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

APPLICATION OF ENERGEN RESOURCE CORPORATION FOR DETERMINATION OF CEMENT ADEQUACY IN PROXIMITY TO PROPSED WELL PERFORMATIONS, SANDOVAL COUNTY, NEW MEXICO.

CASE NO. 15017

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

July 11, 2013

Santa Fe, New Mexico

BEFORE: RICHARD EZEANYIM, CHIEF EXAMINER
DAVID K. BROOKS, LEGAL EXAMINER
PHILLIP GOETZE, TECHNICAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Richard Ezeanyim, Chief Examiner, David K. Brooks, Legal Examiner, and Phillip Goetze, Technical Examiner, on Thursday, July 11, 2013, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

REPORTED BY: Mary C. Hankins, CCR, RPR
New Mexico CCR #20
Paul Baca Professional Court Reporters
500 4th Street, Northwest, Suite 105
Albuquerque, New Mexico 87102

APPEARANCES

FOR APPLICANT ENERGEN RESOURCES CORPORATION:

J. SCOTT HALL, ESQ.
MONTGOMERY & ANDREWS
325 Paseo de Peralta
Santa Fe, New Mexico 87501
(505) 670-7362
shall@montand.com

FOR STATE OF NEW MEXICO OIL CONSERVATION DIVISION:

GABRIELLE A. GERHOLT, ESQ.
and
GABRIEL WADE, ESQ.
OFFICE OF GENERAL COUNSEL
OIL CONSERVATION DIVISION
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
(505) 476-3451
gabrielle.gerholt@state.nm.us

INDEX

EXHIBITS OFFERED AND ADMITTED

(10:48 a.m.)

EXAMINER EZEANYIM: At this time, I'll call the next case.

Everybody sit down, please.

At this point, I call Case Number 15017, application of Energen Resource Corporation for determination of cement adequacy in proximity to propsed well perforations, Sandoval County, New Mexico.

Call for appearances.

MR. HALL: Mr. Examiner, Scott Hall, Montgomery & Andrews Law Firm of Santa Fe, appearing on behalf of the Applicant, Energen Resources Corporation, and I have one witness this morning.

EXAMINER EZEANYIM: Any other appearances?

MS. GERHOLT: Mr. Examiner, Gabrielle Gerholt on behalf of the Oil Conservation Divison. Today we have one witness, Charlie Perrin of District 3.

EXAMINER EZEANYIM: Any other appearances?

Okay. You may call your first witness.

And then call all your witnesses, and stand up and state your names for the record. State and spell your name for the record.

MR. DONAHUE: My name is Charles Donahue, Energen Resources.

MR. PERRIN: Charlie Perrin, Oil

Conservation Division.

(Mr. Donahue and Mr. Perrin sworn.)

MR. HALL: At this point, Mr. Examiner, we would call Charlie Donahue to the stand.

EXAMINER EZEANYIM: You may proceed, Mr. Hall.

CHARLIE DONAHUE,

after having been previously sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

Q. For the record, Mr. Donahue, would you state your name and tell us where you live?

A. Charles Donahue. I live in Farmington, New Mexico.

Q. And by whom are you employed and in what capacity?

A. I am employed by Energen Resources, and I am the production engineering manager.

Q. Have you previously testified before the Division or the Commission and had your credentials as a petroleum engineer accepted as a matter of record?

A. Yes, I have.

Q. Has it been some time?

A. It's been some time, about 25 years (laughter).

Q. Why don't you give the Hearing Examiners a brief summary of your educational background?

A. I graduated in 1981 from Penn State University with a degree in petroleum engineering. So I've been in the industry for 32 years, working for various companies, most of it in the San Juan Basin, all except for four years in the San Juan Basin. I've worked as a drilling engineer, production engineer and a reservoir engineer over that time. I am a professional engineer since 1986 in the state of New Mexico.

Q. And are you familiar with the application that's been filed in this matter and the well that is the subject of the application?

A. Yes, I am.

MR. HALL: At this point, Mr. Examiner, we would re-offer Mr. Donahue as a qualified expert petroleum engineer.

EXAMINER EZEANYIM: He is so qualified.

Q. (BY MR. HALL) Mr. Donahue, if you would, could you summarize for the Examiner what we're doing here today; what is Energen seeking by its application?

A. Well, we're trying to get our cement on the Chacon Jicarilla D #7 approved, which is 130 feet, and we have a cement bond log to show that, and to get new perforations in the Niobrara Formation approved.

Q. All right. Let's help the Examiners understand this particular well. If we could turn to Exhibit Number 1, would you identify that, please?

A. Yes. This is the approved sundry notice of BLM form --

EXAMINER EZEANYIM: Just a moment. Let me get what you want, please. Which one? This one (indicating)?

THE WITNESS: No, sir. The 3160-5 form.

EXAMINER EZEANYIM: Okay. Is that the best well?

MR. HALL: Say again.

EXAMINER EZEANYIM: Is that the best well construction data you can get? Is there something different -- go ahead. Maybe you can prove your case from this diagram.

MR. HALL: I'm sure we can.

EXAMINER EZEANYIM: Okay. I'm waiting to see that.

MR. HALL: Absolutely you'll see that.

Q. (BY MR. HALL) Mr. Donahue, would it help the Examiner -- if you refer to Exhibit Number 1, does that show the location of the Chacon Jicarilla D #7?

A. Yes.

Q. And does it also show your detail -- your

proposed recompletion for the well?

A. Yes, it does.

Q. And does it identify on there the depth of the new perforation that Energen seeks to pick up the Niobrara Formation?

A. Yes. It's slightly different than what's on the diagram because this initial -- these were initial perfs that were given to us by our geologist on the sundry form, 3160.

On the wellbore diagram, which is Exhibit 2, those are the refined perforations that we intend to go forward with.

Q. Have you made an estimate of the additional volume of Niobrara Formation reserves that you expect Energen will be able to produce through these set of perforations?

A. Yes. It's 75,000 barrels of oil equivalent [sic].

Q. Again, referring back to Exhibit 2, does this accurately depict the current tops of cement in the well?

A. Yes, it does.

Q. And if we turn to Exhibit 3, would you identify that, first of all?

A. Yes. It's a cement bond log that was run on

May 8th of this year.

Q. Can we use the cement bond log to help the Examiners orient themselves with respect to the location of the Niobrara Formation and the cement tops? And does it show the quality of the cement behind it?

A. If you open it up, towards the bottom, where it shows the 6,100 to 6,500 feet, the cement bond log, I've marked --

EXAMINER EZEANYIM: I'm still trying to look for that.

THE WITNESS: Do you have that log?

EXAMINER EZEANYIM: Oh, the log.

THE WITNESS: Yeah, cement bond log.

EXAMINER EZEANYIM: Okay. You may proceed.

A. Okay. You can see I've marked on here the proposed Niobrara perfs, and there are three sets of perf intervals there in the Niobrara. And they're in the Niobrara A and the Niobrara C, basically. I've highlighted the Gallup top at 6,220 and the cement top at 6,154. 6,164 ft

Q. (BY MR. HALL) So are you confident that the cement tops and the information reflected on Exhibit 2 faithfully represents what is shown on that cement bond log?

A. Yes.

Q. Anything further you wish to add with respect to the cement bond log?

A. Well, I'd just like to point out that the annulus of this in this case is over 50 feet above the Gallup top, and it gives us 130 feet, really, of great bonded cement above our proposed top perforation. In fact, you really probably don't see a better-looking bond log than this, or very rarely.

Q. Now that you've identified the locations, the proposed depths for the new perforations, can you tell the Examiners what will be the proximity of those new perforations to the top of the cement?

A. That's approximately 130 feet below the top.

Q. And let's refer back to Exhibit 1, again. Does Exhibit 1 indicate approval of Energen's recompletion by BLM, the Farmington District Office?

A. Yes, it does.

EXAMINER EZEANYIM: Which approval?

MR. HALL: Pardon me?

EXAMINER EZEANYIM: Which approval are you talking about.

MR. HALL: It's reflected on the sundry notice. The BLM's approval is on there.

THE WITNESS: Exhibit 1.

EXAMINER EZEANYIM: Okay. What were you

saying about BLM? What did BLM do?

MR. HALL: They have approved the proposed operation.

THE WITNESS: This is on tribal lands, and that's who we're supposed to send sundry notice to.

EXAMINER EZEANYIM: They approved ~~you~~ having cement just up to 1,000 [sic] feet below the perfs?

THE WITNESS: Excuse me?

EXAMINER EZEANYIM: They just approved the 130 [sic] feet below the perfs -- I mean above the perfs?

THE WITNESS: 1,000. NO 130'

EXAMINER EZEANYIM: Is that what they just approved in this form?

THE WITNESS: Correct.

MR. HALL: Yes.

EXAMINER EZEANYIM: Is that what they told you they approved?

MR. HALL: Yes, sir. The exhibit shows that.

EXAMINER EZEANYIM: Okay. Yeah. Yeah. It shows that, but that's the BLM. That's not the OCD.

MR. HALL: Okay.

Q. (BY MR. HALL) In the course of obtaining

various regulatory approvals, is the BLM's 3160 form filed with the Oil Conservation Division's Aztec office?

A. Yes, it is.

Q. And what has the Divison's District 3 Office advised Energen with respect to the accuracy of the cement column in the well?

A. Okay. When we first -- there is a story about this. When we first ran this -- received this CBL, which was on May 8th of this year, we were required to send it to both -- to the BLM and the Aztec OCD Office for approval. We had a conversation with the supervisor in the Aztec OCD, and the first comment was, Looks like you have a problem. And I said, Well, I don't see it that way because this is a good-looking bond as I've seen on a well, and we have 130 feet. So I think we have adequate zonal isolation. And he agreed with that, that it was a great-looking bond log, but he said it was not enough; we need 500 feet.

So we discussed this for a while, probably about a 30-minute conversation. And in the end, I said, Well, so what do we do now? He said, The ball's in your court. I said, Can we frack the well? He said, As long as you remediate it before or after your frack, which is key, which means he's not concerned with the frack communicating past that 130 feet, if he says we can

remediate it after the frack.

Q. In the course of your conversation with the District 3 Office -- it was Mr. Charlie Perrin you talked to; is that correct?

A. That's correct.

Q. Did Mr. Perrin indicate to you that of the Division's rules, Rule 19.15.16.10, subpart E would be applicable in these circumstances?

A. Yes.

Q. Let's turn to Exhibit 4. Is that a copy of the Division's rules, 16.19, "sealing off strata," and 16.10, "casing and tubing requirements"?

A. Yes, it is.

Q. Let's refer to subpart E, "approval," 16.10. And at this point, I'll pause and allow the Examiners time to fully scrutinize that subpart.

EXAMINER EZEANYIM: We are familiar with it. Go ahead.

Q. (BY MR. HALL) Mr. Donahue, if you look at subpart E, is it your understanding that subpart E acts as an exception to the requirement to use hard-setting cements when an operator proposes to you carbon-based -- oil-based packing material in lieu of hard-setting cements?

A. Yes. In that case, yes.

Q. And is Energen seeking an exception to this subpart of the rule?

A. No.

Q. Let's look at the broader rules above. Let's look at Rule 16.9 and then 16.10, A through D. Is it your understanding that those rules, the Division's rules, simply require zonal isolation in the sealing off of strata?

A. That is correct.

Q. It's a clear, unambiguous requirement that --

A. Yes, it is.

Q. Is Energen seeking an exception from any of these rules?

A. No.

Q. In your opinion, will the proposed recompletion, with the existing cement column, meet the requirements for a zonal isolation under the Division's rules?

A. Yes.

Q. Now, Mr. Donahue, does Energen operate in Division Districts 1 and 2 in the southeast?

A. Yes, we do.

Q. And are you familiar with the Division's requirements in those districts?

A. Yes. I had a conversation with both our

production engineering manager in our Midland office, who actually operates the southeast, Districts 1 and 2, and our regulatory person in that same office, and I confirmed that they have never heard of a 500-foot rule.

Q. And was that what was suggested to you by the District 3 Office, that you would have to add an additional 500 feet to the column?

A. Yes, or squeeze it so it was a total of 500 feet.

EXAMINER EZEANYIM: Who hasn't heard about the 500-feet rule, your last sentence? Who is that?

THE WITNESS: Our production engineering manager, Kevin Millan [phoentic], of our Permian office.

EXAMINER EZEANYIM: Okay. He isn't going to know that unless he reads the regulations.

THE WITNESS: Yeah. Well, I'm saying that they have never heard that. And we have a regulatory person in that same office who has never heard of that either.

EXAMINER EZEANYIM: But you know it's a rule? You know it's a rule, right?

THE WITNESS: No, I don't.

EXAMINER EZEANYIM: You can't read it on that 16.10?

THE WITNESS: Except for in the case of

casing -- you know, oil-based casing packers is the only place that says it.

EXAMINER EZEANYIM: Even using high cement, whatever that means. I ask you what you mean by -- I know you're going to use hard-setting cement. Explain to us what that means. But I don't want to interrupt you; we'll go through it when you finish. Can you continue, please?

Q. (BY MR. HALL) Let me clarify that point. Is it a requirement of the Division's District 1 and District 2 Offices that an operator obtain 500 feet of cement above the uppermost perforations that are in the completion?

A. No.

Q. What would be required for Energen to raise the cement column to 500 feet? What additional columns would be required to do that?

A. Well, we would have to perforate with two sets of squeeze holes. The first set being above the existing cement, as you see on the CBL. And I would perforate, again, approximately 500 feet above that to leave us room for air, in case there is fall-back of cement. We would trip [sic] in the hole with a retainer on tubing to approximately 50 feet above the lower set of holes, pump our cement. It would circulate around on

top of our cement retainer. We would displace it down to that retrainer and sting out of the retainer and pull our tubing up to above our new cement top inside the casing.

Q. Would that require you to add another 370 feet of cement column?

A. Yes, and that would give us the minimum of 370 feet, additional.

Q. The procedure you've just described, what does the industry term that?

A. Suicide squeeze.

Q. And so why is this a concern to Energen?

A. Well, it introduces -- to us, to put unnecessary additional perforations in this well would introduce -- would be -- you know, cause mechanical integrity to the well. There's risk involved in this in that, you know, cement could set up early. If there's -- let's say the consultant is having a bad day and he doesn't pull the tubing out far enough, which has happened in the past, it would cost us a lot more cost. We'd have to mill it out or wash over it somehow and try to get that tubing unstuck. So we try to avoid it, you know, at all costs.

Q. Mr. Donahue, have you had the opportunity to review the well file for the Chacon Jicarilla D 7?

A. Yes.
Q. Including the drilling report?
A. Yes.
Q. Did you see any indication that the well encountered any abnormal pressure zones?
A. No, I didn't.
Q. And in your opinion, is there any risk of cross-flows between the hydrocarbon-bearing formation --
A. No.
Q. -- or with water-bearing zones?
A. No.
Q. What is the BLM Farmington District Office's practice with respect to cement coverages?
A. The only thing they have in there -- well, they address zonal isolation in their 1-4 order, too, and the only place where it specifies footages is at P&A. That's where you need a 100-foot plug, where you straddle the top of the zone, where you have 50 feet above, 50 below inside and outside the pipe.
And in this case, as you can see, we have 50 feet above the Gallup top, as indicated on the CBL. So we wonder why you would need more than that. If that's good for P&A-ing, plug and abandonment, why would we need more for pay add or add additional perfs, you know.

Q. Based on your experience as an engineer in the San Juan Basin, has the BLM's practice requiring 50 feet of isolation been effective in protecting strata?

A. Yes. Yes, it has.

Q. Does Energen plan on performing similar completions to other Gallup-Dakota wells in the area?

A. Other than the Chacon Jicarilla?

Q. Yes.

A. Yes, we do.

Q. Approximately how many?

A. An additional 14.

Q. And do you know, in each case, are those wells configured with casing-submitting programs similar to the number seven?

A. Yeah. Generally similar, yes.

Q. Will Energen defer those recompletions if it is required to perform suicide-squeeze jobs?

A. Yes.

Q. Say again your answer.

A. Yes.

Q. And if you defer those recompletions, will additional otherwise recoverable hydrocarbon reserves go unproduced?

A. That's correct.

Q. Mr. Donahue, in your opinion, can the proposed

recompletion, with the existing level of cement, in the Chacon Jicarilla D #7 well be performed and the well produced so that underground waste of hydrocarbon resources is prevented and the contamination of fresh water is avoided?

A. Yes.

MR. HALL: That concludes my direct examination of Mr. Donahue. I would move the admission of Exhibits 1 through 4 into evidence.

EXAMINER EZEANYIM: Any objection?

MS. GERHOLT: No objection.

MR. HALL: And I would also tender Exhibit 5, which is our notice affidavit. At the direction of Division counsel, we provided notification to the Divison's Aztec District Office, the Bureau of Land Management in Farmington and the Jicarilla Apache Nation, all of whom are here today.

EXAMINER EZEANYIM: Any objection?

MS. GERHOLT: No objection.

EXAMINER EZEANYIM: Based on that, Exhibits 1 through 5 will be admitted.

(Energen Resources Exhibit Numbers 1 through 5 were offered and admitted into evidence.)

MS. GERHOLT: Thank you, Mr. Examiner.

CROSS-EXAMINATION

BY MS. GERHOLT:

Q. Good morning, Mr. Donahue.

A. Good morning.

Q. If I could draw your attention to Energen's Exhibit 2, the wellbore diagram for the Chacon Jicarilla D #7, if we could walk through this exhibit together. I can see from this exhibit that the surface casing is set at 268 feet and cemented to surface; is that correct?

A. That's correct.

Q. And then there is a void between the bottom of that shoe to the top of the cement at 1,906 feet; is that correct?

A. That's correct.

Q. And then the DV tool is 3,352, correct?

A. Correct.

Q. And then there is another void between the DV tool and the next top of cement, which is at 6,164; is that correct?

A. That's correct.

Q. And it's been established that there is 130 feet above the top perforation; is that correct?

A. Yes. The proposed perfs, yes.

Q. Proposed perfs.

Energen has recently been out on this well,

correct?

A. Yes.

Q. And has there recently been a casing leak detected?

A. Yes.

Q. And do you know where that casing leak was detected at?

A. It was detected up there around the -- I think it was up around the stage tool. I don't have the exact depth with me.

Q. But around the stage tool?

A. It was uphole, yeah.

Q. So where there is currently --

A. It was a minor leak. It looked like a collar leak or something like that.

Q. Does Energen have a plan to set a plug above the existing perf and then pressure test the entire casing string?

A. Yes.

Q. And has a date been scheduled for that test?

A. Actually, we've already done that.

Q. Have those results been shared with the Division?

A. And that's where we found the casing leak, and we've squeezed that casing leak since that point.

Q. And will another test be run to determine if the squeeze was adequate or not?

A. Yeah. We'll have to do another test on that. When we move back on -- when we move the rate back off -- this well is in hearing [sic]. And so when we move back on, we'll go ahead and retest it.

Q. And I believe you stated on direct that Energen does plan on fracking this well; is that correct?

A. Yes, that's correct.

Q. And then I have a question. You made a statement on direct that you were told that you could frack the well as long as you remediate after the frack?

A. Before or after the frack.

Q. What do you mean by remediate?

A. That's through the suicide squeeze.

Q. And could a frack crack that 130 feet of cement above the top perf?

A. No.

Q. Why not?

A. Why not? Because -- well, really because of the experience we've had in the past. We've never seen that with this kind of a bond log, for that to happen. It's going -- the frack will go on the path of least resistance, and the path of least resistance will be out in the formation, not up the annulus. If we were

fracking a well -- that's why -- if we didn't have this kind of a bond, we wouldn't be fracking the well at all, actually. If we had really ratty looking cement, then we just probably would have walked away from it for fear of that very thing.

Q. Okay.

A. But in this case, you know, you're going to the path of least resistance. This is as good a bond as it gets, and it'll go the path of least resistance, out through the perfs and the formation.

Q. Will the frack be monitored to determine if there is breakdown?

A. Well, you'd able to tell, yes, with the typical Halliburton monitoring of a multiplot, things like that. If a frack went out of zone, you would be -- you would be able to see a significant drop in pressure.

Q. And that would occur during the time of the actual frack, correct?

A. That's correct.

Q. Is there a test that can be run maybe two years later to determine whether or not things are as intact as of the time of the frack?

A. No. I guess -- I guess you could rerun a CBL or rerun a mechanical integrity -- rerun the mechanical integrity log or something like that to see if there was

anything happening up the hole -- up the hole of the casing, if you're drilling with some sort of a sound log to see if there is anything happening uphole.

Q. Okay. So there are some tests that may be able to be run?

A. You might be able to, yeah.

Q. And then, finally, you made the point, in regards to when a well is plugged and abandoned, there is a 50-foot cement requirement for zonal isolation; is that correct?

A. That's correct.

Q. And Energen's concern, if I'm saying this correctly, is: Why would you need more cement during production than during a P&A?

A. Yeah. Or to do this operation of fracking this zone, why would you need more than 50 feet above, say, the Gallup here? We're going to have 50 feet above the Gallup? Why would you need more than that for zonal isolation, you know, to frack the well if that's all you need for P&A-ing, when the well is finally plugged?

Q. But during production, isn't the wellbore moving slightly; there is some movement during production?

A. The wellbore?

Q. Or the casing.

A. No, not really.

Q. So there is not more --

A. This well's been producing for almost 40 years. Whatever movement has occurred, it's occurred.

Q. There's not more movement typically during production than when the well is plugged and abandoned?

A. Oh, that's possible, yeah, maybe just minor, minute, you know, but it's not significant.

Q. Thank you, Mr. Donahue. I have no further questions.

A. Okay.

EXAMINER EZEANYIM: Any cross?

MR. HALL: That concludes our direct presentation in this case.

EXAMINER EZEANYIM: Thank you very much.

Any questions, Mr. Brooks?

EXAMINER BROOKS: No questions.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. Let's go back to the suicide squeeze. You know in the industry sometimes you may have to do that. I mean, suicide squeeze, you know, of course every time you need to have it, you need to do it. I want to get that out of the way. So sometimes you can do a suicide squeeze to get what you want, right?

A. That's correct.

Q. Of course. Of course it's correct. I mean, you've done it before. When you use the word "suicide," you are using it like -- I know what you're talking about. It's not like somebody's killing themselves. We use it in the industry to talk about something that is going to cost a lot of money, and that's why we call it a suicide squeeze. It's not like somebody is going to die when you squeeze.

A. No. It's just more risky than a normal squeeze.

Q. Of course. I understand.

A. Okay. It costs much more.

Q. Well, I'm really going to go back to that suicide squeeze. I'm looking at your cement bond log here. I know this is a very important log you presented to me. And during that testimony, you indicated that you don't even know that the OCD requires that we need that cement to 500 feet above the perforations. You didn't know that, right? Did you know that before?

A. No. I've never -- no.

Q. That's the reason why I'm asking that. Do you want to address that?

MR. HALL: Mr. Ezeanyim, I just want to say that I think it mischaracterizes his testimony.

EXAMINER EZEANYIM: No, no, no. I know, because I heard him say that he didn't know that we require 500 feet above the top perf according to that 19.15.16.10E.

MR. HALL: And the point of our application, we tried to make this -- we don't think it's a requirement under the Division regulations.

EXAMINER EZEANYIM: Why is it not?

MR. HALL: If you look at subpart E, it's only applicable in the event the operator seeks to use something other than hard-setting cement.

EXAMINER EZEANYIM: I read it to imply whether they are using hard cement or not using hard cement, that issue. That's how I read it. I might be wrong. I'm not an engineer, you know. I read it as whether or not you were using hard-setting cement or you're using that hard-packing material. You are trying to say, Oh, it's only applicable to hard-packing material. Is what you're saying?

MR. HALL: Yes. I think that's the clear and unambiguous wording of subpart E of 16.10.

EXAMINER EZEANYIM: You know, we need to clarify that, because that's very important. Because the way I read it is, whether you're using hard-setting cement, which you are going to talk about, or you're

using the packing material, you still have to have the 500 feet above the first perfs or above your casing shoe, if it's open hole. So is that what --

Can we get a legal interpretation of that language.

EXAMINER BROOKS: Well, we've heard one side's interpretation. I would be interested in hearing the Division's interpretation.

MS. GERHOLT: Mr. Examiner, sorry to interrupt you. I would like to say that the Division's witness, Charlie Perrin, will address that, and we'll hopefully help clarify that issue.

EXAMINER EZEANYIM: Okay. Then he will go to that question. Okay. Very good.

Q. (BY EXAMINER EZEANYIM) What is hard-setting cement?

A. Excuse me?

Q. What do you mean by the term "hard-setting cement"? Is it conventional --

A. It's like cement that you can conventionally cement a well with --

Q. Yeah, I know, but --

A. -- 500 pounds compressive strength, class G, with two percent calcium chloride and water loss and --

Q. That's my point there, because I don't -- okay.

You use an H API milligrams. I'm not talking about -- because you can see a bunch of API, but they're not milligram cements, you know. I don't know what the compressive strength is, but my question here is: What type of cement did you use here? The cement that -- class G? Class H API?

A. In 1977, it was class -- I believe, at the time, class -- I don't know if it was class B or G at the time, number 2 CaCl. And this was -- this well was 1977, which was prior to even the onshore order to 1982, and it was drilled and cemented to the regulations at the time.

Q. What type of cement do you use in your operation now?

A. Class -- well, it's a variety. It's class G 50/50 poz, 65/35 poz, with first [sic] class G in it.

Q. And what is a typical compressive strength?

A. You know, above 500 feet, you know, depending what we're doing, you know.

Q. And we can reach that strength above --

A. About 500 pounds.

Q. You know, this is something we need to do with our rule.

A. Right.

Q. I don't know what hard-setting cement is. When

you said that, my mind goes to API. I mean, I think that was the thinking at the time the rule got wrote. It's not your problem. It's the problem that the Division is going to correct.

If you tell me what is a hard -- conventional hard-setting cement, I don't know what that is, you know. You could tell me the API milligrams or just API or just construction cement with the additive to give you the performance criteria. I don't know. But it's something we need to do.

Now, apart from this suicide squeeze, is that the reason why you can't add 370 feet?

A. Well, it's the cost associated with that.

Q. How much is that?

A. Probably $50,000, by the time we get a rig on there and have to drill it out, get the cement out there, pay the consultant, all those fees. It adds up pretty quick. We don't have a formal cost estimate, but it's going to be about 50,000, I would guess.

Q. To do a suicide now?

A. And that would affect the economics.

Q. It's not really the impossibility of the technology. It's the cost, right?

A. Uh-huh.

Q. How much is this well going to -- is this an

oil well?

A. Yes.

Q. It's an oil well. What do you expect to produce from this well?

A. Our model says about 12 barrels a day of oil, with some associated gas with it.

Q. I'm only interested in oil for now. Okay.

And then so your assimilation is that if you spend 50,000, it may not be profitable. Is that what you're saying?

A. Yeah. That's why we would walk away from it. No. I mean walk away from the pay-out. We would just produce it as is, you know, in its current condition, from the existing perfs. We would just put it back on production. We probably wouldn't complete that.

Q. So if I require you to put -- add 370 feet, you walk away?

A. Excuse me?

Q. If I require you to add an additional 370 feet, you walk away? You walk away from this well?

A. Yes.

Q. If you add 370 feet to the 130, you get --

A. Because in our opinion, it's unnecessary -- you're putting unnecessary holes in your pipe.

Q. I hear you. I listen to what you are saying.

Now, in your testimony here -- because I heard you say that when you frack this well, you can eliminate it if you have a problem. And that problem is the suicide squeeze. Let's say you frack and that problem -- according to cross-examination, then you are going to limit the -- eliminate the situation by suicide squeeze, right? Is that what you said?

A. You have to repeat that. I didn't quite understand.

Q. Oh, yeah, I'll repeat it, because it's important from what your testimony was. I was listening to you.

A. Okay.

Q. When you were asked whether -- when you frack this well --

A. Right.

Q. -- and you start seeing problems, you say you are going to remediate the well. And then the question was: What do you mean by remediate? You said, Well, we are going to do a suicide squeeze. Is that what you meant? I heard you say that.

A. Well, are you talking about in the context of the cross-examination --

Q. Yes.

A. -- where she said what tools we could run and

sort of thing?

Q. No, no. When she was saying -- she said -- I didn't understand what she said -- I didn't understand what you mean by remediate when you frack the well.

A. Oh.

Q. Is that subject to a suicide squeeze? You said yes.

A. Well, I think she was talking -- the remedy, the well, is that casing leak that we found up the hole that we have already squeezed. That's not a suicide squeeze. That's just a regular squeeze to squeeze off that casing leak in order -- you know, which would be required anyway. If we have a -- induce a casing failure because we're testing the well to 3,800 pounds, and that's our -- our recent frack pressures have been 32- to 3,700. Induced a hole into that, as a result. We're required to fix that, test it, and then what we do is, we would run a frack line on top of that one fracked well.

Q. Do you know where that leak occurred? Do you know where that leak occurred in this diagram?

A. I don't have the exact depth with me, but I can get that to you.

Q. But you squeezed it -- you told me you squeezed it, so you should know where --

A. I would have to look it up. I would have to look it up and see what's not on the chart or anything.

Q. I would really like to know where that leak occurred.

A. Okay. I can get that for you. It was one of my engineers that actually did that, so I don't have the exact depth there.

Q. And, again, let me get this before you step down. You have 14 wells that are facing the same problem that we have here in that area. You say 14 wells that we have the same problem without getting the cement 500 feet in the area?

A. No. We have 14 wells with similar casing and cementing programs, but the funny part is, of the five wells, CBLs that we've run, five or six wells, this is the only one that had less than 500 feet. The other ones actually had greater than 500 feet, so there wasn't that problem. And we have not fracked all those wells. But you do not -- you won't know until you can actually move on the well and run a CBL, and, you know, it's kind of a case-by-case basis.

Q. You were asked by your counselor what about the zonal isolation. Could you explain to me, from your geology background, engineering background, how that is true? How would 130 feet provide zonal isolation for

the top perfs?

A. Well, that, again, is just experience. And we've fracked in the past -- and this has been a few years -- wells with as little as 50-foot zonal isolation without any problems. And I don't have those specific wells with me. I'm just saying, from past experience, I know that we have as little as 50 feet. And in order to know whether this 130 feet is correct, we would know that during the frack. If we broke through that, which is highly unlikely, I mean, probably, I would say, it would not occur, that we would see that on the pressure charts, because your -- would drop.

Q. Okay. That's all I have for you. Thank you.

A. Yeah.

EXAMINER EZEANYIM: You may step down.

THE WITNESS: Okay. Thank you.

EXAMINER EZEANYIM: Any more witnesses for you?

MR. HALL: No, sir.

EXAMINER EZEANYIM: Ms. Gerholt?

MS. GERHOLT: Call Charlie Perrin at this time, and Mr. Wade will handle his direct examination.

CHARLIE T. PERRIN,

after having been previously sworn under oath, was questioned and testified as follows:

EXAMINER EZEANYIM: Mr. Perrin, you've been sworn. You're seated under oath.

THE WITNESS: Yes, sir.

DIRECT EXAMINATION

BY MR. WADE:

Q. Good morning, Mr. Perrin.

A. Good morning.

Q. For the record, would you please state your name?

A. Charlie Perrin.

Q. And where are you employed?

A. Aztec, New Mexico OCD, District 3.

Q. And how long have you been employed by the Division?

A. 21 years.

Q. What is your title there?

A. District supervisor.

Q. And what are your duties as district supervisor?

A. Oversee the district activities, review actions, review rules, applicability of the rules.

Q. And how long have you been district supervisor?

A. Since 2004, nine years.

Q. Have you had the opportunity to testify before the hearing Examiners previously?

A. Yes, I have.
Q. Were your credentials as an expert in OCD regulations accepted?
A. Yes, they were.
MR. WADE: The OCD would like to move Mr. Perrin as an expert in OCD regulatory practice.
EXAMINER EZEANYIM: He's so qualified.
MR. HALL: Let me think about that.
EXAMINER EZEANYIM: Okay. You have an objection?
MR. HALL: I think we'd certainly stipulate to his expertise as a petroleum engineer. There is a recognized expertise for regulatory matters.
EXAMINER EZEANYIM: His presentation was for regulatory expertise. I don't think it's petroleum engineering or any technical -- are you objecting to that regulatory expertise?
MR. HALL: I don't object to it.
EXAMINER EZEANYIM: What?
MR. HALL: I do not object to Mr. Perrin providing us opinion testimony.
EXAMINER EZEANYIM: So what are you saying?
MR. HALL: I said I don't object.
EXAMINER EZEANYIM: Okay. Mr. Perrin is so qualified.

Q. (BY MR. WADE) Are you familiar with Energen's sundry notice of intent received by the OCD on April 2nd, 2013 that's marked as Exhibit 1?

A. Yes, I am.

Q. And how did that sundry notice marked as Exhibit 1 come to your attention?

A. It was sent to the office as an application for a downhole commingle -- I'm sorry -- downhole recompletion. A wellbore reviewed by the geologist indicated that there wasn't sufficient cement identified in the wellbore, so we submitted it to the upper agency that it needed a CBL prior to perf. That was put on the document.

Q. And that's a notation on the document?

A. Yes, it is.

Q. And was that CBL conducted?

A. Yes, it was.

Q. What did it show?

A. It showed that there is -- a CBL was run under 500 pounds of pressure. It showed that there is cement to 6,140 feet. Really good cement is at 6,160.

Q. Based on what you reviewed in the CBLs information, were you able to approve that sundry?

A. No, sir, I was not.

Q. And why not? What did you base your decision

on?

A. The decision was based on our rules and our practices. When a well is applied to be drilled, we require the operator to design the cement program to become [sic] surface or to the top end of the stream, minimum 100 feet.

Q. Did you rely on certain rules?

A. Yes, I did.

Q. Could you walk us through those rules?

A. Yes, I can. I reviewed 16.9, which says: The drilling of an oil well -- of an oil well, injection well or other surface well, the operator shall seal and separate the oil and gas and water strata above the producing or injection horizon to prevent the contents from passing into other strata.

Q. That would be 16.9A?

A. 16.9A.

I reviewed 16.10A: The operator shall equip the well drilled for oil and gas with surface intermediate casing strings that seem as may be necessary as effective -- to effectively seal off and isolate all water-, oil- and gas-bearing strata and other strata encountered in the well down to the casing point. In addition, the operator shall equip a well completed for oil and gas production with a string of

properly cemented production casing at sufficient depth to ensure production -- protection of the oil and gas strata encountered in the well, including the strata being produced.

Q. So in simple terms, what do those two sections mean to you?

A. There should be cement in the wellbore behind the pipe. There's not -- in lieu of requiring Energen to bring cement across the whole formation, we referred to 16.10E, and used it to allow a minimum of 500 feet instead of requiring the operator to bring the cement all the way back up.

Q. And you've heard testimony that mud-packing material is not what is being used. So what's the reasoning behind using that as a minimum allowable cement?

A. If there was no cement behind the pipe, it would be worse than having the packing material, since there is nothing behind there. We use this to require the operator to be at 500 feet, so we have the isolation and protection.

Q. And why is that worse than not having the mud?

A. To keep it from communicating with another formation.

Q. And how long have you been using 16.10E as

guidance for that 500-foot minimum?

A. We've used it for years, ever since I've become supervisor. It was in practice before that.

Q. You've been supervisor for nine years?

A. Nine years.

Q. And had that requirement been communicated to all the operators in your district?

A. Yes, it has at various times.

Q. And do you know if, up to this point, they've complied with that minimum requirement?

A. Yes, to my knowledge.

Q. Did you review the well file for this well?

A. Yes, I did.

Q. Do you recall when you reviewed it?

A. Yes, after we received the application for hearing.

Q. And why would you review the well file?

A. To see if there was anything -- I'm sorry. After we received the letter form the BLM asking us to work within the exception, we re-reviewed the well file. And through that process, we reviewed it.

Q. And what were you looking for?

A. We were looking for any potential migration or issues that could cause -- I was looking for compliance with the rules and regulations.

Q. When you were looking at the well file, did you find the age of the well?

A. Yes. The well was spud in 1977.

Q. And would that cause any concern for you?

A. Well, it tells us that the well was probably drilled before the requirement pursuant to surface on all the strings that would minimize [sic] tie in. It tells us that the cement is 36 years old, and there is always those concerns.

Q. What about the way the well was cemented? Maybe we could refer to the Applicant's exhibit.

A. The well is cemented. It was tabbed in. They had pumped their bottom plug, and I think it was 65/35 poz mix. And it was brought up to 6,140 feet. Then the leach [sic] hole was opened, and it was brought up from 33 to 1850-ish.

Q. Would the way that well is drilled cause any issues with monitoring?

A. Yes. We cannot monitor anything below the cement at 1,800 feet. We have a bradenhead-type program. All the wells in the district are tested on a three-year rotation basis, and the well would be tested to find out what pressures are between the formation and the casing and between the casing strings. And that is evaluated on a continual basis. With that cement being

at 1,800 feet, there is no way to monitor if anything broke through deeper than that.

Q. And why would that be a problem?

A. Well, it prevents us from seeing any migration from the 3,300 to the 6,100 foot.

Q. And later on, did you receive any other reports regarding the well, any other sundry notices?

A. Yes.

Q. And do you have that sundry notice in front of you? It's marked as Exhibit 2.

A. Exhibit 2. Yes, I do.

Q. What's the date on that sundry notice?

A. The date received is June 19th, 2013.

Q. What did that sundry notice tell you?

A. It says: See attachment for performed remedial -- worked performed on the subject well. The second page is not there. That has the specific work that was performed.

Q. Do you recall what's on the second page?

A. Yes. It seems like they had tested it and found a hole about 3,200 feet. They've gone in and done a squeeze and repaired that, performed remedial work on it.

Q. So the casing has already been shown to leak?

A. Yes, it has had evidence of a leak.

Q. In your opinion, does the 500-foot minimum casing that OCD requires give more protection than the 130-foot casing as proposed by Energen?

A. Yes, it will. It will give new cement. It does have the risk of the hose, the perforation through the block, squeezed. It will add new cement on the inside of that pipe to help prevent any type of migration.

Q. So in the testimony that you heard from Energen's witness, he mentioned that somebody in the Aztec office had said that you could frack that well as long as it was remediated after the frack -- before or after.

A. Yes, sir.

Q. Do you recall that?

A. Brandon Powell made that statement. He indicated that they could perform their completion work if they would agree to perforate above and top cement, bring the cement 500 foot after the completion work.

Q. So the 500-foot requirement was still in place?

A. Yes, it was.

Q. No further questions.

EXAMINER EZEANYIM: Cross, Mr. Hall?

MR. HALL: Yes, sir.

EXAMINER BROOKS: It's only two minutes. I

suggest that I need to recess for lunch, and I'm thinking perhaps Mr. Hall intends more than two minutes of cross-examination.

MR. HALL: Three or four at least.

EXAMINER EZEANYIM: We might allow you to go.

EXAMINER BROOKS: Well, my concern is that -- originally, we talked about I could leave and you could continue, or we could recess. However, the point is that I really intend to examine this witness. So I do think I need to be here.

EXAMINER EZEANYIM: So we need to take a break and come back.

EXAMINER GOETZE: Let's do that.

EXAMINER BROOKS: I think we can take a recess until 1:15. I think that's very important. It's quarter to 12:00.

EXAMINER EZEANYIM: So we come back at 1:15. We have a lot of work to do. We'll come back at 1:15.

MR. HALL: Will do.

(Break taken, 11:43 a.m. to 1:35 p.m.)

EXAMINER EZEANYIM: We'll go back on the record and continue with Case Number 15017. The witness is on the witness stand. Continue with

cross-examination. Cross-examination, right?

MR. HALL: One housekeeping matter.

MR. WADE: I had neglected to enter our exhibits into the record.

EXAMINER EZEANYIM: I was wondering about that.

MR. WADE: It's Exhibits 1 and 2.

EXAMINER EZEANYIM: Exhibits 1 and 2?

MR. WADE: Yes.

(OCD Exhibit Numbers 1 and 2 were offered and admitted into evidence.)

EXAMINER EZEANYIM: Go ahead.

CROSS-EXAMINATION

BY MR. HALL:

Q. Good afternoon, Mr. Perrin.

A. Mr. Hall.

Q. I want to ask you about something you indicated in your direct testimony. You now have been District 3 director [sic] for nine years; is that correct?

A. Uh-huh.

Q. You need to indicate verbally for the court reporter.

A. Yes.

Q. And you worked at the Aztec District Office before that, correct?

A. Yes.

Q. And who were the previous directors you've worked under?

A. I worked under Frank Chavez. He was the district supervisor.

EXAMINER EZEANYIM: May I make a correction? He's not a director. He's the supervisor.

MR. HALL: Say again.

EXAMINER EZEANYIM: He's the District 3 supervisor.

MR. HALL: Yes.

EXAMINER EZEANYIM: He's not the director of District 3. I want to correct the record. You know, you are calling him the director of District 3, but I think supervisor is the correct word.

MR. HALL: Well, I appreciate you pointing that out. I think he ought to have a director's salary.

(Laughter.)

EXAMINER EZEANYIM: You didn't tell me that.

EXAMINER BROOKS: I imagine he thinks that, too.

(Laughter.)

EXAMINER EZEANYIM: I just wanted to clear up the record, because we are the director, and we don't

have two directors.

MR. HALL: Thank you for that.

EXAMINER EZEANYIM: I'm sorry about that, but I need to correct the record.

MR. HALL: Got it. "Supervisor."

Q. (BY MR. HALL) And it's your testimony that ever since you've become supervisor, it's been a standing requirement to have operators obtain 500 feet of cement above perforations for recompletions; is that right?

A. Yes. It's evaluated on a case-by-case basis. So we're getting into a specific. If we can monitor that above it, then we have approved it with less than 500 feet. If we lose that monitoring capability, no. When we review it, we review it for the rule of the 500 feet, yes.

Q. I heard both a no and a yes to my question.

A. That's because there is both a no and a yes.

Q. Okay. So it would be accurate to say, would it not, that there is no blanket requirement that an operator obtain 500 feet of cement isolation?

A. Yes, that is correct.

Q. And was that also the practice with Mr. Chavez?

A. I believe it was, yes.

Q. You had also mentioned that you had received some correspondence from the BLM. If you would take

before you Exhibit 6 -- I thought I had given that to you.

EXAMINER EZEANYIM: Exhibit 6 of who? Of Energen, right?

MR. HALL: I provided you with a copy.

EXAMINER EZEANYIM: Is that the exhibit you're talking about?

MR. HALL: Exhibit 6.

EXAMINER EZEANYIM: Of Energen? Of Energen, right?

MR. HALL: Correct. It's right there before you, Mr. Examiner.

EXAMINER GOETZE: Under your calculator.

EXAMINER EZEANYIM: Okay. Thank you.

Q. (BY MR. HALL) Now, Mr. Perrin, Exhibit Number 6 is a letter, with a stamp date on it of May 10, 2013, on Bureau of Land Management letterhead and signed by David Evans, correct?

A. Yes, sir. That is correct.

Q. Is this the letter that you were referring to in your direct testimony?

A. Yes.

Q. And if we turn now to what we have marked as Exhibit 7, can you identify that letter for us?

A. Yes. This is the letter in response to

Mr. Evans, from the Farmington BLM.

Q. Would it be a fair characterization of Mr. Evans' letter --

A. Yes.

Q. -- that it says, the BLM finds 130 feet of cement in the Chacon Jicarilla D 7 well to be adequate to obtain zone isolation. Is that a fair characterization?

A. Yes.

Q. And Exhibit 7 is your response to Mr. Evans' letter, as you said, correct?

A. Yes.

Q. And if we turn to page 2 of that, you have, at the very top, included the entirety of the text of Division Rule 19.15.16.10E, correct?

A. Yes, sir. That's correct.

Q. And it is subpart E that you're basing your determination on that 500 feet of cement is required for the Chacon Jicarilla D #7 well; is that right?

A. Yes. The evaluation of the wellbore and the application of this 500-foot minimum is what we used, yes.

Q. At the last sentence of the second paragraph on page 2, read that for us. What did you say there?

A. "This is obtained by requiring the operator to

obtain the 500 foot in lieu of bringing the cement all the way back to the next casing string or surface."

Q. And so by indicating that, were you saying that the only means by which an operator can obtain zonal isolation is by placement of the cement 500 feet above the perforation?

A. No. In this case.

Q. Do you have a minimum requirement that you will sometimes permit an operator to go by?

A. It's on a case-by-case basis. We evaluate the wellbore and see where we're at. When we need it, we use the 500-foot minimum, as long as we can monitor it at the surface. If we can -- if there is no cement between the new perfs and surface, if it breaks through, we can see that through a bradenhead test at the surface. In the event that something has it isolated, as in the case of this well, we can't see it if it breaks through. So, therefore, we require the minimum protection of the 500 feet.

Q. Let's refer to Energen's Exhibit Number 4, if you would, please, and it's the highlighted rules we've been talking about. And if we look at Rule 19.15.16.9, is that the general requirement of operators, that they seal off strata in wells?

A. Yes, in conjunction with 16.10.

Q. And would that be 19.15.16.10A, specifically?
A. Yes.
Q. And would you agree with me that there is nothing ambiguous or unclear about 19.15.16.9A, B and C and 19.15.16.10 subpart A?
A. I'm not sure exactly what you're asking, Scott -- I mean Mr. Hall.
Q. Do they require interpretation to understand?
A. No, they do not.
Q. Let's look down at the subpart of Rule 16.10 that you've been relying on for the 500-foot requirement. That's subpart E. Do you see in the first sentence that the rule refers to "ways operators may obtain permission to use oil-based casing packing material in lieu of hard-setting cements"? Do you agree with that?
A. Yes.
Q. And then when we look at the very last sentence of subpart E -- why don't you read that into the record for us, the very last sentence in that subpart.
A. Starting at "when the operator uses such materials on the production casing string"?
Q. Yes.
A. "The operator shall place conventional-type hard-setting cements throughout all oil- and gas-bearing

zones that shall extend upward a minimum of 500 feet above the uppermost perforation or, in the case of open-hole completion, 500 feet above the production casing shoe."

Q. And would you agree with me that the prepatory portion of that sentence -- and by that, I mean where it says: "When the operator uses such materials on the production casing string." Do you agree with me that that prepatory language qualifies the applicability of the 500-foot requirement to those circumstances where an operator is seeking to use materials other than hard-setting cements?

A. Yes.

Q. So you would also agree that nowhere in subpart E does the rule say "in all cases, an operator must obtain 500 feet of cement isolation above perfs?"

A. No, it does not specifically say that.

Q. Isn't that the way you have interpreted and applied it in Energen's case here?

A. No. What we did was evaluate the wellbore, and we found out how much cement was there; and then we expressed our concern. And in lieu of asking the operator to bring the cement back up to tie in or back up into the next casing string, we used this as a way to allow them to use the 500-foot minimum. Because in lieu

of nothing or in lieu of the packing material, the cement being back there is a lot better than no cement, no packing material or anything behind the casing. So we used this as a minimum to require something to be behind the casing to keep it from migrating and flowing.

Q. And the Division's come here today and has not offered any evidence that the recompletion proposed by Energen with 130-foot cement column is not adequate to protect other strata or water-bearing zones, correct?

A. I'm not sure that I'm following you.

Q. I just haven't seen the evidence, and presumably you have no more to offer.

MR. WADE: I'd just object. He's asking for a legal conclusion, which is left to the Hearing Examiners.

EXAMINER BROOKS: Well, I think I would advise the Examiner to sustain that objection.

EXAMINER EZEANYIM: Objection sustained.

Q. (BY MR. HALL) I'd ask you, Mr. Perrin: Are you familiar with the requirements for cement isolation being utilized by the District 1 and District 2 offices?

A. No, I'm not.

Q. Have you talked to those supervisors about what their practices are?

A. I have spoken with E.L. Gonzales of the Hobbs

District, and he indicated to me that he does use that.

Q. How about District 2?

A. I have not communicated with District 2.

Q. Are you aware that the districts are taking divergent interpretations of the cementing requirement?

A. I can't speak to what the other districts are doing.

Q. In your view, is there a need for clarification of subpart E to Rule 16.10?

MR. WADE: I'd object. Again, this is also asking for some form of legal conclusion or rulemaking that's not before --

EXAMINER BROOKS: Well, he has to administer the rules. He can testify whether or not there is a need for clarification.

I would advise the Examiner to overrule the objection.

EXAMINER EZEANYIM: Objection overruled.

MR. WADE: Can we clarify the question, that he clarify among the district offices or the rule itself?

EXAMINER BROOKS: Well, I think he's asking whether the rule is clear to the witness.

A. I think our rule is very weak when it comes to cementing. It's not specific, and, therefore, we use it

to protect the environment to the best of our abilities.

Q. (BY MR. HALL) Do you agree with me that subpart E acts as an exception only to subpart D of Rule 16.10 as written?

A. As written, yes.

Q. Is there anything preventing the Division or District 3 from applying to the Commission for a rulemaking to add the clarification to the cementing requirements that you seek?

A. Not to my knowledge.

Q. Do you agree that that would be an appropriate means of obtaining clarification in a proceeding where industry could come in and comment on a modification to that rule?

A. I believe that is our standard rulemaking process, yes.

MR. HALL: That concludes my cross-examination of Mr. Perrin.

EXAMINER EZEANYIM: Any redirect?

MR. WADE: Sure.

REDIRECT EXAMINATION

BY MR. WADE:

Q. So going back to questions referring to Rule E -- or it would be 19.15.16.10E, are you applying that rule as a rule strictly in this situation, or are you

using this as guidance?

A. I'm using this rule as a guidance. We've got a minimum set at 500 feet, and I'm using that as a guidance.

Q. If you refer to the letter that you sent to the BLM -- I believe it's Applicant Exhibit 7, the second page, the second paragraph; it was the last sentence of that paragraph. Could you read that again?

A. "This is obtained by requiring the operator to obtain the 500 foot in lieu of bringing the cement all the way back to the next casing string or to the surface."

Q. So the rule requirement would be for the operator to bring the cement all the way back to the next casing string or to the surface, correct?

A. Yes.

Q. And this 500 foot is an allowance?

A. Yes.

Q. No further questions.

EXAMINER EZEANYIM: Okay. Recross?

MR. HALL: No, sir.

EXAMINER EZEANYIM: You done?

MR. HALL: Yes, sir.

EXAMINER EZEANYIM: Have we admitted any exhibits in evidence?

MR. HALL: I would move the admission of Exhibit 7, and I have another witness who can authenticate Exhibit 6 for us.

EXAMINER EZEANYIM: Oh, you have another witness?

MR. HALL: Yes, sir. It's in the nature of rebuttal testimony, and he can authenticate an exhibit I haven't tendered yet.

EXAMINER BROOKS: I'm not sure what the exhibit is, but it's correct, if it's rebuttal. He's correct if it really is a legitimate rebuttal.

MR. HALL: You should have Exhibit 6 before you there.

EXAMINER EZEANYIM: Is this (indicating) what you call Exhibit 6?

EXAMINER BROOKS: Oh, yeah. That's what it says. Okay. Well, I suppose it is legitimate, so if it's subject to authentication, I will advise the Examiner to admit it.

EXAMINER EZEANYIM: Is that a new witness?

MR. HALL: Yes, sir.

EXAMINER EZEANYIM: So the witness has not been sworn at all?

MR. HALL: Not yet. And I think the appropriate procedure would be to see if the Division

has any more witnesses to present today, and then after that, we can present the additional witness.

EXAMINER BROOKS: I think so, also. I also think that would be the appropriate procedure, and I think that the Examiner should finish the questions of this witness.

EXAMINER EZEANYIM: Yes. Okay.

Are we finished with the current witness? And then we can decide whether or not to call your next witness. Okay?

Do you have something to say?

EXAMINER BROOKS: Well, I think we're through -- we're through with counsel's examination of this witness. I think the next thing is for the Examiners to examine this witness.

EXAMINER EZEANYIM: Okay. Mr. Brooks, do you have any questions for this witness?

EXAMINER BROOKS: I do have.

CROSS-EXAMINATION

BY EXAMINER BROOKS:

Q. Good afternoon, Mr. Perrin.

A. Good afternoon, Mr. Brooks.

Q. Now, I may be a little bit confused. I suppose that wouldn't be unusual. Maybe you can straighten me out.

The string of casing that's set at 61 -- well, the top of the cement at 6,164, 130 feet above the proposed perf, is that an intermediate string?

A. No, sir. That is the production string.

Q. That was what I was a little confused about, the production string.

Now, in this case, it is -- well, this wellbore diagram is incomplete, I think, but --

EXAMINER EZEANYIM: Yeah.

Q. (BY MR. BROOKS) -- you can maybe tell me. Is this well perforated through the casing?

A. Yes, sir, it ~~is, at 7,300 and --~~

Q. So the casing -- the cement was squeezed into this?

A. No, sir.

Q. How is this well constructed? Tell me a little bit more.

A. When the well was drilled, the surface casing was set, and they pumped cement, circulated it to surface.

Q. Well, I understand about the surface. I'm talking about this one.

A. Then they drilled the production casing, and they spotted their cement on the bottom, which is the bottom where it comes up to 61.

Q. 6,294?
A. Yes.
Q. Okay.
A. And then up above it, they had a stage tool, and they opened it and pumped cement there.
Q. So they pumped it down the hole?
A. Yes.
Q. And then the cement above the stage tool was put in later?
A. Well, at the same time. They did the bottom. They circulated. They waited on the cement, and then did the stage tool.
Q. Good. Now I think I understand.

Now, we start out with 16.9A. It says: "During the drilling of an oil well, an injection well or other surface well, the operator shall seal and separate the oil and gas and water strata above the producing or injection zone to prevent their contents from passing into the other strata." Now, that rule doesn't say anything specifically about cement, but it really is about cement; is it not?

A. Yes, it is. OK

Q. Because that's the way you seal?
A. Yes.
Q. So if you look at 16.9A, you would come to the

conclusion that the well has to be cemented sufficiently to prevail --

A. Yes.

Q. -- communication out of the production zone into any other strata, right?

A. Yes.

Q. Now, B talks about surface casing, right?

A. Yes.

Q. We're not concerned -- we're not here talking about surface casing. The surface casing of this well is sufficient, right?

A. For the shallow water, right, but the casing string -- the other casing string also isolates deeper waters in the well.

Q. Okay. Hold on a minute here. And then C says: "The operator shall ensure that water is shut off and excluded from the various oil- and gas-bearing strata that are penetrated. The operators shall ordinarily make water shut-offs by cementing the casing." That refers to water -- oh, water shut-off. Well, that's probably not terribly applicable, because we're talking about -- we're talking about formation footage, right --

A. Yes.

Q. -- which could include water. But it kind of looks like they're talking about water moving downward.

I'm not sure.

A. They're talking about keeping the oil and gas out of the water whichever way it moves.

Q. Well, first they talk about keeping the oil and gas out of the water, and then they talk about keeping the water out of the oil and gas. But both are important, right?

A. Yes.

Q. Then we get to 10A. 10A is the one that's about the surface string? Unless I'm missing something in here, 10A is only about surface string?

A. 10A, last sentence.

Q. So the first sentence only?

A. Yes.

Q. The second sentence, and this is probably the key. "In addition, the operator shall equip a well completed for oil and gas with a string of properly cemented production casing at sufficient depth to ensure protection of oil- and gas-bearing strata encountered in the well, including the strata to be produced."

The only thing it says about cementing in that sentence is that it must be properly cemented. It doesn't say what properly is, right?

A. That is correct.

Q. And then B says: "The operator shall use

sufficient cement to fill the annular space behind the casing to the top of the hole." There you're talking about surface casing, right?

A. Yes, sir.

Q. Provided that -- but the proviso doesn't apply?

A. Right.

Q. So in this case, the surface casing is cemented?

A. (Indicating.)

Q. Now, if I understood what you're telling me, you're telling me that your first line of defense, your first requirement that you would normally apply in deciding whether or not casing is sufficiently cemented to insulate the various formations -- basically, that's the rule; is it not?

A. Yes.

Q. The rule says that it has to be sufficient?

A. Correct.

Q. And you -- as the person administering the rule, you have to make a judgment call as to whether or not it's sufficient?

A. Yes, sir.

Q. There is nothing really in the rule to tell you what's sufficient, just that it has to be sufficient to achieve the purpose?

A. That is correct.

Q. And your first rule of thumb on this is that you believe that -- you're telling me it should be -- each casing string -- the cement for each casing string, in your opinion, should go up to where the column is high enough to be behind the cement in the next higher casing string?

A. Be in it 100 foot above it.

Q. So that there is no place where there is an open annular space between that -- between that string, and there's also an open annular case between the next string and the hole?

A. Correct.

Q. And the reason is because, I would assume -- correct me if I'm wrong. That's a good way of asking a leading question. If the fluid escaped from the production string into the annular space, then it could go from there into some other formation, right?

A. Correct. Yes, sir.

Q. But you're willing to consider some alternatives if that's not the case?

A. Yes.

Q. And you you agree, I believe, with Mr. Hall that 16.10E doesn't actually apply?

A. Correct.

Q. Because 16.10E only applies when you're using an oil-based casing packing material?

A. Yes, sir.

Q. And this well doesn't use an oil-based casing packing material?

A. No, it doesn't.

Q. So it is your opinion, then, that in the absence of having a cement column that goes up to the next higher casing, you need at least 500 feet above the producing zone? Is that what you're telling me?

A. That is correct, above the top perforation.

Q. I thought that's what you were saying. I just wanted to make very clear that I understood. Thank you.

EXAMINER BROOKS: Mr. Ezeanyim?

EXAMINER EZEANYIM: What was your last question?

EXAMINER BROOKS: Do you want me to repeat it?

EXAMINER EZEANYIM: Yeah, repeat your last question.

Q. (BY EXAMINER BROOKS) Is it your opinion that in the absence of a cement column behind the production string that goes up to the base of the intermediate string, in order to adequately seal off the production -- the casing -- the productive zone, you

need at least 500 feet of cement behind the production string casing?

A. Yes, it is.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. That's where you are using the casing packing materials, right?

A. We're not using casing packing materials. We use the Rule E -- part E of the rule, that 500 foot, as a guidance of requiring 500 foot of cement.

Q. Which cement? Any cement? Any cement, right?

A. Well, yes.

Q. Okay. I'm trying to understand what you're saying. What you are saying is, in the normal practice, that's what the district has already done. When you are using the casing packing materials, you must allow 500 feet from the first perf, right, or above the casing shoe if it's an open hole? That is the way I'm interpreting that E requirement. Is that how you have been interpreting the E requirement?

A. We have not used the casing packing material in the northwest. We use the 500-foot requirement for cement to be through and 500 feet above as the protective measure outside that casing. When the casing hasn't been -- the cement hasn't brought up -- been

brought up between the casing and formation up to the next casing string.

Q. So are we using now the 500-foot requirement that is applicable to the casing packing material for conventional hard-setting cement? Is that what we're doing?

A. Yes, in lieu of -- in lieu of the packing material. There is nothing back there. So we use, in lieu of that nothing to protect the environment, a minimum of 500 feet of cement.

Q. 500 foot. I thought that's what you said. I think that is the crux of the matter here, you know, because I'm beginning to understand what you are asking. Okay.

EXAMINER EZEANYIM: Before I go to you (indicating), let me finish my questions.

Q. (BY EXAMINER EZEANYIM) Now, in your everyday practice, how many times have you granted an exception to that requirement?

A. There's been numerous times when we can monitor the annulus between the top of the cement and surface. And in this specific case, if we could monitor that at surface, if that plug from 33 to 18 [sic] wasn't there, we would have approved this 130 feet.

Q. Which exhibit are you talking about on this

well?

A. Yeah. The cement that's in the middle. That stops us from being able to see any communication or any pressure at the surface.

Q. Oh, okay. You had to --

A. Yes.

Q. Now, that's why you didn't approve it. Okay.

Who does the monitoring? Do you do the monitoring? How do you do the monitoring, by a pressure head test?

A. We require the operators to conduct a bradenhead test on a rotating basis. We have various A, B and C. The Basin's broken up into three areas. We do area A, area B, area C, back to area A. And we have those reports, and we can monitor it if there is a change or if we see something that is different in the well or if pressure starts coming up.

Q. When you say "we," who is we?

A. Well, whoever evaluates the bradenhead test in my office, staff.

Q. But who conducts the bradenhead test?

A. The operators conduct it, and we witness it in specific areas; or if the test comes in and indicates an issue, we may ask the operator to re-conduct the test and have one of our personnel on the site to witness the

test.

Q. Okay. I understand.

Have you ever -- okay. You say you have never used the casing packing material at all in the northwest?

A. Correct, not to my knowledge.

Q. They use the API-milligram cements?

A. Yes.

Q. And in that case, you address everything case by case?

A. Yes.

Q. If you can monitor, you do not require the 500?

A. Yes.

Q. If you can't monitor, you require 500?

A. Yes.

Q. I think that's all I have for you.

EXAMINER EZEANYIM: Do you have any questions?

EXAMINER GOETZE: No, I don't have any questions for this witness.

EXAMINER EZEANYIM: Anybody have anything for Mr. Perrin?

Okay. You may step down.

MR. HALL: You-all finished?

MR. WADE: We are finished with our

case-in-chief.

EXAMINER EZEANYIM: Okay. Now, you say you want to call another witness?

MR. HALL: I want to recall Mr. Donahue. You had asked him to provide some information to you with respect to the casing leak that was detected.

EXAMINER EZEANYIM: Oh, yeah.

MR. HALL: He can address that and also provide some rebuttal testimony for us. And I will call an additional witness to authenticate Exhibit 6 as well. So it shouldn't take long.

EXAMINER EZEANYIM: Okay. I hope not.

CHARLES DONAHUE,

after having been previously sworn under oath, was questioned and testified as follows:

EXAMINER EZEANYIM: You've been sworn in, so you're under oath.

THE WITNESS: What's that? What?

EXAMINER EZEANYIM: You are still under oath.

THE WITNESS: Yes.

DIRECT EXAMINATION

BY MR. HALL:

Q. Mr. Donahue, earlier in the day, the Division counsel brought up a casing leak that was detected, and

Examiner Ezeanyim asked you to provide additional follow-up to that. Have you obtained that information?

A. Yes, I have.

Q. What is the depth location of that casing?

A. 3,020 to 3,040 feet is where it was narrowed down to. You can't exact -- that's about as good as it gets as far as pinpointing the casing leak.

EXAMINER EZEANYIM: 3,020 to what?

THE WITNESS: To 3,040.

Q. (BY MR. HALL) And was that leak repaired?

A. (Indicating.)

Q. Was the leak repaired?

A. Repaired. Oh, I didn't understand. Yes, it was.

Q. And was the repair and subsequent notice approved by the Division?

A. Yes, it was.

Q. Can you tell us about the nature of that leak? What do we know about that?

A. Well, I know we were able to pump into this a quarter barrel a minute of fluid at 1,700 pounds. It says it's extremely tight. And my thought is that it's probably a collar leak, when it's that tight, you know, where they actually screw the joints of casing together. A lot of times it's that way when it's that tight.

Q. Now, we had discussed the sequence of events with respect to the submission of the sundry notice to the BLM and the OCD and the subsequent detection. But let's go through that, so the record is clear on this.

The very first act was the submission of the sundry notice for the proposed recompletion to BLM; is that correct?

A. That's correct.

Q. And was that approved by BLM?

A. Yes, it was.

MS. GERHOLT: Objection. This was covered on direct. This isn't rebuttal or adding additional information that the Examiners requested earlier.

MR. HALL: Yeah, if I may be allowed to tie it up.

EXAMINER BROOKS: Well, let's make it short. Other than that, I agree.

EXAMINER EZEANYIM: I would really like -- I think I've heard enough about this case. I don't think we need that testimony.

MR. HALL: Right. Well, I'm entitled to put on proof. And I think there is a question about the sequence of events, and it won't take me very long to do it.

EXAMINER EZEANYIM: Make it quick. We

still have a lot to do.

MR. HALL: I will. I appreciate that.

Q. (BY MR. HALL) Tell us when you were advised by OCD of the requirement for 500 feet of cement placement above perforations.

A. After review of the CBL.

Q. Did that occur before or after the detection of the casing leak?

A. Before.

Q. And the casing leak was detected how?

A. We pressure tested the casing after -- because you have a rig out there, and it's like, Okay, we've got the bond login. We went forward and pressure tested the casing anyway. We weren't going to perf until we got approval. Pressure tested the casing to 3,800 pounds, and that's when we discovered a quarter pound -- or a quarter barrel a minute, 1,700-pound leak.

Q. All right. So the casing leak was not cited to you by OCD as a requirement for the placement of 500 feet of cement?

A. They're totally independent. There's no --

Q. The repair of the casing leak, does that qualify as a suicide squeeze?

A. No.

Q. You were asked about the hydraulic fracturing

operation for the recompletion. Was there ever any concern about the fractures propagating beyond 130 feet?

A. No.

MS. GERHOLT: Again, Examiner, I would object.

EXAMINER BROOKS: That was -- I specifically remember that on direct, but he's already answered it. So let's move on (laughter).

Q. (BY MR. HALL) So we've talked about the extent and the locations of the production casing, surface casing. The Mesaverde is not totally isolated by casing; is that correct?

A. That's correct.

Q. Is the Mesaverde --

A. By cement.

Q. By cement. Thank you.

A. That's correct.

Q. Is the Mesaverde productive in this area?

A. No.

Q. Is there any reason to protect the Mesaverde with cement sealing?

A. No. The closest is eight miles to the north, closest production.

Q. And you agree that use of oil-based casing packing materials is not common in the San Juan Basin at

all?

A. I've never heard of it used in the San Juan Basin.

Q. Is it reasonable to conclude that the 500-foot requirement for oil-based casing materials is derived from the fact that it's not hard-setting cement: It's softer, more ductile?

A. Or in the case of just using that packing for it, yes. That's correct.

MR. HALL: That concludes my rebuttal examination.

EXAMINER EZEANYIM: You've concluded?

MR. HALL: Yes.

EXAMINER EZEANYIM: Ms. Gerholt?

MS. GERHOLT: I have no questions.

EXAMINER BROOKS: Let me suggest, in the case of time, I think the Division is well aware of Mr. Evans' position. You can contest the legitimacy of his letter, so perhaps we can get a stipulation to admit it without the --

MR. WADE: Absolutely. We have no objection to the authenticity. We'd definitely object to the relevancy of any of his testimony.

EXAMINER BROOKS: Very good.

MR. HALL: We'd move the admission of 6 and

7.

MS. GERHOLT: No objection.

EXAMINER EZEANYIM: No objection? Okay. 6 and 7 will be admitted.

(Energen Resources Exhibit Numbers 6 and 7 were offered and admitted into evidence.)

MR. HALL: That concludes our case.

EXAMINER EZEANYIM: Do you have any questions?

EXAMINER BROOKS: No, I have no further questions.

EXAMINER EZEANYIM: Do you have any questions?

EXAMINER GOETZE: No further questions.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. Okay. Now, you have brought up the casing leak and material has no relation to this case, because this would have been six years ago. Do you envision that the leak caused -- the entire well we are talking about? Because, you know -- do you know what caused that leak in the first place? Do you know what caused that leak?

A. Well, it was the fact that we put 3,800 pounds of pressure, because we were pressure testing the casing. The frack pressure is about 3,500. So the max

pressure for the casing is 3,800, for that casing string. So we typically have to test that casing to make sure it'll hold pressure for our frack, and that caused a casing leak at a quarter barrel a minute, 1,700 pounds, or it would have kind of pumped just barely pressure up on it and stuff. We really couldn't pump much fluid into it. It's a very small leak or a collar leak or something like that.

Q. But your box [sic] pressure is -- I mean, the box [sic] pressure of that casing is still higher than the pressure you are applying. The box [sic] pressure of your casing is like 300, and the pressure you applied was like 500. Is that what you said? You just said it now. But you are telling me that --

A. No, 3,500.

Q. What?

A. The frack pressure is 3,500.

Q. And you thought that's what caused the leak?

A. Yes. Yeah. It wasn't leaking before that. A leak like that was going to hold the 500 psi pressure requirement to produce the well.

Q. So it's not anything related to corrosion?

A. No. It was just something, and then once we -- once we caused that leak -- because pressuring up on it, we're required to fix it.

EXAMINER EZEANYIM: In the interest of time, I think we have heard enough, and we don't need to hear any more witnesses, because I don't know --

MR. HALL: I understand, Mr. Examiner.

I'd be glad to offer brief closing comments if you feel it will add to your understanding for the relief we're asking for in our application.

EXAMINER EZEANYIM: Are the two parties willing to give closing statements? Do you want to do a closing statement? Is that what you're asking for?

MR. HALL: If you would find it helpful, I'll be glad to do that.

EXAMINER EZEANYIM: Well, I don't want to deprive you of what you need to do, because I don't want to have a mistrial. If you want to do a closing statement, that's fine.

EXAMINER BROOKS: I would respectfully suggest, Mr. Examiner, in view of the number of people here in the audience waiting to present other cases, that we invite the parties to provide closing comments in writing.

EXAMINER EZEANYIM: Oh, in writing. Okay.

MR. HALL: We'll be glad to do that.

EXAMINER EZEANYIM: We can do that. If you want to, you can give it to us in writing.

MS. GERHOLT: When would the Examiners like the written closing statements by?

EXAMINER EZEANYIM: We'll give you at least -- a week would be more than enough.

MS. GERHOLT: Thank you very much.

EXAMINER EZEANYIM: A week would be more than enough, unless you have a brief.

(Laughter.)

EXAMINER BROOKS: If the parties come up with authorities to cite on this issue, they're more imaginative than I.

(Laughter.)

EXAMINER EZEANYIM: Anyway, I don't think we're in a hurry. If you can bring it by the next hearing, which is July 25th, you know, if we can do that.

Okay. Anything further in this case?

MR. HALL: No, sir.

EXAMINER EZEANYIM: Case Number 15017 will be taken under advisement.

(Case Number 15017 concludes, 2:20 p.m.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 15017 heard by me on 7/25/13.

Examiner

Oil Conservation Division

STATE OF NEW MEXICO

COUNTY OF BERNALILLO

CERTIFICATE OF COURT REPORTER

I, MARY C. HANKINS, New Mexico Certified Court Reporter No. 20, and Registered Professional Reporter, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings that were reduced to printed form by me to the best of my ability.

I FURTHER CERTIFY that the Reporter's Record of the proceedings truly and accurately reflects the exhibits, if any, offered by the respective parties.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this case and that I have no interest in the final disposition of this case.

MARY C. HANKINS, CCR, RPR
Paul Baca Court Reporters, Inc.
New Mexico CCR No. 20
Date of CCR Expiration: 12/31/2013