STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ORIGINAL

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

APPLICATION OF ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION, LLC FOR APPROVAL OF A GAS STORAGE WELL, GRAMA RIDGE MORROW STORAGE UNIT, LEA COUNTY, NEW MEXICO — CASE NO. 14332

APPLICATION OF ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION, LLC FOR THE EXPANSION OF THE GRAMA RIDGE MORROW STORAGE UNIT AND THE AREA SUBJECT TO THE SPECIAL PROJECT RULES AND OPERATING PROCEDURES FOR THIS STORAGE UNIT, LEA COUNTY, NEW MEXICO — CASE NO. 14333

TRANSCRIPT OF PROCEEDINGS
Hearing
July 23, 2009
9:52 a.m.
1220 South St. Francis Drive, Room 102
Santa Fe, New Mexico 87504



BEFORE: TERRY G. WARNELL, HEARING EXAMINER
RICHARD EZEANYIM, TECHNICAL ADVISOR
BRYAN JAMES, LEGAL ADVISOR

REPORTED BY: CONNIE JURADO, RPR, NM CCR #254
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A P P E A R A N C E S

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I N D E X

MR. WARNELL: Call Case Number 14332, application of Enstor Grama Ridge Storage and Transportation, LLC for approval of a gas storage well, Grama Ridge Morrow Storage Unit, Lea County, New Mexico. Call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe office of Holland & Hart, LLP. We represent Enstor Grama Ridge Storage and Transportation, LLC in this matter.

Mr. Examiner, this is a case involving the Grama Ridge Morrow Gas Storage Project. The following case, Case 14333 is a companion case, and I would request that they be consolidated for the purpose of hearing.

MR. WARNELL: Very well. We will consolidate, and we call Case 14333, application of Enstor Grama Ridge Storage and Transportation, LLC for the expansion of the Grama Ridge Morrow Storage Unit and the area subject to the Special Project Rules and Operating Procedures for this storage unit, Lea County, New Mexico.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe representing Apache Corporation. I have no witnesses. Apache is simply an interested offset operator.

MR. WARNELL: Very well. Mr. Carr, you may proceed.

MR. CARR: Mr. Examiner, I have three

witnesses who need to be sworn. I also have Mr. Tom Barron, who is the drilling engineer, who is present, that we can call if there are questions that he can respond to. And so with your permission, I would ask that all four witnesses be sworn.

MR. WARNELL: Very well. The four witnesses will stand, state your name, and be sworn.

MR. GEE: Daryl Wayne Gee.

(Note: Mr. Gee was duly sworn.)

MS. DEVINE: Vicki V. Devine.

(Note: Ms. Devine was duly sworn.)

MR. BARRON: Thomas F. Barron.

(Note: Mr. Barron was duly sworn.)

MR. WELLS: John A. Wells.

(Note: Mr. Wells was duly sworn.)

MR. WARNELL: Call your first witness.

MR. CARR: Mr. Examiner, with your permission, I would like to give an opening statement. We're talking about the Grama Ridge Morrow Gas Storage Project in Lea County, New Mexico. It has been in operation since the early 1970's, and as it has historically evolved, we are operating at under what I think is fair to characterize as an unusual regulatory scheme.

And I would like to give a brief opening that I think provides some general information on this project that

I think will help put the testimony of the following witnesses into context. I would ask that you take out Exhibit Number 1, which is a large copy of the area of review map.

And I would also ask you to take out the last exhibit, which is Exhibit Number 5. I will refer to these briefly in the opening. What we have here is one gas storage project, but this project is regulated under two different regulatory schemes. If you look at the plat, the Grama Ridge Storage area or project consists of the five sections outlined in the dark black line on this exhibit.

Today's hearing involves the addition of the acreage in Section 9 to the project area. Exhibit 5 is simply a summary of the key regulatory components for -- on the first page, state and fee lands, the second for federal lands, and the last page addresses the special rules that this division adopted several years ago. And I would like to refer to these because I think you will understand what the complications we're dealing with as we have approached this project.

If you look at page 1 of Exhibit 5 and compare it to the map, what we have is three state or fee sections. It is sections -- the northern Sections 33, 34, and then Section 3 on the eastern boundary of the unit. These are state sections, and they are operated pursuant to a unit

agreement that was approved by the division in January of 1973 by Order R4473. That was later amended. It originally was Section 34 and Section 3. It was later amended to include Section 3.

But what you have is a unit agreement, and the purpose of the unit as stated in that document is for storage and enhanced recovery. In fact, this has always been a storage project, but the enhanced recovery component comes in because there is some BTU enhancement as you cycle through the reservoir, and a small amount of indigenous gasses produce with the storage operations.

Back at that time, two injection wells were also approved. They are the wells shown in Sections 3 and 34. And at that time, when the case came before the division, it predates the C-108 process, and the witnesses advised the commission that as they went forward -- or the division as it went forward with this project, they intended to only report to the Land Office. And that is, in fact, what they did.

The amendment, the initial unit agreement is attached to Exhibit 5. It is Exhibit A. And the amendment is Exhibit B, and I just included those because they may not be easy to locate. The other things have been handled by OCD orders. But that is the scheme as it evolved initially for the development of the state and fee lands.

In 1975, it became apparent that Section 4 was potentially in communication with the storage project. It is federal land, but the BLM refused to commit that tract to the unit agreement. They didn't want to be in a three way agreement with the state and the unit operator, and so a separate agreement -- the agreement is entitled "Agreement for Subsurface Storage of Gas Morrow Formation Grama Ridge Area, Lea County, New Mexico."

It was a simple storage agreement. So the federal lands are governed by an independent agreement. The unit agreement and these separate agreements cross-reference that they are separate and independent regulatory schemes. So back in 1975, that agreement was executed for Exhibit 4, and it was amended in 1981 to include Section 10. And those approvals were obtained from the BLM.

I think it's important to note that all of these lands and all of the wells were committed to the storage project over 28 years ago in 1981, and they have been operated since that time. There was concern about offset development and how it might impact the integrity of the storage reservoir. And so back in 19 -- I believe it was 2001, the Oil Conservation Commission adopted special rules to protect this area, just requiring that notice be given and special casing requirements basically be employed. But in any event, those rules were adopted, but they are limited

in effect to just the five sections that are in the project as of today.

In 2005, Enstor acquired interest in the area and became the unit operator. And since that time, they have been engaged in an effort to sort out what is truly a confusing, I think, outdated, certainly unique, regulatory system that has been difficult to understand, both from an operating point of view and from the regulator's point of view. And so part of the effort of Enstor to make sense out of the system and to bring it under current rules and regulations, both at the state level, Land Office, as well as the OCD and BLM, they started sort of rebooting the project.

They also decided that it was apparent that Section 9 might also be in communication, and to get this all done right one time, it needed to be included. And that's what is the cause for our being here today, the effort to bring in Section 9. Section 9 is leased to BTA, and we have been working with the BLM since the first of the year, and we found ourselves in a very tight time bind with BTA because of delays getting final signatures from the BLM.

We agreed to bring Section 9 into the project. It means we have to get an injection well approved, and the time was short. So this week, we met with the director of the OCD, Mr. Jones was there, Ms. Altamira was there, and

explained our need to proceed. This whole thing was triggered by the C-108 that we filed for the new well. That's what you do today.

We agreed in our meeting with the director, Mr. Jones, and Ms. Altamira, that we would as quickly as possible come forward with a full case for the project to be sure there is C-108 coverage for all wells. And that's really required for the enhanced oil recovery portion of this project because storage wells stand in somewhat of a different position under the Underground Injection Control Program.

We have agreed to do that, and we will be filing that as quickly as we can. We would like to give you a time frame on that, but we have to go back and determine how many of the wells are in the areas of review, but I will assure you that we are going to do it as quickly as it is possible for us to get back here with this.

Now, the project and the approvals, most of them were granted 35 years ago, and I think it is important for you to understand that even though the approvals are old, the OCD has not been left completely out of the process. They have regularly filed, both Enstor now and its predecessors, the C-138 report showing injection withdrawal and pressures in the unit area. And when an order is entered in this case, it will be actually the 19th order,

counting the couple of dismissals, that have been entered since 1903 -- 1973 impacting the Grama Ridge.

Today, we're asking for only two matters. Since Section 9 is federal land, and under this regulatory system, the BLM is the party that approves adding this to their storage agreement, we are not asking to expand the project, but we are asking for authorization to -- for the injection well on that tract subject to coming back to the subsequent hearing.

When this expansion occurs, we also are asking that the order that established these special rules to protect the integrity of this storage project, that that order also be applicable to a section of the new land that we're entering -- that we're adding.

I have three witnesses today. My first witness is Daryl Gee. Mr. Gee is the director of land and regulatory matters for Enstor, and he can provide you with perhaps a more detailed history of this project. He will address the special operating procedures that were approved in 2001 and can review the recent efforts to bring this project under current BLM and State Land Office rules and will also address the notice provided for today's hearing.

Our geologist is Vicki Devine. She participated in the preparation of the C-108 and will review her study with you. John Wells is a reservoir engineer who was

responsible for the C-108 and will be here to review that. And if you have any questions concerning the drilling aspects of what we're proposing, Thomas F. Barron is here, the drilling engineer, and we can call him. And so with that, with your permission, I would call our first witness.

MR. WARNELL: Mr. Bruce, do you have any statements?

MR. BRUCE: I have no comment.

MR. WARNELL: No comment. Please proceed.

MR. CARR: Mr. Examiner, at this time I call Daryl Gee.

DARYL WAYNE GEE

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. CARR:

Q Would you state your name for the record, please?

A My full name is Daryl Wayne Gee.

Q Your last name is spelled?

A G-E-E.

Q Where do you reside?

A Houston, Texas.

Q And by whom are you employed?

A I am employed by Enstor Operating Company, LLC.

Q What is your current position with Enstor?

A I am director of land and regulatory affairs for Enstor.

Q I think initially you should explain to the Examiners who is Enstor.

A Enstor is an affiliate of Iberdrola Renewables, and the parent of Enstor. Iberdrola Renewables, of course, has a parent, and that is Iberdrola SA in Spain. Enstor Grama Ridge Storage and Transportation, LLC, is a subsidiary of Enstor, and it is authorized to do business in New Mexico.

Q That is actually an Oregon LLC?

A That is correct. And we have owned and operated the Grama Ridge Storage facility since 2005.

Q Have you previously testified before the New Mexico Oil Conservation Division?

A I have not testified before the OCD, but I have testified in other state regulatory bodies as well as the Federal Energy Regulatory Commission.

Q Were you qualified as a landman in those other proceedings?

A As a corporate witness, a land representative, and also as an expert witness.

Q Could you review your educational background for the Examiners?

A Sure. I have -- in 1985, received a bachelor of

applied arts and sciences degree with a double major in petroleum technology and petroleum land management. And in '87, further postgraduate studies towards business administration. And after -- in 1987, began work as an independent landman in Houston, Texas. Did that since -- until about 1991 when I left my own business and began work for Western Gas Resources, a Denver based company, but we had an office in Houston, as their land manager.

And then in 1999, I left Western Gas Resources and began work as the manager due diligence for Aquila, a Kansas City based company, but it had a Houston office. And in 2002, I was a part of the divestiture of the gas storage assets that Aquila owned and operated in Texas that we sold to Enstor. And since 2002, I have been an employee of Enstor Operating Company, LLC, both as director of business development, and I moved into director of project management, and now as director of land and regulatory affairs for the company.

Q Mr. Gee, are you familiar with the applications filed in these cases for Enstor?

A Yes, I am.

Q Are you familiar with Enstor's plans to expand, inject, store and withdraw natural gas from the Grama Ridge Morrow Storage Project?

A Yes.

Q Are you familiar with the status of the land and the area that is the subject of the application?

A Yes.

MR. CARR: May it please the Examiners, we would tender Mr. Gee as an expert witness -- as an expert landman.

MR. WARNELL: Mr. Gee is so qualified.

Q (By Mr. Carr) Mr. Gee, would you summarize for the examiners what it is that Enstor seeks with these applications?

A Yes. As previously mentioned, Enstor is seeking approval to utilize the Grama Ridge Federal 8817P well #1 as an injection withdrawal well, and that well is located in Section 9. Secondly, Enstor is also seeking that special rules be applied to this new addition, Section 9, as well.

Q Could you refer to what has been marked Exhibit 1, the plat, and review the information contained on this exhibit for the Examiners?

A Exhibit 1 is a plat depicting the well. It is basically a land plat, but it depicts the Grama Ridge Storage Area, comprising of the five sections and also the additional section crosshatched that we would like to include. In addition, on this plat, you will see the radius from the proposed injection well emanating a half mile away from the proposed injection well, and also, it depicts the

ownership in the surrounding area.

Q So what we have here is we have the red circle, which is the area of review for the proposed injection well?

A That's correct.

Q And then we have a one mile circle and a two mile circle; is that right?

A That is correct.

Q After you finish this effort with the OCD and the BLM and Land -- well, the BLM in this case, this will be a six section storage project?

A That will be a six section storage area, that's correct.

Q Could you summarize for the Examiners the general history of the development of this area?

A The general history, again, developed back in 1973. And, again, the state lands, being Sections 34 and 33, were a part of the earlier development. And through different years and processes and procedures, both at the State Land Office and also with the addition of the Bureau of Land Management, additional acreage and sections were added for the Grama Ridge Storage Area.

But it has a long and historied past going all the way back to 1973. Again, the State Land Office has the unit agreement. The Bureau of Land Management, again, would refuse -- refused to join into the unit, so again, we have

two distinct, separate bodies, but yet again, the -- in 2001, the OCD issued the special rules applicable to the five section area.

Q Mr. Gee, we talked about fee lands in the unit area. Where are they?

A The fee lands are up in the northwest or northeast quarter section of Section 4, and also, as you will see, you will see a reference to Merchant Livestock. I believe it is in Section 33, small interests.

Q And the fee interest in Section 4 is actually the Surface Estate; is that right?

A That's correct.

Q Recently, the way the fee lands are managed has been altered in an agreement with the Land Office, has it not?

A Yes. We took a proactive approach with the State Land Office, and in 2006, we were successful in negotiating a new agreement with the State Land Office here in New Mexico allowing for the storage of natural gas underneath their lands, and it is more in a -- it is styled an easement, but it allows for the use and enjoyment of the property, as well as storage of natural gas underneath the state lands.

Q And this easement governs all storage aspects of the project; is that right?

A That is correct.

Q Any secondary recovery or enhanced recovery aspect remains under the old unit agreement?

A Correct.

Q Let's look at the federal lands. How are these handled?

A The federal lands, we were governed by an agreement back in 1975 that was executed by the federal government. Additional acreage was added pursuant to expansion, so you have amendments of that. And we have recently been in contact with the Bureau of Land Management to add Section 9, and we're currently in the last throes of a negotiation and agreement being reached with the Bureau of Land Management for the inclusion of Section 9 to the Grama Ridge Storage Area.

Q When the 1975 agreement and the 1981 amendment were entered, the current regulatory scheme at the federal level was not in place, was it?

A That's correct.

Q Since that time, they have adopted new guidelines and forms?

A That is correct. They have adopted new guidelines and forms, and we are utilizing those new guidelines and forms with this new agreement with the Bureau of Land Management.

Q And that new agreement will cover all three sections that contain federal amendments?

A That is correct. It is amended and restated and with the inclusion of Section 9.

Q So with the easement on state lands, you have current regulatory clear authority with the Land Office?

A That is correct.

Q And when this agreement is entered with the BLM, you will have clarified and put on current forms the storage arrangement with the federal government?

A That is correct.

Q And what we're in need of here will be temporary authorization or initial authorization today, and then full C-108 coverage for everything, so we're consistent and in line with all of the --

A That is correct.

Q Now, in the past, there has been concern about development in the area and its impact on the storage reservoir. Could you review that?

A Yes. Briefly, L & B Operating pursuant to Order 7582 back in June 29, 1984, there was an order issued there. It was repeat formation testing within the area. Again, I think Mr. Carr had alluded to it in his opening, the Order 11611, which was Nearburg Production where the special rules and procedures were addressed and issued by the OCD as it

relates to Grama Ridge.

Q Back in the L & B hearing, the then operator, Llano, reviewed how it was operating this storage project and discussed all injection wells and all aspects of that project, did it not?

A That's correct.

Q And the thing that triggered the special rules was the fact that there was concern that Nearburg had, in fact, completed a well and a storage project; isn't that right?

A That is correct.

Q And there was concern that they were not only producing from the storage project, but selling back to the storage project, and that was later determined not to be the case; is that correct?

A That is correct.

Q Let's go to what has been marked as Enstor Exhibit Number 2. Would you identify that for the Examiners and reviewers, please?

A Enstor Exhibit Number 2 is the OCD Order R-11611, Cases 12588 and 12441 dated July 3, 2001.

Q And this was a result of the concern that popped up with the Nearburg issue; is that right?

A That is correct.

Q And what did this order do?

A It adopted the special rules and operating

procedures for the Grama Ridge Morrow Gas Storage Unit.

Q Now, these special rules apply to federal lands as well as the state and fee interests; is that right?

A It applies to the federal and state and fee lands.

Q And to what lands does it apply?

A It identifies the state lands and the unit area as Section 33, 34 of the Township 21 South, Range 34 East, and then the federal lands, of course, were the Sections 4 and Section 10, but it did not allow for any kind of buffer. It was only the five sections of the Grama Storage Unit.

Q So if the BLM adds Section 9 to the federal storage agreement, has the order that promulgated the operating rules for this area, as they now stand, they wouldn't apply to Section 9?

A They would not apply.

Q And so Enstor is asking that they be expanded to also include that section since it is -- has the BLM agreed to add Section 9?

A They have agreed.

Q And so when that comes in, you need this coverage?

A We will need that protection.

Q Could you just generally for the Examiners explain what these rules were designed to do?

A Sure. Rules number 2 and 3 define the unit project area. Again, it set aside the state lands and

addressed the federal lands. It did not address any kind of buffer zone, so therefore, you only have the five sections included in the storage area.

Rule number 5 talked about the notice where other operators who must provide us the -- Enstor or whomever the operator would be notice for drilling of another well or a well within the storage area and providing additional items such as drilling reports and copies of well logs.

Rule number 6 was a special casing and cementing rules, and it addressed completion of wells both above and below as the well penetrated through the storage interval and isolation of that storage interval, and also addressed plugging requirements and confidential -- I'm jumping ahead of myself.

Rule 7 was a special casings requirements for below, and Rule 8 was the special plugging requirements. Rule 9, confidentiality provisions, and Rule 10 is a prohibition against any operator other than the project operator completing in the storage interval itself.

Q Mr. Gee, has notice of this application been provided in accordance with the rules and directives of the Oil Conservation Division?

A Yes, it has.

Q To whom has notice been provided?

A Notice has been provided all the surface owners

within a one-half mile radius of the proposed injection well, as well as the leasehold operators within that radius. And then pursuant to the directives that we received from the OCD, we also added additional notice to the offsetting operators directly adjacent to and southwest and just directly south of the proposed Section 9 as additional notice recipients.

Q And you met with Mr. Brooks and others with the OCD to determine the parties to whom notice should be given?

A That is correct, we did.

Q Was the application, the C-108 application provided to all of the affected parties?

A It was.

Q Is Exhibit Number 3 an affidavit confirming that that notice has been provided?

A Yes, it is.

Q And have you been contacted by any other operators in the area concerning this proposal?

A We have been contacted by Chaparral Energy, LLC. We talked about the application. They did not have any -- or express any concerns about our planned activities. They wanted to have copies of the exhibits in this proceeding.

Q What about Apache? Mr. Bruce is here for Apache.

A We have had some discussion with Apache. We've got some other items going on within this project, but

again, I think the only thing that they are concerned about is informational purposes only. And one additional landowner or owner contacted us. That would be the estate of C.W. Trainer. They, too, just wanted information as it related to our activities.

Q Is it your understanding that no other operator in the area is objecting to this application?

A No other operator is objecting.

Q Will Enstor call technical witnesses to review the geological and engineering portions of this case?

A Yes, we will.

Q Have you seen Exhibit Number 5, the history of this storage project?

A Yes, I have.

Q Attached to that are four documents: The unit agreement, an amendment to the unit agreement, the surface storage agreement, and the amendment to that agreement. Are these records from the files of Enstor?

A They are.

Q And are these the kinds of records that Enstor keeps in its ordinary course of business?

A Yes, they are.

MR. CARR: May it please the Examiners, at this time --

Q (By Mr. Carr) And were Exhibits 1 through 3 either

prepared by you or compiled under your direction and supervision?

A They were.

Q Can you testify as to their accuracy?

A They are accurate.

MR. CARR: May it please the Examiners, at this time, I would move the admission into evidence of Enstor Exhibits 1 through 3 and Exhibit Number 5.

MR. BRUCE: No objection.

MR. WARNELL: Exhibits 1 through 3 and Exhibit Number 5 are admitted.

(Exhibits 1, 2, 3, and 5 admitted.)

MR. CARR: That concludes my direct examination of Mr. Gee.

MR. BRUCE: I have no questions.

MR. WARNELL: Richard?

MR. EZEANYIM: Let me defer my questions at this point.

MR. WARNELL: Okay, Mr. Gee, other than -- it sounds as though you are rather attached to Houston. I have a couple of questions for you. I noticed here on Exhibit 1, on the half mile radius, it looks like that goes right through a dry hole there?

THE WITNESS: That --

MR. WARNELL: Section 9.

THE WITNESS: That well in Section 9 is a temporarily abandoned well.

MR. WARNELL: Will we see anything here this morning talking about that well?

THE WITNESS: Our technical experts will provide some additional data as to that.

MR. WARNELL: Okay. Fine. Can you tell me who it is at BLM that you have been talking with or working with?

MR. CARR: I can answer that. We have been there together, but it is Wesley Ingram in the Carlsbad office that has been the BLM person responsible for this. He is aware of today's hearing and indicated to me that if you had questions, you could call him in the Carlsbad office. He would be happy to confirm that they are going forward with Section 9.

MR. WARNELL: Okay. Appreciate that. No further questions.

MR. CARR: With that, we would call Vicki Devine, the geological witness. Ms. Devine will be addressing the portions of the C-108, the geological portions of that exhibit. It is marked Exhibit Number 4. She will be specifically referring to pages 10, 11, and 12 in that exhibit.

VICKI V. DEVINE

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. CARR:

Q Would you state your full name for the record, please?

A Vicki V. Devine.

Q Ms. Devine, where do reside?

A Denver, Colorado.

Q By whom are you employed?

A I am self-employed.

Q What is your relationship with Enstor Grama Ridge Storage and Transportation?

A I am a consulting geologist on the Grama Ridge Project.

Q Have you previously testified before the New Mexico Oil Conservation Division?

A No, I have not, but I have testified in Wyoming and in Colorado to the Oil and Gas Conservation --

Q And in those other states, were you qualified as an expert witness in petroleum geology?

A I was.

Q Can you review for the Examiners your educational background?

A Yes. I have a bachelor's of science degree from

the University of Georgia in geology. That is in 1977. I have a master's degree in geology from the University of Texas, 1980. And then I have a master of business administration in finance from the University of Colorado at Denver, 1990.

Q And for whom have you worked?

A Oh, goodness. I started out --

Q Focus where you've done land work.

A Okay. I started my career with Tenneco Oil Exploration and Production in Englewood, Colorado. I was with them for six years, and ended as a senior exploration geologist. Tenneco decided to get out of the oil and gas business, and everybody in it left. I started my own consulting company then and have worked for a lot of companies, living in Denver, and I have worked the Rockies and the Permian Basin.

Q And you have been employed as a geologist in all of those positions?

A In all of those positions, exploration and development and geology, and have been a consultant for 22 years.

Q Are you familiar with the applications filed in these consolidated cases for Enstor?

A I am.

Q Are you familiar with their plans to inject,

store, and withdraw natural gas in the Grama Ridge Project?

A Yes, sir, I am.

Q Have you made a geological study of the area that is the subject of these cases?

A I have.

Q Are you prepared to share the results of your study with the Examiners?

A Yes, sir, I am.

MR. CARR: We tender Ms. Devine as an expert witness in petroleum and geology.

MR. WARNELL: Ms. Devine is so recognized as an expert in petroleum geologist.

Q (By Mr. Carr) Have you prepared exhibits for presentation today to the Oil Conservation Division?

A I have.

Q Are those exhibits contained in the Form C-108 application filed in these cases?

A Yes, they are.

Q And we're talking about pages 10, 11, and 12?

A Ten, 11 and 12 of Exhibit 4.

Q And these consist of a geological summary?

A Geological summary, a structure map, and a stratigraphic cross-section.

Q I think it would be helpful if initially you described the general nature of the Morrow formation in this

general area, and particularly focus on Section 9 and that part of the storage project.

A Okay. I will be referring to the structure map, which is on page 11, I believe, and the stratigraphic cross-section, which is on page 12. If you will look at the cross-section first, you will see that the Pennsylvanian Morrow formation in this area of the Delaware Basin is typically divided into an upper unit called the Morrow limestone, which is limestone and carbonate shales, and then a lower clastic interval consisting of a series of interbedded sandstones and shales which are called the Morrow clastics.

On this cross-section, the top of the Morrow clastics is the datum for the cross-section, and it is the black line. Above that is the Morrow limestone, and below that is the Morrow clastics. The gas at Grama Ridge is stored within the clastic interval, and that is marked with the red bars on the cross-section running down the gamma ray tract on the left side.

Now, if you will -- I will come back to the cross-section in a minute, but if you will refer to the structure map, I will give you a general idea of the structural position.

During the Pennsylvanian time, structural movements separated the Delaware Basin from the Central

Basin platform, and it activated the faults within the area. As you can see on the structure map, there is a very well-defined structural nose which plunges from the northeast to the southwest through the storage area, and it is bounded on the west side by a regional fault, which has between 500 and 800 feet of vertical throw to the west.

And there is also a secondary fault peeling off of that which is in the northwest there. That also shows evidence of being active during the Morrow deposition. Now, go back to the cross-section.

Q As you do that, Ms. Devine, could you show the Examiners the line or trace for this cross-section on Exhibit Number 11? It seems to start --

A It starts -- yes.

Q With the well in Section 9?

A It starts with the subject well in Section 9. It goes to the Grama Ridge #4, which is in the Southeast Northwest of Section 4, and then goes to the Grama Ridge #1 Unit Well, which is in the Southwest Northwest of Section 3.

Q Okay. All right. Let's go now to that --

A Okay.

Q -- cross-section.

A So now we're back on the cross-section. The sandstones within the Morrow clastic interval, which is the storage interval, comprise four stratigraphic sequences.

Those are commonly in the industry referred to as A through D. Sandstones are developed in all of those zones within the storage unit, but only the Unit #3 Well, which is up on the isolated fault block, has sandstone in all four zones. So there is not necessarily sand in each zone in every well.

The subject well, which is the leftmost well on this cross-section, has no significant sand in the B, and the B is marked in green on there. And although it does have sand in the D, that sand is all tied in nonproductive, and the D is on the base there marked in yellow. The well has reservoir quality sand and has produced from the A and the C. Both are perforated, and the perforations are marked on the depth tract in green.

Q Those are the --

A Those are within the storage unit. And then there are additional perforations in this well in the Morrow limestone above the clastics, but those perfs will be squeezed because they are not within the storage unit.

Q And injection will occur then in this well --

A In the A and the C --

Q Okay.

A Yes, sir. The sandstones in the A and C at Grama Ridge were deposited during base-level rise into incised valleys. They were cut into the marine Morrow shale during the previous sea level low-stands. Then the flooding of the

valleys resulting in dip-oriented, channel-fill sandstones along with more strike-oriented deltaic and estuarine-marine sandstones and shales. You have a whole lot of different environments filling in this valley system that was cut previously.

These multiple depositional environments resulted in discrete sandstones, which are about ten to 30 feet thick. They are discontinuous, and they are generally less than one mile wide. They vary widely in porosity and permeability, and they are interbedded both vertically and laterally with shales. The discontinuous nature of the Morrow clastics I think causes the gas within the storage unit to be very highly compartmentalized.

Q Could you summarize for the Examiners the conclusions that you have reached from your geologic study of this reservoir?

A This Morrow reservoir does have sufficient porosity and permeability to be used to inject and withdraw natural gas. And because of the bounding fault, the structural position, and the nature of the sands themselves, we have geologic containment in the storage reservoir.

Q Were the structure map -- and a summary of your geological presentation is --

A Is on page 10.

Q -- contained on page 10 --

A Correct.
Q -- is that right?
A Uh-huh.
Q Were the structure map, cross-section, and summary prepared by you?
A Yes.
MR. CARR: May it please the Examiners, at this time, we would move the admission into evidence of the geological summary, page 10 of the C-108, the structure map, page 11, and the cross-section, page 12, of the C-108 of Exhibit Number 4.
MR. BRUCE: No objection.
MR. WARNELL: Page 10, 11, and 12 of Exhibit 4 will be admitted.
(Pages 10, 11 and 12 of Exhibit 4 admitted.)
MR. CARR: And that concludes my direct examination of Ms. Devine.
MR. WARNELL: Thank you. Mr. Bruce, any questions?
MR. BRUCE: No, I have no questions.
MR. EZEANYIM: Can you tell us about the porosity and permeability of the unit?
THE WITNESS: I'm sorry? The --
MR. EZEANYIM: The porosity and the permeability of the unit.

THE WITNESS: I used -- you can see on the cross-section, actually I used a six percent porosity cutoff for reservoir quality. So if you have reservoir quality rock, it can range from six to 12 percent, and it can go down to zero very quickly.

MR. CARR: Permeability?

THE WITNESS: I have no permeability data. I have no core data or anything for that. I have to assume that in this well, it has certainly got permeability because it produced a lot of gas.

MR. EZEANYIM: Thank you.

MR. WARNELL: Ms. Devine, you mentioned the perforations on the depth tract in the green?

THE WITNESS: Yes.

MR. WARNELL: Can you point those out a little better for me as far as on the first well, just below 13,000 there, we have perforation --

THE WITNESS: That is in the C unit, and then there is another set from. About 12850 in there.

MR. WARNELL: Okay. So there's two sets of --

THE WITNESS: Those are in the clastic interval, and then there's another set of perfs that will be squeezed and that is at about 12680 to 12700.

MR. WARNELL: Up in the limestone?

THE WITNESS: That's up in the limestone, correct.

MR. WARNELL: And tell me a little bit more about the containment. I guess you've got a nice cap there with that limestone.

THE WITNESS: Yes, definitely. That is a very tight limestone. There is also a shale right beneath the limestone, which is tight. We have the structural advantage of being on the structural nose. There is -- on your structure map, that is actually done on the top of the A. There is -- if you look at the structure map on the top of the C, it looks virtually identical, but it is 150 feet lower.

There is no isopach difference there to change that structure map. Below on the A, I believe it said there is a gas water contact, so everything south of that is wet and nonproductive. Then on the west side, you have the ceiling fault. And then up dip, you have the contained nature of the sands themselves. Even though they were deposited in this valley, which is continuous, the sands within the valley are not necessarily continuous. And they definitely are -- if they are even present up to the north, they are completely tight.

MR. WARNELL: How deep are these wells? Do you know what their TDs -- I see the log goes down to just

below --

THE WITNESS: That is the TD for most of them, yes.

MR. WARNELL: Okay. Any questions?

MR. EZEANYIM: Yes. What is the exact perforated interval in this? I have been looking at this in your logs.

THE WITNESS: I can get that.

MR. CARR: Mr. Examiner, our engineer will review that, and there is a schematic for the well showing its present completion on page 4 of the C-108.

MR. EZEANYIM: Okay.

MR. CARR: And it shows perforations.

MR. EZEANYIM: I wanted to find the exact depth of those perforations.

MR. CARR: And if I can read this correctly, it looks like they are from 12,6.

THE WITNESS: That is up in the limestone, yeah.

MR. CARR: That is up in the limestone. It would be from 12 --

THE WITNESS: I think it is 12699 --

MR. EZEANYIM: 12,6 or 12,7.

THE WITNESS: 12699 is the limestone, is the base of those perfs.

MR. CARR: And down to 13,39, I believe, but we will have the engineering witness give you those exact --

MR. EZEANYIM: Okay.

MR. WARNELL: One other question. Oh, I'm sorry.

MR. EZEANYIM: Yeah. On the -- maybe the engineering witness will know, but I want to know what the productive zones above and below the injection interval are, and maybe the engineer will tell us what it is.

MR. CARR: Yes, he will.

MR. EZEANYIM: Okay.

MR. WARNELL: Did you ever work with Carol Peavey?

THE WITNESS: Yeah.

MR. WARNELL: Tell her I said hello, please.

THE WITNESS: I will do that.

MR. CARR: I gather you both like Carol Peavey.

THE WITNESS: She is a live wire.

MR. WARNELL: We used to work together up in the San Juan Basin.

THE WITNESS: I'll be darned.

MR. WARNELL: Thank you.

MR. CARR: Okay. Thank you, Mr. Examiner. At this time, we call John Wells.

JOHN WELLS

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. CARR:

Q Will you state your full name for the record, please?

A John Wells.

Q And Mr. Wells, where do you reside?

A Sugar Land, Texas.

Q By whom are you employed?

A Wells Chappell and Company, Incorporated.

Q And what is your relationship with Enstor Grama Ridge Storage and Transportation, LLC?

A I am consulting reservoir engineer on the storage project.

Q Have you previously testified before the New Mexico Oil Conservation Division?

A I have.

Q Have you testified before Examiners Warnell, Ezeanyim, and Mr. James?

A I don't recall, but I don't believe so.

Q Could you review for them your educational background?

A In 1971, I earned a bachelor of science in

mathematics and chemistry from Delta State University, Cleveland, Mississippi. And then I earned a master of science in physics in 1973, Mississippi State University, Starkville, Mississippi.

Q And generally summarize for me your employment.

A In 1973 through 1979, I was employed by Texaco Production Research in Houston, Texas. And then in 1979 through 1984, I was director of gas projects with Intercomp Worldwide Consultants in Houston, Texas. In 1984, I formed a consulting company along with partners, and that company evolved to the point today where I am now president of Wells Chappell and Company, consultants, Sugar Land, Texas, specializing in all aspects of reservoir engineering, underground gas storage.

Q To beat Mr. Ezeanyim to the punch, are you a registered engineer?

A I am not a registered engineer. I have several people in my shop that are.

Q Are you familiar with the application filed in this case on behalf of Enstor?

A I am.

Q And are you familiar with Enstor's plans for natural gas storage in the Grama Ridge Morrow Storage Project?

A Yes.

Q Have you conducted an engineering study of the area that is the subject of this application?

A I have.

Q And were you the person primarily responsible for the preparation of the C-108 application filed with the OCD?

A Yes. I primarily reviewed it and confirmed the accuracy of it.

MR. CARR: We would tender Mr. Wells as an expert witness in reservoir engineering.

MR. WARNELL: Mr. Wells is so recognized.

Q (By Mr. Carr) Mr. Wells, could you identify what has been marked Grama Ridge Exhibit Number 4?

A Yes. That is the C-108 application for authorization to inject.

Q Does it contain all of the information required by this form?

A To my knowledge, it does.

Q Is this an expansion of an existing project?

A It is.

Q I would like to direct your attention to -- I believe it is pages 6 and 7, the area of review maps, and I would ask you to review the current status of development in this area for the Examiners.

A Right. These are orientation maps from the C-108 application. The proposed injection well location is

indicated here. The lease ownership and the area is depicted. It also shows all of the wells within a two mile radius. It shows the required one-half mile area around -- centered around the proposed injection well, and it shows all of the wells which penetrate the Morrow within a one-half mile area. It shows all of the other wells in the area and identifies all the offset operators.

Q This is actually the same plat that was offered as Exhibit Number 1; is that correct?

A That is correct.

Q Let's go to page 8. Could you explain what that is?

A Well, that is a -- it's a compilation of pertinent well information as required by the OCD form.

Q And this contains the information on the type of well, its status, things of that nature as required by that form?

A That's correct.

Q Are there any plugged and abandoned wells within the area?

A No.

Q Do you have information on the temporarily abandoned wells that Mr. Warnell discussed a few minutes ago?

A We do have some information on it, yes.

Q And can you respond to his question? What is the status of that well?

A Well, I mean, I don't know that I personally know the status of the well, other than that it -- it has not produced, temporarily abandoned, it is just not producing right now.

MR. WARNELL: Do you know who drilled it?

THE WITNESS: I don't. I think we may have someone here in the room who could answer that question. I'm not sure.

MR. BARRON: I don't have any information on it.

MR. CARR: I don't believe Mr. Barron has information on that either, other than it is currently a well in a temporarily abandoned status.

MR. WARNELL: We will just see what we can find.

Q (By Mr. Carr) Mr. Wells, could you refer to the work over program for this well? And I'm referring here to the wellbore data sheets that are included in this exhibit on pages 3 through 5. It is a data sheet and a couple of schematics.

A Right. On page -- we'll start with the schematic on page 4. That schematic is a depiction of the current down hole configuration of the existing wellbore, the

proposed wellbore that we propose to inject into. And then if you turn to the next page, that is a similar schematic, but it shows what the post work over down hole configuration then would look like.

And the important things here I think there are generally three different -- three things that are generally important. Number one is the fact that we're going to change out the tubing from the existing 2 3/8". We are going to install five-inch tubing.

The second thing is we intend to mill out the lower packer that you see there on the schematic and the tailpipe, and we will push those down and install a bridge plug at 13,255 feet.

The third point of interest is that we intend to squeeze the Morrow limestone perforations at 12,677 to 699. And throughout this work over, we intend to use high quality carbon steel tubing, just like the tubing that we have used in our existing injection wells that have not given us any problems. We also intend to fill the annulus in this well with corrosion inhibited KCL water.

Q Will the annulus face be pressure monitored to assure the integrity of the well?

A Yes.

Q And you will otherwise comply with the requirements of the Federal Underground Injection Control

Program as they would apply to this well?

A That's right.

Q How large an interval in the Morrow does Enstor plan actually to perforate?

A The perforations that we will propose to preserve in this well are 12,844 feet to 13,039 feet.

Q You're going to squeeze the other perforations?

A That's right.

Q Are there other productive formations in the half mile area for you --

A Only Morrow limestone.

Q And that is productive?

A Right.

Q And what is the character of the gas that Enstor proposes to inject in this subject well?

A We propose to inject pipeline quality natural gas.

Q And what will Enstor's maximum daily injection rates be?

A Well, the maximum daily injection rate will, of course, depend upon the level of inventory in the storage facility at any given time and the activities of our customers, but at our existing storage, we have injected in the range of 30 to 40 million cubic feet a day in a given injection well. In this particular well, we think that we might be injecting as high as 60 million cubic feet a day.

Q But the application is seeking for 50 million, is that -- no, no. You're right. I'm sorry. I'm jumping ahead on the question.

A All right.

Q I will quit trying to provide engineering testimony to the commission. Will the system be open or closed?

A It will be a closed system.

Q Are you going to be injecting under pressure?

A We will.

Q And what surface pressure does Enstor propose to use?

A On average, we propose 3,850 pounds per square inch surface injection pressure. On a maximum, we might get up as high as 5,000 pounds per square inch maximum.

Q Mr. Wells, can Enstor safely inject into this reservoir at this pressure?

A Yes, they can. The original discovery pressure in this well was 7,500 pounds at 12,900 feet, and that translates to about 6,200 pounds of surface pressure, discovery pressure. And so we're only proposing on a maximum to go to 5,000 pounds surface pressure. And it should be noted also that we have successfully injected at 4,000 pounds routinely for the last 30 years, 4,000 surface pressure in our other wells.

Q Does the proposed injection impact any producing horizon in this area?

A It does not. We believe that this well is a typical isolated Morrow compartment, and it certainly heretofore has been depleted, so we're just going to repressure that same compartment.

Q Are there fresh water zones in the area?

A There are two major ground water aquifers found in the area. The Ogallala is encountered in unconfined conditions at depths of 50 feet or less, but typically at depths of 100 to 500 feet below ground, and then there is the Capitan Aquifer encountered at 500 to 1,000 feet below ground surface.

Q Are there any fresh water wells within a mile of the proposed injection well?

A There is one well. It is the water supply well over at the Grama Ridge compressor station, and it is completed in the Ogallala at a depth of 62 feet.

Q Is a summary report on the analysis of ground water sampled from the well after it was completed in 2000 included in this exhibit?

A Right, that is included in Exhibit 4, page 13.

Q Mr. Wells, have you examined the available geological and engineering data on this reservoir?

A I have.

Q As a result of that examination, have you found evidence of open faults or any other hydrologic connections between the injection zone and any underground source of drinking water?

A I have not found any evidence of any such faults or hydrologic connections, no.

Q Will approval of this application and adding of injection -- of the injection well in Section 9, as well as expanding the operating rules to cover that section, in the best interest of conservation and the prevention of waste and the protection of correlative rights?

A In my opinion, yes.

Q Were the portions of Exhibit 4 not addressed by Ms. Devine prepared by you or under your direction and supervision?

A They were.

Q Can you testify to their accuracy?

A Yes, they are accurate.

MR. CARR: May it please the Examiner, I would move now all of Exhibit Number 4 into evidence.

MR. WARNELL: All of Exhibit Number 4 is admitted.

(Exhibit 4 admitted.)

MR. CARR: That concludes my direct examination of Mr. wells.

MR. WARNELL: Mr. Bruce?

MR. BRUCE: I have no questions.

MR. WARNELL: Richard?

MR. EZEANYIM: Good presentation there because you've answered most of my questions. But let's talk about the production above and below this injection area. I am asking you for only outside of the -- above and below. Do you know any production history above the injection interval or below the injection interval?

THE WITNESS: Like I say, only that little bit of production from the limestone.

MR. EZEANYIM: Which is above?

THE WITNESS: Right.

MR. EZEANYIM: That is the only production?

THE WITNESS: Right.

MR. EZEANYIM: Is there any other development around the storage area?

THE WITNESS: Not to our knowledge, no.

MR. EZEANYIM: So how does the production above and below be squeezed out? It will be squeezed out, right?

THE WITNESS: That's right.

MR. EZEANYIM: So to answer our question, the exact perforation in your well now is between 12844 to 13039, right?

THE WITNESS: The interval --

MR. EZEANYIM: I looked at the --

THE WITNESS: In the schematic on page 5, Exhibit 4, the bottom two sets of perforations there, that is what we will end up with when the work over is completed, and that will be from 12,844 to 13,039.

MR. EZEANYIM: This well, what was it used for? Production?

THE WITNESS: It was just a -- it was a primary producing gas well, yes.

MR. EZEANYIM: And you're converting it to --

THE WITNESS: We're converting it to gas storage primary unit, just like all of our other wells were at Grama Ridge.

MR. EZEANYIM: Right. So your testimony says that the total pressure is about 7500 BSI. Is that --

THE WITNESS: Discovery pressure was, yes.

MR. EZEANYIM: And do you know what it is now?

THE WITNESS: Current pressure right now, I think is in the neighborhood of maybe 1,000 pounds, something like that. Reservoir pressure, not surface pressure.

MR. EZEANYIM: I'm just trying to examine you on injection pressure. Right now you're injecting at 4,000

pounds, right? You're injecting at 4,000 pounds?

THE WITNESS: Yeah, in the other part of our storage project, yes, surface pressure.

MR. EZEANYIM: Okay. Good. Let's talk about water because -- can you tell me more about water in the area? How close they are to this storage area? Any fresh water?

THE WITNESS: Well, I mean, we're so far below the fresh water, that the only way that that would come into play is if there was some problem, you know, in the injection well that allowed communication, but certainly there is no water down at 12,000, 13,000 feet where we're operating.

MR. EZEANYIM: Okay.

THE WITNESS: And we certainly intend to protect the well from any type of leakage into any fresh water zones, the same way we have done all of our other wells for the last 30 years.

MR. EZEANYIM: This section on page 5 of the schematic, is that the -- that would be the schematic of the current well status? Have you done that, or are you going to do it?

THE WITNESS: Page 5 is the -- page 4 is the current well configuration.

MR. EZEANYIM: Okay. And then the --

THE WITNESS: And 5 is what we intend to do to it.

MR. EZEANYIM: Okay. You haven't done that?

THE WITNESS: This is what it will look like once we get approval to inject into this well. The first thing we will do is go out and perform this work over to prepare the well for injection.

MR. EZEANYIM: What about fluid that is going to be in the annulus? Is that chloride? Is that what you said?

THE WITNESS: Yes. As indicated there on the schematic, we intend to put corrosion inhibited KCL water in the annulus.

MR. EZEANYIM: Okay. How many wells in the area of review?

THE WITNESS: How many wells in the area of review? Well, it depends on whether you're talking about the half --

MR. EZEANYIM: The half mile.

THE WITNESS: The half mile? I will have to turn back to that exhibit and take a look at that. I don't recall just off the top of my head how many were in there. There are only two.

MR. EZEANYIM: Two wells within one-half mile?

THE WITNESS: The well we're talking about, you know, is in the center of the half mile.

MR. EZEANYIM: And the other well that is --

THE WITNESS: That is that temporary abandoned well, I believe. Right?

MR. EZEANYIM: Do you have a schematic of that well?

THE WITNESS: I don't believe that I have that handy today.

MR. EZEANYIM: Yeah, we need to have a schematic of that well, since nobody knows the history of that well.

MR. CARR: And Mr. Examiner, we are going to call Tom Barron, who will give you some information on that, but we will provide following the hearing a schematic for you.

MR. EZEANYIM: Yeah, that would be very important.

MR. WARNELL: I think the temporary abandoned well is the third well.

MR. CARR: I think it actually is. I think it is right outside of that circle, and the two wells that are within the area of review -- well, if you go to page 8 of the C-108, it identifies the wells in the area. And there is the temporarily abandoned well shown there.

MR. EZEANYIM: Is that on page 8?

MR. CARR: Yes.

MR. EZEANYIM: Okay. The first one or the second one?

MR. CARR: Yeah, the second one is temporarily abandoned.

MR. EZEANYIM: And the one we are looking for a schematic?

MR. CARR: Correct.

MR. WARNELL: So what is that other well?

MR. CARR: I think you're looking at the 9 that didn't show up, so I wrote it in the corner of that. If you're looking right in the center --

MR. WARNELL: Uh-huh.

MR. CARR: -- right between "Minerals: USA (BLM) Surface: USA (BLM)" and it looks like a well spot, that is the numeral 9 for Section 9.

MR. WARNELL: Oh, that is the section?

MR. CARR: I couldn't read them either so that is my handwriting where I put the sections up in the corner.

MR. EZEANYIM: So you're going to use this well both as an injector and as a withdrawal?

THE WITNESS: That's correct.

MR. EZEANYIM: You say you inject pipeline

quality gas. Do you process gas before you inject it through there?

THE WITNESS: I'm sorry?

MR. EZEANYIM: Do you process the gas --

THE WITNESS: Process it before we inject it?

MR. EZEANYIM: Yeah. You said pipeline quality, I mean --

THE WITNESS: Not typically, no. It is already processed gas. It is gas that is running through the pipeline system.

MR. EZEANYIM: Okay. So you're just getting the --

THE WITNESS: Right, right, right.

MR. EZEANYIM: So what will you be asking for injection pressure here, 5,000 pounds?

THE WITNESS: We're asking for 5,000 pounds surface pressure, maximum -- surface pressure maximum.

MR. EZEANYIM: What is the -- this well that we're looking at right now, you are using it to withdraw. What is it doing now? Is it shut in?

THE WITNESS: What is it doing right now?

MR. EZEANYIM: Yeah.

THE WITNESS: It is just shut in.

MR. EZEANYIM: And you acquired this property what month in 2005? When did you acquire this property?

THE WITNESS: I don't know that.
MR. CARR: I believe it was April 2005.
MR. GEE: March.
MR. CARR: March 2005.
MR. EZEANYIM: From BTA?
MR. CARR: No. It was --
MR. EZEANYIM: Who did you acquire it from?
MR. CARR: Acquired the storage project from?
MR. EZEANYIM: Yes.
MR. CARR: It was acquired from Raptor Resources. It was a Conoco entity. And then Section 9 will be acquired from BTA as soon as we get approval.
MR. EZEANYIM: And then according to Section 9 -- that was my last question.
MR. CARR: Yeah.
MR. EZEANYIM: You're one of the -- the other positions, in the other five sections that you apply to Section 9?
MR. CARR: Yes.
MR. EZEANYIM: Okay. Now, what is your -- did you talk with BLM? Did they agree --
MR. CARR: Yes.
MR. EZEANYIM: They agreed?
MR. CARR: Yes. And you could check with Mr. Ingram if you're concerned about that.

MR. EZEANYIM: Mr. Ingram?

MR. CARR: Yes.

MR. EZEANYIM: And then on the -- you know, we are dealing with two cases here, separate cases, Application of Enstor Grama Ridge Storage to include Section 9.

MR. CARR: Yes. And that, Mr. Ezeanyim, will be handled by the BLM because it is only under the federal agreements, since they won't allow it to be part of the unit.

MR. EZEANYIM: Okay.

MR. CARR: So we've got these two separate systems. We've got a unit agreement, and we've got the BLM acreage, so they have agreed to put it in.

MR. EZEANYIM: Okay.

MR. CARR: But your rules still apply on those lands, and so that's what we're trying to do is get your part of it in place with what they're doing.

MR. EZEANYIM: Okay. I understand.

MR. CARR: May it please the Examiners, I have some additional information now on the temporarily abandoned well. I would like to tell you what it is, and if you would like, I will call the drilling engineer, Mr. Barron, who can confirm it. But if you look at Exhibit 8 in the C-108 application, there are two wells identified.

MR. EZEANYIM: Yes. I have that. Page 8?

MR. CARR: Yes, sir. And that bottom well says "temporarily abandoned." That is what we call the BTA #2, and it is temporarily abandoned. It is within the area of review, but it is a well. That is a shallow well, and it doesn't penetrate the injection interval. And so that's why there was no schematic for it. If you would like, I can call Mr. Barron, who can confirm that, but that is the status of that well.

MR. WARNELL: So that BTA #2 is this --

MR. CARR: It is right on the extreme left side of the circle that straddles the red area of review line.

MR. WARNELL: Yeah. It goes right through it?

MR. CARR: Yes. And that is a shallow well that doesn't penetrate the injection interval.

MR. WARNELL: We may want to call him. I have a question or two, Mr. Carr.

MR. CARR: Okay.

MR. WARNELL: First thing is this is 5-inch tubing, and I haven't seen tubing in injection wells come across my desk with 5-inch tubing in there. That's interesting to see. The other thing is that usually on an injection order, we require that the tubing be seated within

100 feet at the top perfs, and we're going to exceed that by quite a bit. So I would like to talk about that. So our top perfs is at -- correct me if I am wrong, is at 12,844 feet? That would be the top perf?

THE WITNESS: The top perfs is 844, right.

MR. WARNELL: 12,844?

THE WITNESS: Uh-huh.

MR. WARNELL: And our packer is going to be set at 11,435?

THE WITNESS: Uh-huh.

MR. EZEANYIM: Why do you set the packer at 11,400? Why do you set the packer down there -- up there? Can't we set it below that to the perf -- the squeezed out zone?

THE WITNESS: Yeah, I mean, I am really not the person to be asking that question about --

MR. EZEANYIM: Oh, okay.

THE WITNESS: -- the decisions on how to, you know, set the packer and that kind of thing.

MR. EZEANYIM: That was an area of concern because the packer should be set within 100 feet or 100 feet of the top perfs, but this one is almost thousands of feet above. But who do we ask the question?

THE WITNESS: Tom, I think --

MR. EZEANYIM: Well, if we have to ask him

the question, it has to be on the witness stand.

THE WITNESS: Yeah, I think we can bring Mr. Barron on.

MR. CARR: Yes, we will bring Mr. Barron on.

MR. WARNELL: I think that is it for Mr. Wells.

THE WITNESS: Okay.

MR. CARR: At this time, may it please the Examiners, we would call Thomas F. Barron to the stand.

THOMAS F. BARRON

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. CARR:

Q Would you state your full name for the record, please?

A Thomas F. Barron.

Q Mr. Barron, where do you reside?

A In Houston.

Q And by whom are you employed?

A Essex Energy Storage Services.

Q And what is your relationship with Enstor Grama Ridge Storage and Transportation?

A We have been providing drilling and work over engineering support.

Q Have you previously testified before the New Mexico Oil Conservation Division?

A No, I have not.

Q Could you review your educational background and work experience for the Examiners?

A Sure. I have an undergraduate degree in petroleum engineering, also, from the University of Houston. MBA from Texas. Started my career with Exxon. Worked as a drilling work over reservoir engineer for them for a number of years, and then went to work for a small company specializing in manufacturing drilling equipment. And then got into the storage business about 25 years ago with an engineering consulting firm, PVKVB.

And then in 1998, started a partnership specializing in consulting services for natural gas and natural gas liquid storage. And in 2004, started my own company specializing, again, in natural gas storage and depleted reservoirs and salt caverns and liquid storage and salt caverns.

Q And you are consulting with Enstor on this project?

A Yes.

Q Are you familiar with the applications filed --

A Yes.

Q -- in these cases?

MR. CARR: We tender Mr. Barron as an expert witness in drilling engineering.

MR. BRUCE: No objection.

MR. WARNELL: Mr. Barron is so qualified.

Q (By Mr. Carr) Mr. Barron, you have been present for the hearing today?

A Yes.

Q There have been questions concerning the BTA Well #2, a temporarily abandoned well approximately one-half mile west of the proposed injection well.

A Correct.

Q What is the status of that well?

A Well, it's temporarily abandoned.

Q And how deep is that well?

A We've got a schematic here, and I will have a hard copy of it, but the total depth was 13,362.

Q What is the injection interval in this case? Do you know?

A Well, the producing interval was the Morrow formation.

Q Can you provide a hard copy following the hearing --

A Yes.

Q -- a schematic on that wellbore?

A Certainly.

Q In terms of the proposed configuration for this well if the application is granted, and in fact, it is converted to an injection, the Examiners had some questions concerning the placement of the packer in the well.

A Uh-huh.

Q Could you explain why you're placing the packer at the depth you have selected?

A Well, it gives us the ability to set a full bore four-and-a-half or five-inch packer to complement the five-inch string, and we wanted to set it above the liner top.

Q And that is the basis for that decision?

A Yes, uh-huh.

MR. CARR: May it please the Examiners, I have no further questions for Mr. Barron, but I would pass the witness to you so you can ask him whatever questions you have concerning these issues.

MR. WARNELL: Okay. Thank you. Well, our concern is where that packer is set. It's about -- what is that? 1,300 feet above the top perf?

THE WITNESS: Yes, uh-huh.

MR. WARNELL: What size is that casing just below the -- that is five -- four-and-a-half inch?

THE WITNESS: Four-and-a-half-inch line below the seven-inch casing, yes.

MR. WARNELL: And the top of that four-and-a-half-inch goes up to -- I'm sure it is here --

THE WITNESS: 11,463 or something like that. Yeah, 11,468.

MR. WARNELL: Okay. So you're getting your five-inch tubing down there about as close as you can?

THE WITNESS: Exactly.

MR. EZEANYIM: To comply with the rules, we need to set the packer within 100 feet of that 12844 feet.

THE WITNESS: We made a number of attempts to determine if there were rules for that and talked to a number of people about -- within the state about that. We could never come up with any requirement like that.

MR. CARR: Mr. Barron, is it physically possible for you to do that?

THE WITNESS: Yes.

MR. WARNELL: You would have to run something smaller than a five-inch tubing?

THE WITNESS: Yes, we would have to run some -- probably 2 7/8" tubing down in the liner.

MR. EZEANYIM: That's why I said that. Regardless of what packer is set, you will have to set that at 75 feet, 100 feet. Anything below 100 feet at the top of the perforations, we have to have that. So it is good that I asked the question initially, have you done this? You

said no. But this is something -- a correction you have to make in this schematic.

THE WITNESS: Uh-huh. Okay.

MR. EZEANYIM: To be able to have that packer down there.

THE WITNESS: Okay.

MR. EZEANYIM: But you can -- it is not impossible to do, is it?

THE WITNESS: Oh, no.

MR. EZEANYIM: Okay.

MR. CARR: And Mr. Barron, would it be possible to inject at the volumes being anticipated through the smaller tubing?

THE WITNESS: It should be, yes.

MR. WARNELL: Would that change your pressure, surface pressure requirements then?

THE WITNESS: Well, it will certainly be a -- more pressure drop in the smaller tubing. We just have to make -- run an analysis to see what the effect would be, but I don't think it is going to be an appreciable change. It would only be, like you pointed out, 1,300 feet of smaller tubing in a 13,000 foot well, so it is -- majority of the pressure drop is going to be in the five-inch.

MR. EZEANYIM: Yeah. We would like to have a schematic of that --

THE WITNESS: Okay.

MR. EZEANYIM: -- abandoned --

MR. CARR: We will provide that. And we can, I have been advised, have a schematic for you by the end of the week, and we can make this change, and we will.

MR. EZEANYIM: Very good. Thank you.

MR. WARNELL: No further questions?

MR. CARR: I hate to tell you this, but I have a -- have been working on proposed orders. And I just passed them out to Enstor representatives, and I thought I could do it to clarify the history, but I have the error in them, so I'm going to have to redo them. I will submit proposed orders to you, and I hope by the end of the week, if not the first of the week, as soon as they clean up my work.

MR. WARNELL: Okay.

MR. CARR: And that concludes our presentation in this case.

MR. WARNELL: On these two cases, right?

MR. CARR: On these two cases, yes, sir.

MR. WARNELL: Thank you. With that then, Case Number 14332 and Case Number 14333 will be taken under advisement.

MR. CARR: Thank you very much.

MR. WARNELL: Thank you, Mr. Carr. If there

is nothing else, I believe that concludes Docket Number 26-09, and we stand adjourned.

(Hearing concluded at 11:20 a.m.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. _____, heard by me on _____ _____.

_____, Examiner
Oil Conservation Division

REPORTER'S CERTIFICATE

I, CONNIE JURADO, do hereby certify that I reported the foregoing case in stenographic shorthand and transcribed, or had the same transcribed under my supervision and direction, the foregoing matter and that the same is a true and correct record of the proceedings had at the time and place.

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 whatsoever in the final disposition of this case in any court.

WITNESS MY HAND this 23rd day of July, 2009.

Connie Jurado, CCR, RPR
New Mexico CCR No. 254
Expires: December 31, 2009