NEW MEXICO OIL CONSERVATION DIVISION

STATE LAND OFFICE BUILDING

STATE OF NEW MEXICO

CASE NO. 10506

IN THE MATTER OF:

The Application of American Hunter Exploration, Ltd., for an exception to the provision of the Division's No-Flare Rule 306; cancellation of overproduction or, in the alternative, special provisions governing overproduction; and the adoption of special operating procedures, Rio Arriba County, New Mexico.

BEFORE:

MICHAEL E. STOGNER

Hearing Examiner

State Land Office Building

July 9, 1992

REPORTED BY:

DEBBIE VESTAL
Certified Shorthand Reporter
for the State of New Mexico

ORIGINAL

A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

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FOR THE APPLICANT:

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FOR BENSON-MONTIN-GREER DRILLING COMPANY:

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BY: **W. THOMAS KELLAHIN, ESQ.**

# I N D E X

# E X H I B I T S

EXAMINER STOGNER: Hearing will come to order. Call the next case, No. 10506.

MR. STOVALL: Application of American Hunter Exploration, Limited, for an exception to the provisions of the Division's No-Flare Rule 306; cancellation of overproduction or, in the alternative, special provisions governing overproduction; and the adoption of special operating procedures, Rio Arriba County, New Mexico.

EXAMINER STOGNER: Call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm, Campbell, Carr, Berge & Sheridan of Santa Fe. I represent American Hunter Exploration, Limited, and I have two witnesses.

EXAMINER STOGNER: Are there any other appearances?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin, Kellahin & Aubrey, appearing on behalf of Benson, Montin & Greer Drilling Corporation.

EXAMINER STOGNER: Do you have any witnesses?

MR. KELLAHIN: No, sir.

EXAMINER STOGNER: Are there any other appearances in this matter?

Will the witnesses, please, stand and be sworn at this time.

[The witnesses were duly sworn.]

EXAMINER STOGNER: Mr. Carr, is there any need for prehearing statements or any statements before we get started?

MR. STOVALL: Would it be useful to summarize what you're trying to establish and request based upon our discussion this morning? I'd be glad to do it unless you want to --

MR. CARR: May it please the Examiner, this morning, prior to the hearing, we met with representatives of the Division and Benson-Montin-Greer and discussed generally the nature of the development in the northern portion of the west Puerto Chiquito Field.

As a result of that discussion, and I'm sure Mr. Kellahin will correct me if I misspeak, what we are intending to do here today is to present to you a general overview of our efforts, our, American Hunter's, efforts to develop.

We are then going to request an

exception to 308.

MR. STOVALL: 306.

MR. CARR: 306, the No-Flare Rule. We will propose that the gas production currently coming from the 3-F well be reinjected in our 2-A well as quickly as possible.

We are then going to propose some production limits to you during the interim and also as to testing questions -- are deferring those, as I understand, to the operators and the Division in Aztec or to the Division, whether it be Aztec or here.

But we intend to make a presentation focusing on the exception to 306. We also will discuss the overproduced status of the 3-F well and will propose to you some operating procedures that we believe will permit us to continue to produce the well and at the same time as quickly as possible come up with a plan to utilize the gas other than by flaring.

MR. STOVALL: Just if I might jump in and clarify, with respect to venting, what you are seeking is approval to vent from within the order of up to a set volume per day?

MR. CARR: Yes.

MR. STOVALL: And to adopt some testing procedures during this period while you're waiting to develop the injection facilities which would be approved by the Aztec office and that might set a venting limit, which could vary during different periods of time according to the testing procedures, at a level lower than the maximum allowed by this order.

Is that a reasonable statement as to what we discussed or what you anticipate?

MR. CARR: That is correct. And there would be a time frame set within which we are to acquire the necessary facilities for gas reinjection.

EXAMINER STOGNER: Mr. Kellahin, do you have anything to add?

MR. KELLAHIN: Mr. Stogner, on behalf of Benson, Montin & Greer, I'd like to state Mr. Greer's position. He is here pursuant to notification on the docket as to that portion of American Hunter's case that deals with an exception to the No-Flare Rule under 306.

We would like the Division and the Division Examiner to approve the test procedures that are the justification by which the applicant

seeks an exception to the No-Flare Rule. What we would like to do is to have that test established so that meaningful, reliable engineering data is realized from that test and the information then may be utilized by the parties to have a better understanding of the reservoir.

The exception to the flare exception may potentially impact the correlative rights of Mr. Greer in his corporation which operate and own the sections to the south of the F-3 well and the 2-A well.

Certain action has been undertaken by the Aztec office with regards to notifying the operator of a suggested test procedure. We believe that test procedure proposed by Mr. Bush in the Aztec office can be significantly improved with certain additional components.

In order to avoid a complicated engineering presentation today, we are seeking to have you under your direction require the Aztec office and the operator and Mr. Greer to meet to discuss and agree upon a test procedure and to make that recommendation back to you so that you can adopt it into the order that sets forth the parameters for the test and determines at what

level and for what period of time the exception will apply for the flaring of the gas.

And this will be our position, Mr. Examiner.

EXAMINER STOGNER: Thank you, Mr. Kellahin.

Mr. Stovall, do you have anything to add at this time?

MR. STOVALL: I think, just so there's an understanding and it is in perspective, one of the issues that has been discussed is how production will be treated in terms of being excess or overproduction.

Rule 306 provides that no gas will be vented from an oil well after 60 days from completion, the 60 days being a test period without the approval essentially of the district office or, if the operator is not satisfied with that approval, without approval from the Division based upon a hearing.

The Aztec District Office has established a venting limitation of 30 Mcf a day for wells in the San Juan Basin, oil wells in the San Juan Basin. This application seeks venting, as I understand, substantially in excess of

that.

A question which I think we've agreed can be deferred at the moment is whether the allowable for the subject well will be set based upon a 30 Mcf a day gas limitation, and any production in excess of that limitation would be overproduction and have to be made up at some future time or whether in fact the allowable will be the volume of gas set by the order, and therefore no overproduction would occur, assuming they produced within the limitations of the order.

I think the parties agreed, and I agree at the moment and having conferred with Mr. Bush from the Aztec office, that at the moment that is not a critical issue for the Division to discuss, and I don't think we're going to get testimony that will help address that; that if you allow the applicant to produce to whatever limits are set as a result of this hearing, the question of overproduction and the make-up of overproduction can be dealt with at a later date subject to the understanding, I think, on the part of applicant and the Division that if we adhere to the 30 Mcf a day limit, a reasonable period of time for

making that overproduction up, which will be fairly substantial if they produce 5- or 600 Mcf a day, a reasonable period of time will be provided to allow them to make that up to be determined at some future point.

But I think that is an issue which will not have to be addressed today. The Division is not prepared to present anything in support of the 30 Mcf a day other than the fact that is a historical number that has been used. And I don't think the parties are particularly prepared to discuss whether that should be the allowable or the actual production should be the allowable.

All of the production that's being discussed is well within the -- I think it's 800 barrels a day and 2,000-to-1 GOR limitation for the pool and for that area. So it's not a matter of absolute overproduction but only occurs because of the venting issue. I think that can be addressed at a later point when we have more information.

EXAMINER STOGNER: Thank you, Mr. Stovall. Let that be the case.

Mr. Carr.

MR. CARR: At this time, Mr. Stogner, we call Mr. Lister.

**JAMES C. LISTER**

Having been duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARR:

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

A. James C. Lister.

Q. Where do you reside?

A. Evergreen, Colorado.

Q. By whom are you employed and in what capacity?

A. I work for American Hunter Exploration as senior geologist.

Q. Have you previously testified before this Division and had your credentials as a geologist accepted and made a matter of record?

A. Yes, I have.

Q. Are you familiar with American Hunter's efforts to develop the Mancos Formation in the San Juan Basin in northwest New Mexico?

A. Yes, I am.

Q. Are you familiar with the Jicarilla 2-A

and 3-F wells?

A. Yes.

Q. Are you familiar with the application filed in this case by American Hunter?

A. Yes, I am.

MR. CARR: Are the witness' qualifications acceptable?

EXAMINER STOGNER: Are there any objections?

MR. KELLAHIN: No objections.

EXAMINER STOGNER: Mr. Lister is so qualified.

Q. (BY MR. CARR) Would you briefly state what American Hunter seeks with this application?

A. We come here today with three basic applications: The first being an exception to the No-Flare Rule 306 for the 3-F well; the second being a cancellation of overproduction for the 3-F; or if the Division decides otherwise, to adopt special provisions in calculation of that overproduction and make-up of overproduction.

And then finally American Hunter wishes to present proposals for the conservation of gas for this reservoir and will ask the Division to adopt special operating procedures that will

allow American Hunter to implement these gas conservation procedures.

Q. Would you refer to what has been marked as American Hunter Exhibit L, as in Lister, 1, identify that and review it for the Examiner, please?

A. Yes. Exhibit L-1 is a regional base map showing the area being discussed here today. On the lower left-hand side of the map is the overall location of the San Juan Basin. And on the right-hand side of the map, we have highlighted with an arrow the area of interest and the extreme eastern portion of the San Juan Basin in Rio Arriba County.

Q. I think at this point, as an introductory matter, it might be helpful if you would review for Mr. Stogner American Hunter's recent efforts to develop the Mancos formation in this area.

A. Okay. The history of American Hunter's involvement in this area began with the Commission last year in May when we originally appeared seeking approval for a four-well horizontal drilling program to test and evaluate the fractured Mancos reservoir in the area

located in between the Boulder pool and East Puerto Chiquito pool and the West Puerto Chiquito pool. We conducted the four-well drilling program last year and finished with the last well, the 3-F, early January of this year.

The results of the program have been basically that the two easternmost wells that were drilled, the 8-I and the 6-A, are probably dry holes. They're not producing currently. They're temporarily suspended. The 2-A and 3-F resulted in producing wells. And we have been producing the 2-A and 3-F for the last several months.

Q. Let's go to American Hunter Exhibit L-2, and would you identify this and then review for Mr. Stogner what this shows?

A. Exhibit L-2 is a structure base map of the top of the Niobrara A zone. And some of the features shown on this map are in pink; the East Puerto Chiquito-Mancos pool boundary in yellow; the West Puerto Chiquito-Mancos pool boundary; and to the north on the map, the Boulder-Mancos pool boundary.

Other things to note from this map are the structural position and distribution of the

production across the area. One thing I would like to point out is that the structural contour values on basically the eastern half of this map are shown in 500-foot contours. The western portion are 100-foot contours. So you can see that we're dealing with a monoclinal structural dip from the outcrop of the Mancos to the base of the monocline, and then flattening out from there westward.

The dips, as you can see, are about 500 feet per half-mile in the eastern section and about 500 feet over a mile in the western portion.

Q. This exhibit indicates the original proposed location for the 3-F well; is that correct?

A. Yes. It actually depicts the original proposed location for the 6-A, the 2-A, and the 3-F. This was an exhibit that was previously shown to the Division in October of 1991 when we sought approval of the order for the 4-A well at that time.

Q. And what we have here is your wells are in the northernmost portion of the West Puerto Chiquito pool. And then the development in the

northern portion of East Puerto Chiquito is shown in the southernmost tip of the Boulder field is also indicated?

A. Yes, that's correct. The 2-A and the 3-F are in the West Puerto Chiquito-Mancos pool. The 6-A and the 8-I would be in the East Puerto Chiquito-Mancos pool.

Q. Have special pool rules been adopted for these pools?

A. Yes, that's correct.

Q. What is the allowable rate provided for in these rules?

A. Well, in the west Puerto Chiquito pool, the subject of this hearing, it's 800 barrels a day and a gas-oil ratio of 2,000 to 1.

Q. Let's go now to the Exhibit L, No. 3, and review, using this exhibit, for the Examiner the history of the 2-A well.

A. Okay. This exhibit, entitled "Well Summary, American Hunter Exploration, Jicarilla 2-A," is a brief summary of all the important aspects involving surface location and drilling and completion history for the well. And it's fairly self-explanatory, but I'll just select portions of it to highlight in this

conversation.

The 2-A well was drilled from an actual surface location of 442 feet from the north line and 1177 feet from the east line of Section 2 in 27 North, 1 West. We spudded that well on September 29, 1991. We set 10-3/4 inch surface casing by September 30. We drilled to a depth of 3796, measured depth, and at that point we ran logs. And when we resumed operations, we used that as a kickoff point. And from there we drilled ahead with our hole to 4569, measured depth, and ran intermediate casing on October 14 of 1991.

We TD'd the well October 28, 1991, at a measured depth of 6632, and we ran an uncemented pre-perforated liner to that depth on the same day. The completion rig we moved in on November 7, and we put the well on pump by December 12. And since we had drilled these wells with native crude and lost some of the native crude during the drilling, when we regained or recovered the crude that we used to drill, that corresponds with the date of completion, or first new oil produced. And for this particular well it's February 2, 1992.

Q. What is the present status of this well?

A. Currently the well is producing on pump, and it is a part of a commerciality and reservoir interference test program that was authorized by the Aztec district.

Q. Okay. Could you identify American Hunter Exhibit L-4, please.

A. L-4 is a completion diagram for the same well, the Jicarilla 2-A. And again this is fairly self-explanatory. It shows the position of the casing and liner and pump and where the fractures were encountered and gross interval and shows all the engineering details for the completion of that well.

Q. Let's go now to the 3-F well, and I'd direct your attention to American Hunter Exhibit L-5 and ask you to review that for Mr. Stogner.

A. In a similar fashion to the well summary for the 2-A, this is one for the 3-F. It shows the surface location actually drilled as 1845 from the north and 1900 feet from the west in Section 3.

The well was spud on November 28, 1991. We reached kickoff point on December 17.

And the kickoff point was at a depth of 5870, measured depth. We ran the intermediate casing on 12/24 of 91. And we TD'd the well January 2, 1992 at 7862, measured depth, following a period of lost circulation and no sample returns.

We ran pre-perforated uncemented liner, similar to the 2-A, to the total depth of 7837. The completion rig moved on location January 18, 1992. We began testing our well on January 24. And the first new oil produced out of this particular well is dated at February 24, 1992.

Q. Could you identify Exhibit L-6, please?

A. L-6 is the early well behavior completion history details. This actually describes in more detail the swabbing and well performance history for the 3-F. And since it's quite wordy, I think that I'll just not get into any details here, and we'll defer that to Mr. Artindale's testimony when he discusses the production history for this well.

Q. Could you identify Exhibit L-7, please?

A. L-7 is also a completion diagram for the 3-F well similar to the one previously shown for the 2-A. It, too, shows the details of the casing liner perforations and overall gross

producing interval for the same.

Q. What are American Hunter's plans for additional development in this area?

A. We conducted a seismic program this summer which we hope will lead to the drilling of four or perhaps five additional Mancos wells this summer.

Q. And where are they at least tentatively proposed in regard to the 3-F?

A. They would all be located west of the 3-F down-dip and in a structural position in comparison to the Gavilan Field; whereas, the 3-F is in a structural position that would be comparable to West Puerto Chiquito.

Q. Mr. Lister, is Exhibit 8 an affidavit confirming that notice of this application and hearing had been provided to the parties identified in that affidavit?

A. Yes, it is.

Q. And do the parties named there constitute all the working and royalty interest owners in this area?

A. Yes, that's correct.

Q. Will American Hunter also call an engineering witness who will review the status

and production history on the well and make recommendations to the Division concerning future operations of the well?

A. Yes.

Q. Were Exhibits 1 through 8 compiled under your direction and supervision?

A. Yes, that's correct.

MR. CARR: At this time, Mr. Stogner, we move the admission of American Hunter Exhibits 1 through 8.

EXAMINER STOGNER: Are there any objections?

MR. KELLAHIN: No objection.

EXAMINER STOGNER: Exhibits L-1 through L-8 will be admitted.

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

EXAMINER STOGNER: Thank you, Mr. Carr.

Mr. Kellahin, your witness.

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Lister, let me ask you about the 2-A and 3-F wells.

A. Okay.

Q. On the 2-A well, when you initially completed that well, was it production-tested?

A. Well, yes. When we completed the 2-A well, we moved in the completion rig and began swabbing within two days after moving on the completion rig.

Q. What was your initial potential on the well?

A. The initial potential in the well has been submitted to the state as 45 barrels of oil a day and 140 Mcf of gas, 20 barrels of water.

Q. Okay. Is that well still producing?

A. Yes, it is.

Q. Do you know what its approximate current daily producing rates are?

A. Its current daily production rate, I don't have the exact number, but is in a similar range to this. It has shown a decline and is currently producing well under 100 barrels of oil a day.

Q. When we look at the 3-F, what was that well initially potentialed for?

A. It was initially IP'd for 323 barrels of oil, gas too small to measure, and no water.

Q. Were both of these wells completed in

the same relative interval in the Mancos?

A. Yes, in a gross sense. It depends on how narrowly you define it. They're both completed in the Niobrara member of the Mancos Formation.

Q. Have you further defined the Niobrara so that it can be subdivided into any further divisions?

A. Yes. We refer to it as the Niobrara A, B, and C in this area. The 2-A produces principally from the A zone and the 3-F principally from the B zone.

Q. Are you open in all three Niobrara zones in each of the two wells?

A. No, we're not in terms of the wellbore. However, one cannot rule out the fact that through some kind of fracture network we may be ultimately communicating with the other zones.

Q. Help me understand why you use the word "principally" in the A zone for the 2-A, and you said principally in the B zone of the Niobrara for the 3-F. What does "principally" mean?

A. For my last comment. So far as we know, the fractures and the oil, the fractures

are located within those zones and were producing from just those two zones. But --

Q. Was that part of the drilling plan to take one well and test the A zone and do the other in the B zone?

A. No. I think we testified before the Commission last year initially that we wanted to test the A and the B zone equally. But through drilling we learned that it was difficult to stay within one zone.

And actually, when we drilled these wells, we tried to land in either the A or the B main sand and stay in it, whichever the current wellbore radius, the position of the wellbore would allow.

Q. When you look at the relationship of the well structurally, how much vertical displacement is there between the two wells approximately?

A. There's approximately 2,000 feet of structural elevation difference between the 2-A well and the 3-F well.

Q. Okay. Which ones?

A. The 2-A is structurally higher. Its midpoint of perfs is about plus 2736 subsea. And

the 3-F is approximately plus 687 subsea.

Q. About 2,000 feet vertical difference?

A. Yes.

Q. Over what horizontal distance?

A. Over a distance, which you can see on L-2, a little more than a mile, a mile-and-a-quarter, mile-and-a-half.

Q. It appears from looking at the structure map that you were attempting to be perpendicular to the strike of the structure with the horizontal portion of the --

A. Yes.

Q. -- producing lateral?

A. That's correct. We testified last year that we thought, based on our independent work and on previous operators' testimonies and publications, that the fractures trend, the main fractures trend north-south, and therefore we were trying to drill at a perpendicular angle.

Q. Did you conduct any studies in drilling the 2-A well to help you orient yourself as to the direction of those fractures before you undertook the drilling of the lateral in the 2-A well?

A. Not in the sense of taking oriented

cores or anything like that. We were using as a tool principally the seismic that we had shot.

Q. Does that answer apply to the F-3 well?

A. Yes.

Q. The 3-F well as well?

A. Yes.

Q. Can you explain geologically what characteristics might account for the differences in productivity between the two wells?

A. No, I really can't because in the drilling history of the two wells, which are described on the well summaries for the two wells, we lost oil in both of those wells. We lost load oil that we were drilling with to the formation in both of those wells at comparable rates.

So from all appearances it seems that we hit fracture systems in both of those, but the production history has been quite different.

Q. You don't have a geologic explanation as to why there is a difference?

A. I could probably come up with two or three different ideas, but I don't have any foundation for one in preference to the other.

MR. KELLAHIN: Thank you, Mr. Lister.

EXAMINER STOGNER: Thank you. Any questions at this time, Mr. Stovall?

MR. STOVALL: I have discussed this with Mr. Lister before. I think I'll let you take over from here.

EXAMINER STOGNER: I want to reserve any questions at this point. I may have some for Mr. Lister at a later time.

Mr. Carr.

MR. CARR: At this time we would call Mr. Artindale.

**JIM ARTINDALE**

Having been duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARR:

Q. Would you state your full name and place of residence?

A. It's Jim Artindale. I reside in Calgary, Alberta, Canada.

Q. By whom are you employed and in what capacity?

A. I'm employed by Canadian Hunter in the capacity of Chief Exploitation Engineer for New Ventures Group.

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

A. I have not.

Q. Could you briefly review your educational background and then summarize your work experience for Mr. Stogner?

A. Okay. I graduated from the University of Calgary in 1979 with a degree in chemical engineering. I went to work for the Canadian subsidiary of Superior Oil. Two years later I was certified as a petroleum engineer by the province of Alberta.

I later went to work for a small independent called Gas-Can Resources. For the last six years I have been employed by Canadian Hunter.

Q. Have you testified as an expert witness in petroleum engineering matters before other state regulatory boards?

A. Yes, I have before the Province of Alberta, the Province of British Columbia, the State of North Dakota, and the State of Montana.

Q. What experience have you had with the technologies involved in horizontal drilling?

A. The company has been involved in a

significant number of horizontal projects, approximately a dozen. I have been the lead engineer on the majority of those properties. In particular I have studied the application of horizontal wells in fractured reservoirs.

Q. And have you been called upon from time to time to teach courses on horizontal drilling?

A. Yes. I've taught numerous workshops and courses for the CIM, the SPE, the Canadian Geologic Society, as well as the Rocky Mountain Association of Geologists.

Q. Have these presentations focused on horizontal drilling?

A. They have.

Q. Are you a Registered Petroleum Engineer?

A. I am.

Q. Where are you registered?

A. In the Province of Alberta.

Q. Are you familiar with the application filed in this case on behalf of American Hunter?

A. I am.

Q. Are you familiar with the efforts made by American Hunter to develop the Mancos Formation in the San Juan or northwest New

Mexico?

A. Yes, I am.

Q. Are you familiar with in particular the 2-A and 3-F, Jicarrila 2-A and 3-F wells?

A. I am.

MR. CARR: We would tender Mr. Artindale as an expert witness in petroleum engineering.

EXAMINER STOGNER: Are there any objections?

MR. KELLAHIN: Point of clarification, Mr. Examiner.

EXAMINER STOGNER: Okay, Mr. Kellahin.

VOIR DIRE EXAMINATION

BY MR. KELLAHIN:

Q. The reservoir aspects of your certification as a petroleum engineer, have you practiced reservoir engineering?

A. For almost my whole career, yes.

Q. You don't separate that out into having only practiced in the area of developing drilling programs for horizontal wells?

A. No. That's just a specialty that I have developed over the last years. But fundamentally I'm a reservoir engineer.

Q. That's what I wanted to make sure of. In practicing your profession you have done work with the components, the studies with regards to well performances in studying the reservoir?

A. Yes, I have.

MR. KELLAHIN: Thank you, Mr. Examiner. I have no objection.

EXAMINER STOGNER: Okay. Mr. Artindale is so qualified.

EXAMINATION (CONTINUED)

BY MR. CARR:

Q. Mr. Artindale, have you prepared certain exhibits for presentation here today?

A. Yes, I have.

Q. Would you refer to what has been marked American Hunter A-1, A as in Artindale.

MR. STOVALL: Very clever numbering scheme.

MR. CARR: This is what happens when your attorney numbers two sets 1 through 8. You have to do this the night before.

Q. (BY MR. CARR) Would you identify this exhibit for Mr. Stogner and review the information on it for him, please?

A. Yes. This is a map of the area

surrounding our acreage block. Our acreage block is outlined in dark black. Within that acreage block you'll see the four horizontal wells located. They're referred to as Jicarilla 8-I, Jicarilla 6-A-1, Jicarilla 2-A-1, and the Jicarilla 3-F-1.

Also in this map we've plotted all the Mancos oil producers. And the numbers beside each one of those producers represents the cumulative oil production to date. I really intended to use it as a reference map.

Q. Whereabouts is the boundary between the Jicarilla Reservation -- or the Jicarilla boundary on this exhibit?

A. The boundary identifying the Jicarilla Reservation really is the boundary between Township 26 North and Township 27 North.

Q. North of that is the Jicarilla Reservation?

A. Primarily, yes.

Q. The production for the wells that are centered in 28 North, 1 West, that's the Boulder Field?

A. That's correct. The East Puerto Chiquito Field, those wells centered in 27 North,

Range 1 East kind of, primarily. And the West Puerto Chiquito wells primarily are located in Townships 25 and 26 North, Range 1 West.

The Gavilan Field is located in 25 North, 2 West. And then the Lindrith Field is in 26 North, Range 2 West. That gives you a bearing.

Q. Okay. Let's move to American Hunter Exhibit A-2 and review that now.

A. This really is a very simplistic schematic of our reservoir model. In fact, this schematic was previously presented by Benson-Montin-Greer in previous testimonies. And what it illustrates is that where we've drilled our wells, the four horizontal wells, we're dealing with a monocline situation, knowing that to the west of that, the monocline disappears and you're in a very flat part of the reservoir. But within the area we've drilled our wells, we're in a steeply-dipping monocline.

The reservoir itself actually outcrops, which is kind of identified there on the right-hand side of the picture, and then goes from outcrop position down to about 7,000 feet within a 6- to 10-mile distance.

On here we've marked what's called the "Barren Zone." It's in this striped hatched marks. Basically within the barren zone there is no productive oil, no movable oil. Below the barren zone in the Mancos Formation, you have essentially an oil column whose primary drive mechanism is gravity drainage.

I've highlighted on this display the kind of relative locations of our four horizontal wells as well as the Boulder location. This clarifies the point that our 3-F location is situated at plus 687 relative to sea level; whereas, our 2-A location is plus 2736 relative to sea level, so a 2000-foot vertical displacement. The Boulder field is at about plus 3300 feet relative to subsea. That's kind of a datum depth that's been used for the Boulder.

The pressures that have been marked on this plot indicate what would have been the original pressures in the reservoir prior to any production. These pressures were approximated based on the gradient that was established in the area, although the Boulder pressure itself was in fact recorded.

So the Boulder had an original of about

924 pounds. We estimated that the Jicarilla 2-A well would have had a virgin pressure of 1110 pounds and that the Jicarilla 3-F well would have had a virgin pressure of 1786 pounds.

Q. When you compare this information to the actual pressures encountered when these wells were drained, what does it tell you?

A. Well, it tells us that there has been production in the area. In fact, between the Boulder field and East Puerto Chiquito, there has been several millions barrels of oil taken out of direct area. The Boulder pressure has in fact dropped down from 924 pounds down to somewhere between 200 and 450 pounds, depending on which location you use.

The Jicarilla 2-A well -- we just recorded a pressure through our testing program that we've had approved with the state -- that pressure is now around just under 500 pounds instead of the 1110 pounds. And the Jicarilla 3-F pressure, the original pressure that we recorded after drilling the well was just under 1400 pounds.

So it shows two things: It shows that there has been depletion in the area, but it also

shows that the Jicarilla 3-F is in fact in pressure communication with the Jicarilla 2-A, which is subsequently in pressure communication with the Boulder field.

Q. Let's move now to Exhibit 3-A. Please identify this and review it for the Examiner.

A. This exhibit represents kind of a redrafted version of exhibits that have been presented to this Commission previously by Benson-Montin-Greer. And really it portrays the pressure history in Puerto Chiquito West and in the Gavilan area versus time.

The reason that we've presented this graph is really to kind of make the point that we have gone through the testimonies of the previous hearings. We certainly appreciate the difference between the two systems, the Puerto Chiquito West system and the Gavilan system.

The Puerto Chiquito West pool was a gravity drainage pool that had a gas reinjection implemented in the late 60s, early 70s primarily; whereas, the Gavilan area represents a solution gas drive system where no enhanced recovery mechanism was employed.

Our wells, the 2-A and 3-F, are

significantly within a gravity drainage system and would be more comparable to the performance of Puerto Chiquito West and the Boulder fields.

Q. All right. Let's move now to Exhibit A-4.

A. Exhibit A-4 again is an illustrated figure depicting what we think would be an effective development strategy within the area that we're developing. We believe that if our reservoir model is correct, that we have a communicating gravity drainage system; that the optimum way of developing it would be to focus on wells which are further down-dip on the monocline near the base of the monocline. You may require additional wells up-dip as needed, but that you would want to consider reinjecting gas in an up-dip location as soon as possible.

The secondary development area would be the area of lower dip where the primary drive mechanism would be solution gas. And in that situation you may very well have to go to a more conventional type spacing pattern, and you may have to evaluate enhanced recovery methods other than gas reinjection.

Q. At this time I'd like to direct your

attention to the 2-A well, if you would refer to Exhibit A-5 and first review the production history for the wells.

A. This is a plot of the production history for the 2-A between November of 1991 and February of 1992 where most of the prior action occurred. I don't want to repeat too much of what Mr. Lister testified on, but during the month of November, we were basically swabbing the well. The well had not been officially completed. It was swabbing. We had rates in excess of 200 barrels a day but under a swabbing condition.

At that time there was no water production coming from the 2-A. In December we completed the well, installed a pumping unit, put the well in production. And the initial production rate was around 150 barrels of oil per day. However, the well quickly declined.

And within a period of about 30 to 40 days, production was less than 20 barrels of oil per day. And during that period of time, the well began to cut water, and the water-oil ratio consistently increased during that period of time.

We then shut the well in for a few days, which occurred, I guess, mid-January. When we brought the well back on-stream, the well this time peaked at about 100 barrels a day initially, but then quickly declined within a two-week period and again dropped to 20 barrels per day midway through February.

At that time the road conditions, the lease conditions were such that we were really forced to suspend operations on the well and did so.

Q. What's the current status of this well?

A. Okay. If you want to turn to the next exhibit, Exhibit A-6, it really provides the production information for the periods April, May, June, and July.

For the most part this well has been shut-in for the last several months. There was just a small period of production in May where again you see we got up now, the peak rate was about 80 barrels a day. And it was starting to decline, and we shut it in as well.

The water was present. We didn't produce the well until really the end of June, at which point we started our production and

interference test that we had worked out with the Division.

We had, as Mr. Lister had pointed out, we had encountered what we considered to be significant fracturing in the 2-A when we drilled the well. Well, we went in and did a very simplistic injectivity test and determined that in fact the fracture system was still present in the 2-A that we encountered while drilling, but that in fact it appers to be very limited.

So we find no evidence of damage to the reservoir, just in the fact that we have a limited high perm fracture system that then degrades into a poorer fracture system.

So after we did that, we took prior to bringing the well on stream, we ran a bomb. We pulled the pump and rods and ran a bomb, measured the reservoir pressure. As I said, the reservoir pressure was just under 500 pounds at the datum depth. We then brought the well on stream.

As you can see, it peaked at around 150 barrels of oil per day and has dramatically declined within a seven-day period. It's now producing, I believe, less than 50 barrels of oil per day. The water has steadily increased, and

we now have a water-oil ratio of around 1.

Q. Let's go now to Jicarilla 3-F. Could you identify Exhibit A-7.

A. Yes. Exhibit A-7 just represents a photograph of the pumping unit that was installed on the 3-F. Really this picture is just intended to illustrate the point that we drilled these wells under an agreement with the Jicarilla tribe. Unfortunately it resulted in us drilling the wells during the winter season.

Operators familiar with the area will tell you that that is not a good time to drill wells on the reservation. And the result was that we had extreme lease conditions that prevented us from really doing some operations in the manner that we would normally be comfortable with.

Q. Basically because of the ordinary drilling costs and the additional problems encountered having to drill in the winter, how much did this well actually cost to drill?

A. This well ended up costing us $1.3 million besides that it ended up costing us tens of thousands of dollars to operate on a monthly basis in order just to have Cats available and to

make sure that we could transport the oil. We ended up setting up a transfer system that basically moved the oil about two miles down the road so that we could actually have access to it.

We are unable to reclaim the lease during the winter because it was just impossible. And also we were unable at that time to upgrade the roads. Currently we are proceeding with plans to reclaim this lease and high grade the roads.

Q. And your agreement with the Jicarillas would not permit you to defer the drilling of this well until better weather conditions?

A. No, it would not.

Q. Let's to to Exhibit A-8, and I've asked you to review the production history on the 3-F well.

A. Well, in February of 1982 -- 1992, excuse me, we had finished drilling the well and was swabbing the well. As Mr. Lister had pointed out, there was considerable sludge within the wellbore. And, in fact, we swabbed it down to the bottom without getting any apparent flow.

However, after cleaning up the sludge,

and there was approximately 30 barrels of sludge that we recovered, the well then started flowing. And we ended up swabbing at about 350 barrels of oil per day.

Based on the swabbing rates, we then installed a pumping unit, the one that I showed in the previous exhibit, that had a capacity of about 350 to 380 barrels of oil per day. The well was placed on production with the pumping unit in February. And, in fact, pumped consistently at the capability of the well for the months of March, April, and most of May.

The oil rate, as I said, was about 380 barrels of oil per day. The gas was very constant at a rate of about 170 Mcf a day, which equated to a GOR of approximately 500.

During this period of time, we took several echo meters or sonics that gave us an estimation of the bottom-hole flowing pressure, which indicated that the well was in fact flowing at this 380-barrel-a-day rate with very limited or very small drawdown. So it indicated to us that we had an extremely prolific well.

In May of this year, just following the spring, we were, as I said, planning to reclaim

the lease, put in the proper production facilities. We were planning to install new tanks when in fact the well took a dramatic surge, where it went from pumping 380 barrels of oil per day to flowing almost 1,000 barrels of oil per day. You can see that in the graph.

That kind of caught us a little off guard. We thought that it might be in fact a short-lived event. We actually hired people to watch the well 24 hours a day, actually, on the lease. We've monitored the well carefully.

And since that time the production rate has gone about from about 1,000 barrels of oil per day and has steadily decreased to around 680 barrels of oil per day. The gas has fluctuated between 4- to 600 Mcf a day with the GOR being somewhere around 6- to 800 or 8- to 900.

The difficulty with the GOR is that in this surge mode the well is not producing consistently. What it does is it slugs and then stops, slugs and then stops. And in fact on lease you can hear the gas. It will vent a tremendous amount of gas and then stop and then vent and then stop.

And what that does to the chart is it

makes it extremely difficult to get an accurate measurement of the gas rate. So our operator has done the best job he can in terms of estimating the gas rate from the charts, and that's what we've been reporting to the state.

We are in the process of actually having the chart sent to Denver to be -- or at lease some of the charts sent to Denver to have integrated and read accurately.

Q. Now, Mr. Artindale, the well has recently been shut-in; is that correct?

A. Yes.

Q. Explain that, please.

A. On July 2 the BLM went out and determined that the production tanks that we were using were not adequate, could not be properly gauged. And so for the reasons of safety, they asked us to shut in the operation and to change out the tanks.

We had in fact planned to put in four new production tanks. This just kind of expedited it for us. And in fact we did that over the weekend, and I believe the tanks for the most part are installed. And in the next day or two, the well will be available for production

again.

Q. Are you ready to go to Exhibit A-9?

A. Yes.

Q. Let's review now the pressure information on this exhibit for Mr. Stogner.

A. Okay. This is a summary of the fluid levels that we took while the well was pumping at 380 barrels a day. As I mentioned, it was producing at a very constant rate, a very constant GOR. The GOR was very close to the solution gas-oil ratio that the reservoir should have. So we took these fluid levels to determine the bottom-hole flowing pressure.

So the first column represents the fluid level. The second column represents the calculated or estimated bottom-hole flowing pressure. And the third column represents the production, cumulative production from the well at that point in time.

The bottom line that's titled "Initial Reservoir Pressure" provides the pressure that we determined before we began producing the well. And that was 1,374 pounds.

What you can determine from this chart is that in fact the Jicarilla 3-F well is

extremely prolific, has really shown no signs of adversely affecting the reservoir. It's really providing a very marginal draw-down into the reservoir.

This in fact occurred -- these tests were run prior to the big surge. The surge at this point in time seems reasonable because in fact the well was producing close to 400 barrels a day with very little drawdown.

When we were forced to shut in the well this past weekend to change out the tanks, after a few days we took a fluid level in a shut-in position and determined that the reservoir pressure at the 3-F location to date was still approximately 1,374 pounds.

Q. How do these pressures compare with recent pressures obtained in the Benson-Montin-Greer wells in the area?

A. Well, very comparable. And again they give us confidence that we are in a good system. Al recently measured the shut-in pressure on his O-16 well and determined that the minimum pressure was around 1300 -- or I'm sorry. The minimum pressure he had there was approximately 1200 pounds at a datum depth of 900. That would

equate to approximately 1300 pounds at our datum depth. So the pressures are very close.

Q. What are American Hunter's immediate plans for this reservoir?

A. Well, we want to go ahead and continue with our development program. As mentioned previously, we hope to drill between 3 to 5 wells to the west of the 3-F location. We want to proceed with obtaining more quality information on the reservoir in a prudent fashion.

We're certainly working with the state in terms of preparing a plan to conserve the gas in the area. We have -- I guess that's about it.

Q. I think at this time maybe it would be helpful if you could review for Mr. Stogner the current overproduced status of this well.

A. Okay. This well began producing -- well, during its testing period, a 60-day test period, we produced approximately 20,000 barrels of oil. That was substantially less than what we could have produced under the allowable that we were permitted during the testing period. In fact, it was about 22,000 barrels less than what we could have produced.

At that time we were very conscious of

not trying to produce the reservoir too hard until we had a comfortable feel with what this well could do. The test period ended in late March. We then, during the test period, we had conversations with the OCD and the BLM and determined that in fact we needed to address the concept of gas conservation following the test period.

On May 1 we made application to the BLM, with a copy being sent to the Aztec office, requesting approval to continue to vent the gas, basically wanting exemption from the venting order.

On May 13, after a telephone conversation with Mr. Duane Spencer of the BLM, we sent additional information. On June 4 we met with Mr. Duane Spencer in Farmington. At that time he advised us that the BLM was in fact going to grant us permission to continue venting until September, at which time they wanted us to present a plan to conserve the gas.

Q. Now, Mr. Artindale, what is American Hunter Exhibit No. 10?

A. Exhibit No. 10 represents some correspondence between ourselves and the BLM.

The correspondence in fact was CC'd to the Aztec office. The first part is the application we made on May 1 for the right to continue to flare or vent gas.

The second part is the letter of May 13 where we provided additional information. And the third letter is a letter that we sent trying to explain the situation to Mr. Frank Chavez after they had informed us that our well was in an overproduced status on June 5.

And finally the last letter is the approval from Duane Spencer from the BLM allowing us to continue to vent gas until September.

Q. Now, Mr. Artindale, you were advised by Mr. Spencer on the 4th that you had a testing period, and then the next day the OCD advised you that you were going to be curtailed back?

A. Right. On June 5 they advised us, the OCD advised us that in fact the well had been in an overproduction status since the testing period and that they strongly advised us to curtail the production.

Q. Why did you send these letters to the BLM and not to the OCD?

A. Well, we were in quite a state of

confusion as to the jurisdiction. We were on Indian land, Indian federal land. These really represent the first wells that we've operated in the state of New Mexico.

Based on our discussions we felt that we knew this was under the jurisdiction of the BLM. They certainly didn't tell us anything to the contrary. We thought we were covering ourselves by sending copies to the state.

Q. In fact you made a mistake?

A. We erred.

Q. All right. I think you testified that the test period ended in March. It actually was April 24?

A. That's right. I'm sorry. April 24.

Q. During this period of time, when you were visiting or attempting to secure additional testing time, were you discussing the gas production from this well with other entities?

A. Yes. In relation to the gas situation, we basically were talking to Mr. Al Greer during the time that we were also making application to the BLM. In fact, we met with Al Greer the same day that we met with Duane Spencer to discuss the concept of constructing a gas gathering line to

our 3-F and 2-A wells.

Q. Did you have other discussions with the Oil Conservation Division after they advised you that you were overproduced and beyond the testing period?

A. Certainly. We had discussions with Mr. Ernie Bush, Mr. Frank Chavez, with this office here to discuss the status to try to explain the circumstances surrounding the situation.

We determined that it may be an appropriate time to implement the testing procedure. We then subsequently worked on that procedure and had it approved by the state.

Q. Has the testing actually begun?

A. Yes. It began on June 28? 27.

Q. Mr. Artindale, in terms of today's hearing, what were you asked to do?

A. Well, in preparation for this hearing, I was really asked to evaluate the performance characteristics of the 3-F well and the 2-A well and to determine the best methods of conserving gas for these wells.

Q. Let's look first at the 3-F. What conclusions have you reached about this well?

A. Well, we certainly would like to

suggest that there are four reasons why we should not be asked to shut in the well. The first one simply is data acquisition. There has not been a well completed, a significant well completed in this area in the Mancos for the last twelve years. And then before that there had only been four wells or maybe half a dozen wells in the last 20 to 30 years.

This represents not only a successful oil well in the Mancos but in fact represents probably one of the best Mancos wells in this area. We believe that we need to continue to produce it to get an estimate of the size of the reservoir and the capabilities of the reservoir.

As I've mentioned, we've produced almost 60,000 barrels from this well. And there doesn't appear to be any pressure drawdown. It certainly is giving us a lot of comfort concerning the development potential of the area.

Secondly, I mentioned the concept that this well would not produce on itself until we removed almost 30 barrels of sludge from the hole. Once we did that the well was able to be pumped at about 380 barrels a day with the

existing equipment.

Of course, when the surge occurred, just in the last three weeks, three to four weeks, this may be indicative of the well cleaning up more of the sludge and in fact opening up more of the fractures. We just don't think it would be appropriate at this time to shut in a well that's showing us signs of cleanup.

Thirdly, we have talked to the OCD. We've talked to operators in the area. We've researched all the hearing information, all the public information. There certainly is, I don't think, anybody that has indicated to us that there is any potential damage to the reservoir by continuing to produce this well in its current status in the short-term.

We certainly recognize the need for gas conservation. We certainly are strongly leaning towards the concept of gas injection system in the area. But for the short-term there certainly is no indication of damage to this reservoir by producing it in its current mode.

And, fourthly, certainly we are very much interested in prudently and profitably

developing this reservoir to maximize the recovery in an economic manner. But also we have to justify the existence of our program, and this well represents the cash flow revenue for future development. So just from an economic point of view, we would like to keep the well producing.

Q. What do you propose to Mr. Stogner be done concerning I think, first of all, this well? And although it won't be decided today, I'm going to ask you just to mention the overproduction.

A. Well, we certainly think many of the issues are tied together, and it's very important for us as a company to have these issues resolved. We would like to recommend that, first of all, we will commit to proceeding with a gas reinjection scheme whereby we'll take the produced solution gas from the 3-F well and inject it into the 2-A well.

We've reviewed the appropriateness of this, and it seems like an ideal opportunity. The 2-A well is not a damaged well but represents a marginal or sub-economic producer. It is 2,000 feet, vertical feet higher than the 3-F well. They're definitely in pressure communication as

we saw by the depletion when we first drilled these wells. It really represents an ideal location to inject the solution gas from the 3-F.

So we'll proceed immediately. And we would hope to have that in place within approximately 120 days. What we need to do is obtain approval from this body. We need to obtain approval from the Jicarilla tribe.

These two sections are contiguous, although they have the same owners but slightly different ownerships. So we have to work out with the Jicarilla tribe, you know, their legal questions. We certainly feel that they will in fact approve it.

We have to then order the necessary equipment and install the equipment. It is a fairly simplistic scheme but it still requires getting the equipment including a pipeline and compressor.

So we're thinking that 120 days will give us time -- we'll be rushed -- but will give us time to implement this scheme.

Q. What do you propose be done during this 120-day period?

A. Well, we would like to recommend that the state give us the right to continue to produce this well at certainly no more than the current allowable for the pool that we're within.

It would represent venting a small amount of gas during this time, but certainly would continue to provide us excellent information particularly while we're in the midst of a drilling program. It may in fact give us information that would help that program.

During this time we'd also have the option to continue the testing program that we've developed with the state. There have been some questions as to modifying that program. We're certainly open to looking at any suggestions, but during this time we could continue with the testing program as well.

Q. In reaching this conclusion have you evaluated the other options that would be available to you for handling the gas?

A. Yes. They really represent four other options. Three of them represent pipelines. We've evaluated tying into the El Paso system, tying into the Northwest system, and tying into

the Al Greer's system to the south. Both Northwest and El Paso are to the west.

Each one of them involves a direct distance of around seven to nine miles with pipeline, actual pipeline distances probably between seven to twelve miles.

Our economics suggest that the only way that any one of these tie-ins would be economic was if we guaranteed to produce a minimum of 1 Bcf of gas from the reservoir. Certainly our 3-F well couldn't do that, so it would mean tying in some of the other wells and producing a large quantity of gas from the reservoir just in order to pay off this pipeline.

We really are hesitant to make that kind of long-term commitment to gas sales when in fact we believe that in the near term, in fact we're recommending it right now, that gas reinjection is more appropriate for reservoir management.

So based on the marginal and in some cases noneconomic condition of the building of pipeline and the fact that we do not want to produce a large amount of gas from the reservoir, we just will not recommend tying in the gas into

a commercial pipeline.

The other option, of course, would be to wait until we've drilled our four additional wells. It would give us much more information concerning the reservoir and concerning the volumes of gas, volumes of oil, and at that time developing a more optimal injection program.

Unfortunately that would require that we wait approximately one year before we could implement the gas injection because of again the winter months. We just would not build a pipeline in the winter months up there.

Based on discussions with the state, it appears that that is not a reasonable solution if we want to continue to produce the 3-F well.

Q. Currently how overproduced is the 3-F well?

A. Our estimation is that the 3-F well has been overproduced by about 37,000 barrels.

Q. If you go through a full testing period and there is still accumulation of overproduction, that number would grow substantially; is that correct?

A. Yes. If in fact it took 120 days to build this pipeline injection facility and we

were to continue to produce the 3-F well with no exemption from the current venting order, it could certainly double or even higher than that.

Q. If you continue to accumulate overproduction, in effect what you would be gaining from an exception to the No-Flare Rule 306 simply is you would avoid shut-in; is that right?

A. That's right.

Q. In your opinion would approval of your recommendation, and that is going forward in an expeditious fashion to secure injection facilities and permitting the well to produce in the interim, would in your opinion that cause waste of any hydrocarbons?

A. Certainly not. We really believe that the history of development in this field suggests that operators have to consider the reinjection of gas within the gravity drainage portion of the reservoir.

And if we in fact go ahead and inject immediately into the reservoir, that would negate any possibilities of waste. And certainly the amount of gas that would be vented since we began producing and up till the time of implementing

the gas injection scheme would not constitute any negative impact on the reservoir at all.

Q. In your opinion will it impair the correlative rights of any owner in the pool?

A. No. The injection of gas into 2-A in fact should be a benefit to other operators in the area.

Q. Would American Hunter be agreeable to continuing to work with the Oil Conservation Division to assure that the testing that is done of these wells is efficient and obtains meaningful information?

A. We certainly would.

Q. In the event that the Division sees fit to agree to the request for an exception to Rule 306 and as part of that encourages American Hunter to go forward with the plans for gas injection, would it be important that that order be entered in an expeditious fashion?

A. Yes, very much. We certainly have a multi-million dollar project, drilling project that sort of is going to be implemented here in the next month or two. In order to install the facilities, we'd need pretty quick approval just in order to order the facilities and get them in

place. So it would be important to.

Q. Were Exhibits 1 through 10 prepared by you or compiled at your direction?

A. Yes, they were.

MR. CARR: At this time, Mr. Stogner, I would move the admission of American Hunter Exhibits A-1 through A-10.

EXAMINER STOGNER: Are there any objections?

MR. KELLAHIN: No objections.

EXAMINER STOGNER: Exhibits A-1 through A-10 will be admitted into evidence at this time.

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

EXAMINER STOGNER: Thank you, Mr. Carr.

Mr. Kellahin?

EXAMINATION

BY MR. KELLAHIN:

Q. Let me ask you about the elements of pressure communication between the 2-A and F-3.

A. Yes.

Q. You've concluded that those two wells represent positions in the reservoir where it makes it probable that you can reinject the gas

produced from the down-structure well into the up-structure well?

A. Yes.

Q. You've concluded that there is indications of pressure communication between those two wells?

A. Yes.

Q. What was the evidence that caused you to reach that conclusion?

A. When you look at the original pressure gradient through the Mancos system, going from East Puerto Chiquito to Boulder to West Puerto Chiquito to Gavilan, in fact when you prepare a pressure depth plot, which was in fact developed by Mr. Al Greer and other operators, you'll find that there's a pretty consistent gradient of about .33. And in fact what we're dealing with is just an oil column.

Well, when we went in and drilled 3-F and 2-A, we basically got reservoir pressures that indicated that, number one, they had both been depleted. And, number two, after both being depleted, they were still in that .33 gradient position. So in essence they went down together.

Q. Did you derive that pressure

information from surface pressures --

A. No.

Q. -- calculated to bottom-hole?

A. No.

Q. You measured bottom-hole?

A. They were both bottom-hole build-ups.

Q. Okay. 2-A is completed in the A Niobrara, and the 3-F is in the B Niobrara?

A. Yes.

Q. We have evidence of pressure communication between the two --

A. Yes.

Q. -- within this producing interval. What is your explanation to the fact that you have substantially different producing characteristics in those two wells?

A. Well, what we have determined is that we certainly encountered major fracture systems in both wells when we drilled. There's no question.

When we went back into the 2-A and injected a certain quantity of lease crude, we determined that in fact the fracture system was still in place; that it wasn't damaged; it wasn't poor. But that in fact the fracture system in

2-A is much less extensive. Basically you have good fractures right near the wellbore, but then it gets into a poorer fracture system within a short distance away from the wellbore.

In terms of gas injection, again we talked to Al Greer, who's the only person who's implemented gas injection. He told us that some of the best wells to inject in were the poorer producers. So in fact that gave us a lot of confidence in the 2-A.

Q. Let me go to Exhibit A-8 with you.

A. Okay.

Q. Which is the production information on the 3-F well?

A. Okay.

Q. You talked a while ago about a solution gas-oil ratio for the reservoir?

A. Yes.

Q. What is the solution gas-oil ratio?

A. I'm trying to remember. We ran a PBT on the 3-F. I don't have it with me, but I believe it is very close 480, 500. Very close to the solution gas-oil ratio that was being produced by the well while it was pumping.

Q. Okay. When you draw a bubble point

diagram, where are you with regards to the bubble point of the reservoir?

A. This reservoir would be at the bubble point.

Q. Okay.

A. Not necessarily the original bubble point but --

Q. The current. You've got a partially depleted reservoir at this point?

A. Right.

Q. So you're going to be producing at or slightly below the bubble point?

A. Right. Now, the interesting thing with 3-F again is when we ran the sonics, we determined that the drawdown was on the order of 10 to 24 pounds. So it's very limited drawdown below the bubble point. In fact, it would probably be the best of any Gavilan well or Mancos well up there right now.

Q. Follow with me on A-8 and tell me what your conclusion is about the reservoir as we see the gas-oil ratio take substantial changes in the plot. Early life of the well, we have a pumping well situation. We've got a gas-oil ratio in the 400 range. And we move to a flowing well

situation and you're up to the 800, 900 --

A. Yes.

Q. -- gas-oil ratio rates. What's the explanation?

A. Well, the explanation is actually quite simple. And in, fact, this phenomena has occurred in other Mancos reservoirs. We spoke to a gentleman at the BLM who in fact was the operator for the Rio Puerco Field.

What you have is while we're pumping it, as I said, we're drawing the reservoir down only by 10 to 25 pounds. This well has a reservoir pressure of 1374 pounds at approximately 7000 feet. The gradient to surface from that pressure is about .2. There's no way that normally this reservoir should flow.

But because it's so prolific, what happens is that -- it's so prolific and you really have a minimal drawdown -- what the reservoir has done is basically built up a little bit of a gas saturation on its own accord and enough to basically create a kind of an in situ gas lift effect.

As I said, in the Rio Puerco they had this happen throughout the life of their field,

not quite as dramatic. They didn't have this kind of well. But they'd be pumping the well, and all of a sudden, the wells would flow for a few days and then go back to pumping.

So really what you're seeing is just in essence an exaggerated or long-term gas surge. And in fact it couldn't flow at all if the GOR hadn't built up.

Q. It doesn't concern you that over this short interval of time of a few months the gas-oil ratio has substantially changed?

A. Well, as I say, there are two totally different phenomenons. One is where you're pumping the well; it's acting in a normal behavior. The other is where it basically has stored up a certain amount of gas around the wellbore and has surged.

Q. When we look at the portion of the display that shows the flowing well status --

A. Yes.

Q. -- is this well producing up-tubing, or is it up the annulus?

A. Up the annulus. Just for safety reasons we want to be able to control the well; therefore, we produced up the annulus so that we

could shut it in or control it at our desire.

Q. What is the current full capacity of the well produced in the current fashion?

A. I don't quite understand.

Q. Well, the maximum oil rate on a daily basis is 800 barrels of oil. Does this well in this current configuration by flowing up the annulus have the capacity to produce 800 barrels of oil a day?

A. No. We are basically under flowing conditions producing pretty well, I think, at capacity. I'm not sure what the choke is. I want to be somewhat careful. I don't think we're choking it back. We are basically producing it at capacity, but I may be mistaken.

Q. Subject to checking to see if this well is being restricted, assuming it's not, what is its current maximum rate?

A. Flowing rate?

Q. Yes.

A. Well, about 680 barrels a day.

Q. 680 barrels a day maximum flowing rate. At that rate how much gas are you producing a day?

A. Well, we're estimating that the gas

would be around --

MR. CARR: Mr. Kellahin, just for your information, I've been advised it's on one-half choke.

A. It's around 400 Mcf per day.

EXAMINER STOGNER: I'm sorry. What was that again?

THE WITNESS: It's around 400 Mcf per day. But if you look at the chart over the last week or so, he's starting to record, like, 350. I want reemphasize that the gas measurements really are estimates. And, you know, we really need to examine the charts carefully in this Denver firm before we can kind of hang our hats on those estimates.

We are not concerned about the GORs. We are certainly not seeing a reservoir where you're adversely drawing it down and causing an increase in GOR that would be very typical to a solution gas drive very similar to what you saw in Gavilan.

Q. (BY MR. KELLAHIN) Well, that's my point of reference, Mr. Artindale.

A. Well, let me equate this to another reservoir, the Boulder Field.

Q. I'm familiar with Boulder. Let me ask you this so I don't prolong the discussion. What are the purposes you intend to achieve with the testing program? What are you going to try to find out?

A. Well, primarily two things we're trying to find out. Well, two things and there may be a third. First thing is we want to determine the volume of movable oil between the two locations. The longevity of this well does not depend upon intersecting one set of great fractures because that fracture system will contain pretty well a kind of an insubstantial amount of oil.

The amount of reserves we're looking for comes from gravity drainage. So we're looking at trying to determine the amount of oil between the 2-A location and the 3-F location, which represents 2,000 vertical feet.

Q. Why do you care to know the amount of oil?

A. Because the amount of oil tells you whether or not this play is economic. Whether or not it can produce 800 barrels of oil today is irrelevant. We want to know whether or not this well is going to produce 100,000 barrels of oil

or 500,000 barrels of oil.

Q. Will this test help you know what the optimum producing rate should be to maximize ultimate recovery?

A. Secondly, it will help us to determine the permeability of the system if the test is successful. That certainly would give us the ability to equate that to gravity drainage nomographs that would then help us to optimize the rates of this well.

Q. If this well is being choked back at a half choke -- I'm familiar with gas well choking, but I'm not sure I know about oil well choking. Half a choke means what in terms of the capacity of the well to produce?

A. I'm not sure in this case.

UNIDENTIFIED SPEAKER: Half-inch.

THE WITNESS: No. But I'm not sure if it would go up to a thousand barrels a day if you pulled it up. I don't think so, but I'm not sure.

Q. (BY MR. KELLAHIN) In order to attain the objectives of the test --

A. Uh-huh.

Q. -- can you do that at volumes of oil of

680 barrels a day or less the way you're currently producing the well?

A. Yes. In fact, what we did is we ran some analytic simulators in our company. In fact, we ran it all the way down to 400 barrels a day, which would occur if in fact the well stopped flowing; we would have had to pump it again.

And we certainly feel that given a long enough pulse, a single pulse -- in fact, that was based on Al Greer's recommendations -- that we should be able to see the interference effects at 2-A.

This unfortunately is also contingent on the amount of gas saturation that has been built up around 2-A because gas saturation does have a dampening effect on interference.

Q. You mentioned a while ago to Mr. Carr that you would need a small amount of gas to vent or flare. I want to make sure you really meant small amount, and I won't try to understand what that means.

Within the context of the way the well is producing, if you're making 400 Mcf a day, is that sufficient volume of gas on a daily basis

for the 120-day test period? Is that the quantity of gas at issue when we talk about having an exception to the no-venting rule?

A. I think that's the number. We would like a little bit of latitude. We certainly would suggest they'd give us up to, say, 600 Mcf a day. But this well basically, to my knowledge, is producing close to capacity. It's producing around 4- to a 500 cubic feet a day of gas. So that's the level we're talking about over the next 120 days.

It's all contingent on whether or not this well keeps flowing. If it stops flowing, it likely will revert to the pumping conditions where the gas rate is in fact less than 200 Mcf a day.

Q. Can you approximate for me what the daily oil rate would be if we increased the gas rate to 600 Mcf a day? Is there a range?

A. Well, we wouldn't increase the gas rate. We're just saying the gas is just what's associated with us producing the oil. Right now the oil is being produced at 680 barrels a day. I don't think there's very much upside to that rate. And the gas that we're producing is, you

know, 4- to 500 Mcf a day.

Q. Let me ask you the sequence by which you have come up against the Division Rule 306.

A. Uh-huh.

Q. So that we're looking at the rule together and you don't have to try to remember it, I've made a copy of 306 for you.

Q. Before we go to the 306, let me ask you one follow-up question. You said that during this flowing period --

A. Yes.

Q. -- that you had to replace or enlarge the tanks on location?

A. Well, the tanks that we had originally installed were from the completion process, and they were old frac tanks.

Q. I understand. What point in time did that change take place? Was that in June?

A. Oh, at the beginning of July, in essence --

Q. Okay.

A. -- where we shut the well in.

Q. You shut the well in. How long was the well shut-in?

A. It's been shut-in since the 3rd of

July.

Q. Are you now producing the well?

A. No.

Q. So we don't know if there's been any effect on the well with regards to the short shut-in period?

A. No. When we look at 306, the well is completed, begins to produce, and you run beyond the 60-day test period. When did it first come to your attention that you needed to go back to the Division and ask for relief with regards to that issue?

A. Well, it was during the 60-day test period, we had, as I said, we had discussions with both the BLM and the Aztec office. We still were not sure of whose jurisdiction we were in. And so on May 1, which is approximately a week to 10 days after the 60-day test period ended, we made application to the BLM.

Q. When did you make application to the OCD under Rule 306 for the exception?

A. Well, in essence, it would have been the same day, but it was not through Form C-129. It was just through our own personal application. It provided a lot of the same

information.

Q. Okay. Have you ever filed Form C-129?

A. Not to my knowledge, no.

Q. When you went to the district for relief --

A. Well, we in fact never went to the district for relief. We were having conversations with the BLM and received relief. And subsequent to that the state informed us that we hadn't followed their appropriate procedures and that we were in fact in an overproduction status.

Q. As to overproduction, with regards to the no-flare, no-venting procedures, I'm trying to understand if you know how we ended up here at an OCD hearing --

A. Sure.

Q. -- and not at the district office under the Rule 306 procedure?

MR. STOVALL: Excuse me. Let me do something on the record for you to perhaps help explain that. The Aztec District Office did receive a copy of the application to the BLM and did accept that as a substitute for the C-129 application for C-106 exception.

It's not clearly documented in terms of the correspondence, but that is how Aztec has treated it, and that's how they've responded to it and provided the 30-Mcf-a-day limitation on the no-flare exception under 306.

THE WTINESS: In terms of this hearing --

MR. KELLAHIN: Maybe Mr. Stovall can help shorten the process for me. I'm looking at the last sentence of 306-B, Mr. Stovall. It says, "the District Supervisor shall either grant the exception within ten days or refer to the Director of the Division, who will advertise it and set it for public hearing."

MR. STOVALL: I'd be glad to summarize. From the Division's perspective what occurred is that the District office received the application to the BLM, treated it as a 129 request, granted the 30 days. I'm not sure if it was strictly within the ten-day time frame or not.

I believe at that point American Hunter contacted the Santa Fe office of the District. And I was in on a conversation with Mr. Larry Van Ryan, chief engineer, who then recommended to

American Hunter that they docket this for hearing for an exception under that provision because they were not happy about the 30-Mcf-a-day limitation on the exception.

And I believe that's how we got to hearing at a meeting with them. And they immediately did so, I mean, within a day of that conversation.

Q. (BY MR. KELLAHIN) Let me ask you about the overproduction number.

A. Yes.

Q. The 37,000 barrels, is that a number generated because you were producing too much oil, or were you simply producing too much gas?

A. No. That's a number based on the gas volumes. At all times, for the most part, we were below the 800 barrels day. Certainly on a monthly basis we were.

Q. You were taking out more gas than is allowed?

A. Than the 30 Mcf a day.

MR. STOVALL: That overproduction is based upon 30-Mcf-a-day limits set by the Aztec District Office, not based upon the 800 barrel, 2,000 GOR for the pool.

MR. KELLAHIN: That's what I wanted to know.

MR. STOVALL: Strictly based upon the 30 Mcf a day.

THE WITNESS: That's right.

MR. STOVALL: As far as I know, against the pool rules, they would be underproduced.

MR. KELLAHIN: And that's what Exhibit A-8 demonstrates.

MR. STOVALL: Correct.

MR. KELLAHIN: Thanks.

MR. STOVALL: Any overproduction that occurs in this well is based upon a limitation set by the OCD because of gas being vented.

THE WITNESS: That's right.

MR. STOVALL: I guess, from a correlative rights standpoint, that certainly changes or adds a perspective to it.

THE WITNESS: It's strictly a waste issue.

MR. STOVALL: It's fundamentally a waste issue in that area, I believe.

Q. (BY MR. KELLAHIN) All right. As I understand it, with regards to the exception to the no-venting rule, you're seeking a 120-day

period?

A. Yes.

Q. Using a maximum gas rate, I think you said, of 600 Mcf a day?

A. It would be acceptable, yes.

Q. And that 120-day period would commence when? Has is it already commenced?

A. It would commence based on the date of this hearing or the approval date, whichever -- based on today.

Q. What do we do with that short period that you've commenced the test on the 27th pursuant to the supervisors?

A. Well, I think what I'd recommend is we'll just talk with the Aztec office and try to clarify some of the issues concerning the overproduction status during the testing phase. And whatever we come up, we'll live with. If that has to be added to the overproduction those few days of the test, so be it.

For the most part, the 3-F has been shut-in for most of the testing time anyway.

Q. So you're seeking 120 days from the date of this Examiner order in which to have --

A. Well, from today.

MR. STOVALL: Mr. Kellahin, I think Mr. Artindale has suggested that perhaps it would be from today, the date of the hearing, because they're effectively on notice to start taking some action.

I would have no problem recommending that date as the start date for the 120 days for the Division. I haven't consulted with Mr. Bush on that. But I think that would probably be a reasonable date from which to do --

The Division is interested in getting this gas put to some beneficial use as quickly as possible. And this is as early a date as we could start from, I think.

MR. KELLAHIN: Thank you, Mr. Examiner. I'm through.

EXAMINER STOGNER: Thank you, Mr. Kellahin.

EXAMINER STOGNER: Mr. Carr, do you have any redirect?

FURTHER EXAMINATION

BY MR. CARR:

Q. Mr. Artindale, in regard to the questions that have just come up about the overproduction, did you have any recommendation

concerning how that ought to be handled or any suggestion, and recognizing that it's not going to be resolved in this hearing today?

A. Yes.

MR. STOVALL: Let me help you structure that question to deal with it in two ways. One would be overproduction accummulated, assuming we used this as the starting date for whatever order comes out. Deal with the -- answer that in two parts, if you would, for our benefit how to deal with what's happened up to today and then your recommendation from today forward.

A. Okay. Well, my recommendation would be that from -- if this Hearing Commission approves our application that in fact no overproduction would be accrued on the well for the next 120 days, as long as we stayed within the 600 Mcf a day limit and stayed within the allowables, of course, 800 barrels, which shouldn't be a problem, that would be any recommendation.

And any testing that occurs during that time would just be a testing program that we've worked out with the Division or the District Office and that we'd be responsible for undertaking.

Secondly -- so in essence we're hoping that there will be no accrual of overproduction from this point to the point where we install the facilities.

Number two, in terms of the previous overproduction or any overproduction, we would recommend that once our facilities are in place and once we're reinjecting, conserving the gas, that there's no longer a problem with the venting or the flaring of the solution gas, that we would begin to retire the overproduction by restricting the well to no more than 600 barrels of oil per day.

So, in essence, retiring it at a rate of 200 barrels of oil per day or more, depending on how we produced the well. If we decided to produce the well even less than 600 barrels of oil per day, that would go against the overproduction. So, in essence, we would retire the overproduction over a period of months at that rate.

Q. (BY MR. CARR) Now, Mr. Artindale, what about the overproduction, the overproduced 37,000 that has accrued as of the 3rd of July?

A. Well, two recommendations: One, we'd

hope that we have demonstrated that we have not been negligent operators. We have tried to file the appropriate forms. We certainly are in error with regard to which jurisdiction we are under. Still some confusion, but for the most part we understand now.

We would ask that you would even consider forgiving the overproduction. We don't believe there has been any correlative rights issue. We certainly have produced below the allowable. There has been no damage to the reservoir. Basically what's done has been done. There was no intent to do that. So we'd ask that you would even consider forgiving the overproduction.

However, if that's not acceptable to you, we would certainly recommend that that overproduction be retired under the same circumstances where we would restrict the production of the well to no more than 600 barrels of oil per day.

MR. CARR: That's basically all we have.

EXAMINATION

BY MR. STOVALL:

Q. Let me back up and do something, if you don't mind, to help clarify if we're going to write an order out of this. Let's go back to what we're doing in the first place.

From the OCD's standpoint, in terms of prevention of waste and -- primarily prevention of waste. I don't think correlative rights is a major issue in this particular case other than reservoir energy issues.

But given the fact that your production is within what would be allowed if you were connected to a beneficial use of the gas, you would be producing at these rates and so correlative rights in fact would be the same.

A. Uh-huh.

Q. So I want to address these in terms of waste. The major justification upon which the Division can grant the application would be to allow you to produce under a test program to achieve some objectives to learn something about the reservoir and how to produce it and what to expect, and you stated some objectives, I think.

Now, I want to restate those and make sure we're clear as to those objectives because I think they may need to be incorporated into the

order as part of the justification.

The first objective is to attempt to make some determination of how much oil is potentially available to be produced; is that correct?

A. We're now talking about the justification for the interference tests that we had discussed with the Aztec office?

Q. I'm talking about a justification to allow you to continue to produce the well rather than, say, go get yourself an injection system hooked up and then start producing again.

A. Right. Number one would be to establish the long-term potential of the well. We're going to be drilling four more, up to five more wells in the near future. We have to consider the concept of injection for those wells.

In fact, we're going to have to determine whether or not we should be putting those wells on injection a lot faster than we did for the 3-F well because, you know, I don't think the next time you're going to be quite as reasonable working with us if we wait eight months for the next four wells.

Q. We'll be reasonable, probably not as tolerant.

A. So what I'm saying, in the next four wells we're going to have to make decisions a lot quicker. Therefore the decisions for those wells is going to be primarily based on the 3-F production. If we shut in the 3-F, all of a sudden we stop gaining information.

As I said, we've produced 60,000 barrels from this well. There's been no pressure decline. That is important information to us. If you produce 100,000 barrels and no pressure decline, it starts to make an incredible case for large-scale development in the area, not just for us but even for other operators.

So to me there's nothing but value to be gained by continuing to produce probably one of the best Mancos wells in the basin. So that's what we're looking at. We're talking about a 120-day period now. We're no longer talking about an extended period.

You know that concurrently we're going to be spending a significant amount of money to begin injecting that gas. So you know that there really is not going to be much of a waste issue

after that 120 days. In fact, there shouldn't be any waste issue.

So the information that we acquire by producing the well, we think more than justifies the limited amount of gas that would be vented during that period.

Q. That takes into the next phase of the question. We've had some discussion off the record prior to the start of this hearing with respect to how the testing procedures should be structured.

Now, am I correct that currently you have an approved testing procedure established by the Aztec District Office? Is that correct?

A. Yes. We worked over a period of, I believe, three to four weeks to develop the testing procedure. We had discussions with Al Greer on it. Basically came to the conclusion that we were only going to be able to work with two wells, developed a testing program that was for the most part agreeable between the district office and ourselves, and have implemented that test.

There has been, even today there certainly has been some additional information

that's been presented and some additional clarification as to what in fact was approved.

So this testing procedure is not a one-time shot. We anticipate that as we drill more wells, as there's more production there, there's going to be more testing, more information determined. So it's kind of an ongoing process.

Q. I understand that. But essentially talking about the next 120 days and what we're going to do in there is you're currently operating under an approved testing program, approved by the OCD Aztec District Office?

A. Uh-huh.

Q. Now, if I understand from our off-the-record discussion, Mr. Greer has recommended to you that some additional measures be taken, such as taking a bottom-hole test with a bomb in the 3-F. And am I correct that he has recommended that, and at this point you're not sure that you want to do that, but you haven't rejected that idea at this point?

A. Yeah. We're trying really not to get into the issue of the testing program at this hearing. I received a letter -- the letter might

be four or five days old -- from Al mentioning that he thought we should in fact incorporate a pressure test on the 3-F. He didn't clarify whether it was during the producing time or during the buildup time, at least I can't recall if he clarified it.

Q. My real point is, we don't need to go into the details of that, the point I'm making, would you anticipate that given some recommendations from Mr. Greer, given information that you may acquire during the test phase under the current approved program, that there could possibly be some reasons to modify that test program?

A. Absolutely. You know, I think we're always interested in good suggestions. We don't want to be necessarily dictated to by another operator, but we're very open to suggestions, to recommendations. We'll discuss them with the district office. We'll evaluate the costs and what information would be gained by that cost.

But certainly we think over the next few months, as we're testing these wells, that it will certainly change.

Q. Would you have any objection to,

assuming the Division grants your application -- I think we've agreed taht basically the 120 days is your maximum period that we're talking about. It looks like we're talking -- you are talking in terms of recommending a maximum venting volume of 600 Mcf of gas a day.

And the anticipation is it really won't be that much because you'll be shut-in part of the time, and you'll be producing at varying rates during part of the time under the current test program as projected; is that correct?

A. That's correct under the current testing. I really want to try to keep the two issues separate. The testing was something that we developed with the District.

Q. I understand. But let me follow through. I just want to make sure that my. premise for my analysis here is correct.

And if a Division order came out that said you will be permitted to vent not more than, let's say 600 Mcf a day, for not more than, let's say 120 days, subject, however, to conducting tests in accordance with the Division-approved testing program, which program may set production limits at a lower level for periods of time or

even shut-ins for periods of time for test purposes, and then clean up the language so it essentially says you submit your tests and discuss your tests with the Aztec office, and that would be in anticipation of Mr. Greer having some input into it as an offset operator and as one of the acknowledged experts in the fractured Mancos Field, would that be consistent with what you're seeking today?

I'm not telling you that you will do what Greer says. You will do what the district says, and Greer would have some input into it. But you would develop a testing program and would be able to modify it from time to time as needs require under such a provision.

A. Well, I think the answer is yes. You know, there has to be a certain understanding. We're talking about a 120-day period. The current testing period really will run approximately 70 days, meaning you've got 50 days where's there is no approved testing period where we would probably just recommend producing the well. And that's what we would intend on doing.

Now, we may change the testing period. It may be lengthened; it may be shortened

depening on our discussions.

Q. Exactly.

A. We may review the whole testing period, based on what the 2-A has told us, and readjust it completely. But I think that we're willing to work with the district. We have to work with them for many years to come. And so we're happy to kind of, you know, come to an agreement with the testing program.

But I'm not so sure that should be sort of tacked on to the basic order, the venting relief order. I think that's something that's --

Q. Well, you've got two choices, I guess, is what I'm saying. Either we tell you how to test in the order, or we tell you you will test in accordance with the Division-approved program, which program can be developed in conjunction with the Aztec office. Which is your preference of those two choices?

A. Well, in an order we have at least a chance to speak before the hearing, and that's not my preference. But there has to be an understanding it has to be agreed to by both parties. I wouldn't want the district to go down and say this is what you're going to do to test

it, and I come back and say that it's just not reasonable and all of a sudden we're forced to spend the money to go ahead with that test.

Do you understand the difficulty?

Q. I understand what you're saying.

A. Testing has to be done from an efficient engineering-based concept. It shouldn't be kind of regulated unless you've really evaluated all the reasons behind it.

Q. My anticipation in how that process would work is that you would -- if you wanted to make modifications to the existing test program that's been approved by the District, you would make those recommendations and justify them to the Division?

A. Sure.

Q. If Mr. Greer thought that there were some things that ought to be added or changed to that, he could make some recommendations to the Division and to you -- at the same time to you -- and you would then review those, comment on them, and the Division could then recommend the modifications to that program. And again I think there's an element of reasonableness here, and I think so far that's occurred.

A. Yeah.

Q. I guess what I'm asking you here is recognizing that understanding it is not just going to be an arbitrary imposition, from your position would you rather have it in the order or the flexibility to deal with the District?

A. We certainly want the flexibility to deal with the District. You know, there's always the situation that we can't come to an agreement, that all of a sudden they feel that this testing might be changed or we need it to be changed, and so you always have to understand that it can be that situation.

But for the most part I think we've been able to work together. And we have an approved program in place, so I don't think there's much problem surrounding this.

Q. Now, with respect to dealing with overproduction -- and I recognize that what we've talked about today kind of leaves you in the air as far as what you have to do with overproduction. Assuming we adopt some sort of gas limitation because you were venting it, would you be comfortable if -- let me rephrase that.

In order to give you some comfort and

predictability in your operations, I would suggest that what the order should incorporate is some minimum level, make-up level which should be included. You have suggested that you produce at no more than 600, which essentially is a 200 barrel a day make-up level?

A. Right.

Q. Is that the level at which you would be comfortable, the Division ordering a minimum make-up level for whatever overproduction it determined existed?

A. We would be comfortable with that level. I think it's very important that you put that clause into the order for this perspective. We're spending $300- maybe up to $500,000 putting in the injection scheme. If all of a sudden the order says no, you have to retire it right now, basically we've just spent all that money to shut in the well. And so we wouldn't spend that money; we'd retire the overproduction first and then spend it.

Q. I understand that, and that's why I'm asking you what level would be --

A. Well, the level that we've recommended, that we would make it up at a minimum of 200

barrels per day, you know, which represents what? 25 percent of our allowable.

Q. Mr. Artindale, let me broach something now that we have not discussed previously. As the test program stands today, it's roughly 70 to 75 days from now you will have completed the testing procedure as approved, currently approved by the Division?

A. In fact, it may be less than 70 days.

Q. Okay.

A. Seventy-one days approximately. Seventy to 75 days from the date of starting it.

Q. That then raises the question of the justification for venting beyond that time because the justification initially is for testing purposes.

A. Uh-huh.

Q. You've indicated that it could take you as much as 120 days to develop the infrastructure to get your injection back to -- what is it? The 2-A; is that correct?

A. Yes. That's an estimate we have right now. We'd hoped that it would be less than that, but then we'd panic if it was more than that.

Q. I understand.

A. In terms of the testing, we've talked about testing and the acquisition of information.

Q. Okay.

A. I think they're two different things. We're talking about a particular test here where we would have -- we're primarily dealing with pressure, acquiring pressure data. The other is just a productivity test. In fact, that represents what you -- in the first 60 days of your program.

So we're saying we'd like this to be considered as also kind of a production test. While we're trying to determine the production characteristics of this well for the next 120 days, it would have impact on our injection scheme and on our -- significantly on our future wells in terms of putting them on to injection.

So that's kind of what I'm talking about in terms of production testing, maintaining the flow rate of up to 3-F and monitoring it.

Q. Even after the 70-day --

A. Uh-huh.

Q. -- what we call testing period?

A. Well, a good portion of the 70 days, the 3-F well is in fact shut-in. So it's not as

if it's producing all of those 70 days.

Q. I guess what I'm -- a little bit of concern -- if we just say set the gas limit at 600 a day and then you go back to that at the end of the 70-day period, just flow the well at whatever it will produce up to 600 Mcf a day, it's a potential of 50 days of that, 30 million Mcf a day?

A. Thirty Mcf.

Q. Thirty million cubic feet. At the very least I think we would want to look at the end of that time and see if in fact producing at that rate would yield any additional valuable information, or whether in fact it ought to be reduced in production to a rate which would still allow you to have some operating cost recoveries while you finished the injection system, but reduce the amount of gas being vented.

Would you have any problem with coming back at the end of this period and saying, "Okay, here's where we ought to be. Here's what we found"?

A. No. We certainly don't have any problem with reviewing the status of the test at the end of that period.

Q. I think this whole situation results from the fact, as I described it to the Examiner when we were talking earlier, there's a freight train moving by us at about 70 miles an hour with a hope on Chicago and we're trying to inventory it while it moves.

I mean, I think we need to get a grip on the inventory, but I think we would like the flexibility to come back and say, all right, let's review it at this time. And perhaps put in a recommendation that the Director could adjust that if necessary at the end of that -- after the completion of the Division-approved testing program.

And again with some assurance to you that we are cognizant of the fact that you are spending some money and doing some things out there and generally operating in a very prudent and productive manner and don't want to penalize you, so we do want to -- but we do also want to waste as little gas as possible.

A. Yeah. You know, this well is not only prolific, it's been very expensive to operate. Conditions certainly are not conducive to minimal or limited operating expenses. The amount of gas

that would be flared in that 50 days at the end would probably not even compare to some of the operating costs that we've experienced in the last few months.

So, you know, we're trying to put it all in perspective here.

Q. I understand.

A. Thirty million cubic feet a day.

Q. Or over -- not thirty a day.

A. Thirty over that fifty days really in terms of waste is a minimal amount compared to what's being spent out there and the opportunity out there as well.

MR. STOVALL: I don't think I have anything further.

Mr. Kellahin, did you?

MR. KELLAHIN: Yes. I want to present some of the correspondence to complete some of the topics we've touched on when it's appropriate.

EXAMINER STOGNER: Are you through with this witness?

MR. KELLAHIN: Yes.

MR. CARR: I'm finished.

EXAMINER STOGNER: Let's take a

five-minute recess.

[A recess was taken.]

MR. STOVALL: Mr. Artindale, I've only got one more question for you. You say you got somewhat confused by who had jurisdiction. Could you explain to me how a Canadian operator operating a well in the United States on Indian land subject to the United States government's supervision with regulation by the state agency could possibly get confused about the regulatory process? And you can take the fifth if you want to.

THE WITNESS: Yeah, I better not answer that.

EXAMINER STOGNER: Are there any other questions of this witness?

MR. CARR: No, sir.

EXAMINER STOGNER: I don't have any at this time. You may be excused.

THE WITNESS: Thanks.

EXAMINER STOGNER: Any of Mr. Lister?

MR. STOVALL: I don't think so.

EXAMINER STOGNER: I have none.

MR. KELLAHIN: I'd like to introduce some documents. I have marked for introduction

B-M-G Exhibits 1, 2, and 3. Exhibit 1 is the letter we've been discussing that Mr. Bush wrote American Hunter so that the Examiner has that in the record. That letter was dated June 26, copied to Mr. Greer.

Mr. Greer then responded to the Division and the parties on July 2 stating his concerns about the test, proposes a way to improve the test. On July 6 he writes another letter and again outlines his recommendations and suggestions about the test.

Rather than discuss all that, with Mr. Carr's concurrence, I propose to simploy introduce this into the record.

MR. STOVALL: If you have no objections, I would like to have Mr. Bush just review those and advise that in fact that is the most current letter that he has written with respect to the approval. That's what I'm particularly concerned about. And Greer's responses.

MR. BUSH: Yes. This does constitute the most current correspondence with American Hunter.

MR. STOVALL: Let the record reflect

Ernie Bush so stating as a representative of the Aztec District Office and is not testifying to contents and therefore is not sworn, just stating it's an official record.

MR. CARR: We have no objection.

EXAMINER STOGNER: Benson-Montin-Greer's Exhibits 1, 2, and 3 then will be admitted into the record at this time.

I would state, Mr. Bush, if there's any other correspondence, Mr. Artindale, Canadian Hunter, American Hunter to the District Office pertaining to the testing procedures, I would suggest that we CC a copy to the case file today. That way we'll have a complete record in this case.

Do you have any closing statements, Mr. Kellahin?

MR. KELLAHIN: If you're ready for that point in the hearing, Mr. Examiner.

EXAMINER STOGNER: I am if there's nothing else that you have to present.

MR. KELLAHIN: Very briefly, Mr. Examiner, the applicant seeks an exception to Rule 306. We think the rule is clear that that exception ought to be approved by the Oil

Conservation Division through this hearing process and through you subject to what our understanding is about the justification for venting that gas. And that is to provide a meaningful way to generate valuable reservoir data and information.

We believe that Mr. Bush's letter proposing a testing procedure is a good starting place to generate that reservoir data. However, we also think that Mr. Greer's suggestions, as contained in his letters, Exhibits 2 and 3, provide substantial ways to significantly improve the test. The most meaningful provision is the installation of a pressure bomb in the producing well, the F-3.

We would like the Examiner to enter an order that allows an opportunity for that test procedure to be modified to take into consideration that fact and that under whatever fashion you think appropriate for a procedure; that we accomplish a testing exception for this particular operator within the time frame that they proposed provided it can be modified to provide the most reliable accurate reservoir data, which we think is going to be generated by

the use of a pressure bomb.

One suggestion about how to make that work is have the Division Examiner, as part of the order, direct the District Office to make a recommendation back to you about the test and let the District, along with Mr. Greer and the applicant, provide those ideas to the District, but allow the Division Examiner through this hearing process to make a final choice about whether that test is to be modified or not.

MR. STOVALL: If I can, Mr. Kellahin, are you suggesting that that would be incorporated into the order coming out of this hearing, or that something be established in the order that the Examiner could supplement it as a result of that information?

MR. KELLAHIN: In either fashion. But rather than simply put that issue aside and presume that it can be successfully accomplished at the District level under the Supervisor's discretion, I suggest going back and inviting a further hearing here.

We have already utilized Rule 306 to get us to the hearing process. And we think there is a way to devise an order where this

Examiner can create a procedure for us to address modification of that test.

EXAMINER STOGNER: Is that all, Mr. Kellahin?

MR. KELLAHIN: Yes, sir.

EXAMINER STOGNER: Just one point of clarification for Mr. Kellahin. What's Al Greer's interest in this particular case? Is he a working interest owner?

MR. KELLAHIN: He is directly offset with four sections that are the spacing units immediately to the south.

EXAMINER STOGNER: As a lessee of record or just a mineral interest?

MR. KELLAHIN: I must tell you I am not certain.

MR. STOVALL: Perhaps one of the American Hunter witnesses knows. Does one of your witnesses know what Greer's official interest is, or do you just know he's the operator in that area?

MR. ARTINDALE: He operates those four wells. I believe last year Al told me that those four wells produced a total of, like, 9,000 barrels.

EXAMINER STOGNER: What four wells?

MR. KELLAHIN: Let's take a moment before we get this wrong.

[A discussion was held off the record.]

EXAMINER STOGNER: I believe I asked you for some clarification of Mr. Greer's interest in this particular case. And I believe you have something at this time, Mr. Kellahin?

MR. KELLAHIN: Mr. Examiner, what I'm marking as Greer ExhibiT No. 4, B-M-G, is a facsimile that Mr. Greer has provided to me that outlined the wells he owns or operates. I will highlight in red the acreage that he controls.

The four producing wells that he operates I've outlined in the pink. I then outlined the four sections that he operates. And I've shown the relationship to the 3-F and the 2-A.

Let me share that with opposing counsel so that he can confirm that I have correctly stated the ownership.

MR. STOVALL: Mr. Kellahin, after the hearing is over, let's reproduce that on a photocopy because those copies tend not to last.

MR. KELLAHIN: I'll duplicate that.

MR. STOVALL: We'll do that on clean paper.

MR. KELLAHIN: But we would move the introduction of Exhibit No. 4.

EXAMINER STOGNER: This Exhibit No. 4, absent the --

MR. STOVALL: Mr. Carr, would you stipulate to the accuracy since we don't have a witness sponsoring these?

MR. CARR: To extent that I can, it appears accurate to me.

EXAMINER STOGNER: This is more of a point of clarification of Mr. Greer's interest. I just wanted something on the record to tell me.

MR. STOVALL: He had a right to be here.

EXAMINER STOGNER: Sure.

Thank you, Mr. Kellahin.

Mr. Carr, I've left you the last word for today.

MR. CARR: Thank you, Mr. Stogner.

EXAMINER STOGNER: For today.

MR. CARR: Representing the fact that the Examiner always has the last say, I would

like to point out that American Hunter is here having expended substantial sums and effort to develop a new well, which is really a major discovery in the San Juan Basin.

It ties the productive area in Boulder to the previously developed area in the West Puerto Chiquito. And because of a mistake and some confusion, they didn't properly obtain an extension from you or an exemption to the no-flare provisions of Rule 306.

The purpose in coming before you today was to, one, advise you as to where we are and to ask for relief. And in the meetings and in the hearing, we are agreeable to going forward with the program whereby within 120 days we will be prepared to inject the gas that is now being produced from the 3-F well. In the interim we're asking for authority to vent no more than 600 Mcf of gas a day.

We have an approved testing procedure. We have worked one out with the Division. It isn't something that is going to be created in the future. We have one. And if that test needs to be amended or changed, we believe the appropriate place to do that is with the District

Office. It may have been changed or modified at the request of American Hunter. Someone else may have issues that need to be resolved.

But we think that the flexibility that this process is going to require can only be achieved by keeping that function clearly in the District Office. If a dispute comes up, any operator can always bring it back to you for further resolution. And if there are engineering questions that none of us feel competent to respond to, we certainly would entrust them to you.

The only thing that still stands out as a source of not so much a problem, but just an apprehension on our part is that we really don't know where we stand in terms of the overproduced status of the 3-F well as we move through a testing period.

We understand Mr. Bush's and Mr. Chavez' interpretation of the rule. And in fact we're asking you, I think, as you go through this not to assign additional overproduction to us. And when we get to that question at an appropriate time -- I don't know where in the process as it stands now that we can express

that, so I am expressing it now.

But we do think that exceptions to the no-flare rule are substantially undercut if all you're getting is a provision which exempts you from shut-in and yet you still accrue all of this overproduction while complying with the Division-approved test.

Now, I understand that sometimes the District Office is hard to correct or direct on those points. When I was here one time, we sent a memo to Mr. Arnold, who sent it right back to us with a note on it, "You guys run your office; I'll run mine."

But as you go through the process and work this out, we'd like to have input on not only the questions that relate to the testing, but how the overproduction is going to be handled. And we appreciate the effort that you've put into this proceeding today.

EXAMINER STOGNER: Thank you, Mr. Carr.

There's been talk of reinjection of gas. I'm going to ask that an application, since this is going to have to go to hearing, it's not gas disposal; it somewhat falls under the

pressure maintenance.

MR. CARR: We intend to file an application seeking authority on Form C-108 to have this matter brought before an Examiner in August. We were hoping to have it back before you. We don't know if we can get the application together and pre-filed 15 days before the first hearing in August. But we'll do that as quickly as we can.

EXAMINER STOGNER: That, by the way, would need to be on next Tuesday to get on the August 8 hearing.

MR. CARR: That's the problem that we're facing.

EXAMINER STOGNER: Just be aware that that particular hearing that day concerns a very interesting case down in the southeast with a certain potash interest that may take some time and effort.

MR. STOVALL: Which may also be a related company.

MR. CARR: I believe you can rest assured it's unlikely we'll show up on the 8th.

EXAMINER STOGNER: No feelings hurt.

Also, to keep this agency enlightened,

I realize there's going to have to be flow lines. There again the jurisdictional agencies, this is the Jicarillas and the BLM, which we fully understand, but if you could perhaps submit for the record to keep this record straight, since this is part of this particular proceeding today for informational purposes, showing that that particular authorization by American Hunter is being followed through, submit us copies for the record how that is coming along for the flow line and the application to drill or not drill the injection well, but to do the road work and such as that. That way we'll have a clear and concise record in this particular case that is being abided by.

Gentlemen, I'd like for you to also provide me with a rough draft order, if you would. What kind of time frame are you looking at on this?

MR. CARR: Shoot for a week from tomorrow. Is that all right with you, Tom?

MR. KELLAHIN: Certainly.

MR. CARR: Could we do it a week from Tuesday? Well, I don't know. I think we better keep ourselves on a time frame and do it by a

week from tomorrow, if that's all right with you.

EXAMINER STOGNER: Are you talking about the 18th? Oh, no. Wrong month. You're talking about the 17th of July?

MR. CARR: The 17th. And I will try and have it here before then.

EXAMINER STOGNER: Mr. Kellahin?

MR. KELLAHIN: That's fine.

MR. CARR: That puts it the day after the Commission hearing.

MR. STOVALL: I don't know, but let me ask you a question whether it makes sense to -- I mean, you're essentially in agreement. If you want, do you want to do something jointly and one sign off on it?

MR. CARR: If we can. He always thinks I word things wrong.

EXAMINER STOGNER: Of course, something like this where you're both here in the same town, if you need to fluctuate, one way or the other.

MR. CARR: I'm not concerned about filing these on the same date either. I will attempt to have it in before then. That does

give me one day after next week's Commission hearing, and that was the thinking on that.

MR. KELLAHIN: I think we should try to provide you with an order where we can agree on. And those areas where we can't agree, we'll provide you with alternative language.

MR. CARR: We can do that.

EXAMINER STOGNER: That's what I would like.

Is there anything else further in today's matter? If not, I'm going to leave the record open to take in the rough draft order from Mr. Kellahin and Mr. Carr.

Anybody else have anything further today? If not, hearing adjourned.

[And the proceedings were concluded at the approximate hour of 3:40 p.m.]

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10326, heard by me on July 9 1992.

Examiner
Oil Conservation Division

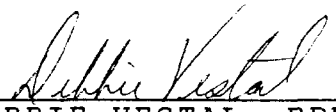
CERTIFICATE OF REPORTER

STATE OF NEW MEXICO )
) ss.
COUNTY OF SANTA FE )

I, Debbie Vestal, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL JULY 21, 1992.



DEBBIE VESTAL, RPR
NEW MEXICO CSR NO. 3