STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

7 November 1984

COMMISSION HEARING

IN THE MATTER OF:

Application of Mesa Petroleum Co. for NGPA determination, San Juan County, New Mexico.

CASE 8182 8183

BEFORE: Richard L. Stamets, Chairman
Commissioner Ed Kelley

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. STAMETS: The hearing will please come to order.

We will call the continued cases first this morning.

Call first Case 8182. As a matter of fact, let's call Case 8182 and 8183 since they have the same style.

MR. TAYLOR: The application of Mesa Petroleum Company for NGPA determination, San Juan County, New Mexico, and the application of Mesa Petroleum Company for NGPA determination, San Juan County, New Mexico.

MR. STAMETS: The applicant has requested that these cases be continued till the December 12th Commission hearing, and they will be so continued.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

12 December 1984

COMMISSION HEARING

IN THE MATTER OF:

Application of Mesa Petroleum Co. for NGPA determination, San Juan County, New Mexico.

CASE 8182 & 8183

BEFORE: Richard L. Stamets, Chairman
Commissioner Ed Kelley

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:

For the Applicant:

MR. STAMETS: Call Case 8182.

Application de novo of Mesa Petroleum Company for NGPA determination, San Juan County, New Mexico.

MR. CARR: May it please the Examiner, a stipulation has been entered between the parties to this case and the subseqwent case. The stipulation has been entered into by Jeff Taylor for the Commission, Steve Daugherty for Northwest Pipeline, Tom Jensen for El Paso Natural Gas Company, and Steve James for Mesa.

There is a letter confirming this that we believe is -- has been sent to the Commission, may be here.

In any event, the stipulation provides that the record of the Examiner Hearing, including the supplemental memoranda that were filed following the hearing, by stipulation can be used as the basis for the de novo hearing and will constitute the record in this proceeding, and that you may review that and act upon that in issuing a Commission order.

The parties also would request that it be clear that one, no additional testimony will be entered and two, that each party to the proceeding before the Examiner will remain a party of record in this matter.

MR. STAMETS: All right, let me call, then, Case 8183, which is also the same style, appli-

cation de novo, Mesa Petroleum Company for NGPA determination, San Juan County, New Mexico.

The Commission, then, will incorporate the record in the Examiner case in each of these cases and the Commission will review the record in each case and issue either a new order or orders confirming the original Examiner order in each of these cases.

Is there anything further in these cases?

MR. CARR: Nothing further.

MR. STAMETS: The cases then will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

9 May 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Mesa Petroleum Co. for NGPA determination, San Juan County, New Mexico. CASE 8182

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. STAMETS: We'll call next Case 8182.

MR. PEARCE: That case is in the matter of the application of Mesa Petroleum Co. for NGPA determination, San Juan County, New Mexico.

Mr. Examiner, applicant has requested that this case be continued until the May 23rd Examiner hearing.

MR. STAMETS: This case will be so continued.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best on my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8152, heard by me on 5-9, 1984.

Richard L. Stamets, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

6 June 1984

EXAMINER HEARING

IN THE MATTER OF

Application of Mesa Petroleum Company for NGPA determination, San Juan County, New Mexico.	~~CASE~~ 8182
Application of Mesa Petroleum Company for NGPA determination, San Juan County, New Mexico.	CASE 8183

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:	W. Perry Pearce Attorney at Law Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501
For the Applicant:	Steven C. James Attorney at Law Mesa Petroleum Co. Vaughn Building, Suite 1000 Midland, Texas 79701

A P P E A R A N C E S

For El Paso Natural Gas: Thomas S. Jensen
Attorney at Law
El Paso Natural Gas Co.
P. O. Box 1492
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For Northwest Pipeline: Mary Duffin
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Northwest Pipeline Corporation
295 Chipeta Way
Salt Lake City, Utah 89108

I N D E X

MICHAEL P. HOUSTON

I N D E X

E X H I B I T S

IN CASE 8182

IN CASE 8183

MR. STAMETS: We'll call next Case 8182.

MR. PEARCE: That case is on the application of Mesa Petroleum Company for NGPA determination, San Juan County, New Mexico.

MR. JAMES: Mr. Examiner, Steven C. James, appearing on behalf of applicant, Mesa Petroleum Co., attorney from Amarillo, appearing in association with the Campbell, Byrd and Black law firm here in Santa Fe.

We have one witness.

We would also request that Case 8183 be consolidated with 8182 since they have very similar facts.

MR. STAMETS: All right, we'll call Case 8183.

MR. PEARCE: That case is on the application of Mesa Petroleum Company for an NGPA determination, San Juan County, New Mexico.

Are there other appearances in these consolidated cases?

MS. DUFFIN: Mary Duffin, attorney for Northwest Pipeline, in association with Montgomery and Andrews.

MR. JENSEN: Tom Jensen, appearing on behalf of El Paso Natural Gas Company, also in association with Montgomery and Andrews.

MR. PEARCE: Ms. Duffin, do you have a proposed witness in this matter, or more?

MS. DUFFIN: I do. I have one witness.

MR. PEARCE: Okay. Mr. Jensen?

MR. JENSEN: Yes, sir.

MR. PEARCE: You got a witness?

MR. JENSEN: Mr. Kendrick.

MR. PEARCE: Could I ask all of the proposed witnesses to rise at this time, please?

(Witnesses sworn.)

MR. STAMETS: Mr. James, you may proceed.

MR. JAMES: At this time, Mr. Examiner, we will call Mesa Petroleum's Mike Houston.

MICHAEL P. HOUSTON,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. JAMES:

Q Would you please state your name and occupation?

A Michael P. Houston. I'm a Division Pro-

duction Engineer with Mesa Petroleum in Amarillo, Texas.

Q Have you ever testified before this Commission and had your qualifications accepted by them?

A Yes, sir, I have.

MR. JAMES: We would tender the witness' qualifications to the Examiner.

MR. STAMETS: He is considered qualified.

Q How many years have you been with Mesa?

A About ten and a half years.

Q Now, in your capacity as Division Production Engineer for Mesa are you familiar with the applications filed by Mesa in Cases 8182 and 8183?

A Yes, sir, I am.

Q Would you please briefly state what Mesa is seeking in each of these cases?

A Okay. Case 8182 addresses a request by Mesa for a further determination of increase in rate of production of gas from Mesa's State Com "AJ" No. 34 Well in San Juan County, New Mexico, is due to the use of Mesa of a recognized enhanced recovery technique as defined by the FERC.

And, similarly, Case 8183 addresses a request by Mesa for the further determination that an increase in the rate of production of gas from Mesa's State Com "AI" No. 33 Well in San Juan County, New Mexico, is due to the use by Mesa of a recognized enhanced recovery technique as defined by the Federal Energy Regulatory Com-

mission.

Q Mr. Houston, I would hand you what's been marked Mesa's Exhibit Number One in Case 8182 and ask if you would please identify that exhibit.

A Yes. This is just the application for the further determination of NGPA Section 108 for the State Com "AJ" No. 34.

Q Okay. Mr. Houston, I would ask that you also identify for us Mesa Exhibit Number One as submitted here in Case 8183.

A Okay. This is -- this is also the application for further determination under NGPA Section 108 for the State Com "AI" No. 33.

Q Are those true and correct copies, to the best of your knowledge, of the documents taken from Mesa's files?

A Yes, sir, they are.

Q Now, Mr. Houston, who operates both of these wells?

A Mesa Petroleum.

Q And how much working interest does Mesa have in the State Com "AJ" 34 Well?

A In the "AJ" 34 we have 100 percent.

Q How much working interest does Mesa have in the "AI" 33 Well?

A In the "AI" 33 Well we have 25 percent working interest.

Q Who owns the rest of the working interest in the "AI" 33?

A Superior, I believe, owns 25 percent. El Paso Natural owns 12-1/2 percent and Getty owns 37-1/2 percent.

Q Are you aware that in 1981 both of these wells were approved as stripper wells under Section 108 of the NGPA?

A Yes, sir.

Q Okay, who purchases the gas from these two wells?

A Northwest Central Pipeline.

Q I believe Northwest -- would it be Northwest Pipeline Corporation?

A Yes, uh-huh.

Q You may have Northwest Central confused with Northwest.

A I'm sorry.

Q The -- does El Paso Natural Gas gather the gas from these two wells?

A Yes, they do.

Q And then do they deliver it to Northwest Pipeline?

A That's my understanding.

Q Are you aware that in March of 1983 that Northwest filed notices of increased production for these two wells with this Commission and with the FERC?

A Correct, I am, yes.

Q Are you aware that later in that same year that Mesa filed notices of increased production and the two requests that you've identified?

A Yes, sir.

Q In mid to late 1982, Mr. Houston, did -- did Mesa start alternately shutting these wells in and then producing them for a various number of days each month?

A Yes, sir.

Q Why?

A In order to maximize production. We felt like we could shut these wells in and improve our overall economics.

Q Did Northwest request you to shut the wells in?

A Yes, they did.

Q Did they request that you turn the wells back on?

A On an intermittent basis --

Q Yes.

A -- yes, they did.

Q Now, how -- how does Mesa go about actually shutting one of these wells in?

A Our Field Foreman addresses some of the pumpers that work for him and they go by and manually close the valves, which prevents any further flow into the pipeline.

Q And where is your field foreman?

A He's located in Flora Vista, New Mexico.

Q When you want to then recommence production from one of the wells how to do you go about that?

A In a similar fashion. The pumper has to go by and physically open the valves.

Q And this -- this is a Mesa pumper?

A Yes, sir.

Q Mesa employee?

A Yes, sir.

Q Now once Mesa, I believe you've addressed this point briefly, once -- once they began in mid to late 1982 manually regulating the production in this manner from these two wells, what -- what happened to the production from these two wells?

A The production was stimulated and in essence increased to a point above the normal tolerances under NGPA Section 108.

Q Did the overall production from these two wells increase in any particular months as opposed to, say, when they were just open flow?

A Yes, they did.

Q Did Mesa do anything else to these wells to achieve the increases you've talked about?

A No, sir, not that I know.

Q Did anyone else do anything to the two wells that increased the production?

A No, sir.

Q Now, does the -- does the manual regulation of the flow of gas that you've talked about, does it cause the pressure to build up in the -- in the wells?

A Yes, it would.

Q Okay. Now, does this manual regulation allow you to maintain that pressure build-up from, say, one month to the next?

A Versus keeping the well flowing the --

Q Right.

A -- whole time? Yes, it would.

Q Does the build-up allow Mesa to produce its fair share of the gas underlying the acreage?

A Yes.

Q Now if these applications that are submitted by Mesa in these two cases today are denied, will that have an adverse effect on the economics of producing these two wells?

A Yes, sir, I think that it would.

Q Could such denials also ultimately result in waste?

A Yes.

MR. JAMES: At this time, Mr. Examiner, I would offer Exhibit One in each case, 8182 and 8183, into evidence.

MR. STAMETS: Without objection these exhibits will be admitted.

MR. JAMES: That's all the questions I have at this time.

MR. STAMETS: Are there questions of the witness?

MS. DUFFIN: I have a couple questions.

CROSS EXAMINATION

BY MS. DUFFIN:

Q Mr. Houston, I have just a couple of questions.

For clarification, did the directions for the shutins that you referred to in your testimony come from Northwest Pipeline or from El Paso Natural Gas, the pipeline company to whom the wells are connected?

A El Paso Natural.

Q You indicated that you performed some manual regulation of the two wells and I wanted to ask, following that regulation did you notice in the wells an increase in flow rate of the wells or an actual increase in the production, the number of Mcf produced by the two wells?

A State those again? I think you're almost talking about the same thing. Maybe I missed it.

Q Did the flow rate of the well increase during the few hours that the well was turned on in the course of your manual regulation, thereby actually producing more gas, or was it just a higher rate of flow though during

a shorter period with no net increase in the number of Mcf produced by these two wells?

A I think that the wells actually exhibited a higher rate of flow for a shorter period of time.

Q An actual greater number of Mcf's produced oveer the shorter period?

A Yes, ma'am.

Q Okay. Could you elaborate a little bit on the adverse effect on Mesa's economics that you refer to in your testimony?

A Comparing -- comparing the stripper price versus the non-stripper price, is that what you're referring to? In other words, if we -- if we were to not receive this extension or this further determination, if we were not to be able to stay under stripper status, we feel like the price would decrease to the point where it would be almost marginal. Maybe not uneconomic, but it would be much more as a marginal case.

Q Is it not possible, Mr. Houston, that Mesa could continue to monitor these two wells over 90-day production periods and so long as the wells did not produce in excess of the 60 Mcf per day limitation Mesa could continue to receive the 108 price without the need for this enhanced recovery designation so that there would in fact be no adverse effect on your economics?

A I think that would be possible, yes, ma'am.

MS. DUFFIN: That's all my questions. Thank you.

MR. STAMETS: Other questions of the witness?

MR. JENSEN: Yeah, I've got a few questions.

CROSS EXAMINATION

BY MR. JENSEN:

Q Mr. Houston, are you familiar with the Commission's, the Federal Energy Regulatory Commission's temporary build-up, temperature pressure build-up regulations?

A Yes, sir.

Q Is it your opinion that both of these wells would have qualified under those regulations, that Mesa could have filed a temporary pressure build-up application on these wells?

MR. JAMES: I'd object. I'd object to the asking for legal conclusions.

Q Now, when El Paso Natural Gas Company asks -- requests Mesa to shut a well in, and then subsequently requests that they turn it on, is it on any consultation with Mesa as to the build-up of pressure or the potential for enhancing recovery and the rate of production in the wells?

A Not to my knowledge.

Q In other words, the shutting in and the turning on of wells is done solely -- is done by Mesa solely upon El Paso Natural Gas Company's request?

A Pretty much so, yes, sir.

Q Okay. And I'm not sure if this question has been asked exactly. I think Ms. Duffin was getting at it, but if you took all the -- all the time that the -- that the well -- all the time involved with each of these wells, including shut-in time and producing time, is the total volume produced greater or lesser than would have been produced if the well had been producing continuously?

In other words, taking away the shut-in time, if the well had been produced continuously, was the production greater -- would the production have been greater than with this supposed --

A Yes.

Q -- enhanced recovery technique?

A I think I follow your question and I believe the rate or the volume would be larger than.

Q If it had been continuously?

A Larger than if it had been produced continuously, yes, sir.

Q Okay. Now, I'm not familiar, as familiar with the 34 Well as I am with the 33 because that's the one in which we have an interest, but is there not an intermitter on the "AI" No. 33 Well?

A Yes, sir, there is an intermitter.

Q Okay, and that was operating to -- to alternately turn on and off the well prior to -- well, during -- was that operating during 1981 and 1982, the intermitter?

A It was operating part of the time but I can't -- I could not swear that it was operating 100 percent of the time.

Q And the intermitter no longer operates now that El Paso is requesting you turn on and then off the well for periods of time?

A It's operative but I don't believe we use it any longer.

MR. JENSEN: No more questions.

MR. JAMES: If I might just ask him a question.

REDIRECT EXAMINATION

BY MR. JAMES:

Q I believe you've stated that you're aware that Northwest filed notices of increased production for these two wells in early 1983, is that correct?

A Yes, sir.

Q And to your -- to your knowledge, if Mesa had done nothing further, then would -- would the wells have been disqualified from the stripper price?

A I feel like they would have been, yes, sir.

Q Now, is it your testimony that this

manual regulation by Mesa has resulted in an increased rate of production from these wells?

A Yes, I think they do, sir.

MR. JAMES: No further questions.

CROSS EXAMINATION

BY MR. PEARCE:

Q Mr. Houston, I'm unclear on the "AI" 33 Well.

Could you explain to me further if you have an operative intermitter on the well but it's not being used, what's going on out there at that well?

A Excuse me, I'm sorry I mislead you.

I -- the intermitter is capable of being operative but it is not in use. All I'm trying to say is the intermitter is not junked.

Q But it's not connected to the flow stream either.

A It's not in use, that's correct.

Q Thank you.

A It is capable of being operative, not junked.

MR. PEARCE: Thank you.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Houston, again, when El Paso was having market problems over the last couple years and they were shutting in not only nonmarginal wells but marginal wells, to meet their market demand, is that correct?

A That's my understanding, yes, sir, that's correct.

Q If it hadn't been for that you wouldn't have gone out there and physically shut those wells in.

A Probably not.

Q Okay. And are you aware that the Division has orders out now which indicate that it's our intention that marginal wells be kept on the pipeline at all times?

A I believe I recall something along those lines, yes, sir.

Q And baring any violation of that by the pipeline, then the shutting in of these wells is on Mesa's own volition at this time.

A Yes, they would be.

Q All right, now, Mr. Houston, you've been an engineer for a long time. In the real world of oil and gas would you classify this as enhanced recovery?

A The mechanical manipulation of the valves?

Q Shutting in a well and turning it back

on, do you classify that as enhanced recovery?

A I would have to say no, sir.

Q Okay. Now you indicated that if this application were denied that there would be a negative impact on production and I presume you mean ultimate production from this -- these wells, is that correct?

A That's possible, yes, sir. It would be possibly uneconomic at an earlier stage and perhaps we would lose some of the reserves that would normally be produced if the higher price was allowed.

Q How would that work? Under the current rules, you know, the well would be stripper in its last years and it would be drawing stripper price, I presume. How are we going to lose production?

A Well, I think what I'm saying is that with this more careful attention to the well, lease operating expenses are going up and even though we may be in excess of 60 Mcf per day average and above the NGPA 108 requirements. Therefore we receive a -- would receive a lesser price and economics become even more marginal and even to the point that we might have to prematurely, or what I would call prematurely, plug and abandon the well.

Q What price do wells receive when they're not classified as stripper?

A Under 10 -- I don't believe I have that information with me.

MR. STAMETS: Mr. James, do you

know?

MR. JAMES: We do have it. What price would 104 be? How much is that, approximately, right now? Ninety cents plus a BTU adjustment.

MR. STAMETS: And what's 108?

MR. JAMES: It's Four Dollars at the present time.

MR. STAMETS: Mr. James, I looked at your Memorandum of Law here and it seems as though in -- what is it in, in the second paragraph where you discuss the definition of enhanced recovery? Yeah, right.

Would you point out to me there just exactly where it is that you believe that physically shutting in a well and turning back on is covered?

MR. JAMES: Process performed by the producer increases the rate of production of gas from a well includes mechanical as well as chemical stimulation.

MR. PEARCE: Mr. Houston, do you happen to know whether or not either or both of these wells are classified as marginal under the State of New Mexico's proration system for --

A I do not at the present time, no, sir.

MR. PEARCE: Does anybody here for El Paso happen to know?

MR. KENDRICK: I think I can tell you.

MR. PEARCE: Would you do that,

please, sir?

MR. JAMES: Mr. Pearce, we're also talking about a loss of revenues that would result in disqualification from the end of 1982 until present. Even if it is a marginal well and they put it back on stream full time, we would still under the regs, if this is denied today, not be entitled to collect the stripper price from the end of '82 to the present. It would be a significant economic loss in terms of these two wells.

MR. KENDRICK: I'm H. L. Kendrick with El Paso Natural Gas.

In reading the May, 1984, Gas Proration Schedule, as published by the State, page 31, the well is listed only as the No. 33 with a companion well as the 33-E, that multiple well proration unit is classified as nonmarginal.

The State Com "AJ" with Wells No. 34 and 34-E is a multiple well unit also classified as nonmarginal.

MR. PEARCE: Thank you, sir. Thank you. Nothing further.

MR. STAMETS: Any further questions of the witness? He may be excused.

Ms. Duffin?

MS. DUFFIN: Thank you, Mr. Examiner.

I'd like to present this letter

of association for your records. I'm a member of the Utah Bar, and I'd also like to submit for your use in the course of our presentation, these copies of what I've designated as Exhibit One.

As I go through and refer to the various pages in that exhibit I'll ask that they be admitted into evidence separately.

My name is Mary Duffin. I'm an attorney for Northwest Pipeline.

Northwest is interested in this proceeding due to the fact that it purchases 100 percent of the gas from the "AJ" 34 Well from Mesa Petroleum, the applicant.

We purchase 87-1/2 percent of the gas from the State Com No. 33 Well from the applicant and other interest owners.

Northwest has an interest in these proceedings which cannot be sufficiently represented by any other party and Northwest claims that its participation is in the public interest and is necessary and appropriate in the administration of the Natural Gas Policy Act.

Northwest filed protests relative to Mesa's request for further determination of eligibility for NGPA 108 pricing in these proceedings in mid-1983.

The first two documents in the exhibit package I just handed you, NWP-A and NWP-B, are copies of those two protests.

And if I may at this point, I'd like to make a clarification in those two protests.

In the second paragraph of the July protest and in the third paragraph of the August protest I indicated that it was not Mesa but Northwest, due to a decrease in demand on these wells, that shut in the wells, and in fact I now understand that the wells are connected to El Paso's system and that it was El Paso's market demand which was the determining factor.

I don't think that the substance of Northwest's protests are affected because it was still an issue of pipeline demand which caused the shutin, but I wanted to clarify that for the Examiner today.

Northwest appreciates this opportunity to appear. We'd like to present some technical testimony today, that which was referred to in our protests, indicative of the fact that the production increases demonstrated by these wells were related to and caused by the shutins of El Paso's pipeline connected to the well and were not the result of the application of any enhanced recovery technique.

To do that I would like to call upon Mr. Brent Hale, who is Manager of Reservoir Engineering for Northwest Pipeline. He's here with me today and is prepared to present testimony relative to our position.

I'd be happy to ask Mr. Hale some questions so that you're comfortable about his qualifi-

cations at this time, if you care for me to.

BRENT WALTER HALE,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MS. DUFFIN:

Q Mr. Hale, could you please state your full name?

A My name is Brent Walter Hale.

Q And who are you employed by?

A I'm employed by Northwest Pipeline Corporation.

Q What's your position with that company?

A I'm currently Manager of Reservoir Engineering.

Q Could you provide a description of your educational background and professional degrees?

A Yes. I studied petroleum engineering at the University of Wyoming and received a Bachelor of Science degree in 1976, after which I went to work for Northwest Pipeline.

During 1978 I took a leave of absence from Northwest Pipeline and returned to the University of Wyoming and completed residency and course work requirements on a Master's degree in petroleum engineering. The thesis

research was completed off campus and I received a Master's degree in 1979 in petroleum engineering.

And since them I've worked full time for Northwest Pipeline.

Q Could you describe the work that you've done in reviewing qualifications of the wells at issue in this hearing for recognized enhanced recovery designation?

A Yes. In reviewing that I've retrieved production records which Northwest has available showing volumes produced, operating pressures on the wells, the amount of time the wells have flowed and the times they have been shut in due to market demand and other -- various other shut-in related causes.

Q Did you review any technical literature relative to the generally accepted definition of recognized enhanced recovery technique?

A Yes, I did. I conducted a review of the technical literature to see if I could find anything that remotely resembled the application that we're discussing today.

Q Have you ever provided sworn testimony before this Commission previously?

A No, I have not.

Q Have you given sworn testimony relative to other NGPA pricing matters before other State or Federal commissions?

A I've given testimony before the FERC Com-

mission relative to tight gas pricing matters.

MS. DUFFIN: I would ask that Mr. Hale be accepted as a qualified witness.

MR. STAMETS: Let me ask a question or two.

Mr. Hale, in your duties as a reservoir engineer would you describe what you've done for Northwest?

A Yes. We've been responsible for gas well testing, reserve analysis, deliverability projections for Northwest Pipeline, which includes the San Juan Basin.

It also includes various reservoirs along the western slope of Colorado and in Green River Basin of Wyoming.

We've conducted extensive transient pressure analyses on many wells. We've also done some compression work, economic analyses for drilling, for installation of gathering systems and various facilities.

MR. STAMETS: The witness is considered qualified.

MS. DUFFIN: Thank you.

Q Mr. Hale, if I could ask you at this point to refer to pages NWP-C and NWP-D in the exhibit package.

The -C page applies to the State Com 33 Well and the -D page applies to the 34 Well.

Could you explain, Mr. Hale, what these

exhibits reflect as far as flowing days versus down days on these two wells?

A Yes. These exhibits are taken from the production records that Northwest maintains on all wells that we have a purchase interest in or else they're connected to our pipeline, and they show the monthly volume produced for each well at the top and then the center graph shows the number of days that the wells actually flowed.

Now this is not a producing day but it's the number of days each month that gas is flowing through the gas purchase meters and at the bottom we have a record of the average volume pressure, which is not particularly important in the hearings today. But the volume produced is important and the number of days that the well actually flowed gas is important.

We can see by looking at the volume record at the top that there was extensive down time during 1982 and 1983, and it's also very obvious that flow rates following the down time did increase.

Q Could you identify with respect to the 33 Well and then with respect to the 34 Well the specific decreased flow rates that you're referring to in the case of each of these wells?

A The decreased flow rates, during November of 1982 on the 33 Well the production was way down, and that's due to market related shutin.

On the number -- on the same well you see

the production and flowing time also being way down due to market related shutin.

One thing that's very important to observe is that even though the market related shutin was more severe during '82 and '83, it wasn't the first time this had occurred. If you go back to 1979 we find that there were several months during the summer of 1979 where flowing time was reduced, and during November and December of 1979 we had the same type of short term rate increase that we say during the '82, '83, and '84.

MS. DUFFIN: I would ask that Exhibit pages NWP-C and NWP-D be admitted.

MR. STAMETS: Without objection they will be admitted.

MS. DUFFIN: Thank you.

Q Mr. Hale, if I can, I'd now like to refer you to Exhibit pages NWP-E and F. Page E applies to the No. 33 Well and F applies to the 34 Well.

I understand that these exhibits contain a record of the down time on each of the wells beginning in the tenth month of the year 1982 and continuing through April of '84, is that correct?

A That's correct for the "AI" 33 Well.

On the "AJ" 34 Well the down time record begins in January of '83.

Q Thank you. Can you explain what the column "Days Flowing" on these two charts represents?

A That's a record of time that gas was flowing through the measurement meter.

Q And what does the column "Days of No Demand" represent?

A That is the time that the well was shut in by request of El Paso Natural Gas because of lack of market for the gas.

Q You're saying that it is El Paso Natural Gas that determines whether or not -- that essentially determines the number that appears in that Days of No Demand column?

A That's correct.

Q Is it the pipeline company or the producers that makes the decision to shut in a well when there's a day of no demand?

A The pipeline company.

Q What does the column on each of these exhibits "Days of Other Down Time" represent?

A When we went through the record we grouped all other down time together and listed it separately. This would include time that the well was down because of intermitter operation; if the well is shut in for pressure buildup testing, or any other miscellaneous maintenance or down time that could be caused either by a producer or by the pipeline.

Q So in the case of the No. 33 Well the average days of other down time is 1.52, where the days of

no demand is 10.3.

And in the case of 34, other down time is 5.1; days of no demand is 13.8, so less than half indicates what that was. Is that the correct way to read that?

A That's correct.

Q Okay. Does Mesa operate intermitters on these wells, to your knowledge, Mr. Hale?

A Yes, they have intermitters on both wells and they were in operation up until time time the pipeline requested the wells be shut in due to a lack of market, and it appears that because of the pressure buildup associated with the lack of market, the intermitters haven't been used regularly since then.

Q If Mesa has intermitters on these wells, why can it not be said that Mesa's responsible for increased flow rates following shutin of the wells?

A The intermitter operation is a normal operation of the well. It's what an operator would normally do to maintain the production, and the market related down time is down time in excess of what would normally be required for prudent operation of the well.

Q If we were to assume for a minute that Mesa's operation of the intermitters on the wells was responsible for increased flow rates from the well, do records available to you that you have reviewed in preparation for this hearing represent that Mesa has, since making their applications in these cases, utilized the practice of inter-

mitter regulation with the intent of increasing production?

A I don't see any evidence from the production records that Mesa has done anything with regard to their intermitter operation to increase the production. They've operated the intermitters only when necessary and as far as other down time, which has been primarily no demand down time, that has occurred only when the pipelines requested it.

MS. DUFFIN: I would ask that pages NWP-E and -F be admitted.

MR. STAMETS: Without objection they will be admitted.

MS. DUFFIN: Thank you.

Q Mr. Hale, if you would look at Exhibit pages NWP-G and -H at this time, Exhibit G relates to the State Com 33 Well and Exhibit H relates to the 34 Well.

Can you explain what the two axis on these two graphs represent?

A Right. We have a graph of production versus time for each well and also a graph of days flowing versus time for each well.

On the "AI" 33 on Exhibit G the production is seen to drop from 1976 from a rate of around 120 Mcf a day down to a minimum of 30 to 33 Mcf a day during mid-'83.

Also we see a line representing average days per month flowing and we can see that the "AI" 33 has

never produced more than 22 to 23 days per month since at least 1977.

Q And what does the Exhibit H reflect about the No. 34 Well?

A The Exhibit H shows the same data for the No. 34 Well. It shows that the intermitter has been in use, that the well has been shut in by Mesa via an intermitter to optimize production on the well, and also we see that producing time during '82 and '83 was reduced and, as we discussed previously, that's related to the market, no demand situation.

Q So the lighter shaded portion of these graphs represents what?

A The lighter shaded area actually represents the production from the well. It's listed as annual Mcf per day but what we have is a twelve-month rolling production, and that is total volume divided by 365. It doesn't accurately represent the rate of production but it does give us a representation of the total production from the well.

Q And the more darkly shaded portion represents the number of days produced.

A That's correct.

Q When was the first time in the case of each of these wells, based on the records you've looked at, that production occurred on less than thirty days per month?

A It's been consistent on both wells since

1977, and that's as far back as our records go.

Now there have been a few months during the last two years where they have had a full thirty days production following extensive down time, but the history on the wells back through 1977 shows that they have been shut in each month to optimize the production.

Q When I look at these two graphs, Mr. Hale, it doesn't look to me like your accounting for the number of days of production even starts until 1978, about mid-year in both cases, so how can you say that they are reflective of conditions that might have existed back in '77?

A These two graphs show an annual average and the first annual average where we have twelve months complete data to average, was mid-1978.

Q Based on a review of these graphs, Mr. Hale, is it your opinion that the practice of shutting in these wells began in 1982?

A No.

Q If I could ask you, Mr. Hale, is there a difference between the rate of flow of a well and the rate of production from a well?

A Yes, there is a difference. If we're talking about the rate of flow, that can be recorded on a very short period of time. It's how fast the gas comes out of the wellbore, how fast we can run it through a measurement meter.

When we're talking about the rate of pro-

duction, we're talking about the total produced volume. If we talked about production from a well it's not important to know whether a well flows one hour a day or whether it flowed 24 hours a day.

If we want to talk about production from a well, then we need to know the total volume and it becomes immaterial how fast the gas was produced.

Q Do you agree with Mr. Houston's opinion expressed during his testimony that production from these wells appears to have increased following down time, shutins of the wells?

A No, I don't, and if you'll look at the -- either Exhibit G or Exhibit H, you can see that there is a noticeable drop in production that correlates very well with the drop in days flowing. This is very obvious during 1983 and during 1984. Starting in late 1982 when the market related down time began, the average of days flowing started to drop and the average production started to drop. Only in late '83 and early '84 when the total number of days flowing began to increase again did the actual production begin to increase.

Q I'd refer you now, Mr. Hale, to Exhibit pages I, J, K, and L in Northwest's exhibit package.

NWP-I pertains to the No. 33 Well and --

MR. JAMES: Mr. Examiner, if I might, I hate to say this objection in advance of the tender of the exhibits; however, since we are going to have several

exhibits and before we get away from Exhibit G and H, if they are indeed to be tendered and with regard to any testimony that's already been submitted with respect to them, I want to ask that they not be admitted. I would ask that all evidence with regard to these exhibits be stricken because it's obviously irrelevant calculations in accordance with the definitions set forth in the NGPA and the regs.

These two exhibits incorporate non-productive days into the -- into the exhibit and the NGPA deals only in productive days in determining rate of production.

MS. DUFFIN: Mr. Stamets, I will ask that the exhibits be admitted on this basis. I think that they are relevant inasmuch as Section 271.803 requires that in order to be a recognized enhanced recovery technique the technique must increase the rate of production of the well as opposed to simply the flow rate of the well.

I think Mr. Hale's testified to that difference. I think it is pertinent under the regulations and I think these exhibits go to show that in fact the technique at issue in the hearing has not served to increase the rate of production as required by the regulations. I think that's the relevancy of these exhibits.

MR. JAMES: I don't agree at all with their trying -- attempting to distinguish rate of flow from rate of production. The NGPA in the regs and comments to the regs clearly, clearly stated that they are not

concerned with the ultimate recovery from the well but merely with the increase in the rate of production from the well, whether it goes over 60 Mcf per day or not, and I object to both of these exhibits.

MR. STAMETS: We'll overrule the objection and admit these particular exhibits and they will be used for what they're worth in conjunction with our reading and interpretation of the FERC regulations.

MS. DUFFIN: Thank you.

Q Moving on to Exhibit pages I and J, page I relates to the No. 33 Well and page J relates to the 34 Well.

Could you explain the two axis of these graphs, Mr. Hale?

A Yes. Exhibit I relating to the 33 and J relating to the 34, is actually a graph of production versus days per month that the well flowed or produced gas, and on the "AI" 33 Well we see that up until market related down time became a factor the well typically produced around 22 days per month and had a flow rate declining from 56 Mcf per day down to around 48 Mcf per day.

At that time the pipeline began to shut in the well due to lack of market for the gas and we see that both production and the days producing decreased.

This is very significant on these types of wells because of the nature of the reservoir and the pressure buildup phenomenon associated with down time.

There is a considerable amount of activity in the reservoir even though the valves may be closed at the surface. So you have to look at actual time flowing and it is important to look at the well in terms of the stabilization time of the reservoir, which is much longer than a day or on these wells it's much longer than a 90-day period specified by the FERC.

When we look at the Exhibit J for the "AJ" No. 34 Well --

MR. STAMETS: Before we -- before we go on there, let's have a little explanation of what we're looking at here on this Exhibit I.

I presume we start up in the upper lefthand corner with all the little -- upper right, with all those pluses?

A Yes.

MR. STAMETS: When is that?

A That is about three years ago.

MR. STAMETS: Okay, and --

A We've got about three years history.

MR. STAMETS: Where -- where did you get this data? What's its source?

A The data comes from the monthly production records on the well. What we're looking at is the volume produced each month as recorded by the pipeline and also the days per month flowing.

MR. STAMETS: How many points do we have on this exhibit?

A There are roughly thirty points.

MR. STAMETS: And that represents thirty months production.

A Thirty months, yes.

MR. STAMETS: And from what time?

A We're going from April, 1984, back roughly thirty months, which would put us back in the early 1982, I believe. Late 1981 to early 1982.

MR. STAMETS: Okay, and that will be the same for all of the --

A Same for both wells.

MR. STAMETS: Okay. Thank you.

A And the line connecting the points shows the chronological relationship between the data points.

Q Do you read these graphs, Mr. Hale, essentially from the right to the left as far as time?

A That's right.

Q Is that correct?

A That's correct.

Q Go ahead.

A We read them from the right to the left, we find out that as time has increased, the average days per month there's been demand for the gas has decreased, and the average production from the well has also decreased.

On the "AJ" 34 we see a temporary increase about twelve days per month and that shows us that

the stabilization time of the reservoir on this well is greater than twelve months.

Q Can you explain, Mr. Hale, what the stabilization period of the No. 34 Well means in the context of this application?

A What that means is that we shut the well in, let's say, for four months, and if we shut the well in for four months and the stabilization time is greater than a year, that means that a year following the recommencement of production from the well there will be a noticeable impact on the rates.

The total volume would not increase but there would be a noticeable increase in daily rate.

MS. DUFFIN: I would ask that Exhibits I and J be admitted at this time.

MR. JAMES: I'll object to Exhibits I and J in that they are based on evidence or determinations that are irrelevant to our cases today.

MR. STAMETS: I'll overrule your objection on the same basis as the last, and at this time admit the exhibits.

Q We can now move, Mr. Hale, to Exhibit NWP-K and NWP-L.

NWP-K relates to the No. 33 Well and L relates to the No. 34 Well.

Can you explain these graphs and what the axis on them are?

A Yes. These graphs relate the flow rate on the wells to the days per month the wells flow.

The flow rate was measured on a monthly basis and days flowing likewise on a monthly basis. Now these differ from the previous graphs. We're looking at individual months here. This is not an annual average of anyl sort.

Mesa Petroleum presented similar evidence in their application, except that instead of dividing or using actual flowing days they did use FERC producing days, which includes some down time.

The important thing that we see on Exhibits K and L is that as the flowing time decreases, the flow rate does increase, and Mesa has pointed this out. It's a very normal type of phenomenon.

On the "AI" 33 Well we see that the well will normally flow at a rate of around 75 Mcf per day if allowed to produce 20 to 25 days per month. The most severe shutin shows the well producing one day per month and rates have increased to values in excess of 250 Mcf per day flowing, so we do see an increase in rate but even though there's an increase in rate we have an associated decrease in total production because of the substantial down time.

Q Mr. Hale, from your experience, do most wells in the San Juan Basin show -- I beg your pardon.

Do they experience some no demand shut-in time on an annual basis?

A Currently the majority of the wells are being shut in at some time during the year due to no demand and there is other shut-in time and one thing that's very important is this behavior is very, very typical. It's very normal. The wells have very slow stabilization time. If we shut them in for the summer, it's very often the case that they have flush production or increased spot rates all throughout the next winter.

Q In your experience would most wells react that way?

A Yes.

Q Following shut-in time? Is this how the No. 33 and 34 Wells react following shut-in for no demand, in your judgment?

A Yes.

Q And is that shown by the flow rates set forth in Exhibits C and D?

A Yes, it is.

Q Those are the bar graphs --

A Right.

Q -- that relate flow days and production volumes?

A In fact, the data in Exhibits C and D is the same as the data in Exhibits K and L. We've just reformatted the scale to make it easier to relate flowing time and flow rate.

Q Thank you.

MS. DUFFIN: That concludes my questions of Mr. Hale. I do have a closing statement but if you'll call for those later, I'll just give it at that time.

MR. STAMETS: Would you like to admit Exhibits K and L?

MS. DUFFIN: I sure would, thank you.

MR. STAMETS: Any objections? They will be admitted.

MS. DUFFIN: Thank you.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Hale, what is enhanced recovery technique --

A If I understand --

Q -- and is this one?

A As I understand it, enhanced recovery technique is a process where the operator will add energy to the reservoir which might be necessary to produce the hydrocarbons present in the reservoir.

In the case of a gas well the best enhanced recovery technique that I can think of would be the possibility of going in with a hydraulic fracture or some other type of treatment which would allow the well to produce gas that would not otherwise be produced.

The market related shut-ins are not en-

hanced recovery, as I see it.

Q I'm advised that in the past we have approved intermitters as an enhanced recovery technique for this particular program.

Is the shutting in of wells physically by the operator any different from the use of an intermitter?

A In this case I'd say it's not different. The intermitter operation is normally on a daily cycle and what has really happened here is we've changed the cycle from a daily cycle effectively to an annual cycle.

Because of the long stabilization time in the Dakota reservoir, the impact on production and on flow rate is the same except that we're changing our time frame from a matter of days to a matter of years.

Total production averaged over the course of the year would see the same type of behavior that we normally would expect from an intermitter if we average over a course of hours.

MR. STAMETS: Any other questions of this witness?

CROSS EXAMINATION

BY MR. JAMES:

Q I take it that you're in agreement with us that -- that shutting in the well on some various number of days each month, as opposed to leaving the well open flow over the same month, will increase the rate of flow from the

well during the days it is produced.

A That's right.

Q Now, in your attempting to understand what a technique was, and in your research, did you -- did you come across the Federal Energy Regulatory Commission's statement that when asked -- when they received a number of comments asking them to provide examples, processes, or equipment that constituted recognized enhanced recovery techniques, were you aware that they stated that in this respect we believe it is clear from our revised definition that any technique shall qualify if it increases the rate of production from the well?

A I have reviewed the regulations and the one concern I have is that the rate of flow, the spot rate has increased, the production has dropped off on these wells, and that's the concern I have there.

Q Are you also aware that in the past the Commissin has stated that it is not concerned with the ultimate recovery from the well when considering stripper determination?

A The data that I presented this morning does not address the issue of ultimate recovery.

Q Now, since we do agree that the flow rate would be increased in the circumstances we've been discussing today, what caused that flow rate's increase?

A This is the phenomenon of pressure build-up in the reservoir. When you produce the well you have a

low pressure zone around the well, or fracture, if there be any fracture, when you shut the well in gas will continue to flow and recharge the area near the wellbore.

Q Now what causes the pressure to build up, and I'm speaking of -- is there something on the surface that -- that is done that causes the pressure to build up?

A The valves have been closed at the surface.

Q Okay, now who closes the valve?

A That's done by the operator. It would be in this case Mesa Petroleum personnel.

Q Okay, now I believe that you earlier stated that the wells were shut-in by El Paso, but that's not actually what you meant then.

A That's right. The orders are originated from El Paso. The physical work is done by Mesa.

Q Okay.

MR. JAMES: I believe that's all I have.

MR. STAMETS: Any other questions of this witness?

MR. STOGNER: Mr. Stamets, if I might.

Michael E. Stogner, Alternate Examiner for today.

QUESTIONS BY MR. STOGNER:

Q Mr. Hale, are you familiar if Northwest Pipeline is purchasing any gas from a well that has previously been determined to be a 108 enhanced recovery determination, either from the State of New Mexico on State or fee lands, or from the United States Bureau of Land Management on Federal lands in the San Juan Basin?

A I do not know.

Q To clarify a matter, if I might, you said that an intermitter is a normal procedure?

A In the Dakota reservoir in the San Juan it's a very normal type of thing to have an intermitter on a well.

Q Might we go on to say that a normal procedure should not be classified as an enhanced recovery technique?

A That would be my opinion, that it's a normal operating practice and not an enhanced recovery practice.

Q In the San Juan Basin in the Basin Dakota Pool is it normal to fracture the formation before producing it?

A It is.

MR. STOGNER: No further questions, Mr. Stamets.

MR. STAMETS: I perhaps would

point out for the record that the FERC regulations don't necessarily fall under the category of normal.

If there are no further questions, the witness may be excused.

Mr. Jensen?

MR. JENSEN: Mr. Examiner, my name is Tom Jensen and I'm an attorney for El Paso Natural Gas Company.

El Paso owns a working interest in the No. 33 Well and as such is interested to that extent.

We are also, however, interested to the extent that we are a major purchaser of gas in the San Juan Basin, where there are a good number of stripper wells, and it's our -- it's our concern to have stripper well regulations properly implemented and we, of course, are fully confident that this Commission will do so in this particular case.

We're going to present one witness, Mr. Kendrick, and I will just proceed now with him.

H. L. KENDRICK,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. JENSEN:

Q Mr. Kendrick, would you please state your

full name for the record?

MR. JAMES: Mr. Stamets, if I might in advance, since it appears that El Paso intends to present testimony with regard to both cases, I would ask that their testimony be limited to Case 8183, the well in which they have a working interest, and that their testimony not be made a part of the record in Case 8182, since they have -- they lack standing in that case and they have no significant interest which would allow them to intervene in that case.

MR. JENSEN: Well, I disagree, of course, and think there is an interest in the case to the extent that as I stated, we're -- we're a purchaser of gas from stripper wells all over the Basin and elsewhere, and the question is one of law here that we are concerned with, and to an extent it applies to the Case Number 8182 for the 34 Well and it also applies to Case Number 8183 in which we have an actual working interest.

MR. STAMETS: Mr. Jensen, El Paso does purchase gas in the San Juan Basin, does it not?

MR. JENSEN: Yes, sir.

MR. STAMETS: Would you consider these cases precedent setting cases?

MR. JENSEN: Yes, sir, I would.

MR. STAMETS: And El Paso would be affected by the outcome of these cases regardless if you had an interest in the wells?

MR. JENSEN: That's quite correct.

MR. STAMETS: And El Paso's pipeline is connected to both of these wells?

MR. JENSEN: That's correct.

MR. STAMETS: I will overrule the objection and allow the participation of El Paso in both cases.

MR. JENSEN: Thank you.

Q Mr. Kendrick, would you please state your full name for the record?

A I'm Harold L. Kendrick.

Q Okay, and are you an employee of El Paso Natural Gas Company?

A Yes, I am.

Q In what capacity?

A I am a Conservation Engineer with El Paso Natural Gas Company in the Production Control Department.

Q How long have you been so employed?

A I've been with El Paso Natural Gas Company for over thirty years.

Q All right, and have you testified before this Commission before?

A Yes, sir, I have.

MR. JENSEN: I would ask the Examiner's acceptance.

MR. STAMETS: He is considered

qualified.

Q I just have a few questions of Mr. Kendrick. First of all, is it correct that El Paso Natural Gas Company is connected to both the "AI" 33 and the "AJ" 34 Wells?

A Yes, sir, it is.

Q And does El Paso take all of the production from both wells for its market?

A We take the gas into our system to be used as needed.

Q And that's pursuant to an exchange arrangement with Northwest?

A Yes, sir, it is.

Q Okay, and El Paso Natural Gas Company is the -- tells Mesa when to turn wells off and on, when to turn these two wells on and off?

A Yes, sir, it does.

Q And to your knowledge is that done with any consultation with Mesa with regard to -- with regard to their concerns for enhanced recovery of gas from these wells?

A No, sir, the turning on and off of wells onto our system is solely based upon our demand or our need for gas or lack of demand and not needing the gas at any particular day or any time during a day.

Q And so it's not sensitive at all for well pressures and the enhancement of recovery from -- from the

wells?

A No, sir.

Q And one question regarding an -- regarding the intermitters which we have heard testimony today that are at each of these wells and previously were functioning.

Is it your opinion that -- that if the wells were continuously producing but subject to the operation of an intermitter, would your opinion be that the production be greater, the total production, total gas produced during the month from such a well be greater or lesser than a well that is being -- than the well's production pursuant to El Paso's alternate shutting in and turning on due to its market demand?

And that question might have been very difficult to understand. Maybe I'll repeat it.

Okay. We -- we know we've seen -- we've got the testimony and the exhibits concerning what the actual production, total production was from the -- from these two wells during the past couple of years.

During that time we also understand from testimony that the intermitters were not operating. The intermitters that are connected on the wells were not operating.

Is it your opinion that if the wells had been -- had not been subject to market restrictions, in other words, El Paso had not been requesting Mesa to shut

the wells in because of lack of market, and the wells were producing continuously but subject to the operation of the intermitter, would -- would the total gas produced during the past couple of years have been greater or lesser than what was actually experienced?

A We find that there are various conditions among different wells that can influence the production. If yoiu have a well that will not sustain production on a continuous basis due to liquid loading within the wellbore, we have experienced very good control in producing a well by shutting it in for short periods of time and producing it into the line for short periods of time.

This is often done by the use of an intermitter and we have labeled, our industry has labeled, someone has labeled this as stopcock operation, so that the short shut-in time of a well will allow the pressure to build up enough that the immediate flush when the well is turned on will clean the wellbore of any accumulation and cause the well to produce at a higher rate for a short period of time.

However, some wells that are producing at an adequate rate to continuously lift the liquids, any liquid accumulation in the wellbore, can produce without having to be shut in at any time and in those cases might produce gas at a higher rate per day continuously.

Each well has its own qualification of whether or not it can lift the liquids at a particular time,

and these wells might qualify one way or the other way.

Q Okay. Now as to the No. 33 Well, have you in the course of preparation for your testimony today examined the measurement charts and other production data from these wells?

A I have.

Q And as to that well, did -- would -- can you opine as to the effectiveness of the intermitter versus continuous production on that well?

A I noticed prior to the long term, if you please to call it that, shutting in of the well. The well was operated with an intermitter, a cyclic type production, keeping the wellbore clean of liquids and having a very definite, good flow pattern throughout the month as it was produced.

After the well was shut in for a longer period of time, then the well was opened back into the line and due to the build-up that had occurred around the wellbore and within the wellbore during the shut-in time, the well was capable of producing at a rate adequate to lift the liquids from the wellbore and not causing the need for the intermitter to be used until the flow rate decreases enough that at that point then you put the intermitter back in service and keep the wellbore cleaned of liquids that normally accumulate.

MR. JENSEN: I don't have any more questions.

MR. STAMETS: Any questions of this witness?

MR. JAMES: I have just a few.

CROSS EXAMINATION

BY MR. JAMES:

Q I take it that you heard the testimony of Mr. Hale, I believe it was, from Northwest. Do you also believe that it can be distinguished, the definition of rate of production versus the definition of rate of flow?

A That to me would be to anybody's desire of terminology, that there's a certain amount of production you can get per day and a certain amount you can get per month, and however you wish to label it.

Q But they are rates. A rate is a --

A Rate to me has to have a time element to it, yes, sir.

Q And so a rate would not have really anything to do with the ultimate recovery but rather the rate of that recovery.

A The rate would be the amount produced per unit of time, yes, sir.

Q Maybe you're aware of a -- well, we're not talking about the temporary pressure, build-up regulations today, but rather the enhanced recovery regulations, but referring to temporary pressure build-up for a statement from the FERC, I would question if you're aware of this

quote: "Commenters also question whether a stripper well shut in due to market conditions will qualify under the rules established in the interim rule.

The Commission recognizes that wells have been shut in because of falling market demand for gas and notes that the reason for the shut-in is not a determining factor in the jurisdictional agency's determination."

Were you aware of that?

A No, sir, I was not aware of it because I do not follow NGPA rules and regulations, due to the fact my duties are elsewhere.

Q Do you -- you stated that the shut-in is the result of El Paso Natural Gas's market demand.

Now, isn't it true that El Paso Natural takes the gas that it gathers from Mesa as the opertor of these two wells and exchanges that gas in some sort of exchange method with Northwest?

A Yes, sir.

Q So that as a result it cannot be said that these Mcfs are really El Paso Natural Gas's?

A We don't know whether molecularly these are colored blue and others are colored red if we exchance volumes so that we can balance out under our exchange agreement, yes, sir.

Q Well, it's not actually El Paso Natural Gas's market that results in these wells being --

A Yes, it is El Paso's market.

Q -- shut in.

A In this sense, that today's operation cannot be accounted for in the morning in the business of natural gas.

This month's operation may be accounted for a few months later down the line.

So what we're doing today is putting gas into our pipeline that we think we can let go out the other end later today or tomorrow.

Q Now, when the valve, the surface valve is turned off for a set number of days each month, what happens in the two particular wells we're talking about here today?

A May I ask what do you mean "set number of days each month"?

Q Whatever, however many days it's shut in for -- for the months we've been discussing back to late 1982? What has happened once you shut that well in, down hole?

A What has happened downhole once the well is shut in? Normally when a well is shut in the gas flow stops coming out of the well and the wellbore being the lowest pressured zone of the reservoir, gas will flow from the higher pressured zone of the reservoir to the point of lower pressure. Therefore gas will be replaced into the wellbore and to the area immediately surrounding the wellbore in an effort, if left shut in long enough, the reservoir would equalize all the way across, the pressure at a

depth.

Q Now, when you first, when you turn this well back on, then, as opposed to say just the open flow, is the -- isn't the rate of flow then increased?

A The rate of flow could be higher when you turn it on due to the accumulation of gas within the wellbore itself.

Q Now, if you -- if you turn it off again next month, then I assume that the process repeats itself in the well.

A Each time, my experience has been that each time a well is shut in, when it is turned on it immediately produces at the highest rate it will produce for the remainder of time the well is on, barring other influences of liquid accumulation or liquid accumulation already occurring in the wellbore and not being able to lift it at the time the well is first turned on.

Q Would you say that an operator would be able through the -- through regulating the flow by manually turnign on and turning off the well, to increase the rate of recovery of production from that well?

A There are two answers to that as I see it. Some wells, if left continuously producing will produce more gas than if they were intermittently shut in and intermittently produced.

Other wells will produce more gas being intermittently shut in and produced than they would had they

been left on the line continuously.

Q Let me direct my question to the two wells we're dealing with here today and answer the same question.

A I do not know enough about the amount of liquids produced from either well and the time of shut-in and the time of production to make that judgment.

Q Is it possible, since you haven't done that study, is it possible that Mesa through studying the well and experimenting with the times of shut-in and then turning the well back on, could increase the rate of production from these two wells?

Is it possible?

A I'm going to say it might be possible.

MR. JAMES: That's -- I don't have any questions.

MR. STAMETS: Are there any other questions of this witness? Ms. Duffin?

CROSS EXAMINATION

BY MS. DUFFIN:

Q Mr. Kendrick, is it possible that the operation of an intermitter on a gas well can be considered one for the normal maintenance of a well?

A I think so.

Q Is it possible, to your knowledge, are there intermitters on the wells that are the subject of this

hearing?

A I know from looking at the production chart of the No. "AI" 33 Well that there has been used an intermitter on that well.

Q Is it possible, in your judgment that the use of that intermitter could have been for normal maintenance of the well?

A Very possibly.

Q Do you have knowledge of when the intermitter may have been placed on the No. 33 Well in your review of records?

A No, ma'am, I do not know a date for that.

Q Okay. Mr. Kendrick, did you agree with Mr. Hale's definition of a recognized enhanced recovery technique to be one that adds energy to a reservoir as a generally accepted definition?

A For me to consider something enhanced, I would say that you would have to do something that actually changed the reservoir or changed the producing characteristics of the well in such a manner that this is a new function, something new that has occurred.

In other words, when the well was drilled and completed and was fractured, certainly before the well was fractured it had a producing capability of being very small. After the well was fractured possibly its production rate may be increased tenfold or twentyfold or hundredfold.

This to me is enhanced recovery. Maybe

not the only type of enhanced recovery, but certainly that would be one.

Merely shutting a well in and turning it on to me does not constitute what I consider enhanced recovery.

Q Does the application of fracturing to a well entail the addition of energy to the reservoir into which the well is drilled?

A You have to expend energy to cause the fracturing to occur, yes.

Q Conduct the process?

A Yes, ma'am.

Q Does the operation of an intermitter require that same kind of expenditure of energy once it's installed on a well?

A No.

Q Thank you.

MS. DUFFIN: That's all I have.

MR. STAMETS: Any other questions of this witness? He may be excused.

Excuse me, I'm sorry.

QUESTIONS BY MR. STOGNER:

Q Mr. Stamets, if I might.

Mr. Kendrick, should an intermitter be considered an enhanced recovery procedure?

A If I may change the word from enhanced

recovery to a word a conservation practice, I would say that the use of an intermitter to help keep a wellbore free of liquids would be a manner of conservation practice in that you can keep a well producing for a longer period of its lifetime without adding any other additional equipment.

Q Let me ask another question concerning an intermitter.

Should it be considered a normal operation?

A There were times it seemed that intermitters were normal operation and through the change of use of intermitters, which in the early days they vented the gas to the atmosphere to clean the well, in changing that to a point where when you find a well will not keep itself clean and place an intermitter on the well to intermittently produce it into the line, I think you have bettered the production of your well, merely because you're keeping it clean, which may be a conservation practice to prevent premature abandonment, ultimately recovering more gas from the formation.

Q You said ultimately recovering more gas. Is your definition of enhanced recovery, could that be considered an operation producing more gas?

A I believe my definition of enhanced recovery would be the fact that you would recover the gas from that well in a quicker amount of time.

MR. STOGNER: No further ques-

tions, Mr. Stamets.

MR. STAMETS: Any other questions of this witness? He may be excused.

I have a question for Mr. Houston. Did you intend to put him back on the stand?

MR. JAMES: I did not.

MR. STAMETS: Okay, well, let me just ask him where he's at then.

Mr. Houston, why does Mesa want to produce these two wells in this manner?

MR. HOUSTON: Why is Mesa willing to produce --

MR. STAMETS: Why do they want to produce these wells in this manner?

MR. HOUSTON: You mean in the manner without the intermitters?

MR. STAMETS: Yes, by shutting them off and turning them on, why do you want to do that?

MR. HOUSTON: Just to maximize the amount of recovery that we get. To recover all the gas volume that we can.

MR. STAMETS: To maximize the ultimate recovery?

MR. HOUSTON: Yes, sir.

MR. STAMETS: So you believe that the current production process will cause more gas to be produced from these wells.

MR. HOUSTON: I think it could, yes, sir.

That may be argueable but I think it could, yes, sir.

MR. STAMETS: In what way? What reservoir function will come into play this way?

MR. HOUSTON: Well, it would be taking us back to the conservation and I think as I alluded to in my testimony, I think that if you have a lower rate, or maybe not rate, a lower price that you are going to have to abide with if you rule against this particular meeting, the well will become more marginal, almost to the point of becoming uneconomic and it might set itself up for a premature plug and abandonment.

MR. STAMETS: If we just leave price out of this altogether, and consider that you are going to get $25.00 an Mcf regardless of how you produce the well, if you put intermitters on the two wells or if you produce them by shutting them in and opening them up, do you believe that the ultimate recovery would be enhanced by either one of those two processes?

MR. HOUSTON: To a slight degree I think so, yes, sir.

MR. STAMETS: Which one?

MR. HOUSTON: I think that it would be enhanced, both -- both wells.

MR. STAMETS: Both, and is one

better than the other?

MR. HOUSTON: Slightly better.

MR. STAMETS: Which one?

MR. HOUSTON: The -- the "AJ" 34, I believe is better.

MR. STAMETS: No, no, I'm sorry, which process, the intermitter or the manually shutting and opening the well?

MR. HOUSTON: I would probably say the intermitter.

MR. STAMETS: Okay. Any other questions of Mr. Houston?

MR. STOGNER: Mr. Stamets, if I might, I would like to direct a couple of questions to Mr. Houston, and maybe also a couple of directives.

In the original NGPA Section 108 enhanced recovery application I find and did not find any mention of an intermitter on either one of those wells.

Could you please supply this Division -- this hearing today -- to the Division today something telling us when the intermitter was used, how extensive it was used, and when it was taken off the line, and in particular the three months that are relevant to the NGPA Section 108 enhanced recovery 90-day period?

Could you -- could Mesa please supply that information?

MR. HOUSTON: I'm sorry, I can-

not. I do not have that information available.

MR. STOGNER: Could you do it today?

Let me rephrase that. Could you subsequent to this hearing provide that information?

MR. HOUSTON: I think that we could, yes.

MR. STOGNER: Thank you.

MR. STAMETS: Any other questions? He may be excused again.

I presume that there will be some closing arguments. What I would like to have in this case is proposed order from each of the participants and I would also like to see some written arguments as to why shutting in of wells and opening them manually should or should not be considered an enhanced recovery technique under the FERC regulations.

Mr. James, you've already submitted one and if you're happy and satisfied with that, that's good enough.

I don't think there's any real rush in getting those in; a couple of weeks will be fine. I think I've got three days in the office between now and July the 6th, so it's not going to be a lot of rush.

Does anyone have a closing statement that they would like to make?

All right, we'll start with El

Paso first and work our way toward the applicant.

MR. JENSEN: First of all, we would like to assert that we don't have any objection to Mesa's receiving a stripper well price when that is applicable and so it's not a matter of El Paso trying to deny Mesa its retroactive dollars that it has at jeopardy here, but it's a question of whether this particular action is enhanced recovery technique and with regard to that, and I guess we will illuminate it more in written arguments, certainly the ultimate shutting in and turning off -- or shutting in and turning on of a well could be considered an enhanced recovery technique to the extent an intermitter is considered an enhanced recovery technique.

If the one is, then the other certainly could be, but in this particular case it was not done by Mesa because of their desire to enhance recovery, but was done because El Paso told them to shut the well in, and in fact they at that point, when their intermitters were no longer used, when they began turning on and off the well because of El Paso's request.

The only other point that I'd have to make is that Mesa did have available to it the method by which to continue to qualify this well as a stripper well, and that was the temporary pressure build-up regulation and it chose not to for reasons unknown to El Paso.

But certainly that was the in-

tent of the FERC in promulgating those regulations where the pipeline shuts in the -- a producer voluntarily-involuntary producer standpoint because of pressure build-up the Commission promulgated the regulations to permit them to continue to receive their stripper price for the flush production that results. And I think that is what we see with the ninety-day period at issue here, is simply a matter of flush production.

MS. DUFFIN: Northwest urges the Commission to deny the applicant's request in Cases 8182 and 8183 for at least three reasons, and I hope we've identified them today.

First of all, the regulations clearly require the producer to perform or install the technique or process that is used.

In this case the producer, Mesa, has merely followed directions from the pipeline, El Paso, has engaged in no creative thought or activity of its own with respect to the issue, and simply on a technical reading of the regulations we would submit that this process of pipeline shut-in for no demand does not constitute enhanced recovery.

Second, from Mr. Hale's review of records available to Northwest Pipeline, it appears that the process of shut-in for no demand occurred at least as early as 1977. My reading of the regulations, Section 274.206C, which addresses a producer attempting to get an

enhanced recovery designation, implies to me that you get your 108 designation and then the new enhanced recovery technique is undertaken in order to qualify as such, and it does not appear from the chronology of shut-ins having occurred long before the wells were even designated as 108 that that criteria has been met.

And thirdly, as Mr. Hale testified, what has occurred here is that the flow rate from the wells has temporarily increased but overall production has not in fact been enhanced, due to the pipeline shut-in for no demand that has occurred here.

Northwest submits that no demand shut-in time, if deemed by the Commission to be an enhanced recovery technique, will result in a massive upswing in the number of filings of this nature before the Commission. We submit that it will ultimately increase the price of gas paid not only by pipeline companies like Northwest, which purchases this gas, but by the ultimate consumer, and for these reasons we would ask that these applications be denied.

Thank you.

MR. JAMES: Well, the pipelines obviously want us to apply some sort of sophistication to the term "technique". It has to be a sophisticated technique process.

It's clear that something happened here in this period of time that increased the rate of

production from these two wells. I mean we wouldn't be here today if that increase had not occurred.

The FERC, in cases and in its enacting regulations and such over the years, has consistently stated a policy of encouraging increased production from stripper wells. You have to keep in mind when the NGPA was enacted. The NGPA has not been changed.

You have to keep in mind when the regs were enacted in 1981 and look at and read those regs and that statute in that light. The Congress said that the objective of this definition of enhanced recovery is to insure that the producer does not have a built-in incentive to limit the production from a given well to an average of 60 Mcf per day.

The FERC, in enacting their regulations and discussing techniques, said, we believe it is clear from our definition that any technique shall qualify if it increases the rate of production from the well.

And we've heard a lot of testimony about different interpretations, as such, but we're bound by the NGPA and by the FERC regulations in this instance, and I would certainly appeal for a very technical reading of those regulations and that statute because that's precisely what it takes here, and the result of that very technical reading is going to recognize this technique, this method of manual regulation of the flow of gas from these two wells increases the rate of production from these two

wells.

MR. STAMETS: If there is nothing further, then this case will be taken --

MR. BUCKINGHAM: Mr. Examiner.

MR. STAMETS: Yes, I'm sorry, feel free. Identify yourself and --

MR. BUCKINGHAM: Allen Buckingham for the Bureau of Land Management, Albuquerque District.

Being a jurisdictional agency for an enormous number of stripper wells in San Juan Basin area, we would look at this case and we have a keen interest in both these cases, just like the State, and the BLM fully supports the position taken by Northwest Pipeline Corporation and El Paso Natural Gas Company.

Thank you.

MR. STAMETS: Any other comments?

If there is nothing further, the case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8182 & 8183 heard by me on 6-6, 1984.

Richard L. Stamets, Examiner
Oil Conservation Division