

Case No.

1523

Application, Transcript,
Small Exhibits, Etc.

CONFIDENTIAL

Case 1568

MAIN OFFICE ~~SEC~~ El Paso Natural Gas Company

1958 JUL 28 AM 8:29 El Paso, Texas

R/S *Hearings*

July 25, 1958

Mr. A. L. Porter
Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Porter:

Attached is El Paso's Application for an order establishing 320-acre drilling and spacing units for the Dakota formation in all Dakota gas pools situated in San Juan and Rio Arriba Counties, New Mexico.

We request that you set this matter for hearing.

Yours very truly,

F. Norman Woodruff
F. NORMAN WOODRUFF,
Manager
Gas Proration Operations

FNW/jrt
Attachment

BEFORE THE
OIL CONSERVATION COMMISSION
FARMINGTON, NEW MEXICO

IN THE MATTER OF:

CASE NO. 1508 and
CASE NO. 1523

TRANSCRIPT OF HEARING

October 15, 1958

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691

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TRANSCRIPT OF PROCEEDINGS

MR. PORTER: The meeting will come to order, please. At this time the Commission will consider Cases 1508 and 1523.

MR. PAYNE: Case 1508. Application of El Paso Natural Gas Company for the establishment of 320-acre spacing units for the Dakota formation in San Juan and Rio Arriba Counties, New Mexico.

CASE 1523. Application of El Paso Natural Gas Company for an order establishing 320-acre drilling and spacing units and promulgating special rules and regulations for certain formations in San Juan and Rio Arriba Counties, New Mexico.

MR. HOWELL: I am Ben Howell of El Paso Natural Gas Company. If it please the Commission, Case 1508 was continued from the last hearing when it developed that within the area of the Dakota formation were certain other formations that had been included with the Dakota in the designation of certain pools and that probably should be produced with the Dakota. As a result of that development, the case was continued and Case 1523 filed which defines with more accuracy the lateral limits of the area under consideration. Therefore, at this time, I would like to move to consolidate the two cases and to have the evidence which was introduced in Case 1508 applicable and to be considered in Case 1523. That will prevent us spending a couple of hours of going back over that testimony.

MR. PORTER: Is there objection to the counsel's motion?

MR. COOLEY: Mr. Howell, I take it that you expect only one order to be written as a result of the two cases?

BEFORE THE
OIL CONSERVATION COMMISSION
FARMINGTON, NEW MEXICO
OCTOBER 15, 1958

IN THE MATTER OF:

CASE 1508 Application of El Paso Natural Gas Company :
for the establishment of 320-acre spacing :
units for the Dakota formation in San Juan :
and Rio Arriba Counties, New Mexico. Appli- :
cant, in the above-styled cause, seeks an :
order establishing 320-acre spacing units :
for all gas wells drilled to or completed in :
the Dakota formation in San Juan and Rio Ar- :
riba Counties, New Mexico, including the :
fifteen presently designated Dakota gas :
pools in said counties; and for the promul- :
gation of special rules and regulations for :
said pools.

CASE 1523 Application of El Paso Natural Gas Company :
for an order establishing 320-acre drilling :
and spacing units and promulgating special :
rules and regulations for certain formations :
in San Juan and Rio Arriba Counties, New :
Mexico. Applicant, in the above-styled :
cause, seeks an order establishing 320-acre :
drilling and spacing units in San Juan and :
Rio Arriba Counties, New Mexico, and promul- :
gating special rules and regulations for the :
gas producing interval lying between the :
base of the Greenhorn limestone of Cretace- :
ous age and the base of the productive upper :
portion of the Morrison sandstone of Juras- :
sic age, which includes undifferentiated :
Graneros, Dakota, and Morrison sands. The :
application includes all currently designa- :
ted Dakota Gas Pools, Graneros Gas Pools and :
Graneros-Dakota Gas Pools with exception of :
the Barker Creek-Dakota Gas Pool and the Ute :
Domc Gas Pool.

BEFORE: Mr. A. L. Porter
Mr. Murray Morgan

TRANSCRIPT OF PROCEEDINGS

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MR. PORTER: Is there objection to the counsel's motion?

MR. COOLEY: Mr. Howell, I take it that you expect only one order to be written as a result of the two cases?

MR. HOWELL: I would.

MR. PORTER: Without objection, the motion will be granted.

MR. HOWELL: Now, there have been other developments since we have been at this hearing. At the last hearing it appeared that an operator represented -- I think Mr. Brown is representing himself and Mr. Weaver, who have some wells in the Angels Peak-Dakota Pool, which have been developed on a 160-acre spacing, wished to have some additional time for testing, and after consultation with them, we feel that in the interest of expediting action for the rest of the basin and narrowing any controversy that we may have with each other to that one area, that we move now and ask for permission to withdraw and exclude the Angels Peak-Dakota Pool from the consolidated cases.

MR. PORTER: You are making a motion to amend your application to that effect?

MR. HOWELL: I so move.

MR. PORTER: Is there objection to the counsel's motion for amendment of the application?

MR. WHITING: Kenneth R. Whiting, attorney for Sunset International Petroleum Corporation. I would just like to make it clear if the withdrawal of the Angels Peak Pool from the effect of the order would only affect the Angels Peak Pool as it now exists, is that correct, Mr. Howell?

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MR. HOWELL: That is my intention, and I might ask that when the nomenclature case which involves an extension to the present Angels Peak Pool is offered, I am going to ask for that portion of the nomenclature case to be extended and continued. That would give an opportunity for further study. And I may state that we probably, as a result of the study, will file an application for 320-acre spacing for the Angels Peak-Dakota Pool, and have a hearing in which the issues are limited to that relatively small area, and we think probably a better decision can be made and better evidence obtained where there is controversy about the matter.

MR. WHITING: That area would be limited to the Pool as it now exists and we would defer the petition today by the Commission to expand the Angels Peak Pool.

MR. HOWELL: I would ask the Commission to do that. Of course, I can't speak for what the Commission would do.

MR. PORTER: Any further discussion on counsel's motion for amendment to the application? The motion will be granted.

At this time I would like for all who would like to have appearances in this case or intend to make appearances, will you please identify yourselves?

MR. HOWELL: El Paso Natural Gas Company is represented in this case by Oliver Seth, Garrett Whitworth and Ren R. Howell.

MR. KELLAHIN: Jason Kellahin of Kellahin & Fox, Santa Fe, representing Phillips Petroleum Company.

MR. BUELL: Guy Buell for Pan American Petroleum Cor-

poration.

MR. WHITING: Kenneth R. Whiting for Sunset International Petroleum Corporation.

MR. CHRISTIE: R. S. Christie, Amerada Petroleum.

MR. BRATTON: Howard Bratton, Hervey, Dowe & Hinkle, Roswell, appearing for Humble Oil and Refining Company.

MR. PORTER: Anyone else that desires to make an appearance in the case?

Mr. Howell, will you proceed with your testimony at this time, please, sir?

MR. HOWELL: Our witness, who was on the stand the last time, I believe, was sworn, but possibly it should be well to have the witnesses re-sworn since there is a new case.

MR. PORTER: One of the witnesses was not sworn the last time, so suppose we have all of them sworn at this time.

MR. HOWELL: Fine, fine, Mr. Porter.

(Witnesses sworn)

MR. HOWELL: Will Mr. Loleit take the stand.

ALLAN LOLEIT,

called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. HOWELL:

Q Will you state your name for the record?

A Allan Loleit.

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Q Mr. Loleit, you are the same Allan Loleit who testified in Case 1508 a month ago at the last hearing?

A Yes, sir.

Q And the exhibits which have been placed on the board here are the exhibits which were introduced by El Paso Natural Gas Company at the last hearing?

A Yes, sir.

Q Perhaps it might expedite matters if you would state very briefly what each exhibit consists of and if there have been any changes in the conditions or any additional information which you have obtained since the last hearing, and ask that you then state to the Commission what those changes have been.

A Exhibit No. 1 is this map here of the portion of San Juan basin. It shows all Dakota wells as of September 29th of this year. Blue indicates a well that has penetrated the Dakota, but is not producing from the Dakota. Red indicates a well that is producing gas from the Dakota. Black indicates a well that is producing oil from the Dakota. And half red and half black indicates oil and gas from the Dakota. Those lines across the map there with the numbers on it indicate cross sections which are Exhibits 3, 4, 5, 6 and 7; on this board there, and they more or less prove the existence of the Dakota throughout the basin. On the cross sections, the test tract, when it is filled in solid with red, indicates that gas is being produced from that zone. And the black indicates that there is oil producing from that zone.

Q Now, have there been any changes that you have discovered that should be made as to any of these exhibits since the last hearing?

A Yes. On one cross section Magnolia Ingwerson, which I previously listed as a dry hole, is still producing oil and water and gas. That's on cross section No. 2. And also on cross section No. 3, on the extreme left of the section Southern Union Culpepper Martin No. 2 is now Aztec's Culpepper Martin No. 2, and that has produced gas from the Dakota at one time, but it is plugged back and producing from the Mesaverde at present.

Q I think in your testimony a moment ago, you stated that the Exhibit No. 1 showed all wells completed to September 29, which is after the last hearing.

A Pardon me.

Q Are you in error as to that date?

A The date is wrong, yes.

Q What should the date -- to what date does the Exhibit show the wells?

A Those show to September 29th of this year; the last hearing was the 17th, I believe.

Q And there were no wells completed between the 17th and the 29th?

A Yes, there were some completed, and I added a few wells to that Exhibit.

Q I see.

MR. PORTER: In other words, the map has been brought up to date, to September 29th, showing all completions?

A Yes, sir.

Q (By Mr. Howell) But has there been any significant change that would change the conclusions which you reached in your testimony at the last hearing?

A No, sir.

Q Now, before cross examination, I would like to recall your testimony under cross examination, I believe, by Mr. Hutter. In discussing the comparison between the characteristics of the Dakota formation with the Mesa Verde formation or the Pictured Cliffs formation, and in reading the testimony, it is not clear to me just what your opinion is. Will you please state to the Commission what your opinion is with reference to the comparison of characteristics of the Dakota formation, first with the Mesa Verde and then with the Pictured Cliffs?

A Well, the Mesa Verde formation itself, I believe the production aeriaily will be as widespread or more so than with the Mesa Verde.

Q That is the Dakota --

A The Dakota will be, yes. And the Pictured Cliffs formation has areas of spotty permeability which I don't -- with evidence up to this time, I can't see that carries through with the Dakota.

Q Have you found in your study of the Dakota formation any evidence of corridors of low permeability which separate trends

as there appear to be corridors of low permeability separating trends in the Pictured Cliffs formation and resulting in the designation of different Pictured Cliffs Pools?

A In the Dakota I found no such trends.

Q Now, have you collected, since the date of the last hearing, any data relating to the wells which you have shown on your cross sections and compiled it in the form of a schedule?

A Yes, sir.

MR. HOWELL: Would you mark that as El Paso's Exhibit No. 8.

What have you shown as to each well that is covered by the cross sections on El Paso's Exhibit No. 8?

A On these cross sections I have the name of the well, the location, the date of the completion, the top of the Graneros, the total depth, the potential, the producing interval, how the well was stipulated and what drill stem tests were run in the Dakota.

Q Would you like to summarize your conclusions and reasons for your recommendations as to the vertical limits which should be established in this hearing? I might state that possibly, for convenience, we may refer to the producing gas sands lying below the base of the Greenhorn and above the upper producing portion of the Morrison as the Dakota reservoir. Now, what would you include within the Dakota reservoir to be subject to the spacing order which the Commission has been asked to issue?

A That includes the Dakota sand, the Dakota formation and

the upper part of the Morrison.

Q Have you found the gas produced from each of these sources to be comparable in quality and pressure?

A I believe they are.

Q And what is the extent, generally, of the separation that you found to exist between these separate sources?

A In the Graneros sand, between that and perhaps the top of the Dakota, there is sometimes an interval of maybe ten, twenty, thirty feet of shale, and then between the lower Dakota and the upper Morrison, it is indefinite where you can definitely pick a top.

Q Have you found any evidence of communication in places between the Graneros and the Dakota, or do you think there is communication in places?

A I think there very well could be communication between the Dakota sand and Graneros sand.

Q Now, is the Graneros sand a blanket-in sand condition underlying the same area as the Dakota?

A It is a blanket sand except for several areas where the Graneros sand is not present.

Q So that it does exist with the Dakota in some areas and not in others?

A Yes, sir.

Q And is it a gas producing sand in all the places where it exists?

A Toward the deepest part of the basin, I believe it is all gas producing except in the Graneros Otero Field it is oil, producing oil and gas.

Q Produces both oil and gas. Any portions of what you would call the Graneros formation that are non-productive, is any part of it shale rather than sand formation?

A Yes, it's shale.

Q And is that situation one that is spotty over the Field?

A No. The Graneros sands, where it is present, covers considerable areas.

Q And then about what is the interval of separation between the Graneros sands and the Dakota in those places?

A Anywhere from perhaps a few feet to maybe twenty, thirty feet.

Q Now, approximately what vertical limits in feet would be covered by your recommended definition of the vertical limits for this Dakota reservoir?

A I'd include at least four hundred feet from the base of the Greenhorn down.

Q Briefly, about what is the interval between the top and the base of the Mesa Verde formation in the basin?

A About eight hundred feet.

Q And does the Mesa Verde formation have several producing gas producing members in it?

A Yes, sir.

Q Is one of the topmost members, the Cliff House, gas producing?

A Yes, sir.

Q And the lowest member, the Point Lookout, gas producing --

A Yes, sir.

Q -- or one of the lowest, let's say?

A Yes.

Q So, is the situation which exists in the Mesaverde formation comparable to that which exists in this Dakota reservoir?

A Yes, sir.

MR. HOWELL: That's all.

MR. PORTER: Anyone have a question of the witness at this time? Any questions of Mr. Loleit?

Mr. Howell, are there any exhibits that you wanted to enter at this time?

MR. HOWELL: If they have finished with his testimony, I would like to offer our Exhibit No. 8.

MR. PORTER: Without objection, El Paso's Exhibit No. 8 will be admitted into the record.

MR. KELLAHIN: I have a question here in just a moment.

MR. PORTER: Mr. Kellahin.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Your definition of the vertical limits, am I correct in my understanding your recommendation, is the base of the Green-

horn through the undifferentiated Morrison formation, productive upper portion of the Morrison and no further than that?

A Well, it depends on how far -- well, let me say it is awfully hard to pick the top of the Morrison, and you might have some sand, maybe twenty, thirty, forty feet thick in the top of the Morrison, if our peaks are correct, but below that you will find perhaps the brushy basin shale, maybe some minor sand strands, and there is no production as far as I know, or no shows of gas from the brushy basin, so it would be the sand units above the brushy basin which are hard to differentiate between the Dakota.

Q In other words, you would not then necessarily include the first producing interval encountered in a Morrison well?

A No.

Q In your examination, did you find any evidence of vertical impermeability between the formations which you have discussed, that is, as between the Graneros and the Dakota, or between the Dakota and the Morrison?

A Vertical impermeability?

Q No, horizontal impermeability. I stated that wrong.

A There is probably some. I don't recall of any offhand.

MR. KELLARIN: Thank you.

QUESTIONS BY MR. COOLEY:

Q Mr. Lolait, I am still somewhat confused as to how you would identify the vertical limits of the producing interval about which you are testifying here. If you were to have to identify it

from an area, I take it from your testimony that the top would be picked as the base of the Greenhorn, is that correct?

A Yes, sir.

Q Now, tell me how you pick the bottom of this producing interval.

A Well, the Graneros interval, the shale, including the sand, sometimes vary between fifty and a hundred feet, sometimes it might be less than that, than the average thickness of the Dakota, from the outcrop studies, I think the maximum we found was about 225 feet, so that brings us to almost up to 375 feet total thickness, then I allowed a little more for sand that might be below the Dakota that might be lower Cretaceous or Morrison.

Q You still haven't told me exactly how you would pinpoint this in defining the vertical limits of this area which is to be spaced. That's the problem that I am confronted with. Do you pick it from a formation, or do you pick it from a footage measurement from the base of the Greenhorn?

A On the average, the way I stated previously, it would probably be on a footage basis, but picking the top of your Morrison sometimes is a problem. What we usually do, we first drill through about 200 some odd feet of Dakota, the first conglomeration or first shale you meet, we would consider that the upper Morrison and then stop.

Q Mr. Loleit, you still haven't pinpointed the base of the horizon or producing interval which you intend to space that you

are applying for spacing in this hearing, and before we can proceed I think it is necessary that you define the limits, the vertical limits of the interval which you propose to space. Now, there's got to be some way of determining what we are dealing with here.

A Yes.

Q You define the top of it as being the marker, or the base of the Greenhorn. Now, do you propose to define the base of this producing interval as possibly four hundred feet below the base of the Greenhorn, or do you intend to pick a formation as the bottom of this thing?

A Well, in areas it would vary. It probably would be less than four hundred feet.

MR. HOWELL: May I interrupt --

MR. COOLEY: Please do.

MR. HOWELL: -- with a question that might clarify it? Mr. Loleit, would it be possible to define the bottom as being a hundred feet into the Morrison formation, would that cover all producing gas sands that should be covered in this reservoir?

A I believe it would.

Q (By Mr. Cooley) Mr. Loleit, can you pick the top of the Morrison?

A Well, that's pretty hard.

Q You can't get a hundred feet below it?

A Let me say something. Your top of the Morrison would either be, possibly be a conglomerated or virgated shale, usually

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a green shale in this area, and I don't recall offhand of any virgated shale in the Dakota. They have some black shales in there.

Q Let's put it this way. If this interval which you propose to space were defined as that interval lying between the base of the Greenhorn and four hundred feet below the base of the Greenhorn, would you include anything in this interval which you desire here to exclude?

A No.

Q Would you include everything that you desire here to include?

A Yes.

MR. COOLEY: No further questions.

MR. PORTER: Anyone else have a question of the witness? No further questions, the witness may be excused.

(Witness excused)

MR. PORTER: At this time the hearing will recess until one-thirty.

(Recess)

MR. PORTER: The hearing will come to order, please. Mr. Howell.

MR. HOWELL: If the Commission please, at the last hearing some of the staff suggested that we produce testimony showing the area in which the ownership above the base of the Mesaverde was different than the ownership below the base of the Mesaverde. The next witness will testify as to that matter. With that intro-

duction, I will call Darryl Canfield.

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DARRYL CANFIELD,
called as a witness, having been first duly sworn on oath, testified
as follows:

DIRECT EXAMINATION

BY MR. HOWELL:

Q Mr. Canfield, please state your name for the record.
A Darryl Canfield.

Q And what position do you occupy with El Paso Natural
Gas Company?

A Division landman in Farmington, New Mexico.

Q As such, do you have records showing the ownership of
lands in the San Juan Basin in San Juan and Rio Arriba Counties,
New Mexico?

A Yes.

Q Have you prepared a map reflecting certain features of
ownership?

A Yes.

Q Will you mark that as El Paso's Exhibit No. 9, and state
to the Commission what that map shows?

A Yes. The acreage shown in blue on the map is acreage
in which the Dakota and Mesaverde ownership and the working inter-
est is owned by different parties. The acreage shown in yellow is
acreage where the ownership in the Dakota and Mesaverde are basi-
cally the same, there being a difference in some acreage. There

is a second party that has a right to drill and explore in the Dakota, but should a gas well be completed, it can be turned over to the owner of the Mesaverde for operation.

Q Now, what does the area in white reflect?

A The area in white is where we did not have information available or did not obtain that information.

Q Well, does that map correctly reflect the information which has been accumulated in El Paso's Farmington office in the Land Department regarding the ownership?

A Yes.

MR. HOWELL: We offer Exhibit No. 9 in evidence.

MR. PORTER: Without objection, El Paso's Exhibit No. 9 will be admitted.

MR. HOWELL: That's all the questions I have.

MR. PORTER: Any questions of the witness? The witness may be excused.

(Witness excused)

F. NORMAN WOODRUFF,

called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. HOWELL:

Q Will you state your name for the record?

A F. Norman Woodruff.

Q What position do you hold with El Paso Natural Gas Company?

A I am the company's manager of gas proration operations.

Q What experience have you had with reference to reservoir engineering?

A I am a graduate petroleum engineer. Prior to assuming my present position with the company, I worked in the company's geological and reservoir engineering section doing reservoir engineering work, and I have testified before this Commission as a reservoir engineer on the San Juan basin on numerous previous occasions.

Q In connection with your testimony today, have you had available and used the information which the company has in its reservoir engineering department?

A Yes, sir, I have.

Q Well, now, will you please state briefly the type of data which you have studied and the records which you have studied in preparing to testify in this hearing?

A I have reviewed the core analysis, certain electric logs, the drilling completion, testing and production history of the wells.

Q Now, of how many wells?

A Of forty-one wells.

Q Have you had core analysis of all of those?

A No, on twelve wells.

Q Now, is there any other information that you have used?

A I believe not.

Q Will you please state your conclusions and opinions to the area that each refers to, as the Dakota gas reservoir which we've suggested would have vertical limits, the top of which would be the base of the Greenhorn limestone, and the bottom of which would be the producing portion of the Morrison formation, which the record shows, I think would include the Graneros and the Dakota sands, and possibly some portion of the Morrison?

A I agreed that that is an appropriate definition of a Dakota reservoir.

Q Now, will you state what characteristics the Dakota reservoir in San Juan County and Rio Arriba County, New Mexico has?

A From the twelve core analyses available, we had determined that the average porosity of the Dakota formation is 7.2 percent, the average interstitial water 30.6 percent. Utilizing the cores and electric logs on forty-one wells, we've been able to determine that the average thickness is forty feet, and from the --

Q Now, average thickness, you mean -- what do you mean by average thickness?

A It is the average thickness that we pick for net effective pay.

Q Forty feet of net effective pay will be found in the Dakota reservoir?

A That is what has been found to exist within the forty-one wells presently drilled.

Q That is the average?

A That is correct. I might mention that some of these wells don't go through the Dakota; the majority don't, as we pointed out here today. Some of them just go into the upper portion, and we have taken the position that was open in the particular well bores and taken the effective net pay for that portion.

Q Now, have you also had occasion to make studies and have data available concerning the Mesa Verde formation and the wells completed in the Mesa Verde formation?

A Yes, sir, I have.

Q Just state briefly what that is.

A In comparison to the 7.2 porosity for the Dakota, the Mesa Verde averages 9.1 percent. The Mesa Verde has 28.6 percent interstructural water content as compared to the Dakota's 30.6. The average thickness and net effective pay in the Mesa Verde is fifty-one feet as compared to the Dakota's forty feet.

Q Now, upon what data is that average figure obtained?

A From the same type of data utilized in our determination of the averages for the Dakota.

Q And averages how many wells?

A The major portion of the wells in the basin.

Q That have been drilled into the Mesa Verde formation?

A That's correct. We had available forty-three core analyses.

Q For Mesa Verde wells?

A For Mesa Verde wells.

Q Now, what is the pressure, relative pressure as between the Dakota and Mesa Verde formation?

A The average original shut-in pressure for the forty-one wells on which I had data was 2,877 PSIA. The average pressure of Mesa Verde wells has been determined to be 1,364 PSIA.

Q Now, what other characteristics of either reservoir would you care to comment on?

A We've also attempted to analyze both the reservoirs to determine what average permeability characteristics were exhibited and reported on the core analysis. I found a great variety in both reservoirs. The Dakota weighted average permeability was 4.12 millidarcys. The Mesa Verde weighted average permeability was 4.38 millidarcys.

Q Now, in your study, did you give any attention to determine the extent, if any, of fracturing in the Dakota sands?

A Yes, sir. We analyzed the core analysis to determine whether fractures were reported or whether fractures might be apparent because of the abnormal permeability characteristics. And we found that in five of the wells, vertical fractures were definitely reported, and that in all except two of the wells, there was an indication of probable fracturing. I also took this data in an effort to determine whether this condition existed fairly well from the base of the Greenhorn to the maximum depth cord which is approximately 260 feet below the base of the Greenhorn, and we find

that fractures do exist or probably exist over the entire interval.

Q Now, what effect does the existence of fractures and similar conditions in the aforementioned have with reference to the area which one well will economically and efficiently drain?

A It enables the well to more easily drain its reserve and probably drain a greater area than had the fractures not been present. And I might add that vertical fractures also tend to interconnect stringers which may not otherwise be interconnected through drilling, except through drilling.

Q Did you make any estimate as to the reserves per acre in the Dakota formation in the areas which have been found to be productive of gas?

A Yes, sir, I did so.

Q Will you state to the Commission what you found and the comparison of these estimates with those of the Mesa Verde?

A Yes, sir, I will. Utilizing the reservoir characteristics that I have previously described, the average reserve recoverable, reserve for a 320-acre Dakota well, would be four billion, one hundred twenty-eight million cubic feet. Utilizing the data that I have previously expressed for the Mesa Verde, the recoverable reserves on a 320-acre tract are three billion, eight hundred seventy-two million cubic feet. So that the recoverable reserves are very similar on a 320-acre with the Dakota being somewhat in excess of the Mesa Verde.

Q Incidentally, those last reserve figures, are those the ones

that have been used before the Federal Power Commission in hearings?

A Yes, sir, the resultant per acre foot are those ~~same ones~~ used in Federal Power Commission hearings.

Q The studies which you have conducted have led you to conclusions, I am sure, as to the comparison of the Mesa Verde with the Dakota reservoir in its producing characteristics, particularly with reference to the ability of a well to produce the reserves in the same length of time. Will you please comment to the Commission what you found and what your opinion is on that subject?

A Yes, sir, I will, and I believe it might be well to give the Commission some data that we had determined on delivery characteristics of wells. We have analyzed and averaged the initial potential flows of twenty-six Dakota wells for which data was available, and found that the initial potential flow is four million, two hundred seventy-three thousand cubic feet per well. We find that the average State deliverability is available for seventeen of those wells and that they -- and that the deliverability was 19.3 percent of the initial potential flow or an average of eight hundred twenty-five MCF State "D." I also determined that information for the Mesa Verde; found that the average Mesa Verde initial potential flow was three million, nine hundred fifty thousand cubic feet, that the average State deliverability was 18 percent, or approximately seven hundred and twelve MCF. The Mesa Verde's seven hundred twelve compares with the eight hundred twenty-five for the Dakota. The State deliverabilities reflect the formation's ability to deliver

gas into the well bore, and it would appear that under the same conditions of drawdown, that the Dakota formation is as able or more able to deliver its reserve into the well bore than the Mesa Verde. I further analyzed the deliverable capacity of the Dakota and Mesa-verde against five hundred pound line pressure, and found that the Dakota could deliver an average of 25.7 percent of its initial potential flow against five hundred pounds, and that that average deliverable capacity would be one million, one hundred thousand cubic feet per day. The ^{MV}~~Dakota~~ formation is able to produce approximately 19 percent of its initial potential flow against five hundred pounds. That would equal seven hundred and fifty MCF per day. That seven fifty compares with the eleven hundred MCF deliverable capacity for Dakota wells, so that under initial conditions the Dakota formation is capable of producing approximately 46 percent more than the -- against five hundred pounds than the Mesa Verde reservoir. Here again I have utilized all wells on which data is available. That includes poor ones and good ones on the Dakota. Some of them were comparatively poor wells. It is conceivable that with better completion methods in the future there will be better relationships than is exhibited here today.

Q From your studies, have you reached a conclusion as to the comparative ability of a Dakota well to drain an area surrounding the well bore, compared to a Mesaverde well?

A Yes, sir, I have.

Q And what is that conclusion?

A I have reached the conclusion that the Dakota well can more easily drain the area surrounding the well bore than could a Mesa Verde well.

Q And you have based that upon the studies and data that you have recounted here to the Commission?

A That is correct.

Q Now, at the time that 320-acre spacing was established in the Mesa Verde, I believe that we had probably even less information than we have today about the Dakota, is that correct?

A Yes, sir. I believe that to be correct.

Q Now, what, in your opinion, is the effect of the 320-acre rule as applicable to the Mesa Verde? That is, have you found any evidence that shows that Mesa Verde wells are actually capable of efficiently and economically draining an area of 320 acres?

A I consider that the Mesa Verde has exhibited the ability to efficiently and economically drain 320 acres. We have definitely been able to determine that there has been communication over areas in excess of that, that is exhibited by the pressures shown by wells in-field in areas where the majority of the acreage has been developed and has been produced for a period of time, we find that the pressures are lower in those areas and apparently have been drained.

Q That is in situations in which some drilling has taken place and wells are produced and then the later wells that are drilled upon completion find a lower reservoir pressure than existed

at the time of the first wells?

A Yes, sir, that's correct.

Q And from that you conclude that there has been drainage of those areas?

A That is correct.

Q So that the Mesa Verde wells have demonstrated generally their ability to drain at least 320 acres?

A I consider that they have.

Q Now, what is your opinion as to the ability of a well completed in the Dakota formation to efficiently and economically drain an area of 320 acres?

A Based on my studies, I believe that the well on 320 acres in the Dakota formation can more easily drain 320 acres than could a Mesa Verde well. Consequently, I feel confident that one well on 320 will efficiently and economically drain that size tract.

Q What, in rather general terms, is the difference in cost between the drilling and completion of a well in the Mesa Verde formation and one in the Dakota reservoir?

A Assuming that no unusual difficulties are encountered, a well in the Dakota reservoir will normally cost about \$135,000, and a well in the Mesa Verde reservoir will normally cost about \$85,000, or a difference of about \$50,000.

Q I believe you have already testified that per acre reserves, according to your estimate, are substantially the same as between the Dakota reservoir and the Mesa Verde?

A That is correct.

Q Now, what is your opinion as to the relative rate of development of the area and of reserves as a result of the order that we're asking for and continuation of the present statewide rule of 160 acres. In other words, which rule, the 320-acre spacing or 160-acre spacing will be most likely to result in reasonable development and proving of additional reserves in the Dakota formation?

A We may anticipate a more or less set number of wells to be drilled each year.

Q Why is that?

A Because normally a company budgets itself to just some wells. Now, if you are going to drill that many wells and space them on 160 acres rather than 320, you would prove about half as much acreage as you would otherwise prove, or as you would prove by drilling the 320. Actually, facilities are built and markets are fulfilled based on a determination of recoverable reserves. The sooner you can prove what you have, the sooner you can build the facilities and the sooner you can start taking the gas out, and it is important from that standpoint to prove your area as quickly as possible.

Q Insofar as an interstate pipeline subject to Federal Power jurisdiction is concerned, it is necessary to first establish reserves before you can get the certificate to move the gas, is that correct?

A That is correct.

Q What, in your opinion, would the adoption of a 320-acre spacing rule result in as compared with 160?

A Well, first, to prove up the Dakota reservoir reserves much more quickly, and secondly, I think that the drilling on 320 acres rather than 160 acres will prevent the drilling of unnecessary and probably uneconomic wells.

Q Will it be an inducement to the operator to go ahead with Dakota development?

A On 320 acres?

Q Yes.

A I certainly consider that it would.

Q How would you classify the present stage of the development in the Dakota reservoir and the depletion of that reservoir?

A I consider they are in initial stage of development and depletion.

Q Has there been any opportunity to conduct any actual interference tests as between wells completed in the Dakota reservoir that you know of?

A No, sir.

Q Does the Dakota reservoir, in your opinion, extend across the state line into Colorado?

A Yes, sir, I consider that it does.

Q Do you know what the spacing is for the, what we have termed the Dakota reservoir which I believe is called in Colorado the Dakota-Morrison?

A May I say first that my answer to the last question is that I consider that the reservoir does, I think that the reservoir does extend, and is shown to extend by the geologic data that we have shown here today, and at the previous hearing last month, and in the Colorado portion of the Dakota reservoir, spacing has been established for 640 acres per well.

Q Have you any other points, comparisons that you would like to make, comments with reference to this Dakota reservoir?

A I believe not.

Q Have you prepared any suggestive rules for spacing in the Dakota reservoir?

A Yes, sir, I have.

MR. HOWELL: I guess we will mark this as El Paso's Exhibit No. 10.

Will you state very briefly the rules that you have suggested and why you have suggested these rules for spacing in the Dakota reservoir?

A The spacing rules shown are essentially the same rules as have been adopted for the Mesaverde. Rule 1 varies from the identical Mesaverde rule in that it permits the well to be drilled within any quarter section within the section. Now, we have recommended that this flexibility be granted the operators drilling Dakota wells in order that they may take full advantage of the possibilities of dually completing Dakota wells with other wells that are to be drilled or are to be worked over on the same acreage. We

think that we'll have more Dakota wells drilled if we can be assured of dual completions. And I think the nature of the Dakota reservoir is such as to, unrecoverable reserves are such as to necessitate or to at least make desirable the additional incentive.

Q You have -- by this rule, you have suggested that the operator be permitted to take to the Dakota a well in any quarter section of this section?

A That is correct.

Q Allocating to it a half of the section?

A That is correct.

Q And that would then permit either the reworking of an existing Mesa Verde well or if there was another shallower formation, Pictured Cliffs, or some other formation, it might permit the dualing of the Dakota, is that correct?

A That is correct. It may be that on a quarter section you have a Mesa Verda dualled with a Pictured Cliffs, and you could also dual the Dakota, the well bore very well.

Q You can then go into the other quarter section and drill a dual, a Pictured Cliffs, and Dakota?

A That's correct.

Q And by giving this flexibility, operators would be encouraged to test the Dakota because the test can be made more economically?

A That is correct.

MR. HOWELL: We would like to offer Exhibit No. 10.

MR. PORTER: Without objection, El Paso's Exhibit No. 10 will be received.

MR. HOWELL: I think that's all of our questions.

MR. PORTER: Anyone have a question of Mr. Woodruff?

CROSS EXAMINATION

BY MR. COOLEY:

Q Mr. Woodruff, regarding this proposed latitude, as you call it, in permitting the operator to drill in any quarter section rather than fixing them to a pattern as they have been in the Mesa Verde would tend to some degree to reduce the efficiency of drainage in the reservoir, wouldn't it, any time you vary from the pattern?

A I don't believe that it would have a significant variation in the efficiency of drainage in the Dakota reservoir.

Q If you have an ideal situation, though, disregarding the economics of the matter for the moment, where you could develop a reservoir on a set pattern as opposed to an erratic pattern, wouldn't you expect some degree of efficiency, greater degree?

A I believe that would be a reasonable conclusion. I don't consider that it would be significant in this instant.

Q Now, as I understand it, the primary reason for your requested latitude in this regard is to permit the dual completion of wells in the area?

A That is correct.

Q In the event that 320-acre spacing were adopted, do you

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think it would be extremely offensive or burdensome if a spacing pattern or well pattern similar to that of the Mesaverde were adopted with provision to administratively permit dual completion such as, or as you have suggested, dual completion on an off quarter so that the Pictured Cliffs and the Dakota might be dually completed?

A I think it would be overburdensome and an unnecessary requirement to set up the spacing, say identical to the Mesaverde and require exceptions where you go elsewhere. You often don't know, when you are drilling a new well, whether you are going to be able to dually complete it or not. I don't know what prerequisite of standards the Commission would set, but I do know that you can always obtain prior to drilling, I believe the latitude is reasonable as requested.

Q In the event the Commission determines that the set spacing pattern, such as that in the Mesaverde, be adopted; that 320-acre spacing would not be feasible in the Dakota, assuming that set of facts, then would it be El Paso's preference to have 320 with fixed location, or 160?

A It would be our preference to have fixed spacing on 320 acres.

MR. COOLEY: That is all.

MR. PORTER: Anyone else have a question of Mr. Woodruff?

QUESTIONS BY MR. FISCHER:

Q Mr. Woodruff, when you are speaking of vertical fractures, horizontal fractures, do you think there is a greater degree of horizontal fracturing than there is vertical fracturing?

A The only fractures that have been defined other than fractures are vertical fractures on the core analysis that have been reported, so I cannot positively say whether there also may have been horizontal fractures.

Q Did you notice any actual evidence of vertical fractures in any of the impermeable stringers in the vertical limits that we are talking about?

A Yes.

MR. FISCHER: Thank you.

MR. PORTER: Any further questions?

QUESTIONS BY MR. UTZ:

Q Mr. Woodruff, referring to Rule 3, of your Exhibit No. 4, again back to the vertical limits, in view of the testimony of the previous witness in this case, would it still be your recommendation to leave Rule 3 as printed on this exhibit or put it between the base of the Greenhorn?

A I believe, in view of his testimony, it would be better to tag it as four hundred feet below the base of the Greenhorn. There is just some question as to what all that will include, but I think as we gain experience we can judge at that time whether that four hundred feet needed to be changed and make any changes as necessary when that is determined.

MR. UTZ: That's all I have.

MR. PORTER: Anyone else have a question of the witness?

Mr. Kendricks.

QUESTIONS BY MR. KENDRICKS:

Q Mr. Woodruff, do you have any objections to a change in your Rule 2 which asks for notification of all offset operators in case of non-standard locations due to topographical conditions since it might reflect more the revised Rule 104, which requires notification of any operator closer than 790 feet to the well bore?

A I believe Rule 2 should be consistent with the provisions of Rule 104.

MR. KENDRICKS: Thank you.

MR. PORTER: Anyone else have a question?

QUESTIONS BY MR. CHRISTIE:

Q Mr. Woodruff, in your proposed Rule 2, do I understand this minimum 990 feet is from the outer boundaries of the quarter section or the inner boundary?

A It would be from any boundary of the quarter section.

MR. CHRISTIE: Thank you.

MR. PORTER: Any further questions of Mr. Woodruff? If no one else has a question, the witness may be excused.

(Witness excused)

MR. HOWELL: That completes our evidence.

MR. PORTER: Anyone else have testimony to present in the case? Any comments or statements to be made? Mr. Buell.

MR. BUELL: May it please the Commission, Guy Buell for Pan American Petroleum Corporation. Pan American urges the Commission grant the 320-acre units for the Dakota formation as requested by El Paso.

We are strongly supporting the adoption of 320-acre units, although our engineers believe, in fact, are confident that subsequent data will show that probably the more optimum unit is 640 acres. However, in our opinion, the most important thing at this time is to adopt 320-acre units so that we can at least minimize the drilling of unnecessary wells until we acquire subsequent data which will show 640-acre drainage. The Commission docket is always open, but we strongly support the 320-acre Dakota unit.

MR. PORTER: Anyone else have a statement in this case concerning the matter?

MR. BRATTON: I am Howard Bratton, Humble Oil and Refining Company. We strongly urge the adoption of El Paso's proposal of 320-acre spacing in the Dakota formation. We believe the evidence justifies the issuance of the order as requested.

MR. KELLAHIN: I am Jason Kellabin. Phillips Petroleum Company strongly urges the adoption of the 320-acre spacing for the Dakota formation under the proposed definition of the Dakota. In that connection I would like to make a brief observation on this testimony. While the witness frankly admits they have no interference tests, certainly the testimony offered is quite impressive in showing that this reservoir is at least as good and probably better as to drainage characteristics than the Mesa Verde. Until additional testimony or information is available, I think it would be a serious mistake to continue the development of this pool on 160-acres, and we strongly urge the adoption of this 320-acre rule.

MR. PORTER: Anyone else have anything to offer? Any comments, statements? Mr. Christie.

MR. CHRISTIE: I have a statement I would like to read in the record. I have some figures here that maybe you want me sworn to testify to, I don't know.

(Witness sworn)

R. S. CHRISTIE,
called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. GOOLEY:

Q Will the witness state his name and position, please?

A My name is R. S. Christie. Engineer for Amerada Petroleum Corporation, Tulsa, Oklahoma.

Q Mr. Christie, have you previously qualified before the New Mexico Oil Conservation Commission --

A Yes, sir, I have.

Q -- as an expert in the field of engineering?

A Yes, sir.

Q Proceed.

A Off the record.

(Discussion off the record)

A Amerada is not particularly in favor of El Paso's application in that we think the initial development, or at least the

initial stage of development of Dakota should be on 640-acres. We give that for these reasons: If a well will drain 640 acres and El Paso has not proved otherwise, then to develop on 320-acre spacing will result in unnecessary wells. We feel that if a well will drain only 320 acres, it is our opinion development on 320 acres would not on the average be a very profitable venture. We have estimated in one particular area where we have interest in the Dakota that the recovery will be 6.8 million cubic feet per acre. At the present rate of production, we estimate that these reserves will be produced in approximately eleven years. Our cost of the Dakota well is a little bit higher than El Paso's. We estimate an actual cost of the Dakota well is approximately \$150,000, and Dakota Mesa Verde dual completion \$184,000. If the reserves will be depleted in eleven years, then the present worth based on current price on a 640-acre unit is only \$174,000. Therefore, it is obvious if a second well is required on 640 acres, then the profit is only \$24,000. Of course, in addition to that, you have to pay out from dry holes. If it is necessary to drill on the Mesa Verde on 320 acres, savings of at least \$74,000 can be realized, if one single Mesa Verde well is drilled and one dual Dakota Mesa Verde well is drilled on the other 320 acres. This, then, would be a very substantial savings if large areas are involved, which this area is. Mr. Loleit testified in a previous hearing in this case that there have been fifty wells drilled in the Dakota basin, thirty of which have been dry. This means, of course, that one producer will pay out the cost of

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one and a half dry holes as well as his own costs. While it is unlikely that under a development program there would be an additional thirty dry holes out of fifty wells drilled, the success ratio will be low. This further points out the questionable economics of 320-acre spacing. I would like to recall here, too, that Mr. F. H. Lechiah's analysis on dry holes drilled in gas areas, the percentage or the ratio is now one to about 10.78 wells, which is a little bit higher than the rate for oil. If we understand Paragraph 5, under El Paso's application, in effect, they have indicated one well will drain 640 acres. This is apparent from Amerada's Exhibit No. 1 which I offer in evidence at this time. This brings out the question that Mr. Cooley asked Mr. Woodruff a while ago. Under their proposed rule, it would be possible to drill up your 320 acres under such a plan as this. It is evident from this exhibit that if wells were permitted under this spacing, that there would be a large area in between the locations that would not be drained, and I don't think El Paso would propose a plan such as this if they didn't think they were going to drain the whole entire area, so that to me, in effect, I think they are probably admitting that one well will drain greater than 320 acres. If you would locate the wells 660 feet from the center of the quarter sections and have a 640-acre unit, you would drain the 640 acres just as adequately as you would to space them as the proposed rules suggest. Actually, the difference between the drainage, radius of drainage of a 320-acre unit and 640-acre unit, assuming a radial drainage, is only an additional 840 feet

approximately, so we submit that if a well with the permeability of the Dakota will drain 320, then it will drain 640.

We object to the language in Paragraph 6, Mr. Howell, I'm not sure whether you now ask for what was in the original application. If the language means that any other gas pool in the same sands within San Juan and Rio Arriba Counties should be developed on 320-acre spacing, we have some areas that you have no development at all, and we think that those areas ought to stand on their own feet and not be tied to 320, that will not be necessary.

MR. PORTER: You are referring to Paragraph 5 of the application?

MR. CHRISTIE: Of the application, yes, sir.

MR. HOWELL: Paragraph 6?

MR. CHRISTIE: Yes, I am sorry.

MR. HOWELL: The language, I think, is the same in the amended application.

MR. GOOLEY: Mr. Christie, would you read the language to which you refer and state more particularly what your objection is?

MR. CHRISTIE: I am referring to this statement or this part in the first application, I'm not sure, "the establishment of drilling and spacing units as herein requested is necessary for the orderly development of the common source of supply in the designated Dakota gas pools and areas adjacent hereto and any other gas pool to the Dakota formation within the San Juan and Rio Arriba

Counties."

MR. COOLEY: Well, it is very clear, Mr. Christie, from the application that El Paso Natural Gas Company is, by this application, seeking 320-acre spacing in this horizon which has been designated as the Dakota producing interval wherever it may occur in San Juan or Rio Arriba Counties, with the exceptions of the four pools --

MR. HOWELL: Three.

MR. COOLEY: Three existing pools which have been expressly excluded from the application.

MR. CHRISTIE: Well, that's the way we interpret it, and it's our opinion that probably shouldn't include areas that are not now under development or haven't been developed. We may find entirely different conditions somewhere else in the county. For all these reasons, therefore, Amerada recommends 640-acre spacing with the well located 660 feet from the inner boundaries of the quarter sections. I think this would be a good time to remind the Commission that this is Oil Progress Week, and the majority of the companies are trying to make progress on this wider spacing, and I believe Amerada believes that the regulatory bodies of the various states would be of great assistance to the industry as a whole if they would at least start out with wider spacing and then, if necessary, to come down to the denser spacing.

MR. PAYNE: Mr. Christie, you are aware, are you not, that the application is for 320-acre spacing?

MR. CHRISTIE: Yes, sir.

MR. PAYNE: And that we could not grant 640 under this application even if we so desired, and that at any time your company could come in and file an application for 640-acre spacing.

MR. CHRISTIE: Yes, I realize that.

MR. PORTER: Does anyone have a question of Mr. Christie?

QUESTIONS BY MR. NUTTER:

Q Mr. Christie, you don't anticipate the same development or progress in the Dakota as on these forty wells?

A No, I believe I made that statement that we don't.

MR. PORTER: Anyone else have a question of Mr. Christie?

You may be --

MR. COOLEY: I still am not sure that I understand his position. In view of what Mr. Payne just told you that the Commission in this application has but two choices, to establish 320-acre spacings in these areas, or remain on the statewide 160-acre spacing, in view of this fact, you are still objecting to approval of the application? I understand your company feels that 640 is more proper, but are you actually objecting to the granting of this application?

A If the Commission feels that there is sufficient evidence to substantiate the 320, we certainly would be in favor of that over the 160.

MR. COOLEY: That's the only choice we have in this hearing.

MR. PORTER: Any further questions? The witness may be excused.

(Witness excused)

MR. PORTER: Anyone else have testimony to present in the case? Any statements to be made that we haven't already heard?

MR. PAYNE: The Commission has received notification to the effect that the following named companies adopt and join in El Paso's application. These companies are as follows: King-Lee Petroleum Company, Superior Oil Company, Brockhaven Oil Company, Daerem Corporation, Northeast Blaney Development Corporation, Delhi-Taylor Oil Corporation, Pubco Petroleum Corporation and Texas National Petroleum Company.

The following companies have concurred and recommend approval of El Paso's application: Kingwood Oil Company, Aztec Oil and Gas Company, Western Natural Gas Company, Empire States Drilling Corporation and Southern Union Gas Company as the application was amended by deleting the Barker Creek and Ute Dome Pools.

MR. PORTER: If there are no further statements in this case, we will take the case under advisement.

W C GILMORE—359 CORNER BLDG ALBUQUERQUE N MEX. YOU ARE HEREBY AUTHORIZED TO APPEAR ON BEHALF OF KUTZ CANON OIL & GAS COMPANY WHICH HOLDS EXCLUSIVE LEASEHOLD INTERESTS AND OPERATING RIGHTS IN THE ARIZEL PEAK KUTZ CANON PULCHER AREA SAN JUAN COUNTY NEW MEXICO AT THE HEARING OF THE NEW MEXICO OIL AND GAS CONSERVATION COMMISSION

W. C. Gilmore
359 Corner Bldg
Albuquerque, New Mexico
Phone CRope 3-009

45
TO BE HELD OCTOBER 15, 1958 ON THE QUESTION OF SPACING OF DAKOTA
WELLS IN THAT AREA STOP THE POSITION OF KUTZ CANON OIL & GAS COMPANY
AS TO THE SPACING OF DAKOTA WELLS IN THAT AREA IS THAT THE SPACING
SHOULD BE ONE WELL FOR EACH ONE HUNDRED SIXTY ACRES-

KUTZ CANON OIL & GAS CO J F SEATON PRESIDENT:

C E R T I F I C A T E

STATE OF NEW MEXICO)

: ss

COUNTY OF BERNALILLO)

I, J. A. TRUJILLO, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript by me and/or under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this, the 28th day of October 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
Notary Public

My Commission Expires:

October 5, 1960

Case 1508

THE SUPERIOR OIL COMPANY

P. O. BOX 3015, TERMINAL ANNEX
LOS ANGELES 54, CALIFORNIA

September 9, 1958

JOHN T. ISBERG
VICE PRESIDENT

Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

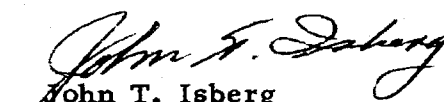
Gentlemen:

Enclosed is a copy of the application of El Paso Natural Gas Company before the Commission for an order establishing 320-acre drilling and spacing units for the Dakota formation in all Dakota gas pools situated in San Juan and Rio Arriba Counties, New Mexico.

The Superior Oil Company hereby adopts and joins in the application as undersigned.

Yours very truly,

THE SUPERIOR OIL COMPANY


John T. Isberg

JTI:cgt

cc-El Paso Natural Gas Company
El Paso, Texas

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
EL PASO NATURAL GAS COMPANY FOR AN)
ORDER OF THIS COMMISSION ESTABLISHING)
320-ACRE DRILLING AND SPACING UNITS)
FOR THE DAKOTA FORMATION IN ALL)
DAKOTA GAS POOLS SITUATED IN SAN JUAN)
AND RIO ARriba COUNTIES, NEW MEXICO,)
AND FOR THE PROMULGATION OF RULES)
AND REGULATIONS PERTAINING THERETO.)

MAIN OFFICE OCC

1958 SEP 11 AM 8:14

CASE NO. 1508

ORDER NO. _____

APPLICATION

Comes now El Paso Natural Gas Company, a Delaware corporation, authorized to do business in the State of New Mexico, Applicant herein, and respectfully alleges and states as follows:

1. Heretofore by the respective orders listed below, this Commission has designated the following fifteen Dakota gas pools located in San Juan and Rio Arriba Counties, New Mexico.

<u>Pools</u>	<u>Order No.</u>
(a) Angels Peak - Dakota	R-13
(b) Barker Creek - Dakota	R-13
(c) Blanco - Dakota	R-347
(d) South Blanco - Dakota	R-347
(e) West Blanco - Dakota	R-466
(f) East Companero	R-739
(g) Companero Dakota	R-347
(h) Huerfanito Dakota	R-624
(i) Huerfano - Dakota	R-347
(j) West Kutz - Dakota	R-347
(k) Largo - Dakota	R-739
(l) North Los Pinos - Dakota	R-624
(m) South Los Pinos - Dakota	R-624
(n) Ute Dome Dakota	R-13
(o) Otero Graneros - Dakota	R-1080

2. Applicant is the owner of oil and gas leases covering lands located within some of the said designated Dakota gas pools and of oil and gas leases in areas surrounding many

of such designated Dakota gas pools which, if productive in the Dakota formation, will be included in said gas pools.

3. A separate common source of supply of gas in the Dakota formation has been established by completion of wells drilled to the Dakota formation in the above designated Dakota gas pools.

4. A study of geological and engineering data now available pertaining to the said Dakota formation indicates that one well will efficiently and economically drain the recoverable gas in place in the Dakota formation underlying an area of not less than 320 acres. A drilling and spacing unit for gas wells drilled to the Dakota formation would properly be composed of one-half section according to U. S. Land Surveys, containing approximately 320 acres, in which unit all of the interest should be consolidated by pooling agreement or otherwise. No gas well should be drilled on such drilling unit on which another gas well has been completed or approved for completion in the Dakota formation.

5. Said 320-acre drilling and spacing units should consist of two contiguous governmental quarter sections within a single section as designated by the operators thereof, and the unit well should not be drilled closer than 990 feet from the boundary of either such governmental quarter section included in a unit; provided a tolerance of 200 feet be allowed, but all wells commenced prior to the date the Commission issues its order in this case and located on less than a 320-acre drilling and spacing unit and located closer than 990 feet to the boundary of a governmental quarter section should be recognized as exceptions to this order. The operator should be allowed to locate such unit well on any quarter section within such unit to permit maximum flexibility for the dual completion of such well with a shallower formation.

6. The establishment of drilling and spacing units as herein requested is necessary for the orderly development of the common source of supply in the designated Dakota gas pools and areas adjacent thereto and of any other gas pool to the Dakota formation within San Juan and Rio Arriba Counties, New Mexico that may hereafter be designated. This will protect the correlative rights of all parties affected, will prevent waste, will eliminate drilling unnecessary wells and will promote the recovery of gas from each of said pools in an efficient and economical manner.

7. In the interest of conservation and for the protection of correlative rights, this Commission should promulgate rules and regulations governing the drilling and spacing of wells to the Dakota formation.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing after due notice as prescribed by law, and, upon such notice and hearing, the Commission issue its order establishing 320-acre drilling and spacing units for said common source of supply in the manner described herein and that the Commission promulgate special rules and regulations with respect thereto.

Garrett C. Whitworth
Attorney for El Paso Natural Gas Company

The undersigned hereby adopt and join in the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

THE SUPERIOR OIL COMPANY

John F. Shurg
Vice President

David Hecht
ASST. SECY

EMPIRE STATES DRILLING CORPORATION

MAIN OFFICE 000

1020 SIMMS BUILDING

ALBUQUERQUE, NEW MEXICO

1038 SEP 11 AM 8:12

September 8, 1958

Re: Case 1508 to be heard
September 18

Oil Conservation Commission
Santa Fe
New Mexico

Gentlemen:

Please accept this letter as our concurrence and strong support of the request of El Paso Natural Gas Company to establish 320 acre drilling and spacing units for the Dakota formation gas pools in San Juan and Rio Arriba Counties.

Very truly yours,

EMPIRE STATES DRILLING CORP.


John P. Wiedemer

JPW/pg

*Copy
File*

MAIL ROOM
Western Natural Gas Company

1958 SEP 12 PM 1:05 MAIN STREET

Houston 2, Texas

W. K. DAVIS
VICE PRESIDENT
IN CHARGE OF
OPERATIONS

September 11, 1958

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

With reference to Case 1508 on the New Mexico Conservation Commission Docket for Hearing, September 17, 1958 concerning the application of El Paso Natural Gas Company for the establishment of 320 acre spacing in the Dakota Formation in San Juan and Rio Arriba Counties, New Mexico, please be advised that Western Natural Gas Company will be unable to have a representative present at this Hearing and would like to submit this letter for the record in the Hearing.

El Paso Natural Gas Company has furnished us with a copy of the application concerning Case 1508. Western Natural Gas Company has no objection to the establishment of 320 acre spacing units or even 640 acre spacing units in the Dakota Pools of San Juan and Rio Arriba Counties, New Mexico, and recommends that rules be established to govern these pools along the lines described by El Paso Natural Gas Company.

Yours very truly,

Paul C. Wright
Paul C. Wright

PCW:mm

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

December 11, 1958

C
O
P
Y

Ada Dearnley
Box 1092
Albuquerque, New Mexico

Dear Ada:

Received your letter requesting the transcript of consolidated cases 1508 and 1523. Since most of the geological data was presented at the first hearing under 1508, am sending you both transcripts. We had two calls yesterday regarding these cases and both parties talked like they wanted the transcripts too.

Sincerely,



DEARNLEY-MEIER & ASSOCIATES

605 SIMMS BUILDING
ALBUQUERQUE, NEW MEXICO

Ada Dearnley
Marianne Meier
Joseph A. Trujillo

Phone CHapel 3-6891



December 10, 1958

Bobbie Postlewaite
Oil Conservation Commission
P. O. /Box 871
Santa Fe, New Mexico

Dear Bobbie:

May we please borrow as soon as possible a copy of transcript
1508 and 1523 consolidated October hearing.

Thanking you in advance.

ADA

CONVENTIONS • COURT PROCEEDINGS • DEPOSITIONS • HEARINGS • STATEMENTS

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

W. P. MARSHALL, President

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

LA172 KC227

K OCC346 DL PD=OKLAHOMA CITY OKLA 16 422PMC=
A L PORTER JR=

SECRETARY DIRECTOR NEW MEXICO OIL CONSERVATION

COMMISSION SANTA FE NMEX=

KINGWOOD OIL COMPANY WISHES TO FILE THIS MESSAGE AS AN INDICATION OF ITS COMPLETE AGREEMENT WITH THE APPLICATION OF EL PASO NATURAL GAS COMPANY FOR 320-ACRE SPACING FOR DAKOTA GAS IN RIO ARRIBA AND SAN JUAN COUNTIES NEW MEXICO WHICH WE UNDERSTAND IS TO BE HEARD ON SEPTEMBER 17. KINGWOOD HAS ONLY RECENTLY ENTERED SAN JUAN COUNTY AND FOR THAT REASON AS WELL AS LACK OF EARLY NOTICE OF THE HEARING HAS NOT BEEN ABLE TO PREPARE EXHIBITS OR FURNISH

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

1938 SEP 16 PM 4 07
MAIN OFFICE OKC

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

W. P. MARSHALL, President

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

EXPERT TESTIMONY AT THE HEARING. HOWEVER, WE WISH TO ASSURE YOU OF OUR HEARTY CONCURRENCE WITH EL PASO NATURAL GAS IN ITS APPLICATION=

KINGWOOD OIL CO R P LAMMERTS VICE PRESIDENT=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

November 25, 1958

Mr. Ben Howell
El Paso Natural Gas Company
P.O. Box 1492
El Paso, Texas

Dear Mr. Howell:

We enclose two copies of Order R-1287 issued November 21, 1958, by the Oil Conservation Commission in Cases 1508 and 1523, which were heard on October 15th at Farmington.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

C
O
P
Y

Cofe

MAIN OFFICE
AZTEC OIL & GAS COMPANY
920 MERCANTILE SECURITIES BUILDING
DALLAS 1, TEXAS
SEP 9 PM 1:26

QUILMAN B. DAVIS
SECRETARY AND GENERAL ATTORNEY

September 8, 1958

AIR MAIL

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Attention Mr. Pete Porter, Secretary-Director

Re: El Paso Natural Gas Company
Case 1508 - 320-Acre Spacing
for Dakota Gas Pools

Gentlemen:

Aztec Oil & Gas Company has received a copy of El Paso Natural Gas Company's application in the subject case.

We concur in the application and respectfully request the Commission to grant the relief requested by El Paso Natural Gas Company.

Yours very truly,

S. P. Davis

QED:ML

cc - El Paso Natural Gas Company
Mr. Joe Salmon

DOCKET: REGULAR HEARING SEPTEMBER 17, 1958

Oil Conservation Commission 9 a.m. Mabry Hall, State Capitol, Santa Fe, NM.

- ALLOWABLE: (1) Consideration of the oil allowable for October, 1958.
- (2) Consideration of the allowable production of gas for October, 1958, from six prorated pools in Lea County, New Mexico; also consideration of the allowable production of gas from seven prorated pools in San Juan and Rio Arriba Counties, New Mexico, for October, 1958.

NEW CASES

CASE 1508: Application of El Paso Natural Gas Company for the establishment of 320-acre spacing units for the Dakota formation in San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks an order establishing 320-acre spacing units for all gas wells drilled to or completed in the Dakota formation in San Juan and Rio Arriba Counties, New Mexico, including the fifteen presently designated Dakota gas pools in said counties; and for the promulgation of special rules and regulations for said pools.

CASE 1509: Southeastern New Mexico nomenclature case calling for an order for the creation of new pools and extension of existing pools in Lea, Eddy and Roosevelt Counties, New Mexico.

- (a) Create a new oil pool for Blinebry production, designated as the Justis-Blinebry Pool, and described as:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 13: SE/4

- (b) Create a new oil pool for Montoya production, designated as the Justis-Montoya Pool, and described as:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 13: SW/4
Section 24: N/2

- (c) Create a new oil pool for San Andres production, designated as the Milnesand-San Andres Pool, and described as:

TOWNSHIP 8 SOUTH, RANGE 34 EAST, NMPM
Section 24: NW/4

- (d) Create a new oil pool for Glorieta production, designated as the Skaggs-Glorieta Pool, and described as:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM
Section 11: NE/4

- (e) Extend the vertical limits of the Bagley-Pennsylvanian Oil Pool to include the following area only:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
Section 34: SW/4 SE/4

and redefine the vertical limits of this area to be -4500 feet to -5200 feet subsea.

- (f) Extend the Crosby-Devonian Gas Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 33: SE/4

- (g) Extend the Eumont Gas Pool to include:

TOWNSHIP 21 SOUTH, RANGE 35 EAST, NMPM
Section 3: Lots 3, 4, 5, & 6

- (h) Extend the Grayburg-Jackson Pool to include:

TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM
Section 10: E/2 NW/4 & W/2 NE/4

- (i) Extend the Justis-Drinkard Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 24: SW/4

- (j) Extend the Justis-Fusselman Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 13: SW/4

- (k) Extend the Maljamar Pool to include:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM
Section 18: SE/4

- (l) Extend the East Millman-Queen Pool to include:

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM
Section 14: SW/4

- (m) Extend the Townsend-Wolfcamp Pool to include:

TOWNSHIP 16 SOUTH, RANGE 36 EAST, NMPM
Section 6: Lots 3, 4, 5, & 6

- (n) Extend the South Vacuum-Devonian Pool to include:

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 21: NE/4
Section 22: W/2

- (o) Extend the Vacuum-Yates Pool to include:

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 34: NE/4

CASE 1510: Northwestern New Mexico nomenclature case calling for an order for the extension of existing pools in Rio Arriba and San Juan Counties, New Mexico.

- (a) Extend the Aztec-Pictured Cliffs Pool to include:

TOWNSHIP 30 NORTH, RANGE 11 WEST, NMPM
Section 12: W/2 & SE/4

- (b) Extend the Blanco-Pictured Cliffs Pool to include:

TOWNSHIP 29 NORTH, RANGE 9 WEST, NMPM
Section 10: S/2 & NE/4
Section 11: All
Section 12: NW/4

- (c) Extend the Otero-Pictured Cliffs Pool to include:

TOWNSHIP 24 NORTH, RANGE 6 WEST, NMPM
Section 9: SE/4
Section 21: NE/4

- (d) Extend the South Blanco-Pictured Cliffs Pool to include:

TOWNSHIP 24 NORTH, RANGE 2 WEST, NMPM
Section 25: SE/4

TOWNSHIP 24 NORTH, RANGE 3 WEST, NMPM
Section 10: E/2
Section 11: All

TOWNSHIP 26 NORTH, RANGE 4 WEST, NMPM
Section 19: SW/4

TOWNSHIP 26 NORTH, RANGE 5 WEST, NMPM
Section 24: SE/4

TOWNSHIP 27 NORTH, RANGE 5 WEST, NMPM
Section 30: SW/4

TOWNSHIP 27 NORTH, RANGE 6 WEST, NMPM
Section 14: All
Section 15: All
Section 24: E/2
Section 25: E/2

- (e) Extend the Tapacito-Pictured Cliffs Pool to include:

TOWNSHIP 27 NORTH, RANGE 5 WEST, NMPM
Section 26: NE/4

- (f) Extend the Blanco-Mesaverde Pool to include:

TOWNSHIP 27 NORTH, RANGE 8 WEST, NMPM

Section 19: E/2

Section 33: E/2

- (g) Extend the East Companero-Dakota Pool to include:

TOWNSHIP 27 NORTH, RANGE 4 WEST, NMPM

Section 17: W/2

- (h) Extend the Gallegos-Gallup Oil Pool to include:

TOWNSHIP 27 NORTH, RANGE 13 WEST, NMPM

Section 36: SW/4

- (i) Extend the Horseshoe-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM

Section 34: NW/4 SW/4

- (j) Extend the Otero-Gallup Oil Pool to include:

TOWNSHIP 24 NORTH, RANGE 5 WEST, NMPM

Section 5: NW/4 NE/4

- (k) Extend the Verde-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 15 WEST, NMPM

Section 26: NW/4

Section 27: N/2

CONTINUED CASE

CASE 1053:

Application of the Oil Conservation Commission upon its own motion, at the request of the State Engineer, for an order prescribing rules and regulations to govern the disposal of salt water in areas of Lea County, New Mexico. The Commission desires to formulate rules and procedures which will result in the efficient disposal of salt water and which will eliminate the practice of surface disposal of large volumes of oil field brines in order to prevent the contamination of the fresh-water bearing horizons in Lea County, New Mexico.

Case 1508

El Paso Natural Gas Company

1958 AUG 4 AM 8:56 Paso, Texas

August 1, 1958

Mr. A. L. Porter, Jr.
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Porter:

Re: El Paso's Application for Establishment of 320
Acre Drilling and Spacing Units for the Dakota
Formation in San Juan and Rio Arriba Counties,
New Mexico

Confirming my conversation with Jack Cooley on Monday, July 28, 1958, it is El Paso's desire in requesting this Hearing to establish 320 acre spacing for wells drilled to the Dakota Formation within the San Juan Basin area.

This rule would be comparable to that rule presently existing which requires 320 acre drilling and spacing units for wells drilled to the Mesaverde Formation in the San Juan Basin.

It is considered that the application would permit the establishment of 320 acre spacing within the existing pools and surrounding areas should the Commission determine spacing for the entire Basin to be inappropriate.

Yours very truly,

F. Norman Woodruff
F. NORMAN WOODRUFF, Manager
Gas Proration Operations

FNW:mgs

CC: Mr. Jack Cooley
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

**BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO**

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:**

**CASES NO. 1508 & 1523
Order No. R-1287**

**APPLICATION OF EL PASO NATURAL GAS
COMPANY FOR AN ORDER ESTABLISHING
320-ACRE SPACING IN THE GRANEROS,
DAKOTA AND UPPER MORRISON PRODUCING
INTERVAL IN SAN JUAN AND RIO ARRIBA
COUNTIES, NEW MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 15, 1958, at Farmington, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 21st day of November, 1958, the Commission, a quorum being present, having considered the application and the evidence adduced, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, El Paso Natural Gas Company, seeks an order establishing 320-acre spacing in San Juan and Rio Arriba Counties, New Mexico, for the producing interval extending from the base of the Greenhorn limestone to a point 400 feet below the base of said formation, which interval is hereinafter referred to as the "Dakota Producing Interval" and is comprised of the Graneros formation, the Dakota formation, and the productive upper portion of the Morrison formation.

(3) That the Barker Creek-Dakota Gas Pool, the Ute Dome Gas Pool, and the Angels Peak-Dakota Gas Pool were expressly excluded from the application.

(4) That the preponderance of the evidence indicates that the producing interval under consideration can be efficiently and economically drained on a 320-acre spacing pattern, and that said interval can best be developed on such a pattern.

(5) That the applicant proposes that the well location provision of the special rules and regulations for the Dakota Producing Interval be such as to permit the drilling of a well on either quarter section in a 320-acre unit.

(6) That the proposal set forth in finding No. 5 is justified because of the anticipated dual completion and/or recompletion of many wells drilled to other horizons.

IT IS THEREFORE ORDERED:

(1) That the Dakota Producing Interval be and the same is hereby established and defined as set forth in Exhibit "A" which is attached hereto and made a part hereof.

(2) That any well which was projected to or completed in the Dakota Producing Interval prior to the effective date of this order be and the same is hereby granted an exception to Rules 1 and 2 of the Special Rules and Regulations for said Interval as hereinafter set forth.

(3) That Special Rules and Regulations for the Dakota Producing Interval be and the same are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS FOR THE
DAKOTA PRODUCING INTERVAL

RULE 1. (a) That each well drilled to or completed in the Dakota Producing Interval shall be located on a tract consisting of approximately 320 acres comprising any two contiguous quarter sections of a single governmental section, being a legal subdivision of the United States Public Lands Survey. For purposes of these Rules a unit consisting of between 216 and 324 surface contiguous acres shall be considered a standard unit.

(b) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 1 (a) without notice and hearing where an application has been filed in due form and where the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Lands Survey, or where the following facts exist and the following provisions are complied with:

1. The non-standard unit consists of contiguous quarter-quarter sections or lots.

2. The non-standard unit lies wholly within a single governmental section.

3. The entire non-standard unit may reasonably be presumed to be productive of gas.

4. The length or width of the non-standard unit does not exceed 5280 feet.

5. That applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which any part of the non-standard unit is situated and which acreage is not included in said non-standard unit.

6. In lieu of Paragraph 5 of this Rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered mail of his intent to form such non-standard unit. The Secretary-Director of the Commission may approve the application, if, after a period of 30 days following the mailing of said notice, no such operator has made objection to the formation of such non-standard unit.

RULE 2. (a) (1) That all wells drilled to or completed in the Dakota Producing Interval shall be located no nearer than 790 feet to the boundary line of the unit and shall be located no nearer than 130 feet to a governmental quarter-quarter section line or subdivision inner boundary line.

(2) In the event any such well is completed as an oil well at a location nearer than 330 feet to a governmental quarter-quarter section line, said well shall not be produced unless and until such time as the unorthodox oil well location has been approved by the Commission after notice and hearing.

(b) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 2 (a) without notice and hearing where an application therefor has been filed in due form and the Secretary-Director determines that good cause exists for granting such exception.

Applicants shall furnish all offset operators and all operators within the section in which the subject well is located a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all such operators, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and may approve such unorthodox location only in the absence of objection from any offset operator or any operator within the section in which the well is located. In the event such an operator objects to the unorthodox location, the Commission shall consider the matter only after proper notice and hearing.

-4-
Cases No. 1508 & 1523
Order No. B-287

IT IS FURTHER ORDERED:

That the foregoing Special Rules and Regulations shall have no application whatsoever in any area which is now or may hereafter be defined by the Commission as an oil pool in the Dakota Producing Interval.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

E. L. Mechem

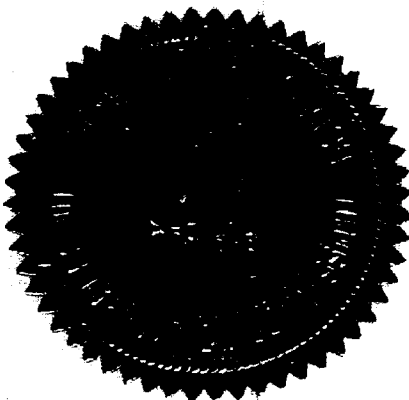
EDWIN L. MECHEM, Chairman

Murray E. Morgan

MURRAY E. MORGAN, Member

A. L. Porter, Jr.

A. L. PORTER, Jr., Member & Secretary



1r/

-5-

Cases No. 1508 & 1823
Order No. A-1287

EXHIBIT "A"

DAKOTA PRODUCING INTERVAL

HORIZONTAL LIMITS:

San Juan and Rio Arriba Counties, New Mexico, with the exception of the Barker Creek-Dakota Gas Pool, the Ute Dam Gas Pool and the Angels Peak-Dakota Gas Pool together with any extensions thereof.

VERTICAL LIMITS:

Base of the Greenhorn Limestone to a point 400 feet below the base of said formation and consisting of the Grangeros formation, the Dakota formation and the productive upper portion of the Morrison formation.

Case 1508

The undersigned hereby adopt and join in the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

August 20th 1958

Albany

Brookhaven Air Company
by Thomas B. Scott Pres.

Sacres Corporation
by Thomas B. Scott Pres.

Packet Mailed
9-9-58
B.P.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

MAIN OFFICE OCC

IN THE MATTER OF THE APPLICATION
OF EL PASO NATURAL GAS COMPANY
FOR AN ORDER OF THIS COMMISSION 48
ESTABLISHING 320-ACRE DRILLING
AND SPACING UNITS FOR THE DAKOTA
FORMATION IN ALL DAKOTA GAS POOLS
SITUATED IN SAN JUAN AND RIO ARriba
COUNTIES, NEW MEXICO, AND FOR THE
PROMULGATION OF RULES AND REGU-
LATIONS PERTAINING THERETO.

ORDER NO. _____

APPLICATION

Comes now El Paso Natural Gas Company, a Delaware corpora-
tion, authorized to do business in the State of New Mexico, Applicant
herein, and respectfully alleges and states as follows:

1. Heretofore by the respective orders listed below, this
Commission has designated the following fifteen Dakota gas pools
located in San Juan and Rio Arriba Counties, New Mexico.

<u>Pools</u>	<u>Order No.</u>
(a) Angels Peak - Dakota	R-13
(b) Barker Creek - Dakota	R-13
(c) Blanco - Dakota	R-347
(d) South Blanco - Dakota	R-347
(e) West Blanco - Dakota	R-466
(f) East Companero	R-739
(g) Companero Dakota	R-347
(h) Huerfanito Dakota	R-624
(i) Huerfano - Dakota	R-347
(j) West Kutz - Dakota	R-347
(k) Largo - Dakota	R-739
(l) North Los Pinos - Dakota	R-624
(m) South Los Pinos - Dakota	R-624
(n) Ute Dome Dakota	R-13
(o) Otero Graneros - Dakota	R-1080

2. Applicant is the owner of oil and gas leases covering lands
located within some of the said designated Dakota gas pools and of
oil and gas leases in areas surrounding many of such designated
Dakota gas pools which, if productive in the Dakota formation, will

be included in said gas pools.

3. A separate common source of supply of gas in the Dakota formation has been established by completion of wells drilled to the Dakota formation in the above designated Dakota gas pools.

4. A study of geological and engineering data now available pertaining to the said Dakota formation indicates that one well will efficiently and economically drain the recoverable gas in place in the Dakota formation underlying an area of not less than 320 acres. A drilling and spacing unit for gas wells drilled to the Dakota formation would properly be composed of one-half section according to U. S. Land Surveys, containing approximately 320 acres, in which unit all of the interest should be consolidated by pooling agreement or otherwise. No gas well should be drilled on such drilling unit on which another gas well has been completed or approved for completion in the Dakota formation.

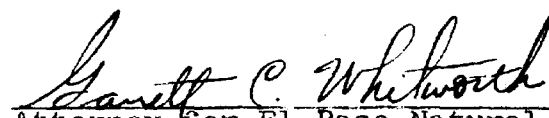
5. Said 320-acre drilling and spacing units should consist of two contiguous governmental quarter sections within a single section as designated by the operators thereof, and the unit well should not be drilled closer than 990 feet from the boundary of either such governmental quarter section included in a unit; provided a tolerance of 200 feet be allowed, but all wells commenced prior to the date the Commission issues its order in this case and located on less than a 320-acre drilling and spacing unit and located closer than 990 feet to the boundary of a governmental quarter section should be recognized as exceptions to this order. The operator should be allowed to locate such unit well on any quarter section within such unit to permit maximum flexibility for the dual completion of such well with a shallower formation.

6. The establishment of drilling and spacing units as herein requested is necessary for the orderly development of the common source of supply in the designated Dakota gas pools and areas adjacent thereto and of any other gas pool to the Dakota formation within San Juan and Rio Arriba Counties, New Mexico that may hereafter be designated. This will protect the correlative rights of all parties affected, will prevent waste, will eliminate drilling unnecessary

wells and will promote the recovery of gas from each of said pools in an efficient and economical manner.

7. In the interest of conservation and for the protection of correlative rights, this Commission should promulgate rules and regulations governing the drilling and spacing of wells to the Dakota formation.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing after due notice as prescribed by law, and, upon such notice and hearing, the Commission issue its order establishing 320-acre drilling and spacing units for said common source of supply in the manner described herein and that the Commission promulgate special rules and regulations with respect thereto.


Attorney for El Paso Natural Gas Company

Case 1508

MAIN OFFICE OCC
DELHI-TAYLOR OIL CORPORATION
1958 AUG 28 AM 10:20
DALLAS 1, TEXAS

W. C. SMITH
VICE PRESIDENT

August 26, 1958

New Mexico Oil Conservation Commission
Box 871
Santa Fe, New Mexico

Gentlemen:

El Paso Natural Gas Company has made application for an order to establish 320 acres drilling and spacing units for the Dakota formation for all Dakota gas pools in San Juan and Rio Arriba Counties, New Mexico.

We wish to join El Paso in this application and enclose a copy of the application with our signature attached.

Yours very truly,

W. C. Smith

W. C. Smith

WCS/TC:m

Encl.

*Docket Mailed
9-9-58
B P*

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF EL PASO NATURAL GAS COMPANY
FOR AN ORDER OF THIS COMMISSION
ESTABLISHING 320-ACRE DRILLING
AND SPACING UNITS FOR THE DAKOTA
FORMATION IN ALL DAKOTA GAS POOLS
SITUATED IN SAN JUAN AND RIO ARriba
COUNTIES, NEW MEXICO, AND FOR THE
PROMULGATION OF RULES AND REGU-
LATIONS PERTAINING THERETO.

CASE NO. 1508

ORDER NO. _____

APPLICATION

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tion, authorized to do business in the State of New Mexico, Applicant
herein, and respectfully alleges and states as follows:

1. Heretofore by the respective orders listed below, this
Commission has designated the following fifteen Dakota gas pools
located in San Juan and Rio Arriba Counties, New Mexico.

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(c) Blanco - Dakota	R-347
(d) South Blanco - Dakota	R-347
(e) West Blanco - Dakota	R-466
(f) East Companero	R-739
(g) Companero Dakota	R-347
(h) Huerfanito Dakota	R-624
(i) Huerfano - Dakota	R-347
(j) West Kutz - Dakota	R-347
(k) Largo - Dakota	R-739
(l) North Los Pinos - Dakota	R-624
(m) South Los Pinos - Dakota	R-624
(n) Ute Dome Dakota	R-13
(o) Otero Graneros - Dakota	R-1080

2. Applicant is the owner of oil and gas leases covering lands
located within some of the said designated Dakota gas pools and of
oil and gas leases in areas surrounding many of such designated
Dakota gas pools which, if productive in the Dakota formation, will

be included in said gas pools.

3. A separate common source of supply of gas in the Dakota formation has been established by completion of wells drilled to the Dakota formation in the above designated Dakota gas pools.

4. A study of geological and engineering data now available pertaining to the said Dakota formation indicates that one well will efficiently and economically drain the recoverable gas in place in the Dakota formation underlying an area of not less than 320 acres. A drilling and spacing unit for gas wells drilled to the Dakota formation would properly be composed of one-half section according to U. S. Land Surveys, containing approximately 320 acres, in which unit all of the interest should be consolidated by pooling agreement or otherwise. No gas well should be drilled on such drilling unit on which another gas well has been completed or approved for completion in the Dakota formation.

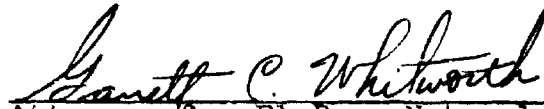
5. Said 320-acre drilling and spacing units should consist of two contiguous governmental quarter sections within a single section as designated by the operators thereof, and the unit well should not be drilled closer than 990 feet from the boundary of either such governmental quarter section included in a unit; provided a tolerance of 200 feet be allowed, but all wells commenced prior to the date the Commission issues its order in this case and located on less than a 320-acre drilling and spacing unit and located closer than 990 feet to the boundary of a governmental quarter section should be recognized as exceptions to this order. The operator should be allowed to locate such unit well on any quarter section within such unit to permit maximum flexibility for the dual completion of such well with a shallower formation.

6. The establishment of drilling and spacing units as herein requested is necessary for the orderly development of the common source of supply in the designated Dakota gas pools and areas adjacent thereto and of any other gas pool to the Dakota formation within San Juan and Rio Arriba Counties, New Mexico that may hereafter be designated. This will protect the correlative rights of all parties affected, will prevent waste, will eliminate drilling unnecessary

wells and will promote the recovery of gas from each of said pools in an efficient and economical manner.

7. In the interest of conservation and for the protection of correlative rights, this Commission should promulgate rules and regulations governing the drilling and spacing of wells to the Dakota formation.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing after due notice as prescribed by law, and, upon such notice and hearing, the Commission issue its order establishing 320-acre drilling and spacing units for said common source of supply in the manner described herein and that the Commission promulgate special rules and regulations with respect thereto.


Attorney for El Paso Natural Gas Company

The undersigned hereby adopt and join in the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

DELHI-TAYLOR OIL CORPORATION



W. C. Smith

LEGAL DEPARTMENT
WILLIS L. LEA, JR.
GENERAL ATTORNEY

SOUTHERN UNION GAS COMPANY
MAIN OFFICE BURT BUILDING
DALLAS, TEXAS
1958 SEP 9 PM 1:25

A. S. GRENIER
MILLARD F. CARR
JACK HERTZ
WM. S. JAMESON
JAS. R. WETHERBEE

September 8, 1958

AIR MAIL

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Case No. 1508

Gentlemen:

Because of the pressure of other business we will be unable to have a representative present at the hearing to be held before the Commission with regard to the above matter on September 17, 1958. We request, however, that this letter be read into, and made a part of, the record of the case.

In its application in this matter El Paso Natural Gas Company seeks establishment of 320-acre spacing units for all of the 15 presently designated Dakota gas pools in San Juan and Rio Arriba Counties, New Mexico. Except with respect to the Barker Creek and Ute Dome Pools, Southern Union is in accord with El Paso's proposal.

Both the Barker Creek and the Ute Dome Dakota pools appear to be fully developed at the present time, no additional drilling having been conducted in either of same for many years past. In each instance the entire area of the pool is covered by a single lease, and the entire production of the pool is being taken by a single transporter. In each instance, too, the pool was drilled on an irregular pattern, made possible by the fact that the period of development preceded the establishment by the Commission of uniform spacing regulations. Under these circumstances, when the drilling of no additional wells can be anticipated, there would seem to be little point in making the affected lease operators (Southern Union Gas Company in the case of the Barker Creek pool and Pan American Petroleum Corporation in the case of the Ute Dome pool) go through the paper work of fitting as many of their wells as possible into the standard spacing pattern and obtaining approval of non-standard units for the remainder. Accordingly, Southern Union Gas Company requests that the Barker Creek and Ute Dome Dakota pools be excluded from the coverage of any spacing order adopted by the Commission in this proceeding.

As to the other 13 Dakota pools referred to in El Paso's application, we recommend that the same pattern be followed as is presently in effect

New Mexico Oil Conservation Commission

September 8, 1958

for the Blanco-Mesaverde pool, with either the $N\frac{1}{2}$, $S\frac{1}{2}$, $E\frac{1}{2}$ or $W\frac{1}{2}$ of a legal section constituting a standard drilling unit, and with wells to be located within 330 feet of the center of either the northeast or southwest quarter of each section, subject to variation of 200 additional feet for topographic conditions.

Very truly yours,



A. S. Grenier, Attorney for
Southern Union Gas Company

ASG:fg

cc: Mr. A. M. Wiederkehr

Mr. F. Norman Woodruff

TEXAS NATIONAL PETROLEUM CO.

902 SOUTH COAST LIFE BUILDING

HOUSTON 2, TEXAS

W. STEWART BOYLE

PRESIDENT

August 22, 1958

MAIN OFFICE OCC

1958 AUG 25 AM 8:46

New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Gentlemen:

We are enclosing one copy of a request to establish 320-acre drilling and spacing units for the Dakota formation and all Dakota gas pools in San Juan and Rio Arriba Counties, New Mexico.

El Paso Natural Gas Company has instigated this request and we are very happy to join them.

We would appreciate your giving this application your consideration.

Yours very truly,

TEXAS NATIONAL PETROLEUM CO.

Robert L. Gorden
Robert L. Gorden
Manager Land Department

RLG:WW
Enc.

cc Mr. Garrett C. Whitworth, Attorney
El Paso Natural Gas Company
P. O. Box 1492
El Paso, Texas

The undersigned hereby adopt and join in the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

KING-LOC PETROLEUM COMPANY

By James S. Locke
Secretary-Treasurer

Donath H. Eggen
Vice-President

KING-LOC PETROLEUM COMPANY

MAIN OFFICE
AN ARIZONA CORPORATION

Producers of Petroleum Products

716 FIRST NATIONAL BANK BUILDING - 411 NORTH CENTRAL AVENUE
PHOENIX, ARIZONA

New Mexico Office
AZTEC, NEW MEXICO

September 12, 1958

Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Re: Case No. 1508, Entitled "In the Matter of
the Application of El Paso Natural Gas Company
for an Order of this Commission Establishing
320-Acre Drilling and Spacing Units for the
Dakota Formation in all Dakota Gas Pools Situated
in San Juan and Rio Arriba Counties, New Mexico,
and for the Promulgation of Rules and Regulations
Pertaining Thereto."

Gentlemen:

Herewith copies of El Paso Natural Gas Company's
application in the above matter signed by King-Loc Petroleum
Company and Candado Production Company which you will
please file in this cause.

Very truly yours,

KING-LOC PETROLEUM COMPANY

Dorothy H. Eggert (Miss)
DOROTHY H. EGGERT, Vice-President

dhe
Encls.

PLEASE DIRECT ALL CORRESPONDENCE TO THE ARIZONA OFFICE

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
EL PASO NATURAL GAS COMPANY FOR AN)
ORDER OF THIS COMMISSION ESTABLISHING) 40
320-ACRE DRILLING AND SPACING UNITS)
FOR THE DAKOTA FORMATION IN ALL)
DAKOTA GAS POOLS SITUATED IN SAN JUAN)
AND RIO ARriba COUNTIES, NEW MEXICO,)
AND FOR THE PROMULGATION OF RULES)
AND REGULATIONS PERTAINING THERETO.)

CASE NO. 1508

ORDER NO. _____

APPLICATION

Comes now El Paso Natural Gas Company, a Delaware corporation, authorized to do business in the State of New Mexico, Applicant herein, and respectfully alleges and states as follows:

1. Heretofore by the respective orders listed below, this Commission has designated the following fifteen Dakota gas pools located in San Juan and Rio Arriba Counties, New Mexico.

<u>Pools</u>	<u>Order No.</u>
(a) Angels Peak - Dakota	R-13
(b) Barker Creek - Dakota	R-13
(c) Blanco - Dakota	R-347
(d) South Blanco - Dakota	R-347
(e) West Blanco - Dakota	R-466
(f) East Companero	R-739
(g) Companero Dakota	R-347
(h) Huerfanito Dakota	R-624
(i) Huerfano - Dakota	R-347
(j) West Kutz - Dakota	R-347
(k) Largo - Dakota	R-739
(l) North Los Pinos - Dakota	R-624
(m) South Los Pinos - Dakota	R-624
(n) Ute Dome Dakota	R-13
(o) Otero Graneros - Dakota	R-1080

2. Applicant is the owner of oil and gas leases covering lands located within some of the said designated Dakota gas pools and of oil and gas leases in areas surrounding many

of such designated Dakota gas pools which, if productive in the Dakota formation, will be included in said gas pools.

3. A separate common source of supply of gas in the Dakota formation has been established by completion of wells drilled to the Dakota formation in the above designated Dakota gas pools.

4. A study of geological and engineering data now available pertaining to the said Dakota formation indicates that one well will efficiently and economically drain the recoverable gas in place in the Dakota formation underlying an area of not less than 320 acres. A drilling and spacing unit for gas wells drilled to the Dakota formation would properly be composed of one-half section according to U. S. Land Surveys, containing approximately 320 acres, in which unit all of the interest should be consolidated by pooling agreement or otherwise. No gas well should be drilled on such drilling unit on which another gas well has been completed or approved for completion in the Dakota formation.

5. Said 320-acre drilling and spacing units should consist of two contiguous governmental quarter sections within a single section as designated by the operators thereof, and the unit well should not be drilled closer than 990 feet from the boundary of either such governmental quarter section included in a unit; provided a tolerance of 200 feet be allowed, but all wells commenced prior to the date the Commission issues its order in this case and located on less than a 320-acre drilling and spacing unit and located closer than 990 feet to the boundary of a governmental quarter section should be recognized as exceptions to this order. The operator should be allowed to locate such unit well on any quarter section within such unit to permit maximum flexibility for the dual completion of such well with a shallower formation.

6. The establishment of drilling and spacing units as herein requested is necessary for the orderly development of the common source of supply in the designated Dakota gas pools and areas adjacent thereto and of any other gas pool to the Dakota formation within San Juan and Rio Arriba Counties, New Mexico that may hereafter be designated. This will protect the correlative rights of all parties affected, will prevent waste, will eliminate drilling unnecessary wells and will promote the recovery of gas from each of said pools in an efficient and economical manner.

7. In the interest of conservation and for the protection of correlative rights, this Commission should promulgate rules and regulations governing the drilling and spacing of wells to the Dakota formation.

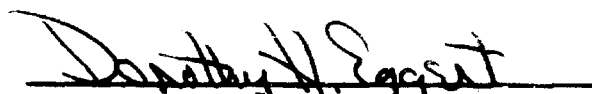
WHEREFORE, Applicant respectfully requests that this matter be set for hearing after due notice as prescribed by law, and, upon such notice and hearing, the Commission issue its order establishing 320-acre drilling and spacing units for said common source of supply in the manner described herein and that the Commission promulgate special rules and regulations with respect thereto.


Attorney for El Paso Natural Gas Company

The undersigned hereby adopt and join in the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

CANDADO PRODUCTION COMPANY

By 
President


Secretary

GENERAL AMERICAN OIL COMPANY OF TEXAS

1000 CHURCH ST.
MEADOWS BUILDING

100 CHURCH ST. DALLAS, TEXAS 75201

September 15, 1958

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

We are enclosing copy of application for an order from the New Mexico Oil Conservation Commission to establish 320 acre drilling and spacing units for the Dakota Formation for all Dakota gas pools in San Juan and Rio Arriba Counties, New Mexico, and request that you issue said order.

Yours very truly,



William P. Barnes
Vice President
Land Department

WPB/bw

Enclosure

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
EL PASO NATURAL GAS COMPANY FOR AN)
ORDER OF THIS COMMISSION ESTABLISHING)
320-ACRE DRILLING AND SPACING UNITS)
FOR THE DAKOTA FORMATION IN ALL)
DAKOTA GAS POOLS SITUATED IN SAN JUAN)
AND RIO ARriba COUNTIES, NEW MEXICO,)
AND FOR THE PROMULGATION OF RULES)
AND REGULATIONS PERTAINING THERETO.)

CASE NO. _____

ORDER NO. _____

APPLICATION

Comes now El Paso Natural Gas Company, a Delaware corporation, authorized to do business in the State of New Mexico, Applicant herein, and respectfully alleges and states as follows:

1. Heretofore by the respective orders listed below, this Commission has designated the following fifteen Dakota gas pools located in San Juan and Rio Arriba Counties, New Mexico.

<u>Pools</u>	<u>Order No.</u>
(a) Angel Peak - Dakota	R-13
(b) Barker Creek - Dakota	R-13
(c) Blanco - Dakota	R-347
(d) South Blanco - Dakota	R-347
(e) West Blanco - Dakota	R-466
(f) East Companero	R-739
(g) Companero Dakota	R-347
(h) Huerfanito Dakota	R-624
(i) Huerfano - Dakota	R-347
(j) West Kutz - Dakota	R-347
(k) Largo - Dakota	R-739
(l) North Los Pinos - Dakota	R-624
(m) South Los Pinos - Dakota	R-624
(n) Ute Dome Dakota	R-13
(o) Otero Graneros - Dakota	R-1080

2. Applicant is the owner of oil and gas leases covering lands located within some of the said designated Dakota gas pools and of oil and gas leases in areas surrounding many

of such designated Dakota gas pools which, if productive in the Dakota formation, will be included in said gas pools.

3. A separate common source of supply of gas in the Dakota formation has been established by completion of wells drilled to the Dakota formation in the above designated Dakota gas pools.

4. A study of geological and engineering data now available pertaining to the said Dakota formation indicates that one well will efficiently and economically drain the recoverable gas in place in the Dakota formation underlying an area of not less than 320 acres. A drilling and spacing unit for gas wells drilled to the Dakota formation would properly be composed of one-half section according to U. S. Land Surveys, containing approximately 320 acres, in which unit all of the interest should be consolidated by pooling agreement or otherwise. No gas well should be drilled on such drilling unit on which another gas well has been completed or approved for completion in the Dakota formation.

5. Said 320-acre drilling and spacing units should consist of two contiguous governmental quarter sections within a single section as designated by the operators thereof, and the unit well should not be drilled closer than 990 feet from the boundary of either such governmental quarter section included in a unit; provided a tolerance of 200 feet be allowed, but all wells commenced prior to the date the Commission issues its order in this case and located on less than a 320-acre drilling and spacing unit and located closer than 990 feet to the boundary of a governmental quarter section should be recognized as exceptions to this order. The operator should be allowed to locate such unit well on any quarter section within such unit to permit maximum flexibility for the dual completion of such well with a shallower formation.

6. The establishment of drilling and spacing units as herein requested is necessary for the orderly development of the common source of supply in the designated Dakota gas pools and areas adjacent thereto and of any other gas pool to the Dakota formation within San Juan and Rio Arriba Counties, New Mexico that may hereafter be designated. This will protect the correlative rights of all parties affected, will prevent waste, will eliminate drilling unnecessary wells and will promote the recovery of gas from each of said pools in an efficient and economical manner.


7. In the interest of conservation and for the protection of correlative rights, this Commission should promulgate rules and regulations governing the drilling and spacing of wells to the Dakota formation.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing after due notice as prescribed by law, and, upon such notice and hearing, the Commission issue its order establishing 320-acre drilling and spacing units for said common source of supply in the manner described herein and that the Commission promulgate special rules and regulations with respect thereto.


Attorney for El Paso Natural Gas Company

The undersigned hereby adopt and join in the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

CENTRAL AMERICAN


W. P. BARNES VICE PRESIDENT

Three States Natural Gas Company

SEVENTEENTH FLOOR CORRIGAN TOWER

1958 SEP 13 PM 1:16

JOSEPH P. DONAHUE, JR.
VICE PRESIDENT, SECRETARY-TREASURER


September 17, 1958

Oil Conservation Commission
State of New Mexico
Box 871
Santa Fe, New Mexico

Gentlemen:

Enclosed herewith is one copy of El Paso Natural Gas Company's application for an order from the Commission to establish 320-acre drilling and spacing units for the Dakota Formation for all Dakota gas pools in San Juan and Rio Arriba Counties, New Mexico, signed by Three States Natural Gas Company whereby we join El Paso in such application.

Very truly yours,



JPD:dg
enc

cc: El Paso Natural Gas Company
P. O. Box 1492
El Paso, Texas
Attention: Garrett C. Whitworth, Attorney

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
EL PASO NATURAL GAS COMPANY FOR AN)
ORDER OF THIS COMMISSION ESTABLISHING)
320-ACRE DRILLING AND SPACING UNITS)
FOR THE DAKOTA FORMATION IN ALL)
DAKOTA GAS POOLS SITUATED IN SAN JUAN)
AND RIO ARriba COUNTIES, NEW MEXICO,)
AND FOR THE PROMULGATION OF RULES)
AND REGULATIONS PERTAINING THERETO.)

MAIN OFFICE OCC

1958 SEP 13 PM 1:16

CASE NO. _____

ORDER NO. _____

APPLICATION

Comes now El Paso Natural Gas Company, a Delaware corporation, authorized to do business in the State of New Mexico, Applicant herein, and respectfully alleges and states as follows:

1. Heretofore by the respective orders listed below, this Commission has designated the following fifteen Dakota gas pools located in San Juan and Rio Arriba Counties, New Mexico.

<u>Pools</u>	<u>Order No.</u>
(a) Angels Peak - Dakota	R-13
(b) Barker Creek - Dakota	R-13
(c) Blanco - Dakota	R-347
(d) South Blanco - Dakota	R-347
(e) West Blanco - Dakota	R-466
(f) East Companero	R-739
(g) Companero Dakota	R-347
(h) Huerfanito Dakota	R-624
(i) Huerfano - Dakota	R-347
(j) West Kutz - Dakota	R-347
(k) Largo - Dakota	R-739
(l) North Los Pinos - Dakota	R-624
(m) South Los Pinos - Dakota	R-624
(n) Ute Dome Dakota	R-13
(o) Otero Graneros - Dakota	R-1080

2. Applicant is the owner of oil and gas leases covering lands located within some of the said designated Dakota gas pools and of oil and gas leases in areas surrounding many

of such designated Dakota gas pools which, if productive in the Dakota formation, will be included in said gas pools.

3. A separate common source of supply of gas in the Dakota formation has been established by completion of wells drilled to the Dakota formation in the above designated Dakota gas pools.

4. A study of geological and engineering data now available pertaining to the said Dakota formation indicates that one well will efficiently and economically drain the recoverable gas in place in the Dakota formation underlying an area of not less than 320 acres. A drilling and spacing unit for gas wells drilled to the Dakota formation would properly be composed of one-half section according to U. S. Land Surveys, containing approximately 320 acres, in which unit all of the interest should be consolidated by pooling agreement or otherwise. No gas well should be drilled on such drilling unit on which another gas well has been completed or approved for completion in the Dakota formation.

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7. In the interest of conservation and for the protection of correlative rights, this Commission should promulgate rules and regulations governing the drilling and spacing of wells to the Dakota formation.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing after due notice as prescribed by law, and, upon such notice and hearing, the Commission issue its order establishing 320-acre drilling and spacing units for said common source of supply in the manner described herein and that the Commission promulgate special rules and regulations with respect thereto.


Attorney for El Paso Natural Gas Company

The undersigned hereby adopt and join in the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

THREE STATES NATURAL GAS COMPANY

By: James P. Henshaw, Jr.

Vice President

LAW OFFICES
McAFEE, TAFT, GATES & KUNTZ
2020 FIRST NATIONAL BUILDING
OKLAHOMA CITY 2, OKLAHOMA

KENNETH E. McAFEE
RICHARD G. TAFT
OLIVER W. GATES
EUGENE KUNTZ
CASSIDY WRIGHT


August 27, 1958

Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

We enclose herewith our joinder in the application of
El Paso Natural Gas Company with respect to the spacing for
the Dakota formation. We request that this be filed along
with El Paso's application.

Very truly yours,


K. E. McAfee

KEM:hw
Encl.

*Docket mailed
9-9-58
BP*

Case 1508
MAIN OFFICE OCC

1958 AUG 23 AM 8:20

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
EL PASO NATURAL GAS COMPANY)
ORDER OF THIS COMMISSION ESTABLISHING)
320-ACRE DRILLING AND SPACING UNITS)
FOR THE DAKOTA FORMATION IN ALL)
DAKOTA GAS POOLS SITUATED IN SAN JUAN)
AND RIO ARriba COUNTIES, NEW MEXICO,)
AND FOR THE PROMULGATION OF RULES)
AND REGULATIONS PERTAINING THERETO.)

MAIN OFFICE OCC

CASE NO. 1508

ORDER NO. _____

APPLICATION

Comes now El Paso Natural Gas Company, a Delaware corporation, authorized to do business in the State of New Mexico, Applicant herein, and respectfully alleges and states as follows:

1. Heretofore by the respective orders listed below, this Commission has designated the following fifteen Dakota gas pools located in San Juan and Rio Arriba Counties, New Mexico.

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(l) North Los Pinos - Dakota	R-624
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(o) Otero Graneros - Dakota	R-1080

2. Applicant is the owner of oil and gas leases covering lands located within some of the said designated Dakota gas pools and of oil and gas leases in areas surrounding many

of such designated Dakota gas pools which, if productive in the Dakota formation, will be included in said gas pools.

3. A separate common source of supply of gas in the Dakota formation has been established by completion of wells drilled to the Dakota formation in the above designated Dakota gas pools.

4. A study of geological and engineering data now available pertaining to the said Dakota formation indicates that one well will efficiently and economically drain the recoverable gas in place in the Dakota formation underlying an area of not less than 320 acres. A drilling and spacing unit for gas wells drilled to the Dakota formation would properly be composed of one-half section according to U. S. Land Surveys, containing approximately 320 acres, in which unit all of the interest should be consolidated by pooling agreement or otherwise. No gas well should be drilled on such drilling unit on which another gas well has been completed or approved for completion in the Dakota formation.

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7. In the interest of conservation and for the protection of correlative rights, this Commission should promulgate rules and regulations governing the drilling and spacing of wells to the Dakota formation.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing after due notice as prescribed by law, and, upon such notice and hearing, the Commission issue its order establishing 320-acre drilling and spacing units for said common source of supply in the manner described herein and that the Commission promulgate special rules and regulations with respect thereto.

Garrett C. Whitworth
Attorney for El Paso Natural Gas Company

The undersigned hereby adopt and join in the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

For the undersigned
by [Signature] President

DOCKET: REGULAR HEARING OCTOBER 15, 1958

Oil Conservation Commission 9 a.m. Apache School Gymnasium, 600 Block West
Apache, Farmington, New Mexico

- ALLOWABLE:** (1) Consideration of the oil allowable for November, 1958.
- (2) Consideration of the allowable production of gas for November, 1958, from six prorated pools in Lea County, New Mexico; also consideration of the allowable production of gas from seven prorated pools in San Juan and Rio Arriba Counties, New Mexico, for November, 1958.

NEW CASES

CASE 1522:

Application of Lea County Drip Company, Inc. for the revision of certain of the Commission Statewide Rules and Regulations and for the revision of certain of the Commission forms. Applicant, in the above-styled cause, seeks an order to revise Rules 311, 312, 1116 and 1117 of the Commission Rules and Regulations, to replace the present Commission Form C-117 with two forms to be designated as C-117-A and C-117-B, and to revise Commission Form C-118.

CASE 1523:

Application of El Paso Natural Gas Company for an order establishing 320-acre drilling and spacing units and promulgating special rules and regulations for certain formations in San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks an order establishing 320-acre drilling and spacing units in San Juan and Rio Arriba Counties, New Mexico, and promulgating special rules and regulations for the gas producing interval lying between the base of the Greenhorn limestone of Cretaceous age and the base of the productive upper portion of the Morrison sandstone of Jurassic age, which includes undifferentiated Graneros, Dakota, and Morrison sands. The application includes all currently designated Dakota Gas Pools, Graneros Gas Pools and Graneros-Dakota Gas Pools with exception of the Barker Creek-Dakota Gas Pool and the Ute Dome Gas Pool.

CASE 1524:

Application of Sunray Mid-Continent Oil Company and British American Oil Producing Company for the establishment of rules and regulations for secondary recovery projects in the Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico. Applicants, in the above-styled cause, seek an order promulgating special rules and regulations governing the operation of secondary recovery projects in the Bisti-Lower Gallup Oil Pool in the following areas:

TOWNSHIP 25 NORTH, RANGE 12 WEST, NMPM

Section 6: S/2, NE/4, S/2 NW/4, & NE/4 NW/4

Section 7: E/2 & NW/4

TOWNSHIP 25 NORTH, RANGE 13 WEST, NMPM
Section 1: NW/4, SE/4, S/2 NE/4, & NW/4 NE/4
Section 12: NE/4

TOWNSHIP 26 NORTH, RANGE 12 WEST, NMPM
Section 31: SE/4, E/2 SW/4, & NW/4 SW/4

TOWNSHIP 26 NORTH, RANGE 13 WEST, NMPM
Section 35: All

Applicants propose that said special rules would include, among other things, a system for transfer of allowable from injection to shut-in wells and an administrative procedure for conversion of additional wells to LPG and gas injection.

CASE 1525:

Southeastern New Mexico nomenclature case calling for an order for the creation of new pools and extension of existing pools in Lea, Eddy and Chaves Counties, New Mexico.

(a) Create a new oil pool for Devonian production, designated as the Arkansas Junction-Devonian Pool, and described as:

TOWNSHIP 18 SOUTH, RANGE 36 EAST, NMPM
Section 28: NW/4
Section 29: NE/4

(b) Create a new oil pool for Grayburg production, designated as the East Leo-Grayburg Pool, and described as:

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
Section 20: SE/4

(c) Create a new gas pool for Pennsylvanian production, designated as the South Salt Lake-Pennsylvanian Gas Pool, and described as:

TOWNSHIP 20 SOUTH, RANGE 32 EAST, NMPM
Section 25: SE/4

(d) Extend the Allison-Pennsylvanian Pool to include:

TOWNSHIP 9 SOUTH, RANGE 36 EAST, NMPM
Section 2: NE/4

(e) Extend the Atoka Pool to include:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
Section 13: NE/4 SW/4 & NW/4 SE/4

(f) Extend the Caprock-Queen to include:

TOWNSHIP 14 SOUTH, RANGE 31 EAST, NMPM
Section 4: W/2 NW/4

- (g) Extend the South Carter-San Andres Pool to include:

TOWNSHIP 18 SOUTH, RANGE 39 EAST, NMPM
Section C: SE/4

- (h) Extend the High Lonesome Pool to include:

TOWNSHIP 16 SOUTH, RANGE 29 EAST, NMPM
Section 14: N/2
Section 15: NE/4

- (i) Extend the West Henshaw-Grayburg Pool to include:

TOWNSHIP 16 SOUTH, RANGE 30 EAST, NMPM
Section 3: Lots 11, 12, & 14

- (j) Extend the Jalmat Gas Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 34: NE/4

- (k) Extend the South Paddock Pool to include:

TOWNSHIP 22 SOUTH, RANGE 38 EAST, NMPM
Section 32: SW/4

- (l) Extend the Reeves-Pennsylvanian Pool to include:

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 25: SW/4
Section 26: W/2
Section 27: S/2

- (m) Extend the South Sawyer-San Andres Pool to include:

TOWNSHIP 9 SOUTH, RANGE 38 EAST, NMPM
Section 31: S/2
Section 32: S/2

TOWNSHIP 10 SOUTH, RANGE 38 EAST, NMPM
Section 6: NW/4

- (n) Extend the Square Lake Pool to include:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
Section 15: NW/4

- (o) Extend the Young Pool to include:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 8: S/2 SE/4

CASE 1526: **Northwestern New Mexico nomenclature case calling for an order for the extension of existing pools in Rio Arriba and San Juan Counties, New Mexico.**

- (a) Extend the Aztec-Fruitland Pool to include:

TOWNSHIP 29 NORTH, RANGE 11 WEST, NMPM
Section 25: SW/4
Section 36: W/2

- (b) Extend the Ballard-Pictured Cliffs Pool to include:

TOWNSHIP 25 NORTH, RANGE 7 WEST, NMPM
Section 28: NW/4
Section 29: All
Section 30: N/2

- (c) Extend the Canyon Largo-Pictured Cliffs Pool to include:

TOWNSHIP 24 NORTH, RANGE 6 WEST, NMPM
Section 3: SE/4
Section 4: N/2

TOWNSHIP 24 NORTH, RANGE 7 WEST, NMPM
Section 1: NE/4

- (d) Extend the Otero-Pictured Cliffs Pool to include:

TOWNSHIP 24 NORTH, RANGE 6 WEST, NMPM
Section 23: W/2
Section 27: NE/4

- (e) Extend the Tapacito-Pictured Cliffs Pool to include:

TOWNSHIP 25 NORTH, RANGE 3 WEST, NMPM
Section 15: SE/4

TOWNSHIP 27 NORTH, RANGE 4 WEST, NMPM
Section 29: SW/4
Section 30: E/2

TOWNSHIP 27 NORTH, RANGE 5 WEST, NMPM
Section 13: SW/4
Section 24: All
Section 25: N/2

- (f) Extend the South Blanco-Pictured Cliffs Pool to include:

TOWNSHIP 24 NORTH, RANGE 3 WEST, NMPM
Section 20: E/2
Section 21: All

TOWNSHIP 25 NORTH, RANGE 6 WEST, NMPM

Section 1: W/2
Section 2: All
Section 3: All
Section 10: NE/4
Section 14: E/2

TOWNSHIP 26 NORTH, RANGE 4 WEST, NMPM

Section 33: SW/4

TOWNSHIP 26 NORTH, RANGE 5 WEST, NMPM

Section 13: S/2
Section 15: S/2
Section 16: All
Section 23: N/2
Section 24: N/2

TOWNSHIP 27 NORTH, RANGE 6 WEST, NMPM

Section 1: All
Section 11: W/2
Section 12: E/2
Section 13: E/2

TOWNSHIP 27 NORTH, RANGE 9 WEST, NMPM

Section 5: E/2
Section 8: All
Section 9: W/2

- (g) Extend the Blanco-Mesaverde Pool to include:

TOWNSHIP 27 NORTH, RANGE 8 WEST, NMPM

Section 7: All

- (h) Extend the Angels Peak-Dakota Pool to include:

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM

Section 2: NW/4

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM

Section 35: SW/4

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM

Section 27: W/2
Section 28: E/2

- (i) Extend the Bisti-Lower Gallup Oil Pool to include:

TOWNSHIP 25 NORTH, RANGE 12 WEST, NMPM

Section 3: SE/4

TOWNSHIP 26 NORTH, RANGE 13 WEST, NMPM

Section 19: NW/4

- (j) Extend the Horseshoe-Gallup Oil Pool to include:

TOWNSHIP 30 NORTH, RANGE 16 WEST, NMPM
Section 10: NW/4 NE/4

- (k) Extend the Otero-Gallup Oil Pool to include:

TOWNSHIP 25 NORTH, RANGE 5 WEST, NMPM
Section 32: S/2 NE/4

- (l) Extend the Verde-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM
Section 20: NW/4

CONTINUED CASE

CASE 1508:

Application of El Paso Natural Gas Company for the establishment of 320-acre spacing units for the Dakota formation in San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks an order establishing 320-acre spacing units for all gas wells drilled to or completed in the Dakota formation in San Juan and Rio Arriba Counties, New Mexico, including the fifteen presently designated Dakota gas pools in said counties; and for the promulgation of special rules and regulations for said pools.

ir/

No. 27-58

SUPPLEMENTAL DOCKET: REGULAR HEARING OCTOBER 15, 1958

Oil Conservation Commission 9 a.m. Apache School Gymnasium, 600 Block
West Apache, Farmington, New Mexico

CASE 1519: Application of Sunray Mid-Continent Oil Company and British American Oil Producing Company for an order authorizing a secondary recovery project. Applicants, in the above-styled cause, seek an order authorizing a secondary recovery project in the Bisti-Lower Gallup Oil Pool in San Juan County, New Mexico. Applicants propose to inject liquefied petroleum gas and dry gas into the Gallup formation through the British American Marye Well No. 2 located in the NE/4 NE/4 of Section 12, Township 25 North, Range 13 West, and the Sunray Mid-Continent Federal "C" Well No. 20 located in the SW/4 NW/4 of Section 7, Township 25 North, Range 12 West, all in San Juan County, New Mexico.

ir/

Case 1508

PUBCO PETROLEUM CORPORATION

BOX 1419

1958 AUG 21 AM 8:26 ALBUQUERQUE, NEW MEXICO

TELEPHONE CHAPEL 7-8836
CHAPEL 7-8837


August 20, 1958

New Mexico Oil Conservation Commission
Post Office Box 871
Santa Fe, New Mexico

Gentlemen:

As per the attached Application, Pubco Petroleum Corporation joins El Paso Natural Gas Company in its Application for an Order establishing 320 acre spacing units for the Dakota formation in all Dakota Gas Pools situated in San Juan and Rio Arriba Counties, New Mexico and for the promulgation of rules and regulations pertaining thereto.

Very truly yours,


Frank D. Gorham, Jr.
Vice President

FDGJr/j
Encl.

cc: F. G. Daniell
Garrett C. Whitworth

*Docket Mailed
9-9-58
B P*

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

Adopted by
Debes

MAIL OFFICE OCC.
IN THE MATTER OF THE APPLICATION OF)
EL PASO NATURAL GAS COMPANY FOR AN)
ORDER OF THE COMMISSION ESTABLISHING)
320-ACRE DRILLING AND SPACING UNITS)
FOR THE DAKOTA FORMATION IN ALL)
DAKOTA GAS POOLS SITUATED IN SAN JUAN)
AND RIO ARriba COUNTIES, NEW MEXICO,)
AND FOR THE PROMULGATION OF RULES)
AND REGULATIONS PERTAINING THERETO.)

CASE NO. 1508

ORDER NO. _____

APPLICATION

Comes now El Paso Natural Gas Company, a Delaware corporation, authorized to do business in the State of New Mexico, Applicant herein, and respectfully alleges and states as follows:

1. Heretofore by the respective orders listed below, this Commission has designated the following fifteen Dakota gas pools located in San Juan and Rio Arriba Counties, New Mexico.

<u>Pools</u>	<u>Order No.</u>
(a) Angels Peak - Dakota	R-13
(b) Barker Creek - Dakota	R-13
(c) Blanco - Dakota	R-347
(d) South Blanco - Dakota	R-347
(e) West Blanco - Dakota	R-466
(f) East Companero	R-739
(g) Companero Dakota	R-347
(h) Huerfanito Dakota	R-624
(i) Huerfano - Dakota	R-347
(j) West Kutz - Dakota	R-347
(k) Largo - Dakota	R-739
(l) North Los Pinos - Dakota	R-624
(m) South Los Pinos - Dakota	R-624
(n) Ute Dome Dakota	R-13
(o) Otero Graneros - Dakota	R-1080

2. Applicant is the owner of oil and gas leases covering lands located within some of the said designated Dakota gas pools and of oil and gas leases in areas surrounding many

of such designated Dakota gas pools which, if productive in the Dakota formation, will be included in said gas pools.

3. A separate common source of supply of gas in the Dakota formation has been established by completion of wells drilled to the Dakota formation in the above designated Dakota gas pools.

4. A study of geological and engineering data now available pertaining to the said Dakota formation indicates that one well will efficiently and economically drain the recoverable gas in place in the Dakota formation underlying an area of not less than 320 acres. A drilling and spacing unit for gas wells drilled to the Dakota formation would properly be composed of one-half section according to U. S. Land Surveys, containing approximately 320 acres, in which unit all of the interest should be consolidated by pooling agreement or otherwise. No gas well should be drilled on such drilling unit on which another gas well has been completed or approved for completion in the Dakota formation.

5. Said 320-acre drilling and spacing units should consist of two contiguous governmental quarter sections within a single section as designated by the operators thereof, and the unit well should not be drilled closer than 990 feet from the boundary of either such governmental quarter section included in a unit; provided a tolerance of 200 feet be allowed, but all wells commenced prior to the date the Commission issues its order in this case and located on less than a 320-acre drilling and spacing unit and located closer than 990 feet to the boundary of a governmental quarter section should be recognized as exceptions to this order. The operator should be allowed to locate such unit well on any quarter section within such unit to permit maximum flexibility for the dual completion of such well with a shallower formation.

6. The establishment of drilling and spacing units as herein requested is necessary for the orderly development of the common source of supply in the designated Dakota gas pools and areas adjacent thereto and of any other gas pool to the Dakota formation within San Juan and Rio Arriba Counties, New Mexico that may hereafter be designated. This will protect the correlative rights of all parties affected, will prevent waste, will eliminate drilling unnecessary wells and will promote the recovery of gas from each of said pools in an efficient and economical manner.

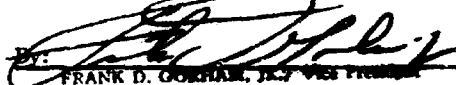
7. In the interest of conservation and for the protection of correlative rights, this Commission should promulgate rules and regulations governing the drilling and spacing of wells to the Dakota formation.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing after due notice as prescribed by law, and, upon such notice and hearing, the Commission issue its order establishing 320-acre drilling and spacing units for said common source of supply in the manner described herein and that the Commission promulgate special rules and regulations with respect thereto.


Attorney for El Paso Natural Gas Company

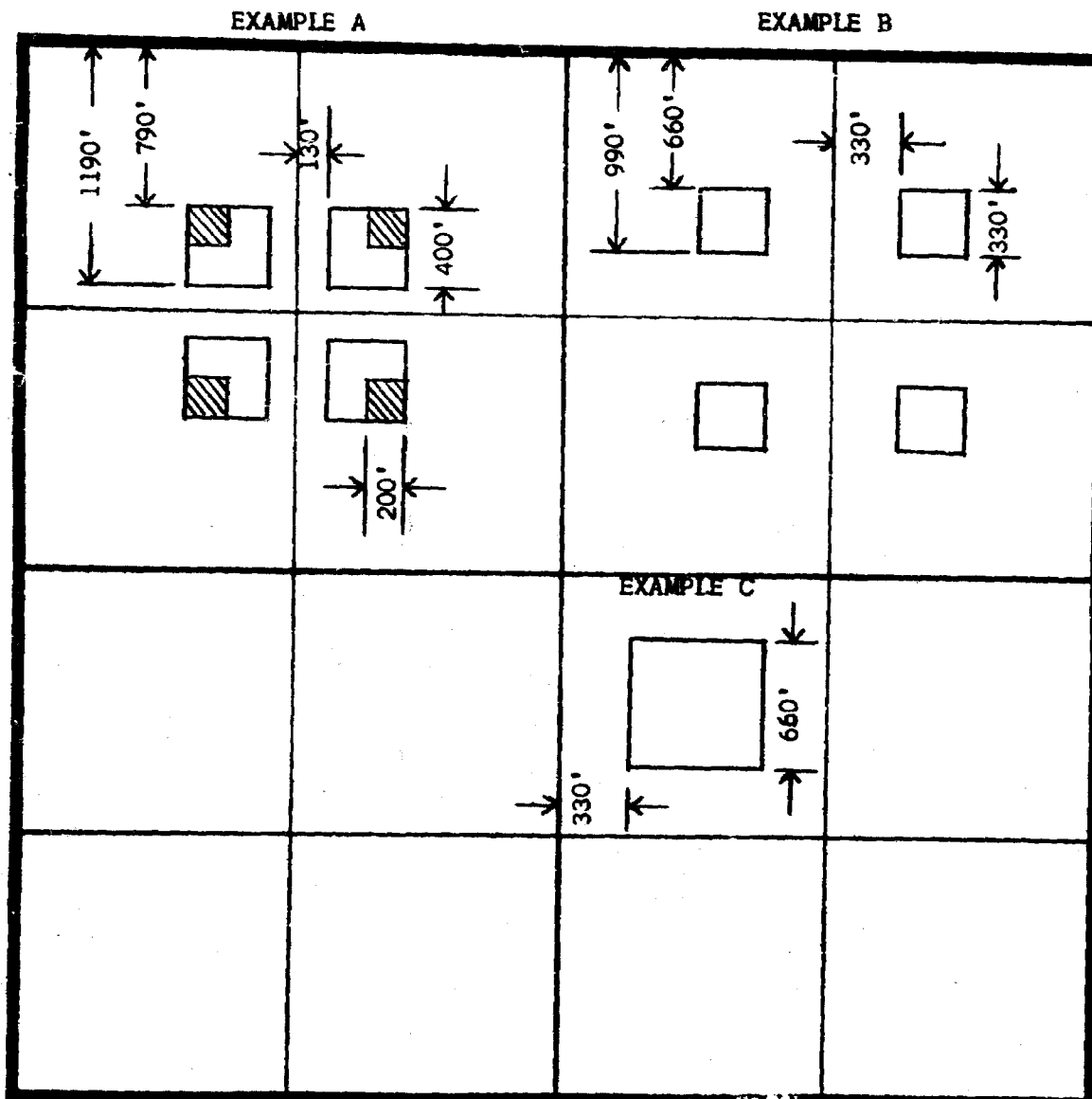
The undersigned hereby adopt and join to the foregoing application in all respects and respectfully request the Commission to grant the relief asked.

PUBCO PETROLEUM CORPORATION

By: 
FRANK D. GORMAN, JR., Vice President

STANDARD OIL AND GAS WELL LOCATIONS IN NEW MEXICO ACCORDING TO RULE
OF THE GENERAL RULES AND REGULATIONS

Sec _____ Township No. _____ of Range No. _____



EXAMPLE A - Shows Standard Gas Well location in San Juan, Rio Arriba and Sandoval Counties. 200' crosshatched square shows portion of 400' square which is a standard location for oil or gas wells. These locations may be used in any quarter section.

EXAMPLE B - Shows standard gas well location for the State, except San Juan, Rio Arriba and Sandoval Counties. These locations may be used in any quarter section.

EXAMPLE C - Shows Standard Oil Well location for the State. This location may be used for a wildcat oil or gas well except in San Juan, Rio Arriba and Sandoval Counties. This location may be used in any quarter quarter section.

11/19/56

Memo

From
ELVIS A. UTZ
Gas Engineer

To Mr.

I cannot see why
we don't limit the
NSL for oil by
forbidding drilling
(as item 330 from
40 ac. boundary within
a 5 mile radius of a
under. Oil discovery
The way it is sketched
in design. The point
will cause the NSLs

EU

GENERALIZED SECTION
PRODUCING FORMATIONS SAN JUAN BASIN NEW MEXICO

AGE	FORMATION		FIELDS
EOCENE	McDERMOTT		(DOGS - NON-PRODUCING TERTIARY BEDS) (NOT HIGH LEVELS)
UPPER CRETACEOUS age	KIRTLAND SHALE INCLUDING FARMINGTON SANDSTONE MEMBER		GAS - AZTEC OIL AND GAS - BOWELL OIL - WYPER
	FRUITLAND		
	PICTURED CLIFFS		GAS - FULLEREN BUTTE AZTEC BARKER CREEK SOUTH RUTZ CANYON WEST RUTZ CANYON
	LEWIS SHALE		
	CLIFF HOUSE		GAS - BLANCO
	MENESEE		
	POINT LOOKOUT (HOBSPAN IN MCKINLEY CO.)		GAS - BLANCO, LA PLATA, SOUTH LA PLATA OIL - HOBSPAN RED MOUNTAIN SEVEN LAKES*
	MANCOS		OIL - STONY BUTTE*
	DAKOTA		OIL - RATTLESNAKE HOBSPAN TABLE MESA LYNCHETH, STONEY BUTTE OIL AND GAS - ANGEL'S PEAK
	MORRISON		
JURASSIC	SAN RAFAEL GROUP		
	GLEN CANYON GROUP		
TRIASSIC	CHINLE		
	SHinarump MOENKOPF		
PERMIAN	CUTLER		
	RICO		
PENNSYLVANIAN	HERMOSA		OIL - RATTLESNAKE*
	PARADOX		GAS - BARKER CREEK UTE DOME
	MOLAS		
MISSISSIPPIAN	LEADVILLE		
DEVONIAN	OURAY		HELM GAS - RATTLESNAKE
ORDOVICIAN	ELBERT		
CAMBRIAN	IBNACIO QUARTZITE		
PRE-CAMBRIAN	GRANITE, GNEISS AND SCHIST		

*no longer producing or
non-commercial production

PROPOSED POOL RULES IN CASE 1523

Effective as of the date of this order, the following special rules and regulations shall apply to wells hereafter drilled or completed or re-completed to the Dakota reservoir in the San Juan Basin Area.

*Reason for exception
in necessity for
drill comp. of new
wells*

Rule 1. No well shall hereafter be projected to, drilled to, completed in or re-completed as a gas well in the Dakota reservoir, as defined in Rule 3, in San Juan and Rio Arriba Counties, New Mexico unless such well is located on a designated drilling unit of approximately 320 acres of land, more or less, according to legal subdivision of the United States Land Surveys consisting of two (2) contiguous governmental quarter sections in which unit all the interests are consolidated by pooling agreement or otherwise and on which no other gas well is completed or approved for completion to the same horizon. Such drilling unit shall be substantially in the shape of a rectangle except for normal variations in legal subdivisions of the United States Land Surveys and shall consist of the north half, south half, east half or west half of a regular section, or the nearest equivalent of an irregular section.

*Change to
be consistent with
Rule 104*

Rule 2. Any such gas well shall be located a minimum of 990' from the boundary of any quarter section provided, however, that a tolerance of 200' will be permissible. The Secretary-Director of the Commission shall have authority to grant exceptions to this Rule 2 where application has been filed in due form and such exception is based on topographic conditions. Applicant shall furnish all operators of leases offsetting the lease containing subject gas well, a copy of the application to the Commission and applicant shall include with this application, a list of the names and addresses of all such operators together with a written statement that all such operators have been properly notified by registered mail. The Secretary-Director of the Commission shall wait at least twenty (20) days before

approving any such exceptions and shall approve such exceptions only in the absence of objection of any offset operators. In the event an operator objects to the exception, the Commission shall consider the matter only after proper notice and hearing.

Rule 3. The "Dakota reservoir" as used in these rules shall consist of the gas producing zones lying between the base of the Greenhorn Limestone of Cretaceous Age and the base of the upper productive portion of the Morrison Sandstone of Jurassic Age which will include undifferentiated Graneros-Dakota and undifferentiated Dakota-Morrison.

Rule 4. Rules and regulations of the Commission relating to drilling, abandonment, completion and production shall be applicable to gas wells drilled to or completed in the Dakota reservoir as defined in Rule 3 above.

CROSS SECTION NO. 1 EXHIBIT NO. 3

Company	Well	Location	Completed	T/Cran.	TD	Potential	Prod. Int.	Stimulation	Remarks
EPNG	Allison #1	17-32N-6W	8-30-54	7811	8660	2326 IPF	7930-8084	SOE 7930-8084	DST 7942-8000 egg 844 mcf. DST 8099-8136 rec 20' mud. DST 8091-8099 rec 20' mud. DST 8122-8130 rec 250' mud. DST 8463-8570 rec 90' @ mud, 870' clear wtr. DST 8510-8590 rec 1170' @ mud, 1730 wtr.
Blackwood- Nichols	NE Blanco #1	27-31N-7W	10-24-52	7667	8095	IPF 536 mcf	7860-7995	Shot 7860-7995	DST 7748-7848 no gas. DST 7901-7956 rec 33' gcm. DST 8055-8095 gas and wtr.
Delhi-Taylor	Florance #26	25-29N-9W	4-17-56	6636	7033	none in Kd	none	none	No DST's or Cores.
McRae	Federal #1	28-28N-10W	5-31-57	6406	6730	53 bopd 2936 mcf	6528-92 6446-54 6464-74	SOE	DST 6541-6604 egg 150 mcf. DST 6590-6681 G. TSTM. DST 6430-6496 egg 632 mcf.
EPNG Products	Frontier #1-B	9-27N-11W	7-25-58	6475	6770	AOE 3002 mcf	6608-72 6553-89 6509-24	SWF	No DST's or Cores.

E.P. 84 8

CROSS SECTION NO. 2 EXHIBIT NO. 4

Company	Well	Location	Completed	T/Gran.	TD	Potential	Prod. Int.	Stimulation	Remarks
British American	Scott #1-D	20-28N-13W	9-1-57	6130	6426	Dry			DST 6265-96 rec al gcm. DST 6228-66 rec al gcm.
Pan American	Gallegos Canyon #8	22-28N-12W	2-8-52	5915	6188	7 BO & 150 mcf	6026-6103	Made 560 mcf & 6 BO after shot. Shot 6026-6103 in 1952. SOF 5845-6103 in 1954.	DST 5940-6006 20 mcf & o & gcm. DST 6006-6094 C. TSTM & 60' gcm.
McRae	Federal #1	28-28N-10W	5-31-57	6406	6730	2936 mcf & 53 BO	6446-6672 Gran-Dak.	Perf & SOF 6608-20 6622-28 6666-72 6528-92 6446-54 6464-74	DST 6541-6604 G 150 mcf & spray oil. DST 6590-6681 G TSTM. DST 6430-6496 632 mcf.
Byrd-Frost	Hughes #2	3-27N-9W	4-21-55	6624	6994	776 mcf	6740-56	Perf & SOF & Ac 6740-56	DST 6550-6667 200 mcf. DST 6670-6748 50 mcf. DST 6751-6834 rec mud. DST 6837-6877 rec mud. DST 6880-6965 rec mud & wtr.
Southern Union	Hodges #7	22-26N-8W	9-25-57	6963	7319	Dry			No DST's.
EPNG	Canyon Largo #29	7-25N-6W	7-18-54	6973	8144	Dry			Little gas & wtr. in Dak. DST 7119-7226 gas 25" TSTM. DST 7219-7326 gcm. DST 7223-7326 gcm.
Amerada	Jicarilla #F-1	17-25N-5W	7-25-56	6901	7330	Dry		SOF 7200-7210 7178-7189	Trace oil, gas & wtr. in Dak.

(Continued)							
Company	Well	Location	Completed	T/Gran.	TD	Potential	Prod. Int. Simulation Remarks
Amerada	Jicarilla #A-3	23-25N-5W	2-2-56	7110	7505	262 mcf & 20 BO	7132-76 Perf & SOF 7384-7468 7132-76 DST 7105-84 732 mcf 12" rec wtr. & dist. DST 7275-7359 gas TSTM. DST 6368-7505 3 mcf in 5", rec gcm & fresh wtr.
Conoco	Jicarilla #30-1	30-25N-4W	4-3-54	7395	8714	Dry	DST 7405-80, little gas in 15". DST 7545-87, n-s. DST 7600-763, little gcm. DST 7680-7718 rec wcm. DST 7754-7797 n-s.
Magnolia	Ingverson #4	20-24N-2W	3-13-54	7285	8464	20,744 BO 35,602 BW 17,349 mcf	? DST 7465-7485 n-s. DST 7565-7645 wcm. DST 7688-7708 rec 150' free oil & some gcxw. DST 7697-7730 rec 180' free oil & gcxw.

CROSS SECTION NO. 3 EXHIBIT NO. 5

Company	Well	Location	Completed	T/Gran.	TD	Potential	Prod. Int.	Stimulation	Remarks
Southern Union	Culpepper-Martin #2	30-32N-12W	10-19-51	6705	7015			Shot 6770-6970	DST 6738-61 failed G TSTM, gcm. DST 6744-66 failed. DST 6898-6953 gcm.
EPNG	Mudge #3	9-31N-11W	2-25-53	7191	7552	Ggd 255 mcf		Shot 7309-7552	
DeJha-Taylor	Florance #26	25-29N-9W	4-17-56	6636	7033				
EPNG	S. J. 28-7 #12	17-28N-7W	7-29-54	7596	7957	Ggd 329 mcf @ 7623. duced. Ggd 450 mcf @ 7712	not pro-	SOF 7639-7691 Ret. failed	
EPNG	S. J. 27-5 #1	4-27N-5W	5-21-52	7570	7881	IP 4380 mcf	7754-7881	Shot 7754-7881 with 370 qts.	DST 7743-82 G TSTM, gcm. DST 7710-7816 G TSTM, hl gcm. DST 7814-7847 G TSTM.
EPNG	S. J. 27-4 #14-X	18-27N-4W	12-4-57	7625	7964	IP 963 mcf	7651-82 7834-40 7845-50 7856-64 7897-7931	SWF 7651-7931	
Conoco	South Dulce #1	6-28N-2W	7-16-52	8084	13,248	none	none		DST 8273-8335 failed. DST 8274-8335 G TSTM, gcm. DST 8363-8423 gcm. DST 8455-8517 drilling mud.

DAKOTA CROSS SECTION NO. 4 EXHIBIT NO. 6

Company	Well	Location	Completed	T/Gran.	TD	Potential	Prod. Int.	Stimulation	Remarks
Pan American	Davies #1	27-28N-13W	3-15-57	6140	6400	IP 5400 mcf & 3 BOPD	6204-26 6252-60 6268-78 6293-6319	Ac SOF	DST 6160-6211 rec 0 mud. DST 6211-95 G ggd 62 mcf. DST 6280-6370 G TSTM, gcm. DST 6375-6400 wcm.
O. J. Lilly	O. J. Riddle #1	7-27N-12W	9-12-53	5775	5912	IP 584 mcf	5810-5912	SOF 5810-5912	DST 5635-5728, failed. DST 5879-85, rec 01 gcm.
EPNC	Hill #1	20-26N-12W	9-5-52	5645	5895				DST 5810-45 rec xw.
Shell	Carson #1	25-25N-12W	10-1-56	5660	5983				DST 6068-99 rec wcm. DST 6102-63 rec xw. DST 6162-6213 rec 0 mud. DST 6213-78 rec 0 mud. DST 6278-6328 rec xw.
Skelly	H. Bolack #1	5-24N-11W	8-12-56	5408	5776				
Deep Rock Oil	Edgar #1	35-24N-10W	11-28-52	5630	5924				
EPNC	English #1	1-23N-9W	10-18-52	6039	6378				
Great Western	Chaco Canyon #2	16-23N-8W	10-19-55	5788	6098				DST 5780-6098 rec xw.
Humble	South Chaco #4	10-22N-8W	9-16-57	5429	5855	Pump 10 BOPD & 4 BXWPD	5637-44	Nat.	DST 5252-5350 rec 0&gcm. DST 5442-5510 rec gcm. DST 5636-75 G TSTM, rec 0&gcm. DST 5637-44 G TSTM, rec 0&gcm. DST 5689-5725 rec 0&gcm.

DAKOTA CROSS SECTION NO. 5 EXHIBIT NO. 7

Company	Well	Location	Completed	T/Gran.	TD	Potential	Prod. Int.	Stimulation	Remarks
PNW	lg. 33-8 #4-13	13-33N-8W La Plata Co. Colorado	9-24-55	7245	7930	IP 2496 mcf	7510-7930	SOF Open hole	DST 9942-8000 G egg 844 mcf. DST 8099-8136 rec 0 mud. DST 8091-99 rec 0 mud. DST 8022-30 rec 0 mud. DST 8463-8510 0 mud & wtr. DST 8510-90 0 mud & wtr.
EPNG	Allison #1	17-32N-6W	8-30-54	7811	8660	IP 2326	7930-8084	SOF 7930-8084	DST 7686-7912 G TSTM, gcm. DST 7886-7938 G TSTM, failed. DST 7859-8087 G 480 mcf.
Pan American	Rosa Unit #1	11-31N-6W	11-22-51	7737	8087	Ggd 1730 mcf not produced	7866-8056	Shot 7866- 8056 with 480 qts.	DST 7686-7912 G TSTM, gcm. DST 7886-7938 G TSTM, failed. DST 7859-8087 G 480 mcf.
Phillips	Dakota Unit 30-5 #6-19	19-30N-5W	12-30-53	7463	7976	none			
EPNG	S. J. 27-5 #1	4-27N-5W	5-21-52	7570	7881	IP 4380 mcf show oil	7754-7881	Shot 7754- 7881 with 370 qts.	DST 7743-82 miscrun. DST 7743-82 G TSTM, gcm. DST 7710-7816 G TSTM, gcm. DST 7814-47, G TSTM, tools in hole.
EPNG	S. J. 27-4 No. 14-X	18-27N-4W	12-4-57	7625	7964	IP 963 mcf	7651-82 7834-40 7845-50 7856-64 7897-7931	S WF 7651-7931	

(Continued)

Company	Well	Location	Completed	T/Gran.	TD	Potential	Prod. Int.	Stimulation	Remarks
NWP	Jicarrilla "N" #8-8	8-26N-4W	6-3-57	6760	7910	IP 1048 mcf	7798-7804 7828-58 7864-70 7874-80 7696-7734 7744-58 7774-82 7610-24 7630-36 7642-66	SWF 7798-7880 SWF 7696-7782 SWF 7610-66	