

CASE 4232: Application of PAN AM.  
FOR A PRESSURE MAINTENANCE PROJECT  
CHAVES COUNTY, NEW MEXICO.

Case Number  
4232

Application

Transcripts

Small Exhibits

ETC.



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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
October 22, 1969

EXAMINER HEARING

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IN THE MATTER OF: )

Application of Pan American Petroleum )  
Corporation for a pressure maintenance )  
project, Chaves County, New Mexico. )  
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) Case No. 4232

BEFORE: Daniel Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: Case 4232.

MR. HATCH: Case 4232. Applicant of Pan American Petroleum Corporation for a pressure maintenance project, Chaves County, New Mexico.

MR. BUELL: For Pan American Petroleum Corporation, Harry Hickman and Guy Buell. We have one witness, Mr. Wells.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 5 were marked for identification.)

MR. BUELL: If it please the Examiner, I might make a brief opening statement to point out for the record that at the present time there are 219 wells in the Cato-San Andres Oil Pool. These wells have been developed slightly less than 9,000 surface acres.

We do not know at this time whether or not the Cato-San Andres Pool will be a good waterflood prospect. The data that we do have indicate that it will be. However, as yet in this pool it has not been a proven success. There is one pressure maintenance program now in operation in the Cato-San Andres Pool that has been in operation only a short while and not sufficient fluids have been injected to prove

it a success.

We do feel that since other San Andres oil reservoirs have been successfully flooded that we should make every attempt to determine whether or not the Cato-San Andres will lend itself to a flood. Of course, if it does, as extensive as it is and with the reserves that we have, significant increase in oil recovery could be achieved.

So, that is our request here today that we be permitted to conduct this pressure maintenance program to determine whether or not we can successfully inject water and increase recovery.

BILL WELLS

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Wells, would you state your name, by whom you are employed, in what capacity and in what location, please, sir.

A My name is Bill Wells. I am employed by Pan American Petroleum Corporation as petroleum engineer in Fort Worth, Texas.

Q Have you testified at previous Commission hearings and your qualifications as petroleum engineer are a matter of public record?

A Yes, sir, they are.

MR. BUELL: Any questions, Mr. Examiner?

MR. NUTTER: No.

Q (By Mr. Buell) Mr. Wells, at the outset I wish you would state what your recommendations and Pan American's request here will be so that the Examiner can evaluate your testimony and exhibits in that light.

A All right. We are requesting approval of a pressure maintenance project in the Cato-San Andress Field. We are requesting approval of a project area which would comprise the east half of Section 11, Township 8 South, Range 30 East in Chaves County.

We are also requesting approval for injection into our Baskett B Well No. 4. Additionally, we are requesting approval of an allowable treatment for this project.

Q What is the recommended allowable treatment?

A We are requesting that the project area be granted an allowable equal to the sum of the current allowables of the wells therein plus a top allowable for our

injection wells -- our proposed injection wells. This is similar to past approval.

Q All right, sir. Would you look first at what has been identified as Pan American's Exhibit No. 1. What is that exhibit?

A Exhibit No. 1 is a map of the eastern portion of the Cato-San Andres Pool. On the map all producing wells shown on this map are -- by the way -- in the Cato-San Andres Pool.

We have also shown outlined in red tape our proposed project area which, again, is the east half of Section 11, Township 8 South, Range 30 East.

Q How have you designated and identified the initial proposed injection well?

A The proposed injection well, the Baskett D No. 4, is designated by a blue circle. We also have a big black arrow pointing to it. It's located in the northeast quarter of the southeast quarter of Section 11.

Q That would be Unit 1 of Section 11, would it not -- I mean Unit I?

A Right; right.

Q All right, sir. It might be of benefit to the

Examiner if you would state, as briefly as possible, the producing capabilities of the offset wells to the injection wells?

A All right. The direct and diagonal offsets to this proposed injector are the number one Baskett D, which currently produces 65 -- or currently has a capacity of 65 barrels of oil per day.

Well No. 8, which has a capacity of one hundred barrels of oil per day. Our well No. 5 with the capacity of two hundred barrels per day. Well No. 3 with a capacity of 87 barrels per day; and well No. 7 with a capacity of 44 barrels per day.

Q There's one other project in existence in this pool at this time, the Sun Project. Is the area of that project included on Exhibit No. 1?

A Yes, sir; on the left-hand side of our map, Section 16 in the same township and range within that section, Sun's State H Lease is located.

You will notice in the lower or the southeast corner or southeast quarter of the southeast quarter of the -- this section, we have color-coated their State H Well No. 13 blue, which is their injector in their pressure maintenance project.



Q Do you have any comments you would care to make at this time on the Sun Program?

A Yes, sir. As you mentioned earlier, there's really insufficient injection -- cumulative injection into the well at the current time to evaluate flooding on this lease. Sun has injected some thirty-three thousand barrels of water to date. No response has been noted as of any such date, but as I said, we wouldn't expect any at this low cumulative injection.

Q Have they noticed or observed any adverse occurrences?

A No, sir.

Q From their injection?

A No, sir; they haven't.

Q Before we leave Exhibit 1, Mr. Wells, it appears to me that in our project area that five of the remaining seven producing wells in the area are either direct or diagonal offsets to our injection well. Is that observation correct?

A Yes, sir. Our proposed injector is an interior location on the lease and as such it does have five direct or diagonal offsets.

Q Do you have any other comments you care to make

on Exhibit No. 1?

A No, sir, I don't believe I do.

Q Would you turn then to Exhibit No. 2. What is that exhibit, Mr. Wells?

A Exhibit No. 2 is a performance curve from our Baskett D Lease showing a historical plot of GOR oil and water producing performance.

Q That is lease performance and not Cato Field performance?

A Yes, sir; true. This is the Baskett D Lease.

Q Would you briefly comment on any of the curves on that exhibit which you think would be pertinent to this hearing?

A All right. We show that during July of 1969, the most recent month shown on the curve oil production averaged 380 barrels of oil per day.

We also show that the corresponding water production to this oil production was 150 barrels of water per day. As of August 1, 1969, we had produced some 310,000 barrels of oil from the lease. Additionally, our GOR is approximately 975 cubic feet per barrel and there now -- as shown on Exhibit 1 -- eight producing wells on

the lease.

Q All right, sir. Turn now if you will to Pan American's Exhibit 3. What is that exhibit?

A Exhibit 3 is a schematic diagram of our proposed injector, the Baskett D Well No. 4. On this diagram, we have shown the mechanical set-up of the well as it would be equipped for injection.

We show that we would -- our injection string would be two and three-eighths inch plastic-coated tubing. It would be set in a tension packer at approximately 3400 feet.

Our injection interval would be the current producing interval which is 3514 to 3557 and 3584 to 3628. We also show that our annulus would be filled with an inhibited fluid and that we would have a pressure gauge on the surface.

Q All right, sir. Turn now if you will to Exhibit 4. What is that exhibit?

A Exhibit 4 is a gamma ray neutron log from this well from the proposed injector. We have shown the top of the San Andres correlative marker on this log in red pencil.

We have also shown the current producing interval

which, again, is the proposed injection interval.

Q In other words, we will be injecting directly into the proposed zones, the San Andres Zone in this area?

A Yes, sir; and this is the main San Andres pay in this portion of the field.

Q What about the offset wells on the Baskett Lease? Are they open in relatively this same interval?

A Yes, sir, they are.

Q Do you have any other comments on the log Exhibit No. 4?

A No, sir, I don't.

Q Turn please to Exhibit No. 5. What is that exhibit?

A Exhibit No. 5 is a pertinent data sheet showing various factors concerning our application. I would like -- I believe the data sheet is pretty much self-explanatory.

I would like to emphasize that the water to be injected into the injection well, the D No. 4 Well will be produced San Andres water from the Baskett D Lease.

Q At this time, Mr. Wells, do you have any idea of what the possible increase in ultimate recovery might be from this pressure maintenance project?

A No, sir. Due to the complicated nature of the

rock and the matrix in this field we are not able to make an accurate determination of any estimate of increased recovery due to this waterflood. As you mentioned in your opening statement, due to the large reserves or the large amount of reserves in this field, we feel that we need to evaluate waterflooding here.

There is an additional factor. There is no fresh water which could be used for waterflooding in this area. It would be about twenty miles south before we could find any and the cost of bringing water up to this area for flooding on a field wide basis would be very costly; so, we would like to evaluate, on a small-scale, the flooding potential of this reservoir prior to make any substantial investment.

Q And in that test using produced water as injective flood?

A Yes, sir. Now, basing just a rough estimate on our current estimate of ultimate primary from this lease, we feel that within or just considering the direct offsets to our injector alone increased recovery could range in a minimum of -- well, in the range of a minimum of 27,000 barrels to 55,000 barrels. As I said, this is a rough

estimate based strictly on our estimate of ultimate primary.

Q All right, sir. Now, what if we would expand the flood from a one well injecting pressure maintenance program to cover the entire project area. What, then, would you anticipate should pressure maintenance prove successful?

A Assuming that it does prove successful, which would be required before we would expand this, we estimate that on a minimum we would recover some 300,00 barrels additional recovery from this lease alone.

Q In other areas many San Andres reservoirs have been proven good waterflood or pressure maintenance prospects, have they not?

A Yes, sir. Yes, sir.

Q In view of the fact that in the Cato-San Andres Oil Pool we do not know yet whether we can successfully conduct a pressure maintenance program, does Pan American plan any monitoring of this program should the Commission approve it?

A Yes, sir. We will maintain a real close surveillance of production from the wells on the lease. This would include testing at least once monthly. Additionally, Pan

American in the majority -- in fact, in all of our other waterflood projects run a series of injection well tests from which we are able to predict and evaluate some of our waterflood performance.

This series of tests would be run on well number four here. In other words, we would very closely scrutinize the performance of this small flood.

Q Monthly tests on producing wells and performance tests on the injection well?

A Yes, sir.

Q In view of the safeguards that we have incorporated into this program and the close watch that we will keep on it, do you see how the correlative rights of any owners of interest in this pool could in any way be adversely affected?

A No, sir, I don't.

Q Do you see how this could be a conservation benefit, conserve conservation if it were revealed to not only Pan American, but to the other operators in this pool whether or not the Cato-San Andres reservoir is a good pressure maintenance project?

A Yes, sir. If we -- from the results of this one evaluation we can prove that the Cato field can be

flooded. This could lead to the recovery of several hundred thousand barrels of reserves which we couldn't recover under primary means. I think this is necessary out here. We need to evaluate waterflooding in this area.

Q Do you have anything else that you care to add to your testimony at this time, Mr. Wells?

A No, sir, I don't believe I do.

MR. STARKS: May it please the Examiner, that's all we have by way of direct evidence.

At this time, I would like to formally offer Pan American's Exhibits 1 through 5, inclusive.

MR. NUTTER: Pan American's Exhibits 1 through 5 will be admitted in evidence.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Wells, what's your estimated ultimate primary recovery from this lease?

A Mr. Examiner, we are -- based on -- this is actually a minimum number -- but, based on declined curve analysis assuming that we will go on decline right now or I believe August, '69, was the last month's production we had, we estimate we will recover some 1680 barrels of oil



per acre on primary from this lease.

MR. STARKS: What does that figure out to altogether?

THE WITNESS: I don't have that exact number. I can multiple it out for you.

Q (By Mr. Nutter) That's 1680 barrels per surface acre?

A Yes, sir.

Q It's a 320-acre lease?

A Yes.

Q But, you have up to now recovered approximately 310,000 barrels through July?

A Yes, sir.

Q Now, you mentioned the producing capacity of the five offsetting wells to the injection well. What is the capacity of the injection well at the present time?

A The injection well at the current time makes about one hundred barrels of oil per day.

Q How about those two wells at the north end of the lease?

A Those would be the Baskett D No. 2 located in the northeast of the northeast which makes 49 barrels of oil per day and the Baskett D No. 6, which is in the northwest of the northeast which has a capacity of about 80

barrels per day right now.

Q So, you have three wells which, under the present allowables, would be classified as top allowable wells being your number six, your number eight and number three?

A Yes, sir; that's true.

Q You are requesting a project allowable to be equal to the sum of the allowables of the various wells plus top allowable for the injection well?

A Yes, sir.

Q I think, Mr. Wells, if you will review the normal type of order that the Commission has entered in a pressure maintenance project that the injection wells usually receive an allowable equal to the allowable that was determined by a 72-hour test prior to putting the well on injection.

A I see. I'm sorry. I was misinterpreting something, I think. This would be fine with us.

MR. STARKS: May it please the Examiner, I am the person that misled him because it was my understanding that the Commission would allow you to transfer a top allowable from your injection well even though it might not be able to make it.

MR. NUTTER: There may be some orders that make

that provision, but I think the majority of them make a provision that the allowable would be based on the final twenty-four hours of the 72-hour test, Mr. Buell.

MR. STARKS: I will have to admit that the pressure maintenance orders that I am intimately familiar with were some of the earlier orders.

MR. NUTTER: I see. Are there any further questions of Mr. Wells? He may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Buell?

MR. BUELL: No, sir, but I believe Mr. Perdue with Union Texas has a statement he would like to make.

MR. NUTTER: Does anyone have anything to offer in Case 4232?

MR. PERDUE: I am Howard Perdue with Union Texas Petroleum from Midland. Union Texas supports Pan American's request for their authority to institute a pressure maintenance project with the injection of water into the Baskett D 4 Well.

In view of the possibility that directionally oriented permeability exists in this reservoir, Union Texas requests that any order authorizing this project

would contain two provisions; one of them would be monthly tests on the surrounding wells, which I believe has already been indicated by Pan American that they plan to do. We would also like for the Fisher Federal Wells to be included in the testing since they are offsetting this project to the east.

I believe Fisher Federal Wells No. 1 and 2 are in Section 12 and we would also request that a provision for review hearing approximately six months from the initiation of the water injection be set up to review the results of the water injection and the well testing. That's all.

MR. STARKS: May it please the Examiner, on behalf of Pan American we certainly have no objections to these requests of Union Texas. In fact, as Mr. Perdue pointed out we intend to do the very thing.

The Fisher Federal Wells that he mentioned are Pan American Wells, and we do intend to test them on monthly basis, also. We would have no objections at all to coming back to the Commission six months after we start injecting water to review not only with the Commission but other interested operators in the pool just what has occurred in the interim period.

We anticipate that it will take us from one month to forty-five days after the Commission issues its order to start injection operation.

MR. NUTTER: Thank you. Thank you, Mr. Perdue.

Does anyone else have anything to offer in Case 4232? We will take the case under advisement and call Case No. 4240.

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Glenda Banks  
Notary Public

March 12, 1973

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1232 heard by me on 10/22/69.

*[Signature]* Examiner  
New Mexico Oil Conservation Commission



## OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2080 - SANTA FE

87501

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER

STATE GEOLOGIST  
A. L. PORTER, JR.  
SECRETARY - DIRECTOR

October 29, 1969

Mr. Guy Buell  
Pan American Petroleum Corporation  
Post Office Box 1410  
Fort Worth, Texas 76101

Re: Case No. 4232  
Order No. R-3867  
Applicant:  
Pan American Petroleum Corp.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X

Artesia OCC X

Aztec OCC           

Other                     State Engineer Office



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:

CASE No. 4232  
Order No. R-3867

APPLICATION OF PAN AMERICAN PETROLEUM  
CORPORATION FOR A PRESSURE MAINTENANCE  
PROJECT, CHAVES COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 22, 1969, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 29th day of October, 1969, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, 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, Pan American Petroleum Corporation, seeks authority to institute a pressure maintenance project in the Cato-San Andres Pool on its Baskett "D" Lease, Chaves County, New Mexico, by the injection of water into the San Andres formation through its Baskett "D" Well No. 4, located in Unit I of Section 11, Township 8 South, Range 30 East, NMPM, Chaves County, New Mexico.

(3) That the applicant further seeks the designation of the project area and the promulgation of special rules and regulations governing said project.

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(4) That initially the project area should comprise only the following-described area:

CHAVES COUNTY, NEW MEXICO  
TOWNSHIP 8 SOUTH, RANGE 30 EAST, NMPM  
Section 11: S/2 NE/4 and SE/4

(5) That a pressure maintenance project, designated the Pan American Cato Baskett Pressure Maintenance Project, comprising the above described area is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(6) That an administrative procedure should be established whereby said project area may be expanded for good cause shown and whereby additional wells in the project area may be converted to water injection.

(7) That special rules and regulations for the operation of the Pan American Cato Baskett Pressure Maintenance Project should be promulgated and, for operational convenience, such rules should provide certain flexibility in authorizing the production of the project allowable from any well or wells in the project area in any proportion, provided that no well in the project area which directly or diagonally offsets a well on another lease producing from the same common source of supply should be allowed to produce in excess of top unit allowable for the Cato-San Andres Pool until such time as the well has experienced a substantial response to water injection. When such a response has occurred, the well should be permitted to produce up to two times top unit allowable for the Cato-San Andres Pool. Production of such well at a higher rate should be authorized only after notice and hearing.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pan American Petroleum Corporation, is hereby authorized to institute a pressure maintenance project in the Cato-San Andres Pool on its Baskett "D" Lease, Chaves County, New Mexico, to be designated the Pan American Cato Baskett Pressure Maintenance Project, by the injection of water into the San Andres formation through the following-described well in Section 11, Township 8 South, Range 30 East, NMPM, Chaves County, New Mexico:

Baskett "D" Well No. 4, located in Unit I

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(2) That the aforesaid water injection well shall be equipped with 2 3/8-inch tubing set in a packer, said packer being set at approximately 3400 feet. Further, that the casing tubing annulus shall be filled with an inert fluid and the annulus equipped with a pressure gauge to facilitate detection of leakage in the tubing or packer.

(3) That Special Rules and Regulations governing the operation of the Pan American Cato Baskett Pressure Maintenance Project, Chaves County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS  
FOR THE  
PAN AMERICAN CATO BASKETT PRESSURE MAINTENANCE PROJECT

RULE 1. The project area of the Pan American Cato Baskett Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the area described as follows:

CHAVES COUNTY, NEW MEXICO  
TOWNSHIP 8 SOUTH, RANGE 30 EAST, NMPM  
Section 11: S/2 NE/4 and SE/4

RULE 2. The allowable for the Project shall be the sum of the allowables of the several wells within the project area, including those wells which are shut-in, curtailed, or used as injection wells. Allowables for all wells shall be determined in a manner hereinafter prescribed.

RULE 3. Allowables for injection wells may be transferred to producing wells within the project area, as may the allowables for producing wells which, in the interest of more efficient operation of the Project, are shut-in or curtailed because of high gas-oil ratio or are shut-in for any of the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids or progress of sweep.

RULE 4. The allowable assigned to any well which is shut-in or which is curtailed in accordance with the provisions of Rule 3 which allowable is to be transferred to any well or wells in the project area for production, shall in no event be greater than its ability to produce during the test prescribed by Rule 6, below, or greater than the current top unit allowable for the pool during the month of transfer, whichever is less.

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RULE 5. The allowable assigned to any injection well on a 40-acre proration unit shall be top unit allowable for the Cato-San Andres Pool.

RULE 6. The allowable assigned to any well which is shut-in or curtailed in accordance with Rule 3, shall be determined by a 24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well should be produced in the same manner and at a constant rate. The daily tolerance limitation set forth in Commission Rule 502 I (a) and the limiting gas-oil ratio (2,000 to 1) for the pool shall be waived during such tests. The project operator shall notify all operators offsetting the well, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission, if they so desire.

RULE 7. The basic allowable assigned to each producing well in the Project shall be equal to the well's ability to produce or to top unit allowable for the pool, whichever is less. Wells capable of producing more than top unit allowable may also receive transfer allowable, provided however, that no producing well in the project area which directly or diagonally offsets a well on another lease producing from the same common source of supply shall receive an allowable or produce in excess of two times top unit allowable for the pool. Each producing well shall be subject to the limiting gas-oil ratio (2,000 to 1) for the pool.

RULE 8. Each month the project operator shall, within three days after the normal unit allowable for Southeast New Mexico has been established, submit to the Commission a Pressure Maintenance Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project as well as the total project allowable. The aforesaid Pressure Maintenance Project Operator's Report shall be filed in lieu of Form C-120 for the Project.

RULE 9. The Commission shall, upon review of the report and after any adjustments deemed necessary, calculate the allowable for each well in the Project for the next succeeding month in accordance with these rules. The sum of the allowables so calculated shall be assigned to the Project and may be produced from the wells in the Project in any proportion except that no well in the Project

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which directly or diagonally offsets a well on another lease producing from the same common source of supply shall produce in excess of two times top unit allowable for the pool.

RULE 10. The conversion of producing wells to injection, the drilling of additional wells for injection, and expansion of the project area shall be accomplished only after approval of the same by the Secretary-Director of the Commission. To obtain such approval, the project operator shall file proper application with the Commission, which application, if it seeks authorization to convert additional wells to injection or to drill additional injection wells shall include the following:

(1) A plat showing the location of proposed injection well, all wells within the project area, and offset operators, locating wells which offset the project area.

(2) A schematic drawing of the proposed injection well which fully describes the casing, tubing, perforated interval, and depth showing that the injection of gas or water will be confined to the San Andres formation.

(3) A letter stating that all offset operators to the proposed injection well have been furnished a complete copy of the application and the date of notification.

The Secretary-Director may approve the proposed injection well if, within 20 days after receiving the application, no objection to the proposal is received. The Secretary-Director may grant immediate approval, provided waivers of objection are received from all offset operators.

Expansion of the project area may be approved by the Secretary-Director of the Commission administratively when good cause is shown therefor.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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CASE No. 4232


Order No. R-3867

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

  
ALEX J. ARMIJO, Member

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



esr/

DOCKET NO. 29-69

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 22, 1969

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or  
Elvis A. Utz, Alternate Examiner:

CASE 4213: (Continued from the September 10, 1969, Examiner Hearing)

Application of Texo Oil Company for pool redelineation, creation of a new gas pool, an unorthodox gas well location, and non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the redelineation of the vertical limits of the South Corbin-Queen Pool to permit the creation of a new basal Penrose gas pool for its Buffalo Unit Well No. 11 located at an unorthodox gas well location 2310 feet from the South line and 330 feet from the West line of Section 35, Township 18 South, Range 33 East, Lea County, New Mexico. Applicant further seeks approval of an 80-acre non-standard gas proration unit comprising the N/2 SW/4 of said Section 35, to be dedicated to the above-described well.

CASE 4230: Application of Dalport Oil Corporation for an exception to Order No. R-3221, as amended, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's AMCO Federal Well No. 2 located in the SW/4 NW/4 of Section 31, Township 14 South, Range 30 East, Double L Field, Chaves County, New Mexico. Applicant seeks authority to dispose of salt water produced by said well in an unlined surface pit located in the vicinity of said well.

CASE 4231: Application of Western States Producing Company for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from 4174 feet to 4388 feet in its State "30" Well No. 3, located in Unit L of Section 30, Township 7 South, Range 33 East, Chavero-San Andres Pool, Roosevelt County, New Mexico.

- CASE 4232: Application of Pan American Petroleum Corporation for a pressure maintenance project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project on its Baskett "D" Lease by the injection of water into the San Andres formation through its Baskett "D" Well No. 4 located in Unit I of Section 11, Township 8 South, Range 30 East, Cato-San Andres Pool, Chaves County, New Mexico.
- CASE 4233: Application of Aztec Oil & Gas Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates-Seven Rivers formations in the open-hole interval from 3929 feet to 3990 feet in its State SR Well No. 1 located in Unit G of Section 16, Township 24 South, Range 36 East, Jalmat Field, Lea County, New Mexico.
- CASE 4234: Application of Gulf Oil Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the upper Morrow and lower Morrow formations underlying Section 12, Township 23 South, Range 24 East, Eddy County, New Mexico. Said acreage to be dedicated to a well to be drilled at a standard location 1650 feet from the North and East lines of said Section 12, and within one mile of the Rock Tank-Upper Morrow and Rock Tank-Lower Morrow Gas Pools. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.
- CASE 4235: Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Jack A-29 lease by the injection of water into the Seven Rivers-Queen formations through its Jack A-29 Wells Nos. 2 and 4 located, respectively, in Units J and O of Section 29, Township 24 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico.



CASE 4236: Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Anderson Ranch Unit Area by the injection of water into the Wolfcamp formation through its Anderson Ranch Unit Wells Nos. 4 and 5, located, respectively, in Units B and J of Section 11, Township 16 South, Range 32 East, Anderson Ranch-Wolfcamp Pool, Lea County, New Mexico.

CASE 4237: Application of Continental Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Monument-Tubb and Weir-Blinbry Pools in the well-bores of the following four wells located in Township 20 South, Range 37 East, Lea County, New Mexico:

Britt "B" Well No. 18 - Unit N - Section 10

Britt "B" Well No. 19 - Unit B - Section 15

Britt "B" Well No. 20 - Unit L - Section 10

Britt "B" Well No. 21 - Unit J - Section 10

CASE 4238: Application of McCasland Disposal System for the amendment of Order No. R-3781, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3781, to permit the disposal of produced salt water in the Yates formation, in addition to the previously authorized Seven Rivers formation, in its Getty Oil Company J. H. Day Well No. 2 located in Unit D of Section 6, Township 22 South, Range 36 East, Jalmat Pool, Lea County, New Mexico. Overall disposal interval would be from 3543 feet to 3939 feet.

CASE 4239: Application of Amini Oil Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Upper Pennsylvanian formation underlying the SE/4 of Section 8, Township 14 South, Range 34 East, Lea County, New Mexico. Said acreage to be dedicated to a well to be drilled at a standard location in said quarter section and within one mile of the Cerca-Upper Pennsylvanian Pool. Also to be considered will be the costs of drilling said

Case 4239 - Continued from Page 3 -

well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4240: Application of Pan American Petroleum Corporation for an exception to Order No. R-3221, as amended, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks exceptions to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exceptions would be for applicant's Smernoff Federal Well No. 1 located in Unit B of Section 24 and LaRue Federal Well No. 1 located in Unit D of Section 25, both in Township 15 South, Range 29 East, Sulimar-Queen Pool, Chaves County, New Mexico. Applicant seeks authority to dispose of water produced by said wells in two unlined surface pits located in said Units B and D.

CASE 4241: Application of Pennzoil United, Inc., for a non-standard gas proration unit or the creation of a new gas pool, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 320-acre non-standard gas proration unit comprising the E/2 of Section 21, Township 24 South, Range 26 East, White City-Pennsylvanian Gas Pool, Eddy County, New Mexico, said unit to be dedicated to applicant's Allied Federal 21 Well No. 1 located at a standard location in Unit J of said Section 21. In the alternative, applicant seeks the deletion of said Section 21 from the White City-Pennsylvanian Gas Pool and the creation of a new Morrow gas pool for said Allied Federal 21 Well No. 1.

CASE 4242: Application of Pennzoil United, Inc., for a non-standard gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C II, to permit the recompletion of its Mescalero Ridge Well No. 1 at a non-standard location 660 feet from the South and West lines of Section 20, Township 19 South, Range 34 East, and within one mile of the Quail Ridge-Morrow Gas Pool, Lea County, New Mexico.

October 22, 1969 - Examiner Hearing

Docket No. 29-69

-5-

(Continued from the October 8, 1969, Examiner Hearing)

CASE 4223: Application of Resler and Sheldon for two waterflood projects, Lea County, New Mexico. Applicants, in the above-styled cause, seek authority to institute two waterflood projects by the injection of water into the Grayburg, and possibly other formations in the perforated interval from approximately 3555 feet to 3617 feet in their Kelly Well No. 3 and into the Queen, and possibly other formations in the perforated interval from approximately 3439 feet to 3689 feet in their Steeler Well No. 1, said wells being located, respectively, in Unit M of Section 16, and Unit I of Section 20, Township 23 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico. In the alternative, applicants seek authority to dispose of produced salt water in said wells in the intervals as described above.

ATWOOD, MALONE, MANN & COOTER  
LAWYERS

OCT 21 1969

JEFF D. ATWOOD (1883-1960)  
CHARLES F. MALONE  
RUSSELL D. MANN  
PAUL A. COOTER  
BOB F. TURNER  
ROBERT A. JOHNSON  
JOHN W. BASSETT  
ROBERT E. SABIN  
RUFUS E. THOMPSON

505 622-6221  
P. O. DRAWER 700  
SECURITY NATIONAL BANK BUILDING  
ROSWELL, NEW MEXICO  
88201

October 20, 1969

Mr. A. L. Porter, Jr.  
Oil Conservation Commission  
State Land Office  
Santa Fe, New Mexico 87501

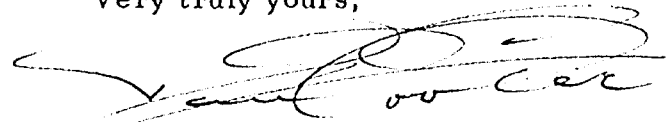
Re: Cases Nos. 4232 and 4240 on the October 22,  
1969 Examiner Hearing Docket

Dear Mr. Porter:

Would you please file the enclosed Entry of Appearance  
in the two captioned cases. The presentation of both cases will be  
handled by either Guy Buell or Gordon Ryan of Pan American Petrol-  
eum Corporation's Fort Worth office.

Appreciating your courtesy, and with our kind regards,  
we are,

Very truly yours,

  
Paul Cooter

PC:bc  
Encls.

cc: Harry O. Hickman, Jr., Esq. (w/Enc.)  
Guy Buell, Esq. (w/Enc.)

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF )  
PAN AMERICAN PETROLEUM CORPORATION )  
FOR A PRESSURE MAINTENANCE PROJECT, )  
CHAVES COUNTY, NEW MEXICO. )

No. 4232

ENTRY OF APPEARANCE

The undersigned, Atwood, Malone, Mann & Cooter of Roswell,  
New Mexico, hereby enters its appearance in this case as New Mexico  
counsel for Pan American Petroleum Corporation.

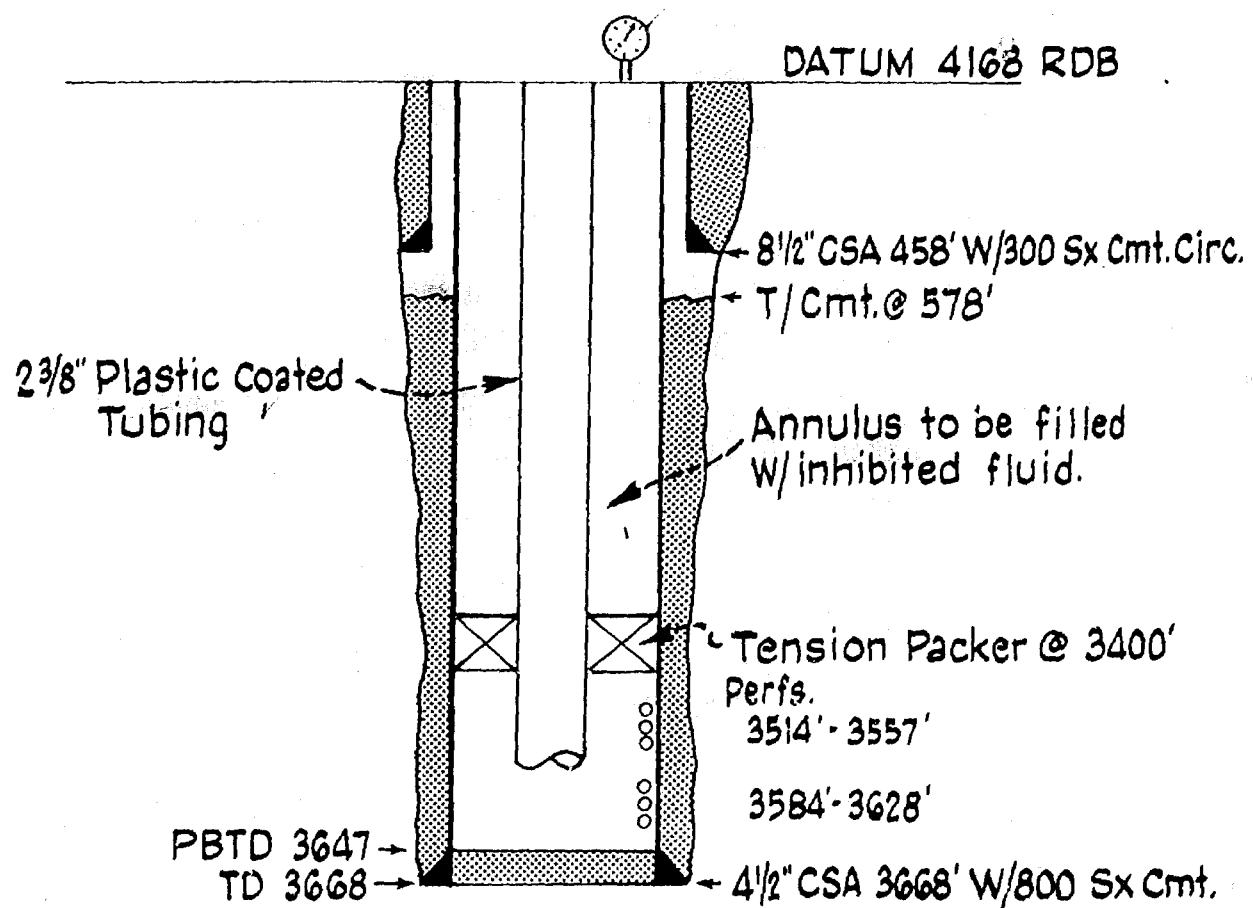
DATED this 20th day of October, 1969.

ATWOOD, MALONE, MANN & COOTER

By 

P. O. Drawer 700  
Roswell, New Mexico 88201

# D.C. BASKETT "D" WELL NO. 4



BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 5  
CASE NO. 4232

PERTINENT DATA  
PAN AMERICAN D. C. BASKETT "D" LEASE  
PRESSURE MAINTENANCE PROJECT  
CATO FIELD  
CHAVES COUNTY, NEW MEXICO

Proposed Injector	-	D. C. Baskett "D" Well No. 4
Injection Interval	-	3514-3557; 3584-3628 San Andres
Source of Injection Water	-	Produced San Andres Water from Baskett "D" lease.
Anticipated Rate	-	300 - 500 BWPB

BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
*100 Nov* EXHIBIT NO. 8  
CASE NO. 9237

# PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING

P. O. BOX 1410

D. L. RAY  
DIVISION ENGINEER

FORT WORTH, TEXAS--76101

September 16, 1969

File: PEH-430-986.510.1

Subject: Pressure Maintenance Project  
Cato (San Andres) Pool  
Pan American - Baskett "D" Lease  
Chaves County, New Mexico

SEP 17 1969  
SEP 18 1969

SEP 18 1969

*Case 4232*

New Mexico Oil Conservation Commission  
Post Office Box 871  
Santa Fe, New Mexico 87501

Gentlemen:

Pan American Petroleum Corporation respectfully requests that a hearing be docketed to consider approval of a pressure maintenance project for our Baskett "D" lease in the Cato-San Andres Field, Chaves County, New Mexico. The proposed injector for this project will be Baskett "D" Well No. 4, which is located 1980' FSL and 700' FEL, Section 11-T8S-R30E. We anticipate injection of from 300 to 500 BWPD into this well. The proposed project area will be the entire Baskett "D" lease.

Exhibits as required by Rule 701-B are attached. The proposed project area is outlined in red on Exhibit I and the proposed injection interval is shown on Exhibit II.

Yours very truly,

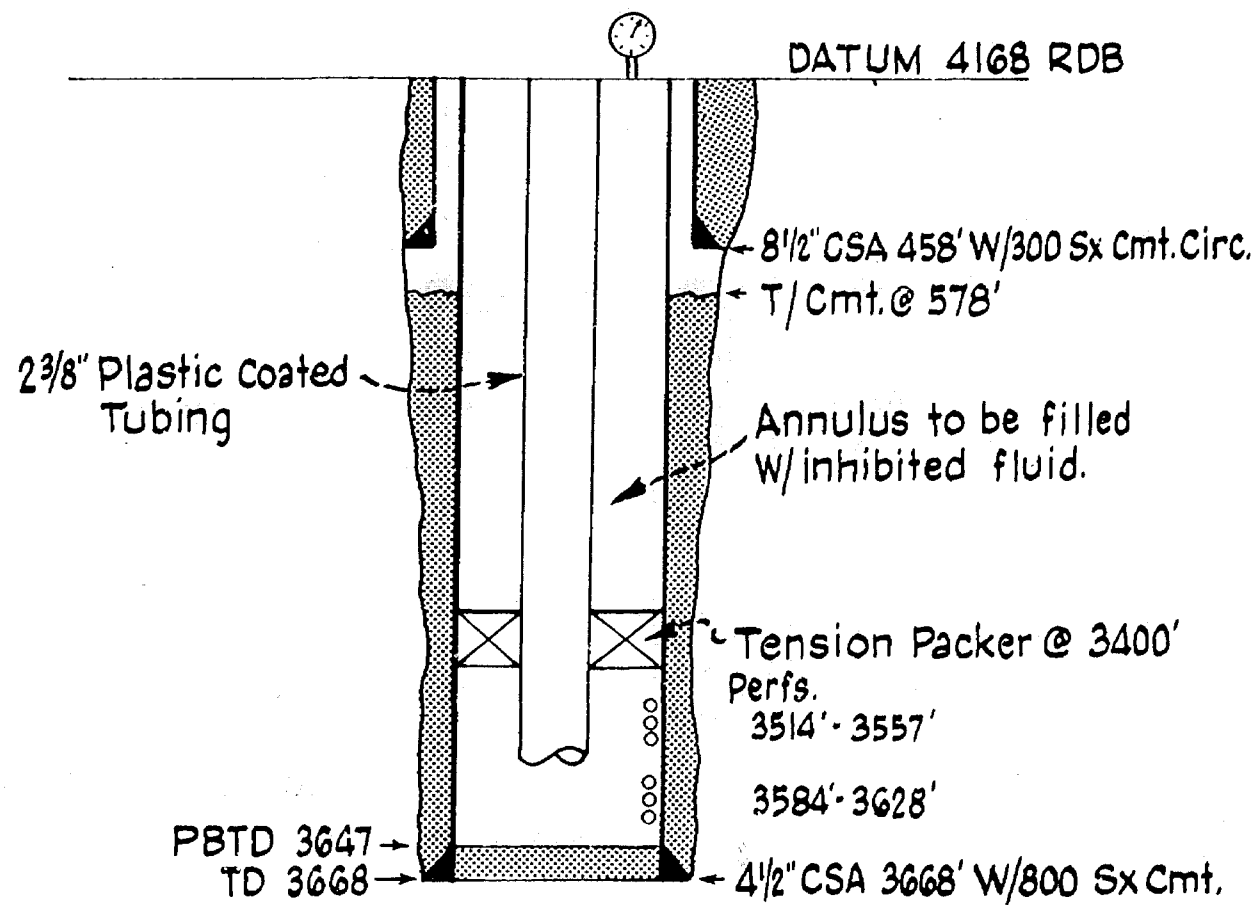
*D. L. Ray*

WCW:jn  
Attachments

DOCKET MARKED  
Date 10-9-69



# D.C. BASKETT "D" WELL NO. 4



Case 4232  
Attachment III

*Attachment IV*

PERTINENT DATA  
PAN AMERICAN D. C. BASKETT "D" LEASE  
PRESSURE MAINTENANCE PROJECT  
CATO FIELD  
CHAVES COUNTY, NEW MEXICO

Proposed Injector	-	D. C. Baskett "D" Well No. 4
Injection Interval	-	3514-3557; 3584-3628 San Andres
Source of Injection Water	-	Produced San Andres Water from Baskett "D" lease.
Anticipated Rate	-	300 - 500 BWPD

*Case 4232*

DRAFT

GMH/esr

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:

CASE No. 4232

Order No. R-3867

APPLICATION OF PAN AMERICAN PETROLEUM  
CORPORATION FOR A PRESSURE MAINTENANCE  
PROJECT, CHAVES COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 22, 1969,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this \_\_\_\_\_ day of October, 1969, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, 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, Pan American Petroleum Corporation,  
seeks authority to institute a pressure maintenance project in  
the Cato-San Andres Pool on its Baskett "D" Lease, Chaves County,  
New Mexico, by the injection of water into the San Andres forma-  
tion through its Baskett "D" Well No. 4, located in Unit I of  
Section 11, Township 8 South, Range 30 East, NMPM, Chaves County,  
New Mexico.

(3) That the applicant further seeks the designation of the  
project area and the promulgation of special rules and regulations  
governing said project.

(4) That initially the project area should comprise only the following-described area:

CHAVES COUNTY, NEW MEXICO  
TOWNSHIP 8 SOUTH, RANGE 30 EAST, NMPM  
Section 11: *S/2 NE/4 and SE/4*

(5) That a pressure maintenance project, designated the Pan American *Cato Buckett* Pressure Maintenance Project, comprising the above-described area is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(6) That an administrative procedure should be established whereby said project area may be expanded for good cause shown and whereby additional wells in the project area may be converted to water injection.

(7) That special rules and regulations for the operation of the Pan American *Cato Buckett* Pressure Maintenance Project should be promulgated and, for operational convenience, such rules should provide certain flexibility in authorizing the production of the project allowable from any well or wells in the project area in any proportion, provided that no well in the project area which directly or diagonally offsets a well on another lease producing from the same common source of supply should be allowed to produce in excess of top unit allowable for the Cato-San Andres Pool until such time as the well has experienced a substantial response to water injection. When such a response has occurred, the well should be permitted to produce up to two times top unit allowable for the Cato-San Andres Pool. Production of such well at a higher rate should be authorized only after notice and hearing.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pan American Petroleum Corporation, is hereby authorized to institute a pressure maintenance project

in the Cato-San Andres Pool on its Baskett "D" Lease, Chaves County, New Mexico, to be designated the Pan American Cato Baskett Pressure Maintenance Project, by the injection of water into the San Andres formation through the following-described well in Section 11, Township 8 South, Range 30 East, NMPM, Chaves County, New Mexico:

Baskett "D" Well No. 4, located in Unit I

✓ (2) That the aforesaid water injection well shall be equipped with <sup>2 3/8 inch</sup> tubing set in a packer, said packer being ~~located within~~ <sup>set at approximately 3400 feet.</sup> ~~foot of the uppermost perforation.~~ Further, that the casing-tubing annulus shall be filled with an inert fluid and the annulus equipped with a pressure gauge ~~or left open~~ to facilitate detection of leakage in the tubing or packer.

(3) That Special Rules and Regulations governing the operation of the Pan American Cato Baskett Pressure Maintenance Project, Chaves County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS  
FOR THE  
PAN AMERICAN CATO BASKETT PRESSURE MAINTENANCE PROJECT

RULE 1. The project area of the Pan American Cato Baskett Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the area described as follows:

CHAVES COUNTY, NEW MEXICO  
TOWNSHIP 8 SOUTH, RANGE 30 EAST, NMPM  
Section 11: S/2 NE/4 and SE/4

RULE 2. The allowable for the Project shall be the sum of the allowables of the several wells within the project area,

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including those wells which are shut-in, curtailed, or used as injection wells. Allowables for all wells shall be determined in a manner hereinafter prescribed.

RULE 3. Allowables for injection wells may be transferred to producing wells within the project area, as may the allowables for producing wells which, in the interest of more efficient operation of the Project, are shut-in or curtailed because of high gas-oil ratio or are shut-in for any of the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids or progress of sweep.

RULE 4. The allowable assigned to any well which is shut-in or which is curtailed in accordance with the provisions of Rule 3, which allowable is to be transferred to any well or wells in the project area for production, shall in no event be greater than its ability to produce during the test prescribed by Rule 6, below, or greater than the current top unit allowable for the pool during the month of transfer, whichever is less.

RULE 5. The allowable assigned to any injection well on a 40-acre proration unit shall be top unit allowable for the Cato-San Andres Pool.

RULE 6. The allowable assigned to any well which is shut-in or curtailed in accordance with Rule 3, shall be determined by a 24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well should be produced in the same manner and at a constant rate. The daily tolerance limitation set forth in Commission Rule 502 I (a) and the limiting gas-oil ratio (2,000 to 1) for the pool shall be waived during such tests. The project operator shall notify all operators offsetting the well, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission, if they so desire.

RULE 7. <sup>basic</sup> The allowable assigned to each producing well in the Project shall be equal to the well's ability to produce or to top unit allowable for the pool, whichever is less, provided <sup>that any</sup> ~~that any~~ producing well in the project area which directly or diagonally offsets a well on another lease producing from the same common source of supply shall not produce in excess of two times top unit allowable for the pool. Each producing well shall be subject to the limiting gas-oil ratio (2,000 to 1) for the pool.

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RULE 8. Each month the project operator shall, within three days after the normal unit allowable for Southeast New Mexico has been established, submit to the Commission a Pressure Maintenance Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project as well as the total project allowable. The aforesaid Pressure Maintenance Project Operator's Report shall be filed in lieu of Form C-120 for the Project.

RULE 9. The Commission shall, upon review of the report and after any adjustments deemed necessary, calculate the allowable for each well in the Project for the next succeeding month in accordance with these rules. The sum of the allowables so calculated shall be assigned to the Project and may be produced from the wells in the Project in any proportion except that no well in the Project which directly or diagonally offsets a well on another lease producing from the same common source of supply shall produce in excess of two times top unit allowable for the pool.

RULE 10. The conversion of producing wells to injection, the drilling of additional wells for injection, and expansion of the project area shall be accomplished only after approval of the same by the Secretary-Director of the Commission. To obtain such approval, the project operator shall file proper application with the Commission, which application, if it seeks authorization to convert additional wells to injection or to drill additional injection wells shall include the following:

- (1) A plat showing the location of proposed injection well, all wells within the project area, and offset operators, locating wells which offset the project area.
- (2) A schematic drawing of the proposed injection well which fully describes the casing, tubing, perforated interval, and depth showing that the injection of gas or water will be confined to the San Andres formation.
- (3) A letter stating that all offset operators to the proposed injection well have been furnished a complete copy of the application and the date of notification.

The Secretary-Director may approve the proposed injection well if, within 20 days after receiving the application, no objection to the proposal is received. The Secretary-Director

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may grant immediate approval, provided waivers of objection are received from all offset operators.

Expansion of the project area may be approved by the Secretary-Director of the Commission administratively when good cause is shown therefor.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

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

S E A L

esr/