BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 23, 1965

EXAMINER HEARING

IN THE MATTER OF:

Application of Shell Oil Company for special rules for the East Hightower-Upper Pennsylvanian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the East Hightower--Upper Pennsylvanian Pool in Section 25, Township 12 South, Range 33 East, Lea County, New Mexico, including a provision for 80-acre proration units.

Case No. 3336

BEFORE: DANIEL S. NUTTER, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: The hearing will come to order. The next case will be 3336.

MR. DURRETT: Application of Shell Oil Company for special rules for the East Hightower-Upper Pennsylvania Pool, Lea County, New Mexico.

MR. BUELL: Sumner Buell of Seth, Montgomery, Federici and Andrews appearing on behalf of the Applicant. I have one witness and ask that he be sworn.

(Witness sworn.)

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

R I C H A R D D. S E B A, a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Would you state your name, by whom you are employed, and where and in what position?

A I am Richard D. Seba with Shell Oil Company in Midland.

MR. NUTTER: How do you spell that?

THE WITNESS: S-E-B-A.

MR. NUTTER: Thank you.

THE WITNESS: And I'm a reservoir engineer with the Western Division.

Q (By Mr. Buell) Have you previously testified before

this Commission?

A Yes, I have.

Q Are you familiar with the application in Case Number 3336?

A Yes.

Q What does Shell seek by that application?

A Shell Oil Company seeks special pool rules for the East Hightower-Upper Pennsylvanian Pool located in the southeast quarter of Section 25, Township 12 south, Range 33 east of Lea County, New Mexico. The special rules sought include establishment of 80-acre proration units and the limits of the pool were previously established by the New Mexico Oil Conservation Commission in 3319(e).

Q And what were those limits?

A The limits as defined previously were determined in the Shell State "HTA" Number 1 and they were stated that the top would be 9750 and the base to be 10,010 feet in that particular well.

Q And what was the horizontal extent?

A The horizontal extent of the pool would be limited to the southeast quarter, Section 25, Township 12 south, Range 33 east.

Q Referring you now to what has been marked as Exhibit Number 1, would you state what it is and what it shows?

A Exhibit 1 is a map of the East Hightower Field and adjacent area with contours drawn on a marker at 9800 and the discovery well which is the "HTA" or "HT Number 1". This is located approximately in the center of the map and sits in the southeast quarter of Section 25. Now, the map is drawn on the 9800 rather than the 9750 as stated in the pool limits because this was a little better marker than the top as designated by the Commission and there is no pay above this 9800 interval.

Also on this map, I've indicated four other wells. The well in Section 36 in the northeast quarter of Section 36 is currently testing and in the process of completion in the subject reservoir.

The well in the northwest quarter of Section 31 is currently in the process of drilling and we anticipate that it will also encounter pay in the subject reservoir.

There are two other wells I've also shown on the plat: One located in Section 30 in the southwest quarter is a PanAm well, their "CY" Number 1 which is completed in the lower pen and is not completed in the upper pen. They've found only three feet of pay in the upper pen and are not able to make a completion. The other well, in the northeast quarter of Section 30, labeled "Texam Oil Corp. 1-30" is also a producer in the lower pen and is not completed in the upper pen. So, currently there is only one well completed in the East Hightower-Upper Pen field and

that is the one located in Section 25, Shell Oil "HT" Number 1.

Also on this map, I've shown the lease ownership. The leases with the stripe around them are Shell leases and adjacent to the Shell lease in Section 25, the two offset operators are Amerada and PanAm.

Q Also in Exhibit 1, do you have a cross section drawn on there?

A Yes. I have indicated a line of cross section -- west-east cross section through the three wells being the "HT" Number 1, the PanAm "CY" Number 1 and the Texam Oil Corporation Number 1, and this cross section is presented in Exhibit Number 2.

Q Okay. Would you explain Number 2, please?

A Exhibit Number 2 is a log cross section through the three wells that had logs available on them at the time the exhibit was prepared; being specifically the Shell "HT" Number 1, the PanAm State "CY" Number 1 and a Texam State 30, Number 1.

Also in this cross section I have indicated two correlation lines: One labeled "Top East Hightower Upper Pennsylvanian Field Pay" which I would like to point out is on 9800-foot point in the discovery well as opposed to the official top being 9750 and this was done so that it would correlate with the contour map as previously presented. The base which is labeled " Top East Hightower Lower Pennsylvanian" is as

specified by the Commission.

Also on this cross section, I wish to call your attention to the legend which indicates the interval open in each well. The interval drill stem tested in each well could involve each well and the interval production tested but not open to production.

I will limit my precise discussion to the Shell "HT" Number 1 since it is the only completion in the East Hightower Upper Pennsylvanian Pool at the present time.

We are completed in the interval 9835 to 9853 as shown by the Roman numeral "I". We cored the bottom part of that interval shown by the heavy line. We also drill stem tested that interval.

I would like to point out that drill stem test number 1 over this interval which had oil to the surface in 34 minutes has subsequently been completed and, I believe, at the present time is producing top allowable.

Q Are the drill stem tests shown on this exhibit?

A Yes. The drill stem tests for all the wells presented in the cross section are indicated at the bottom of the log.

Q Referring now to what has been marked as Exhibit 3, will you explain that, please?

A Exhibit 3 is a summary of the reservoir properties of the East Hightower Upper Pennsylvanian Pool as determined in the

discovery well. And I would like just to read through those.

We found a net pay of 12 feet and this 12 feet was spread over a total interval of 15 feet. It has an average porosity of 6 per cent, a permeability of approximately 4 milidarcies, water saturation of 40 per cent, reservoir temperature of 156 degrees Fahrenheit and original reservoir pressure of 3550 feet. Our fluid properties are rather limited in our knowledge. We feel that the original solution gas/oil ratio is approximately 1378 and the produced oil has a stock tank gravity of 44.9 degrees, API.

Q Would you also explain Exhibit 4?

A Exhibit 4 is further evidence of the reservoir properties presented in Exhibit 3 being a core-gamma correlation. The curve on the extreme left is the surface gamma ray readings made on the core. The second column is permeability, the third porosity and the fourth oil saturation and you will notice that I have changed the depth from the printed figure to those in red to correlate with the logs presented in Exhibit 2. This correlation was based on the core-gamma presented in the left-hand column so there was a 16 foot correction necessary to bring this in line with the logs presented. As stated before, this core was taken over the bottom portion of the producing interval substantiates that the core analysis or the reservoir properties as presented in enclosure 3.

I would also like to state at this time that this reservoir is quite similar in properties to several other Pennsylvanian reservoirs that are producing in the vicinity. In particular, we feel this is similar to the Inbe Field, the Ranger Lake, the Lane, the South Lane and North Bagley Pools and all of these have sufficient performance to substantiate the fact that we feel that one well will drain 80 acres.

Q Referring you now to Exhibit 5, would you run that briefly, please?

A Number 5 is an economic analysis of two specific spacing patterns.

The data at the top of the page is basic information applicable to both being that the oil value is $2.95, currently it is being purchased by the Permian Corporation. We estimate that a gas value is 11 cents per thousand cubic feet. Prior to the present time there is not a gas purchaser. Production taxes will be 21.8 cents per barrel. Lifting costs are estimated to be 33.5 cents per barrel and the investment to drill a well in this Pool plus the lease facilities and pumping unit require would total $174,000. Shell's net interest in the discovery well is 87-1/2 per cent.

Specifically, I would like to call your attention to several items in the economic analysis. First of all that we estimate from an analogy with similar reservoirs in this

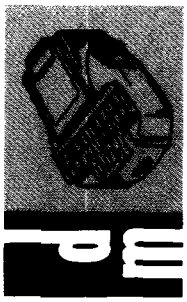
vicinity that we would recover 75,000 barrels on 40-acre spacing and 150,000 barrels on 80-acre spacing.

Just going down the column, this is calcuations leading up to the final profit for such a venture, including operating costs, production taxes, leading to a net income for 40 acres of $190,000 and for 80 acres of $381,000, subtracting off the investment for each which is the same, $174,000, would yield a profit for a 40 acre well of only $16,600 whereas for a 80 acre well we would derive a profit of $207,200.

One convenient way of looking at the profit available as criteria for such a venture would be to compare that profit-to-investment in item 12 as product venture for both wells based on this. This indicates that we would expect about a 9-1/2 per cent profit for a 40-acre spacing which we feel would not be what a prudent operator would be able to accept and continue development in this field. However, on 80-acre spacing we would derive approximately 119 per cent profit which we feel would be acceptable and lead to further and full development of this oil pool.

Q Mr. Seba, do you feel that one well can effectively drain 80 acres?

A Yes, I do and I base this on analogy with similar Pennsylvanian Reservoirs in the vicinity that have recurred what must be under 80 acres.



Q Do you also feel that this draining of 80-acre proration units would prevent waste and protect correlative rights?

A Yes, I do. I believe it would prevent waste and the fact that it would lead to full development of this reservoir whereas the economics on smaller spacing would not lead to full development.

Q Have you contacted any of your adjoining interest owners there in regards to this hearing?

A Yes. Both Pan American Petroleum Corporation, and Amerada were contacted and asked whether they would be in favor of 80-acre spacing for the pool and both of them indicated that they would be happy to accept and would support 80-acre spacing for this pool.

Q Were Exhibits 1 through 5 prepared by you or under your supervision?

A Yes.

MR. BUELL: I would like to move the introduction of Exhibits 1 through 5 as evidence.

MR. NUTTER: They will be admitted as evidence.

(Whereupon, Applicant's Exhibits 1 through 5 were offered and admitted into evidence.)

MR. BUELL: I have no further question.

MR. NUTTER: Does anyone have further questions of Mr. Seba?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Seba, this "HTA" well, number 1, which is presently drilling is pretty far down, isn't it?

A Yes. I stated that it's in the process of testing and completion. We have not made a completion. The last information I had, they were still testing and trying to determine which one or both that they should complete in, whether it would be the Upper Pennsylvanian and or the Lower Pennsylvanian.

Q Have tests been made in each of the two zones to date?

A I'm not aware of the results of the test. When I left Midland, they were just in the process. They had run the pipe through both zones and were in the process of testing them.

Q Then you don't know the drill stem tests or any other tests that were made or conducted to date?

A No, sir, I don't.

Q How about your "HTB Number 1", has drilling commenced on that?

A Yes. We are down three to four thousand feet. I'm not sure of the precise depth but we are drilling on that well.

Q Now, to what extent did Pan American test this upper

pen zone, do you know?

A Yes. The drill stem tests for this is presented on Exhibit Number 2. They did encounter only three feet of pay on this and on drill stem tests they recovered 50 feet of oil and 900 feet of gas-cut mud and 3807 feet of salt water. To my knowledge they did not attempt to complete in this zone.

Q Well, that drill stem test number 1 actually isn't in the same equivalent zone that you're producing from, would you say on examination of your cross section?

A No, it is not and this is the only zone that they found porosity in -- in the Upper Pennsylvanian, only this 3 feet of pay and they did test that 3 feet of pay. Actually in the correlative zone with the "HT" 1 it was completely tight.

Q I see. Now, there has been an Upper Pen pool and a Lower Pen pool designated by the Commission?

A Yes, at a hearing I think it was in October 13th in Case Number 3319(e) on the motion of the Commission. The limits of the East Hightower Pennsylvanian were contracted and two pools were set up.

Q The vertical limits were split and two pools were set up?

A Where previously the Texam well was prorated in the East Hightower Pennsylvanian, but now it is in the East Hightower Lower Pennsylvanian.

Q Now, do you know whether there any 80-acre rules for the original Hightower Pennsylvanian. I mean, the original East Hightower Pen prior to this time?

A I don't think there were any field rules, any pool rules, no, sir.

Q And there's only that one well in that pool and that would be the PanAm well?

A No, there are two: Texam well which was the discovery well and the PanAm "CY" Number 1 are both in the Lower Pennsylvanian.

Q I see. Now, you haven't actually made a computation of the reserves in this area based on your porosity and water saturation and such other reservoir and this 75,000 barrels of recoverable oil for 40 acres is an estimate analogous to some other pools --

A Yes.

Q -- of a similar nature in the county?

A The reason that we approached the problem in this manner is that in fields of rock of this nature we have in the past tried to make a volumetric calculation based upon the reservoir properties that we see in the individual wells and we found these to be grossly in error when we compared our original estimates to what we actually produced from these reservoirs; that we have gone to analogy barrels per net feet

that we have produced from similar reservoirs in the area. If anything, it's my opinion that a volumetric calculation using these reservoir perimeters would even come out lower than the 75 and 150,000 barrels.

Q Do you by any chance know what the formation volume factor is here?

A I don't know precisely but I would imagine that it was in the vicinity of 1.2 to 1.3.

MR. NUTTER: Are there any other questions of Mr. Seba? You may excused.

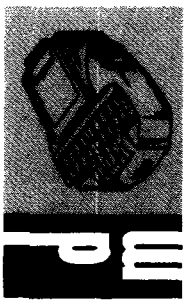
Do you have anything further, Mr. Buell?

(Counsel nods head.)

Does anyone have anything further they wish to state in Case 3336?

We will take the case under advisement and call Case 3337.

(Whereupon, Case Number 3336 was concluded.)



I N D E X

E X H I B I T S

EXHIBIT	MARKED FOR IDENTIFICATION	OFFERED	ADMITTED
App's. 1	2	10	10
App's. 2	2	10	10
App's. 3	2	10	10
App's. 4	2	10	10
App's. 5	2	10	10

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, DEAN A. ROBINSON, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 3rd day of December, 1965.

Dean A. Robinson
NOTARY PUBLIC

My Commission Expires:

October 16, 1969.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3336 heard by me on 11/23, 1965.

....., Examiner
New Mexico Oil Conservation Commission

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 2, 1966

EXAMINER HEARING

IN THE MATTER OF:

Case Number 3336 being re-opened pursuant to provisions of Order Number R-3005, which Order established eighty acre spacing units for the East Hightower-Upper Pennsylvanian Pool Lea County, New Mexico.

Case No. 3336 (Re-opened)

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 3336.

MR. HATCH: Case 3336 Re-Opened, in the Matter of Case Number 3336 being re-opened pursuant to provisions of Order Number R-3005, which Order established eighty acre spacing units for the East Hightower-Upper Pennsylvania Pool, Lea County, New Mexico, for a period of one year.

MR. MORRIS: May the Examiner please, I am Dick Morris of Montgomery, Federici and Andrews, Santa Fe, New Mexico, appearing on behalf of Shell Oil Company, which was the company that was the Applicant for the Special Rules in the East Hightower Pool when Case 3336 was first considered by the Commission.

We will have one witness, Mr. Dave Frawley, and I ask that he stand and be sworn at this time.

(Whereupon, the witness was sworn.)

DAVID FRAWLEY

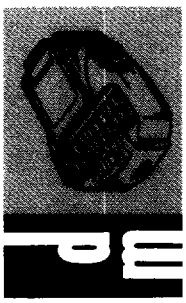
called as a witness, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. MORRIS:

Q Mr. Frawley, will you please state your name, where you reside, by whom you are employed, and in what capacity?

A My name is David Frawley. I reside in Midland, Texas, and I am employed by Shell Oil Company as Senior



Reservoir Engineer in our Western Production Division.

Q Have you previously testified before the New Mexico Oil Conservation Commission or one of its Examiners?

A No, I have not.

Q Would you briefly state your education and experience in the oil industry?

A I graduated from the University of Tulsa in January, 1958 with a Batchelor of Science degree in petroleum engineering. I accepted permanent employment with Shell Oil Company upon graduation. I spent approximately one year in training in south Louisiana and south Texas. I was then assigned to Shell's Billings, Montana Division as a Field Exploitation Engineer. I spent approximately two years as a field engineer. I was then assigned to Shell's Billings Reservoir Engineer Division where I spent approximately three years. I was then assigned to Shell's foreign affilliates, P. T. Shell, Indonesia, for one and a half years. Upon returning to the United States, I was assigned to Shell's Drilling Division in New Orleans for approximately one year and, in June of this year, I was assigned to Shell's Western Production Division in our Midland area as Senior Reservoir Engineer.

Q Are you familiar, Mr. Frawley, with the temporary rules, special rules and regulations, that have been adopted

by the Commission for the East Hightower-Upper Pennsylvanian Pool?

A Yes, sir, I am.

MR. MORRIS: Are the witness's qualifications acceptable?

MR. UTZ: Yes, sir. They are.

Q (By Mr. Morris) Referring to the plat that has been marked as Exhibit Number One in this case, will you state what that exhibit is and the primary features of the exhibit?

A Exhibit One is a structure contour plat, contoured on top of the East Hightower-Upper Pennsylvanian Producing Zone. We have designated on this structure plat, particularly in Section Twenty-Five, Unit "B" in Section Twenty-Five, Twelve South, Thirty-Three East, the discovery well, Shell "HT", State Number One. That well was completed August 13, 1965.

The second well in the East Hightower-Upper Pennsylvanian Pool was the well in the section to the south, Section Thirty-Six, Unit "B", Twelve South, Thirty-Three East. That well was completed December 4, 1965.

At the time of the previous hearing, only the discovery well had been completed, and the second well was being tested.

We have a third well completed in the East Hightower-Upper Pennsylvanian Pool which is the section to the east,

Section Thirty-One, Unit "D", Twelve South, Range Thirty-Four East, and that well is Shell's State "HTB" Number One, completed January 19, 1966.

A fourth well, indicated here, in the vicinity of the structure is in Section Thirty, Unit "M", Twelve South, Thirty-Four East, Pan American's "CY" Well Number One. That well is completed in the East Hightower-Lower Pennsylvanian Pool. I point out, as far as the three wells completed in the Upper Pennsylvanian Pool, that they are spaced on a regular eighty acre pattern.

Q Are these four wells shown on a cross section which has been designated as Exhibit Number Two?

A That's correct.

Q Would you point out the features of that cross section?

A The cross section is designated "AA Prime" which is the line of section that is designated on the structure plat through the "HTA" Number One Well and the "HT" Number One and Pan American's "CY" Number One and Shell's State "HTB" Number One.

On the cross section, the second well from the left is the discovery well, and we can see that the contour datum which occurs in the discovery well at the depth of approximately ninety-eight hundred feet, is the top of the

East Hightower-Upper Pennsylvanian Producing Zone and that is correlated across the four wells to the contour data on Exhibit One.

To the left of the section, the log section, for State "HT" Number One, we have the vertical limits delineated for the Upper Pennsylvanian Pool-East Hightower Field, and then the Lower Pennsylvanian Pool.

Q This cross section shows that the Pan American well is definitely completed in the Lower Pennsylvanian, and the three Shell wells are completed in the Upper ?

A That's correct. The three Shell wells are completed in the Upper and the Pan American is completed in the Lower Pennsylvanian Pool.

Incidently, we do have, on the lower portion of the log of the three Shell wells, information relating to the unsuccessful attempts to establish Lower Pennsylvanian production. I point out that the three Upper Pennsylvanian completions are completed in a correlative limestone stringer that we may correlate across the wells and see that the wells are completed in the same zone which is geological evidence that the pool does extend, in each case, at least eighty acres to the next well.

Q Turning now to Exhibit Number Three, would you state what that is and what it shows?

A Exhibit Three is a summary of production data through September, 1966, for the three wells completed in the East Hightower-Upper Pennsylvanian Pool.

In September, production was 7,932 barrels of oil plus 2,148 barrels of water, for an average water cut of twenty-one percent. Gas production was 9,805 M.C.F., for an average producing gas-oil ratio of 1,236 cubic feet per barrel.

The discovery well, State "HT" Number One is still productive, while the second and third wells, State "HTA" Number One and State "HTB" Number One, are not pumping.

The cumulative reservoir oil production, September 30, 1966, is 96,387 barrels of oil.

Q Do you have any pressure information, Mr. Frawley, that would indicate the drainage by one well in excess of eighty acres?

A Yes, we do have, and that I think is now designated as Exhibit Four. It is a plot of reservoir pressures measured at the datum of 5,625 feet sub-sea versus cumulative oil production from the reservoir.

All the pressures are extrapolated from pressure buildup surveys or drill stem tests, and that are reported in the reservoir datum.

The pressure buildup survey in the discovery well,

Shell State "HT" Number One was taken August 17, 1965, and showed an initial pressure for the reservoir of 3,550 P.S.I. Subsequently, a drill stem test of the second well, completed in the Pool, State "HTA" Number One, was taken November 15, 1965, and showed a reservoir pressure at that time of 3,316 P.S.I. which was a drop in pressure of 234 pounds per square inch from the original pressure. On December 20, 1965, a drill stem test on the third completion in this reservoir, State "HTB" Number One, indicated a reservoir pressure datum of 3,118 pounds per square inch which was a drop in pressure of 432 pounds per square inch from the original reservoir pressure.

The latest pressure was taken September 26th in State "HT" Number One and showed the reservoir pressure to be 2,385 P.S.I. or 1,165 pounds per square inch less than the original pressure.

I would say that this is definite evidence that the wells are draining in excess of eighty acres. There is a definite pressure connection between the three wells.

Q Do you have any information to present to the Examiner concerning the economics of the drilling and production in this pool?

A Yes, sir, I do. That's designated Exhibit Five, I believe.

Q Will you point out the features of that exhibit?

A I think that the principal feature here is that based on the production performance we have seen in the two wells to date, plus the pressure cumulative information that we have, it is my opinion that the ultimate recovery from the three Shell wells will be approximately 300,000 barrels of oil which is an indicated recovery of 100,000 barrels for the average, eighty acre well, and I base the economics of drilling forty acre spacing versus eighty acre spacing on this indicated recovery of 100,000 barrels for an eighty acre well.

A forty acre well then is seen to recover an ultimate recovery of 50,000 barrels. In Item Nine which is the net income after royalties, taxes and operating costs, is one hundred and fourteen thousand dollars, while the capital investment is estimated to be one hundred and seventy-five thousand dollars, indicating a loss of a well drilled on forty acre spacing to be sixty-one thousand dollars for each well.

On eighty acre spacing, I estimate a recovery of one hundred thousand barrels per well, a net income of two hundred and twenty-eight thousand dollars, a capital expenditure of one hundred and seventy-five thousand dollars for an indicated profit of fifty-three thousand dollars, or thirty percent profit, and it is therefore apparent that forty acre spacing in this pool would be unprofitable while eighty

acre development would be only moderately profitable.

Q I think you stated at the outset of your discussion on this exhibit, Mr. Frawley, that your estimate of recoverable oil, forty and eighty acres, is based on performance of pressure information, and I ask if you have made any volumetric analysis of the oil influx?

A Yes, I have made a volumetric analysis of the oil in place based on the average net pay and porosity and water saturation we see in the existing wells. The lateral extent of the field is actually rather indefinite which makes a volumetric analysis difficult to say how much oil is in place in the total reservoir, but, under an eighty acre tract, it's my estimate that the recovery would be 100,000 barrels or less volumetrically.

Q And, probably less?

A Probably, yes.

Q Does Shell plan any further development in this pool?

A We have no development planned at this time. The economics, as I pointed out, are indicated that a well, even on eighty acre spacing, would only be moderately profitable, and not sufficiently profitable, in our opinion, to justify the risk of drilling.

There is a second problem, as I pointed out, on the

production exhibit, summary production data. All three of the wells are producing some water which is an additional risk, I feel, to down dip development. We have no immediate plans.

Q What is your recommendation concerning the rules and regulations to govern this pool from this time forward?

A It's my recommendation that the special rules which provided for temporary proration unit spacing of eighty acres be made a permanent spacing of eighty acres.

Q Were Exhibits One through Five prepared by you or under your supervision?

A Yes.

MR. MORRIS: We offer Shell's Exhibits -- I think they have been designated One "R" through Five "R", "R" to indicate re-opened. We offer those exhibits into evidence.

MR. UTZ: Without objection, Exhibits One "R" through Five "R" will be entered into the record in this case.

(Whereupon, Exhibits One "R" through Five "R" were entered into evidence.)

MR. MORRIS: That's all I have of Mr. Frawley at this time.

MR. UTZ: Is it your intention to run any communication test of any nature other than the pressures on your subsequent drilled wells to prove communication in this Pool?

A No, sir. We have no plans to run any communication

tests as such. We do feel that the pressure information is definitive, that it does show pressure connections between the three wells.

MR. UTZ: Is this a water drive or solution drive?

A In my opinion, it is principally a solution drive reservoir. However, there are indications of a partial water drive. I feel that it would be a combination.

MR. UTZ: Were the two pumping wells, flowing wells in the initial stage of production?

A The second well, State "HTA" Number One, was flowed initially then required putting on the pump. The third well, State "HT" Number One, was pumped from the outset.

MR. UTZ: Pan American is the only people that would have any acreage near the crest of the structure other than Shell, is that correct?

A That's correct.

MR. UTZ: And, they did not get a well in the Upper Penn in their location?

A They did not actually test an interval correlative to the interval which is completed in the Upper Penn. Zone in the three Shell wells. However, the development in their wells, as indicated from a sonic log, is quite poor. I wouldn't try to speak for Pan American but, in my opinion, that is probably

a non-economical completion.

MR. UTZ: Any questions of the witness?

MR. LYNCH: Mr. Frawley, my name is Tom Lynch and I represent Amerada Petroleum Corporation, and you testified that 100,000 barrels of oil in place. Is that recoverable?

A Excuse me, recoverable oil, 100,000 barrels for each eighty acre tract.

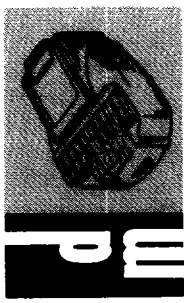
MR. LYNCH: That's all I have.

MR. UTZ: Are there other questions of the witness? The witness may be excused. Any statements in the case?

MR. LYNCH: Mr. Examiner, on behalf of Amerada Petroleum Corporation, my name is Thomas W. Lynch, appearing in association with Jason Kellahin. On behalf of Amerada, who owns substantial lease hold interests in the defined limits of this pool, we support Shell in this proposal.

MR. UTZ: Are there any other statements?

The case will be taken under advisement.



STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, W. DON McINTYRE, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission Examiner at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF, I have affixed my hand this 17th day of November, 1966.

W Don McIntyre
Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3336, heard by me on Nov. 17, 1966.

Elvis A. Utz, Examiner
New Mexico Oil Conservation Commission