BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 28, 1960.

IN THE MATTER OF:

APPLICATION OF CABEEN EXPLORATION CORPORATION for permission to complete its State 1-K Well located 1980 feet from the South and West lines of Section 11, Township 10 South, Range 32 East, in an undesignated Permo-Pennsylvanian pool in Lea County, New Mexico as a "slim-hole" completion, using 2-7/8 inch casing.

CASE NO. 2033

BEFORE:

Hon. Daniel S. Nutter, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: Hearing will come to order, please. Next case will be 2033.

MR. PAYNE: Case 2033. Application of Cabeen Exploration Corporation for a "slim-hole" completion.

MR. CAMPBELL: Jack M. Campbell, of Campbell and Russell, Roswell, New Mexico, appearing on behalf of the Applicant, Cabeen Exploration Corporation. I have two witnesses to be sworn.

(Witnesses sworn.)

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N E I L L H. P O T T S, a witness, called by the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CAMPBELL:

Q Will you state your name, please?

A Neill H. Potts.

Q Where do you live, Mr. Potts?

A I reside in Roswell, New Mexico.

Q What is your profession?

A My profession by degree is geologist; I have a Bachelors degree from the University of Wichita.

Q And what has been your practical experience in the oil business?

A I have three years with Amerada; five years with Shell as division geologist; and six years with Cabeen Exploration Corporation as manager of exploration, and vice-president.

Q Is that your capacity with Cabeen Exploration?

A I am vice-president of the Mid-continent area.

Q Are you acquainted with the application of Cabeen in this case?

A Yes, I am.

(Whereupon, Applicant's Exhibit 1 marked for identification.)

Q I refer you, Mr. Potts, to what has been identified as Applicant's Exhibit Number 1 in this case, and ask you to state what that is, please?

A This is a land plat, showing the acreage description of the Cabeen Exploration holdings, which comprises the W/2 of Section 11, Township 10 South, Range 32 East, Lea County, New Mexico.

Q Does it show the location of the well that is involved in this application?

A The Cabeen Exploration Corporation State Number 1-K was drilled in the standard location, 1980 feet from the West line, and 1980 feet from the South line, in Section 11 of this Township.

Q And I notice there are other wells appearing on the map. Would you explain to the Examiner whether or not those wells were drilled into, or through the formation from which you hope to produce the Cabeen Exploration Corporation well?

A Yes, this prospect was a seismic substance prospect, which all of the other wells on this plat had been drilled through the formation. The Wrather hole to the southwest was drilled to the Devonian; the Sunray well to the southeast was drilled to the Devonian; and the Monterey Oil in the NE/4 of the section was drilled to the Devonian; the Potts "A" well, drilled in this section, the bottom in the Mississippian has a low subsurface point, 200 feet low to the other control there at the top of the Mississipian.

MR. NUTTER: The well directly to the East isn't a deep well?

A This is a well drilled to the Yates sand.

Q (By Mr. Campbell) Dry?

A Dry and abandoned by Sunray.

Q Was your well projected to the Devonian?

A This was principally a Devonian prospect, the Devonian was the primary objective, and all of our intended completion

program was based on the Devonian test, or Devonian producer.

Q Are you acquainted with the history of the drilling of this well?

A Yes.

(Whereupon, Applicant's Exhibit 2 marked for identification.)

Q Mr. Potts, I am referring you to what has been identified as Applicant's Exhibit Number 2, which appears to be a log, and ask you if you will please trace the drilling of this well, giving the Examiner the pertinent information as to the geological aspects particularly in the drilling of this well. First state what Exhibit 2 is.

A Exhibit 2 is a radioactive log which is our correlation log from surface to total depth, which with the significant geological horizon marking thereon, we spudded this well April 9 of this year, and terrain rocks were on the surface, we encountered a normal section of triassic, permian, red beds and salt, with the standard section Yates-Queen and San Andres. The significant point here is that the San Andres was encountered at 3366, with the intermediate picture set at 3505, which is through the porosity in the upper San Andres section. There were no significant shows of oil or gas in any of this section, it continues down through the Glorieta 4772, through the Tubb 6216, Abo at 7,078; to the top of the Waco or Wolfcamp formation at 6204. It was approximately at this point, we began to get significant shows of oil and gas.

The key zone in this area is that section, that section was cored in, core Number 1 and 2 shown on the log; this section, the drill stem tested about 3003 to 3. Oil in the Wrather test, Southwest of us, but on the subsequent drill stem test of this interval, recovered only 240 feet of mud with no show. We continued down.

Q Did you at that time consider this particular zone was probably not commercial?

A At that time we would have to assume from the core analysis which showed less than two millidarcies throughout the cored interval, plus the data in the drill stem test, this was certainly not a commercial horizon, other than from the data we had on it at that point.

Q Go ahead.

A We then continued to drill through the Atoka section, the rights for which were reserved by Sunray on the interval of 10,193 to 10,204; the section was cored and found to be too tight to produce. Then a normal section of the Mississippian and Wolf-Camp was encountered, and the top of the Devonian was, the top was encountered at 10,790 and it was at this point, 18 feet structurally lower than the Sunray hole Southwest of us, and 37 feet lower than the Wrather hole Southwest of us; both of these previous testings, drill stem tested salt water in the Devonian.

It was at this point when it was logged a dry hole in the Devonian, that our interest was shifted to any other possible zone that might recoup the loss in some way, the $155,000.00 in-

vestment we had made at this point. We were able to gain a little additional support from the interpretation of the radioactive log, and came up with four anomalous zones, three of which had already been tested over the drill stem Number 1 interval. However, knowing the problem you have with drilling fluids blocking the formation, and not wishing to allow this blocking action to take any further toll in this interval, it was my election at this point to run pipe in order to protect what could be a possibly commercial zone.

Q What, if any, other economic factors entered into your decision to run the pipe of 2-7/8 inches?

A The significant economic fact is that the 2-7/8 casing is about a dollar a foot, whereas the 5-1/2 inch casing is about $2.10 a foot. This effects quite an economic savings, and still allows prudent engineering practices to be employed.

Q In other words, you were looking here at a pretty long shot possibility of developing production from this particular zone which had not tested satisfactorily during the drilling, and which was surrounded by these wells that had failed to find commercial production in that zone, is that correct?

A That is correct.

Q How much difference, approximately, was there in the cost of running 2-7/8 inch casing, and the larger casing you would normally run?

A Be about $15,000.00.

Q I believe you stated that you had not in the drilling of this well, and did not then as a result of the log, encounter any potential producing formations at a shallower depth than the depth which this well is to be completed?

A No shows of oil or gas above the Wolfcamp formation, which was encountered at 8204; this was determined by sample analysis and gas detecting equipment we employed on this hole.

MR. CAMPBELL: Mr. Examiner, I have no more questions of this witness. I might say we have a witness who will testify as to the completion technique and the present situation on the well with regard to the casing and with regard to cementing.

MR. NUTTER: Does anyone have any questions of Mr. Potts?

(No response.)

QUESTIONS BY MR. NUTTER:

Q Mr. Potts, how much did you say that 5-1/2 inch casing would run?

A Two dollars and ten cents.

Q Assuming you run 9,000 feet of that, the price would be approximately $18,900.00; and if the tubing is a dollar a foot, the string of that would be $9,000.00. I see a difference of $9,900.00, or $10,000.00.

A I am, of course, not -- as an engineer -- up on all the economic factors, but you are using different centralizing equipment, different float equipment, which is an economic factor there. You are also, of course, faced with the tubing cost too, if you

tube on a 5-1/2 inch hole.

Q I see. And adding the cost of the tubing to this would probably lift it to five and a half inch casing, the job goes up?

A Yes.

MR. NUTTER: Are there any other questions of Mr. Potts?

(No response.)

MR. NUTTER: You may be excused.

(Witness excused.)

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F O R R E S T B L O U N T, a witness, called by the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BLOUNT:

Q Will you state your name, please?

A Forrest Blount.

Q Where do you live?

A Hobbs, New Mexico.

Q What is your business?

A I am a petroleum consultant.

Q What type of consulting work do you do?

A Well completions and workovers.

Q How long have you been engaged as a consultant in well completions?

A Two years.

Q And have you been, during that period of time, operating

your business in the Hobbs area?

A In the Permian Basin, yes, sir.

Q Were you employed by Cabeen Exploration Corporation as a consultant in connection with the completion of the well involved in this application?

A That is correct.

(Whereupon, Applicant's Exhibits 3 and 4 marked for identification.)

Q Mr. Blount, I refer you to what has been identified as Applicant's Exhibit 3, and Applicant's Exhibit 4. Number 3, I believe, is a log that you maintain of the work that you performed on this well, and Number 4 is a diagramatic sketch of the present status of the well. Referring as much as you feel necessary to those two exhibits, will you describe to the Examiner the work you did on the well, or had done on the well, after you arrived, took over the supervision of the completion of this well.

A When I arrived at the location they had completed, run logs, and was out of the hole with drill pipe. So we went in the hole with drill pipe at 10,800, and circulated three hours; spotted 20-sack regular Neet Cement for plug at 10,800 feet back to the estimated calculation, the fill of 10,737 feet. Pulled 17 joints of drill pipe, spotted joints with 50 sacks of regular Neet Cement from 10,300 feet back to calibrated fillof 10,142 feet, and come out of the hole, laying down drill pipe. We ran 2-7/8.

Q You were, in that regard, plugging off the Devonian, is that correct?

A That is correct, we were protecting the Devonian and the Atoka, which Sunray is producing from an offsetting use. And we went in the hole with 290 joints of 2-7/8 inch OD EUE N-80 casing for 8,943 feet set at 8,951 feet, with float at 8,920 feet, with centralizers set at every four joints: 8,951 feet, 8,831 feet, 8,711 feet, 8,591 feet, 8,471 feet, and 8,351 feet; and cemented with 255 sacks Trinity Inferno cement with 4 percent Gel added, with a calculated fill of 1,000 feet, which should have brought our cement back to 7,951, and chased the plug down with a thousand gallons of 15 percent type "J" Acid and 28 barrels of water; maximum pressure 2700-pounds. Pumped plug to 8920 feet at 5:30 P.M. on June 16, 1960, released rig, and let the well set for three days.

On June 19, 1960, we rigged up an X-Pert Well Servicing Unit, and Frontier Perforators to run Correlation Gamma Ray and Collar Log and perforate, which they encountered some difficulty with their Gamma Ray tool with the small pipe; so we rigged up PGAC and perforated intervals from 8,752 to 8,771, 8,725 to 8,734, with the Jet Expendable Gun, total of 112 holes.

On June 20, 1960, we rigged Knox Services to break down the formation with acid which was spotted previously in the hole, and was unable to break down, even with 7,000 pounds. We run a sand line and found tubing bridged at 8,725 feet, so we closed the well in for acid in the hole to decompose the fused gun.

On June 21, 1960, we run a -- swabbed the hole dry, due to acid and water in the hole, to run measuring line. We couldn't

due to the fact it is a Holbert and Steel line, it would sustain itself in acid, and run the B. J. line. Tubing was cleared and it reached the depth of 8,879 feet. We rigged PGAC and re-perforated the intervals with the Sidewinder Gun, total 112 holes. Rigged Knox Services and acidized casing perforations with 500 gallons of 20 percent mud acid, and approximately 6 barrels of 15 percent Type "J" Acid were left in the hole; our breakdown meters with which a very tight 4 gallons a minute at 6200-pounds, was increased to 9 gallons, 6000-pounds for eight barrels; and broke to 5200, the injection rate increased to 27 gallons a minute for the final four barrels of acid; shut in pressure was 4800-pounds. We rigged and swabbed the hole dry. We recovered some unspent acid, spent acid water, and show of oil and gas.

Q That was with reference to the lower perforation on the log?

A The lower, from 8752-8771, 8725-8734; and we continued to swab, on June 22, 1960, at the rate of 300 feet of fill per hour. Estimated a barrel and three-quarters of oil with acid water. We rigged Knox Services to reacidize casing perforations from 8725-8734 feet and 8752-8771 feet, with 1,000 gallons of 15 percent SLT Acid solution. Our maximum pressure was 5500 pounds, minimum pressure was 4500-pounds, close in pressure 5,000 pounds, 10-minute close in pressure 4400 pounds; we closed the well in.

June 23, 1960, we swabbed back load and acid water with increase of gas and oil; maintained 500 feet of fluid in the hole.

We recovered 3 barrels fluid per hour with an increase of oil show. At this point, we were trying to decide whether or not to go ahead on the five or ten, or go and open the other, so we decided to go and perforate the upper two sections, which were from 8354 to 8365, 8655 to 8687, with four Jet shots from the Sidewinder Gun, totalling 172 holes, and set up a PGAC. We rigged Cecil Horne Wire Line Service and run P.S.I. tubing plug to 8,704 feet.

Q You plugged off the lower formation that you already referred to, is that correct?

A We set this to see if the plug bridged, with the break-down of the upper sections. We swabbed the hole dry, and pumped in our acid, which went in our vacuum, which was an indication we possibly communicated from 8655-8687 to the lower holes of 8725-8734.

On June 27, 1960, we rigged the Cecil Horne Wire Line Service and pulled the P.S.I. tubing plug at 8,704 feet. Rigged the Halliburton to acidize casing perforations from 8354-8365 feet, and 8655-8687 feet, and 8725-8734 feet, and 8752-8771 feet, with 10,000 gallons of 15 percent acid Gel. Maximum tubing pressure 7,000 pounds, 1500 gallons in the formation were channelled to the surface, and as we were treating this well, we left our casing valve open for an indication of the channel, as you would a packer if you were using tubing. We closed the well in. We put 2,000 gallons of acid in the tubing at this point, which was a total of 3500 gallons of acid going in; so we rigged down and swabbed the hole to recover

drilling mud to clean up the hole, and we re-cemented.

On June 28, 1960, we rigged Cecil Horne Wire Line Service and run tubing plug to 8,338 feet, we built the pressure up with B. J. Services to 3,000 pounds. The tubing pressure built in the channel, we were afraid it might blow up our tubing, so we run this as a check to find out, and we found out it was in the channel, the tubing pressure held, and we rigged the Cecil Horne Wire Line Service to retrieve the tubing plug. We rigged McCullough Tool Company and run 2-1/8 inch OD Aluminum Drillable Bridge Plug set at 8,303 feet, and tested it with 3,000 pounds pressure, and it held. Perforated 2-7/8 inch OD EUE casing from 8300-8302 feet with four Jet shots per foot. Rigged B. J. Services and break circulation with 1200 pounds. Circulate to surface. We cemented the 2-7/8 inch OD EUE casing with 100 sacks regular Neet Cement. Maximum pressure 1200 pounds. Closed well in.

On June 29, 1960, we rigged Coleman Engineering Company to run temperature survey. Top cement at 7,827 feet. We rigged Reynolds Specialty Company and drilled cement and bridge plug at 8300-8303 feet.

On June 30, 1960, we rigged Halliburton to acidize casing perforations from 8354-65, 8655-87, 8725-34, and 8752-71 with ten thousand gallons 15 percent acid Gel. Maximum tubing pressure 5900 pounds, minimum tubing pressure 4600 pounds, shut in pressure 3600 pounds, 10-minute shut in pressure 2700 pounds. Average pumping rate was 4.5 barrels per minute. Closed well in.

On July 1, 1960, the next morning, the hole was on vacuum. Rigged to swab. Swabbed back flush water with show of oil and gas. Well starts to flow at 2:00 P.M., with 440 pounds tubing pressure.

On July 2, 1960, well flowing this A.M. with 450-575 pounds tubing pressure on 24/64 inch choke.

MR. NUTTER: You mean on July the 2nd?

A That is correct. Recovered 170.52 barrels of fluid in 15 hours. 154.08 barrels of oil and 16.44 barrels of water. Closed well in.

Q (By Mr. Campbell) Now, during the time that you were doing all this, making this effort to obtain some production from this zone, you were essentially working inside your 2-7/8 tubing?

A All work was done inside that tubing.

Q Did you encounter any difficulties in connection with performing this work, using the 2-7/8 inch tubing, other than what you would normally expect to encounter if you were using a larger casing?

A No, I sure did not, and as far as time is concerned, it was quite a bit quicker.

Q Would you explain to the Examiner the cementing program that you followed with regard to cementing the 2-7/8 inch casing?

A We calculated our fill according to the cap appearing on the log, against the OD of our tubing, which calibrated us a fill of a thousand feet. We displaced this cement with a thousand

gallons of acid, so they would have this acid on formation as a spot when we perforated.

Q So your 2-7/8 inch is cemented from the 8951 feet to the 7827 feet?

A We attempted to run a survey on the second cement, we were unable to run on the first due to the fact we had about 4200 feet of acid in the hole.

Q Your immediate casing is set below the San Andres Sand there, is it?

A Porosity, it surely is.

Q Will you describe briefly to the Examiner about your well-head setup on the 2-7/8 inch casing?

A On the 2-7/8 inch casing we have 13-3/8 inch flange type Bradenhead with 8-5/8 landed in the spacing spool from 13 inch to 10 inch 900, with the 10-inch 900 National Type "E" Tubing hanger and the packer off of slips.

Q How long have you been engaged in doing work on well completions and workovers?

A Approximately ten years.

Q During that time, have you participated in the completion of a number of wells, using the 5-1/2 inch casing?

A That is correct.

Q Do you believe that the method of completion of this well, from the point of view of operation negotiation, and from the point of view of prevention of waste, it is efficient at this time?

A Yes.

Q Do you know that the cementing powers that you have used will adequately protect any potential oil producing zones in this hole?

A That is correct.

Q Do you believe it is sufficient to maintain satisfactory rigidity of the 2-7/8 inch casing?

A Yes. We ran six centralizers, which I failed to mention awhile ago, 616 to 660, from the joint of one at 8951, one at 8831, one at 8711, one at 8591, one at 8471, and one at 8351; and due to the weight of our tubing, I think that the tubing is pretty well in the center of the hole from this point to the surface.

MR. CAMPBELL: I believe that is all the questions I have, Mr. Examiner.

MR. NUTTER: Does anyone have any questions of Mr. Blount?

QUESTIONS BY MR. NUTTER:

Q You have got six centralizers over an interval of 600 feet, is that corredt?

A That is correct.

Q What is the normal number of centralizers you use when you are running and cementing 5-1/2 inch pipe?

A Depending on your zone that you anticipate pay, to have plenty and equal distribution of cement around your casing, and have your casing in the center of your well bore.

Q What is the normal number that you use on 5-1/2 inch pipe?

A Beg your pardon?

Q What is the normal number that you use on 5-1/2 inch pipe?

A It depends on the section of the well completion. Previous to this, I ran 24, but we have 1300 foot of possible pay, you see, in the centralizers, according to the zones that you might possibly complete in, or complete in at a later date.

Q You feel then that the use of centralizers is more important in the slim-hole type of completion than the standard type casing completion?

A Actually, I think so.

Q Are you aware of certain instances where the Commission has required the use of a centralizer on each joint of tubing that is used as casing --

A No, sir, I have not.

Q -- whereas, you have used one every four joints in this instance? On the 27th of June, Mr. Blount, were your 1500 gallons in the formation channelled to the surface, what do you mean, it came up through the cement?

A It came up through the cement. Our fill was figured on the calculated fill, plus 20 percent of our hole caliper, and we did not get the fill we anticipated.

Q And you re-cemented it on the 28th, is that correct?

A That is correct.

Q What did you do, perforate that 2-7/8ths?

A Perforated and blocked the circulation.

Q How many holes did you perforate?

A Eight holes.

Q Oh, I see. It is right, 8300 to 8302 for squeeze cementing the cement --

A That is correct.

Q -- the casing.

A And at this point we were able to run a temporary surface; previously,we were unable to do this due to the fact we had 1,000 gallons of acid in the hole.

Q How would you know whether that sheet of cement around those perforated holes in that casing, will stand up,and if the cement should fail right there at the holes, how will you repair the holes in the casing?

A At that point we have no porosity, permeability. On Exhibit 2 on which you are looking, we all know it is very tight, relatively, to the other sections.

Q You have got an interval of two feet that you have perforated?

A That is correct.

Q You never did ascertain the actual top of the cement on the first job?

A No, it was figured by calculation. We figured a thousand

foot of fill, 250 sacks would give us a thousand foot of fill with 20 percent area.

Q You finally had 1100 feet of fill with two cement jobs?

A That is correct.

Q Is this well flowing or pumping at the present time?

A It is closed in.

Q It was flowing though at the time it was closed in?

A That is right.

Q Then on that 1500 pound test, when you recovered 170 barrels of fluid, of which 16 barrels of it was water?

A That is correct.

Q Is that formation water, or --

A An analysis run on 20 and 25 acid, water at this point, we still had under 40 barrels of load water to recover of the 10,000 barrels of Gel acid in our treatment.

Q So when the well cleans up, we may produce water from the oil?

A That is highly possible.

Q Are there any Wolfcamp wells in this neighborhood, Mr. Blount?

A No, sir. The nearest are on the line of the Wolfcamp, and I imagine that is about eight or nine miles to the East.

Q Are there any Pennsylvania wells in this area except Sunray's Atoka gas well?

A The Mescalero Field is about two miles South and West,

which I understand is producing from the Pennsylvanian and the Devonian.

Q I was wondering about this situation, if they should create a Wolfcamp Pool and also a Pennsylvanian Pool, and also throw the two together and allocate and call it Permo-Pennsylvanian?

A That is the geological end there.

MR. CAMPBELL: Maybe Mr. Potts has an idea.

MR. POTTS: The Atoka's mythology is about 10,600 feet, I believe, 10,000 thereabouts; whereas, the -- and this is entirely a different geological section, both lithological and age-wise, and the so-called Permo-Pennsylvanian, this is not a good diagnostic term, it is used because the age of the body is still in doubt as to whether it is actually lower than the Wolfcamp, or up in with the Cisco in age. So in order to avoid a lithologic debate, it could be called Permo-Pennsylvanian.

I think you are talking about a commoner or similar reservoir in the Wolfcamp section, from say 8200 on through the log down through about 8900. This is roughly an equivalent interval production in the Crossroads and Abo Fields and that particular section. However, in this production your oil is high gravity oil, whereas the Atoka down here at 10,150 feet, thereabouts, is gas.

MR. NUTTER: Your lower producing interval here is in the Abo section, actually?

MR. POTTS: The Commission has, on quite a number of

locations determined that the Abo was Pennsylvanian; whereas, the upper portion of the Permo-Pennsylvanian was in the Waco or the Wolfcamp formation. Our correlation brings that the Abo would include but the bottom 3 feet of our formation. There you see, outside of that bottom three feet, all the rest is Wolfcamp.

Q (By Mr. Nutter) Mr. Blount, would it be feasible to duly complete this well to production from the upper set of perforations, lower set of perforations, and maintain separation between it?

A I hardly think so.

Q Is it your opinion at this time this well is going to be a commercial venture?

A Well, no more than we have recovered, it is hard to say. I should think on our primary, as strong as it is, it should be.

Q You have no idea how much of the production is coming from the lower set of perforations, how much is coming from the upper set of perforations?

A It appears that possibly 50/50, due to your breakdown of work preference, and on your swab banks where we started with a 300-foot fill, per our swab after breakdown, and got it increased to a 500 foot fill with total holes open.

Q Is it possible that you are going to artificially lift this well?

A Surely no problem.

MR. NUTTER: Any further questions of Mr. Blount?

QUESTIONS BY MR. PAYNE:

Q Mr. Blount, you circulate your cement on your surface string?

A That is correct.

Q And you used 300 sacks of cement on 2-7/8?

A That is correct.

Q What is your calculated top there?

Q 2700.

MR. NUTTER: Did you take the temporary survey to establish that?

A It was calculated.

Q (By Mr. Payne) Did you encounter undue pressure problems when you completed this well?

A You mean as far as treating?

Q Yes, sir.

A No, sir, we did not. We anticipated going to 10,000 pounds, and 7,000 was our maximum.

Q Now, I believe Mr. Potts said this is high gravity oil?

A It is 43.1, corrected to 85.1, and 85.

Q Is it corrosive?

A No, sir.

Q You do not anticipate any corrosion problems?

A Surely, but the water analysis shows 67 parts per million chlorides, which isn't too strong.

MR. PAYNE: Thank you.

MR. NUTTER: Any further questions of Mr. Blount?

(No response.)

MR. NUTTER: You may be excused.

(Witness excused.)

MR. CAMPBELL: I would like to offer the Applicant's Exhibits 1 through 4.

MR. NUTTER: Cabeen's Exhibits 1 through 4 will be entered into evidence. Do you have anything further, Mr. Campbell?

MR. CAMPBELL: No.

MR. NUTTER: If there is nothing further, we will take the case under advisement.

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

I, LLEWELYN NELSON, 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 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 5th day of August, 1960, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Llewellyn N. Nelson
NOTARY PUBLIC.

My Commission Expires:

June 14, 1964.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2033, heard by me on 7/28, 1960.

, Examiner
New Mexico Oil Conservation Commission

I N D E X