Cont to Oct 9

Cont to Oct 18

Also Copy of order to come

CASE 2810: Application of BIG (6) MINING COMPANY for extension of SCHARB BONE SPRING OIL POOL.

CASE No. 2910

Application,
Transcripts,
Small Exhibits
ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 25, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico, seeking the extension of the Schaub Bone Spring oil Pool to comprise the W/2 of Section 5, all of Section 6, and the W/2 of Section 7, TS 19 South, Range 35, East, Lea County, New Mexico, and for special rules therefor, including 80-acre spacing and proration units to comprise any two contiguous 40-acre tracts, and for fixed well locations. Case No. 2910

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

DEARNLEY, MEIER, WILKINS and CROWNOVER
General Court Reporting Service
Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 25, 1963

EXAMINER HEARING

IN THE MATTER OF: The application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico.	CASE NO. 2910

BEFORE: DANIEL S. NUTTER, Examiner for the Commission

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 2910.

MR. DURRETT: Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico.

MR. CHRISTY: Sim Christy of Roswell, New Mexico. We represent the applicant in this case, and request the extension of the case until October 9th, next Examiner Hearing.

MR. NUTTER: Is there an objection to the continuance of 2910? The case will be continued to October 9th, 9 a. m., same place.

* * * * * *

DEARNLEY, MEIER, WILKINS and CROWNOVER
General Court Reporting Service
Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO)

I, ROY D. WILKINS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing beforethe New Mexico Oil Conservation Commission was reported by me, and that the same is a true andcorrect record of the said proceedings, to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal of Office, this 12 th day of October, 1963.

NOTARY PUBLIC

My Commission Expires:

September 6, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2910, heard by me on 9/25, 1963.

, Examiner
New Mexico Oil Conservation Commission

DRAFT
JMD/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. 2910
~~2589-A~~ ?

Order No. R-~~_____~~
R-2589-A

APPLICATION OF BIG (6) DRILLING COMPANY FOR THE EXTENSION OF THE SCHARB-BONE SPRINGS OIL POOL, TOWNSHIP 19 SOUTH, RANGE 35 EAST, LEA COUNTY, NEW MEXICO, AND FOR SPECIAL RULES THEREFOR, INCLUDING 80-ACRE SPACING AND PRORATION UNITS TO COMPRISE ANY TWO CONTIGUOUS 40-ACRE TRACTS, AND FOR FIXED WELL LOCATIONS. ~~UPON APPLICATION BY GUY HOOPER THIS CASE WILL BE HEARD DE NOVO UNDER THE PROVISIONS OF RULE 1220.~~

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing de novo at 9 o'clock a.m. on December 18, 1963, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this _____ day of December, 1963, the Commission, a quorum being present, having considered the ~~testimony presented and the exhibits received at said hearing~~ record, 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.

~~Upon application by the attorney for the applicant~~

(2) That the attorney for the Commission ~~stated that the attorney for the applicant had requested voluntary dismissal~~ and moved to dismiss the ~~subject case~~ application for hearing de novo.

(3) That the motion ~~to dismiss~~ should be granted.

IT IS THEREFORE ORDERED:

That ~~Case No. 2910 is hereby dismissed~~ the application of Guy Hooper for a hearing de novo is hereby dismissed.

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

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 18, 1963

REGULAR HEARING

IN THE MATTER OF:
Application of Big (6) Drilling Company for the extension of the Scharb-Bone Springs Oil Pool.

Case No. 2910

BEFORE: Honorable Jack M. Campbell, Governor
E. S. "Johnnie" Walker, Land Commissioner
A. L. "Pete" Porter, Secretary-Director

TRANSCRIPT OF HEARING

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 18, 1963

REGULAR HEARING

IN THE MATTER OF:

Application of Big (6) Drilling Company for the extension of the Scharb-Bone Springs Oil Pool.

Case No. 2910

BEFORE: Honorable Jack M. Campbell, Governor
E. S. "Johnnie" Walker, Land Commissioner
A. L. "Pete" Porter, Secretary-Director

TRANSCRIPT OF HEARING

MR. PORTER: Take up Case Number 2910.

MR. DURRETT: If the Commission please, this case came before the Commission at this time upon an application by Mr. Guy Hooper for a De Novo Hearing under the provisions of Rule 1220. Mr. Fred Standley, the attorney for Mr. Hooper, or, maybe to be more specific, I should say Mr. Hooper's last attorney of record, contacted me and requested that we dismiss this case at this time and on that basis I move to dismiss this case.

MR. PORTER: With no objections this case will be dismissed.

Call the next case.

****

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

I, NORRIS R. CROWNOVER, 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 26th Day of December, 1963.

Norris R. Crownover
NOTARY PUBLIC

My Commission Expires:

July 11, 1967.

DEARNLEY, MEIER, WILKINS and CROWNOVER
General Court Reporting Service
Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 9, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico

Case No. 2910

BEFORE: MR. ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 9, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico.

CASE NO. 2910

BEFORE: MR. ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

MR. UTZ: Case No. 2910.

MR. DURRETT: Application of Big Six Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico.

MR. BRATON: Howard Braton on behalf of the applicant. If the Examiner please, we would request that this be continued to a special examiner hearing to be set the 18th of October, at 9:00 A. M. The reason for the request is that the attorney for an interested party in connection with the matter is otherwise engaged with bar convention duties.

MR. UTZ: Particularly in Hawai?

MR. BRATON: I believe that is correct, yes, sir.

MR. UTZ: Case 2910 will be continued to October 18th at 9:00 A. M. The examiner on that case will be Mr. Nutter.

* * * *

STATE OF NEW MEXICO)

COUNTY OF BERNALILLO)

I, ROY D. WILKINS, 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 of Office, this 4th day of December, 1963.

NOTARY PUBLIC

My Commission Expires:

September 6, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2910, heard by me on Oct. 9, 1963.

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

FRED M. STANDLEY
WALTER R. KEGEL
SANTIAGO E. CAMPOS

STANDLEY, KEGEL AND CAMPOS
ATTORNEYS AT LAW
PETROLEUM BUILDING
P. O. BOX 2081
SANTA FE, NEW MEXICO
YUCCA 3-4346

ASSOCIATES IN DENVER, COLORADO
TALLMADGE & TALLMADGE
AMERICAN NATIONAL BANK BUILDING

December 18, 1963

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

Re: Case No. 2910
Order No. R-2589

Gentlemen:

This is to inform you that the appeal taken from the decision of the examiner in the above matter is hereby dismissed.

Very truly yours,

Fred M. Standley

FRED M. STANDLEY

FMS/gdl
cc: Melvin Neal
Howard Bratton
Jerry Hooper

STANDLEY, KEGEL AND CAMPOS
ATTORNEYS AT LAW
PETROLEUM BUILDING
P. O. BOX 2081
SANTA FE, NEW MEXICO
YUcca 3-4346

FRED M. STANDLEY
WALTER R. KEGEL
SANTIAGO E. CAMPOS

ASSOCIATES IN DENVER, COLORADO
TALLMADGE & TALLMADGE
AMERICAN NATIONAL BANK BUILDING

Set for December Regular Hearing

November 11, 1963

Received November 13, 1963

Honorable Jack M. Campbell, Chairman
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Case No. 2910
Order No. R-2589

Dear Governor:

Please take notice that we hereby request an appeal to the full Commission on the decision in Docket No. 2910, entitled "In the Matter of the Hearing Called by the Oil Conservation Commission of New Mexico for the Purpose of Considering Application of Big (6) Drilling Company for Extension of an Existing Oil Pool and Special Pool Rules, Lea County, New Mexico", and request notice of hearing date to be furnished to us.

Yours very truly,

Fred M. Standley

FRED M. STANDLEY

FMS/gdl
cc: E. S. Johnny Walker
P. O. Box 871
Santa Fe, New Mexico
cc: A. L. Porter, Jr.
P. O. Box 871
Santa Fe, New Mexico
cc: Marathon Oil Company
P. O. Box 2107
Hobbs, New Mexico
cc: Mr. Howard Bratton
P. O. Box 10
Roswell, New Mexico
cc: The Atlantic Refining Company
P. O. Box 1970
Roswell, New Mexico 88201
cc: Humble Oil & Refining Company
P. O. Box 1600
Midland, Texas

COPIES MAILED
DATE 12-2-63

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico

Oil Conservation Commission

LAND COMMISSIONER
E. S. "JOHNNY" WALKER
MEMBER

P. O. BOX 871
SANTA FE

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

December 27, 1963

Mr. Fred M. Standley
Standley, Nagel and Campos
Attorneys at Law
Petroleum Building
Post Office Box 2081
Santa Fe, New Mexico

Re: Case No. 2910
Order No. R-2589-A
Applicant:
Big (6) Drilling Company

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.

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC
OTHER Mr. Howard Bratton

Hooper 1A 16
Marathon
NPA 1 28'

+1 Dalmont #1
40 Jackson 1
44 Hooper 1-B

SCHARB BONE SPRING
RESERVES & ECONOMICS FOR DEVELOPMENT

BASIC DATA

Variable	Symbol	Value	
Pay Thickness	h	42'	three wells
Drainage Area	A	40 & 80	
Porosity	Ø	6.5%	ave picked from sonic logs
Water Saturation	Sw	15%	based on Jackson 1 calculation
Recovery Factor	fr	20%	
Oil Formation Volume Factor	B	1.33	correlation curve based on
Constant - Bbls/Ac. Ft.	-	7758	37.9° Api GOR 630

$$\text{Recovery} = \frac{7758 \times A \times h \times \emptyset \times (1 - SW) \times fr}{Bo}$$

RECOVERY FOR 40-ACRE SPACING

$$\text{Recovery} = \frac{7758 \times 40 \text{ ac.} \times 42' \times .065 \times (1 - .15) \times .20}{1.33} = 108{,}000 \text{ STB}$$

RECOVERY FOR 80-ACRE SPACING

$$\text{Recovery} = \frac{7758 \times 80 \text{ ac.} \times 42' \times .065 \times (1 - .15) \times .20}{1.33} = 216{,}000 \text{ STB}$$

COMPARISON OF ECONOMICS

	40 Ac. Spacing	80 Ac. Spacing
Oil Reserves	108,000 Bbls.	216,000 Bbls.
Gas Reserves	167 MMCF	334 MMCF
Oil Revenue (7/8)	$280,700	$561,400
Gas Revenue (7/8)	13,150	26,300
Total Revenue	$293,850	$587,700
Drilling Investment	$135,000	$135,000
Lease Equipment/Well	10,150	20,300
Pumping Equipment	34,100	34,100
Dry Hole Risk	17,600	17,600
Operating Costs	73,200	123,800
Taxes	16,700	33,000
Total Costs	$286,750	$363,800
Profit	$ 7,100	$223,900
Payout	8 yrs	1.0 yrs
Profit/Investment Ratio	.04	1.2
Investors' Rate of Return	3%	57%

$2.97/bbl
.09/mcf
incl 4½" pipe & 2" tbg
5½ pipe & 2½ tbg
will run cost up $7400
total taxes
25 yr life
250/well/mo
1500/yr
Co overhead
108000
based on 15 yr life

EXHIBIT NO.________

pumping unit w/ base 15,750
engine 5500
starter 350
rods 75
val 1000 fr...

1" 1900
7/8" 1670
3/4 3530

SCHARB POOL AREA
PERMEABILITY DATA

WELL	PERMEABILITY	REMARKS
Big "6" Jackson #1	55.0 md.	Calculated from drill stem test data
Cactus Hooper "A" #1	.07 md.	Calculated from drill stem test data
Cactus Hooper "B" #1	200+ md.	Calculated from drill stem test data
Marathon State "NPA" #1	9.1 md.	Calculated from drill stem test data

EXHIBIT NO._____

RESERVOIR FLUID DATA

SCHARB BONE SPRING POOL

		Source
Oil Gravity	37.9 API	Marathon State NPA No. 1
Gas Gravity	.9332	" " " " "
Solution GOR	630 Cu.Ft./Bbl.	Production Data
Bubble Point	1960 psi	Correlation Charts estimate
Oil Formation Volume Factor	1.34	Correlation Charts
Reservoir Oil Viscosity	.61 Cp	Correlation Charts

Exhibit No. _____

R-35-E

Gulf | Gulf | Humble | Big Six

TD 4906

State | Peoples Sec Co | Peoples Sec. Co | Jackson

Atlantic | Atlantic | 6 | Big Six

4276 PSI
7-30-63

T.D. 4687

5480'

State | Marathon | Big Six | Atlantic

Marathon "NPA"

Cactus
1-A

2640'

Bomb
4345 PSI
7-14-62

4205 PSI
9-9-63

State | Hooper

Hondo

5820'

T 19 S

State | Dalmont | Jackson

Humble | Marathon | 7 | Std. of Texas

T.D. 6515

1-B
Cactus
4241 PSI
9-2-63
4206 PSI
9-13-63

dst
Bomb

Big Six

Marathon

Alves et al | Hooper et al
Marathon

Hooper et al | Hooper et al | Jackson

Scharb Pool Area

Initial bottom hole pressures and dates taken

EXHIBIT No.

PROPOSED SPECIAL RULES AND REGULATIONS FOR THE SCHARB BONE SPRING POOL

RULE 1. Each well completed or recompleted in the Scharb Bone Spring Pool or in the Bone Spring formation within one mile of said pool, and not nearer to nor within the limits of another designated Bone Spring pool, shall be spaced, drilled, operated, and prorated in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Scharb Bone Spring Pool shall be located on a unit containing 80 acres, more or less, which consists of any two contiguous quarter-quarter sections of a single governmental section.

RULE 3. Unit wells shall be located within 150 feet of the center of either the NE¼ or SW¼ of a governmental quarter-section. Any well which was drilling to or completed in the subject pool prior to October 1, 1963, is granted an exception to the well location requirements of this Rule.

RULE 4. For good cause shown, the Secretary-Director may grant exception to the requirements of Rule 2 without notice and hearing when the application is for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application if, after a period of 30 days, no offset operator has entered an objection to the formation of such non-standard unit.

The allowable assigned to any such non-standard unit shall bear the same ratio to a standard allowable in the subject pool as the acreage in such non-standard unit bears to 80 acres.

RULE 5. An 80-acre proration unit (79 through 81 acres) in the subject pool shall be assigned an 80-acre proportional factor of 5.67 for allowable purposes.

10184
10086
68

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 28, 1964

EXAMINER HEARING

IN THE MATTER OF: (Reopened)

Case No. 2910 being reopened pursuant to the provisions of Order No. R-2589, which order established 80-acre spacing units for the Scharb-Bone Springs Oil Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

Case No. 2910

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: The hearing will come to order, please. The next case will be Case 2910.

MR. DURRETT: In the matter of Case No. 2910 being reopened pursuant to the provisions of Order No. R-2589, which order established 80-acre spacing units for the Scharb-Bone Springs Oil Pool, Lea County, New Mexico, for a period of one year.

MR. CHRISTY: Sim Christy of Hinkle, Bondurant and Christy, for the Applicant. We have one witness, Mr. Examiner. Would you stand and be sworn, please?

(Witness sworn.)

GALE STODDARD

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you please state your name, residence and occupation?

A Gale Stoddard, 1403 Harvard, Midland, Texas, geologist.

Q Mr. Stoddard, have you previously testified before this regulatory board and had your qualifications accepted?

A I have not.

Q Will you briefly tell the Examiner any institutions

of higher learning you have attended and the degrees, if any, received?

A I attended the University of California, graduated in 1936, B. A. in Geology.

Q Since 1936 have you been employed in the oil business?

A Yes, I have, continuously.

Q What areas, generally?

A Gulf Coast, West Texas, New Mexico.

Q How many years in the West Texas-New Mexico area?

A Been out here fifteen years.

Q Are you generally familiar with geology in the area of New Mexico and West Texas?

A Yes, I am.

Q And particularly I have reference to the Scharb-Bone Springs Pool in Lea County, New Mexico. Are you familiar with that?

A Yes, I am.

Q Are you familiar with the wells in the area?

A Yes.

Q And their past production history?

A Yes.

MR. CHRISTY: Does the Examiner have any questions in connection with the qualifications of the witness?

MR. NUTTER: No, sir, he's qualified.

MR. CHRISTY: Thank you. Mr. Examiner, by way of a slight bit of background, in October, 1963, Commission's Order R-2589 was entered establishing pool rules for the Scharb-Bone Springs Oil Pool in Township 19 South, Range 35 East, Lea County. Among the rules established was Rule 2 for 80-acre spacing. The order further provides that the matter will be brought back to the Examiner in October of 1964 and that, of course, is the purpose of this hearing.

Q With that general statement, Mr. Stoddard, would you give us a brief background on the history of this pool?

A The Scharb Field was discovered by Marathon Oil Company, NPA State 1 in Section 6, 19, 35. That was in January of 1962; approximately a year past before any further development took place in the area, and at that time Big Six Drilling Company from Houston drilled their No. 1 Jackson. That was a well located a mile east of the Marathon.

Q You are now a consulting geologist for Big Six Drilling, are you not?

A Yes.

Q And you are representing them here today?

A That's correct.

Q Go ahead.

A They completed their well in excess of 400 barrels

a day, at which time it set off a minor boom in the area, and subsequently there were 11 wells drilled during the past year as a result of the Big Six completion. The reservoir was found at a depth of 10,100, gross pay averages 42 feet, it has porosity which is continuous all over the producing area which covers approximately a thousand acres. Reserves calculated about 2500 barrels to the acre and so far the field has produced 498,000 barrels, that's during the past year.

Q What is your estimate of ultimate recovery, primary, of the field?

A About 2,250,000 barrels.

Q Are these flowing wells or on the pump?

A Initially the wells were all flowing. At the present time there are three on the pump and eight flowing.

Q Are they going down pretty fast where they need to go on the pump?

A Quite rapidly, yes.

Q Quite rapidly. I refer you to the structural map depicted on Exhibit 1 -- first of all, would you identify Exhibit 1? This is a list of your exhibits in connection with this case?

A That's correct.

(Whereupon, Applicant's Exhibit No. 1 was marked for identification.)

Q This was prepared by you and under your direct supervision?

A That's correct.

Q We have numbered the pages at the top, have we not?

A That's right.

Q Would you point to the structure map, I believe it's at page 9, is it not?

A Page 9.

Q Tell us generally what is depicted here. You have mentioned the 11 wells. Does this structure map show the 11 wells that you have just mentioned?

A It shows the discovery well . It is the most westerly well drilled.

Q Let's identify that for the record.

A That's the Ohio.

Q Ohio 1 well?

A Correct. As you can see, there's very little structure. This is contoured on top of the Bone Springs pay. The field is a stratigraphic type field with a maximum development of pay running northeast, southwest direction. The northwest limits are determined by porosity and permeability barrier and there's a known deposition on the east side what happens here at point A^1, that's the Humble Adkins well.

We have a northeast, southwest elongation, what looks like an old stream bed, channel deposition, and the producing horizon itself is a dolomite, many reworked crinoid fragments in it. It's cross bedded, threaded, or not reservoir.

Q I notice your A-A^1, B to B^1, C to C^1 on page 9. I assume those are cross sections?

A That's correct.

Q Are those cross sections shown at pages 10, 11 and 12 of your exhibit?

A Yes.

Q What do they depict? Let's take up the page 10, which I believe is A to A^1.

A That's correct.

Q That is running in a --

A East, west.

Q -- east, west direction?

A That's correct.

Q All right.

A The more westerly portion of the section is Ohio State NPA. It shows its initial production and also the perforated section. The over-all gross section is colored in blue. The Ohio well has a maximum of eight feet of microlog porosity, it's one of the poorer wells, however it has been in the longest.

The Cactus 1-A Hooper is one of the higher wells in the field and had the least development very close to the permeability barrier. The Big Six Dalmont, as you can see, has over-all thickness of approximately 70 feet and has one of the thicker sections. The last well on the section more recently, the one shows disappearance, non-deposition of the pay zone.

Q That's the Humble --

A That's the Humble Adkins. It's very abrupt. Actually, that section in the Adkins well was cored and there were just a few signs of little stray particles.

MR. NUTTER: Which is the Humble Adkins?

A The more easterly.

MR. NUTTER: A^1?

A Yes.

MR. CHRISTY: I believe it's shown at page 9 as a dry hole.

MR. NUTTER: Yes. I didn't see the word "Humble" there, that's what was throwing me.

Q (By Mr. Christy) Now, on your B to B^1, which is page 11, I believe that's in the northwest, southeast direction, is it not?

A That's correct. Before we go on, an examination of these sonic logs will show that the section tends to clean up

and the greatest porosity is shown in the lower two-thirds of the section. That preserve toward the pinchout on the west and east, the remainder of porosity is in the lower part of the section and you lose your section from the top. I think that is it.

Q Would you depict B to B^1 at page 11?

A That depicts the section from the No. 2 Hoover to the No. 2 Alvis. Those were put into the section and are the most recent of the wells. The last well that was drilled is the No. 2 Alvis, which was potentialed here about two weeks ago for 150 barrels a day and has since been coming up in production. There again, you can see that the porosity is developed in the lower two-thirds of the section.

Q I believe the C to C^1 shown on page 12 is also northwest, southeast?

A That is correct.

Q Any particular change in that?

A No.

Q Based upon your study of these wells have you reached an opinion as to whether or not there is communication between wells?

A Very definitely.

Q There is?

A Communication.

Q What's the production data on these wells? And I might at this point refer you to page 4 of your exhibit.

A That is the production history of all of the wells to date.

Q Page 4 does show all the eleven wells?

A Correct.

Q And we have a cumulative total production of approximately 500,000 barrels, as you mentioned, at this point?

A That's correct.

Q Which of these three wells are on the pump that you mentioned?

A The Standard Oil Company of Texas Guy Hooper, the Humble No. 1 Charles Alvis, the Hondo or Cactus Hooper 1-A. Now, the Marathon NPA State is being put on pump as of this date, and the Humble 2 Alvis is being put on the pump as of this date. They are not completed as yet. Let me add one other thing that just -- they have just put the Big Six 2-A Jackson on the pump.

Q The Jackson 2-A?

A 2-A, yes.

Q So we have three actually on and two or three more coming right in at this particular point?

A That's right.

Q I assume that this production data further reflects

the approximate time when the wells started producing?

A That's correct.

Q Is that correct?

A That's listed. I think of particular interest is the Marathon State production; as you'll notice, it is the discovery well in the area and you will notice that its production to July, well, let's say until October of '63, was fairly constant. That is, it made its hundred barrels a day for which it was initially potentialed, as soon as the Big Six and Cactus wells are in you'll notice an immediate tapering off of production. In June it was 1686 barrels, and it has been going downhill from that since that time.

Q This is another indication of communication, is that correct?

A That's right.

Q How about the pressure on these wells? I refer you to page 5 of your exhibit.

A This is tabulated data. The Marathon State being the discovery well showed an initial bottom hole pressure of 4345 pounds. That was taken in February of '62 at thirty-day periods until 4-62, and you'll notice that it dropped to 3928 pounds. The Big Six wells, first bottom hole pressures were taken in the Big Six wells were taken in January and February, had bottom hole pressures of 3400, an average bottom

hole pressure of 3400 pounds. Subsequent bottom hole pressure tests showed, they had taken the following month showed that they had dropped to 3246 pounds. A month later averaged out the six wells that were in at that time, including the Marathon well, all bottom hole pressures had averaged out at 3113 pounds, which is certainly indicative of communication.

Q I believe at page 6 of your same exhibit you graphically portray this same pressure data?

A That's correct. It's pressure against time.

Q I believe we've seen that there is communication, is one well draining 80 acres?

A I would say it's draining in excess of 80 acres.

Q How about the economics, the reserves of this matter, and I specifically refer you to page 13 of your exhibit? And I might state to the Examiner that is a copy of the initial exhibit submitted by Atlantic in the October, '63 hearing. Have you reviewed this page?

A Yes, sir. It has been reviewed.

Q Has it been revised any?

A No, it has not been revised. It may become necessary at some future time, but it will be a downgrading rather than an upgrading.

Q A downgrading on recovery of money?

A Of Recovery of oil and money.

Q Right. In other words, as I understand you, Mr. Stoddard, this year period that we have experienced between October, '63 and October of '64 has proved out the Atlantic data, which would indicate that it's a very poor venture on 40-acre spacing and very marginal venture on 80-acre spacing from an economic waste standpoint?

A That's the way we feel about it.

Q Do you have any recommendations to the Commission with respect to whether or not Rule 2 of its rules on the Scharb-Bone Springs Pool should be made permanent at this time?

A Yes. I request a continuation of the existing 80 acres.

Q You think it's time now to make the rules permanent?

A I do.

Q You think sufficient data has been developed?

A Yes.

Q Will this pool be extended any more particularly?

A It appears that there is a possibility to the north. It may go south a ways. It's going to be a very thin section to the south, however, and it will be very marginal.

Q I assume by your statement that since one well is draining in excess of 80 acres that no correlative rights would be violated by having permanent 80-acre spacing rules?

A None whatsoever.

Q Have I failed to cover anything that you think would be of information to the Examiner? We have not tried to go over each page in detail because of purposes of time.

MR. CHRISTY: I believe the witness testified that all the material was prepared by him or under his direct supervision.

Q (By Mr. Christy) Have I not covered any point that you think is vital to the hearing?

A No, I don't believe;it's been covered.

MR. NUTTER: Are there any questions of the witness?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Stoddard, Humble recently completed a well there?

A Yes. The reason that was not in, the initial potential was 150 barrels.

Q You say that well is going on the pump right soon?

A It is on the pump. I mean they're installing it as of this time, and I'm sure it is on, and the well is beginning to clean up and is now making right at 200 barrels. That was my communication with Humble yesterday.

Q And you believe that there may be some further development to the north?

A Yes. Big Six is planning a location northwest,

it would be a regular 80-acre location northwest of this No. 1 Jackson. Northeast, excuse me.

Q What would be the location of that?

A That would be 1980 from the west and 660 from the north of Section 6. I have to get ahold of the map here.

Q Section 6?

A Maybe 5. I can give it to you exact here. It would be Section 5, excuse me. A diagonal northeast to the No. 1 Jackson, 1980 from the west line and either 660 or 860 from the north line of Section 5.

Q Page 8 of your exhibit shows a location in the northeast, northeast of Section 6 there on an Atlantic lease?

A That is correct. That was a dry hole in the Bone Springs.

Q That well has been completed?

A It has been completed, but it's completed in a zone at 940 feet.

Q That's not Bone Springs?

A It is, but not this horizon.

Q It's an upper pay in the Bone Springs?

A Yes.

Q This particular pay --

A 10,100.

Q This particular pay that the Scharb-Bone Springs was

concerned with was dry in that Atlantic?

A Yes. Impervious.

Q As I recall from a previous hearing, and also you mentioned the permeability barrier --

A Yes, sir.

Q Wasn't there some kind of a pressure differential across a portion of this field at one time?

A Not to my knowledge, no, sir.

Q As far as you know, are all the pressures fairly uniform?

A All equalized.

Q And equalized?

A Yes, sir. I have an isopach map which kind of looks like the rainbow, but if you would like to put it over that structure map you can see pretty well the aerial distribution of the pay, if you would like to see it.

Q I think we can skip that for the time being.

A Originally we thought it was a structure. It certainly turned out to be nothing but stratigraphic.

Q Well, now, the Cactus Hooper 1-A --

A Correct.

Q -- is on one of your cross sections there?

A Yes.

Q That's an extremely tight well, isn't it?

A Yes. And the reason for its being a poor well is that the lower porosity is poorly developed and it's right on the north edge of our permeability barrier. As you can see, you can take the Atlantic in the northeast of 6, come down to the Cactus 1-A, and go westward through the Ohio well that is the northwesterly limits of the field as we now know it. The Marathon and the Cactus have the poorest development of dolomite.

Q So the North Half of Section 6, in your opinion, is condemned in its entirety then?

A With the exception for this 10,100 foot Bone Springs pay, yes.

Q Did this well in the northwest, northwest of Section 7 go to the Bone Springs pay? It apparently, from this map, has T.D. of 6500.

A No, that's an old Argo well which did not. The top of the Bone Springs is 8,000 feet, that is of the formation.

Q This evidently went about 6500 it looks like?

A Correct.

Q Do any of your exhibits show the cumulative recoveries?

A Yes. The production to date, yes.

MR. CHRISTY: It would be, I believe, at page 4,

would it not?

A Yes. It shows the cumulative on each of the wells.

Q (By Mr. Nutter) Page 13 would indicate that the original statistics by Atlantic indicated about 108,000 barrels of recoverable oil for 40?

A That's correct.

Q And 216 for 80-acre spacing. And the maximum that's been recovered to date is from the Marathon NPA-1, which is 91,000, is that right?

A That's right. 91,645. I believe that this zone will be abandoned in that Ohio well just in the very near future. And they'll make an attempt to complete in the upper Bone Springs at 9450.

Q What's the deal here on this cumulative production sheet where the Big Six Jackson A-1 and the Jackson A-2 are combined?

A They go into a common battery.

Q And you don't have the production, then, on the individual wells?

A No, I do not.

Q And this 11,562 barrels production in July is from the two wells?

A That's correct.

Q And the two wells together have had the 90,000

barrels of production?

A That's correct. The 2-A Jackson is a weak well. However, it made its allowable up until they just have put it on the pump, and to my knowledge it will go in excess of 4500 barrels per month.

Q When was the State NPA well originally completed, Mr. Stoddard?

A In January of '62 I believe, January 9, 1962.

MR. NUTTER: Are there further questions of the witness?

MR. CHRISTY: I would like to ask one question, if I might.

REDIRECT EXAMINATION

BY MR. CHRISTY:

Q Referring to page 11 in connection with your testimony to Mr. Nutter, I believe we now have some additional data on the Humble Avis No. 2 well.

A Alvis.

Q Alvis?

A Yes.

Q Would you recite what that is? We don't have the perforation do we?

A No.

Q What is the I.P.?

A The initial potential was 150 barrels per day.

Q And we would then like to correct the exhibit to that extent to add that additional data obtained since this exhibit was prepared?

A That is correct.

MR. CHRISTY: I have added it, Mr. Examiner, to the original.

MR. NUTTER: Are there any other questions of the witness? He may be excused.

(Witness excused.)

MR. CHRISTY: Subject to the addition to page 11, the Applicant would like to offer into evidence its Exhibit No. 1, consisting of 13 pages testified to.

MR. NUTTER: Applicant's Exhibit No. 1 in Case 2910 will be admitted.

(Whereupon, Applicant's Exhibit No. 1 was offered and admitted in evidence.)

MR. CHRISTY: I have marked the date.

MR. NUTTER: 10-28-64 is admitted in evidence.

MR. TOMLINSON: I have a statement I would like to offer here.

MR. NUTTER: Okay.

MR. TOMLINSON: Phil Tomlinson for Atlantic, and we concur in Big Six's recommendation for permanent rule for

the Scharb Field. It has been our impression that the field has performed essentially as we had thought it would under 80-acre spacing, and certainly appears no waste is occurring as a result of the spacing we now have.

MR. NUTTER: You mean it's going along as expected, including that dry hole?

MR. TOMLINSON: I'm speaking for the field.

MR. NUTTER: Thank you. Anything else in this case?

MR. CHRISTY: I have been authorized by Humble Oil and Refining Company to concur in the application for permanent 80-acre spacing in the Scharb-Bone Springs Pool. I believe the Commission has received a wire.

MR. DURRETT: I might state for the record that the Commission received telegrams from Cactus Drilling Company, Humble, and United States Smelting, Refining and Mining Company all supporting the application.

MR. NUTTER: Is there anything further in Case 2910? We'll take the case under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, 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 8th day of November, 1964.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2910, heard by me on 10/28, 1964.

New Mexico Oil Conservation Commission

I N D E X

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 18, 1963

EXAMINER HEARING

IN THE MATTER OF: (Continued from the October 9, 1963, examiner hearing) Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the Scharb Bone Spring Oil Pool to comprise the W/2 of Section 5, all of Section 6, and the N/2 of Section 7, Township 19 South, Range 35 East, Lea County, New Mexico, and for special rules therefor, including 80-acre spacing and proration units to comprise any two contiguous 40-acre tracts, and for fixed well locations.

Case No. 2910

BEFORE: DANIEL S. NUTTER, Examiner

TRANSCRIPT OF HEARING

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE OCT. 18, 1963 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
H C Rygtlen	H D + H	Roswell
F. M. Standley	Hooper	Santa Fe

MR. NUTTER: The hearing will come to order, please. The first case this morning will be Case 2910.

MR. DURRETT: Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico.

MR. NUTTER: I would like to call for appearances in this case at this time.

MR. BRATTON: Howard Bratton appearing on behalf of the Applicant.

MR. STANDLEY: Fred Standley appearing on behalf of Guy Hooper. Melvin Neal should be made attorney of record in this case, also.

MR. NUTTER: That's appearing for Guy Hooper?

MR. STANDLEY: Yes, sir.

MR. NUTTER: Any other appearances in the case? It is our understanding that there has been some discussion that this case would be continued. However, as far as we're concerned, the case is coming on for hearing at this time. If anyone would care to entertain any motion for continuance, we would be happy to hear them.

MR. STANDLEY: I would like to move that the case be continued, and for the following reasons: First, the Hoopers were formerly represented by Jack Russell. Mr. Russell returned night before last from Honolulu. He was at that time attorney of record in this matter. The Hoopers contacted Mr. Neal while Mr.

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Russell was in Honolulu. Mr. Neal was unable to contact Mr. Russell. Upon Mr. Russell's return, he stated that he would not appear for the Hoopers, whereupon Mr. Neal, who incidentally also had cases set today, contacted us and asked us to appear for Mr. Hooper.

We're totally unprepared. We were contacted yesterday in this matter, and I returned yesterday at 2:00 o'clock from Honolulu, the same trip. I didn't even know Mr. Hooper until this time. I called Pete yesterday at 4:00 o'clock and he said that the case would go on.

There is an additional reason. It's our understanding that one of the wells is being cored and we believe, and Mr. Hooper informs me that their engineers state that until that core is available, proper engineering data can't be obtained in this case, and it should be available in approximately two weeks, two to three weeks; and we therefore move that until all the data is available and until Mr. Hooper is able to obtain the information necessary, that certainly so far as his end of the case or his protest in the case is concerned, that it be continued.

We would have no objection to you proceeding with the application end of the case at this point, but we would request that the remaining portion of the case be continued until a later date.

MR. NUTTER: What would be your motion then? If the applicant wished to, that he could go ahead and present his side

of the case, but you would want it continued to a specific time at which time the case will be reopened?

MR. STANDLEY: That's correct, and no decision rendered until our side has the opportunity to furnish the data that will be available at that time, or at least prepare ourselves for it.

MR. NUTTER: Mr. Bratton.

MR. BRATTON: If the Commission please, we never have any objection to anybody having an opportunity to fully and fairly present his side of the case. However, in this situation I believe that actually a further continuation would be quite an injustice to the applicant in this case. This matter was set for hearing on the examiner docket of September 25 or September 26. Due to the fact that I could not be present at that time, it was continued to the examiner docket of October 6th.

MR. NUTTER: October 9, I believe.

MR. BRATTON: October 9. During all of this time, Mr. Hooper was represented by Mr. Russell, and Mr. Russell contacted me sometime before the 9th and advised me that he was going to the Bar meeting and would we continue the case so that he could have an opportunity to appear and present the matter for Mr. Hooper.

We discussed the matter with Mr. Russell, with the applicant, with the Commission, and we requested an extension of this case from October 9th until this date, which date was agreed to by Mr. Russell because it would allow him time after he got

back from the Bar meeting to go over the case with his witnesses yesterday, be prepared to present the case today. This date was agreed upon between the attorney for Mr. Hooper and myself, and so presented to this Commission.

I think you can continue one of these cases ad infinitum and insofar as obtaining further data and further data, you could continue the case from now until doomsday until the entire area is drilled up.

MR. STANDLEY: Mr. Examiner, I would like to point out that why Mr. Russell did not appear, I have no idea. I don't know. He informed Mr. Neal that he was not planning to appear. It's my information that he did this yesterday morning, whereupon Mr. Neal contacted us and stated that Mr. Russell had withdrawn.

Now I would certainly concede that there is such a thing as continuing cases too long, but I would not concede that in these circumstances, certainly, the attorneys for Mr. Hooper and in our opinion Mr. Hooper would have a fair opportunity to present his case today in view of these facts that have developed.

MR. NUTTER: I would like to find out what the positions of both parties are as to the case itself. Mr. Bratton, as I understand it, the applicant here is seeking the extension of the Scharb Bone Springs Pool to cover certain additional acreage. They are requesting 80-acre spacing and proration units --

MR. BRATTON: Temporary 80-acre spacing.

MR. NUTTER: Temporary 80-acre units, requesting fixed

locations for the wells being in the Northeast Quarter and Southwest Quarter of a governmental quarter section?

MR. BRATTON: Yes, sir.

MR. NUTTER: And permission to dedicate any two contiguous 40-acre tracts, even though they may cross a section line?

MR. BRATTON: Yes, sir.

MR. NUTTER: And an exception for a well that has already been drilled off of this spacing pattern, is that correct?

MR. BRATTON: Yes, sir, or is drilling, either one.

MR. NUTTER: That is the way the application was originally filed. Is that the applicant's request at this time?

MR. BRATTON: Yes, sir.

MR. NUTTER: May I ask what position your client takes?

MR. STANDLEY: I think -- and this is because of practically no communication with our client and with any engineers -- I think our position is that we are objecting to the entire matter for the reason that they have already drilled these wells on the basis of 40 acres, and they're located presently on the basis of 40 acres, and we will simply take a position that the pool can be drained economically on the basis of 40-acre spacing.

MR. NUTTER: One further question, Mr. Standley. You stated that core information would be available in two weeks for a well that is being drilled?

MR. STANDLEY: I have been told that.

MR. NUTTER: Who is drilling that well?

MR. STANDLEY: Humble.

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MR. NUTTER: Humble Oil and Refining is drilling that one?

MR. STANDLEY: It's my understanding that none of the other wells have been cored.

MR. NUTTER: Will the core data be available to your client when the well has been cored?

MR. STANDLEY: It will be available to you.

MR. NUTTER: It may or may not; unless the material is subpoenaed we don't obtain core data.

MR. STANDLEY: We will ask for a subpoena to be issued when the core data is available.

MR. DURRETT: Will you please state for the record, Mr. Standley, as to whether or not Mr. Russell withdrew from the case or has been dismissed?

MR. STANDLEY: It was my understanding -- I'll be perfectly honest about it. I talked to my partner yesterday afternoon after having no sleep. I crawled on an airplane at 11:00 o'clock Hawaiian time, I landed in Albuquerque just about 12:00 and finally got up here about 1:30 or 2:00, and I called the office about 2:30. They told me what the confusion was. I talked to my partner and asked him to contact Melvin Neal. My partner said he talked to Jack Russell and he said that he would not appear. You would have to put your inferences on those terms. It is hearsay on my part. I have not talked to Jack Russell since we left the Garden Bar at Hawaiian Village, and I said, "Goodbye,

Jack," and he said, "Goodbye, Fred."

MR. DURRETT: The Commission has not been informed by Mr. Russell that he has withdrawn from the case. Since your client is, and the motion is that he is not adequately represented by counsel and has not had time to prepare, will you ask him if Mr. Russell has been dismissed or has withdrawn from the case?

MR. HOOPER: To be real honest about it, we had an engineer on it and got his report and didn't feel we could do any good until we had core data. Mr. Russell stated that unless he had an engineering report, he refused to come up here. He said if Melvin Neal wanted to come up and represent us on correlative rights, that we should get Mr. Neal to go ahead and do it. He didn't say he wouldn't and I didn't say he shouldn't come. He just felt that he couldn't represent us until we had some engineering data, which we do not have.

When he left town we thought we were going to have this engineering data, but we ended up without it, and I was at a loss what to do. I didn't know whether to get the hearing postponed or anything. We had known Mr. Neal and we phoned him and I talked to Russell about that before I left. Now he said, "If you have any problems, maybe you can get Melvin to help us."

MR. DURRETT: Is Mr. Russell definitely out of the case as far as representing you?

MR. STANDLEY: That is what Mr. Neal informs me, that Mr. Russell communicated to him. I have a wire from Mr. Neal.

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Do you know anything about this, Howard?

MR. BRATTON: I talked to him yesterday afternoon.

MR. STANDLEY: You are way ahead of me. You tell them what the situation is.

MR. BRATTON: I'm not going to quote Mr. Russell. As far as I'm concerned, the situation rests on the facts.

MR. STANDLEY: Here's the wire from Mr. Neal. I'm not asking for any mercy for Mr. Russell or Mr. Neal. It's me I'm begging for. Beyond finding this room, I know very little about this matter.

MR. DURRETT: Here's the point I'm interested in. As an attorney you haven't had time to prepare the case, that's one thing. If your client has had a lawyer and dismissed his lawyer before the case is about to come before the Commission, that's another thing.

MR. STANDLEY: It's completely beyond my comprehension why any lawyer would consent, if it was a consent matter, to having a case set the day after he returns from a holiday such as we were having, or a Bar meeting.

MR. NUTTER: An important business trip.

MR. STANDLEY: If there are tax people present, that important convention. I'm at a complete loss as to why anybody would consent, if it is a matter of consent, to having one set this soon. Usually when I get back I find things are sufficiently confused it takes a day or so to find out where you are.

MR. BRATTON: On that score, Jack did not only consent, we discussed several dates and agreed on this date and agreed to ask the Commission to schedule it for this date. The situation as far as I am concerned is I think the applicant has been more than considerate of all the various lawyers in the matter, and the fact remains that this date was agreed to.

MR. STANDLEY: You'll understand that I don't understand what the situation is, but by your own statement apparently there was no objection to a continuance when you couldn't make it, Howard.

MR. BRATTON: That is right.

MR. STANDLEY: In other words, if I understand this correctly, there have been two continuances in this matter, one of which you requested.

MR. BRATTON: Yes.

MR. STANDLEY: The other grew out of the fact that Russell left on the 7th and you had the thing set for the 9th.

MR. BRATTON: Right.

MR. STANDLEY: I don't know a thing in the world about this. I think it would be grossly unfair to force our side of this matter to be presented at this time.

MR. DURRETT: Will you ask your client, Mr. Standley, if he plans to present engineering testimony?

MR. STANDLEY: I have asked him that, and we certainly intend to present engineering testimony if the core data is

available, yes. I don't have to ask him again.

MR. NUTTER: I think we'll take a ten-minute recess on this, and we'll have a ruling at the end of the recess.

(Whereupon, a short recess was taken.)

MR. NUTTER: The hearing will come to order. After consideration of the arguments for a continuation and for continuing on with this case at this time, it is our decision that we will proceed with the hearing at this time. We want to point out that regardless of how the order reads which issues from this hearing, that any party which is adversely affected thereby has a right to a de novo hearing before the full Commission.

I would like to read the rules and regulations, Rule 1220 pertaining to a de novo hearing before the Commission.

"When any order has been entered by the Commission pursuant to any hearing held by an Examiner, any party adversely affected by such order shall have the right to have such matter or proceeding heard de novo before the Commission, provided that within 30 days from the date such order is rendered such party files with the Commission a written application for such hearing before the Commission. If such application is filed, the matter or proceeding shall be set for hearing before the Commission at the next regular hearing date following the expiration of fifteen days from the date such application is filed with the Commission."

Now I would like to mention another facet of this case. Approximately two weeks ago, prior to the time or just immediately

following the time that the Humble well, which has previously been mentioned, was staked and spudded, Jack Russell called us and requested that the Commission declare a moratorium on any further off-pattern locations. It has never been the Commission's policy to declare such moratoriums pending the outcome of a hearing, and we so advised him.

We would like to point this out, that if the order issuing from this hearing should be in favor of the applicant and should cover these fixed patterns that the applicant has requested, that this in effect would declare a moratorium for the period in which time any adversely affected party could ask for a rehearing or hearing de novo. This would in effect prevent any further off-pattern wells being drilled.

We further think that if an order should issue from this hearing which favors the applicant, that thirty days after the order is entered will provide sufficient time that this core from the Humble well will be available. All it takes is a letter of application to request a hearing de novo.

If the order from the hearing denies the application of Big (6) Drilling Company, then the Hooper interests wouldn't be adversely affected, in our opinion, so we believe that the proper thing to do this morning is to proceed with the case, with the opportunity to the applicant to request a de novo if he is not satisfied with the order issuing from the hearing, and with the opportunity to the Hooper interests to request a de novo if they're

not satisfied with the order issuing from the hearing.

So, Mr. Bratton, would you proceed with your case, please?

MR. BRATTON: In that connection, I want to apologize for not mentioning the very facts that the Examiner has pointed out; and also, as I understand the situation, the Commission puts into any order, in particular a spacing order, the fact that it keeps jurisdiction of that order; and I would assume that not only would the rights of a de novo hearing apply, but at any time any party affected by the order could request a new hearing on the order, whether it's at the end of the year or any time sooner than a year, assuming the Commission were to grant an 80-acre spacing order. Therefore, we believe that the Commission retains full control for the protection of the rights of everybody at any time in any of these cases.

MR. STANDLEY: I would like to point out this, and I would like to object to the ruling, for the record. The effect of this does shift the burden of proof, and I think that that is of sufficient moment to cause the objection to be raised. I assume, I know it's true in other administrative hearings and I assume it's true in yours, that on the de novo hearing the burden would fall on us, if we have an adverse ruling.

MR. NUTTER: We have always felt that a de novo is a de novo hearing; we are starting from scratch all over.

MR. STANDLEY: The applicant would proceed?

MR. NUTTER: The applicant would proceed.

MR. STANDLEY: In that respect you are different from other administrative bodies.

MR. NUTTER: No, the applicant proceeds in the de novo.

MR. STANDLEY: In that respect, as I say, you are different from other administrative bodies.

MR. NUTTER: We believe that de novo is de novo.

MR. BRATTON: If the Commission please, one brief statement to preface the testimony of our one witness, but I assume the Examiner would like to swear him in at this time.

(Witness sworn.)

MR. BRATTON: If the Examiner please, the Examiner has correctly heretofore stated what the applicant seeks in this request. The applicant is Big (6) Drilling Company, and we will present today one witness, Mr. Van Cammack, who is an engineer employed by Atlantic Refining Company. Big (6) is a small independent organization without an engineering staff acquainted with New Mexico and New Mexico procedures, and has most of its acreage in this area on farmout from Atlantic; and Atlantic, as the map shows, has a retained interest in the general area that we're talking about. However, the application is made by Big (6) and the presentation is on behalf of Big (6), who have drilled the majority of the wells that have been drilled in the area to date.

VAN R. CAMMACK

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

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DIRECT EXAMINATION

BY MR. BRATTON:

Q Would you state your name, please, by whom you are employed and in what capacity?

A Van R. Cammack, employed by Atlantic Refining Company, Senior Engineer.

MR. NUTTER: How do you spell your name?

A C-a-m-m-a-c-k.

Q (By Mr. Bratton) Are you employed by the Roswell office, Mr. Cammack?

A Yes.

Q Are you familiar with the area covered by the Scharb Bone Spring Pool?

A Yes.

Q Have you previously testified before this Commission as an expert witness?

A Yes.

Q And your qualifications have previously been accepted by this Commission?

A Yes.

MR. BRATTON: Are the witness' qualifications acceptable?

MR. NUTTER: They are.

Q (By Mr. Bratton) Mr. Cammack, we've marked the entire folder of exhibits as Exhibit No. 1. Therefore we will refer to the different sheets as we come to them by description rather than

by exhibit number.

Will you turn first to the first sheet in your exhibit and explain what that is and what it represents?

A The first page of the exhibit is a map of the Scharb Bone Springs productive area; outlined in red thereon is the pool limits as we are proposing them for the Scharb Bone Springs. It is contoured in ten-foot intervals on top of the Bone Springs pay.

Q Reflected on there are the completed wells and the drilling wells, is that correct?

A True.

Q Identify those, please.

A The first well completed in the pool was Marathon State "NPA" Well located in the Northwest of the Southwest of Section 6. It had an initial potential of 114 barrels a day. It is currently producing 114 barrels a day, and had a cumulative production to the 1st of September, 1963, of 63,092 barrels.

Q When was that well completed in the Bone Springs?

A January 23, 1962. The next well completed in the reservoir is the Big (6) Jackson No. 1, which was completed August 15, 1963. It had an initial flowing potential of 516 barrels and is currently producing top allowable.

Q Where is that well located?

A It is located in the Southwest of the Northwest of Section 5. The third well completed, located in the Northeast of the Northeast of Section 7, is the Cactus Hooper No. 1-B completed

September 8, 1963, for the initial flowing potential of 480 barrels per day.

The fourth well, completed in the Northeast of the Southeast of Section 6, is the Big (6) Dalmont No. 1, completed September 19, 1963, for 476 barrels a day flowing.

The Cactus Hooper 1-A, located in the Northwest of the Southeast of Section 6, was completed September 27, 1963, for an initial flowing potential of 62 barrels per day.

Q Then there are two drilling wells in the pool, is that correct?

A Correct. The Big (6) Jackson No. 2, located in the Southwest of the Southwest of Section 5; it's currently drilling below 6,000 feet. The Humble Alvis No. 1 in the Northwest of the Northeast of Section 7 is currently drilling below 8,000 feet.

Q What does this map represent as far as structure, and what is our type of formation or trap here, Mr. Cammack?

A The contours indicate a gentle plunging nose to the south, which is located on a re-entrance on the north flank of the Delaware Basin. Now the trap we think is formed by permeability pinchout to the north. It is a stratigraphic type of trap, to the best of our knowledge. The poor potential on the Hooper 1-A, Cactus Hooper 1-A, we think indicates that possibly the north boundary of the reservoir is in that vicinity.

The Marathon "NPA" No. 1 also has a lower producing capacity than other wells in the pool. Since we are expecting a

permeability pinchout to the north to bound the reservoir, these two wells could easily be an indication of that pinchout.

Q This is a stratigraphic trap which will pinch out somewhere to the north here?

A True.

Q Is there anything further you care to point out in connection with this exhibit?

A We might notice that the cross section A-A^1 as outlined on this map will be referred to later. It's a traverse of the entire field. We've tied all the producing wells within the field on one cross section.

Q It goes from west to east but drops down to pick up your 1-B well?

A True.

Q What's your total actual depth here, is it below 10,000 feet?

A Yes, producing interval is within 10,100 to 10,200 feet in most of the wells.

Q Is there anything further you care to point out in connection with this exhibit?

A No, sir.

Q Let's turn then to your cross section.

A Yes. Page 2 of the exhibits is a cross section with the Scharb Bone Springs productive interval colored in blue. We think this cross section shows that the productive interval is continuous

through the area of the pool so far as it's defined to date. One minor error or correction I would like to point out here is that on the cross sections we have referred to the Dalmont No. 1 as Cactus and we've corrected in pencil on some of the exhibits and some of them might not have been corrected. I think all the copies given to the Commission have been corrected.

Q This reflects the interval of the Bone Springs throughout all of the wells in the pool?

A Yes. You can see that the productive zone varies from around 40 feet thick in the Hooper No. 1-A to about 60 feet thick over in the Cactus or the Big (6) Dalmont No. 1.

Q That's gross interval, is that correct?

A Yes.

Q And reflected on here are your initial potentials of all the wells, and the depth?

A Yes, and the perforated interval is shown also.

Q Based on this exhibit, is it your conclusion that the Bone Springs is continuous throughout the area that we're discussing?

A Yes.

Q Is there anything further you care to point out in connection with your cross section?

A No.

Q Turn then to the next page of the exhibit, which are your data and economic calculation.

A This page of the exhibit reflects our interpretation of reserves and economics for wells to be drilled within this pool. The first section, we show the basic data that we've used in calculating reserves, with the pay thickness of 42 feet, being an average of the pay that we've encountered in the Big (6) Jackson No. 1, the Big (6) Dalmont No. 1, and the Cactus Hooper 1-B.

Now these three wells have a much better net pay interval than the Cactus Hooper 1-A and the Marathon "NPA" No. 1. We've used what we think is a maximum pay thickness in this case to make the completions look as favorable as possible.

Q Now these three wells that you are talking about, the Hooper B-1, the Dalmont 1, and Jackson 1, have larger gross thickness than the "NPA" No. 1 and the Hooper A No. 1, is that correct?

A Correct.

Q And likewise larger net thickness?

A Correct.

Q What is the actual net thickness of the three wells that you've taken to bring your average of 42 feet there?

A We have 41 feet in the Dalmont No. 1, 40 feet in the Jackson No. 1, and 44 feet in the Hooper No. 1-B.

Q Now if you had thrown in the other two wells in that average, it would have brought the average down very considerably, is that correct?

A Yes. The Hooper 1-A, we have picked 16 feet net pay;

and the Marathon "NPA" No. 1 we interpret 28 feet as net pay.

MR. NUTTER: How many feet was that?

A 28 feet.

Q (By Mr. Bratton) Is the reason that you've taken the three larger thicknesses to reflect what you think the majority of the pool will be, until you run into this permeability pinchout to the north?

A We chose those three wells because they are the best three wells in the pool at this time. We are, of course, concerned with drilling uneconomical wells, and this shows that even under the best conditions, as will be pointed out later, a 40-acre well will not be an economic venture.

Q Go on down to the rest of your figures and explain how you arrived at them.

A The drainage area we are looking at, 40-acre versus 80-acre spacing, the porosity is 6.5 percent average picked from sonic logs on the same three wells that we used for picking net pay. The water saturation of 15 percent, which we think is conservative, is based on calculations for the Jackson No. 1, which actually reflected 13 percent water saturation. The recovery factor of 20 percent is a normal recovery factor for a solution gas drive reservoir. At this time the best information available indicates we have a good chance of finding a solution gas drive present here. Most of the other Bone Springs reservoirs either indicate a solution gas drive, or at this time we can't

conclude what type drive it will be.

In any event, early in the life of the reservoir like this, we need to protect ourselves so as not to drill too many wells or they might all end up being uneconomical.

The oil volume formation factor is taken from the curves in the literature, based on the oil gravity of 37.9 degrees API and solution gas-oil ratio of 630 cubic feet. This information is reflected on a later page within the exhibit. The constant here, of course, is the volume in barrels of one acre foot.

Now our recovery formula, using the above information, indicates reserves for a 40-acre tract would be 108,000 barrels; on an 80-acre tract the reserves are 216,000 barrels.

Q Those are recoverable reserves?

A Recoverable reserves, yes. For the oil revenue, we have based this on a 7/8ths working interest, it would be $280,700 gross for a 40-acre location, and $561,400 gross for an 80-acre location. These gross incomes were derived using $2.97 a barrel for crude. Gas revenue, $13,150.00 on 40-acre location versus $26,300 for the 80-acre spacing case. This gives a total expected revenue for the 40-acre spacing of $293,850.00.

MR. NUTTER: What's the price of your gas that you used there?

A Nine cents. Again it's a little bit higher than the average that is being paid now for casinghead gas.. On the 80-acre spacing case, the gross revenue would be $587,700.00.

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Now the well drilling costs will be the same regardless of 40's or 80-acre locations, which is estimated at $135,000.00. This would require use of 4-1/2 inch pipe and 2-inch tubing. On wells that Atlantic expects to drill in the area, we plan to use 5-1/2 inch pipe and 2-1/2 inch tubing, which would run this cost up another $7400.00.

Lease equipment including tank batteries, separators, heater-treaters, $10,150.00 for the 40-acre development. This is on a per well basis, of course. $20,300.00 for one well on 80-acre spacing. Pumping equipment, $34,100.00 in either case. Dry hole risk, $17,600.00 in either case. Operating costs. $73,200.00 for 40-acre spacing. This is based on 15-year productive life. It's $123,800.00 for 80-acre location, which is based on a 25-year producing life. Taxes, $16,700.00, 40-acre location; $33,000.00 for the 80-acre location.

Q Those are your production taxes that you do not take off your gross revenue of $2.97 a barrel?

A The gross revenue of $2.97 has nothing taken out of it. That's the posted price.

Q Actually you haven't taken out any trucking cost, although you are trucking?

A That's true. We think this will be a temporary condition and within a year we expect to have a pipeline in the field. These figures indicate an expected profit for a 40-acre well of $7100.00 and an expected profit for an 80-acre well of $223,900.00.

On a 40-acre spacing the payout is estimated to be eight years, where on the 80-acre spacing case we can expect to pay out a well in one year.

The profit/investment ratio and the investors' rate of return both indicate that a 40-acre well would be undesirable for any investor. On the 80-acre spacing it would be an attractive investment.

Q Once again, these economics are based off of the data from the three best wells in the pool?

A The best wells in the pool. We think that they reflect the maximum profits that can be expected from wells in the pool.

Q Let's turn to your next exhibit, Mr. Cammack.

A The next page in the exhibit indicates our determinations of permeability as derived from calculations based on drillstem test information. At this time we don't have any core information. This is the best that we have available, and they are accepted methods for determining permeabilities and give good estimates of permeability ranges.

We have in this pool so far permeability ranging from .07 millidarcies in the Hooper A No. 1 to in excess of 200 millidarcies for the Cactus Hooper B No. 1.

Q These correspond actually with the actual productive characteristics of the wells to date?

A Yes, correspond very well with producing characteristics of the wells. The next page shows our estimated reservoir fluid

characteristics. The oil gravity of 37.9 degrees API was determined from a fluid sample taken in Marathon State "NPA" No. 1. The gas gravity, determined from fluid produced from the same well, is .9332. As a solution GOR, 630 cubic feet per barrel was determined by Marathon in conjunction with some special testing they were doing on this well to determine reservoir size. We think it is an accurate test for GOR.

Using this oil gravity, gas gravity, and measured gas-oil ratio, we estimate from correlation charts the bubble point in the reservoir is at 1960 psi; the oil formation volume factor of 1.34; reservoir oil viscosity within the reservoir at .61 centipoise.

Q Now let's turn to your pressure data, Mr. Cammack, which is reflected on your next exhibit.

A Yes.

Q Explain that, would you please?

A The first pressure taken in the reservoir was determined in Marathon's State "NPA" No. 1 with a drillstem test in 1959 when the well was drilled. It reflected 4330 pounds at the pool datum from the build-up curve. This well wasn't completed in the reservoir for some two years later, in January of 1962. At that time or shortly after completion, the well had a bomb run for bottom hole pressure which indicated reservoir pressure at that time to be 4345 pounds. We think this is in close agreement with the drillstem test pressure measured when the well first penetrated

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the Scharb pay zone. It was some eighteen months later when the second well was drilled and completed in this reservoir. That was the Jackson No. 1 drilled by Big (6).

A drillstem test of that well indicated a pressure of 4275. That is 70 pounds less than the initial pressure measured in Marathon's well. We think this indicates conclusively that the Marathon well has drained an area much larger than 80 acres. The Jackson Big (6) well is more than a mile removed from the Marathon well.

The graph also shows that other wells completed later in the reservoir had still lower pressures. Now the Hooper No. 1-B had a drillstem test pressure indicated at approximately 4240 pounds, and nine days later a bomb pressure measured in that well indicated 4206 psi. The 4206 psi agrees very closely to the pressure measured on a drillstem test in the Cactus Hooper A No. 1 at 4205.

Q Turn to your next exhibit.

A The next exhibit shows the same information reflected in a little different manner to show that there is a pressure variation with distance from the Marathon well in agreement to what should be expected if the Marathon well were draining the entire reservoir. You'll notice the Cactus Hooper A-1, the nearest well completed to the Marathon well, had 4205 psi on initial pressure. The next well closest to the "NPA" is the Cactus Hooper 1-B, showing 4241 psi on a drillstem test, and a few days later

4106 by the bomb. The furthest well from the "NPA" had an initial pressure of 4276 psi.

You can see from this plot that the pressure drawdown from original pressure in the reservoir is inversely proportional to the distance of the well or the point where that pressure is measured from the "NPA" well. This is a further indication that the "NPA" well had drained the entire reservoir.

MR. BRATTON: If the Examiner please, is the date reflected on the "NPA" well shown on your copy as 9-14-62?

MR. NUTTER: Yes.

MR. BRATTON: I believe it should be 2-14-62, shouldn't it?

A Yes, it should. That's correct.

MR. NUTTER: That was the approximate date of completion of the well?

A No, the well was completed 1-23-62 and the pressure reported here was measured 2-14-62.

MR. NUTTER: Three weeks later?

A Yes, sir. I think in that interim period there had been 2700 barrels produced.

MR. NUTTER: Has any other pressure been taken on that well since then?

A Well, this pressure was taken in conjunction with a draw-down pressure and a subsequent buildup pressure taken five days later. That's the last pressure taken and the pressure taken five

days later was on a shut-in 63 hours and didn't show a complete buildup. There hasn't been a later pressure, to my knowledge.

Q (By Mr. Bratton) Actually you have drillstem test pressures and bomb pressures both, both of which correspond and both of which reflect that the Marathon well has affected wells a mile away?

A True.

Q And all wells closer proportionately?

A True.

Q Is there anything further you care to point out in connection with that exhibit?

A No,sir, that's all.

Q Based on these exhibits, Mr. Cammack, is it your opinion that one well will efficiently and economically drain in excess of 80 acres in this pool?

A Yes, it is.

Q Is it your opinion that the drilling of wells on 40 acres in this pool would result in economic waste?

A Yes.

Q Were all of these exhibits prepared by you?

A By me or under my supervision.

Q Turn then to the rules that you propose for the pool, Mr. Cammack.

A Rule No. 1 would provide for all wells within one mile of the outlined pool limits, on the first page of our exhibit,

and not closer than, or not closer to any other Bone Springs production, would be governed by rules established here for the Scharb Bone Springs.

Rule 2 provides that any well drilled within this pool would be drilled on an 80-acre proration unit, consisting of any two contiguous quarter-quarter sections. We need the provision for any two contiguous quarter-quarter sections because there are several cases in this immediate area where one land owner owns a quarter section and one owns a quarter-quarter section in one quarter section and a contiguous quarter-quarter section in an adjoining quarter section; so that we can prevent unnecessary pooling of interests in the pool by providing for any two contiguous quarter-quarter sections.

Q So following that rule, you would prevent unnecessary pooling both as to working interest and as to royalty interest within the pool?

A True, yes.

Q Go ahead.

A Rule 3 provides for locating wells within 100 feet of the center of either the Northeast Quarter or Southwest Quarter of a governmental quarter section.

Q Is that 100 or 150?

A 150. It further provides for granting exceptions to wells that are completed in the pool or drilling in the pool prior to the time that the order might be established. Now the rules

as typed up here reflect October 1 as the effective date. The Commission might desire to change that to something later, since our hearing has been postponed a few times.

Rule 4 provides for drilling wells on 40-acre tracts in the event that a 40-acre location is all that an operator has that can be shown to be productive. It further provides that an allowable for a well drilled on a 40-acre tract would be one-half the allowable for an 80-acre well.

Rule 5 would establish a proportional factor for the pool of 5.67 for an 80-acre standard location.

Q What is your purpose in proposing fixed locations in the pool, Mr. Cammack?

A We think it best protects correlative rights. There would be less non-productive acreage brought into the pool and assigned an allowable if wells are drilled at fixed locations in diagonal quarter-quarter sections.

We further think that in the event secondary recovery is entered into sometime down the line, that a standard location, fixed pattern, would be, could more easily, more efficiently be operated. Recovery from the pool could be more efficiently obtained.

Q Is there anything further you care to see in connection with any of your exhibits or the proposed rules, Mr.Cammack?

A No, sir.

MR. BRATTON: We would offer in evidence Applicant's Exhibit No. 1, consisting of all of the various sheets which have

been referred to, and we have nothing further at this time.

MR. NUTTER: Applicant's Exhibit No. 1 will be admitted in evidence. Does anyone have any questions of the witness?

(Whereupon, Applicant's Exhibit No. 1 admitted in evidence.)

MR. STANDLEY: May I have a moment?

MR. NUTTER: Yes, sir.

MR. STANDLEY: I just have one question, Mr. Nutter.

* * * * * *

CROSS EXAMINATION

BY MR. STANDLEY:

Q If this "NPA" well is draining the pool properly, why is there such a great variance in the production of the wells?

A Well, a well's productivity is influenced much more by the permeability in the immediate vicinity of the well than it is by the permeability of the entire reservoir. It's our opinion that the "NPA" well is completed in a tighter section of the reservoir than these other wells are completed in.

Q Then isn't it reasonable to assume that the other wells would be draining the pool, as opposed to the "NPA" well at this point, if the permeability is tighter in that area?

A I think it's true any well in the pool will have an effect on the oil in place on the whole pool. That's the reason we want to assign all the wells a fixed proration unit, so that

each individual's correlative rights will be best protected.

Q The wells that have been drilled so far and have been started are not on pattern at all, are they?

A As of now there are four wells in the pool on pattern and three wells off pattern as we propose them.

Q So at least so far as those three wells are off pattern are concerned, they will affect correlative rights if all of this is proven, won't they?

A True.

Q Very seriously or substantially if not seriously?

A It's our opinion that a well's recovery would not be affected by a well's location so long as it is completed in the reservoir.

Q But the correlative rights would be affected?

A So long as the well is properly prorated and assigned an 80-acre tract that is fully productive, the well's recovery would be the same and correlative rights would have been protected.

Now, the point where we think correlative rights would better be protected by establishing fixed location is that it prevents drilling several wells in a line of what might be the periphery of a reservoir and assigning to those wells acreage that cannot be definitely shown to be productive, in which case if it turned out not to be productive, the owner of that well would have an unfair advantage in draining that pool.

Q Isn't it customary -- and I'm asking this for information

because I guess everybody in this room knows this except me, but isn't it customary at a hearing such as this to produce a more recent piece of data on a well such as this Marathon well than the data that you have produced on pressures?

A Mr. Standley, I think that in this case the original pressure is the one that we're most interested in, or it was our attempt here to show that pressures in other wells subsequently drilled or recently drilled are lower than the original reservoir pressure was as established by the Marathon well.

Q But isn't it possible that at this point you would get an entirely different reading on this Marathon well--

A Very definitely.

Q -- from the wells that you have shown the pressure on more recently?

A Well, I'm sure the reservoir pressure at the location of the Marathon well would be lower than its original pressure.

Q You are sure of that but wouldn't you have a much more persuasive piece of evidence if you had a test that showed that?

A Well, that's not the point we want to show, Mr. Standley. We're trying to show that reservoir pressure over the entire developed area as of now is lower than it was originally.

Q But you still don't have a test on this outlying well of recent enough vintage to show the effect of these other wells on this well, --

A Well, of course --

Q -- which would seem to me to indicate that you are draining the entire pool with these other wells as well as this one?

A Yes.

Q But if you had this information more recently, it would be much more persuasive to me, although I'm not very well versed in this field, as Mr. Bratton knows and these gentlemen here.

A It shows that the pressure has been drawn down in outlying locations away from the Marathon well, because the Marathon well is where the withdrawal from the reservoir has been. It has produced some 60,000 barrels and these other wells are new locations. Of course, the pressure drawdown would be greater in the area of the oldest producing well.

Q I understand that. Let's start a little back. When you drill a group of wells, let's say several miles apart or a mile apart, as most of these are, the ones that you have used are a mile apart, aren't they?

A Yes, on that order.

Q Approximately?

A Some of them are closer.

Q If they were finished simultaneously, which I suppose never happens, but if they were, you at least in theory should have the same bottom hole pressure in all these wells?

A If all wells were completed at the same time and no withdrawal from any wells, that's true, we should have exactly the

same pressure in all the wells.

Q Now at all times, then, all completed wells should have approximately the same bottom hole pressure, shouldn't they?

A Yes.

Q Do you have an exhibit that shows that to be true in this field at this time?

A No. We have our exhibit -- if I might continue on that -- we have our exhibit that shows that the wells completed near the same time period do have similar pressures.

Q You have two wells that have almost the exact pressures, that's correct.

A Well, now, the point -- that's not the point I was trying to refer to, Mr. Standley. You'll notice --

Q You are going to have to be pretty basic with me. Had we had a continuation, we would have had somebody in here that knows more about it than I.

A What we think we have shown here is that on the Jackson well and the Big (6) No. 1-B and the Hooper A-1, we have similar pressures at that time; and at that time there are pressure transients established in the pool due to production from the Marathon "NPA" well.

Now if the Marathon "NPA" had been shut in during the period of time that these other wells were completing, just to allow a complete equilibrium to be established in the reservoir, we would have measured the same pressure at all points and all

these new wells completed we think would have been at the same pressure.

Q How do you know that you would have measured the same pressure at all points?

A Well --

Q Aren't you assuming, when you say that -- now that seems to me to be the crux of the argument. Aren't you assuming the thing that this Commission must determine when you say that? Do you follow what I'm saying?

A Well, of course --

Q You are assuming the answer that presumably they have to determine when you say they would have the same pressure at all times?

A We think we have established here that drainage has occurred over the entire reservoir. We have communication, as based on pressure measurements. Now if that communication exists then it follows that the reservoir could equalize and pressure would reach an equilibrium if it were shut-in.

Q It follows that if what you are assuming is true it would, yes.

A I don't think it's an assumption that we have communication established. There's no way that the reservoir pressure can be depleted without withdrawing fluid from that portion of the reservoir, you see. We have shown that pressures are lower than the subsequently completed wells. The only way that pressure

could have been lowered was through production from that acreage. The only place that production could have occurred from was the "NPA" well. It was the only well completed.

Q By this same data I assume that you are proving that they are all in the same pool?

A Yes, sir.

Q Because of the decrease in bottom hole pressures?

A Yes, sir.

Q What is the relationship of the bottom hole pressure wells to the adjoining pool, the Dalmont Pool?

A I am sorry, Mr. Standley, I don't understand your question.

Q Well, maybe I don't either. Is there an adjoining pool to this pool?

A Of course, if there were an adjoining pool we would think it was all one pool. We think that Dalmont is completed in the same oil pool as the "NPA" well and as all these other wells that we have shown on the exhibits here.

Q And to prove that, you've used the bottom hole pressure?

A Yes, sir.

Q You don't believe in coincidence at all, I take it?

A Well, that's a possibility but all of the pressures fall into proper order that they should fall in, you see, to show that drainage has occurred over this area. We have had bottom hole pressure measurements with bombs run into the hole which we think

substantiate the drillstem test data. So in our opinion there's just no question but what it is one reservoir. The cross section that we earlier discussed shows that it is a continuous pay section.

Q This Hooper A well should flow, shouldn't it, if all the bottom hole pressures are the same?

A Our exhibits show that its bottom hole pressure is commensurate with its location within the reservoir. Now as I earlier stated, a well productivity is influenced greatly by the reservoir characteristics in the immediate vicinity of the well.

Q You plan to put that on pump, don't you?

A True. There's no argument here. The well has poor pay characteristics, but it is also shown that the well is tied into the reservoir. It has, on one of our exhibits we have shown the permeability of .07 millidarcies for that well, which is very, very tight. But the bottom hole pressure measured in the well is in good agreement with other pressures measured in the pool, you see, at a similar time.

Q But it's still not going to flow?

A Of course, that's due to the pay characteristics, not the fact that it's a separate reservoir.

Q Then the pay characteristics will not be the same on each of the 40's, will they?

A We don't have an indication that they will.

Q You have an indication they will not, don't you?

A True. That's my next statement. I was going to refer you to the exhibit here where we've shown permeabilities ranging from .07 millidarcies to something in excess of 200 millidarcies.

Q Just as you, on most of your economic figures, have multiplied by two or divided by two, depending on whether that's necessary, in this particular case where the pay characteristics vary to this degree you have to either divide by two or multiply by two, depending on which 80-acre spacing we are talking about?

A Well, of course,the well with characteristics as tight as the Hooper A will not get its fair share of the oil from the reservoir.

Q That's right.

A But nevertheless the operator has his opportunity to drill a well and produce his share of the reserves;if he so desires he can break this unit into two 40's and drill another well on the other end and assign it one-half of an 80-acre allowable.

Q But you are also -- you have some terrific variations in here between the Hooper A and Hooper B?

A There's some terrific variations in the characteristics of the wells.

Q The permeability of the two vary from .07 to 200 millidarcies?

A True.

Q So those are pretty wide extremes in permeability?

A I think they are wide extremes for average within wells.

You often see variations greater than that within a given well bore.

Q That may be true, but my point is that this is sufficient variation to show that while the Hooper A is extremely low permeability and Hooper B is satisfactory, the degrees in between would make a tremendous difference in productivity of the wells to be drilled, wouldn't they?

A True.

Q And this would affect, very seriously affect the rights of the individuals in the area?

A I would like to point out that the oil in place under a tract is not affected by the permeability. The porosity is the capacity space. The porosity in the Hooper A showed that there was as much capacity there for storage of oil as there is in a given foot of reservoir.

Q But you have to get it out, don't you?

A You have to get it out, true.

Q For it to be productive, it simply has to come out. So far as the people involved in the field, correlative rights in the field, this is going to create an even more marked variation in the rights of the individuals as opposed to the 40-acre spacing, wouldn't you say that was true?

A No.

MR. STANDLEY: I have no further questions.

BY MR. NUTTER:

Q Mr. Cammack, first of all turning to your sheet entitled "Reserves and Economics for Development."

A Yes, sir.

Q You've got $10,150.00 for 40-acre spacing and $20,300.00 for 80-acre spacing for lease equipment per well. What are you including in there?

A Tank batteries. I think it had two 500-barrel tanks and a heater-treater.

Q What are you assuming there, a tank battery for each well?

A We are assuming a tank battery for each well on 80-acre spacing. The reason for that is that most of the acreage is in blocks where you would only drill one well per lease, you see, or a considerable amount of the acreage is like that so you would have to put a tank battery for each well on the proration unit.

Q You are assuming then that you'd have a cost of $20,300.00--

A For a tank battery.

Q -- for an 80-acre lease?

A True. We're assuming the cost will be the same for 80 acres, but if we drill two wells on it we will have that cost divided between two wells.

Q Some of the leases have more than 80 acres?

A Yes.

Q So you have taken the extreme situation here, the 80-acre lease?

A True. If we could get more than one well on a tract on 80-acre spacing, I should say then we would require more tankage. This we don't think would handle it.

Q In case of the Marathon "NPA", the 20 would apply to that lease because it's a 40-acre lease?

A Yes.

Q In the remainder of the leases, if they are larger than 40 acres, the tank battery cost would be less by 10,000?

A No, it would be less than 20,000.

Q What's the 34,100 for the pumping equipment, what type of pumping equipment are you using?

A That's the Beam pump equipment,we are talking about pumping from 10,300 feet.

Q What's your breakdown there on the $35,000 for pumping equipment and roads?

A We have one Luckin C-64 ODB-341 pumping unit, complete with sub-base, 34-inch PD 7D Shive for $15,750.00; one Ajax 11 by 14 gas engine, $5500.00; one Happy starter, $350.00; 1800 feet of one-inch sucker rods, $1900.00; 2,050 feet of 7/8-inch sucker rods, $1670; 6250 feet of 3/4-inch sucker rods, $3930.00; a volume tank and regulators, $75.00; foundation, $1,000.00; 400 feet of 2-inch line pipe, $160.00; and miscellaneous pumping equipment and 2,000 feet -- miscellaneous pumping equipment $250.00; 2,000 feet of 3-inch J-55 EUE tubing, $2530.00; and then unit time for the installation and labor of $960.00.

Q Now that line pipe and tubing, is that for your flow lines or lead lines?

A Yes, sir.

Q You hadn't included that in your lease equipment previously?

A No, sir.

Q How do you calculate the dry hole risk of $17,600.00, is this for dry holes in this pool or dry holes for drilling operations for the company all over the country?

A Yes, that's it. We feel that in order to operate as a successful company we have to set aside dry hole risk to cover wells that turn out to be dry where we don't anticipate them. Of course, we don't drill any that we anticipate are going to be dry. Let's say in this particular case we assign a well an 85 percent chance to be productive.

I'm saying in a case like that, if we drill 100 wells that appear to us to have the same chance for producing that out of that 100 wells, 85 of those wells would be productive and the other 15 would be dry.

Q This is based on the economics of the Atlantic Refining Company?

A This is an Atlantic Refining Company method for determining risk. I think it's also used in other companies and is written up in the literature.

Q These economics may not necessarily apply to Big (6)

and Marathon and Humble, some of the others?

A I think they would. I think the only difference would be in the man's opinion of the chances of a well producing at this location. That's a fact that just has to be established by experience. Of course, we set it up, we allow then this dry hole risk so that out of those 100 wells those 85 that are producers would be economical to the point that the whole 100 well package would be profitable, you see.

Q How about your operating costs of $73,200.00 versus $123,800.00?

A Of course, for the 80 --

Q You have a 15-year life and 25-year life?

A Yes.

Q Is that a fixed cost per month?

A That's our estimate of what it would cost if we used $250.00 per well per month pumping and $1500.00 per year to cover company overhead. Now the overhead number would vary from one company to another.

Q But this is the Atlantic figure?

A Yes, sir.

Q And based on your company-wide operations?

A Yes, sir. Actually, I might add to that that in our particular district in Roswell, they run higher than $1500.00. We hope to alleviate that when we get more wells.

Q Now turning to your initial reservoir pressure versus

time chart here. You have two pressures for the Marathon State "NPA" 1 and then the last test, of course, was in February of 1962. Then you have a pressure for the Jackson No. 1, two pressures for the Hooper B-1 and one pressure for the Hooper A-1, all taken in the third quarter of 1963.

A Yes, sir.

Q Why don't you have a Marathon "NPA" pressure for the third quarter of 1963?

A Well, first of all it wasn't available to us and, second, we don't think it was significant to what we're trying to show here. We were trying to show a comparison of the pressures existing in the recently completed wells compared to what it was initially in the reservoir.

Q If you had a pressure for the Marathon well in this same quarter and that pressure was in the neighborhood of these other wells, it would substantiate the drainage and the pressure decline throughout the reservoir?

A It would substantiate the pressure decline at the Marathon well only. What we're trying to show here is that at a point removed from the Marathon well, the pressure has been drawn down. The only way that could have occurred would be through withdrawal of fluid from the reservoir.

Q Right now there's no evidence that there's a non-permeable streak that comes down through the Cactus 1-A that may separate the Marathon "NPA" well from these other wells, and that

in fact there may be two separate pools; is there any actual evidence of that as yet?

A Well, of course, if we had two separate pools in this proximity of one another, we would expect them to have very similar reservoir pressures, and we don't have any pressure measurements that can substantiate that. We think that it would certainly be likely that if they were separate pools that the reservoir pressure in these recently completed wells would be as high as it was in the Marathon well initially.

Q We know we have a low permeability area in the neighborhood of the Cactus 1-A?

A Yes, sir.

Q The Hooper 1-A, but there's no evidence either for or against the fact that there may be a complete permeability pinchout running across through there?

A No direct evidence. I think it can be reasoned from the information that we have here that we do have one reservoir with communication.

Q Do you know whether Marathon has ever taken any subsequent bottom hole pressures after February of 1962 on "NPA" 1?

A To my knowledge they have not, and we have an interest in that well and normally the information of that type is forwarded to us. The last test information we had was taken in February of '62.

MR. NUTTER: I believe that's all. Any other questions

of the witness? He may be excused.

MR. BRATTON: Excuse me, Mr. Nutter.

MR. NUTTER: Oh, Mr. Bratton.

REDIRECT EXAMINATION

BY MR. BRATTON:

Q Go to the economics again, Mr. Cammack. Even if you cut your operating costs by some figure and even if you dropped out your dry hole risk, would 40-acre development be economic in this area?

A No, not in my opinion. If we eliminated the $17,000.00 there for dry hole risk and removed from the operating cost this $1500.00 per well per year, we would be talking about $22,000.00 for operating costs and $17,000.00 then for dry hole risk, which would be added to our profit column, that would be 37, approximately, plus the 1700, which is about $38,000.00 profit for an initial investment of $180,000.00 roughly. We'd be talking of a profit to investment ratio of about .3, which isn't attractive. I can't say offhand what the investment return would be for that.

Q That's over a 15-year period?

A True.

Q In your economics you have used the figures from the three best wells in the area as far as calculating your reserves?

A Yes.

MR. BRATTON: I believe that's all. I would like to state to the Examiner we'll be glad to call Marathon and see if

there is any later pressure on that well and ask them to send the Commission a wire and ask that that wire be considered as evidence in the case, whatever it may reflect, if the Examiner wants that information. To the best of our knowledge, we don't have any. If there is a later pressure, we sure want the Commission to have it.

MR. NUTTER: Is there any objection to requesting any further pressure information from Marathon, if such is available?

MR. STANDLEY: Are you talking to me?

MR. NUTTER: Yes.

MR. STANDLEY: There's none from me. I don't think with the information that you have, you have any showing that there is a proper or a sufficient amount of relationship between these wells.

MR. NUTTER: We would appreciate a telegram from Marathon.

MR. STANDLEY: I'd like a copy of it, if you would make a copy of it.

MR. NUTTER: Yes, sir, it will be available in the Commission's files.

MR. BRATTON: We will request them to wire you if there is or isn't, and if there is, to give it to you.

MR. NUTTER: The date on the pressure, if there is one available. Any further questions from Mr. Cammack? The witness may be excused.

(Witness excused.)

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

MR. BRATTON: Only this, if the Examiner please. It has been quite a while since I've been involved in a contested case on 80-acre spacing.

MR. STANDLEY: You have nothing on me. It's been a hell of a long time since I have.

MR. BRATTON: The pattern of action by this Commission over the past several years has firmly recognized the economic necessity of producing oil at as low a cost as possible in this country, consistent with sound conservation practices.

It occurs to me it would be a terrific setback to what I think has been a very progressive attitude by this Commission, and certainly recognized by the entire industry, by the Interstate Oil Compact and every agency connected with the regulation of the production of oil and gas, to turn around and go back to a policy of narrow spacing, until you can absolutely prove that such narrow spacing is both economic and necessary to drain the reservoir.

I just think it would be a tragedy for this reservoir and for the oil industry in general if this Commission were to reverse the forward-looking policy that it has adopted and followed in the last several years.

MR. NUTTER: Does anyone else have anything they wish to offer in this case?

MR. DURRETT: If the Examiner please, we have received some communications concerning this case, and I would like to read them into the record at this time in order that the attorneys may comment on them if they desire to do so.

We received a telegram from Humble Oil and Refining Company, a Mr. R. R. McCarthy, which reads as follows:

"Gentlemen: In re to Case 2910 scheduled for hearing on September 25, Humble Oil and Refining Company urges the adoption of 80-acre spacing for pressing economic reasons, with proration units to include any two contiguous 40-acre tracts. Humble proposes that wells be located within 330 feet of the center of either 40-acre tract in an 80-acre proration unit. The lack of conformation to a fixed pattern in the development to date, the variation in size and shape of leases in this area, and the need for the option to drill in the best structural position of the 80-acre unit to insure maximum recovery efficiently all contribute to the need for flexibility of well locations."

Also would like to state that we have received a letter from Gulf Oil Corporation signed by Mr. M. I. Taylor, which reads as follows:

"RE Case 2910, scheduled for Examiner Hearing on September 25, 1963. Gulf Oil Corporation strongly feels that the Scharb Bone Spring Oil Pool should be developed on not less than 80-acre spacing; therefore concurs with the Big (6) Drilling Company application for 80-acre spacing and proration units, to comprise

any two contiguous 40-acre tracts. We feel, however, that flexible well locations should be permitted; therefore recommend that a well may be located within 150 feet of the center of any quarter-quarter section."

MR. STANDLEY: I would like to comment on this. I know that this Commission has done this in the past and I suspect that if any real concerted effort were made you could also get the votes of practically every other major oil company going along with this, if that's what it amounts to. By the same token, if communications are what this Commission is after, I suspect we can go down and get the holders of these leases to also wire saying"we don't think this is a ood idea."

The only thing that can be properly considered in the case such as this is, if I understand your rules correctly, and history around here, is whether or not these wells will properly drain the pool on the spacing that you determine to be the proper spacing; and the evidence is all that you should be considering.

If we are talking about voting, I am surprised that Stanolind and some of the rest of them haven't got their vote in. By the same token, we can find a lot of people who hold leases that would be tickled to death to send you wires that they don't want it this way. I don't think that these are proper things to consider in any sort of hearing.

I don't think they're evidence, I don't think they can ever be construed as evidence. I would stipulate with Mr. Bratton

that Stanolind and the drilling company for the Texas Company and all the rest of them around the United States feel exactly this way, but I don't think it's any proper evidence.

I don't think this comes as any great news to you or Mr. Porter or any of the rest of the Commission. This is exactly how they all feel, sure, cut down the drilling cost. By the same token, it cuts down the amount of money paid to the individuals, too.

MR. NUTTER: Thank you, Mr. Standley. Does anyone else have anything?

MR. BRATTON: If the Commission please, we don't have a communication from Stanolind, but we do have one from Standard of Texas,

MR. STANDLEY: That comes as a surprise, doesn't it?

MR. BRATTON: -- which we will tender to the Commission not as evidence in the case, but just for its information.

MR. NUTTER: Standard of Texas has no objection to the proposed field rules.

If there's nothing further in the case, we will take it under advisement and the hearing is adjourned.

(Whereupon, the hearing was adjourned.)

* * * * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, 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 said proceedings to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal this 5th day of November, 1963.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2990, heard by me on 10/18, 1963.

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

DEARNLEY, MEIER, WILKINS and CROWNOVER
General Court Reporting Service
Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-0691

MARATHON OIL COMPANY
FORMERLY THE OHIO OIL COMPANY

October 23, 1963

File
Case 2910

P. O. Box 220
Hobbs, New Mexico

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico
87501

Dear Sir:

Submitted herewith are certain BHP Data, requested by Atlantic Refining Company, on Marathon Oil Company's State NPA, Well No. 1, Scharb Bone Springs Pool, Lea County, New Mexico.

Date Run	S. I. (Hrs.)	Pool Datum	Elevation	Test Depth	BHP @ Pool Datum
4-29-63	72	-6230	3922	10,152	3928

Please advise if any additional information is desired.

Yours very truly,

MARATHON OIL COMPANY
Engineering Department

John R. Barber
Area Petroleum Engineer

JRB:bje

cc: Mr. Fred Standley
Petroleum Building
Santa Fe, New Mexico

File

Case 2910

Gulf Oil Corporation

ROSWELL PRODUCTION DISTRICT

W. B. Hopkins
DISTRICT MANAGER
M. I. Taylor
DISTRICT PRODUCTION MANAGER
F. O. Mortlock
DISTRICT EXPLORATION MANAGER
H. A. Rankin
DISTRICT SERVICES MANAGER

September 18, 1963

P. O. Drawer 1938
Roswell, New Mexico

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

Attention: Mr. A. L. Porter, Jr.

Re: Case 2910 Scheduled for Examiner Hearing on September 25, 1963

Gentlemen:

Gulf Oil Corporation strongly feels that the Scharb Bone Spring Oil Pool should be developed on not less than 80-acre spacing; therefore, concurs with the Big (6) Drilling Company's application for 80-acre spacing and proration units to comprise any two contiguous 40-acre tracts. We feel, however, that flexible well locations should be permitted; therefore, recommend that a well may be located within 150 feet of the center of any quarter-quarter section.

Yours very truly,

M. I. Taylor

JHH:ers

cc: The Atlantic Refining Company
Post Office Box 1978
Roswell, New Mexico 88201
Attention: Mr. W. P. Tomlinson

STANDARD OIL COMPANY OF TEXAS
A DIVISION OF CALIFORNIA OIL COMPANY
P. O. BOX 1249 • HOUSTON 1, TEXAS

September 16, 1963

The Atlantic Refining Company
P. O. Box 1978
Roswell, New Mexico

Gentlemen:

We have reviewed the following field rules for the Scharb-Bone Springs Field, Lea County, New Mexico, as proposed by telephone September 12, 1963:

1. The field is to be developed on 80-acre spacing, with wells to be drilled in the Northeast or Southwest 40-acre portion of the quarter-section, provided that the well be located in the center of the 40-acre tract with a tolerance of 150 feet in any direction.

2. The proration unit shall consist of two contiguous 40-acre tracts.

3. The maximum allowable for any 40-acre proration unit shall be one-half the maximum allowable for an 80-acre proration unit.

4. The horizontal limits of the Scharb-Bone Springs Pool shall be all of Section 6, W/2 Section 5, N/2 Section 7, all in Township 19 South, Range 35 East.

This is to advise that Standard Oil Company of Texas has no objections to the proposed field rules.

Yours very truly,

C. N. Segnar

C. N. Segnar
Chief Engineer

MEM:ja

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

WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

1220
R-4-60

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

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

LA126 C283 I

1963 SEP 23 PM 5 29

(14)

NDA169 LONG PD=FAX MIDLAND TEX 23 410P CST=

A L PORTER JR, NEW MEX OIL CON COMM=

LAND OFFICE BLDG SANTA FE NMEX=

GENTLEMEN IN RE TO CASE 2910 SCHEDULED FOR HEARING ON SEPTEMBER 25, HUMBLE OIL & REFINING COMPANY URGES THE ADOPTION OF 80-ACRE SPACING FOR PRESSING ECONOMIC REASONS WITH PRORATION UNITS TO INCLUDE ANY TWO CONTIGUOUS 40-ACRE TRACTS. HUMBLE PROPOSES THAT WELLS BE LOCATED WITHIN 330 FEET OF THE CENTER OF EITHER 40- ACRE TRACT IN AN 80-ACRE PRORATION UNIT. THE LACK OF CONFORMANCE TO A FIXED PATTERN IN DEVELOPMENT TO DATE, THE VARIATION IN SIZE AND SHADE OF LEASES IN THIS AREA, AND THE NEED FOR THE OPTION TO DRILL IN THE BEST STRUCTURAL POSITION OF THE 80-ACRE UNIT TO INSURE MAXIMUM RECOVERY EFFICIENCY ALL CONTRIBUTE TO THE NEED FOR FLEXIBILITY OF WELL LOCATIONS=

HUMBLE OIL AND REFG CO R MCCARTY=

1963 SEP 23 PM 3 19

MAIN OFFICE OCC

DOCKET MAILED
Date 9/27-63

2910 25 80 40 330/40 80 80=

Exhibit - please give one copy of this Order to Jim Durrett when typed - OK - Thanks

I gotta Copy Please

DRAFT
JMD/esr
October 28, 1963

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. 2910
Order No. R-2589
NOMENCLATURE

APPLICATION OF BIG (6) DRILLING COMPANY FOR EXTENSION OF AN EXISTING OIL POOL AND SPECIAL POOL RULES, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 18, 1963, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this _____ day of October, 1963, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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, Big (6) Drilling Company, seeks extension of the horizontal limits of the Scharb-Bone Springs Oil Pool to comprise the W/2 of Section 5, all of Section 6, and the N/2 of Section 7, Township 19 South, Range 35 East, NMPM, Lea County, New Mexico.

(3) That the applicant also seeks the promulgation of special rules and regulations governing said pool, including provisions for 80-acre spacing units comprising any two contiguous 40-acre tracts, and for fixed well locations.

(4) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk caused from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of

too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 80-acre spacing units should be promulgated for the Scharb-Bone Springs Oil Pool. in order to encourage the orderly development of the subject pool,

(5) That the temporary special rules and regulations should provide for 80-acre spacing units comprising the N/2, S/2, E/2, or W/2 of a single governmental quarter section; that due to the configuration of leases, the diversity of ownership, and the locations of wells previously drilled in the SW/4 and W/2 SE/4 of Section 6, Township 19 South, Range 35 East, NMPM, Lea County, New Mexico, the operators in said area should be permitted to dedicate to wells within said area any two quarter-quarter sections contiguous by a common bordering side and lying wholly within said area. ~~to existing wells and to wells subsequently completed or recompleted in said area.~~

(6) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(7) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

(8) That this case should be reopened at an examiner hearing in October, 1964, at which time the operators in the subject pool should appear and show cause why the Scharb-Bone Springs Oil Pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

(1) That the horizontal limits of the Scharb-Bone Springs Oil Pool in Lea County, New Mexico, are hereby extended to include the following-described area:

TOWNSHIP 19 SOUTH, RANGE 35 EAST, NMPM
Section 5: W/2
Section 6: All
Section 7: N/2

(2) That Special Rules and Regulations for the Scharb-Bone Springs Oil Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
SCHARB BONE-SPRINGS OIL POOL

RULE 1. Each well completed or recompleted in the Scharb-Bone Springs Oil Pool or in the Bone Springs formation within one mile of the Scharb-Bone Springs Oil Pool, and not nearer to or within the limits of another designated Bone Springs oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Scharb-Bone Springs Oil Pool shall be located on a standard unit containing approximately 80 acres comprising the N/2, S/2, E/2, or W/2 of a single governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

RULE 3. The Secretary-Director may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. The first well drilled on every standard or non-standard unit in the Scharb-Bone Springs Oil Pool shall be located in ~~within 150 feet of the center of either~~ the NE/4 or SW/4 of a governmental quarter section. All wells shall be located within 200 feet of the center of a governmental quarter-quarter section.

RULE 5. The Secretary-Director may grant an exception to

the footage requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon, provided the well will be located no nearer than 330 feet to the outer boundary of the unit. All operators offsetting the proposed unorthodox location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) in the Scharb-Bone Springs Oil Pool shall be assigned an 80-acre proportional factor of 5.67 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable in the Scharb-Bone Springs Oil Pool as the acreage in such non-standard unit bears to 80 acres.

IT IS FURTHER ORDERED:

(1) That an exception is hereby granted to the Special Rules and Regulations for the Scharb-Bone Springs Oil Pool to permit the operators in the SW/4 and W/2 SE/4 of Section 6, Township 19 South, Range 35 East, NMPM, Lea County, New Mexico, to dedicate existing and future wells within said area any two quarter-quarter sections contiguous by a common bordering side and lying wholly within said area ~~to existing wells and to wells subsequently completed or recompleted in said area.~~

(2) That any well drilling to or completed in the Bone Springs formation within the Scharb-Bone Springs Oil Pool or within one mile of the Scharb-Bone Springs Oil Pool on or before October 9, 1963, that will not comply with the well location

requirements of Rule 4 is hereby granted an exception to the requirements of said rule. The operator of any such well shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before November 15, 1963.

(3) That any operator desiring to dedicate 80 acres to a well presently drilling to or completed in the Scharb-Bone Springs Oil Pool shall file a new Form C-128 with the Commission on or before November 15, 1963.

(4) That this case shall be reopened at an examiner hearing in October, 1964, at which time the operators in the subject pool may appear and show cause why the Scharb-Bone Springs Oil Pool should not be developed on 40-acre spacing units.

(5) 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.

Case 2910

J. M. HERVEY 1874-1953
HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.
GEORGE H. HUNKER, JR.
HOWARD C. BRATTON
S. B. CHRISTY IV
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.

LAW OFFICES
HERVEY, DOW & HINKLE
HINKLE BUILDING
ROSWELL, NEW MEXICO

TELEPHONE 622-6510
AREA CODE 505
POST OFFICE BOX 10

September 9, 1963

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

Gentlemen:

Big "6" Drilling Company herewith makes application for the following:

1. Extension of the Scharb-Bone Springs Oil Pool to cover the W½ of Section 5, All of Section 6 and the N½ of Section 7, Township 19 South, Range 35 East, N.M.P.M., Lea County, N.M.

2. For the promulgation of Temporary Special Pool Rules covering the Pool and including provisions for 80-acre spacing and proration units, fixed locations of the wells being in the NE¼ and SW¼ of a Governmental quarter-section, dedication of any two contiguous 40-acre tracts to a well, normal 80-acre depth factor, and exceptions as to the locations of any existing or drilling well. Also, an exception will be requested to permit the dedication of 40-acres to the Marathon "NPA" State No. 1 Well in the NW¼SW¼ of Section 6.

Please set the above matter down for hearing at the September 25 Examiner hearing.

Very truly yours,

HERVEY, DOW & HINKLE

Howard C. Bratton

HCB/cd

DOCKET MAILED
Date 9-27-63

DOCKET MAILED
Date 10-17-63

SANTA FE'S

Desert Inn

311 COLLEGE
SANTA FE, NEW MEXICO
PHONE YU 2-1851

Barber Ef 37106 - 14 bbls.

4-29-63

72 hr. S.I.

10,152

3922 el.

3928 psi DC @ 6330'

3-62

4034

10152
3922
-6330

OCC 982 2641

"Center of Everything Downtown"

Docket No. 30-63
Docket No. 31-63

DOCKET: EXAMINER HEARINGS OCTOBER 18, 1963, AND OCTOBER 30, 1963

BOTH HEARINGS 9:00 A.M. OIL CONSERVATION COMMISSION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

Examiner: Daniel S. Nutter; Alternate Examiner: Elvis A. Utz

DOCKET NO. 30-63 - OCTOBER 18, 1963:

CASE 2910: (Continued from the October 9, 1963, examiner hearing)

Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the Scharb Bone Spring Oil Pool to comprise the W/2 of Section 5, all of Section 6, and the N/2 of Section 7, Township 19 South, Range 35 East, Lea County, New Mexico, and for special rules therefor, including 80-acre spacing and proration units to comprise any two contiguous 40-acre tracts, and for fixed well locations.

DOCKET NO. 31-63 - OCTOBER 30, 1963:

CASE 2678: (Reopened and continued from the October 9, 1963, examiner hearing)

In the matter of Case No. 2678 being reopened pursuant to provisions of Order No. R-2359, which order established temporary 160-acre proration units for the East Saunders Permo-Pennsylvanian Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

CASE 2903: (Continued from the October 9, 1963, examiner hearing)

Application of Coastal States Gas Producing Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Gulf State Well No. 1, located in Unit F of Section 20, Township 17 South, Range 36 East, Lea County, New Mexico, to produce oil from the Double-A Abo Pool and an undesignated Lower Leonard pool through parallel strings of tubing.

CASE 2921:

Application of Robert G. Hanagan for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a non-standard gas proration unit comprising the S/2 SW/4 of Section 1 and the N/2 NW/4 of Section 12, Township 12 South, Range 34 East, Four Lakes-Devonian Gas Pool, Lea County, New Mexico, to be dedicated to a well to be drilled 660 feet from the South and West lines of said Section 1.

CASE 2922:

Application of Consolidated Oil & Gas, Inc. for an unorthodox location and a dual completion, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Jicarilla No. C-1-11 to produce gas from the Blanco Mesaverde and Basin Dakota Gas Pools. Said well is at an unorthodox Blanco Mesaverde Pool location 890 feet from the South line and 990 feet from the East line of Section 11, Township 26 North, Range 4 West, Rio Arriba County, New Mexico.

CASE 2923:

Application of Cities Service Oil Company for a special gas-lift gas allocation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce Blinebry gas from its State "S" Well No. 1 located in Unit E of Section 15, Township 21 South, Range 37 East, Lea County, New Mexico, and to utilize said gas for Hare Pool gas-lift operations on its State "S" Well No. 4 located in said Unit E. Gas produced from said State "S" Well No. 1 would be metered and charged to the Blinebry Oil Pool casinghead gas production from applicant's State "S" Well No. 6 also located in the said Unit E.

CASE 2924:

Application of Socony Mobil Oil Company for a dual completion and for a tubing exception, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State Bridges No. 58-DD in Unit M of Section 24, Township 17 South, Range 34 East, Lea County, New Mexico, to produce oil from the Vacuum Glorieta and Vacuum Blinebry Oil Pools through parallel strings of tubing. Applicant further seeks an exception to Commission Rule 107(d)4 to produce the Glorieta formation through the casing-tubing annulus from perforations at approximately 6000 feet up to 2 3/8-inch tubing landed in a dual packer at approximately 4020 feet.

CASE 2925:

Application of Sunray DX Oil Company for the creation of a Strawn Gas Pool and for Special Temporary Pool Rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Strawn Gas Pool for its New Mexico State "AH" Well No. 1, located in Unit K of Section 30, Township 18 South, Range 23 East, Eddy County, New Mexico, and the establishment of temporary pool rules therefor, including a provision for 640-acre proration units and for fixed well locations.

Docket No. 30-63
Docket No. 31-63

CASE 2926:

Application of Sinclair Oil & Gas Company for an exception to Order No. R-1670, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order permitting its Barber Gas Unit Well No. 1, located in Unit E of Section 8, Township 20 South, Range 37 East, Eumont Gas Pool, Lea County, New Mexico, to produce 600 MCF of gas per month in exception to the shut-in provisions of Rule 15(A) of Order No. R-1670, Southeast New Mexico Gas Pool Rules, said gas to be utilized in the oil well gas-lift system on applicant's B. J. Barber Lease.

CASE 2927:

Application of Skelly Oil Company for gas commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 21(A) of Order No. R-1670, Northwest New Mexico Gas Pool Rules, to permit the commingling of gas produced from its Jicarilla "C" Wells Nos. 3, 7, 4, 8 and 6, located in Units M and P of Section 21, Unit A of Section 28 and Units E and J of Section 27 respectively, Township 25 North, Range 5 West, South Blanco-Pictured Cliffs Pool, Rio Arriba County, New Mexico, allocating said gas to the individual wells on the basis of periodic testing. Applicant further proposes to meter said commingled gas and to commingle it with commingled casinghead gas produced from seven Otero-Gallup oil wells on its Jicarilla "C" lease.

CASE 2928:

Application of Texaco Inc. for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the triple completion (combination) of its State of New Mexico "O" NCT-1 Well No. 14, located in Unit J of Section 36, Township 17 South, Range 34 East, Lea County, New Mexico, to produce oil from the Vacuum-Wolfcamp and North Vacuum-Abo Pools through parallel strings of 2-7/8 inch casing and to produce oil from the Vacuum-Blinebry Pool through 1-1/2 inch tubing run inside 3-1/2 inch casing, all casing strings to be cemented in a common well bore.

CASE 2929:

Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Basal San Andres formation through its State of New Mexico "O" NCT-1 Well No. 12 located in Unit J of Section 36, Township 17 South, Range 34 East, Vacuum Field, Lea County, New Mexico.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date Oct 22, 1963

CASE 2910 Hearing Date 9am Oct 18, 1963
DSN @ SF

My recommendations for an order in the above numbered cases are as follows:

Enter an order authorizing 80-acre Spacing for a period of one year in the Scharb-Bone Spring Pool. Provide for 80-acre units comprising the E/2, W/2, S/2, or N/2 of a single governmental quarter section provided however that in the SW/4 and the E/2 SE/4 of Section 6 Twp 19S Rge 35E, the 80 acre units may comprise any two adjacent quarter sections. Provided further that all wells hereafter drilled in the Scharb Bone Spring Pool shall be located within 150' of the center of either the NE/4 or the SW/4 of a governmental quarter section. Any well completed or drilling in the Scharb Bone Spring Pool on October 9, 1963, the location of which is not in conformance w/ the above well-location requirements should be granted an exception.

Require new plats and new well tests to be resubmitted to the OCC Hobbs by Nov 15 for any well wanting 80 acres. Provide for non std over

units comprising a single governmental quarter-quarter section administratively also for exception to the footage location requirements administratively.

Extend the pool to cover the W/2 of Sec 5, All of 6, & the N/2 of Sec 7, T19S. R35E.
Establish 80-acre spacing factor of 1.67 for proration due to configuration of leases and ownership
Locations of wells previously drilled in SW/4 & W/2 SE/4 of 6-19-35 an exception to the acreage dedication requirements of para ____ of the Spec Rules & Regulations shall be granted

Call case for another hearing in October 1964 to show cause why pool should not be developed on 40 acre units.

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico

Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

P. O. BOX 2088
SANTA FE

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

November 24, 1964

Mr. Sim Christy
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico

Re: CASE NO. 2910
ORDER NO. R-2589-B
APPLICANT Big (6) Drlg. Co.

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.

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

OTHER Mr. W. P. Tomlinson (Atlantic Refining Co)

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

WESTERN UNION
TELEGRAM

W. P. MARSHALL, President

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

1963 OCT 18 PM 1 W 074

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

3098 SSG215

L HD4050 PD=HOBBS NMEX 18 137P MST=

DAN NUTTER=

CARE NMOCC BOX 871 SANTA FE NMEX=

SUBMITTED HEREWITH BHP DATA MARATHON'S STATE NPA #1
SCHARB BONE SPRINGS POOL LEA COUNTY NEW MEXICO BHP AT
DATAM MINUS 3628 SHUT IN 72 HOURS DATE RUN 4-29-63=

MARATHON OIL CO=

OCT 18 PM 2:07
MAIN OFFICE OCC

BHP NPA #1 BHP 3628 72 4-29-63=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

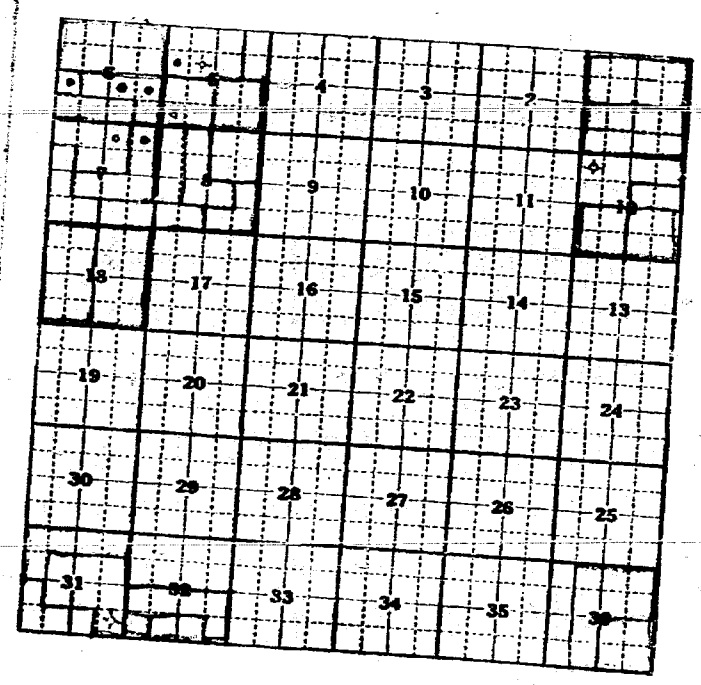
FEDERAL ABSTRACT CO.

Name

Address

Remarks:

Ph.



T ..... R ..... State or County .....

F. A. Co. form No. 105 - 1M

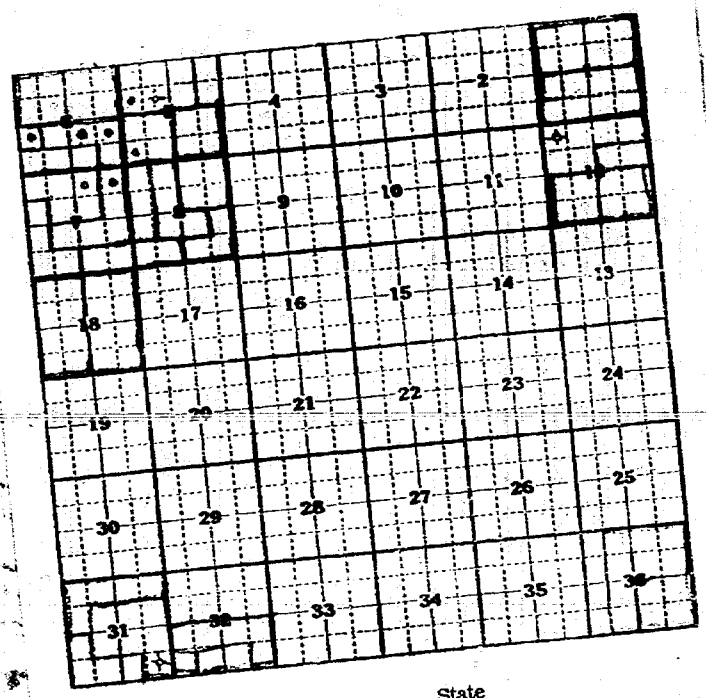
FEDERAL ABSTRACT CO.

Name

Ph.

Address

Remarks:



T ..... R ..... State or County .....

F. A. Co. form No. 105 - 1M

CASE 2910

REQUEST FOR CONTINUATION OF EXISTING SCHARB (BONE SPRING) POOL RULES ON A PERMANENT BASIS

SCHARB BONE SPRING POOL
LEA COUNTY, NEW MEXICO

CONTENTS:

General Discussion
Data Sheet
Present Field Rules
Production Data
Tabulation of Pressure Data
Graphical Presentation of Pressure Data
Walter Jensen - Testimony
Drainage Radius Map
Structure Map
Cross Sections
Reserves and Economics

GENERAL DISCUSSION

The Scharb (Bone Spring) Pool is located approximately 22 miles west of the city of Hobbs, New Mexico. Proven production, as of this date, is 1,000 acres ± being portions of Sections 5, 6, 7, 8 and 18, T-19-S, R-35-E.

Bone Spring production was discovered by The Ohio Oil Company's (Marathon) No. 1 NPA State well, Section 6, T-19-S, R-35-E, on January 19, 1962. The discovery potentialed for 100 barrels/day from a dolomite section perforated between the depths of 10,156 - 10,166'. No additional wells were drilled in the area until August, 1963 when Big "6" Drilling Company completed their No. 1 Ora Jackson (Section 6, T-19-S, R-35-E). Eleven wells have subsequently been completed in this Bone Spring producing zone.

Geological studies indicate the Scharb Pool to be a stratigraphic type oil field. Limits of the production area are not yet determined.

The Bone Spring reservoir is penetrated at an average depth of 10,100' in the Scharb area. Average thickness of the gross pay section is 42 feet. The rock is a brown to tan dolomite, which locally contains zones of re-worked crinoid fragments. Porosity is best developed in the lower two-thirds of the reservoir. Examination of electrical logs shows this porosity to be continuous throughout the limits of the field (Section A-A', B-B', C-C'). The Bone Spring horizon has a vertical oil column in excess of 80 feet.

Recoverable oil from the Bone Spring horizon is estimated to be 2,500 barrels per acre. Ultimate recovery for the field is estimated to be 2,250,000 barrels.

The Scharb Field has been developed on an 80 acre spacing program. Production per well averages 4,600 barrels per month with the field averaging approximately 50,000 barrels per month. Cumulative field production to July has been 498,104 barrels.

DATA SHEET

1. Physical Properties of the Reservoir Rock

a.	Average Porosity	7%
b.	Average Permeability	Unknown . 1 to 381
c.	Average interstitial water saturation	15%

2. Structural Features of the Reservoir

a.	Structure Map	Plat I
b.	Cross section	Plat II, III, IV
c.	Water Oil and Gas Oil Contacts	None
d.	Average Gross Pay Thickness	42'

3. Characteristics of Reservoir Fluids

a.	Average Gravity of Oil	37.8°
b.	Formation Volume Factor	1.33

4. Pressures

Original BHP	4345
Periodic Weighted Average	See Exhib. 6

5. Statistical Data

a.	Oil Production	See Exhib. 2,3
b.	Water Production	One well prod. H_2O. Believed result of faulty completion.
c.	Number flowing & pumping wells	3 pumping 8 flowing
d.	Well Completion Methods	Acid Treatment
e.	Proven Acres	1,000 acres
f.	Average Well Density	80 Ac./Well
g.	Gas/Oil Ratio	600/1
h.	Disposition of Gas	Warren Petroleum
i.	Stage of Depletion of Reservoir	Initial Primary

6. General Reservoir Mechanics

a.	Effectiveness of Water Drive	None
b.	Effectiveness of Gas Expansion Drive	Believe this is the principal value mechanism.

PROPOSED SPECIAL RULES AND REGULATIONS FOR THE SCHARB BONE SPRING POOL

RULE 1. Each well completed or recompleted in the Scharb Bone Spring Pool or in the Bone Spring formation within one mile of said pool, and not nearer to nor within the limits of another designated Bone Spring pool, shall be spaced, drilled, operated, and prorated in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Scharb Bone Spring Pool shall be located on a unit containing 80 acres, more or less, which consists of any two contiguous quarter-quarter sections of a single governmental section.

RULE 3. Unit wells shall be located within 150 feet of the center of either the NE¼ or SW¼ of a governmental quarter-section. Any well which was drilling to or completed in the subject pool prior to October 1, 1963, is granted an exception to the well location requirements of this Rule.

RULE 4. For good cause shown, the Secretary-Director may grant exception to the requirements of Rule 2 without notice and hearing when the application is for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application if, after a period of 30 days, no offset operator has entered an objection to the formation of such non-standard unit.

The allowable assigned to any such non-standard unit shall bear the same ratio to a standard allowable in the subject pool as the acreage in such non-standard unit bears to 80 acres.

RULE 5. An 80-acre proration unit (79 through 81 acres) in the subject pool shall be assigned an 80-acre proportional factor of 5.67 for allowable purposes.

PRODUCTION DATA
Source: N. Mex. O.C.C.

SCHARB BONE SPRING FIELD
LEA COUNTY, NEW MEXICO

Operator and Well	July,1963	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.1964	Feb.	Mar.	Apr.	May	Jun.	
Atlantic Refining Co. Ora L. Jackson							3000(Est.)	6866	6443	6972	6422	5853	
Big "6" Drilling Co. **Gene Dalmont**			2244	5797	6660	6882	7272	6888	7284	5663	5800	6300	
Big "6" Drilling Co. **Ora Jackson et al**		3178	5610	5797	6999	6990	7092	6316	6298	6172	6882	6683	
Big "6" Drilling Co. **Ora Jackson "A" #1**					6604	6882	7667	Combined w/ Well #2					
Big "6" Drilling Co. Ora Jackson "A" #2								10682	10921	11547	12152	12468	11
Blair Edwin Foster State "B"											428	366	
Cactus Drilling Co. Guy H. Hooper #1-A				1296	1219	1134	900(Est.)	615	606	506	479	439	
Cactus Drilling Co. Guy H. Hooper #1-B			4733	6377	5920	6896	7000(Est.)	6874	6710	6584	6808	6208	6
Hondo Oil and Gas Co. Hondo State "B"										4617	6925	6411	6
Humble Oil & Refining Co. Charles S. Alves #1					1194	1220	2500(Est.)	3136	3119	2842	2837	2321	2
Marathon Oil Co. State NPA #1	3582*	3580	3439	3523	3339	3316	3000(Est.)	2702	2691	2417	2440	1686	
Standard Oil Co. of Texas Guy Hooper et al #1											1720	1510	1

*55,930 Barrels oil produced prior to July, 1963.

July oil production from 11 wells
Average per well

DATA
N. Mex. O.C.C.

SCHARB BONE SPRING FIELD
LEA COUNTY, NEW MEXICO

July,1963	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.1964	Feb.	Mar.	Apr.	May	Jun.	July	Cumulative
						3000(Est.)	6866	6443	6972	6422	5853	7283	42,839
		2244	5797	6660	6882	7272	6888	7284	5663	5800	6300	6510	67,300
	3178	5610	5797	6999	6990	7092	6316	6298	6172	6882	6683	7533	75,550
				6604	6882	7667	Combined w/ Well #2						90,485
							10682	10921	11547	12152	12468	11562	
										428	366	334	1,128
			1296	1219	1134	900(Est.)	615	606	506	479	439	404	7,598
		4733	6377	5920	6896	7000(Est.)	6874	6710	6584	6808	6208	6486	70,596
									4617	6925	6411	6816	24,769
				1194	1220	2500(Est.)	3136	3119	2842	2837	2321	2490	21,659
3582*	3580	3439	3523	3339	3316	3000(Est.)	2702	2691	2417	2440	1686	-	91,645
										1720	1510	1305	4,535
													498,104

*55,930 Barrels oil produced prior to July, 1963.

July oil production from 11 wells 50,723
Average per well 4,611

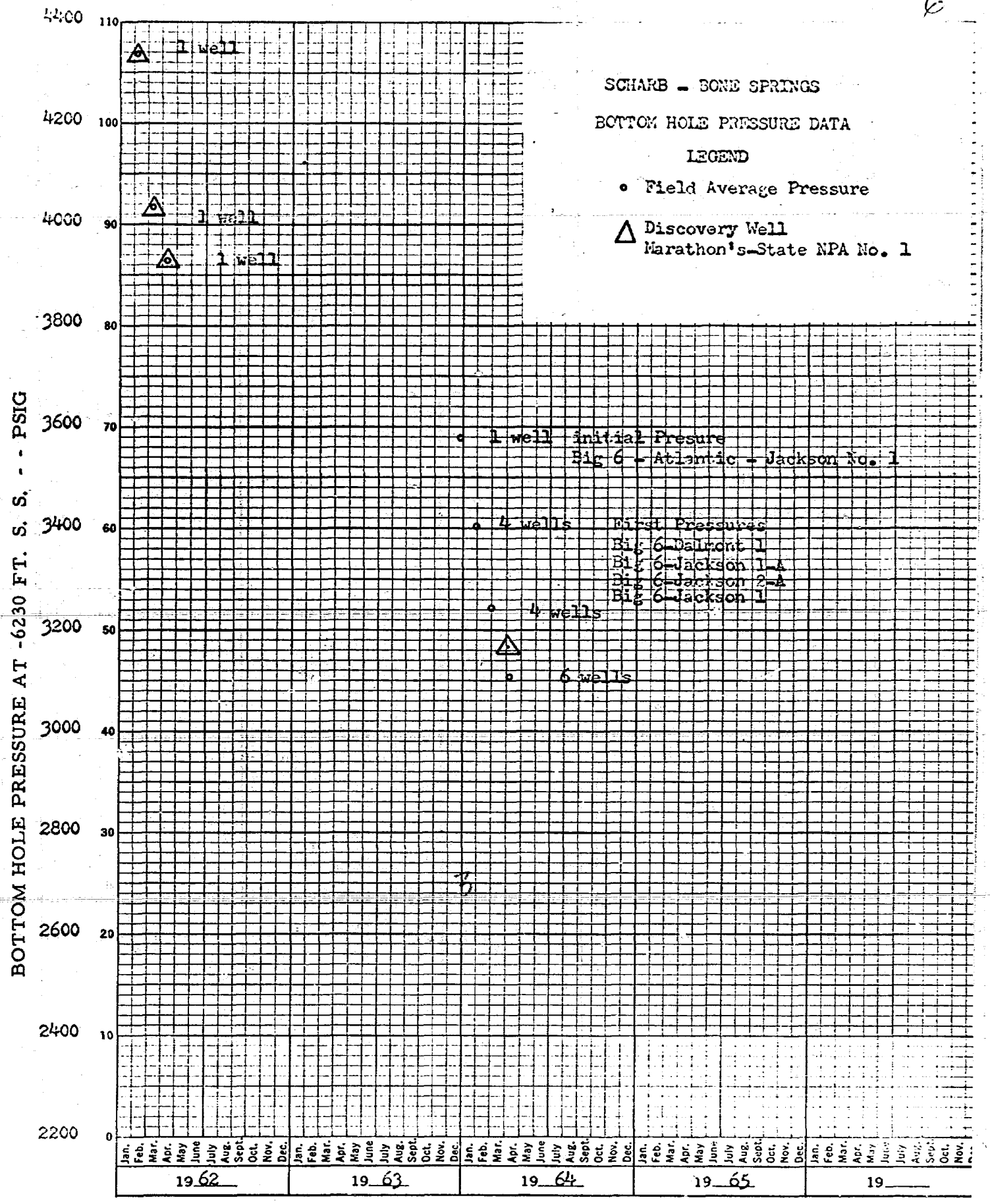
5

SCARB-BONE SPRINGS POOL
BOTTOM HOLE PRESSURE DATA
DATUM - 6230 FEET SUBSEA

Well	Date	Pressure PSIG	HRS-Shut In
Marathon St. NPA 1	2-62	4345	Unknown
Marathon St. NPA 1	3-62	4034	Unknown
Marathon St. NPA 1	4-62	3928	72
Atlantic Jackson 1	12-27-63	3578	48
Big (6) Dalmont	1-64	3451	48
Big (6) Jackson	1-64	3330	48
Big (6) Jackson 1-A	2-64	3459	48
Big (6) Jackson 2-A	2-64	3362	48
		3401 Average	
Big (6) Dalmont 1	2-64	3306	48
Big (6) Jackson 1	2-64	3200	48
Big (6) Jackson 1-A	3-4-64	3293	48
Big (6) Jackson 2-A	3-6-64	3183	48
		3246 Average	
Big (6) Dalmont 1	4-4-64	3148	72
Big (6) Jackson 1	4-4-64	3036	72
Big (6) Jackson 1-A	4-4-64	3135	73
Big (6) Jackson 2-A	4-4-64	3041	72
Cactus Hooper B-1	4-13-64	3155	Unknown
Marathon NPA 1	4-13-64	3163	72
		3113 Average	

3

6


SCHARB - BONE SPRINGS
BOTTOM HOLE PRESSURE DATA
LEGEND
Field Average Pressure
Discovery Well
Marathon's-State NPA No. 1
1 well
1 well
1 well
1 well initial Presure
Big 6 - Atlantic - Jackson No. 1
4 wells
First Pressures
Big 6-Dalmont 1
Big 6-Jackson 1-A
Big 6-Jackson 2-A
Big 6-Jackson 1
4 wells
6 wells
BOTTOM HOLE PRESSURE AT -6230 FT. S. S. - - PSIG
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
110
100
90
80
70
60
50
40
30
20
10
0
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
19 62
19 63
19 64
19 65
19

WALTER JENSEN
PETROLEUM ENGINEER
235 OIL & GAS BUILDING
HOUSTON 2, TEXAS

October 23, 1964

7

Mr. W. A. Stockard
225 Oil & Gas Building
Houston, Texas 77002

Re: Scharb Bone Spring Field,
Lea County, New Mexico

Dear Mr. Stockard:

I will be unable to attend the hearing to be held in Santa Fe on October 28, 1964, in regard to the above Field, and I take this opportunity to let you know the results of my investigation.

From a survey of the production and pressure history of the subject field, I believe we can conclude the following:

1. Wells drilled on spacing of less than 80 acres would be unnecessary to recover the recoverable oil and gas reserves in the reservoir.

2. A well completed in the Bone Spring Formation can effectively and efficiently drain an area in excess of 80 acres.

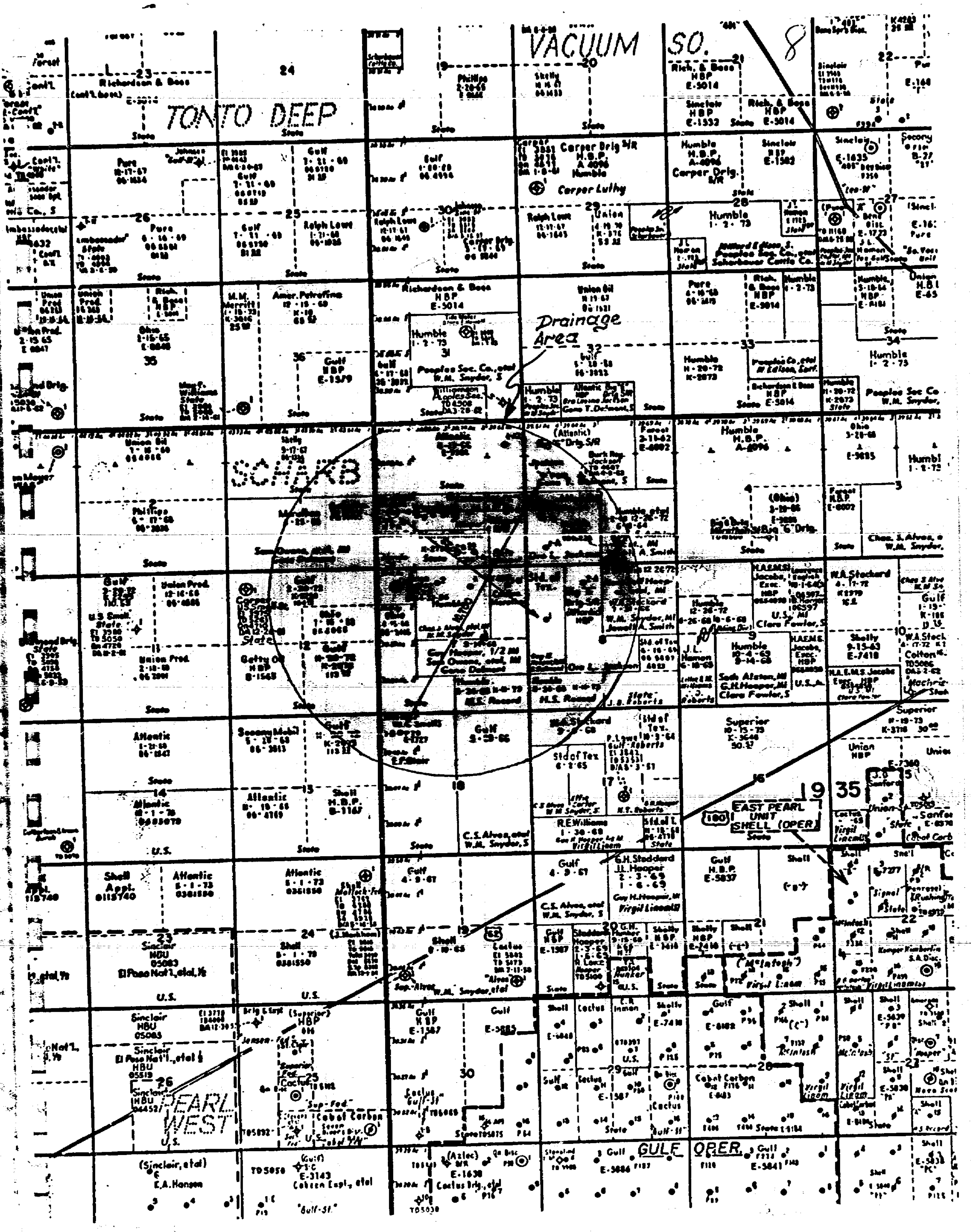
3. A spacing program of less than 80 acres per well would actually impede the development of a field of this nature, due to economic considerations.

Since I will be unable to be present on the hearing date, I respectfully submit my qualifications as an expert in the field of Petroleum Engineering. I am a licensed professional engineer in Texas (#17010) and Louisiana (#3325), and I have practiced my profession for the past thirteen years. During the past six years I have been self-employed.

Yours very truly,

Walter Jensen

WJ:aw


VACUUM SO.
8
TONTO DEEP
Drainage Area
SCHARB
EAST PEARL UNIT SHELL (OPER)
State
PEARL WEST
GULF OPER.

13

EXHIBIT SUBMITTED BY ATLANTIC REFINING CO.
October 18, 1963

SCHARB BONE SPRING
RESERVES & ECONOMICS FOR DEVELOPMENT

BASIC DATA

Variable	Symbol	Value
Pay Thickness	h	42'
Drainage Area	A	40 & 80
Porosity	ø	6.5%
Water Saturation	Sw	15%
Recovery Factor	fr	20%
Oil Formation Volume Factor	B	1.33
Constant - Bbls/Ac. Ft.	-	7758

$$\text{Recovery} = \frac{7758 \times A \times h \times \phi \times (1 - SW) \times fr}{Bo}$$

RECOVERY FOR 40-ACRE SPACING

$$\text{Recovery} = \frac{7758 \times 40 \text{ ac.} \times 42' \times .065 \times (1 - .15) \times .20}{1.33} = 108{,}000 \text{ STB}$$

RECOVERY FOR 80-ACRE SPACING

$$\text{Recovery} = \frac{7758 \times 80 \text{ ac.} \times 42' \times .065 \times (1 - .15) \times .20}{1.33} = 216{,}000 \text{ STB}$$

COMPARISON OF ECONOMICS

	40 Ac. Spacing	80 Ac. Spacing
Oil Reserves	108,000 Bbls.	216,000 Bbls.
Gas Reserves	167 MMCF	334 MMCF
Oil Revenue (7/8)	$280,700	$561,400
Gas Revenue (7/8)	13,150	26,300
Total Revenue	$293,850	$587,700
Drilling Investment	$135,000	$135,000
Lease Equipment/Well	10,150	20,300
Pumping Equipment	34,100	34,100
Dry Hole Risk	17,600	17,600
Operating Costs	73,200	123,800
Taxes	16,700	33,000
Total Costs	$286,750	$363,800
Profit	$ 7,100	$223,900
Payout	8 yrs	1.0 yrs
Profit/Investment Ratio	.04	1.6
Investors' Rate of Return	3%	57%

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

MEMORANDUM

TO: GOVERNOR CAMPBELL AND COMMISSIONER WALKER

FROM: A. L. PORTER, JR., SECRETARY-DIRECTOR

SUBJECT: CASE 2910, ORDER NO. R-2589

Attached is a recommended order in Case No. 2910 which I have signed.

This application was opposed by the royalty owner, Mr. Hooper of Roswell.

The case was continued once on motion by Mr. Bratton, attorney for the applicant at the time of Judge Bratton's death, and once by agreement between Mr. Bratton and Mr. Russell, who at that time was attorney for Mr. Hooper. The second continuance was because of the State Bar Association Meeting.

At the time the case was finally heard on October 18th, Mr. Fred Standley appeared for Mr. Hooper and requested a further continuance.

The examiner ruled that the case would not be continued, but reminded Mr. Standley that any party adversely affected by the decision of the examiner could ask for a hearing before the full Commission.

In my opinion the application should be granted.

October 30, 1963

ir/

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

October 31, 1963

COPY

Mr. Ernest H. Stanley
Attorney at Law
Petroleum Building
Santa Fe, New Mexico

Re: Case No. 2910
Order No. R-2589

Dear Ernie:

I am enclosing herewith a copy of Order No. R-2589 which was signed by the Commission on October 30, 1963.

If your client desires a hearing de novo in this case, application for the same must be filed with the Commission within 30 days from October 30, 1963.

The following parties have entered an appearance in this case:

Marathon Oil Company
P. O. Box 2107
Hobbs, New Mexico

The Atlantic Refining Company
P. O. Box 1970
Roswell, New Mexico 88201

Humble Oil & Refining Company
P. O. Box 1600
Midland, Texas

Mr. Howard Bratton
Attorney at Law
P. O. Box 10
Roswell, New Mexico

Very truly yours,

J. M. DURRETT, Jr.
Attorney

JMD/esr
Enclosure

CASE 2910 (Reopened):

In the matter of Case No. 2910 being reopened pursuant to the provisions of Order No. R-2589, which order established 80-acre spacing units for the Scharb-Bone Springs Oil Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 2659 (Reopened):

In the matter of Case No. 2659 being reopened pursuant to the provisions of Order No. R-2347-A, which continued the original order establishing 80-acre proration units for the North Bagley-Wolfcamp Pool, Lea County, New Mexico, for an additional year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

CASE 2904 (Reopened):

In the matter of Case No. 2904 being reopened pursuant to the provisions of Order No. R-2576, which order established temporary 80-acre spacing units for the Flying "M" Abo Oil Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 2678 (Reopened):

In the matter of Case No. 2678 being reopened pursuant to the provisions of Order No. R-2359-A, which continued the original order establishing 160-acre proration units for the East Saunders Permo-Pennsylvanian Pool, Lea County, New Mexico, for an additional year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

CASE 3136: Application of William A. and Edward R. Hudson for expansion of a waterflood project and for certain unorthodox locations, Eddy County, New Mexico. Applicants, in the above-styled cause, seek authority to expand their Maljamar Grayburg-San Andres Waterflood Project by the drilling of three injection wells at unorthodox locations not more than 100 feet nor closer than 25 feet to the Northeast corner of Units H, M and P of Section 24, Township 17 South, Range 31 East, Eddy County, New Mexico. Applicants further seek authority to convert from oil production to water injection their Puckett "A" Well No. 26 located in the Southeast corner of Unit D and Wells Nos. 27 and 28 located in the Northwest corners of Units K and C, respectively, all in said Section 24.

CASE 3137: Application of Southern Union Production Company for an unorthodox location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to complete its Navajo Indian Well No. 6 at an unorthodox location in the Blanco Mesaverde Pool 1700 feet from the North line and 910 feet from the West line of Section 6, Township 26 North, Range 8 West, San Juan County, New Mexico.

CASE 2660 (Reopened):

In the matter of Case No. 2660 being reopened pursuant to the provisions of Order No. R-2348-A, which continued the original order establishing 80-acre proration units for the Middle Lane-Pennsylvanian Pool, Lea County, New Mexico, for an additional year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

Docket No. 29-64

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 28, 1964

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 3113: (Continued from the September 30, 1964 Examiner Hearing). Application of BCO, Inc. for a unit agreement, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks approval of the Escrito Gallup Pool Unit Area comprising 3123.88 acres, more or less, of State and Federal lands in Township 24 North, Ranges 7 and 8 West, San Juan and Rio Arriba Counties, New Mexico.

CASE 3114: (Continued from the September 30, 1964 Examiner Hearing). Application of BCO, Inc. for a waterflood project, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Escrito Gallup Oil Pool in its Escrito Unit Area by the injection of water into the Gallup formation through three wells located in Sections 17 and 18, Township 24 North, Range 7 West, and Section 12, Township 24 North, Range 8 West, San Juan and Rio Arriba Counties, New Mexico.

CASE 3131: Application of Texstar Petroleum Company for a unit agreement, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Hospah Unit Area comprising 1160 acres, more or less, of State and Fee lands in Townships 17 and 18 North, Ranges 8 and 9 West, Hospah Pool, McKinley County, New Mexico.

CASE 3132: Application of Texstar Petroleum Company for a waterflood project, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Hospah Pool in its Hospah Unit Area, by the injection of water into the Hospah Sand through 8 wells located in Section 1, Township 17 North, Range 9 West, and Section 36, Township 18 North, Range 9 West, McKinley County, New Mexico.

CASE 3133: Application of George W. Strake for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Hackberry Deep Unit Area comprising 3,832.60 acres, more or less, of Federal and State lands in Townships 19 and 20 South, Ranges 30 and 31 East, Eddy County, New Mexico.

CASE 3134: Application of Lone Star Producing Company for a non-standard location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to deepen its Federal Well No. 1-D and complete same in the South Prairie-Atoka Gas Pool. Said well is 660 feet from the North and East lines of Section 29, Township 8 South, Range 36 East, Roosevelt County, New Mexico, at a non-standard location for said gas pool.

CASE 3135: Application of Lone Star Producing Company for a non-standard unit and a non-standard location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the SW/4 of Section 21, Township 8 South, Range 36 East, South Prairie Atoka Gas Pool, Roosevelt County, New Mexico. Said unit to be dedicated to applicant's Federal Well No. 1-B at a non-standard location for said pool 660 feet from the South and West lines of said Section 21.

Telefax

WESTERN UNION

SENDING BLANK

Telefax

'64 Oct 22 AM 11

CALL LETTERS [illegible]

CHARGE TO U. S. Smelting MD3-2734

October 20, 1964

State of New Mexico Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico

Re October 28 hearing Case 2910 (re-opened) to show cause why Scharb-Bone Springs Oil Pool, Lea County, should not be developed on 40-acre spacing units. U. S. Smelting, owner of lands within the spaced area, strongly recommends a continuance of 80-acre spacing units in the above pool because of low productivities and reserves at this depth.

United States Smelting Refining and Mining Company
W. C. Dougherty, Manager of Production

[illegible]

Send the above message, subject to the terms on back hereof, which are hereby agreed to

PLEASE TYPE OR WRITE PLAINLY WITHIN BORDER—DO NOT FOLD

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

WESTERN UNION

TELEGRAM

W. P. MARSHALL, PRESIDENT

1201

SYMBOLS
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LA118 DC093

D MDA124 PD 3 EXTRA=FAX MIDLAND TEX 20 3[illegible]P CST=
STATE OF NEW MEXICO OIL CONSERVATION COMMISSION=
STATE LAND OFC BLDG SANTA FE NMEX=

RE OCTOBER 28 HEARING CASE 2910 (RE-OPENED) TO SHOW CAUSE WHY SCHARB-BONE SPRINGS OIL POOL, LEA COUNTY, SHOULD NOT BE DEVELOPED ON 40-ACRE SPACING UNITS. US SMELTING, OWNER OF LANDS WITHIN THE SPACED AREA, STRONGLY RECOMMENDS A CONTINUANCE OF 80-ACRE SPACING UNITS IN THE ABOVE POOL BECAUSE OF LOW PRODUCTIVITIES AND RESERVES AT THIS DEPTH=

UNITED STATES SMELTING REFINING AND MINING CO
W C DOUGHERTY MANAGER OF PRODUCTION==

[illegible] SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

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

WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

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LA118 DA418

D MDA139 PD 4 EXTRA=FAX MIDLAND TEX 23 349P CST=
NEW MEXICO OIL CONSERVATION COMMISSION=
P O BOX 871 SANTA FE NMEX=
ATTN: MR. A. L. PORTER

IN REFERENCE TO THE REOPENING OF CASE 2910 AT THE OCTOBER 28 HEARING, HUMBLE STRONGLY URGES CONTINUATION OF 80-ACRE SPACING FOR THE SCARB-BONE SPRINGS POOL ON A PERMANENT BASIS. THE PRESSURE COMMUNICATION DATA TO BE PRESENTED BY BIG (6) SHOWS THAT ONE WELL WILL ADEQUATELY DRAIN 80 ACRES=

HUMBLE OIL AND REFINING CO R R MCCARTY BY H L HENSLEY=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

CLASS OF SERVICE
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WESTERN UNION
TELEGRAM
W. P. MARSHALL, PRESIDENT

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UA044 SSE071

L HBA028 PD 2 EXTRA=HOBBS NMEX 26 1044A MST=
A L PORTER JR=
STATE LAND OFFICE BLDG SANTA FE NMEX=

CACTUS DRILLING COMPANY SUPPORTS THE PERMANENT 80 ACRE SPACING RULES AS PER CASE #2910=
GEORGE W BAKER VICE PRESIDENT
CACTUS DRILLING CO=

Oct 28

MAIN OFFICE O
'61 OCT 26 AM 11

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

(5) That the Special Rules and Regulations promulgated by Order No. R-2589 have afforded and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil in the pool.

(6) That to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-2589 should be continued in full force and effect until further order of the Commission.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the Scharb-Bone Springs Pool promulgated by Order No. R-2589 are hereby continued in full force and effect until further order of the Commission.

(2) 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

JACK M. CAMPBELL, Chairman

E. S. WALKER, Member

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

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. 2910
Order No. R-2589-B

APPLICATION OF BIG (6) DRILLING COMPANY
FOR EXTENSION OF AN EXISTING OIL POOL,
AND SPECIAL POOL RULES, LEA COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 28, 1964, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 24th day of November, 1964, 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 by Order No. R-2589, dated October 30, 1963, temporary Special Rules and Regulations were promulgated for the Scharb-Bone Springs Pool, Lea County, New Mexico.

(3) That pursuant to the provisions of Order No. R-2589, this case was reopened to allow the operators in the subject pool to appear and show cause why the Scharb-Bone Springs Pool should not be developed on 40-acre spacing units.

(4) That the evidence establishes that one well in the Scharb-Bone Springs Pool can efficiently and economically drain and develop 80 acres.

DRAFT

JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CF Subj. _____

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

CASE No. 2910

Order No. R- 2589-B

APPLICATION OF BIG (6) DRILLING COMPANY FOR EXTENSION OF AN EXISTING OIL POOL, AND SPECIAL POOL RULES, LEA COUNTY, NEW MEXICO.

11-23-64

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 28, 1964, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of Nov, 1964, 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 by Order No. R-2589, dated October 30, 1963, temporary Special Rules and Regulations were promulgated for the Scharb-Bone Springs ~~Oil~~ Pool, Lea County, New Mexico.

(3) That pursuant to the provisions of Order No. R-2589, this case was reopened to allow the operators in the subject pool to appear and show cause why the Scharb-Bone Springs ~~Oil~~ Pool should not be developed on 40-acre spacing units.

(4) That the evidence establishes that one well in the Scharb-Bone Springs ~~Oil~~ Pool can efficiently and economically drain and develop 80 acres.

(4) That to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-2589 should be continued in full force and effect until further order of the Commission.

(5) That the Special Rules and Regulations promulgated by Order No. R-2589 have afforded and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil in the pool.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the Scharb-Bone Springs ~~Oil~~ Pool promulgated by Order No. R-2589 are hereby continued in full force and effect until further order of the Commission.

(2) 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.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 11/20

CASE 2910 Hearing Date 9am 10/28
DJN @ SF

My recommendations for an order in the above numbered cases are as follows:

Enter an order Continuing the present temporary 80-acre pool rules in the Schark Box Spring Pool in effect until further order of the Commission.

The evidence at this hearing indicates that the wells are effectively and efficiently draining 80 acres

Staff Member

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. 2910
Order No. R-2589-A

APPLICATION OF BIG (6) DRILLING COMPANY
FOR THE EXTENSION OF THE SCHARB-LYNN SPRINGS
OIL POOL, TOWNSHIP 19 SOUTH, RANGE 35 EAST,
LEA COUNTY, NEW MEXICO, AND FOR SPECIAL RULES
THEREFOR, INCLUDING 80-ACRE SPACING AND PRO-
RATION UNITS TO COMPRISE ANY TWO CONTIGUOUS
40-ACRE TRACTS, AND FOR FIXED WELL LOCATIONS.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing de novo at 9 o'clock a.m. on December 18, 1963, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 27th day of December, 1963, the Commission, a quorum being present, having considered the record 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 attorney for the Commission moved to dismiss the application for hearing de novo.

(3) That the motion should be granted.

IT IS THEREFORE ORDERED:

That the application of Guy Hooper for a hearing de novo is hereby dismissed.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

E. S. WALKER, Member

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

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. 2910
Order No. R-2589
NOMENCLATURE

APPLICATION OF BIG (6) DRILLING COMPANY
FOR EXTENSION OF AN EXISTING OIL POOL
AND SPECIAL POOL RULES, LEA COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 18, 1963, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 30th day of October, 1963, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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, Big (6) Drilling Company, seeks extension of the horizontal limits of the Scharb-Bone Springs Oil Pool to comprise the W/2 of Section 5, all of Section 6, and the W/2 of Section 7, Township 19 South, Range 35 East, NMPM, Lea County, New Mexico.

(3) That the applicant also seeks the promulgation of special rules and regulations governing said pool, including provisions for 80-acre spacing units comprising any two contiguous 40-acre tracts, and for fixed well locations.

(4) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk caused from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 80-acre spacing units should be promulgated for the Scharb-Bone Springs Oil Pool.

(5) That in order to encourage the orderly development of the subject pool, the temporary special rules and regulations should provide for 80-acre spacing units comprising the N/2, S/2, E/2, or W/2 of a single governmental quarter section; that due to the configuration of leases, the diversity of ownership, and the locations of wells previously drilled in the SW/4 and W/2 SE/4 of Section 6, Township 19 South, Range 35 East, NMPM, Lea County, New Mexico, the operators in said area should be permitted to dedicate to wells within said area any two quarter-quarter sections contiguous by a common bordering side and lying wholly within said area.

(6) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(7) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

(8) That this case should be reopened at an examiner hearing in October, 1964, at which time the operators in the subject pool should appear and show cause why the Scharb-Bone Springs Oil Pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

(1) That the horizontal limits of the Scharb-Bone Springs Oil Pool in Lea County, New Mexico, are hereby extended to include the following-described area:

TOWNSHIP 19 SOUTH, RANGE 35 EAST, NMPM
Section 5: W/2
Section 6: All
Section 7: N/2

(2) That Special Rules and Regulations for the Scharb-Bone Springs Oil Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
SCHARB-BONE SPRINGS OIL POOL

RULE 1. Each well completed or recompleted in the Scharb-Bone Springs Oil Pool or in the Bone Springs formation within one mile of the Scharb-Bone Springs Oil Pool, and not nearer to or within the limits of another designated Bone Springs oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Scharb-Bone Springs Oil Pool shall be located on a standard unit containing approximately 80 acres comprising the N/2, S/2, E/2, or W/2 of a single governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

RULE 3. The Secretary-Director may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. The first well drilled on every standard or non-standard unit in the Scharb-Bone Springs Oil Pool shall be located in the NE/4 or SW/4 of a governmental quarter section. All wells shall be located within 200 feet of the center of a governmental quarter-quarter section.

RULE 5. The Secretary-Director may grant an exception to the footage requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon, provided the well will be located no nearer than 330 feet to the outer boundary of the unit. All operators offsetting the proposed unorthodox location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) in the Scharb-Bone Springs Oil Pool shall be assigned an 80-acre proportional factor of 5.67 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable in the Scharb-Bone Springs Oil Pool as the acreage in such non-standard unit bears to 80 acres.

IT IS FURTHER ORDERED:

(1) That an exception is hereby granted to the Special Rules and Regulations for the Scharb-Bone Springs Oil Pool to permit the operators in the SW/4 and W/2 SE/4 of Section 6, Township 19 South, Range 35 East, NMPM, Lea County, New Mexico, to dedicate to existing and future wells within said area any two quarter-quarter sections contiguous by a common bordering side and lying wholly within said area.

(2) That any well drilling to or completed in the Bone Springs formation within the Scharb-Bone Springs Oil Pool or within one mile of the Scharb-Bone Springs Oil Pool on or before October 9, 1963, that will not comply with the well location requirements of Rule 4 is hereby granted an exception to the requirements of said rule. The operator of any such well shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before November 15, 1963.

(3) That any operator desiring to dedicate 80 acres to a well presently drilling to or completed in the Scharb-Bone Springs Oil Pool shall file a new Form C-128 with the Commission on or before November 15, 1963.

(4) That this case shall be reopened at an examiner hearing in October, 1964, at which time the operators in the subject pool may appear and show cause why the Scharb-Bone Springs Oil Pool should not be developed on 40-acre spacing units.

(5) 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

Jack M Campbell
JACK M. CAMPBELL, Chairman

E. S. WALKER, Member

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

esr/

CASE 2910

REQUEST FOR CONTINUATION OF
EXISTING SCHARB (BONE SPRING) POOL RULES
ON A PERMANENT BASIS

SCHARB BONE SPRING POOL
LEA COUNTY, NEW MEXICO

CONTENTS:

General Discussion
Data Sheet
Present Field Rules
Production Data
Tabulation of Pressure Data
Graphical Presentation of Pressure Data
Walter Jensen - Testimony
Drainage Radius Map
Structure Map
Cross Sections
Reserves and Economics

GENERAL DISCUSSION

The Scharb (Bone Spring) Pool is located approximately 22 miles west of the city of Hobbs, New Mexico. Proven production, as of this date, is 1,000 acres ± being portions of Sections 5, 6, 7, 8 and 18, T-19-S, R-35-E.

Bone Spring production was discovered by The Ohio Oil Company's (Marathon) No. 1 NPA State well, Section 6, T-19-S, R-35-E, on January 19, 1962. The discovery potentialed for 100 barrels/day from a dolomite section perforated between the depths of 10,156 - 10,166'. No additional wells were drilled in the area until August, 1963 when Big "6" Drilling Company completed their No. 1 Ora Jackson (Section 6, T-19-S, R-35-E). Eleven wells have subsequently been completed in this Bone Spring producing zone.

Geological studies indicate the Scharb Pool to be a stratigraphic type oil field. Limits of the production area are not yet determined.

The Bone Spring reservoir is penetrated at an average depth of 10,100' in the Scharb area. Average thickness of the gross pay section is 42 feet. The rock is a brown to tan dolomite, which locally contains zones of re-worked crinoid fragments. Porosity is best developed in the lower two-thirds of the reservoir. Examination of electrical logs shows this porosity to be continuous throughout the limits of the field (Section A-A', B-B', C-C'). The Bone Spring horizon has a vertical oil column in excess of 80 feet.

Recoverable oil from the Bone Spring horizon is estimated to be 2,500 barrels per acre. Ultimate recovery for the field is estimated to be 2,250,000 barrels.

The Scharb Field has been developed on an 80 acre spacing program. Production per well averages 4,600 barrels per month, with the field averaging approximately 50,000 barrels per month. Cumulative field production to July has been 498,104 barrels.

2

DATA SHEET

1. Physical Properties of the Reservoir Rock

a.	Average Porosity	7%
b.	Average Permeability	Unknown . 1 to 381
c.	Average interstitial water saturation	15%

2. Structural Features of the Reservoir

a.	Structure Map	Plat I
b.	Cross section	Plat II, III, IV
c.	Water Oil and Gas Oil Contacts	None
d.	Average Gross Pay Thickness	42'

3. Characteristics of Reservoir Fluids

a.	Average Gravity of Oil	37.8°
b.	Formation Volume Factor	1.33

4. Pressures

Original BHP	4345
Periodic Weighted Average	See Exhib. 6

5. Statistical Data

a.	Oil Production	See Exhib. 2,3
b.	Water Production	One well prod. H_2O. Believed result of faulty completion.
c.	Number flowing & pumping wells	3 pumping 8 flowing
d.	Well Completion Methods	Acid Treatment
e.	Proven Acres	1,000 acres
f.	Average Well Density	80 Ac./Well
g.	Gas/Oil Ratio	600/1
h.	Disposition of Gas	Warren Petroleum
i.	Stage of Depletion of Reservoir	Initial Primary

6. General Reservoir Mechanics

a.	Effectiveness of Water Drive	None
b.	Effectiveness of Gas Expansion Drive	Believe this is the principal value mechanism.

E
3

PROPOSED SPECIAL RULES AND REGULATIONS FOR THE SCHARB BONE SPRING POOL

RULE 1. Each well completed or recompleted in the Scharb Bone Spring Pool or in the Bone Spring formation within one mile of said pool, and not nearer to nor within the limits of another designated Bone Spring pool, shall be spaced, drilled, operated, and prorated in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Scharb Bone Spring Pool shall be located on a unit containing 80 acres, more or less, which consists of any two contiguous quarter-quarter sections of a single governmental section.

RULE 3. Unit wells shall be located within 150 feet of the center of either the NE¼ or SW¼ of a governmental quarter-section. Any well which was drilling to or completed in the subject pool prior to October 1, 1963, is granted an exception to the well location requirements of this Rule.

RULE 4. For good cause shown, the Secretary-Director may grant exception to the requirements of Rule 2 without notice and hearing when the application is for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application if, after a period of 30 days, no offset operator has entered an objection to the formation of such non-standard unit.

The allowable assigned to any such non-standard unit shall bear the same ratio to a standard allowable in the subject pool as the acreage in such non-standard unit bears to 80 acres.

RULE 5. An 80-acre proration unit (79 through 81 acres) in the subject pool shall be assigned an 80-acre proportional factor of 5.67 for allowable purposes.

PRODUCTION DATA
Source: N. Mex. O.C.C.

SCHARB BONE SPRING FIELD
LEA COUNTY, NEW MEXICO

Operator and Well	July,1963	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.1964	Feb.	Mar.	Apr.	May	Jun.	J
Atlantic Refining Co. Ora L. Jackson							3000(Est.)	6866	6443	6972	6422	5853	7
Big "6" Drilling Co. Gene Dalmont			2244	5797	6660	6882	7272	6888	7284	5663	5800	6300	6
Big "6" Drilling Co. Ora Jackson et al		3178	5610	5797	6999	6990	7092	6316	6298	6172	6882	6683	7
Big "6" Drilling Co. Ora Jackson "A" #1					6604	6882	7667	Combined w/ Well #2					
Big "6" Drilling Co. Ora Jackson "A" #2								10682	10921	11547	12152	12468	11
Blair Edwin Foster State "B"											428	366	
Cactus Drilling Co. Guy H. Hooper #1-A				1296	1219	1134	900(Est.)	615	606	506	479	439	
Cactus Drilling Co. Guy H. Hooper #1-B			4733	6377	5920	6896	7000(Est.)	6874	6710	6584	6808	6208	6
Hondo Oil and Gas Co. Hondo State "B"										4617	6925	6411	6
Humble Oil & Refining Co. Charles S. Alves #1					1194	1220	2500(Est.)	3136	3119	2842	2837	2321	2
Marathon Oil Co. State NPA #1	3582*	3580	3439	3523	3339	3316	3000(Est.)	2702	2691	2417	2440	1686	
Standard Oil Co. of Texas Guy Hooper et al #1											1720	1510	1

*55,930 Barrels oil produced prior to July, 1963.

July oil production from 11 wells
Average per well

SCHARB BONE SPRING FIELD
LEA COUNTY, NEW MEXICO

DATA
N. Mex. O.C.C.

July,1963	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.1964	Feb.	Mar.	Apr.	May	Jun.	July	Cumulative
						3000(Est.)	6866	6443	6972	6422	5853	7283	42,839
		2244	5797	6660	6882	7272	6888	7284	5663	5800	6300	6510	67,300
	3178	5610	5797	6999	6990	7092	6316	6298	6172	6882	6683	7533	75,550
				6604	6882	7667	Combined w/ Well #2						
							10682	10921	11547	12152	12468	11562	90,485
										428	366	334	1,128
			1296	1219	1134	900(Est.)	615	606	506	479	439	404	7,598
	4733	6377	5920	6896	7000(Est.)	6874	6710	6584	6808	6208	6486	70,596
									4617	6925	6411	6816	24,769
				1194	1220	2500(Est.)	3136	3119	2842	2837	2321	2490	21,659
3582*	3580	3439	3523	3339	3316	3000(Est.)	2702	2691	2417	2440	1686	-	91,645
										1720	1510	1305	4,535
													498,104

*55,930 Barrels oil produced prior to July, 1963.

July oil production from 11 wells 50,723
Average per well 4,611

SCARB-BONE SPRINGS POOL
BOTTOM HOLE PRESSURE DATA
DATUM - 6230 FEET SUBSEA

Well	Date	Pressure PSIG	HRS-Shut In
Marathon St. NPA 1	2-62	4345	Unknown
Marathon St. NPA 1	3-62	4034	Unknown
Marathon St. NPA 1	4-62	3928	72
Atlantic Jackson 1	12-27-63	3578	48
Big (6) Dalmont	1-64	3451	48
Big (6) Jackson	1-64	3330	48
Big (6) Jackson 1-A	2-64	3459	48
Big (6) Jackson 2-A	2-64	3362	48
		3401 Average	
Big (6) Dalmont 1	2-64	3306	48
Big (6) Jackson 1	2-64	3200	48
Big (6) Jackson 1-A	3-4-64	3293	48
Big (6) Jackson 2-A	3-6-64	3183	48
		3246 Average	
Big (6) Dalmont 1	4-4-64	3148	72
Big (6) Jackson 1	4-4-64	3036	72
Big (6) Jackson 1-A	4-4-64	3135	73
Big (6) Jackson 2-A	4-4-64	3041	72
Cactus Hooper B-1	4-13-64	3155	Unknown
Marathon NPA 1	4-13-64	3163	72
		3113 Average	

BOTTOM HOLE PRESSURE AT -6230 FT. S. S. - - PSIG

4400 | 110
4200 | 100
4000 | 90
3800 | 80
3600 | 70
3400 | 60
3200 | 50
3000 | 40
2800 | 30
2600 | 20
2400 | 10
2200 | 0

△ 1 well

△ 1 well

△ 1 well

SCHARB - BONE SPRINGS

BOTTOM HOLE PRESSURE DATA

LEGEND

∘ Field Average Pressure

△ Discovery Well
Marathon's-State NPA No. 1

∘ 1 well Initial Presure
Big 6 - Atlantic - Jackson No. 1

∘ 4 wells First Pressures
Big 6-Dalmont 1
Big 6-Jackson 1-A
Big 6-Jackson 2-A
Big 6-Jackson 1

∘ 4 wells

∘ 6 wells

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

19 62 | 19 63 | 19 64 | 19 65 | 19 ____

KEUFFEL & ESSER CO. MADE IN U.S.A.
X 110 DIVISIONS

7 & E

WALTER JENSEN
PETROLEUM ENGINEER
235 OIL & GAS BUILDING
HOUSTON 2, TEXAS

October 23, 1964

Mr. W. A. Stockard
225 Oil & Gas Building
Houston, Texas 77002

Re: Scharb Bone Spring Field,
Lea County, New Mexico

Dear Mr. Stockard:

I will be unable to attend the hearing to be held in Santa Fe on October 28, 1964, in regard to the above Field, and I take this opportunity to let you know the results of my investigation.

From a survey of the production and pressure history of the subject field, I believe we can conclude the following:

1. Wells drilled on spacing of less than 80 acres would be unnecessary to recover the recoverable oil and gas reserves in the reservoir.

2. A well completed in the Bone Spring Formation can effectively and efficiently drain an area in excess of 80 acres.

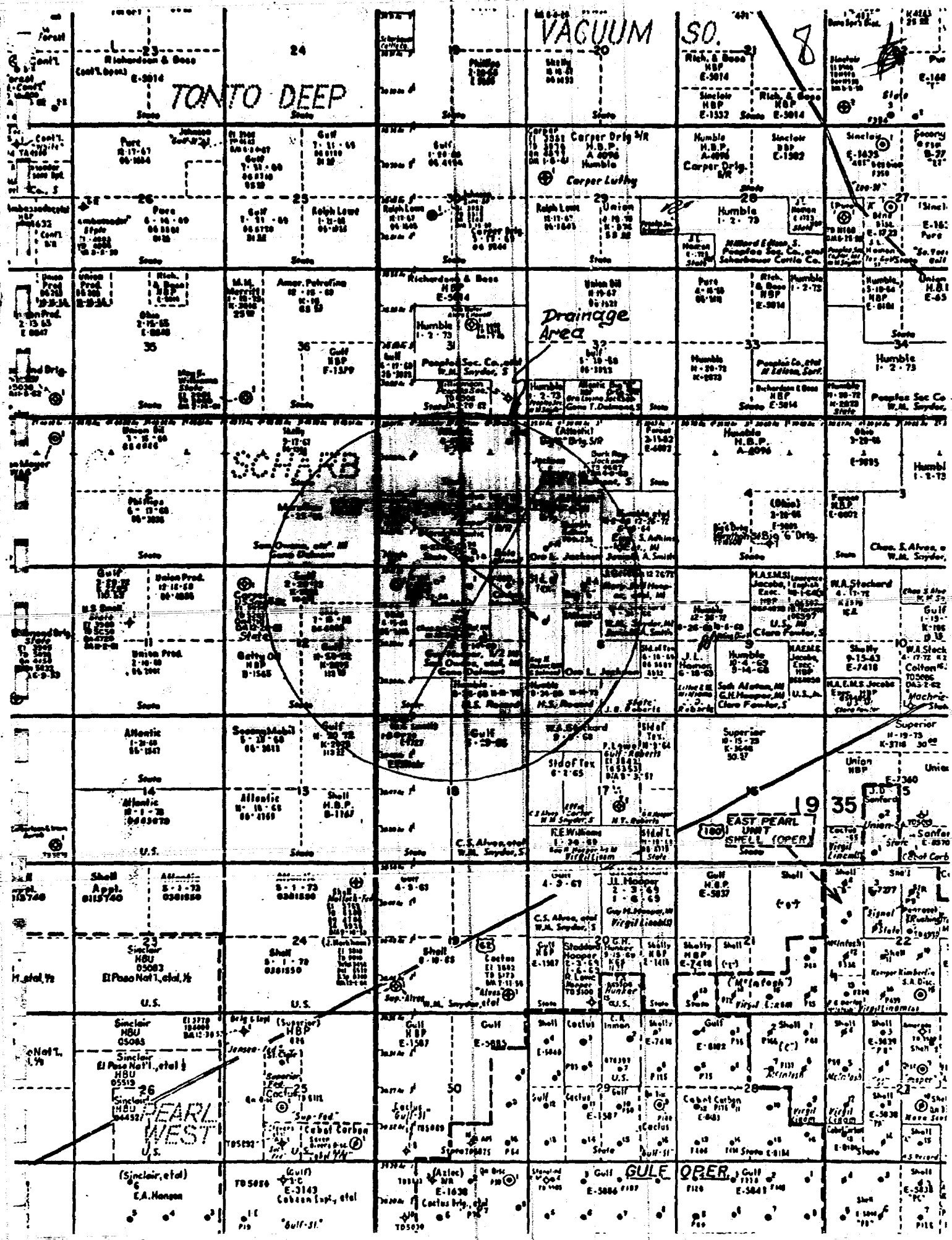
3. A spacing program of less than 80 acres per well would actually impede the development of a field of this nature, due to economic considerations.

Since I will be unable to be present on the hearing date, I respectfully submit my qualifications as an expert in the field of Petroleum Engineering. I am a licensed professional engineer in Texas (#17010) and Louisiana (#3325), and I have practiced my profession for the past thirteen years. During the past six years I have been self-employed.

Yours very truly,

Walter Jensen

WJ:aw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SCHRB
Drainage Area
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SHELL (OPER.)
PEARL WEST
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Richardson & Bass
Carper Drlg. S/R
Carper Lathy
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Sinclair
Union
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EXHIBIT SUBMITTED BY ATLANTIC REFINING CO.
October 18, 1963

SCHARB BONE SPRING
RESERVES & ECONOMICS FOR DEVELOPMENT

BASIC DATA

Variable	Symbol	Value
Pay Thickness	h	42'
Drainage Area	A	40 & 80
Porosity	ϕ	6.5%
Water Saturation	Sw	15%
Recovery Factor	fr	20%
Oil Formation Volume Factor	B	1.33
Constant - Bbls/Ac. Ft.	-	7758

$$\text{Recovery} = \frac{7758 \times A \times h \times \phi \times (1 - SW) \times fr}{Bo}$$

RECOVERY FOR 40-ACRE SPACING

$$\text{Recovery} = \frac{7758 \times 40 \text{ ac.} \times 42' \times .065 \times (1 - .15) \times .20}{1.33} = 108{,}000 \text{ STB}$$

RECOVERY FOR 80-ACRE SPACING

$$\text{Recovery} = \frac{7758 \times 80 \text{ ac.} \times 42' \times .065 \times (1 - .15) \times .20}{1.33} = 216{,}000 \text{ STB}$$

COMPARISON OF ECONOMICS

	40 Ac. Spacing	80 Ac. Spacing
Oil Reserves	108,000 Bbls.	216,000 Bbls.
Gas Reserves	167 MMCF	334 MMCF
Oil Revenue (7/8)	$280,700	$561,400
Gas Revenue (7/8)	13,150	26,300
Total Revenue	$293,850	$587,700
Drilling Investment	$135,000	$135,000
Lease Equipment/Well	10,150	20,300
Pumping Equipment	34,100	34,100
Dry Hole Risk	17,600	17,600
Operating Costs	73,200	123,800
Taxes	16,700	33,000
Total Costs	$286,750	$363,800
Profit	$ 7,100	$223,900
Paycut	8 yrs	1.0 yrs
Profit/Investment Ratio	.04	1.2
Investors' Rate of Return	3%	57%

may down grade in future