

CASE 5978: BTA OIL PRODUCERS FOR POOL
CREATION AND SPECIAL POOL RULES, LEA
COUNTY, NEW MEXICO

Case Number
5978

Application

Transcripts.

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 6, 1977

EXAMINER HEARING

IN THE MATTER OF:

Application of BTA Oil Producers for
pool creation and special pool rules,
Lea County, New Mexico. CASE
5978

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission: Lynn Teschendorf, Esq.
Legal Counsel for the Commission
State Land Office Building
Santa Fe, New Mexico

For the Applicant: Jason W. Kellahin, Esq.
KELLAHIN & FOX
Attorneys at Law
500 Don Gaspar
Santa Fe, New Mexico

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General Court Reporting Service
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501
Phone (505) 982-9212

I N D E X

Page

STEVE SALMON

Direct Examination by Mr. Kellahin	3
Cross Examination by Mr. Nutter	10

EXHIBIT INDEX

Offered Admitted

BTA Exhibit One, Summary of Application	3	10
BTA Exhibit Two, Structure Map	4	10
BTA Exhibit Three, Map	5	10
BTA Exhibit Four, Log	5	10
BTA Exhibit Five, Summary of Economics	7	10

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1 MR. NUTTER: We will call 5978.

2 MS. TESCHENDORF: Case 5978, application of BTA Oil
3 Producers for pool creation and special pool rules, Lea County,
4 New Mexico.

5 MR. KELLAHIN: If the Examiner please, Jason Kellahin
6 Kellahin and Fox, appearing for the applicant and we will use
7 the same witness who testified in Case 5977 and I would like
8 the record to show that he has been sworn.

9 If the Examiner please, Case 5978 pertains to the
10 same well and area as was testified to in 5977 and for
11 convenience we would ask the Examiner to take notice of the
12 testimony and exhibits offered in that case.

13 MR. NUTTER: We will take note of the previous case,
14 Mr. Kellahin.

15

16

STEVE SALMON

17 called as a witness, having been previously sworn, was examined
18 and testified as follows:

19

20

DIRECT EXAMINATION

21 BY MR. KELLAHIN:

22 Q Mr. Salmon, would you tell the Examiner what the
23 applicant proposes in Case 5978?

24 A Yes, for his convenience we prepared Exhibit One
25 which is a summary of the application. We are asking for the

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1 creation of a Pennsylvanian gas pool for the BTA Oil Producers
2 7608 JV-P Hagood Well No. 1. We are requesting that the pool
3 be named the Hagood Pool. The vertical limits of the pool will
4 be the Pennsylvanian formation and the promulgation of
5 temporary special rules including provisions for six hundred
6 and forty acre spacing.

7 Q. And this is the same well you testified to in the
8 other case, is it not?

9 A. Yes, this is the same well.

10 Q. What is the current status of this well?

11 A. It is currently shut in waiting on the pipeline
12 connection.

13 Q. Have you prepared an exhibit showing the structural
14 formation and the area surrounding this well?

15 A. Yes, Exhibit Two is a structural map on the top of
16 the Pennsylvanian. The contour interval is one hundred feet,
17 the scale is one inch equals four thousand feet. BTA's Hagood
18 Well No. 1 is shown by the red dot in Section 25. The Hagood
19 Federal Unit is outlined in yellow, which the well was drilled
20 on.

21 The circle with the two-mile radius is drawn around
22 the Hagood Well No. 1. There are no producing wells within
23 this two-mile radius. The nearest well to penetrate the
24 Pennsylvanian lime formation which is this one that we will
25 be producing from. It is approximately two and a half miles to

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1 the northeast in Section 17. It's the Exxon South Lea Unit.

2 This well penetrated to the granite and was a dry hole.

3 Q What would the closest Pennsylvanian pool be?

4 A This was shown on Exhibit Three which is a producing
5 field map. This map is to the scale of one inch equals six
6 miles. BTA's Hagood Well No. 1 is shown by the red dot in
7 approximately the center of the map, the Arena Rojo which is a
8 one-well gas field located three and three-quarter miles to
9 the west and slightly north of this well. The Arena Rojo is a
10 one-well gas field and it is producing between two and three
11 hundred MCF a day, it has been up and down somewhat recently.

12 Q Do you have a log showing the producing zones with
13 the information marked on it?

14 A Yes, I do. Exhibit Four is a Borehole Compensated
15 Sonic Log on the subject well and the data pertinent to the
16 well is shown on the two-inch scale and we have also put it on
17 the detailed five-inch scale in a little bit more detail.

18 The well was originally drilled to nineteen thousand
19 nine hundred feet as a Fusselman test. The Fusselman was drill
20 stem tested recovering seven thousand seven hundred and nineteen
21 feet of formation water with no shows. This drill stem test is
22 shown on the log from nineteen thousand seven hundred and
23 ninety feet to nineteen thousand eight hundred and ninety-two
24 feet.

25 Shows were encountered while drilling the Pennsylvanian

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1 lime and two drill stem tests were taken while we were drilling
2 through the Pennsylvanian. The first drill stem test tested
3 from thirteen thousand eight hundred and fifty feet to thirteen
4 thousand nine hundred and sixty-one feet. It flowed gas at the
5 rate of three point two million cubic feet per day, decreasing
6 to two point three million cubic feet per day at the end of
7 the test. The shut-in pressures which are shown on the detail
8 scale but not on the two inch, indicate that the well was
9 depleting during the drill stem test. The other drill stem test
10 was from fifteen thousand six hundred and eighty-one to fifteen
11 thousand seven hundred and ninety-one feet. This test flowed
12 gas of only two hundred MCF per day.

13 MR. NUTTER: What formation would that have been in?

14 A. Well, this is all Pennsylvanian formation. Sometimes
15 the Pennsylvanian is broken down into other formations.

16 MR. NUTTER: That would still be Pennsylvanian at
17 fifteen seven?

18 A. Yes.

19 This drill stem test flowed gas at only two hundred
20 MCF per day and the pressures were not usable on this test due
21 to the packer by-pass opening during the test. Since neither
22 test really looked like it was worthwhile by itself and didn't
23 justify a test and we did have a few weak shows in between I
24 would try to salvage something out of the well. We perforated
25 from thirteen thousand eight hundred and seventy-two feet to

1 fifteen eight forty-nine and acidized with ten thousand
2 gallons.

3 Q (Mr. Kellahin continuing.) Now, in your opinion
4 would additional development be justified based on the performance
5 of this well?

6 A No, not at this time. The potential test indicates
7 an initial producing rate of only one and a half million cubic
8 feet a day, fourteen barrels of oil per day and three hundred
9 and forty barrels of water per day with the well riding the
10 line pressure.

11 Exhibit Five summarizes the economics of additional
12 drilling. At the one and a half million cubic feet a day a
13 pay out on this well would be four point eight years. A pay
14 out on the additional development in the Federal Unit, assuming
15 this one and a half million cubic feet a day held up it would
16 be four point one year. Assigning a reasonable decline rate
17 to the well, say thirty percent per year or so, would result
18 in the well not paying out at all. These calculations were
19 made with BTA's revenue interest ratioed up to reflect the
20 hundred percent working interest for simplification. BTA does
21 actually own less than a hundred percent working interest.

22 Q Would you anticipate, however, that the production
23 would hold up to a million and a half?

24 A No, as I said, a reasonable assumption would be that
25 the well would decline and at this point we can't put a definite

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1 decline rate on it and even if it holds up, say for five years,
2 we are still having an extended pay out with probably relative
3 low return on your investment. A reasonable assumption might
4 be that the well will decline somewhere between twenty to
5 fifty percent per year and with this kind of a decline rate
6 you would not get paid off.

7 Q Now what's the purpose of BTA in asking for six
8 hundred and forty acre spacing?

9 A Well, I feel that if the producing rate holds up the
10 well could drain six hundred and forty acres. The temporary
11 rules are requested to protect the correlative overriding
12 royalty owner rights in Section 25 while the well is being
13 tested for a year.

14 Three separate leases are involved in this section
15 and on less than six hundred and forty acre spacing only one
16 lease will get royalty or overriding royalty payments. They
17 all three are Federal leases, however.

18 Q Now you haven't any information on the porosity or
19 permeability of this formation do you?

20 A No, the drill stem test pressures were really not
21 adequate for permeability calculations. We don't have any
22 pressure build up since that time. The well is not on production
23 so you don't know for sure what it's going to make once it
24 gets on and as far as porosity on an interval this long, based
25 on whatever assumptions you wanted to make, you could probably

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1 come up with just about whatever you wanted on the pore value.

2 Q Would a temporary order enable BTA to fully evaluate
3 this well and determine whether it will in fact drain six
4 hundred and forty acres?

5 A Yes, I think it would.

6 Q Would BTA be willing to have the Commission enter
7 an order for a temporary period of one year?

8 A Yes, we would.

9 Q Would that be adequate to enable you to test the
10 well fully?

11 A Yes, it would.

12 Q And then you could come back and present your
13 evidence to the Commission again?

14 A Right. At that time if we still felt like it was
15 draining six hundred and forty acres we would have the evidence
16 to back it up and if we didn't feel that it was then we would
17 be willing to drop it back to three hundred and twenty acre
18 spacing.

19 Q Now at the present time all you have is a limited
20 test of the well?

21 A This is true and the well is not on pipeline yet,
22 as we stated in the previous case, and will not be on pipeline
23 until the second half of this month.

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

1 A. Yes, they were.

2 MR. KELLAHIN: At this time we will offer Exhibits
3 One through Five, inclusive.

4 MR. NUTTER: Exhibits One through Five will be
5 admitted into evidence.

6 (THEREUPON, BTA Exhibits One through
7 Five were admitted into evidence.)

8

9 CROSS EXAMINATION

10 BY MR. NUTTER:

11 Q Mr. Salmon, in examining your Exhibit Number Two here
12 I see some little pencil notations down in the middle of the
13 log there, for instance, eight seventy-two, thirteen eight
14 seventy-eight, thirteen eight eighty-four?

15 A. Yes, these are our perforations.

16 Q These are your perforations?

17 A. Yes.

18 Q So you have scattered perforations then for over
19 two thousand feet up and down the wellbore?

20 A. Yes, we have. As I mentioned before the various
21 intervals did not justify testing separately, we felt like we
22 could not make a commercial well on any one of these groups of
23 perforations going through here and in an attempt to salvage
24 something out of the well we perforated them all trying to make
25 a commercial well.

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1 Q All of these perforations were just made on the basis
2 of log interpretations, with the exception of the two intervals
3 where you had the DST's?

4 A It was made on the basis of log interpretation and we
5 had a mud logging unit on the well while we were drilling it
6 and we used the gas shows and drilling breaks from the mud
7 log to help us pick the perfs.

8 Q So by having your over two thousand feet of scattered
9 perforations, you have perforated into all of the various
10 interval portions of the Pennsylvanian that are normally
11 separated out and have a specific name?

12 A Yes, we have.

13 Q And that's the reason you have asked for creation of
14 a Pennsylvanian pool here?

15 A Right. We felt like anyone of these alone and I
16 think that the weak test that we get when we got them all open
17 backs us up, we felt like any one specific zone through here
18 would not make a commercial well and it's questionable whether
19 even putting them all together whether the well is going to be
20 commercial for very long.

21 Q As I recall the Commission not too long ago created
22 a pool along the state line for Pennsylvanian production or
23 for one of the portions of the Pennsylvanian and named it the
24 Horseback and I don't recall exactly who the operator was that
25 drilled that well there but where would that pool be, is it

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1 east of your pool three or four miles?

2 A. I'm not really familiar with the Horseback Field.
 3 The Arena Rojo which has one well producing is a Skelly well.

4 Q. That's not the one I'm thinking of.

5 A. It's about two and three quarter miles west of us.

6 Q. There is another Pennsylvanian pool to the east here
 7 called the Horseback and the Commission did approve six hundred
 8 and forty acre spacing for that, I just wondered how close it
 9 was but you're not acquainted with that pool?

10 A. No, I'm not. It's not on this producing field map
 11 which is a commercial service map and the well is not on the
 12 county map within the vicinity shown on the map here and I don't
 13 remember seeing it when I looked at the bigger part of the
 14 county map.

15 Q. I know it's there somewhere.

16 And you are asking for approval of this six hundred
 17 and forty acre spacing for what period of time?

18 A. For one year.

19 Q. After date of connection?

20 A. Right.

21 MR. NUTTER: Are there any further questions of this
 22 witness? He may be excused.

23 (THEREUPON, the witness was excused.)

24 MR. NUTTER: Do you have anything further,
 25 Mr. Kellahin?

1 MR. KELLAHIN: That's all, Mr. Nutter, thank you.


2 MR. NUTTER: Does anyone have anything to offer in
3 Case Number 5978? We will take the case under advisement and
4 a fifteen minute recess.

5 (THEREUPON, the hearing was in recess.)
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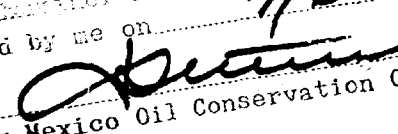
REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Certified Shorthand Reporter,
do hereby certify that the foregoing and attached Transcript
of Hearing before the New Mexico Oil Conservation Commission
was reported by me, and the same is a true and correct record
of the said proceedings to the best of my knowledge, skill and
ability.


Sidney F. Morrish, C.S.R.

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I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 5978
heard by me on 7/6, 1977.

New Mexico Oil Conservation Commission Examiner

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. 5978
Order No. R-5492

NOMENCLATURE

APPLICATION OF BTA OIL PRODUCERS FOR
POOL CREATION AND SPECIAL POOL RULES,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 6, 1977, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 19th day of July, 1977, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, BTA Oil Producers, seeks the creation of a new gas pool for Pennsylvanian production in Lea County, New Mexico, to bear the designation Hagood-Pennsylvanian Gas Pool, and the promulgation of special rules and regulations governing said pool, including a provision for 640-acre spacing and proration units.

(3) That said pool was discovered by applicant's JV-P Hagood Well No. 1 located in Unit B of Section 25, Township 26 South, Range 35 East, NMPM, Lea County, New Mexico, said well having been drilled to a total depth of 19,894 feet and plugged back to a depth of 16,165 feet.

(4) That said well is capable of producing from perforations in the Pennsylvanian formation in the overall interval from 13,865 feet to 15,847 feet.

-2-

Case No. 5978
Order No. R-5492

(5) That in order 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, temporary special rules and regulations providing for 640-acre spacing units should be promulgated for the Hagood-Pennsylvanian Gas Pool.

(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 special rules and regulations should be established for a temporary period to expire one year from the date that a pipeline connection is first obtained for a well in the pool; that during this temporary period all operators in the subject pool should gather all available information relative to drainage and recoverable reserves.

(8) That this case should be reopened at an examiner hearing one year from the date that a pipeline connection is first obtained for a well in the Hagood-Pennsylvanian Gas Pool, at which time the operators in the subject pool should appear and show cause why the Hagood-Pennsylvanian Gas Pool should not be developed on 320-acre spacing units.

(9) That the first operator to obtain a pipeline connection for a well in the Hagood-Pennsylvanian Gas Pool should notify the Commission in writing of such fact, and that the Commission should thereupon issue a supplemental order designating an exact date for reopening this case.

IT IS THEREFORE ORDERED:

(1) That a new pool in Lea County, New Mexico, classified as a gas pool for Pennsylvanian production, is hereby created and designated the Hagood-Pennsylvanian Gas Pool, comprising the following described area:

LEA COUNTY, NEW MEXICO
TOWNSHIP 26 SOUTH, RANGE 35 EAST, NMPM
Section 25: All

Case No. 5978
Order No. R-5492

(2) That temporary Special Rules and Regulations for the Hagood-Pennsylvanian Gas Pool, Lea County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
HAGOOD-PENNSYLVANIAN GAS POOL

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

RULE 2. Each well shall be located on a standard unit containing 640 acres, more or less, consisting of a governmental section.

RULE 3. The Secretary-Director of the Commission 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 and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Land Surveys, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a governmental section and contains less acreage than a standard unit.
- (c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard

-4-

Case No. 5978
Order No. R-5492

unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well shall be located no nearer than 1650 feet ~~to the~~ outer boundary of the section and no nearer than 330 feet to any governmental quarter-quarter section line.

RULE 5. The Secretary-Director may grant an exception to the 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. All operators offsetting the proration 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 operators offsetting the proration unit or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Hagood-Pennsylvanian Gas Pool or in the Pennsylvanian formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before August 1, 1977.

(2) That, pursuant to Paragraph A. of Section 65-3-14.5, NMSA 1953, contained in Chapter 271, Laws of 1969, existing wells in the Hagood-Pennsylvanian Gas Pool shall have dedicated thereto 640 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 65-3-14.5, existing wells may have non-standard spacing or proration units established by the Commission and dedicated thereto.

Failure to file new Forms C-102 with the Commission dedicating 640 acres to a well or to obtain a non-standard unit approved by the Commission within 60 days from the date of this order shall subject the well to cancellation of allowable.

-5-

Case No. 5978
Order No. R-5492

Until said Form C-102 has been filed or until a non-standard unit has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the Hagood-Pennsylvanian Gas Pool or in the Pennsylvanian formation within one mile thereof shall receive no more than one-half of a standard allowable for the pool.

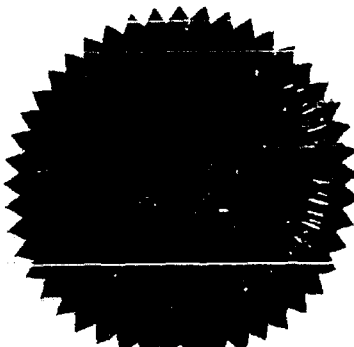
(3) That this case shall be reopened at an examiner hearing one year from the date that a pipeline connection is first obtained for a well in the Hagood Pennsylvanian Gas Pool, at which time the operators in the subject pool may appear and show cause why the Hagood-Pennsylvanian Gas Pool should not be developed on 320-acre spacing units.

(4) That the first operator to obtain a pipeline connection for a well in the Hagood-Pennsylvanian Gas Pool shall notify the Commission in writing of such fact, and that the Commission will thereupon issue a supplemental order designating an exact date for reopening this case.

(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


Phil R. Lucero
PHIL R. LUCERO, Chairman

Emery C. Arnold
EMERY C. ARNOLD, Member

Joe D. Ramey
JOE D. RAMEY, Member & Secretary

S E A L

dr/

406 W. ILLINOIS
MIDLAND, TEXAS 79701
PHONE 683-4521

LABORATORY NO. 97677
SAMPLE RECEIVED 5-15-76
RESULTS REPORTED 9-15-76

SOURCE OF SAMPLE AND DATE TAKEN:

Pit sample.

NO. 2 Recovered water - sampler.

NO. 3

NO. 4

REMARKS: _____ DST #1

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0032	1.2015		
pH When Sampled				
pH When Received	8.8	6.8		
Bicarbonate as HCO ₃	5	93		
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	760	91,500		
Calcium as Ca	224	31,200		
Magnesium as Mg	49	3,281		
Sodium and/or Potassium	428	81,504		
Sulfate as SO ₄	924	231		
Chloride as Cl	497	190,331		
Iron as Fe	0.48	31.2		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	2,141	306,640		
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	3.00	0.045		
Suspended Oil				
Filterable Solids, as mg/l				
Volume Filtered, ml				
Carbonate, as CO ₃	14	0		

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks	The above results clearly show all the recovered water is natural connate water from a Delaware interval.
---------------------------------------	---

Form No. 3

By Waylan C. Martin, M. A.

P. O. BOX 1468
MONAHAN, TEXAS 79756
PHONE 943-3234 OR 563-1040

EXHIBIT 4
CASE 5777
Martin Water Laboratories, Inc.

RECEIVED MAY 11 1977

406 W. ILLINOIS
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. C. R. Pearson
104 South Pecos, Midland, TX

LABORATORY NO. 57724
SAMPLE RECEIVED 5-9-77
RESULTS REPORTED 5-2-77

COMPANY BTA Oil Producers

LEASE
Wildcat

Hagood 7608 JV-P #1

FIELD OR POOL
SECTION BLOCK SURVEY COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Recovered water - taken from Hagood #1 separator, 5-8-77

NO. 2

NO. 3

NO. 4

Penn - Atoka

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0328			
pH When Sampled				
pH When Received	7.0			
Bicarbonate as HCO ₃	1,000			
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	8,600			
Calcium as Ca	2,880			
Magnesium as Mg	340			
Sodium and/or Potassium	13,057			
Sulfate as SO ₄	592			
Chloride as Cl	25,212			
Iron as Fe	72.0			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	43,081			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.185			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks We have no records of Atoka in the general area but as we check on the characteristics in outlying areas of the Delaware Basin, we find some distinct similarity between this water and these other records of Atoka. Therefore, though the stability is somewhat limited due to the lack of records in the immediate area, we are inclined to suspect with some degree of confidence that this is likely mostly Atoka water.

Form No. 3

By

Waylan C. Martin, M. A.

EXHIBIT NO. 6
CASE 5977
RATE TEST

RATE
BPM

RATE
BPD

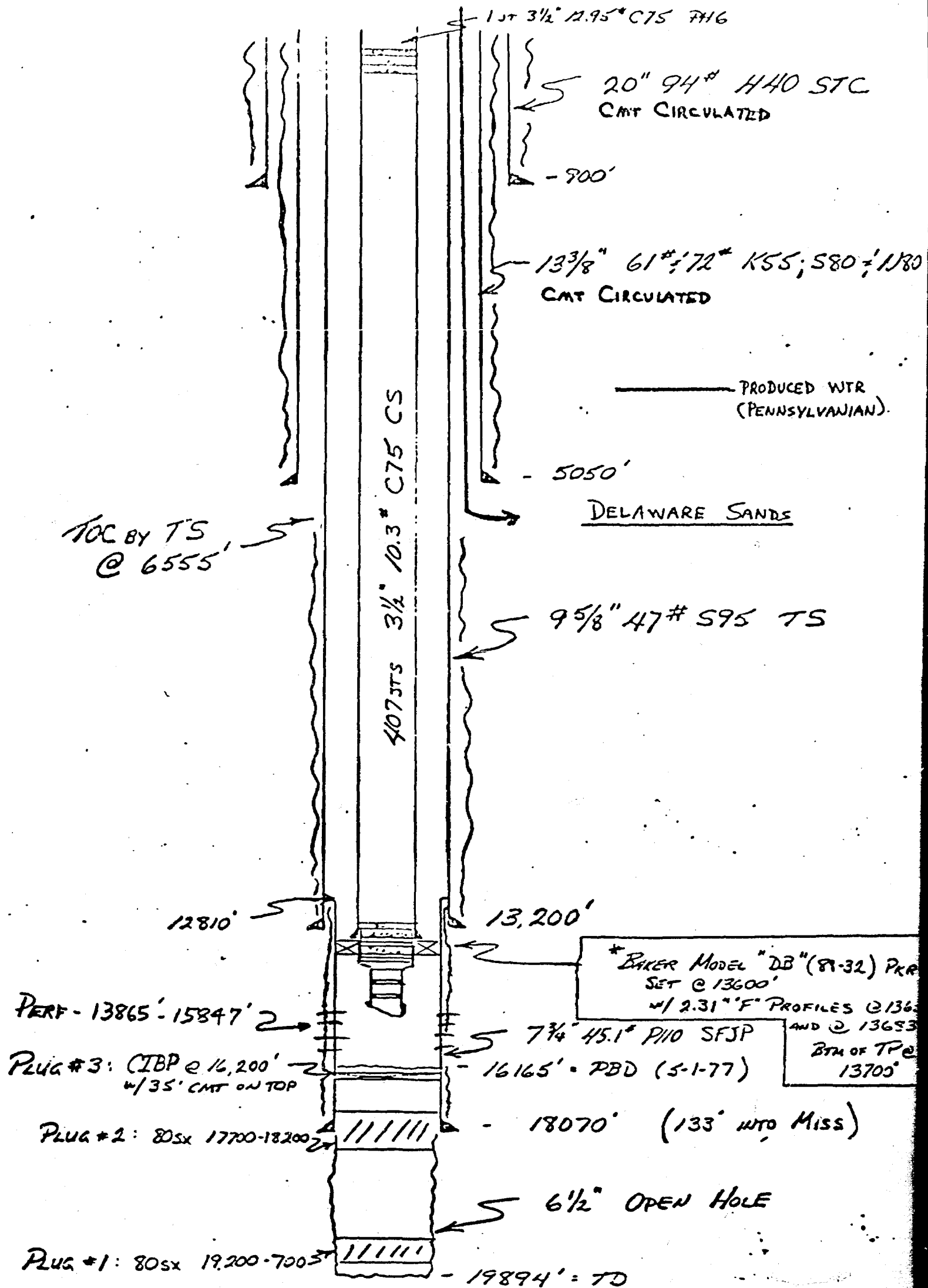
PRESSURE
PSI

Pump 9 barrels to load hole

3	4320	150
4	5760	250
5	7200	350

ISDP 0 psi

CASE 5977 EXHIBIT 5
 PROPOSED ANNULAR INJECTION
 7608 JV-P HAGOOD No.1 -



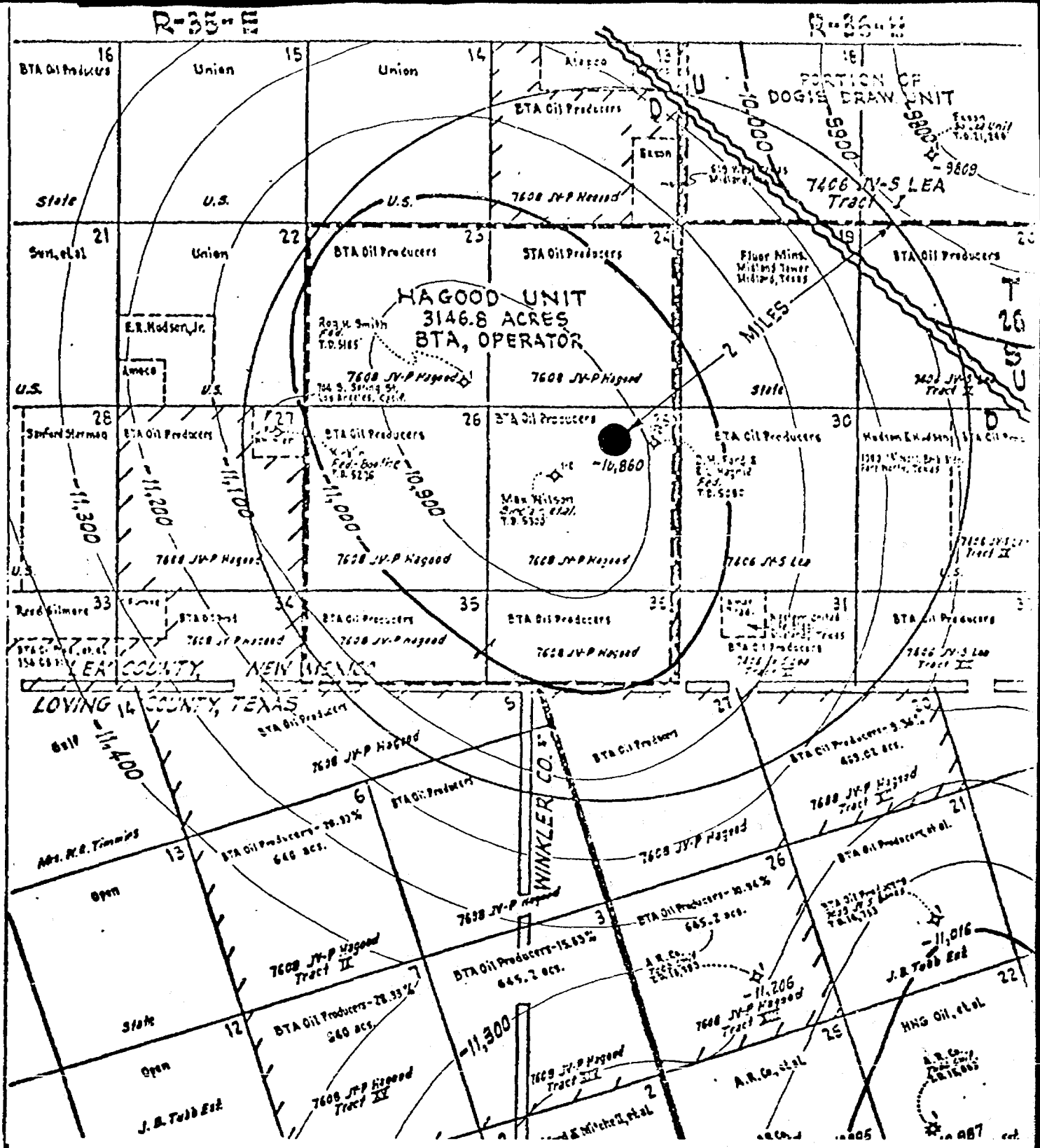
* SEE BAKER DRAWING FOR DETAIL

5/6/77

EXHIBIT NO. 1
CASE 5978
SUMMARY OF APPLICATION

1. Creation of a Pennsylvanian Gas Pool for the BTA Oil Producers 7608 JV-P Hagood Well No. 1 located 990' FNL and 1980' FEL Section 25, Township 26 S, Range 35 E, Lea County, New Mexico.
2. The pool be named the Hagood Pool.
3. Vertical limits of the pool to be the Pennsylvanian formation.
4. The promulgation of temporary special rules including provisions for 640 acre spacing.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
BTA EXHIBIT NO. 1
CASE NO. 5978



- LEGEND**
- DISCOVERY WELL
 - * PRODUCING GAS WELLS
 - ◇ DRY HOLE
 - BTA HAGOOD UNIT BOUNDARY

BEFORE EXAMINER NOTED CAT POOL (PENNSYLVANIAN)
 CASE NO. 5978
 LEA COUNTY, NEW MEXICO
 STRUCTURAL MAP
 BTA EXHIBIT NO. 2
 TOP PENNSYLVANIAN LINE
 SCALE: 1" = 4000'
 DATE: 6-27-77
 BY: JSA

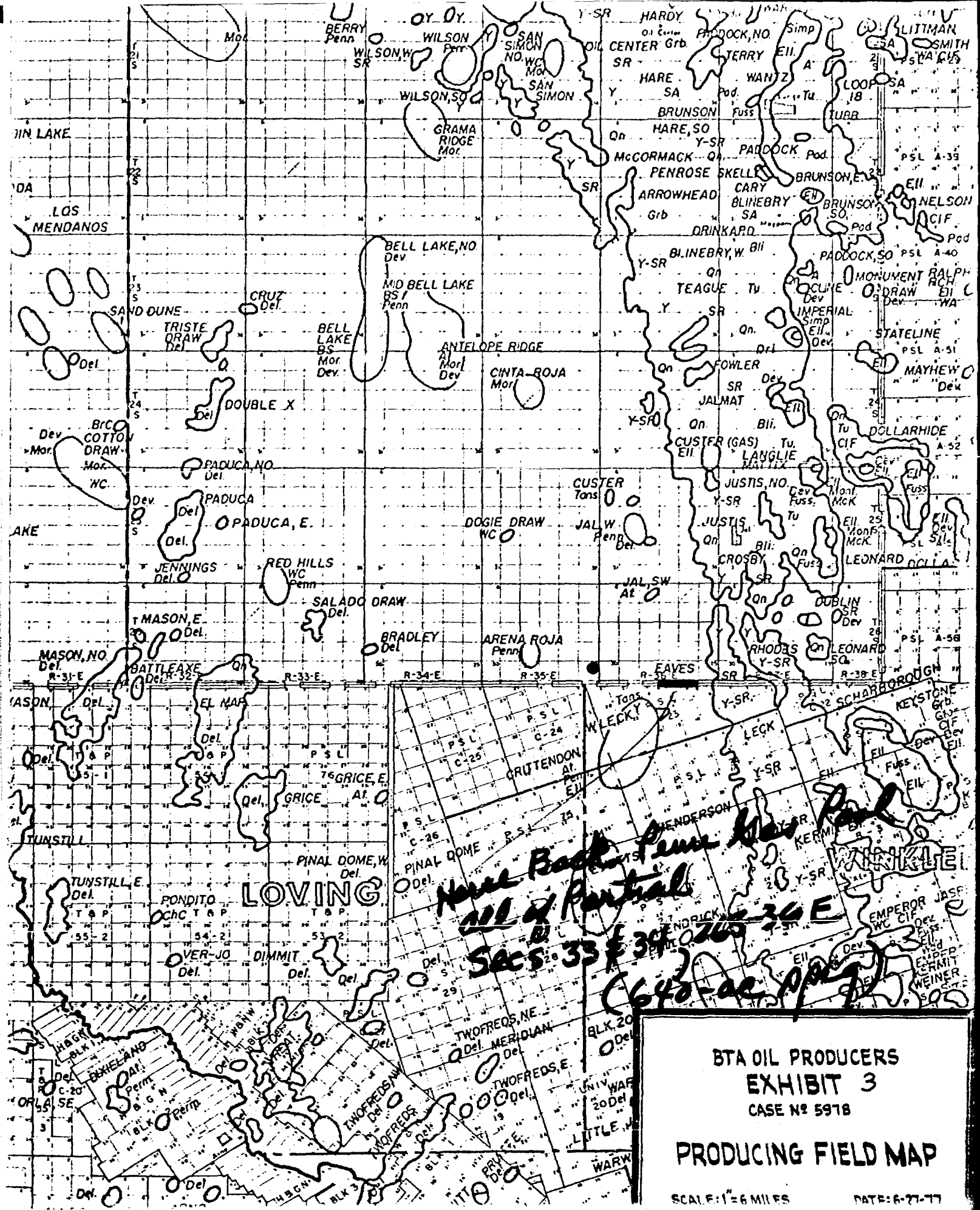


EXHIBIT NO. 5
CASE 5688
ECONOMIC SUMMARY

- I. Monthly income (100%)
1500 mcfpd (30 d/mo) (\$1.47/mos) (1-0.075) + 14 bopd (30 d/mo)
(\$11.65/bbl) (1-0.075) = \$65,700
Less \$1500/mo. operating expenses = \$64,200/mo.
- II. Payout BTA 7608 JV-P Hagood No. 1
 $PO = \frac{\$2,700,000}{64,200(0.729)} = 57.7 \text{ mo.} = 4.8 \text{ yrs.}$
Gas production to PO = 2.6 BCF
- III. Payout additional well on unit acreage
 $PO = \frac{\$2,500,000}{64,200(0.799)} = 48.7 \text{ mo.} = 4.1 \text{ yrs.}$
Gas production to PO = 2.2 BCF
- IV. Assigning any reasonable decline rate will result in the well will not payout.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
BTA EXHIBIT NO. 5
CASE NO. 5978



PARTNERS
CARLTON BEAL
CARLTON BEAL, JR.
BARRY BEAL
SPENCER BEAL

BTA OIL PRODUCERS

104 SOUTH PECOS
MIDLAND, TEXAS 79701
AC 915-682-3753

June 8, 1977

Re: Hearing Confirmation - Field Rules
Wildcat Pool (Pennsylvanian)
7608 JV-P Hagood, Well #1
Unit Ltr -B-, 1980' FEL & 990' FNL
Sec. 25, Twp 26-S, Rge 35-E
Lea County, New Mexico

OIL CONSERVATION COMMISSION
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. C. G. Ulvog

Gentlemen:

Pursuant to our conversation June 6, 1977, BTA Oil Producers hereby confirms July 6, 1977 as the hearing date for the subject field.

Yours very truly,

Bob K. Newland

BOB K. NEWLAND
For BTA Oil Producers

BKN/dh



PARTNERS
CARLTON BEAL
CARLTON BEAL, JR.
BARRY BEAL
SPENCER BEAL

BTA OIL PRODUCERS

104 SOUTH PECOS
MIDLAND, TEXAS 79701
AC 915-682-3753

June 2, 1977

Re: Field Rule Hearing

OIL CONSERVATION COMMISSION
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Joe D. Ramey

Gentlemen:

BTA Oil Producers respectfully request a hearing be called as soon as possible to adopt field rules for the following field:

BTA Oil Producers
Wildcat Pool (Pennsylvanian)
7608 JV-P Hagood, Well #1
Unit Ltr. -B-, 1980' FEL & 990' FNL
Sec. 25, Twp 26-S, Rge 35-E
Lea County, New Mexico

BTA Oil Producers request the Oil Conservation Commission to approve standard spacing and 640 acre proration units for the subject field.

Yours very truly,

Bob K. Newland

BOB K. NEWLAND
For BTA Oil Producers

BKN/dh

OIL CONSERVATION COMMISSION
Hobbs DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE June 1, 1977

RE: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed SWD X _____
Proposed WFX _____
Proposed PMX _____

JUN - 6 1977

Gentlemen:

I have examined the application dated _____

for the BTA Oil Producers Hagood 7608 JV-P #1-B 25-26-35
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

O.K.---J.S.

Yours very truly,

James L. Smith

CASE 5977: Application of BTA Oil Producers for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its JV-P Hagood Well No. 1 located in Unit B of Section 25, Township 26 South, Range 35 East, Lea County, New Mexico, in such a manner as to produce gas from the Pennsylvanian formation thru tubing in the production casing and to dispose of produced salt water down the production/intermediate casing annulus into the Delaware formation thru the open-hole interval from 5020 feet to approximately 6555 feet.

CASE 5978: Application of BTA Oil Producers for pool creation and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a Pennsylvanian Gas Pool for its Hagood Well No. 1 located in Section 25, Township 26 South, Range 35 East, Lea County, New Mexico, and the promulgation of special rules therefor, including a provision for 640-acre spacing and proration units.

CASE 5979: Application of Texas Pacific Oil Company, Inc., for non-standard gas proration units, simultaneous dedication and unorthodox locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the following non-standard gas proration units on its State "A" A/C-2 Lease in Township 22 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico:

a 480-acre unit comprising the N/2, W/2 SW/4, and E/2 SE/4 of Section 11 to be simultaneously dedicated to Wells Nos. 14, 36 and 42 located at unorthodox locations in Units B, M, and E, respectively, of said Section 11; a 160-acre unit comprising the E/2 SW/4 and the W/2 SE/4 of Section 11 to be dedicated to Well No. 62 to be drilled at an unorthodox location in Unit K of said Section 11; a 160-acre unit comprising the NW/4 of Section 9 to be dedicated to Well No. 63 to be drilled at an unorthodox location in Unit C of said Section 9; a 160-acre unit comprising the NE/4 of Section 9 to be dedicated to Well No. 40 located at a standard location in Unit A of said Section 9.

CASE 5980: Application of Ken Blackford, et al., for a non-standard gas proration unit and an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 160-acre non-standard gas proration unit comprising the N/2 NW/4, SW/4 NW/4 and NW/4 SW/4 of Section 24, Township 29 North, Range 12 West, Fulcher Kutz-Pictured Cliffs Pool, San Juan County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the North line and 1980 feet from the West line of said Section 24.

CASE 5981: Application of W. A. Moncrief, Jr., for pool creation and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of an oil pool for Upper-Pennsylvanian production for his State Well No. 1 located in Unit E of Section 26, Township 16 South, Range 33 East, Lea County, New Mexico, and the promulgation of special rules therefor, including a provision for 80-acre spacing.

dr/

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. 5978

Order No. R- 5492

NOMENCLATURE

APPLICATION OF BTA OIL PRODUCERS FOR POOL CREATION AND
SPECIAL POOL RULES, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSIONBY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 6,
1977, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this day of July, 1977, the Commission,
a quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, BTA Oil Producers, seeks the creation
of a new gas pool for Pennsylvanian production in Lea County, New
Mexico, ~~To bear the designation Hagood Pennsylvanian Gas Pool,~~
and the promulgation of special rules and regulations
governing said pool, including a provision for 640-acre spacing and
proration units.

(3) That said pool was discovered by applicants
JV-P Hagood well No. 1 located in Unit B of Section
25, Township 26 South, Range 35 East, NMPM, Lea County,
New Mexico, said well having been drilled to a total
depth of 19,894 feet and plugged back to a depth
of 16,165 feet.

(4) That said well is capable of producing from
perforations in the Pennsylvanian formation in
the overall interval from 13,865 feet to 15,847 feet.

(3) ~~That said pool offsets a commercial gas pool for Pennsylvanian production which applicant has discovered by a well drilled in Section 25, Township 26 South, Range 35 East, NMPN, Lea County, New Mexico.~~

(6) That in order 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, temporary special rules and regulations providing for 640-acre spacing units should be promulgated for the Hagood-Pennsylvanian Gas Pool.

(7) 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.

(8) That special rules and regulations should be established for a temporary period to expire one year from the date that a pipeline connection is first obtained for a well in the pool; that during this temporary period all operators in the subject pool should gather all available information relative to drainage and recoverable reserves.

(9) That this case should be reopened at an examiner hearing one year from the date that a pipeline connection is first obtained for a well in the Hagood-Pennsylvanian Gas Pool, at which time the operators in the subject pool should appear and show cause why the Hagood-Pennsylvanian Gas Pool should not be developed on 320-acre spacing units.

(10) That the first operator to obtain a pipeline connection for a well in the Hagood-Pennsylvanian Gas Pool should notify the Commission in writing of such fact, and that the Commission should thereupon issue a supplemental order designating an exact date for reopening this case.

IT IS THEREFORE ORDERED:

(1) That a new pool in Lea County, New Mexico, classified as a gas pool for Pennsylvanian production, is hereby created and designated the Hagood - Pennsylvanian Gas Pool Pool, comprising the following described area:

LEA COUNTY, NEW MEXICO
TOWNSHIP 26 SOUTH, RANGE 35 EAST, NMPM
Section 25: A11

(2) That temporary Special Rules and Regulations for the Hagood - Pennsylvanian Gas Pool, Lea County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE

HAGOOD-PENNSYLVANIAN GAS POOL

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

RULE 2. Each well shall be located on a standard unit containing 640 acres, more or less, consisting of a governmental section.

RULE 3. The Secretary-Director of the Commission 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 and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Land Surveys, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a governmental section and contains less acreage than a standard unit.
- (c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well shall be located no nearer than 1650 feet to the outer boundary of the section and no nearer than 330 feet to any governmental quarter-quarter section line.

RULE 5. The Secretary-Director may grant an exception to the 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. All operators offsetting the proration 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 operators offsetting the proration unit or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Hagood-Pennsylvanian Gas Pool or in the Pennsylvanian formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before August 1, 1977.

(2) That, pursuant to Paragraph A. of Section 65-3-14.5, NMSA 1953, contained in Chapter 271, Laws of 1969, existing wells in the Hagood-Pennsylvanian Gas Pool shall have dedicated thereto 640 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 65-3-14.5, existing wells may have non-standard spacing or proration units established by the Commission and dedicated thereto.

Failure to file new Forms C-102 with the Commission dedicating 640 acres to a well or to obtain a non-standard unit approved by the Commission within 60 days from the date of this order shall subject the well to cancellation of allowable. Until said Form C-102 has been filed or until a non-standard unit has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the Hagood-Pennsylvanian Gas Pool or in the Pennsylvanian formation ~~within~~ within one mile thereof shall receive no more than one-half of a standard allowable for the pool.

(3) That this case shall be reopened at an examiner hearing one year from the date that a pipeline connection is first obtained for a well in the Hagood-Pennsylvanian Gas Pool, at which time the operators in the subject pool may appear and show cause why the Hagood-Pennsylvanian Gas Pool should not be developed on 320-acre spacing units.

(6) That the first operator to obtain a pipeline connection for a well in the Hagerd-Pennsylvania Gas Pool shall notify the Commission in writing of such fact, and that the Commission will thereupon issue a supplemental order designating an exact date for reopening this case.

(7) 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.