

CASE 7215: AMOCO PRODUCTION COMPANY
FOR AN UNORTHODOX GAS WELL LOCATION,
EDDY COUNTY, NEW MEXICO

CASE NO.

7215

APPLICATION,
TRANSCRIPTS,
SMALL EXHIBITS,
ETC.



May 22, 1981

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
BANTA FE, NEW MEXICO 87501
(505) 827-2434

Mr. Clyde Mote, Attorney
Amoco Production Company
Post Office Box 3092
Houston, Texas 77001

Re: CASE NO. 7215
ORDER NO. R-6654

Applicant:

Amoco Production Company

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Director

JDR/ed

Copy of order also sent to:

Hobbs OCD	<u> x </u>
Artesia OCD	<u> x </u>
Aztec OCD	

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7215
Order No. R-6654

APPLICATION OF AMOCO PRODUCTION
COMPANY FOR AN UNORTHODOX GAS WELL
LOCATION, EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on April 8, 1981,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 20th day of April, 1981, the Division
Director, 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 Division has jurisdiction of this cause and the
subject matter thereof.
- (2) That the applicant, Amoco Production Company, seeks
approval of an unorthodox gas well location for its Willow Lake
Unit Well No. 4Y to be drilled 1980 feet from the South line
and 660 feet from the West line of Section 14, Township 24 South,
Range 28 East, NMPH, to test the Wolfcamp and Pennsylvanian
formations, Eddy County, New Mexico.
- (3) That the S/2 of said Section 14 is to be dedicated to
the well.
- (4) That a well at said unorthodox location will better
enable applicant to produce the gas underlying the proration unit.
- (5) That no offset operator objected to the proposed un-
orthodox location.
- (6) That approval of the subject application will afford
the applicant the opportunity to produce its just and equitable

-2-

Case No. 7215
Order No. R-6654

share of the gas in the subject pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

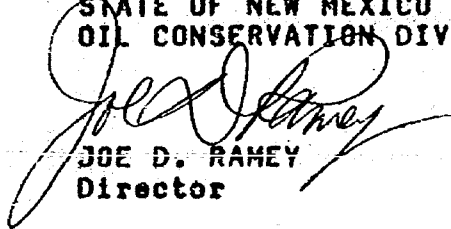
(1) That an unorthodox gas well location for the Wolfcamp and Pennsylvanian formations is hereby approved for the Amoco Production Company Willow Lake Unit Well No. 4Y to be located at a point 1980 feet from the South line and 660 feet from the West line of Section 14, Township 24 South, Range 28 East, NMPM, Eddy County, New Mexico.

(2) That the S/2 of said Section 14 shall be dedicated to the above-described well.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director


S E A L

rd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
8 April 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco Production Com-
pany for an unorthodox gas well
location, Eddy County, New Mexico.

CASE
7215

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

Clyde A. Mote, Esq.
Amoco Production Company
500 Jefferson Bldg.
Houston, Texas 77002

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I N D E X

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HENRY G. DE WITT

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Direct Examination by Mr. Mote

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EXHIBITS

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Applicant Exhibit One, Map

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Applicant Exhibit Two, Isopach

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Applicant Exhibit Three, Contour Map

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MR. STAMETS: We'll call next Case 7215.

MR. PADILLA: Application of Amoco Production Company for an unorthodox gas well location, Eddy County, New Mexico.

MR. MOTE: Clyde Mote, representing Amoco, in conjunction with Atwood and Malone, and we have one witness.

(Witness sworn.)

MR. MOTE: Mr. Examiner, I'd like to make a short opening statement to sort of tie this case together because there are some loose ends.

This Willow Lake Unit was approved as a Federal exploration unit on March 26th of 1975 by the New Mexico Commissioner of Public Lands. And on March 27th, '75, by the Area Oil and Gas Supervisor for the USGS.

It's located in Eddy County and originally contained 4800 acres. Some 920 acres became excluded out of Sections 28 and 21 during the first year of operation, and the north half of Section 23 was excluded in the previous year -- in the year just past.

Burma Oil and Gas Company was designated as operator when the unit originally formed. Aminoil

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2 has succeeded to all the rights of Burma as operator.

3 Amoco Production Company has orally
4 agreed to take over unit operation from Aminoil, and although
5 the written assignment has not been executed and delivered to
6 Amoco Production Company, it nevertheless appears to be
7 imminent.

8 Amoco Production Company desires to
9 change the location of Unit Well No. 4 from its location
10 where it is now currently drilling to Unit Well No. 4-Y, to
11 be drilled 1980 feet from the south line and 660 feet from
12 the west line of Section 14, with the south half of the section
13 dedicated to the well.

14 Since statewide rules require 1980 feet
15 from the west line, approval is necessary to drill at this
16 unorthodox location.

17 MR. STAMETS: In essence, what Amoco
18 will be doing is abandoning the Well No. 4 that's already been
19 started by Aminoil, and drilling a new well, then.

20 MR. MOTE: Well, I don't really know
21 how we'd characterize it. We've got to discuss it with USGS
22 as to how the characterization should be.

23 MR. STAMETS: But in fact that's what
24 is going to happen. You are not going to drill the current
25 Well No. 4 on to total depth.

1 MR. MOTE: Not if this application is
2 granted, that's correct.

3 MR. STAMETS: And will you advise the
4 Examiner as to the effective date of the operator change sub-
5 sequent to this hearing?

6 MR. MOTE: Yes, sir, sure will.

7 MR. STAMETS: I would imagine what
8 we'll do, then, is hold up this order, hold up issuing the
9 order until we have been advised of that change, that that
10 change has taken place.

11 MR. MOTE: All right.

12
13 HENRY G. DEWITT
14 being called as a witness and being duly sworn upon his oath,
15 testified as follows, to-wit:

16
17 DIRECT EXAMINATION

18
19 BY MR. MOTE:

20 Q Would you please state your name, by
21 whom you're employed, and in what capacity and location?

22 A Yes, sir. My name is Henry G. Dewitt
23 and I'm currently living in Houston, Texas, and I'm employed
24 by Amoco Production Company as a petroleum geologist.

25 Q Have you previously testified before

1
2 the Oil Conservation Division?

3 A. No, sir, I have not.

4 Q. Please relate your educational experience.

5 A. In June, 1975, I completed a Bachelor's
6 program in -- in geology from the University of Massachusetts,
7 and in 1978 received a Master's degree in geology from Colorado
8 State University.

9 Q. And what did you do upon graduation?

10 A. I began employment with Exxon Company
11 USA, working in their Kingsville District as a production
12 geologist, and was employed there for approximately a year and
13 a half.

14 Q. And then where did you go?

15 A. Following that, in February of 1980,
16 I began employment with Amoco Production Company and have
17 been working in Eddy and Lea Counties, New Mexico, as an
18 exploitation and exploration geologist for the Morrow forma-
19 tion.

20 MR. MOTE: Is there any question con-
21 cerning his qualifications?

22 MR. STAMETS: The witness is considered
23 qualified.

24 Q. You'll be asked to testify concerning
25 certain exhibits. Were these exhibits either prepared by you

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2 or under your supervision and direction?

3 A Yes, sir, they were.

4 Q If you would, please turn to your Exhibit
5 Number One. I notice several different colors of dots on
6 this map. Would you please explain the significance of those
7 to the Examiner?

8 A Okay. What you see here on my first
9 exhibit is a base map or plat of the Malaga area. Highlighted
10 by the various colored dots are the various initial completions
11 in the area. The blue dots represent Strawn Pennsylvanian
12 completions; the green dots represent Atoka completions; the
13 red dots represent Morrow completions; and finally, the tan
14 or orange dots represent those wells testing.

15 Q And how is the Willow Lake Unit outline
16 shown on this map?

17 A You can see in Township 24 South,
18 Range 28 East, a hachured line bordering through Sections 14,
19 15, and 16, along the west sides of Sections 16, 21, and 28,
20 the south of Sections 28, 27, and 26, and finally, to the
21 east in Sections 26, 23, and 14.

22 Q And how is the well that's currently
23 drilling shown on this map?

24 A In the south half of Section 14,
25 Township 24 South, Range 28 East, there's a solid orange dot,

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2 indicating the Willow Lake Unit No. 4 Well, currently
3 drilling with cable tool.

4 Q And how is the proposed well shown?

5 A Indicated by the red arrow, the Willow
6 Lake Unit No. 4-Y is located 1980 from the south line and
7 660 from the west line of Section 14.

8 Q How many wells have been completed in
9 this unit?

10 A Three wells to date have been completed
11 in the unit. The first well was the Willow Lake or the Burma
12 Willow Lake Unit No. 1, located in the north half of Section
13 22. A second completion was the Burma Willow Lake Unit No.
14 3, a Morrow completion, shown in the south half of Section 15;
15 and finally, a non-unit well, the Maddox Petroleum well was
16 initially completed in January of this year in the north
17 half of Section 23; 1.9 million a day out of the Pennsylvanian
18 Morrow.

19 Q I notice you have certain items of
20 information highlighted in yellow. What's -- what's the
21 significance of this?

22 A Yes, sir, that's correct. Highlighted
23 in yellow underneath each of the various completion symbols
24 seen on the map is the cumulative production and the latest
25 daily rate for those wells as of December 31st, 1980.

Q All right, if you would, turn to your Exhibit Number Two, which I believe is your Isopach map.

A Yes, sir. Here, what you see here is a sand Isopach or sand limits map of an inferred Atoka Channel system that prograded through the area in Atoka time.

Q And do the same dots on this map, are they the same -- with the same reasons and explanations as was on the previous exhibit?

A Yes, sir, just as I've done before, I've used the same color coding, blue for Strawn, green for Atoka, red for Morrow, and finally, those wells testing. I've highlighted those Atoka completions within the inferred channel system as identified by the squares represented adjacent to the green dots. You've seen their cumulative production and their daily rate currently as of December 31st, 1980.

Q And what control do you have for this interpretation?

A The controls I have available are those wells which have been identified on this base map.

Q And how did you go about constructing this exhibit?

A I used electric logs, sample logs, and mud logs where they were available, and calculating the

1
2 net footage of Atoka Sand present or not present in these
3 wellbores.

4 Q And what's the environment of the
5 deposition?

6 A Based on the work I've done here, the
7 geometry of these sands, their relationship to surrounding
8 limestones and shales, it's my interpretation that this re-
9 presents an ancient fluvial system that drained through the
10 Malaga area.

11 Q And what is the nature of these deposits?

12 A These are highly lenticular in nature.
13 They're widely variable. You can see that the channel system
14 is not more than probably 3/4 to a mile wide.

15 Q All right. Your proposed well is shown
16 on this map also by the same arrow as was on the previous
17 map, is that correct?

18 A Yes, sir, that's correct. You see it
19 in Section 14.

20 Q And immediately to the east of the
21 proposed well you'll see the same well No. 4, Unit Well No. 4,
22 that is currently drilling, is that correct?

23 A Yes, sir.

24 Q I notice that it's almost off of your
25 contours for the Atoka. Is that correct? It's in the shale

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2 area?

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A. Yes, sir, it's right on the border.

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5 Based on my control in the area I can estimate probably four
6 to five feet of net Atoka Sand might be available to it at
7 that location.

8

Q. Now why do you want to move the location?

9

A. Several reasons I think are important.

10 Number one, that again the boundary of this inferred channel
11 system is still inferred. The advantage of moving the well
12 to the west may give us anywhere from 17 to 18 feet of net
13 Atoka Channel Sand to us.

14

15 Secondly, those wells which were com-
16 pleted in the central portions of these -- of this channel
17 system appear to have a substantially higher reservoir quality
18 and higher cumulative rates.

19

20 If I might point your attention to the
21 north in Township 23 South, Range 28 East, Delta drilled
22 two wells, their South Culebra Bluff in the east half of
23 Section 23, and finally their second Culebra Bluff Unit Well
24 in the east half of Section 14.

25

26 If you look at the cumulative rates of
27 those two wells, or the cumulative production, the Delta
28 Culebra Bluff well in Section 23 has cum approximately 12.7
29 Bcf as of December, 1980, whereas the second Culebra Bluff

1 Well has cumed only 371 million cubic feet of gas.

2 The importance here is that the higher
3 cumulative production is associated with 24 feet of net Atoka
4 sand, whereas those wells on the periphery of this channel
5 system, 8 feet in this case, appear to have substantially
6 less cumulative production.
7

8 Finally, we would substantially reduce
9 our risk in drilling this well if we were to move it to the
10 west.

11 Q Well, up to this point we've been talking
12 about the Atoka. Is there any possibility of encountering
13 any other zones?

14 A Yes, sir, there's also significant
15 potential existing in the Pennsylvanian Strawn and Pennsyl-
16 vanian Morrow formations.

17 Q Would your Exhibit Number Three suggest
18 this?

19 A Yes, sir. If you refer to my Exhibit
20 Number Three, again this is -- again I've used the same color
21 coding as seen in the previous two maps. What I'd like to
22 show here, this does depict the structural contour map with
23 subsea values calculated from the various electric logs; on
24 the top of the Pennsylvanian Strawn you can see that our loca-
25 tion currently in the south half of Section 14, the proposed

Willow Lake Unit No. 4-Y would be located to the west of that. It is my estimation that we'd gain about 30 feet of structure relief, if we were to move this location to the west.

As I said before, the Pennsylvanian Strawn is known to be productive in the area, along with the Pennsylvanian Morrow formation. There were several reservoirs identified in the Maddox-Earl Guitar No. 1 in the north half of Section 23, Township 24 South, Range 28 East. Only one of those was -- was a successful completion. The others, two or three reservoirs were indicated to be wet by log analysis.

If we could encounter those reservoirs additionally up-dip it might allow us to make a successful gas completion in those Morrow reservoirs, along with the Pennsylvanian Strawn.

Q And it's your testimony that this exhibit shows the change in location would favor a Strawn well as well as a Morrow location over the existing location that is now drilling?

A Yes, sir, that's correct.

Q Do you have an opinion as to whether or not the proposed location would enhance the probability of a successful commercial completion in the Atoka, Strawn, and Morrow, as compared to the existing drilling location?

A Yes, I do.

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Q What is your opinion?

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Briefly, in summarizing the data that we have presented here, I think you can see that again we would substantially be reducing our risk if we were to move this location to the west as identified in my Exhibit Number Two. We can expect to encounter an increased amount of net Atoka sand available to us of substantially high reservoir quality and hopefully substantial reserves.

Additionally, up dip potential would contribute to a successful completion in the Pennsylvanian Strawn and Morrow formations, as identified on my enclosure Number Three, Exhibit Number Three.

Q Has an estimate been made of the cost to drill and complete a well in the -- this Well No. 4-Y which you're asking to drill?

A. Yes, sir, and that is approximately \$1.9 million.

Q All right, has an estimate been made of the probable recoverable reserves that might be obtained from this well?

A. Yes, sir. Based on the offset production, I point out two wells in the west half of Section 11, an Atoka completion there, the Aminoil-Burma CNB has had a cumulative production of 1.49 Bcf, and finally,

1
2 the Aminoil-Burma Willow Lake Unit No. 1 in the north half
3 of Section 22 has had a cumulative production of 2.9 Bcf.

4 Based on those adjacent wells and
5 looking at previous production in the area, we can expect a
6 minimum of 2 Bcf out of this well.

7 Q Now would such a recovery be expected
8 to pay all costs of drilling, completing, and producing such
9 a well, as well as return a profit to the unit owners?

10 A Yes, sir, it is my estimation that it
11 would.

12 MR. MOTE: Now we'll offer our exhibits
13 into evidence and tender for cross examination.

14 MR. STAMETS: The exhibits are admitted.
15 Are there any other questions of the witness? He may be
16 excused.

17 Anything further in this case?

18 The case will be taken under advisement.

19 MR. MOTE: Thank you, sir.

20
21 (Hearing concluded.)
22

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREPY CERTIFY that
the foregoing Transcript of Hearing before the Oil Conserva-
tion Division was reported by me; that the said transcript
is a full, true, and correct record of the hearing, prepared
by me to the best of my ability.

Sally W. Boyd CSR

SALLY W. BOYD, C.S.R.

Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 7215
heard by me on 4-8 1981.

Richard R. Stant, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
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EXAMINER HEARING

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6	Direct Examination by Mr. Mote		5
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13		E X H I B I T S	
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15	Applicant Exhibit One, Map		7
16	Applicant Exhibit Two, Isopach		9
17	Applicant Exhibit Three, Contour Map		12
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10 (Witness sworn.)

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19 BY MR. MOTE:

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25 Q Have you previously testified before

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3 A. No, sir, I have not.

4 Q. Please relate your educational experience.

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7 to the Examiner?

8 A. Okay. What you see here on my first
9 exhibit is a base map or plat of the Malaga area. Highlighted
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11 in the area. The blue dots represent Strawn Pennsylvanian
12 completions; the green dots represent Atoka completions; the
13 red dots represent Morrow completions; and finally, the tan
14 or orange dots represent those wells testing.

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17 A. You can see in Township 24 South,
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19 15, and 16, along the west sides of Sections 16, 21, and 28,
20 the south of Sections 28, 27, and 26, and finally, to the
21 east in Sections 26, 23, and 14.

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23 drilling shown on this map?

24 A. In the south half of Section 14,
25 Township 24 South, Range 28 East, there's a solid orange dot,

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2 indicating the Willow Lake Unit No. 4 Well, currently
3 drilling with cable tool.

4 Q And how is the proposed well shown?

5 A Indicated by the red arrow, the Willow
6 Lake Unit No. 4-Y is located 1980 from the south line and
7 660 from the west line of Section 14.

8 Q How many wells have been completed in
9 this unit?

10 A Three wells to date have been completed
11 in the unit. The first well was the Willow Lake or the Burma
12 Willow Lake Unit No. 1, located in the north half of Section
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15 and finally, a non-unit well, the Maddox Petroleum well was
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20 information highlighted in yellow. What's -- what's the
21 significance of this?

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23 in yellow underneath each of the various completion symbols
24 seen on the map is the cumulative production and the latest
25 daily rate for those wells as of December 31st, 1980.

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3 Exhibit Number Two, which I believe is your Isopach map.

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5 a sand Isopach or sand limits map of an inferred Atoka Channel
6 system that prograded through the area in Atoka time.

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8 they the same -- with the same reasons and explanations as
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23 this exhibit?

24 A I used electric logs, sample logs,
25 and mud logs where they were available, and calculating the

1

10

2 net footage of Atoka Sand present or not present in these
3 wellbores.

4 Q And what's the environment of the
5 deposition?

6 A Based on the work I've done here, the
7 geometry of these sands, their relationship to surrounding
8 limestones and shales, it's my interpretation that this re-
9 presents an ancient fluvial system that drained through the
10 Malaga area.

11 Q And what is the nature of these deposits?

12 A These are highly lenticular in nature.
13 They're widely variable. You can see that the channel system
14 is not more than probably 3/4 to a mile wide.

15 Q All right. Your proposed well is shown
16 on this map also by the same arrow as was on the previous
17 map, is that correct?

18 A Yes, sir, that's correct. You see it
19 in Section 14.

20 Q And immediately to the east of the
21 proposed well you'll see the same well No. 4, Unit Well No. 4,
22 that is currently drilling, is that correct?

23 A Yes, sir.

24 Q I notice that it's almost off of your
25 contours for the Atoka. Is that correct? It's in the shale

1
2 area?

3 A. Yes, sir, it's right on the border.

4 Based on my control in the area I can estimate probably four
5 to five feet of net Atoka Sand might be available to it at
6 that location.

7 Q. Now why do you want to move the location?

8 A. Several reasons I think are important.

9 Number one, that again the boundary of this inferred channel
10 system is still inferred. The advantage of moving the well
11 to the west may give us anywhere from 17 to 18 feet of net
12 Atoka Channel Sand to us.

13 Secondly, those wells which were com-
14 pleted in the central portions of these -- of this channel
15 system appear to have a substantially higher reservoir quality
16 and higher cumulative rates.

17 If I might point your attention to the
18 north in Township 23 South, Range 28 East, Delta drilled
19 two wells, their South Culebra Bluff in the east half of
20 Section 23, and finally their second Culebra Bluff Unit Well
21 in the east half of Section 14.

22 If you look at the cumulative rates of
23 those two wells, or the cumulative production, the Delta
24 Culebra Bluff well in Section 23 has cum approximately 12.7
25 Bcf as of December, 1980, whereas the second Culebra Bluff

1
2 Well has cumed only 371 million cubic feet of gas.

3 The importance here is that the higher
4 cumulative production is associated with 24 feet of net Atoka
5 sand, whereas those wells on the periphery of this channel
6 system, 8 feet in this case, appear to have substantially
7 less cumulative production.

8 Finally, we would substantially reduce
9 our risk in drilling this well if we were to move it to the
10 west.

11 Q Well, up to this point we've been talking
12 about the Atoka. Is there any possibility of encountering
13 any other zones?

14 A Yes, sir, there's also significant
15 potential existing in the Pennsylvanian Strawn and Pennsyl-
16 vanian Morrow formations.

17 Q Would your Exhibit Number Three suggest
18 this?

19 A Yes, sir. If you refer to my Exhibit
20 Number Three, again this is -- again I've used the same color
21 coding as seen in the previous two maps. What I'd like to
22 show here, this does depict the structural contour map with
23 subsea values calculated from the various electric logs; on
24 the top of the Pennsylvanian Strawn you can see that our loca-
25 tion currently in the south half of Section 14, the proposed

1
2 Willow Lake Unit No. 4-Y would be located to the west of that.
3 It is my estimation that we'd gain about 30 feet of structure
4 relief, if we were to move this location to the west.

5 As I said before, the Pennsylvanian
6 Strawn is known to be productive in the area, along with the
7 Pennsylvanian Morrow formation. There were several reservoirs
8 identified in the Maddox-Earl Gultar No. 1 in the north half
9 of Section 23, Township 24 South, Range 28 East. Only one of
10 those was -- was a successful completion. The others, two or
11 three reservoirs were indicated to be wet by log analysis.

12 If we could encounter those reservoirs
13 additionally up-dip it might allow us to make a successful
14 gas completion in those Morrow reservoirs, along with the
15 Pennsylvanian Strawn.

16 Q And it's your testimony that this exhibit
17 shows the change in location would favor a Strawn well as well
18 as a Morrow location over the existing location that is now
19 drilling?

20 A Yes, sir, that's correct.

21 Q Do you have an opinion as to whether
22 or not the proposed location would enhance the probability
23 of a successful commercial completion in the Atoka, Strawn,
24 and Morrow, as compared to the existing drilling location?

25 A Yes, I do.

1
2 Q What is your opinion?

3 A Briefly, in summarizing the data that
4 we have presented here, I think you can see that again we
5 would substantially be reducing our risk if we were to move
6 this location to the west as identified in my Exhibit Number
7 Two. We can expect to encounter an increased amount of net
8 Atoka sand available to us of substantially high reservoir
9 quality and hopefully substantial reserves.

10 Additionally, up dip potential would
11 contribute to a successful completion in the Pennsylvanian
12 Strawn and Morrow formations, as identified on my enclosure
13 Number Three, Exhibit Number Three.

14 Q Has an estimate been made of the cost
15 to drill and complete a well in the -- this Well No. 4-Y
16 which you're asking to drill?

17 A Yes, sir, and that is approximately
18 \$1.9 million.

19 Q All right, has an estimate been made of
20 the probable recoverable reserves that might be obtained
21 from this well?

22 A Yes, sir. Based on the offset
23 production, I point out two wells in the west half of Sec-
24 tion 11, an Atoka completion there, the Aminoil-Burma CNB
25 has had a cumulative production of 1.49 Bcf, and finally,

1
2 the Aminoil-Burma Willow Lake Unit No. 1 in the north half
3 of Section 22 has had a cumulative production of 2.9 Bcf.

4 Based on those adjacent wells and
5 looking at previous production in the area, we can expect a
6 minimum of 2 Bcf out of this well.

7 Q Now would such a recovery be expected
8 to pay all costs of drilling, completing, and producing such
9 a well, as well as return a profit to the unit owners?

10 A Yes, sir, it is my estimation that it
11 would.

12 MR. MOTE: Now we'll offer our exhibits
13 into evidence and tender for cross examination.

14 MR. STAMETS: The exhibits are admitted.
15 Are there any other questions of the witness? He may be
16 excused.

17 Anything further in this case?

18 The case will be taken under advisement.

19 MR. MOTE: Thank you, sir.

20
21 (Hearing concluded.)
22
23
24
25

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that
the foregoing Transcript of Hearing before the Oil Conserva-
tion Division was reported by me; that the said transcript
is a full, true, and correct record of the hearing, prepared
by me to the best of my ability.

Sally W. Boyd CSE

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. _____,
heard by me on _____ 19____.

_____, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.

Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

Aminoil USA, Inc.
Loraine Center
601 N. Loraine Street
Midland, Texas 79701
(915) 682-8231

AMINOIL USA

April 6, 1981

*Case No 7215
B.L.*

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Joe Ramey

Re: WILLOW LAKE UNIT NO. 4 WELL
SECTION 14, T-24-S, R-28-E,
EDDY COUNTY, NEW MEXICO
AUSA FILE NO. 2841

Gentlemen:

As you are aware, Aminoil is currently the operator of the Willow Lake Unit located in T-24-S, R-28-E, Eddy County, New Mexico. As Unit Operator, Aminoil is currently drilling that certain well designated the Willow Lake Unit No. 4 Well, at a location being 1980' FSL and 1980' FWL of Section 14, T-24-S, R-28-E. Aminoil is currently negotiating with Amoco Production Company concerning Aminoil's resignation as Unit Operator and terms by which Amoco would take over as Unit Operator of the Willow Lake Unit. In this connection Amoco has requested to change the location of said Willow Lake Unit No. 4 Well to a location designated No. 4-Y being 1980' FSL and 660' FWL of Section 14, T-24-S, R-28-E.

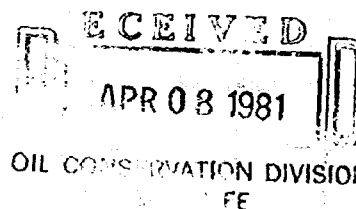
We understand that Amoco has applied for your approval of this new proposed location as an unorthodox location. Please be advised that Aminoil, as Unit Operator of the Willow Lake Unit, does not object to Amoco's request for said change in location.

Yours very truly,

James L. Whalon
James L. Whalon
District Landman

JLW/sls

cc: Amoco Production Company
Attention: James Allen



ATWOOD, MALONE, MANN & COOTER

A PROFESSIONAL ASSOCIATION
LAWYERS

JEFF D. ATWOOD [1883-1930]
ROSS L. MALONE [1910-1974]

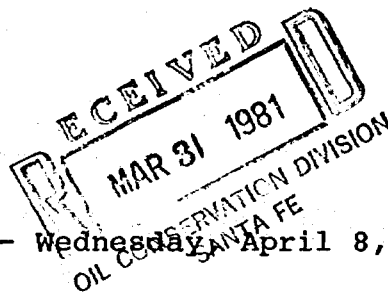
P. O. DRAWER 700
SECURITY NATIONAL BANK BUILDING
ROSWELL, NEW MEXICO 88201
[505] 622-6221

CHARLES F. MALONE
RUSSELL D. MANN
PAUL A. COOTER
BOB F. TURNER
JOHN W. BASSETT
ROBERT E. SABIN
BRIAN W. COPPLE

STEVEN L. BELL
WILLIAM P. LYNCH
RODNEY M. SCHUMACHER

March 30, 1981

Mr. Joe Ramey
Secretary-Director
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501



RE: Examiner Hearing - Wednesday, April 8, 1981
Cause No. 7215

Dear Mr. Ramey:

We would appreciate your filing the enclosed Entry
of Appearance for Amoco Production Company in Cause No. 7215.

Your assistance in this matter is appreciated.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Paul Cooter".

Paul Cooter

PC/le

Enc.

cc: C. A. Mote, Esq.

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION)
OF AMOCO PRODUCTION COMPANY FOR)
AN UNORTHODOX GAS WELL LOCATION,)
EDDY COUNTY, NEW MEXICO.)

No. 7215

ENTRY OF APPEARANCE

The undersigned hereby enter their appearance on
behalf of Amoco Production Company with C. A. Mote of Houston,
Texas.

ATWOOD, MALONE, MANN & COOTER, P.A.

By 

P. O. Drawer 700
Roswell, New Mexico 88201

Dockets Nos. 14-81 and 15-81 are tentatively set for April 22 and May 6, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 8, 1981

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

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 7086: (Continued from the January 14, 1981, Examiner Hearing)

Application of Blackwood & Nichols Company, Ltd. for designation of a tight formation, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Pictured Cliffs formation underlying portions of Townships 30 and 31 North, Ranges 6, 7, and 8 West, containing 33,500 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.

CASE 7210: Application of Gulf Oil Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the East Hat Mesa Unit Area, comprising 2197 acres, more or less, of State and Federal lands in Township 21 South, Range 33 East.

CASE 7211: Application of Gulf Oil Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the North Rock Lake State Unit Area, comprising 2880 acres, more or less, of State land in Township 22 South, Range 35 East.

CASE 7212: Application of Bass Enterprises Production Co. for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Poker Lake Unit Well No. 50 located in Unit C of Section 4, Township 25 South, Range 31 East, to produce gas from the Atoka and Wolfcamp formations through the tubing and casing-tubing annulus, respectively.

CASE 7213: Application of Exxon Company USA for a dual completion and downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its J. L. Greenwood Well No. 13 located in Unit L of Section 9, Township 22 South, Range 37 East, to produce oil from the Brunson-Fusselman Pool through tubing and commingled Blinberry and Tubb production through the casing-tubing annulus.

CASE 7214: Application of Pioneer Production Corporation for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Basin-Dakota production in the wellbore of its Dustin Well No. 1E located in Unit J of Section 6, Township 29 North, Range 12 West.

CASE 7215: Application of Amoco Production Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox Wolfcamp-Penn location of its Willow Lake Unit Well No. 4Y to be drilled 1980 feet from the South line and 660 feet from the West line of Section 14, Township 24 South, Range 28 East, the S/2 of said Section 14 to be dedicated to the well.

CASE 7216: Application of Amoco Production Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Gallup and Chacon-Dakota production in the wellbore of its Jicarilla 396 Well No. 1 located in the NE/4 of Section 8, Township 23 North, Range 3 West.

CASE 7217: Application of Harvey E. Yates Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox Morrow location of its Travis Ohio State Com Well No. 1 to be drilled 660 feet from the South and West lines of Section 13, Township 18 South, Range 28 East, the S/2 of said Section 13 to be dedicated to the well.

CASE 7218: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox Wolfcamp-Penn location of its Federal "BQ" Well No. 7 to be drilled 660 feet from the North line and 990 feet from the West line of Section 27, Township 17 South, Range 25 East, the N/2 of said Section 27 to be dedicated to the well.

CASE 7165: (Readvertised)

Application of ARCO Oil and Gas Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Ellenburger, Strawn, McKee, and Devonian formations, Langley Field, underlying the N/2 of Section 33, Township 22 South, Range 36 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

ATWOOD, MALONE, MANN & COOTER

A PROFESSIONAL ASSOCIATION
LAWYERS

JEFF D. ATWOOD [1883-1960]
ROSS L. MALONE [1910-1974]

P. O. DRAWER 700
SECURITY NATIONAL BANK BUILDING
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ROBERT E. SABIN
BRIAN W. COPPLE

STEVEN L. BELL
WILLIAM P. LYNCH
RODNEY M. SCHUMACHER

April 3, 1981

Mr. Joe D. Ramey
Oil Conservation Division
State Land Office Building
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Examiner Hearing April 8

Dear Mr. Ramey:

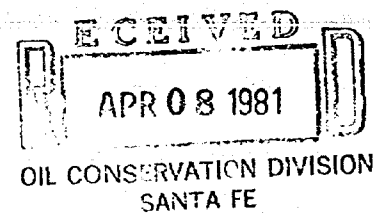
Please file the enclosed Entry of Appearance in
behalf of Amoco Production Company.

I enjoyed visiting with you at Portales.

Very truly yours,


Charles F. Malone

CFM:dh
Enclosure
cc (w/ encl.): Gordon D. Ryan, Esquire



BEFORE THE OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

APPLICATION OF AMOCO
PRODUCTION COMPANY FOR
DOWNHOLE COMMINGLING IN
JICARILLA 396 WELL NO. 1,
NE $\frac{1}{4}$ Section 8, Township 23
North, Range 3 West, Rio
Arriba County, New Mexico.

Case No. 7216

ENTRY OF APPEARANCE

The undersigned Atwood, Malone, Mann & Cooter, P.A.
enters its appearance herein in behalf of Amoco Production
Company with Gordon D. Ryan, Esquire of Denver, Colorado.

ATWOOD, MALONE, MANN & COOTER, P.A.

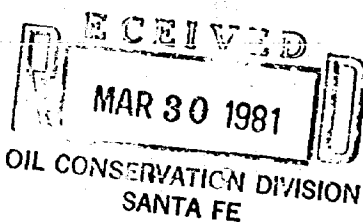
By _____

By Charles E. Fubon
P. O. Drawer 700
Roswell, New Mexico 88201
Telephone: 505-622-6221



Richard E. Ogden
Regional Engineering
Manager

March 13, 1981



Amoco Production Company

Houston Region
500 Jefferson Building
Post Office Box 3092
Houston, Texas 77001

File: JCA-986.51NM-493

Case 7215

Re: Application for Hearing
Unorthodox Gas Well Location
Willow Lake Unit Well No. 4Y
Eddy County, New Mexico

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Attention: Mr. Joe D. Ramey

Gentlemen:

Amoco Production Company respectfully requests a hearing to consider our application to drill the Willow Lake Unit Well No. 4Y at the following unorthodox location:

1980' FSL X 660' FWL, Section 14, T-24-S,
R-28-E, Eddy County, New Mexico

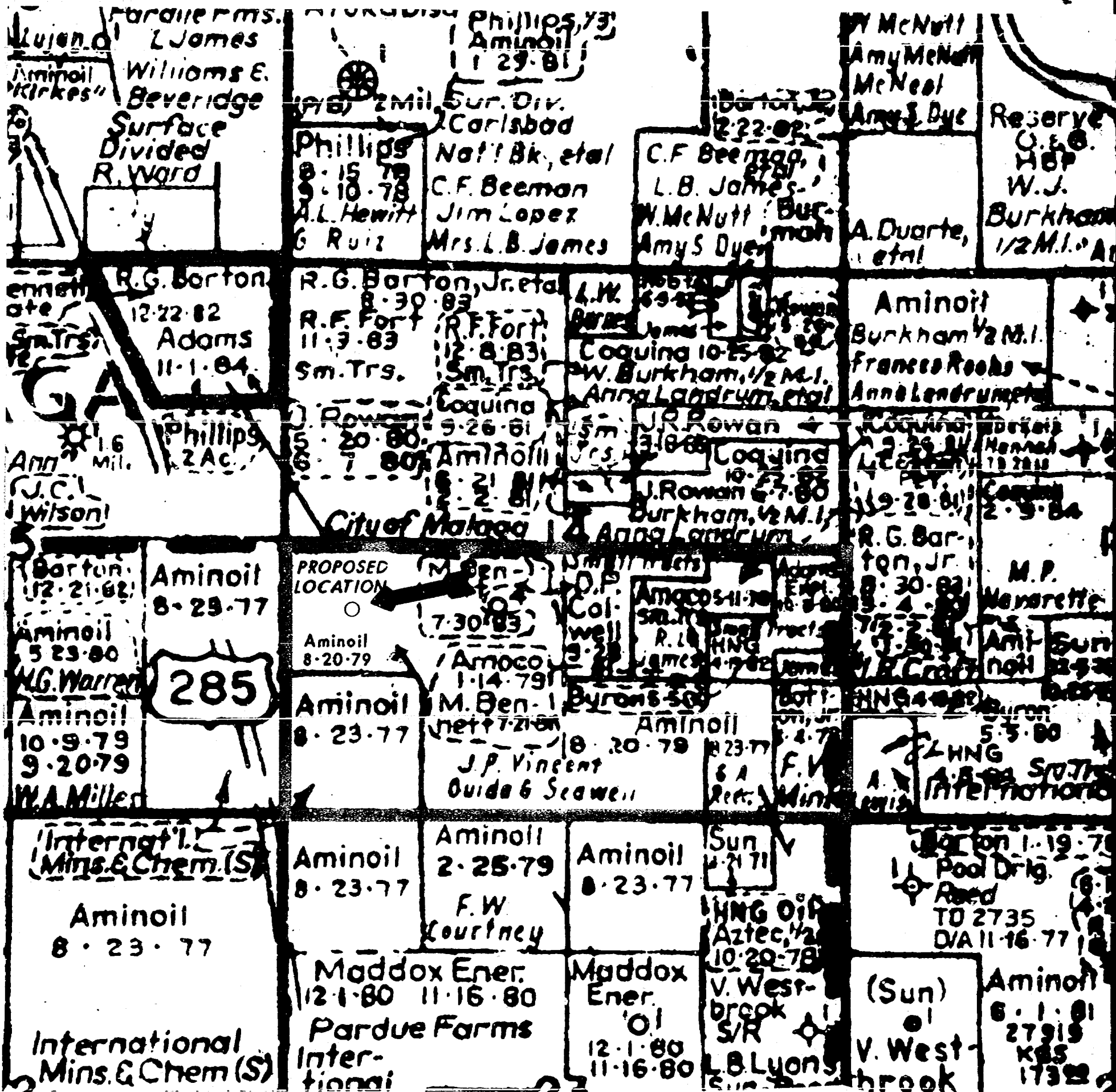
The subject well is projected to be drilled to 13,500' as a Pennsylvanian test.

Aminoil is currently operator of record of the Willow Lake Unit. Negotiations are now underway for Aminoil to resign as Unit Operator and Amoco Production Company to become Unit Operator.

Please place this item on the Examiner's Hearing Docket of April 8, 1981. This confirms our verbal request of March 13, 1981. Any questions can be directed to Mr. Jim Allen, telephone (713) 652-5497.

Yours very truly,

R. E. Ogden
JCA/rw



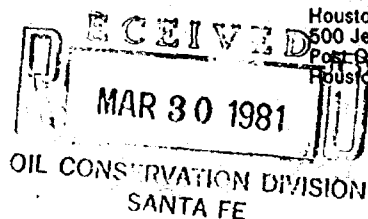


Richard E. Ogden
Regional Engineering
Manager

March 13, 1981

File: JCA-936.51NM-493

Re: Application for Hearing
Unorthodox Gas Well Location
Willow Lake Unit Well No. 4Y
Eddy County, New Mexico



Amoco Production Company

Houston Region
500 Jefferson Building
Post Office Box 3092
Houston, Texas 77001

Case 7215

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

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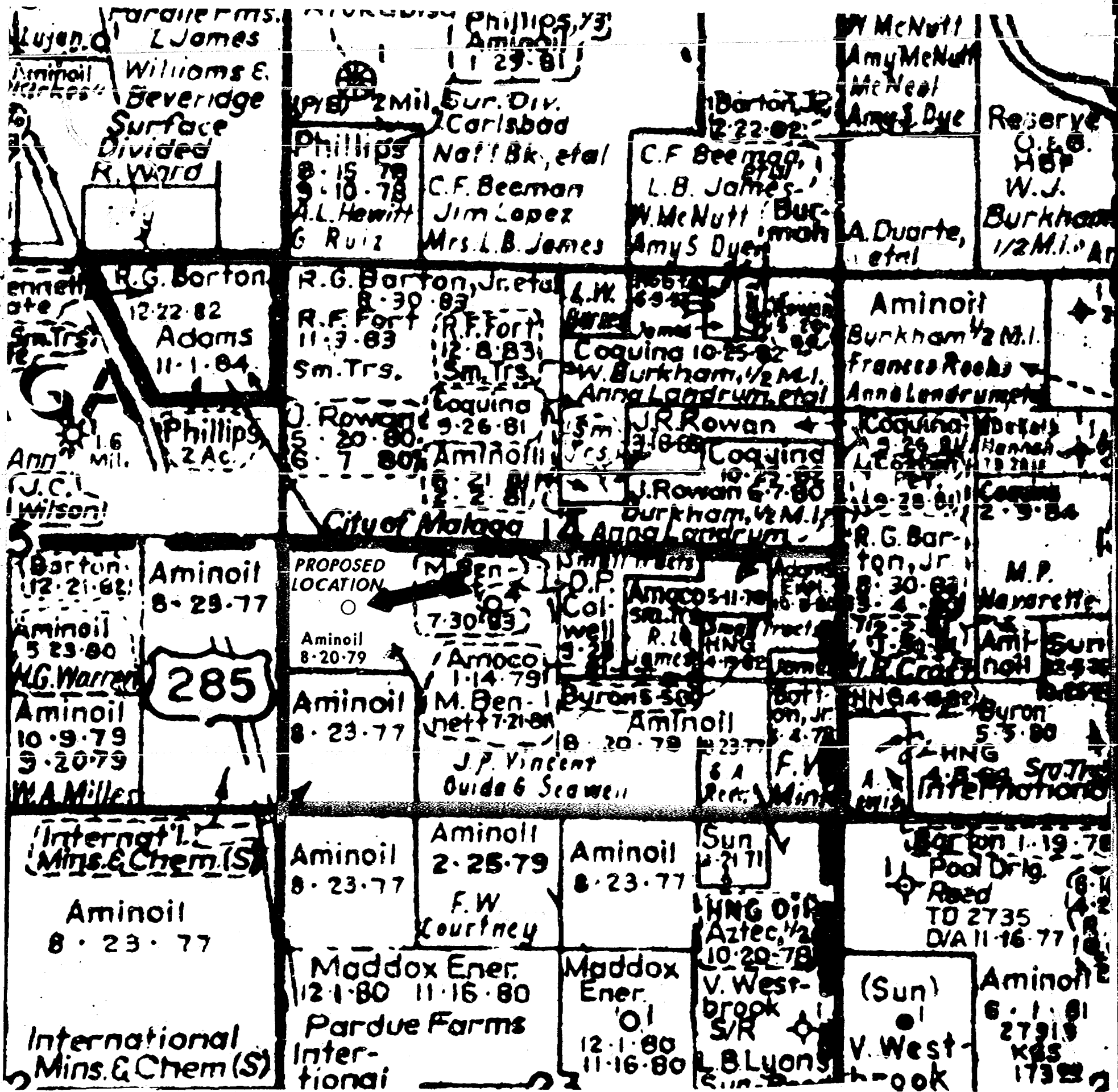
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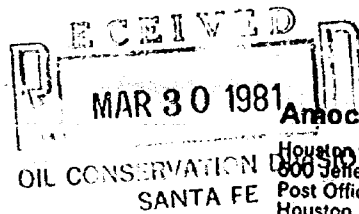
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Yours very truly,

R. E. Ogden
JCA/rw





Amoco Production Company
Houston Region
800 Jefferson Building
Post Office Box 3082
Houston, Texas 77001

Richard E. Ogden
Regional Engineering
Manager

March 13, 1981

File: JCA-986.51NM-493

Re: Application for Hearing
Unorthodox Gas Well Location
Willow Lake Unit Well No. 4Y
Eddy County, New Mexico

Case 7215

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

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Yours very truly,

R. E. Ogden
JCA/rw

A map of the Aminoil concession area in the Atoka District, Phillips County, Oklahoma. The map shows the location of the Aminoil concession, which is divided into several sections. The concession is bounded by the Atoka District to the north, the Phillips County line to the east, and the Oklahoma-Arkansas border to the south. The map includes the following information:

- Atoka District:** The northern boundary of the concession area.
- Phillips County:** The eastern boundary of the concession area.
- Oklahoma-Arkansas Border:** The southern boundary of the concession area.
- Concession Sections:** The map is divided into several sections, each labeled with a name and a date. The sections include:
 - Section 1:** Aminoil, 8-23-77
 - Section 2:** Aminoil, 8-23-77
 - Section 3:** Aminoil, 8-23-77
 - Section 4:** Aminoil, 8-23-77
 - Section 5:** Aminoil, 8-23-77
 - Section 6:** Aminoil, 8-23-77
 - Section 7:** Aminoil, 8-23-77
 - Section 8:** Aminoil, 8-23-77
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 - Section 11:** Aminoil, 8-23-77
 - Section 12:** Aminoil, 8-23-77
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 - Section 14:** Aminoil, 8-23-77
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 - Section 94:** Aminoil, 8-23-77
 - Section 95:** Aminoil, 8-23-77
 - Section 96:** Aminoil, 8-23-77
 - Section 97:** Aminoil, 8-23-77
 - Section 98:** Aminoil, 8-23-77
 - Section 99:** Aminoil, 8-23-77
 - Section 100:** Aminoil, 8-23-77



Richard E. Ogden
Regional Engineering
Manager

Amoco Production Company
Western Region
1800 Jackson Building
Post Office Box 2082
Santa Fe, New Mexico 87501

March 13, 1981

File: JCA-206.5100-493

Case 7215

Application for Hearing
Unorthodox Gas Well Location
Willow Lake Unit Well No. 4Y
Eddy County, New Mexico

State of New Mexico
Energy and Minerals Department
Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Attention: Mr. Joe B. Jancy

Gentlemen:

Amoco Production Company respectfully requests a hearing to consider our application to drill the Willow Lake Unit Well No. 4Y at the following unorthodox location:

1980' FSL X 560' FSL, Section 14, T-20-S,
R-28-E, Eddy County, New Mexico

The subject well is projected to be drilled to 13,500' as a Pennsylvania test.

Amoco is currently operator of record of the Willow Lake No. 2.
Negotiations are now underway for Amoco to resign as Unit Operator and Amoco Production Company to become Unit Operator.

Please place this item on the Executive's Hearing Docket of April 8, 1981. This confirms our verbal request of March 13, 1981. Any questions can be directed to Mr. Jim Allen, telephone (713) 652-5437.

Yours very truly,

R. E. Ogden
RCA/TH



Richard E. Ogden
Regional Supervisor
Bureau

Amoco Production Company
Houston Region

600 Jefferson Building
Post Office Box 3102
Houston, Texas 77001

March 13, 1981

File: JCA-905.5100-093

Re: Application for hearing
Northstar Gas Well Location
Willow Lake Unit Well No. 4Y
Eddy County, New Mexico

Case 7215
1

State of New Mexico
Energy and Minerals Department
381 Conservation Division
P. O. Box 2000
Santa Fe, NM 87501

Attention: Mr. Joe D. Ramsey

Continued:

Amoco Production Company respectfully requests a hearing to consider our application to drill the Willow Lake Unit Well No. 4Y at the following Northstar location:

2980' FSL X 660' FR., Section 14, T-24-S,
R-28-E, Eddy County, New Mexico

The subject well is projected to be drilled to 13,500' as a Pennsylvania section.

Amoco is currently operator of record of the Willow Lake Unit. Negotiations are underway for Amoco to resign as Unit Operator and Amoco Production Company to become Unit Operator.

Please place this item on the Examiner's Hearing Docket of April 8, 1981. This satisfies our verbal request of March 13, 1981. Any questions can be directed to Mr. Jim Allen, telephone (713) 652-5497.

Sincerely,
R. E. Ogden

JOE

App 1 of Amoco Prod
Co. B.V. under the dot
Gos Well 10 co

Willow Lake Unit #4Y

1980S 660W 14 -245-28E

Eddy County 13500 Perm

Wolfcamp thru Pennsylvanian
formations

S12 dedication

Jim Allen 3-13-81

DRAFT
dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7215

ORDER NO. R- 6654

APPLICATION OF AMOCO PRODUCTION COMPANY
FOR AN UNORTHODOX GAS WELL LOCATION,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on April 8, 19 81, at Santa Fe, New Mexico, before Examiner Richard L. Stamets

NOW, on this day of April, 19 81, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Amoco Production Company, for its Willow Lake Unit Well No. 4Y to be drilled seeks approval of an unorthodox gas well location/ 1980 feet from the South line and 660 feet from the West line of Section 14, Township 24 South Range 28 East, NMPM, to test the Wolfcamp and Pennsylvanian formation, Eddy County, New Mexico.

(3) That the S/2 of said Section 14 is to be dedicated to the well.

(4) That a well at said unorthodox location will better enable applicant to produce the gas underlying the proration unit.

(5) That no offset operator objected to the proposed unorthodox location.

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Case No. _____
Order No. R- _____

(6) That approval of the subject application will afford the applicant the opportunity to produce its just and equitable share of the gas in the subject pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That an unorthodox gas well location for the ^{and} Wolfcamp-Pennsylvanian the Amoco Production Company Willow Lake Unit Well No. 4Y formation is hereby approved for ~~a well~~ to be located at a point 1980 feet from the South line and 660 feet from the West line of Section 14, Township 24 South, Range 28 East NMPM, Pddy, Eddy County, New Mexico.

(2) That the S/2 of said Section 14 shall be dedicated to the above-described well.

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

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