

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARINGSANTA FE, NEW MEXICOHearing Date NOVEMBER 5, 1986 Time: 8:15 A.M.

NAME

REPRESENTING

LOCATION

Greg Allen	Pennzoil	Midland, Tex
W. D. Kelbaker	Black Hills Co. & Agency	Santa Fe
Bob Baker	Bryman	Santa Fe
W. H. Whitbrook	Whitbrook Oil	Hobbs
Jim Bruce	Hinkle Law Firm	S.F.
Gary Green	SFEOP, LP	Midland, TX
Anthony J. Welker	SFEOP, LP	Midland, TX
Richard J. Botts	Amoco	Denver CO
Douglas Broadfoot	Amoco	Denver CO
Peter N. Jones	Benson Martin Jones, SRL,	Santa Fe
Mark W. H. H.	Oklahoma Oil, IPD Mgmt	Artesia
Danell Moore	nmoco	Artesia
Dan Ritten	nmoco	S.F.
Jim Brown	Coco's Edge	Artesia, N.M.
	Yates Petroleum	

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

5 November 1986

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco Production Com- CASE
pany for a unit agreement, Rio Arriba 8998
County, New Mexico.

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division:

Jeff Taylor
Legal Counsel for the Division
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

Edmund H. Kendrick
Attorney at Law
MONTGOMERY & ANDREWS
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I N D E X

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Amoco Exhibit Two, Letter 6

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Amoco Exhibit Four, Cross Section 14

1

2

MR. STOGNER: Call next Case

3

Number 8998.

4

MR. TAYLOR: Application of

5

Amoco Production Company for a unit agreement, Rio Arriba

6

County, New Mexico.

7

MR. STOGNER: Call for appear-

8

ances.

9

MR. KENDRICK: Mr. Examiner, my

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name is Edmund Kendrick with Montgomery & Andrews in Santa

11

Fe, appearing on behalf of Amoco Production Company.

12

I have two witnesses to be

13

sworn.

14

MR. STOGNER: Thank you, are

15

there any other appearances?

16

Will the witnesses please stand

17

and be sworn at this time?

18

MR. TAYLOR: Mr. Kendrick, how

19

do you spell your last name, K-E-N-?

20

MR. KENDRICK: K-E-N-D-R-I-C-K.

21

MR. TAYLOR: R-I-C-K.

22

23

(Witnesses sworn.)

24

25

1 PAUL S. CONNER,
2 being called as a witness and being duly sworn upon his
3 oath, testified as follows, to-wit:

4
5 DIRECT EXAMINATION

6 BY MR. KENDRICK:

7 Q Please state your name and place of resi-
8 dence.

9 A My name is Paul S. Conner, Denver, Colo-
10 rado.

11 Q Mr. Conner, by whom are you employed and
12 in what capacity?

13 A I am co-owner of Edmundson & Associates,
14 Incorporated, in Denver, Colorado, as a specialist in for-
15 ming unit agreements, Federal unit agreements.

16 Q How long have you been employed with Ed-
17 mundson?

18 A A little over seven years.

19 Q And could you describe the nature of your
20 work with that firm?

21 A We specialize in the formation of Federal
22 unit agreements primarily through the Rocky Mountain Region.
23 I've been personally involved with the formation of in ex-
24 cess of 100 Federal agreements in that seven year period.

25 Q Are you familiar with the application of

1 Amoco in this case and the subject unit?

2 A Yes, sir, I am. I -- I prepared the ap-
3 plication on behalf of Amoco.

4 MR. KENDRICK: Are the witness'
5 qualifications acceptable?

6 MR. STOGNER: They are.

7 Q Mr. Conner, will you briefly state what
8 Amoco seeks to accomplish with this application?

9 A The successful formation of the Bear
10 Canyon Unit Agreement in Rio Arriba County.

11 Q Have you prepared certain exhibits for
12 introduction in this case?

13 A Yes, sir, I have.

14 Q What are those exhibits?

15 A Exhibit One is the proposed form of unit
16 agreement, Federal form, and a part of that exhibit is Exhi-
17 bit A, which is a land plat, and Exhibit B, which is a sche-
18 dule of lease owners.

19 Q Could you refer to what has been marked
20 as Exhibit One and explain in more detail what it shows?

21 A Exhibit One is a unit agreement, the pro-
22 posed form that we'll be submitting to the Bureau of Land
23 Management for final approval, and the map which is a part
24 of Exhibit One shows the area which is located, the unit
25 area, proposed unit area, located at 26 North, 2 West, and

1 encompasses 4800 acres, of which 1280 acres is Federal
2 lands, 26.67 percent, and 3520 acres, which is patented
3 lands, 73.33 percent.

4 The leasehold schedule shows
5 the type and percentage of kind of ownership of those par-
6 ties who own an interest within the unit agreement.

7 Q What percentage of the acreage in the
8 unit has been committed to the unit agreement?

9 A At this time we have 90 percent a working
10 interest basis and 90 percent on a basic royalty basis, and
11 we're still securing joinders.

12 Q Is Amoco designated as the unit operator
13 under this agreement?

14 A Yes, sir.

15 Q Is there committed sufficient acreage to
16 afford Amoco effective control of unit operations?

17 A Yes, sir.

18 Q Mr. Conner, please refer to what has been
19 marked as Exhibit Two and explain what it is and what it
20 shows.

21 A Exhibit Two is the -- a letter dated July
22 23rd from the Bureau of Land Management, which has accepted
23 Amoco's application of June 13th, and had designated the
24 unit area as a logical unit area.

25 Q Does Amoco have another witness who will

1 testify as to geological considerations?

2 A Yes, sir, they do.

3 Q Mr. Conner, in your opinion will granting
4 this application be in the best interests of conservation,
5 the prevention of waste, and the protection of correlative
6 rights?

7 A Yes, sir, I believe so.

8 MR. KENDRICK: At this time I'd
9 like to offer Exhibits One and Two into evidence.

10 MR. STOGNER: I don't have a
11 copy of them. I can't admit them into evidence, --

12 MR. KENDRICK: Okay.

13 MR. STOGNER: -- not until I
14 look them over and have a chance to --

15

16 CROSS EXAMINATION

17 BY MR. STOGNER:

18 Q Mr. Conner, what formations or what hori-
19 zons are being unitized today?

20 A The initial agreement was to provide for
21 all formations. That has been since amended to provide for
22 those formations from the surface of the earth down to 100
23 feet below the base of the Dakota.

24 There's been an amended application sub-
25 mitted to the Bureau of Land Management. At this time we

1 have not gotten concurrence.

2 We have had a meeting with the BLM and
3 have gotten verbal approval of that amendment.

4 Q Now you said 90 percent of the working
5 interest owners and 90 percent of the royalty holdings were
6 unitized so far. What -- which ones haven't been unitized
7 or hasn't volunteered yet?

8 A Well, there's a number through there.
9 There's quite a few basic royalty owners within the unit.
10 There are several throughout the unit have not committed at
11 this time and Amoco and myself through Edmunson are
12 attempting to secure all those joinders before we submit for
13 final approval.

14 Q How many, would you say, of the working
15 interest owners have not agreed?

16 A Well, there is -- at this time there is
17 less than one percent who have been -- hard to contact and
18 we haven't gotten any favorable consideration from him.

19 Everybody else we've contacted and have
20 signatures for at this time or has verbally agreed to commit
21 to the unit, which entails 99 percent of the working
22 interest owners.

23 Q Okay. Is this the same for the royalty
24 owners?

25 A Yes, sir.

1 MR. STOGNER: Exhibits One,
2 Two, and Three will be admitted into evidence at this time.

3 I have no further questions of
4 this witness.

5 Are there any other questions
6 of Mr. Conner?

7 THE REPORTER: I just have
8 Exhibits One, One-A, One-B, and Two.

9 MR. KENDRICK: That's correct.

10 MR. STOGNER: Oh, okay, I'm
11 sorry. Let me restate that.

12 Exhibits One and Two and their
13 subparts will be admitted into evidence at this time.

14 Are there any questions of Mr.
15 Conner?

16 MR. KENDRICK: I have no
17 further questions.

18 MR. STOGNER: If not, he may be
19 excused.

20 Mr. Kendrick?

21 MR. KENDRICK: The next witness
22 is Mr. Bottjer.

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RICHARD J. BOTTJER,

being called as a witness and being duly sworn upon his
oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KENDRICK:

Q Please state your name and place of residence.

A My name is Richard Bottjer and I currently reside in Denver, Colorado.

Q Mr. Bottjer, by whom are you employed and in what capacity?

A I'm employed as a petroleum geologist by Amoco Production Company in Denver.

Q Have you previously testified before the Division or one of its examiners and had your credentials accepted and made a matter of record?

A Yes, I have.

Q Please summarize your educational background and work experience.

A I got my Bachelor in Science degree in geology in 1981 from the State University of New York in Binghamton, and I got my Master of Science degree in geology from the University of Wyoming in 1984.

1 I've been working for Amoco from 1983 un-
2 til the present and my current job assignment is exploration
3 projects in the San Juan Basin.

4 Q Are you familiar with the area which is
5 subject to this application?

6 A Yes, I am.

7 MR. KENDRICK: Are the witness'
8 qualifications acceptable?

9 MR. STOGNER: They are.

10 Q Mr. Bottjer, have you prepared certain
11 exhibits for introduction in this case?

12 A Yes, I have. I have prepared two exhi-
13 bits.

14 Exhibit Number Three is a structure map
15 in the area in question and Exhibit Number Four is a cross
16 section across the proposed unit area.

17 Q Please refer to what has been marked as
18 Exhibit Three and explain what it is and what it shows.

19 A Exhibit Number Three is a structure con-
20 tour map -- let me go ahead and start out by explaining some
21 of the things on the map and then we'll get into what it
22 shows.

23 The scale on the map is one inch equals
24 4000 feet. The location of the map, it shows between Town-
25 ship 24 North up through part of Township 27 North and part

1 of Range 1 East, all of Range 1 West, all of Range 2 West,
2 and a part of Range 3 West, in Rio Arriba County, New Mexico.
3

4 The proposed unit outline is in the
5 northeastern part of Township 26 North, Range 2 West, as illustrated
6 on the display, and the map also shows wells in
7 the area that have penetrated the Mancos formation as defined
8 on scout tickets.

9 The well symbols that are used on the
10 map are standard oil industry well symbols. For example,
11 the solid dot is an oil well, and so on.

12 The structure has been mapped on top of
13 the Graneros Shale. It's essentially the same as the base
14 of the Greenhorn. It's a good marker in the San Juan Basin.

15 Contour interval on the map, in the western
16 part it's 50 feet and in the eastern part, where you get
17 up on the hogback monocline in the east side, it's 500 feet.
18 You'll notice that every 500 feet, every 500-foot contour is
19 a heavier line.

20 The depressions or lows, structural lows,
21 have hachures on the low side and you can see some of those
22 in the east central part of the map and there are some
23 faults that I've interpreted and they are shown by double
24 striped tape on there.

25 Basically what the display shows is you

1 can see, and you're familiar with, the Gallup production in
2 the Gavilan-Mancos area in predominately Township 25 North,
3 Range 2 West, in the south central portion of the map.

4 We feel that the Gallup production in
5 Gavilan is controlled by an anticlinal nose which plunges
6 both to the north and the south and we see most of the high
7 volume wells in Gavilan are at the south plunge of that
8 structure, predominately in the southern part of Township 25
9 North, Range 2 West.

10 We have reason to believe that there is a
11 similar although slightly smaller structure in the area that
12 we propose to have unitized and we feel like most of the
13 good production would be where that structural nose point is
14 to the south to enhance fracturing in the Gallup.

15 The nearest producing well that's cur-
16 rently producing from the Gallup to the unit is in Section
17 25 of Township 26 North, Range 2 West, and that would be
18 currently operated by Dugan Production Company, the Tapa-
19 citos No. 2.

20 So we're about two miles or a mile and a
21 half to the north of the nearest production. Our initial
22 proposed well would be in the northeast quarter of Section
23 15, as indicated on the map by an open circle, and that
24 would be two-and-a-half to three miles away from the nearest
25 production, so it would be classified as an exploratory

1 well.

2 Q Please refer to what has been marked as
3 Exhibit Four and explain what it is and what it shows.

4 A Exhibit Number Four is a structural cross
5 section between the two northernmost deeper wells, or the
6 two nearest wells to the unit. The line of section is shown
7 on Exhibit Number Three and it goes from the Aztec Oil & Gas
8 Tapacitos No. 1 in Section 16, Township 26 North, Range 2
9 West, proceeds east through the unit area, through the pro-
10 posed unit area, to the Benson-Montin-Greer Canada Ojitos
11 Unit No. 1, which is in Section 9 of Township 26 North,
12 Range 1 West, and basically it shows the formations that we
13 propose to have unitized.

14 It shows the logs that penetrated through
15 the lowermost tertiary on through the Dakota. Those are the
16 formations we would propose unitizing in this application.

17 It also serves to display our interpreted
18 structural nose and the structural feature shows up as an
19 anticline in the western part of the cross section.

20 As you can see, we anticipate maximum
21 fracturing in the Gallup will be where that anticline is and
22 especially where it plunges towards the south because you
23 get a greater rate of change of dip along the plunge.

24 Q Okay, what formation is the primary ob-
25 jective in this unit?

1 A The primary objective would be the Gallup
2 producing interval, also referred to in the area as the Man-
3 cos Shale.

4 Q And what formations do you consider to be
5 secondary objectives?

6 A We consider the Pictured Cliff's sand-
7 stone, the sandstones of the Mesaverde, and also the Dakota
8 sandstone as secondary objectives.

9 Q What do you propose for the initial obli-
10 gation test well in this unit?

11 A We would propose that the initial obliga-
12 tion test well be drilled in the northeast quarter of Sec-
13 tion 15, Township 26 North, Range 2 West. We would propose
14 that the well be drilled such that the Dakota be tested pro-
15 perly. It would be such that we drill to either 8300 feet
16 or 15 feet into the Morrison, whichever one is less, but we
17 want to make sure we test the Dakota in the initial well.

18 Q Does the unit agreement provide for per-
19 iodic filing of plans of development?

20 A Yes, we will file plans of development
21 annually, as per the unit operating agreement.

22 Q Does the agreement require that these
23 plans be filed with the Oil Conservation Division?

24 A Yes.

25 Q In your opinion will the granting of this

1 application be in the best interests of conservation, the
2 prevention of waste, and the protection of correlative
3 rights?

4 A Yes.

5 MR. KENDRICK: Okay, at this
6 time I'd like to offer into evidence Exhibits Three and
7 Four.

8 MR. STOGNER: Exhibits Three
9 and Four will be admitted into evidence.

10 MR. KENDRICK: I have no fur-
11 ther questions on direct.

12

13 CROSS EXAMINATION

14 BY MR. STOGNER:

15 Q Mr. Bottjer, the Morrison is a member of
16 what formation?

17 A Well, the Morrison is a formation and
18 it's not shown on the cross section because it wasn't pene-
19 trated in either of those wells.

20 The Burro Canyon in the subsurface in the
21 San Juan Basin is considered to be part of the Dakota and
22 the Morrison in generally the interbedded sands and red and
23 green shales that underlie the Dakota Burro Canyon section.

24 Q How thick usually is this Burro Canyon in
25 this area?

1 A It's usually about 100 feet thick.

2 Q And the Morrison lays right under that.

3 A Right.

4 Q When I look at your Exhibit Number Three,
5 you show some faults within your --two faults within your
6 unit area.

7 A Uh-huh.

8 Q Was seismic information also used to com-
9 pile these fault lines?

10 A No, those faults are just hypothetical.
11 We don't know if they're going to be there or not, but since
12 we see faults on a similar structural feature, or apprent
13 faults on a similar structural feature in the south, I've
14 just anticipated that there may be some on the feature that
15 we propose to have a unit formed around.

16 MR. STOGNER: I have no further
17 questions of this witness.

18 Are there any other questions
19 of Mr. Bottjer?

20 MR. KENDRICK: I have no fur-
21 ther questions.

22 MR. STOGNER: He may be ex-
23 cused.

24 Mr. Kendrick, have you got any-

25

1 thing further?

2 MR. KENDRICK: No, I do not.

3 MR. STOGNER: Does anybody else
4 have anything further in this case?

5 If not, Case Number 8998 will
6 be taken under advisement.

7

8 (Hearing concluded.)

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C E R T I F I C A T E

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

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8448, heard by me on 5 November 19 96.
Michael E. Dwyer, Examiner
Oil Conservation Division