

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico

5 June 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of MorOilCo, Inc. for CASE
an unorthodox gas well location, 8616
Lea County, New Mexico.

BEFORE: Gilbert P. Quintana, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Maryann Lunderman
Division: Attorney at Law
Energy and Minerals Department
Santa Fe, New Mexico 87501

For the Applicant: Randolph M. Richardson
Attorney at Law
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1 For ARCO Oil & Gas: William F. Carr
 2 Attorney at Law
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 5 Santa Fe, New Mexico 87501

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 8 I N D E X
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10 STEPHEN F. MITCHELL

11 Direct Examination by Mr. Richardson 4

12 Cross Examination by Mr. Quintana 9

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 14
 15 FRANK MORGAN

16 Direct Examination by Mr. Richardson 12

17 Cross Examination by Mr. Morgan 21

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 21 E X H I B I T S
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23 Applicant Exhibit One, Plat 17

24 Applicant Exhibit Two, Log 6

25 Applicant Exhibit Three, Notifications 20

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MR. QUINTANA: We'll call next
Case 8616.

MS. LUNDERMAN: Application of
MorOilCompany, Incorporated, for an unorthodox well -- gas
well location, Lea County, New Mexico.

MR. RICHARDSON: Randolph M.
Richardson, Roswell, New Mexico, appearing on behalf of ap-
plicant, and I have two witnesses to be sworn.

Swear them both at once or --

MR. QUINTANA: I'll just swear
them both at once, right.

Are there other appearances in
this case?

MR. CARR: Mr. Examiner, my
name is William F. Carr with the law firm Campbell and
Black, P. A., of Santa Fe, appearing on behalf of ARCO Oil
and Gas Company.

We will not call a witness.

MR. QUINTANA: Thank you. Will
all witnesses please stand up at this time and be sworn in?

(Witnesses sworn.)

MR. RICHARDSON: First I would

1 like to call Mr. Mitchell.

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STEPHEN T. MITCHELL,

4

being called as a witness and being duly sworn upon his

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oath, testified as follows, to-wit:

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DIRECT EXAMINATION

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BY MR. RICHARDSON:

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Q

Mr. Mitchell, would you please state your

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name, address, education and professional background which

11

would enable you to testify in this case?

12

A

Yes. Stephen T. Mitchell; live in Ros-

13

well, New Mexico.

14

My background is I have a BS in geology

15

from New Mexico Institute of Mining and Technology.

16

I have one year's experience mudlogging

17

in the Delaware Basin and two and a half years as a geolo-

18

gist working prospects for George L. Scott in Roswell.

19

Q

Mr. Mitchell, are you familiar with the

20

application that has been made for unorthodox well location

21

for the Styvesant Well?

22

A

Yes.

23

MR. RICHARDSON: Will he be ac-

24

ceptable?

25

MR. QUINTANA: That's all your

1 experience in the southeast part of New Mexico?

2 A Yes, sir, mostly in the Delaware Basin
3 and the shelf area.

4 MR. QUINTANA: The witness'
5 qualifications are accepted.

6 You may continue.

7 Q Mr. Mitchell, please state the name and
8 location of the well which is subject of this hearing.

9 A Yes. It's the MorOilCo No. 1 Styvesant.
10 It's located in Section 33 of Township 19 South, Range 34
11 East, 330 feet from the north line and 330 feet from the
12 east line.

13 Q This well was originally staked as an oil
14 test, is that correct?

15 A Yes, that's correct.

16 Q Was this well drilled to a depth suffi-
17 cient to test the Queen formation?

18 A Yes. This well was drilled to a depth to
19 test the Queen and Penrose Sand, Penrose being a member of
20 the Queen.

21 Q Referring to a log of the well, would you
22 please identify the log, a name and exhibit number?

23 MR. QUINTANA: Are these the
24 same exhibits that I have in the case file or are these ad-
25 ditional?

1 A Exhibit One is the No. 1 Styvesant -- a
2 log on the No. 1 Styvesant Federal, a CNL litho-density log.

3 Q And a -- let me correct that. I've shuf-
4 fled them around and put this log Number Two.

5 A Oh, okay, this would be Exhibit Number
6 Two.

7 Q Would you identify the zones? Okay, go
8 ahead, referring to that log please identify the log by name
9 and exhibit number, and identify the zones of porosity which
10 were tested above the total depth drilled.

11 A Okay. This is the No. 1 Styvesant Feder-
12 al, a (not understood) for No. 1 Styvesant Federal.

13 The zones tested -- what did you say,
14 above the Queen --

15 Q Uh-huh.

16 A -- or above the Queen?

17 Q Above total depth.

18 A Above total depth, okay, the first zone
19 we tested was at 5020 feet. That's a Penrose Sand, a member
20 of the Queen formation.

21 Then we moved up to the -- after testing
22 that zone and deciding that it wasn't economical, we moved
23 up to the Upper Queen, the Shattuck member of the Queen for-
24 mation, and we tested that for approximately four months and
25 we had quite a high water cut and had some better zones up

1 the hole, we thought, so we moved up and tested three Seven
2 Rivers Sands.

3 First we tested the zone at 4100 feet and
4 then, after making some oil and some water there, we then
5 moved up and tested the zones at 4020 and 3910 feet.

6 Q This well was completed as an oil well in
7 the Queen formation. Were the necessary BLM completion
8 forms filed?

9 A Yes, they were.

10 Q What was the potential of this well as an
11 oil well?

12 A It originally potentialled for 50 barrels
13 of oil a day and 30 barrels of water.

14 Q How long did this well produce as an oil
15 well in the completed zone?

16 A This was produced for approximately four
17 months.

18 Q At the time a decision was made to move
19 up the hole and attempt completion in another zone, what was
20 the well making?

21 A It was making 30 barrels of oil and 85
22 barrels of water.

23 Q In what formation is the isolated zone of
24 porosity located?

25 A In the Seven Rivers. The isolated zone

1 is at 3905 feet, 3905.

2 Q That is in the Seven Rivers?

3 A That is in the Seven Rivers zone.

4 Q Is there a difference of opinion as to
5 whether this porosity is within the Lower Yates or Upper
6 Seven Rivers?

7 A Yes, there is a slight argument there.

8 Q In your opinion the porosity is within
9 the Seven Rivers. Can you think of any problems that would
10 be -- would arise if some other geologist felt the zone was
11 in the Yates?

12 A No, I can't think of any problems there.
13 The allowable on the zone is the same all over that area.

14 Q In this area of Lea County do the Yates
15 and Seven Rivers and Queen formations normally produce oil
16 or normally produce gas?

17 A No, they typically produce oil in this
18 area.

19 Q Would it be correct to state that the
20 volume of gas encountered in the Seven Rivers was completely
21 unexpected?

22 A Yes, it was.

23 Q In your opinion, but without having
24 sufficient information on which to base a definite answer,
25 will the well drain from the east or drain from the west?

1 A We feel that the well will probably drain
2 from the west. As we can see, the porosity is developed
3 much better to the west.

4 Q Would the granting of this application be
5 in the interest of conservation and prevention of waste?

6 A Yes.

7 Q Would the correlative rights of any other
8 operator be damaged?

9 A No.

10 MR. RICHARDSON: That's all I
11 have of Mr. Mitchell.

12 MR. QUINTANA: I have some
13 questions of the witness.

14
15 CROSS EXAMINATION

16 BY MR. QUINTANA:

17 Q Mr. Mitchell, you stated that in the
18 Queen zone the stabilized rate was 30 barrels of oil per day
19 before you moved up?

20 A Yes, sir.

21 Q Is it also your testimony that you don't
22 think -- that your company does not consider 30 barrels of
23 oil per day to be economically attractive?

24 A Well, we were producing a large amount of
25 water, 85 barrels of water, and having to truck that off,

1 and -- and we just looked at the Seven Rivers zones and
2 thought we would see how those -- how those zones acted.

3 And --

4 MR. RICHARDSON: That lower
5 zone, I think, did the water increase by a lot in that?

6 A Yes.

7 Q Okay, and then they came up -- they came
8 up hole to the Seven Rivers and tested three zones in the
9 Seven Rivers, right?

10 A Yes, sir. We tested -- first we tested
11 the zone at 4100 feet.

12 Q And that one made 53 barrels of oil and
13 85 barrels of water?

14 A Yes.

15 Q There was no stabilized rate on that?

16 A Yeah, we didn't test it very long, so --

17 Q Then you moved up hole from there to ap-
18 proximately 1060 feet?

19 A No, that would be 4015 --

20 Q Okay.

21 A -- to 25.

22 Q What was the circumstances for that test?

23 A Okay, we -- we perforated this zone and
24 the zone at 3910 at the same time, and -- and we produced
25 quite a bit of gas out of this zone, and so when we put it

1 on the pump, the pump started gas locking and we are making
2 mostly water at this time.

3 Q Bear with me a second.

4 MR. RICHARDSON: Mr. Examiner,
5 some of these questions probably will be cleared up with the
6 next witness.

7 MR. QUINTANA: Okay. Yeah, why
8 don't have him present the next witness?

9 I may call you back with some
10 more questions.

11 A Okay.

12 MR. QUINTANA: Do we have a
13 standard C-108 application that came along with this?

14 MR. RICHARDSON: Not with this
15 unorthodox well.

16 MR. QUINTANA: Oh, excuse me,
17 what am I thinking?

18 MR. RICHARDSON: There's a C-
19 108 in the next case.

20 MR. QUINTANA: Okay, yeah, I
21 was --

22
23 FRANK MORGAN,
24 being called as a witness and being duly sworn upon his
25 oath, testified as follows, to-wit:

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DIRECT EXAMINATION

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BY MR. RICHARDSON:

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Q Would you please state your name, address, and previous experience which would enable you to testify as an expert witness in this case?

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A My name is Frank Morgan and I reside in Artesia, New Mexico, and I have operations in Roosevelt, Lea, Eddy, and Chaves Counties and have operated for over five years.

11

12

13

Q Mr. Morgan, are you the designated operator of the Styvesant Federal Well and were you responsible for the drilling, completing, and equipping of this well?

14

15

16

A Yes, sir, I was.

17

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Q This well is located on Federal BLM land. Were all the necessary BLM forms duly and properly filed?

21

22

A Okay. We have filed permit to drill to 5100 feet to test the Penrose and Queen formations.

23

24

25

Q Was the location of 330 feet from the north line and 330 feet from the east line proper for a Queen oil test?

1 A Yes, sir, it was.

2 Q Referring to the log used by Mr. Mit-
3 chell, would you please give a brief chronological history
4 of the drilling and completion of this Styvesant well with
5 particular reference to casing, perforations, packers, and
6 so forth?

7 A Okay, we drilled the well to a depth of
8 approximately 1500 feet.

9 We ran 4-1/2 and 9-5 casing; cemented
10 with 600 -- 600 sacks Class C cement.

11 At that time we ran logs, or we came up
12 and acidized the Lower Penrose formation with 500 gallons of
13 7-1/2 percent acid and then we fraced it with 16,000 gallons
14 of gelled water and 18,000 pounds of 20/40 sand.

15 We tested on pump and found that this
16 zone would make about 5 barrels of oil and 3 barrels of
17 water.

18 At that time we again moved up to the
19 Queen formation and acidized perfs 4511 to 32 with 500 gal-
20 lons 7-1/2 percent and stabilized approximately 22 barrels
21 of oil per day and about 22 barrels of water.

22 After frac we fraced with 20,000 gallons
23 of gelled water and 24,500 pounds of 20/40 sand and it
24 potentialled at 50 barrels of oil and 30 barrels of water,
25 which then again stabilized at 30 barrels of oil and 85 bar-

1 rels of water.

2 The question you asked Steve Mitchell, 85
3 barrels of water, we have to truck it off at approximately
4 anywhere from 85 to \$1.15 a barrel, which is anywhere from
5 \$3000 to \$4000 a month, and it's, for a small operator, that
6 cuts into the operating expense pretty heavily.

7 Okay. Then we moved up to the Lower
8 Seven Rivers, we acidized perms 4095 to 4100 with 500 gal-
9 lons 7-1/2 percent acid.

10 In four days, on the fourth day of pro-
11 duction, or fourth day of producing, we had 53 barrels of
12 oil and approximately 85 barrels of water per day.

13 Due to the fact that two Upper Queen, or
14 Seven Rivers zones calculated less water and more attrac-
15 tive, we then moved up and acidized perms 3906 to 3914 with
16 1000 gallons 7-1/2 percent, and also perms 4110 to 25 with
17 1000 gallons 7-1/2 percent.

18 We at that time moved down and straddled
19 all Seven Rivers zones and we found that we had more gas
20 than we could handle. We had -- we just couldn't handle it
21 and we got something we didn't anticipate.

22 So at that time I again moved down and
23 again tested each zone separately. The lower zone would
24 make approximately 50 barrels of oil and about 85 water.

25 The Middle Seven Rivers zone would pro-

1 duce a small amount of water and no oil at all. It was very
2 tight.

3 Okay, the top Seven Rivers zones we found
4 out where all the gas was coming from. We rough guessed a
5 field estimate of about 1,700,000 gas per day, and that's
6 where my packer is now set at 3950, a bridge plug at 3950,
7 and a packer at 3846, and I have a Baker Model LocSet packer
8 at approximately 4200 to separate the Queen and Seven Rivers
9 formations.

10 Q This well has been mechanically completed
11 for gas production. Has a BLM form for completion or recom-
12 pletion of the well been filed?

13 A Yes, it has.

14 Q As a gas well?

15 A We have the papers to file it as a gas
16 well but we have not turned it in to the OCD in Hobbs at
17 this time, pending a hearing.

18 Q What tests have been made in connection
19 with this Seven Rivers gas and what were the results of such
20 tests?

21 A We have Bennett and Cathey out of Artesia
22 to run a bottom hole pressure and 4-point test and they
23 found open flow tests under a 4-point would be 4 --
24 4,508,000 per day, cubic feet of gas per day.

25 Q Was there any drawdown or did adjust any

1 well to get any indication of drawdown and pressures?

2 A No, sir, we had no show of increase in
3 pressures. Of course, we didn't test -- or we haven't been
4 able to test it long enough to be able to find out for sure
5 if it will draw down.

6 Q And what tests were made to determine the
7 gas/oil ratio and what was the final determination of such
8 ratio?

9 A We just -- we've taken Bennett and
10 Cathey's multipoint and back pressure 4-point and bottom
11 hole tests to -- to describe our gas/oil ratio.

12 Q And that ratio was finally determined to
13 be what?

14 A 270,000-to-1.

15 Q 270,000-to-1.

16 A 270.2 MCF per barrel.

17 Q Would you please tell the Division your
18 estimate of maximum deliverability of this Styvesant well?

19 A We believe that the Styvesant well will
20 produce anywhere from 800,000 to a million cubic feet of gas
21 per day, depending on what the purchaser can take.

22 Q Have any arrangements been made for the
23 marketing and disposal of this gas?

24 A Yes. Warren Petroleum has offered an un-
25 signed contract to take such gas.

1 Q Do you have any estimate or indication as
2 to the amount of gas the purchaser may take?

3 A No, I don't.

4 Q Could this well be produced as a gas/oil
5 or dual completion and if not, why not?

6 A No, sir. We've -- technically we cannot
7 dual complete it due to the fact that we have 4-1/2 9-5 and
8 10-5 and we'd have to run 2-6/10ths inch tubing from each
9 side and that would be -- it would be -- it just wouldn't be
10 practical.

11 Q What future plans have been formulated
12 for additional drilling and do you expect to take any action
13 in the near future?

14 A We do plan to drill other offset acreage
15 but not necessarily for this gas zone. We thin we'll stay
16 away from it for right now.

17 Q Will you please refer to this plat, which
18 I put in -- or entered as Exhibit One and would you please
19 identify the offset operators?

20 A Offset operators are ARCO and Sun now has
21 that acreage that is declared Gulf. Sun and ARCO were all
22 delivered by receipt mail, registered mail.

23 Q These offset operators were notified by
24 registered or certified mail that you were requesting an un-
25 orthodox location for a gas well.

1 A Yes, sir.

2 Q When were these notifications mailed and
3 have you received any waivers?

4 A The dates are on the copies of the re-
5 ceipts. I believe it was about three weeks ago. I don't
6 remember the exact date.

7 MR. QUINTANA: May I have a
8 copy of receipts?

9 A It was the 13th, May the 13th.

10 Q They were all mailed out to Sun and ARCO
11 on May 13th.

12 MR. RICHARDSON: And, Mr. Exa-
13 miner, ARCO, Mr. Carr did make an appearance for ARCO.

14 We did hear from them and they
15 desire to protect their future rights. They're not sure
16 what the wells do and they just don't have enough informa-
17 tion to present any sort of a case and don't know exactly
18 what steps Mr. Carr will take, but ARCO is not opposing at
19 this time.

20 We have not heard from Sun at
21 all.

22 We had them out in plenty of
23 time. The notices went out to Sun and ARCO in plenty of
24 time; just have not heard a word back from Sun.

25 Q And, Mr. Morgan, do you agree to furnish

1 all reports that are made to the BLM and OCD, will you give
2 those to ARCO, also?

3 A Yes, sir. I think we've had more or less
4 verbal arrangements to furnish ARCO any information that
5 they desire on this well during production.

6 Q The BLM well completion report has not
7 been filed and he has not filed OCD Form 104, which is a
8 request for allowable and authority to transport.

9 When do you intend to file such reports?

10 A At the closing of the hearing.

11 Q In your opinion will approval of this ap-
12 plication for unorthodox well location be in the interest of
13 conservation, the prevention of waste?

14 A Yes, it will.

15 Q Will the correlative rights of any offset
16 operator be endangered?

17 A We don't believe so.

18 MR. RICHARDSON: I'd like to
19 admit Exhibits One and Two in this case.

20 MR. QUINTANA: Exhibits One and
21 Two will be entered as evidence.

22 MR. RICHARDSON: And I have no
23 further questions for either witness.

24 MR. QUINTANA: I have a couple
25 of requests and one question.

1 The two requests are for copies
2 of the notifications to offset operators and for copies --

3 MR. RICHARDSON: You do have
4 those already, I think, don't you?

5 MR. QUINTANA: I don't have
6 copies of those. You might want to provide copies for me,
7 would you?

8 MR. RICHARDSON: Yeah, I'll
9 give you these now.

10 Do those need to come in as an
11 exhibit?

12 MR. QUINTANA: We will mark it
13 Exhibit Three.

14 And then the second request I
15 have is for copies of your application as a gas well which
16 you're going to submit to the OCD so I can put it in the
17 case file here.

18 A Okay.

19 MR. QUINTANA: And we don't
20 have to put that as an exhibit because it's just some infor-
21 mation I want off that.

22 MR. RICHARDSON: Here's copies
23 of the BLM form and copies of the 104.

24 MR. QUINTANA: Right. Okay.

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CROSS EXAMINATION

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BY MR. QUINTANA:

Q And I have a question of you, Mr. Morgan.

Is it your testimony that you don't believe that correlative rights of offset operators will be affected by producing gas, being a gas well and being that close to ARCO and --

A We really have no control on this gas, you know. We did to the west but now there's not any wells, really, to the east of us and we can't -- we haven't really been able to find it on the logs.

I'm sure it might drain some. That's why want to work real closely with ARCO, to watch our bottom hole pressure test and see if it's drawing down, and if it's not, then either cut our allowable back later on or work with them any way they'd like to on that, but as far as knowing for sure, we really have no control yet.

Q And you are aware, Mr. Morgan, that even though ARCO has not objected, they have entered an appearance and by the fact that nobody has objected and we do grant this, do you realize that ARCO retains the right to come back and object and ask for a penalty?

A Yes, we do understand that.

MR. QUINTANA: I have no --
okay, Exhibit Number Three will also be entered as evidence

1 on this case.

2
3 of the witness?

Are there any further questions

4
5 excused.

If not, Mr. Morgan, you may be

6
7 advisement.

Case 8616 will be taken under

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(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 that the foregoing Transcript of Hearing before the Oil Conservation 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

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8616, heard by me on JUNE 5 19 85.

Gilbert P. Quintana Examiner
Oil Conservation Division