

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

6 June 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Curtis J. Little
for hardship gas well classifi-
cation, San Juan County, New
Mexico.

CASE
8217

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

W. Perry Pearce
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

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2
3 MR. STAMETS: Call next Case
4 8217.

5 MR. PEARCE: That case is on
6 the application of Curtis J. Little for a hardship gas well
7 classification, San Juan County, New Mexico.

8 Mr. Examiner, applicant has re
9 quested continuance of that matter until July the 11th, 1984.

10 MR. STAMETS: The case will be
11 so continued.

12 (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. 8217
heard by me on 6-5-6 1984.

Richard D. Starnes, Examiner
Oil Conservation Division

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

11 July 1984

EXAMINER HEARING

IN THE MATTER OF

Application of Curtis J. Little for CASE
hardship gas well classification, 8217
San Juan County, New Mexico.

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

For the Applicant:

MR. STAMETS: Also at this time we'll call Case Number 8217, which is the application of Curtis J. Little for hardship gas well classification, San Juan County, New Mexico.

Applicant in this case has requested that the case be continued to the July 25th Examiner Hearing and it will be so continued.

(Hearing concluded.)

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 Con-
servation Division was reported by me; that the said tran-
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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. 8217
heard by me on 7/7/84 1984.

Paul L. [Signature], Examiner
Oil Conservation Division

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

25 July 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Curtis J. Little for	CASE
hardship gas well classification, San	8217
Juan County, New Mexico.	

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation	W. Perry Pearce
Division:	Attorney at Law
	Oil Conservation Commission
	State Land Office Bldg.
	Santa Fe, New Mexico 87501

For the Applicant:

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MR. STOGNER: Call next Case
Number 8217.

MR. PEARCE: That case is on
the application of Curtis J. Little for hardship gas well
classification, San Juan County, New Mexico.

Mr. Examiner, that case is to
be continued until August the 15th, 1984.

MR. STOGNER: Case Number 8217
will be so continued to a Division Hearing scheduled for
August 15th, 1984.

(Hearing concluded.)

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 Con-
servation Division was reported by me; that the said tran-
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prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is
a complete and true report of the
the Examiner hearing of Case No. 8217,
heard by me on July 25 19 84.
Michael C. Stogner, Examiner
Oil Conservation Division

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

15 August 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Curtis J. Little for CASE
hardship gas well classification, 8217
San Juan 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	W. Perry Pearce
Division:	Attorney at Law
	Oil Conservation Commission
	State Land Office Bldg.
	Santa Fe, New Mexico 87501

For the Applicant:

1
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3 MR. QUINTANA: We call next
4 Case 8217.

5 MR. PEARCE: That case is on
6 the application of Curtis J. Little for hardship gas well
7 classification, San Juan County, New Mexico.

8 Mr. Examiner, applicant has
9 requested that that matter be continued until September the
10 5th, 1984.

11 MR. QUINTANA: Case 8217 will
12 be continued till September 5th, 1984.

13 (Hearing concluded.)
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C E R T I F I C A T E

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prepared by me to the best of my ability.

Sally W. Boyd CSR

FILED
OIL CONSERVATION DIVISION
U.S. DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C. 20500
heard by me on Aug. 15 84 8217

Hubert P. Quintana, Examiner
Oil Conservation Division

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

5 September 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Curtis J. Little CASE
for haedship gas well classification, 8217
San Juan 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	Charles E. Roybal
Division:	Attorney at Law
	Energy and Minerals Dept.
	525 Camino de Los Marquez
	Santa Fe, New Mexico 87501

For the Applicant:

1
2
3 MR. QUINTANA: We'll call next
4 Case 8217.

5 MR. ROYBAL: Case 8217, appli-
6 cation of Curtis J. Little for a hardship gas well
7 classification, San Juan County, New Mexico.

8 Mr. Hearing Examiner, the ap-
9 plicant, Curtis J. Little, has requested a continuance until
10 October 3rd, 1984.

11 MR. QUINTANA: Case 8217 will
12 so be continued to October 3rd, 1984.

13 (Hearing concluded.)
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C E R T I F I C A T E

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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. 8217,
heard by me on SEPT. 5 1984.
Gilbert P. Quintana, Examiner
Oil Conservation Division

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

3 October 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Curtis J. Little	CASE
for hardship gas well classifica-	8217
tion, San Juan 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	Jeff Taylor
Division:	Attorney at Law
	Legal Counsel to the Division
	State Land Office Bldg.
	Santa Fe, New Mexico 87501

For the Applicant:

1
2
3 MR. QUINTANA: We'll call next
4 Case 8217.

5 MR. TAYLOR: The application of
6 Curtis J. Little for hardship gas well classification, San
7 Juan County, New Mexico.

8 The applicant has requested
9 that this case be continued to October 17th.

10 MR. QUINTANA: Case 8217 will
11 so be continued until October 17th, 1984.

12 (Hearing concluded.)
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C E R T I F I C A T E

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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. 8217,
heard by me on OCT. 3 1984.

Gilbert P. Quintana, Examiner
Oil Conservation Division

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

17 October 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Curtis J. Little for CASE
hardship gas well classification, 8217
San Juan 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	Jeff Taylor
Division:	Attorney at Law
	Legal Counsel to the Division
	State Land Office Bldg.
	Santa Fe, New Mexico 87501

For the Applicant:

1
2
3 MR. QUINTANA: We'll call next
4 Case 8217.

5 MR. TAYLOR: The application of
6 Curtis J. Little for hardship gas well classification, San
7 Juan County, New Mexico.

8 The applicant has requested
9 that this case be continued.

10 MR. QUINTANA: Case 8217 will
11 be continued until October 31st, 1984.

12 (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 Con-
servation Division was reported by me; that the said tran-
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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. 8217
heard by me on OCT. 17 1984.

William P. Quintana Examiner
Oil Conservation Division

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

31 October 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Curtis J. Little	CASE
for hardship gas well classifi-	8217
cation, San Juan County, New Mexico.	

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation	Jeff Taylor
Division:	Attorney at Law
	Legal Counsel to the Division
	State Land Office Bldg.
	Santa Fe, New Mexico 87501

For the Applicant:

MR. STOGNER: Call next Case
Number 8217.

MR. TAYLOR: Application of
Curtis J. Little for hardship gas well classification, San
Juan County, New Mexico.

The applicant has requested
that this case be continued.

MR. STOGNER: Case Number 8217
will be continued until the Examiner's Hearing scheduled for
November 14, 1984.

(Hearing concluded.)

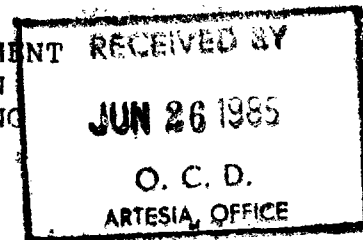
C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY
that the foregoing Transcript of Hearing before the Oil Con-
servation Division was reported by me; that the said tran-
script 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 and correct transcript of
the hearing held at _____
heard by me on Oct. 31 1984.
Michael E. Stoyers Examiner
Oil Conservation Division

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



14 November 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Curtis J. Little for
hardship gas well classification,
San Juan County, New Mexico.

CASE
8217

BEFORE: Gilbert P. Quintana, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

William F. Carr
Attorney at Law
CAMPBELL & BLACK P. A.
P. O. Box 2208
Santa Fe, New Mexico 87501

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I N D E X

EWELL N. WALSH

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MR. QUINTANA: We'll call next
Case 8217.

MR. TAYLOR: The application of
Curtis J. Little for hardship gas well classification, San
Juan County, New Mexico.

MR. CARR: May it please the
Examiner, my name is William F. Carr with the law firm
Campbell and Black, P. A., of Santa Fe, appearing on behalf
of Curtis J. Little.

I have one witness who needs to
be sworn.

MR. QUINTANA: Are there other
appearances in Case 8217?

MR. KENDRICK: H. L. Kendrick
of El Paso Natural Gas Company.

MR. QUINTANA: Will the witness
please stand and be sworn in at this time?

(Witness sworn.)

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

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DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and place of residence?

A My name is Ewell N. Walsh. I reside at 925 East Navajo, Farmington, New Mexico.

Q Mr. Walsh, by whom are you employed?

A I'm employed by Walsh Engineering and Production Corporation.

Q In this case are you also employed by Curtis J. Little?

A Yes, my firm has been employed by Mr. Little.

Q And in what capacity have you been employed?

A As a consultant petroleum engineering consultant to testify to the situation in this case.

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

A Yes, I have.

Q Are you familiar with the application filed in this case by Mr. Little?

A Yes, I am.

Q Are you familiar with the subject well?

A Yes.

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2 MR. CARR: Are the witness'
3 qualifications acceptable?

4 MR. QUINTANA: Mr. Walsh's
5 qualifications as a petroleum engineer are considered as ac-
6 ceptable.

7 Q Mr. Walsh, will you refer to what has
8 been marked for identification as Little Exhibit Number One,
9 identify this and review it for the Examiner?

10 A Exhibit One is Mr. Little's application
11 for classification as hardship gas well for his Federal Com
12 2-E, as in easy, Well, located in Unit N, Section 11, Town-
13 ship 28 North, Range 13 West.

14 With the exhibit is his letter of trans-
15 mittal, his form application, and in addition I have sup-
16 plied a supplement to the application which I prepared to
17 give additional data with the application.

18 Q And this supplemental information re-
19 sponds to the questions in the form application, does it
20 not?

21 A Yes, it does.

22 Q And this is a different information sheet
23 than was originally filed with the application.

24 Q You filed -- you prepared this informa-
25 tion for the purposes of today's hearing.

A Of today's hearing.

Q When was this application filed?

A April 23rd, 1984.

1
2 Q Were copies filed with the Santa Fe and
3 the District Offices of the Oil Conservation Division?

4 A Yes, they were.

5 Q Was an emergency hardship classification
6 granted for this well?

7 A To my knowledge, no.

8 Q Would you now refer to Exhibit Number
9 Two, identify that and review it for Mr. Quintana?

10 A Exhibit Two is a plat indicating with the
11 dark outline in Section 11, 12, of Township 28 North, 13
12 West, the proration unit for this subject well and also the
13 proration unit including the original well drilled on the
14 unit.

15 The well on the plat is located in the
16 southeast of the southwest quarter, Unit N, of Section 11,
17 and indicated as a nominal gas well symbol there.

18 The -- you may note that the proration
19 unit does encompass more than normal acreage as you might
20 expect in a normal section; however, this unit encompasses
21 344.28 acres. The reason for this configuration of this
22 proration unit is due to a re-survey of townships some 25 to
23 30 years ago in the area and the Commission, after re-survey
24 established that these could be called standard proration
25 units although they are basically nonstandard.

Also surrounding the indicated outlined
proration area are the names of the offset operators.

Q Now what pool is the proposed well -- is

1
2 the well completed?

3 A It is Basin Dakota.

4 Q And this is a prorated pool.

5 A It is a prorated pool.

6 Q I'd ask you to advise the Examiner of the
7 status of the well, and in so doing, please refer to Little
8 Exhibit Number Three.

9 A Exhibit Number Three is a copy of a page
10 from the November, 1984, Northwest Gas Proration Schedule.

11 The schedule indicates under Curtis J.
12 Little, which is on the top lefthand side of the page, that
13 the proration unit, including the original well and this
14 well, status as of September was overproduced 2,912 Mcf.

15 However, with a November allocation of
16 some 10,079 Mcf, I would expect the status of the unit to go
17 into an underproduced status due to the capability -- pro-
18 ducing capabilities of the wells.

19 Q Mr. Walsh, was notice of the application
20 given to each of the offsetting operators?

21 A Yes, it was.

22 Q And did that notice contain the minimum
23 sustainable producing rate which Mr. Little seeks in this
24 case?

25 A It did.

Q Was notice also given to the transporter
and purchaser of the gas?

A Yes, they also received one.

1
2 Q And that also contained a minimum sus-
3 tainable producing rate being sought?

4 A Also did.

5 Q And what is that rate?

6 A 88 Mcf per day.

7 Q How was this rate obtained?

8 A Mr. Little determined that this would in
9 all probability be currently approximately the average pro-
10 ducing rate on the basis of monthly production in days pro-
11 duced.

12 Q Would you now refer to Exhibit Number
13 Four, which contains certain production data, and review
14 that for the Examiner?

15 A Exhibit Number Four is in two parts. The
16 first part is a tabulation which is headed Production Data.
17 I have tabulated the full producing history of the well.
18 You may note that in 1984, now on your right is Days Pro-
19 duced, a column for water production, a column for oil pro-
20 duction, a column for daily average oil production, which is
21 your production divided by your days, a column for gas pro-
22 duction, and also the same computation for the daily average
23 of gas.

24 In 1984 there is three months at -- which
25 produced at approximately the 88 percent, 88 Mcf per day, or
slightly below. Then there are, excuse me, four months;
however, there are four months it was above. All I can ex-
plain this higher producing character would be a variance in

1
2 line pressures for this well, and the lower rates, in all
3 probability are the same thing, the higher line pressures,
4 just to give you an explanation of why the variance could
5 occur in that production data.

6 The second part of the exhibit is that
7 tabulated production data put on a production decline curve.
8 The top of the curve is for natural gas, indicated as gas.
9 The bottom portion, the bottom curve, is for the oil produc-
10 tion. We draw these curves for -- as decline curves to help
11 in determining production problems and future recoveries.

12 Q Mr. Walsh, looking at these decline
13 curves it appears the well has been shut in on occasion.
14 Following shut-in did Mr. Little experience a loss of pro-
15 ductivity?

16 A As you indicated, in the -- the shut-in
17 periods are in the fall of 1982 and the spring of 1983. I
18 believe the fall was some hundred-odd days and then sixty-
19 some odd days in the spring of '83.

20 If you will note with the gas production
21 curve, there did not seem to be a change or decrease in pro-
22 duction, producing capacity, but this would not be unusual
23 even with our request for hardship case, any water on the
24 formation, because this is in the early life of the well and
25 the -- during the early life your formation pressures are
high enough to a degree, they probably -- they overcome any
of this damage due to produced water intrusion.

So I -- that is not surprising but if you

1
2 get, as you produce the well and these formation pressures
3 decrease and this water that could be in the wellbore at the
4 time a well is shut in is forced back into the formation,
5 and goes into this gas-filled porosity, in all probability
6 blocking a portion of the porosity, then the well does not
7 have the pressure or horsepower or whatever you want to call
8 it to remove that water, and this would bring about the sit-
9 uation that that gas-filled porosity may not get produced;
it would be blocked off.

10 So the critical time for shut-in period
11 in this well is in the future.

12 Q Now, Mr. Walsh, if that porosity is
13 blocked off by water, that would in effect result in under-
ground waste, would it not?

14 A It would result in underground waste due
15 to not being able to efficiently produce your volume of gas
16 in the reservoir.

17 Q Have you had problems with this well
18 loading up in the past?

19 A They have had problems with it loading
20 up. It actually happened during producing periods when it
21 was on production, and in order to get the well into a pro-
22 ducing status again they used nitrogen to blow out, remove
23 the water from the wellbore and get the gas flowing again,
put it back on production.

24 Q Has swabbing been required?

25 A Swabbing has not been considered, really,

1
2 because of the small diameter tubing in the well. The tub-
3 ing has inch and a half OD tubing and to try to the swab
4 fluids in this small a tubing is very inefficient and cost
5 -- it would be more costly. It would take longer to swab a
6 certain volume of water out than it would to blow it out
7 with nitrogen.

8 Q Has a log off test been attempted on the
9 well?

10 A Yes, we have attempted a log off test.

11 Q And what was the -- were you able to run
12 a successful test?

13 A We were not able to run a successful
14 test.

15 Q Mr. Walsh, I'd like you now to refer to
16 what has been marked as Little Exhibit Number Five and re-
17 view that with the Examiner.

18 A This is a copy of the gas purchaser's
19 chart from the producing period in -- in June, a producing
20 period in June. I'm presenting this to illustrate to the
21 Commission how the well is being produced.

22 This well is being produced on what we
23 call a stopcock basis in that for every four hour period
24 that well is shut in three hours and produced approximately
25 one. This occurs six times a day; therefore the well is on-
ly producing six hours a day.

The configuration on the chart, now, this
is what they call an inverted chart. So on the outside edge

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is what coming in is what we call our differential, which is the critical main reading point of this.

You'll note that you'll basically go from a straight line, or zero line, when the well comes on it will mark in towards the center of the chart as the well produces and then fall back, produce for some period of time and then it will go straight back out to the zero line. That's the time it's shut in.

But this is to illustrate what a stopcock operation is.

Q Why is the well produced in this fashion producing for a few hours and then being shut in and then being produced again for an hour?

A It has been determined that this is the most efficient way to produce this well to attempt to remove produced water that comes into the wellbore. It has been -- years ago they tried other cycles, but they have determined this is the most efficient cycle, three hours shut-in, one hour producing.

Q And this is to prevent loading up of the well.

A Prevent loading up or logging off of the well; however, it has been, like I said, times in producing it loading up and they had to unload it electrically.

Q In your opinion based on the information you've testified to already, will underground waste occur if production from the well is curtailed below its recommended

1
2 producing rate?

3 A Yes, if it's curtailed below its recom-
4 mended producing rate then that would have to put it in may-
5 be to a shut-in status which would cause the intrusion of
6 produced water in the wellbore to be forced back into the
7 gas-filled porosity.

8 Q What attempts have been made by Mr. Lit-
9 tle to eliminate the problems with this well without coming
10 into the Division and seeking hardship classification?

11 A During the original completion of this
12 well Mr. Little realized he could possibly have this situa-
13 tion; therefore, at that time he -- after completion and
14 cleaned up, he ran inch and a half OD tubing in the well.
15 Now this tubing is very small tubing, very small diameter,
16 inside diameter, and this is run to some 6000 feet. This is
17 not the most efficient way through small diameter tubing to
18 produce gas volume but you have to do it in this case in
19 order to lift the liquids.

20 A larger diameter tubing without liquids
21 would more -- produce more efficiently.

22 And then in addition, after determining
23 basically what the producing conditions of the well were, he
24 installed a piston. Now this is a device that will flow --
25 move freely in the inside of that small tubing. When the
well is shut-in it will fall to bottom and you're looking at
a very small OD type mechanical equipment with some seals on
it and when it falls to bottom, then when the well starts

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2 producing and the gas flow starts coming out the tubing, it
3 -- along with the water, it -- the gas will push the piston,
4 the piston will push the water and to remove it from the
5 wellbore.

6 Q Was installation of a pumping unit ever
7 considered?

8 A It was considered at one time but due to
9 -- was considered excessive costs, some \$50,000, in relation
10 to this mechanical setup, it was discarded.

11 Q It wasn't economically justifiable.

12 A it wasn't economically justifiable.

13 Q Would you now refer to Exhibit Number Six
14 and review that for Mr. Quintana?

15 A Exhibit Number Six is a schematic of the
16 downhole mechanical condition for the subject well. As in-
17 dicated, 4-1/2 inch production casing was set at 6420 feet
18 with some 1200 sacks of cement.

19 The Dakota perforations, Dakota formation
20 was perforated from 6286 to 6371. This formation in turn
21 was then stimulated through hydraulic fracturing, cleaned
22 up, and then the one inch and a half tubing I referred to
23 was run in the well and landed with the bottom of the tubing
24 at 6338 feet.

25 Q Mr. Walsh, if a hardship classification
is not granted for this well, in your opinion could it re-
sult in a premature abandonment of the well?

A Yes, it could.

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2 Q Would you now refer to Little Exhibits
3 Seven and Eight, which are cash flow analyses, and review
4 those with the Examiner?

5 A Exhibits Seven and Eight I prepared and
6 are called cash flow analyses, or production rate forecast
7 evaluations.

8 Exhibit Number Seven, and I'd like right
9 now for you to refer to the top lefthand corner called Gross
10 Production, gross production is -- I utilized the producing
11 monthly production history of the well to determine that to
12 start and estimate a future production, I started with 2200
Mcf per month.

13 I requested that that computation, which
14 is made monthly and summarized annually, continue into the
15 future at a decline rate of 10 percent per year, the actual
gas production.

16 Next is the -- also you have indicated
17 barrels of oil, which in this case is condensate. I deter-
18 mined that for each M -- each Mcf of gas that so much oil
19 was going to produce, and I coupled that factor with the gas
20 to give estimated oil production.

21 You go through, the net is net back to
22 the revenue interest of Mr. Little. The oil price is cur-
23 rent posted price less transportation. I held that rate
24 flat as indicated there through 1987 and then let it esca-
late at six percent per year.

25 The gas, I took the current gas price as

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2 of September, that's the latest I had, and escalated it at
3 six percent till the end of 1984 and this being a well that
4 comes under deregulation status, then I held the gas rate
5 flat for the remaining life of the well. I didn't want to
6 presuppose any increases.

7 This all flows through, comparing your
8 income and then subtracting out taxes, windfall profit tax,
9 operating costs, coming down to a net income, and this pro-
10 gram runs until there's economic limit. When it comes to
11 not any more economical it shuts off.

12 So in effect I'm saying if the well had
13 no problems or was not put in a condition where it could be
14 damaged, I would say the well theoretically could produce
15 ultimately -- produce in the future, excuse me, 238-million
16 cubic feet of gas.

17 In turn, in Exhibit Number Eight I
18 changed one variable and that was gas production. I de-
19 creased the initial gas production by 30 percent. I arrived
20 at this 30 percent factor assuming the well was damaged by
21 shut-in and inclusion of water and gas-filled porosity.

22 I determined this 30 percent decrease
23 from my knowledge of the area plus another hardship gas well
24 case I had worked on in the same formation. Everything goes
25 through the same but I would like you to note that now eco-
nomicallly we can only estimate a recovery of 158-million.
That's some decrease, 80-million cubic feet, which can be
translated one, into reservoir waste, and then working with

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2 your cash flows, some \$300,000 less in income.

3 Q Mr. Walsh, this 30 percent decrease in
4 production, that was based on your study of another Dakota
5 well?

6 A Yes, it was.

7 Q And who operates that well?

8 A M. J. Brannon.

9 Q Is that the hardship well which was the
10 subject of Case 8216?

11 A Yes, it was.

12 MR. CARR: Mr. Examiner, we
13 would request that you take administrative notice of the re-
14 cord in Case 8216, which further expands on the study of the
15 Dakota made by Mr. Walsh.

16 MR. QUINTANA: I'll take admin-
17 istrative notice of that case.

18 Q Mr. Walsh, would you now refer to what
19 has been marked as Little Exhibit Number Nine and review
20 that with Mr. Quintana?

21 A Little Exhibit Number Nine, I have pre-
22 viously stated we have made an attempt to get a logoff test
23 and in order to have those tests properly witnessed, Mr.
24 Selinger, Mr. Selinger, who was acting, not acting as con-
25 sultant to me, but under my immediate direction, and Mr.
Frank Chavez, who is District Supervisor, Oil Conservation
Division at Aztec, New Mexico, they went to this well site
together and looked over the equipment to determine the best

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way to run the logoff test. While there they discovered the well was logged off already. They determined again the stopcock type operation was in effect with the motor valve, but even with this cycling the sales chart or the gas purchaser's chart indicated that the well logs off every other day, but fortunately, will come back on, and they witnessed one cycle of the well which had unloaded after being logged off for six cycles, or six four-hour periods, 24 hours.

As Mr. Chavez states in his letter in the last paragraph, there is no further need to test this well as it shows periodic logoff under normal operating conditions.

So that's why we didn't run the logoff test. He agreed that present operating conditions created a logff test and in the operation.

Q Now, Mr. Walsh, in summary has Mr. Little acted in a responsible and prudent manner to eliminate the problems which can result from curtailing production from the subject well prior to requesting a hardship classification?

A Yes, he has.

Q In your opinion will granting this application prevent the underground waste of natural gas?

A It will.

Q Will granting this application be in the best interest of conservation and the protection of correlative rights?

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A It will.

Q And if I understand your testimony, Mr. Little's concern is that permanent damage to the well can result if it is shut in for an extended period of time.

A Yes, it can.

Q Were Exhibits One through Nine prepared by you or under your direction and supervision?

A They were prepared by me or prepared under my supervision or reviewed by me.

Q Okay, and can you testify as to their accuracy?

A Yes, I can.

MR. CARR: At this time, Mr. Quintana, I would offer into evidence Little Exhibits One through Nine.

MR. QUINTANA: Exhibits One through Nine will be admitted into evidence.

MR. CARR: And that concludes my direct examination of Mr. Walsh.

MR. QUINTANA: Mr. Walsh, I have a few questions.

A Sure.

CROSS EXAMINATION

BY MR. QUINTANA:

Q In your professional opinion do current producing trends show an actual loss of gas or oil -- gas or

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2 oil reserves from this well?

3 A Are you referring to the production de-
4 cline curve?

5 Q Yes.

6 A I mean that type?

7 Q Due to the well being shut in.

8 A This curve here at the present time it-
9 self does not indicate that. Like I stated, due to the re-
10 servoir having in the initial early stages in its life, evi-
11 dently having the capability of pressure to overcome any da-
12 mage if it occurred.

13 When we referred to this other case, if
14 you examined the production decline curve on that, I have
15 indicated definite drop in production or change in the con-
16 figuration of the slopes. Now when you get that, if you get
17 a decrease below what you consider your normal decline, say
18 it would go at an angle like I used 10 degrees, 10 percent,
19 but if at some point in time all of a sudden it came down
20 and dropped down below what you considered normal and still
21 continued 10 percent, you're not going to get as far out and
22 recover as much gas at the lower slope as you would the
23 higher.

24 Q Right, so --

25 A So it's an indication, yes, of a loss in
reserves or producing.

Q Now you're referring to the well that was
the other case, in Case 8216 that you talked about --

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A Yes.

Q -- that showed this. How close is that well to this well?

A I'd say approximately, oh, it's about 20 miles to the -- 15 or 20 miles to the southeast. It's down in 25 of 9, I believe is the township and range, 25 of 9.

Q Would you say that the pressures in those two wells are similar?

A Similar, yes. The Basin Dakota in most parts, the formation pressure is very similar throughout the Basin, some variations.

Q Certainly approximately -- very close to one another.

A Yes.

Q Is the Basin Dakota formation sensitive to the production of water?

A The -- any formation. Now produced water is there, so produced water per se, if you have a lot of it, will decrease your initial reserves. Produced water, once it's removed, no, it won't hurt, but when you get into a condition in which you get away from normal flow from your higher pressure in your formation to the lower pressure, which is your wellbore, that's what creates trouble. Then those fluids move.

Now you try to reverse that flow and it's just like a Chinese finger graph. You're forcing that water in, you're forcing it in. Then when anything you put it in

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2 under pressure, other -- not like at flowing pressure but
3 you have to force it in, then it will expand or go into your
4 permeabilities and porosities.

5 During normal flow it will bypass because
6 it's -- everything's equal, but once you create a differen-
7 tial pressure across a barrier, your -- through your
8 permeability into your porosity, then you force it and you
create a blockage.

9 Q So what you're saying now, Mr. Walsh, is
10 that even though the production decline curves do not show a
11 loss of reserves as of yet, you are expecting that the loss
12 of reserves could result in the future if continued opera-
13 tion is -- in this manner is continued.

14 A If the well is shut in for an extended
15 period of time.

16 Q All right. Would you reiterate how many
17 times this well has been shut in over the last year?

18 A Well, there was one period of shut in in
19 the fall of 1982. Your years are at the bottom of that --

20 Q Right.

21 A -- decline curve. The other occurred in
22 the spring of 1983.

23 Q And these were shut-ins that had -- that
24 force Mr. Little to utilize nitrogen to bring them back on
25 production.

26 A I believe at that time the well, like I
said, had good enough pressure and built up sufficient pres-

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2 sure in the casing to unload any liquids and come on produc
3 tion.

4 The times that the nitrogen was used were
5 basically during production operations similar to -- well,
6 it logged off similar to the one that is mentioned in Mr.
7 Chavez' letter but they -- it would not create enough casing
8 pressure to unload itself so it had to use nitrogen.

8 Q Now the well has an inch and a half tub-
9 ing in it. I must have missed your testimony there where
10 you mentioned having -- let me ask you a question.

11 Have you put in smaller tubing or what
12 would be the reason why you would not put in smaller tubing
13 in that well?

14 A Smaller tubing would be completely inef-
15 ficient, any smaller than the tubing in there. The reason
16 why the smaller tubing over nominal 2-3/8ths or almost 2-
17 inch ID tubing is the only thing that lifts your fluid is
18 velocity. The velocity of your flowing medium to lift,
19 which is gas, and velocity is determined by volume and area.
20 This inch and a half tubing utilization is as determined
21 throughout -- well, use in the industry up there as a good
22 lifting size.

23 This well, you put 2-inch in it, well,
24 you're increasing the area with the same amount of flow
25 rate, decreasing your velocity, it probably wouldn't lift
the fluid.

So to go any smaller, then you're getting

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2 into restrictive friction pressure. In other words, you may
3 have to blow it all day long to do -- if you went to 3/4-
4 inch tubing, you may have to blow it all day long to do the
5 same thing you would do in one hour with this inch and a
6 half; just by virtue of the small diameter and flowing tub-
ing.

7 Like a garden -- well, the difference be-
8 tween a 3/8ths garden hose and 5/8ths garden hose, you can
9 get more water in a hurry.

10 Q Would -- would reducing the size of the
11 tubing not also reduce the amount of gas produced?

12 A It would affect the producing capacity of
13 the well due to the higher friction, yes.

14 Q Will using smaller tubing continually
15 take water off the formation?

16 A Not necessarily because you get into --
17 then you're fighting friction pressure, and you may not have
18 enough volume or horsepower down there to actually overcome
19 a friction pressure between -- it's a combination of fluid
20 and gas at that depth and bring it all the way to the
surface.

21 Q One last question here.

22 To date what expenditures have been spent
23 in bringing the well back on production?

24 A In my supplemental portion to the
25 application I prepared Item 3-D. I indicate from the
information I got from Mr. Little, some \$6-to-8000.

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2 Q That's the total cost for the year of
3 1984 or --

4 A No, this occurred basically in '83.

5 Q In '83.

6 A During -- yes. However, also continuing
7 into Section 3-B, I state due to decreasing reservoir
8 pressure it is estimated that the expenditure of \$5-to-
9 10,000 a year could possibly have to be made to maintain the
10 well in a producing condition, and that \$5-to-10,000 equates
11 into quite a bit of volume of gas that your economics are
12 not getting.

13 Q What do you base that \$5-or-10,000 on?

14 A If the well had -- was shut in, formation
15 damage occurred, less reservoir pressure, it would take more
16 frequently to unload with the nitrogen or unload it with
17 some means, would be more frequently than occurred before.

18 Q Right.

19 MR. QUINTANA: I have no
20 further questions of the witness.

21 Does anybody have further
22 questions of the witness?

23 If not, the witness may be
24 excused.

25 Is there anything further in
Case 8217?

MR. KENDRICK: Mr. Examiner, I
have a statement to make, if you please.

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2 MR. QUINTANA: You may proceed.

3 MR. KENDRICK: El Paso Natural
4 Gas Company neither concurs with nor objects to this appli-
5 cation.

6 El Paso recognizes that some
7 wells should definitely be recognized as hardship wells.

8 El Paso believes it must ex-
9 press to the New Mexico Oil Conservation Division that any
10 time a well is declared a hardship well, then the extra vol-
11 ume of gas that is taken from this well must be subtracted
12 from the total production from all other wells on our sys-
13 tem.

14 This increases the noncontrol-
15 lable gas taken into our system thereby reducing our flexi-
16 bility of pipeline operations to take ratably and to protect
17 correlative rights.

18 MR. CARR: Mr. Quintana, I have
19 a closing statement very briefly.

20 We agree, I think, with the
21 tone of El Paso's statement and feel that caution should be
22 exercised in granting hardship classification.

23 We do believe, however, for
24 this well the time for granting the hardship classification
25 is now. Reviewing the characteristics of the well and also
the information that Mr. Walsh has accumulated on the Bran-
non well, another Dakota well in the area, we are convinced
that if this well is shut in for an extended period of time,

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2 reservoir damage will result and reserves will be left in
3 the ground that otherwise could be produced, thereby causing
4 waste.

5 If we can't obtain a classifi-
6 cation at a time like this, we're left in the position where
7 we have to wait until damage to the reservoir has occurred,
8 come back to you at that time, and we will come back then
9 with what we're trying to avoid having already occurred.

10 MR. QUINTANA: Thank you, Mr.
11 Carr.

12 Any further statements in Case
13 8217?

14 If not, the Case 8217 will be
15 taken under advisement.

16 (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 Con-
servation Division was reported by me; that the said tran-
script 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 and correct transcript of the
hearing held at the hearing of case 8217
heard by me on Nov. 14 1984.

Silvestre P. Quintana Examiner
Oil Conservation Division