

CASE 4863: APPLICATION OF C & K
PETROLEUM FOR A NON-STANDARD GAS
PRORATION UNIT & UNORTHODOX LOC.

- ase Number

4863

Application
Transcripts.

Small Exhibits

ETC.

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
Wednesday, November 29, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of C & K Petroleum, Inc.
for an unorthodox well location,
Eddy County, New Mexico

Case No. 4863

BEFORE: Richard L. Stamets,
Examiner

TRANSCRIPT OF HEARING

1 MR. STAMETS: Call Case 4863 application of C & K
2 Petroleum, Inc. for an unorthodox well location, Eddy County,
3 New Mexico. Call for appearances.

4 MR. KELLAHIN: If the Examiner please, Jason
5 Kellahin, Kellahin and Fox, Santa Fe, appearing for the
6 applicant. We have one witness I'd like to have sworn.

7 MR. STAMETS: Are there other appearances in Case
8 4863?

9 MR. JENNINGS: James T. Jennings of Jennings, Christy
10 and Copple, appearing on behalf of Mountain States Petroleum
11 Corporation.

12 MR. STAMETS: Mr. Jennings, you have any witnesses?

13 MR. JENNINGS: Possibly I'll have Mr. K. C. Havenor.

14 EDWARD W. HOOPER

15 a Witness, having been first duly sworn according to law, upon
16 his oath, was examined and testified as follows:

17 DIRECT EXAMINATION

18 BY MR. KELLAHIN:

19 Q Would you state your name, please?

20 A Edward W. Hooper.

21 Q By whom are you employed and in what position, Mr. Hooper?

22 A C & K Petroleum, Incorporated, District Geologist, West
23 Texas District.

24 Q What does the West Texas District include?

25 A The Permian Basin, including the Southeastern part of

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1

New Mexico.

2

Q Does that include that portion of Eddy County that is the subject matter of this hearing?

3

4

A That is correct.

5

Q Mr. Hooper, have you ever testified before the Oil Conservation Commission?

6

7

A No, I have not.

8

Q For the benefit of the Commissioner, briefly outline your education and experience.

9

10

A I have a B.S. degree in geology from the University of

11

Southwestern Louisiana in Lafayette. I have approximately 12 years geological experience including the subject area we are talking about.

12

13

14

Q With whom did you have this experience and where for the most part?

15

16

A Well, most of my experience was with Southern Minerals Corporation. Also been employed by El Paso Natural Gas and General American Oil Company in Texas.

17

18

19

Q During that time you worked in Southeastern New Mexico as well as Western Texas?

20

21

A Correct. Made regional studies as well as detail studies of the Morrow formation.

22

23

MR. KALLAHAN: Are the witness's qualifications acceptable?

24

25

MR. STAMETS: They are.

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1 Q (By Mr. Keilahn) Are you familiar with the application of
2 C & K Petroleum Incorporated in Case 4863?
3 A Yes, I am.
4 Q Briefly what is the applicant's proposal in this case?
5 A We are applying for an unorthodox location at one or two
6 locations either 660 from the south and west line of said
7 Section 18, Township 18 south, 26 east or a location at 660
8 from the west line and 990 from the south line of 18 south
9 26 east.
10 Q Now, referring to what has been Marked as the applicant's
11 Exhibit #1, would you identify that Exhibit please?
12 A That is a structural map on top of the Chester shale.
13 Q Is structure important to the producing formation
14 involved in this case?
15 A It is my contention that the accumulation of gas at
16 Atoka West Morrow Field is primarily stratigraphic.
17 Q So the structure is really not of great significance?
18 A Correct.
19 Q But does the Exhibit indicate, and do you believe that the
20 producing formation underlies all of the unit which you
21 propose to dedicate to your well?
22 A I think it does.
23 Q Now, referring to what has been marked as Exhibit #2,
24 would you identify that Exhibit?
25 A That is an Isopachous map of the "C" sandstone of what we

1 consider the main producing sand in the Atoka West Morrow
2 Field.

3 Q Does that show the structure to which you are referring to
4 in extent?

5 A It shows the configuration of the main producing sand as I
6 interpret it.

7 Q What is the significance of this Exhibit, Mr. Hooper?

8 A I think the significance of it is that it reveals a
9 channel sandstone that extends in the north-south
10 direction.

11 Q Is that of importance to wells producing in the Atoka West
12 Morrow Field?

13 A Yes, I think it is definitely important.

14 Q Do you have any examples of that shown on this Exhibit?

15 I have reference to Section 25, for example.

16 A Oh, right. Where the Fasken #1 Yates-Hornbaker was drilled.
17 A subsequent side-tracked hole of that well 300 feet to the
18 east and I think approximately 80 feet south went from 44
19 feet of sand development to 160 feet of sand development to
20 me clearly indicated the presence of a channel sand in
21 relationship to the bar-type sand at the Atoka-Penn Field
22 production from --

23 Q Now, you testified that the south half of Section 18 you
24 proposed to dedicate to the well is underlain by the
25 producing sand and the morrow. In your opinion, is all of

1 the acreage productive of gas from the Atoka West Morrow
2 pool?

3 A Let's see, would you --

4 Q In your opinion, is all of the south half of Section 18
5 productive from the Atoka West Morrow Field?

6 A I would think there is a good chance it could be.

7 Q But you feel you'd have a better well at this proposed
8 location?

9 A I think in light of what we've seen to the south of us, a
10 more western location in Section 18 would be a more
11 favorable, would have a more favorable chance of hitting
12 the channel that has been indicated to the south of us in
13 the producing, the Fasken Brown Yates Well in Section
14 24 and the Mountain States Well in Section 18.

15 Q Now, referring to Exhibit 3, the cross section on the
16 board, would you discuss the information shown on that
17 Exhibit?

18 A This is a stratigraphic cross section utilizing electric
19 logs and it's hung on the top of the Morrow formation.
20 What I depicted here is the channel saying that as I
21 interpreted it has been penetrated in the Fasken Brown
22 Yates Well and also the Mountain States Well in the fact
23 that you go into, the levy faces into the east for the
24 Fundamental Thorp-Sear Well and over here into the David
25 Fasken and Pennzoil Wells in Section 13.

1 The productive zones are indicated to the wells in question
2 here. In the Fasken Well, Mountain States Well, there is
3 a lower sand unit which I labeled the "D" sand. That is
4 perforated in the Mountain States Well. I have
5 correlated that over into the fundamental well, and I
6 think two D.S.T.'s across that interval yielded gas on
7 the drill-stem test. They did show some permeability
8 restrictions; but the time that was allowed between the
9 tests did show that the formation seemed to recharge
10 itself and that the first test was 1,300,000 and the
11 second test, when they opened it, was 1,180,000.

12 Q Did they attempt to complete that well?

13 A There was no completion attempt. There was no D.S.T.
14 across what I consider the equivalent sandstone of what
15 is the channel producing zone, channel sandstone in the
16 Mountain States Well. Now, whether that zone would be
17 productive or not, I cannot say. It's questionable.

18 Q According to your interpretation, it could be productive
19 in that well, is that correct?

20 A It is a possibility.

21 Q Was it a fact that that well was drilled and condemned
22 the eastern portion of the south half of Section 18?

23 A I would think in light of the "D" sand that was produced
24 in the Mountain States Well and the subsequent testing of
25 gas on two drill-stem tests, I don't think we can say that

1 the eastern portion of Section 18 is definitely dry.

2 Q Do you have anything to add in connection with that
3 Exhibit, Mr. Hooper?

4 A No, except that to elaborate just a little bit on the
5 Exhibit, the Isopachous map, I think the productivity of
6 the two wells in question, the Fasken Brown Yates Well and
7 the Mountain States Wells here definitely show them to be
8 associated with the clean or the channel sandstone as
9 opposed to the poor productive history of the Fasken Well
10 and the Pennzoil Well in 13 which I consider to be in the
11 levy phases of the channel.

12 Q Does that complete your testimony of Exhibit 3?

13 A Unless there are other questions.

14 Q Mr. Hooper, are you familiar with the standard spacing
15 required in this pool?

16 A Right, 320.

17 Q That's 320 acres, but the well location I'm talking about.

18 A You are talking about as to whether it constitutes a
19 standard location?

20 Q Yes.

21 A It's 98 from the west line and 660 from the south line.

22 Q So the location you are proposing, is it any closer to
23 the Mountain States Well in Section 19?

24 A It would still be 660 from the south line and probably
25 measured distances, it would probably be a little bit

1 farther away.

2 Q Now, is the geological interpretation the only reason for
3 locating the well as you propose here?

4 A No, a topographic map of the same 320-acre unit that we
5 are speaking of will show --

6 Q Exhibit #4?

7 A --show the outline of the cultivated irrigated field in
8 the area.

9 Q Would you go ahead and discuss the Exhibit, please?

10 A We show the standard location 1980 from the west line and
11 660 from the south line to be in a maize field and
12 approximately 4 feet from an underground irrigation
13 pipeline.

14 Q Now, did you have any objection from the landowner at the
15 time you --

16 A Correct. He would rather see us move the location to the
17 west side of the 320 over in the pasture area.

18 Q Do you remember who the landowner is?

19 A Mr. T.E. Vandiver.

20 Q And he did object to the standard location you originally
21 proposed to drill?

22 A He did object, and we have a letter to that effect.

23 Q Now, do you have anything to add to your testimony, Mr.
24 Hooper?

25 A No, not at this point.

1 Q Were Exhibits 1, 2, and 3 prepared by you and under your
2 supervision?

3 A Yes.

4 Q And Exhibit 4 is a copy of a topographic map prepared by
5 John West of John West Engineering Company, Hobbs, New
6 Mexico?

7 A Yes.

8 Q Have you been on the land, and do you feel that that
9 correctly reflects the situation?

10 A It does. We had a company representative on the ground to
11 look at this.

12 MR. KALLAHAN: At this time, I'd like to offer into
13 evidence Exhibits 1 through 4 inclusive.

14 MR. STAMETS: Without objection, Applicant's Exhibits
15 1 through 4 will be admitted into evidence.

16 MR. KALLAHAN: If the Commissioner please, we have a
17 letter here from Mr. T. E. Vandiver directed to Mr. A. L.
18 Porter, Jr. in connection with this case. We'd like to have it
19 incorporated in the record.

20 MR. STAMETS: The letter does support the application
21 and reiterates what has been testified to. Unless somebody
22 wants it read into the record, I'll just incorporate it into
23 the record. So that completes your --

24 MR. KALLAHAN: That completes the cross examination.

25 MR. STAMETS: Are there questions of the witness,

1 Mr. Jennings?

2 MR. JENNINGS: Yes.

3 CROSS EXAMINATION

4 BY MR. JENNINGS:

5 Q Mr. Hooper, first referring to your Exhibit #4 which is a
6 topographic map of the top half of Section 18.

7 A Right.

8 Q Is there any reason that the well could not be located at
9 a standard location if the east half of Section 18 was
10 dedicated to the well?

11 A The east half of Section 18?

12 Q Yes, sir.

13 A I think I represented in the geological presentation that
14 the possibility if we were to dedicate the east half of
15 18 that we would get a --

16 MR. STAMETS: I think Mr. Jennings must mean the west
17 half.

18 MR. JENNINGS: The west half, I'm sorry.

19 A (By Mr. Hooper) Well, it's still my contention in light
20 of what we've seen down in the south that the Fasken Well
21 and the side-tracked hole that the possibility of fighting
22 the channel becomes greater as we move north to a standard
23 location that you suggested, 1980 from the south and 660
24 from the west. From the geological standpoint I would
25 have to recommend the location out of the southwest corner

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- 1 of Section 18.
- 2 Q From a strictly surface section that appears that the part
- 3 of the west half there is pasture land, is it not?
- 4 A Correct.
- 5 Q It would not interfere with the farm operation?
- 6 A No, it appears that it wouldn't.
- 7 Q Does Mr. Vandiver as you referred to him own the southeast
- 8 quarter of Section 18?
- 9 A In his letter there he says the south half of Section 18,
- 10 so I assume that he has all of this on the lease.
- 11 Q Do you have a lease on the northwest quarter of Section 18?
- 12 A We have on the lease by a farm out all of the northwest
- 13 quarter except the north half which is shown on the
- 14 Exhibits as belonging to Arco Etal.
- 15 Q What portion of it do you have under farm out, roughly?
- 16 A It would be approximately the south half of the northwest
- 17 quarter of Section 18.
- 18 Q Have you attempted to get that?
- 19 A Attempted to get what?
- 20 Q The lease on that remaining portion of the northwest
- 21 quarter of Section 18?
- 22 A Yes, but it was already obtained by American Trading, and
- 23 I don't know whether Yates has, American Trading bought
- 24 out Arco's portion of that lease.
- 25 Q Is there any other reason that you cannot drill in a

1 standard location in the south half of Section 18?

2 A Other than I have cited for the topographic reasons and
3 more so the geological reasons, I would say, no.

4 Q Did you say there was a well or an underground pipeline
5 that was in the well?

6 A At the standard location 1980 from the west and 660 from
7 the south, the proposed location falls approximately 4
8 feet north of the underground irrigation line that Mr.
9 Vandiver has in there.

10 Q How big a line is that? Do you have any idea?

11 A No, I don't. We initially advertised for a 990 from the
12 south and west corner of Section 18, but that fell
13 approximately 64 feet north, northeast of one of Mr.
14 Vandiver's irrigation wells, which is a butane well. He
15 also has two irrigation wells that are supplied with
16 electricity, and that's the one that we had the letter
17 stating that he would prefer that we not drill that
18 location.

19 Q It is possible to drill either location, though, is it
20 not?

21 A The locations that we are trying for?

22 Q No, for the standard location. It is possible to drill
23 them or make a slight deviation of 30, 40, 50 feet?

24 A Right, but that still is not compatible with our
25 geological presentation.

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- 1 Q What effect, if any, in your opinion will your well
- 2 located 660 from the south and 660 from the west line of
- 3 Section 18 have on the Mountain States Well located in
- 4 the west half of Section 19?
- 5 A I don't quite understand your question. What do you mean
- 6 what--
- 7 Q Well, do you feel that in any way it would drain part of
- 8 the north half of the northwest quarter of Section 19?
- 9 A Well, no more than I can say that the Mountain States Well
- 10 is draining a portion of the east half of Section 19. I
- 11 don't think I can state unequivocally that it would or
- 12 would not be draining.
- 13 Q You can't equivocally say they would not be draining?
- 14 A Right, either way.
- 15 Q Now, in connection with the Fundamental Thorp-Sear Well,
- 16 that is located I believe 990 from the south and 990 from
- 17 the east line of Section 18.
- 18 A Correct.
- 19 Q That tested the formation which your well has rejected?
- 20 A It tested a portion of the Morrow formation. On one of
- 21 our Exhibits the drill-stem test intervals are clearly
- 22 indicated.
- 23 Q No attempt was made to complete the well?
- 24 A No attempt was made.
- 25 Q Why didn't you re-enter that well instead of selecting the

1 location of the southwest quarter?

2 A Well, it's my opinion that the well would be a marginal
3 producer in a sense comparable to what we have in Section
4 13, the two producing wells in Section 13, the Pennzoil
5 Vandiver and the Fasken Well in the southeast quarter of
6 Section 13.

7 Q What's the nature of the production from those wells?

8 A The last production history I have on those is approximately
9 2.5 to 3 million cubic feet of gas per Morrow, roughly a
10 hundred thousand cubic feet of gas per day of which the
11 fundamental Thorp Sear indicated in excess of that amount
12 of gas on drill-stem tests. So if those two wells are
13 commercial, then I'd have to say the Fundamental Sears Well
14 is commercial.

15 Q And is it your testimony that this formation, as it exists,
16 underlies the whole south half and would be productive from
17 all of the south half of Section 19 or of 18?

18 A I would say so in light of the drill-stem tests conducted
19 in the Fundamental Sear. We do have some direct evidence
20 that the well has yielded gas.

21 Q Do you feel that the proposed well at your unorthodox
22 location should be granted a full allowable or should be
23 cut down by reason of the fact that it appears that there
24 is a dry hole in the remaining --

25 A Well, it's my contention that it's not a dry hole.

1 Q You are familiar with the completion of the well and all
2 the tests that were made on it as shown by the records?

3 A Correct. I had the drill-stem test charts here to offer
4 into evidence if need be.

5 Q Do you definitely feel that the drill-stem test that you
6 have that was made on this well was in the same sand that--

7 A Well, now, we are getting into something I don't think I
8 can define as a black and white situation. I think there
9 is going to be a hell of a gray area in there and it's an
10 interpreted thing, and I've consulted with two other
11 Consulting Geologists in Midland, Texas, and asked them
12 to correlate the particular logs in question, one of which
13 has a somewhat different interpretation than mine and one
14 of which agrees with my interpretation.

15 Q Do you attach any significance to the apparent decrease in
16 pressure that was encountered from the original test to
17 the --

18 A Right. I already mentioned that there was some
19 permeability restriction indicated by draw-down
20 impression, but also the fact that the well did recharge
21 itself by the time the drill-stem test #4 was conducted
22 and made in excess of 1,000,000 cubic feet of gas on DST
23 and drew down to 157,000 cubic feet of gas which is better
24 than the two wells producing in Section 13 on the Atoka
25 West Morrow Field.

1 Q Do you feel the two wells that are producing in Section 13
2 are commercial wells?

3 A Not by my company's standards. They might not be
4 considered, but with the present Commission and the gas
5 prices as such, I don't know how you can determine that.

6 Q Your company certainly wouldn't propose to drill this well
7 if they thought they were going to get a well like either
8 one of those, would they?

9 A Correct. That's why I suggested drilling 660 out of the
10 south and west. It's my opinion that that is the optimum
11 location for penetrating the channel sandstone trends
12 north-south through the area.

13 MR. JENNINGS: That's all.

14 CROSS EXAMINATION

15 BY MR. STAMETS:

16 Q Mr. Hooper?

17 A Yes, sir.

18 Q What are the formational limits on the West Atoka pool?

19 A I don't quite understand the question. What do you mean
20 the formational limits?

21 Q What are the vertical limits? What pay are you allowed to
22 complete in the West Atoka pool?

23 A What pay are you allowed to complete in?

24 Q Right.

25 A I think any sand producing zone within the Morrow that

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1 indicates productivity on the drill-stem test.

2 Q So it's the entire Morrow formation; and if you drill this

3 well and encounter production in any Morrow sands, you

4 can complete on that?

5 A That's the reason I labelled in the cross section Sands

6 "A", "B", "C" and "D", because all of which are in one

7 well or another have been perforated.

8 Q So the drill-stem test on the Fundamental well indicates

9 that there is production from the Morrow formation.

10 Essentially this is a diagonal offset to a well completed

11 in the West Atoka Morrow Pool?

12 A Correct.

13 Q The location you have proposed here is a better location

14 stratigraphically than the standard location in the south

15 half of the section?

16 A It is my opinion in evaluating this area. That's my

17 contention that our chances are more favorable at the

18 proposed location than they would be at a standard

19 location.

20 Q What about drainage of offset operators, now, from this

21 location? Would this well be more apt to drain gas from

22 offsets than at a standard location?

23 A That would be difficult to say, because I don't know the

24 exact configuration of the channel sandstone as it trends

25 through the area; and I think it is indicated down in

1 Section 25 by the Fasken initial well and in the offset
2 side-tracked hole that this would be pretty hard to
3 predict what you are actually draining.

4 Q Assuming that you have drawn your Isopachous map
5 correctly here, would you be draining the offset wells
6 more at this location than at a standard location?

7 A I don't think I can say one way or the other.

8 Q I think you have already discussed the capacity of the two
9 wells in 13. I'd kind of like to have that again.

10 A Okay. Well, I have a production record here that I could
11 quote some production figures on those particular wells
12 in relationship to the -- I'll quote the production
13 figures as reported by the New Mexico Oil Commission. In
14 July of this year, the David Fasken Well made 276,280,000
15 cubic feet of gas. Mountain States made 130,337,000 cubic
16 feet of gas.

17 Q Now, which Fasken Well was that that made 276 million?

18 A That is the well that's in the southeast quarter of
19 Section 24.

20 Q Okay.

21 A The Mountain States Well made 130,337,000.

22 Q Okay.

23 A The Pennzoil Federal in the northeast quarter of Section
24 13 for July made 3,183,000 cubic feet of gas, Pennzoil #1
25 Vandiver, which is the southeast quarter of Section 13.

1 Q Now, wait a minute. That doesn't sound right. Pennzoil
2 is in the northwest.

3 A That's the way it's carried on the books, but that is the
4 Fasken #1 Vandiver in the southeast quarter of Section 13.

5 Q Now, that's the one you are just getting ready to give me.

6 A That well made 2,506,000 cubic feet a day or less than
7 100,000 per month.

8 MR. KELLAHIN: 2,000,000 per month. Would you give
9 that production again?

10 A (By Mr. Hooper) I've got the southeast well as 2 1/2
11 million and the northwest half of 13 at 3 million. That's
12 per month. Well, let me reiterate that for you. Pennzoil
13 1 of Federal which is in the northwest quarter of Section
14 13 for July made 3,183,000 cubic feet of gas; and the well
15 in the southeast quarter of Section 13 which is the Fasken
16 #1 Vandiver, is that the wrong name on that? My map shows-

17 Q You've got a Pennzoil 13 Federal here for the Fasken Oil.

18 A The #1 13.

19 MR. JENNINGS: That's a David Fasken #1 13 Federal.

20 A (By Mr. Hooper) Okay, then, somehow it's wrong in here.
21 The well is the same well we are speaking of. It's located
22 in the southwest of the southeast quarter of Section 13.

23 Q These two wells in 13 then are not barnburners?

24 A I would have to say, no.

25 Q As such, the drainage that you would have from them should

1 not really be too significant?

2 A I would say it will be nil.

3 Q Actually, you might achieve a little bit better drainage
4 of the reservoir through the completion of that well?

5 A Correct.

6 Q Now, as far as the Mountain States Well to the south at a
7 standard location in the south half, could you not be
8 somewhat closer to that well? For instance, if you
9 located 1980 feet from the west line and 660 from the
10 south line?

11 A You mean closer to the Mountain States Well in regard to
12 draining the reservoir? Well, that is what I would
13 contend that our proposed location would be farther away
14 from them and would stand less chance of draining them.

15 Q Actually, the best well that you would be getting somewhat
16 closer to would be the Fasken Well to the east half of
17 Section 24 which looks to be 3/4 of a mile to the south
18 and west.

19 A Correct. We are just primarily interested in getting into
20 there for the channel sandstone that is indicated in the
21 area in that providing the main reservoir of the Atoka
22 West Field.

23 Q The penalty has been discussed. I believe Mr. Jennings
24 brought it up. A penalty might be in line for this
25 non-standard location due to the advantage gained over

1 offset operators because of location. This is a
2 possibility. Would you anticipate at some point where
3 there would be a complication if you had a fifteen per
4 cent penalty? Would that seriously affect the commission
5 of the well?

6 A Well, it would. I think it's all going to depend on how
7 good a well we make. Fifteen per cent on a well like the
8 Fasken Brown Yates I'd say, no. Fifteen per cent on the
9 Pennzoil Vandiver in 13 would kill it.

10 Q This good section has been referred to as a channel with
11 levies. Could you expand on that just a little bit for
12 my own information?

13 A How do you mean expand on it?

14 Q Tell me about that channel, the channel that is later
15 filled with sand or is the channel filled at the time
16 the sand is laid down?

17 A I think there is a later channel that is cut across. It's
18 part of a delta-like completion here that perhaps just one
19 of the district tributaries that cut across the old strand
20 like the Atoka Penn field has been demonstrated to be a
21 definite strand-like sand with the buildup being in an
22 upward direction. Whereas, this channel sand is in a down-
23 cutting fashion and at the top of the sand itself would be
24 essentially flat; but you'd see a thickening
25 beginning downward as evidenced by the Fasken well that

1 was drilled encountered 44 feet of sand and then was
2 side-tracked only 3 feet away encountered a 160 feet.
3 I've been told perhaps this is the thickest channel
4 sandstone that has been penetrated in all of Southern
5 New Mexico, that being definitely demonstrated to be a
6 channel that close where you have that close of well
7 control.

8 MR. STAMETS: Are there any other questions of the
9 witness?

10 MR. JENNINGS: One question.

11 RECROSS EXAMINATION

12 BY MR. JENNINGS:

13 Q What is your feeling as far as prorating the gas
14 production from this field?

15 A I don't know what end it would serve to prorate the
16 field. I haven't heard any reasons given to what is the
17 advantage of prorating the field.

18 Q If you are to be penalized and there isn't any proration,
19 how could the penalty be effected?

20 A Why couldn't it be served on the basis of the calculated
21 absolute open flow?

22 Q Don't you feel that you would be getting more than your
23 fair share of the production in that event?

24 A Why so?

25 Q Well, you have 160 acres. Say there is 240 acres that is

1 good and the rest is not good.

2 A Well, see, I could pose the same question to you on the
3 Mountain States Well. Who is to say that all 320 acres
4 there that are dedicated to that well are gas bearing?
5 I would venture to say that perhaps an east offset to that
6 well would probably, would have a good chance in light of
7 what is happening with the Yates #2 Kinkaid going into a
8 shale sequence just north of that thick sand that was
9 penetrated just south of them. I understand that well is
10 presently being sidetracked to try to find the channel.

11 There you have some straight-edge geology between the
12 Fasken Yates-Hornbaker and the Fasken Brown Yates well,
13 both of which exhibited excellent channel sandstone
14 development. Yet the Kinkaid hit a hail bank. So I don't
15 think I'm smart enough to say whether productive limits
16 of the channel sand and its levy component which are
17 also indicating gas and the wells up in 13 indicate now
18 where they are connected with the channel areas. I would
19 have to vote against it because of the productivity of
20 the wells is rather low.

21 MR. JENNINGS: That's all.

22 MR. STAMETS: Any other questions of the witness? He
23 may be excused. Mr. Kallahan, do you have anything further?

24 MR. KALLAHAN: I have nothing further at all.

25 MR. STAMETS: Mr. Jennings?

1 MR. JENNINGS: I would like to call Mr. Havenor.
2
3 MR. HAVENOR
4 a Witness, having been first duly sworn according to law, upon
5 his oath, was examined and testified as follows:
6
7 MR. STAMETS: Mr. Jennings, you may proceed.
8
9 DIRECT EXAMINATION
10
11 BY MR. JENNINGS:
12 Q Would you state your name and occupation, please, sir?
13 A My name is K. C. Havenor. I'm a Geologist for Mountain
14 States Petroleum Corporation.
15 Q How long have you been so employed, Mr. Havenor?
16 A Since Mountain States Petroleum Corporation was formed
17 three years ago.
18 Q What is your educational training?
19 A I have a Masters of Science degree in geology.
20 Q Have you appeared on many occasions and testified before
21 this Commissioner?
22 A Yes, I have.
23
24 MR. STAMETS: The witness is qualified.
25 Q (By Mr. Jennings) Mr. Havenor, referring to what has been
marked as Exhibit #1 which is the only Exhibit we have
offered, would you locate your well and the proposed C & K
well?
A The Mountain States Petroleum Corporation #1 McCaw Gas Com
is located 1650 feet from the north line and from the west

1 line of Section 19, 18 south, 26 east.

2 Q That's a standard location?

3 A It is a standard location. The C & K Petroleum Company
4 location was proposed at the indicated proposed location
5 in Section 18; and as I understand, they also had an
6 alternate 990 from the south, which would be 330 feet
7 north of the indicated location.

8 Q Referring to that map, there is a well located marked as
9 a #7 Fundamental Oil Corporation Thorp-Sear Com Well.

10 A That's the Fundamental #1 Thorp Well.

11 Q Are you familiar with the drill-stem test and other
12 completion attempts in connection with this well?

13 A I'm familiar with the well on the basis of electric logs,
14 sample logs and on the basis of a reported drill-stem test
15 only.

16 Q You have heard the witness's testimony concerning the
17 pressures, and that it is his feelings that possibly this
18 was not a dry hole. Do you share this feeling?

19 A No, sir. I do not. I concur with Fundamental's opinion,
20 had it been our own well I believe we also would have
21 plugged the well as a non-commercial well. The reason
22 behind this, our reason would have been simply that the
23 thickness of the sand which is actually a "B" sand that
24 they drill-stem tested, and our idea from the previous
25 witness is slightly different. The sand I refer to is "B"

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1 sand which is typically called the producing zone of
2 the Atoka Morrow Field. That sand was approximately 17
3 feet thick, and they ran a drill-stem test which had an
4 initial shut-in pressure of slightly over 3,000 pounds and
5 a final shut-in pressure of approximately 2,470 pounds.
6 That was after the flow.

7 "We would be of the opinion that the Fundamental well
8 demonstrated a very marginal reservoir at best and that
9 it would not be commercial. They indicated 550 plus or
10 minus pounds draw-down would certainly indicate the
11 reservoir was not competent to sustain production,
12 not competent for sustained production. I think it's also
13 of interest in this particular case that we can demonstrate
14 that there is a difference between the sands and that the
15 sands are not intercommunicated as was indicated to the
16 previous cross section. I believe that was the Applicant's
17 Exhibit 3. The cross section indicated the sand in the
18 Fundamental well which was drill-stem tested was connected
19 through devious methods as channel sands frequently are
20 and would in fact also be taped by a location at the
21 Applicant's proposed location.

22 It should be noted that the original pressures in the
23 West Atoka Penn Field are on the order of 3,600 pounds.
24 Whereas, in the Fundamental well itself, just a little over
25 3,000 pounds, approximately 3,043 pounds. The Fundamental

1 well was drilled before any of the producing wells, excuse
2 me, I'll qualify that. They were drilled before any of
3 the thicker sand wells that produced significant volumes
4 of gas. I don't know if the Fundamental well was drilled
5 prior to the Pennzoil United #1 Vandiver which is a
6 question of the commercial well.

7 The point of this is that there is a marked pressure
8 differential between the two sands, which clearly to us
9 indicates a separation of the two sands. The draw-down
10 on the drill-stem test would suggest that the Fundamental
11 well is more closely associated with the production of the
12 "B" sand, the main producing sand of the Atoka Penn field
13 rather than from this separate field which lies to the west
14 of the Atoka Penn field.

15 Q Mr. Havenor, do you feel that this reservoir covers the
16 entire south half of Section 18?

17 A No, sir, I do not. I don't believe that either the "B"
18 sand or the "C" sand cover all of the south half of
19 Section 18. As we have indicated in our Exhibit 1 which
20 is an Isopach of the "A" sand and again this is different
21 from the previous Exhibit, but the "A" sand as it has
22 previously been called before the Commission in the West
23 Atoka field appears to us to lie primarily equally
24 divided between the east half of Section 24 and the west
25

1 half of Section 29 as far as its productive capacity,
2 capabilities are concerned.

3 The previous testimony brought out the point that in
4 the east half of Section 25 a thick sand has developed.
5 However, in the lowermost or the southernmost well, the
6 Fasken Yates-Hornbaker, this well tested water in the
7 formation and would not be considered productive at
8 least in the lower portion of that half section.

9 MR. STAMETS: Mr. Havenor, would you take the
10 Applicant's Exhibit #3 here and with a red felt tip pen on the
11 Mountain State's well mark the letter "A" and "C" with the
12 sands as you referred to them?

13 MR. HAVENOR: As we referred to them? Yes, sir.

14 A (By Mr. Havenor) Our "A" sand is comparable to the
15 Exhibits' "C" sand and the "B" sand is comparable to the
16 "D" in the two wells noted, the Mountain States #1 McCaw
17 and in the David Fasken #1 Yates Brown, Brown Yates,
18 excuse me.

19 Q In your opinion, Mr. Havenor, how much of the south half
20 of Section 18 is underlain by the reservoir?

21 A Very small part. It would appear the way that we have
22 interpreted the position of the sand that it would be
23 roughly comparable to the section encountered in the David
24 Fasken #1 Pennzoil 13 Federal in the southeast quarter of
25 Section 13 or in the Reading & Bates #1 Linck located in

1 the southwest quarter of Section 24. The latter well
2 was a dry hole which drill-stem tested a very small
3 amount of gas and had a large pressure drop and was
4 clipped and abandoned.

5 Q In your opinion would the proposed location be draining
6 your acreage in Section 19?

7 A Yes, sir.

8 Q In your opinion would the standard location dedicated to
9 the west half of Section 18 be productive?

10 A Again, I believe there is a possibility that they might
11 have a well comparable to the Pennzoil #1 Vandiver.

12 Q Do you agree with the interpretation placed by Mr. Hooper
13 on his Exhibit #2 which is relative to the channeling and
14 which I think he explained to the Examiner's satisfaction
15 but not to mine?

16 A Perhaps in principle, yes, I would agree. As to the specific
17 location of the lines on it, I think I would have to
18 disagree.

19 Q Do you feel that this location will impair the correlative
20 rights of Mountain States Petroleum?

21 A Yes, sir.

22 Q Do you have anything else to offer in this connection at
23 this time?

24 A No, sir.

25 MR. STAMETS: Are there questions of this witness?

CROSS EXAMINATION

1
2 BY MR. KELLAHIN:

3 Q Mr. Havenor, just so I understand what we are talking about,
4 did you say what you referred to as the "A" sand is the
5 same thing as Mr. Hooper referred to as "B" sand?

6 A On his cross section as indicated in the Fasken Yates Brown
7 Well and in the McCaw Well. In the two wells of the West
8 Atoka Penn Field.

9 Q You showed 41 feet of pay for the David Fasken Yates -
10 Hornbaker well in Section 25. Did you give any consideration
11 to the fact that well was deviated and encountered 160 feet?

12 A Yes, sir.

13 Q You don't show it on your Exhibit, though.

14 A I did not have the information available. The information
15 was not made available to me.

16 Q So your Exhibit is not up to date, then?

17 A Only in the sense of availability of information, sir, as
18 is the information on the Kinkaid Well which is currently
19 being drilled as a tight hole.

20 Q Now, you testified that you would plug the Fundamental Well
21 as non-commercial, and it was plugged as a non-commercial
22 well I assume. That doesn't necessarily indicate it is
23 not productive from the Morrow, does it?

24 A Well, first, sir, I think we need to restrict the usage of
25 the term "Morrow" here. I would say it is not productive

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- 1 from the "A" sand of the Morrow which is the primary
2 producing zone in the West Atoka Field.
- 3 Q Do you know what the pool delineation of the West Atoka
4 Morrow Field is?
- 5 A The pool delineation?
- 6 Q Yes, sir, vertical.
- 7 A Is the Morrow Formation.
- 8 Q That includes all the sands regardless?
- 9 A Yes, sir.
- 10 Q So you can open any of them?
- 11 A Any that are prepared for commercial production, yes, sir.
- 12 Q Now, could you answer my question? You said that it is
13 not commercial, the Fundamental well was not commercial.
14 That doesn't necessarily indicate it was not productive
15 from the Morrow.
- 16 A I don't recognize the distinction between productive and
17 commercial.
- 18 Q You don't?
- 19 A No, sir. You don't produce a well unless it's commercial.
- 20 Q Is there gas presently in the Morrow in the Fundamental
21 Well or was there? You agree there was, don't you?
- 22 A Yes, sir. There was undoubtedly gas present in the hole.
- 23 Q And a well in the vicinity would undoubtedly drain that?
- 24 A From the Fundamental well?
- 25 Q Yes, sir.

- 1 A I'd have to know how far you are talking about.
- 2 Q You name the distance. Can you tell me how far it will
- 3 drain?
- 4 A 3 or 4 feet perhaps. You have a question of permeability
- 5 when you start getting more than 10 feet away from the
- 6 bore hole.
- 7 Q If you are talking about that, how can you account for the
- 8 high production to the initial test?
- 9 A The high production to the initial test was undoubtedly
- 10 glass charged in the interest of the bore hole. This is
- 11 why the well, this is why the pressures on the final
- 12 shut-in pressure of the test showed such a drastic drop.
- 13 Q Did they take a build-up test on it?
- 14 A They reported a 4-hour build-up test after the end of their
- 15 flow. That is correct.
- 16 Q What did it build to?
- 17 A Up to approximately 550 pounds, less than the initial
- 18 pressure which was approximately 3,050 plus or minus.
- 19 Q So there was some permeability making the gas available,
- 20 was there not?
- 21 A There is never a complete lack of permeability.
- 22 Q Do you consider the Pennzoil Well in the north half of 13
- 23 and the Fasken Well in the south half of 13 as
- 24 non-commercial?
- 25 A We consider it under the present production from the

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1 Pennzoil #1 Vandiver which is currently producing
2 approximately 90,000 cubic feet per day, we consider that
3 this would be a non-commercial objective for an 8,800 to
4 8,900 foot well, yes, to drill this well.

5 Q Having been drilled, it's being produced, is it not?

6 A Yes, it is being produced.

7 MR. KALLAHAN: That's all I have.

8 CROSS EXAMINATION

9 BY MR. STAMETS:

10 Q Mr. Havenor, I believe you stated that the pressure in the
11 Fundamental Well was substantially lower than the West
12 Atoka pressure.

13 A Yes, sir.

14 Q When that well was drilled? If I remember right, the
15 Fundamental Well was drilled before the West Atoka was
16 discovered; is that right?

17 A Yes, sir. That is correct.

18 Q However, this 3,050 pounds, wasn't that somewhat lower than
19 the Atoka Penn pool to the east at the time?

20 A Yes, sir, but I think that there is good reason for it to
21 be. As you well know, there is a rather imperfect
22 permeability connection even in the best wells. That's
23 why we have the few pounds variation, for example, that we
24 see between the McCaw Well and the Brown Yates Well in the
25 east half of 24. The Irene Brainard Well, the Read and

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1 Stevens Irene Brainard Well, for example, which is located
2 in the unmarked section directly east of Section 19 was a
3 well, which, when drilled, encountered formation pressures
4 substantially below virgin pressures but substantially
5 higher than producing well at shut-in pressures. But
6 after a very short period of producing that well, the
7 bottom-hole pressures were equal to or very closely equal
8 to the rest of the field. This is a rather typical thing
9 that it just takes just a little bit of drainage to equal
10 itself to the more charged area, and had this well been
11 allowed to have flowed or had been left open long enough,
12 it would undoubtedly have dropped down to a common
13 reservoir pressure as at that time shown in the sand.

14 Q Is it possible that the Fundamental Well in 18 is not
15 connected to the Atoka Pennsylvanian Pool? Is it likely
16 it is not connected?

17 A I don't think that it's likely. There is always that
18 possibility.

19 Q You indicated that you would expect the Applicant to get
20 a well about the quality of the Vandiver Well if they go
21 ahead and drill in the southwest quarter; is that right?

22 A Yes, sir. That's approximately right. No, sir. Mr.
23 Jennings asked if at a location for a west half dedication
24 which would be 1980 from the south and 660 from the west.
25 I said at that point I thought that perhaps a well

1 comparable to the Vandiver would be about what I would
2 expect.

3 Q What about at the proposed location?

4 A One comparable to the Fasken Pennzoil 13, which again is
5 not too great a well. It's currently producing about
6 300,000 a day.

7 Q What about at a standard location in the south half, say,
8 1660 to the south, 1980 to the west?

9 A Well, of course, we could have no objection to a location
10 at that point. I don't think that we would ourselves be
11 interested in drilling the location at that point. That's
12 all I can say.

13 Q You feel like the quality of the well would be substantially
14 different between the proposed location and location 60
15 from the south?

16 A No, sir. I don't. I think they'd be essentially the same.

17 Q So we are not talking here at least in your terms about a
18 question of appreciably significantly more drainage at the
19 proposed location?

20 A No, sir. I don't think that is exactly right, because I
21 think we also have to realize that we do not have absolute
22 control to the contours in the north half of Section 13 or
23 in the east half of the northeast quarter of 13. I'm sure
24 the Applicants would admit that any number of things
25 could occur and, for example, if in fact our Isopach were

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1 wrong and theirs was right, then it would give them an
2 unfair advantage to drain an area which the sand would
3 not spread uniformly or at least equally over their
4 entire proration unit; and we feel they would have an
5 unfair advantage of draining the Mountain State's acreage
6 to the south and the other operators to the southwest
7 on that.

8 Q Do you have a copy of Applicant's Exhibit #2? That's
9 the Isopach map?

10 A Yes, sir. I have seen it.

11 Q If their man is accurate, true, and correct, and if the
12 well is approved in that location, say, either of the
13 two locations, and the south half is dedicated to the well,
14 do you have a penalty factor which you would recommend to
15 the Commission?

16 A Well, we think that there are several things which must be
17 taken into consideration not only the two Isopach maps
18 which in one part agree fundamentally and that is as to
19 the southeast quarter of Section 18. Both of these maps
20 indicate that the sand is too thin to make a commercial
21 completion, and I think that we can rather historically
22 see that throughout this area where you have less than 10
23 feet of a good clean sand, it is generally nearly impossible
24 to make a good commercial completion. But we feel there
25 are two factors involved here. Number 1 is that the

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1 proposed location 660 from the south and the West is in
2 fact taking an unfair geological advantage, and number two
3 is the southeast quarter of the proposed proration unit
4 does not in fact carry a sand which is capable of
5 commercial production.

6 So, yes, we do think a rather heavy penalty should be
7 imposed upon that location in the event it were approved.

8 MR. STAMETS: Are there any other questions of the
9 witness? He may be excused. Mr. Jennings, you have any other
10 witnesses?

11 MR. JENNINGS: No.

12 MR. STAMETS: Mr. Kellahin, would you call your
13 witness?

14 MR. KELLAHIN: Yes, sir. I'd like to recall Mr. Hooper.

15 MR. HOOPER

16 a Witness, having previously been sworn testified as follows:

17 REDIRECT EXAMINATION

18 BY MR. KELLAHIN:

19 Q Are you the same Mr. Hooper who previously testified in
20 this case and was sworn?

21 A Correct.

22 Q Mr. Hooper, have you had an opportunity to examine the
23 Exhibit that was presented by Mountain States?

24 A I have.

25 Q Have you any comments on that Exhibit?

A Yes, I'd like to make several comments about the way the

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1 sand was contoured. The configuration of the sand that is
2 to be elongated up to a point reaching section 18 and
3 gerrymanders off to the west showing the proposed unit to
4 be of an undesirable thickness to warrant us having the
5 proposed location. I'd like to submit this to the
6 Commissioner and let him examine it in the light to say
7 that it would be very simple to contour the same points he
8 has and to show essentially the same things that we are
9 presenting in the light of 22 feet of sand he shows in the
10 well on the southeast quarter Section 13 if that contour
11 was to be brought out in the light of the way the sand is
12 depicted, also the fact that he does not show the channel
13 nature of the sand by the side-tracked hole in the David
14 Fasken Well, although I don't have supporting evidence for
15 the Yates Petroleum Corporation #2 Kinkaid.

16 It has been brought to my attention that that well is
17 being side-tracked because they have missed the channel
18 and had no non-commercial well there, strongly indicating
19 the north-south nature of the deposit and more so in
20 support of contouring the sand on a north-south direction
21 and underlying a bigger proportion of the Section 16 as
22 depicted. The other thing that I'd like to propose, we
23 can show the DST #3 and the Fundamental Well. The initial
24 shut-in pressure in that hole was 3,400 pounds as opposed
25 to 3,600 pounds in the Mountain States Well. I do not

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1 think it's sufficient to say that those sands are not
2 correlative because of the bigger differential and
3 bottom-hole pressures, plus the fact that we can not
4 delineate the Atoka West Morrow Field in the basis of one
5 sand.

6 We can show the cross sections that there are
7 currently four distinct sands that are produced in the
8 field. If the entire Atoka Morrow Formation is the pool,
9 then I would have to say the presence of gas in the
10 Fundamental Well does not preclude that a direct offset
11 to that well couldn't be productive.

12 Q Now, you say there are four sands producing in the field.
13 Are all of the wells completed in the field producing from
14 all four of the sands?

15 A No, they are not.

16 Q Are three producing from several different sands?

17 A Several different sands as clearly indicated on the cross
18 section served as Exhibit --

19 Q Three?

20 A Three.

21 Q And you have shown perforations on that Exhibit?

22 A The perforations are clearly exhibited on the cross
23 section.

24 Q Now, your testimony of the witness that C & K would gain
25 an undue change by location and should therefore be

1 ' penalized by 50 per cent for that reason and for the
2 reason that the Fundamental Well was not productive,
3 do you have any comments on that?

4 A My comment would be if the Fundamental Well, this is an
5 augmentative point as to what constitutes a commercial
6 well and more so in the erratic nature of the Morrow
7 Formation as such that a direct offset to that well could
8 possibly be commercial.

9 I think the presence of the gas in the "D" sand does
10 not suggest that the well is definitely or at proportion
11 of Section 18 as indicated by Mountain States as being
12 non-productive. I think it is an unfair interpretation of
13 the sand as presently seen in the field area.

14 MR. KELLAHIN: That's all I have.

15 MR. JENNINGS: Just a couple questions.

16 MR. STAMETS: Mr. Jennings?

17 CROSS EXAMINATION

18 BY MR. JENNINGS:

19 Q Mr. Hooper, are the two good wells in the pool producing
20 from the same sands?

21 A This would depend on the geologist you talked to. I'm
22 a geologist. I'm familiar with Mr. Mark Wilson from Otis
23 and that says they are not producing from the same sand.

24 Q Well, if the pressures I've taken from the two wells, one
25 on July 10, 1972 and the other on July 11, 1972, indicated

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- 1 a variance of only some 6 pounds between the two wells,
- 2 wouldn't that indicate that they were producing from the
- 3 same sands?
- 4 A I don't know. The hydrostatic height of burial might say
- 5 that this does not necessarily hold true. You could have
- 6 the same bottom-hole pressure for two entirely different
- 7 sands at that depth. You are not dealing with a great
- 8 variance in depth in the neighborhood of perhaps 35 to 50
- 9 feet. I don't know what the hydrostatic difference would
- 10 be at that depth, but I would venture it would be along in
- 11 the neighborhood that you were saying, so I don't think
- 12 this is conclusive proof that they are definitely producing
- 13 from the same, although I agree with you.
- 14 I think portions of the better sand, as I see it in
- 15 the Mountain States Well is correlative to the Brown Yates
- 16 Well; but I'm just citing other geologists do not
- 17 necessarily believe that.
- 18 Q I would hand you here an Isopach sand plat which was
- 19 offered in this case as Exhibit B in Number 4540 which was
- 20 prepared I believe some two years ago and ask you if the
- 21 lines there are almost identical to the ones on Mountain
- 22 States Exhibit No. 1?
- 23 A Now, what am I supposed to agree on here?
- 24 Q Well, it's the general contour lines.
- 25 A Well, to me they show to be radically wrong.

1 Q Aren't they substantially the same as the ones on our
2 Exhibit #1 that you said was wrong, too?

3 A Well, let me point out that one thing. You are showing
4 me points on both maps that are shown here, deleting
5 certain other points; and you draw a high the center of
6 which corresponds correlative on both maps. Yet I would
7 agree in part with some of it.

8 Q It doesn't show any gerrymandering as you indicated, does
9 it?

10 A No, all I'm saying is a difference of opinion how you
11 contour two points. Now, if we were to let this be
12 contoured objectively by three different geologists, I
13 contend that Mr. Havenor's and mine, we may have a 50-50
14 split of who agrees with whom; and by the same, this
15 other Exhibit that you show, it seems to have busted the
16 idea that this is a channel sandstone. You show it as a
17 plot of sand which is definitely not -- the thickest
18 portion of the sand is to the south. So you are right
19 on one point and you are wrong on the other. So what have
20 you gained?

21 MR. JENNINGS: We have not offered that, and I would
22 like to question Mr. Havenor so we may offer it.

23 REDIRECT EXAMINATION

24 BY MR. KALLAHAN:

25 Q I would like the record to show whether it were or were not

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1 known by the same geologist.

2 A The only point I'd like to make is in taking a series of
3 points granted that the correlation of these individual
4 sands is something that will be debated until the time
5 immemorial, I would say this, that it would be easy to
6 contour no more points than you have to the north ends
7 of this particular sand lands one of two ways. One in
8 our favor, and one in their favor. With that I'll --

CROSS EXAMINATION

9 BY MR. STAMETS:

10 Q Do you have a copy of the drill-stem test of the
11 Fundamental well?

12 A I have two copies, #3 and 4 tests that were conducted, one
13 for a long interval and one for a short interval.

14 Q May I see those, please? There seems to be a difference of
15 opinion what the shut-in pressure is.

MR. HAVENOR

17 a Witness, having previously been sworn testified as follows:

DIRECT EXAMINATION

19 BY MR. JENNINGS:

20 Q Mr. Havenor, I hand you what has been marked as Mountain
21 States Exhibit 1 and ask you if that was prepared by you
22 or under your direction?

23 A Yes, it was prepared by me.

24 MR. JENNINGS: We would offer Mountain States Exhibit
25 #1 and we would like to offer or ask that the Commission take

dearnley, meier & mc cormick reporting services, inc.

200 SIMMS BLDG. P.O. BOX 1092 PHONE 243-6091 ALBUQUERQUE, NEW MEXICO 87103
1216 FIRST NATIONAL BANK BLDG. EAST ALBUQUERQUE, NEW MEXICO 87108

1 Judicial Notice of the Exhibit which was offered in Case No.
2 4540 as Exhibit B revised. We don't have any more.

3 MR. KELLAHIN: I would ask you if that were also
4 prepared by Mr. Havenor?

5 Q (By Mr. Jennings) Was this prepared by you, Mr. Havenor?

6 A Yes, it was.

7 MR. STAMETS: For everybody's information, I have
8 here two drill-stem test reports from Halliburton Services
9 which Mr. Hooper has handed me. This test was on 11-9-68 and
10 reports an initial closed-in pressure of 3,398 pounds. There
11 is another test on 11-13-68 which reports an initial closed-in
12 pressure of 3,030 pounds. The second test covers a slightly
13 larger interval than the first test. I'll give you those
14 intervals. The first test, 8836 to 8900. The second test,
15 8800 to 8900. Anybody have any quarrel with these figures?

16 I don't think there will be a need in entering these into
17 evidence. There is no question about that.

18 Is there any other testimony in this case? Are there any
19 statements? If not, we will take the case under advisement.

20 Without objection, the Exhibit will be admitted into
21 evidence.
22
23
24
25

dearnley, meier & mc cormick reporting service, inc.

209 SIMMS BLDG., P.O. BOX 1002, PHONE 243-6691, ALBUQUERQUE, NEW MEXICO 87103
1216 FIRST NATIONAL BANK BLDG. EAST, ALBUQUERQUE, NEW MEXICO 87108

1 STATE OF NEW MEXICO)
2) SS.
3 COUNTY OF BERNALILLO)

4 I, JANET RUSSELL, a Notary Public, in and for the County
5 of Bernalillo, State of New Mexico, do hereby certify that the
6 foregoing and attached Transcript of Hearing before the New
7 Mexico Oil Conservation Commission was reported by me; and that
8 the same is a true and correct record of the said proceedings
9 to the best of my knowledge, skill and ability.

10 *Janet Russell*
11 NOTARY PUBLIC
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I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 4863,
heard by me on November 22, 1977.
Richard F. Starnes, Examiner
New Mexico Oil Conservation Commission

dearnley, meier & mc cormick reporting service, inc.

200 SIMMS B. BLDG. P.O. BOX 1092, PHONE 243-6691, ALBUQUERQUE, NEW MEXICO 87103
1210 FIRST NATIONAL BANK BLDG. EAST, ALBUQUERQUE, NEW MEXICO 87108I N D E X

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dearnley, meier & mc cornick reporting service, inc.

209 HIMS BLDG. P.O. BOX 1092 PHONE 243-6691 ALBUQUERQUE, NEW MEXICO 87103
216 FIRST NATIONAL BANK BLDG. EAST ALBUQUERQUE, NEW MEXICO 87103

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
Tuesday, November 14, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of C & K Petroleum Inc. for
a non-standard gas proration unit and an
unorthodox location, Eddy County, New Mexico.

Case No. 4863

BEFORE: Daniel S. Nutter,
Examiner

TRANSCRIPT OF HEARING

dearnley, meier & mc cormick reporting service, inc.

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1216 FIRST NATIONAL BANK BLDG. EAST • ALBUQUERQUE, NEW MEXICO 87103

1 MR. NUTTER: Call next Case Number 4863, application
2 of C & K Petroleum Inc. for a non-standard gas proration unit
3 and an unorthodox location, Eddy County, New Mexico.

4 At request of applicant, this case will be
5 continued and readvertised in a different manner for a
6 different proposition and will be heard at the Examiner Hearing
7 scheduled to be held at this same place, 9:00 A.M., November
8 29, 1972.

9
10
11
12
13
14 STATE OF NEW MEXICO)
15) ss
16 COUNTY OF BERNALILLO)

17 I, JOHN DE LA ROSA, a Court Reporter, in and for the
18 County of Bernalillo, State of New Mexico, do hereby certify
19 that the foregoing and attached Transcript of Hearing before
20 the New Mexico Oil Conservation Commission was reported by me;
21 and that the same is a true and correct record of the said
22 proceedings to the best of my knowledge, skill and ability.

23 I do hereby certify that the foregoing
24 a complete record of the proceedings
25 the Examiner hearing of Case No. 4863
heard by me on 11/14, 1972
John De La Rosa
COURT REPORTER
Examiner
New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

GOVERNOR
BRUCE KING
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

December 19, 1972

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 4863
Order No. R-4455
Applicant:
C & K Petroleum Inc.

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other Mr. James T. Jennings

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 4863
Order No. R-4455

APPLICATION OF C & K PETROLEUM
INC. FOR A NON-STANDARD GAS PRORATION
UNIT AND AN UNORTHODOX LOCATION,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 29, 1972, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 19th day of December, 1972, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, C & K Petroleum Inc., seeks authority to drill a well at an unorthodox location 660 feet from the South line and 660 feet from the West line, or in the alternative, 990 feet from the South line and 660 feet from the West line of Section 18, Township 18 South, Range 26 East, NMPM, West Atoka-Morrow Gas Pool, Eddy County, New Mexico, and to dedicate the S/2 of said Section to the well.

(3) That a standard location for the subject well would be no closer than 1980 feet to the end boundary, or closer than 660 feet to the side boundary of the dedicated half section, nor closer than 330 feet to any quarter-quarter section line.

(4) That at a standard location, the well would be drilled in a cultivated field, that the necessary service road would cross the cultivated area and a buried irrigation pipeline, that at either of the proposed unorthodox locations the well would be drilled on pasture lands, and that the land owner has objected to such well being drilled on the cultivated land but not on the pasture land.

-2-

Case No. 4863
Order No. R-4455

(5) That one offset operator has objected to the proposed unorthodox location.

(6) That a well drilled at the alternative proposed unorthodox location would be more distant from the objecting offset operator's acreage and well than a well drilled at the closest possible standard location.

(7) That the S/2 of said Section 18 may reasonably be presumed to be productive of gas from the West Atoka-Morrow Gas Pool.

(8) That a well located at the alternative unorthodox location can efficiently and economically drain the S/2 of said Section 18.

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

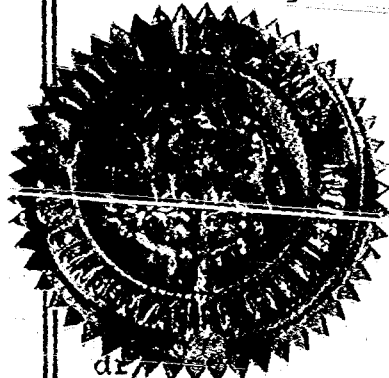
IT IS THEREFORE ORDERED:

(1) That an unorthodox location in the West Atoka-Morrow Gas Pool is hereby approved for a C & K Petroleum Inc. well to be located 990 feet from the South line and 660 feet from the West line of Section 18, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico.

(2) That a standard 320-acre gas proration unit for said pool, comprising the S/2 of said Section 18, shall be dedicated to said well.

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

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



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Bruce King
BRUCE KING, Chairman

Alex J. Arnesen
ALEX J. ARNESEN, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 29, 1972

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

The following cases will be heard before Richard L. Stamets, Examiner, or Elvis A. Utz, Alternate Examiner:

CASE 4854: (Continued from the November 1, 1972 Examiner Hearing)

Application of Dugan Production Corporation to commingle gas production prior to metering, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle gas produced from wells located in Sections 25, 26, 35, and 36, Township 28 North, Range 15 West, undesignated Pictured Cliffs gas pool, San Juan County, New Mexico, prior to metering said gas, as an exception to Rule 403 of the Commission Rules and Regulations.

CASE 4860: (Continued from the November 14, 1972 Examiner Hearing)

Application of Craig Folsom for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well to test the Queen formation at an unorthodox oil well location 1340 feet from the South line and 1300 feet from the East line of Section 12, Township 13 South, Range 31 East, Caprock-Queen Pool, Chaves County, New Mexico.

CASE 4857: (Continued to November 29, 1972 Examiner Hearing)

Application of Perry R. Bass for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox gas well location for his Big Eddy Well No. 7 located 660 feet from the South line and 1980 feet from the East line of Section 19, Township 20 South, Range 31 East, Maroon Cliffs-Morrow Gas Pool, Eddy County, New Mexico, with the E/2 of said Section 19 to be dedicated to the well.

CASE 4866: Application of Roger C. Hanks for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Devonian formation through perforations between 13,000 to 13,300 feet in his Graham Well No. 1 located in Unit F of Section 29, Township 16 South, Range 36 East, East Shoe Bar-Devonian Pool, Lea County, New Mexico.

CASE 4867: Application of Superior Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the S/2 of Section 7, Township 23 South, Range 27 East, South Carlsbad Field, Eddy County, New Mexico, to be dedicated to a

(Case 4867 continued from page 1)

well to be drilled 810 feet from the South line and 1980 feet from the West line of said Section 7. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4868: Application of The Wiser Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Drinkard formation through its Downes "D" Well No. 1 located in Unit K of Section 32, Township 21 South, Range 37 East, Drinkard Pool, Lea County, New Mexico.

CASE 4869: Application of Claude C. Kennedy for the amendment of Order No. R-4263 and for the revocation of Commission Order NSL-586, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-4263 to require that all wells drilled within the Lone Pine Dakota "D" Unit be drilled on locations no closer than 330 feet from the boundary of the quarter-quarter section in which any such well is located, and to prohibit the transfer of allowable to any well located closer than 1320 feet from the outer boundary of the unit area. Applicant further requests the revocation of Commission Order No. NSL-586 dated November 1, 1972, which order authorized Tenneco Oil Company to drill its proposed Lone Pine Dakota "D" Unit No. 29 well at a location 2300 feet from the South line and 1450 feet from the West line of Section 8, Township 17 North, Range 8 West, Lone Pine-Dakota "D" Oil Pool, McKinley County, New Mexico.

CASE 4835: (Continued and readvertised)

Application of Texas Oil & Gas Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface of the ground down to and including the Pennsylvanian formation underlying the S/2 of Section 13, Township 22 South, Range 26 East, South Carlsbad Field area, Eddy County, New Mexico, to be dedicated to a well to be drilled 660 feet from the South line and 1980 feet from the East line of said Section 13. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4870: Application of Sun Oil Company for an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its proposed U. D. Sawyer Well No. 10 at an unorthodox location 986 feet from the South line and 1000.5 feet from the East line of Section 27, Township 9 South, Range 36 East, Crossroads-Devonian Pool, Lea County, New Mexico.

CASE 4871: Application of Samedan Oil Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Langlie-Mattix "B-4" Penrose (Queen) Unit Area, comprising 240 acres, more or less, of Federal lands in Sections 17 and 18, Township 23 South, Range 37 East, Lea County, New Mexico.

CASE 4872: Application of Samedan Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through two wells in its Langlie-Mattix "B-4" Unit Area, Langlie-Mattix Pool, Lea County, New Mexico.

CASE 4862: (Continued and readvertised)

Application of Adobe Oil Company for a non-standard gas proration unit and an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 520-acre non-standard gas proration unit comprising the NE/4, SE/4, E/2 SW/4, N/2 NW/4, and SE/4 NW/4 of Section 11, Township 23 South, Range 24 East, Rock Tank-Upper Morrow and Rock Tank-Lower Morrow Gas Pools, Eddy County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South line and 330 feet from the East line of said Section 11.

CASE 4863: (Continued and readvertised)

Application of C & K Petroleum Inc. for an unorthodox well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be located 660 feet from the South and West lines, or in the alternative, 990 feet from the South line and 660 feet from the West line of Section 18, Township 18 South, Range 26 East, West Atoka-Morrow Gas Pool, Eddy County, New Mexico, to be dedicated to a standard proration unit comprising the S/2 of said Section 18.

CASE 4873: Application of Mountain States Petroleum Corporation for gas prorationing, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the institution of gas prorationing in the West Atoka-Morrow Gas Pool, Eddy County, New Mexico.

700 Hermosa Drive
Artesia, New Mexico 88210
November 28, 1972

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2008
Santa Fe, New Mexico 87501

Re: Application of C & K Petroleum, Inc. for Unorthodox
Well Location, Case No. 4863

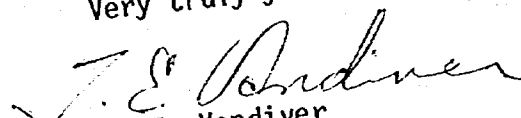
Dear Mr. Porter:

I am the owner of the irrigated farm comprising, among other lands, the S/2 of Section 18, Township 18 South, Range 26 East, N.M.P.M., proposed to be dedicated as the proration unit for the C & K Petroleum, Inc. well in the SW/4 of Section 18.

The operator originally staked two locations for its well, one 1,980 feet from the West line and 660 feet from the South line of Section 18, and the other 990 feet from the South and West lines of Section 18. The first location would place the well on my irrigated farm six feet from an underground irrigation pipe. The second location would place the well approximately 64 feet from an artesian well. I objected to the operator at the above two locations for these reasons.

I am informed that the captioned case seeks authority to drill the well 660 feet from the South and West lines or, in the alternative, 990 feet from the South line and 660 feet from the West line of Section 18. Both of these locations are outside of the irrigated farm area and at least 300 feet from my artesian irrigation well. Accordingly, I support the application of C & K Petroleum, Inc. for its said unorthodox well location application.

Very truly yours,


T. E. Vandiver

C & K Petroleum

CASE 4863

14 NOV 72

Propose to Re Advertise for
Nov 29th

& modify Ad As follows

1. Standard Protection Unit of $\frac{5}{2}$ of Sec 18
2. Unmodified, Location of 660' from S & W lines
or in the ALTERNATIVE
660' from W line
&
990' from S. line -

DOCKET: EXAMINER HEARING - TUESDAY - NOVEMBER 14, 1972

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

The following cases will be heard before Daniel S. Nutter, Examiner, or Elvis A. Utz, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for December, 1972, from seventeen prorated pools in Lea, Eddy, Roosevelt, and Chaves Counties, New Mexico.
- (2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico for December, 1972.
- (3) Consideration of purchasers' nominations for the one-year period beginning January 1, 1973, for both of the above areas.

CASE 4608: (Reopened) (Continued from October 4, 1972)

In the matter of Case 4608 being reopened pursuant to the provisions of Order No. R-4213 which order established special rules and regulations for the Haystack Siluro-Devonian Pool, Chaves County, New Mexico, including a provision for 80-acre spacing units. All interested persons may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 4855: Application of Gulf Oil Corporation for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of oil production from the Cary-Montoya and South McCormack-Silurian Oil Pools in the wellbore of its R. E. Cole (NCT-A) Well No. 10 in Unit E of Section 16, Township 22 South, Range 37 East, Lea County, New Mexico.

CASE 4856: Application of Gulf Oil Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Shugart Pool, Eddy County, New Mexico, by the injection of water into the Queen formation through three wells on its Federal Littlefield "AB" Lease in Section 22, Township 18 South, Range 31 East, Eddy County, New Mexico.

CASE 4857: Application of Perry R. Bass for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox gas well location for his Big Eddy Well No. 7 located 660 feet from the South line and 1980 feet from the East line of Section 19, Township 20 South, Range 31 East, Maroon Cliffs-Morrow Gas Pool, Eddy County, New Mexico, with the E/2 of said Section 19 to be dedicated to the well.

CASE 4858: Application of Continental Oil Company for two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the two following Blinebry Gas Pool non-standard gas proration units in Township 21 South, Range 37 East:

A 120-acre unit comprising the N/2 SW/4 and the SW/4 SW/4 of Section 21, to be dedicated to applicant's M. E. Wantz Well No. 11 located in Unit L of said Section 21, and a 160-acre unit comprising the NW/4 SE/4, S/2 SE/4 and SE/4 SW/4 of Section 21, to be dedicated to applicant's M. E. Wantz Well No. 8 located in Unit O of said Section 21.

CASE 4859: Application of Continental Oil Company for two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the two following Blinebry Gas Pool non-standard proration units in Township 21 South, Range 37 East:

An 80-acre unit comprising the SW/4 NW/4 of Section 13 and the SE/4 NE/4 of Section 14, to be dedicated to applicant's Lockhart B-14 "A" Well No. 1 located in Unit H of Section 14, and a 160-acre unit comprising the NW/4 SE/4, N/2 SW/4, and SW/4 SW/4 of Section 13, to be simultaneously dedicated to applicant's Lockhart B-13 "A" Wells Nos. 1 and 8 located in Units M and L, respectively, of said Section 13.

CASE 4860: Application of Craig Polson for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well to test the Queen formation at an unorthodox oil well location 1340 feet from the South line and 1300 feet from the East line of Section 12, Township 13 South, Range 31 East, Caprock-Queen Pool, Chaves County, New Mexico.

CASE 4861: Application of Cities Service Oil Company for the amendment of Order R-4239, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-4239, which order pooled all mineral interests in the South Carlsbad-Morrow Gas Pool underlying the N/2 of Section 19, Township 22 South, Range 27 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 2173 feet from the North line and 1200 feet from the East line of said Section 19 and provided \$60.00 per month as the charge for supervision (combined fixed rates). Applicant proposes that said order be amended to provide for the drilling of a well on the pooled unit at a standard well location and that \$200.00 a month be established as the charge for supervision.

CASE 4862: Application of Adobe Oil Company for a non-standard gas proration unit and an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 520-acre non-standard

(Case 4862 continued from Page 2)

gas proration unit comprising the NE/4, SE/4, E/2 SW/4, N/2 NW/4, and SE/4 NW/4 of Section 11, Township 23 South, Range 24 East, Rock Tank-Upper Morrow and Rock Tank-Lower Morrow Gas Pools in Eddy County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 320 feet from the South and East lines of said Section 11.

CASE 4863: Application of C & K Petroleum Inc. for a non-standard gas proration unit and an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 225.59-acre non-standard West Atoka-Morrow gas proration unit in Section 18, Township 18 South, Range 26 East, comprising the SW/4, the SW/4 SE/4, and that portion of the NW/4 SE/4 described as follows:

Beginning at the Northwest corner of said NW/4 SE/4, thence South 1320 feet, thence East 1193.4 feet, thence North 639 feet, thence West 242.2 feet, thence North 30 degrees West, 452.6 feet, thence West 267 feet, thence North 8 degrees East, 267 feet to the North line of said NW/4 SE/4, thence West 507.4 feet to the point of beginning.

Applicant further seeks authority to drill a well for said unit at an unorthodox location 990 feet from the South and West lines of said Section 18.

CASE 4864: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Chaves, Eddy and Lea Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Canyon production and designated as the South Carlsbad-Canyon Gas Pool. The discovery well is the Phillips Petroleum Company Drag B No. 1 located in Unit K of Section 18, Township 23 South, Range 27 East, NMPM. Said pool described as:

TOWNSHIP 23 SOUTH, RANGE 27 EAST, NMPM
Section 18: S/2

(b) Create a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the Hat Mesa-Morrow Gas Pool. The discovery well is the Phillips Petroleum Company Hat Mesa No. 1 located in Unit G of Section 11, Township 21 South, Range 32 East, NMPM. Said pool described as:

TOWNSHIP 21 SOUTH, RANGE 32 EAST, NMPM
Section 11: E/2

(Case 4864 continued from Page 3)

(c) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Rocky Arroyo-Morrow Gas Pool. The discovery well is the El Paso Natural Gas Company Rocky Arroyo No. 1 located in Unit J of Section 8, Township 22 South, Range 22 East, NMPM. Said pool described as:

TOWNSHIP 22 SOUTH, RANGE 22 EAST, NMPM
Section 8: E/2
Section 17: N/2

(d) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the Rocky Arroyo-Wolfcamp Gas Pool. The discovery well is the El Paso Natural Gas Company Rocky Arroyo No. 1 located in Unit J of Section 8, Township 22 South, Range 22 East, NMPM. Said pool described as:

TOWNSHIP 22 SOUTH, RANGE 22 EAST, NMPM
Section 8: SE/4

(e) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Lower Pennsylvanian production and designated as the South Sand Dunes-Lower Pennsylvanian Gas Pool. The discovery well is the El Paso Natural Gas Company Sundance Federal No. 1 located in Unit F of Section 4, Township 24 South, Range 31 East, NMPM. Said pool described as:

TOWNSHIP 24 SOUTH, RANGE 31 EAST, NMPM
Section 4: N/2

(f) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Winchester-Morrow Gas Pool. The discovery well is the Penroc Oil Corporation Dero Federal No. 1 located in Unit P of Section 35, Township 19 South, Range 28 East, NMPM. Said pool described as:

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM
Section 35: S/2

(g) Extend the Blinebry Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 36 EAST, NMPM
Section 25: SW/4

(h) Extend the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

(Case 4864, Paragraph (h) continued from Page 4)

TOWNSHIP 15 SOUTH, RANGE 28 EAST, NMPM

Section 7: S/2

Section 18: N/2

(i) Extend the South Carlsbad-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 27 EAST, NMPM

Section 18: S/2

(j) Extend the East Chisum-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 11 SOUTH, RANGE 28 EAST, NMPM

Section 16: NW/4 NE/4

(k) Extend the North Eunice-San Andres Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM

Section 17: NW/4

Section 18: NE/4

(l) Extend the Grayburg Jackson Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 30 EAST, NMPM

Section 7: SE/4

(m) Extend the Haystack-Cisco Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 6 SOUTH, RANGE 27 EAST, NMPM

Section 9: All

Section 16: N/2

(n) Extend the Penasco Draw San Andres-Yeso Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM

Section 5: SW/4

Section 6: S/2

(o) Extend the Red Lake Queen-Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 27 EAST, NMPM

Section 23: SE/4 NW/4, NE/4 SW/4, and
N/2 SE/4

Section 24: SE/4 and N/2 SW/4

(Case 4864 continued from Page 5)

(p) Extend the East Shoebar-Devonian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 36 EAST, NMPM
Section 29: NW/4

(q) Extend the Shugart Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM
Section 36: NW/4

(r) Extend the West Tres Papalotes-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM
Section 30: NE/4

(s) Extend the Washington Ranch-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

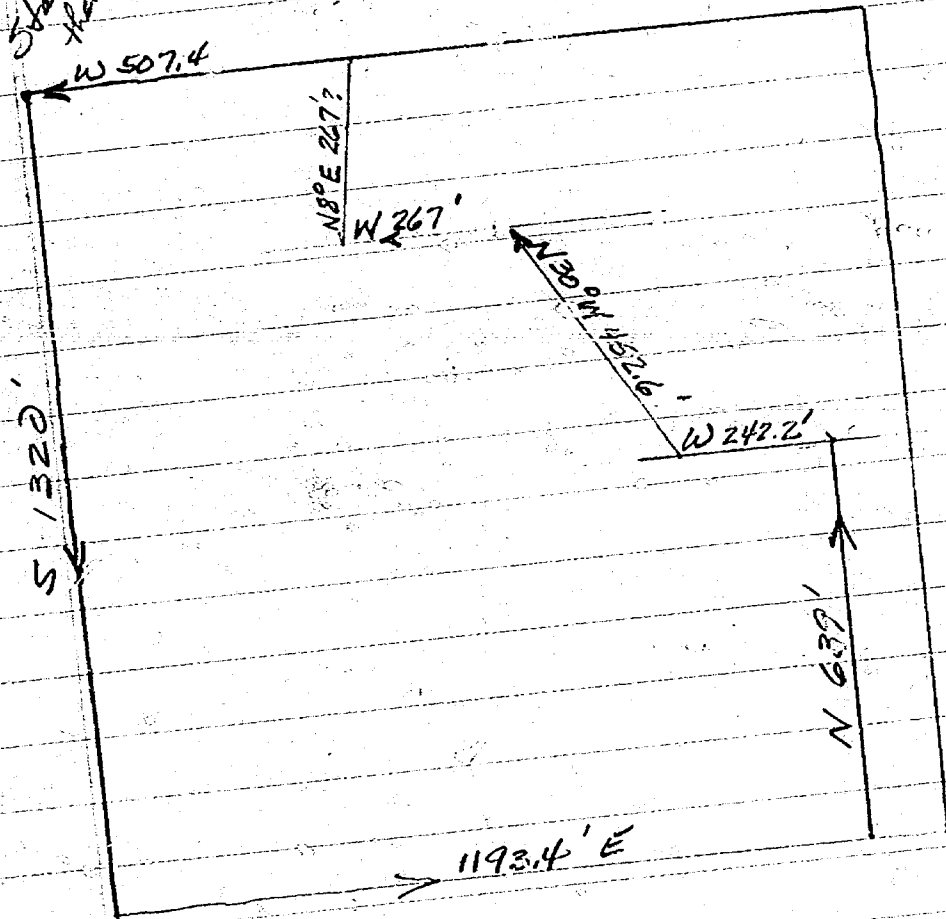
TOWNSHIP 26 SOUTH, RANGE 24 EAST, NMPM
Section 2: W/2
Section 11: All

(t) Extend the White City-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 26 EAST, NMPM
Section 32: All

July
Sept
Nov

Start here
from South E

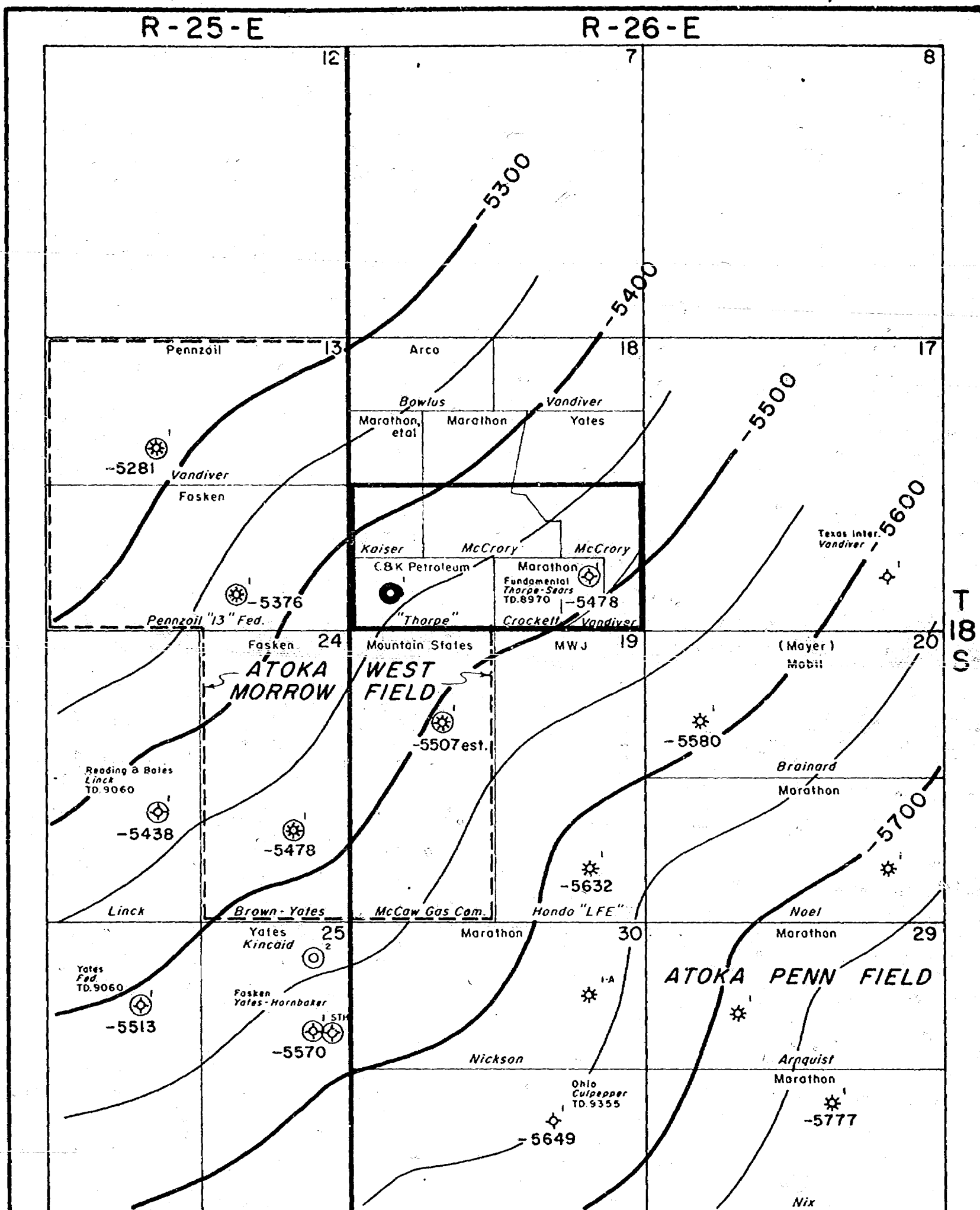


Application of C & K Petroleum Inc.
for a non-standard gas proration
unit and an unorthodox location,
Eddy County, Louisiana

Applicant, in the above-styled cause,
~~seeks~~ ^{223.59 acre} approval of a non-standard
~~west stake-garrow~~
gas proration unit in ~~the~~ Section 18,
Township 18 South, Range 26 East comprising
the ~~following described acreage~~ the SW $\frac{1}{4}$,
the SW $\frac{1}{4}$ SE $\frac{1}{4}$, and that portion of
NW $\frac{1}{4}$ SE $\frac{1}{4}$ described as follows:

Beginning at the NW $\frac{1}{4}$ corner of said
NW $\frac{1}{4}$ SE $\frac{1}{4}$, thence South 1320 feet,
thence East 1193.4 feet, thence North
639 feet, thence West 242.2 feet, thence
North 30° degrees East 267 feet to the
North line of said NW $\frac{1}{4}$ SE $\frac{1}{4}$, thence
West 507.4 feet to the point of beginning.

Applicant further seeks ~~seeks~~ ~~authority~~
to drive a well for said unit
at an unorthodox location 990 feet
from the South and West lines of
said Section 18.



BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

EXHIBIT NO. 1

CASE NO. 4863

Submitted by Hooper

Hearing Date 11-29-72

ATOKA WEST MORROW FIELD Eddy County, New Mexico

STRUCTURE MAP

"TOP CHESTER SHALE"

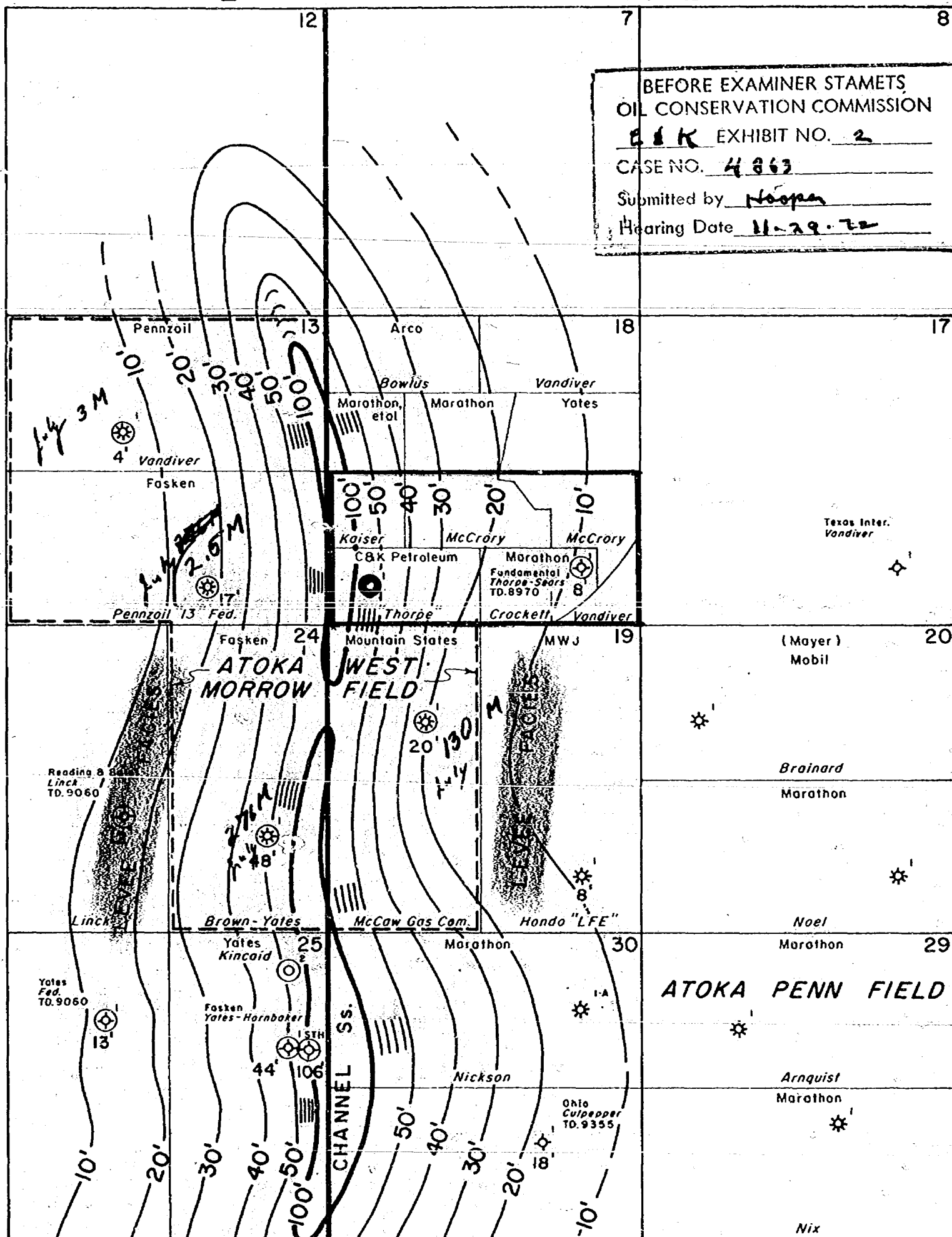
CONT. INT. = 50'

0 2000' 4000'

R-25-E

R-26-E

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
C & K EXHIBIT NO. 2
CASE NO. 4863
Submitted by Hooper
Hearing Date 11-29-72



ATOKA WEST MORROW FIELD
Eddy County, New Mexico

ISOPACHOUS MAP
"C" SANDSTONE

CONT. INT. = 10'

DRAFT

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

RLS/dr

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 4863

Order No. R-4455

APPLICATION OF C & K PETROLEUM
INC. FOR A NON-STANDARD GAS PRORATION
UNIT AND AN UNORTHODOX LOCATION,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 29, 1972
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this day of December, 1972, the Commission,
a quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, C & K Petroleum Inc., seeks authority
to drill a well at an unorthodox location 660 feet from the
South line and 660 feet from the West line, or in the alternative,
990 feet from the South line and 660 feet from the West line of
Section 18, Township 18 South, Range 26 East, NMPM, West Atoka-
Morrow Gas Pool, Eddy County, New Mexico, and to dedicate the
S/2 of said Section to the well.

-2-
Case No. 4863
Order No. R-

(3) That a standard location for the subject well would be no closer than 1980 feet to the end boundary, or closer than 660 feet to the side boundary of the dedicated half section, nor closer than 330 feet to any quarter-quarter section line.

(4) That at a standard location, the well would be drilled in a cultivated field, that the necessary service road would cross the cultivated area and a buried irrigation pipeline, that at either of the proposed unorthodox locations the well would be drilled on pasture lands, and that the land owner has objected to such well being drilled on the cultivated land but not on the pasture land.

(5) That one offset operator has objected to the proposed unorthodox location.

(6) That a well drilled at the alternative proposed unorthodox location would be more distant from the objecting offset operator's acreage and well than a well drilled at the closest possible standard location.

(7) That the S/2 of said Section 18 may reasonably be presumed to be productive of gas from the West Atoka-Morrow Gas Pool.

(8) That a well located at the alternative unorthodox location can efficiently and economically drain the S/2 of said Section 18.

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

-3-

Case No. 4863

Order No. R-

IT IS THEREFORE ORDERED:

(1) That an unorthodox location in the West Atoka-Morrow Gas Pool is hereby approved for ^{an} C & K Petroleum Inc. well to be located 990 feet from the South line and 660 feet from the West line of Section 18, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico.

(2) That a standard 320-acre gas proration unit for said pool, comprising the S/2 of said Section 18, shall be dedicated to said well.

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

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

and that portion of NW ~~SE~~
~~SE~~.

Beginning at NW/4 corner
of said NW/4 SE, thence

S 1320', thence E 1193.4,

thence N 639', thence

W 242.2', thence 30° W 452.6',

thence ^W 267, thence N 8° E

~~282.6~~ 267' to the north line

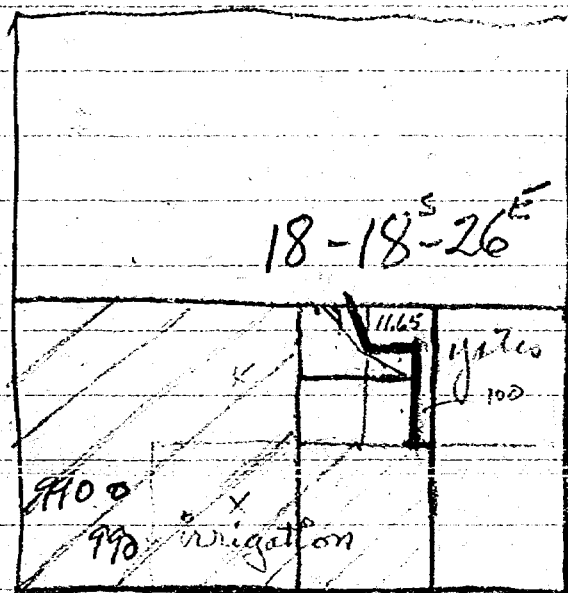
of said NW/4 SE/4, thence W

507.4' to point of beginning

11.65

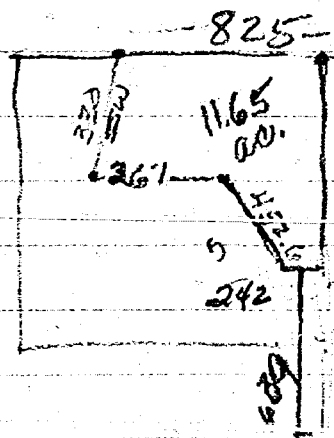
225.59.

C & K Petroleum Inc
 non std gas production unit
 unorthodox gas well location
 West Alaska - Morrow Eddy Co.



225

they have acc except 11.65 acres NWSE = 28.35



40.00 SWSE

80.00 E/2SW

38.63

38.61

225.59

Martin's ACC Eddy