

1 STATE OF NEW MEXICO
2 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
3 OIL CONSERVATION COMMISSION
4 STATE LAND OFFICE BUILDING
5 SANTA FE, NEW MEXICO

6 22 June 1988

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Application of Hanson Operating Comp- CASE
10 any, Inc. for an unorthodox oil well 9414
11 location, Roosevelt County, New Mexico.

12 BEFORE: Michael E. Stogner, Examiner
13

14 A P P E A R A N C E S
15

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I N D E X

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JOHN WORRALL

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1 MR. STOGNER: Call next Case
2 Number 9414, which is in the matter of Hanson Operating
3 Company, Incorporated, for an unorthodox oil well loca-
4 tion, Roosevelt County, New Mexico.

5 We'll call for appearances in
6 this matter.

7 MR. PEARCE: May it please the
8 Examiner, I am W. Perry Pearce of the law firm of Mont-
9 gomery and Andrews, appearing in this matter on behalf of
10 Hanson Operating Company, Inc.

11 I have one witness who needs
12 to be sworn.

13 MR. STOGNER: Are there any
14 other appearances in this matter?

15 Will the witness please step
16 forward?

17

18 (Witness sworn.)

19

20 Mr. Pearce.

21 MR. PEARCE: Thank you, Mr.
22 Examiner.

23

24

25 JOHN WORRALL,
being called as a witness and being duly sworn upon his

1 oath, testified as follows, to-wit:

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3

DIRECT EXAMINATION

4

BY MR. PEARCE:

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Q For the record, sir, would you please state your name and employer?

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8

9

A My name is John Worrall. I work for Permian Basin Investment Corporation. We're a consultant for Hanson Operating Company.

10

11

12

Q Mr. Worrall, have you testified before the Oil Conservation Commission or one of the Division Examiners previously?

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16

A No, I have not.

17

18

19

A I have a Bachelor's of Science in geology from Rice University in Houston, Texas; a Master's in geology from the University of Texas in Austin.

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22

I have approximately two and a half years experience in the oil and gas profession as an explorationist, petroleum geologist.

23

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25

Q Mr. Worrall, as part of your work responsibilities have you prepared certain exhibits and become familiar with the application of Hanson that's being

1 heard today?

2 A Yes, I have.

3 MR. PEARCE: Mr. Examiner, I
4 tender Mr. Worrall as an expert in the field of petroleum
5 geology.

6 MR. STOGNER: Mr. Worrall is
7 so qualified.

8 Q Mr. Worrall, would you please summarize
9 very briefly for the Examiner what Hanson seeks today?

10 A We seek to drill an unorthodox location
11 1980 feet from the east line, 660 from the south line in
12 the Allison Bough C Field.

13 Q That is Section 17?

14 A Section 17.

15 Q And do you understand that the pool
16 rules for the Allison Pennsylvanian Pool provide for an
17 initial location in the northeast or southwest quarter of
18 the section?

19 A Yes, sir.

20 Q And we are seeking to drill at an unor-
21 thodox location in the southeast quarter, is that correct?

22 A That's correct.

23 Q All right. Let's begin, Mr. Worrall, if
24 we could, I show you what we have marked as Hanson Exhibit
25 Number One to this proceeding and I would ask you to sum-

1 marize for the Examiner the information reflected on that
2 exhibit.

3 A This exhibit is a structure map on the
4 top of the Bough C limestone reservoir. It reflects the
5 structure and reflects the fact that this is primarily a
6 stratigraphic trap. We will be testing this field up-dip
7 to existing production.

8 Q Mr. Worrall, I notice that there is a
9 shaded area and some dashed lines around two tracts. Am I
10 correct that those are lease tracts rather than proration
11 units?

12 A That is correct. Those --

13 Q And -- I'm sorry, go ahead.

14 A Those are (unclear) that we have rights
15 for.

16 Q And Hanson proposes to dedicate a
17 standard 80-acre spacing unit in the Allison Pennsylvanian
18 Pool comprised of the south half of the southeast quarter,
19 is that correct?

20 A That is correct.

21 Q All right, sir. Other than the
22 structural interpretation which is reflected on this
23 exhibit, do you have other materials you'd like to discuss
24 for the Examiner?

25 A Not until we've seen all the exhibits.

1 Q All right. Let's now move to what we
2 have marked as Hanson Exhibit Number Two to this proceeding
3 and I would ask you once again to discuss that exhibit and
4 the information reflected for the Examiner.

5 A This map is a map of the porosity of the
6 reservoir, the Bough C Reservoir. Primarily what it shows
7 is the feet with greater than 4 percent porosity, which is
8 what we consider the limit on production.

9 And it shows that at the test location
10 we feel we should see about 4 to 6 feet of porosity.

11 It also shows that the limits of the
12 field are defined by the loss of porosity both to the west,
13 south, and north.

14 Q All right, sir, let's move now to what
15 we have marked as Exhibit Number Three to this proceeding,
16 please.

17 What information would you like to high-
18 light for the Examiner on this exhibit, please?

19 A This is a cumulative production map for
20 the Allison Field. It shows that just south of our test
21 location wells there averaged about 185,000 barrels of oil.
22 We feel that there's a -- the best realm of production is
23 just south of our location.

24 Production to the west of the location
25 falls off as you lose porosity and the same to the east.

1 Q All right, sir, as I understand it, the
2 Allison Pennsylvanian Pool is a pool with an extended
3 production history and many of the tracts are nearing
4 depletion, is that correct?

5 A That's correct.

6 Q All right, I would ask you to look at
7 what we have marked as Hanson Exhibit Number Four to this
8 proceeding. I'd ask you to discuss that for us, please.

9 A This is a -- this map shows a current
10 production as of February, 1988. It shows that this is
11 largely a field developed in the sixties. Most of the
12 wells south of us were plugged in 1967.

13 Many of the wells are now plugged.

14 In 1980 -- some of -- there has been
15 some attempts at coming back into the field on 40-acre
16 spacing. The well in Section 25 of Township 8, 36 East,
17 was drilled in 1986 on a 40-acre spacing unorthodox loca-
18 tion, and shows that it has come back in and is currently
19 producing at 50 barrels a day offset wells that are now
20 depleted and producing no barrels of oil. And it shows
21 that there is room to come back in on 40-acre spacing again
22 and still drain recoverable reserves.

23 Q Okay. Anything further you'd like to
24 highlight about this exhibit?

25 A No. I would like to talk about our

1 exhibits.

2 Q All right, let's do. Let's go back and
3 refer, please, to any of Exhibits One through Four, which
4 you believe would help us understand Hanson's objective.

5 A Well, we feel that this location is the
6 most favorable geologic -- is geologically the most
7 favorable location to drill this well. We're trying to do
8 this to test the limits of this field and the primary risk
9 is the loss of porosity. So that's the main risk that
10 we're looking at.

11 Looking at the porosity map --

12 Q That's what we've marked as Exhibit Two
13 to this proceeding?

14 A Exhibit Two.

15 Q Yes, sir.

16 A We will be going -- our location will be
17 going between a well in the north -- northeast quarter of
18 the northwest quarter of Section 20, which was plugged due
19 to collapsed casing but we know we have good established
20 production and porosity.

21 And in a direct line to the northeast of
22 the well in the northern portion of Section 16, where only
23 2 feet of porosity was encountered.

24 So we feel that by going in a line of
25 strike between these two wells we will encounter porosity.

1 The well in Section 16 also swabbed the
2 well when it was tested but we feel that it may have gotten
3 some water behind pipe from earlier perforations and sub-
4 sequent tests, so we feel that we have a good chance of
5 getting favorable porosity in that location.

6 The other locations are not quite as
7 favorable, mainly because they're falling off somewhat
8 structurally as well as you're getting tighter porosity as
9 you go to the west and to the east.

10 Looking at the cumulative production
11 map, Exhibit Three, we feel our location is in a tract of
12 more preferable production. We anticipate encountering as
13 high as 180,000 barrels of oil, ultimately producing as
14 much as 180,000 barrels of oil, similar to the wells in the
15 northern portion of Section 20.

16 Q All right, Mr. Worrall, let's make it
17 clear, looking at Exhibit One, the structure map, as I
18 understand it Hanson is proposing a laydown 80 in the south
19 half of the southeast quarter of Section 17, is that
20 correct?

21 A I'm sorry, could you repeat the
22 question?

23 Q Hanson's spacing unit for this well will
24 be the south half of the southeast quarter of 17, is that
25 correct?

1 A Yes, it is correct.

2 Q And a standard location would be either
3 in the northeast quarter or the southwest quarter, is that
4 correct?

5 A That is correct.

6 MR. STOGNER: Whoa, let's back
7 up, Mr. Pearce.

8 MR. PEARCE: Yes, sir. I
9 thought I saw --

10 MR. STOGNER: Yeah, I have
11 this advertised as the west half southeast quarter, and
12 according to the application made by Hanson Operating Com-
13 pany by letter dated May 27th, 1988, that's what I show.

14 MR. PEARCE: I'm looking at
15 that now, Mr. Examiner. Mr. Examiner, I may have a bad
16 copy. I don't see the west half indicated.

17 MR. STOGNER: Okay, I have
18 from my files in this case the application. Of course it
19 would be necessary to readvertise this, but considering the
20 testimony today I don't see that there would be any need to
21 come in and present any additional testimony, if you'd like
22 to proceed with the south half (unclear).

23 MR. PEARCE: All right, Mr.
24 Examiner, as unusual as it is, I would like to have the
25 record reflect that applicant is in fact seeking a west

1 half southeast quarter spacing and proration unit for this
2 well. You'll notice, Mr. Examiner, on Exhibit One that the
3 lease dedication changes the 40 acres dedicated but does
4 not in fact have any affect on the leases included within
5 the spacing and proration unit.

6 The 120-acre tract to the east
7 and north of the proposed location is all one lease.

8 MR. STOGNER: And that is --
9 do you know what the name of that lease is? Is it a State
10 lease fee lease?

11 MR. PEARCE: From my exhibit
12 it appears to me that it is State Lease Number NM 71794,
13 covering that 120 acres. The lease on which the well is to
14 be located is State Lease NM 56277.

15 MR. STOGNER: And that's a
16 Federal lease, is it not?

17 MR. PEARCE; Do you know if
18 those are Federal leases, Mr. Worrall?

19 I apologize, Mr. Examiner, the
20 witness informs me he believes those are both Federal
21 leases.

22 MR. STOGNER: They're both
23 Federal leases.

24 Q Yes, it is, the MKB Federal lease.

25 MR. STOGNER: While we're on

1 that, what's the hatched 80 acres?

2 A That is acreage owned by Celsius Energy.

3 MR. STOGNER: Okay, let me see
4 if I make this straight. You want the west half southeast
5 dedication --

6 A Yes, sir, please.

7 MR. STOGNER: -- as is shown.

8 A Yes.

9 MR. STOGNER: So in that case
10 there won't be any need for readvertisement and I was under
11 the impression it was the west half so I'll mark all out so
12 --

13 MR. PEARCE: You're ahead of
14 me, Mr. Examiner.

15 Mr. Examiner, one concluding
16 matter. I have been informed by Mr. Worrall that Hanson
17 Operating Company has a farmout expiration problems; they
18 need to spud this well by July 1st. We would therefore
19 request expedited consideration of this matter.

20 Additionally, Mr. Examiner,
21 I'd like you to note that waivers from offset operators
22 appear in the Division's file. Those waivers appear from
23 Petroleum Production Management, Celsius, and Tenneco.

24 MR. STOGNER: Okay, just for
25 the record, what acreage does Tenneco operate offsetting

1 this proration unit?

2 A They own the acreage north, the north
3 half of 17, and also to the west. They have acreage in
4 Section 18, east half.

5 MR. STOGNER: And what was the
6 first one, Petroleum --

7 MR. PEARCE: Petroleum Pro-
8 duction Management, Inc.

9 MR. STOGNER: And they would
10 own the southern -- I mean the north half of the Section
11 20, is that correct?

12 A Yes. I believe that's correct.

13 MR. STOGNER: Thank you,
14 Mr. Worrall.

15 MR. PEARCE: I have nothing
16 further at this time, Mr. Examiner.

17 I'd move the admission of
18 Hanson Exhibits One through Four to this proceeding.

19 MR. STOGNER: Okay, Exhibits
20 One through Four will be admitted into evidence.

21

22

CROSS EXAMINATION

23 BY MR. STOGNER:

24 Q Okay, Mr. Worrall, in looking at the two
25 wells in Section 16, those both penetrated the Bough C, is

1 that correct?

2 A That is correct.

3 Q And you found 2 foot of pay in the one
4 in the north half and no pay in the south half, is that
5 correct?

6 A That is correct.

7 Q And the one in the north half of Section
8 16 was swabbed for oil and tested?

9 A It was. It tested -- swabbed originally
10 30 barrels of oil and then it was tested again and swabbed
11 oil and water, and the third test all it got back was
12 water.

13 I've got the numbers if you want to see
14 them.

15 Q When was the -- no, that won't be neces-
16 sary. When was this well swabbed?

17 A 19 -- it was in the 1960's. I believe
18 1961.

19 Q Okay. And all of the producing wells in
20 Section 20, are they presently producing?

21 A All the wells in Section 20 are now
22 plugged.

23 Q Okay.

24 A They were all plugged in 1967.

25 Q So the closest producing well is in the

1 southern portion of Section 19, is that correct?

2 A That is correct, and that would be an
3 older well; the closest new wells would be in Section 24
4 and 25. Those were drilled in '86 and '87; now producing
5 51 barrels a day.

6 Q For the record, the only reason this
7 needs to come to hearing is because of the pool rules and
8 it was a geologic reason, is that correct, Mr. Pearce?

9 MR. PEARCE: That's correct,
10 Mr. Examiner.

11 MR. STOGNER: I have no
12 further questions of this witness. Is there any other
13 questions of Mr. Worrall?

14 If not, he may be excused.

15 Does anybody else have any-
16 thing further in Case Number 99 -- I'm sorry, in 9414?

17 The case will be taken under
18 advisement.

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20 (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 (Commission) 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. 9414
heard by me on 22 June 1988.
Michael E. Stogatz, Examiner
Oil Conservation Division