

BEFORE THE
OIL CONSERVATION COMMISSION
NOVEMBER 19, 1958

IN THE MATTER OF:

APPLICATION OF H. K. RIDDLE, CASE 1555

TRANSCRIPT OF HEARING

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sworn, Mr. Riddle.

(Witness sworn.)

MR. FOX: Mr. Examiner, do you want any other appearances?

MR. UTZ: Yes, I do. Any other appearances in this case?

MR. SELINGER: On behalf of Skelly, George W. Selinger.

MR. SULLIVAN: R. W. Sullivan, Modesitt & Sullivan, Denver, Colorado, representing British-American Oil Producing Company.

MR. UTZ: Any other appearances? Proceed.

MR. FOX: Mr. Examiner, this is an application which seeks an order establishing two non-standard oil proration units, as is indicated in the application, along the west boundaries of Sections 18 and 19 of the Township and Range shown. The testimony and exhibits will bring out the details of the application.

H. K. RIDDLE

the witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. FOX:

Q State your name, please.

A H. K. Riddle.

Q And where do you reside?

A I live in Salt Lake City.

Q What is your address?

A 29 South State.

Q Mr. Riddle, you have filed this application as an individual, is that correct?

A That is correct.

Q And what has been your education, Mr. Riddle?

A I graduated from Oklahoma University in Geology in 1932.

Q Have you testified before this Commission prior to this time?

A No.

Q What has been your experience since your graduation?

A I've been an independent oil operator for 26 years.

Q Are you familiar with the San Juan Basin?

A I am, for 13 years.

Q Have you been operating in that area for that period?

A Yes, sir.

Q Now, this application which you have filed in this case, Mr. Riddle, we have an exhibit marked Applicant's Exhibit Number One, that is the same plan as is attached to the application and Mr. Riddle doesn't have further copies at this time. We will be glad to supply those.

MR. UTZ: Mr. Fox, would you care to correct the lot numbers on that exhibit at this time?

MR. FOX: I was going to get to that. I think this is as good a time as any.

According to the initial information, the lot numbers which are shown were correct, but we later discovered that those lot numbers should be changed according to the land office's later survey. Reading from top to bottom, I believe those lots should

be numbered 3, 4, 9, 10, in Section 18, and 3, 4, 9, 10 in Section 19.

MR. UTZ: Without objection, that correction will be noted.

Q (By Mr. Fox) Mr. Riddle, will you take Applicant's Exhibit Number One and tell the Examiner what this discloses, represents?

A Well, on the west side of the Sections 18 and 19, there is a strip of land varying from 489.72 feet at the north end to 533.28 feet at the south end.

Q Does that exhibit show location of the proposed wells?

A Yes, it does, the proposed locations being in lot 9 of Section 18 and lot 3 of Section 19.

Q Does it likewise show distances from the boundaries; does the plat show this?

A Yes, these locations are in the center of the strip. They are approximately 250 feet from the east and west boundaries, and each location is directly west of producing oil wells of Skelly Oil Company, approximately 1165 feet.

Q That is, the Skelly wells are east of the proposed locations as shown on this plat?

A That's correct.

MR. SELINGER: May it please the Examiner, just a moment. Since you are referring to this plat, you have Skelly Well Number 14 in the wrong place. Skelly Well Number 14 is directly north, right here (indicating). It's right here; it's one location north.

That's an error made by the San Juan Engineering Company.

MR. SELINGER: That is where the well is.

A That wouldn't directly affect this case.

MR. SELINGER: Since you are correcting Exhibit One, we'd like to have it reflect the true location.

A It should, by all means; thank you.

Q (By Mr. Fox) Is this Federal land involved here, Mr. Riddle?

A Yes, it is Federal land.

Q In respect to the areas shown and involved in your application, who has the leases on that property in regard to Sections 18 and 19 respectively?

A Well, Skelly Oil Company has the leases on all of Sections 18 and 19, excepting this strip in question.

Q I'm speaking now of the strip in regard to Section 18; what is the status of that lease?

A Well, that lease is now owned by John W. Sullivan; however, previously it was a part of an original lease that also covered the strip in Section 19.

Q Do you have any interest in the portion held now by Mr. Sullivan?

A Only as operator.

Q And what is the status of the lease covering the strip on the west side of Section 19?

A I own that strip, the lease on that strip.

Q Just briefly, what is the history of these two sections in regard to the oil and gas leases, Sections 18 and 19?

A Well, I used to own the oil and gas lease on Sections 17, 18, 19 and 20; and that is the reason why I filed a lease on this strip, so as to completely cover those four sections, but my office failed to pay the rental at one time and we lost those four excepting the strip in question.

Q Now, Mr. Riddle, have you made any effort to communitize in respect to the strip in Section 18?

A Yes, I did. Last February I wrote Skelly proposing this.

Q I'm speaking now of the strip, Mr. Riddle.

A Communitizing the two strips?

Q Yes.

A Yes, I have. Mr. Sullivan is not interested in communitizing.

Q You have propositioned him in this regard?

A I have.

Q And he has declined to communitize?

A He has.

Q What has been the history insofar as communitization concerning the balance of Section 18 and the balance of Section 19?

A I wrote Skelly proposing communitization with their leases last February, and they wrote me a letter declining to communitize.

Q I hand you Applicant's Exhibit Number Two and ask you to identify that.

A Well, this is the letter dated February 18, 1958, from Skelly Oil Company.

Q Is this the letter to which you refer and which Skelly has declined to communitize as shown in the letter?

A That is correct.

MR. FOX: I move the admission of these --

MR. SELINGER: -- May I see that. I have no objection.

MR. UTZ: Any objection to the entrance of Exhibit Two?

MR. SULLIVAN: May I see it, too, please? Are you proposing that this be offered, Mr. Fox, solely to show that they refused to communitize?

MR. FOX: Well, I don't know quite what you have in mind by the question, but that is certainly the primary purpose in offering it.

MR. SULLIVAN: Well, the letter also sets forth a reason why they refused to communitize. I think the entire letter, the contents, should be offered.

MR. FOX: That is what is being proposed.

MR. UTZ: Without objection, the exhibit, the Two will be received.

Q (By Mr. Fox) Mr. Riddle, have you, to the best of your knowledge, notified the adjoining lease holders, that is, the parties interested in the adjoining leaseholds in respect to these

strips in question?

A Yes, I've notified both the British-American and Skelly, who are the only lease owners adjacent.

Q Have you communicated with the USGS concerning the proposals set out in the application?

A Yes, and the USGS have approved these locations subject to the State's approval.

MR. FOX: I don't want to clutter the record in this. I don't know frankly what the practice of the Commission is. I have a letter here which I propose to -- from the USGS, formal approval, which I propose to introduce.

MR. SELINGER: We don't have any objection.

Q (By Mr. Fox) I hand you, Mr. Riddle, Applicant's Exhibit Number Three and ask you if that is the letter to which you refer reflecting the approval by USGS subject to the action of the New Mexico Oil Conservation Commission?

A Yes, this is the letter.

MR. FOX: I move the admission of Applicant's Exhibit Number Three.

MR. UTZ: Without objection it will be received.

(Whereupon Applicant's Exhibit Number 3 was received in evidence.)

Q (By Mr. Fox) Now, Mr. Riddle, with respect to this area in the plat marked Applicant's Exhibit Number One, is there production in this area?

A Yes, there is.

Q And what production, to your knowledge, is there?

A Well, Skelly has 16 oil wells trending southeasterly from about the center of this strip, and British-American has production to the west.

Q Now, in regard to this area, Mr. Riddle, what has been the experience in respect to the delineation of the productive area? Is it accepted that the structure is controlling in this area in question?

A Well, there is no surface indication of structure. This production is found in a permeability trap, which is stratographic condition only.

Q Is there any well-defined boundary of the producing area in this?

A Well, yes, there is a boundary to the Bisti trend; and, as you reach the boundary, you either get light wells or dry holes when you get off it. But those boundaries can only be determined by drilling; and the boundary lines certainly are not straight lines as you might draw with a ruler, but are probably waved or curved lines with considerable irregularities.

Q These strips in Sections 18 and 19, are they now a part of any unit or communitization agreement?

A No, they are not.

Q Is there any production being realized insofar as these strips are concerned?

A No, they are not.

Q In your opinion, would the approval of this application be in the interest of prevention of waste and the protection of correlative rights?

A Yes, it would.

Q Is it, in your opinion reasonable to conclude that the acreage in question in your application would be productive?

A Yes, of course.

Q In your view and opinion, is it economically feasible that these wells which you have proposed be drilled?

A It is.

Q As matters stand, Mr. Riddle, and with the refusal to communitize by both Mr. Sullivan and by Skelly, is there any way in the world that you know of to realize any production from this acreage short of the approval of the application before the Commission and the Examiner now being heard?

A No, there is no way unless I can drill it. Furthermore, the leases will expire if I don't drill it.

Q Under the existing circumstances, Mr. Riddle, and the status of this acreage, do you have an opinion as to whether these offsetting wells presently producing will or will not drain the acreage which you have and the subject of this application?

A Well Skelly has two wells directly offsetting this strip that certainly are draining the oil from under it; however, I think the British-American well, being 1980 feet west, is not

subjecting my strip to any amount of drainage.

MR. FOX: If the Examiner please, I don't think I moved for the admission of Applicant's Exhibit Number One.

MR. UTZ: No.

MR. FOX: I would like to do so at this time, with the corrections Mr. Selinger suggested.

MR. SELINGER: Before you admit Exhibit One, we believe also that the distances that the exhibit shows of 1165 feet in case of Number 16 and 1164 in the case of Number 15 is also incorrect, because the two Skelly wells are 660 from the west line plus the 265 -- 256 -- on one case and plus 252 on another would mean that the distance between the well Number 15 and the proposed location would be 912 feet rather than 1164; and in case of the northern location, instead of 1165, it would be only 916. The two Skelly wells are 660 feet.

A Those distances are not intended to be from the Skelly well to my proposed location; they are intended to be from the Skelly well to the west side of the section.

MR. SELINGER: I see.

A So the engineering company is right.

MR. SELINGER: But not the distance between the two wells.

A We can see the Skelly well is in the middle of the section. It is obvious it is 660 feet from my line.

MR. SELINGER: That wasn't intended to be the distance between the two wells, your proposed well in 16 or your proposed

location well Number 15?

A No, that's the distance of your well from the west of the section line.

MR. SELINGER: With that connection, we have no objection to the introduction of Exhibit Number One.

MR. UTZ: Is there objection to the introduction of Exhibit One as corrected? If not, it will be admitted.

(Whereupon the document marked Applicant's Exhibit Number One was admitted in evidence.)

Q (By Mr. Fox) Mr. Riddle, if this application were granted, how soon could you commence drilling on these locations?

A I could commence immediately one well; but I would want to see the outcome of it before drilling the other well.

Q If the application were not permitted, would this injure you financially?

A Well, yes, it would, because I've made arrangements for the money to drill these wells. If I'm unable to drill them at this time, I might not have the money at a later date, which would be injurious.

Q As matters stand further, there will be no production attributable to this acreage under the present circumstances?

A No, there wouldn't.

MR. FOX: That's all I have.

MR. UTZ: Are there questions of the witness?

MR. SELINGER: Yes

MR. UTZ: Mr. Selinger.

CROSS-EXAMINATION

BY MR. SELINGER:

Q You stated you would like to drill one well immediately and await the outcome for the second well. Why is that?

A Well, for one thing, I can't look after two at once, and I can only hire one contractor at a time.

Q Any other reasons?

A No, no other reasons. They are too far apart to determine whether it proves the location productive.

Q Which well would you drill first?

A I don't think it makes any difference.

Q Now, what is the distance between the Skelly 16, the north well, from your proposed location; what is the distance between those two wells?

A It's approximately 910 feet.

Q What is the distance between the Skelly Number 15 well, the south well, and your proposed south location?

A Approximately the same distance.

Q You are familiar, are you not, with the Commission Order with respect to drilling and development in the Bisti Field, are you?

A I am.

Q You know there is 80-acre spacing in drilling units established in this field?

A I know that.

Q And you know the distance between the wells are approximately 1980 feet?

A Yes, I know that.

Q Mr. Riddle, are you familiar with the geology of this field? Can you state to this Commission that the entire strip is productive from the Gallup zone?

A I'm no more able to make that statement than anyone else is that it is not productive.

Q Are there any dry holes north of the strip?

A Not nearby, so far as I know.

Q Are there any dry holes to the south of the strip or southeast of the strip?

A There is a dry hole about three fourths of a mile east of the south end of the strip, which is shown on this plat.

MR. SELINGER: I believe that's all I have.

MR. UTZ: Are there other questions of the witness?

MR. SULLIVAN: Yes, sir, might I question him at this time?

MR. UTZ: Mr. Sullivan.

EXAMINATION BY MR. SULLIVAN:

Q Mr. Riddle, in your direct examination, you stated that in your opinion the drilling of either or both of these locations would aid the prevention of waste. What do you mean by waste?

A My lessor under this strip expected me to drill and

produce oil or gas from it if such be discovered in the vicinity, and it would be a waste to my lessor, which is the United States of America, if I don't fulfil my obligation to drill these wells and carry out the purpose of this lease.

Q Are you aware of the fact that waste has a statutory definition in the State of New Mexico?

A No, I'm not aware of that.

Q Then, when you stated a moment ago that this well could be drilled without waste, you did not have the statutory definition of waste in New Mexico in mind, is that right?

A No, I did not.

Q And the only waste you had in mind was the waste you stated with regard to the United States as your lessor?

A And me as lessee. There is a waste of my oil if I don't produce it.

Q You stated, I believe, that either or both of these wells could be drilled and would protect correlative rights. What is your conception of correlative rights?

A Well, I have the right to produce the oil from under my lease.

Q Does it mean to you a freedom from drainage; is that what you are saying?

A Yes, that.

Q Is it possible with your knowledge as a geologist of the area you propose to drill, Mr. Riddle, is it possible for you

to drill a well on this strip anywhere from lands which you do now have under lease?

A It is possible.

Q Do you mean you can drill and produce these wells on this strip without draining the oil across the lease lines that outline your property?

A No, it is not probable I can drill and produce without draining any more than the wells are draining that are offsetting me.

Q You give in that statement any regard to the shape of the parcels that you propose to drill, sir?

A I grant you 80-acre regular, 80-acre spacing would be better; but I didn't survey the section.

Q I refer you, Mr. Riddle, to Section 65-3-14, Sub-section C of the New Mexico Statutes, where I find it is provided the only provision for the drilling of one of these unorthodox locations -- "provided, that the owner of any tract that is smaller than the drilling unit established for the field, shall not be deprived of the right to drill on and produce from such tract, if same can be done without waste." There is other pertinent language there. That is the part I want to refer to you. Now, sir, do you believe that you can drill either of these two 60-odd-acre tracts without waste as that term is defined in the New Mexico statutes?

MR. FOX: Just a moment -- if he wants to answer this,

let him read to him the definition. The man says he's not familiar with the definition.

A I don't know what you mean by waste.

MR. PAYNE: The witness is not qualified as an expert in the law. If you want his comment on it, perhaps you should read the section in mind.

MR. SULLIVAN: I think his answer is apparent from the fact he wasn't aware there was such a statutory definition. The answer is apparent to the question that he can't be contemplating the drilling of these wells without waste as is required in these provisions.

All right, sir, with the permission of the Examiner, I'll read the definition of waste, if it is not too late in the day.

MR. UTZ: You may go ahead.

MR. SULLIVAN: 65-3-3 of the New Mexico Statutes Annotated reads, Mr. Riddle -- I hope I don't bore you -- "As used in this act, the term "waste," in addition to its ordinary meaning, shall include:

(a) "Underground waste" as those words are generally understood in the oil and gas business, and in any event to embrace the inefficient, excessive, or improper, use or dissipation of the reservoir energy, including gas energy and water drive, of any pool, and the locating, spacing, drilling, equipping, operating, or producing, of any well or wells in a manner to reduce or tend to reduce the total quantity of crude petroleum oil

or natural gas ultimately recovered from any pool, and the use of inefficient underground storage of natural gas.

(b) "Surface Waste" as those words are generally understood in the oil and gas business, and in any event to embrace the unnecessary or excessive surface loss or destruction without beneficial use, however caused, of natural gas of any type or in any form or crude petroleum oil, or any product thereof, but including the loss or destruction, without beneficial use, resulting from evaporation, seepage, leakage or fire, especially such loss or destruction incident to or resulting from the manner of spacing, equipping, operating, or producing, well or wells, or incident to or resulting from the use of inefficient storage or from the production of crude petroleum oil or natural gas in excess of the reasonable market demand."

I will omit sub-paragraph C, with the permission of the Commission, inasmuch as it refers to production of oil in excess of market demand. I don't think that is pertinent to my question, as well as D and E of the Statute.

Now, having read those to you, sir, which gives you the statutory definition of waste, do you believe that you can drill either or both of these wells without waste?

A I do.

Q Now, are you familiar with the fact that British-American has drilled a dry hole slightly north and to the east of Lot Number 3 in what we've referred to as the northernmost part, sir?

A You mean northwest?

Q No, sir, I mean northeast.

MR. UTZ: Give the location.

MR. SULLIVAN: Located in the southwest quarter, southwest quarter of Section 7, 26 North, 13 West.

A No, I didn't know that dry hole is there.

Q (By Mr. Sullivan) Approximately how far is that well as it is so located from your land, Mr. Riddle?

A About a thousand feet northeast, if it is in the center, northwest, northwest.

Q I beg your pardon?

A It's about a thousand feet if it is in the center, southwest, southwest of Section Seven.

Q Will you refer to your Exhibit Number One, I believe it was marked, a letter of the Skelly Oil Company -- Exhibit Number Two -- in which you used to show that Skelly had refused to communitize with your property. Will you read the article in the paragraph in that letter relating to the British-American dry hole which I just mentioned?

A The dry hole in Section Seven, but it doesn't say in what part of the Section.

Q I see, and you didn't bother to pin it down any closer when they refused to communitize nor for purposes of this hearing?

A No.

Q ~~Nor for purposes of your application?~~

A No, I didn't.

Q Do you have prepared any isopachus maps of this part of the field?

A No, I have not.

Q Have you seen any isopachus maps of this part of the field?

A Yes, I have.

Q Who were they prepared by?

A Paul Umboch for one.

Q Who is Paul Umboch?

A He's a geologist in Boulder, Colorado.

Q From where, sir?

A Boulder Colorado.

Q Is it based upon those maps that you have determined that all of the acreage included in these two tracts will be productive acreage?

A Not necessarily.

Q Upon what information have you based that statement you made a while ago in response to a question by Mr. Fox?

A I simply intend to offset Skelly's producing wells.

Q That is not an answer. My question, Mr. Riddle, on what do you base the statement you made in answer to Mr. Fox' question on direct examination, that, in your opinion, all of the acreage in these two tracts which you propose to drill will be productive acreage? You did so state, did you not, you thought that would

all be productive acreage?

A I did.

Q How did you arrive at that conclusion?

A I have no way of arriving. I can only go by the production that exists. There is no dry holes to condemn it.

Q Was it in your opinion condemned in effect by, parts of it, condemned by Skelly in view of the response they made to you in your request for communitization?

A No.

Q What was the gist of their letter, in your opinion?

A The gist of it was they didn't wish to communitize my acreage with theirs.

Q Mr. Riddle, you stated that you would like to commence the drilling of one of these wells immediately.. Are you aware of the fact there is a 30-day period in which any of us may request a hearing in the event this order authorizing these locations is granted?

A Well, I expected delay, of course. I can't commence it until I have a permit. All steps take time, which is to be expected.

Q Did you mail the notice required under the regulations; did you mail a notice to Atlantic Refining Company?

A No, I did not.

Q Who is the lease owner of Section 24, sir, in Range, in 26 North Range 14 West in this field?

A I don't know.

Q Did you mail a notice to the owner of the lease on that acreage covering Section 24 I just mentioned?

A I don't -- I did not, unless British-American is the owner.

Q Would it surprise you if I told you British-American is not the owner of that lease?

A Not in the least.

Q Do you feel you've given notice as required under the regulations of this Commission?

A If it's owned by Atlantic, if it is necessary to give notice, I didn't, I did not.

MR. SULLIVAN: Mr. Examiner, I move this application be dismissed for lack of proper notice as required by the regulations of the Commission.

MR. FOX: In regard to that, Mr. Examiner, in answer to the motion that the application be dismissed, I move that the application not be dismissed but rather that this applicant be given time and permission to give notice to any such party who hasn't presently been notified.

MR. UTZ: Mr. Sullivan, the objection will be overruled on the grounds that the applicant is not obligated to serve notice on Atlantic or whoever owns Section 24, since the Commission itself gave notice.

MR. SULLIVAN: Well, Mr. Utz, are you -- I think probably

what you are referring to is the fact the published notice is sufficient where there has been no consent by the adjoining land owner, is that correct?

MR. UTZ: That is right.

MR. SULLIVAN: I think your ruling is probably correct then. I think that's all from me.

MR. SELINGER: May I inquire several more questions, Mr. Fox?

MR. FOX: Yes.

EXAMINATION BY MR. SELINGER:

Q Section 18, which is Skelly acreage, is a normal 640-acre section, is it not?

A No, it is not. This strip is in addition to 640 acres.

Q I asked whether Section 18 was a normal 640 acres?

A My answer is no.

Q All right, let's look at the computation of plat one that shows it is. You show there is 5794.14 acres?

A Feet.

Q Feet from one point, which is the southwest corner of your strip, to the southeast corner of Section 18; isn't that what your map shows?

A That's right.

Q Does it show 514.14 feet wide in that strip?

A That's correct.

Q If you deduct 514.14 from 5794.14, do you get 5,280 feet?

A That's correct.

Q Go to Section 19. Your plat shows 5813.28 from the southwest to the southeast corner of Section 19?

A That's correct.

Q Does it show the width of the strip is 533.28?

A That's correct.

Q Deduct 533.28 from 5813.28. Does it give you 5,280 feet?

A That is correct, one mile.

Q Sections 18 and 19 are full 640 acres, is that correct, excluding the strip?

A No, I disagree.

MR. FOX: I think Mr. Selinger has answered his question in this thing. If it is a 640-acre section, well and good, but the statement he just concluded with, it is not, because he has to exclude the strip to get the 640.

MR. SELINGER: Section 18, all I asked was whether or not Section 18 contained 640 acres excluding the strip.

MR. FOX: With that qualification, I'll be quiet.

MR. SELINGER: His answer was no. That is what I asked him.

MR. FOX: Your first question did not exclude the strip.

Q (By Mr. Selinger) Does not Section 18 contain 640 acres excluding the strip?

A It does.

Q Does Section 19 contain 640 acres excluding the strip?

A Yes.

Q The lessor on the entire strip is the United States of America?

A Correct.

Q (By Mr. Payne) Are each of these lots within the defined limits of the Bisti-Lower Gallup Pool?

A Unless you've extended it, no.

Q Could you tell us which portions are and which are not?

A I haven't seen a recent boundary of the Lower Bisti Gallup Oil Pool, and I don't know. The last one I saw didn't extend to within a mile of this.

Q (By Mr. Porter) The last pool map you saw didn't extend to within a mile of what?

A The last one I saw only took in Skelly's Sections 17 and 20, I think.

Q (By Mr. Payne) If the Commission records show this acreage is within the Lower Bisti Gallup Oil Pool, would you agree with that?

A I would.

MR. FOX: We'll so stipulate.

MR. SELINGER: You mean the entire acreage?

MR. PAYNE: Or any portion, part of it or none.

MR. SELINGER: That makes quite a bit of difference. I don't think I'll stipulate to that. I don't think the entire strip is included in the nomenclature of the Bisti any more than I

would say the northwest quarter of Section 18 or the southwest quarter of Section 19 is included in the nomenclature.

MR. PAYNE: I didn't ask you if you wanted to stipulate. I asked if he would agree it was included in the Lower Bisti.

MR. SELINGER: That was my question, wasn't it?

MR. PAYNE: We will take administrative notice of the Lower Bisti as shown by the Commission records.

MR. SELINGER: I have no objection.

A I'd like to know what the new boundaries are for my information.

MR. UTZ: That would reflect the present boundaries of the Bisti Pool as designated by the Oil Commission (indicating).

A It takes in all of the south half of 18, takes in British-American's quarter --

MR. SELINGER: -- Excludes the southwest of 19.

A Excludes the southwest of 19.

MR. SELINGER: And the north half of 18; exactly what I said.

MR. PORTER: How much of the strip then lies outside of the designated pool? By lot numbers rather than try to jump over, which of the lots are included in your defined pool?

MR. SULLIVAN: Nine and ten in 18 and three and fourteen in 19.

A That's correct.

MR. SULLIVAN: Thank you.

MR. PORTER: Would that mean the two end lots, the extreme north lot and the extreme south lot, are outside the pool?

MR. SELINGER: The two north and two south, yes.

MR. PORTER: The two north and two south?

MR. SELINGER: Yes.

MR. PORTER: That would leave four lots within the designated pool?

MR. SELINGER: That's right. Now, in order to make the record complete, Mr. Fox, I wonder if you have any objection to the letter that Skelly, that I wrote November 3 to the New Mexico Commission, and a copy went to Mr. Riddle, a copy to the British-American and a copy to the Atlantic Refining Company may be a part of this record?

MR. FOX: I haven't seen it.

MR. SELINGER: A letter was sent to the Commission and also a copy to Mr. Riddle. Here is the original.

MR. FOX: Is this the one here?

MR. SELINGER: Yes.

MR. FOX: Then I do have it, then.

MR. UTZ: Any other questions of the witness?

MR. FOX: Mr. Examiner, there is pending, I think, a request by Mr. Selinger for our agreement, so to speak, to the admission of the letter dated November 3, 1958, from Mr. Selinger of Skelly Oil Company to this Commission. I feel I couldn't agree as to the last two paragraphs of the letter. This is a

letter setting out -- I feel both argumentative and the material is an opinion matter; and I wouldn't feel I could agree to that in that respect.

MR. SELINGER: We will withdraw it.

MR. UTZ: Any other questions of this witness? Mr. Riddle, would you care to divulge the expiration date of this lease?

A The lease expired July 1, 1958, but prior to that time, the portion of Section 18 was assigned to John W. Sullivan, thereby segregating and thereby entitling a two-year extension of both portions.

Q The lease expires July 1, 1950--

A -- Sixty.

Q Mr. Riddle, would one well on any part of this lease save the lease?

A No, it won't. The other portion would expire.

Q What part of the lease would be saved by the drilling of one well?

A Only that part upon which the well is drilled.

Q And the part that would be segregated would be parts 3 and 4 in Section 18?

A Three, four, nine and ten in Section 18.

MR. PORTER: I don't believe I'm clear on what acreage you propose to dedicate to each of the wells. You would dedicate the four lots in the north to the northernmost well and four lots in

the south to the southernmost well?

A That is correct.

MR. PORTER: What would be your objection to drilling a well near the center of each of the four lots, of the two sub-divisions?

A My objection would be that I'd be subjected to drainage from both Skelly's Number 15 and 16 if I don't directly offset those wells to protect myself from drainage.

MR. PORTER: That's all the questions I had.

Q (By Mr. Payne) Could you rely on counter-drainage to protect yours, Mr. Riddle?

A What do you mean by counter-drainage?

Q I mean they may be draining some of yours, but you may be draining some of theirs.

A Well, that may be true since I'm closer to the boundary line with my locations that they are with theirs, but they got a head start; maybe I can catch up.

Q What I mean by counter-drainage, if you drilled in the middle of both of the proposed units, do you think if you drilled in the middle of the two lots on the middle of the four lots in Section 19, do you think you would have any affect on Skelly's well Number 14 in Section 19?

A Well, I would have some, naturally.

Q But not as much as --

A -- Not as much as their Number 15 would have on the two

northern lots of that unit on yours.

No, I would be further from both wells. Furthermore, if I drilled there, it would have to be on either one or the other of the segregated portions, and the other one would expire.

Q (By Mr. Selinger) That leads to another question. Would it not be as likely to unitize your acreage with your own well as it would be to try to communitize somebody else's?

A That opportunity passed when I approached it to Skelly.

Q You don't have your opportunity to communitize your sections now for the drilling of your one well?

A No, I don't.

Q You claim now that the northern lease expired and has been assigned to somebody else; the two tracts are now segregated?

A That's right.

Q I'm trying to ask you why isn't it likely to communitize the two portions of the two separate tracts into one for the purpose of drilling the well? I think that is what Mr. Payne is inquiring.

A No.

Q What is to prevent you from doing that?

A The man that owns the portion in Section 18 refused to communitize.

Q Mr. Sullivan also refuses to communitize now?

A That's right. He wants it drilled.

Q What's to prevent you from drilling on Mr. Sullivan's

tract and unitize the other by order of the Commission?

A I presume if the Commission ordered it, we'd have to.

Q (By Mr. Utz) Mr. Riddle, do you know the nature of the proration unit in the dedication of the Skelly well?

A Only that I understand 80 acres is dedicated to each well.

Q (By Mr. Selinger) East and west, this 80?

A And they run east and west.

Q (By Mr. Utz) Do you know whether the 13, 14, 15 and 16 Skelly wells are top allowable wells for 80-acre units?

A Yes, I know they are. They all produce more than 100 barrels a day.

MR. SELINGER: Thirteen is not.

A As was reported, I might add.

Q (By Mr. Utz) The British-American Number Two, is it a top allowable well?

A No, it is not according to the reports.

Q Do you know what that well produces?

A Skelly's scout or land man told me about 15 barrels per day.

Q With regard to your Section 18, Mr. Riddle, would you object to the location in lot four?

A Yes, I would.

Q Why would you object to the location there?

A For the same reason that I stated a while ago -- I would like to directly offset the Skelly Number 16.

Q To prevent drainage by the Skelly 16?

A That's correct.

Q Would you have any fear of getting a dry hole in lot four?

A I'll answer that this way -- I would have more fear of getting a dry hole in lot four than I would at the proposed location.

Q In regard to Section 19, would you have any objection to drilling a well in lot four in that section?

A In lot which did you say?

Q Lot four.

A I would.

Q For the same reason you stated in Section 18?

A It would not be the same reason.

Q What would be your reason?

A Well, yes, it would be the same reason, but I would not be directly offsetting Skelly's Number 15 well, and that I would be more afraid of getting a dry hole than I would be on the proposed location.

Q Does the Exhibit Number One reflect all the producing wells in this locality?

A No, it does not. Skelly has other producers in the east half of Sections 18 and 19 which were inconsequential and which the engineering company failed to show. I think altogether they have 16 producing wells in 18, 19 and 20, perhaps one or two in 17.

Q Well, in the west half of Sections 18 and 19, this exhibit reflects all the producing wells?

A So far as I know.

Q Are there producing wells in Section 7 in the north half of Section 18?

A I don't think so.

Q Any in Section 30 to the south of Section 19?

A Yes, sir. CM & W Drilling Company have two wells, one of which is shown here, three quarters of a mile east of the west line of Section 19.

Q Is that a top allowable well?

A I don't think so. And they have another one which is much closer to the south end of my strip that is not shown.

Q What is the location of that well, sir?

A I don't have it.

Q The Commission's records would no doubt reflect that, would they not?

A Both of those CM & W wells are light wells as I remember.

MR. UTZ: Any other questions of the witness?

MR. SULLIVAN: Yes, sir, may I ask?

MR. UTZ: Mr. Sullivan.

EXAMINATION BY MR. SULLIVAN:

Q May I have Applicant's Exhibit One. Mr. Riddle, you stated in response to a question that you would have some, more objection to locating a well either in lot four to the north or

or lot four to the south than your proposed locations, and what was the reason one for that opinion, that position?

A Number one, that I prefer to directly offset Skelly's Number 15 and 16 wells.

Q Now, sir, at the proposed locations, would you mark on that exhibit what you think the probable area of drainage would be from your proposed locations?

A I don't think anyone can determine that without drilling wells.

Q Well, now, sir, you state that you would like to drill up here at the proposed locations to offset Skelly's wells because they are draining your land?

A Right.

Q You certainly have some conception as to what the radius of drainage is for the Skelly wells?

A Well, a well drains from every direction.

Q Well, sir, would you mind marking on that exhibit what you anticipate or what you contemplate as a geologist is the area being drained by the two Skelly wells, Number 15 and 16?

A No, because --

Q -- Does the area of drainage extend over into your land?

A It certainly does.

Q Is it not to be expected that the area of drainage of your wells would be coincident with the area of the wells which you are complaining of itself?

A That's true.

Q If you were permitted to drill wells only somewhere in lots four of the respective parcels, could you give us some conception of what the area of drainage would be around those wells?

A Approximately the same.

Q And yet you stated you had some reluctance to drill farther north and farther south because of the probability of dry holes?

A There is more possibility as you go out from the middle.

Q That is a contradiction, is it not, to Mr. Fox' question that you felt all this acreage was productive?

A I have no reason to know it isn't productive. It has not been condemned.

Q The farther you go in either direction the --

A -- The Bisti trend is, it varies from two to three miles. There is an outside boundary. I propose to stay in the middle.

MR. SULLIVAN: That's all.

MR. UTZ: Any other questions of the witness?

MR. SULLIVAN: Let me ask one more.

Q (By Mr. Sullivan) If you were granted, as suggested a while ago, permission to drill a well somewhere up in the respective -- at your proposed location, would you be willing to drill those locations with an allowable based upon the acreage which you can anticipate will be productive?

A I like to anticipate it will all be productive.

Q But you say the farther out you go the less chance and probability it will be productive?

A That's true.

Q In other words, are you willing to trade locations for a better chance?

A I've picked what I think is the best locations.

MR. SULLIVAN: Thank you.

MR. UTZ: No further questions of the witness? You may be excused.

(Witness excused.)

MR. FOX: That's all we have at this time.

MR. SELINGER: We have one witness we'd like to put on.

MR. UTZ: All right.

(Witness sworn.)

JOHN W. HENDERSON

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. SELINGER:

Q State your name.

A John W. Henderson.

Q And you are with Skelly Oil Company?

A That's correct.

Q In what capacity?

A I'm Assistant District Geologist for the Albuquerque District.

Q Mr. Henderson, have you testified before any State regulatory body as a geologist?

A Yes, sir, I have.

Q Have you testified before the New Mexico Commission as a geologist?

A No, sir, I have not.

Q Are you a graduate of an accredited school in geology?

A Yes, sir.

Q In what year?

A I graduated from the University of Oklahoma in 1937.

Q With a degree in geology?

A With a BS in geological engineering.

Q Have you practiced your profession since that time except for the years you spent in the armed services?

A That's correct.

MR. SELINGER: I wonder if there are any questions as to his qualifications as a geologist?

MR. UTZ: His qualifications are acceptable.

Q (By Mr. Selinger) Mr. Henderson, has the geological department at Skelly Oil Company in Albuquerque had occasion to make an investigation of this particular area involved in this application?

A Yes, sir.

Q And you are a member of that geological department at Albuquerque?

A That's correct.

Q I hand you what has been marked as exhibit, Skelly Exhibit One, and ask you whether or not that is a summation of the results of the geological department of the Skelly Oil Company, conclusions from the Albuquerque office?

A It is, sir.

Q In your opinion, is the information indicated thereon true and accurate?

A It is.

Q Will you briefly explain what this is?

A This is a plat showing the immediate area and the existing wells nearby the area in question. It was prepared by W. R. Kendall and shows by isopachtic lines the microlog thickness of the pay zone in this most westerly end of the Bisti trend.

Q Does it generally run northwest-southeast?

A It does.

Q As you go away, as Mr. Riddle testified, from the heart of the field toward the flank, you get less feet of pay?

A That is correct in this immediate area.

Q You have the net pay that shows by the microlog opposite each of the wells, is that correct?

A That's correct. The figures are listed underneath the wells.

Q And you have a zero line, both the north and south, along the strip that Mr. Riddle has under lease?

A For this particular sand body.

Q It is your opinion that as you go in the strip outside of the zero line that, in your opinion, it would or would not be productive?

A It is my opinion in this sand body it would not be productive from the Gallup.

Q Your opinion, only those portions of the strip lying within the two zero lines is productive from the Gallup.

A That's correct.

MR. SELINGER: We'd like to offer in evidence Skelly Exhibit One. That's all we have.

MR. UTZ: Any objection to the entrance of Skelly Exhibit One?

MR. FOX: No objection.

MR. UTZ: In the absence of objection, it will be received.

(Whereupon the document marked Skelly Exhibit One was received in evidence.)

MR. UTZ: Any questions of the witness?

MR. FOX: I would like to ask a few.

MR. UTZ: Mr. Fox.

CROSS-EXAMINATION

BY MR. FOX:

Q Mr. Henderson, you show on your Exhibit Number One a dry

hole in the southern portion of Section 19. Now, would you say that the location of, the existence of the dry hole as shown would prevent the production being obtained, say, west of that area a quarter of a mile -- you couldn't say that?

A No, not with positive certainty.

Q Neither could you arbitrarily condemn, say, the entire southwest quarter because of the existence of that dry hole, could you?

A Not with positive certainty. If I may add, there is the possibility of separate sand lenses.

Q The actual geological knowledge of this area is in effect quite limited by virtue of the facts which you have available to you as of now, is it not?

A I would not say so.

Q This plat indicates the information which you do have in the vicinity, is that correct?

A As far as holes drilled, is that what you mean?

Q Yes.

A That's right.

Q Now, are there various reasons for dry holes; there are, are there not?

A Yes.

Q You might have a tight spot or tight place which might very well indicate there not being a producer in any area around it, is that true?

A That is true, dependent upon the area.

Q These plats dealing with the subject matter of your Exhibit Number One are as a matter of fact continually being revised, based on additional information uncovered, disclosed?

MR. SELINGER: You mean in this area?

MR. FOX: No, as a general representation.

MR. SELINGER: In the entire Bisti Field?

MR. FOX: In the entire proposition, such as your plat number one, they are, are they not, continually revised as a geological practice?

MR. SELINGER: We'd like to object to that question unless it is limited to this area, since plat one, Skelly Exhibit One, is confined to this particular area.

MR. FOX: Well, in the interest of saving time, I will restate the question. I don't want to thrash this out.

Q (By Mr. Fox) Mr. Henderson, this plat, if it is to be an accurate reflection of your opinion or the opinion of the Geology Department with which you are associated, as new holes are drilled it will be revised accordingly, and your opinions will likewise be revised?

A They could be.

Q They would be, as a matter of fact?

A They might not be.

Q They might not be. I'll accept that. Now, the character of the area, the pool limitations as to this particular pool are quite

irregular, are they not, so far as you know them in dealing with your opinion?

A Again, I would like to confine myself to this plat. They are not irregular on this plat.

Q Well, let me ask you as to the pool without confining you to the plat. Aren't the limits of the pool quite irregular?

A In other parts and pools, yes.

Q The width, so to speak, of the pool will vary greatly from one point to another?

A That depends upon your definition of greatly.

Q They will vary, I take it?

A They will vary within limits, and --

Q How much will they vary?

MR. SELINGER: Let the witness finish his answer. What was your answer?

A The limits of particular sand bodies will vary, and it depends on what you mean by greatly.

Q (By Mr. Fox) That is what I asked for you to explain.

A What do I mean by greatly?

Q No, I asked you what are the variations?

A What are the variations? This depends again on whether you are dealing with the main sand body or with other sand lenses. If you refer to the main sand body, they do vary; the width of the sand body, shall we say, varies within, not over in total width not over a half a mile or, say, a quarter of a mile or

each side. Does that answer your question?

Q In part, I think. Just one further question as a generality, so to speak. You definitely can't state there will be no production in the strip in question in this hearing at any point, can you?

A I'm sorry, but you are asking me to state there will or will not be production anywhere on the strip?

Q My question is this, or my statement rather -- is it possible for you to say there will not be production on any portion of this strip?

A I'm sorry, I'm confused on that.

MR. SELINGER: He means the extreme north or extreme south, any part on the strip.

Q (By Mr. Fox) The area in question has been referred to as the strip in this hearing. Can you state that there will be no production from any portion of the strip?

A There will be no production on some portions of the strip, depending on your limited area in the Gallup horizon.

Q You can't say as a positive proposition, can you?

A In my opinion I can.

Q You are stating in your opinion as you have stated previously?

A Exactly.

Q But you, in answer to the question, you say what?

MR. SELINGER: I don't think it is necessary to argue

with the witness. The witness has already said in his opinion the entire strip is not productive. I don't think it is necessary to argue with the witness to be positive or not. The man said in his opinion the entire portion is not productive.

MR. FOX: I think the answer is specifically evident but the witness won't give it.

MR. SELINGER: I think the evidence is the entire strip is not productive.

MR. PAYNE: I don't believe that is Mr. Fox's question. He asked if he could say within any degree of certainty whether any of the strip was not productive, whether you cannot obtain production on some portion of the strip.

MR. SELINGER: The witness answered on some portion, yes, but not on the entire portion. He answered the question.

MR. PAYNE: That answered the question?

MR. UTZ: Is that your answer to the question?

A Yes.

MR. FOX: That's all.

MR. UTZ: Are there further questions of the witness?

MR. COOLEY: What is your name?

A John Henderson.

Q (By Mr. Cooley) Mr. Henderson, this isopach map you have put into evidence here, does it take into account all stringers of the Gallup, Lower Gallup formation, or is it limited to what we have previously referred to in this hearing and others as the

major and most prolific pay?

A I'm sure we are talking in the same terms. The Gallup, of course, is known to be a confusing issue; but in this particular area, the main body, which is in what most people interpret as the Lower Gallup, this reflects that thickness.

Q Now, there are other horizons in what the Commission has designated as Lower Gallup itself I believe, less productive stringers, that are also present in the Gallup, are there not?

A There are, but not in this area.

Q None of those stringers are present in this area?

A To my knowledge.

Q Do any of the logs in wells in 18, and 19 show complete absence of stringers in this area at all?

A Except for this particular main body.

Q (By Mr. Utz) In most of the Bisti-Gallup, there are four stringers, is that correct?

A We could go around and around about this. There have been numerous hearings about whether they are stringers or whether they are connected or not.

Q Well, let's call them four sands.

A There could be four or more. There are portions of the Gallup that are sand shale laminations just fractions of an inch thick.

Q How many defined sands are in Sections 18 and 19?

A One, sir.

Q One?

MR. SELINGER: That is the main pay, the Lower Gallup main pay.

Q (By Mr. Utz) This contour represents microlog isopachs on that one stringer?

A That's correct.

Q Mr. Henderson, would you explain your control on the zero isopachus on this Exhibit Number One?

A The control is merely extrapolated from the nearest well. There are only two wells to give such control within the Skelly-Duff Number 12 in the southeast corner of Section 18 and the other Skelly-Duff Number One in the southwest corner of the southeast corner of Section 19, both these wells being in the Range 13 West.

Q I note that your isopachus contour, was it through the Duff Number One?

A That is correct.

Q Is ten feet. Can you explain why that is a dry hole with ten feet of isopachus pay?

A As it is obvious from this interpretation geologically it is the opinion of this interpretation that the sand bodies are possibly separated there; they are not continuous.

Q You have no control actually in that immediate area on your zero contour or your five foot contour of your extrapolation?

A That's correct. You never would have unless you drilled

another hole in between eleven and one.

Q So would it not be possible interpretation by someone else that the ten foot contour could swing down through the Duff rather than have a zero contour through there?

A I'm not sure I understand you.

Q Looking at the ten foot contour in the lower part of the exhibit --

A All right.

Q -- would it not be possible for that contour to swing down through the Duff and back up rather than form a separation?

A You are speaking of Duff One?

Q Duff One.

A It is possible that interpretation could be made.

Q Also, in the northeast quarter of Section 19 where you have shown separation of your 15-foot contours, could the 15-foot contour, rather than to show separation, could it not just as logically go on across instead of showing the thick portion at the intersection of Sections 18 and 19? In other words, what control did you have this separation of the 15-foot contour?

A Could I be permitted to see where you are talking about? I get it. That is possible.

MR. UTZ: Are there other questions of the witness?

Mr. Cooley.

Q (By Mr. Cooley) Just to pursue this line of questioning Mr. Utz was following for a moment, Mr. Henderson, to say the

least, your control is rather poor by the time you get to non-standard units in question, is it not? The control for your isopachus map is rather poor when you get to the strip referred to in this hearing?

A Let's say it is less controlled than we have to the east of there.

Q To the west of that strip which you are trying to go beyond, how much control do you have?

A You have the Number Two British-American southwest, southeast of Section 13, Range 14 West, and not shown on this map you have British-American's well in Section Seven of 13 West, which is immediately north of the strip.

MR. SULLIVAN: Southwest to, southwest of Seven, Jack, is the dry hole.

Q (By Mr. Cooley) Now, Mr. Henderson, in your experience in the oil industry, have you ever seen a well completed as a producer in an area where you have zero microlog pay?

A Of course, I have.

MR. COOLEY: That's all the questions I have.

Q (By Mr. Utz) Referring to the well in Section 7, the dry hole of British-American, have you inspected the log on that well?

A I have, sir.

Q Did it have any microlog pay?

A It doesn't have.

Q It is zero then?

A That's correct.

Q Well, with that control, wouldn't it be more reasonable for the zero contour to run through that well?

A Not in my opinion.

Q In other words, you figure it is somewhere south of that well, is that it?

A Correct.

MR. UTZ: Any other questions of this witness? Mr. Fischer.

Q (By Mr. Fischer) Are there any dry holes in the southwest quarter of Section 19 or in Section 24 that are not on this map that were drilled through this pay?

A Not to my knowledge.

Q Then, actually on this five foot isopach contour coming out of the south half of Section 19 on that dry hole, if you followed the symmetry, wouldn't it be possible for that five foot contour to go in a way, follow this zero isopach contour?

A That line could go anywhere, sir.

MR. FISCHER: Thank you.

MR. UTZ: Any other questions of the witness?

MR. SULLIVAN: Yes, sir, I have one.

MR. UTZ: Mr. Sullivan.

Q (By Mr. Sullivan) Do you know of any wells, Mr. Henderson, in the first bench of the lower Gallup which have been productive

with zero feet of microlog sand?

A I couldn't make a definite answer to that question.

Q You are saying you don't know there are any or there are not any?

A I don't know that there are any that produce without some microlog.

MR. SULLIVAN: Thank you.

MR. UTZ: Any further questions? If there are no further questions, the witness may be excused.

(Witness excused.)

MR. UTZ: Does that conclude your case?

MR. SELINGER: Yes, sir.

MR. UTZ: Is there any further testimony to be given?

MR. SULLIVAN: Yes, sir, I have a witness. He's noted for his terse and succinct testimony. He will be as brief as possible.

(Witness sworn.)

JOHN STEIN

called as a witness, having first been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. SULLIVAN:

Q State your name, please.

A John Stein.

Q What is your position and who is your employer?

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A I'm employed by the British-American Oil Producing Company as a District Engineer for the entire Northwestern District.

Q Have you previously testified before this Commission?

A I have.

Q As an expert witness:

A Yes.

Q Mr. Stein, in your capacity as District Engineer for the British-American Oil Producing Company, do you have occasion to study the Bisti-Lower Gallup Oil Field?

A Yes, I have.

Q And in connection with your studies, Mr. Stein, are you familiar with the wells that exist in Sections 18 and 19 in 26 North 13 West, in Section 13 of 26 North 14 West?

A Yes, I am familiar with those wells.

Q Mr. Stein, are you familiar with the definition of waste as it is set forth in the New Mexico Statutes annotated, particularly the Conservation Act?

A Yes, I'm familiar with that term, its definition.

Q Now, sir, are you familiar with the application that Mr. Riddle has made to drill wells in what has been referred to in this hearing as the strip along the Sections 18 and 19, just mentioned?

A Yes, I am familiar with that application.

Q If the location in the north half of that strip is granted, as proposed by Mr. Riddle, in your opinion, would waste result

as waste is defined in the New Mexico Statutes?

A Yes, in my opinion waste would result.

Q How did you arrive at that conclusion, in your opinion, Mr. Stein?

A Previous testimony before this Commission, notably in Case 1308, has conclusively proven that the Lower Gallup sand pay is a continuous reservoir with permeability and porosity connected throughout. In this case, it was conclusively proven that one well was possible of draining an area far in excess of 80 acres. This proof consisted of pressure data on project, LPG project and pressure interference data taken on wells on British-American's Douhit B. Lease. If the Applicant were allowed to drill a well 1980 feet from the south line in Section 18, he would, of course, be draining oil out from under the leases on either side, which would be Skelly's lease to the east and British-American's lease to the west.

Q How does that result in waste?

A If the Commission allows that, as I understand the statutory definition, production from this well, if allowed to be drilled on that position, will cause a rapid pressure draw down, due to the fact there would be at least two wells in this area; and later, when British-American drills a west offset, there would be three wells producing in the proximity. Consequently, a local gas cap would be built up in this area. As a result of the local gas cap, the three wells would immediately develop an extremely

high gas-oil ratio. Producing these three creates a high gas-oil ratio, could create sub-surface waste, as a matter of fact. Natural energy would be designated in a short period of time and consequently result in less recovery from that particular area.

Q Mr. Stein, you indicated, I believe, that a well drilled at the location proposed in the north segments of these two parcels of the strip would drain both the land leased by British-American to the west and land leased by Skelly to the east, is that correct?

A That's correct.

Q In your opinion, is there drainage from this strip to, say, Skelly's Well Number 16?

A There is or probably will be some in the later stages.

Q If British-American drilled an on-pattern 80-acre location in the eastern, let's say the northeast of the southeast of Section 13, would there be drainage from that well to that well from the northern segment of this strip?

A Would you state that again?

Q If British-American drills a well, which would be a regular well location, under the existing 80-acre spacing ordinance, which location would be in the northeast of the southeast of Section 13, would drainage to that well from the strip result or occur?

A There would be a slight amount of drainage later likely

in the well.

Q So that, in your opinion, would any well drilled in that vicinity result in drainage across lease lines?

A Yes, it would.

Q So that, is it your opinion, Mr. Stein, that a well drilled at Mr. Riddle's proposed location would result in drainage from both the Skelly and British-American properties?

A Yes, it would, most certainly.

Q Where, Mr. Stein, will you recommend to your management will be the location of your next well, if drilled in the north-east of the southeast of Section 13?

A Well, it will depend on what the Commission, where the Commission decides Mr. Riddle can drill his well. If they approve the location he has requested, we would have no alternative but to drill our well 252 feet from the east line and 1980 feet from the south line of Section 18.

Q You wouldn't be permitted --

A -- We would have to ask for permission to do that.

Q In other words, you anticipate you would ask for an unorthodox location?

A I anticipate that.

Q Such an unorthodox location would aggravate the pressure draw down if another well was located in the strip, would it not?

A That is most certainly true. We wouldn't like to ask to drill a well there, but if Mr. Riddle is allowed to drill one

we would be forced to come here.

Q Who is the lessor under that lease?

A The Navajo Tribal Group.

Q Did you see the isopach map marked Skelly Exhibit One?

A Yes, I did. As a matter of fact, it is in front of me right now.

Q Do you generally agree or specifically agree with the contours shown on that map?

A Yes, I do.

Q What do you base your agreement on?

A I base it on the fact that he has picked about the same feet of pay I would have picked for these wells, and his interpretation there of the area, I think, is very representative.

Q What do you mean, you would pick for these wells? Have you seen the micrologs on any or all of these wells as shown on Skelly's Exhibit One?

A I have seen them and have made such a map, although I don't have it with me.

Q In your opinion, Mr. Stein, are there parts of the strip, both to the north and to the south, which in all -- which would probably not be productive?

A Yes, in my opinion, there is; certain portions of the northern end of this strip would not be productive, and some portions of the southern part of the strip would not be productive.

Q If British-American were the owner of the lease or lots 3

and 4 in Section 18, would you, based on your present knowledge, recommend the drilling of a well in those lots?

A I would not.

Q Would you, with regard to lots 9 and 10 in Section 18, recommend to your employers, if they owned the lease thereon, recommend a drilling of a well in those lots?

A No, I wouldn't.

MR. SULLIVAN: That's all I have.

MR. SELINGER: May I ask Mr. Stein a question?

MR. UTZ: Yes, sir.

CROSS-EXAMINATION

Q (By Mr. Selinger) Would it be your recommendation to the Commission they consider only that acreage of the strip that lies between the zero isopach line to be considered productive for the assignment of drilling of a well?

A I certainly would not recommend they consider any more than that portion.

Q Now, this may take you by surprise. I'll ask you if that portion of the strip which lies between the two zero lines on the north and south perimeter was 55.9 acres; by eyeballing that acreage there, would you say that is correct?

MR. SULLIVAN: Mr. Examiner, I think that is shooting a fast question at a competent engineer. He could give us an answer by 7:30 that would be right to the nub. I believe it is unfair to question this witness to that detail on an exhibit he did not prepare.

MR. FOX: I'll join that.

MR. SULLIVAN: I don't want to squeeze this witness to give an answer which would embarrass or otherwise throw down on the credibility of the rest of his testimony, sir.

MR. SELINGER: I withdraw that question.

MR. UTZ: Mr. Selinger, your question was with regard to the amount of acreage, was it?

MR. SELINGER: We have a perimeter of 55.9. I wanted to know if he could indicate from eyeballing the total amount of acreage in the strip.

MR. SULLIVAN: I would permit the witness to make a guess, say ten plus or minus acres. I don't think we should make him vouch to the eyeball estimate.

MR. FOX: I object to that, too.

MR. SULLIVAN: I'm inclined to go along with you.

MR. UTZ: Didn't the Federal Land Survey Office indicate the correct acreage?

MR. SELINGER: I would think it would be 11, the perimeter, the amount of land lying between the lines. I'm willing to withdraw the question.

MR. UTZ: Any further questions?

MR. SELINGER: That's all.

MR. FOX: I have some questions.

MR. UTZ: Mr. Fox.

CROSS-EXAMINATION

BY MR. FOX:

Q You say that any well drilled on the strip would drain either one or the other of your client's property or Skelly, is that right?

A That's right.

Q But you say you are not now draining the strip, nor is Skelly?

A I didn't say that. I said sometime in the future of the producing life there will be drainage across. I don't think the British-American well is creating any appreciable drainage at the present time; however, if we drill a well from the northeast to the southwest, there may be drainage later.

MR. UTZ: From the northeast to the southwest?

A From the northeast to the southeast; I beg your pardon.

Q Wasn't it your statement that Skelly and British-American, they are not now draining the strip?

A Not precisely that. I stated there would be some drainage and it would become progressively more as time goes on.

Q But the drilling in, any production out of either of the proposed wells would not at some later date but now drain both the British-American and Skelly, in your opinion?

A There would be some drainage; I beg your pardon -- would you restate that?

Q And you state that the drilling of these proposed wells would immediately, as I understand your testimony, result in

drainage of both British-American and Skelly property?

A Yes, that is due to the close proximity of the location to the lease line.

Q This is the way you arrive at your conclusion as to this question concerning waste then, by reason of the effects of the drilling of the proposed wells -- the drainage will begin immediately -- but the present existing producing wells, possibly some inconsequential drainage now from the strip, but it will be some future date when there will be substantial drainage?

A That amount of drainage, I don't think, will change too much with time because of the distance across the lease. If another well is allowed to be drilled in between these wells, such as Mr. Riddle proposes, then there will be a large pressure draw down immediately due to the three wells draining from the same approximate area, which, of course, creates an initial gas cap and high gas-oil ratio conducive to sub-surface waste.

Q The correlative rights, as matters stand, of Mr. Riddle are not being protected, are they?

A Not until he drills a well.

Q And if he drills a well in the Section 19 and the Commission denies him a well in 18, his correlative rights in 18 will be denied, I presume, is that right?

A Well, as I see it, there is only enough acreage there to possibly support one well. Now, where the well is drilled is not for me to say.

Q Well, by the same token, and accepting your answer, if the well is drilled in either section, either 18 or 19, under the testimony and under the condition of the leases, the correlative rights in the opposite portion of the strip are not being protected?

A Mr. Riddle's correlative rights will be protected when he drills a well. He will be getting drainage from other leases. Nobody will be allowed to buck up and drill a well. He'll be draining the two offset operators; his rights are protected.

Q Is it not contemplated by you as soon as Mr. Riddle is allowed to drill a well any where that you will immediately make application for an unorthodox well of your own, as you stated?

A No, sir, that is only in the case of Mr. Riddle being allowed to drill a well 1980 from the south line and 252 feet from the west line. If he's allowed to drill any other reasonable location of that strip, British-American would drill their well on the accepted 80-acre spacing pattern.

Q The deduction and conclusion which you have stated in conjunction with the definition of waste is, I gather this, waste will result from a well which is drilled by Mr. Riddle; it will not result from the existing well, or wells which are possibly drilled in the future under the present rule governing this pool?

A That's a long, drawn-out question; I don't remember all of it.

MR. SULLIVAN: In the first place, the record will show the

witness never came near saying anything like that.

MR. FOX: I think the attorney is about to tell the witness what to say.

MR. PAYNE: Are you objecting?

MR. SULLIVAN: I certainly am.

MR. PAYNE: On what basis?

MR. SULLIVAN: On the basis he is asking the question as to whether or not the witness has stated such and such a conclusion. Now, if you want to let the witness answer whether or not that is purely and simply his original testimony or whether is isn't, I'm perfectly willing to let the question go in.

MR. PAYNE: What is the question? Restate it.

MR. UTZ: Read the question back.

REPORTER: (Reading) "Q The deduction and conclusion which you have stated in conjunction with the definition of waste is, I gather this, waste will result from a well which is drilled by Mr. Riddle; it will not result from the existing well, or wells which are possibly drilled in the future under the present rule governing this pool?"

MR. SULLIVAN: Where is the question?

MR. FOX: Is that correct?

A If I understand the question right, I never made any such a conclusion.

Q (By Mr. Fox) Let me ask you this -- waste will result from the drilling of either of these proposed wells? Is that

not your position?

A That is my position.

Q Waste is not presently effected by the production from the existing wells, is that correct?

A It is not.

Q Waste would not be effected by the production from wells drilled in conformity with the present rules and regulations governing this pool on standard units, is that correct?

A Waste would not occur.

Q In other words, it's only Mr. Riddle's Wells, as he proposes them, that is going to cause any waste?

A It is the location of Mr. Riddle's wells with reference to other wells, and the combination of three wells or two wells -- we will say three wells -- because British-American is going to drill a well; it's the combination of three wells that creates the aggravated condition of waste.

Q If Mr. Riddle is granted permission to drill those wells, you presume to aggravate the waste further by applying for an additional unorthodox unit, is that right?

A If the Commission allowed him to drill this well at the location he proposes in his application, that would be correct.

Q That would be correct, and the purpose of applying for such a well would be to protect the correlative rights of British-American, isn't that right?

A That is true.

MR. FOX: That's all.

MR. UTZ: Any other questions of the witness?

Q (By Mr. Cooley) Mr. Stein, let's break this into two areas; one, whether it is productive, and, second, where the well should be located, assuming it is productive. Taking the proposed unit in Section 18, where would you propose the well be located to avoid causing this waste that you discussed, if we are going to grant the unit in 18?

A Since you've asked me for a specific recommendation, I'd say 660 feet from the south line and 252 feet from the west line of Section 18.

MR. UTZ: That is lot ten?

A Yes, it would be in lot ten.

Q (By Mr. Cooley) That would be a more favorable location structurally according to Skelly's Exhibit One?

A Isopachtic wise, it would, yes; I don't know about structurally.

Q Is your objection to the well in Section 19, the same proposed location in 19, the same as it is in 18, or do you feel that waste would occur?

A I feel waste would occur. It would be a similar location.

Q Where would you suggest the well be located?

A I wouldn't suggest a well for that location.

Q Assuming that it is actually productive as Mr. Riddle contends, where should he locate the well?

MR. SELINGER: Considering Skelly Exhibit One, assuming it is productive, it is in the record it is productive.

MR. COOLEY: I am asking where he feels the well should be located.

A Well, I could -- I'd say 1980 feet south, if you have to have a location.

Q (By Mr. Cooley) Do you know whether Atlantic proposed to drill a well in the northeast quarter northeast quarter of Section 24?

MR. SELINGER: We object as speculative.

MR. COOLEY: I asked if he knows; all he has to do is say no.

A I don't know.

Q (By Mr. Cooley) Let's get to this question of whether in your opinion this proposed acreage, all of it, is productive or not productive. Am I to understand you recommend any acreage lying outside of this zero contour on the isopach map submitted by Skelly, or any other critically prepared isopach map, should be excluded from the proration unit?

A I personally think it should.

Q You think it should?

A If you have enough control, I don't see why it should enter into a proration unit if it has no productive potentiality.

Q You consider a zero isopachus microlog permeability as shown on this map as a true delineation of productivity?

A It is as near as you can get it.

Q Are you aware of any Gallup oil pool that has produced --

MR. PORTER: -- Do you mean wells?

Q (By Mr. Cooley) Are you aware of any wells in the Lower Bisti oil pool that have produced oil where that microlog permeability is not shown?

A Yes, but not from the first bench of the Gallup. Second and third bench have produced some oil in small amounts without any microlog shown, microlog separation.

Q Is there something peculiar about the second and third bench that makes them not susceptible to microlog separation?

A Yes, they are just extremely light. It is not peculiar; it happens to be a fact.

Q Also the major stringer in here, it continues tight in some areas?

A Where it is, it is non-productive.

Q Where it is?

A It is non-productive.

Q What I'm getting at, is it at all possible it could be tight enough to show microlog permeability but loose enough to produce oil?

A It is always possible. I never have seen it happen.

Q It occurs in the second and third bench in the Bisti oil pool?

A Yes, it does.

Q You still state your recommendation is all areas outside of the microlog permeability be excluded from the proration unit?

A Yes.

Q Would you direct your attention to Skelly's Exhibit One?

A All right, sir.

Q I believe it is Skelly's Number 14 well in the southeast quarter of the northwest quarter of Section 19?

A Yes.

Q And I believe it is in the record that the proration unit runs east and west, is that right?

MR. SELINGER: Yes.

Q (By Mr. Cooley) What portion of that proration unit do you feel is non-productive, based on your former conclusion?

A It would be a very small percentage.

Q What percentage of it lies outside of the zero contour?

A Maybe 10 per cent.

MR. FOX: I think there is some misunderstanding.

MR. SULLIVAN: Let the witness have a ruler and let him eyeball estimate it. I'd like to make the same objection to Mr. Selinger's question where he asked for estimates based upon a map.

Q (By Mr. Cooley) It is immaterial what it is. Take your figure of ten percent --

A Yes.

Q -- Would you recommend that unit be reduced by 10 percent?

MR. SELINGER: We object to that question on the grounds this Commission has ruled that every location on regular locations be assigned in 80 acres; and if the Commission undertakes to go around the entire perimeter of the Bisti Field to determine the productive acreage, we have no objection; and you'll find at least 40 units of which portions lie outside of the zero line. If this Commission desires to make a determination of the productive limits of the Bisti Field, we have no objection.

Q (By Mr. Cooley) Is that what we are doing with Mr. Riddle's unit? You are singling it out to see whether it is productive or not?

A No.

MR. SULLIVAN: In addition, this whole line of questioning about those other units is irrelevant and immaterial to this question.

The mandate of the statute is, when you give an unorthodox location, as I read it, you must do everything or must do something that will offset any advantage that the unorthodox well spacer gets.

All we've been trying to establish in here, number one, I think we've been trying to establish there is some question whether the well can be drilled at all without waste, which is the primary, unassailable condition set forth in one phrase in the statute, which gives him the unquestioned right to drill if he

can do so without waste; but, secondly, you are supposed to offset any advantage that he gets by virtue of this unorthodox location.

All we are trying to do is to establish in here, not the minimum, not the maximum, but that acreage which can reasonably be expected to be productive.

If he's going to drain other people's lands, how much drainage is he going to be permitted to commit, and the fractions he's going to be permitted to commit has to bear relationship. Under these circumstances of a narrow strip, he can't avoid production, no matter what his production is.

We are trying to establish for the benefit not only for ourselves who are interested in this hearing but for the benefit of hearing what percentage of orthodox production or allowable is he going to be entitled to. What he thinks about what ought to be done to these other units is irrelevant and immaterial, and I object to that questioning on that ground. I wish the Examiner would rule on that objection.

MR. UTZ: The Examiner will overrule the objection on the grounds we must take cognizance of the Exhibit One in order to determine what acreage is productive and what acreage is not productive in this immediate area, as to these lots and any other area.

MR. SELINGER: Where is the application on the other unit?

MR. UTZ: Not in this case.

MR. PAYNE: We feel the evidence should be admissible for

what it is worth, that it is relevant.

MR. UTZ: Whether the acreage is productive or not is relevant to these lots.

MR. SULLIVAN: Well, now, I can't object, sir, and I did not object to this line of questioning in determining what acreage is or is not productive.

MR. COOLEY: My question was limited to that.

MR. SULLIVAN: You were asking this witness what he would do about the other, would he cut their allowable. I say that questioning has no relevancy to the subject. If you want to ask Mr. Stein, based on the isopachus map, whether or not he thinks the section attributable to the west part of Skelly's 14 well, based on that exhibit or not, that is not objectionable and it is not irrelevant; but if you were asking him what he would do with reference to this allowable, it is.

MR. COOLEY: Since Mr. Stein can't do anything about the allowable, I'll withdraw the question. I'm still interested in whether he thinks that area is productive.

MR. UTZ: Any further questions of the witness?

MR. FOX: One.

Q (By Mr. Fox) Mr. Stein, you are familiar with the present allowable in that area?

A Well, fairly familiar, yes.

Q Isn't it a fact that this concern you stated in regard to gas cap will, and gas waste, by reason of the existence of the

proposed wells would be, if not eliminated, greatly, extremely, substantially reduced by reason of the present allowable?

A No, because you have three wells close to each other, or will have eventually, with an aggravated condition, they will have a top allowable; that they will, of course, being close together, will drawn down the pressure in that particular area much sooner than if they were wider spaced.

MR. SELINGER: Isn't this repetitious of previous cross-examination?

MR. COOLEY: Is that a comment or objection?

MR. SELINGER: I'm raising the point with the Examiner.

MR. FOX: I think part of the answer is; I don't believe the question is.

MR. PAYNE: There has been a great deal of repetition. We will overlook it if it is.

A The allowable is sort of an elusive thing down there. It might be 100 barrels today and two months from now it might jump to 200, as far as I know.

Q (By Mr. Fox) Do you think that is reasonable, to anticipate it will be 200 in a couple of months?

MR. SULLIVAN: I object; it calls for a conclusion of the witness which he can't possibly answer.

MR. UTZ: Sustain the objection.

MR. FOX: That's all.

MR. UTZ: If there are no further questions of the witness,

he may be excused.

MR. SULLIVAN: Mr. Utz, I hate to drag that out. I think there is a part of Mr. Stein's testimony, in response to Mr. Cooley's direct examination or cross-examination, that requires redirect, and that is with regard to his recommended well locations, sir. If I may take about two minutes, I hope that it at least will straighten me out if it doesn't help straighten out the record.

Q (By Mr. Sullivan) Mr. Stein, you said you would recommend a well location for the lots in Section 18 where, sir?

A I believe I stated 660 from the south line of Section 18.

Q And two hundred -- an equal distance?

A Well, 252, equal distance from the west line.

Q If a well were permitted to be drilled there, would you have any recommendation with regard to a well to be located in the southern group of lots or the group of lots in Section 19?

A There should not be a well drilled in there.

Q In other words, your recommendation of the location on Section 18 is based upon the assumption only one well would be permitted in the entire strip?

A That's correct.

Q Thank you. Would you make a recommendation, in the event the Commission decides to permit the drilling of two wells, what would be your recommendation with regard to the location of the wells, the respective lots north and south? Is that question

clear?

A Regardless of what the isopach shows, if I were pinned down to make a recommendation for two holes for the benefit of the Commission, where would I recommend it?

Q I think that is a fair statement of my question.

A If I had to make a recommendation in the south part of the strip, 1980 feet south of the north line.

Q And where would you recommend the well in the northern tier of lots?

A Let it sit 660 from the south line.

Q Making those recommendations, do you have the consideration in mind of waste and protection of correlative rights?

A Yes, I do.

Q Whose correlative rights?

A I believe I have Mr. Riddle in mind.

Q As well as British-American?

A Yes.

Q And the lessors of the respective people you mentioned?

A Yes.

MR. SULLIVAN: Thank you, that's all.

Q (By Mr. Utz) Mr. Stein, have you made a fairly detailed study of this immediate area?

A Yes, fairly detailed.

Q Do you know where the location is of the producing wells in Section 30?

A Section 30?

Q Immediately south of Section 19?

A Yes, there is one in the northwest quarter of the northeast of 30, and then there is one in the southeast of the northwest in 30. I don't believe that is quite centered; it is in that general vicinity.

Q Do you know what the allowable is on the second well mentioned? What is the name of that well?

A CM & W Elliotts One and Two. The first is One, the second is Two -- I don't know right at the present time. I know they were very light wells to start with. They may be even shut in at this time. I haven't looked at the allowable scheduled for those particular wells lately.

Q To your knowledge, they did make oil wells?

A Yes. Initially, they were fairly good, but they declined rapidly, as I recall.

MR. UTZ: Any other questions? If not, the witness may be excused.

A Thank you.

(Witness excused.)

MR. UTZ: Any other statements to me made in this case? No further statements, the case will be taken under advisement.

MR. SULLIVAN: I'm slow at this hour of the evening.

MR. UTZ: Almost too late.

MR. SULLIVAN: I'd like to, one, object to the admission

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of Applicant's Exhibit Number One in evidence on the grounds that the palpable error discovered there gives rise to doubt as to the reliable value of the rest of the map. I have also picked up another one. The San Juan Engineering Company, who claims to have produced this map, made a mistake even in spelling of Farmington, New Mexico, which I think adds to the lack of credance to be given to that exhibit on its face.

MR. UTZ: The objection will be overruled.

MR. SULLIVAN: May I move, sir, that any other errors that may be discovered in that may be taken into account as they are discovered by examination by the Commission staff?

MR. UTZ: We certainly will. We intend to examine it.

MR. SULLIVAN: I'd like to move the dismissal of the application on the grounds there is no competent legal evidence to support it.

Your laws very clearly state that no order will be issued by this Commission without some competent legal evidence to support it, and I submit there is none given in support of the application.

Mr. Riddle, even though a geologist and an expert witness, had nothing to support his opinion that the wells would be productive regardless of where drilled in the strip. That is not stated fairly -- that, in effect, that they, the wells, would that the entire strip would be productive. He had nothing to support his conclusion that could be produced at the suggested and

proposed locations without waste. He had nothing to support his statements that those wells would be drilled and still protect correlative rights. He acknowledged on cross-examination that those wells drilled anywhere would result in drainage of the adjoining landowner's property. And I also submit that he bore the burden of proof in this case, which, I think, is questionable whether or not he has been able to maintain.

MR. UTZ: The motion will be denied, Mr. Sullivan. The Examiner will take recognition of the evidence or lack of evidence as the case may be.

MR. SULLIVAN: May I ask this -- is your ruling on this final? You don't issue the order; this is all submitted to the Commission. May they not again consider the motions that have been made and rule on them, particularly a motion of the substance of this nature? A motion to dismiss, I think, should be one beyond the normal role of the Examiner.

MR. UTZ: If the Commission so wishes to overrule my decision, I'm sure it is within their power to do so.

MR. SULLIVAN: May I reserve that question for the Commission?

MR. PAYNE: Yes.

MR. SELLINGER: I have one comment to make, and that is, if you will note from Applicant's Exhibit One that the four 80-acre units running north and south, running east and west, consist -- that the southwest of 18 and the northwest of 19

correspond to the two, the north half of the south strip and they also correspond to the south half of the north strip, so that it is our contention that only the two, the four lots, the two in Section 18 and two lots in Section 19 are all that are productive, and they are joined on the east by producing units and south of the, or in the southwest quarter of 19 there are no producing units, nor are there any producing units in the northwest of 18. It is our contention that only half of the north strip and half of the south strip is productive.

MR. UTZ: Thank you. Any further statements? The case will be taken under advisement.

