

FARMINGTON, N. M.  
PHONE 325-1182ALBUQUERQUE, N. M.  
PHONE 243-6691

Application of Sinclair Oil & Gas Company for permission )  
 to directionally drill, Lea County, New Mexico. Applicant )  
 in the above-styled cause seeks permission to bottom its )  
 Rosa Shultz Well No. 1 in the Gladiola-Devonian Pool in )  
 the approximate center of the SW/4 SW/4 of Section 18, ) CASE  
 Township 12 South, Range 38 East, Lea County, New Mexico. ) NO.  
 Said well has a surface location 330 feet from the South ) 2502  
 and West lines of said Section 18. )

## BEFORE:

Daniel S. Nutter, Examiner

A. L. "Pete" Porter, Secretary-Director of Commission

TRANSCRIPT OF HEARING

MR. NUTTER: The next case is No. 2502.

MR. WHITFIELD: Application of Sinclair Oil & Gas  
 Company for permission to directionally drill, Lea County, New  
 Mexico.

MR. KELLY: Booker Kelly, of Gilbert, White & Gilbert,  
 Attorneys-at-Law, Santa Fe. Mr. Horace Burton, member of the  
 Texas Bar, is with me today, and there are two witnesses, and we  
 ask that they be sworn, as we will ask some questions.

MR. BURTON: The first witness will be R. M. Anderson.

R. M. ANDERSON,

called as a witness herein, having been first duly sworn on oath,  
 was examined and testified as follows:

DIRECT EXAMINATIONBY MR. BURTON:

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Q Will you state your name, please?

A R. M. Anderson.

Q Will you state your employment, the capacity in which you are employed?

A Senior Petroleum Engineer, Sinclair Oil & Gas Company, in the Midland, Texas, Division Office.

Q Have you previously qualified to give testimony before the Commission in your professional capacity as a petroleum engineer?

A I have.

Q Have you made a study of the well and lease which is the subject of this application?

A I have.

Q Will you just give the name of the operator and identify the lease and the well and give a resume of the history of the well that is involved?

A The well is Sinclair's Rosa Shultz No. 1. It is in the Gladiola-Devonian Field, and I have circled the well in red on an area map which I have identified as Exhibit 1.

MR. NUTTER: Mr. Anderson, before you proceed any further, I notice that on the exhibit list, "Shultz" is spelled with a "Z," and on the application it is spelled with an "S." Will you give us the correct spelling, please?

A Yes. The correct spelling is with an "S."

MR. NUTTER: Thank you.



A This well was drilled from September, 1952 to March, 1953, as a Gladiola-Devonian Field extension well at a regular location 330 feet from the southwest lines of Section 18, Township 12, Range 38 East. The well encountered the Devonian low structurally, and attempts to complete the well were unsuccessful on the Devonian. At that time the Devonian Reservoir was located to the south and west of the well and it was not believed that the 65 feet of gross pay above the royal water contact was sufficient to establish a Devonian producer, so the well was plugged back and completed as a Wolfcamp producer at that time, in March, 1953. In September, 1957, the Wolfcamp formation was depleted in this well and subsequent extension of the Devonian reservoir to the north and east indicated possibilities of making a well in the Devonian, so we re-deepened the well and were successful after acidizing, we were successful in completing a marginal Devonian producer and 80 barrels of oil.

Q Is it producing now and what has been its production?

A The well produced up until the latter part of '61, at which time the well fell off in February of this year, '62. We acid-fractured the well in an effort to restore production, and we resulted in a well producing five barrels of oil and 138 barrels of water a day. In other words, we acid-fractured into it. Subsequent investigation after that acid-fract revealed that the well, by some coincidence, had encountered a reverse fault at the bottom hole location in the Devonian, the well just above the Devonian



formation, just above the shale, and our geological witness will go into that, so it is my opinion that we have acidized this well into that fault which lies in close proximity to the well bore in the Devonian formation and that we are now producing water that is coming up from the water table in the fault, and I believe that we have a mechanical condition there that is very adverse and that has resulted in our inability to complete this well producing water free.

Q You would have the right to plug the well and re-drill it at another surface location without a hearing; is that correct?

A Yes. As I understand the state-wide rule 104 which applies in this field, Sinclair could drill a well anywhere on that 40 acres that would be no closer to the 130 feet governmental sectional lines.

Q But you now propose to directionally re-drill the present well, do you not?

A Yes, sir; that is true.

Q Would you describe the details of your proposed re-drilling?

A We propose to re-drill this well because that would be considerably cheaper than drilling any new well. We would be able to use the same surface casing and intermediate casing and we could re-drill the well at about one-half the cost of drilling a new well at another location. I have prepared Exhibit 2, which reflects the well conditions both at present and how it will be



proposed, and I have listed all of the pertinent data on Exhibit 2 pertaining to the well, and I show that we are going to cut the present five-and-a-half inch oil strain at approximately 9,000 feet in pulley. The top of the cement has been established at 9,000 feet and we feel we will be cutting just above that. We will set a cement plug in the bottom of the well; about 140 foot plug will completely cover the existing Devonian prorations in the bottom of the well, and then we will set -- we will fill the hole with mud and we will set a second cement plug at the point where we have cut the casing off at about 9,000 feet. This plug will be about 205 feet long. Then we will set a whip-stock on top of that plug; after we have milled it off to a hard surface we will set a whip-stock and we will drill out from the side of the well. Now, schematically, by showing this well very thick here, I have shown that we will be drilling through a considerable amount of old pipe and well-board there, but that is not true when you reduce this well-board to its proper thickness; it is extremely thin and we would not be doing that, we would be kicking out through the side and drilling through formation.

Now, we will control this direction, which will essentially be in a northeast direction from the present surface location, toward the center of the governmental quarter-quarter section toward 160 feet location. That will be the target, and every 30 or 40 feet we drill we will run an instrument and determine the direction that we are drilling in so that we will continuously



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control this drilling back down to T.D. Now, the direction can be controlled by the weight on the bit and by the speed that we turn it and by the way that we stabilize the drill calipers to some extent, but if the post stops deviating a little bit off of the target it would be necessary to set rib stocks to keep it in line, and I do not feel that that is justified or warranted. I am seeking an order here that would permit us to bottom this well anywhere on that governmental 40 acres that is in compliance with state-wide rule 104, that is, the bottom hole location will be no closer than 330 feet to the governmental quarter section line. However, we anticipate that we will hit somewhere near the center of the government quarter-quarter section.

Q You would want the leeway that is permitted by rule 104-C to complete the well at a bottom location in the same manner as if you were doing it from the surface?

A Yes, sir. Upon reaching T.D., we would then run a string of five-and-a-half inch casing and cement sand bags back up to the original casing in there about two vertical depths about 9,000 feet. We need sufficiency to cover the Wolfcamp formation to adequately protect all formations in the wellboard.

Q Do you have a special reason for wanting this leeway for locating the bottom of the well?

A Yes. The closer that you attempt to hit a target, why, the more expensive the drilling operation becomes, and so I feel that we should have all the leeway that we are entitled to. We



are not asking for an unorthodox location for the well. We want authority to bottom the well at an orthodox location.

Q With regard to the next question, we will go into this in detail with our geological witness, but I would like to ask you if you have any reason to believe that this 40-acre subdivision is not productive throughout in the Devonian formation.

A Well, I have examined the structure map and the cross-section that our geological witness will present here today, and I find no barriers to the free flow of hydro-carbons throughout the 40 acres that this well is located on.

Q Is it your opinion that the granting of this application would be in the interest of prevention of waste?

A Yes.

Q Do you think that there will result any violation of corelative rights?

A I cannot see how anyone's corelative rights would be violated by the granting of this application and the drilling of the well.

Q Do you have any further comments?

A No, sir.

MR. BURTON: That's all.

MR. NUTTER: Are there any further questions of Mr. Anderson?

MR. MORRIS: Yes.



CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Anderson, are you familiar with the ownership of the 160 acres being the southwest quarter of this Section 18 under consideration?

A Yes.

Q Is the ownership in this 160 acres common at all depths?

A Yes, sir.

Q Now, I notice on your Exhibit No. 1 that Shell Oil Company is shown to be the owner of 56.25 per cent of the working interest in the 160 acres; is that right?

A I do not believe that is correct. A hundred per cent of the ownership is reflected there, and there are other owners besides Sinclair and Shell. Shell only has 18 per cent. That should be Shell, et al.

Q Sinclair, however, is the owner of 33.75 working interest in the 160 acres.

A Yes, sir. There are eleven other owners with lesser amounts of interest than 43 per cent.

Q Is Sinclair the operator of the entire 160 acres by communitization or some other form of agreement? Exhibit No. 1 shows Sinclair to be the operator.

A The type of consolidation is an operating agreement.

Q With Sinclair designated as the operator?

A Yes, sir.

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Q In proposing the form of recompletion in the Devonian for which you have made application here today, have you felt it necessary to secure the consent of your other working interest owners in this 160 acre tract?

A Their consent is necessary in order to approve the expenditure and their consent has been requested, and I do not know whether the consent has been received or not, but under the non-consent clause, we would proceed with this matter if any of them disapproved.

Q Do you know whether any disapproval has been voiced?

A No. I do not believe we received any disapproval.

Q Mr. Anderson, under our Commission rule 111-B, the requirement is made that a deviational and directional survey shall be made whenever a well utilizes a whip stock or any other method of intentional deviation?

A Yes.

Q Will Sinclair file such a test with the Commission upon the completion of this well?

A Yes, they will.

MR. MORRIS: Thank you, sir.

BY MR. NUTTER:

Q Mr. Anderson, I presume these prorations from 9480 to 9640 are in the Wolfcamp; is that right?

A Yes.

Q But they have already been investigated in the previous



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recompletion from the Wolfcamp to the Devonian?

A Yes, in '47.

Q When you drill 12,000 feet to vertical depth, how far back would you bring the cement on that vertical --

A I would think about 5,000 feet.

Q It will come above the Wolfcamp formation?

A Yes.

Q No attempt is going to be made to recomplete on the Wolfcamp?

A Not at this time.

Q In other words, no plans for improvement?

A No plans for improvement.

MR. NUTTER: Are there any other questions of Mr. Anderson?

(No response.)

MR. NUTTER: You may be excused.

(Witness excused.)

MR. BURTON: Our next witness will be Mr. Murphy.

J. P. MURPHY,

called as a witness herein, having been first duly sworn on oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BURTON:

Q Will you state your name, please?

A J. P. Murphy.



Q And would you give your employment and your capacity?

A I am employed by Sinclair Oil & Gas Company in the Midland Division office as a senior petroleum geologist.

Q Have you previously testified before the Commission in your capacity as a geologist?

A Yes, I have.

Q Have you made yourself familiar with the well and the geologies surrounding the lease that is involved in this hearing?

A I have.

Q Have you prepared a contour map of the formations in the area?

A Yes, I have.

Q And do you have a cross section, also?

A We do.

Q Will you produce your exhibits and explain in your own way the data and findings concerning the Devonian formation?

A Yes, I will. Our Exhibit 3 is a structure map, a portion of the Gladiola Field surrounding Sinclair's Rosa Shultz lease. Our No. 1 Rosa Shultz Well, the well in question, is circled in red. The wells colored blue are the wells presently completed in the Devonian formation; the ones colored green are those completed in the Wolfcamp formation. The red line AA Prime is the line covered by our cross section.

The orange lines are lines of faulting. You will note the cross section in our Exhibit No. 4. The fault conditions in



our well are shown more graphically on our cross section. Sinclair's No. 1 Rosa Shultz Well has an excess thickness of wood forward 80 feet, which we have interpreted as a high angle reverse fault. This is depicted in the cross section. In no other well in the field do we find a thick wood forward section. Therefore we interpreted this as being a fault condition rather than some other phenomenon. We have shown the origin or water contact in the field on the cross section, and we have shown our whip stock target as being some 500 feet from the present location of the Rosa Shultz Well. On the structure map we have dashed the fault northwest and southeast of our well because we are not sure just what position that it does exist there. We have some indication in the gulf number 4 state that perhaps the faulting is present in that well. There is some 56 feet of additional section in that well. We feel the fault occurred in the Mississippian section, which does not have sufficient character to allow us to pick out a reverse section.

Q What in your opinion is the reason for the failure of the well to produce from the Devonian as presently completed?

A Well, it appears that the fault in our Shultz Well cutting it so close to the top of the Devonian section, and the vertical nature of this fault, we feel the fault is an extremely high angle fault or we would see it in some of the other wells close to our well. We feel that when we acidized the Devonian, the fault line was so close to our well that we probably acidized into it and permitted water into the well through this fault.



Q What is your opinion as to whether or not the Devonian formation is in communication throughout the 40-acre subdivision that is involved?

A It would be my opinion that it would be in communication. I can see no geological evidence to see it would not be in communication.

Q Is that evidence from your Exhibit No. 4?

A I would say so, yes.

Q Do you have any further comments?

A I think that's all at this time.

MR. BURTON: That's all.

MR. NUTTER: Are you going to introduce the exhibits?

MR. BURTON: Yes. We will offer the four exhibits into the record.

#### CROSS EXAMINATION

BY MR. NUTTER:

Q Are you going to show a cross section on this fault line or is this merely the depiction of the fault line? You don't have a cross section on it, I presume.

A Our cross section covers the line AA Prime on the structure map and goes through and includes the Sinclair No. 1, Rosa Shultz, in which well the fault was cut.

Q How about No. 3 Wolf Camp up there? Did it encounter any --

A I wouldn't think a fault of that magnitude would run



that high.

Q Probably up as high as the Mississippian and that is as far as it goes.

A I would think so.

Q What is the normal thickness in the wood forward shale?

A Probably 110 feet.

Q And how much wood forward shale did this well encounter?

A About 190 feet. The wood forward thickness is very uniform with the exception of this well.

Q This is a characteristic of this well?

A Yes.

Q It would appear the wood forward well is the only one non-productive from the Devonian formation.

A That's correct.

Q How far below the base of the wood forward shale is the production in the Devonian encountered?

A Within the first 20 or 30 feet of the Devonian formation.

Q In other words, the Devonian is productive in the top in the formation in this area?

A Yes.

MR. NUTTER: Are there any further questions of Mr. Murphy?

(No response.)

MR. NUTTER: You may be excused.

(Witness excused.)

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MR. BURTON: I would like to offer the exhibits.

MR. NUTTER: Sinclair's Exhibits 1 through 4 are  
admitted.

(Whereupon, Sinclair Oil &  
Gas Company's Exhibits 1  
through 4 were admitted in  
evidence.)

MR. NUTTER: Does anyone have anything further to offer  
in this case number 2502?

(No response.)

MR. NUTTER: I will take the case under advisement.

\* \* \* \* \*



STATE OF NEW MEXICO    )  
                                   )    ss.  
 COUNTY OF BERNALILLO   )

I, ANITA OSWALD, COURT REPORTER in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of hearing was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

Anita Oswald  
 COURT REPORTER

I do hereby certify that the foregoing is  
 a complete record of the proceedings in  
 the Examiner hearing of Case No. 2502  
 heard by me on 3/7, 1962

[Signature], Examiner  
 New Mexico Oil Conservation Commission

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I N D E X

<u>Witness</u>	<u>Direct</u>	<u>Cross</u>	<u>Redirect</u>	<u>Recross</u>
R. M. Anderson	2	9		
J. P. Murphy	11	14		

E X H I B I T SNumberAdmitted in Evidence

Sinclair Gas & Oil Company's  
Nos. 1 - 4

16

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NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING - DANIEL S. NUTTER

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE MARCH 7, 1962

TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
R.M. Anderson	Singelair	Midland
W. Murphy	Singelair	Midland
H.A. Burton	Gettysburg & Co.	S.F.
W. Kelly		
George Eaton	Pan American	Farmington
Guy Boell	✓	Fort Worth
Norman Woodroff	✓	El Paso
John J. Lang	El Paso Natural Gas	El Paso
	Tenneco Oil Co.	Durango, Colo
Kenneth Swanson	Aspen Oil & Gas Co.	Dallas, Texas
Billy J. Shoyer	U.S.G.S.	Roswell, N.M.
Wm. Federici	Tenneco	Santa Fe, N.M.
A.L. Foster	O.C.C.	" " "
St. Lawrence	EPNG	El Paso, Tex

## NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING - DANIEL S. NUTTER

SANTA FE, NEW MEXICO

REGISTERHEARING DATE MARCH 7, 1962TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
R.M. Anderson	Linclair	Midland
J.P. Murphy	Linclair	Midland
H.A. Byrton	Goldman Sachs	S.F.
ing Kelly		
George Latta	Pan American	Farmington
Bug Buell	✓	Fort Worth
Norman Woodruff	✓	El Paso
John St. Larry	El Paso Natural Gas	El Paso
	Amoco Oil Co.	Orange, Cal.
Vanith Casanova	Inter State B.	Dallas Texas
Billy G. Stager	M.S.E.	Roswell, N.M.
Wm. Stager	Tamco	Santa Fe, N.M.
A.P. Stager	O.C.C.	" "
A.H. Stager	CPNG	El Paso, Tex.

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

March 7, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Sinclair Oil & Gas Company  
for permission to directionally drill,  
Lea County, New Mexico. Applicant in the  
above-styled cause seeks permission to  
bottom its Rosa Shultz Well No. 1 in the  
Gladiola-Devonian Pool in the approximate  
center of the SW/4 SW/4 of Section 18,  
Township 12 South, Range 38 East, Lea  
County, New Mexico. Said well has a sur-  
face location 330 feet from the South and  
West lines of said Section 18.

CASE NO.  
2502

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