

CASE 2904: Application of COAST
STATS for creation of new ABO pool
and for special temporary rules.

CASE NO.
2904

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 28, 1964

EXAMINER HEARING

IN THE MATTER OF: (Reopened)

In the matter of Case No. 2904 being reopened pursuant to the provisions of Order No. R-2576, which order established temporary 80-acre spacing units for the Flying "M" Abo Oil Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

Case No. 2904

BEFORE: DANIEL S. NUTTER, EXAMINER.

TRANSCRIPT OF HEARING

EARNLEY-MEIER REPORTING SERVICE, Inc.

PARAMOUNT, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 261-1991

MR. NUTTER: We will call Case 2904.

MR. DURRETT: In the matter of Case No. 2904 being reopened pursuant to the provisions of Order No. R-2576, which order established temporary 80-acre spacing units for the Flying "M" Abo Oil Pool, Lea County, New Mexico, for a period of one year.

MR. CHRISTY: Sim Christy of Hinkle, Bondurant and Christy for the Applicant and Coastal States Drilling Company. We have one witness, Mr. Examiner.

(Witness sworn.)

(Whereupon, Applicant's Exhibit No. 1 was marked for identification.)

CARROLL STATON

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you please state your name, address, occupation and by whom you are employed and in what capacity?

A I am Carroll Staton. I reside in Abilene, Texas, I'm employed by Coastal States Gas Producing Company as a geologist.

Q Mr. Staton, have you previously testified before this regulatory body as a geologist and had your qualifications

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accepted?

A I have.

Q Are you familiar with the matters in Case 2904 and what this hearing concerns?

A I am.

Q I believe, sir, it concerns the initial order of the Commission in Case 2904, Order R-2576, which created a new Abo Pool and provided for special rules and one of the rules being Rule 2, provides for 80-acre spacing at any 80 acres within the governmental section. It being further provided that it would be called back up for hearing in October of 1964 for consideration as to why the pool should not be developed on 40 acres, is that correct?

A That's right.

Q Would you give me a very brief history of the pool and the activity in the area?

A As we testified in September of 1963, at which time Coastal States had Abo production from two wells, the No. 1 Southern Minerals and the re-entry of the Flynn "M" State Well No. 1 drilled by Trice Production Company, completed by the American Mannex Corporation. Subsequent to that time we have, Coastal States has drilled three additional wells that have tested at least to the Abo, some to the Beugh "C"; Southwest Production Company has drilled a well in Section 23 and completed

in the Abo dolomite pay after finding the Bough "C" reservoir as established by Sam Boren in Section 23.

Sam Boren, after watching Southwest Production complete in the Abo dolomite, plugged their marginal Bough "C" well and completed in the Abo dolomite.

As a net result, Coastal States now operates three Abo producers, Southwest Production operates one, and Sam Boren operates one. In addition to this production there have been additional dry holes drilled in the area of the Flying "M" Abo Pool, notably Cabot Carbon in their No. 1 Devore in Section 24.

Q I believe the slight resume of the activity there as you have testified to is also shown at page 2 of your Exhibit 1 in this case, is it not?

A Yes, sir, it is.

Q So, as I understand you, at the time of the last hearing there were two producing wells in the Flying "M" Abo Pool and there is now an additional well?

A Operated by Coastal States, an additional well.

Q On this additional well is there a core analysis shown in your exhibit?

A I've included with my brochure core analyses on the three wells that Coastal States drilled. In every event we did core the Abo dolomite pay. In each event the core

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analyses indicated that these wells were non-commercial at best.

Q So that the page 9 shows all of the three cores, the cores on the three wells?

A The core analyses are included as a loose sheet in the brochure, but we did indicate on that page that these wells have been cored in the Abo.

Q Would you refer to page 4 of your exhibit, containing a structure map of the area? I notice the brown markings shown as non-porous and the indication of the porous area. How did you arrive at this depiction?

A Coastal States drilled most of the wells that are shown to be non-porous with the exception of the Cabot Carbon well, which is shown to be non-porous. A drill stem test over the Abo dolomite pay in the well recovered no fluid and the pressures were of such magnitude that you would assume there was no porosity, which was borne out by Cabot's logs in their hole.

Q It looks like the Flying "M" Abo Pool is finished. There wouldn't be any more drilling in there?

A I should qualify that and say that as far as Coastal States is concerned the Flying "M" Abo is developed.

Q There doesn't appear to be any great expectations of further development?

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A The Coastal States views the Abo dolomite as a salvage reservoir and we plan no further development of the production in the area at this time.

Q You've mentioned these other wells, again referring you to page 5 of your exhibit. I believe those show all of the tests of the Abo or deeper, do they not, in the general area of the Flying "M" Abo Pool?

A That is correct. There are twelve such wells that have tested to the Abo or deeper. On the next page I have indicated by the red circles those wells which have been drilled in the interim, from the testimony at this time last year to date there have been si-

Q At page 7 you have depicted the Abo producers?

A The five Abo producers in the general area are depicted on that page.

Q And page 8 shows approximately the same as page 7, does it not?

A That is correct.

Q The Abo production from those five wells and the apparent area covered thereby, and it also shows the San Andres production?

A That is correct.

Q Tell us a little bit about the costs of these wells, and you might wish to look at page 3 of your exhibit.

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Coastal States has drilled six wells in the immediate area of the Flying "M" or has been concerned vitally with the completion of six wells. Is this because two of the wells are re-entries?

A We have spent \$986,393.00 for these six wells. As I previously testified, there are three producers at the present time in the area, and of these three, the Southern Minerals well, which we have agreed to previously was the discovery well of the Abo dolomite, to date that well has produced 47,951 barrels, and is producing at the rate of 100 to 200 barrels per day.

The Coastal states No. 1 Flying "M" State, which was previously referred to as the American Mannex Flying "M" State, has produced since the first of January, 1964, at which time Coastal States took it over from Mannex, 10,103 barrels. It is currently producing at the rate of 35 to 70 barrels per day.

Coastal States re-entered a well drilled by Jack Chase and completed it, the No. 1 Ainsworth, as a producer from the Abo dolomite. It last produced 10,909 barrels, and is currently producing at the rate of 10 to 50 barrels per day.

Q Do you have any data or opinion with respect to your ultimate recovery of barrels from these three wells?

A In previous testimony we reviewed the information

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that we knew or had access to at that time and proved to our own satisfaction, and I think the satisfaction of the Commission, that these wells would probably, since they are a salvage, in a salvage reservoir, they would have produced probably enough to get our drilling money back, primary reserves on 40-acre drainage patterns.

We would assume now that since no additional information has been gathered that would cause us to increase reserves, that these original estimates are in the ball park. Certainly current production would seem to indicate that we will need far in excess of our original reserves to make any money.

Q You say you will get the drilling costs back. Have you taken off taxes and operating expenses in your consideration?

A No. We said "X" number of dollars would give us a hole and a hundred percent of the oil in place would probably get the money back. We don't operate on one hundred percent of the revenue. The state is the royalty and they get their twelve and a half and there are other trades involved before it gets to Coastal States, that probably on a 40-acre allowable and 40-acre reserve we would not expect to get drilling costs back.

Q You certainly wouldn't get back operating expenses

and make a profit after taxes?

A Not from the Abo dolomite.

Q On the 80-acre spacing would the situation be any better income-wise? I assume it would be no better. You would have no more recovery?

A No. There are "X" number of barrels in the ground and we would have to produce them out of the existing wells. We do not plan to develop further the Abo dolomite.

Q Because of this adverse economics?

A Because of the economics situation in the area. We have already invested nearly a million dollars in the area and we doubt that we'll get but one well paid for.

Q Any one of these wells producing top allowable?

A The Southern Minerals well is on a pump and on occasion will produce top allowable. The allowable for these wells which are completed in the 8,000 to 9,000-foot zone on 80-acre spacing is 152 barrels per day, on 40 acres is 114. Neither of the re-entries is capable of producing near that allowable, but the Southern Minerals well on occasion, it can not be determined with any -- it's not cycling, it can not be determined when it will occur, but quite frequently the well will increase in productivity. In other words, we're producing at a normal rate of say a hundred barrels a day and maybe one out of six weeks it will jump up to 175 to 200

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barrels per day.

Q Based upon your knowledge and study of the field and upon the drilling activity that has occurred in the last year and the high cost of drilling, as you testified to in the expectations of recovery, do you have an opinion as to whether or not the Flying "M" Abo Pool should be developed on 80-acre or 40-acre spacing?

A I have an opinion that the wells in the Abo dolomite in the Flying "M" Abo Pool at the present time will be those that will be there from now on. I do not foresee any further development in the area. I would say that we can probably recover the drilling and completion costs of the Southern Minerals well, for example, more rapidly if on those occasions when the well is capable of producing in excess of a 40-acre allowable that the well should be allowed to do that, and such months as we have produced in excess of a 40-acre allowable that we should not penalize this well nor cause any damage by shutting it in, for example, I do not know that this would be so. So I make that statement then under those circumstances.

Q So, as I understand, it would be your recommendation to the Commission that the pool rules with respect to the Flying "M" Abo Pool, particular reference to the 80-acre spacing, be made permanent?

A Yes, sir, this is what I said.

Q And you feel that the field is fully developed at this time?

A The field is fully developed at this time.

Q Was this exhibit prepared by you or under your direct supervision, except for the core analyses?

A It was.

MR. CHRISTY: I think that will be all.

MR. NUTTER: Are there any questions of the witness?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Staton, these three core analyses that you've got, one of them is on the Skelly State Well, the other is on the Southern Minerals 1-15, and the third is not labeled. What well was this?

A That is the Shell State No. 1. I beg your pardon, I did not label those. I should have. The one that is unlabeled is Shell State No. 1.

Q When was it cored?

A It was drilling at the time we were here last year. It was cored sometime in late October or early November, 1963.

Q So all of these cores are new cores as far as this pool is concerned? They were not available at the time of the hearing last time?

A They were not. We did not have core analysis. The only thing we had was a Schlumberger wireline test and a drill stem test in the area over the dolomite Abo pay..

Q Have you made any computation of reserves using the data that you have available with the cores now?

A From the data that we have available, we would say there are no reserves in place. These three additional wells that we have drilled in the last year are these that we have cored. We have attempted completion on two of them without avail.

Q And none of these three is a producer?

A None of the three is a producer from the Abo dolomite.

Q So far as your reserves here in the Abo are concerned, you've still got the Schlumberger test and that's about all, to compute the reserves?

A That's all. We have not any additional information that would enhance the testimony that we presented this time last year.

Q Do you still go by the reserves as they were --

A I can not change them --

Q -- as they were presented last time?

A I have no means whereby, I can't accept that we'll produce those that we have in the area until such time as they

are uneconomical to operate.

Q The reserves that you presented last year --

A Would tend to indicate that on the Southern Minerals well we would expect 64,662 barrels on a 40-acre production unit, 129,324 on an 80-acre unit.

MR. NUTTER: Are there any other questions of Mr. Staton? He may be excused.

(Witness excused.)

MR. CHRISTY: At this time we would like to offer in evidence Applicant's Exhibit 1, and that's all we have for the Coastal States.

MR. NUTTER: Applicant's Exhibit 1 in Case 2904, 10-28-64, admitted in evidence.

(Whereupon, Applicant's Exhibit No. 1 was offered and admitted in evidence.)

MR. NUTTER: You have nothing further, Mr. Christy?

MR. CHRISTY: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in this case? We will take the case under advisement.

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STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

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

Witness my Hand and Seal this 10th day of November, 1964.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 2904
heard by me on 10/28, 1964.

[Signature], Examiner
New Mexico Oil Conservation Commission

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I N D E X

WITNESS

PAGE

CARROLL STATON

Direct Examination by Mr. Christy

2

Cross Examination by Mr. Natter

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EXHIBIT

MARKED

OFFERED AND
ADMITTED

Applicant's No. 1

2

13

Coastal State & Gas Production

Perigee 15 E 16 T 15 133 E
1 point incl 80 100 100
Ford 100 100 E 100 100

DRAFT

JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CF Subj. _____

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

CASE No. 2904

Order No. R- 2576-A

APPLICATION OF COASTAL STATES GAS
PRODUCING COMPANY FOR THE CREATION
OF A NEW ABO POOL AND SPECIAL POOL
RULES, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

Cause came on for hearing at 9 o'clock a.m. on
October 10, 1964, at Santa Fe, New Mexico, before Examiner
Daniel S. Butler.

NOW, on this _____ day of Nov., 1964, the Commission,
a quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That by Order No. R-2576, dated October 3, 1963, tem-
porary Special Rules and Regulations were promulgated for the
Flying "M" Abo Oil Pool, Lea County, New Mexico.

(3) That pursuant to the provisions of Order No. R-2576,
this case was reopened to allow the operators in the subject pool
to appear and show cause why the Flying "M" Abo Oil Pool
should not be developed on 40-acre spacing units.

~~(4) That the evidence establishes that one well in the~~
~~Flying "M" Abo Oil Pool can efficiently and economically~~
~~drain and develop 80 acres.~~

CASE No. 2904

Order No. R-2576-A

(4)(b) That to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-2576 should be continued in full force and effect until further order of the Commission.

(5)(b) That the Special Rules and Regulations promulgated by Order No. R-2576 have afforded and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil in the pool.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the Elving "P" Abo Oil Pool promulgated by Order No. R-2576 are hereby continued in full force and effect until further order of the Commission.

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

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

DRAFT

JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 2904

Order No. R-2576

APPLICATION OF COASTAL STATES GAS
PRODUCING COMPANY FOR THE CREATION
OF A NEW ABO POOL AND SPECIAL POOL
RULES, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
September 25, 1963, at Santa Fe, New Mexico, before Daniel S. Nutter,
Examiner duly appointed by the Oil Conservation Commission of New
Mexico, hereinafter referred to as the "Commission," in accordance
with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 25 day of September, 1963, the Commission,
a quorum being present, having considered the application, the
evidence adduced, and the recommendations of the Examiner,
Daniel S. Nutter, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Coastal States Gas Producing Com-
pany, seeks the creation of a new pool for Abo production and the
promulgation of temporary special rules and regulations govern-
ing said pool, including provisions for 80-acre spacing and ~~fixed~~ ^{limited}
well locations.

(3) That a new oil pool for Abo production should be
created and designated the Shyong "M" Abo Oil
pool. This pool was discovered by the Coastal States Gas Producing Company
Southern Minnesota State Well No. 1
located in Unit J of Section 16, Township 9 South, Range 33
East, NMPM, Lea County, New Mexico. The top of the perforations
in the Abo formation is at 8403 feet.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 9/25/63

CASE 2904

Hearing Date 9am 9/25/63

My recommendations for an order in the above numbered cases are as follows:

Enter an order creating the Flying "M" Abo
Pool comprising the $W\frac{1}{2}$ $W\frac{1}{2}$ Sec 15
and the $E\frac{1}{2}$ Sec 16, Twp 9 S, Rge 33 W,
Rea Co., N.M.

Promulgate spec. rules ^{effective immediately} for said
pool authorizing temporary 80-acre
proration units for period of 1 yr.
Units may comprise $\frac{1}{2}$, $S\frac{1}{2}$, or
 $W\frac{1}{2}$ of a single governmental quarter
section. ^{This first well on an 80-acre unit}
~~shall~~ ^{shall} be located
within 200 feet of the NW $\frac{1}{4}$ or the SE $\frac{1}{4}$
of the quarter section. Administrative
provision for ^{footage} tolerance is 25% of the
200 feet for topographical reasons
provided well will be ^{located within NW $\frac{1}{4}$ or SE $\frac{1}{4}$} no closer than
330 feet to the outer boundary of the
tract. Provide proportional factor of
4.00 and call case for another hearing
in Sept. ¹⁹⁶⁴

Provide that ^{80-acre} well spacing ~~increasing~~ ^{shall be}
to wells will become effective
upon receipt of ^{80-acre} plat & C-116
showing ability & well to produce.

(4) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 80-acre spacing units should be promulgated for the _____

Shyng "M" Abo Oil Pool.

(5) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(6) That the temporary special rules and regulations should be established for a one-year period and that during this one-year period all operators in the subject pool should gather all available information relative to drainage and recoverable reserves.

(7) That this case should be reopened at an ex parte hearing in October, 1964, at which time the operators in the subject pool should appear and show cause why the Shyng "M" Abo Oil Pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

(1) That a new pool in Lea County, New Mexico, classified as an oil pool for Abo production is hereby created and designated the Shyng "M" Abo Oil Pool, consisting of the following-described area:

TOWNSHIP 9 SOUTH, RANGE 33 EAST, NMPM
Section 15: W/2 W/2
Section 16: E/2

(2) That Special Rules and Regulations for the Shyng "M" Abo Oil Pool are hereby promulgated as follows: effective _____, 1963.

SPECIAL RULES AND REGULATIONS

FOR THE

Shyng "M" Abo Oil Pool

RULE 1. Each well completed or recompleted in the Shyng "M" Abo Pool or in the Abo formation within one mile

(6) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

of the Shing "M" Abo Oil Pool, and not nearer to or within the limits of another designated Abo pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Shing "M" Abo Oil Pool shall be located on a standard unit containing 80 acres, more or less, consisting of the N/2, S/2, E/2, or W/2 of a single governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

RULE 3. The Secretary-Director may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. The first well drilled on every standard or non-standard unit in the Shing "M" Abo Oil Pool shall be located within 200 feet of the center of the NW/4 or SE/4

of a governmental quarter section. All wells shall be located within 200 feet of the center of a governmental quarter section.

RULE 5. The Secretary-Director may grant an exception to the footage requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed unorthodox location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may

provided the well will be located in the NW/4 or SE/4 of a governmental quarter section and not closer than 330 feet to the outer boundary of the unit.

provided the well will be located no nearer than 330 feet to the boundary of another governmental quarter section.

quarter section.

approve the application upon receipt of written waiver from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) in the Shinarump "M" Abo Oil Pool shall be assigned an 80-acre proportional factor of 4.00 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit the operator may produce the allowable assigned to the unit from the well on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable in the Shinarump "M" Abo Oil Pool as the acreage in such non-standard unit bears to 80 acres.

IT IS FURTHER ORDERED:

(1) That any well presently drilling to or completed in the Abo formation within the Shinarump "M" Abo Oil Pool or within one mile of the pool ~~oil pool~~ that will not comply with the well location requirements of Rule 4 is hereby granted an exception to the requirements of Rule 4. The operator shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before November 1, 1963.

(1) ← (2) That ~~any operator desiring to dedicate 30 acres to a well in the Shinarump "M" Abo Oil Pool until the operator of the well files a new Form C-128 and Form C-116 with the Commission.~~ an 80-acre allowable shall not be assigned to a well in the Shinarump "M" Abo Oil Pool until the operator of the well files a new Form C-128 and Form C-116 with the Commission. Oil Pool shall file a new Form C-128 with the Commission on or before November 1, 1963.

(2) That this case shall be reopened at an examiner hearing in October, 1964, at which time the operators in the subject pool may appear and show cause why the Shinarump "M" Abo Oil Pool should not be developed on 40-acre spacing units.

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

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

J. M. HERVEY 1074 1943
HIRAH M. DOW
CLARENCE E. HINKLE
W. E. RONDURANT, JR.
GEORGE H. HUNKER, JR.
HOWARD C. BRATTON
S. B. CHRISTY IV
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
MICHAEL R. WALLER

LAW OFFICES
HERVEY, DOW & HINKLE
HINKLE BUILDING
ROSWELL, NEW MEXICO

September 6, 1963

TELEPHONE 622-6510
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P.O. OFFICE BOX 10

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

Coastal States Gas Producing Company herewith makes application for the designation of a new pool consisting of the $W\frac{1}{2}$ of Section 15 and the $E\frac{1}{2}$ of Section 16, T. 9S., R. 33E., N.M.P.M., Lea County, New Mexico, for the production of oil from the Abo Formation. Application is also made for special pool rules for the pool to include provisions for 80 acre spacing and proration units, and fixed locations for the wells to be within 200 feet of the $NW\frac{1}{4}$ and the $SE\frac{1}{4}$ of each quarter section. It is also proposed that the $E\frac{1}{2}$, $W\frac{1}{2}$, $N\frac{1}{2}$, or $S\frac{1}{2}$ of a quarter section can be dedicated to any well. A request is made for the applicable 80 acre proportional depth factor.

It is requested that the above rules be temporary for one year, and that the matter be set for hearing before an Examiner at the September 25 hearing.

To the best of applicant's knowledge, interested parties in the area are Shell Oil Company, John J. Redfern, Southern Minerals Corporation, Midland, Texas, Skelly Oil Company and American Trading & Producing Company, Midland, Texas. I am sure that you have the addresses of all of these companies and individuals.

Very truly yours,

HERVEY, DOW & HINKLE



Howard C. Bratton

HCB:jw

CC: Mr. Jack Birchum
Coastal States Gas Producing Company
Abilene, Texas

Coastal States Gas Producing Company
Roswell, New Mexico

DOCKET MAILED

Date 9-13-63


COPY

HERVEY, DOW & HINKLE, ATTORNEYS
ROSSELL, NEW MEXICO

Recd
7904

September 6, 1963

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

Coastal States Gas Producing Company herewith makes application for the designation of a new pool consisting of the $\frac{1}{4}$ of Section 15 and the $\frac{1}{4}$ of Section 16, T. 9S., R. 33E, N.M.P.M., Lea County, New Mexico, for the production of oil from the Abo Formation. Application is also made for special pool rules for the pool to include provisions for 80 acre spacing and proration units, and fixed locations for the wells to be within 200 feet of the NW $\frac{1}{4}$ and the SE $\frac{1}{4}$ of each quarter section. It is also proposed that the NE $\frac{1}{4}$, W $\frac{1}{4}$, N $\frac{1}{4}$, or S $\frac{1}{4}$ of a quarter section shall be dedicated to any well. A request is made for the applicable 80 acre proportional depth factor.

It is requested that the above rules be temporary for one year, and that the matter be set for hearing before an Examiner at the September 25 hearing.

To the best of applicant's knowledge, interested parties in the area are Shell Oil Company, John J. Redfern, Southern Minerals Corporation, Midland, Texas, Skelly Oil Company and American Trading & Producing Company, Midland, Texas. I am sure that you have the addresses of all of these companies and individuals.

Very truly yours,

HERVEY, DOW & HINKLE


Howard C. Bratton

HCB:jw

CC: Mr. Jack Birchum
Coastal States Gas Producing Company
Abilene, Texas

Coastal States Gas Producing Company
Roswell, New Mexico

COPY

HERVEY, DOW & HINKLE, ATTORNEYS
ROSWELL, NEW MEXICO

September 6, 1963

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

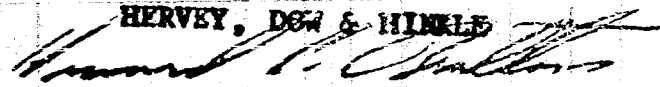
Coastal States Gas Producing Company herewith makes application for the designation of a new pool consisting of the NW $\frac{1}{4}$ of Section 15 and the NE $\frac{1}{4}$ of Section 16, T. 93., R. 33E., N.M.P.M., Lea County, New Mexico, for the production of oil from the Abu Formation. Application is also made for special pool rules for the pool to include provisions for 80 acre spacing and proration units, and fixed locations for the wells to be within 200 feet of the NW $\frac{1}{4}$ and the SE $\frac{1}{4}$ of each quarter section. It is also proposed that the NE $\frac{1}{4}$, NW $\frac{1}{4}$, SE $\frac{1}{4}$, or SW $\frac{1}{4}$ of a quarter section can be dedicated to any well. A request is made for the applicable 80 acre proportional depth factor.

It is requested that the above rules be temporary for one year, and that the matter be set for hearing before an Examiner at the September 25 hearing.

To the best of applicant's knowledge, interested parties in the area are Shell Oil Company, John J. Redford, Southern Minerals Corporation, Midland, Texas, Shelly Oil Company and American Trading & Producing Company, Midland, Texas. I am sure that you have the addresses of all of these companies and individuals.

Very truly yours,

HERVEY, DOW & HINKLE



Howard C. Brazton

HCB:jw

CC: Mr. Jack Birch
Coastal States Gas Producing Company
Abilene, Texas

Coastal States Gas Producing Company
Roswell, New Mexico

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

W. F. MARSHALL, President

1201 (4-60)

SYMBOLS

DL = Day Letter

NL = Night Letter

LT = International Letter Telegram

The time shown in this date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination.

LA102 DA423

B MDA114 NL PD-MIDLAND TEX 24-

OIL CONSERVATION COMM-

SAFE NEX-

1953 SEP 24 PM 3 27

RE: ASE #2904, AS OWNER OF OIL AND GAS LEASE COVERING THE 2 SEC. 16, 98, 33E, LEA CO., N.M., WE CONCUR WITH COASTAL STATES GAS PRODUCING COMPANY RE: TEMPORARY RULES INCLUDING 80 ACRE SPACING FIXED LOCATIONS AT THIS TIME BECAUSE GEOLOGICAL AND ENGINEERING INFORMATION IS BASED UPON ONLY TWO RECENTLY COMPLETED WELLS.

REDFERN & HERD, INC. BY: JOHN J REDFERN JR
1200 WILCO BLDG MIDLAND, TEXAS

CONCERNING ITS SERVICE

No. 27-63

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 25, 1963

9:00 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, or Elvis A. Utz, as alternate examiner:

- CASE 2883: (Continued from the August 21st examiner hearing)
Application of Pan American Petroleum Corporation for an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a gas, Blinbry oil and Paddock gas triple completion, Fowler Field, at an unorthodox location for the Fowler Blinbry Oil Pool 990 feet from the South line and 1650 feet from the East line of Section 15, Township 24 South, Range 37 East, Lea County, New Mexico.
- CASE 2901: Application of Pan American Petroleum Corporation for an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to drill its SMU Well No. 17 at an unorthodox location 1980 feet from the North line and 1980 feet from the East line of Section 15, Township 24 South, Range 37 East, Fowler Ellenburger Pool, Lea County, New Mexico.
- CASE 2902: Application of Pioneer Production Corporation for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests in the Blanco Mesaverde and Basin-Dakota Gas Pools underlying the S/2 of Section 28, Township 30 North, Range 12 West, San Juan County, New Mexico.
- CASE 2903: Application of Coastal States Gas Producing Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Gulf State Well No. 1, located in Unit F of Section 20, Township 17 South, Range 36 East, Lea County, New Mexico, to produce oil from the Double-A Abo Pool and an undesignated Lower Leonard pool through parallel strings of tubing.
- CASE 2904: Application of Coastal States Gas Producing Company for the creation of a new Abo Pool and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for production in Sections 15 and 16, Township 9 South, Range 33 East, Lea County, New Mexico, and for the establishment of temporary rules therefor, including provisions for 80-acre spacing and fixed well locations.
- CASE 2905: Application of Robert N. Enfield for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Indian Basin Unit Area comprising 4,278.29 acres of Federal, State and fee lands in Township 21 South, Range 23 East, Eddy County, New Mexico.
- CASE 2906: Application of Western Oil Fields, Inc. for a quadruple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the quadruple completion (tubingless) of its Gulf Hill No. 4 located in Unit S of Section 4, Township 21 South, Range 37 East, Lea County, New Mexico, to produce oil from the Penrose-Skelly, Tubb, Drinkard and Wantz Abo

Pools, through parallel strings of 2 7/8 inch casing cemented in a common well bore.

- CASE 2907: Application of Penroc Oil Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests in the Indian Hills-Upper Pennsylvanian Gas Pool underlying Section 19, Township 21 South, Range 24 East, Eddy County, New Mexico.
- CASE 2908: Application of Penroc Oil Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests in the Morrow section of the Pennsylvanian formation underlying Section 19, Township 21 South, Range 24 East, Indian Hills Field, Eddy County, New Mexico.
- CASE 2909: Application of Sinclair Oil & Gas Company for the extension of a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Grayburg-Jackson Waterflood Project, Grayburg Jackson Pool, Eddy County, New Mexico, by the injection of water into 7 additional wells located in Sections 3, 4, 5, 8, 9, and 10, Township 17 South, Range 31 East. Applicant further seeks an administrative procedure for further expansion of the project by the conversion to water injection of 30 additional wells in three 6-month stages commencing in early 1964, said wells to be located in Sections 3, 5, 6, 7, 8, 9 and 10 of said township.
- CASE 2910: Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the Scharb Bone Spring Oil Pool to comprise the W/2 of Section 5, all of Section 6, and the N/2 of Section 7, Township 19 South, Range 35 East, Lea County, New Mexico, and for special rules therefor, including 80-acre spacing and proration units to comprise any two contiguous 40-acre tracts, and for fixed well locations.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 25, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Coastal States Gas Pro-
ducing Company, for the creation of a new
Abo Pool and special pool rules, Lea
County, New Mexico, seeking the creation
of a new oil pool for Abo production in
Section 15 and 16, Township 9 South, Range
33 East, and for the establishment of
temporary rules therefor, including pro-
visions for 80-acre spacing and fixed well
locations.

Case No. 2904

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

DEARNLEY-MEIER REPORTING SERVICE, Inc.

SAN FRANCISCO, CALIF.
PHONE 393-1182

SANTA FE, N. M.
PHONE 983-3871

ALBUQUERQUE, N. M.
PHONE 243-6301

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 25, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Coastal States Gas Producing
Company for the creation of a new Abo Pool
and special pool rules, Lea County, New Mexico,
seeking the creation of a new oil pool for Abo
production in Sections 15 and 16, Township 9 South,
Range 33 East, and for the establishment of
temporary rules therefor, including pro-
visions for 80-acre spacing and fixed well
locations.

CASE NO.
2904

BEFORE: DANIEL S. NUTTER, Examiner for the Commission

TRANSCRIPT OF HEARING

MR. NUTTER: Case 2904.

MR. DURRETT: Application of Coastal States Gas Producing
Company for the creation of a new Abo Pool and special pool rules,
Lea County, New Mexico.

MR. CHRISTY: Sim Christy for the applicant, Coastal
States. We have two witnesses, Mr. Examiner.

(Witnesses sworn)

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Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691



CARROLL STATON,

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you please state your name, your occupation, where you reside?

A My- -

Q And by whom you are employed?

A - -name is Carroll Staton, I live in Roswell, New Mexico, I am employed by Coastal States Producing Company as a geologist.

Q Mr. Staton, have you previously testified before this Commission as a geologist, and had your qualifications accepted?

A No, sir, I have not.

Q Would you please briefly tell the Examiner where you went to school, your college education, what degree, if any, you received?

A Graduated from Texas Western College at El Paso in 1955, received a degree of Bachelor of Science with a major in geology and a minor in math.

Q Since 1955, you have been employed as a geologist with various companies?

A Yes, sir. I went to work in the Roswell area, in Roswell, New Mexico, in 1955, with the Pure Oil Company. Left that company in September of 1960. I was an independent for approximately 18

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Albuquerque, New Mexico
Phone 243-6601

Suite 1120 Simms Building

months, and then, I went to work for Coastal States in April of 1961.

Q Has your experience as a geologist been in the area of the land involved in that application in Case 2904?

A Almost exclusively.

Q Are you familiar with the area involved in the Case 2904 as well as the wells and their histories?

A Yes, sir, I am.

Q Does the Commission have any questions concerning the qualifications of the witness?

MR. NUTTER: No, sir. He is qualified. How do you spell your name?

A S-t-a-t-o-n.

MR. NUTTER: Thank you.

Q (By Mr. Christy) Now, would you briefly tell us what is sought by that application in Case 2904?

A We are seeking creation of a new Abo Pool. We are seeking to obtain 80-acre spacing and fixed locations for development of the Abo in this new Abo Pool.

Q Now, the pool that you are speaking of, I believe, is the west half of Section 15, and the east half of Section 16 in Township 9 South, Range 33 East, Lea County, New Mexico?

A Yes, sir.

Q Is that correct, sir? I direct your attention to what has been marked as Applicant's Exhibit Number One in Case 2904, and



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PAGE 5

ask you if you will, please, look at the first page showing the structural map contoured to the top of the Abo Dolomite, top of pay. Is that the area you were just speaking of?

A Yes, sir, it is.

Q And did I correctly state what it is contoured on?

A Yes, sir, you did.

Q Turning over to the next page, again it shows the proposed acreage dedication with your application as to the 80-acre spacing; is that correct, sir?

A Yes, sir.

Q Now, I notice there are two wells in the unit area. Are those the only two wells present in the unit area?

A Yes, sir.

Q Going over two pages, I believe, sir, shows the present drilling wells. Would you briefly, for the record, tell us where those wells are located? I believe there is one in Section 9. Would you give us that one first?

A Well, the well in Section 9 is in the Southeast Southeast, the Coastal States Gas Producing Company Number One Shell State.

Q Where is it drilling at this time?

A It is drilling in the San Andres at approximately 4600.

I am not - - I do not have this morning's drilling.

Q What is the projected depth on this well?

A 9600 to the Bough "C" formation, Penn.

Q Is there a drilling well depicted on there, another - -



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A Well, Section 21, Southeast Quarter of the Northwest Quarter, is the Coastal States Gas Producing Company Number One Skelly State, projected depth, 9600 feet, to the Bough "C" formation.

Q Now, this map also --I will come to the two wells in the unit in a second, --exclusive of those, it shows a well in the Southeast Southwest of Section 11, showing a total depth of 12,480. Has that been plugged and abandoned?

A That has been plugged. That is Coastal States Gas Producing Company Number One Pure State, which was dry in the Devonian formation at a total depth of 12,480 feet.

Q Any of these other wells producing or test the Abo formation out of--

A There have been scattered drill stem tests throughout the area over the Abo Dolomite pay. None have been capable of producing. Evidently, they have been plugged.

Q Let's turn to the two wells, if you would, tell us a little bit of the well history. Let's start with Number One Southern Minerals Well, which is in Section 16. Give us the location of it first, and your total depth objective, and what was incurred?

A Coastal States Gas Producing Company Number One Southern Minerals State was staked in a northeast-northwest-- Excuse me. Drilled in the Northeast Quarter of the Northwest Quarter of the Southeast Quarter of Section 16, projected depth 9600 feet, to the Bough "C" formation. This was spudded June 4, 1963, and it was carried to a total depth of 9404, where we tested water in the



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Bough "C" formation. We ran pipe on the test, not feeling that it was an adequate test of the fluids in the Bough "C" formation, we perforated at the Bough "C" and recovered over a number of days considerable salt water, and at that time, in an effort to salvage our cost, we plugged back to and perforated the Abo Dolomite section at approximately 8600 feet. Subsequent production tests have indicated that we should be able to recover some of our drilling and completion costs of the well from the Abo Dolomite.

Q So, it is now completed in the Abo?

A Yes, sir, it is.

Q All right, sir. Now, was that the only two zones you tested in that well; did you also test the San Andres?

A We did not test the San Andres with a drill stem test, no.

Q Now, where is the second well within the unit area located and what is the brief well history?

A In the Northwest Quarter of the Northwest Quarter of Section 15 the American Mannex Number One Flying "M" State. This was originally drilled by Trice Production Company to a total depth in excess of 12,600 feet. It did not test the Devonian, but from structural position with relation to Coastal States Number One Pure State in Section 11, would be indicative of a water test in the Devonian. The well was plugged by Trice. American Mannex obtained the leases and engaged Coastal States as consultant in the well. American Mannex and Coastal States ran pipe after cleaning out to a



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PAGE 6

total depth of 12,400 feet. Subsequent attempts at establishing production in the Basal Pennsylvanian, and in the Bough "C" were negative, and after the completion of the Coastal States Number One Southern Mineral State in the Abo, production was then established in the American Mannex at an approximate similar depth. It is capable of producing oil from the Abo Dolomite at the present time.

Q All right, sir. So, as I understand it, you have the two Abo wells, are both of them capable of producing top allowable wells?

A The Southern Minerals wells is flowing at the present time, at a rate that would indicate top allowable production. The American Mannex has a pumping unit on the well. It is pumping and flowing volumes that would indicate that it could be top allowable for a period of time.

Q Now, sir, with respect to these two wells, have you calculated the recoverable oil under the well bore and surrounding acreage, both on the 40 acre basis and on the 80 acre basis?

A Yes, sir. I have.

Q I believe the testimony you are about to offer is shown in a chart form on one of the pages in Exhibit One. Is that correct, sir?

A Yes, sir.

Q All right. Now, what did you calculate your porosity?

A On the basis of Gamma Ray Neutron Log, we calculated the porosity on the Southern Minerals State as 15 percent porosity.



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From a Laterolog curve, we calculated water saturation at 22 percent. We have approximately 13 feet of this net pay in the Southern Minerals State Number One.

Q When you consider the water circulation?

A Yes, sir.

Q You wind up with a net- -

A No. We have this on the basis of the Neutron Gamma Ray Log.

Q All right, sir. Now, how did you calculate and what did your calculations run in the oil in place in barrels per acre foot?

A Barrels per acre foot, oil in place?

Q Under this same well?

A Under this same well, 829 barrels per acre foot.

Q Your calculations are shown here in Exhibit One?

A Yes, sir.

Q And using the barrels per acre foot, and your- - what kind of factor did you use in arriving at the recoverability-recoverable oil primary from the barrels per acre foot in place?

A Assumed this to be a solution drive- - gas drive reservoir, and recovering 15 percent of oil in place, we assume that we will recover 124 plus barrels per acre foot.

Q Is the 15 percent an accurate figure?

A Yes, sir, it is.

Q All right, sir. And that gives you, if you will multiply



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the net recoverable oil times the - - by the net pay, how many barrels do we get oil recoverable per acre foot?

A Recoverable oil per acre foot- -

Q Excuse me. Barrels per acre. Beg your pardon.

A We would assume we would recover approximately 1600 barrels per acre.

Q And taking that on 40 acres and 80 acres spacing, what is the total recoverable oil?

A On the basis of 40 acres, we expect to produce approximately 64000 plus barrels on 40 acres, twice that or a 129 thousand plus on 80 acres.

Q All right, sir. Now, would these calculations you have just given me on the Number One Well, be applicable also to the other well in the unit area?

A Yes, sir, they would.

Q You say you are familiar with the wells in this area, and their performance, in your opinion, will one well effectively and efficiently drain 80 acres in this area?

A Yes, sir.

Q Now, sir, I direct your attention to what has been marked as Applicant's Exhibit Two, which, I believe, is a map of the area. Does this exhibit reflect the ownership of the offsetting operators to the area involved?

A Yes, sir.

Q Now, very briefly, could you take us around the unit area



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as to who owns the operating rights or working interests, in the Abo formation surrounding the proposed unit area? Start in the Northeast, which would be the South Half of Section Ten.

A In Section Ten, American Trading and Producing has all of Section Ten.

Q And Section Nine?

A Section Nine, the Shell Oil Company is at the present owner of record of the leases in this section.

Q Let me stop you, Mr. Staton. What I am interested in is the operating rights in the Abo. I know you are drilling a well in Section Nine. Have you obtained a farm out from Shell?

A Yes, sir, we have.

Q So, that for the Abo purposes, you own it?

A Yes, sir.

Q Now, to the west of the proposed unit area, let's take the offsetting 80, which would be the East Half of the Northwest of Section 16. Who owns that?

A Redfern.

Q Mr. Redfern?

A John J. Redfern.

Q You have, I believe, a farm out on the West Half Northwest right next to them?

A Yes, sir.

Q All right, sir. Now, below in the East Half Southwest of Section 16, it is marked American Mannex?



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A Yes, sir.

Q That is outfit- - the outfit you are operating for as their agent?

A Yes, sir.

Q Down in Section 21, where you are drilling a well, marked Skelly, do you have the operating rights on that?

A Yes, sir, we do.

Q As to the Bough? Again coming over toward the East, next is the American Mannex that you have mentioned. How about Southern Minerals?

A We are operators of this lease.

Q To the south southeast of the unit area, it is marked J. C. Ainsworth. What is the story on that, who owns the operating rights on that?

A We are not familiar with the operating rights on this particular lease. It shows on our records to be an open lease.

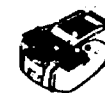
Q All right, sir. And let's go back up here to the East side, who owns the land completely to the east, the operating rights?

A We are the operators of the east acreage.

Q All right, sir.

MR. CHRISTY: Mr. Examiner, I propose to ask the other witness questions concerning the economics of 80 versus 40 acres. Do you have anything else that you feel would be of interest to the Commission that I have overlooked in connection with this application?

A I can't think of anything.



MR. CHRISTY: I believe that is all we have from this witness on direct.

MR. NUTTER: Are there any questions of Mr. Staton?

MR. DURRETT: Yes, I have a few.

EXAMINATION

BY MR. DURRETT:

Q I believe you testified on direct examination that one well in the area would drain 80 acres?

A Yes, sir.

Q On what do you base that opinion?

A On the basis of the permeability that we have been able to establish in the wells that we are familiar with in the area.

Q You do not have any interference test; is that correct?

A I do not, no, sir.

Q You haven't ran any and you are not familiar with any?

A I would prefer that our engineer talk about this.

Q Will he do so later on?

A Yes, sir.

Q All right.

MR. DURRETT: Well, I will reserve my questions along that line for him then. Thank you.

* * * * *

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EXAMINATION

BY MR. NUTTER:

Q Mr. Staton, in arriving at your reserves here, you have got this formation volume factor, would you tell me how you arrived at that formation volume factor?

A This is a request I would like for you to direct at our engineer.

Q Now, I heard several times the mention of this area as being the unit area. Is this unitized?

MR. CHRISTY: No, sir. That is my mistake. That is the area we asking for the pool on. That is my misnomer.

Q No, in reply to a question by Mr. Durrett, you said that you based your opinion that this well could drain 80 acres on the permeability that you have established here. What do you actually know about the permeability that you have established here, in this well, have you taken any cores?

A We have not cored, no, sir, but we did run a formation tester, test of Schlumberger, and we recovered water on the test in the formation, but on the basis of pressure build ups, Schlumberger engineers were able to calculate the permeability of the formation.

Q What is the estimate of the permeability?

A To water for approximately 50 millidarcies.

Q How about the oil?

A Well, we are - - we did not recover oil on that

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particular test, sir. And I am -

Q I see. Now, these two wells that are drilled in the area that you mentioned were both projected to the Bough "C"?

A Yes, sir, they are, yes, sir.

Q The two that are producing are both - - both penetrated the Bough "C"?

A Yes, sir.

Q The Bough "C" was productive in either one of those two?

A That is correct.

Q First well, let's see, would be the Flying "M" State Number One. Did it actually go to the Devonian, or was it projected to the Devonian because the Pure State well to the east had encountered water, this was taken down to what?

A At this particular time, Trice Production Company was on its way to Bankruptcy, and this particular well required approximately a year to reach the depth that it did go to and I don't think that they could buy bits or obtain additional cash to take it on down the 100 or so feet that it would take or require to test the Devonian.

Q But, it was actually running a little lower than the Pure State well, wasn't it?

A Well, we prefer to say the Pure State was running a little bit high to it.

Q But, the Pure State well did go to the Devonian?

A Yes, sir.



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Q And was non-productive?

A It was non-productive.

Q Have either of these two wells, which are drilling at the present time, penetrated the Abo yet?

A No, sir. They are both in the San Andres this morning.

Q I see. How much production has been obtained to date from these two wells that are completed in the Abo?

A The Southern Minerals Number One has produced to date 2907 barrels. The American Mannex has produced 1750 barrels. The American Mannex was completed subsequent to the Southern Minerals well, which was completed on the 28th of July this year.

Q Let's see, what completion dates for the two wells?

A The Southern Minerals was completed 7-28-63, and I

don't have the - August 10th.

Q Now, you give this initial potential as being 276 barrels on the Southern Minerals, and 192 barrels on the Flying "M". Have any recent tests, or have any tests been taken subsequent to this that would indicate their capacity?

A Yes, sir.

Q Are they -

A May I let the engineer answer these questions?

MR. NUTTER: Fine. That will be fine. Are there any other questions of this witness?

MR. DURRETT: Yes, sir, I have a question.



RE-EXAMINATION

BY MR. DURRETT:

Q Mr. Staton, do you have a proposal as to - - if the Commission sees fit to grant your application, as to the dedication of acreage requirements that would be in the rules?

A Pardon me, sir. I don't understand your question.

Q Maybe it is in your application here. Let me look and see. I believe that is in the application. That will answer my question. I will cover that with the engineer, though. I don't have any further questions.

MR. NUTTER: If there are no further questions, Mr. Staton may be excused.

PERRY BARHAM,

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you state your name, address, occupation and by whom you are employed?

A My name is Perry Barham, I live at Abilene, and I am employed by Coastal States Gas Producing Company as a production

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superintendent.

Q Have you previously testified before this Commission and had your qualifications accepted as a petroleum engineer?

A No.

Q Would you tell us very briefly where you went to school, of higher learning, what degrees, if any, you received and what year?

A I went to - attended Texas Tech College School of Petroleum Engineering, graduated in 1950 with a BA degree in Petroleum Engineering.

Q Since that time, where have you worked in the Petroleum Engineering Field?

A I worked for Stanolind for three and a half years, in the Brownfield area, a year and a half for British American in the Midland area, four years for Union Oil Company of California in the Sweetwater area, and four and a half years for Union Oil Company of California in the Hobbs area.

Q You are presently employed by Coastal States?

A Yes.

Q Now, sir, are you familiar with the general area in Case 2904, and the wells in that area?

A Yes,

Q I see. Does the Examiner have any question concerning the qualifications?

MR. NUTTER: No, sir. How do you spell your name?

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A B-a-r-h-a-m.

Q (By Mr. Christy) Now, Mr. Barham, in response to a question ask a moment ago of the other witness, by Mr. Durrètt, as I underscand it, you are asking for a fixed 80 acre - - I mean 80 acre spacing on either a North-South, or East-West basis?

A Yes, sir, that is correct.

Q Wells to be drilled in the- - either the Northwest or Southeast of the particular 160 acre area; would that be correct, sir, you would have fixed pattern of the Northwest-Southeast?

A Right.

Q You would propose that the 80 to be dedicated to the well may either be on a North-South or East-West basis; is that correct?

A Pardon me, just a minute. The word throwed me.

Q That is correct, is it not, sir?

A Yes, sir.

Q Now, sir, turning to the wells that Mr. Staton has mentioned, do you happen to have logs on those wells? May I have them, please, and mark them. I direct your attention to Applicant's Exhibit Number Three, and ask you if that is the log on the Coastal States Well in this project area?

A Yes, sir, it is.

Q And I will direct your attention to Applicant's Exhibit Four and ask you if that is the log on the other American Mannex well in this same project area?



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A Yes, sir, that is right.

Q Now, sir, Mr. Staton testified with respect to the potential from Applicant's Exhibit One, which, I believe, showed the Southern Minerals State well as potentialled for 276 barrels, and the American Mannex well potentialing at 192 barrels?

A Yes.

Q What was that potential based on, what type of test?

A Pumping test.

Q Have any subsequent tests been taken with respect to these?

A Yes, sir. September 20th- - What is today? What is today?

Q September 25th.

A From 7:00 a.m. on the 24th to 6:00 a.m. this morning.

Q Yes.

A The wells, the Southern Minerals produced 173 barrels on a 17/64th. The Flying "M", or American Mannex, well pumped 146 barrels in 24 hours.

Q Same type of choke?

A Pumping.

Q Pumping. Excuse me. Beg your pardon.

A Pumping difficulties, if we can keep it running all time.

Q Now, sir, with respect to recoverable production calculations that Mr. Staton mentioned, a question was ask by the Examiner with respect to the permeability of this section underlying these wells. Could you give us any testimony with respect to



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permeability characteristics here?

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A We run a bucket test, wire line bucket test, and obtained--

Q Which well are we speaking of now?

A Southern Minerals.

Q All right, sir.

A And we calculated the apparent permeability from the bucket test.

Q This is your wire line test?

A And calculated off of the-- No, we didn't either. We got it off the bucket test.

Q Got it off the bucket test. Now, is the test that you just spoke of depicted in Applicant's Exhibit Five?

Yes.

Q This is the test you were just speaking of?

A Yes, it is. That is correct.

Q This reflects the result of that test?

A That is true.

Q And does that reflect what type of permeability it has, what type of permeability does it reflect?

A Low permeability.

Q Low permeability?

A Yes.

Q Now, do you concur in the testimony of Mr. Staton with respect to the recoverable oil from the Bough "C" zone underlying these wells?



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A Yes, I do.

Q The calculations he has testified to, you concur in?

A Yes.

Q Now, sir, if I might ask you a question or two concerning the economics of this. What did it cost to drill the Coastal States well?

A Approximately \$140,000.00.

Q Did that include testing the Bough "C"?

A Yes.

Q Now, if we delete that portion of drilling, what would be the cost of drilling and completing the well?

A \$130,000.00.

Q About hundred thirty. Now, how about flow lines, tank batteries, and so forth?

A Around ten to \$16,000.00.

Q This would give us a total cost of \$140,000.00 to \$160,000.00?

A Right.

Q Are these 7/8ths leases, do you have 7/8th interest, or do you have an override on them?

A They are burdened.

Q Now, sir, what would be the income from a barrel of oil under this area? Please give us first the gross income and then, tell us what deductions you are making and for what?

A The price of crude is based on the 3.01, \$3.01 posted



price for 40 API gravity crude.

Q Is Magnolia the purchaser of this production?

A We are selling it to McWood as a transporter and they are selling it to Magnolia.

Q All right, sir. You have a basic price of \$3.01?

A Yes, sir.

Q Now, what degree gravity oil is that on the posted price?

A Posted price for 40 API and 60 degrees if it is fair, two cents per degree penalty, which makes six cents penalty on the oil. We have a 15 cent trucking and marketing charge, and a variable 16 cent taxes, ad valorem and production cost.

Q That gives you \$2.64 net?

A Yes, sir.

Q Just for a moment, let's assume this is a 7/8ths lease, but at a 7/8ths lease, and using the figures testified by Mr. Staton what is the operator's gross income both on 40 acres and 80 acres, over the life time of the wells.

A \$149,421 on a 40 acre spacing, and on 80 acre spacing, would be \$298,800.00 plus.

Q Now, sir, both of these wells continued to produce at top allowable, would it take you - - how long would it take you to recover the recoverable oil underneath the particular wells, how many years?

A At top allowable, 36 months.

Q Would you anticipate from your experience with other wells

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in this area, that they will continue as top allowable wells?

A No, sir.

Q As a matter of fact, one of them is already on the pump?

A Yes, sir.

Q Now, what would be your best educated estimate as to how long it will take to recover the recoverable oil underneath these wells?

A The field will be abandoned within seven years, between six and seven years.

Q Going to take you six or seven years to recover the primary oil?

A Yes, sir.

Q When you do, as I understand your testimony, have 40 acre spacing, you won't quite break even, on 80 acre spacing, you will just about double your money, on six or seven years?

A Yes, sir, that is correct.

Q Do you consider this as being an economic venture?

A No. Not by itself.

Q Do you recommend to your company- -

A That is the reason for projection on the Bough "C", and of the San Andres.

Q So, as I understand you, you have a three shot deal, three shots at it is the reason you would- -

A Right.

Q - - recommend drilling the well?



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A That is correct.

Q This sounds like it is in the nature of a salvage job; is that correct?

A The Abo definitely is a salvage operation.

Q Now, do these permeability tests that you have taken and the other tests that you have taken, and your knowledge of the wells, indicate that the wells will effectively and efficiently drain 80 acres in the Abo?

A Yes, we feel that they will.

Q Do you feel that the granting of this application of 80 acre spacing would be in the interest of conservation?

A Yes.

Q And would it prevent waste?

A Yes.

Q By the drilling of - - prevent the drilling of unnecessary wells and thereby prevent waste?

A True, it would.

Q Do you see the rights of any other offset party or royalty owner, the correlative rights being violated by granting of the 80 acre spacing here?

A No, sir.

Q Do you have anything else that I have not ask you about you feel might be of any interest to the Examiner in the examination of this case, or the Commission?

A No.



MR. CHRISTY: I believe that is all from this witness.

* * * *

MR. NUTTER: Are there any questions of Mr. Barham?

EXAMINATION

BY MR. NUTTER:

Q Mr. Barham, the initial reservoir pressure in the Southern Minerals is 3250. The initial pressure in the Flying "M" is 3068, and in your reservoir data sheet over here, you give the original reservoir pressure for reservoir as a whole at 3085. Would you explain these three pressures, please?

A The initial reservoir pressure, we had here on the Southern Minerals - - which one are you - -

MR. CHRISTY: He is asking about all three of them.

A Well, the initial reservoir pressure on the Southern Minerals was taken 72 hours after the initial potential.

Q That is the 3250?

A The 3250 was indicated on the bucket test. The initial on this American Mannex Flying "M" was 72 hours after the 192 barrel potential.

Q Well, if we had averaged the two pressures, we would have a pressure quite a bit in excess of 3085, however, wouldn't we, that you have used for your reservoir pressure?

A When the PI was run, when we tested that for a PI, the

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72 hour shut in, if you will notice over here, the shut in reservoir pressure is 3083, when we run that PI on 9-17-63.

Q Which Exhibit are you looking at, or referring to?

MR. CHRISTY: Exhibit One, Mr. Examiner. Right here, sir.

A On September 17th we run a PI, Productive Index test,

272.8 barrels, shut in reservoir pressure that starts after 72 hours. Prior to the start of that test, was 3083. Flowing bottom hole pressure was 2768 during that 24 hours, and that is where the 3083 comes in.

Q I see. Then, on your data sheet, this should be probably 3085 instead of 3083 on your reservoir rock, the sheet just before the PI test?

A Yes, sir.

Q Then, that figure of 3250 would probably be a little high then for the original pressure taken after the IP. That pressure was taken from the bucket test?

A No, sir. That is pressure taken immediately after the initial PI test.

Q 72 hours after?

A Yes, sir. This is after several days of production on it that we had here. We shut it in for this PI.

Q Now, would you explain your reservoir volume factor of 1.095?

A We found it has been acceptable, the formula that has been used by several reservoir sections, of different companies.



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Q You don't have any fluid analysis from this reservoir?

A No, sir, not as yet.

Q No cores have been taking in here as yet?

A No, sir.

Q So, your gross pay-net pay porosity and water circulation as calculated at that time from the log?

A Yes, sir.

Q Permeability estimate was from the PI test and bucket test, and- -

A Yes, sir.

Q - -your formation volume factor is calculated?

A Yes, sir.

MR. NUTTER: Does anyone else have any questions of Mr. Barham? He may be excused.

(Witness excused)

MR. CHRISTY: We would like to amend Applicant's Exhibit One, to correctly reflect the Examiner's statement that it is 3083 in the Reservoir Rock and Fluid Properties, Abo Dolomite formation. That page, and with that correction, we would like to offer in evidence Applicant's Exhibit One to Five inclusive.

MR. NUTTER: Applicant's Exhibits One through Five will be admitted in evidence. One more question. I notice in your economics, you haven't figured the value of gas, where is the available market for casinghead gas to these wells?

A About 14 miles northeast of us.



Q So, in all probability until you had further development, you wouldn't have any market?

A No, sir. We could not figure that in the economics at all.

MR. NUTTER: I just received a telegram from Redfern, which he concurs with Coastal States Producing Company's request for temporary rules. Does anyone have anything that he wishes to offer in Case 2904? Take the case under advisement.

* * * * *

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STATE OF NEW MEXICO I
COUNTY OF BERNALILLO X

I, ROY D. WILKINS, a Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal of office this 14th day of October, 1963.


NOTARY PUBLIC

My Commission Expires:
September 6, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2904 heard by me on 9/25, 1963.


Examiner
New Mexico Oil Conservation Commission



NEW MEXICO OIL CONSERVATION COMMISSION
Examiner Hearing

PAGE 1

Santa Fe, NEW MEXICO

REGISTER

HEARING DATE September 25, 1963

TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Jim B. Christy W. C. Kresseth H. Lee Harward	Hervey, Dons & Hinkle Robert E. Field Paul Ann State Engr. Office Western Oil Field Inc.	Roswell, N. M. Columbia University Roswell, N. M. Fort Worth Santa Fe
Ruby Buell Frank & Liby Tom McKenna Paul SW Fite Randy W. Graham Carmel Hilton	" " " " Carmel Hilton Carmel Hilton	Santa Fe Helms, N. M.
D.W. Cunningham Jimmie Rodgers Randy S. Lane Vincent Taylor Randy A. Taylor Robert H. Exline	Simlar Oil Co. Randy S. Lane Randy S. Lane Carpenter & Co. Inc. Hickman Co.	Midland Midland Midland Midland Midland

NEW MEXICO OIL CONSERVATION COMMISSION

Examiner Hearing

Santa Fe, NEW MEXICO

REGISTER

HEARING DATE September 25, 1963 **TIME:** 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Barclay	W. L.	San Diego
Michael Smith	Wood Oil Fields Shelby County	Denver, Colo Santa Fe

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 2904
Order No. R-2576

APPLICATION OF COASTAL STATES GAS
PRODUCING COMPANY FOR THE CREATION
OF A NEW ABO POOL AND SPECIAL POOL
WITNES, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 25, 1963, at Santa Fe, New Mexico, before Daniel S. Mutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 3rd day of October, 1963, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Mutter, and being fully advised in the premises,

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

(2) That the applicant, Coastal States Gas Producing Company, seeks the creation of a new pool for Abo production and the promulgation of temporary special rules and regulations governing said pool, including provisions for 80-acre spacing and limited well locations.

(3) That a new oil pool for Abo production should be created and designated the Flying "M" Abo Oil Pool. This pool was discovered by the Coastal States Gas Producing Company Southern Minerals State Well No. 1, located in Unit J of Section 16, Township 9 South, Range 33 East, NMPM, Lea County, New Mexico. The top of the perforations in the Abo formation is at 8603 feet.

(4) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of

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CASE No. 2904
Order No. R-2576

too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 80-acre spacing units should be promulgated for the Flying "M" Abo Oil Pool.

(5) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(6) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

(7) That this case should be reopened at an examiner hearing in October, 1964, at which time the operators in the subject pool should appear and show cause why the Flying "M" Abo Oil Pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

(1) That a new pool in Lea County, New Mexico, classified as an oil pool for Abo production is hereby created and designated the Flying "M" Abo Oil Pool, consisting of the following-described area:

TOWNSHIP 9 SOUTH, RANGE 33 EAST, NMPM
Section 15: W/2 W/2
Section 16: E/2

(2) That Special Rules and Regulations for the Flying "M" Abo Oil Pool are hereby promulgated as follows:

**SPECIAL RULES AND REGULATIONS
FOR THE**

FLYING "M" ABO OIL POOL

RULE 1. Each well completed or recompleted in the Flying "M" Abo Oil Pool or in the Abo formation within one mile of the Flying "M" Abo Oil Pool, and not nearer to or within the limits of another designated Abo pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations herein-after set forth.

RULE 2. Each well completed or recompleted in the Flying "M" Abo Oil Pool shall be located on a standard unit containing 80 acres, more or less, consisting of the N/2, S/2, E/2, or W/2 of a single governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

CASE No. 2904
Order No. R-2576

RULE 3. The Secretary-Director may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. The first well drilled on every standard or non-standard unit in the Flying "M" Abo Oil Pool shall be located in the NW/4 or the SE/4 of a governmental quarter section. All wells shall be located within 200 feet of the center of a governmental quarter-quarter section.

RULE 5. The Secretary-Director may grant an exception to the footage requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon, provided the well will be located no nearer than 330 feet to the outer boundary of the unit. All operators offsetting the proposed unorthodox location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) in the Flying "M" Abo Oil Pool shall be assigned an 80-acre proportional factor of 4.00 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable in the Flying "M" Abo Oil Pool as the acreage in such non-standard unit bears to 80 acres.

IT IS FURTHER ORDERED:

- (1) That an 80-acre allowable shall not be assigned to a well in the Flying "M" Abo Oil Pool until the operator of the well files a new Form C-128 and Form C-116 with the Commission.

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CASE No. 2904
Order No. R-2576

(2) That this case shall be reopened at an examiner hearing in October, 1964, at which time the operators in the subject pool may appear and show cause why the Flying "M" Abo Oil Pool should not be developed on 40-acre spacing units.

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

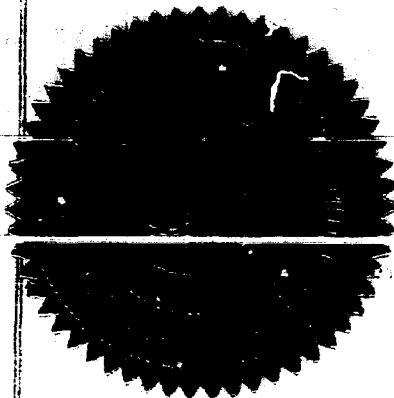
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

E. S. Walker
E. S. WALKER, Member

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



esr/

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico

Oil Conservation Commission



LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

P. O. BOX 871
SANTA FE

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

October 2, 1963

Mr. Howard Bratton
Harvey, Dew & Hinkle
Attorneys at Law
Post Office Box 10
Roswell, New Mexico

Re: Case No. 2904
Order No. R-2576
Applicant:

COASTAL STATES GAS PRODUCING CO.

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

lx/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Astec OCC

OTHER

J. J. [Signature]

**BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO**

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

**CASE No. 2904
Order No. R-2576-A**

**APPLICATION OF COASTAL STATES GAS
PRODUCING COMPANY FOR THE CREATION
OF A NEW ABO POOL AND SPECIAL POOL
RULES, LEA COUNTY, NEW MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 28, 1964, at Santa Fe, New Mexico, before Examiner Daniel S. Fitter.

NOW, on this 10th day of November, 1964, the Commission, quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That by Order No. R-2576, dated October 3, 1963, temporary Special Rules and Regulations were promulgated for the Flying "M" Abo Oil Pool, Lea County, New Mexico.

(3) That pursuant to the provisions of Order No. R-2576, this case was reopened to allow the operators in the subject pool to appear and show cause why the Flying "M" Abo Oil Pool should not be developed on 40-acre spacing units.

(4) That the Special Rules and Regulations promulgated by Order No. R-2576 have afforded and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil in the pool.

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CASE No. 2904

Order No. R-2576-A

(5) That to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-2576 should be continued in full force and effect until further order of the Commission.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the Flying "M" Abo Oil Pool promulgated by Order No. R-2576 are hereby continued in full force and effect until further order of the Commission.

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

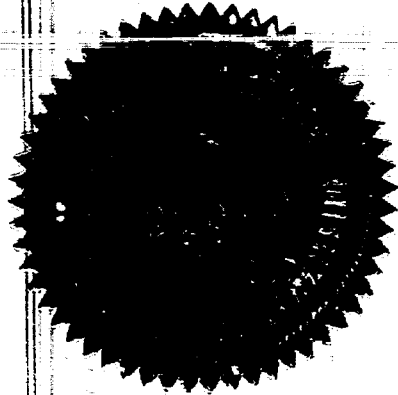
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

E. S. Walker
E. S. WALKER, Member

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



CSR/

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

P. O. BOX 2088
SANTA FE

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

November 10, 1964

Mr. Sin Christy
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico

Re: CASE NO. 2904
ORDER NO. P-2576-A
APPLICANT COASTAL STATES

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC _____

Artesia OCC _____

Aztec OCC _____

OTHER _____

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 11/2/64

CASE 2904

Hearing Date 9am 10/28/64
DSN @ 31

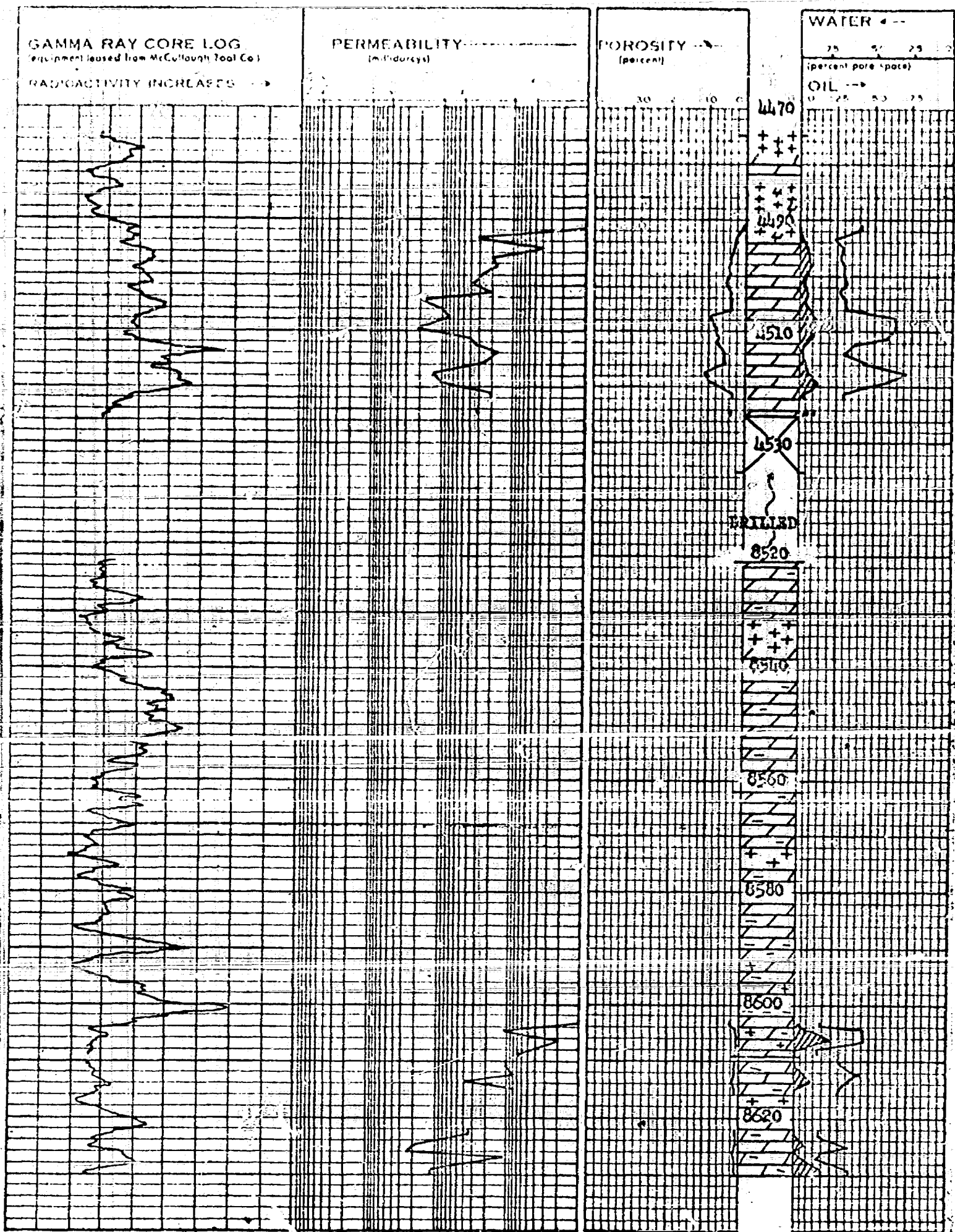
My recommendations for an order in the above numbered cases are as follows:

Enter an order extending,
until further order of the
Commission, the 80-acre spacing
rules promulgated for the
Flying "M" ABC Pool by order
No. IC-2576.

While applicant has not
necessarily shown that one well
will effectively and efficiently
drain 80 acres, numerous
dry holes have been drilled,
the production is marginal,
and drilling on 40 acres
will cause economic waste.

Handwritten Signature
Staff Member

GRAPHICAL PRESENTATION OF RESULTS

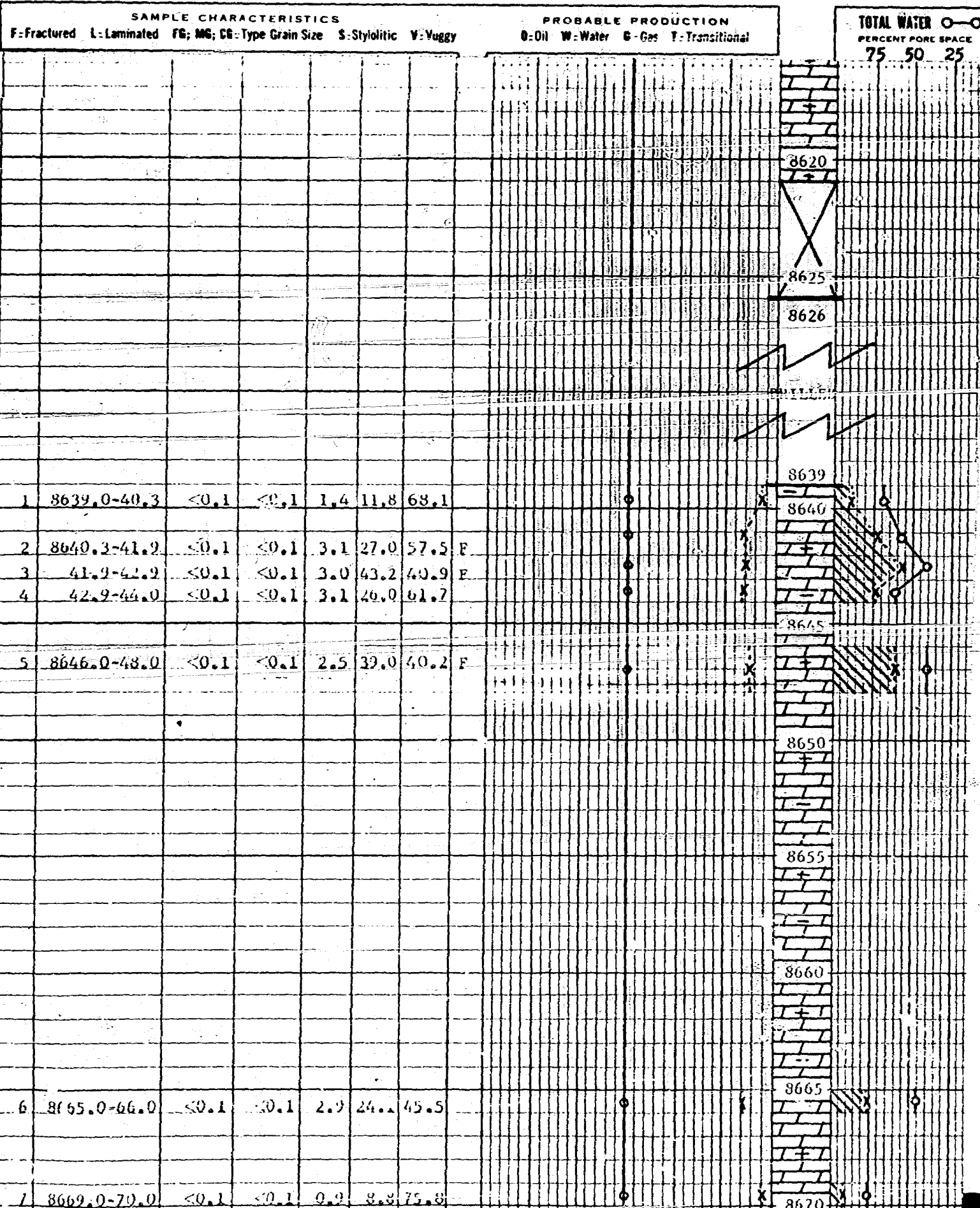
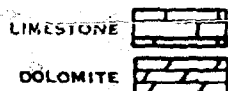


Shale SL 701

COMPANY: COASTAL STATE GAS PROPERTIES COMPANY FILE NO. WP-3-2246
WELL: SOUTHERN MINERALS NO. 1-15 DATE: 1-2-64 ENGRS. BOONE
FIELD: FLYING "H" ABO FORMATION: ABO ELEV. 4378' KB
COUNTY: LEA STATE: NEW MEXICO DRG. FLD. WATER BASE MTD. CORES: DIAMOND 3 1/2"
LOCATION: 660 FM. E. 1280 TEL. SEC. 15-TOL-RD-3E REMARKS: SAMPLED AS DIRECTED BY CLIENT

COMPLETION COREGRAPH

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees assume no responsibility and make no warranty or representation as to the productivity, storage operation, or profitability of any oil, gas or other mineral well or land in connection with which such report is used or relied upon.



DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 28, 1964

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

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

- CASE 3113: (Continued from the September 30, 1964 Examiner Hearing). Application of BCO, Inc. for a unit agreement, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks approval of the Escrito Gallup Pool Unit Area comprising 3123.88 acres, more or less, of State and Federal lands in Township 24 North, Ranges 7 and 8 West, San Juan and Rio Arriba Counties, New Mexico.
- CASE 3114: (Continued from the September 30, 1964 Examiner Hearing). Application of BCO, Inc. for a waterflood project, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Escrito Gallup Oil Pool in its Escrito Unit Area by the injection of water into the Gallup formation through three wells located in Sections 17 and 18, Township 24 North, Range 7 West, and Section 12, Township 24 North, Range 8 West, San Juan and Rio Arriba Counties, New Mexico.
- CASE 3131: Application of Texstar Petroleum Company for a unit agreement, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Hospah Unit Area comprising 1160 acres, more or less, of State and Fee lands in Townships 17 and 18 North, Ranges 8 and 9 West, Hospah Pool, McKinley County, New Mexico.
- CASE 3132: Application of Texstar Petroleum Company for a waterflood project, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Hospah Pool in its Hospah Unit Area, by the injection of water into the Hospah Sand through 8 wells located in Section 1, Township 17 North, Range 9 West, and Section 36, Township 18 North, Range 9 West, McKinley County, New Mexico.
- CASE 3133: Application of George W. Strake for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Hackberry Deep Unit Area comprising 3,832.60 acres, more or less, of Federal and State lands in Townships 19 and 20 South, Ranges 30 and 31 East, Eddy County, New Mexico.
- CASE 3134: Application of Lone Star Producing Company for a non-standard location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to deepen its Federal Well No. 1-D and complete same in the South Prairie-Atoka Gas Pool. Said well is 660 feet from the North and East lines of Section 29, Township 8 South, Range 36 East, Roosevelt County, New Mexico, at a non-standard location for said gas pool.
- CASE 3135: Application of Lone Star Producing Company for a non-standard unit and a non-standard location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the SW/4 of Section 21, Township 8 South, Range 36 East, South Prairie Atoka Gas Pool, Roosevelt County, New Mexico. Said unit to be dedicated to applicant's Federal Well No. 1-B at a non-standard location for said pool 660 feet from the South and West lines of said Section 21.

October 28 Examiner Hearing

CASE 2910 (Reopened):

In the matter of Case No. 2910 being reopened pursuant to the provisions of Order No. R-2589, which order established 80-acre spacing units for the Scharb-Bone Springs Oil Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 2659 (Reopened):

In the matter of Case No. 2659 being reopened pursuant to the provisions of Order No. R-2347-A, which continued the original order establishing 80-acre proration units for the North Bagley-Wolfcamp Pool, Lea County, New Mexico, for an additional year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

CASE 2904 (Reopened):

In the matter of Case No. 2904 being reopened pursuant to the provisions of Order No. R-2576, which order established temporary 80-acre spacing units for the Flying "M" Abo Oil Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 2678 (Reopened):

In the matter of Case No. 2678 being reopened pursuant to the provisions of Order No. R-2359-A, which continued the original order establishing 160-acre proration units for the East Saunders Permo-Pennsylvanian Pool, Lea County, New Mexico, for an additional year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

CASE 3136:

Application of William A. and Edward R. Hudson for expansion of a waterflood project and for certain unorthodox locations, Eddy County, New Mexico. Applicants, in the above-styled cause, seek authority to expand their Maljamar Grayburg-San Andres Waterflood Project by the drilling of three injection wells at unorthodox locations not more than 100 feet nor closer than 25 feet to the Northeast corner of Units H, M and P of Section 24, Township 17 South, Range 31 East, Eddy County, New Mexico. Applicants further seek authority to convert from oil production to water injection their Puckett "A" Well No. 26 located in the Southeast corner of Unit D and Wells Nos. 27 and 28 located in the Northwest corners of Units K and C, respectively, all in said Section 24.

CASE 3137:

Application of Southern Union Production Company for an unorthodox location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to complete its Navajo Indian Well No. 6 at an unorthodox location in the Blanco Mesaverde Pool 1700 feet from the North line and 910 feet from the West line of Section 6, Township 26 North, Range 8 West, San Juan County, New Mexico.

CASE 2660 (Reopened):

In the matter of Case No. 2660 being reopened pursuant to the provisions of Order No. R-2348-A, which continued the original order establishing 80-acre proration units for the Middle Lane-Pennsylvanian Pool, Lea County, New Mexico, for an additional year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

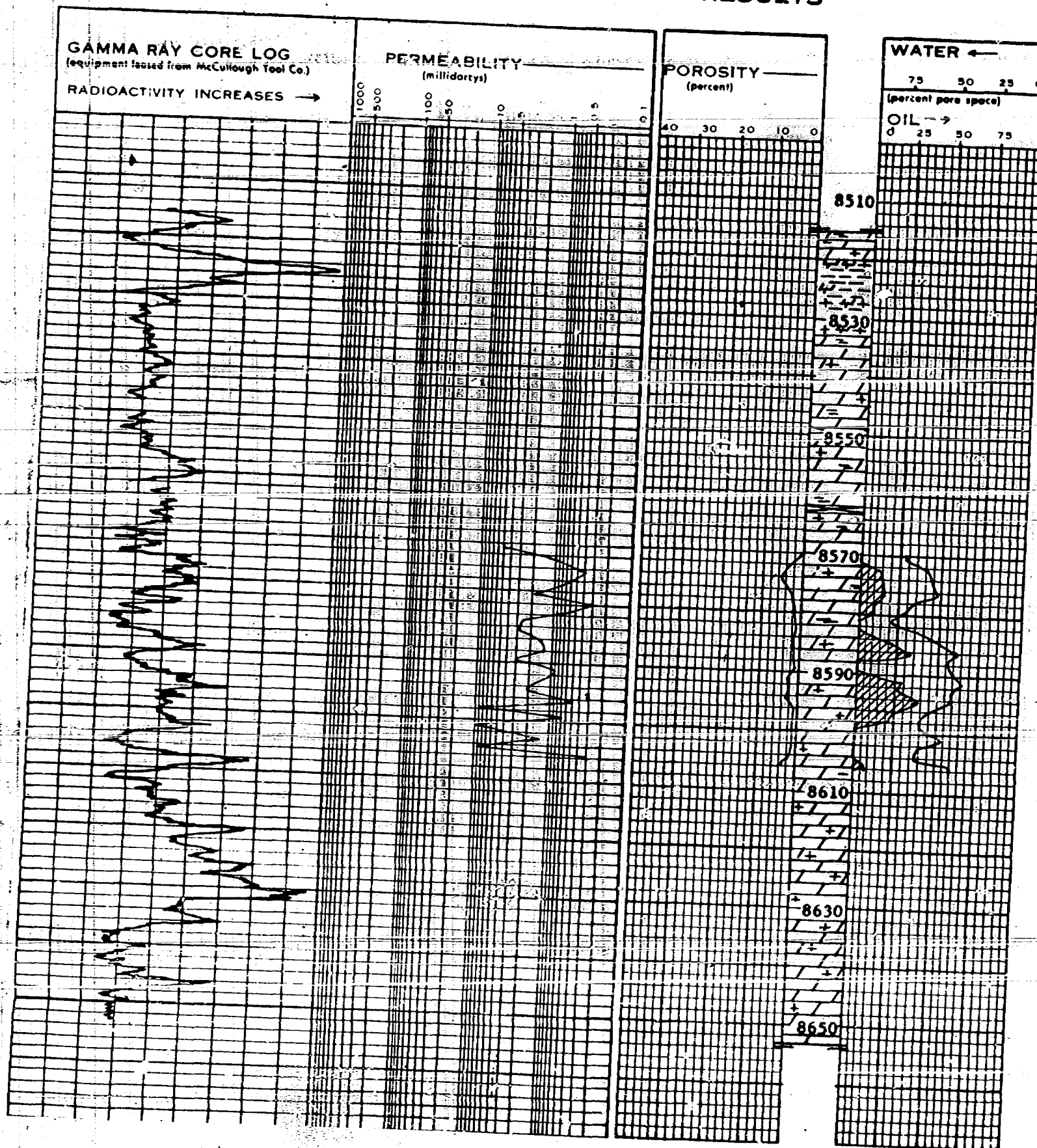


REPORT OF CORE ANALYSIS

COMPANY Coastal States Gas Producing Company
FEE Skelly State WELL NO 1
FIELD Undesignated
LOCATION 1978' FNL & 1993' FNL, Sec. 21,
T9S, R33E
COUNTY Lea STATE New Mexico

ELEVATION 4376' KN
DRILLING FLUID Salt Water Base Mud/Oil Added
FORMATION Abo
TYPE OF CORE Diamond 3-1/2"
ANALYST JG, AB, BL SERVICE RCM
LAB NO H-498 DATE 10/19/63

GRAPHICAL PRESENTATION OF RESULTS



EXHIBITS FOR CASE NO. 2904

COASTAL STATES GAS PRODUCING COMPANY

FLYING "M" ABO POOL

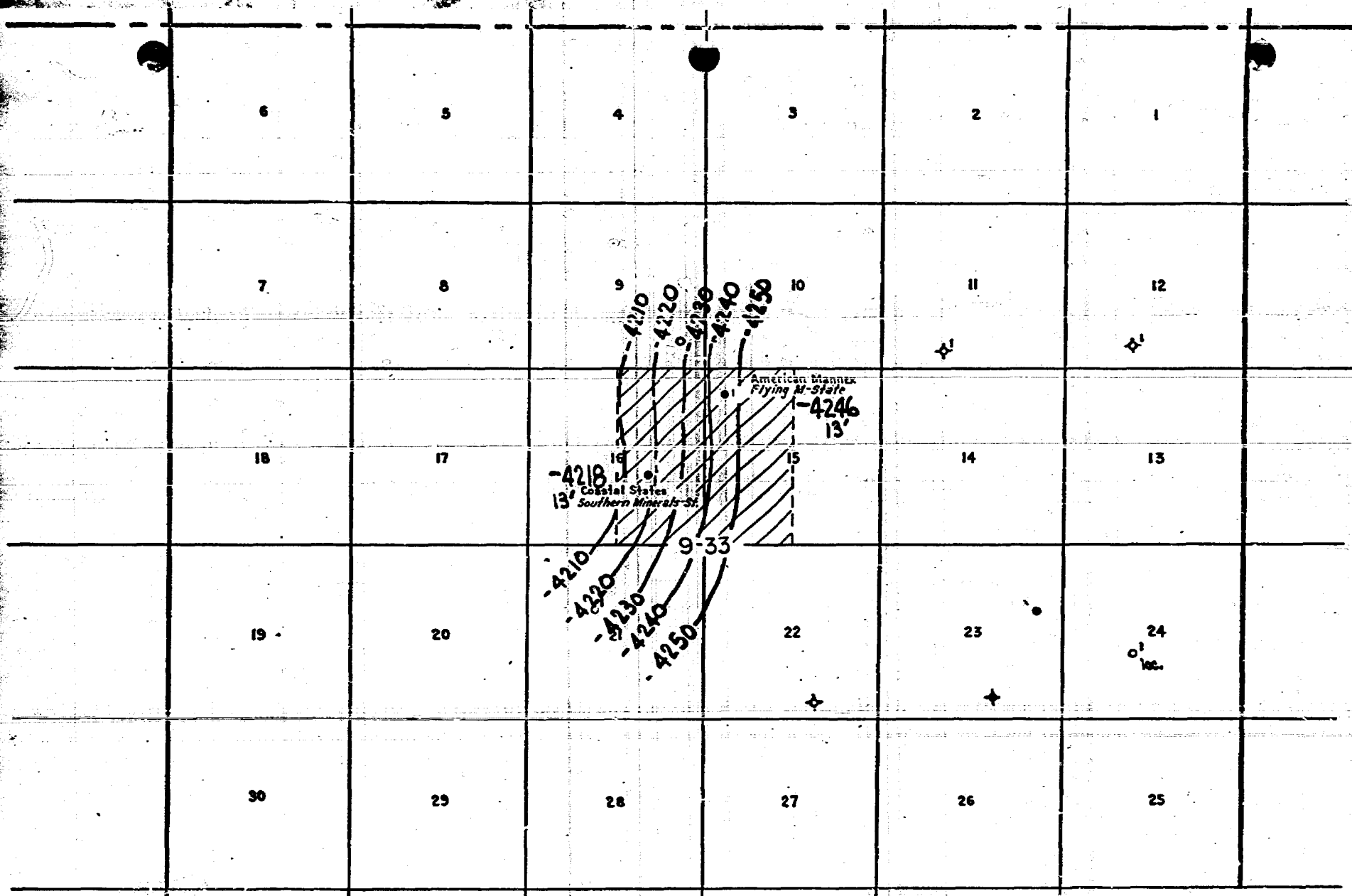
LEA COUNTY, NEW MEXICO

EXHIBITS FOR CASE NO. 2904
COASTAL STATES GAS PRODUCING COMPANY'S APPLICATION
FOR ORDER CREATING
TEMPORARY RULES AND 80-ACRE SPACING
FLYING "M" ABO POOL

COASTAL STATES GAS PRODUCING COMPANY
SOUTHERN MINERALS STATE WELL NO. 1

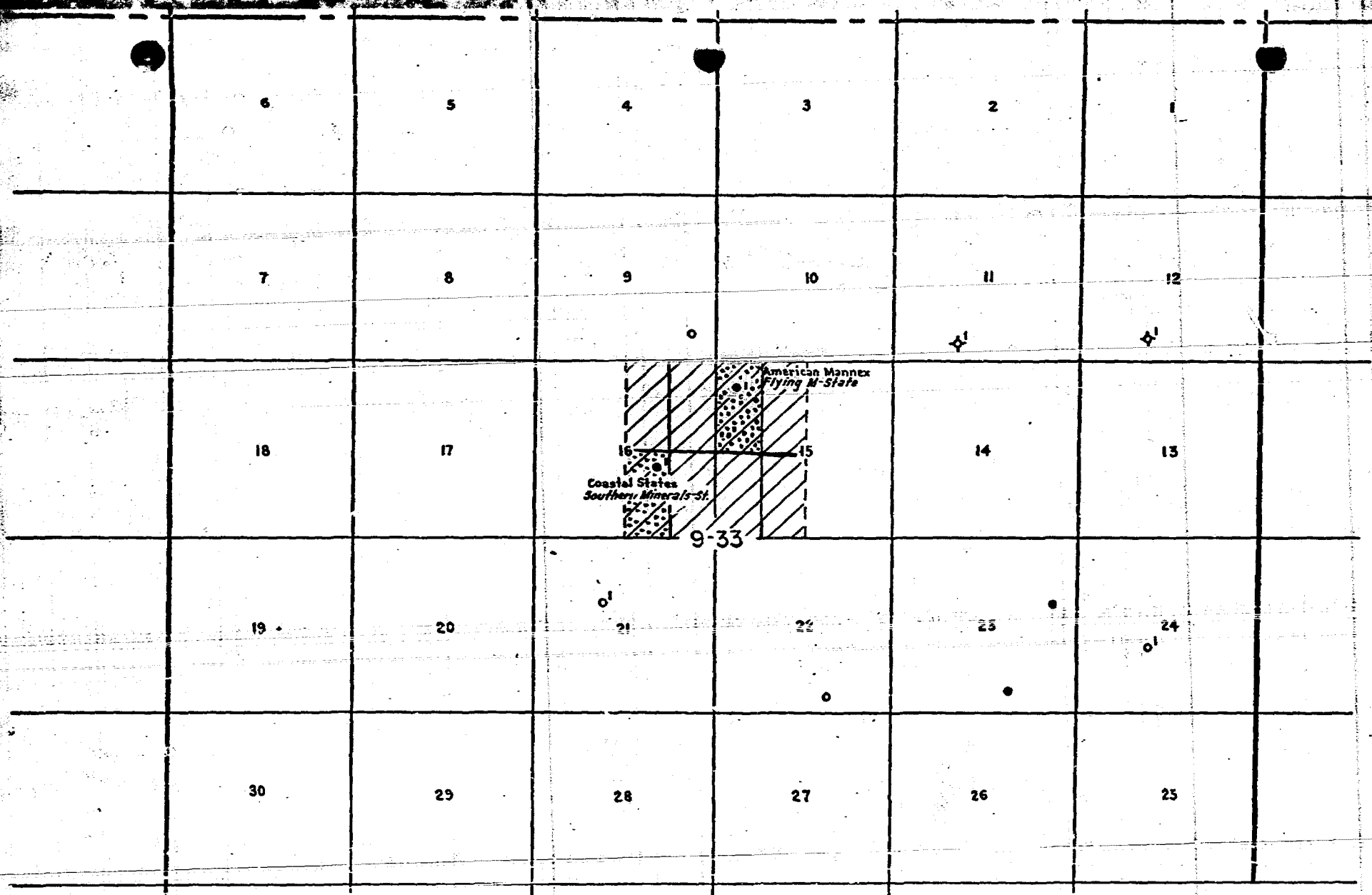
and

AMERICAN MANNEK CORPORATION
FLYING "M" STATE WELL NO. 1



ABO DOLOMITE, STRUCTURE: TOP OF PAY
CONTOUR INTERVAL: 10'

COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'



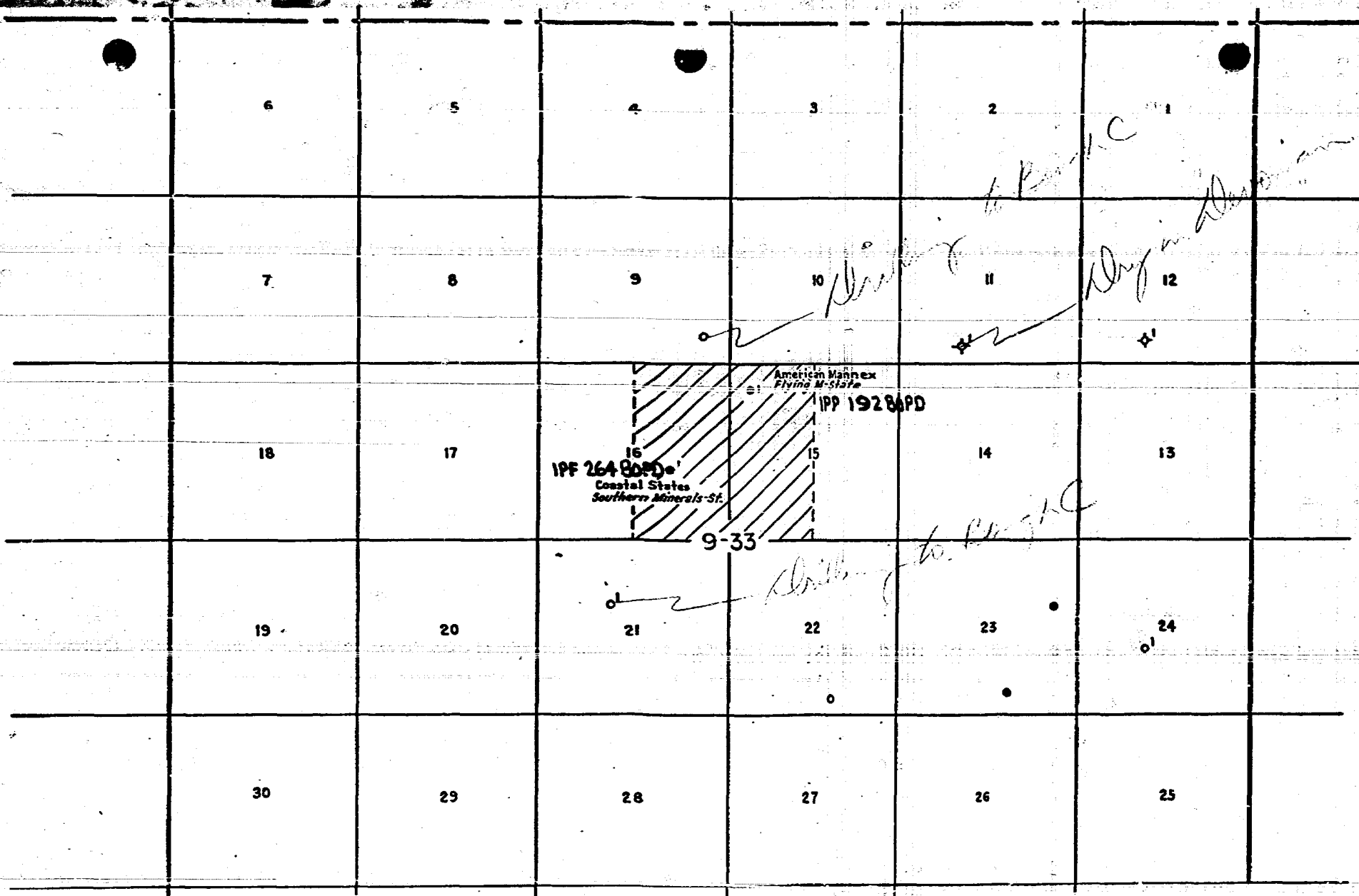
Proposed Acreage Dedication, 80 acre spacing

COASTAL STATES GAS PRODUCING CO.

FLYING M ABO POOL

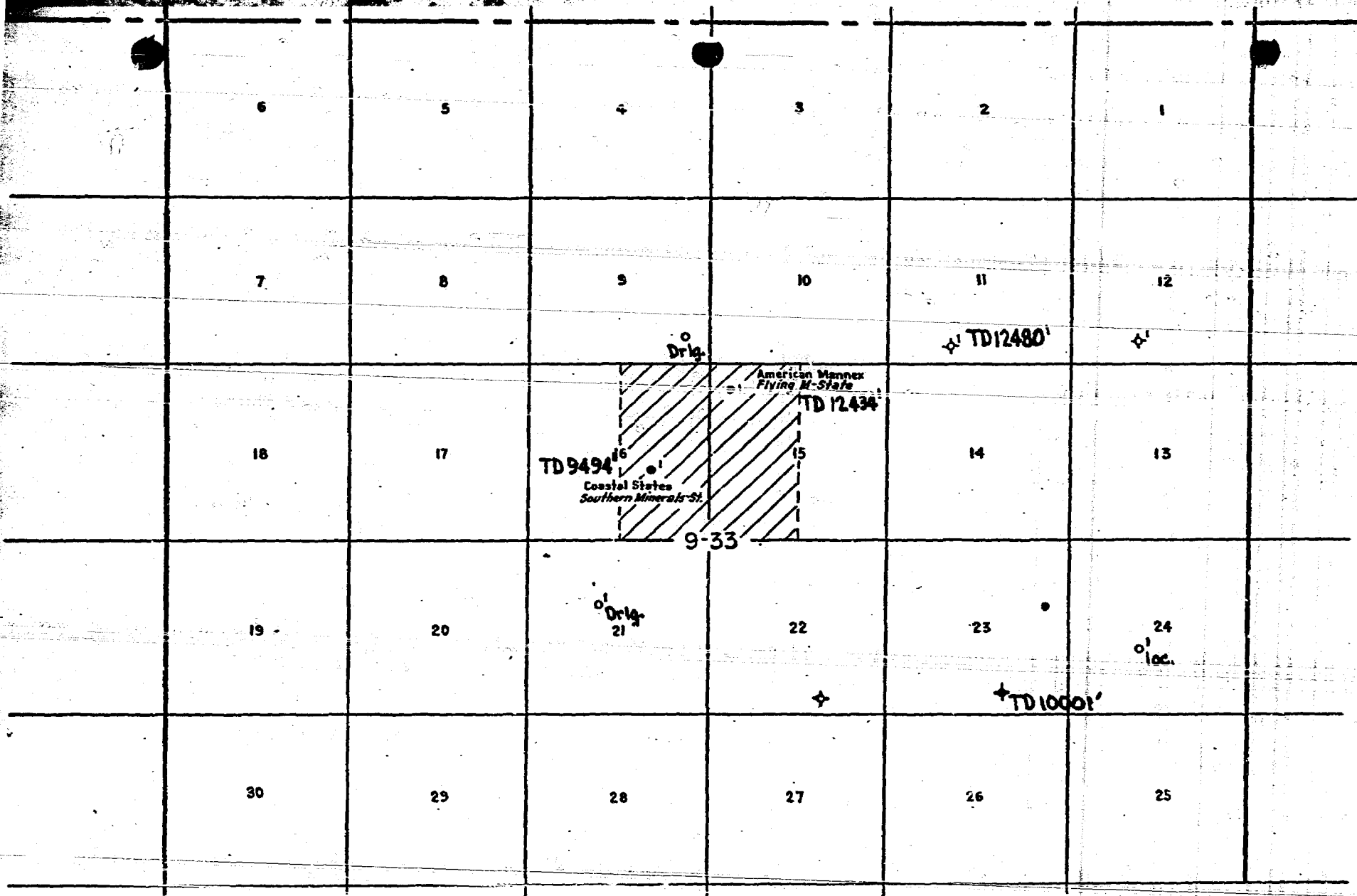
LEA COUNTY, NEW MEXICO

SCALE: 1" = 4000'



Potentials, Abo Dolomite Pay

COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'



COASTAL STATES GAS PRODUCING CO.
 FLYING M ABO POOL
 LEA COUNTY, NEW MEXICO
 SCALE: 1" = 4000'

WELL HISTORY

Coastal States Gas Producing Company
#1 Southern Minerals State

Location: 2307.6' FSL & 1661.9 FEL, Sec 16, T-9S
R-33-E, Lea County, New Mexico

Total Depth: 9547' PBD: 8757'

Production String: 5- $\frac{1}{2}$ ", OD, 17 & 15#, J-55 & N-80 smls Csg:
9532.86' set @ 9546', 300 sks cmt.

Schlumber-Formation Test: (Wireline)

ger

8505 - 08': T. O. 45 Seconds

Recovery: 20,400 cc water

.95 cu ft gas

6 cc sd (Very Slight Fluorescence)

Pressures: Sampling Pr - 150 PSI (45 seconds)
FSIP - 3250 PSI (28")
MW - 4280 PSI

Perforations - Abo Zone: 8603 - 16, one jet shot/ft.

Treatment: 500 gals MCA Acid following by 6000 Gals M-38 Acid

Potential: 276 bbls oil per day, flowing on 16/64" choke.
262 MCF Gas/Day, GOR: 992:1, Grav - 37.5°.

Initial Reservoir Pressure: 3250 PSI

WELL HISTORY

American Mannex #1 Flying M State (OWWO)
(Formerly Trice Production Co. #1 Flying M State)

Location: 660' FNL & 660' FWL, Sec 15, T-9S, R-33E,
Lea County, New Mexico

Total Depth: 12,445' PBTD: 9250'

Production String: 5- $\frac{1}{2}$ ", OD Csg, (12,431.65') set @ 12,455'.

Drill Stem Test: Abo (Trice Production Company)

8600 - 8675':

T. C. - 30", T.O. - 60", T.C. - 30"

Recovered: 280' Gas in Drill Pipe, 30' GCM

IMW - 4586#, ISIP - 2344#, IF - 90#, FF - 83#,

FSIP - 238#, FMW - 4513#.

Perforations: Abo Zone - 8620 - 26', 8630 - 34'

Treatment: Abo - 6000 Gals FLAX-2 Acid

Potential: 192 bbls oil per day

Initial Reservoir Pressure: 3068 PSI

OIL RECOVERY CALCULATIONS
ABO DOLOMITE FORMATION

COASTAL STATES GAS PRODUCING COMPANY
SOUTHERN MINERALS STATE WELL NO. 1

Calculated Porosity (Schlumberger)	15%
Water Saturation (Schlumberger)	22%
Net Pay	13 feet

Oil in Place (Bbls/Ac.Ft.)

$$(7758 \text{ bbl/AF}) (0.15) (1 - .22) \left(\frac{1}{FVF}\right)$$

$$FVF = 1.05 + (5\% \times \frac{GOR}{100}) =$$

$$1.05 + (.05 \times \frac{820}{100}) =$$

$$1.05 + \frac{41}{100} = 1.05 + .041 = 1.091 =$$

829 Bbls/Ac.Ft.

Recoverable Oil (Bbls/Acre Foot)

$$(829 \text{ bbl/AF}) (.15) =$$

124.35

Oil in Place (Bbls/Acre)

$$(829) (13') =$$

10,777

Recoverable Oil (Bbls/Acre)

$$(10777) (.15) =$$

1616.55

Oil in Place

40 Acres
431,080

80 Acres
862,160

Recoverable Oil

64,662

129,324

RESERVOIR ROCK AND FLUID PROPERTIES
ABO DOLOMITE FORMATION

Coastal States Gas Producing Company #1 Southern Minerals State

Depth of Producing Formation	8600'
Gross Pay, feet	13'
Net Pay, feet	13'
Porosity, per cent (Neutron Log)	15%
Water Saturation (Laterolog)	22%
Permeability (Schlumberger Formation Test)	50 md (to water)
Original Reservoir pressure, psig	3085
Reservoir temperature	145°F
Formation volume factor	1.095
API Gravity, °API @ 60° F	37.5°

Productivity Index & Permeability Calculations
Abo Dolomite Formation

Coastal States Gas Producing Co. #1 Southern Minerals State

Productivity Index

Date of Test	<u>9-17-63</u>
Producing Rate (24 Hrs)Bbls/day	<u>231.8</u>
Shut-In Reservoir Pressure, psig	<u>3083</u>
Flowing Bottom Hole Pr, psig	<u>2768</u>

$$P. I. = \frac{\text{Bbls/day}}{\text{Drawdown, psig}} = \frac{231.8}{3083 - 2768} = 0.735 \text{ BOPS/psi/psi}$$

Permeability Calculation from P. I.

$$K_o = \frac{(P.I.) Q_o (\log \frac{r_e}{r_w}) (FVF)}{(0.00307) (h)} = \frac{(0.735) (\log \frac{5280}{0.328} (0.2) (1.095))}{0.04}$$

$$= \underline{\quad 170 \quad} \text{ md.}$$

Permeability Calculation, Pressure Buildup, Schlumberger
Wireline Test = 50 md.

COMPARISON OF ROCK & FLUID PROPERTIES

No known comparable production, northern Lea or southern Roosevelt Counties, New Mexico.

DRILLING ECONOMICS
ABO DOLOMITE FORMATION

<u>Income</u>	40 Acres	80 Acres
1. Recoverable Oil, bbls	64,662	129,324
2. Operator's Net Recoverable Oil ($7/8 \times 1$)(bbls)	56,599	113,198
3. Operator's Gross Income ($\$2.64 \times 2.$)*	\$149,421	\$298,842

<u>Cost</u>	
1. Drilling and Completing Somico-St. #1	\$140,000
2. Flow Lines and Tank Battery	<u>16,000</u>
Total Cost**	\$156,000

* Crude Price = \$3.01 per bbl, posted price, 40° API Crude
 $\frac{-.06}{2.95}$ Penalty per °API less than 40°, 37° Abo
 $\frac{-.15}{2.80}$ Trucking and Marketing Chg.
 $\frac{-.16}{2.64}$ Taxes, ad valorem and prod.
 \$2.64 Operating Gross Income/bbl.

** Total cost does not include operating costs or income taxes.



COLEMAN PETROLEUM ENGINEERING COMPANY

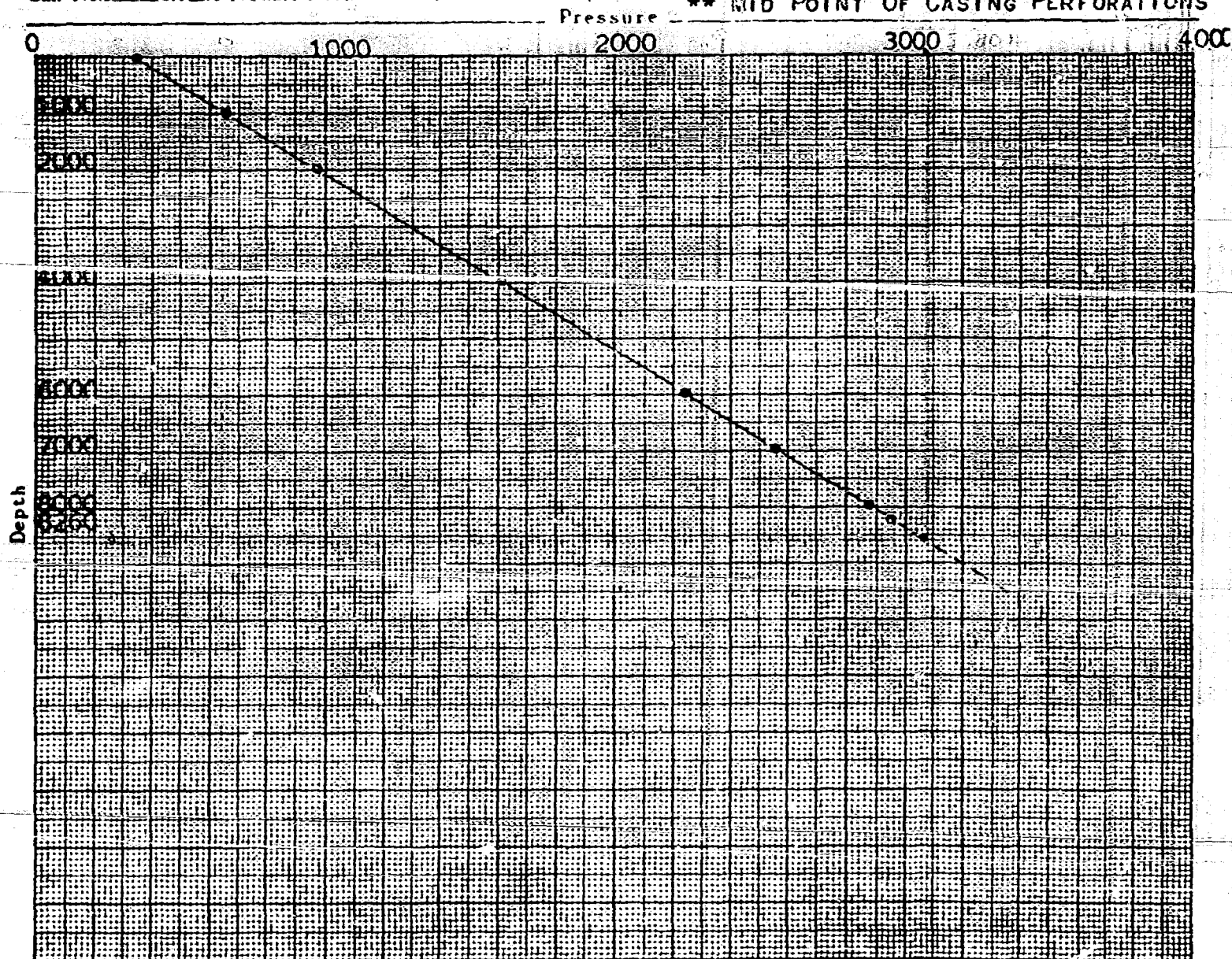
PHONE EXPRESS 3-3813
611 GRIMES
P O BOX 1025
HOBBS, NEW MEXICO

BOTTOM HOLE PRESSURE RECORD

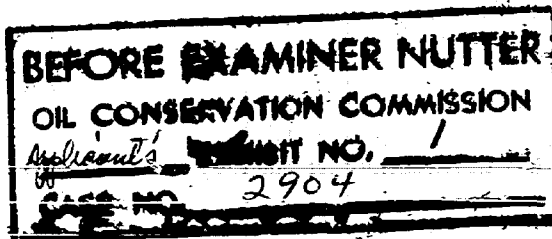
OPERATOR COASTAL STATES GAS PRODUCING CO. *also Dolomite*
FIELD UNDESIGNATED FORMATION *DOLOMITIC PENN.*
LEASE SOUTHERN MINERALS WELL No. 1
COUNTY LEA STATE NEW MEXICO
DATE 7-30-63 TIME 9:00 AM
Status SHUT IN Test depth 8260'
Time S. I. 93.0 HRS Last test date INITIAL
Tub Pres. 363 BHP last test -
Cas. Pres. NC BHP change -
Elev. 4368' GL Fluid top SURFACE
Datum (-3942)** Water top NONE
Temp. @ 143°F Run by STINSON
Cal. No. A3112N Chart No. 1

Depth	Pressure	Gradient
0	363	
1000	675	.312
2000	991	.316
4000	1623	.316
6000	2255	.316
7000	2571	.316
8000	2888	.317
8260	2971	.319
8310(-3942)	2987**	(.319)
8600	3020	

* EXTRAPOLATED PRESSURE
** MID POINT OF CASING PERFORATIONS



EXHIBITS FOR CASE NO. 2904
COASTAL STATES GAS PRODUCING COMPANY
FLYING "M" ABO POOL
LEA COUNTY, NEW MEXICO



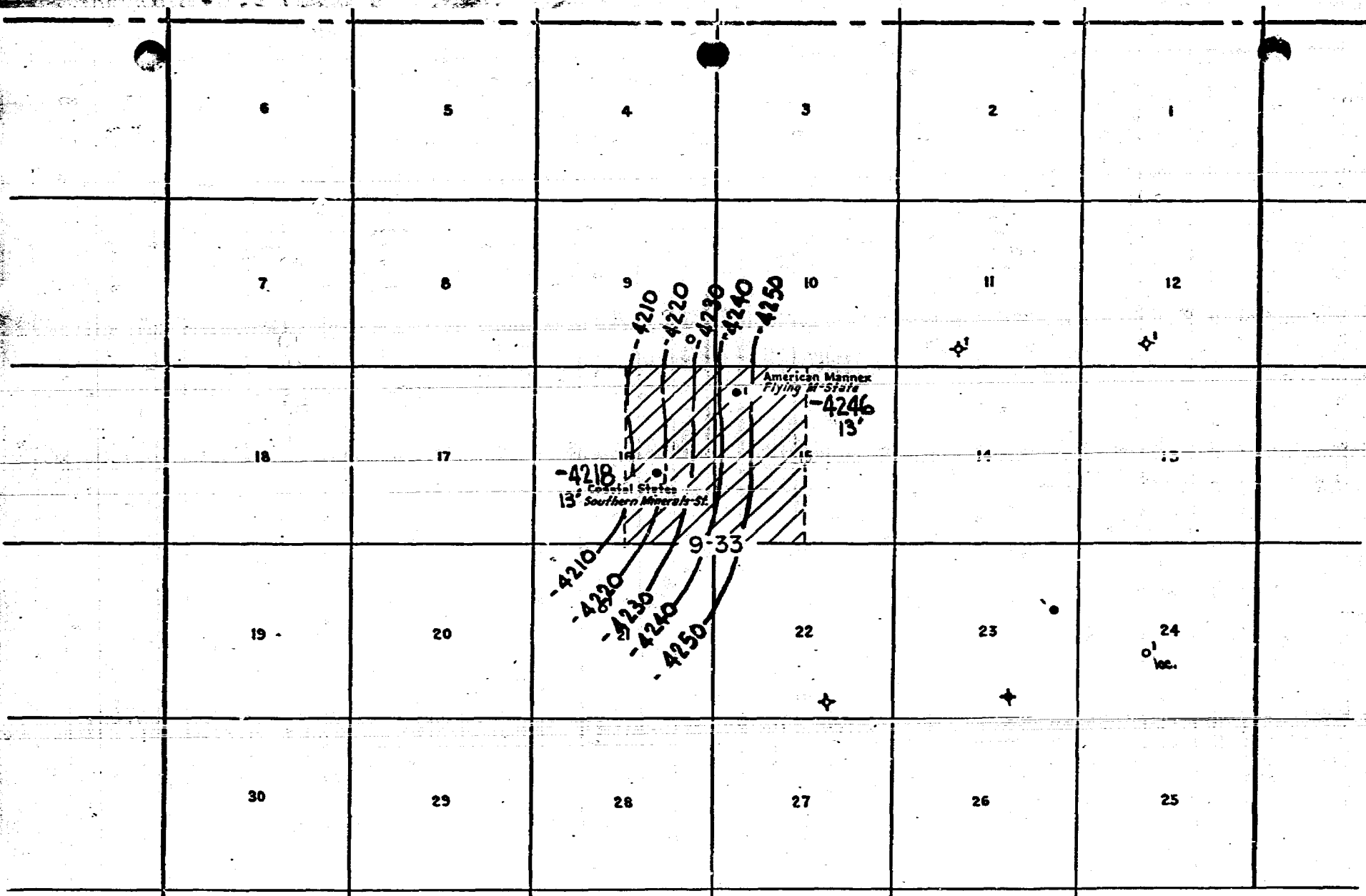
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TEMPORARY RULES AND 80-ACRE SPACING

FLYING "M" ABO POOL

COASTAL STATES GAS PRODUCING COMPANY
SOUTHERN MINERALS STATE WELL NO. 1

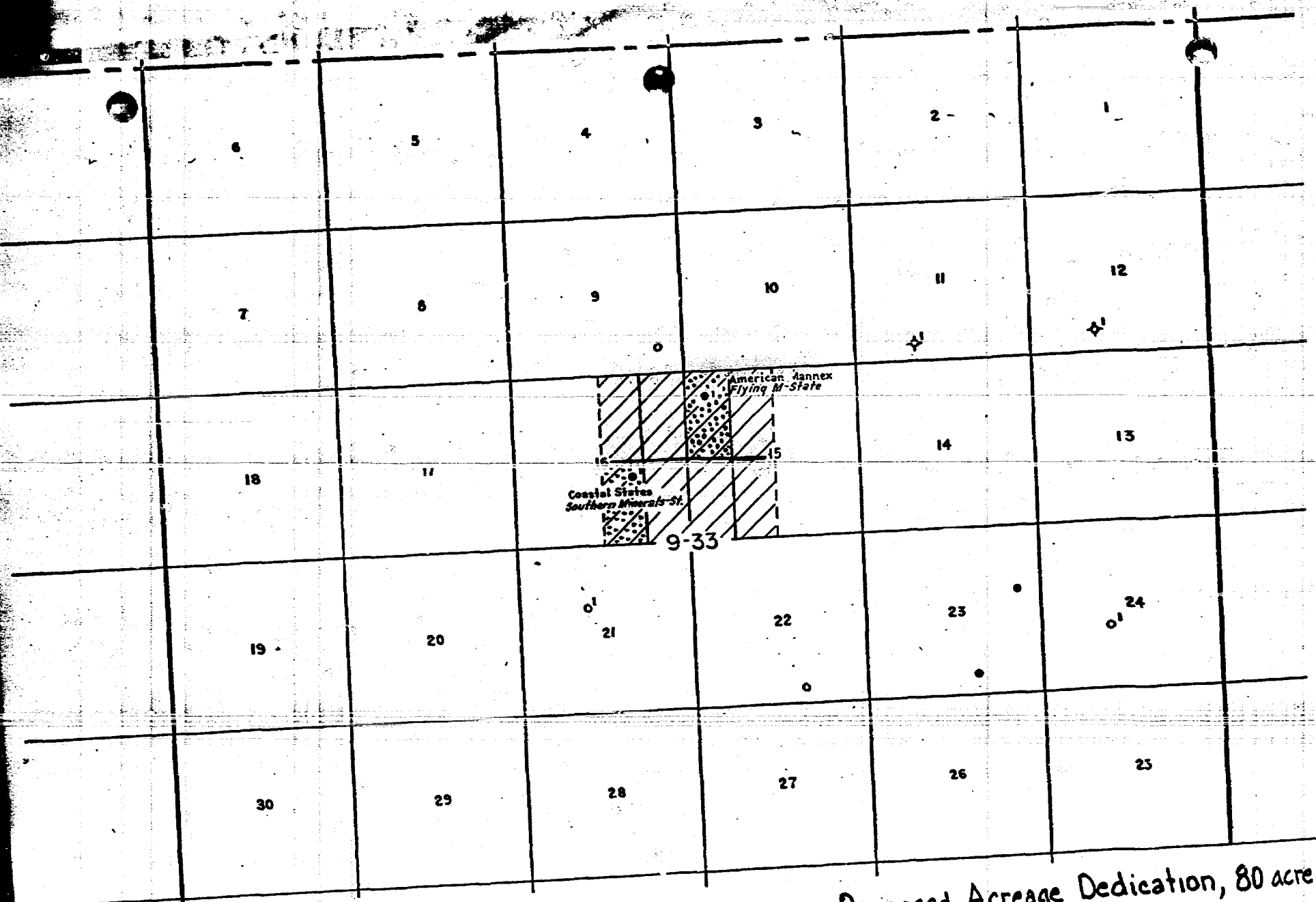
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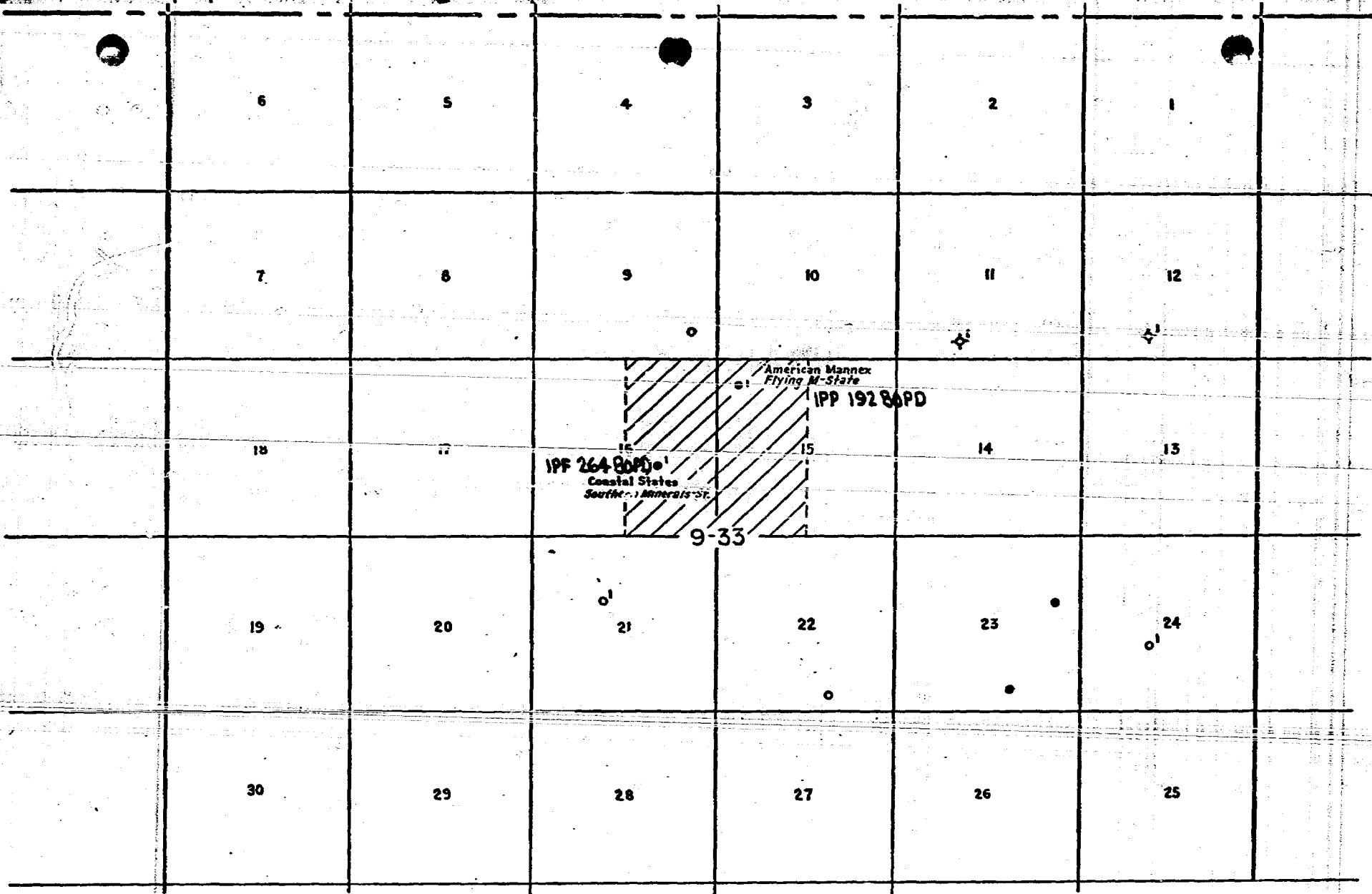


ABO DOLOMITE, STRUCTURE: TOP OF PAY
CONTOUR INTERVAL: 10'

COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'

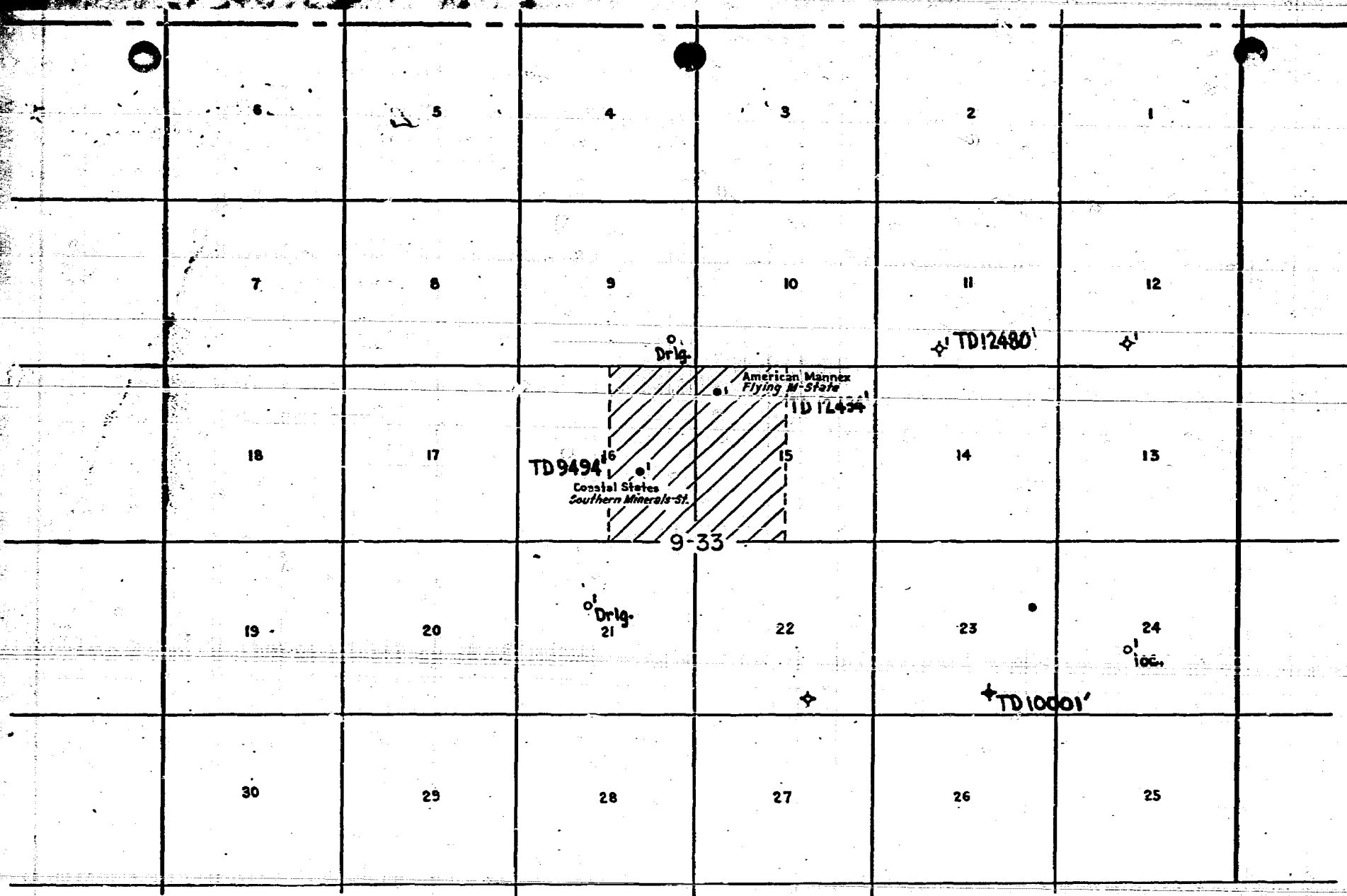


Proposed Acreage Dedication, 80 acre spacing
COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'



Potentials, Abo Dolomite Pay

COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'



COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'

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ger

8505 - 08': T. O. 45 Seconds

Recovery: 20,400 cc water

.95 cu ft gas

6 cc sd (Very Slight Fluorescence)

Pressures: Sampling Pr - 150 PSI (45 seconds)

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MW - 4280 PSI

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Treatment: 500 gals MCA Acid following by 6000 Gals M-38 Acid

Potential: 276 bbls oil per day, flowing on 16/64" choke.
262 MCF Gas/Day, GOR: 992:1, Grav - 37.5°.

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T. C. - 30", T.O. - 60", T.C. - 30".

Recovered: 280' Gas in Drill Pipe, 30' GCM

LMW - 4586#, ISIF - 2544#, IF - 30#, FF - 83#,
PSIP - 238#, FMW - 4513#.

Perforations: Abo Zone - 8620 - 26', 8630 - 34'

Treatment: Abo - 6000 Gals FLAX-2 Acid

Potential: 192 bbls oil per day

Initial Reservoir Pressure: 3068 PSI

OIL RECOVERY CALCULATIONS
ABO DOLOMITE FORMATION

COASTAL STATES GAS PRODUCING COMPANY
SOUTHERN MINERALS STATE WELL NO. 1

Calculated Porosity (Schlumberger)
 Water Saturation (Schlumberger)
 Net Pay

15%
 22%
 13 feet

Oil in Place (Bbls/Ac.Ft.)

$$(7758 \text{ bbl/AF}) (0.15) (1 - .22) \left(\frac{1}{FVF} \right)$$

$$FVF = 1.05 + (5\% \times \frac{GCA}{100}) =$$

$$1.05 + (.05 \times \frac{820}{100}) =$$

$$1.05 + \frac{41}{100} = 1.05 + .41 = 1.46 =$$

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ABO DOLOMITE FORMATION

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Original Reservoir pressure, psig	3085
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Formation volume factor	1.095
API Gravity, °API @ 60° F	37.5°

**Productivity Index & Permeability Calculations
Abo Dolomite Formation**

Coastal States Gas Producing Co. #1 Southern Minerals State

Productivity Index

Date of Test	<u>9-17-63</u>
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$$= \underline{170} \text{ md.}$$

Permeability Calculation, Pressure Buildup, Schlumberger
Wireline Test = 50 md.

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** Total cost does not include operating costs or income taxes.



COLEMAN PETROLEUM ENGINEERING COMPANY

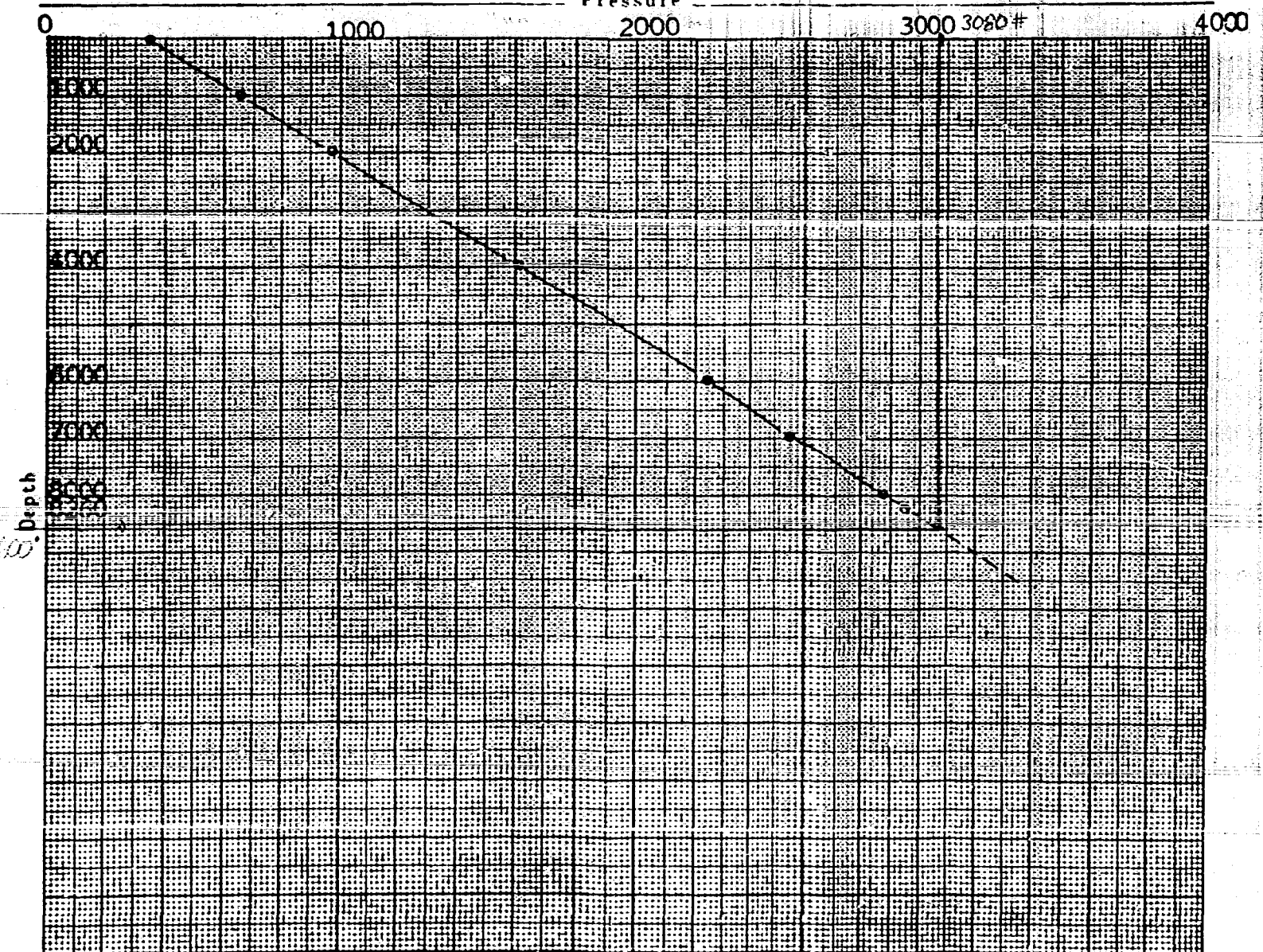
PHONE EXPRESS 3-3813
611 GRIMES
P O BOX 1825
MORRIS NEW MEXICO

BOTTOM HOLE PRESSURE RECORD

OPERATOR COASTAL STATES GAS PRODUCING CO.
FIELD UNDESIGNATED FORMATION BOUGH "C" PENN.
LEASE SOUTHERN MINERALS WELL NO. 1
COUNTY LEA STATE NEW MEXICO
DATE 7-30-63 TIME 9:00 AM
Status SHUT IN Test depth 8260'
Time S. I. 93.0 HRS Last test date INITIAL
Tub Pres. 363 BHP last test -
Cas. Pres. NC BHP change -
Elev. 4368' CL Fluid top SURFACE
Datum (-3942)** Water top NONE
Temp. @ 143 F Run by STINSON
Cal. No. A3112N Chart No. 1

Depth	Pressure	Gradient
0	363	
1000	675	.312
2000	991	.316
4000	1623	.316
6000	2255	.316
7000	2571	.316
8000	2888	.317
8260	2971	.319
8310(-3942)	2987 * **	(.319)

* EXTRAPOLATED PRESSURE
** MID POINT OF CASING PERFORATIONS



EXHIBITS FOR CASE NO. 2904

COASTAL STATES GAS PRODUCING COMPANY'S APPLICATION

FOR ORDER CREATING

TEMPORARY RULES AND 80-ACRE SPACING

FLYING "M" ABO POOL

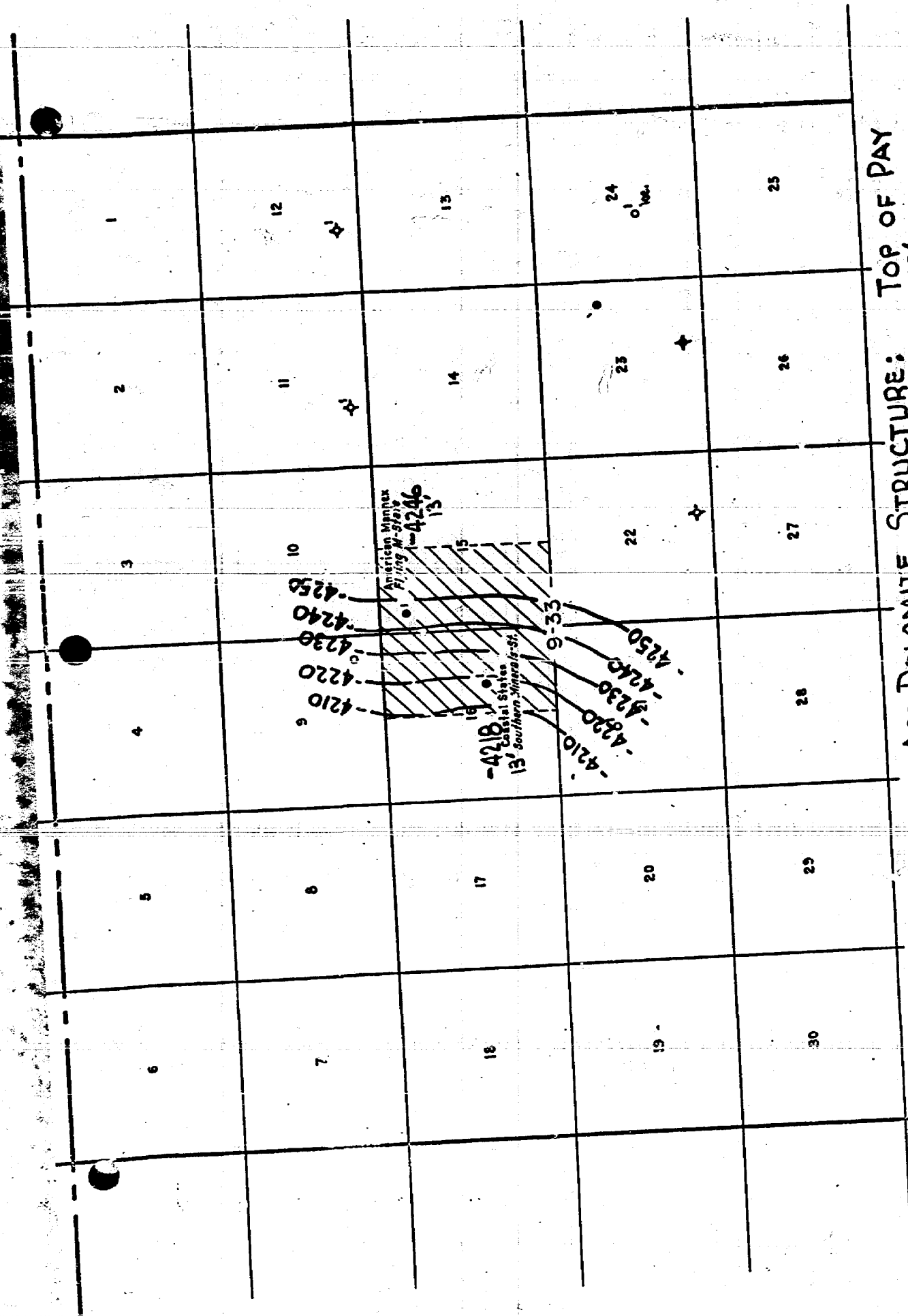
COASTAL STATES GAS PRODUCING COMPANY

SOUTHERN MINERALS STATE WELL NO. 1

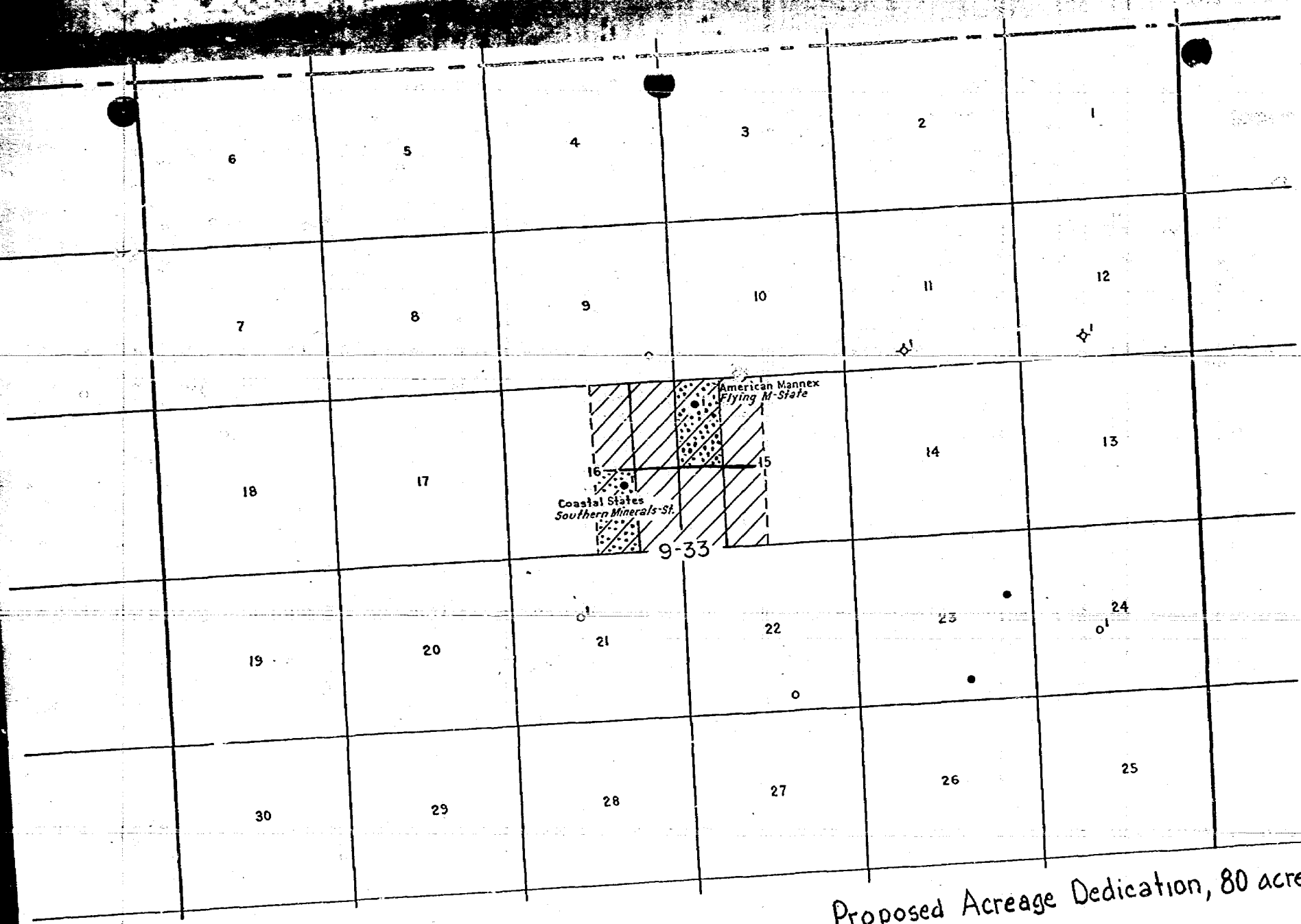
and

AMERICAN MANNEX CORPORATION

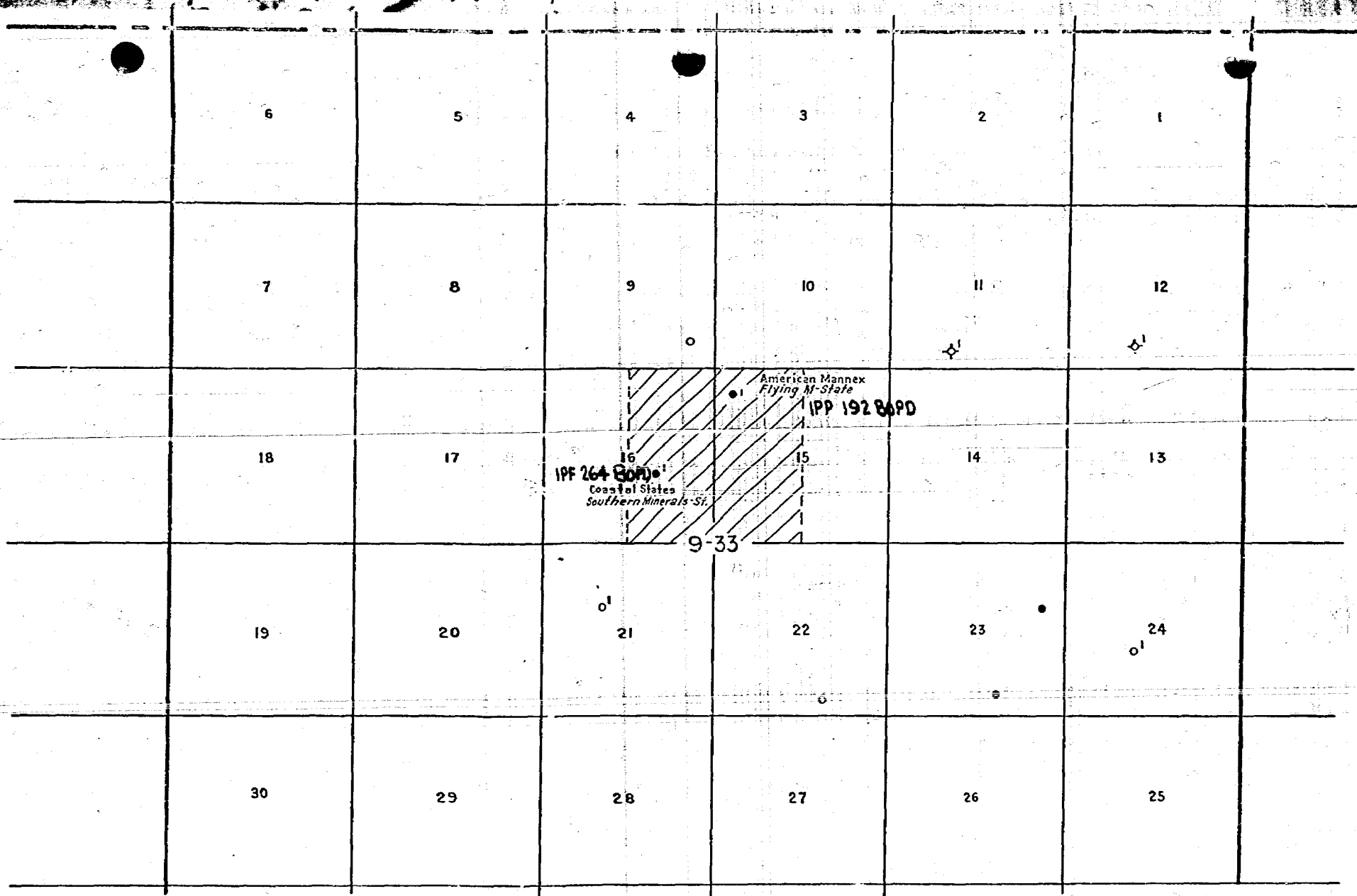
FLYING "M" STATE WELL NO. 1



ABO DOLOMITE, STRUCTURE: TOP OF PAY
CONTOUR INTERVAL: 10'
COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'

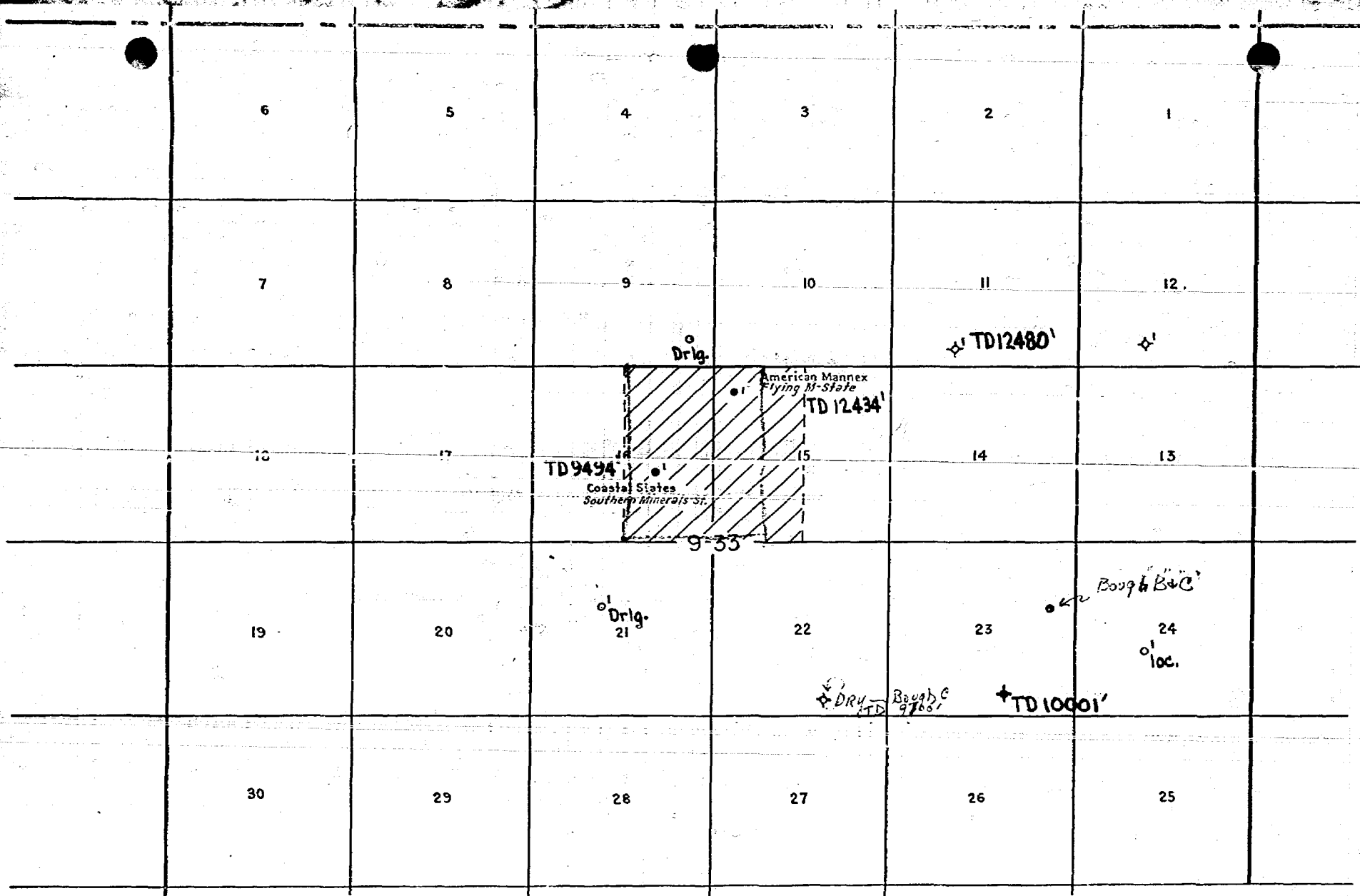


Proposed Acreage Dedication, 80 acre spacing
COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'



Potentials, Abo Dolomite Pay

COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'



COASTAL STATES GAS PRODUCING CO.
FLYING M ABO POOL
LEA COUNTY, NEW MEXICO
SCALE: 1" = 4000'

WELL HISTORY

Coastal States Gas Producing Company
#1 Southern Minerals State

Location: 2307.6' FSL & 1661.9 FEL, Sec 16, T-9S
R-33-E, Lea County, New Mexico

Total Depth: 9547' PBD: 8757'

Production String: 5- $\frac{1}{2}$ ", OD, 17 & 15#, J-55 & N-80 smls Csg:
9532.86' set @ 9546', 300 sks cmt.

Schlumber-Formation Test: (Wireline)
ger

8505 - 08': T. O. 45 Seconds

Recovery: 20,400 cc water

.95 cu ft gas

6 cc sd (Very Slight Fluorescence)

Pressures: Sampling Pr - 150 PSI (45 seconds)
FSIP - 3250 PSI (28")
MW - 4280 PSI

Perforations - Abo Zone: 8603 - 16, one jet shot/ft.

Treatment: 500 gals MCA Acid following by 6000 Gals M-38 Acid

Potential: 276 bbls oil per day, flowing on 16/64" choke.
262 MCF Gas/Day, GOR: 992:1, Grav - 37.5°.

Initial Reservoir Pressure: 3250 PSI

Spud - 6/4/63

Comp - 7/28/63

WELL HISTORY

American Mannex #1 Flying M State (OWWO)
(Formerly Trice Production Co. #1 Flying M State)

Location: 660' FNL & 660' FWL, Sec 15, T-9S, R-33E,
Lea County, New Mexico

Total Depth: 12,445' PBTD: 9250'

Production String: 5- $\frac{1}{2}$ ", OD Csg, (12,431.65') set @ 12,455'.

Drill Stem Test: Abo (Trice Production Company)

8600 - 8675':

T. C. - 30", T.O. - 60", T.C. - 30".

Recovered: 280' Gas in Drill Pipe, 30' GCM

IMW - 4586#, ISIP - 2344#, IF - 90#, FF - 83#,

FSIP - 239#, FSI - 4513#.

Perforations: Abo Zone - 8620 - 26', 8630 - 34'

Treatment: Abo - 6000 Gals FLAX-2 Acid

Potential: 192 bbls oil per day

Initial Reservoir Pressure: 3068 PSI

Spud - ~~6/1/63~~

Complete - ~~July 28/63~~

OIL RECOVERY CALCULATIONS
AEO DOLOMITE FORMATION

COASTAL STATES GAS PRODUCING COMPANY
SOUTHERN MINERALS STATE WELL NO. 1

Calculated Porosity (Schlumberger)	15%
Water Saturation (Schlumberger)	22%
Net Pay	13 feet

Oil in Place (Bbls/Ac.Ft.)

$$(7758 \text{ bbl/AF}) (0.15) (1 - .22) \left(\frac{1}{FVF} \right)$$

$$FVF = 1.05 + (5\% \times \frac{GOR}{100}) =$$

$$1.05 + (.05 \times \frac{890}{100}) =$$

$$1.05 + \frac{44.5}{100} = 1.05 + .445 = 1.095 =$$

829 Bbls/Ac.Ft.

Recoverable Oil (Bbls/Acre Foot)

$$(829 \text{ bbl/AF}) (.15) =$$

124.35

Oil in Place (Bbls/Acre)

$$(829) (13') =$$

10,777

Recoverable Oil (Bbls/Acre)

$$(10777) (.15) =$$

1616.55

Oil in Place

40 Acres
431,080

80 Acres
862,160

Recoverable Oil

64,662

129,324

RESERVOIR ROCK AND FLUID PROPERTIES
ABO DOLOMITE FORMATION

Coastal States Gas Producing Company #1 Southern Minerals State

Depth of Producing Formation	8600'
Gross Pay, feet	13'
Net Pay, feet	13'
Porosity, per cent (Neutron Log)	15%
Water Saturation (Laterolog)	22%
Permeability (Schlumberger Formation Test)	50 md (to water)
Original Reservoir pressure, psig	308 ³ ₅
Reservoir temperature	143°F
Formation volume factor	1.095
API Gravity, °API @ 60° F	37.5°

Productivity Index & Permeability Calculations
Abo Dolomite Formation

Coastal States Gas Producing Co. #1 Southern Minerals State

Productivity Index

Date of Test	9-17-63
Producing Rate (24 Hrs) Bbls/day	231.8
Shut-In Reservoir Pressure, psig	3083
Flowing Bottom Hole Pr, psig	2768

$$P. I. = \frac{\text{Bbls/day}}{\text{Drawdown, psig}} = \frac{231.8}{3083 - 2768} = 0.735 \text{ BOPS/psi/psi}$$

Permeability Calculation from P. I.

$$K_o = \frac{(P.I.) U_o (\text{Log } r_e / r_w) (FVF)}{(0.00307) (h)} = \frac{(0.735) (\text{Log } \frac{5280}{0.328}) (0.2) (1.095)}{0.04}$$

$$= 170 \text{ md.}$$

Permeability Calculation, Pressure Buildup, Schlumberger
Wireline Test = 50 md.

COMPARISON OF ROCK & FLUID PROPERTIES

No known comparable production, northern Lea or southern Roosevelt Counties, New Mexico.

DRILLING ECONOMICS ABO DOLOMITE FORMATION

<u>Income</u>	40 Acres	80 Acres
1. Recoverable Oil, bbls	64,662	129,324
2. Operator's Net Recoverable Oil (7/8 x 1) (bbls)	56,599	113,198
3. Operator's Gross Income (\$2.64 x 2.)*	\$149,421	\$298,842

<u>Cost</u>	
1. Drilling and Completing Somico-St. #1	\$140,000
2. Flow Lines and Tank Battery	<u>16,000</u>
Total Cost**	\$156,000

* Crude Price = \$3.01 per bbl, posted price, 40° API Crude
 -.06 Penalty per °API less than 40°, 37° Abo
 2.95
 -.15 Trucking and Marketing Chg.
 2.80
 -.16 Taxes, ad valorem and prod.
 \$2.64 Operating Gross Income/bbl.

** Total cost does not include operating costs or income taxes.



COLEMAN PETROLEUM ENGINEERING COMPANY

PHONE EXPRESS 3-3813
611 GRIMES
P O BOX 1825
HOBBS, NEW MEXICO

BOTTOM HOLE PRESSURE RECORD

OPERATOR COASTAL STATES GAS PRODUCING CO. *Abc Dolomite*
FIELD UNDESIGNATED FORMATION *Abc Dolomite*
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8260	2971	.319
8310(-3942)	2987 (**)	(.319)
8600	3080	

* EXTRAPOLATED PRESSURE

** MID POINT OF CASING PERFORATIONS

