

CASE 4333: Application of PHILLIP:  
FOR A DUAL COMPLETION AND SALT  
WATER DISPOSAL, CHAVES COUNTY.

Case Number

4333

Application  
Transcripts.

Small Exhibits

ETC.



# OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87801

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER

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

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

Re: Case No. 4333  
Order No. R-3949  
Applicant:  
Phillips Petroleum Company

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC   x  

Artesia OCC   x  

Aztec OCC           

Other           State Engineer Office

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. 4333  
Order No. R-3949

APPLICATION OF PHILLIPS PETROLEUM  
COMPANY FOR A DUAL COMPLETION AND  
SALT WATER DISPOSAL, CHAVES COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 15, 1970,  
at Hobbs, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 22nd day of April, 1970, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, and being fully advised  
in the premises,

FINDS:

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

(2) That the applicant, Phillips Petroleum Company, seeks  
authority to complete its Marley "A" Well No. 1, a wildcat well,  
located in Unit P of Section 3, Township 11 South, Range 31 East,  
NMPN, Chaves County, New Mexico, as a dual completion to produce  
oil from the San Andres formation in the interval from 4148 feet  
to 4165 feet through 2 3/8-inch tubing and to dispose of produced  
salt water into the San Andres formation in the perforated inter-  
val from 4344 feet to 4800 feet through a parallel string of  
2 3/8-inch plastic-lined tubing, with separation of the zones  
by a packer set at approximately 4315 feet.

(3) That approval of the dual completion and salt water  
disposal as set out above will prevent the drilling of unnecessary

-2-

CASE No. 4333  
Order No. R-3949

wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Phillips Petroleum Company, is hereby authorized to complete its Marley "A" Well No. 1, a wildcat well, located in Unit P of Section 3, Township 11 South, Range 31 East, NMPM, Chaves County, New Mexico, as a dual completion to produce oil from the San Andres formation in the interval from 4148 feet to 4165 feet through 2 3/8-inch tubing and to dispose of produced salt water into the San Andres formation in the perforated interval from 4344 feet to 4800 feet through a parallel string of 2 3/8-inch plastic-lined tubing, with separation of the zones by a packer set at approximately 4315 feet;

PROVIDED HOWEVER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

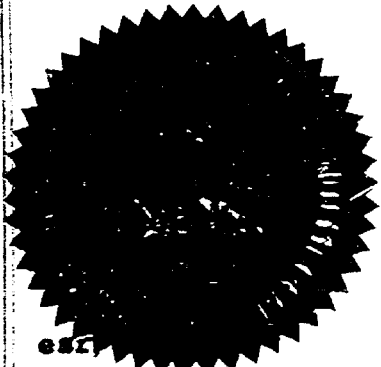
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

  
ALEX J. ARMILLO, Member

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



## PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING

P. O. BOX 1410

D. L. RAY  
DIVISION ENGINEERFORT WORTH, TEXAS—76101  
March 18, 1970

File: PEH-129-986.510.1

Subject: Phillips Petroleum Company's  
Marley-A Well No. 1 (Unit P  
Section 3, 11-S, 31-E) Wildcat  
Chaves County, New MexicoMAR 23 1970  
41333New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501Attention: Mr. A. L. Porter  
Secretary-Director

Gentlemen:

Pan American Petroleum Corporation, as an offset operator, has been advised of Phillips Petroleum Company's request for administrative action on the following proposals concerning the subject well:

1. Application for Discovery Allowable and Creation of a new Pool.
2. Application to Dispose of Salt Water by Injection into a Porous Formation Non-productive of Oil or Gas into the San Andres formation with perforations 4344-4800'.
3. Application for Multiple Completion.

Pan American Petroleum Corporation hereby waives notice of hearing to this request.

Yours very truly,

D. L. Ray

CDB:jn

cc: Phillips Petroleum Company  
Phillips Building, Fourth & Washington  
Odessa, Texas 79760

DOCKET MAILED

Date 4-2-70

dearnley-meier

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

209 SIMAS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Hobbs, New Mexico  
April 15, 1970

REGULAR HEARING

IN THE MATTER OF:

Application of Phillips Petroleum  
Company for a dual completion and  
salt water disposal, Chaves County, New  
Mexico.

) Case No. 4333

BEFORE: A. L. Porter, Secretary-Treasurer  
David P. Cargo, Governor  
George Hatch, General Counsel

*Daniel S. Nutter, Examiner*

TRANSCRIPT OF HEARING

MR. NICHOLS: Call Case 4232.

MR. NICHOLS: Case 4232. Application of Phillips Petroleum Company for a dual completion and salt water disposal, Chaves County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, appearing for the Applicant. I believe the witness has already been sworn.

(Thereupon, Applicant's Exhibits 1 through 4 were marked for identification.)

WILLIAM MUELLER

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A William John Mueller, M-u-e-l-l-e-r.

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

A I'm the north area reservoir engineer for Phillips Petroleum Company operating out of the Southwest region, Odessa, Texas.

Q In connection with your duties, do you have jurisdiction over the area involved in the application in



Case 43332

A Yes, sir.

Q Have you testified before the Oil Conservation Commission and made your qualifications a matter of record?

A Yes, sir.

MR. KELLAMIN: Are the witness' qualifications acceptable?

MR. NUTTER: Yes, they are.

Q (By Mr. Kellamin). Mr. Mueller, are you familiar with the application of Phillips Petroleum Company in Case 43332?

A Yes, sir.

Q What is proposed by the applicant in this case?

A Proposed by Phillips in this case is to reinject produced salt water into lower non-productive zones of the San Andres in our Marley "A" Number 1 completion well.

Q Is that, as a salt water disposal operation, the nature of it?

A Yes. As far as the salt water disposal part of the application is concerned, that's it.

Q You are asking for a dual completion from its production from the upper portion of the San Andres and disposal in the lower portion?

Q Yes, sir. The subject well in question will accomplish this salt water disposal will be by double completion the well.

Q Now, referring to that has been marked as Exhibit Number 1, would you identify that exhibit?

A Exhibit Number 1 is an acre plat showing the Phillips Marley "A" Number 1 located in Unit B of Section 3, Township 11 South, Range 31 East, Chaves County, New Mexico.

Q This well is currently producing from the Upper San Andres portion of the reservoir through perforations 4148 to 4165. It's producing on average in the neighborhood of 20 to 30 barrels of oil per day and approximately 80 to 100 barrels of water per day.

Q What disposition is presently being made of the water production?

A Currently the water production is going into surface pits on a temporary no pit exception while we test the well for completion.

Q Now, does the exhibit also show the lease ownership within a two-mile radius of the subject well?

A Yes, sir, the plat does.

Q Is there any San Andres production in that area?

A No, sir. There is no current production or prior production indicated in any two-mile radius of this lease. All wells were dry holes.

Q Now, on the right side of the exhibit there appears a log section. What information is indicated on it?

A On the right side of Exhibit Number 1 is a reproduced section of the gamma ray sonic log through the San Andres. And it shows schematically what Phillips proposes in this application.

This is to produce the upper portion of the San Andres through a single string of tubing, set at about 4148 and reinject the produced water through a string of internally plastic-coated tubing set in a Baker production packer at 4315 and this water would be disposed of into two sets of perforations, 4344 to 4364 and 4780 to 4800.

Both sets of perforations were tested non-productive of oil and high water volumes on swab test.

Q Now, are those perforations indicated on the exhibit?

A Yes. They are marked in blue on the exhibit whereas the producing zone is marked in red.

Q Was there any trace of oil production at all in

either of these cases?

2 No, sir.

Q Now, referring to what has been marked as Exhibit Number 2, would you identify that exhibit?

2 Exhibit Number 2 is a full set of logs on this well. Both runs at intermediate and at "D".

Q Is there any particular information on that that you want to call attention to?

2 No, sir. The same data that's -- the logs have all the tops marked and the perforated zones in the well and the packer setting. That same data is available here on Exhibit 1.

Q Now, referring to what has been marked as Exhibit Number 3, would you identify that exhibit?

2 Exhibit Number 3 is a completed form C108 of the New Mexico Oil Conservation Commission for application to dispose of produced water by injection into a porous formation. This form shows that we have surface nine thirteen and three-eighths set at 327 feet and cemented with 375 sacks circulated to surface.

That is now called our long string here, the eight and five-eighths, set at 4224, cemented with a total

of 750 each, top of the cement behind the eight and five eighths is at 2600 for temperature survey. This well was initially drilled as a 5200 foot depth C-11 deal and at that time this eight and five eighths was set at intermediate casing.

Continuing on down the form, we propose to set two and three eighths inch internally plastic coated tubing in a Baker packer at 4315 and reinject the produced water into the bottom two sets of perforations that tested non-productive of oil while maintaining oil production from the upper set of perfs.

Q What volumes of water do you anticipate you will inject in this well?

A Currently we anticipate a minimum volume of a hundred barrels and possible maximum up to 500 if the well is successfully reconditioned.

Q Would it require pressure or will the well take it on gravity?

A It will take it on gravity because we have an acid test and treatment of the lower zone that was -- showed an instantaneous shut down pressure of a vacuum and at that time we established a pump in the rate of -- in excess of one and a half barrels a minute on a vacuum.

Q Now, attached to the form C108 are some other exhibits; is that correct?

A Attached to the form C108 and made a portion of Exhibit 3 is details of each of the testing activities in each of the three San Andres zones we did perforate in this well with the upper zone here again underlined in red and it, swabbed on potential test here, indicates -- shows 64 barrels of oil and 96 barrels of salt water in ten hours.

The lower middle set of perfs are 4344 to 64 were acidized and swabbed last day, two hours, 6 barrels of salt water and swabbed dry.

Perforations 4780 to 4800 were acidized and on last day their swab nine hours, 84 barrels of load water, a hundred barrels of salt water with a standing fluid level of 1500 foot.

Q Now, did you get a water analysis from each of the zones involved here?

A Yes. These are also attached as part of Exhibit 3 as the Halliburton water analysis from all sets of perforations individually.

Q How does the water analysis compare as to the three zones?

A They show to be very comparable as would be

anticipated and highly mineralized and unfit for domestic use.

Q You would not anticipate any difficulty on compatibility of the water involved in the different zones, would you?

A No, sir.

Q Now, referring to what has been marked as Exhibit Number 4, would you identify that exhibit?

A Exhibit Number 4 is a New Mexico Oil Conservation Commission form C107 outlining our application here to multiple complete this well with the upper zone being an oil producing zone on artificial lift and the lower zones to be gravity injection salt water disposal.

Q Now, attached to that, is there a diagrammatic sketch showing the proposed completion?

A Yes. Attached is a diagrammatic sketch showing our surface pipe, our long string, eight and five-eighths at 4884; the two strings of tubing, two and three-eighths-inch OD internally plastic-coated injection string in the two-inch production string.

It also shows the TD of the well at 9200 and the cement plugs that were set on top of the fish when the open hole was abandoned and also the one in the base of the

eight and five-eighths that was set prior to perforating the San Andres. I might point out that at the time we set that plug we then pressure tested the eight and five-eighths to 2000 pounds.

Q You feel that you have effective separation then of any lower zones that might be below your plug?

A Yes, sir.

Q Did you find any producing intervals below the San Andres?

A No, sir.

Q Are there any in the area that you know of?

A The nearest production to this well, I think, is two and a half miles south and the TV Pennsylvanian Pool and the nearest San Andres production is about ten miles to the east, northeast in the Mascalero San Andres. There is nothing in the immediate vicinity here.

Q Mr. Mueller, is this the type of completion for production in salt water disposal that has been approved by this Commission in other cases? Do you know of any differences?

A No, sir, I know of no differences; but, I also know of none where it's been approved before.

Q Mr. Mueller, in your opinion, will all producing



intervals be fully protected by an injection program as proposed here?

A Yes, sir.

Q Will the correlative rights of any operator be impaired in any way?

A No, sir.

Q Is this in the interest of conservation and prevention of waste, in your opinion?

A Yes, sir.

Q Were Exhibits 1 through 4 prepared by you or under your supervision?

A Yes, sir.

MR. KELLAHIN: At this time I would like to offer in evidence Exhibits 1 through 4.

MR. NUTTER: Phillips Exhibits 1 through 4 will be admitted in evidence.

MR. KELLAHIN: That completes the examination of the witness?

THE WITNESS: May I make one statement?

MR. KELLAHIN: Yes.

THE WITNESS: I said I knew of no others. I had the other one before the Commission, the Vacuum Pool. We have a Yates gas zone that produces up the annulus with

salt water disposal down tubing below it.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Mueller, what's the current rate of production from this well?

A At approximately 20 to 30 barrels of oil per day and 80 to 100 barrels of water per day.

Q Does Phillips at this time have plans for any additional drilling in the San Andres in the area?

A We are still attempting to evaluate it and we do have a force commitment. That's why we are in rather a hurry. We have a thirty-day deadline, I believe.

Q But, oil production has fallen to 20 to 30 barrels?

A Yes, sir.

Q What's the water production doing? Is it fairly well stabilized or is it going up or down or what?

A It appears to be percentage-wise dropping. In other words, on initial completion the well tested -- I don't have the twenty-four hour record -- but, I think it was something like 300 barrels of water, 250 to 300 barrels of water in twenty-four hours.

Q Over here your swab test is given for twenty-four hours.

A Our calculated twenty-four hour potential based on a ten hour swab test was 154 barrels of oil and 230 barrels of salt water, which would indicate approximately 60 to 70 percent water where now we are producing 70 to 80 percent.

MR. NUTTER: Thank you. Are there any further questions of Mr. Mueller? He may be excused.

(Witness excused).

MR. NUTTER: Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: That's all, Mr. Nutter. Thank you.

MR. NUTTER: Does anyone have anything they wish to offer in Case 4333? We will take the case under advisement and a fifteen-minute recess.

(Whereupon, a short recess was taken).

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
WILLIAM MUELLER	
Direct Examination by Mr. Kellahin	2
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E X H I B I T S

Applicant's 1 through 4	2
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STATE OF NEW MEXICO )  
 )  
 COUNTY OF BERNALILLO )

I, BRENDA BURKS, Court Reporter 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.

Brenda Burks  
 Court Reporter

I do hereby certify that the foregoing is  
 a complete record of the proceedings in  
 the Executive hearing of the New Mexico  
 heard by me on \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_, Executive  
 New Mexico Oil Conservation Commission

## NEW MEXICO OIL CONSERVATION COMMISSION

## APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

Applicant Phillips Petroleum Company		Address Rm. B-2, Phillips Bldg., Odessa, Texas 79760	
Well Name Marley A	Well No. 1	Field Wildcat--San Andres	County Chaves
Location UNIT LETTER <u>P</u> WELL IS LOCATED <u>660</u> FEET FROM THE <u>south</u> LINE AND <u>660</u> FEET FROM THE <u>east</u> LINE. SECTION <u>31-S</u> TOWNSHIP <u>11-S</u> RANGE <u>31-E</u> NEPRL.			
CASING AND TUBING DATA			
NAME OF STRING	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT
SURFACE CASING	3-3/8"	327'	375 sy class H
INTERMEDIATE	--	--	Surface
LONG STRING	8-5/8"	4884'	350 sy class H 20% DD & 400 sy class H
TUBING	2-3/8"	4315'	2600' Temperature Survey
NAME OF PROPOSED INJECTION FORMATION		TOP OF FORMATION	BOTTOM OF FORMATION
Lower San Andres		4315'	4882'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?		PERFORATIONS OR OPEN HOLES	PROPOSED INTERVAL(S) OF INJECTION
Tubing		Perforations	4344-64', 4780-4800'
IS THIS A NEW WELL DRILLED FOR DISPOSAL?	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?
No	Exploratory--oil		yes
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH			
Upper San Andres zone perforated 4148-4165' and currently oil producing.			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA	
300	4165'	None	
ANTICIPATED DAILY INJECTION VOLUME (BBLS.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM
100	100	500	Closed
IS INJECTION TO BE BY GRAVITY OR PRESSURE?		APPROX. PRESSURE (PSI)	
Gravity		None	
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE --		WATER TO BE DISPOSED OF	
Yes		Yes	
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)		NATURAL WATER IN DISPOSAL ZONE	
Fee--Surface Owner--Robert C. Marley, 900 W. Matthews, Roswell, New Mexico 88201		Yes	
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL			
Amerada-Hess Corporation, Box 2040, Tulsa, Oklahoma 74102			
Pan American Petroleum Corporation, Box 1410, Oil & Gas Bldg., Ft. Worth, Texas 76101			
Hunt Oil Company, 1401 Elm, Dallas, Texas 75202			
Union Oil Company of California, 300 Security National Bldg., Roswell, New Mexico 88201			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER	
Yes		Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)?		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
Yes		Yes	
PLAT OF AREA		THE NEW MEXICO STATE ENGINEER	
Yes		No	
ELECTRICAL LOG		DIAGRAMMATIC SKETCH OF WELL	
Yes		Yes	

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

J. Mueller

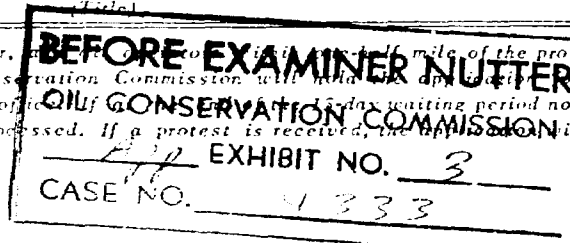
Associate Reservoir Engineer

3-4-70

(Signature)

(Date)

Should waivers from the State Engineer, the surface owner, and the operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold an application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If a protest is received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.



Continental Oil Company  
Well No. 1  
Unit P, Sec. 3, T-11-S, R-31-E,  
Chaves County, New Mexico

Summary of Testing Activity - San Andres

Upper San Andres: Perfs 4148-65'.

Perforated 8-5/8" casing in San Andres w/2 shots per foot from 4148-65'. Set retrievable BP at 4180' and packer at 4113'. Swabbed perfs 4148-65' for 3 hours, swabbed dry. Howco treated w/1000 gals reg. 15% acid. Swabbed 4 hrs, 26 BLW, 20 BAW, 3 EO, and swabbed dry. SI 14 hrs, TP 50#. Swabbed 10 hrs, 15 EO, 4 BAW, 41 BSW. Last 3 hrs swab rate was 1 EO, 3 BSW, gas TSTM, per hour. SI 14 hrs, TP 50#, FL 2500' from surface. Swabbed 3 hrs, 4 EO, 12 BSW, swabbed dry. Howco treated w/3000 gals 28% acid. Swabbed and flowed 2 hrs, 26 BLW, 24 BAW. Swabbed 5 hrs, 26 EO, 48 BAW, 32 BSW, swabbing rate of 7 EO, 9 BSW for last 2 hrs. SI 14 hrs, TP 500#, FL 2500'. Swabbed, on potential test, 64 EO, 96 BSW, gas TSTM, Gvty 18.3, in 10 hrs. Production from perfs 4148-65'.

Lower San Andres: Perfs 4344-64'.

Perforated 8-5/8" casing in lower San Andres from 4344-64' with 2 shots per foot. Set retrievable BP at 4381' and RTTS packer at 4327'. Swabbed 2 hrs, 26 BLW, swabbed dry. SI 14 hrs, FL at 2000' from surface. Swabbed 2 hrs, 16 BW and drilling mud, swabbed dry. Howco acidized perfs 4344-64' with 1000 gals 15% acid. Flowed 6 BLW. Swabbed 7 hrs, 20 BLW, 20 BAW, 4 BSW. Swabbed 1 BSW/hr during last 4 hrs. SI 14 hrs, TP-vacuum, FL 3300'. Swabbed 2 hrs, 6 BSW, swabbed dry. Perforations 4344-64' are non-productive.

Lower San Andres: Perfs 4780-4800'.

Perforated 8-5/8" casing 4780-4800' with 2 shots per foot. Set RTTS packer at 4732'. Swabbed 1-1/2 hrs, 30 BLW, FL 1500' from surface. SI 14 hrs, FL 1500' from surface. Swabbed 6 hrs, 120 BSW, FL at 1500'. Howco treated with 2000 gals regular acid. SI 24 hrs. Swabbed 9 hrs, 84 BLW, 100 barrels acid cut salt water. FL 1500'. Swabbed 1 hr, 8 barrels acid cut salt water. Perforations 4780-4800' are non-productive.

HALLIBURTON COMPANY  
MIDLAND DIVISION

## LABORATORY WATER ANALYSIS

No. W1-49-70To Phillips Petroleum CompanyDate 2/17/70Box 2130Hobbs, New MexicoAttn: Mr. Mossman

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by \_\_\_\_\_

Date Rec. 2/9/70Well No. Marley A # 1Depth 4148 - 4165Formation San AndresCounty ChavesField W/CSource SwabResistivity ..... .050 @ 75 FSpecific Gravity ..... 1.166pH ..... 5.8Calcium (Ca) ..... 15,400

\*MPL

Magnesium (Mg) ..... 4,800Chlorides (Cl) ..... 153,000 ✓Sulfates (SO<sub>4</sub>) ..... 1,000Bicarbonates (HCO<sub>3</sub>) .....Soluble Iron (Fe) ..... Nil

Remarks:

\*Milligrams per liter

Respectfully submitted,

Analyst: \_\_\_\_\_

HALLIBURTON COMPANY

cc:

By Robert Lunsford  
DIVISION CHEMIST

## NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.



HALLIBURTON DIVISION LABORATORY  
HALLIBURTON COMPANY  
MIDLAND DIVISION

LABORATORY WATER ANALYSIS

No. W1-42-70

To Phillips Petroleum Company

Date 2/5/70

Box 2130

Hobbs, New Mexico

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by \_\_\_\_\_

Date Rec. 2/5/70

Well No. Marley-A # 1

Depth 4,344 - 4,364

Formation San Andres

County Chaves

Field W/C

Source Swab

Resistivity .052 @ 72 F

Specific Gravity 1.144

pH 6.2

Calcium (Ca) 11,350

\*MPL

Magnesium (Mg) 720

Chlorides (Cl) 127,000

Sulfates (SO<sub>4</sub>) 1,200

Bicarbonates (HCO<sub>3</sub>) 488

Soluble Iron (Fe) 180

Remarks:

\*Milligrams per liter

Respectfully submitted,

Analyst: Robert Lansford

cc:

HALLIBURTON COMPANY

By Robert Lansford  
DIVISION CHEMIST

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

**HALLIBURTON DIVISION LABORATORY**  
HALLIBURTON COMPANY  
MIDLAND DIVISION

**LABORATORY WATER ANALYSIS** No. W1-52-70

To Phillips Petroleum CompanyDate 2/17/70Box 2130Hobbs, New MexicoAttn: Mr. Mossman

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Mr. MossmanDate Rec. 2/14/70Well No. Marley A # 1Depth 4780 - 4800Formation San AndresCounty ChavesField W/CSource SwabResistivity .047 @ 75 FSpecific Gravity 1.182pH 0.4Calcium (Ca) 7,600

\*MPL

Magnesium (Mg) 2,040Chlorides (Cl) 170,000 ✓Sulfates (SO<sub>4</sub>) HeavyBicarbonates (HCO<sub>3</sub>) 0Soluble Iron (Fe) Heavy

Remarks:

\*Milligrams per liter

Respectfully submitted,

Analyst: \_\_\_\_\_

cc: \_\_\_\_\_

HALLIBURTON COMPANY

By Robert L. Lusk

DIVISION CHEMIST

**NOTICE**

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

NEW MEXICO OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
APPLICATION FOR MULTIPLE COMPLETION

FILE NO.  
DATE

Phillips Petroleum Company  
Room 2-2, Phillips Building  
Dallas, Texas 75260

Chaves

March 2, 1970

Harley A

1

P

3

11-S

31-E

1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in the same zones within one mile of the subject well? YES ☐ NO ☒

2. If answer is yes, identify one such instance: Order No. ---; Operator Lease, and Well No.: ---

3. The following facts are submitted:

	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	Wildcat--San Andres	--	San Andres
b. Top and Bottom of Pay Section (Perforations)	4148-4165'	--	4344-64', 4780-4800'
c. Type of production (Oil or Gas)	Oil	--	Salt Water Disposal
d. Method of Production (Flowing or Artificial Lift)	Artificial Lift	--	Gravity Injection

4. The following are attached. (Please check YES or NO)

Yes No

- ☒ ☐ a. Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.
- ☒ ☐ b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.
- ☒ ☐ c. Waivers consenting to such multiple completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.\*
- ☒ ☐ d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed it shall be submitted as provided by Rule 112A.)

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

Amerada Hess Corporation, Box 2040, Tulsa, Oklahoma 74102

Pan American Petroleum Corporation, Box 1410, Oil and Gas Bldg., Ft. Worth, Texas 76101

Hunt Oil Company, 1401 Elm, Dallas, Texas 75202

Union Oil Company of California, 300 Security National Bldg., Roswell, New Mexico 88201

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ☒ NO ☐. If answer is yes, give date of such notification March 4, 1970.

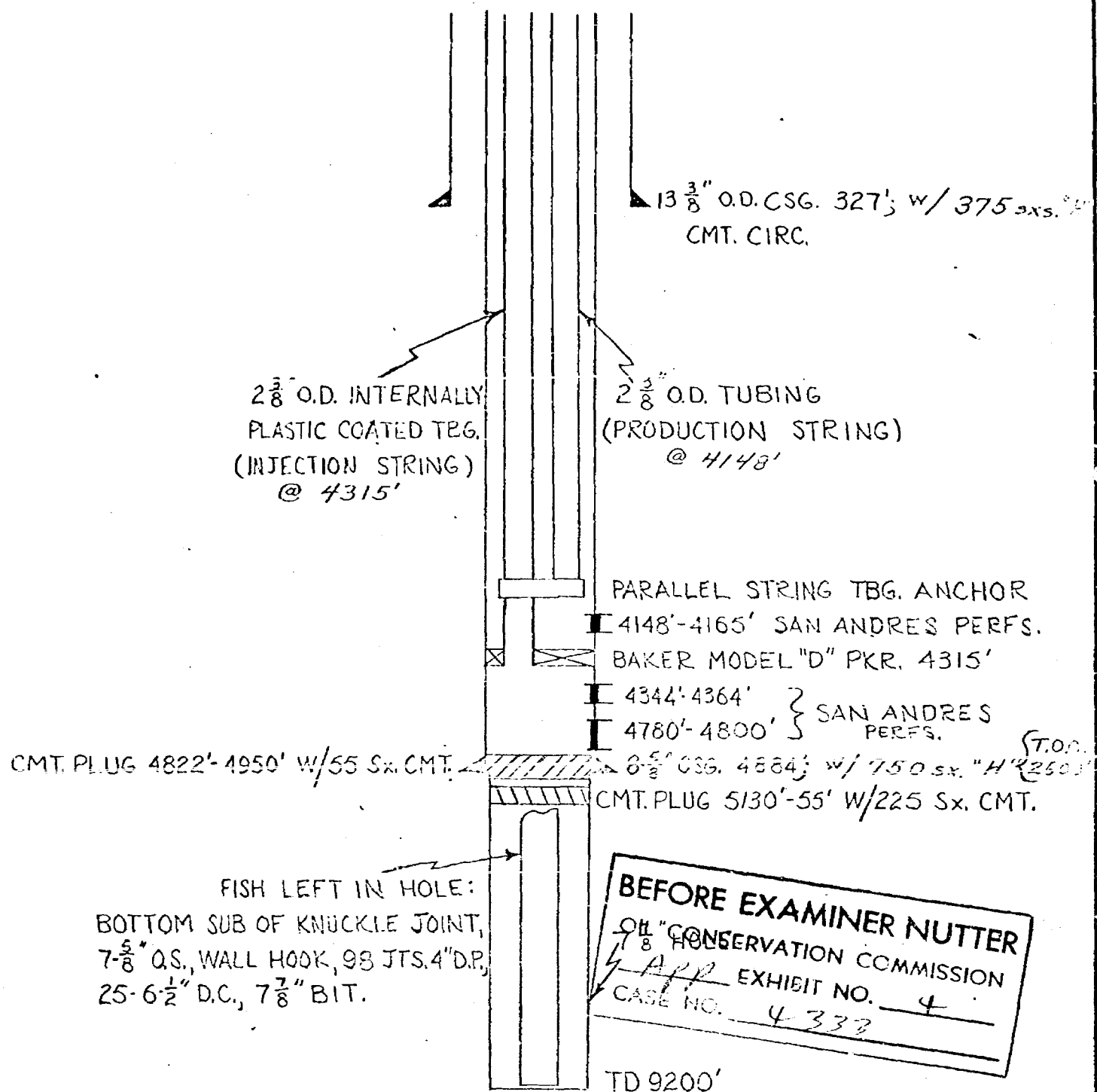
CERTIFICATE: I, the undersigned, state that I am the duly authorized agent of the Phillips Petroleum Co. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.  
Waivers requested by copy this form and transmittal letter.

W. J. Mueller

Signature

\*Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest or request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard completion unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.



**BEFORE EXAMINER NUTTER**  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 4  
CASE NO. 4333

**BARTLESVILLE, OKLAHOMA**

MARLEY "A" No. 1			
PROPOSED COMPLETION			
Loc: 660' FSL, 660' FEL, SEC. 3, T-11-S, R-31-E, CHAYES CO., N.M.			
DRAWN	PPD	7-7-77	AFE. NO.
CHECKED			DWG. NO.
REVISION	BY	DATE	APPROVED
			SCALE 1/4" = 1'
			SHEET NO.



PHILLIPS PETROLEUM COMPANY

ODessa TEXAS 7960  
PHILLIPS BUILDING FOURTH & WASHINGTON

EXPLORATION & PRODUCTION DEPARTMENT

March 3, 1970

7-5: Marley-A Well No. 1  
(Unit F, Sec. 3, 11-S, 31-E)  
Wildcat, Chaves County,  
New Mexico

File: W6-Ba-187-70

New Mexico Oil Conservation Commission (3)  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.  
Secretary-Director

Gentlemen:

We respectfully request administrative action on the following proposals concerning our captioned well:

1. Application for Discovery Allowable and Creation of a New Pool -- Form C-109, 2-mile area production map, and electric logs are enclosed. There is no production of oil or gas within the statutory radius surrounding this well. Further, a copy of our notice of intent and request for waivers of objections is attached. This notice was sent to all offset operators.
2. Application to Dispose of Salt Water by Injection Into a Porous Formation Non-productive of Oil or Gas -- Form C-108, 2-mile area production map, electric logs, water analyses, and diagrammatic sketch of well equipment/completion are enclosed. Produced water from San Andres perforations 4148-65' will be re-injected into lower San Andres perforations 4344-4800'. A copy of our notice of intent and request for waivers of objections is attached. This notice was sent to all offset operators.
3. Application for Multiple Completion -- This is a conventional oil/salt water disposal completion using dual tubing strings and a reservoir production separation packer set in the casing. Attached are application Form C-107, diagrammatic sketch of equipment/completion, location plat, electric logs, and a copy of our notice of intent and request for waivers of objections as was directed to all offset operators.

The area plat, electric logs, list of offset operators and surface owner, and diagrammatic sketches referred to herein are common to all proposals.

Your consideration of these proposals will be appreciated.

Yours very truly,

PHILLIPS PETROLEUM COMPANY

*F. F. Lovering*

F. F. Lovering, Manager  
Southwestern Region

DOCKET MAILED

Date 4-2-70

HM:rm  
Attachment

cc: New Mexico Oil Conservation Comm. (2), Box 1980, Hobbs, New Mexico 88240  
Offset operators and surface owner -- list attached

Phillips Petroleum Company  
Marley-A Well No. 1  
Chaves County, New Mexico

Surface Owner:

Mr. Robert C. Marley  
900 W. Matthews  
Roswell, New Mexico 88201

Offset Operators:

Amerada Hess Corporation  
P. O. Box 2040  
Tulsa, Oklahoma 74102

Pan American Petroleum Corporation  
Oil and Gas Building  
P. O. Box 1410  
Fort Worth, Texas 76101

Hunt Oil Company  
1401 Elm  
Dallas, Texas 75202

Union Oil Company of California  
300 Security National Building  
Roswell, New Mexico 88201

RECEIPT FOR CERTIFIED MAIL—30¢

SENT TO <i>Robert C. Marley</i>	POSTMARK OR DATE <i>McKinney</i> <i>3-10-70</i>
STREET AND NO. <i>900 W. Matthews</i>	
P. O. STATE, AND ZIP CODE <i>Laswell, N.M.</i>	
EXTRA SERVICES FOR ADDITIONAL FEES Return Receipt Shows to whom and date delivered <input type="checkbox"/> 10¢ fee <input type="checkbox"/> 35¢ fee Deliver to Addressee Only <input type="checkbox"/> 50¢ fee	

POD Form 3800  
Mar. 1966

NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL (See other side)

No. 547961

No. 547498

SENT TO <i>Union Oil Co. of Calif.</i>	POSTMARK OR DATE <i>McKinney</i> <i>3-10-70</i>
STREET AND NO. <i>300 Security Natl. Bldg</i>	
P. O. STATE, AND ZIP CODE <i>Laswell, N.M. 87201</i>	
EXTRA SERVICES FOR ADDITIONAL FEES Return Receipt Shows to whom and date delivered <input type="checkbox"/> 10¢ fee Shows to whom, date, and where delivered <input type="checkbox"/> 35¢ fee Deliver to Addressee Only <input type="checkbox"/> 50¢ fee	

POD Form 3800  
Mar. 1966

NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL (See other side)

No. 547497

RECEIPT FOR CERTIFIED MAIL—30¢

SENT TO <i>Pan American Pet. Co</i>	POSTMARK OR DATE <i>McKinney</i> <i>3-10-70</i>
STREET AND NO. <i>Oil &amp; Gas Bldg Bx 1410</i>	
P. O. STATE, AND ZIP CODE <i>St. Worth, Texas 76101</i>	
EXTRA SERVICES FOR ADDITIONAL FEES Return Receipt Shows to whom and date delivered <input type="checkbox"/> 10¢ fee Shows to whom, date, and where delivered <input type="checkbox"/> 35¢ fee Deliver to Addressee Only <input type="checkbox"/> 50¢ fee	

POD Form 3800  
Mar. 1966

NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL (See other side)

No. 547500

RECEIPT FOR CERTIFIED MAIL—30¢

SENT TO <i>Hunt Oil Co</i>	POSTMARK OR DATE <i>McKinney</i> <i>3-10-70</i>
STREET AND NO. <i>1401 Elm</i>	
P. O. STATE, AND ZIP CODE <i>Dallas, Texas 75202</i>	
EXTRA SERVICES FOR ADDITIONAL FEES Return Receipt Shows to whom and date delivered <input type="checkbox"/> 10¢ fee Shows to whom, date, and where delivered <input type="checkbox"/> 35¢ fee Deliver to Addressee Only <input type="checkbox"/> 50¢ fee	

POD Form 3800  
Mar. 1966

NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL (See other side)

No. 547499

RECEIPT FOR CERTIFIED MAIL—30¢

SENT TO <i>Amerada Hess Corp.</i>	POSTMARK OR DATE <i>McKinney</i> <i>3-10-70</i>
STREET AND NO. <i>P.O. Box 2040</i>	
P. O. STATE, AND ZIP CODE <i>Tulsa, Okla.</i>	
EXTRA SERVICES FOR ADDITIONAL FEES Return Receipt Shows to whom and date delivered <input type="checkbox"/> 10¢ fee Shows to whom, date, and where delivered <input type="checkbox"/> 35¢ fee Deliver to Addressee Only <input type="checkbox"/> 50¢ fee	

POD Form 3800  
Mar. 1966

NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL (See other side)

Case 4323

**NEW MEXICO OIL CONSERVATION COMMISSION**  
**APPLICATION FOR DISCOVERY ALLOWABLE AND CREATION OF A NEW POOL**

Form C-109  
 Adopted 9-1-66

**NOTE:** This form is to be filled and attachments made in accordance with the provisions of Rule 509.  
 If discovery is claimed for more than one zone, separate forms must be filed for each.

Operator <b>Phillips Petroleum Company</b>		Address <b>Rm. B-2, Phillips Bldg., Odessa, Texas 79760</b>	
Lessee Name <b>Marley A</b>		Well No. <b>1</b>	County <b>Chaves</b>
Well Location Unit Letter <b>P</b> : <b>660</b> Feet from The <b>south</b> Line and <b>660</b> Feet From the <b>east</b> Line of Section <b>3</b> , Township <b>11-S</b> , Range <b>31-E</b> , NMPM			
Suggested Pool Names (List in order of preference) 1. <b>Tower (San Andres)</b> 2. 3.			
Name of Producing Formation <b>Upper San Andres</b>		Perforations <b>4148' to 4165'</b>	Date of Filing Form C-104 <b>2-11-70</b>
Was "Affidavit of Discovery" Previously Filed For This Well in this Pool? <b>No</b>		If Yes, Give Date of Filing <b>—</b>	Date Well was Spudded <b>12-15-70</b>
Date Compl. Ready to Prod. <b>2-9-70</b>			
Total Depth <b>9200</b>	Plugged Back Depth <b>4822</b>	Depth Casing Shoe <b>4884</b>	Tubing Depth <b>4124</b>
Elevation (Gr., DF, RKB, RT, etc.) <b>4506' Ground</b>			
Oil Well Potential (Test to be taken only after all load oil has been recovered) <b>154</b> Bbls. Oil Per Day Based On <b>64</b> Bbls In <b>10</b> Hours; <b>230</b> Bbls Water Per Day Based On <b>9</b> Bbls In <b>10</b> Hours; Gas Production During Test: <b>TSTM</b> MCF; Gas-Oil Ratio: <b>TSTM</b> Method Of Producing: <b>Swabbing</b> Chk. Size <b>--</b>			

**NEAREST PRODUCTION TO THIS DISCOVERY (Includes past and present oil or gas producing areas and zones whether this discovery is based on horizontal or vertical separation):**

Pool Name <b>T.V. Penn-Gas</b>	Name of Producing Formation <b>Morrow Sand</b>	Top of Pay <b>10867</b>	Bottom of Pay <b>10963</b>	Currently Producing? <b>Yes</b>
Horizontal Distance and Direction from Subject Discovery Well to the Nearest Well in this Pool <b>12,300 feet southwest</b>		Vertical Distance from Subject Discovery Zone to Producing Interval this Pool <b>6719 feet</b>		

**NEAREST COMPARABLE PRODUCTION (Includes past and present oil or gas production from this pay or formation only):**

Pool Name <b>Mescalero (San Andres)</b>	Top of Pay <b>4031</b>	Bottom of Pay <b>4131</b>	Currently Producing? <b>Yes</b>
Horizontal Distance and Direction from Subject Discovery Well to the Nearest Well in this Comparable Pool <b>9 miles east and 2 miles north</b>			

Is "County Deep" Discovery Allowable Requested for Subject Discovery Well? <b>NO</b>	If Yes, Give Name, Location, and Depth of Next Deepest Oil Production in this County <b>---</b>
---	--

Is the Subject Well Multiple Completion? <b>Yes</b>	Is Discovery Allowable Requested for other Zone(s)? <b>No</b>	If Yes, Name all Such Formations * <b>Upper San Andres 4148-65' --oil producing</b> <b>Lower San Andres 4344-84' and 4780-4805' --non-productive--</b> <b>to be used for salt water disposal.</b>
--	--	---

**LIST ALL OPERATORS OWNING LEASES WITHIN ONE MILE OF THIS WELL (Attach additional sheet if necessary)**

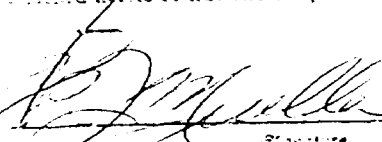
NAME	ADDRESS
<b>Amerada Hess Corporation</b>	<b>Box 2040, Tulsa, Oklahoma 74102</b>
<b>Pan American Petroleum Corporation</b>	<b>Oil and Gas Division Box 1410, Ft. Worth, Texas 76101</b>
<b>Hunt Oil Company</b>	<b>1401 Elm, Dallas, Texas 75202</b>
<b>Union Oil Company of California</b>	<b>300 Security National Bldg., Roswell, N. M. 88201</b>

Attach evidence that all of the above operators have been furnished a copy of this application. Any of said operators who intends to object to the designation of the subject well as a discovery well, eligible to receive a discovery allowance, must notify the appropriate District Office and the Santa Fe Office of the Commission of such intent in writing within ten days after receiving a copy of this application.

Remarks:  <div align="right"><i>Page 4233</i></div>
---

**CERTIFICATION**

I hereby certify that all rules and regulations of the New Mexico Oil Conservation Commission have been complied with, with respect to the subject well, and that it is my opinion that a bona fide discovery of a hitherto unknown common source of oil supply has been made in said well. I further certify that the discovery allowable for the subject well, if authorized, will be produced from the subject zone in this well only. Further, that the information given herein and attached hereto is true and complete to the best of my knowledge and belief.

 W. J. Mueller	Associate Reservoir Engr.	3-9-70
Signature	Position	Date



## NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-124  
(Rev. 9-53)COMPANY Phillips Petroleum Company BOTTOM HOLE PRESSURES Wildcat - San Andres POOLPOOL DATUM +367 NOMINAL SHUT-IN TIME — HRS: AVERAGE POOL TEMPERATURE 104 °F

LEASE	WELL NO.	UNIT	S-T-R	DATE	TIME	D.F. ELEV.	GAUGE DEPTH	GRADIENT TBG.	B.H.P. @ GAUGE DEPTH	B.H.P. @ POOL DATUM	PREVIOUS TEST	
				PRESS. RUN	S.I. HRS./MINS.						@ DATUM PRESS.	DATE
Marley-A	1	P	3-11-31	3-4-70	20 days	4504'	3310	—	1027	—	—	—
							4210	.491	1469	—	—	—
							4310	.510	1520	—	—	—
							4137	—	1432	—	—	—

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

Form C-105  
Revised 1-1-65

5a. Indicate Type of Lease  
State ☐ Fee ☒  
5. State Oil & Gas Lease No.

1a. TYPE OF WELL  
OIL WELL ☒ GAS WELL ☐ DRY ☐ OTHER ☐  
b. TYPE OF COMPLETION  
NEW WELL ☒ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF. REBVR. ☐ OTHER ☐

7. Unit Agreement Name

8. Farm or Lease Name

9. Well No.

2. Name of Operator  
**Phillips Petroleum Company**

3. Address of Operator  
**Room B-2, Phillips Bldg., Odessa, Texas 79700**

10. Field and Pool, or Wildcat

4. Location of Well

UNIT LETTER **P** LOCATED **660** FEET FROM THE **South** LINE AND **660** FEET FROM

12. County

THE **East** LINE OF SEC. **3** TWP. **11S** RGE. **31E** NMPM

**CHAVEZ**

15. Date Spudded **12-15-69** 16. Date T.D. Reached **1-23-70** 17. Date Compl. (Ready to Prod.) **2-7-70** 18. Elevations (DF, RKB, RT, GR, etc.) **4516 Gr.** 19. Elev. Casinghead

20. Total Depth **920** 21. Plug Back T.D. **4322** 22. If Multiple Compl., How Many **—** 23. Intervals Drilled By **Rotary Tools** **C-7200** Cable Tools

24. Producing Interval(s), of this completion — Top, Bottom, Name **4145-4165 San Andres** 25. Was Directional Survey Made **No**

26. Type Electric and Other Logs Run **compensated density, laterolog, microlaterolog Schlumberger, integrated LMC-Sonic, M-3, sidewall neutron** 27. Was Well Cored **No**

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	43	327'	17-1/2"	275 or 0.5, 25 0.5, 1/4"	—
8-5/8"	32, 24	4322'	11"	1300 lb. or 0.5, 2.5 0.5, 1/4"	—
				0.5 or 1/4"	—

29. LINER RECORD					30. TUBING RECORD		
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
—					2-7/8"	4124'	4113'
—							

31. Perforation Record (Interval, size and number)  
**4145-4165, 17', 34 holes**  
**2 - 1/2" holes/ft.**

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.  
DEPTH INTERVAL  
**4145-4165** AMOUNT AND KIND MATERIAL USED  
**3000 gals 15% acid**  
**3000 gals 20% acid**

33. PRODUCTION  
Date First Production **2-7-70** Production Method (Flowing, gas lift, pumping — Size and type pump) **Swabbing** Well Status (Prod. or Shut-in) **Prod.**  
Date of Test **2-7-70** Hours Tested **10** Choke Size **—** Prod'n. For Test Period **64** Oil — Bbl. **64** Gas — MCF **7571** Water — Bbl. **96** Gas — Oil Ratio **—**  
Flow Tubing Press. **—** Casing Pressure **—** Calculated 24-Hour Rate **154** Oil — Bbl. **154** Gas — MCF **7571** Water — Bbl. **200** Oil Gravity — API (Corr.) **13.3 API**

34. Disposition of Gas (Sold, used for fuel, vented, etc.) **Vented** Test Witnessed By **C.M. Fossman**

35. List of Attachments  
**logs forwarded direct by logging company.**

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED **E.J. Mueller** TITLE **Associate Reservoir Engr.** DATE **2-10-70**

# INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

## INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

### Southeastern New Mexico

### Northwestern New Mexico

T. Ankylopter 1550'	T. Canyon	T. Ojo Alamo	T. Penn. "B"
T. Salt	T. Strawn	T. Kirtland-Fruitland	T. Penn. "C"
B. Salt	T. Atoka	T. Pictured Cliffs	T. Penn. "D"
T. Yates 2221'	T. Miss	T. Cliff House	T. Leadville
T. 7 Rivers	T. Devonian	T. Menefee	T. Madison
T. Queen 2223'	T. Silurian	T. Point Lookout	T. Elbert
T. Grayburg	T. Montoya	T. Mancos	T. McCracken
T. San Andres 7122'	T. Simpson	T. Gallup	T. Ignacio Qtzite
T. Glorieta 6215'	T. McKee	Base Greenhorn	T. Granite
T. Paddock	T. Ellenburger	T. Dakota	T.
T. Blinberry	T. Gr. Wash	T. Morrison	T.
T. Tubb 6372'	T. Granite	T. Todilto	T.
T. Drinkard	T. Delaware Sand	T. Entrada	T.
T. Abo 7211'	T. Bone Springs	T. Wingate	T.
T. Wolfcamp 6217'	T.	T. Chinle	T.
T. Permian 3 6783'	T.	T. Permian	T.
T. Cisco (Bough C) 9174'	T.	T. Penn. "A"	T.

## FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	1550	1550	Redbeds.				
1550	3545	1995	Anhydrite & lime.				
3545	4035	1340	Lime & dolomite.				
4035	7335	2450	Lime.				
7335	7935	600	Lime & shale.				
7935	8575	640	Lime & dolomite.				
8575	8723	148	Lime & chert.				
8723	9200	477	Lime & shale.				

Perforations at 4148-65' in San Andres

Perforated 8-5/8" casing in lower San Andres from 4148-65' with 2 shots per foot. Set retrievable BP at 4180' and packer at 4171'. Swabbed perfs 4148-65' for 3 hours, swabbed dry. Howco treated w/2000 gals 15% acid. Swabbed 4 hrs, 26 BLW, 12 BSW, 3 BAW, and swabbed dry. SI 14 hrs, TP 500%, FL 2500'. Swabbed 10 hrs, 15 BO, 4 BAW, 41 BSW. Last 3 hrs swab rate was 1 BO, 3 BSW, gas TSTM, per hour. SI 14 hrs, TP 500%, FL 2500' from surface. Swabbed 3 hrs, 4 BO, 12 BSW, swabbed dry. Howco treated w/2000 gals 28% acid. Swabbed and flowed 2 hrs, 26 BLW, 24 BAW. Swabbed 5 hrs, 26 BO, 48 BAW, 32 BSW, swabbing rate of 7 BO, 9 BSW for last 2 hrs. SI 14 hrs, TP 500%, FL 2500'. Swabbed, on potential test, 64 BO, 96 BSW, gas TSTM, Gvty 18.3, in 10 hrs. Production from perfs 4148-65'.

Lower San Andres: Perfs 4344-64'.

Perforated 8-5/8" casing in lower San Andres from 4344-64' with 2 shots per foot. Set retrievable BP at 4381' and RTTS packer at 4327'. Swabbed 2 hrs, 26 BLW, swabbed dry. SI 14 hrs, FL at 2000' from surface. Swabbed 2 hrs, 16 BW and drilling mud, swabbed dry. Howco acidized perfs 4344-64' with 1000 gals 15% acid. Flowed 6 BLW. Swabbed 7 hrs, 20 BLW, 20 BAW, 4 BSW. Swabbed 1 BSW/hr during last 4 hrs. SI 14 hrs, TP-vacuum, FL 3300'. Swabbed 2 hrs, 6 BSW, swabbed dry. Perforations 4344-64' are non-productive.

Lower San Andres: Perfs 4780-4800'.

Perforated 8-5/8" casing 4780-4800' with 2 shots per foot. Set RTTS packer at 4732'. Swabbed 1-1/2 hrs, 30 BLW, FL 1500' from surface. SI 14 hrs, FL 1500' from surface. Swabbed 6 hrs, 120 BSW, FL at 1500'. Howco treated with 2000 gals 15% acid. SI 24 hrs. Swabbed 9 hrs. 84 BLW, 100 barrels acid cut salt water. FL 1500'. Swabbed 1 hr, 8 barrels acid cut salt water. Perforations 4780-4800' are non-productive.

Case 4323

## NEW MEXICO OIL CONSERVATION COMMISSION

## APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

Applicant: Phillips Petroleum Company		Well No: 660		Location: 660 south 660	
Operator: Marley A		County: Wildcat--San Andres		County: Chaves	
Casing and Tubing Data					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS OF CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13-3/8"	327'	375 sz class	Surface	Circulation
INTERMEDIATE	---	---	---	---	---
LONG STRING	8-5/8"	4884'	350 sz class H 20% DD & 400 sz class H	2600'	Temperature Survey
TUBING	2-3/8"	4315'	Baker Model 415-D @ 4315'		
NAME OF PROPOSED INJECTION FORMATION			TOP OF FORMATION		BOTTOM OF FORMATION
Lower San Andres			4315'		4882'
IS INJECTION TO BE BY CIRCULATION, CASING, OR ANNULUS?			PERFORATIONS OR OPEN HOLE?		
Tubing			Perforations		
			4344-64', 4780-4800'		
IS THIS A NEW WELL DRILLED FOR DISPOSAL?		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?	
No		Exploratory--oil		yes	
LIST ALL ZONE PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR CEMENTIZE EACH					
Upper San Andres zone perforated 4148-4165' and currently oil producing.					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA	
300		4165'		None	
ANTICIPATED DAILY INJECTION VOLUME (BBLS/D)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
	100	500	Closed	Gravity	None
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE --			WATER TO BE DISPOSED OF		
Yes			Yes		
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)			ARE WATER ANALYSES ATTACHED?		
Fee--Surface Owner--Robert C. Marley, 900 W. Matthews, Roswell, New Mexico 88201			Yes		
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF MILE OF THIS INJECTION WELL					
Amerada-Hess Corporation, Box 2040, Tulsa, Oklahoma 74102					
Pan American Petroleum Corporation, Box 1410, Oil & Gas Bldg., Ft. Worth, Texas 76101					
Bunt Oil Company, 1401 Elm, Dallas, Texas 75202					
Union Oil Company of California, 300 Security National Bldg., Roswell, New Mexico 88201					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
Yes		Yes		Yes	
THE NEW MEXICO STATE ENGINEER		No			
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)?		PLAT OF AREA		ELECTRICAL LOG	
Yes		Yes		Yes	
				DIAGRAMMATIC SKETCH OF WELL	
				Yes	

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

*W. J. Mueller*  
(Signature)

W. J. Mueller Associate Reservoir Engineer  
(Title)

3-4-70

(Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

*Case*  
4333

HALLIBURTON DIVISION LABORATORY  
HALLIBURTON COMPANY  
MIDLAND DIVISION

## LABORATORY WATER ANALYSIS

No. W1-49-70To Phillips Petroleum CompanyDate 2/17/70Box 2130Hobbs, New MexicoAttn: Mr. Mossman

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by \_\_\_\_\_

Date Rec. 2/9/70Well No. Marley A # 1Depth 4148 - 4165Formation San AndresCounty ChavesField W/CSource SwabResistivity .050 @ 75 FSpecific Gravity 1.166pH 5.8Calcium (Ca) 15,400

\*MPL

Magnesium (Mg) 4,800Chlorides (Cl) 153,000Sulfates (SO<sub>4</sub>) 1,000Bicarbonates (HCO<sub>3</sub>) \_\_\_\_\_Soluble Iron (Fe) Nil

Remarks: \_\_\_\_\_

\*Milligrams per liter

Respectfully submitted,

Analyst: \_\_\_\_\_

cc: \_\_\_\_\_

HALLIBURTON COMPANY

By Robert L. Smith

DIVISION CHEMIST

## NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, which shall be no act or omission, resulting from such report or its use.

Case 4323

HALLIBURTON DIVISION LABORATORY  
HALLIBURTON COMPANY  
MIDLAND DIVISION

LABORATORY WATER ANALYSIS

No. W1-42-70

To Phillips Petroleum Company

Date 2/5/70

Box 2130

Hobbs, New Mexico

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by \_\_\_\_\_

Date Rec. 2/5/70

Well No. Harley-A # 1

Depth 4,244 - 4,361

Formation San Andres

County Chaves

Field W/C

Source Swab

Resistivity

.052 @ 72 F

Specific Gravity

1.144

pH

6.2

Calcium (Ca)

11,350

\*MPL

Magnesium (Mg)

720

Chlorides (Cl)

127,000

Sulfates (SO<sub>4</sub>)

1,200

Bicarbonates (HCO<sub>3</sub>)

488

Soluble Iron (Fe)

180

Remarks:

\*Milligrams per liter

Respectfully submitted,

Analyst: Robert Jansford

cc:

HALLIBURTON COMPANY

By [Signature]

DIVISION CHEMIST

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

4223

HALLIBURTON DIVISION LABORATORY  
HALLIBURTON COMPANY  
MIDLAND DIVISION

LABORATORY WATER ANALYSIS No. W1-52-70To Phillips Petroleum CompanyDate 2/17/70Box 2130Hobbs, New MexicoAttn: Mr. Mossman

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Mr. MossmanDate Rec. 2/14/70Well No. Marley A # 1Depth 4780 - 4800Formation San AndresCounty ChavesField W/CSource SwabResistivity .047 @ 75 FSpecific Gravity 1.182pH 0.4Calcium (Ca) 7,600

\*MPL

Magnesium (Mg) 2,040Chlorides (Cl) 170,000Sulfates (SO<sub>4</sub>) HeavyBicarbonates (HCO<sub>3</sub>) 0Soluble Iron (Fe) Heavy

Remarks:

\*Milligrams per liter

Respectfully submitted,

Analyst: \_\_\_\_\_

HALLIBURTON COMPANY

cc:

*Robert L. Leland*  
DIVISION CHEMIST

## NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

*Case*  
*4333*



NEW MEXICO OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
APPLICATION FOR MULTIPLE COMPLETION

Form No. 1  
1-6-61

Phillips Petroleum Company  
Room B-2, Phillips Building  
Dallas, Texas 79760

By: Marley A

Date: March 2, 1970

Well No. 3 Zone 11-B Section 31-B

1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in the same zones within one mile of the subject well? YES ☐ NO ☒
2. If answer is yes, identify one such instance: Order No. ---; Operator Lease, and Well No.: ---

	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	Wildcat--San Andres	--	San Andres
b. Top and Bottom of Pay Section (Perforations)	4148-4165'	--	4344-54', 4780-4800'
c. Type of production (Oil or Gas)	Oil	--	Salt Water Disposal
d. Method of Production (Flowing or Artificial Lift)	Artificial Lift	--	Gravity Injection

3. The following are attached. (Please check YES or NO)

- |   |                             |   |
|---|-----------------------------|---|
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | a. Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent. |
| <input checked="" type="checkbox"/>     | <input type="checkbox"/>    | b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.   |
| <input checked="" type="checkbox"/>     | <input type="checkbox"/>    | c. Waivers consenting to such multiple completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.*  |
| <input checked="" type="checkbox"/>     | <input type="checkbox"/>    | d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed it shall be submitted as provided by Rule 112-A.)   |

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

Amerada Hess Corporation, Box 2040, Tulsa, Oklahoma 74102

Pan American Petroleum Corporation, Box 1410, Oil and Gas Bldg., Ft. Worth, Texas 76101

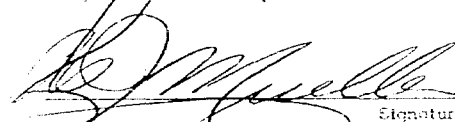
Hunt Oil Company, 1401 Elm, Dallas, Texas 75202

Union Oil Company of California, 300 Security National Bldg., Roswell, New Mexico 88201

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ☒ NO ☐. If answer is yes, give date of such notification March 4, 1970.

CERTIFICATE: I, the undersigned, state that I am the duly authorized agent of the Phillips Petroleum Co. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

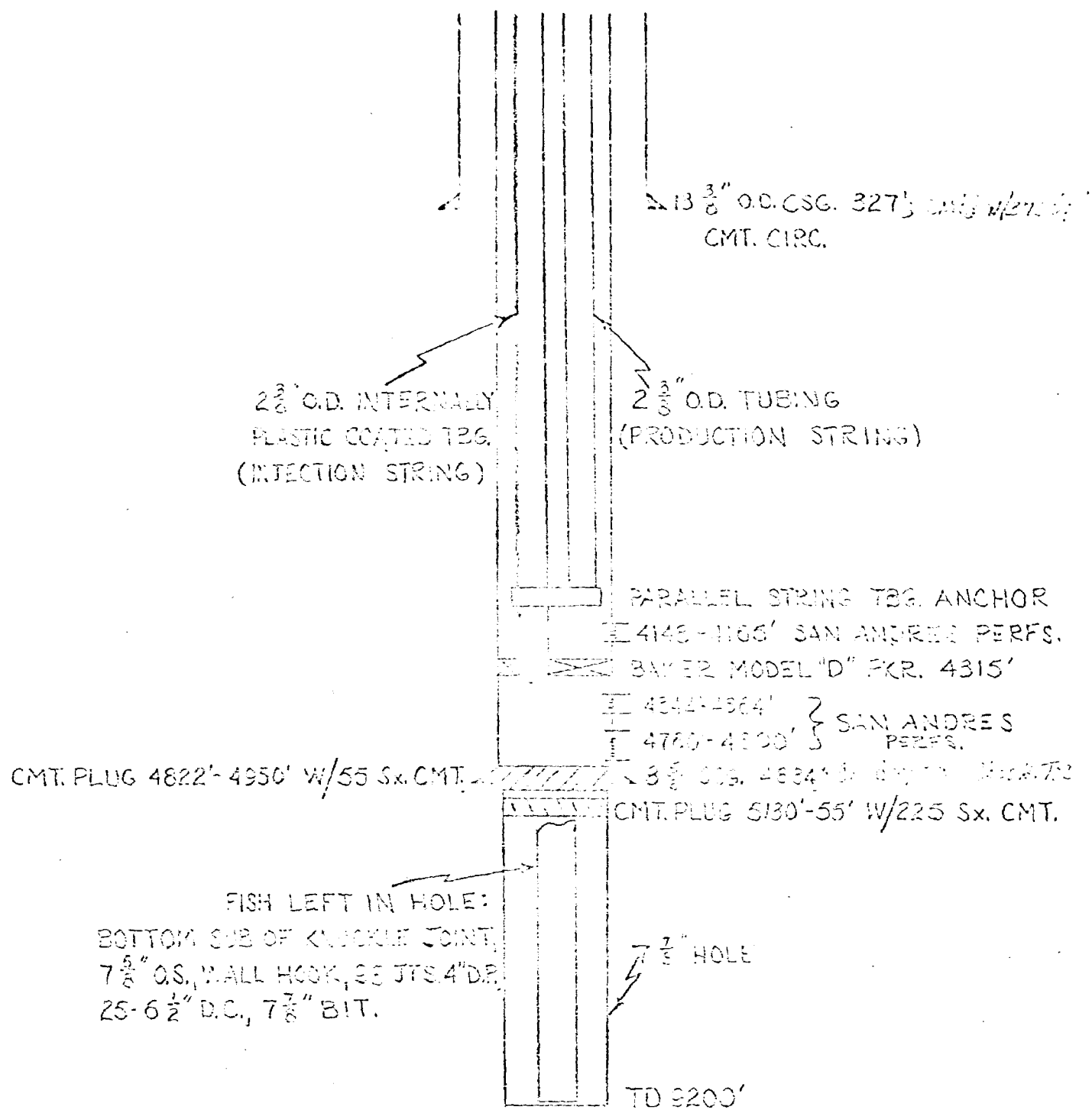
\*Waivers requested by copy this form and transmittal letter.

  
Signature W. J. Mueller

\*Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard perforation unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

One 2323



BARTLESVILLE, OKLAHOMA

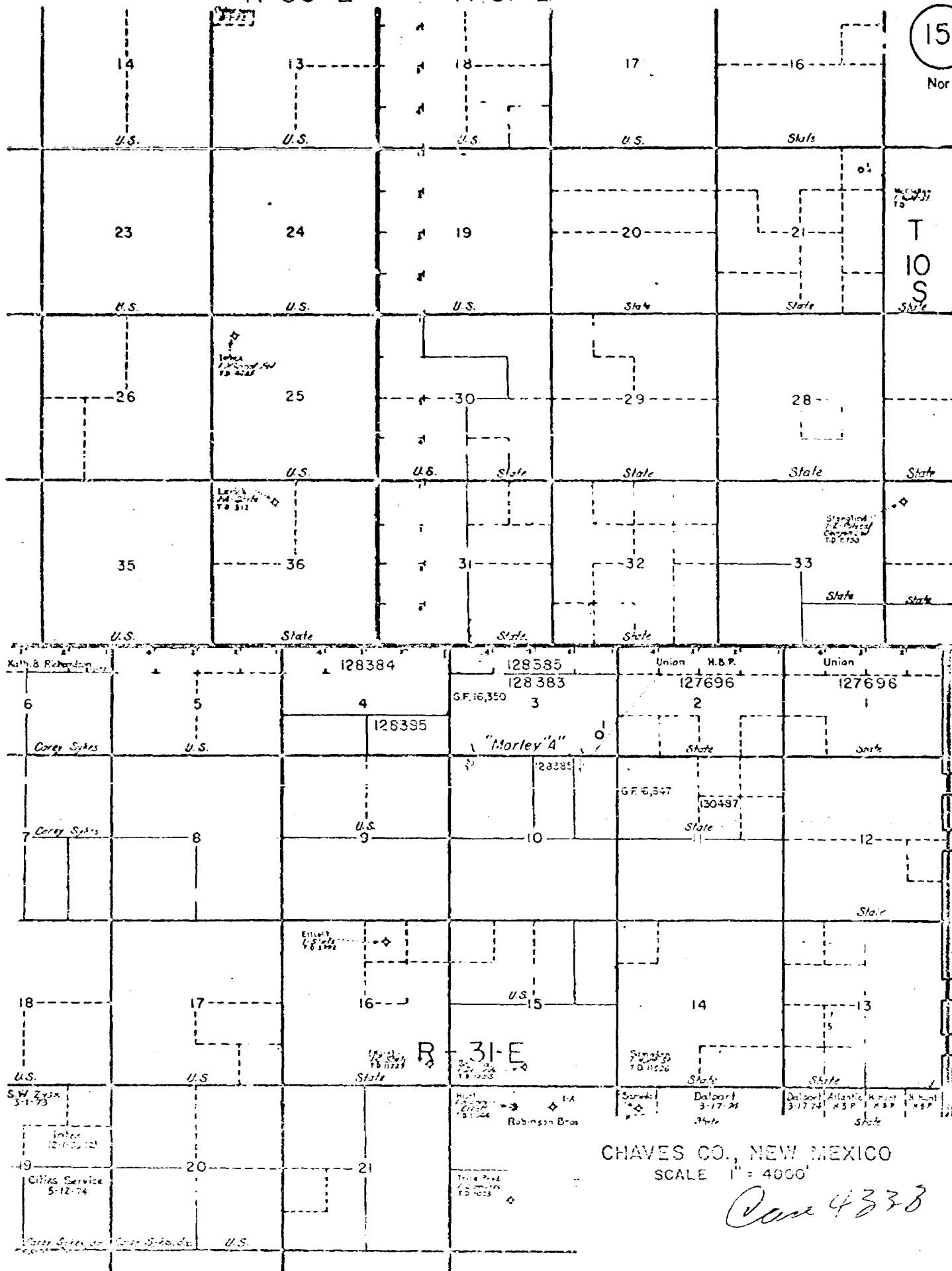
MARLEY "A" No. 1				PRODUCED COMPLETION		Case 4333	
Loc: 600' FSL, 600' FEL, 5000' FHS, 2-31-E, CHAVES CO., N.M.							
DRAWN		DATE		APP. NO.		DWG. NO.	
CHECKED		DATE					
REVISION		BY		DATE		APPROVED	
						SCALE	
						SHEET NO.	

R-30-E

R-31-E

15

North



DRAFT  
GMH/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. 4333

Order No. R- 3949

*gnt*  
APPLICATION OF PHILLIPS PETROLEUM  
COMPANY FOR A DUAL COMPLETION AND  
SALT WATER DISPOSAL, CHAVES COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 15, 19670,  
at Hobbs, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this \_\_\_\_\_ day of April, 19670, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, and being fully advised  
in the premises,

FINDS:

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

(2) That the applicant, Phillips Petroleum Company, seeks  
authority to complete its Marley "A" Well No. 1, a wildcat well,  
located in Unit P of Section 3, Township 11 South, Range 31 East,  
NMPM, Chaves County, New Mexico, as a dual completion to produce  
oil from the San Andres formation in the interval from 4148 feet  
to 4165 feet through 2 3/8-inch tubing and to dispose of  
produced salt water into the San Andres formation in the perforated  
interval from 4344 feet to 4800 feet through a parallel string  
of 2 3/8-inch <sup>plastic lined</sup> tubing, with separation of the zones by a  
packer set at approximately 4315 feet.

(3) That approval of the dual completion and salt water  
disposal as set out above will prevent the drilling of unnecessary

wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Phillips Petroleum Company, is hereby authorized to complete its Marley "A" Well No. 1, a wildcat well, located in Unit P of Section 3, Township 11 South, Range 31 East, NMPM, Chaves County, New Mexico, as a dual completion to produce oil from the San Andres formation in the interval from 4148 feet to 4165 feet through 2 7/8-inch tubing and to dispose of produced salt water into the San Andres formation in the perforated interval from 4344 feet to 4800 feet through a parallel string of 2 7/8-inch <sup>plastic-lined</sup> tubing, with separation of the zones by a packer set at approximately 4315 feet;

PROVIDED HOWEVER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(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.

CASE 4334: Application of PAN AM.  
FOR AN UNORTHODOX GAS WELL LOC-  
ATION, SAN JUAN COUNTY, N. M.