

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 S. 1st Street, Artesia, NM 88210-2834
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-101
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator name and Address ARCO PERMIAN P.O. BOX 1610 MIDLAND, TX 79702		² OGRID Number 000990
		³ API Number 30-015-30333
⁴ Property Code 22954	⁵ Property Name WASHINGTON "33" STATE	⁶ Well No. 23

⁷ Surface Location									
UL or lot no.	Section	Township	Range	Lot. Idn	Feet from the	North/South Line	Feet from the	East/West line	County
M	33	17S	28E		975	SOUTH	1060	WEST	EDDY

⁸ Proposed Bottom Hole Location If Different From Surface									
UL or lot no.	Section	Township	Range	Lot. Idn	Feet from the	North/South Line	Feet from the	East/West line	County

⁹ Proposed Pool 1 ARTESIA (Q-G-SA) 3230	¹⁰ Proposed Pool 2
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¹¹ Work Type Code N	¹² Well Type Code O	¹³ Cable/Rotary R	¹⁴ Lease Type Code S	¹⁵ Ground Level Elevation 3671'
¹⁶ Multiple NO	¹⁷ Proposed Depth 3200	¹⁸ Formation SAN ANDRES	¹⁹ Contractor	²⁰ Spud Date 4/98

²¹ Proposed Casing and Cement Program					
Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12-1/4	8-5/8	24#	500'	450	CIRC. TO SURE.
7-7/8	5-1/2	15.5#	3200	1200	CIRC. TO SURE.
Two c 18 Holes on 8 5/8" casing					

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

DRILL SURFACE HOLE W/FRESH WATER TO 500'. SET & CEMENT 8-5/8" CASING.
DRILL 7-7/8" HOLE TO 2000; W/SATURATED BRINE. DRILL 3200' TD W/ SACT GEL
USING PRE-HYDRATED FW GEL SWEEPS. FL +/- 15CC. LOG WFL, RUN & CEMENT
5-1/2" CASING. COMPLETE AND TEST SAN ANDRES FORMATION.

SUBJECT WELL PLANNED AS A 3200' STRAIGHT HOLE.
3000 PSI BOPE WILL BE USED FROM 500' TO TD.

NSL- 4060 6-19-98

Post ID-2
7-10-98
APT + Loc

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief. Signature: Elizabeth A. Casbeer Printed name: ELIZABETH A. CASBEER Title: REG./COMP. ANALYST	OIL CONSERVATION DIVISION Approved by: Jim W. Green B6X Title: District Supervisor Approval Date: 7-6-98 Expiration Date: 7-6-99
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DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
P.O. Box 2088, Santa Fe, N.M. 87504-2088

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name <i>ARTESIA (Q-G-SA)</i>
Property Code <i>22954</i>	Property Name WASHINGTON 33 STATE	Well Number 23
OGRID No. <i>000990</i>	Operator Name APCO PERMIAN	Elevation 3671'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	33	17 S	28 E		975	SOUTH	1060	WEST	EDDY

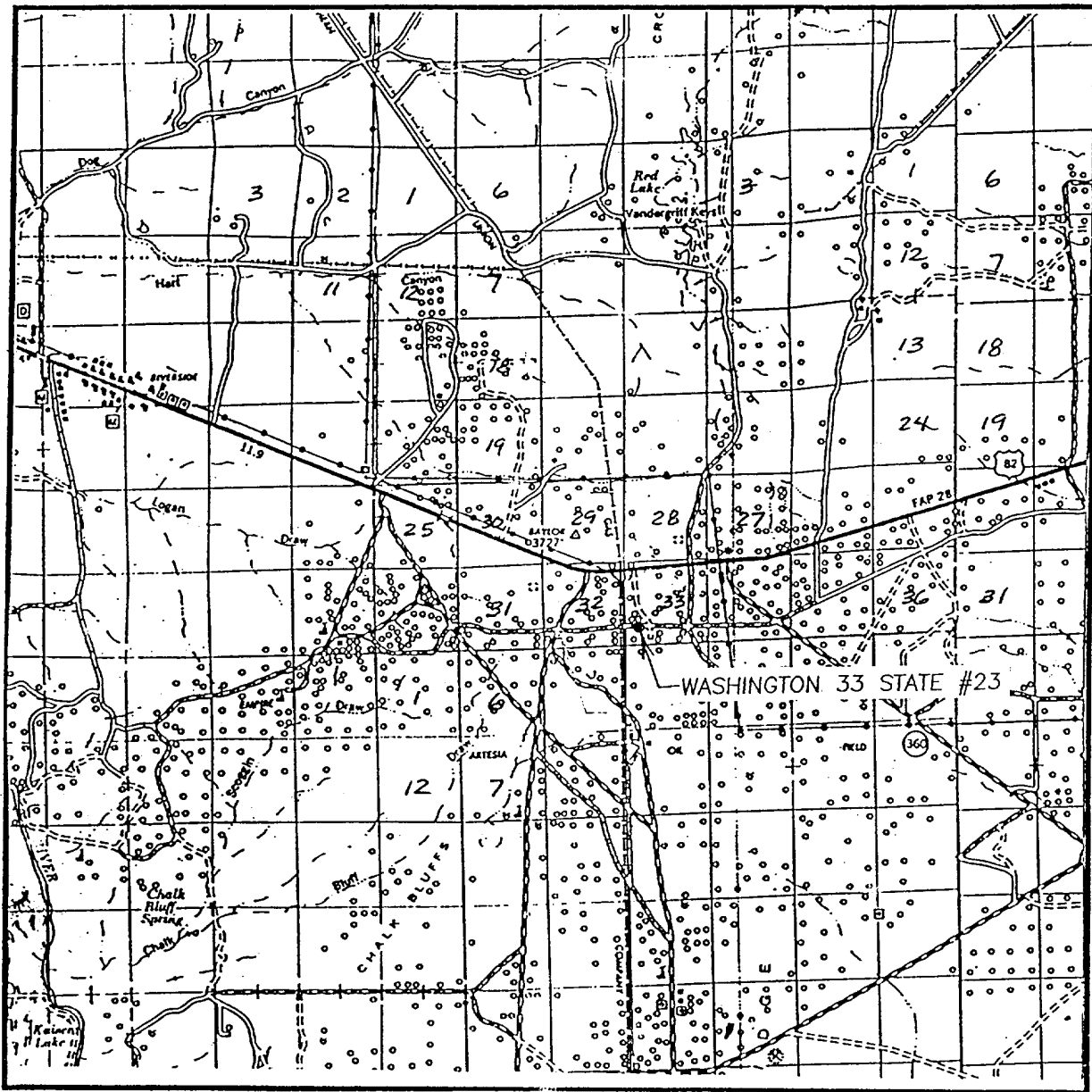
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres <i>40</i>	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<div>05</div> <div>06</div> <div>07</div> <div>08</div> <div>09</div> <div>01</div> <div>02</div> <div>03</div> <div>04</div> <div>013</div> <div>014</div>	<div>021</div> <div>022</div>	<div>1060'</div> <div>975'</div>	<div>OPERATOR CERTIFICATION</div> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Elizabeth A. Casbeer</i> Signature Elizabeth A. CASBEER Printed Name REG. / COMPLIANCE Title 4/29/98 Date</p> <div>SURVEYOR CERTIFICATION</div> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.</p> <p>MARCH 3, 1998</p> <p>Date Surveyed Signature & Seal of Professional Surveyor RONALD J. EIDSON 3-05-98 98-11-0374</p> <p>Certificate No. RONALD J. EIDSON 3239 12641</p>
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VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 33 TWP. 17-S RGL. 28-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 975' FSL & 1060' FWL

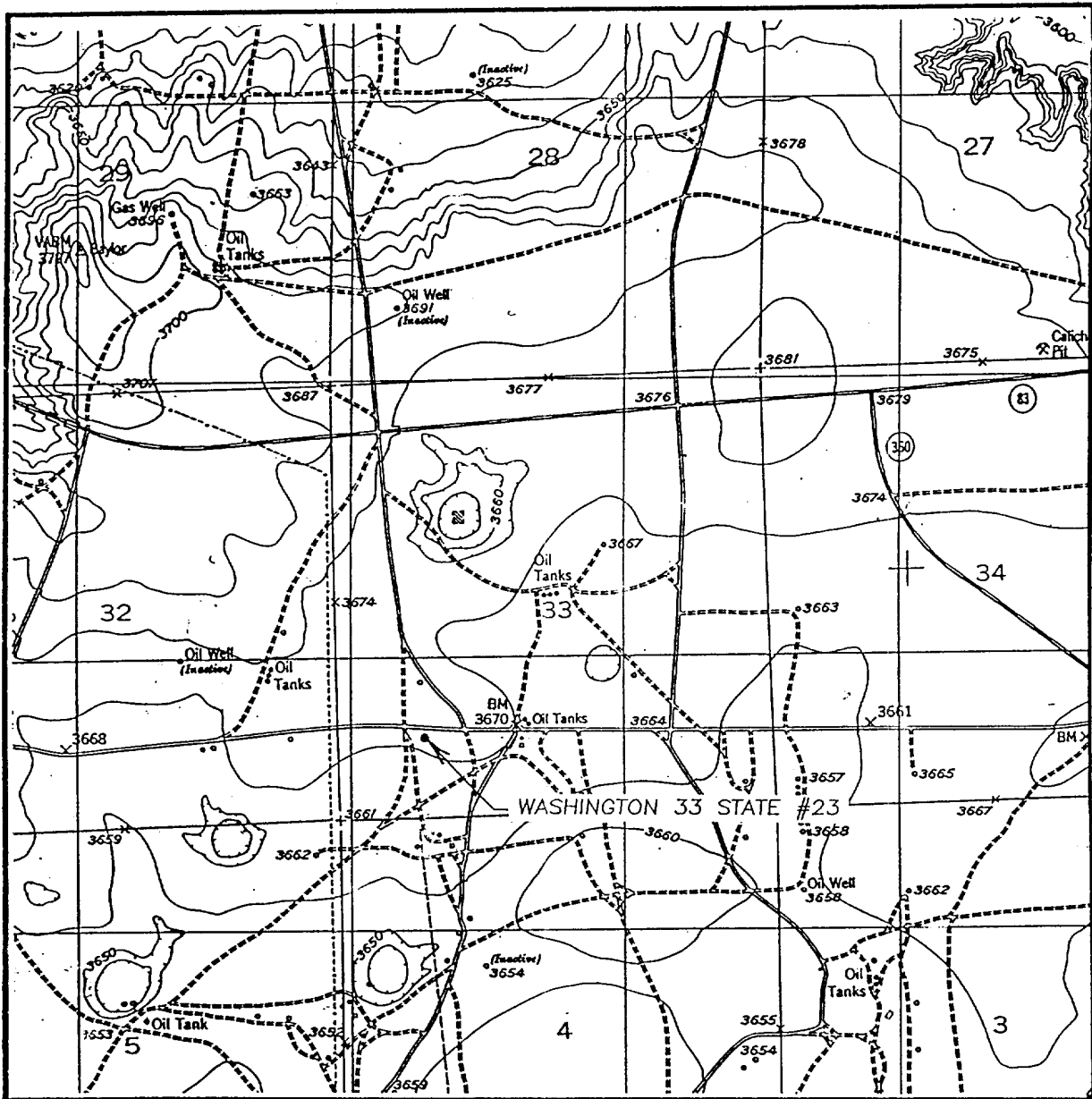
ELEVATION 3671'

OPERATOR ARCO PERMIAN

LEASE WASHINGTON 33 STATE

JOHN WEST ENGINEERING
HOBBS, NEW MEXICO
(505) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL - 10'

SEC. 33 TWP. 17-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 975' FSL & 1060' FWL

ELEVATION 3671'

OPERATOR ARCO PERMIAN

LEASE WASHINGTON 33 STATE

U.S.G.S. TOPOGRAPHIC MAP

RED LAKE, NM

JOHN WEST ENGINEERING
HOBBS, NEW MEXICO
(505) 393-3117

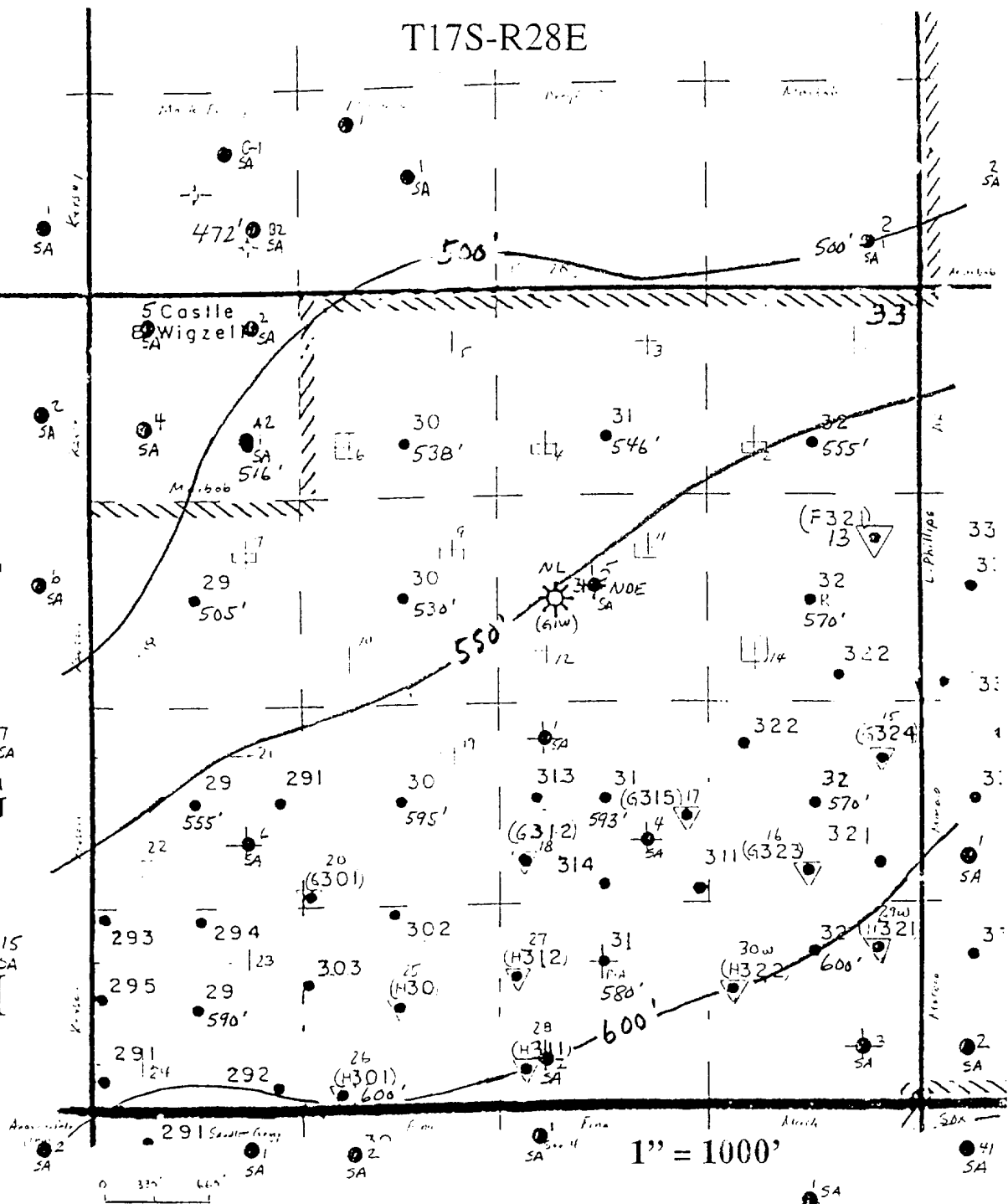
T17S-R28E

E

F

G

H



ARCO Permian
GROSS PAY, SAN ANDRES DOLO.
Washington 33 Lease
Sec. 33 T17S-R28E
Eddy Co. NM
Abo And San Andres Well Locations
DBP 3/98



San Andres recomplete Candidates



San Andres Locations



Primary Yeso Locations



Recomplete alternate in Yeso



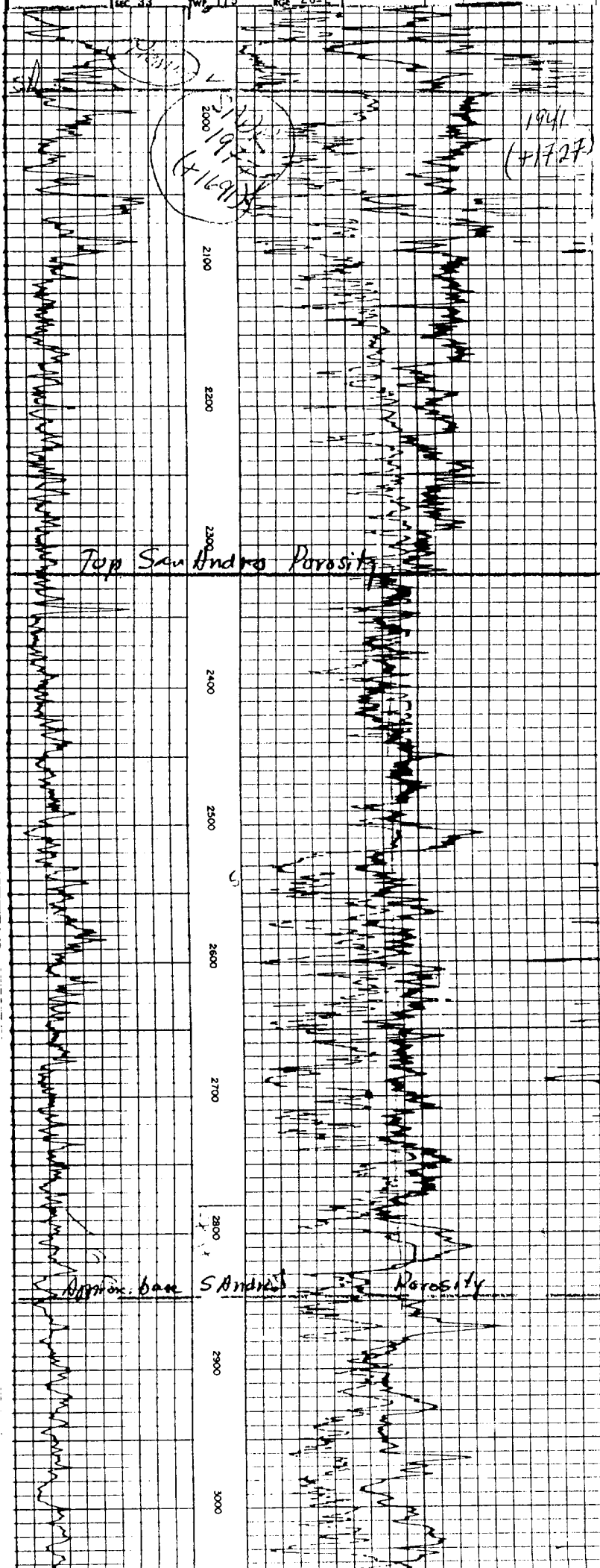
Possible / contingent Yeso TD



Relevant San Andres wells
Production well #

3001501689

PAN GEO ATLAS CORP.	
Gamma Ray Neutron Laterolog Survey	
FILE NO.	COMPANY SINCLAIR OIL & GAS COMPANY
	WELL M. YATES B. ARC # 5
	FIELD EMPIRE ABO
	COUNTY EDDY STATE NEW MEXICO
LOCATION:	Other Services
1980' FN & W LINE	NONE
SEC 33	TWP 17S
	RGE 28-E



DATE	NAME	ADDRESS	CITY	STATE
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

RECEIVED
MAY 1998
OCD - ALBUQUERQUE

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
 [DD-Directional Drilling] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling

☒ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement

☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☒ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO

U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I further verify that all applicable API Numbers are included. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

ELIZABETH A. CASBEER
Print or Type Name

Signature

REG/COMPLIANCE
Title

4/29/98
Date



ARCO Permian
800 North Maricfield
Midland TX 79701-4353
Post Office Box 1610
Midland TX 79702-1610
Telephone 915 688 5570

Elizabeth A. Casbeer
Regulatory/Compliance Analyst

April 29, 1998

Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Gentlemen:

Under the provisions of NMOCD Rule 104.f(3), ARCO Permian requests administrative approval for an unorthodox location for its Washington "33" State #23, a new well in the Artesia (Queen-Grayburg-San Andres) Field, due to topography and geological conditions. The location for this proposed well is 975'FSL and 1060'FWL of Section 33, T17S, R28E, Eddy County, New Mexico.

The following exhibits are submitted to support our request for administrative approval:

1. A C-102 plat showing the subject 40-acre spacing unit with the unorthodox location.
2. A topographic map from John West Engineering.
3. A sketch plat showing topographical obstructions around the location.
4. A Structure map.
5. A gross isopach map of the San Andres porosity interval.
6. A type log for the Washington lease.
7. A geologic and engineering discussion of the necessity for an unorthodox location.
8. A plat showing adjoining and diagonal spacing units.

All adjoining and diagonal spacing units are ARCO-operated.

Should you have any questions, please call Dave Percy at 915-688-5355. Thank you for your assistance in this matter.

Sincerely,

Elizabeth A. Casbeer
Regulatory/Compliance Analyst

EAC:lc

cc: NMOCD, Artesia, New Mexico

Enclosures

**Geological and Engineering Attachment
Washington "33" State #23**

ARCO Permian requests administrative approval for unorthodox location due to geological and topographical conditions for the cited well. This encroachment is toward ARCO, and will not affect other offset operators.

As shown on the engineer's sketch plat, ARCO attempted to obtain an orthodox location for this well at 990'FS & FWL of Section 33, but was prevented access by two buried pipelines, electric highlines, and a major lease road. We have shifted the location east-southeast the minimal distance (to 975 FSL and 1060 FWL) to allow adequate and safe setback for the small United rig we will use.

ARCO will require 2 strategically spaced wellspots in each 40-acre tract to be simultaneously dedicated to the Artesia (Q-G-SA) Pool. An orthodox San Andres location (24) will be spotted in the SW corner of this same Unit L, but we need this unorthodox location in the NE corner to fully exploit the Queen-Grayburg-San Andres main pays. Any alternative location south or west of the highlines and pipeline would be too close to #24 to effectively drain the in-place oil, and would leave undrained a significant portion of our reserves. Directional drilling of these low producing-rate wells cannot be economically justified, since this would add approximately \$100,000 to the cost for only 50 MBO reserves.

At a future date, we anticipate a waterflood could be initiated to effectively sweep both dolomite and sand reservoirs. Optimum results can only be achieved with good spacing of the primary wells. Core results show the Queen-Grayburg-San Andres "sand" pays should yield 130 MBO per 40 acres, but the modest 35 MBO recovered from "sand" wells on and surrounding our lease indicates that 10-20 acre drainage for these pays is reasonable.

We have therefore determined that two wells per 40 acres, with 700 feet between wells wherever possible, would effectively drain this reservoir and protect correlative rights. Where inexpensive recompletions are available, 550 ft between wells will avoid wasteful drilling. "Ten-acre" locations in the same half of any 40-acre unit should be avoided until waterflood startup. With current technology, the drainage radius for these San Andres wells is probably 10 acres, so we do not expect to be affecting any offset owner's correlative rights with these unorthodox locations.