

BOOK 17 PAGE 210

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

JUN 8 PM 12 30

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 9931

APPLICATION OF

ARCO OIL & GAS COMPANY
for Pressure Maintenance
Expansion and an Unorthodox
gas well location, Eddy County,
New Mexico

OXY USA INC.'s

PRE-HEARING STATEMENT

This prehearing statement is submitted by W. Thomas Kellahin
as required by the Oil Conservation Division.

APPEARANCES OF PARTIES

APPLICANT

ARCO OIL & GAS COMPANY

name, address, phone and
contact person

OPPOSITION OR OTHER PARTY

OXY USA Inc

Box 50250

Midland, Texas 79710

Attn: Mr. Richard E. Foppiano

(915) 685-5913

name, address, phone and
contact person

ATTORNEY

William F. Carr, Esq

P. O. Box 2208

Santa Fe, New Mexico 87501

ATTORNEY

W. Thomas Kellahin

Box 2265

Santa Fe, New Mexico 87504

(505) 982-4285

STATEMENT OF CASE

APPLICANT

(Please make a concise statement of what is being sought with this application and the reasons therefore.)

OPPOSITION OR OTHER PARTY

(Please make a concise statement of the basis for opposing this application or otherwise state the position of the party filing this statement.)

Arco seeks to convert is J-13 well to gas injection, said well being approximately 1,000 feet from the OXY USA Inc tract in the NE/4NW/4 of Section 2 T18S, R27E, a producing tract not in the Arco Unit. Arco's proposal is in violation of Rule 7 of Order R-4549 and will seriously impair the correlative rights of Oxy USA Inc by prematurely "gassing out" one of two remaining producing wells in the Empire Abo Unit operated by Oxy.

PROPOSED EVIDENCE

APPLICANT

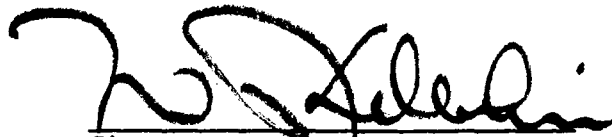
WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
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OPPOSITION

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
Jeff Schmuhl (P.F.)	1-2 hours	approx. 18
Ed Behm (P. F.)		

PROCEDURAL MATTERS

(Please identify any procedural matters which
need to be resolved prior to the hearing)


Signature

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WITNESSES
(Name and expertise)

EST. TIME

EXHIBITS

OPPOSITION

WITNESSES
(Name and expertise)

EST. TIME

EXHIBITS

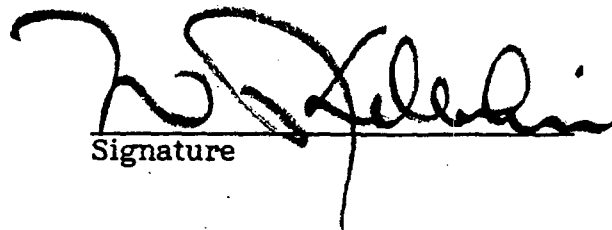
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Ed Behm (P. E.)

1-2 hours

approx. 18

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(Please identify any procedural matters which
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**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

RECEIVED

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CALLED BY THE OIL CONSERVATION
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CONSIDERING:

JUN 8 1990

OIL CONSERVATION DIVISION

CASE NO. 9931

APPLICATION OF ARCO OIL & GAS COMPANY
FOR PRESSURE MAINTENANCE EXPANSION
AND AN UNORTHODOX GAS INJECTION WELL
LOCATION, EDDY COUNTY, NEW MEXICO.

PRE-HEARING STATEMENT

This prehearing statement is submitted by William F. Carr, as required by the Oil Conservation Division.

APPEARANCES OF PARTIES

APPLICANT

ARCO Oil & Gas Company _____
c/o Gary Smallwood _____
Post Office Box 1610 _____
Midland, Texas 79702 _____

name, address, phone and
contact person

ATTORNEY

William F. Carr _____
Campbell & Black, P.A. _____
Post Office Box 2208 _____
Santa Fe, New Mexico 87504 _____
(505) 988-4421 _____

OPPOSITION OR OTHER PARTY

OXY USA, Inc. _____
Post Office Box 50250 _____
Midland, Texas 79710 _____

name, address, phone and
contact person

ATTORNEY

W. Thomas Kellahin _____
Post Office Box 2265 _____
Santa Fe, New Mexico 87504 _____
(505) 982-4285 _____

STATEMENT OF CASE

APPLICANT

ARCO seeks authority to expand its Empire Abo Unit Pressure Maintenance Project, authorized by Division Order No. R-4549, as amended, by converting its Empire Abo Unit "J" Well No. 10, located 2310 feet from the North and West lines (Unit F) of Section 3 and its Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E), of Section 2, both in Township 18 South, Range 27 East, Empire Abo Unit Area, from producing wells to gas injection wells.

ARCO also seeks an exception to Rule 7A of the Special Rules and Regulations for the Empire Abo Pressure Maintenance Project, as promulgated by Order No. R-4549, as amended, for the "J" Well No. 13 which is located at an unorthodox gas injection well location.

OPPOSITION OR OTHER PARTY

(Please make a concise statement of the basis for opposing this application or otherwise state the position of the party filing this statement.)

PROPOSED EVIDENCE

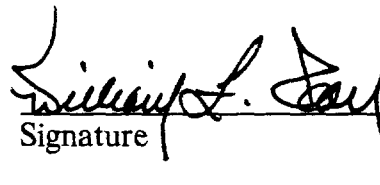
APPLICANT

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
Gary Smallwood, Petroleum Engineer	45 Min.	Approximately 12 <i>types of Exhibits</i>

OPPOSITION

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
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PROCEDURAL MATTERS



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ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

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Midland, Texas 79702 _____

name, address, phone and
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ATTORNEY

William F. Carr _____
Campbell & Black, P.A. _____
Post Office Box 2208 _____
Santa Fe, New Mexico 87504 _____
(505) 988-4421 _____

OPPOSITION OR OTHER PARTY

OXY USA, Inc. _____
Post Office Box 50250 _____
Midland, Texas 79710 _____

name, address, phone and
contact person

ATTORNEY

W. Thomas Kellahin _____
Post Office Box 2265 _____
Santa Fe, New Mexico 87504 _____
(505) 982-4285 _____

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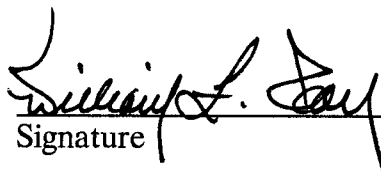
APPLICANT

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
Gary Smallwood, Petroleum Engineer	45 Min.	Approximately 12

OPPOSITION

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
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PROCEDURAL MATTERS



Signature

CAMPBELL & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
MARK F. SHERIDAN
WILLIAM P. SLATTERY
PATRICIA A. MATTHEWS

JEFFERSON PLACE
SUITE 1 - 110 NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87504-2208
TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

May 23, 1990

HAND-DELIVERED

William J. LeMay, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
State Land Office Building
Santa Fe, New Mexico 87503

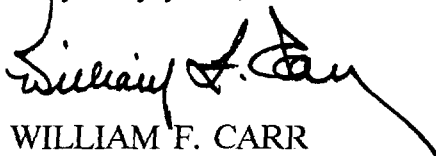
RECEIVED
MAY 23 1990
OIL CONSERVATION DIVISION

Re: In the Matter of the Application of ARCO Oil & Gas Company for Pressure Maintenance Expansion and an Exception to the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project, Eddy County, New Mexico

Dear Mr. LeMay:

Enclosed in triplicate is the Amended Application of ARCO Oil & Gas Company in the above-referenced case. ARCO Oil & Gas Company respectfully requests that this matter be placed on the docket for the Examiner hearings scheduled on June 13, 1990.

Very truly yours,


WILLIAM F. CARR

WFC:mlh

Enclosures

cc w/enc.: Kirk Moore, Esq.
Gary B. Smallwood

BEFORE THE
OIL CONSERVATION DIVISION

NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES

IN THE MATTER OF THE APPLICATION
OF ARCO OIL & GAS COMPANY FOR
PRESSURE MAINTENANCE EXPANSION
AND AN EXCEPTION TO THE SPECIAL
RULES AND REGULATIONS FOR THE
EMPIRE-ABO PRESSURE MAINTENANCE
PROJECT, EDDY COUNTY, NEW MEXICO.

RECEIVED

MAY 20 1990

OIL CONSERVATION DIVISION

CASE NO. 9931

**AMENDED
APPLICATION**

ARCO OIL & GAS COMPANY ("ARCO"), through its undersigned attorneys, hereby makes application for an order authorizing the expansion of the Empire-Abo Pressure Maintenance Project and an Exception to Rule 7 of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project and in support of this application states:

1. ARCO is the operator of the Empire-Abo Unit in which it conducts a pressure maintenance project in accordance with Special Rules and Regulations promulgated by Division Order No. R-4549, as amended.

2. On March 21, 1990 ARCO filed Division Form C-108 in which it seeks authority to convert from producing wells into gas injection wells its Empire Abo Unit "J" Well No. 10 located 2310 feet from the North and West lines (Unit F) of Section 3, and its Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, both in Township 18 South, Range 27 East,

Empire-Abo Pool, Empire-Abo Unit Area, Eddy County, New Mexico.

3. The Empire Abo "J" Unit Well No. 13 is closer than 1650 feet to an OXY operated tract that is not committed to the unit and, therefore, ARCO needs an exception to the provision of Rule 7 of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project.

4. Copies of Form C-108 were mailed to OXY USA, Inc. ("OXY") on March 21, 1990 who objected to the application for the Empire Abo "J" Well No. 13. Attached to and incorporated into this application is a revised Form C-108 which includes a plat identifying the lands committed to the Unit Agreement and those lands not committed to said Agreement and showing the location of the proposed well, all wells within the Unit Area and offset operators and a schematic drawing of the proposed well which fully describes the casing, tubing, perforated interval, and depth.

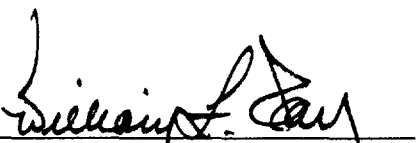
5. All offset operators of the proposed well have been furnished a complete copy of the application and the date of notification.

6. Granting this application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

WHEREFORE, ARCO Oil & Gas Company requests that this application be set for hearing before a duly appointed Examiner of the Oil Conservation Division on June 13, 1990, and that after notice and hearing as required by rules of the Division, this application be granted.

Respectfully submitted,

CAMPBELL & BLACK, P.A.

By: 

WILLIAM F. CARR

Post Office Box 2208

Santa Fe, New Mexico 87504

Telephone: (505) 988-4421

ATTORNEYS FOR ARCO
OIL & GAS COMPANY

Case 9931 RECEIVED

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ Yes ☐ No
- II. Operator: ARCO Oil and Gas Company
Address: P.O. Box 1610, Midland, Texas 79702
Contact party: Gary B. Smallwood, Sr. Engineer Phone: (915) 688-5359
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ Yes ☐ No
If yes, give the Division order number authorizing the project R-4549
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Gary B. Smallwood Title: Senior Engineer
Signature: Gary B. Smallwood Date: 3-19-90 3/21/90 VB
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Initial application to inject in 1973. Case #4953

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

ARCO OIL AND GAS COMPANY
EMPIRE ABO UNIT J-10
APPLICATION TO INJECT GAS
MARCH, 1990

III. WELL DATA

- A. (1) Location
2310' FNL & 2310' FWL, Section 3-T18S-R27E
Eddy County, New Mexico
- (2) Casing
8-5/8" @ 1455' w/450 sx cement in 11" hole
TOC @ surface: circulated
5-1/2" @ 5705' w/300 sx cement in 7-7/8" hole
TOC unknown
- (3) Proposed Tubing
2-3/8" internally plastic coated @ approximately 5452'
- (4) Proposed Packer
Lok-set type (Baker Tool Co.) with on-off tool @ approximately
5452'
- B. (1) Injection formations: Abo
Pool Name: Empire Abo
- (2) Injection Interval: Perfs 5564-5630'
- (3) Well was drilled as an oil producer
- (4) No other perfs
- (5) Next higher productive pool: San Andres - Top of the San Andres
occurs at 1673'

VII. PROPOSED OPERATION

- (1) Average daily rate of fluid to be injected: 6000 MCFPD
- (2) The system is closed
- (3) Average injection pressure: 2000 psi
Maximum injection pressure: 2000 psi
- (4) Source of injection fluid: Empire Abo Unit Gas Injection Plant

IX PROPOSED STIMULATION

Acidize perfs w/3500 gallons 15% NEFE HCl

ARCO OIL AND GAS COMPANY
EMPIRE ABO UNIT J-13
APPLICATION TO INJECT GAS
MARCH, 1990

III. WELL DATA

- A. (1) Location
1980' FNL & 660' FWL, Section 2-T18S-R27E
Eddy County, New Mexico
- (2) Casing
8-5/8" @ 1006' w/675 sx cement in 11" hole
TOC @ surface: circulated
5-1/2" @ 6131' w/225 sx cement in 7-7/8" hole
TOC unknown
- (3) Proposed Tubing
2-3/8" internally plastic coated @ approximately 5600'
- (4) Proposed Packer
Lok-set type (Baker Tool Co.) with on-off tool @ approximately
5600'
- B. (1) Injection formations: Abo
Pool Name: Empire Abo
- (2) Injection Interval: Perfs 5710-5724', 5754-5784'
- (3) Well was drilled as an oil producer
- (4) Perfs from 2300-2301' were squeezed w/525 sx cement. Perfs
from 5020-5021' were squeezed w/275 sx. Perfs from
5364-5390' were squeezed w/105 sx.
- (5) Next higher productive pool: San Andres - Top of the San Andres
occurs at 1672'

VII. PROPOSED OPERATION

- (1) Average daily rate of fluid to be injected: 6000 MCFPD
- (2) The system is closed
- (3) Average injection pressure: 2000 psi
Maximum injection pressure: 2000 psi
- (4) Source of injection fluid: Empire Abo Unit Injection Plant

IX. PROPOSED STIMULATION

Acidize perfs w/15% NEFE HCl

Section VI.
Well Data in Area of Review

ARCO Empire Abo Unit Well No. J-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1488' cemented with 700 sacks, circulated .
4-1/2" @ 5720' cemented with 850 sacks, top of cement @ 925'.
Date Drilled: 8 - 5 - 59
Location: 2310' FNL & 1650' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5720'
Record of Completion: Perf 5620-5664' w/ 2JSPF. 2000 gals. 15% HCl. 79 BO,
1BAW & 88 MCF in 20 hrs. CIBP set @ 5269' on 8-24-77

ARCO Empire Abo Unit Well No. J-12

Type: EAU Gas Injection Well
Construction: 8-5/8" @ 997' cemented with 600 sacks, circulated .
5-1/2" @ 6123' cemented with 250 sacks, top of cement @ 4400'.
Date Drilled: 8 - 5 - 59
Location: 1980' FNL & 660' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6123'
Record of Completion: Perf 5650-670' w/ 2JSPF & treated w/500 gals 15% HCl on
2/59 . Treated with 2000 gals 15% on 6/70. Perf 4630-32 and
squeezed w/800 sacks on 7/79. Perf 700-02 and squeezed with 130
sacks, circulated to surface. Ran 2-3/8" IPC tbg. Packer at 5605'.
Treated with 5000 gals. 15%.Started GI @ 7-3-79. Perf 5592-5608 &
5572-80 & 5536-58 w/ 1 JSPF. 10,000 gals 15 %.

ARCO Empire Abo Unit Well No. J-14

Type: EAU Oil Producer
Construction: 8-5/8" @ 971' cemented with 600 sacks, circulated .
5-1/2" @ 6160' cemented with 230 sacks.
Date Drilled: 1 - 23 - 59
Location: 2180' FNL & 1905' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6133'
Record of Completion: Perf. 5620-40 & treated with 2000 gal DAD. Squeezed perms @
5620-40 w/ 100 sacks on 9/74. Perf. 5748-5776 acidized w/ 3200
gals. 15% on 9/74. Acidized w/ 6000 gal DAD treatment on 10/74.
286 BO, 15 BW & 315 MCFPD.

ARCO Empire Abo Unit Well No. J-15

Type: EAU Oil Producer
Construction: 8-5/8" @ 1216' cemented with 650 sacks, circulated .
5-1/2" @ 5920' cemented with 300 sacks.
Date Drilled: 3 - 4 - 59
Location: 1980' FEL & 2310' FNL, Sec 2-18S-27E; Eddy Co.
Depth: 5920'
Record of Completion: Perf. 5773-95 & 5810-72 oa w/ 2SPF. Treated with 2000 gal
15%, 9/59. Perf. 4010' cemented with 625 sacks.

ARCO Empire Abo Unit Well No. K-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1493' cemented with 650 sacks, circulated .
5-1/2" @ 5881' cemented with 250 sacks. TOC @ 4120'
Date Drilled: 2-25-59
Location: 1980' FSL & 1780' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5881'
Record of Completion: Perf. 5650-70 w/ 2SPF. No treatment, TOC @ 4120'. Treated
with 5000 gal 15% on 5/64. Well was SI 9/76.

ARCO Empire Abo Unit Well No. K-12

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 700 sacks, circulated .
5-1/2" @ 6103' cemented with 435 sacks. TOC @ 2675'
Date Drilled: 12-31-58
Location: 1980' FSL & 660' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6103'
Record of Completion: Perf. 5314-32 w/ 2SPF. Treated with 1000 gal 15%. Sqz.
4/64 w/ 100 sacks & perf. 5656-64, 5670-86 w/ 2spf. Acidize w/
1000 gals. Sqz. w/ 150 sacks on 6/77. Spotted 100 gals acetic acid
5806-5686. Perf. 5766-5804 w/ 2 spf. Acidized w/ 500 gals. 15%.
Pumped 1500 gals. DAD treatment.

ARCO Empire Abo Unit Well No. K-143

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 600 sacks, circulated .
5-1/2" @ 6107' cemented with 1275 sacks.
Date Drilled: 4-16-79
Location: 1820' FSL & 2550' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6107'
Record of Completion: Perf. 5910-25 w 2JSPF. treated w/ 1000 gal 15% and flushed
with 20 BLC. Sqz. w/ 125 sacks and perf. 6070-90 w/ 2JSPF. Treated
with 150 gals 15%, 1000 gals CaCl wtr, 1000 gals LC, 2000 gals acid.
Completed well on 5/79.

ARCO Empire Abo Unit Well No. I-10

Type: EAU GI
Construction: 8-5/8" @ 1471' cemented with 600 sacks, circulated .
4-1/2" @ 5710' cemented with 750 sacks.
Date Drilled: 11-30-59
Location: 990' FNL & 2310' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5710'
Record of Completion: Perf. 5825-305 w 2JSPF. Acidized with 2000 gals. Sqz. with
239 sacks. Perf. 5456-82 with 2JSPF. Acidized with 3000 gals. 15%.
108 BO in 24 hrs. 12-25-59. 2/3/74 treated 5532-46 w/ 1000 gals
acid. Treated perfs. 5456-5516 w/ 5000 gals. 15% acid. Ran IPC tbg
and started gas injection 5456-5546 on 6/22/74.

ARCO Empire Abo Unit Well No. I-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1485' cemented with 700 sacks, circulated .
4-1/2" @ 5719' cemented with 850 sacks. TOC 125'.
Date Drilled: 10-29-59
Location: 972' FNL & 1647' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5719'
Record of Completion: Perf. 5554-98 w 2JSPF on 11-20-59.

ARCO Empire Abo Unit Well No. I-12

Type: EAU Oil Producer
Construction: 8-5/8" @ 1496' cemented with 700 sacks, circulated .
4-1/2" @ 5661' cemented with 850 sacks. TOC 650'.
Date Drilled: 10-05-59
Location: 982' FNL & 330' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5661'
Record of Completion: Perf. 5610-30 and treated w/ acid 10/59.

ARCO Empire Abo Unit Well No. I-13

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1479' cemented with 700 sacks, circulated .
4-1/2" @ 5695' cemented with 850 sacks.
Date Drilled: 10-29-59
Location: 990' FNL & 650' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 5695'
Record of Completion: Perf. 5610-54 w 2JSPF , treated w/ 3000 gals., 15%.
Completed on 11-20-59.

ARCO Empire Abo Unit Well No. J-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1463' cemented with 620 sacks .
5-1/2" @ 5656' cemented with 350 sacks.
Date Drilled: 5-29-60
Location: 2310' FNL & 990' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5656'
Record of Completion: Perf. 5562-5614 w 2JSPF. Treated w/ 3000 gals acid
4/15/68. On 12/11/70 set CIBP @ 5540. Perf. 5463 & pumped 500
gals acid & squeezed thru perfs 125 sacks cement. Pushed down CIBP to
5630 and acidized perfs @ 5562-5614 w/ 2000 gals. On 9-16-71
treated w/ 5000 gals acid. On 1-19-72 acidized w/ 3000 gals 20%. SI
12-1-76. Returned to production 8-29-87 @ 63 BOPD 3 BWPD & 410
MCFPD.

ARCO Empire Abo Unit Well No. K-13

Type: EAU Oil Producer
Construction: 8-5/8" @ 993' cemented with 700 sacks.
5-1/2" @ 6094' cemented with 300 sacks.
Date Drilled: 10-05-58
Location: 1880' FSL & 660' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6094'
Record of Completion: Perf. 5360-86 w 4JSPF on 11-58. Treated w/ 500 gals. 15%.
1-64 squeezed & perf. 6043-50. Treated w/ 1000 gals.

ARCO Empire Abo Unit Well No. K-131

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 800 sacks, circulated .
5-1/2" @ 6145' cemented with 1360 sacks.
Date Drilled: 2-21-79
Location: 972' FNL & 1647' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6145'
Record of Completion: Sqz perfs @ 5709-11. Pumped 200 sacks of cement then drilled
out and pressure tested casing. Perf. 6014- 34 w/ 2JSPF and acidized
w/ 2300 gals 15%. Completed on 4-17-79.

ARCO Empire Abo Unit Well No. K-14

Type: EAU Oil Producer
Construction: 8-5/8" @ 984' cemented with 775 sacks. TOC @ surface.
5-1/2" @ 6193' cemented with 175 sacks.
Date Drilled: 11-23-58
Location: 1980' FSL & 1830' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6193'
Record of Completion: Perf. 5410-36 w 4SPF & acidized w/ 2500 gals. No production
was obtained on test and the perfs were squeezed w/ 100 sacks cement.
Perf'd 5420-70 w/ 2SPF & acidized w/ 1000 gals. No production
obtained & perfs were squeezed w/ 100 sacks cement. Perf'd 5540-
5555 w/ 2SPF and acidized w/ 5500 gals. Well flowed 75 BO in 24
hours. Completed 1-59. On 9-73 squeezed 5540-5555 w/ 100 sacks
cement and perforated 5946-97 w/ 2JSPF & acidized w/ 3000 gals.
Squeezed 1-29-80 & perforated 6100-6110'. Acidized w/ 2000 gals
PAD acid on 10-30-86.

ARCO Empire Abo Unit Well No. K-141

Type: EAU Oil Producer
Construction: 8-5/8" @ 1006' cemented with 400 sacks, circulated to surface .
5-1/2" @ 6203' cemented with 300 sacks. TOC 1130'.
Date Drilled: 4-7-77
Location: 1370' FSL & 2445' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6203'
Record of Completion: Perf. 5990-6024' w/ 2JSPF acidized w/ 500 gals 15%. Perf'd
@ 6100' w/ four .45" holes & treated w/ 1000 gals DAD. Completed
5/18/77.

ARCO Empire Abo Unit Well No. K-142

Type: EAU Oil Producer (drainhole)
Construction: 10-3/4" @ 953' cemented with 400 sacks, circulated .
7" @ 6027' cemented with 575 sacks.
Date Drilled: 7-31-79
Location: 1700' FSL & 1400' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6027'
Record of Completion: Ran 5 1/2" OD 19' radius whipstock w/ 42' 4 1/2" anchor pipe,
87' 5 1/2" sheath pipe. Oriented whipstock w/ btm of anchor pipe at
6060'. Completed well 10/6/79.

ARCO Empire Abo Unit Well No. K-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1505' cemented with 700 sacks, circulated .
4-1/2" @ 5729' cemented with 800 sacks.
Date Drilled: 7-20-59
Location: 1650' FSL & 990' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5729'
Record of Completion: Perf. 5620-60, completed on 8-9-59. SI on 12-01-76.
Returned to production on 7/81

ARCO Empire Abo Unit Well No. K-10

Type: EAU Oil Producer
Construction: 8-5/8" @ 1465' cemented with 700 sacks, circulated .
4-1/2" @ 5778' cemented with 950 sacks.
Date Drilled: 5-23-59
Location: 1650' FSL & 2310' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5778'
Record of Completion: Perf. 5660-5700 w 2 SPF & treated w/ 1000 gals 15% on 6-
22-59.

ARCO Empire Abo Unit Well No. L-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 700 sacks, circulated .
5-1/2" @ 6431' cemented with 160 sacks.
Date Drilled: 12-31-58
Location: 660' FSL & 660' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 6431'
Record of Completion: Perf. 5232-58 w 2 SPF. Perfs. were squeezed w/ 200 sacks and
well was reperforated @ 5560-90 & acidized w/ 1000 gals 15%.
Completed on 2/59. Well was SI 9-19-76. Returned to production after
casing repair on 9/86.

ARCO Empire Abo Unit Well No. L-10

Type: EAU Oil Producer
Construction: 8-5/8" @ 1500' cemented with 750 sacks, circulated .
5-1/2" @ 5830' cemented with 300 sacks.
Date Drilled: 2-20-59
Location: 660' FSL & 1980' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5830'
Record of Completion: Perf. 5718-40 w JSPF & acidized w/ 500 gals 15% & completed on 4-7-59. Perf'd squeeze holes @ 3500' on 8/77. Pumped 500 sacks cement, DO cement & returned well to production.

ARCO Empire Abo Unit Well No. L-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 983' cemented with 700 sacks, circulated .
5-1/2" @ 6043' cemented with 175 sacks.
Date Drilled: 12-2-58
Location: 610' FSL & 1980' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6043'
Record of Completion: Perf. 5340-65w 4 SPF & acidized w/ 500 gals 15%. Perfs were squeezed and well was reperf'd @ 5345-80 & treated w/ 1000 gals 15%. Well was completed 1/59. On 6/64 Perfs @ 5345-80 were squeezed w/ 100 sacks and well was perforated 5847-58, 5866-75, 5882-92 w/ 2 SPF & acidized w/ 2000 gals LSTNE. On 11/80 squeezed w/ 100 sacks and perf'd 5940-54 & 5958-66 and treated w/ 1650 gals of 15%. Well SI 12-8-80.

CITGO Empire Abo Unit Well No. 14

Type: Oil Producer (TA'd)
Construction: 8-5/8" @ 982' cemented with 400 sacks.
5-1/2" @ 5701' cemented with 800 sacks.
Date Drilled: 5-23-60
Location: 330' FSL & 990' FWL, Sec 35-17S-27E; Eddy Co.
Depth: 5701'
Record of Completion: Perf. 5556-98 & acidized w/ 10000 gals 15%. IPF 1841 BOPD

CITGO Empire Abo Unit Well No. 9

Type: Oil Producer (TA'd)
Construction: 8-5/8" @ 985' cemented with 400 sacks.
5-1/2" @ 5629' cemented with 800 sacks.
Date Drilled: 4-20-60
Location: 330' FSL & 1900' FWL, Sec 35-17S-27E; Eddy Co.
Depth: 5629'
Record of Completion: Perf. 5504-50 & acidized w/ 10000 gals 15%. IPF 600 BOPD

CITGO Empire Abo Unit Well No. 5

Type: Oil Producer

Construction: 8-5/8" @ 963' cemented with 425 sacks.

5-1/2" @ 5764' cemented with 300 sacks.

Date Drilled: 7 - 5 - 59

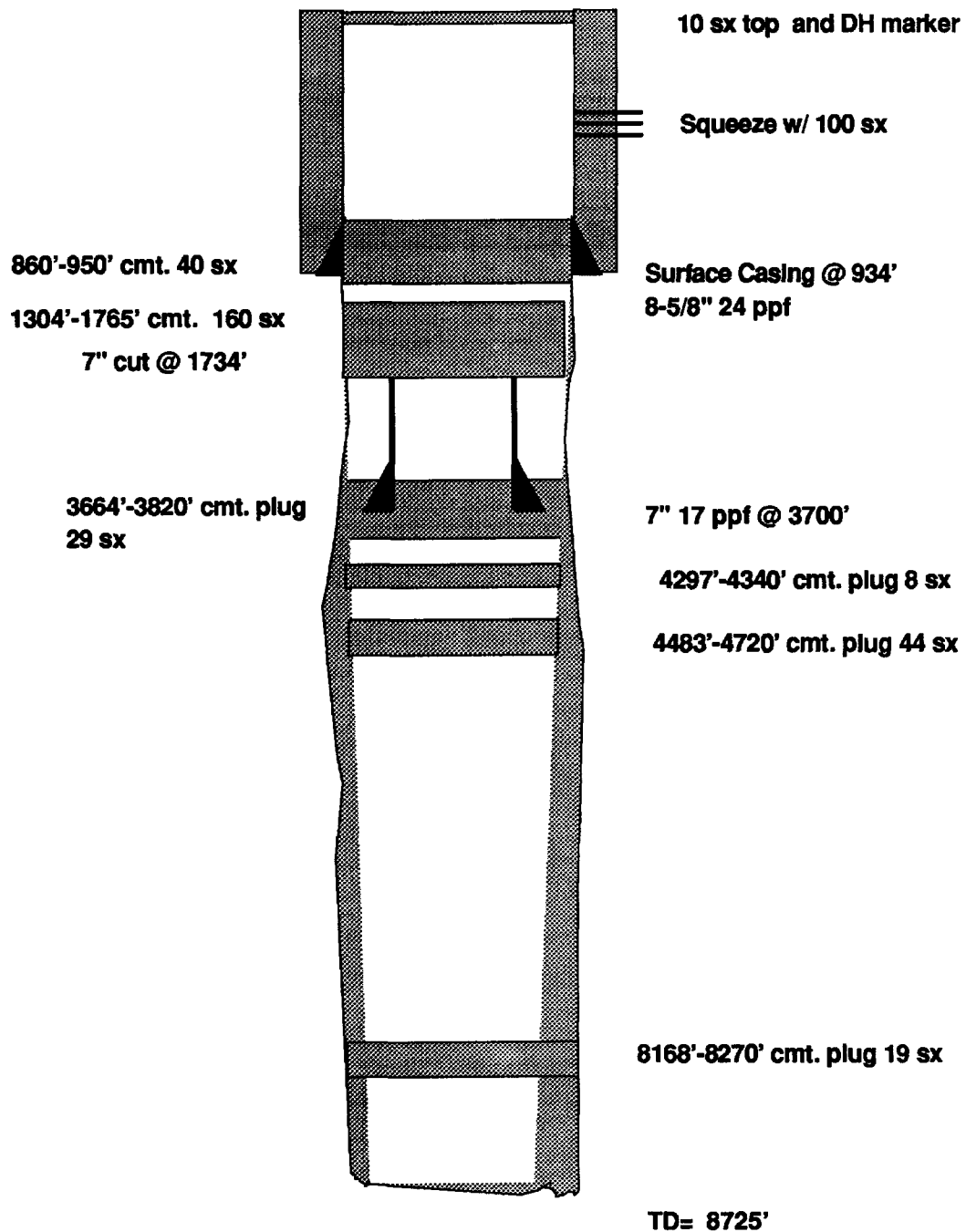
Location: 990' FNL & 1980' FWL, Sec 35-17S-27E; Eddy Co.

Depth: 5764'

Record of Completion: Perf. 5627-5731 OA & acidized w/ 2000 gals 15%. IPF 212
BOPD

Well Name & No.: Hondo C State No. 1
Date: 5-22-90

330' FNL & 990' FWL Sec. 2, 18 S and 27 E



Section VIII. Geological Data

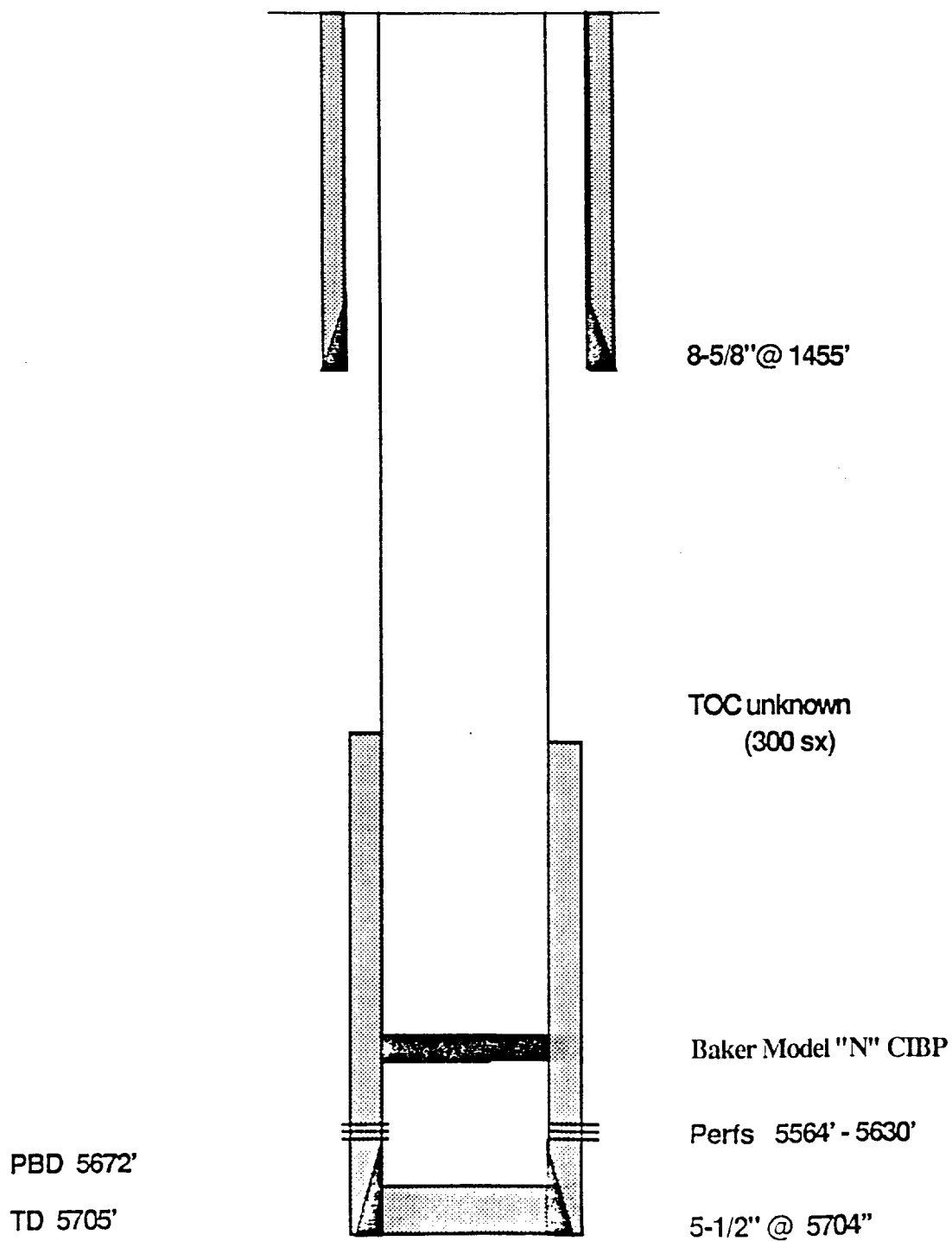
The Empire Abo field produces from a transgressive, carbonate, barrier reef buildup of lower Leonardian (Permian) age. This reef is one of several in a long trend flanking the northern edge of the Delaware Basin. The reef grew from southwest to northeast. It is approximately 12.5 miles long and 1.5 miles wide. Parallel to the reef trend, the reef dips 1 degree from southwest to northeast. Perpendicular to this trend the reef dips sharply at 10 to 20 degrees from crest to fore-reef, or north to south. The average depth of the reef is 5800 feet and the thickness averages 300 feet.

The trapping mechanism at Empire Abo is both stratigraphic and structural. The reef dips below the oil water contact to the south and east. Permeability pinch outs to the north and west occur as a result of carbonate muds, green shales and anhydrite inclusions.

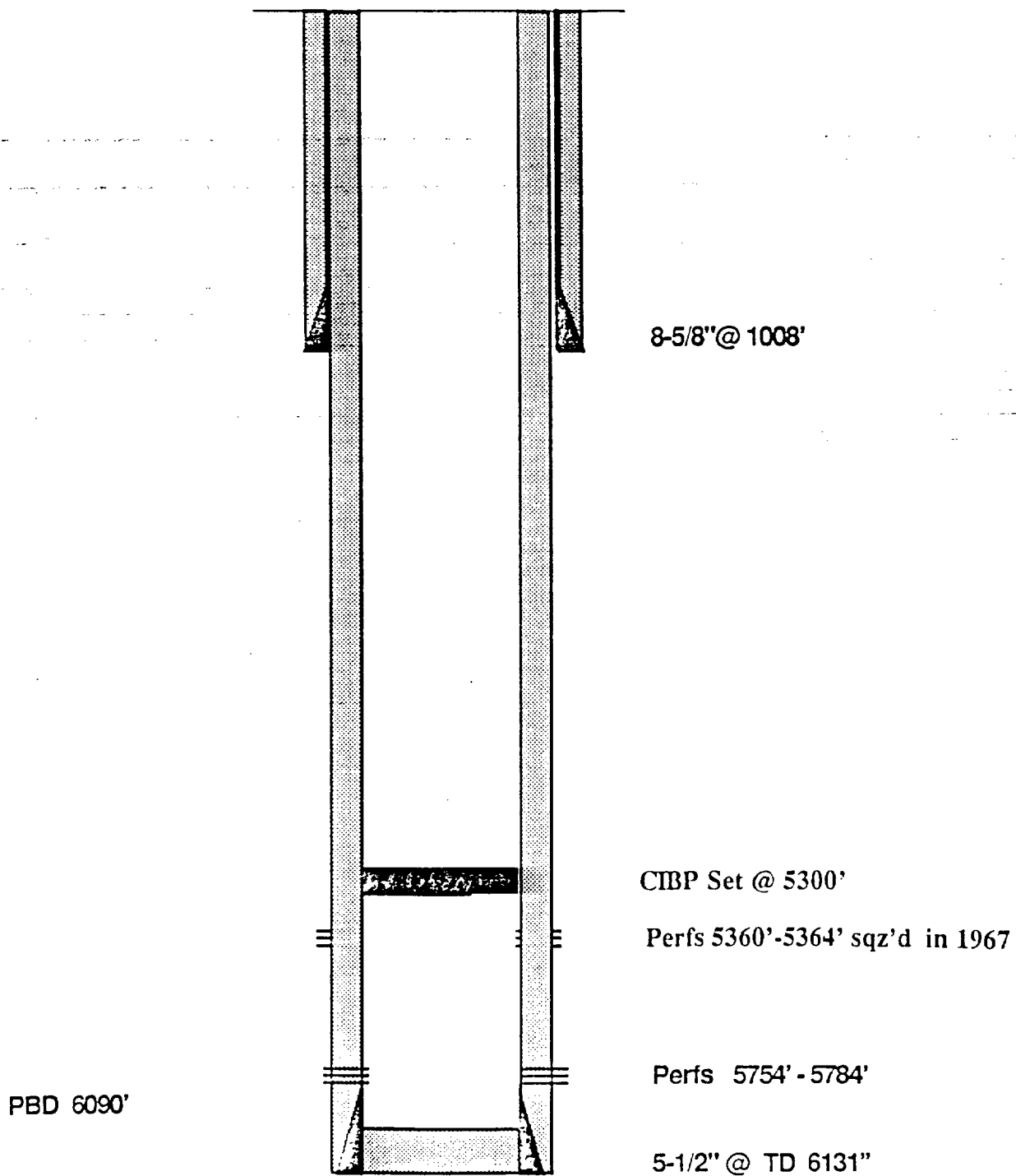
Porosity development is erratic and cannot be correlated between wells. Development is the result of leaching of abundant detrital fossil fragments, dolomitization and recrystallization. The most prolific porosity development is found in the reef core. There is no apparent intercrystalline porosity.

Vertical fracturing, which contributes to the gravity drainage mechanism of the reservoir, is apparently due to local slumping as well as large scale settling and some tectonic activity. Fracture orientation is generally 0 to 45 degrees from vertical and is parallel to the reef trend.

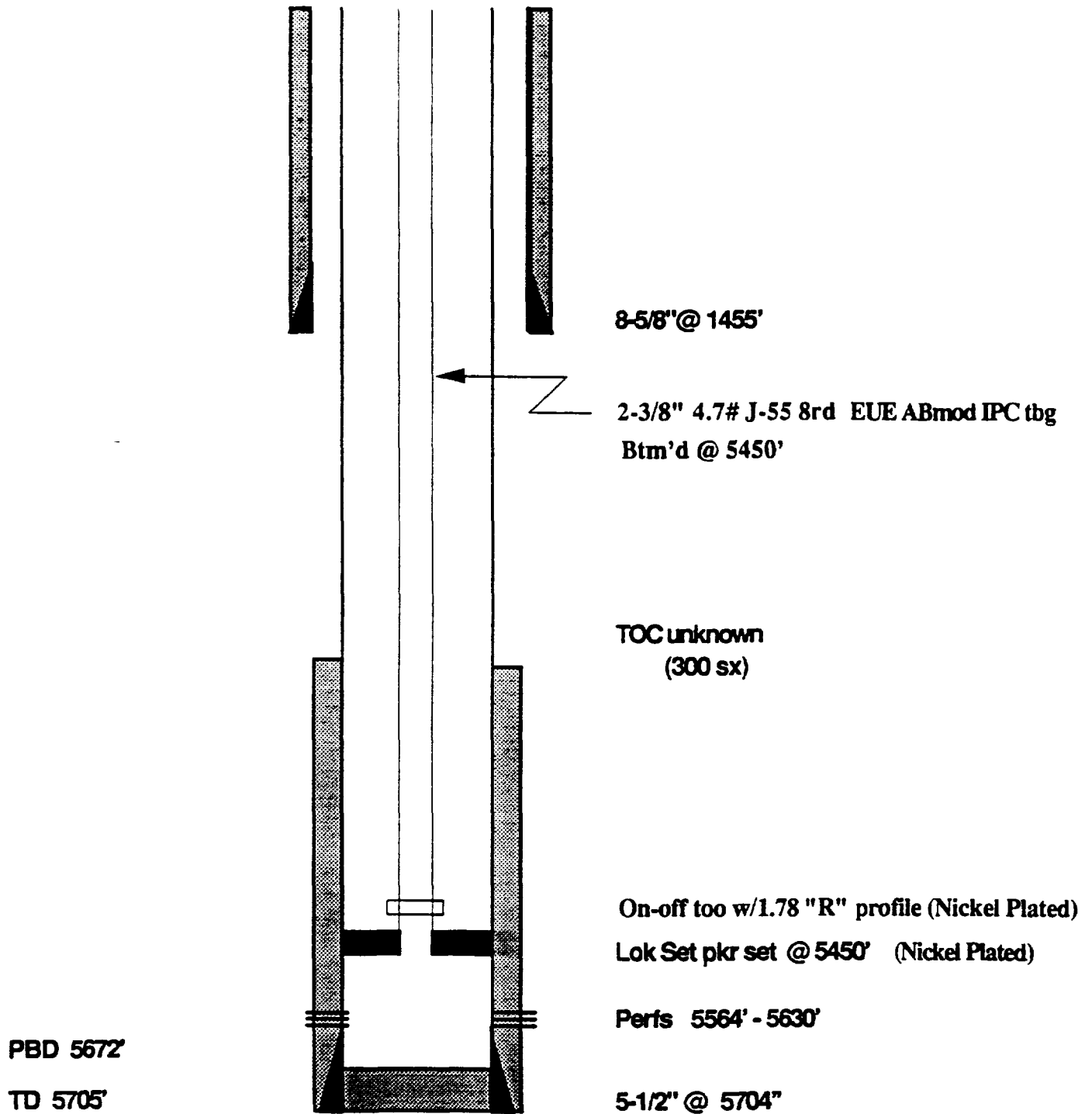
Empire Abo Unit # J-10
Present Wellbore Configuration



Empire Abo Unit # J-13
Present Wellbore Configuration



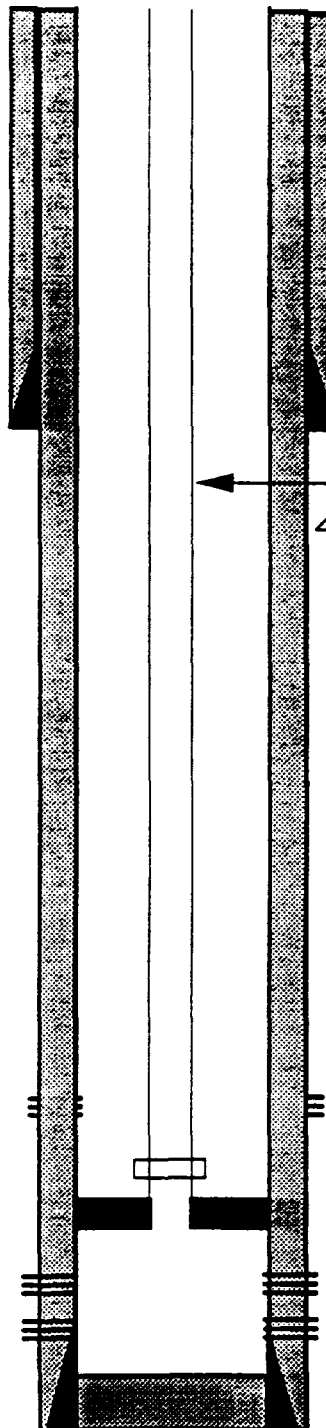
Empire Abo Unit # J-10
Proposed Wellbore Configuration



Empire Abo Unit # J-13
Proposed Wellbore Configuration



PBD 6090'
TD 6131



8-5/8" @ 1008'

2-3/8" 4.7# J-55 8rd EUE ABmod IPC tbg
Btm'd @ 5600'

Perfs 5360' - 5364' sqz'd 1967

On-off too w/1.78 "R" profile (Nickel Plated)

Lok Set plr set @ 5600' (Nickel Plated)

Perfs 5710' - 5724'

Perfs 5754 - 5784'

5-1/2" @ 6131'

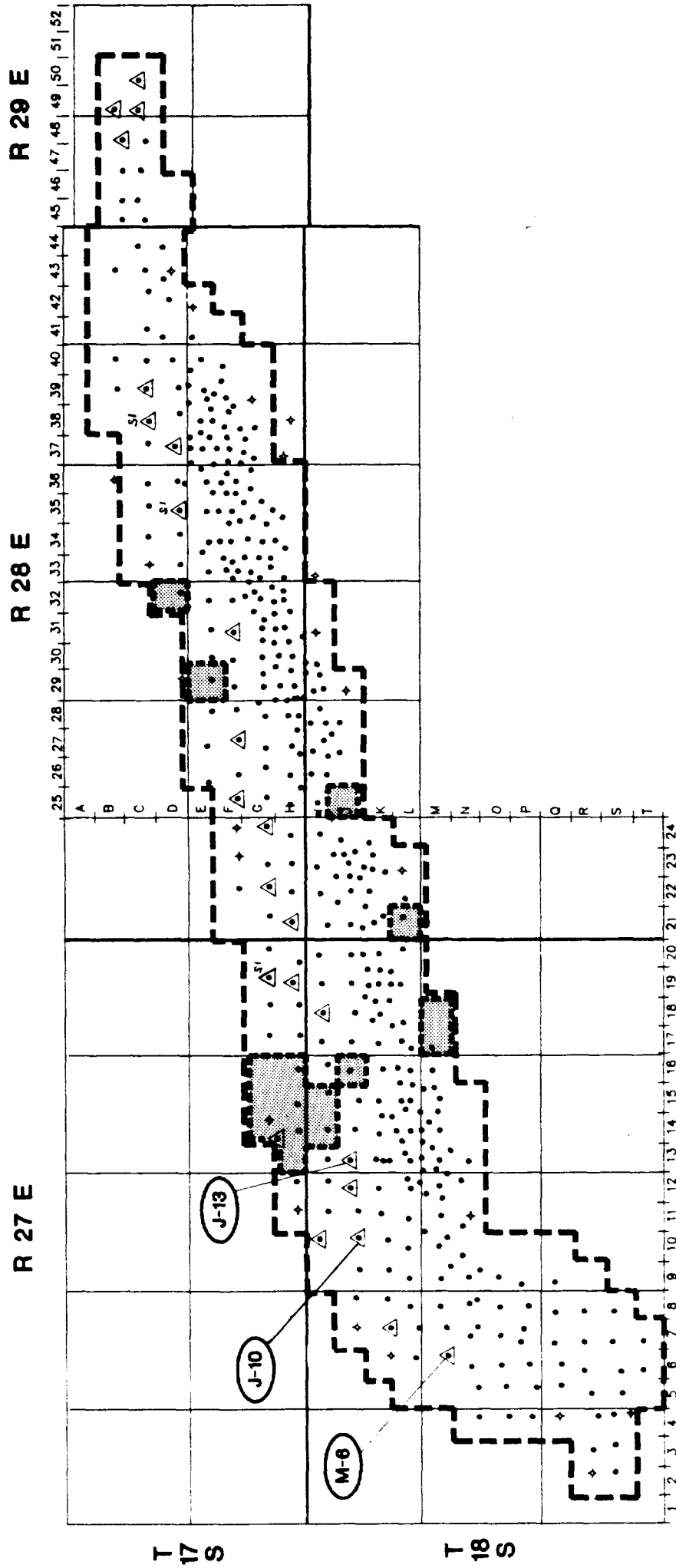


J-13

J-13

EMPIRE ABO UNIT

Eddy County, New Mexico



BEFORE THE
OIL CONSERVATION DIVISION
NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES

IN THE MATTER OF THE APPLICATION
OF ARCO OIL & GAS COMPANY FOR
PRESSURE MAINTENANCE EXPANSION
AND AN EXCEPTION TO THE SPECIAL
RULES AND REGULATIONS FOR THE
EMPIRE-ABO PRESSURE MAINTENANCE
PROJECT, EDDY COUNTY, NEW MEXICO.

RECEIVED
MAY 23 1990
OIL CONSERVATION DIVISION

CASE NO. 9931

**AMENDED
APPLICATION**

ARCO OIL & GAS COMPANY ("ARCO"), through its undersigned attorneys, hereby makes application for an order authorizing the expansion of the Empire-Abo Pressure Maintenance Project and an Exception to Rule 7 of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project and in support of this application states:

1. ARCO is the operator of the Empire-Abo Unit in which it conducts a pressure maintenance project in accordance with Special Rules and Regulations promulgated by Division Order No. R-4549, as amended.
2. On March 21, 1990 ARCO filed Division Form C-108 in which it seeks authority to convert from producing wells into gas injection wells its Empire Abo Unit "J" Well No. 10 located 2310 feet from the North and West lines (Unit F) of Section 3, and its Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, both in Township 18 South, Range 27 East,

Empire-Abo Pool, Empire-Abo Unit Area, Eddy County, New Mexico.

3. The Empire Abo "J" Unit Well No. 13 is closer than 1650 feet to an OXY operated tract that is not committed to the unit and, therefore, ARCO needs an exception to the provision of Rule 7 of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project.

4. Copies of Form C-108 were mailed to OXY USA, Inc. ("OXY") on March 21, 1990 who objected to the application for the Empire Abo "J" Well No. 13. Attached to and incorporated into this application is a revised Form C-108 which includes a plat identifying the lands committed to the Unit Agreement and those lands not committed to said Agreement and showing the location of the proposed well, all wells within the Unit Area and offset operators and a schematic drawing of the proposed well which fully describes the casing, tubing, perforated interval, and depth.

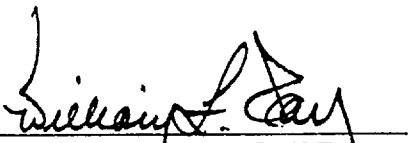
5. All offset operators of the proposed well have been furnished a complete copy of the application and the date of notification.

6. Granting this application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

WHEREFORE, ARCO Oil & Gas Company requests that this application be set for hearing before a duly appointed Examiner of the Oil Conservation Division on June 13, 1990, and that after notice and hearing as required by rules of the Division, this application be granted.

Respectfully submitted,

CAMPBELL & BLACK, P.A.

By: 

WILLIAM F. CARR

Post Office Box 2208

Santa Fe, New Mexico 87504

Telephone: (505) 988-4421

ATTORNEYS FOR ARCO
OIL & GAS COMPANY

Case 9931 RECEIVED
MAY 20 1990

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ Yes ☐ No
- II. Operator: ARCO Oil and Gas Company
Address: P.O. Box 1610, Midland, Texas 79702
Contact party: Gary B. Smallwood, Sr. Engineer Phone: (915) 688-5359
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ Yes ☐ No
If yes, give the Division order number authorizing the project R-4549
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- * VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Gary B. Smallwood Title: Senior Engineer
Signature: Gary B. Smallwood Date: 3-19-90 / JBR 3/21/90 VB
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Initial application to inject in 1973. Case #4953

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and fontage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

ARCO OIL AND GAS COMPANY
EMPIRE ABO UNIT J-10
APPLICATION TO INJECT GAS
MARCH, 1990

III. WELL DATA

- A. (1) Location
2310' FNL & 2310' FWL, Section 3-T18S-R27E
Eddy County, New Mexico
- (2) Casing
8-5/8" @ 1455' w/450 sx cement in 11" hole
TOC @ surface: circulated
5-1/2" @ 5705' w/300 sx cement in 7-7/8" hole
TOC unknown
- (3) Proposed Tubing
2-3/8" internally plastic coated @ approximately 5452'
- (4) Proposed Packer
Lok-set type (Baker Tool Co.) with on-off tool @ approximately
5452'
- B. (1) Injection formations: Abo
Pool Name: Empire Abo
- (2) Injection Interval: Perfs 5564-5630'
- (3) Well was drilled as an oil producer
- (4) No other perfs
- (5) Next higher productive pool: San Andres - Top of the San Andres
occurs at 1673'

VII. PROPOSED OPERATION

- (1) Average daily rate of fluid to be injected: 6000 MCFPD
- (2) The system is closed
- (3) Average injection pressure: 2000 psi
Maximum injection pressure: 2000 psi
- (4) Source of injection fluid: Empire Abo Unit Gas Injection Plant

IX PROPOSED STIMULATION

Acidize perfs w/3500 gallons 15% NEFE HCl

ARCO OIL AND GAS COMPANY
EMPIRE ABO UNIT J-13
APPLICATION TO INJECT GAS
MARCH, 1990

III. WELL DATA

- A. (1) Location
1980' FNL & 660' FWL, Section 2-T18S-R27E
Eddy County, New Mexico
- (2) Casing
8-5/8" @ 1006' w/675 sx cement in 11" hole
TOC @ surface: circulated
5-1/2" @ 6131' w/225 sx cement in 7-7/8" hole
TOC unknown
- (3) Proposed Tubing
2-3/8" internally plastic coated @ approximately 5600'
- (4) Proposed Packer
Lok-set type (Baker Tool Co.) with on-off tool @ approximately
5600'
- B. (1) Injection formations: Abo
Pool Name: Empire Abo
- (2) Injection Interval: Perfs 5710-5724', 5754-5784'
- (3) Well was drilled as an oil producer
- (4) Perfs from 2300-2301' were squeezed w/525 sx cement. Perfs
from 5020-5021' were squeezed w/275 sx. Perfs from
5364-5390' were squeezed w/105 sx.
- (5) Next higher productive pool: San Andres - Top of the San Andres
occurs at 1672'

VII. PROPOSED OPERATION

- (1) Average daily rate of fluid to be injected: 6000 MCFPD
- (2) The system is closed
- (3) Average injection pressure: 2000 psi
Maximum injection pressure: 2000 psi
- (4) Source of injection fluid: Empire Abo Unit Injection Plant

IX. PROPOSED STIMULATION

Acidize perfs w/15% NEFE HCl

Section VI.
Well Data in Area of Review

ARCO Empire Abo Unit Well No. J-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1488' cemented with 700 sacks, circulated .
4-1/2" @ 5720' cemented with 850 sacks, top of cement @ 925'.
Date Drilled: 8-5-59
Location: 2310' FNL & 1650' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5720'
Record of Completion: Perf 5620-5664' w/ 2JSPF. 2000 gals. 15% HCl. 79 BO,
1BAW & 88 MCF in 20 hrs. CIBP set @ 5269' on 8-24-77

ARCO Empire Abo Unit Well No. J-12

Type: EAU Gas Injection Well
Construction: 8-5/8" @ 997' cemented with 600 sacks, circulated .
5-1/2" @ 6123' cemented with 250 sacks, top of cement @ 4400'.
Date Drilled: 8-5-59
Location: 1980' FNL & 660' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6123'
Record of Completion: Perf 5650-670' w/ 2JSPF & treated w/500 gals 15% HCl on
2/59 . Treated with 2000 gals 15% on 6/70. Perf 4630-32 and
squeezed w/800 sacks on 7/79. Perf 700-02 and squeezed with 130
sacks, circulated to surface. Ran 2-3/8" IPC tbg. Packer at 5605'.
Treated with 5000 gals. 15%. Started GI @ 7-3-79. Perf 5592-5608 &
5572-80 & 5536-58 w/ 1 JSPF. 10,000 gals 15 %.

ARCO Empire Abo Unit Well No. J-14

Type: EAU Oil Producer
Construction: 8-5/8" @ 971' cemented with 600 sacks, circulated .
5-1/2" @ 6160' cemented with 230 sacks.
Date Drilled: 1-23-59
Location: 2180' FNL & 1905' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6133'
Record of Completion: Perf. 5620-40 & treated with 2000 gal DAD. Squeezed perms @
5620-40 w/ 100 sacks on 9/74. Perf. 5748-5776 acidized w/ 3200
gals. 15% on 9/74. Acidized w/ 6000 gal DAD treatment on 10/74.
286 BO, 15 BW & 315 MCFPD.

ARCO Empire Abo Unit Well No. J-15

Type: EAU Oil Producer
Construction: 8-5/8" @ 1216' cemented with 650 sacks, circulated .
5-1/2" @ 5920' cemented with 300 sacks.
Date Drilled: 3-4-59
Location: 1980' FEL & 2310' FNL, Sec 2-18S-27E; Eddy Co.
Depth: 5920'
Record of Completion: Perf. 5773-95 & 5810-72 oa w/ 2SPF. Treated with 2000 gal
15%, 9/59. Perf. 4010' cemented with 625 sacks.

ARCO Empire Abo Unit Well No. K-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1493' cemented with 650 sacks, circulated .
5-1/2" @ 5881' cemented with 250 sacks. TOC @ 4120'
Date Drilled: 2-25-59
Location: 1980' FSL & 1780' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5881'
Record of Completion: Perf. 5650-70 w/ 2SPF.No treatment, TOC @ 4120'. Treated
with 5000 gal 15% on 5/64. Well was SI 9/76.

ARCO Empire Abo Unit Well No. K-12

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 700 sacks, circulated .
5-1/2" @ 6103' cemented with 435 sacks. TOC @ 2675'
Date Drilled: 12-31-58
Location: 1980' FSL & 660' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6103'
Record of Completion: Perf. 5314-32 w/ 2SPF. Treated with 1000 gal 15%. Sqz.
4/64 w/ 100 sacks & perf. 5656-64, 5670-86 w/ 2spf. Acidize w/
1000 gals. Sqz. w/ 150 sacks on 6/77. Spotted 100 gals acetic acid
5806-5686. Perf. 5766-5804 w/ 2 spf. Acidized w/ 500 gals. 15%.
Pumped 1500 gals. DAD treatment.

ARCO Empire Abo Unit Well No. K-143

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 600 sacks, circulated .
5-1/2" @ 6107' cemented with 1275 sacks.
Date Drilled: 4-16-79
Location: 1820' FSL & 2550' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6107'
Record of Completion: Perf. 5910-25 w 2JSPF. treated w/ 1000 gal 15% and flushed
with 20 BLC. Sqz. w/ 125 sacks and perf. 6070-90 w/ 2JSPF. Treated
with 150 gals 15%, 1000 gals CaCl wtr, 1000 gals LC, 2000 gals acid.
Completed well on 5/79.

ARCO Empire Abo Unit Well No. I-10

Type: EAU GI
Construction: 8-5/8" @ 1471' cemented with 600 sacks, circulated .
4-1/2" @ 5710' cemented with 750 sacks.
Date Drilled: 11-30-59
Location: 990' FNL & 2310' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5710'
Record of Completion: Perf. 5825-305 w 2JSPF. Acidized with 2000 gals. Sqz. with
239 sacks. Perf. 5456-82 with 2JSPF. Acidized with 3000 gals. 15%.
108 BO in 24 hrs. 12-25-59. 2/3/74 treated 5532-46 w/ 1000 gals
acid. Treated perfs. 5456-5516 w/ 5000 gals. 15% acid. Ran IPC tbq
and started gas injection 5456-5546 on 6/22/74.

ARCO Empire Abo Unit Well No. I-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1485' cemented with 700 sacks, circulated .
4-1/2" @ 5719' cemented with 850 sacks. TOC 125'.
Date Drilled: 10-29-59
Location: 972' FNL & 1647' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5719'
Record of Completion: Perf. 5554-98 w 2JSPF on 11-20-59.

ARCO Empire Abo Unit Well No. I-12

Type: EAU Oil Producer
Construction: 8-5/8" @ 1496' cemented with 700 sacks, circulated .
4-1/2" @ 5661' cemented with 850 sacks. TOC 650'.
Date Drilled: 10-05-59
Location: 982' FNL & 330' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5661'
Record of Completion: Perf. 5610-30 and treated w/ acid 10/59.

ARCO Empire Abo Unit Well No. I-13

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1479' cemented with 700 sacks, circulated .
4-1/2" @ 5695' cemented with 850 sacks.
Date Drilled: 10-29-59
Location: 990' FNL & 650' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 5695'
Record of Completion: Perf. 5610-54 w 2JSPF , treated w/ 3000 gals., 15%.
Completed on 11-20-59.

ARCO Empire Abo Unit Well No. J-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1463' cemented with 620 sacks .
5-1/2" @ 5656' cemented with 350 sacks.
Date Drilled: 5-29-60
Location: 2310' FNL & 990' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5656'
Record of Completion: Perf. 5562-5614 w 2JSPF. Treated w/ 3000 gals acid
4/15/68. On 12/11/70 set CIBP @ 5540. Perf. 5463 & pumped 500
gals acid & squeezed thru perms 125 sacks cement. Pushed down CIBP to
5630 and acidized perms @ 5562-5614 w/ 2000 gals. On 9-16-71
treated w/ 5000 gals acid. On 1-19-72 acidized w/ 3000 gals 20%. SI
12-1-76. Returned to production 8-29-87 @ 63 BOPD 3 BWPD & 410
MCFPD.

ARCO Empire Abo Unit Well No. K-13

Type: EAU Oil Producer
Construction: 8-5/8" @ 993' cemented with 700 sacks.
5-1/2" @ 6094' cemented with 300 sacks.
Date Drilled: 10-05-58
Location: 1880' FSL & 660' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6094'
Record of Completion: Perf. 5360-86 w 4JSPF on 11-58. Treated w/ 500 gals. 15%.
1-64 squeezed & perf. 6043-50. Treated w/ 1000 gals.

ARCO Empire Abo Unit Well No. K-131

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 800 sacks, circulated .
5-1/2" @ 6145' cemented with 1360 sacks.
Date Drilled: 2-21-79
Location: 972' FNL & 1647' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6145'
Record of Completion: Sqz perfs @ 5709-11. Pumped 200 sacks of cement then drilled
out and pressure tested casing. Perf. 6014- 34 w/ 2JSPF and acidized
w/ 2300 gals 15%. Completed on 4-17-79.

ARCO Empire Abo Unit Well No. K-14

Type: EAU Oil Producer
Construction: 8-5/8" @ 984' cemented with 775 sacks. TOC @ surface.
5-1/2" @ 6193' cemented with 175 sacks.
Date Drilled: 11-23-58
Location: 1980' FSL & 1830' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6193'
Record of Completion: Perf. 5410-36 w 4SPF & acidized w/ 2500 gals. No production
was obtained on test and the perfs were squeezed w/ 100 sacks cement.
Perf'd 5420-70 w/ 2SPF & acidized w/ 1000 gals. No production
obtained & perfs were squeezed w/ 100 sacks cement. Perf'd 5540-
5555 w/ 2SPF and acidized w/ 5500 gals. Well flowed 75 BO in 24
hours. Completed 1-59. On 9-73 squeezed 5540-5555 w/ 100 sacks
cement and perforated 5946-97 w/ 2JSPF & acidized w/ 3000 gals.
Squeezed 1-29-80 & perforated 6100-6110'. Acidized w/ 2000 gals
PAD acid on 10-30-86.

ARCO Empire Abo Unit Well No. K-141

Type: EAU Oil Producer
Construction: 8-5/8" @ 1006' cemented with 400 sacks, circulated to surface .
5-1/2" @ 6203' cemented with 300 sacks. TOC 1130'.
Date Drilled: 4-7-77
Location: 1370' FSL & 2445' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6203'
Record of Completion: Perf. 5990-6024' w/ 2JSPF acidized w/ 500 gals 15%. Perf'd
@ 6100' w/ four .45" holes & treated w/ 1000 gals DAD. Completed
5/18/77.

ARCO Empire Abo Unit Well No. K-142

Type: EAU Oil Producer (drainhole)
Construction: 10-3/4" @ 953' cemented with 400 sacks, circulated .
7" @ 6027' cemented with 575 sacks.
Date Drilled: 7-31-79
Location: 1700' FSL & 1400' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6027'
Record of Completion: Ran 5 1/2" OD 19' radius whipstock w/ 42' 4 1/2" anchor pipe,
87' 5 1/2" sheath pipe. Oriented whipstock w/ btm of anchor pipe at
6060'. Completed well 10/6/79.

ARCO Empire Abo Unit Well No. K-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1505' cemented with 700 sacks, circulated .
4-1/2" @ 5729' cemented with 800 sacks.
Date Drilled: 7-20-59
Location: 1650' FSL & 990' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5729'
Record of Completion: Perf. 5620-60, completed on 8-9-59. SI on 12-01-76.
Returned to production on 7/81

ARCO Empire Abo Unit Well No. K-10

Type: EAU Oil Producer
Construction: 8-5/8" @ 1465' cemented with 700 sacks, circulated .
4-1/2" @ 5778' cemented with 950 sacks.
Date Drilled: 5-23-59
Location: 1650' FSL & 2310' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5778'
Record of Completion: Perf. 5660-5700 w 2 SPF & treated w/ 1000 gals 15% on 6-
22-59.

ARCO Empire Abo Unit Well No. L-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 700 sacks, circulated .
5-1/2" @ 6431' cemented with 160 sacks.
Date Drilled: 12-31-58
Location: 660' FSL & 660' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 6431'
Record of Completion: Perf. 5232-58 w 2 SPF. Perfs. were squeezed w/ 200 sacks and
well was reperforated @ 5560-90 & acidized w/ 1000 gals 15%.
Completed on 2/59. Well was SI 9-19-76. Returned to production after
casing repair on 9/86.

ARCO Empire Abo Unit Well No. L-10

Type: EAU Oil Producer
Construction: 8-5/8" @ 1500' cemented with 750 sacks, circulated .
5-1/2" @ 5830' cemented with 300 sacks.
Date Drilled: 2-20-59
Location: 660' FSL & 1980' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5830'
Record of Completion: Perf. 5718-40 w JSPF & acidized w/ 500 gals 15% & completed on 4-7-59. Perf'd squeeze holes @ 3500' on 8/77. Pumped 500 sacks cement, DO cement & returned well to production.

ARCO Empire Abo Unit Well No. L-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 983' cemented with 700 sacks, circulated .
5-1/2" @ 6043' cemented with 175 sacks.
Date Drilled: 12-2-58
Location: 610' FSL & 1980' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6043'
Record of Completion: Perf. 5340-65w 4 SPF & acidized w/ 500 gals 15%. Perfs were squeezed and well was reperf'd @ 5345-80 & treated w/ 1000 gals 15%. Well was completed 1/59. On 6/64 Perfs @ 5345-80 were squeezed w/ 100 sacks and well was perforated 5847-58, 5866-75, 5882-92 w/ 2 SPF & acidized w/ 2000 gals LSTNE. On 11/80 squeezed w/ 100 sacks and perf'd 5940-54 & 5958-66 and treated w/ 1650 gals of 15%. Well SI 12-8-80.

CITGO Empire Abo Unit Well No. 14

Type: Oil Producer (TA'd)
Construction: 8-5/8" @ 982' cemented with 400 sacks.
5-1/2" @ 5701' cemented with 800 sacks.
Date Drilled: 5-23-60
Location: 330' FSL & 990' FWL, Sec 35-17S-27E; Eddy Co.
Depth: 5701'
Record of Completion: Perf. 5556-98 & acidized w/ 10000 gals 15%. IPF 1841 BOPD

CITGO Empire Abo Unit Well No. 9

Type: Oil Producer (TA'd)
Construction: 8-5/8" @ 985' cemented with 400 sacks.
5-1/2" @ 5629' cemented with 800 sacks.
Date Drilled: 4-20-60
Location: 330' FSL & 1900' FWL, Sec 35-17S-27E; Eddy Co.
Depth: 5629'
Record of Completion: Perf. 5504-50 & acidized w/ 10000 gals 15%. IPF 600 BOPD

CITGO Empire Abo Unit Well No. 5

Type: Oil Producer

Construction: 8-5/8" @ 963' cemented with 425 sacks.
5-1/2" @ 5764' cemented with 300 sacks.

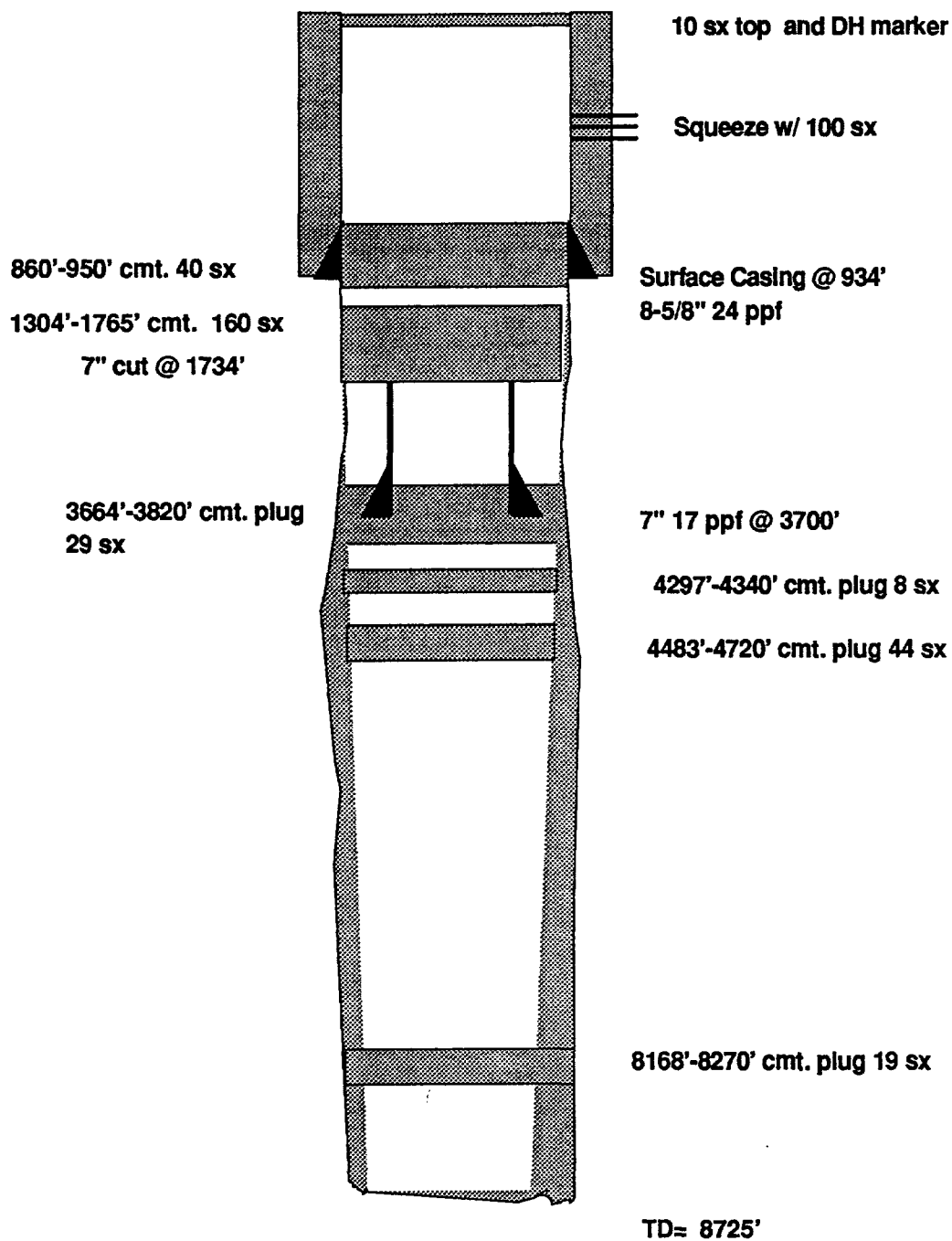
Date Drilled: 7-5-59

Location: 990' FNL & 1980' FWL, Sec 35-17S-27E; Eddy Co.

Depth: 5764'

Record of Completion: Perf. 5627-5731 OA & acidized w/ 2000 gals 15%. IPF 212
BOPD

Well Name & No.: Hondo C State No. 1 330' FNL & 990' FWL Sec. 2, 18 S and 27 E
Date: 5-22-90



Section VIII. Geological Data

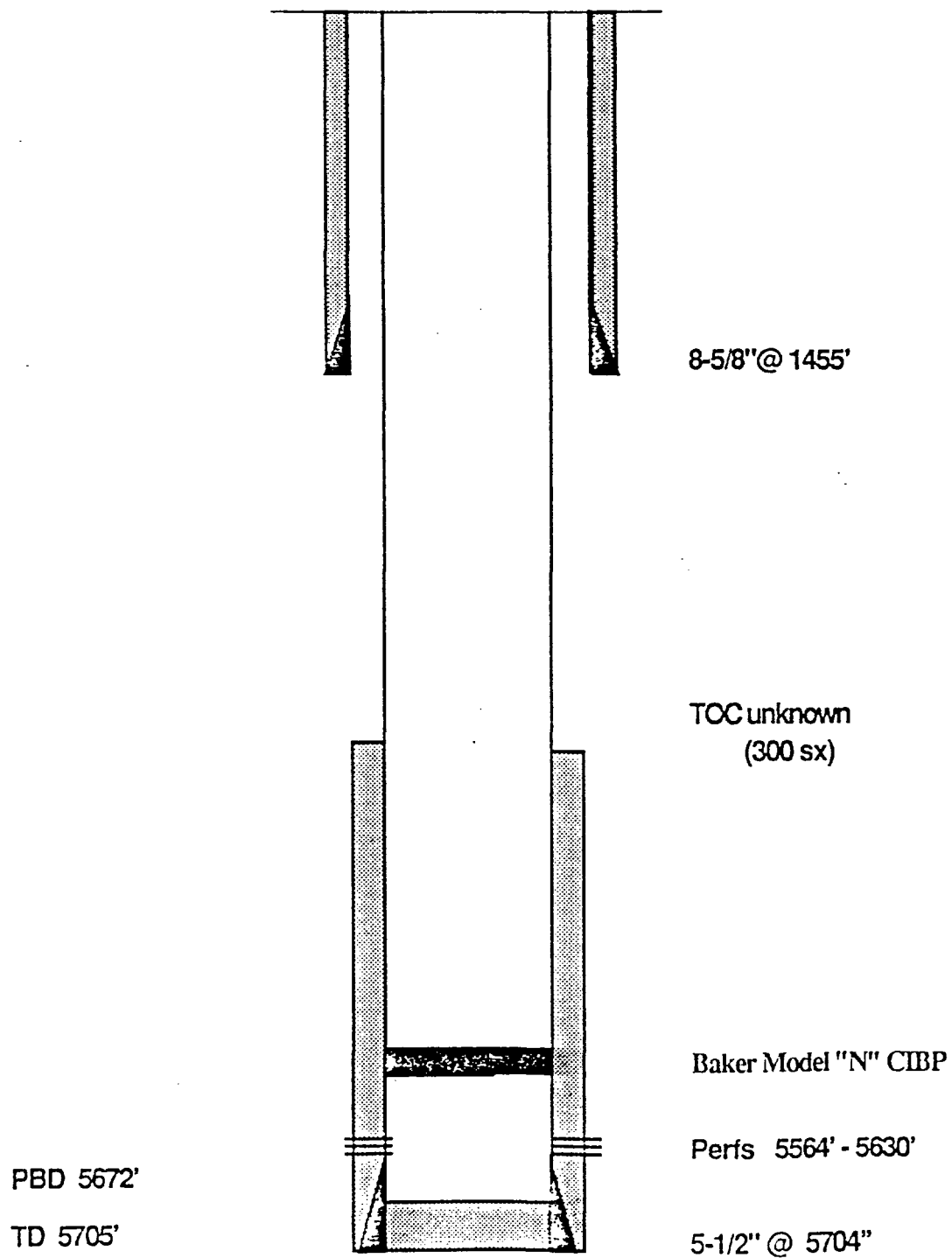
The Empire Abo field produces from a transgressive, carbonate, barrier reef buildup of lower Leonardian (Permian) age. This reef is one of several in a long trend flanking the northern edge of the Delaware Basin. The reef grew from southwest to northeast. It is approximately 12.5 miles long and 1.5 miles wide. Parallel to the reef trend, the reef dips 1 degree from southwest to northeast. Perpendicular to this trend the reef dips sharply at 10 to 20 degrees from crest to fore-reef, or north to south. The average depth of the reef is 5800 feet and the thickness averages 300 feet.

The trapping mechanism at Empire Abo is both stratigraphic and structural. The reef dips below the oil water contact to the south and east. Permeability pinch outs to the north and west occur as a result of carbonate muds, green shales and anhydrite inclusions.

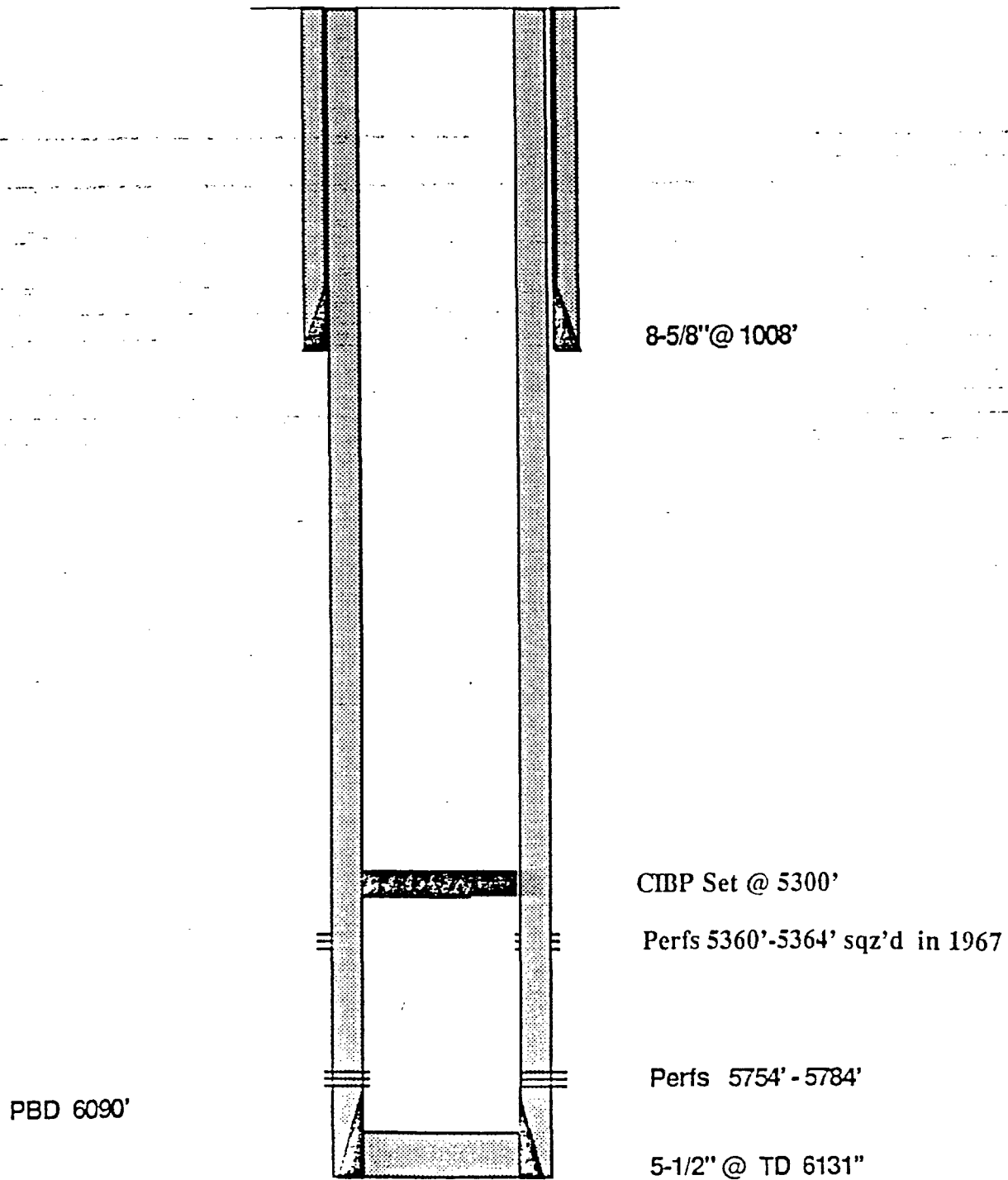
Porosity development is erratic and cannot be correlated between wells. Development is the result of leaching of abundant detrital fossil fragments, dolomitization and recrystallization. The most prolific porosity development is found in the reef core. There is no apparent intercrystalline porosity.

Vertical fracturing, which contributes to the gravity drainage mechanism of the reservoir, is apparently due to local slumping as well as large scale settling and some tectonic activity. Fracture orientation is generally 0 to 45 degrees from vertical and is parallel to the reef trend.

Empire Abo Unit # J-10
Present Wellbore Configuration



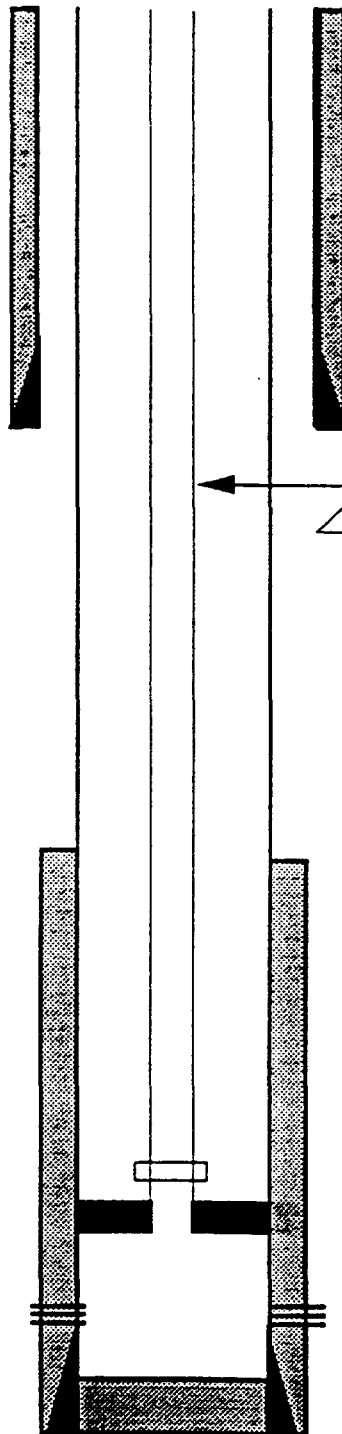
Empire Abo Unit # J-13
Present Wellbore Configuration



Empire Abo Unit # J-10
Proposed Wellbore Configuration



PBD 5672'
TD 5705'



8-5/8" @ 1455'

2-3/8" 4.7# J-55 8rd EUE ABmod IPC tbg
Btm'd @ 5450'

TOC unknown
(300 sx)

On-off too w/1.78 "R" profile (Nickel Plated)
Lok Set pkr set @ 5450' (Nickel Plated)

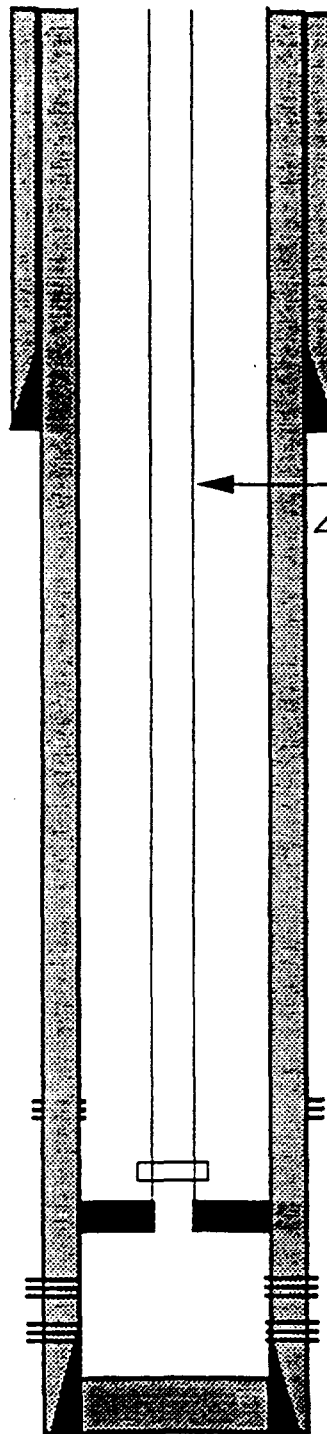
Perfs 5564' - 5630'

5-1/2" @ 5704"

Empire Abo Unit # J-13
Proposed Wellbore Configuration



PBD 6090'
TD 6131



8-5/8" @ 1008'

2-3/8" 4.7# J-55 8rd EUE ABmod IPC tbg
Btm'd @ 5600'

Perfs 5360' - 5364' sqz'd 1967

On-off too w/1.78 "R" profile (Nickel Plated)

Lok Set pkr set @ 5600' (Nickel Plated)

Perfs 5710' - 5724'

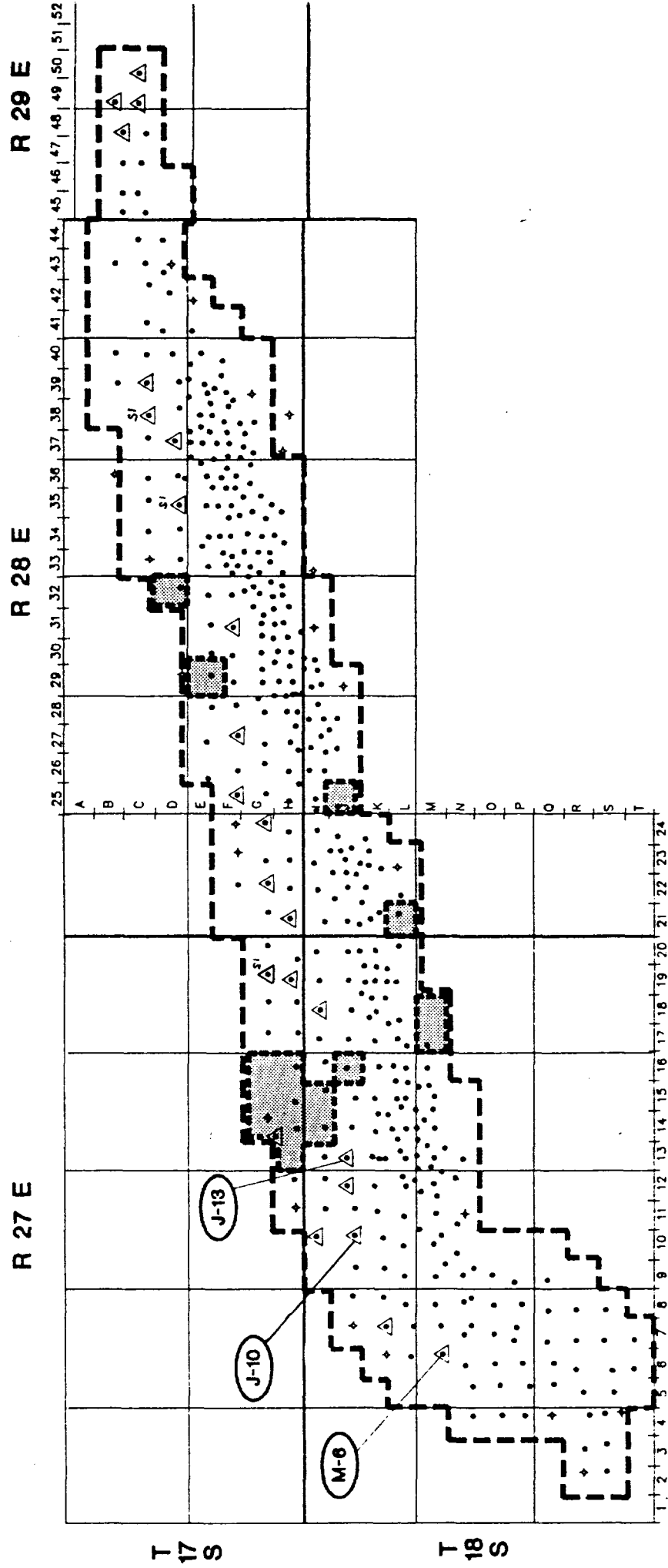
Perfs 5754 - 5784'

5-1/2" @ 6131'

J-13

EMPIRE ABO UNIT

Eddy County, New Mexico



BEFORE THE
OIL CONSERVATION DIVISION
NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES

IN THE MATTER OF THE APPLICATION
OF ARCO OIL & GAS COMPANY FOR
PRESSURE MAINTENANCE EXPANSION
AND AN EXCEPTION TO THE SPECIAL
RULES AND REGULATIONS FOR THE
EMPIRE-ABO PRESSURE MAINTENANCE
PROJECT, EDDY COUNTY, NEW MEXICO.

RECEIVED

MAY 23 1990

OIL CONSERVATION DIVISION

CASE NO. 9931

**AMENDED
APPLICATION**

ARCO OIL & GAS COMPANY ("ARCO"), through its undersigned attorneys, hereby makes application for an order authorizing the expansion of the Empire-Abo Pressure Maintenance Project and an Exception to Rule 7 of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project and in support of this application states:

1. ARCO is the operator of the Empire-Abo Unit in which it conducts a pressure maintenance project in accordance with Special Rules and Regulations promulgated by Division Order No. R-4549, as amended.

2. On March 21, 1990 ARCO filed Division Form C-108 in which it seeks authority to convert from producing wells into gas injection wells its Empire Abo Unit "J" Well No. 10 located 2310 feet from the North and West lines (Unit F) of Section 3, and its Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, both in Township 18 South, Range 27 East,

Empire-Abo Pool, Empire-Abo Unit Area, Eddy County, New Mexico.

3. The Empire Abo "J" Unit Well No. 13 is closer than 1650 feet to an OXY operated tract that is not committed to the unit and, therefore, ARCO needs an exception to the provision of Rule 7 of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project.

4. Copies of Form C-108 were mailed to OXY USA, Inc. ("OXY") on March 21, 1990 who objected to the application for the Empire Abo "J" Well No. 13. Attached to and incorporated into this application is a revised Form C-108 which includes a plat identifying the lands committed to the Unit Agreement and those lands not committed to said Agreement and showing the location of the proposed well, all wells within the Unit Area and offset operators and a schematic drawing of the proposed well which fully describes the casing, tubing, perforated interval, and depth.

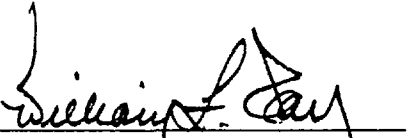
5. All offset operators of the proposed well have been furnished a complete copy of the application and the date of notification.

6. Granting this application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

WHEREFORE, ARCO Oil & Gas Company requests that this application be set for hearing before a duly appointed Examiner of the Oil Conservation Division on June 13, 1990, and that after notice and hearing as required by rules of the Division, this application be granted.

Respectfully submitted,

CAMPBELL & BLACK, P.A.

By: 

WILLIAM F. CARR

Post Office Box 2208

Santa Fe, New Mexico 87504

Telephone: (505) 988-4421

ATTORNEYS FOR ARCO
OIL & GAS COMPANY

APPLICATION FOR AUTHORIZATION TO INJECT

Case 9931
RECEIVED
MAR 23 1990

I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ Yes ☐ No

II. Operator: ARCO Oil and Gas Company

Address: P.O. Box 1610, Midland, Texas 79702

OIL CONSERVATION DIVISION

Contact party: Gary B. Smallwood, Sr. Engineer Phone: (915) 688-5359

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project R-4549

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

* VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Gary B. Smallwood Title: Senior Engineer

Signature: Gary B. Smallwood Date: 3-19-90 / 3/21/90

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Initial application to inject in 1973. Case #4953

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

ARCO OIL AND GAS COMPANY
EMPIRE ABO UNIT J-10
APPLICATION TO INJECT GAS
MARCH, 1990

III. WELL DATA

- A. (1) Location
2310' FNL & 2310' FWL, Section 3-T18S-R27E
Eddy County, New Mexico
- (2) Casing
8-5/8" @ 1455' w/450 sx cement in 11" hole
TOC @ surface: circulated
5-1/2" @ 5705' w/300 sx cement in 7-7/8" hole
TOC unknown
- (3) Proposed Tubing
2-3/8" internally plastic coated @ approximately 5452'
- (4) Proposed Packer
Lok-set type (Baker Tool Co.) with on-off tool @ approximately
5452'
- B. (1) Injection formations: Abo
Pool Name: Empire Abo
- (2) Injection Interval: Perfs 5564-5630'
- (3) Well was drilled as an oil producer
- (4) No other perfs
- (5) Next higher productive pool: San Andres - Top of the San Andres
occurs at 1673'

VII. PROPOSED OPERATION

- (1) Average daily rate of fluid to be injected: 6000 MCFPD
- (2) The system is closed
- (3) Average injection pressure: 2000 psi
Maximum injection pressure: 2000 psi
- (4) Source of injection fluid: Empire Abo Unit Gas Injection Plant

IX. PROPOSED STIMULATION

Acidize perfs w/3500 gallons 15% NEFE HCl

ARCO OIL AND GAS COMPANY
EMPIRE ABO UNIT J-13
APPLICATION TO INJECT GAS
MARCH, 1990

III. WELL DATA

- A. (1) Location
1980' FNL & 660' FWL, Section 2-T18S-R27E
Eddy County, New Mexico
- (2) Casing
8-5/8" @ 1006' w/675 sx cement in 11" hole
TOC @ surface: circulated
5-1/2" @ 6131' w/225 sx cement in 7-7/8" hole
TOC unknown
- (3) Proposed Tubing
2-3/8" internally plastic coated @ approximately 5600'
- (4) Proposed Packer
Lok-set type (Baker Tool Co.) with on-off tool @ approximately
5600'
- B. (1) Injection formations: Abo
Pool Name: Empire Abo
- (2) Injection Interval: Perfs 5710-5724', 5754-5784'
- (3) Well was drilled as an oil producer
- (4) Perfs from 2300-2301' were squeezed w/525 sx cement. Perfs
from 5020-5021' were squeezed w/275 sx. Perfs from
5364-5390' were squeezed w/105 sx.
- (5) Next higher productive pool: San Andres - Top of the San Andres
occurs at 1672'

VII. PROPOSED OPERATION

- (1) Average daily rate of fluid to be injected: 6000 MCFPD
- (2) The system is closed
- (3) Average injection pressure: 2000 psi
Maximum injection pressure: 2000 psi
- (4) Source of injection fluid: Empire Abo Unit Injection Plant

IX PROPOSED STIMULATION

Acidize perfs w/15% NEFE HCl

Section VI.
Well Data in Area of Review

ARCO Empire Abo Unit Well No. J-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1488' cemented with 700 sacks, circulated .
4-1/2" @ 5720' cemented with 850 sacks, top of cement @ 925'.
Date Drilled: 8-5-59
Location: 2310' FNL & 1650' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5720'
Record of Completion: Perf 5620-5664' w/ 2JSPF. 2000 gals. 15% HCl. 79 BO,
1BAW & 88 MCF in 20 hrs. CIBP set @ 5269' on 8-24-77

ARCO Empire Abo Unit Well No. J-12

Type: EAU Gas Injection Well
Construction: 8-5/8" @ 997' cemented with 600 sacks, circulated .
5-1/2" @ 6123' cemented with 250 sacks, top of cement @ 4400'.
Date Drilled: 8-5-59
Location: 1980' FNL & 660' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6123'
Record of Completion: Perf 5650-670' w/ 2JSPF & treated w/500 gals 15% HCl on
2/59 . Treated with 2000 gals 15% on 6/70. Perf 4630-32 and
squeezed w/800 sacks on 7/79. Perf 700-02 and squeezed with 130
sacks, circulated to surface. Ran 2-3/8" IPC tbg. Packer at 5605'.
Treated with 5000 gals. 15%.Started GI @ 7-3-79. Perf 5592-5608 &
5572-80 & 5536-58 w/ 1 JSPF. 10,000 gals 15 %.

ARCO Empire Abo Unit Well No. J-14

Type: EAU Oil Producer
Construction: 8-5/8" @ 971' cemented with 600 sacks, circulated .
5-1/2" @ 6160' cemented with 230 sacks.
Date Drilled: 1-23-59
Location: 2180' FNL & 1905' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6133'
Record of Completion: Perf. 5620-40 & treated with 2000 gal DAD. Squeezed perms @
5620-40 w/ 100 sacks on 9/74. Perf. 5748-5776 acidized w/ 3200
gals. 15% on 9/74. Acidized w/ 6000 gal DAD treatment on 10/74.
286 BO, 15 BW & 315 MCFPD.

ARCO Empire Abo Unit Well No. J-15

Type: EAU Oil Producer
Construction: 8-5/8" @ 1216' cemented with 650 sacks, circulated .
5-1/2" @ 5920' cemented with 300 sacks.
Date Drilled: 3-4-59
Location: 1980' FEL & 2310' FNL, Sec 2-18S-27E; Eddy Co.
Depth: 5920'
Record of Completion: Perf. 5773-95 & 5810-72 oa w/ 2SPF. Treated with 2000 gal
15%, 9/59. Perf. 4010' cemented with 625 sacks.

ARCO Empire Abo Unit Well No. K-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1493' cemented with 650 sacks, circulated .
5-1/2" @ 5881' cemented with 250 sacks. TOC @ 4120'
Date Drilled: 2-25-59
Location: 1980' FSL & 1780' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5881'
Record of Completion: Perf. 5650-70 w/ 2SPF. No treatment, TOC @ 4120'. Treated with 5000 gal 15% on 5/64. Well was SI 9/76.

ARCO Empire Abo Unit Well No. K-12

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 700 sacks, circulated .
5-1/2" @ 6103' cemented with 435 sacks. TOC @ 2675'
Date Drilled: 12-31-58
Location: 1980' FSL & 660' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6103'
Record of Completion: Perf. 5314-32 w/ 2SPF. Treated with 1000 gal 15%. Sqz. 4/64 w/ 100 sacks & perf. 5656-64, 5670-86 w/ 2spf. Acidize w/ 1000 gals. Sqz. w/ 150 sacks on 6/77. Spotted 100 gals acetic acid 5806-5686. Perf. 5766-5804 w/ 2 spf. Acidized w/ 500 gals. 15%. Pumped 1500 gals. DAD treatment.

ARCO Empire Abo Unit Well No. K-143

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 600 sacks, circulated .
5-1/2" @ 6107' cemented with 1275 sacks.
Date Drilled: 4-16-79
Location: 1820' FSL & 2550' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6107'
Record of Completion: Perf. 5910-25 w 2JSPF. treated w/ 1000 gal 15% and flushed with 20 BLC. Sqz. w/ 125 sacks and perf. 6070-90 w/ 2JSPF. Treated with 150 gals 15%, 1000 gals CaCl wtr, 1000 gals LC, 2000 gals acid. Completed well on 5/79.

ARCO Empire Abo Unit Well No. I-10

Type: EAU GI
Construction: 8-5/8" @ 1471' cemented with 600 sacks, circulated .
4-1/2" @ 5710' cemented with 750 sacks.
Date Drilled: 11-30-59
Location: 990' FNL & 2310' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5710'
Record of Completion: Perf. 5825-305 w 2JSPF. Acidized with 2000 gals. Sqz. with 239 sacks. Perf. 5456-82 with 2JSPF. Acidized with 3000 gals. 15%. 108 BO in 24 hrs. 12-25-59. 2/3/74 treated 5532-46 w/ 1000 gals acid. Treated perfs. 5456-5516 w/ 5000 gals. 15% acid. Ran IPC tbq and started gas injection 5456-5546 on 6/22/74.

ARCO Empire Abo Unit Well No. I-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1485' cemented with 700 sacks, circulated .
4-1/2" @ 5719' cemented with 850 sacks. TOC 125'.
Date Drilled: 10-29-59
Location: 972' FNL & 1647' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5719'
Record of Completion: Perf. 5554-98 w 2JSPF on 11-20-59.

ARCO Empire Abo Unit Well No. I-12

Type: EAU Oil Producer
Construction: 8-5/8" @ 1496' cemented with 700 sacks, circulated .
4-1/2" @ 5661' cemented with 850 sacks. TOC 650'.
Date Drilled: 10-05-59
Location: 982' FNL & 330' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 5661'
Record of Completion: Perf. 5610-30 and treated w/ acid 10/59.

ARCO Empire Abo Unit Well No. I-13

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 1479' cemented with 700 sacks, circulated .
4-1/2" @ 5695' cemented with 850 sacks.
Date Drilled: 10-29-59
Location: 990' FNL & 650' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 5695'
Record of Completion: Perf. 5610-54 w 2JSPF , treated w/ 3000 gals., 15%.
Completed on 11-20-59.

ARCO Empire Abo Unit Well No. J-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1463' cemented with 620 sacks .
5-1/2" @ 5656' cemented with 350 sacks.
Date Drilled: 5-29-60
Location: 2310' FNL & 990' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5656'
Record of Completion: Perf. 5562-5614 w 2JSPF. Treated w/ 3000 gals acid
4/15/68. On 12/11/70 set CIBP @ 5540. Perf. 5463 & pumped 500
gals acid & squeezed thru perms 125 sacks cement. Pushed down CIBP to
5630 and acidized perms @ 5562-5614 w/ 2000 gals. On 9-16-71
treated w/ 5000 gals acid. On 1-19-72 acidized w/ 3000 gals 20%. SI
12-1-76. Returned to production 8-29-87 @ 63 BOPD 3 BWPD & 410
MCFPD.

ARCO Empire Abo Unit Well No. K-13

Type: EAU Oil Producer
Construction: 8-5/8" @ 993' cemented with 700 sacks.
5-1/2" @ 6094' cemented with 300 sacks.
Date Drilled: 10-05-58
Location: 1880' FSL & 660' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6094'
Record of Completion: Perf. 5360-86 w 4JSPF on 11-58. Treated w/ 500 gals. 15%.
1-64 squeezed & perf. 6043-50. Treated w/ 1000 gals.

ARCO Empire Abo Unit Well No. K-131

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 800 sacks, circulated .
5-1/2" @ 6145' cemented with 1360 sacks.
Date Drilled: 2-21-79
Location: 972' FNL & 1647' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6145'
Record of Completion: Sqz perms @ 5709-11. Pumped 200 sacks of cement then drilled
out and pressure tested casing. Perf. 6014-34 w/ 2JSPF and acidized
w/ 2300 gals 15%. Completed on 4-17-79.

ARCO Empire Abo Unit Well No. K-14

Type: EAU Oil Producer
Construction: 8-5/8" @ 984' cemented with 775 sacks. TOC @ surface.
5-1/2" @ 6193' cemented with 175 sacks.
Date Drilled: 11-23-58
Location: 1980' FSL & 1830' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6193'
Record of Completion: Perf. 5410-36 w 4SPF & acidized w/ 2500 gals. No production
was obtained on test and the perms were squeezed w/ 100 sacks cement.
Perf'd 5420-70 w/ 2SPF & acidized w/ 1000 gals. No production
obtained & perms were squeezed w/ 100 sacks cement. Perf'd 5540-
5555 w/ 2SPF and acidized w/ 5500 gals. Well flowed 75 BO in 24
hours. Completed 1-59. On 9-73 squeezed 5540-5555 w/ 100 sacks
cement and perforated 5946-97 w/ 2JSPF & acidized w/ 3000 gals.
Squeezed 1-29-80 & perforated 6100-6110'. Acidized w/ 2000 gals
PAD acid on 10-30-86.

ARCO Empire Abo Unit Well No. K-141

Type: EAU Oil Producer
Construction: 8-5/8" @ 1006' cemented with 400 sacks, circulated to surface .
5-1/2" @ 6203' cemented with 300 sacks. TOC 1130'.
Date Drilled: 4-7-77
Location: 1370' FSL & 2445' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6203'
Record of Completion: Perf. 5990-6024' w/ 2JSPF acidized w/ 500 gals 15%. Perf'd
@ 6100' w/ four .45" holes & treated w/ 1000 gals DAD. Completed
5/18/77.

ARCO Empire Abo Unit Well No. K-142

Type: EAU Oil Producer (drainhole)
Construction: 10-3/4" @ 953' cemented with 400 sacks, circulated .
7" @ 6027' cemented with 575 sacks.
Date Drilled: 7-31-79
Location: 1700' FSL & 1400' FWL, Sec 2-18S-27E; Eddy Co.
Depth: 6027'
Record of Completion: Ran 5 1/2" OD 19' radius whipstock w/ 42' 4 1/2" anchor pipe,
87' 5 1/2" sheath pipe. Oriented whipstock w/ btm of anchor pipe at
6060'. Completed well 10/6/79.

ARCO Empire Abo Unit Well No. K-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1505' cemented with 700 sacks, circulated .
4-1/2" @ 5729' cemented with 800 sacks.
Date Drilled: 7-20-59
Location: 1650' FSL & 990' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5729'
Record of Completion: Perf. 5620-60, completed on 8-9-59. SI on 12-01-76.
Returned to production on 7/81

ARCO Empire Abo Unit Well No. K-10

Type: EAU Oil Producer
Construction: 8-5/8" @ 1465' cemented with 700 sacks, circulated .
4-1/2" @ 5778' cemented with 950 sacks.
Date Drilled: 5-23-59
Location: 1650' FSL & 2310' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5778'
Record of Completion: Perf. 5660-5700 w 2 SPF & treated w/ 1000 gals 15% on 6-
22-59.

ARCO Empire Abo Unit Well No. L-09

Type: EAU Oil Producer
Construction: 8-5/8" @ 1000' cemented with 700 sacks, circulated .
5-1/2" @ 6431' cemented with 160 sacks.
Date Drilled: 12-31-58
Location: 660' FSL & 660' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 6431'
Record of Completion: Perf. 5232-58 w 2 SPF. Perfs. were squeezed w/ 200 sacks and
well was reperforated @ 5560-90 & acidized w/ 1000 gals 15%.
Completed on 2/59. Well was SI 9-19-76. Returned to production after
casing repair on 9/86.

ARCO Empire Abo Unit Well No. L-10

Type: EAU Oil Producer
Construction: 8-5/8" @ 1500' cemented with 750 sacks, circulated .
5-1/2" @ 5830' cemented with 300 sacks.
Date Drilled: 2-20-59
Location: 660' FSL & 1980' FWL, Sec 3-18S-27E; Eddy Co.
Depth: 5830'
Record of Completion: Perf. 5718-40 w JSPF & acidized w/ 500 gals 15% & completed on 4-7-59. Perf'd squeeze holes @ 3500' on 8/77. Pumped 500 sacks cement, DO cement & returned well to production.

ARCO Empire Abo Unit Well No. L-11

Type: EAU Oil Producer (TA'd)
Construction: 8-5/8" @ 983' cemented with 700 sacks, circulated .
5-1/2" @ 6043' cemented with 175 sacks.
Date Drilled: 12-2-58
Location: 610' FSL & 1980' FEL, Sec 3-18S-27E; Eddy Co.
Depth: 6043'
Record of Completion: Perf. 5340-65w 4 SPF & acidized w/ 500 gals 15%. Perfs were squeezed and well was reperf'd @ 5345-80 & treated w/ 1000 gals 15%. Well was completed 1/59. On 6/64 Perfs @ 5345-80 were squeezed w/ 100 sacks and well was perforated 5847-58, 5866-75, 5882-92 w/ 2 SPF & acidized w/ 2000 gals LSTNE. On 11/80 squeezed w/ 100 sacks and perf'd 5940-54 & 5958-66 and treated w/ 1650 gals of 15%. Well SI 12-8-80.

CITGO Empire Abo Unit Well No. 14

Type: Oil Producer (TA'd)
Construction: 8-5/8" @ 982' cemented with 400 sacks.
5-1/2" @ 5701' cemented with 800 sacks.
Date Drilled: 5-23-60
Location: 330' FSL & 990' FWL, Sec 35-17S-27E; Eddy Co.
Depth: 5701'
Record of Completion: Perf. 5556-98 & acidized w/ 10000 gals 15%. IPF 1841 BOPD

CITGO Empire Abo Unit Well No. 9

Type: Oil Producer (TA'd)
Construction: 8-5/8" @ 985' cemented with 400 sacks.
5-1/2" @ 5629' cemented with 800 sacks.
Date Drilled: 4-20-60
Location: 330' FSL & 1900' FWL, Sec 35-17S-27E; Eddy Co.
Depth: 5629'
Record of Completion: Perf. 5504-50 & acidized w/ 10000 gals 15%. IPF 600 BOPD

CITGO Empire Abo Unit Well No. 5

Type: Oil Producer

Construction: 8-5/8" @ 963' cemented with 425 sacks.
5-1/2" @ 5764' cemented with 300 sacks.

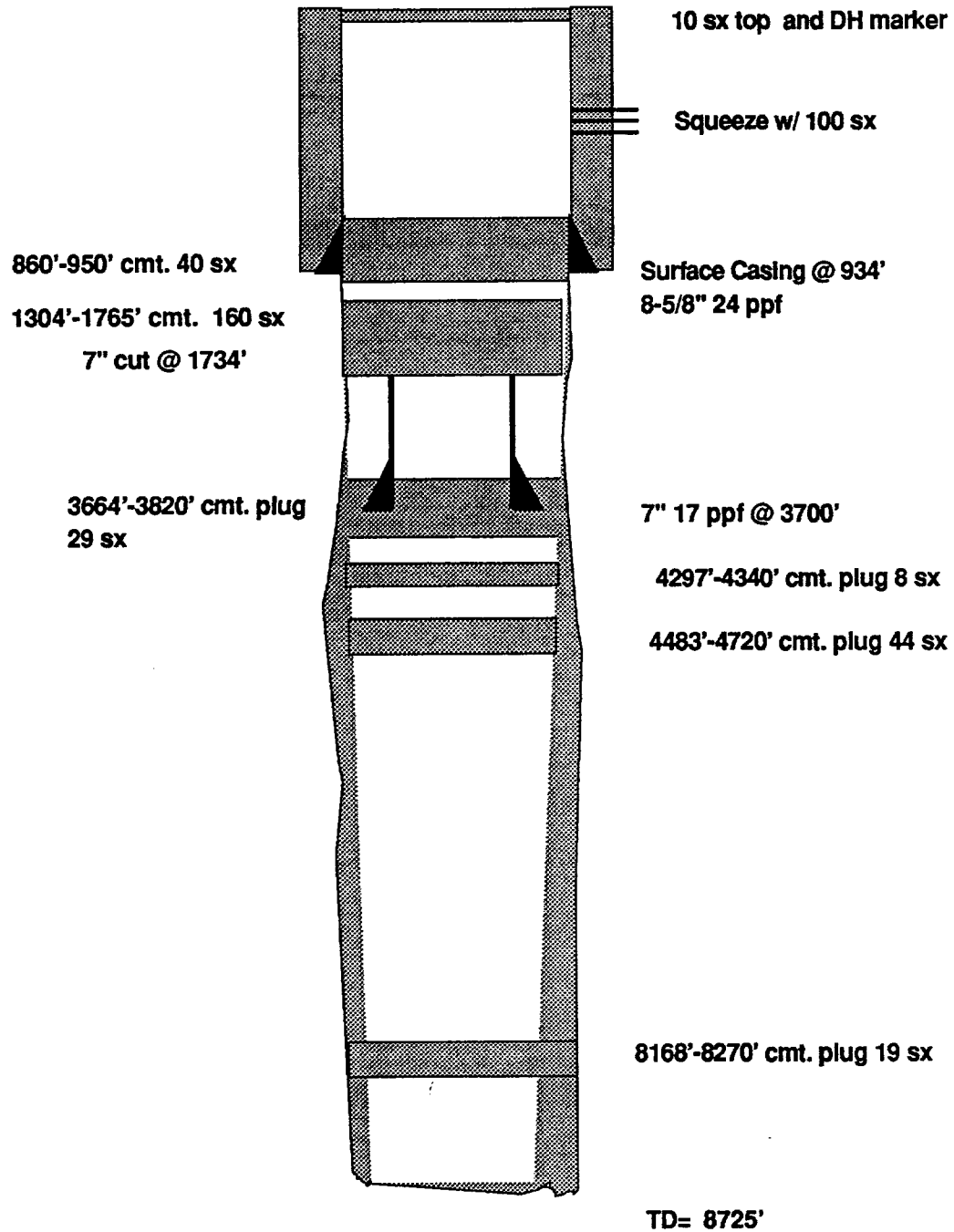
Date Drilled: 7-5-59

Location: 990' FNL & 1980' FWL, Sec 35-17S-27E; Eddy Co.

Depth: 5764'

Record of Completion: Perf. 5627-5731 OA & acidized w/ 2000 gals 15%. IPF 212
BOPD

Well Name & No.: Hondo C State No. 1 330' FNL & 990' FWL Sec. 2, 18 S and 27 E
Date: 5-22-90



Section VIII. Geological Data

The Empire Abo field produces from a transgressive, carbonate, barrier reef buildup of lower Leonardian (Permian) age. This reef is one of several in a long trend flanking the northern edge of the Delaware Basin. The reef grew from southwest to northeast. It is approximately 12.5 miles long and 1.5 miles wide. Parallel to the reef trend, the reef dips 1 degree from southwest to northeast. Perpendicular to this trend the reef dips sharply at 10 to 20 degrees from crest to fore-reef, or north to south. The average depth of the reef is 5800 feet and the thickness averages 300 feet.

The trapping mechanism at Empire Abo is both stratigraphic and structural. The reef dips below the oil water contact to the south and east. Permeability pinch outs to the north and west occur as a result of carbonate muds, green shales and anhydrite inclusions.

Porosity development is erratic and cannot be correlated between wells. Development is the result of leaching of abundant detrital fossil fragments, dolomitization and recrystallization. The most prolific porosity development is found in the reef core. There is no apparent intercrystalline porosity.

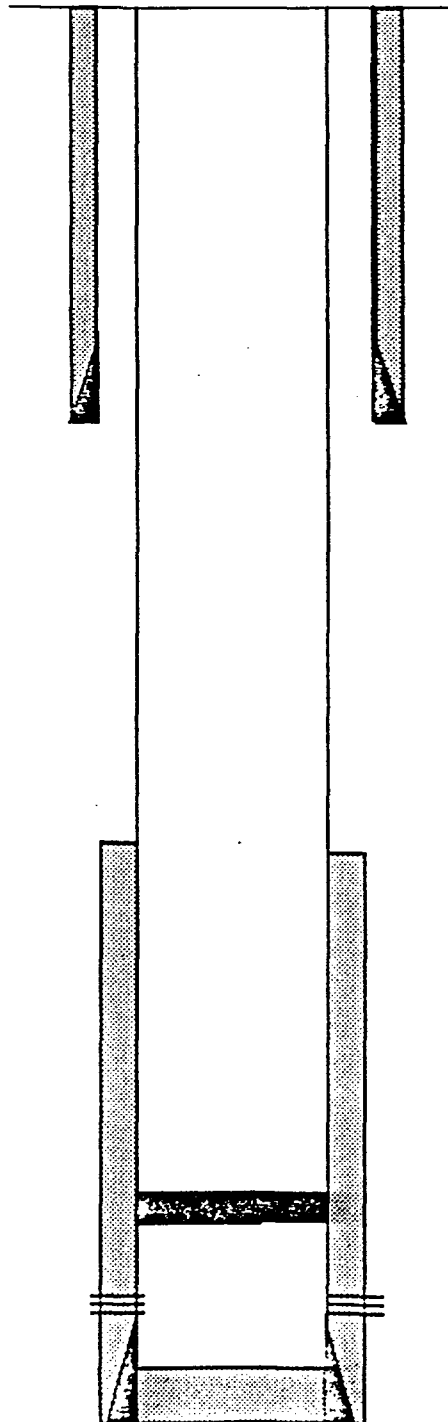
Vertical fracturing, which contributes to the gravity drainage mechanism of the reservoir, is apparently due to local slumping as well as large scale settling and some tectonic activity. Fracture orientation is generally 0 to 45 degrees from vertical and is parallel to the reef trend.

Empire Abo Unit # J-10
Present Wellbore Configuration



PBD 5672'

TD 5705'



8-5/8" @ 1455'

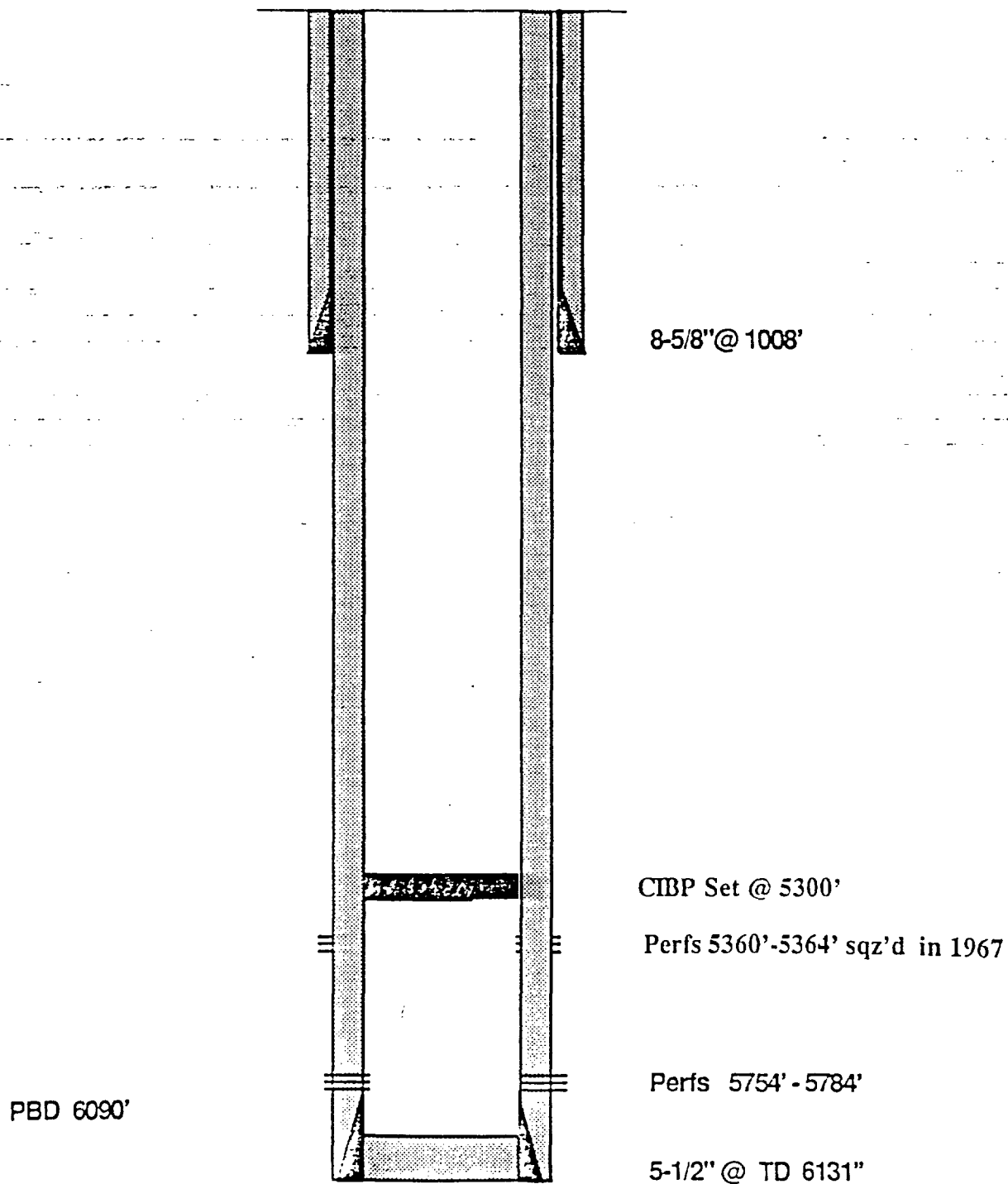
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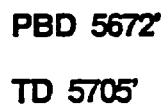
Baker Model "N" CIBP

Perfs 5564' - 5630'

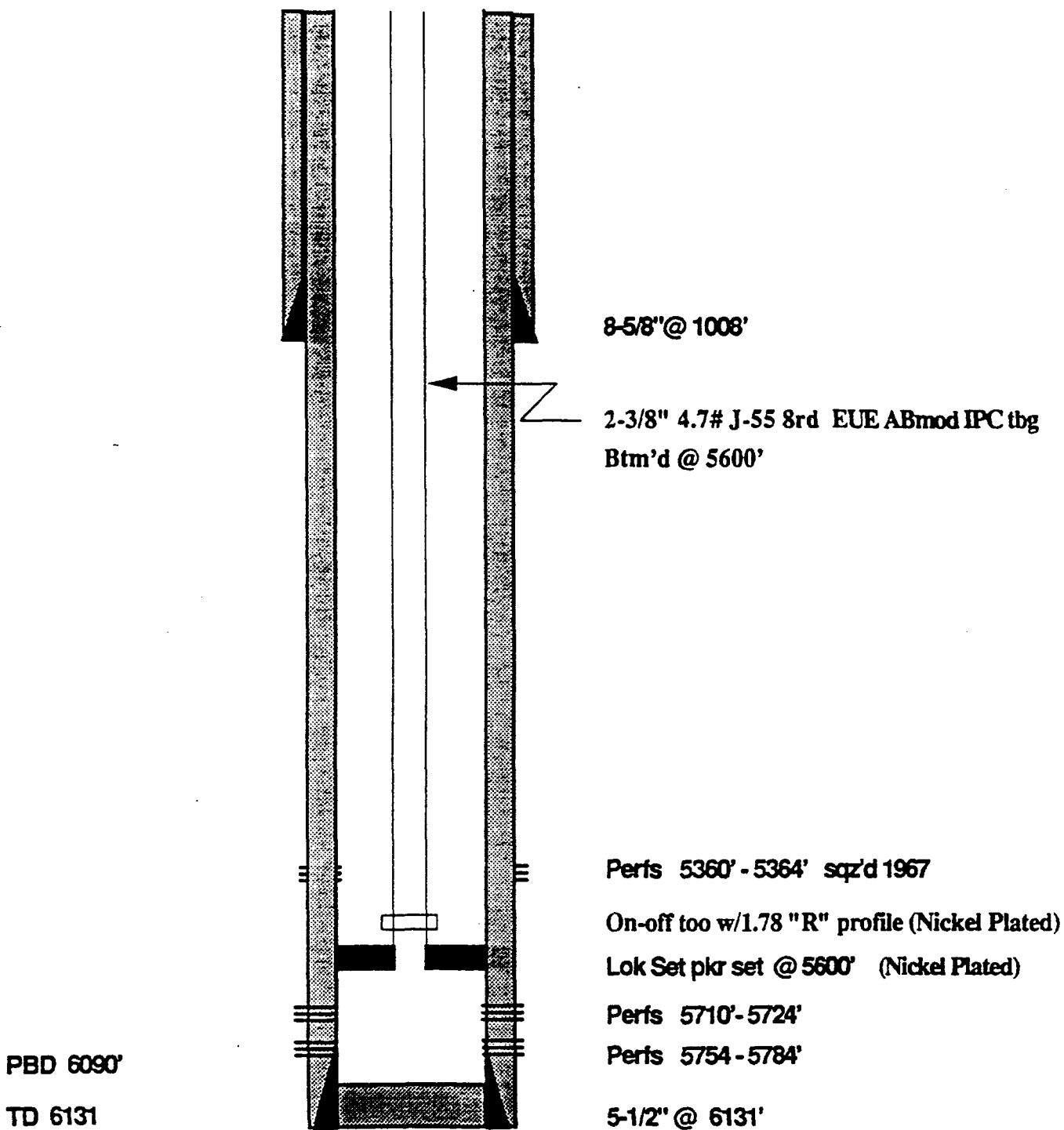
5-1/2" @ 5704"

Empire Abo Unit #J-13
Present Wellbore Configuration





Empire Abo Unit # J-13
Proposed Wellbore Configuration

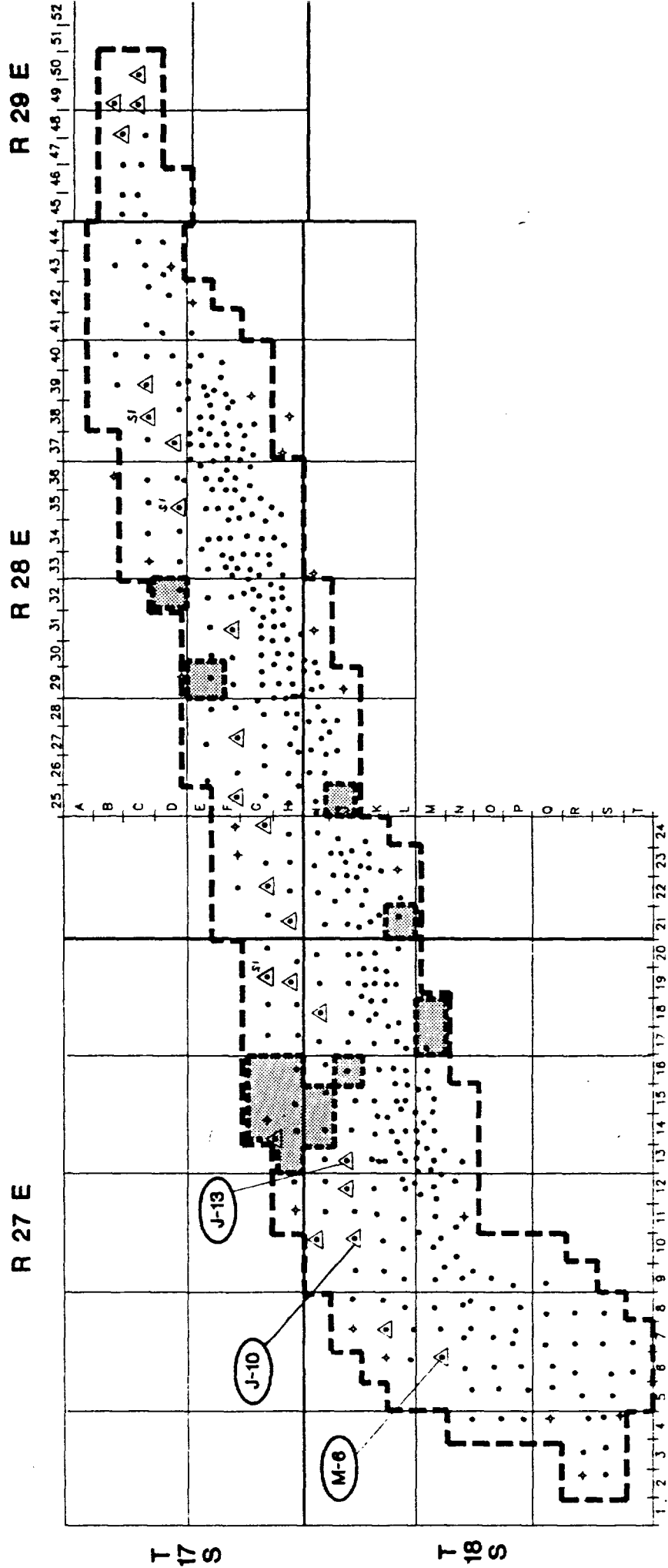


EAU
J-10

J-13

EMPIRE ABO UNIT

Eddy County, New Mexico





STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

M E M O R A N D U M

TO: INDUSTRY OPERATORS, PURCHASERS, AND ALL INTERESTED PARTIES

FROM: WILLIAM J. LEMAY, Director, Oil Conservation Division *WJL*

SUBJECT: ANNUAL STATE OF THE INDUSTRY MEETING - JUNE 8, 1990

DATE: MAY 3, 1990

This year's oil and gas State of the Industry meeting will be held in Morgan Hall, State Land Office Building, Santa Fe, New Mexico, on June 8, 1990 beginning at 9:00 A.M. Navajo Refining Company will be hosting a welcoming reception for everyone attending the State of the Industry meeting. It will be held on Thursday night, June 7, 1990, from 6:30 to 8:00 P.M. in the New Mexico Room of the La Fonda Hotel. Cocktails and hor d'oeuvres will be served. We have a varied and interesting program this year which will include presentations on crude oil and natural gas production and markets from the New Mexico, domestic, and international perspective. The agenda will be finalized and distributed prior to June 8th. The meeting is open to everyone and we hope that many of you will be able to attend.

sl/

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 3088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
505/827-5800

2-90

MEMORANDUM

TO: All Parties Appearing Before OCD Examiners or the Commission

FROM: William J. LeMay, Director *WJL*

SUBJECT: Prehearing Statement to be Filed Prior to Hearing

DATE: April 30, 1990

In order to improve the management of hearing dockets before Oil Conservation Division examiners and the Oil Conservation Commission, parties appearing in any cases are hereby requested to file a **PREHEARING STATEMENT** substantially in the form attached to this memorandum by **4:00 p.m. on the Friday before a scheduled hearing** beginning with the **Docket set for May 30, 1990**. The statements should be filed by the attorney who will be representing the party at the hearing. Two copies should be provided for examiner hearings and four copies for Commission hearings with an additional copy provided to the reporter on the day of the hearing. The statement must be served on any party who has entered an appearance pursuant to Rule 1208.

There are several benefits to be derived from the statements. First the examiner or Commission will be able to anticipate the approximate length of a case in order to schedule the court reporter and plan their own schedules. Hopefully it will also enable parties to better determine when they can expect their case to be heard. By identifying the issues and evidence in advance, the examiners and the parties will be better prepared for the hearings. Changes in witnesses and exhibits will normally be allowed.

Parties subject to this memorandum include applicants and any other party planning to appear either in opposition or support of an application. Applicants should include in the notice required under Division Rules a statement that a prehearing statement is required by any person planning to appear and that anyone wishing to receive other parties' prehearing statements or pleadings must file an entry of appearance.

If any party in a case fails to file a prehearing statement the examiner or the Commission reserves the right to make such adjustments to the docket as are appropriate in a given circumstance, such as moving the case to the end of the docket after all cases in which parties have filed their statements. Because this procedure is intended to improve the hearing process, it is hoped that the high level of support and cooperation normally shown in OCD and OCC proceedings will continue.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO.

APPLICATION OF

PRE-HEARING STATEMENT

This prehearing statement is submitted by _____
as required by the Oil Conservation Division.

APPEARANCES OF PARTIES

APPLICANT

ATTORNEY

name, address, phone and
contact person

OPPOSITION OR OTHER PARTY

ATTORNEY

name, address, phone and
contact person

STATEMENT OF CASE

APPLICANT

(Please make a concise statement of what is being sought with this application and the reasons therefore.)

OPPOSITION OR OTHER PARTY

(Please make a concise statement of the basis for opposing this application or otherwise state the position of the party filing this statement.)

PROPOSED EVIDENCE

APPLICANT

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
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OPPOSITION

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
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PROCEDURAL MATTERS

(Please identify any procedural matters which
need to be resolved prior to the hearing)

Signature

Dockets Nos. 15-90 and 16-90 are tentatively set for May 30, 1990 and June 13, 1990. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 16, 1990

8:15 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

The following cases will be heard before Michael E. Stogner, Examiner, or David R. Catanach, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for June, 1990, from fourteen prorated gas pools in Lea, Eddy, and Chaves Counties, New Mexico.
- (2) Consideration of the allowable production of gas for June, 1990, from four prorated gas pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 9937: Application of Exxon Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Laguna Salado South Unit Agreement for an area comprising 7040 acres, more or less, of State, Federal and Fee lands in all or portions of Sections 10, 15, 16, 21, 22, 23, 26, 27, 28, 33, 34 and 35, Township 23 South, Range 29 East. This area is located approximately 7 miles east of Loving, New Mexico.

CASE 9924: (Continued from May 2, 1990, Examiner Hearing.)

Application of Strata Production Company to amend Division Order No. R-9097, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks to amend Division Order No. R-9097, which authorized a horizontal directional drilling pilot project in the SE/4 of Section 18, Township 26 South, Range 25 East, being a standard 160-acre gas spacing and proration unit in the Bone Spring formation by expanding the prescribed area limiting the horizontal displacement of the proposed wellbore such that any portion thereof can be no closer than 330 feet from the North line, nor closer than 660 feet from the East and West lines, nor closer than 460 feet from the South line of said 160-acre tract. Said location is approximately 2.5 miles east of Mile Post No. 6 on U.S. Highway 62/180.

CASE 9918: (Continued from May 2, 1990, Examiner Hearing.)

Application of Mesa Operating Limited Partnership for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Basin-Fruitland Coal Gas Pool underlying Lots 1 and 2, the S/2 NE/4 and the SE/4 (E/2 equivalent) of Section 2, Township 29 North, Range 9 West, forming a standard 320.60-acre gas spacing and proration unit for said pool, to be dedicated to a well to be drilled at a standard coal gas well location in the NE/4 of said Section 2. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 1.5 miles east of Turley, New Mexico.

CASE 9919: (Continued from May 2, 1990, Examiner Hearing.)

Application of Mesa Operating Limited Partnership for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Basin-Fruitland Coal Gas Pool underlying Lots 1, 2, 7, 8, 9, 10, 15 and 16 (E/2 equivalent) of Section 33, Township 30 North, Range 10 West, forming a standard 317.04-acre gas spacing and proration unit for said pool, to be dedicated to a well to be drilled at a standard coal gas well location in the NE/4 of said Section 33. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 4.5 miles northwest of Blanco, New Mexico.

CASE 9938: Application of Petroleum Production Management, Inc. for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Vada-Pennsylvanian Pool underlying the NE/4 of Section 14, Township 9 South, Range 34 East, forming a standard 160-acre oil spacing and proration unit for said pool. Said unit is to be dedicated to the existing (M&G Oil, Inc.) Mounsey Well No. 1, located at a standard oil well location, 660 feet from the North line and 1980 feet from the East line (Unit B), which is currently temporarily abandoned in said pool. Also to be considered will be the cost of re-entering and/or recompleting said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in re-entering and/or recompleting said well. Said unit is located approximately 5.5 miles west-northwest of Crossroads, New Mexico.

CASE 9927: (Continued from May 2, 1990, Examiner Hearing.)

Application of Pacific Enterprises Oil Company (USA) for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the top of the Strawn formation to the base of the Morrow formation underlying the E/2 of Section 32, Township 22 South, Range 27 East, forming a standard 320-acre gas spacing and proration unit for any and all formations and/or pools developed on 320-acre spacing (which presently includes but is not necessarily limited to the Undesignated South Carlsbad-Strawn Gas Pool, Undesignated South Carlsbad-Atoka Gas Pool, and South Carlsbad-Morrow Gas Pool). Said unit is to be dedicated to the existing Mary L. Knobel Well No. 1, located at a standard gas well location 1980 feet from the South and East lines (Unit J), which is presently temporarily abandoned in the South Carlsbad-Morrow Gas Pool. Also to be considered will be the cost of re-entering and/or recompleting said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in re-entering and/or recompleting said well. Said unit is located approximately 2 miles west of Otis, New Mexico.

CASE 9923: (Continued from May 2, 1990, Examiner Hearing.)

Application of Santa Fe Energy Operating Partners, L. P. for surface commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Division General Rule 309-A for the surface commingling of North Young-Bone Spring Pool production into a common tank battery from its Sharp Shooter "2" State Well Nos. 1, 2, and 3 located in Units I, H, and J, respectively, of Section 2, Township 18 South, Range 32 East. Said wells are located in an area approximately 5.5 miles south-southeast of Maljamar, New Mexico.

CASE 9939: Application of Santa Fe Energy Operating Partners, L. P. for compulsory pooling and a non-standard gas proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying Lots 4 through 7 and the SE/4 (S/2 equivalent) of Irregular Section 12, Township 22 South, Range 25 East, forming a non-standard 332.74-acre gas spacing and proration unit for either the Undesignated Revelation-Morrow Gas Pool or the Undesignated Happy Valley-Morrow Gas Pool. Said unit is to be dedicated to a well to be drilled at a standard gas well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 7 miles west by south of Carlsbad, New Mexico.

CASE 9931: (Continued from May 2, 1990, Examiner Hearing.)

Application of Arco Oil & Gas Company for pressure maintenance expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Empire-Abo Unit Pressure Maintenance Project, authorized by Division Order No. R-4549, as amended, by converting its Empire Abo Unit "J" Well No. 10, located 2310 feet from the North and West lines (Unit F) of Section 3 and Empire Abo Unit "J" Well No. 13, located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, both in Township 18 South, Range 27 East, Empire-Abo Pool, Empire Abo Unit Area, from producing oil wells to gas injection wells. Both wells are located in an area approximately 4.25 miles south-southeast of Riverside, New Mexico.

CASE 9940: Application of Osborn Heirs Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the San Andres formation underlying the NW/4 NE/4 (Unit B) of Section 20, Township 17 South, Range 37 East, forming a standard 40-acre spacing and proration unit for any and all formations and/or pools developed on 40-acre spacing within said vertical extent, which presently includes but is not necessarily limited to the Undesignated Midway-San Andres Pool, said unit to be dedicated to a well to be drilled at a standard oil well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 2.75 miles northwest by west of Humble City, New Mexico.

CASE 9941: Application of Osborn Heirs Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the San Andres formation underlying the NE/4 NW/4 (Unit C) of Section 20, Township 17 South, Range 37 East, forming a standard 40-acre spacing and proration unit for any and all formations and/or pools developed on 40-acre spacing within said vertical extent, which presently includes but is not necessarily limited to the Undesignated Midway-San Andres Pool, said unit to be dedicated to a well to be drilled at a standard oil well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 3 miles west-northwest of Humble City, New Mexico.

CASE 9942: Application of Osborn Heirs Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the San Andres formation underlying the NW/4 NW/4 (Unit D) of Section 20, Township 17 South, Range 37 East, forming a standard 40-acre spacing and proration unit for any and all formations and/or pools developed on 40-acre spacing within said vertical extent, which presently includes but is not necessarily limited to the Undesignated Midway-San Andres Pool, said unit to be dedicated to a well to be drilled at a standard oil well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 3 miles west-northwest of Humble City, New Mexico.

CASE 9943: Application of Osborn Heirs Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the San Andres formation underlying the SE/4 NW/4 (Unit F) of Section 20, Township 17 South, Range 37 East, forming a standard 40-acre spacing and proration unit for any and all formations and/or pools developed on 40-acre spacing within said vertical extent, which presently includes but is not necessarily limited to the Undesignated Midway-San Andres Pool, said unit to be dedicated to a well to be drilled at a standard oil well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 2.75 miles west-northwest of Humble City, New Mexico.

CASE 9911: (Continued from May 2, 1990, Examiner Hearing.)

Application of Union Oil Company of California for a highly deviated directional drilling pilot project and unorthodox coal gas well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to initiate a highly deviated directional drilling pilot project in the N/2 of Section 20, Township 27 North, Range 6 West, forming a standard 320-acre gas spacing unit in the Basin-Fruitland Coal Gas Pool by commencing its Rincon Unit Well No. 254 at a standard surface location 1581 feet from the North line and 1929 feet from the East line (Unit G) of said Section 20 and drilling to a true vertical depth of approximately 2250 feet and then commencing a medium radius curve in a westerly direction to encounter the top of the Basin-Fruitland Coal Gas Pool at a true vertical depth of approximately 2920 feet at which point the wellbore will be drilled to the base of the Basin-Fruitland Coal Gas Pool at a true vertical depth of approximately 3040 feet and then to a total depth at a true vertical depth of approximately 3100 feet with a terminus at an unorthodox bottomhole location in the NW/4 of Section 20; however, said wellbore will be no closer than 790 feet from the outer boundary of the spacing or proration unit. This unit is located approximately 10 miles southwest of Gobernador, New Mexico.

CASE 9930: (Continued from May 2, 1990, Examiner Hearing.)

Application of Union Oil Company of California to amend Division Order No. R-6375, as amended, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks to amend Division Order No. R-6375, as amended, which authorized downhole commingling of Basin-Dakota and Largo-Gallup production within the Rincon Unit Well No. 164 located 1840 feet from the South line and 1090 feet from the West line (Unit L) of Section 2, Township 26 North, Range 7 West, by reviewing and re-establishing, if necessary, the allocation of production that was set forth by the provisions of said order. The subject well is located approximately 2 miles north-northeast of the El Paso Natural Gas Company Largo Station.

CASE 9907: (Readvertised) (Continued from May 2, 1990, Examiner Hearing.)

Application of Enron Oil & Gas Company for compulsory pooling and an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Atoka formation underlying the following described acreage in Section 1, Township 24 South, Range 28 East, and in the following described manner: Lots 1, 2, 3, and 4 and the S/2 N/2 (N/2 equivalent) to form a 319.36-acre gas spacing and proration unit for any and all formations and/or pools developed on 320-acre spacing within said vertical extent (which presently includes but is not necessarily limited to either the Undesignated South Culebra Bluff-Atoka Gas Pool or Undesignated Malaga-Atoka Gas Pool); Lots 3 and 4 and the S/2 NW/4 (NW/4 equivalent) to form a 159.52-acre gas spacing and proration unit for any and all formations developed on 160-acre spacing within said vertical extent; Lot 3 and the SE/4 NW/4 (E/2 NW/4 equivalent) to form a 79.80-acre oil spacing and proration unit for the Undesignated South Culebra Bluff-Bone Spring Pool which is developed on 80-acre spacing; and Lot 3 (NE/4 NW/4 equivalent) to form a 39.80-acre oil spacing and proration unit for any and all formations and/or pools developed on statewide 40-acre oil spacing (which presently includes but is not necessarily limited to either the Undesignated Malaga-Delaware Pool or Undesignated North Malaga-Delaware Pool). Said units are to be dedicated to a single well to be drilled 660 feet from the North line and 1680 feet from the West line (Unit L) of said Section 1, which is a standard location for zones spaced on 160 or 40 acres, however is unorthodox for zones spaced on 320 or 80 acres. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 1 mile west of Harroun, New Mexico.

CASE 9898: (Continued from May 2, 1990, Examiner Hearing.)

Application of Doyle Hartman for compulsory pooling, a non-standard gas proration unit and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Eumont Gas Pool underlying the SE/4 SW/4 and SE/4 of Section 5 and the NE/4 NE/4 and NE/4 NW/4 of Section 8, all in Township 20 South, Range 37 East, forming a non-standard 280-acre gas spacing and proration unit for said pool. The applicant proposes to dedicate all production from the Eumont Gas Pool to the existing Britt-Laughlin Com. Well No. 5 (formerly the Oxy USA, Inc. Laughlin "8" Well No. 5) located 330 feet from the South line and 2310 feet from the East line (Unit O) of said Section 5 and to the existing Britt-Laughlin Com. Well No. 1 (formerly the Britt "8-8" Well No. 1) located 660 feet from the North line and 1980 feet from the West line (Unit C) of said Section 8 and to a third well to be drilled at an undetermined location in the SE/4 of said Section 5. Applicant further seeks to be designated operator of the non-standard gas proration unit so created and be entitled to recover out of the production therefrom his costs of drilling, completing and equipping a new infill well, plus a 200% risk factor for drilling, completing and equipping such new infill well, and an equitable and proper percentage of the value of the existing wellbores of applicant's Britt-Laughlin Com. Well Nos. 1 and 5, and all costs of supervision and operation of such non-standard gas proration unit, and that such order also provide for any other relief which may be deemed equitable and proper. The subject area is located approximately 2.25 miles south of Monument, New Mexico.

CASE 9854: (Reopened) (Readvertised)

In the matter of Case 9854 being reopened pursuant to the provisions of Division Order No. R-9131 which order promulgated temporary special rules and regulations including a provision for 160-acre spacing in the Diablo-Fusselman Pool, Chaves County, New Mexico. Operators in the subject pool may appear and present evidence, testimony and recommendations regarding the proper spacing and most efficient rate of production for the Diablo-Fusselman Pool. The applicant in the original case, Stevens Operating Corporation, also seeks at this time to include within the Special Rules and Regulations for the Diablo-Fusselman Pool provisions for administrative approval of horizontal/high-angle wellbores and to allow the formation of oversized proration units to accommodate such wellbores.

DOCKET: COMMISSION HEARING - THURSDAY - MAY 24, 1990

9:00 A.M. - MORGAN HALL, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

CASE 9944: In the matter of the application of the Oil Conservation Division on its own motion for an order amending Rule 0.1 by amending and adding certain definitions and repealing existing Rules 201, 202, 203, and 204 and adopting new Rules 201, 202, 203, and 204 of the General Rules and Regulations of the Oil Conservation Division. Said changes all pertain to the temporary abandonment, plugging, inactive status and shut-in status of wells.

CASE 9018: (Reopened and Readvertised.)

In the matter of Case 9018 being reopened pursuant to the provisions of Division Order No. R-8170-D, which Order amended Rule 111(b) of Order R-8170-A, in order to take evidence on the following:

1. Whether larger overproduction limit in Northwest New Mexico established by Rule 11(b) as amended by Order R-8170-A is beneficial in preventing waste, and protecting correlative rights, while making the supply of gas available to meet interstate and intrastate demand.
2. The reasons for pools being underproduced when many wells are overproduced and whether or not the amendment has any affect on that issue.
3. Any transition mechanism which should be adopted if the Commission determines that a return to the 6 times overproduced limit is appropriate.

CASE 9854: (De Novo)

Application of Stevens Operating Corporation for pool creation and special pool rules, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the creation and special pool rules, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the Fusselman formation comprising the S/2 of Section 21 and the N/2 of Section 28, Township 10 South, Range 27 East, and for the promulgation of special rules and regulations therefor including provisions for 320-acre oil spacing and proration units, designated well location requirements, a special gas-oil ratio limitation of 20,000 cubic feet of gas per barrel of oil, and a special 320-acre oil allowable of 650 barrels per day. Said area is located at Mile Post No. 174 on U.S. Highway 380. Upon application of Yates Petroleum Corporation, this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 9797: (De Novo)

Application of Santa Fe Energy Operating Partners, L.P. for compulsory pooling and a non-standard gas proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Morrow formation underlying Lots 1 through 7 and the NW/4 NE/4 (N/2 equivalent) of Section 20, Township 23 South, Range 25 East, forming a non-standard 301.37-acre gas spacing and proration unit for any and all formations developed on 320-acre spacing within said vertical extent, said unit to be dedicated to a well to be drilled at a standard gas well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant an operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 6 miles south by east of Riverside, New Mexico. Upon application of Exxon Corporation, this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 9832: (De Novo)

Application of Exxon Company, U.S.A. for compulsory pooling, a non-standard gas proration unit, an unorthodox gas well location, and an exemption to Special Rules and Regulations governing the Rock Tank-Upper and Lower Morrow Gas Pools, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral from the top of the Wolfcamp formation to the base of the Morrow Formation, underlying the NW/4 NE/4 and Lots 1, 6, 7, 8, 9, 14, and 15 (E/2 equivalent) of Section 20, Township 23 South, Range 25 East, forming a non-standard 301.11-acre gas spacing and proration unit for any and all formations and/or pools developed on 320-acre spacing within said vertical extent. Applicant further seeks to be exempt from the Special Rules and Regulations governing the Rock Tank-Upper and Lower Morrow Gas Pools as promulgated by Division Order No. R-3452, as amended. Said unit is to be dedicated to a well to be drilled at an unorthodox gas well location 600 feet from the North line and 660 feet from the East line (Unit A) of said Section 20. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision and a charge for risk involved in drilling said well. Applicant also seeks to have Santa Fe Energy Operating Partners, L.P. designated as operator of said well. Said unit is located approximately 6 miles south by east of Riverside, New Mexico. Upon application of Exxon Corporation, this case will be heard De Novo pursuant to the provisions of Rule 1200.

CASE 9867: (De Novo)

Application of Mallon Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Brushy Draw-Delaware Pool underlying the NW/4 NE/4 (Unit 8) of Section 28, Township 26 South, Range 29 East, forming a standard 40-acre oil spacing and proration unit for said pool. The above-described unit is to be dedicated to the Amoco Red Bluff Federal Well No. 3 drilling at a previously approved unorthodox oil well location 130 feet from the North line and 1805 feet from the East line of said Section 28. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 1.25 miles north of Mile Corner No. 54 on the Texas/New Mexico Stateline. Upon application of George Mitchell d/b/a G.P. II Energy, Inc., this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 9868: (De Novo)

Application of George Mitchell d/b/a/ G.P. II Energy, Inc. for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Cherry Canyon formation underlying the NW/4 NE/4 (Unit 8) of Section 28, Township 26 South, Range 29 East, forming a standard 40-acre oil spacing and proration unit for any and all formations and/or pools developed on 40-acre spacing within said vertical extent, which includes but is not limited to the Brushy Draw-Delaware Pool. Said unit is to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 1.25 miles north of Mile Corner No. 54 on the Texas/New Mexico Stateline. Upon application of George Mitchell d/b/a G.P. II Energy, Inc., this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 9883: (De Novo)

Application of BTA Oil Producers for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox oil well location for its Pardue "C" 8808 JV-P Well No. 1 to be drilled 176 feet from the South line and 1550 feet from the West line (Unit N) of Section 11, Township 23 South, Range 28 East, to test the Undesignated East Loving-Delaware Pool, the SE/4 SW/4 of said Section 11 to be dedicated to said well forming a standard 40-acre oil spacing and proration unit. Said unit is located approximately 1/4 miles southwest of the Harroun Dam. Upon application of Bird Creek Resources, this case will be heard De Novo pursuant to the provisions of Rule 1220.



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

May 14, 1990

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

KELLAHIN, KELLAHIN AND AUBREY
P. O. Box 2265
Santa Fe, New Mexico 87504-2265

ATTN: W. THOMAS KELLAHIN
General Council for
Oxy USA, Inc.

CAMBELL & BLACK, P.A.
P. O. Box 2208
Santa Fe, New Mexico 87504-2208

ATTN: WILLIAM F. CARR
General Council for
Arco Oil & Gas Company

RE: NMOCD Case No. 9931
Application of Arco Oil & Gas
Company for Pressure
Maintenance Expansion,
Empire Abo Unit,
Eddy County, New Mexico

Dear Messrs. Kellahin and Carr:

The request for Oxy USA, Inc. by letter through the office of Kellahin, Kellahin and Aubrey dated May 11, 1990 to continue Case No. 9931 from the examiner hearing scheduled for May 16, 1990 to May 30, 1990, is hereby denied.

Sincerely,


Michael E. Stogner
Examiner

MES/si

cc: OCD Artesia Office
R. Stovall, OCD Santa Fe Office

Memo

From

ROBERT G. STOVALL
General Counsel

To

Mike -
I talked to Laur
about TK's fax.
I will speak with
you in the A.M.

Oil Conservation Division Santa Fe, New Mexico 87503
(505) 827-5805

FAX COVER SHEET

Date

5/14/90

Log No.

Time 4:20 pm

Number of Pages:
(Including cover sheet)

34

TO:

Mr./Ms MICHAEL E. STOGNER

FROM:

Mr./Ms W. THOMAS KELLAHIN

Of NM CD

Of:

KELLAHIN, KELLAHIN & AUBREY

P. O. Box 2265

Santa Fe, NM 87504-2265

FAX #.

827-5741

Address:

FAX #:

982-2047

COPY TO:

SPECIAL INSTRUCTIONS:

RE: MOTION TO DISMISS
NMOCD CASE 9931

- ☐ Confidential
- ☐ Urgent
- ☐ Please reply
- ☐ For your information

SUBJECT:

LETTER DATED 5/14/90 From
W. THOMAS KELLAHIN TO MICHAEL E. STOGNER

KELLAHIN, KELLAHIN AND AUBREY

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87504-2265

TELEPHONE (505) 982-4285

TELEFAX (505) 982-2047

W. THOMAS KELLAHIN
KAREN AUBREY

CANDACE HAMANN CALLAHAN

JASON KELLAHIN
OF COUNSEL

May 14, 1990

Mr. Michael E. Stogner
Hearing Examiner]
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

HAND DELIVERED

Re: Motion to Dismiss
NMOCD Case 9931
Application of ARCO Oil & Gas Company
for Pressure Maintenance Expansion
Empire Abo Unit
Eddy County, N.M.

DELIVERED BY
FAX (827-5741)

Dear Mr. Stogner:

On behalf of Oxy USA, Inc. we hereby move the Division to dismiss the referenced Application of ARCO and in support thereof state:

(1) That Division docket No 13-90 has advertised for hearing an Application by ARCO for the expansion of its pressure maintenance project by the conversion of the J-10 and J-13 wells from producing to gas injection.

(2) That Arco seeks the conversion of the J-13 well to gas injection, said well being located in the SW/4NW/4 of Section 2, approximately 1000 feet from the Oxy USA, Inc. tract in the NE/4NW/4 of Section 2, T18S, R27E, N.M.P.M., a tract not in the ARCO unit.

(3) Division Order R-4549 (copy enclosed) which approved the ARCO project contains Rule 7 which specifically prohibits the Division from approving the J-13 well as an injector because it is closer than 1650 feet to a tract which is not committed to the unit.

(4) That the Division docket fails to advertise for the approval of an unorthodox injection well location and exception to Rule 7 of R-4549 or in the alternative fails to seek to modify Rule 7.

Mr. Michael E. Stogner
May 14, 1990
Page 2

(5) In the absence of a hearing and subsequent order amending Rule 7 of Order R-4549, ARCO is precluded by Division order from using the J-13 for gas injection and the Division lacks jurisdiction to grant an exception for the J-13 well as the case is currently docketed for hearing on May 16, 1990.

In the absence of a properly docketed and advertised case, the Division lack jurisdiction to proceed with this matter and the application must be dismissed.

Respectfully submitted



W. Thomas Kellahan

WTK/tic
Enclosure

cc: William F. Carr, Esq (by FAX 983-6043)

RULE 7. A. (As Amended by Order No. R-4549-B, April 30, 1974, Order No. R-4549-E, January 28, 1980, and Renumbered by Order No. R-4549-F, April 20, 1984.) The Director of the Division is hereby authorized to approve such additional producing wells and gas injection and water injection wells at orthodox and unorthodox locations within the boundaries of the ARCO Empire Abo Unit Area as may be necessary to complete an efficient production and injection pattern, provided said wells are drilled no closer than 660 feet to any outer boundary of said unit nor closer than 10 feet to any quarter-quarter section or subdivision inner boundary and provided that no well shall be approved for gas or water injection when such well is located closer than 1650 feet to a tract which is not committed to the unit and on which is located a well producing from the same common source of supply. To obtain such approval, the project operator shall file proper application with the Division Director, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells shall include the following:

(1) A plat identifying the lands committed to the unit agreement and those lands not committed to said agreement, and showing the location of the proposed well, all wells within the unit area, and offset operators.

(2) A schematic drawing of the proposed well which fully describes the casing, tubing, perforated interval, and depth.

(3) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the date of notification.

RULE 7. B. (As Amended by Order No. R-4549-B, April 30, 1974, Order No. R-4549-E, January 28, 1980, and Renumbered by Order No. R-4549-F, April 20, 1984.) The Director of the Division is hereby authorized to approve the drilling of "horizontal drainholes" for the purposes of production or injection within the boundaries of the ARCO Empire Abo Unit Area as may be necessary to complete an efficient production and injection pattern, provided no perforated or openhole portion of said wells shall be closer than 330 feet to the outer boundary of said unit or to any tract not committed to such unit nor, in the case of a well to be used for injection closer than 1650 feet to such boundary or tract. To obtain such approval, the project operator shall file proper application with the Division Director, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells shall include the following:

(1) A plat identifying the lands committed to said agreement and those lands not committed to said agreement, and showing the location of the proposed well, all wells within the unit area, and offset operators.

(2) Schematic drawings of the proposed well which fully describes the casing, tubing, perforated or open-hole interval, kick-off point, and proposed trajectory of the drainhole section.

(3) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the date of notification.

RULE 7. C. (As Amended by Order No. R-4549-B, April 30, 1974, Order No. R-4549-E, January 28, 1980, and Renumbered by Order No. R-4549-F, April 20, 1984.) The Director may approve the proposed well if, within 20 days after receiving the application, no objection to the proposal is received. The Director may grant immediate approval, provided waivers of objection are received from all offset operators.

RULE 7. D. (As Amended by Order No. R-4549-B, April 30, 1974, Order No. R-4549-E, January 28, 1980, and Renumbered by Order No. R-4549-F, April 20, 1984.) Within 20 days following completion of any horizontal drainhole the operator shall submit a report to the Division Director with sufficient detail to locate the kick-off point and the trajectory of the deviated portion of the well bore with respect to any quarter-quarter section(s) penetrated by such well and any 40-acre tract directly or diagonally offsetting such quarter-quarter section(s).

The Director may approve the final location of the horizontal drainhole by acceptance of such report.

The Director may rescind the authority for any horizontal drainhole if the perforated or openhole portion of such hole is located closer to the unit boundary or any uncommitted tract than permitted by these rules or if it should appear that such rescission is necessary to prevent waste or protect correlative rights.

RULE 8. (As Amended and Renumbered by Order No. R-4549-F, April 20, 1984.) Expansion or contraction of the project area may be approved by the Director of the Division administratively when good cause is shown therefor.

(4) 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.

CAMPBELL & BLACK, P.A.
LAWYERS

JACK M. CAMPBELL
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
MARK F. SHERIDAN
WILLIAM P. SLATTERY
PATRICIA A. MATTHEWS

JEFFERSON PLACE
SUITE 1 - 110 NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87504-2208
TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

May 14, 1990

HAND-DELIVERED

Mr. Michael E. Stogner
Hearing Examiner
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
State Land Office Building
Santa Fe, New Mexico 87501

RECEIVED

MAY 14 1990

OIL CONSERVATION DIV.
SANTA FE

Re: Case 9931. *ms.*

Application of ARCO Oil & Gas Company for Pressure Maintenance
Expansion, Eddy County, New Mexico

Dear Mr. Stogner:

This letter is in response to the May 11, 1990 request of OXY U.S.A., Inc. for continuance of the above-referenced case to May 30, 1990. ARCO opposes this continuance and states:

1. Arco mailed OCD Form C-108 to OXY on March 21, 1990 thereby giving OXY notice of its intention to convert two existing wells in the ARCO operated Empire Abo Unit to gas injection.
2. This proposal was reviewed with OXY personnel on April 2, 1990.
3. By letter from the Division dated April 9, 1990 this case was set for hearing due to the objection of OXY to convert to injection the J-13 Well. The case was set for hearing on May 2, 1990.

Mr. Michael E. Stogner
Hearing Examiner
May 14, 1990
Page Two

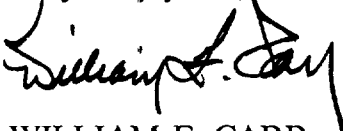
*(Kellahin
Albert)*

4. On April 12, 1990, OXY requested the case be continued to May 16 and further noted that additional notice of the hearing was required. ARCO agreed to the continuance.
5. By letter dated April 20, 1990, OXY requested certain data from ARCO. The letter was mailed on April 23, 1990 and received by the addressee on April 30, 1990.
6. On May 2, 1990 the request for information was discussed with OXY and ARCO advised OXY that much of the requested data had been routinely supplied to them. On May 4, 1990 OXY reduced the amount of data it was requesting from ARCO.
7. On May 9, 1990 the requested data was provided to OXY.

ARCO opposes OXY's request and asserts that it did not promptly request data from ARCO and further notes that much of the information sought had previously been supplied to OXY. Further ARCO opposes the request for continuance because delays in obtaining OCD approval of this application and commencing injection of gas as proposed will result in the waste of hydrocarbons.

Your attention to this matter is appreciated.

Very truly yours,



WILLIAM F. CARR
WFC:mlh

cc: W. Thomas Kellahin, Esq. **"Hand-Delivered"**

KELLAHIN, KELLAHIN AND AUBREY

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87504-2265

TELEPHONE (505) 982-4285

TELEFAX (505) 982-2047

W. THOMAS KELLAHIN
KAREN AUBREY

CANDACE HAMANN CALLAHAN

JASON KELLAHIN
OF COUNSEL

May 11, 1990

HAND DELIVERED

Mr. Michael E. Stogner
Hearing Examiner
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: Motion for Continuance *m.s.*
NMOCD Case No. 9931
Application of Arco Oil & Gas Company
for Pressure Maintenance Expansion
Empire Abo Unit
Eddy County, New Mexico

Dear Mr. Stogner:

Our firm represents Oxy USA, Inc. and has previously entered our written appearance in opposition to the referenced case which is now set for hearing by you on May 16, 1990.

I am hereby requesting that this case be continued to the Examiner's hearing set for May 30, 1990, and in support thereof state:

(1) Arco Oil & Gas Company ("ARCO") proposes to convert two existing producing wells in the Empire Abo pool to gas injection.

(2) Oxy USA, Inc. ("OXY") is the operator of a producing well on an offset tract which is closer than 1650 feet to one of these proposed gas injection wells and is concerned that the ARCO project will adversely affect the correlative rights of OXY.

(3) On April 20, 1990, OXY requested in writing data from ARCO from which to study the possible effect of the Arco proposal on the OXY operations.

(4) On May 2, 1990, ARCO informed OXY that it would make the data available within one week provided OXY paid ARCO some \$5,000.

Mr. Michael E. Stogner
May 11, 1990
Page 2

(5) In response to the ARCO demand, on May 4, 1990, OXY revised its initial request for data.

(6) On May 9, 1990, ARCO, at a cost to OXY of \$1345.00, supplied certain data which OXY is now evaluating.

(7) There remains insufficient time from the date the data was supplied to OXY and the date of the hearing to adequately evaluate that data, determine if it is sufficiently complete, and prepare for the hearing now set for May 16, 1990.

(8) In the absence of a continuance, OXY will be denied due process and an opportunity to effectively participate in this hearing.

(9) OXY is unaware of any reasons a continuance would adversely affect ARCO.

(10) Counsel for ARCO has been contacted and ARCO is opposed to the continuance.

WHEREFORE, OXY USA, Inc. requests that the Hearing Examiner grant a continuance of this case to the Hearing now set for May 30, 1990.

Respectfully submitted



W. Thomas Kellahin

WTK/tic

xc: Hand Delivered to:

William F. Carr, Esq.

Dockets Nos. 13-90 and 14-90 are tentatively set for May 16, 1990 and May 30, 1990. Applications for hearing must be filed at least 22 days in advance of hearing date.

**DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 2, 1990
8:15 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO**

The following cases will be heard before David R. Catanach, Examiner, or Michael E. Stogner, Alternate Examiner:

- CASE 9922: Application of Heafitz Energy Management Inc. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authorization to commingle gas production from the Arena Roja-Pennsylvanian Gas Pool and the Silurian formation within the wellbore of the Falcon Engineering Company Inc. Mexico "P" Federal Well No. 1 located 1980 feet from the North and West lines (Unit F) of Section 21, Township 26 South, Range 35 East. Said well is located approximately 12 miles west-southwest of Jal, New Mexico.
- CASE 9923: Application of Santa Fe Energy Operating Partners, L. P. for surface commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Division General Rule 309-A for the surface commingling of North Young-Bone Spring Pool production into a common tank battery from its Sharp Shooter "2" State Well Nos. 1, 2, and 3 located in Units I, H, and J, respectively, of Section 2, Township 18 South, Range 32 East. Said wells are located in an area approximately 5.5 miles south-southeast of Maljamar, New Mexico.
- CASE 9924: Application of Strata Production Company to amend Division Order No. R-9097, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks to amend Division Order No. R-9097, which authorized a horizontal directional drilling pilot project in the SE/4 of Section 18, Township 26 South, Range 25 East, being a standard 160-acre gas spacing and proration unit in the Bone Spring formation by expanding the prescribed area limiting the horizontal displacement of the proposed wellbore such that any portion thereof can be no closer than 330 feet from the North line, nor closer than 660 feet from the East and West lines, nor closer than 460 feet from the South line of said 160-acre tract. Said location is approximately 2.5 miles east of Mile Post No. 6 on U.S. Highway 62/180.
- CASE 9925: Application of Siete Oil & Gas Corporation for a waterflood project, Eddy and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a cooperative lease waterflood project in the Shugart (Yates-Seven Rivers-Queen-Grayburg) Pool by the injection of water into said pool through selected perforated intervals from approximately 3768 feet to 4310 feet in three certain existing wells located on the applicant's Conoco Federal, Inca Federal, ARCO Federal, and Geronimo Federal Leases, located in portions of Sections 18 and 19, Township 18 South, Range 32 East, Lea County, and Section 24, Township 18 South, Range 31 East, Eddy County. Said cooperative area is located in an area approximately 8.5 miles south-southwest of Maljamar, New Mexico.
- CASE 9926: Application of Mewbourne Oil Company for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Morrow formation underlying the following described acreage in Section 21, Township 18 South, Range 27 East, and in the following described manner: the N/2 to form a standard 320-acre gas spacing and proration unit for any and all formations and/or pools developed on 320-acre spacing within said vertical extent (which presently includes but is not necessarily limited to the Undesignated Red Lake-Pennsylvanian Gas Pool, Undesignated Red Lake Atoka-Morrow Gas Pool, and Undesignated Scoggin Draw-Morrow Gas Pool); the NE/4 to form a standard 160-acre gas spacing and proration unit for any and all formations developed on 160-acre spacing within said vertical extent; and the NE/4 NE/4 to form a standard 40-acre oil spacing and proration unit for any and all formations and/or pools developed on statewide 40-acre oil spacing (which presently includes but is not necessarily limited to the Undesignated Artesia Queen-Grayburg-San Andres Pool, Undesignated East Dayton-Grayburg Pool and Undesignated Empire-Abo Pool). Said units are to be dedicated to a single well to be drilled at a location 660 feet from the North and East lines (Unit A) of said Section 21, being a standard location for zones spaced on 40 and 160 acres and unorthodox for zones spaced on 320 acres. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said area is located approximately 6.5 miles south by east of Riverside, New Mexico.
- CASE 9927: Application of Pacific Enterprises Oil Company (USA) for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the top of the Strawn formation to the base of the Morrow formation underlying the E/2 of Section 32, Township 22 South, Range 27 East, forming a standard 320-acre gas spacing and proration unit for any and all formations and/or pools developed on 320-acre spacing (which presently includes but is not necessarily limited to the Undesignated South Carlsbad-Strawn Gas Pool, Undesignated South Carlsbad-Atoka Gas Pool, and South Carlsbad-Morrow Gas Pool). Said unit is to be dedicated to the existing Mary L. Knobel Well No. 1, located at a standard gas well location 1980 feet from the South and East lines (Unit J), which is presently temporarily abandoned in the South Carlsbad-Morrow Gas Pool. Also to be considered will be the cost of re-entering and/or recompleting said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in re-entering and/or recompleting said well. Said unit is located approximately 2 miles west of Otis, New Mexico.
- CASE 9439: (Reopened) (Continued from April 18, 1990, Examiner Hearing.)
- In the matter of Case 9439 being reopened pursuant to the provisions of Division Order No. R-8770 which Order promulgated temporary special pool rules and regulations including a provision for 80-acre spacing and proration units, designated well locations, and a poolwide exception to Division Rule No. 111 allowing for directional drilling or well deviations of more than five degrees in any 500-foot interval in the Vada-Devonian Pool, Lea County, New Mexico. Operators in the subject pool may appear and show cause why the temporary rules for the Vada-Devonian Pool promulgated herein should not be rescinded.

CASE 9912: (Continued from April 18, 1990, Examiner Hearing.)

Application of Conoco Inc. for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox oil well location 2310 feet from the North line and 660 feet from the West line (Unit E) of Section 35, Township 16 South, Range 37 East, to test either the Undesignated Casey-Strawn Pool or Undesignated Shipp-Strawn Pool, the S/2 NW/4 of said Section 35 to be dedicated to said well forming a standard 80-acre oil spacing and proration unit for either pool. Said unit is located approximately 5.75 miles north of Humble City, New Mexico.

CASE 9928: Application of Oryx Energy Company for two unorthodox gas well locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for two unorthodox gas well locations in Section 26, Township 22 South, Range 34 East, to test any and all formations and/or pools from the top of the Wolfcamp formation to the base of the Morrow formation that is being developed on 320-acre spacing (which presently includes but is not necessarily limited to the Undesignated Ojo Chiso-Strawn Gas Pool, Undesignated Antelope Ridge-Atoka Gas Pool, Undesignated Antelope Ridge-Morrow Gas Pool, and the Undesignated Ojo Chiso-Morrow Gas Pool). The E/2 is to be dedicated to the existing Ojo Chiso Federal Well No. 2 located 990 feet from the South line and 2030 feet from the East line (Unit O) and the W/2 to be dedicated to the proposed Ojo Chiso Federal Well No. 3 to be drilled 990 feet from the South and West lines (Unit M). Said Section 26 is located approximately 4 miles north-northwest of the San Simon Sink.

CASE 9894: (Continued from April 4, 1990, Examiner Hearing.)

Application of Richmond Petroleum, Inc. for compulsory pooling, unorthodox coal gas well location, and a non-standard gas spacing and proration unit, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Basin-Fruitland Coal Gas Pool underlying Lots 1 through 4 and the S/2 N/2 of Irregular Section 11, Township 32 North, Range 6 West, forming a non-standard 232.80-acre gas spacing and proration unit for said pool, said unit to be dedicated to a well to be drilled at a non-standard coal gas well location 1130 feet from the North line and 760 feet from the West line (Unit E) of said Section 11. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is bounded to the north by the State of Colorado for one-half mile of either side of Astronomical Monument No. 8 located on the Colorado/New Mexico stateline.

CASE 9895: (Continued from April 4, 1990, Examiner Hearing.)

Application of Richmond Petroleum, Inc. for compulsory pooling and an unorthodox coal gas well location, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Basin-Fruitland Coal Gas Pool underlying the S/2 of Irregular Section 11, Township 32 North, Range 6 West, forming a standard 320-acre gas spacing and proration unit for said pool, said unit to be dedicated to a well to be drilled at a non-standard coal gas well location 1800 feet from the South line and 230 feet from the West line (Unit L) of said Section 11. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located 1/2 mile south of Astronomical Monument No. 8 located on the Colorado/New Mexico stateline.

CASE 9929: Application of Socorro Petroleum Company for a waterflood expansion and to amend Division Order R-2268 and Administrative Orders WFX-585 and WFX-587, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Keel-West Waterflood Project, authorized by Division Order Nos. R-2268, R-2268-A and R-2268-B, by converting its H.E. West "B" Well No. 24, located 660 feet from the North and East lines (Unit A) of Section 10, Township 17 South, Range 31 East, Grayburg-Jackson Pool, from a producing oil well to a water injection well with an increased injection pressure exceeding the Division's standard 0.2 psi/ft. limitation. Also, the applicant seeks authorization to increase the surface injection limitation pressure for 15 certain injection wells in the Keel-West Waterflood Project, as previously set in either Division Administrative Orders WFX-585, WFX-587, or Division Order No. R-2268 (supplemental) to comply with the 0.2 psi/ft. standard, to 450 psi above the formation parting pressure as determined from step-rate test taken within the Project Area which covers all of Sections 3 through 10 of said Township 17 South, Range 31 East. Said project area is located approximately 7 miles west of Maljamar, New Mexico.

CASE 9911: (Continued from April 18, 1990, Examiner Hearing.)

Application of Union Oil Company of California for a highly deviated directional drilling pilot project and unorthodox coal gas well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to initiate a highly deviated directional drilling pilot project in the N/2 of Section 20, Township 27 North, Range 6 West, forming a standard 320-acre gas spacing unit in the Basin-Fruitland Coal Gas Pool by commencing its Rincon Unit Well No. 254 at a standard surface location 1581 feet from the North line and 1929 feet from the East line (Unit G) of said Section 20 and drilling to a true vertical depth of approximately 2250 feet and then commencing a medium radius curve in a westerly direction to encounter the top of the Basin-Fruitland Coal Gas Pool at a true vertical depth of approximately 2920 feet at which point the wellbore will be drilled to the base of the Basin-Fruitland Coal Gas Pool at a true vertical depth of approximately 3040 feet and then to a total depth at a true vertical depth of approximately 3100 feet with a terminus at an unorthodox bottomhole location in the NW/4 of Section 20; however, said wellbore will be no closer than 790 feet from the outer boundary of the spacing or proration unit. This unit is located approximately 10 miles south-southwest of Gobernador, New Mexico.

CASE 9930: (This case will be continued.)

Application of Union Oil Company of California to amend Division Order No. R-6375, as amended, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks to amend Division Order No. R-6375, as amended, which authorized downhole commingling of Basin-Dakota and Largo-Gallup production within the Rincon Unit Well No. 164 located 1840 feet from the South line and 1090 feet from the West line (Unit L) of Section 2, Township 26 North, Range 7 West, by reviewing and re-establishing, if necessary, the allocation of production that was set forth by the provisions of said order. The subject well is located approximately 2 miles north-northeast of the El Paso Natural Gas Company Largo Station.

Application of Arco Oil & Gas Company for pressure maintenance expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Empire-Abo Unit Pressure Maintenance Project, authorized by Division Order No. R-4549, as amended, by converting its Empire Abo Unit "J" Well No. 10, located 2310 feet from the North and West lines (Unit F) of Section 3 and Empire Abo Unit "J" Well No. 13, located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, both in Township 18 South, Range 27 East, Empire-Abo Pool, Empire Abo Unit Area, from producing oil wells to gas injection wells. Both wells are located in an area approximately 4.25 miles south-southeast of Riverside, New Mexico.

CASE 9932: Application of Anadarko Petroleum Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn formation underlying the SE/4 NW/4 (Unit F) of Section 33, Township 16 South, Range 38 East, forming a standard 40-acre oil spacing and proration unit for said formation. Said unit is to be dedicated to a well to be drilled at a standard oil well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 7 miles northeast by north of Humble City, New Mexico.

CASE 9918: (Continued from April 18, 1990, Examiner Hearing.)

Application of Mesa Operating Limited Partnership for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Basin-Fruitland Coal Gas Pool underlying Lots 1 and 2, the S/2 NE/4 and the SE/4 (E/2 equivalent) of Section 2, Township 29 North, Range 9 West, forming a standard 320.60-acre gas spacing and proration unit for said pool, to be dedicated to a well to be drilled at a standard coal gas well location in the NE/4 of said Section 2. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 1.5 miles east of Turley, New Mexico.

CASE 9919: (Continued from April 18, 1990, Examiner Hearing.)

Application of Mesa Operating Limited Partnership for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Basin-Fruitland Coal Gas Pool underlying Lots 1, 2, 7, 8, 9, 10, 15 and 16 (E/2 equivalent) of Section 33, Township 30 North, Range 10 West, forming a standard 317.04-acre gas spacing and proration unit for said pool, to be dedicated to a well to be drilled at a standard coal gas well location in the NE/4 of said Section 33. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 4.5 miles northwest of Blanco, New Mexico.

CASE 9933: Application of Amerind Oil Company Limited Partnership for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Undesignated Shipp-Strawn Pool underlying the W/2 SE/4 of Section 5, Township 17 South, Range 37 East, forming a standard 80-acre oil spacing and proration unit for said pool, to be dedicated to a well to be drilled at a standard oil well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 5.5 miles northwest of Humble City, New Mexico.

CASE 9934: Application of Amerind Oil Company Limited Partnership for compulsory pooling and an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Undesignated Shipp-Strawn Pool underlying the E/2 SW/4 of Section 35, Township 16 South, Range 37 East, forming a standard 80-acre oil spacing and proration unit for said pool. Said unit is to be dedicated to a well to be drilled at an unorthodox oil well location 1300 feet from the South line and 1750 feet from the West line (Unit N) of said Section 35. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is located approximately 5.5 miles north by west of Humble City, New Mexico.

CASE 9907: (Readvertised)

Application of Enron Oil & Gas Company for compulsory pooling and an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Atoka formation underlying the following described acreage in Section 1, Township 24 South, Range 28 East, and in the following described manner: Lots 1, 2, 3, and 4 and the S/2 N/2 (N/2 equivalent) to form a 319.36-acre gas spacing and proration unit for any and all formations and/or pools developed on 320-acre spacing within said vertical extent (which presently includes but is not necessarily limited to either the Undesignated South Culebra Bluff-Atoka Gas Pool or Undesignated Malaga-Atoka Gas Pool); Lots 3 and 4 and the S/2 NW/4 (NW/4 equivalent) to form a 159.52-acre gas spacing and proration unit for any and all formations developed on 160-acre spacing within said vertical extent; Lot 3 and the SE/4 NW/4 (E/2 NW/4 equivalent) to form a 79.80-acre oil spacing and proration unit for the Undesignated South Culebra Bluff-Bone Spring Pool which is developed on 80-acre spacing; and Lot 3 (NE/4 NW/4 equivalent) to form a 39.80-acre oil spacing and proration unit for any and all formations and/or pools developed on statewide 40-acre oil spacing (which presently includes but is not necessarily limited to either the Undesignated Malaga-Delaware Pool or Undesignated North Malaga-Delaware Pool). Said units are to be dedicated to a single well to be drilled 660 feet from the North line and 1680 feet from the West line (Unit L) of said Section 1, which is a standard location for zones spaced on 160 or 40

CASE 9935: Application of Harvey E. Yates Company for a horizontal directional drilling pilot project and special operating rules therefor, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to initiate a horizontal directional drilling pilot project in the S/2 of Section 26, Township 13 South, Range 35 East,, forming a standard 320-acre gas spacing and proration unit in the Northwest Austin-Mississippian Gas Pool. The applicant proposes to utilize its existing Duncan Unit Well No. 3 located 660 feet from the South line and 1980 feet from the West line (Unit N) of said Section 26 by kicking-off from vertical in a northeasterly direction, build angle to approximately 90 degrees, and drill horizontally in the Northwest Austin-Mississippian Gas Pool for approximately 1000 to 1200 feet. Applicant further requests that special operating provisions be established for said project area including the designation of a prescribed area limiting the horizontal extent of the wellbore such that it can be no closer than 1980 feet from the end boundaries nor closer than 660 feet from the side boundaries of said spacing unit. Said project area is located approximately 4 miles west-northwest of McDonald, New Mexico.

CASE 9898: (Continued from April 4, 1990, Examiner Hearing.)

Application of Doyle Hartman for compulsory pooling, a non-standard gas proration unit and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Eumont Gas Pool underlying the SE/4 SW/4 and SE/4 of Section 5 and the NE/4 NE/4 and NE/4 NW/4 of Section 8, all in Township 20 South, Range 37 East, forming a non-standard 280-acre gas spacing and proration unit for said pool. The applicant proposes to dedicate all production from the Eumont Gas Pool to the existing Britt-Laughlin Com. Well No. 5 (formerly the Oxy USA, Inc. Laughlin "B" Well No. 5) located 330 feet from the South line and 2310 feet from the East line (Unit 0) of said Section 5 and to the existing Britt-Laughlin Com. Well No. 1 (formerly the Britt "B-8" Well No. 1) located 660 feet from the North line and 1980 feet from the West line (Unit C) of said Section 8 and to a third well to be drilled at an undetermined location in the SE/4 of said Section 5. Applicant further seeks to be designated operator of the non-standard gas proration unit so created and be entitled to recover out of the production therefrom his costs of drilling, completing and equipping a new infill well, plus a 200% risk factor for drilling, completing and equipping such new infill well, and an equitable and proper percentage of the value of the existing wellbores of applicant's Britt-Laughlin Com. Well Nos. 1 and 5, and all costs of supervision and operation of such non-standard gas proration unit, and that such order also provide for any other relief which may be deemed equitable and proper. The subject area is located approximately 2.25 miles south of Monument, New Mexico.

CASE 9936: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating, abolishing, contracting, and extending certain pools in Chaves and Eddy Counties, New Mexico.

- (a) CREATE a new pool in Chaves County, New Mexico, classified as an oil pool for San Andres production and designated as the South Acme-San Andres Pool. The discovery well is the Yates Petroleum Corporation Cactus Flower State Unit Well No. 2 in Unit F of Section 19, Township 8 South, Range 27 East, NMPM. Said pool would comprise:

TOWNSHIP 8 SOUTH, RANGE 27 EAST, NMPM
Section 19: E/2
Section 30: NW/4

- (b) CREATE a new pool in Chaves County, New Mexico, classified as a gas pool for Atoka production and designated as the Otterback Ranch-Atoka Gas Pool. The discovery well is the Foran Oil Company State ET Well No. 1 located in Unit C of Section 36, Township 15 South, Range 27 East, NMPM. Said pool would comprise:

TOWNSHIP 15 SOUTH, RANGE 27 EAST, NMPM
Section 36: W/2

- (c) CREATE a new pool in Eddy County, New Mexico, classified as an oil pool for Bone Spring production and designated as the Pierce Crossing-Bone Spring Pool. The discovery well is the Quinoco Petroleum Inc. Queen Lake 20 Fed. Well No. 1 located in Unit E of Section 20, Township 24 South, Range 29 East, NMPM. Said pool would comprise:

TOWNSHIP 24 SOUTH, RANGE 29 EAST, NMPM
Section 20: NW/4

- (d) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the Russell-Wolfcamp Gas Pool. The discovery well is the Petroleum Corporation of Delaware Superior Fed. Well No. 5 located in Unit K of Section 5, Township 20 South, Range 29 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 29 EAST, NMPM
Section 5: W/2

- (e) CREATE a new pool in Eddy County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the West Scanlon Draw-Wolfcamp Pool. The discovery well is the Pennzoil Exploration Winchester Fed. Well No. 1 located in Unit H of Section 4, Township 20 South, Range 28 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 28 EAST, NMPM
Section 4: NE/4

- (f) ABOLISH the Rabbit Flats-PrePermian Gas Pool in Chaves County, New Mexico, consisting of the following described acreage:

TOWNSHIP 10 SOUTH, RANGE 26 EAST, NMPM
Section 36: W/2

- (g) CONTRACT the Comanche Springs-PrePermian Gas Pool in Chaves County, New Mexico, by the deletion of the following described acreage:
TOWNSHIP 10 SOUTH, RANGE 27 EAST, NMPM
Section 36: W/2
- (h) EXTEND the South Carlsbad-Strawn Gas Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 22 SOUTH, RANGE 27 EAST, NMPM
Section 32: All
Section 33: S/2
- (i) EXTEND the Comanche Springs-PrePermian Gas Pool in Chaves County, New Mexico, to include therein:
TOWNSHIP 10 SOUTH, RANGE 26 EAST, NMPM
Section 25: S/2
- (j) EXTEND the North Dagger Draw-Upper Pennsylvanian Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM
Section 24: W/2

TOWNSHIP 20, SOUTH, RANGE 24 EAST, NMPM
Section 1: SW/4
Section 2: N/2
- (k) EXTEND the South Dagger Draw-Upper Pennsylvanian Associated Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 20 SOUTH, RANGE 24 EAST, NMPM
Section 11: S/2
Section 14: All
- (l) EXTEND the Diamond Mound-Morrow Gas Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 16 SOUTH, RANGE 28 EAST, NMPM
Section 6: E/2
- (m) EXTEND the Grayburg-Morrow Gas Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
Section 14: W/2
- (n) EXTEND the La Huerta-Delaware Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM
Section 9: S/2
- (o) EXTEND the East Loving-Delaware Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM
Section 14: NW/4
- (p) EXTEND the North Loving-Atoka Gas Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM
Section 19: E/2
Section 30: E/2
- (q) EXTEND the South Palma Mesa-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:
TOWNSHIP 8 SOUTH, RANGE 27 EAST, NMPM
Section 26: All
- (r) EXTEND the Parkway-Bone Spring Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM
Section 34: NW/4
- (s) EXTEND the Parkway-Delaware Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM
Section 26: SW/4
- (t) EXTEND the Salt Draw-Atoka Gas Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 24 SOUTH, RANGE 28 EAST, NMPM
Section 28: E/2

- (u) EXTEND the South Sand Dunes-Lower Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 24 SOUTH, RANGE 31 EAST, NMPM
Section 15: W/2
Section 16: E/2
- (v) EXTEND the Shugart Yates-Seven Rivers-Queen-Grayburg Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
Section 7: SE/4
- (w) EXTEND the North Shugart-Bone Spring Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
Section 18: NE/4
- (x) EXTEND the Turkey Track Seven Rivers-Queen-Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM
Section 11: SW/4
- (y) EXTEND the Winchester-Bone Spring Pool in Eddy County, New Mexico, to include therein:
TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM
Section 32: W/2

NOTICE

NOTICE

NOTICE

Comments in Case 9018 scheduled to be heard before the Oil Conservation Commission on May 24, 1990, will be accepted by the Commission until the time of the hearing. Testimony and oral or written comments may be presented at the hearing. Said case 9018 concerns the amendment of Rule 11(b) of Order No. R-8170-A relating to overproduction limits.

KELLAHIN, KELLAHIN and AUBREY

Attorneys at Law

W. Thomas Kellahin
Karen Aubrey

Jason Kellahin
Of Counsel

El Patio - 117 North Guadalupe
Post Office Box 2265
Santa Fé, New Mexico 87504-2265

Telephone 982-4285
Area Code 505
Telefax No. (505) 982-2047

April 25, 1990

RECEIVED

APR 25 1990

OIL CONSERVATION DIVISION

Mr. William J. LeMay
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Application of Arco Oil & Gas Company
for Pressure Maintenance Expansion
NMOCD Case 9931


DAC
M.S.

Dear Mr. LeMay:

On behalf of Oxy USA, Inc., please enter our appearance in opposition to the referenced case which is set for hearing on the Examiner's docket now scheduled for May 2, 1990.

It is our understanding that Arco will request that this case be continued to the hearing of May 16, 1990.

Very truly yours,


W. Thomas Kellahin

WTK/dm

cc: William F. Carr, Esq.
Robert Stovall, Esq., OCC
Rick Foppiano, Oxy-Midland



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

April 9, 1990

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

ARCO Oil & Gas Company
P.O. Box 1610
Midland, TX 79702

Attention: Gary B. Smallwood
Senior Engineer

RE: Administrative Application for the
Expansion of the Empire Abo Unit
Pressure Maintenance Project, Wells J-10
and J-13, Empire Abo Pool, Eddy County,
New Mexico.

Dear Mr. Smallwood:

As you are probably aware, an object from Oxy USA, Inc. has been filed on one of the wells in the subject application.

Inasmuch as both wells are in the same area, it is the OCD's conviction that both wells should be considered as one application. This matter has been placed on the docket for the next available Examiner Hearing scheduled for May 2, 1990.

It will also be necessary for ARCO to provide adequate notice as required by General Rule 1207.

Should you have any questions concerning this matter, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael E. Stogner".

Michael E. Stogner
Chief Hearing Officer/Engineer

cc: Oil Conservation Division - Artesia
Oxy USA, Inc. - Midland, TX



RECEIVED
DIVISION
'90 APR 9 AM 9 11

OXY USA INC.
Box 50250, Midland, TX 79710
April 3, 1990

New Mexico Oil Conservation Division
P. O. Box 2088, State Land Office Bldg.
Santa Fe, New Mexico 87504

Attention: Mr. Michael E. Stogner, Chief Hearing Officer

Re: **Application of Arco Oil and Gas
Company for OCD approval of the
Expansion of the Empire Abo Pressure
Maintenance Project, Empire Abo Pool,
Eddy County, New Mexico.**

Dear Mr. Stogner:

OXY USA Inc. is the operator of a producing well on an offset tract which is located closer than 1650 feet to one of the wells that ARCO plans to convert to gas injection. Since we feel that injection into a well located so close to our producing wells in the Empire Abo field will adversely affect our correlative rights, we must protest the referenced application.

By copy of this letter, we are notifying the applicant of our protest. Please direct any future correspondence relating to this matter to the letterhead address and to my attention.

Sincerely,

Richard E. Foppiano
Regulatory Affairs Advisor - Western Region

REF/ref

xc: New Mexico Oil Conservation Division, District II Office
P. O. Drawer DD
Artesia, New Mexico 88210

Arco Oil and Gas Company, Central District
P. O. Box 1610
Midland, Texas 79702
Attention: Mr. Gary B. Smallwood

ARCO Oil and Gas Company
Central District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 688 5200

March 21, 1990

90 MAR 28 AM 9 09



Mr. M. Stogner
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 98504

RE: Expansion of Empire Abo Unit Pressure Maintenance Project
Administrative Approval Request
Empire Abo Pool
Eddy County, New Mexico

9931

Gentlemen:

Attached is a copy of ARCO Oil and Gas Company's application for administrative approval of the expansion of the Empire Abo Unit Pressure Maintenance Project. We propose to convert two existing producers, Wells J-10 and J-13, to gas injection to improve recovery of the Empire Abo Unit.

In addition, Well J-13 is a nonstandard location as per Rule 7(a) of the Empire Abo Pool rules. We also request administrative approval for the location.

If you have any questions pertaining to this application, please contact Gary B. Smallwood, Sr. Engineer, at (915) 688-5359 or Jack T. Lowder, Area Engineer, at (915) 688-5557.

Any objections or requests for hearing must be made within 15 days from the date of this application to the New Mexico Oil Conservation Division in Santa Fe.

Very truly yours,

Gary B. Smallwood
Sr. Engineer

GBS/lal
Attachment

cc: New Mexico Oil Conservation Division, District II Office
P. O. Drawer DD
Artesia, New Mexico 88210

Offset Operators
Surface Owners

**ARCO OIL & GAS COMPANY
APPLICATION TO EXPAND EAU PRESSURE MAINTENANCE PROJECT
OFFSET OPERATORS**

Oxy USA
P.O. Box 50250
Midland, Texas 79710
Attn: Frank Vitrano

ARCO OIL & GAS COMPANY
APPLICATION TO EXPAND EAU PRESSURE MAINTENANCE PROJECT
SURFACE OWNERS

State Land Office
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501
Attn: Floyd Prando

Well J-13

Bureau of Land Management
Carlsbad Resource Area
P.O. Box 1778
Carlsbad, New Mexico 88220
Attn: Barry Hunt

Well J-10

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501FORM C-10A
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

Case 9931

- I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: ARCO Oil and Gas Company
Address: P.O. Box 1610, Midland, Texas 79702
Contact party: Gary B. Smallwood, Sr. Engineer Phone: (915) 688-5359
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project R-4549.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Gary B. Smallwood Title: Senior Engineer
Signature: Gary B. Smallwood Date: 3-19-90 JBS 3/21/90 JBS
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Initial application to inject in 1973. Case #4953

FORM C-108 Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

ARCO OIL AND GAS COMPANY
EMPIRE ABO UNIT J-10
APPLICATION TO INJECT GAS
MARCH, 1990

III. WELL DATA

- A. (1) Location
2310' FNL & 2310' FWL, Section 3-T18S-R27E
Eddy County, New Mexico
- (2) Casing
8-5/8" @ 1455' w/450 sx cement in 11" hole
TOC @ surface: circulated
5-1/2" @ 5705' w/300 sx cement in 7-7/8" hole
TOC unknown
- (3) Proposed Tubing
2-3/8" internally plastic coated @ approximately 5452'
- (4) Proposed Packer
Lok-set type (Baker Tool Co.) with on-off tool @ approximately
5452'
- B. (1) Injection formations: Abo
Pool Name: Empire Abo
- (2) Injection Interval: Perfs 5564-5630'
- (3) Well was drilled as an oil producer
- (4) No other perfs
- (5) Next higher productive pool: San Andres - Top of the San Andres
occurs at 1673'

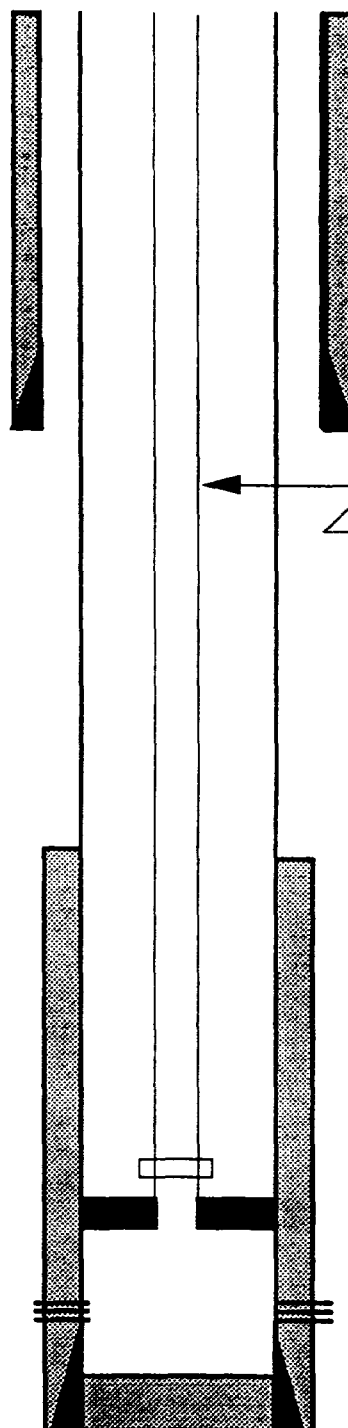
VII. PROPOSED OPERATION

- (1) Average daily rate of fluid to be injected: 6000 MCFPD
- (2) The system is closed
- (3) Average injection pressure: 2000 psi
Maximum injection pressure: 2000 psi
- (4) Source of injection fluid: Empire Abo Unit Gas Injection Plant

IX PROPOSED STIMULATION

Acidize perfs w/3500 gallons 15% NEFE HCl

Empire Abo Unit # J-10
Proposed Wellbore Configuration



8-5/8" @ 1455'

2-3/8" 4.7# J-55 8rd EUE ABmod IPC tbg
Btm'd @ 5450'

TOC unknown
(300 sx)

On-off too w/1.78 "R" profile (Nickel Plated)
Lok Set pkr set @ 5450' (Nickel Plated)

Perfs 5564' - 5630'

5-1/2" @ 5704"

PBD 5672'

TD 5705'

ARCO OIL AND GAS COMPANY
EMPIRE ABO UNIT J-13
APPLICATION TO INJECT GAS
MARCH, 1990

III. WELL DATA

- A. (1) Location
1980' FNL & 660' FWL, Section 2-T18S-R27E
Eddy County, New Mexico
- (2) Casing
8-5/8" @ 1006' w/675 sx cement in 11" hole
TOC @ surface: circulated
5-1/2" @ 6131' w/225 sx cement in 7-7/8" hole
TOC unknown
- (3) Proposed Tubing
2-3/8" internally plastic coated @ approximately 5600'
- (4) Proposed Packer
Lok-set type (Baker Tool Co.) with on-off tool @ approximately
5600'
- B. (1) Injection formations: Abo
Pool Name: Empire Abo
- (2) Injection Interval: Perfs 5710-5724', 5754-5784'
- (3) Well was drilled as an oil producer
- (4) Perfs from 2300-2301' were squeezed w/525 sx cement. Perfs
from 5020-5021' were squeezed w/275 sx. Perfs from
5364-5390' were squeezed w/105 sx.
- (5) Next higher productive pool: San Andres - Top of the San Andres
occurs at 1672'

VII. PROPOSED OPERATION

- (1) Average daily rate of fluid to be injected: 6000 MCFPD
- (2) The system is closed
- (3) Average injection pressure: 2000 psi
Maximum injection pressure: 2000 psi
- (4) Source of injection fluid: Empire Abo Unit Injection Plant

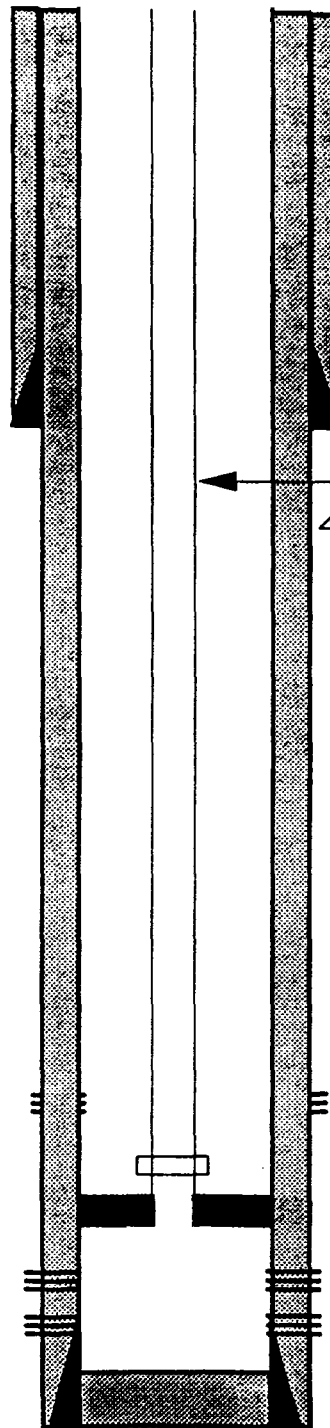
IX PROPOSED STIMULATION

Acidize perfs w/15% NEFE HCl

Empire Abo Unit # J-13
Proposed Wellbore Configuration



PBD 6090'
TD 6131



8-5/8" @ 1008'

2-3/8" 4.7# J-55 8rd EUE ABmod IPC tbg
Btm'd @ 5600'

Perfs 5360' - 5364' sqz'd 1967

On-off too w/1.78 "R" profile (Nickel Plated)

Lok Set pkr set @ 5600' (Nickel Plated)

Perfs 5710' - 5724'

Perfs 5754 - 5784'

5-1/2" @ 6131'

J-13

1891
160

[illegible]

3000

[illegible]

EAU
J-10

AFFIDAVIT OF MAILING

Gary B. Smallwood, being duly sworn states that he is an engineer for ARCO Oil and Gas Company, the Applicant herein.

That on the 21th day of March, 1990, in the City of Midland, Midland County, Texas, he mailed in a sealed envelope, postage prepaid, a copy of the application and plat herein attached to the following:

Bureau of Land Management
Carlsbad Resource Area
P. O. Box 1778
Carlsbad, New Mexico 88220
Attn: Barry Hunt

Oxy USA Inc.
P. O. Box 50250
Midland, Texas 79710
Attn: Frank Vitrano

State Land Office
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501
Attn: Floyd Prando



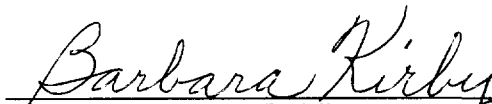
Gary B. Smallwood

State of Texas)
)
County of Midland)

Before me the undersigned, a Notary Public in and for the said County and State, on this 21 day of March, 1990, personally appeared G. B. Smallwood, to me known to be the identical person who executed the within and foregoing instrument and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes herein set forth.

Given under my hand and seal the day and year last above written.

My Commission expires:



Notary Public



ARCO Oil and Gas Company
Central District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 688 5200



March 21, 1990

**CERTIFIED
RETURN RECEIPT REQUESTED**

Artesia Daily News
503 W. Main
Artesia, New Mexico

Dear Sirs:

The New Mexico Oil Conservation Division requires that notice of an application to inject gas be published in a newspaper of general circulation in the county in which the well is located. Please print the following notice in the Artesia Daily News as soon as possible.

"ARCO Oil and Gas Company, P.O. Box 1610, Midland, Texas 79702, has filed an application with the New Mexico Oil Conservation Division seeking permission to inject gas into two wells in Eddy County. The injection wells are located 2310' FN&WL of Section 3-T18S-R27E and 1980' FNL & 660' FWL of Section 2-T18S-R27E. The well in Section 2 is a nonstandard location. Gas is to be injected into the Abo formation at an approximate depth of 5600' to 5800'. A maximum injection rate of 6000 MCFPD and a maximum injection pressure of 2000 psig is expected. Please refer questions to Gary Smallwood at the above address or call (915) 688-5359. Any requests for hearing or objections to this application must be made to the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87504, within 15 days."

The notice is to run for one day. The New Mexico Oil Conservation Division also requires that proof of publication be submitted to them before our application is approved. Please send proof of publication, including a copy of the legal advertisement, to Mr. Mike Stogner, Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501. Please send me an additional copy of the proof of publication at the address above.

Please send the bill in care of Mr. S. D. Smith, ARCO Oil and Gas Company, P.O. Box 1710, Hobbs, New Mexico 88240. Thank you for your help and cooperation.

Yours very truly,

G. B. Smallwood
Sr. Engineer

GBS/lal

cc: Mr. S. D. Smith - Hobbs



FACSIMILE COVER SHEET

DATE

4-3-90

TO:

ADDRESSEE

Michael E. Stogner

COMPANY

New Mexico Oil Conservation Division

ADDRESS

P.O. Box 2088, State Land Office Bldg.

ADDRESSEE'S TELEPHONE NUMBER

ADDRESSEE'S FACSIMILE NUMBER

505/827-5741

COMMENTS

FROM:

ORIGINATOR

Richard E. Foppiano

COMPANY

OXY USA Inc.

ADDRESS

Midland, TX

BLDG.

TELEPHONE NUMBER

915/685-5913

ROOM NO.

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OXY USA INC.

Box 50250, Midland, TX 79710

April 3, 1990

New Mexico Oil Conservation Division
P. O. Box 2088, State Land Office Bldg.
Santa Fe, New Mexico 87504

Attention: Mr. Michael E. Stogner, Chief Hearing Officer

Re: Application of Arco Oil and Gas
Company for OCD approval of the
Expansion of the Empire Abo Pressure
Maintenance Project, Empire Abo Pool,
Eddy County, New Mexico.

Dear Mr. Stogner:

OXY USA Inc. is the operator of a producing well on an offset tract which is located closer than 1650 feet to one of the wells that ARCO plans to convert to gas injection. Since we feel that injection into a well located so close to our producing wells in the Empire Abo field will adversely affect our correlative rights, we must protest the referenced application.

By copy of this letter, we are notifying the applicant of our protest. Please direct any future correspondence relating to this matter to the letterhead address and to my attention.

Sincerely,

A handwritten signature in cursive script that reads "Richard E. Foppiano". The signature is written in dark ink and is positioned above the typed name and title.

Richard E. Foppiano
Regulatory Affairs Advisor - Western Region

REF/ref

xc: New Mexico Oil Conservation Division, District II Office
P. O. Drawer DD
Artesia, New Mexico 88210

Arco Oil and Gas Company, Central District
P. O. Box 1610
Midland, Texas 79702
Attention: Mr. Gary B. Smallwood

CASE 9931:

(Continued from May 16, 1990 and readvertised)

Application of ARCO Oil & Gas Company for Pressure Maintenance Expansion and an Exception to the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Empire-Abo Unit Pressure Maintenance Project, authorized by Division Order No. R-4549, as amended, and an exception to Rule 7 of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project to permit conversion of its Empire-Abo Unit "J" Well No. 10, located 2310 from the North and West lines (Unit F) of Section 3, and the Empire Abo Unit "J" Well No. 13, located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2 both in Township 18 South, Range 27 East, Empire-Abo Pool, Empire-Abo Unit Area from producing oil wells to gas injection wells. Both wells are located in an area approximately 4.25 miles south-southeast of Riverside, New Mexico.

RECEIVED

MAY 22 1990

OIL CONSERVATION DIV.
SANTA FE

CASE 9931:

(Continued from May 16, 1990 and readvertised)

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EMPIRE ABO UNIT AREA

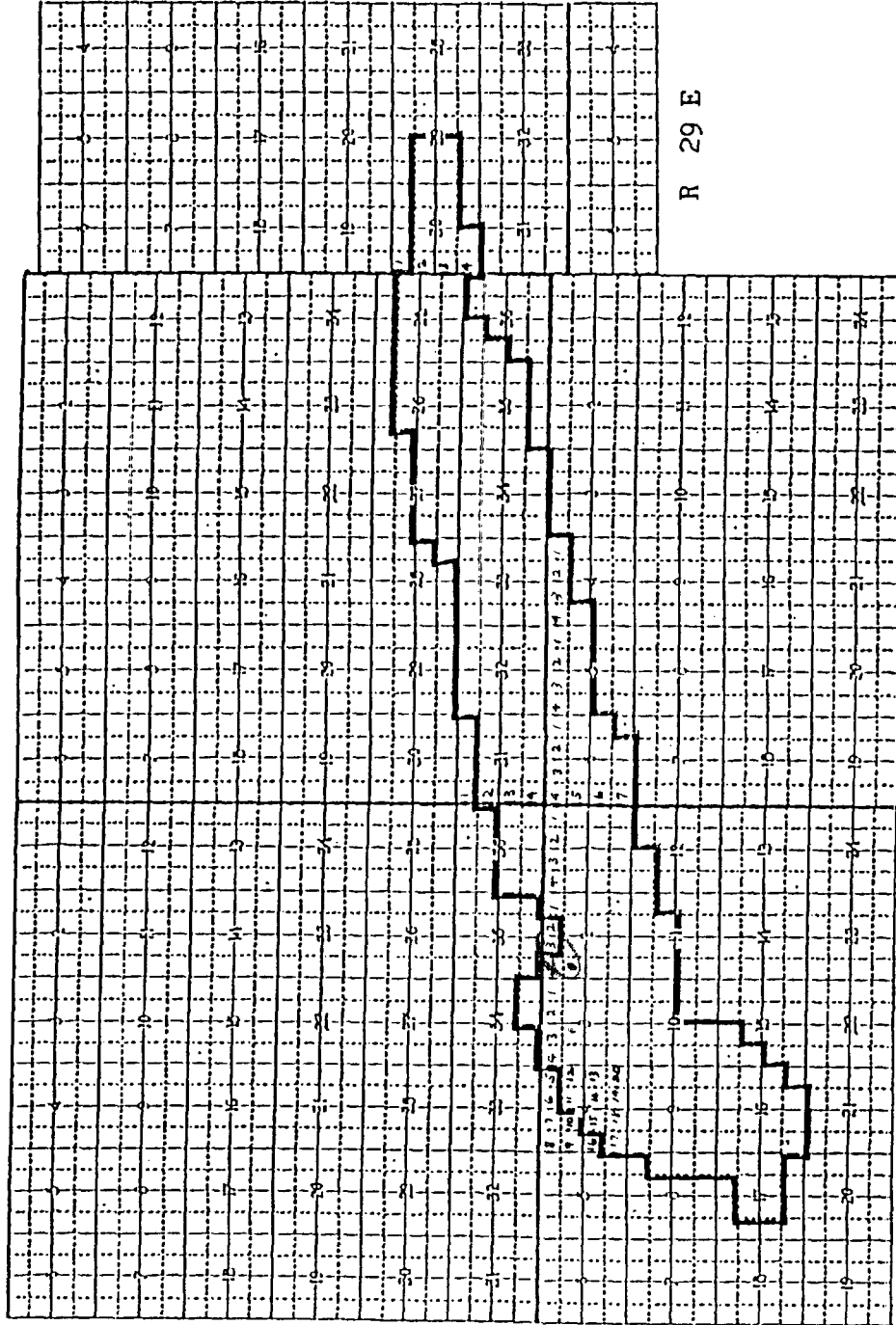
GAS INJECTION-PRESSURE MAINTENANCE

14-08-0001-13801

Abo Formation

APPROVED: September 20, 1973 EFFECTIVE: October 1, 1973

Arco Oil and Gas Company, Operator



Unit Lands

Federal 4,024.86 acres
State 7,073.23 acres
Total 11,098.09 acres



gulram, inc.

petroleum engineering and government regulation consultants

**(RHODES-YATES (TEXACO RHODES-YATES
WATERFLOOD) POOL - Cont'd.)**

(2) That the applicant, Texaco Inc., seeks authority to institute a waterflood project in the Rhodes Yates Unit Area, Rhodes-Yates Pool, by the injection of water into the Yates-Seven Rivers formations through seven injection wells in Sections 21, 27, and 28, Township 26 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to institute a waterflood project in the Rhodes Yates Unit Area, Rhodes-Yates Pool, by the injection of water into the Yates-Seven Rivers formations through the following-described seven wells in Township 26 South, Range 37 East, NMPM, Lea County, New Mexico:

Lease	Well No.	Location
State "JD" Unit	2	660' FNL and 660' FWL, Sec. 27
State "JD" Unit	4	650' FNL and 2310' FWL, Sec. 27
N. M. "AD" State	1	660' FNL and 1980' FWL, Sec. 28
Morris	2	1980' FNL and 660' FWL, Sec. 27
Morris	3	990' FSL and 2970' FEL, Sec. 27
State "A" 28	1	1980' FNL and 660' FEL, Sec. 28
H. G. Moberly "C" (NCT-2)	3	660' FSL and 660' FEL, Sec. 21

(2) That injection into each of said wells shall be through internally plastic-coated tubing set in a packer which shall be located as near as is practicable to the uppermost perforation, or in the case of open-hole completions, as near as is practicable to the casing-shoe; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with a pressure gauge at the surface.

(3) That the subject waterflood project is hereby designated the Texaco Rhodes-Yates Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(4) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(5) 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.

**EMPIRE-ABO POOL
(Pressure Maintenance)
Eddy County, New Mexico**

Order No. R-4549, Authorizing Atlantic Richfield Company to Institute a Pressure Maintenance Project in the Empire-Abo Pool, Eddy County, New Mexico, June 15, 1973, as Amended by Order No. R-4549-A, January 1, 1974, Order No. R-4549-B, April 30, 1974, Order No. R-4549-C, July 1, 1975, Order No. R-4549-D, November 17, 1975, Order No. R-4549-E, January 28, 1980, and Order No. R-4549-F, April 20, 1984.

Order No. R-4549-A, January 1, 1974, extends the project area to include 200.13 acres and increases project allowable to 33,000 barrels per day.

Order No. R-4549-F, April 20, 1984, rescinds Rules 3, 4, 4(A), 5, 6, 7, 8, 9, 10, 11, 12, and 13, adopted by Order No. R-4549, and amended by Orders Nos. R-4549-B through R-4549-E, providing for well allowables based upon reservoir voidage; adopts new Rules 3, 4, 5, and 6; and, redesignates Rules 14A through 14D as Rules 7A through 7D and Rule 15 as Rule 8.

Application of Atlantic Richfield Company for a Pressure Maintenance Project, Eddy County, New Mexico.

CASE NO. 4953
Order No. R-4549

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 a.m. on April 25, 1973, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 15th day of June, 1973, 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, Atlantic Richfield Company, seeks authority to institute a pressure maintenance project in the Empire-Abo Pool in its Empire-Abo Unit Area, Eddy County, New Mexico, by initially limiting reservoir voidage, and within one year by reinjection of approximately 70 per cent of the produced gas, as plant residue gas, into the Abo formation through eight wells in Section 36, Township 17 South, Range 27 East, Sections 3, 4, and 9, Township 18 South, Range 27 East, and Sections 26, 31, 32, and 33, Township 17 South, Range 28 East.

(3) That the applicant further seeks the designation of the project area and the promulgation of special rules and regulations governing said project, including provision for the assignment of special allowables to wells in the project area based on reservoir voidage factors, net gas-oil ratios, the shutting in or curtailment of less efficient wells, and allowable credit for gas injection wells.

(4) (As Amended by Order No. R-4549-A, January 1, 1974) That initially the project area should comprise only the following described area:

EDDY COUNTY, NEW MEXICO
TOWNSHIP 17 SOUTH, RANGE 27 EAST, NMPM
Section 34: S/2 SE/4
Section 36: S/2

(EMPIRE-ABO (PRESSURE MAINTENANCE) POOL - Cont'd.)**TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMPM**

- Section 25: S/2 and S/2 N/2
 Section 26: S/2, S/2 NE/4, and SE/4 NW/4
 Section 27: S/2
 Section 31: S/2 and S/2 N/2
 Section 32: S/2, NE/4, S/2 NW/4, and NE/4 NW/4
 Section 33: S/2, NE/4, S/2 NW/4, and NE/4 NW/4
 Section 34: All
 Section 35: N/2 and N/2 S/2
 Section 36: N/2 NW/4 and SW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM

- Section 29: S/2 NW/4 and N/2 SW/4
 Section 30: SW/4, S/2 N/2, and N/2 SE/4

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM

- Section 1: All
 Section 2: S/2, NE/4 NE/4, SW/4 NE/4, S/2 NW/4, and NW/4 NW/4
 Section 3: All
 Section 4: SE/4, S/2 NE/4, S/2 SW/4, and NE/4 SW/4
 Section 8: E/2 SE/4 and SE/4 NE/4
 Section 9: All
 Section 10: W/2 and NE/4
 Section 11: NW/4, W/2 NE/4, and NE/4 NE/4
 Section 15: N/2 NW/4 and SW/4 NW/4
 Section 16: N/2, SW/4, N/2 SE/4, and SW/4 SE/4
 Section 17: S/2 NE/4, NE/4 NE/4, SE/4 NW/4, NE/4 SW/4, and N/2 SE/4

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM

- Section 4: N/2 N/2, SW/4 NW/4
 Section 5: NE/4, N/2 NW/4, NE/4 NW/4
 Section 6: NW/4, N/2 SW/4, SE/4 SW/4, N/2 SE/4, SW/4 SE/4, S/2 NE/4, NE/4 NE/4, NW/4 NE/4 (Lot 2)

(5) That the applicant has been a major operator in the Empire-Abo Pool and that with a majority of the other operators in said pool has conducted extensive reservoir evaluations and studies in and of said pool.

(6) That said evaluations and studies show that the Empire-Abo Pool will be more efficiently produced through the curtailment of production from high gas-oil ratio wells or by reinjection of plant residue gas or both, and operation of the pool on a net reservoir voidage basis.

(7) That said evaluations and studies show that production from the project area as described in Finding (4) of this order should be limited to the average reservoir voidage for the project area for the calendar year 1972 or 30,000 barrels of oil per day, whichever is less, except that after reinjection of approximately 70 percent of the produced gas has been achieved, the production from said project area should be limited to the average reservoir voidage for the calendar year 1972 or 40,192 barrels of oil per day, whichever is less.

(8) That to provide incentive for the reinjection of produced gas prior to achievement of the full 70 percent reinjection planned, production in excess of the aforementioned 30,000 barrels per day should be permitted within the project area. Said excess production should be computed in accordance with the following formula and should be limited to 10,192 barrels per day:

additional allowable in (2(MCF gas inj. previous month x 10) 2 excess of 30,000
 BOPD equals 97.07 (MCF gas prod. previous month)

$$\frac{(MCF \text{ gas inj. previous month} \times 10)}{(MCF \text{ gas prod. previous month})}$$

(9) That the aforesaid pressure maintenance project, designated the ARCO Empire-Abo Unit Pressure Maintenance Project, and comprising the above-described area, is in the interest of conservation and should result in the recovery of approximately thirty million barrels of additional oil from said reservoir.

(10) That an administrative procedure should be established whereby said project area may be contracted or expanded for good cause shown and whereby additional injection wells and producing wells at orthodox and unorthodox locations in the project area may be approved without the necessity of notice and hearing.

(11) That special rules and regulations for the operation of the ARCO Empire-Abo Unit Pressure Maintenance Project should be promulgated and, for operational convenience, such rules should provide certain flexibility in authorizing the production of the project allowable from any well or wells in the project area in any proportion, provided that no well in the project area which directly or diagonally offsets a well not committed to said unit producing from the same common source of supply should be allowed to produce more than two top unit allowables for the Empire-Abo Pool.

(12) That approval of the application for a pressure maintenance project and the proposed special rules therefore is in the interest of sound conservation practices and will not cause waste or harm correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Atlantic Richfield Company, is hereby authorized to institute a pressure maintenance project in the Empire-Abo Pool in its Empire-Abo Unit Area, Eddy County, New Mexico, to be designated the ARCO Empire-Abo Unit Pressure Maintenance Project, initially by the shutting in or curtailment of production from less efficient wells within the project and within 12 months after the effective date of this order by the reinjection of approximately 70 percent of the produced gas, as plant residue gas, into the Abo formation, through the following described wells:

Operator	Lease Name	Well No.	Section	Location
Amoco	Malco "H" Federal	2	3	H
Amoco	Windfuhr Federal	4	4	J
Exxon	Chalk Bluff Draw Unit "A"	4	9	C

All in Township 18 South, Range 27 East, NMPM.

M. Yates III	Dooley Abo State	2	36	J
--------------	------------------	---	----	---

In Township 17 South, Range 27 East, NMPM.

Hondo	State "A"	21	26	K
Amoco	State "BM"	1	31	K
Amoco	State "BV"	1	32	F
Arco	M. Yates B (ARC)	8	33	G

All in Township 17 South, Range 28 East, NMPM.

(EMPIRE-ABO (PRESSURE MAINTENANCE) POOL - Cont'd.)

(2) That the injection should be through 2-3/8-inch internally coated tubing installed in a packer set within 100 feet of the uppermost perforations, and that the casing-tubing annulus should be fitted with a pressure gauge in order to determine leakage in the casing, tubing, or packer.

(3) That Special Rules and Regulations governing the operation of the ARCO Empire-Abo Unit Pressure Maintenance Project, Eddy County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
EMPIRE-ABO PRESSURE MAINTENANCE PROJECT

RULE 1. (As Amended by Order No. R-4549-A, January 1, 1974, and Order No. R-4549-C, July 1, 1975.) The project area of the ARCO Empire-Abo Unit Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the area described as follows:

EDDY COUNTY, NEW MEXICO
TOWNSHIP 17 SOUTH, RANGE 27 EAST, NMPM
Section 34: S/2 SE/4
Section 36: S/2

TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMPM
Section 25: S/2 and S/2 N/2
Section 26: S/2, S/2 NE/4, and SE/4 NW/4
Section 27: S/2
Section 31: S/2 and S/2 N/2
Section 32: S/2, NE/4, S/2 NW/4, and NE/4 NW/4
Section 33: S/2, NE/4, S/2 NW/4, and NE/4 NW/4
Section 34: All
Section 35: N/2 and N/2 S/2
Section 36: N/2 NW/4 and SW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
Section 29: S/2 NW/4 and N/2 SW/4
Section 30: SW/4, S/2 N/2, and N/2 SE/4

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM
Section 1: All
Section 2: S/2, NE/4 NE/4, SW/4 NE/4, NW/4
Section 3: All
Section 4: SE/4, S/2 NE/4, S/2 SW/4, and NE/4 SW/4
Section 8: E/2 SE/4 and SE/4 NE/4
Section 9: All
Section 10: W/2 and NE/4
Section 11: NW/4, W/2 NE/4, and NE/4 NE/4
Section 15: N/2, NW/4 and SW/4 NW/4
Section 16: N/2, SW/4, N/2 SE/4, and SW/4 SE/4
Section 17: S/2 NE/4, NE/4 NE/4, SE/4 NW/4, NE/4 SW/4, and N/2 SE/4

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM
Section 4: N/2 N/2, SW/4 NW/4
Section 5: NE/4, N/2 NW/4, NE/4 NW/4
Section 6: NW/4, N/2 SW/4, SE/4 SW/4, N/2 SE/4, SW/4 SE/4, S/2 NE/4, NE/4 NE/4, NW/4 NE/4 (Lot 2)

RULE 2. The allowable for the Project shall be the sum of the allowables of the several wells within the project area, including those wells which are shut in, curtailed, or used as injection wells. Allowables for all wells shall be determined in a manner hereinafter prescribed.

RULE 3. (As Added by Order No. R-4549-F, April 20, 1984.) That the maximum daily project allowable shall be an amount of oil which will result in monthly average associated gas production of no more than 65 MMCF per day.

For the purpose of these rules, "Available Residue Gas" shall be defined as being all gas produced from the unitized formation less plant shrinkage, plant fuel, and lease fuel required for operation of the lease.

RULE 4. (As Added by Order No. R-4549-F, April 20, 1984.) That all available unit residue gas shall be reinjected. No raw gas nor plant residue gas attributable to the project shall be sold or otherwise disposed of by any other means. That in addition to the injection of available residue gas, the project operator may inject up to and including 35 million cubic feet of extraneous gas per day into the Abo formation underlying the project area; further, that withdrawals of said extraneous gas may be made, but pending reservoir blow-down, during not more than 30 days in any one 180-day period; provided however, that pending blow-down, the daily rate of withdrawal shall not exceed the average daily rate of injection of such extraneous gas during the preceding 180-day period; provided further, that the project operator shall establish and maintain an "Extraneous Gas Bank Statement" which shall be filed with the Division each month concurrently with the project operator's "Empire-Abo Pressure Maintenance Project Monthly Report", and which shall show thereon each month the volume of extraneous gas injected, the cumulative volume of such gas injected, the volume of gas delivered back to the supplier of extraneous gas, the cumulative volume of gas delivered back to the supplier, and the net cumulative extraneous gas bank.

RULE 5. (As Added by Order No. R-4549-F, April 20, 1984.) Allowables shall be assigned to unit wells in accordance with nominations submitted by the unit operator during the months of March, July, and November of each year. That such nominations shall accompany the Pressure Maintenance Project Operator's Report filed for that month.

The allowables assigned shall result in production of casinghead gas averaging not more than 65 MMCF per day for the month, provided however, that on a cumulative basis, the unit operator may carry gas overproduction of 325 MMCF.

That no producing well in the project area which directly or diagonally offsets a well not committed to the unit, and producing from the same common source of supply, shall receive an allowable or produce in excess of two times the top unit allowable for the pool.

RULE 6. (As Added by Order No. R-4549-F, April 20, 1984.) Each month the project operator shall submit to the Division a Pressure Maintenance Project Operator's Report on a form prescribed by the Division. The report shall show all project wells, production of oil, gas, and water; volumes of water, residue gas, and extraneous gas injected; total production of oil, gas and water, and such other data as the Division may require.

(EMPIRE-ABO (PRESSURE MAINTENANCE) POOL - Cont'd.)

RULE 7. A. (As Amended by Order No. R-4549-B, April 30, 1974, Order No. R-4549-E, January 28, 1980, and Renumbered by Order No. R-4549-F, April 20, 1984.) The Director of the Division is hereby authorized to approve such additional producing wells and gas injection and water injection wells at orthodox and unorthodox locations within the boundaries of the ARCO Empire Abo Unit Area as may be necessary to complete an efficient production and injection pattern, provided said wells are drilled no closer than 660 feet to any outer boundary of said unit nor closer than 10 feet to any quarter-quarter section or subdivision inner boundary and provided that no well shall be approved for gas or water injection when such well is located closer than 1650 feet to a tract which is not committed to the unit and on which is located a well producing from the same common source of supply. To obtain such approval, the project operator shall file proper application with the Division Director, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells shall include the following:

(1) A plat identifying the lands committed to the unit agreement and those lands not committed to said agreement, and showing the location of the proposed well, all wells within the unit area, and offset operators.

(2) A schematic drawing of the proposed well which fully describes the casing, tubing, perforated interval, and depth.

(3) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the date of notification.

RULE 7. B. (As Amended by Order No. R-4549-B, April 30, 1974, Order No. R-4549-E, January 28, 1980, and Renumbered by Order No. R-4549-F, April 20, 1984.) The Director of the Division is hereby authorized to approve the drilling of "horizontal drainholes" for the purposes of production or injection within the boundaries of the ARCO Empire Abo Unit Area as may be necessary to complete an efficient production and injection pattern, provided no perforated or openhole portion of said wells shall be closer than 330 feet to the outer boundary of said unit or to any tract not committed to such unit nor, in the case of a well to be used for injection closer than 1650 feet to such boundary or tract. To obtain such approval, the project operator shall file proper application with the Division Director, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells shall include the following:

(1) A plat identifying the lands committed to the unit agreement and those lands not committed to said agreement, and showing the location of the proposed well, all wells within the unit area, and offset operators.

(2) Schematic drawings of the proposed well which fully describes the casing, tubing, perforated or open-hole interval, kick-off point, and proposed trajectory of the drainhole section.

(3) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the date of notification.

RULE 7. C. (As Amended by Order No. R-4549-B, April 30, 1974, Order No. R-4549-E, January 28, 1980, and Renumbered by Order No. R-4549-F, April 20, 1984.) The Director may approve the proposed well if, within 20 days after receiving the application, no objection to the proposal is received. The Director may grant immediate approval, provided waivers of objection are received from all offset operators.

RULE 7. D. (As Amended by Order No. R-4549-B, April 30, 1974, Order No. R-4549-E, January 28, 1980, and Renumbered by Order No. R-4549-F, April 20, 1984.) Within 20 days following completion of any horizontal drainhole the operator shall submit a report to the Division Director with sufficient detail to locate the kick-off point and the trajectory of the deviated portion of the well bore with respect to any quarter-quarter section(s) penetrated by such well and any 40-acre tract directly or diagonally offsetting such quarter-quarter section(s).

The Director may approve the final location of the horizontal drainhole by acceptance of such report.

The Director may rescind the authority for any horizontal drainhole if the perforated or openhole portion of such hole is located closer to the unit boundary or any uncommitted tract than permitted by these rules or if it should appear that such rescission is necessary to prevent waste or protect correlative rights.

RULE 8. (As Amended and Renumbered by Order No. R-4549-F, April 20, 1984.) Expansion or contraction of the project area may be approved by the Director of the Division administratively when good cause is shown therefor.

(4) 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
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 9931
ORDER NO. R-

APPLICATION OF ARCO OIL AND GAS COMPANY
FOR A PRESSURE MAINTENANCE EXPANSION AND AN
UNORTHODOX GAS INJECTION WELL, EDDY COUNTY,
NEW MEXICO


DRAFT

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 13, 1990 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ day of March, 1991 the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) The applicant, ARCO Oil and Gas Company (ARCO), seeks authority to expand its Empire-Abo Unit Pressure Maintenance Project, authorized by Division Order No. R-4549, as amended, by converting its Empire Abo Unit "J" Well No. 10, located 2310 feet from the North and West lines (Unit F) of Section 3 and Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, both in Township 18 South, Range 27 East, Empire Abo Pool, Empire Abo Unit Pressure Maintenance Project Area NMPM, Eddy County, New Mexico, from producing oil wells to gas injection wells.

(3) Further, the applicant also seeks an exception to Rule 7-A of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project, as promulgated by said Order No. R-4549, as amended, for the "J" Well No. 13 which is located at an unorthodox gas injection well location.

(4) Rule 7-A of the Special Rules and Regulations for said project provides, in part, "that no well shall be approved for gas or water injection when such well is located closer than 1650 feet to a tract which is not committed to the unit and on which is located a well producing from the same common source of supply."

(5) By Division Order No. R-4808, dated June 11, 1974, OXY USA, Inc. (OXY), formerly Cities Service Oil Company, was authorized to institute a gas injection pressure maintenance project designated the Citgo Empire Abo Unit Pressure Maintenance Project in the Empire-Abo Pool located in portions of Section 35, Township 17 South, Range 27 East, and comprising the NW/4 NE/4 and NE/4 NW/ of Section 2, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico.

(6) The ARCO Empire Abo Unit "J" Well No. 13 proposed new gas injector is located 933 feet from the southwest corner of the spacing unit on which OXY continues to produce oil and liquid saturated gas (through perforations from 5627 feet to 5731 feet) from its Citgo Empire Abo Unit Track No. 3 well No. 5 which is located 990 feet from the North line and 1980 feet from the West line (Unit C) of said Section 2.

(7) OXY appeared in opposition to ARCO's application for conversion of the Empire-Abo Unit "J" Well No. 13 to gas injection and seeks the enforcement of Rule 7-A to said Special Rules in order to protect its correlative rights, asserting that said injection would cause its Citgo Empire-Abo Unit Well No. 5 to produce natural gas at higher rates thereby causing a loss of production of oil and other liquid hydrocarbons. OXY raised no

Waste by
a/s/w
me

objection to the conversion of injection of the Empire-Abo Unit "J" Well No. 10.

(8) The Empire-Abo Pool is a massive reef structure ^{with} ~~which~~ variable thickness trending east-northeast and west-southwest over approximately nine miles. Both the ARCO project and the OXY project are within the Empire-Abo Pool and involve a similar plan of operation where ~~the~~ reservoir voidage is controlled, the gas and liquids are produced by production wells located downstructure ^{on the reef} and the produced gas ^{is then} stripped of natural gas liquids (NGL) and ~~then~~ the "dry" gas reinjected into gas injection wells located high on the ^{reef} structure thereby forcing the oil down ~~and to prevent~~ premature gas coning in the producing wells.
~~preventing~~
~~preventing~~

(9) ARCO's testimony indicates that in the 16 years that the above-described operations have been in effect has resulted in ⁽¹⁾ a very large column of gas on top of a relatively thin column of oil ⁽²⁾ and ^{the} associated stripping pattern ^{between wells} whereby the injected gas in the top of the reef has also channeled across the top of the reef and down to the producers.

(10) It is ARCO's intent to inject gas in the subject wells through perforations located lower in the structure than had previously been utilized in order to provide a more efficient sweep of any remaining NGLs from the reservoir:

- Empire Abo Unit "J" Well No. 10
Proposed injection interval - 5564 feet to 5630 feet
- Empire Abo Unit "J" Well No. 13
Proposed injection interval - 5710 feet to 5784 feet.

(11) The geological evidence presented by both parties indicates the presence of

natural fractures in the reservoir which are oriented in a northeast southwest direction. The evidence also indicates that said fractures have provided pressure communication between wells in close proximity of this immediate area.

(12) There are indications from the evidence presented that the "dry" gas injected into the ARCO Empire-Abo Unit "J" Well No. 13 would migrate horizontally to the northeast by way of these fractures and cause OXY's Citgo Empire Abo Unit No. 5 to experience premature loss of NGL and oil production.

(13) It was the original intent by the applicant when the Empire-Abo Unit Pressure Maintenance Project was initiated and is further confirmed at this time by all parties concerned that the purpose of said Rule 7-A was to located~~ed~~ gas injection wells far enough away from non-unit participants so the correlative rights of said non-unit owners would be protected.

(14) ARCO's testimony was insufficient to show that any influence or disturbance to the Empire-Abo Pool from gas injection into its "J" Well No. 13 would be confined only to its Project Area, therefore approval of the Empire-Abo Unit "J" Well No. 13 to be utilized as a gas injection well should be denied.

(15) The location of the ARCO Empire-Abo Unit "J" Well No. 10 is such that no parties outside the Empire-Abo Unit would be adversely affected in any way and fully conforms to Rule 7-A of the Special Rules and Regulations of the Empire Abo Unit Pressure Maintenance Project.

(16) Approval for the conversion of the No. 10 well from a producing oil well to a gas injection well is in the best interest of conservation, will serve to protect correlative rights and will result in the increased recovery of the Empire-Abo Unit Pressure

Maintenance Project thereby preventing the waste of hydrocarbons.

(17) The operator should take all steps necessary to ensure that the injected gas enters only the proposed injection interval and is not permitted to escape into other formations or onto the surface from injection, production or plugged and abandoned wells.

(18) At the time of the hearing the applicant requested that it be allowed to inject gas into the Empire-Abo Unit into the Empire-Abo Unit "J" Well No. 10 up to a maximum surface pressure of 2000 psi which is greater than the Division's recommended guideline of 0.2 psi per foot of depth from the surface to the uppermost perforation.

(19) Prior to the approval of such higher injection pressure, the applicant should conduct a step-rate test on the proposed injection well to ensure that said higher pressure will not result in the fracturing of the injection formation or confining strata. Further, the Director of the Division should be authorized to administratively approve such an increase in the injection pressure.

(20) The Empire-Abo Unit "J" Well No. 10 should therefore initially be equipped as to limit the injection pressure at the wellhead to no more than 1113 psi.

(21) Injection should be accomplished through 2 3/8-inch plastic coated tubing installed in a packer set at 5450 approximately feet; the casing-tubing annulus should be filled with an inert fluid; and a pressure gauge or approved leak-detection device should be attached to the annulus in order to determine leaks in the casing, tubing or packer.

(22) Prior to commencing injection operations, the casing of the Empire-Abo Unit "J" Well No. 10 should be pressure-tested throughout the interval, from the surface down to the proposed packer-setting depth, to assure integrity of such casing.

(23) The operator should give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(24) The subject application should be approved and the project should be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The portion of the application by ARCO Oil and Gas Company to convert its Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, Township 18 South, Range 27 East, Empire-Abo Pool, Empire-Abo Unit Pressure Maintenance Project Area, NMPM, Eddy County, New Mexico from its present status to a gas injection well is hereby **denied**.

(2) The applicant, however, is authorized to expand said Empire-Abo Unit Pressure Maintenance Project by converting its "J" Well No. 10 located 2310 feet from the North and West lines (Unit F) of Section 3, Township 18 South, Range 27 East, Empire-Abo Pool, NMPM, Eddy County, New Mexico from a producing oil well to a gas injection well.

the Empire Abo Unit "J" Well No. 10
(3) Injection into ~~said well~~ shall be accomplished through 2 3/8-inch internally plastic coated tubing installed in a packer set at approximately 5450 feet, with injection into the perforated interval from approximately 5564 feet to 5630 feet;

PROVIDED HOWEVER THAT, the casing-tubing annulus shall be filled with an inert fluid; and a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak-detection device in order to determine leakage in the

casing, tubing or packer.

PROVIDED FURTHER THAT, prior to commencing injection operations, the casing in the subject well shall be pressure-tested to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's Artesia District Office.

(4) The injection well or system shall be equipped with a pressure-limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1113 psi.

(5) The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Abo formation.

(6) The operator shall notify the supervisor of the Artesia District Office of the Division in advance of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(7) The operator shall immediately notify the supervisor of the Division's Artesia District Office of the failure of the tubing, casing or packer, in said well or the leakage of gas ~~for~~ liquids from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(8) Monthly progress reports of the pressure maintenance project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

Case No. *
Order No. R-*
Page No. 8

(9) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

Rough Please

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 9931
ORDER NO. R-

APPLICATION OF ARCO OIL AND GAS COMPANY
FOR A PRESSURE MAINTENANCE EXPANSION AND AN
UNORTHODOX GAS INJECTION WELL, EDDY COUNTY,
NEW MEXICO

DRAFT

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 13, 1990 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ day of ~~June~~ 1990, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) The applicant, ARCO Oil and Gas Company (ARCO), seeks authority to expand its Empire-Abo Unit Pressure Maintenance Project, authorized by Division Order No. R-4549, as amended, by converting its Empire Abo Unit "J" Well No. 10, located 2310 feet from the North and West lines (Unit F) of Section 3 and Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, both in Township 18 South, Range 27 East, Empire Abo Pool, Empire Abo Unit Area from producing oil wells to gas injection wells. Further, the applicant also seeks an exception to Rule ~~3~~ of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project, as promulgated by said Order No. R-4549, as amended, for the "J" Well No. 13 which is located at an unorthodox gas injection well location.

Pressure Maintenance Project

~~7-10~~
EMPM, Eddy County, New Mexico,

(3)

7-A

(4) Rule ~~XXXX~~ of the Special Rule and Regulations for said project provides in part, "that no well shall be approved for gas or water injection when such well is located closer than 1650 feet to a tract which is not committed to the unit and on which is located a well producing from the same common source of seepage".

(5) By Division Order No. R-4808, dated ~~June~~ June 11, 1974, OXY USA, Inc. (OXY), formerly Cities Services Oil Company, was authorized to institute a gas injection pressure maintenance project designated the Citgo Empire Abo Unit Pressure Maintenance Project in the Empire-Abo Pool located in portions of Section 35, Township 17 South, Range 27 East, and Section 2, Township 18 South, Range 27 East, ^{comprises the NW1/4 NE1/4 and NE1/4 NW1/4 of} Eddy County, New Mexico.

(6) The ARCO Empire Abo Unit "J" Well No. 13 proposed new gas injector is located 933 feet from the southwest corner of the spacing unit on which OXY continues to produce oil and liquid saturated gas from its Citgo Empire Abo Unit Track 3 Well No. 5 ^{which is} located 990 feet from the North line and 1980 feet from the West line (Unit C) of said Section 2.
 (through perforations from 5627 feet to 5731 feet)

(7) OXY appeared in opposition to ARCO's application for conversion of the Empire-Abo Unit "J" Well No. 13 to gas injection asserting that said injection would cause its Citgo Empire-Abo Unit Well No. 5 to produce natural gas at higher rates thereby causing a loss of production of oil and other liquid hydrocarbons. OXY raised no objection to the conversion to injection of the Empire-Abo Unit "J" Well No. 10.

and seeks the enforcement
of Rule 7A to said Special
Rules in order to protect its correlative
rights,

waste by
allowing

FERC-121

1.0 API well number: (If not available, leave blank. 14 digits.)	30-025-29552		
2.0 Type of determination being sought: (Use the codes found on the front of this form.)	102 Section of NGPA	2 Category Code	
3.0 Depth of the deepest completion location: (Only needed if sections 103 or 107 in 2.0 above.)	_____ feet		
4.0 Name, address and code number of applicant: (35 letters per line maximum. If code number not available, leave blank.)	Southland Royalty Co. c/o Meridian Oil Inc. Name: 2919 Allen Parkway, Ste. 900 Seller Code Street: Houston, TX 77019 City: _____ State: _____ Zip Code: _____		
5.0 Location of this well: (Complete (a) or (b).) (a) For onshore wells (35 letters maximum for field name.)	Airstrip (Bone Springs) Field Name: Lea NM County: _____ State: _____		
(b) For OCS wells: <div style="text-align: center;">APR 16 RECEIVED</div>	Area Name: _____ Block Number: _____ Date of Lease: _____ Mo. Day Yr. OCS Lease Number: _____		
(c) Name and identification number of this well: (35 letters and digits maximum.)	Tonto "14" State #2 - State Lease No. LG-2750		
(d) If code 4 or 5 in 2.0 above, name of the reservoir: (35 letters maximum.)	_____		
6.0 (a) Name and code number of the purchaser: (35 letters and digits maximum. If code number not available, leave blank.)	Phillips Petroleum Company Buyer Code		
(b) Date of the contract:	03 29 85 Mo. Day Yr.		
(c) Estimated annual production:	10 MMcf.		
	(a) Base Price (\$/MMBTU)	(b) Tax	(c) All Other Prices (Indicate (+) or (-).)
7.0 Contract price: (As of filing date. Complete to 3 decimal places.)	_____	% of proceeds	_____
8.0 Maximum lawful rate: (As of filing date. Complete to 3 decimal places.)	4 5 1 6	3 3 9	4 8 5 5
9.0 Person responsible for this application:	David K. Miller Agent Name: _____ Title: _____ Signature: <i>David K. Miller</i> 4/1/87 (713) 831-1600 Date Application is Completed Phone Number		

STANDARD 7.9

- C. NEW ONSHORE PRODUCTION WELL UNDER SEC. 103
☐ All items required by Rule 16A or Rule 16B
 D. SEC. 107 HIGH-COST NATURAL GAS TIGHT FORMATION, DEEP, COAL

~~XXXXXXXXXXXXXXXXXXXX~~

(8) The Empire Abo Pool is a massive reef structure with a variable thickness ~~trending~~ trending east-northeast and west-southwest over approximately ~~a~~ nine miles. Both the ARCO project and the OXY project are within the Empire Abo Pool and involve a similar plan of operations where the reservoir voidage ~~is~~ ^{is} controlled, the gas and liquids ~~were~~ ^{are} produced by production wells located downstructure and the produced gas stripped of natural gas liquids (~~NGGL~~) ^(NGL) and then the "dry" gas reinjected into gas injection wells located high on the structure thereby forcing the oil down and to prevent ^{premature} gas coning in the producing wells.

(9) ARCO's testimony indicates that in the 16 years that the above-described operations have been in effect ~~has~~ ^{has} resulted in a very large column of gas on top of a ~~the~~ relatively thin column of oil and the associated stripping pattern ~~is~~ whereby the injected gas in the top of the reef has ^{also} "channeled" across the top of the reef and down to the producers.

(10) It is ARCO's intent to inject gas in the subject wells through perforations located lower in the structure than had previously been utilized in order to provide a more efficient sweep of ~~the~~ ^{any remaining} NGL's from the reservoirs.

- Empire Abo Unit "J" Well No. 10
Proposed injection interval - 5564 feet
to 5630 feet.

- Empire Abo Unit "J" Well No. 13
Proposed injection interval - 5710 feet
to 5784 feet.

(11) The geological evidence presented by both parties indicate ~~that the reservoir is fractured~~ the presence of natural fractures in the reservoir which are oriented in a northeast/southwest direction. ~~and provide~~ The evidence also indicates that said fractures ~~has~~ ^{have} provided pressure communication between wells in ~~the~~ close proximity of this immediate area.

(12) ARCO's testimony was insufficient to show that
any influence or disturbance to the
~~any influence to the~~ Empire No Pool from gas injection into ~~the~~ its
only

"J" Well No. 13 would be confined to its Project Area,
therefore approval of the Empire No Unit "J" Well
No. 13 as a gas injection well should be denied.
to be utilized

(13) The location of the ARCO Empire No Unit
"J" Well No. 10 is such that no further
outside of the Empire No Unit would be
adversely affected in any way and fully
conforms to ~~and~~ Rule 7A of the Special
Rules of the Empire ~~that~~ No Unit Pressure
Maintenance Project. ~~and~~ ~~therefore~~

(14) Approval ~~of the~~ for the conversion of the No. 10
well ~~for~~ from a producing oil well to a gas
injection well is in the best interest of conservation,
will serve to protect correlative rights, ^{and} will result
in the increased efficiency of the Empire No Unit

Form C-132

State of New Mexico
ENERGY - MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
P. O. BOX 2086

FOR DIVISION USE ONLY: APPLICATION FOR WELLHEAD PRICE CEILING CATEGORY DETERMINATION		5A. Indicate Type of Lease STATE <input type="checkbox"/> PER <input checked="" type="checkbox"/>
APPROPRIATE FILING FEE(S) ENCLOSED? YES _____ NO _____ DATE COMPLETE APPLICATION FILED _____ DATE DETERMINATION MADE _____ WAS APPLICATION CONTESTED? YES _____ NO _____ NAME(S) OF INTERVENOR(S), IF ANY: _____		5. State Oil & Gas Lease No. _____ 7. Unit Agreement Name _____ 8. Firm or Lessee Name <u>Bart & Lola</u> 9. Well No. <u>1</u> 10. Field and Pool, or Wildcat <u>Hawley/Dakota</u> 12. County <u>Rio Arriba</u>
2. Name of Operator <u>Sun Exploration and Production Company</u>		
3. Address of Operator <u>P. O. Box 2880, Dallas, Texas 75221-2880</u>		
4. Location of Well UNIT LETTER <u>I</u> LOCATED <u>1850</u> FEET FROM THE <u>South</u> LINE AND <u>790</u> FEET FROM THE <u>East</u> LINE OF SEC. <u>11</u> TWP. <u>24N</u> REC. <u>2W</u>		
11. Name and Address of Purchaser(s) <u>Undeveloped</u>		

Check appropriate box for category sought and information submitted. Enter required information on lines 1 and 2, below.

1. Category(ies) sought (By NGPA Section No.) 102(2 1/2 mile)

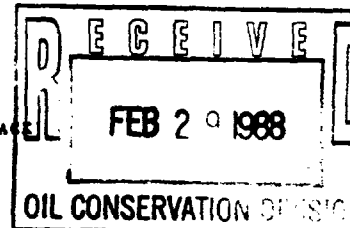
2. Filing Fee(s) Amount enclosed: \$25.00

3. All applications must contain:

- ☐ a. C-101 APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK
☐ b. C-105 WELL COMPLETION OR RECOMPLETION REPORT
☐ c. DIRECTIONAL DRILLING SURVEY, IF REQUIRED UNDER RULE 111
☐ d. AFFIDAVITS OF MAILING OR DELIVERY

4. In addition to the above, all applications must contain the items required by the applicable rule of the Division's "Special Rules for Applications for Wellhead Price Ceiling Category Determinations" as follows:

- A. NEW NATURAL GAS UNDER SEC. 102(c)(1)(B) (using 2.5 Mile or 1000 Feet Deeper Test)
☒ All items required by Rule 14(1) and/or Rule 14(2)
 B. NEW NATURAL GAS UNDER SEC. 102(c)(1)(C) (new onshore reservoir)
☐ All items required by Rule 15
 C. NEW ONSHORE PRODUCTION WELL UNDER SEC. 103
☐ All items required by Rule 16A or Rule 16B
 D. SEC. 107 HIGH-COST NATURAL GAS (TIGHT FORMATION, DEEP, COAL SEAM, AND PRODUCTION ENHANCEMENT)
☐ All items required by Rule 17(1), Rule 17(2), Rule 17(4), or Rule 17(5)
 E. STRIPPER WELL NATURAL GAS UNDER SEC. 108
☐ All items required by Rule 18



I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Sun Exploration and Production

NAME OF APPLICANT (Type or Print)

Gloria Dixon Gloria Dixon

SIGNATURE OF APPLICANT

Title Supervisor, NGPA Compliance

Date FEBRUARY 22, 1988

FOR DIVISION USE ONLY	
<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	The information contained herein includes all of the information required to be filed by the applicant under Subpart B of Part 274 of the FERC regulations.
EXAMINER _____	

() There are ~~into~~ indications from the evidence presented that the "dry" gas injected into the ARCO Empire Aho Unit "J" Well No. 13 would migrate ^{horizontally} to the northeast by way of these fractures and cause the OXY's Citgo Empire Aho Unit Well No. 5 to experience premature loss of NGL and oil production.

() It was the original intent by ~~all parties~~ the applicant when the Empire Aho Unit Pressure Maintenance Project was initiated and is further confirmed at this time by all parties concerned that the purpose of said Rule 7A was to locate gas injection wells far enough away from non-unit participants so the correlative rights of said ~~non-unit~~ owners would be protected.

() ARCO's testimony was insufficient to show that gas injection into the "J" Well No. 13 would ~~not~~ be confined to its Unit

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION



GAREY CARPENTERS
SENIOR

SOUTHLAND ROYALTY COMPANY
& MERIDIAN OIL INC.
P. O BOX 4238
HOUSTON, TEXAS 77210

POST OFFICE BOX 228
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 927-5800

*WITHDRAWN
RETURN*

Re: Well head price ceiling
determination, NGPA of 1978

Gentlemen:

The New Mexico Oil Conservation Division has recieved your application for a wellhead price ceiling category determination under the sections(s) of the Natural Gas Policy Act of 1978 indicated below if your application is incomplete, forms are attached hereto, indicating the documents and further information which must be filed before your application can be considered. If your application is complete, it will be acted upon administratively unless written objection is received within 15 days of its filing.

WELL NAME AND LOCATION TONTO "14" STATE 14-18S-34E #2-K

SECTION(S) APPLIED FOR 102.2

DATE APPLICATION RECEIVED April 16, 1987

APPLICATION INCOMPLETE It appears that there are several marker wells

within the 2.5 mile radius. I, therefore, cannot approve this application
under the 102.2 provisions of the FERC. This application is hereby
withdrawn and is being
returned to you.

Sincerely,

Michael J. Agnew

DATE: Jan. 30, 1989

NOTE:

THIS FORM LETTER MUST ACCOMPANT TWO COPIES OF THE SUPPLEMENTARY
INFORMATION.

c.c. - Phillips Petroleum Company
Vic hven

Pressure Maintenance Project study preventing the
waste of hydrocarbons.



December 5, 1988

Sun Exploration and
Production Company
Four NorthPark East
5656 Blackwell
P O Box 2880
Dallas TX 75221-2880
214 890 6000

Department of Energy and Minerals
New Mexico Oil Conservation Division
Attn: Michael Stogner
P.O. Box 2088
Santa Fe, New Mexico 87501

WITHDRAWAL OF NGPA WELL FILING

Category Determination Application under
Section 102 (2.5 mile) of the Natural Gas Policy Act of 1978

Well Name/No.: Boyt & Lola -A- #1 (I-11-24N-2W)

Field: Gavilan

County/State: Rio Arriba/New Mexico

Contract No. (Date): 55493 (12-1-87)

State Docket No.: N/A

FERC Docket No.: N/A

Dear Sir:

By filing dated December 30, 1987 and received by you on January 19, 1988,
Sun Exploration and Production Company filed for category determination
under Section 102 (2.5 mile) of the Natural Gas Policy Act of 1978.

Sun respectfully requests that its application for category
determination be withdrawn.

Please be advised that any monies collected in reliance upon this
filing will be refunded with interest in accordance with NGPA
requirements.

Sincerely yours,

Toni A. Rowe
Toni A. Rowe

Senior Regulations Analyst

TAR/vm

cc: Mary Holmes - 531

Barbara Sullivan - 1551

Purchaser - Golden Natural Gas Company
Co-Owners - List Attached

4M2/4293 - (1)

(3) The volumes which ARCO proposes to inject do not exceed the current reservoir voidage from the proposed injection well and the offsets thereto and the correlative rights of operators in the pool will therefore not be impaired by the proposed injection.

(4) The wells in the proposed project area are in an advanced state of depletion and should therefore be properly classified as "stripper wells."

(5)(8) The operator should take all steps necessary to ensure that the injected gas enters only the proposed injection interval and is not permitted to escape into other formations or onto the surface from injection, production or plugged and abandoned wells.

(16) At the time of the hearing the applicant requested that it be allowed to inject ~~in~~ gas into the Empire ~~Field~~ Abo Unit "J" Well No. 10 at up to a maximum surface pressure of 3000 psi which is greater than the Division's recommended guideline of 0.2 psi per foot of depth ^{from the surface} to the uppermost perforation.

(17) Prior to approval of such higher injection pressure the applicant should conduct step-rate tests on the proposed injection well to ensure that said higher pressure will not result in the fracturing of the injection formation or confining strata. Further, the Director of the Division should be authorized to administratively approve such an increase ^{in the injection pressure.}
(18) The Empire Abo Unit "J" Well No. 10 should therefore initially be equipped as to limit the injection pressure at the wellhead to no more than 1113 psi.

(19)(6) Injection should be accomplished through 2 3/8-inch plastic coated tubing installed in a packer set at approximately 5450 feet; the casing-tubing annulus should be filled with an inert fluid; and a pressure gauge or approved leak-detection device should be attached to the annulus in order to determine leaks in the casing, tubing or packer.

20(7) Prior to commencing injection operations, the casing of the ~~subject well~~ ^{Empire Abo Unit "J" Well No. 10} should be pressure-tested throughout the interval, from the surface down to the proposed packer-setting depth, to assure integrity of such casing.

(8) The Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such high pressure will not result in migration of the injected gas from the Abo formation.

21(9) The operator should give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

22(10) The subject application should be approved and the project should be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

State of New Mexico

ENERGY - MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 1000

Santa Fe, New Mexico 87504-2000

FOR DIVISION

USE ONLY:

APPLICATION FOR WELLHEAD PRICE CEILING CATEGORY DETERMINATION

APPROPRIATE FILING FEE(S) ENCLOSED? YES ☒ NO ☐

DATE COMPLETE APPLICATION FILED _____

DATE DETERMINATION MADE _____

WAS APPLICATION CONTESTED? YES ☐ NO ☐

NAME(S) OF INTERVENOR(S), IF ANY: _____

- FILING FEE(S) -
Effective October 1, 1986,
a non-refundable filing fee
of \$25.00 per category for
each application is mandatory.
(Rule 2, Order No. R-5878-B-3)

3A. Indicate Type of Lease

STATE ☒ FEDERAL ☐

3. Lease Oil & Gas Lease No.
LG-2730

7. Unit Agreement Name

8. Farm or Lease Name

Tonto "14" State

9. Well No.

2

10. Field and Pool, or Wildcat

Airstrip (Bone Springs)

12. County

Lea

1. Name of Operator

Southland Royalty Company, c/o Meridian Oil Inc.

2. Address of Operator

P.O. Box 4239, Houston, TX 77210

4. Location of Well

ONLY LETTER

K

LOCATED

2130

FEET FROM THE

South

1980

West

14

185

34E

11. Name and Address of Purchaser(s)

Phillips Petroleum Company, 336 HS&L Bldg., Bartlesville, OK 74004

Check appropriate box for category sought and information submitted. Enter required information on lines 1 and 2, below.

1. Category(ies) sought (By NCPA Section No.) 102 OIL CONSERVATION DIVISION

2. Filing Fee(s) Amount enclosed: \$ 25.00

3. All applications must contain:

☒ a. C-101 APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

☒ b. C-105 WELL COMPLETION OR RECOMPLETION REPORT

☐ c. DIRECTIONAL DRILLING SURVEY, IF REQUIRED UNDER RULE 111

☒ d. AFFIDAVITS OF MAILING OR DELIVERY

4. In addition to the above, all applications must contain the items required by the applicable rule of the Division's "Special Rules for Applications for Wellhead Price Ceiling Category Determinations" as follows:

A. NEW NATURAL GAS UNDER SEC. 102(c)(1)(B) (using 2.5 Mile or 1000 Feet Deeper Test)

☒ All items required by Rule 14(1) and/or Rule 14(2)

B. NEW NATURAL GAS UNDER SEC. 102(c)(1)(C) (new onshore reservoir)

☐ All items required by Rule 15

C. NEW ONSHORE PRODUCTION WELL UNDER SEC. 103

☐ All items required by Rule 16A or Rule 16B

D. SEC. 107 HIGH-COST NATURAL GAS (TIGHT FORMATION, DEEP, COAL SEAM, AND PRODUCTION ENHANCEMENT)

☐ All items required by Rule 17(1), Rule 17(2), Rule 17(4), or Rule 17(5)

E. STRIPPER WELL NATURAL GAS UNDER SEC. 108

☐ All items required by Rule 18

I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

David K. Miller

NAME OF APPLICANT (Type or Print)

SIGNATURE OF APPLICANT

Title Agent

Date 3/31/87

FOR DIVISION USE ONLY

☐ Approved

☐ Disapproved

The information contained herein includes all of the information required to be filed by the applicant under Subpart B of Part 274 of the FERC regulations.

EXAMINER

IT IS THEREFORE ORDERED THAT:

- (1) The portion of the application by ARCO Oil and Gas Company to convert its Empire No Unit "5" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, Township 18 South, Range 27 East, Empire No Pool, Empire No Unit ~~Area~~ Pressure Maintenance Project Area, N.M.P.M., Eddy County, New Mexico ~~from~~ from its present status to a gas injection well ~~is~~ is hereby denied.
- (2) The applicant however is hereby authorized to expand said Empire No Unit Pressure Maintenance Project by converting its "5" well No. 10 located 2310 feet from the North and West lines (Unit F) of Section 3, Township 18 South, Range 27 East, Empire No Pool, N.M.P.M., Eddy County, New Mexico from a producing oil well to a gas injection well.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION



GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

December 22, 1988

Sun Exploration and Production Company

P.O. Box 2980
Dallas, TX 75221-2880

Attention: Tom A. Rowe
Senior Regulations Analyst

RE: NGPA Section 102.2 Filing
Boyt & Lola "A" Well No.
1; I-11-T24N-R2W, Gavilan
Manco Oil Pool, Rio
Arriba County, New
Mexico.

Dear Ms. Rowe:

Per your letter dated December 5, 1988, the subject NGPA
Application is hereby withdrawn and is being returned to you at
this time.

Sincerely,

A handwritten signature in dark ink, appearing to read "Michael E. Stogner".

Michael E. Stogner
Petroleum Engineer

MES/ag

cc: Northwest Pipeline Company

internally plastic coated
³(2) Injection into said well shall be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 5450 feet, with injection into the perforated interval from approximately 5564 feet to 5630 feet;

PROVIDED HOWEVER THAT, the casing-tubing annulus shall be filled with an inert fluid; and a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak-detection device in order to determine leakage in the casing, tubing or packer.

PROVIDED FURTHER THAT, prior to commencing injection operations, the casing in the subject well shall be pressure-tested to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's Artesia District Office.

⁴(3) The injection well or system shall be equipped with a pressure-limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1113 psi.

⁵(4) The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Abo formation.

⁶(5) The operator shall notify the supervisor of the Artesia District Office of the Division in advance of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

⁷(6) The operator shall immediately notify the supervisor of the Division's Artesia District Office of the failure of the tubing, casing or packer, in said well or the leakage of gas from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

or liquids
⁸(7) Monthly progress reports of the pressure maintenance project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

⁹(8) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

Case No. *
Order No. R-*
Page No. 4

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

M.S. 3/12/91
RS 3/12/91

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

HM
3-12-91
2
DRAFT
3/12/91
CASE NO. 9931
ORDER NO. R-9466

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

APPLICATION OF ARCO OIL AND GAS COMPANY
FOR A PRESSURE MAINTENANCE EXPANSION AND AN
UNORTHODOX GAS INJECTION WELL, EDDY COUNTY,
NEW MEXICO

M.S.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 13, 1990 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ day of March, 1991 the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) The applicant, ARCO Oil and Gas Company (ARCO), seeks authority to expand its Empire-Abo Unit Pressure Maintenance Project, authorized by Division Order No. R-4549, as amended, by converting its Empire Abo Unit "J" Well No. 10, located 2310 feet from the North and West lines (Unit F) of Section 3 and Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, both in Township 18 South, Range 27 East, Empire-Abo Pool, Empire Abo Unit Pressure Maintenance Project Area, NMPM, Eddy County, New Mexico, from producing oil wells to gas injection wells.

(3) Further, the applicant also seeks an exception to Rule 7-A of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project, as promulgated by said Order No. R-4549, as amended, for the "J" Well No. 13 which is located at an unorthodox gas injection well location.

(4) Rule 7-A of the Special Rules and Regulations for said project provides, in part, "that no well shall be approved for gas or water injection when such well is located closer than 1650 feet to a tract which is not committed to the unit and on which is located a well producing from the same common source of supply."

(5) By Division Order No. R-4808, dated June 11, 1974, OXY USA, Inc. (OXY), formerly Cities Service Oil Company, was authorized to institute a gas injection pressure maintenance project designated the Citgo Empire Abo Unit Pressure Maintenance Project in the Empire-Abo Pool located in portions of Section 35, Township 17 South, Range 27 East, and comprising the NW/4 NE/4 and NE/4 NW/4 of Section 2, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico.

(6) The ARCO Empire Abo Unit "J" Well No. 13 proposed new gas injector is located 933 feet from the southwest corner of the spacing unit on which OXY continues to produce oil and liquid saturated gas (through perforations from 5627 feet to 5731 feet) from its Citgo Empire Abo Unit Tract No. 3 ^W well No. 5 which is located 990 feet from the North line and 1980 feet from the West line (Unit C) of said Section 2.

(7) OXY appeared in opposition to ARCO's application for conversion of the Empire-Abo Unit "J" Well No. 13 to gas injection and seeks the enforcement of Rule 7-A to said Special Rules in order to protect ^{its} ~~is~~ correlative rights, asserting that said injection would cause its Citgo Empire-Abo Unit Well No. 5 to produce natural gas at higher rates thereby causing waste by allowing the loss of production of oil and other liquid

hydrocarbons. OXY raised no objection to the conversion ^{to} ~~of~~ injection of the Empire-Abo Unit "J" Well No. 10.

(8) The Empire-Abo Pool is a massive reef structure with variable thickness trending east-northeast and west-southwest over approximately nine miles. Both the ARCO ~~project and the~~ ^{and} OXY ~~projects~~ ^{are} within the Empire-Abo Pool and involve a similar plan of operation where reservoir voidage is controlled, the gas and liquids are produced by production wells located downstructure on the reef and the produced gas is then stripped of natural gas liquids (NGL) and the "dry" gas reinjected into gas injection wells located high on the reef structure thereby forcing the oil down preventing premature gas coning in the producing wells.

(9) ARCO's testimony indicates that in the 16 years that the above-described operations have been in effect, ^{they have} ~~has~~ ⁽¹⁾ resulted in a very large column of gas on top of a relatively thin column of oil, ⁽²⁾ ~~and the~~ ^{between wells} associated stripping pattern whereby the injected gas in the top of the reef has also channeled across the top of the reef and down to the producers.

(10) It is ARCO's intent to inject gas in the subject wells through perforations located lower in the structure than had previously been utilized in order to provide a more efficient sweep of any remaining NGLs from the reservoir:

- Empire Abo Unit "J" Well No. 10
Proposed injection interval - 5564 feet to 5630 feet
- Empire Abo Unit "J" Well No. 13
Proposed injection interval - 5710 feet to 5784 feet.

(11) The geological evidence presented by both parties indicates the presence of natural fractures in the reservoir which are oriented in a northeast-southwest direction. The evidence also indicates that said fractures have provided pressure communication between wells in close proximity of this immediate area.

(12) There are indications from the evidence presented that the "dry" gas injected into the ARCO Empire-Abo Unit "J" Well No. 13 would migrate horizontally to the northeast by way of these fractures and cause OXY's Citgo Empire Abo Unit No. 5 to experience premature loss of NGL and oil production.

(13) It was the original intent by the applicant when the Empire-Abo Unit Pressure Maintenance Project was initiated and is further confirmed at this time by all parties concerned that the purpose of said Rule 7-A was to locate gas injection wells far enough away from non-unit participants so the correlative rights of said non-unit owners would be protected.

(14) ARCO's testimony was insufficient to show that any influence or disturbance to the Empire-Abo Pool from gas injection into its "J" Well No. 13 would be confined only to its Project Area, therefore approval of the Empire-Abo Unit "J" Well No. 13 to be utilized as a gas injection well should be denied.

(15) The location of the ARCO Empire-Abo Unit "J" Well No. 10 is such that no parties outside the Empire-Abo Unit would be adversely affected in any way and fully conforms to Rule 7-A of the Special Rules and Regulations of the Empire Abo Unit Pressure Maintenance Project.

(16) Approval for the conversion of the No. 10 well from a producing oil well to a gas injection well is in the best interest of conservation, will serve to protect correlative

rights and will result in the increased recovery of the Empire-Abo Unit Pressure Maintenance Project thereby preventing the waste of hydrocarbons.

(17) The operator should take all steps necessary to ensure that the injected gas enters only the proposed injection interval and is not permitted to escape into other formations or onto the surface from injection, production or plugged and abandoned wells.

(18) At the time of the hearing the applicant requested that it be allowed to inject gas into the Empire-Abo Unit into the Empire-Abo Unit "J" Well No. 10 up to a maximum surface pressure of 2000 psi which is greater than the Division's recommended guideline of 0.2 psi per foot of depth from the surface to the uppermost perforation.

(19) Prior to the approval of such higher injection pressure, the applicant should conduct a step-rate test on the proposed injection well to ensure that said higher pressure will not result in the fracturing of the injection formation or confining strata. Further, the Director of the Division should be authorized to administratively approve such an increase in the injection pressure.

(20) The Empire-Abo Unit "J" Well No. 10 should therefore initially be equipped as to limit the injection pressure at the wellhead to no more than 1113 psi.

(21) Injection should be accomplished through 2 3/8-inch plastic-coated tubing installed in a packer set at 5450 approximately feet; the casing-tubing annulus should be filled with an inert fluid; and a pressure gauge or approved leak-detection device should be attached to the annulus in order to determine leaks^{age} in the casing, tubing or packer.

(22) Prior to commencing injection operations, the casing of the Empire-Abo Unit "J" Well No. 10 should be pressure-tested throughout the interval, from the surface down

to the proposed packer-setting depth, to assure integrity of such casing.

(23) The operator should give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(24) The subject application should be approved and the project should be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The portion of the application by ARCO Oil and Gas Company to convert its Empire Abo Unit "J" Well No. 13 located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 2, Township 18 South, Range 27 East, Empire-Abo Pool, Empire-Abo Unit Pressure Maintenance Project Area, NMPM, Eddy County, New Mexico from its present status to a gas injection well is hereby **denied**.

(2) The applicant, however, is authorized to expand said Empire-Abo Unit Pressure Maintenance Project by converting its "J" Well No. 10 located 2310 feet from the North and West lines (Unit F) of Section 3, Township 18 South, Range 27 East, Empire-Abo Pool, NMPM, Eddy County, New Mexico from a producing oil well to a gas injection well.

(3) Injection into the Empire-Abo Unit "J" Well No. 10 shall be accomplished through 2 3/8-inch internally plastic-coated tubing installed in a packer set at approximately 5450 feet, with injection into the perforated interval from approximately 5564 feet to 5630 feet;

PROVIDED HOWEVER THAT, the casing-tubing annulus shall be filled with an inert fluid; and a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak-detection device in order to determine leakage in the casing, tubing or packer.

PROVIDED FURTHER THAT, prior to commencing injection operations, the casing in the subject well shall be pressure-tested to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's Artesia District Office.

(4) The injection well or system shall be equipped with a pressure-limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1113 psi.

(5) The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Abo formation.

(6) The operator shall notify the supervisor of the Artesia District Office of the Division in advance of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(7) The operator shall immediately notify the supervisor of the Division's Artesia District Office of the failure of the tubing, casing or packer, in said well or the leakage of gas or liquids from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(8) Monthly progress reports of the pressure maintenance project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the

Case No. 9931

Order No. R-_____

Page No. 8

Division Rules and Regulations.

(9) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L