



Amoco Production Company

500 Jefferson Building
P.O. Box 3092
Houston, Texas 77001

June 17, 1975

File: CGF-2572-LF

Re: Third Revision of the
Morrow Participating Area,
Empire South Deep Unit,
Eddy County, New Mexico

WORKING INTEREST OWNERS
EMPIRE SOUTH DEEP UNIT

Gentlemen:

In connection with securing approval of the third revision of the Morrow Participating Area for the Empire South Deep Unit in Eddy County, New Mexico, we are attaching for your information and records copies of our letter of April 3, 1975, File: RCJ-956-LF, which have been stamped "Approved" by the USGS and the New Mexico Commissioner of Public Lands, along with their respective transmittal letters of May 7, 1975, and June 5, 1975. Also enclosed is a copy of the NMOCC letter of April 14, 1975, approving this revision.

Yours very truly,

J. L. Hoyt, Jr.
District Production Superintendent

HGA/jh
2/397853

Attachments

cc: New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, NM 87501

All Royalty and Overriding Royalty Owners
Empire South Deep Unit



Amoco Production Company

500 Jefferson Building
P.O. Box 3092
Houston, Texas 77001

Carl J. Christensen
Assistant Division
Production Manager

April 3, 1975

File: RCJ-956-LF

Re: Third Revision of the
Morrow Participating Area
Empire South Deep Unit
Eddy County, New Mexico

APPROVED MAY 07 1975
Carl C. Traywick
ACTING Area Oil & Gas Supervisor
U. S. Geological Survey

Mr. Carl C. Traywick (3)
United States Department of the Interior
P. O. Drawer 1857
Roswell, NM 88201

Mr. James E. Kapteina (3)
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, NM 87501

APR 9 1975
U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

Gentlemen:

Amoco Production Company is the successor Operator to Midwest Oil Corporation of the Empire South Deep Unit, Eddy County, New Mexico, No. 14-08-0001-11591. As such, we propose a Third Revision of the Participating Area for the Morrow Series of the Pennsylvanian System be made to include the following lands effective as of November 1, 1974.

<u>T17S, R28E</u>	<u>T17S, R28E</u>
Section 36: NE/4 NE/4	Section 30: Lot 4, SE/4 SW/4, S/2 SE/4
	Section 31: Lot 1, NE/4 NW/4, N/2 NE/4
	Section 32: W/2 NW/4, NW/4 SW/4
Total Acres to be added	= 457.03
Previous Participating	
Area Acres	= 1516.65
New Total	= 1973.68 acres

In support of this application we attach the following:

1. An ownership map showing the boundaries of the Unit Area, location of the wells, the Initial, First Revision, Second Revision and proposed Third Revision of the Participating Area.
2. A contour map on the Middle Morrow showing wells in the Unit and surrounding area.
3. A seven well Morrow cross-section showing the 5 Unit wells plus 2 nearby producers.
4. A schedule showing the lands entitled to participate in unitized substances from the Morrow in the present participating area plus the proposed Third Revision with the percentage of participation of each lease or tract in such area. A list of the working interest owners in the Unit is also included.

The proposed Third Revision of the Morrow participating area is based primarily on the information revealed by drilling and completing Well No. 5. As you can note from the log cross section this well drilled an about 72' thick sand section from 11,796' to 11,868' with porosity averaging 10.4%. It was completed natural November 25, 1974, from perforations placed at 11,796' to 11,803'. It was subsequently tested for an official calculated absolute open flow of 12,874 MCFD. Log calculations show higher water saturations in the bottom of the sand.

The well was placed on temporary production for 60 days in January, 1975, during which time it produced 113,794 MCF of gas with rates varying up to 7 million cubic feet per day. Some water was being produced when the sales period ended. In a volumetric reservoir such as the Morrow, water production is not ordinarily a problem and we feel the well is definitely a "commercial" producer.

The proposed Third Revision of the Morrow Participating Area is shown by color and by graphic linear code on the Unit map referred to in 1. above. It contains 12-40 acre tracts or lots as compared to 20 in the Initial Area, 5 in the First Revision and 10 in the Second Revision. The North half of Section 31, T17S, R29E, has already been assigned as the proration unit for Well No. 5. We feel the proposed Third Revision is very reasonable and compares favorably to previous actions. It also recognizes the slight eastward trend of the producing area.

Page 3
April 3, 1975

Your favorable consideration of the foregoing is respectfully requested.

Yours very truly,

A handwritten signature in cursive script, appearing to read "J. V. M. Christensen". The signature is written in dark ink on a white background.

JVM/mct
4/04

April 3, 1975

File: RCJ-956-LF

Re: Third Revision of the
Morrow Participating Area
Empire South Deep Unit
Eddy County, New Mexico

Mr. Carl C. Traywick (3)
United States Department of the Interior
P. O. Drawer 1357
Potsdam, NM 88201

Mr. James E. Kapteina (3)
New Mexico Oil Conservation Commission
P. O. Box 2002
Santa Fe, NM 87501

Gentlemen:

Amoco Production Company is the successor Operator to Midwest Oil Corporation of the Empire South Deep Unit, Eddy County, New Mexico, No. 14-08-0001-11591. As such, we propose a Third Revision of the Participating Area for the Morrow Series of the Pennsylvanian System be made to include the following lands effective as of November 1, 1974.

<u>T17S, R28E</u>	<u>T17S, R28E</u>
Section 36: NE/4 NE/4	Section 30: Lot 4, SE/4 SW/4, S/2 SE/4
	Section 31: Lot 1, NE/4 NW/4, N/2 NE/4
	Section 32: W/2 NW/4, NW/4 SW/4
Total Acres to be added	= 457.03
Previous Participating Area Acres	= 1516.65
New Total	= 1973.68 acres

ILLEGIBLE

In support of this application we attach the following:

1. An ownership map showing the boundaries of the Unit Area, location of the wells, the Initial, First Revision, Second Revision and proposed Third Revision of the Participating Area.
2. A contour map on the Middle Morrow showing wells in the Unit and surrounding area.
3. A seven well Morrow cross-section showing the 5 Unit wells plus 2 nearby producers.
4. A schedule showing the lands entitled to participate in unitized substances from the Morrow in the present participating area plus the proposed Third Revision with the percentage of participation of each lease or tract in such area. A list of the working interest owners in the Unit is also included.

The proposed Third Revision of the Morrow participating area is based primarily on the information revealed by drilling and completing Well No. 5. As you can note from the log cross section this well drilled an about 72' thick sand section from 11,796' to 11,868' with porosity averaging 10.4%. It was completed natural November 25, 1974, from perforations placed at 11,796' to 11,803'. It was subsequently tested for an official calculated absolute open flow of 12,874 MCFD. Log calculations show higher water saturations in the bottom of the sand.

The well was placed on temporary production for 60 days in January, 1975, during which time it produced 113,794 MCF of gas with rates varying up to 7 million cubic feet per day. Some water was being produced when the sales period ended. In a volumetric reservoir such as the Morrow, water production is not ordinarily a problem and we feel the well is definitely a "commercial" producer.

The proposed Third Revision of the Morrow Participating Area is shown by color and by graphic linear code on the Unit map referred to in 1. above. It contains 12-40 acre tracts or lots as compared to 20 in the Initial Area, 5 in the First Revision and 10 in the Second Revision. The North half of Section 31, T17S, R29E, has already been assigned as the proration unit for Well No. 5. We feel the proposed Third Revision is very reasonable and compares favorably to previous actions. It also recognizes the slight eastward trend of the producing area.

Page 3
April 3, 1975

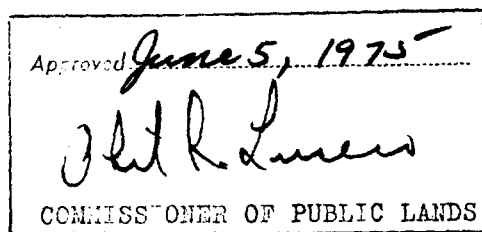
Your favorable consideration of the foregoing is respectfully requested.

Yours very truly,

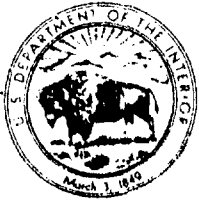
ORIGINAL SIGNED BY
C. J. CHRISTENSEN

JVM/mct
4/74

bcc: Mr. Alex Clarke, Jr.



ILLEGIBLE



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

May 7, 1975

Amoco Production Company
Attention: Mr. Carl J. Christensen
P. O. Box 3092
Houston, Texas 77001

Gentlemen:

Your application of April 3, 1975, requesting approval of the third revision of the Morrow participating area for the Empire South Deep unit agreement, Eddy County, New Mexico, was approved May 7, 1975, by the Acting Area Oil and Gas Supervisor, U. S. Geological Survey, effective as of November 1, 1974.

The third revision adds 457.03 acres described on page one of the application, thereby enlarging the Morrow participating area to 1,973.68 acres. Such revision is based on information obtained by the November 25, 1974, completion of unit well No. 5 in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 17 S., R. 29 E., N.M.P.M., in the Morrow interval 10,796 to 10,803 feet for a calculated open flow potential of 12,874 MCFGPD.

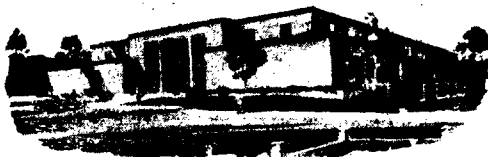
Copies of the approved application are being distributed to the appropriate Federal offices and one approved copy is returned herewith. You are requested to furnish all interested parties with appropriate evidence of this approval.

Sincerely yours,

CARL C. TRAYWICK
Acting Area Oil and Gas Supervisor



State of New Mexico



TELEPHONE
505-827-2748

Commissioner of Public Lands

June 5, 1975

PHIL R. LUCERO
COMMISSIONER

Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

Re: Third Revision, Morrow
Participating Area,
Empire South Deep Unit
Eddy County, New Mexico

ATTENTION: Mr. J. C. Burton

Gentlemen:

The Commissioner of Public Lands has this date approved the third revision of the Morrow participating area for the Empire South Deep Unit agreement, Eddy County, New Mexico. The USGS gave their approval May 7, 1975, and the OCC approved April 14, 1975.

Enclosed is one approved copy for your files.

Very truly yours,

PHIL R. LUCERO
COMMISSIONER OF PUBLIC LAND

BY: *Ray D. Graham*
RAY D. GRAHAM, Director
Oil and Gas Division

PRL/RDG/s
encl.
cc:

USGS-Roswell, New Mexico
OCC- Santa Fe, New Mexico

PRODUCING DEPT. P. O. BOX 1148 SANTA FE, NEW MEXICO 87501 JUN 11 '75			
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OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

April 14, 1975

I. R. TRUJILLO
CHAIRMAN

LAND COMMISSIONER
PHIL R. LUCERO
MEMBER

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

Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

Attention: Mr. C. J. Christensen

Re: Third Revision, Morrow
Participating Area,
Empire South Deep Unit,
Eddy County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Third Revision of the Participating Area for the Morrow Formation for the Empire South Deep Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey.

Two approved copies of the application are returned herewith.

Very truly yours,

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

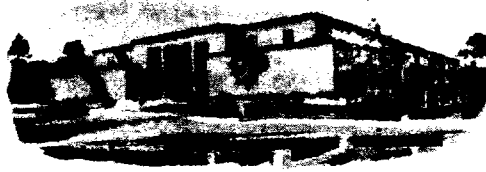
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cc: United States Geological Survey
Box 1857
Roswell, New Mexico

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State of New Mexico



TELEPHONE
303-827-2748

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Commissioner of Public Lands
June 5, 1975

PHIL R. LUCERO
COMMISSIONER

P. O. BOX 1148
SANTA FE, NEW MEXICO 87501

Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

Re: Third Revision, Morrow
Participating Area,
Empire South Deep Unit
Eddy County, New Mexico

ATTENTION: Mr. J. C. Burton

Gentlemen:

The Commissioner of Public Lands has this date approved the third revision of the Morrow participating area for the Empire South Deep Unit agreement, Eddy County, New Mexico. The USGS gave their approval May 7, 1975, and the OGC approved April 14, 1975.

Enclosed is one approved copy for your files.

Very truly yours,

PHIL R. LUCERO
COMMISSIONER OF PUBLIC LAND

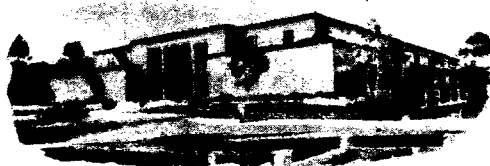
BY:
RAY D. GRAMAM, Director
Oil and Gas Division

PRL/EDG/s
encl.
cc:

USGS-Roswell, New Mexico
OCC- Santa Fe, New Mexico



State of New Mexico



TELEPHONE
505-827-2748

4/5/78

Commissioner of Public Lands

June 5, 1975

PHIL R. LUCERO
COMMISSIONER

P. O. BOX 1148
SANTA FE, NEW MEXICO 87501

Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

Re: Empire South Deep Unit
1975 PLAN OF DEVELOPMENT
Eddy County, New Mexico

ATTENTION: Mr. J. C. Burton

Gentlemen:

The Commissioner of Public Lands has this date approved your 1975 Plan of Development for the Empire South Deep Unit which proposes the drilling of three Morrow wells one of which will be located on the edge of the East Central unit area to prevent drainage of unitized substances contingent upon the completion of an agreement for the well spacing unit. The USGS gave their approval May 9, 1975 and the OCC gave their approval April 14, 1975.

One approved copy of the plan is enclosed herewith.

Please remit a Three (\$3.00) Dollar filing fee.

Very truly yours,

PHIL R. LUCERO
COMMISSIONER OF PUBLIC LANDS

BY:
RAY D. GRAHAM, Director
Oil and Gas Division

PRE/HDG/s
encl.
cc:

USGS-Roswell, New Mexico
OCC- Santa Fe, New Mexico ✓



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

May 9, 1975

Amoco Production Company
Attention: Mr. C. J. Christensen
P. O. Box 3092
Houston, Texas 77001

Gentlemen:

The 1975 plan of development submitted for the Empire South Deep unit area, Eddy County, New Mexico, was approved on this date subject to like approval by the appropriate State officials.

Such plan proposes the drilling of three Morrow wells one of which will be located on the edge of the East Central unit area to prevent drainage of unmined substances contingent upon the completion of an agreement for the well spacing unit. One approved copy is enclosed.

Sincerely yours,

[ORIG. SGD.] CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Area Oil and Gas Supervisor

cc:
Artesia (w/cy plan)
NMOCC, Santa Fe (ltr only) ✓
Commissioner of Public Lands, Santa Fe (ltr only)

JAGillham/hr



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

May 7, 1975

Amoco Production Company
Attention: Mr. Carl J. Christensen
P. O. Box 3092
Houston, Texas 77001

Gentlemen:

Your application of April 3, 1975, requesting approval of the third revision of the Morrow participating area for the Empire South Deep unit agreement, Eddy County, New Mexico, was approved May 7, 1975, by the Acting Area Oil and Gas Supervisor, U. S. Geological Survey, effective as of November 1, 1974.

The third revision adds 457.03 acres described on page one of the application, thereby enlarging the Morrow participating area to 1,973.68 acres. Such revision is based on information obtained by the November 25, 1974, completion of unit well No. 5 in the SW 1/4 sec. 31, T. 17 S., R. 29 E., N.M.P.M., in the Morrow interval 10,796 to 10,803 feet for a calculated open flow potential of 12,874 MCFGPD.

Copies of the approved application are being distributed to the appropriate Federal offices and one approved copy is returned herewith. You are requested to furnish all interested parties with appropriate evidence of this approval.

Sincerely yours,

(ORIG. SGD.) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Area Oil and Gas Supervisor

cc:

BLM, Santa Fe (ltr only)

NMOCC, Santa Fe (ltr only) ✓

Commissioner of Public Lands, Santa Fe (ltr only)

Artesia (w/cy appln)

ARStall/hr

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE NEW MEXICO 87501

April 14, 1975

45-18

C
Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

Attention: Mr. C. J. Christensen

Re: 1975 Plan of Development,
Empire South Deep Unit,
Eddy County, New Mexico.

O
Gentlemen:

P
This is to advise that the New Mexico Oil Conservation
Commission has this date approved the 1975 Plan of
Development dated April 4, 1975, for the Empire South
Deep Unit, Eddy County, New Mexico, subject to like
approval by the United States Geological Survey.

Two approved copies of the plan are returned herewith.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

Y
ALP/JEK/og

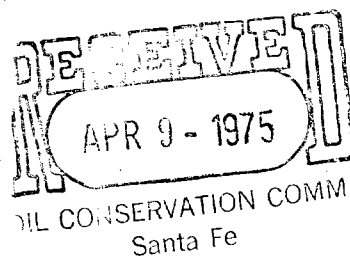
cc: United States Geological Survey
Box 1857
Roswell, New Mexico



Amoco Production Company

500 Jefferson Building
P.O. Box 3092
Houston, Texas 77001

Carl J. Christensen
Assistant Division
Production Manager



April 4, 1975

File: RCJ-955-LF

Re: 1975 Plan of Development
Empire South Deep Unit
Eddy County, New Mexico

Mr. Carl C. Traywick (3)
United States Department
of the Interior
P. O. Drawer 1857
Roswell, NM 88201

Mr. James E. Kapteina (3)
New Mexico Oil Conservation
Commission
P. O. Box 2088
Santa Fe, NM 87501

Gentlemen:

Amoco Production Company is the successor operator to Midwest Oil Corporation of the Empire South Deep Unit, Eddy County, New Mexico, No. 14-08-0001-11591. As such we propose a 1975 Plan of Development calling for drilling two Morrow gas tests plus a third Morrow test contingent on completing the necessary unitization or agreements required. No Wolfcamp oil development is recommended at this time pending receipt of more Wolfcamp data from the 3 Morrow tests.

Attached is a map showing the Unit area and surrounding acreage. It is contoured on the top of the Middle Morrow section. There are a total of 5 wells in the Unit of which Nos. 1, 2, 3 and 5 are Morrow gas completions while No. 4 was dry in the Morrow but completed as a flowing Wolfcamp oil well.

The last Morrow well (No. 5) was completed November 25, 1974, with a CAOF of 12.874 MMCF/D. The Wolfcamp oil zone which produces in Well No. 4 was not present in Well No. 5. The late in the year completion of Well No. 5 and large number of partners in the Unit has prevented earlier submission of the recommended 1975 Plan of Development.

Page 2
April 4, 1975

The first two Morrow wells proposed will probably be in Section 30, T17S, R29E and Section 1, T18S, R28E. The possible third Morrow well will be on the east central edge of the Unit to meet the offset created by completion of the Tenneco well in the NW/4 of Section 33, T17S, R29E. It is here that the exact method of forming a proration unit remains to be determined.

It is respectfully requested that the above 1975 Plan of Development be approved.

Yours very truly,

C. J. Christensen

JWM:fjc
4/161
Attachment

Approved *April 14* 19 *75*
A. L. Porter
Secretary-Director

NEW MEXICO OIL CONSERVATION COMMISSION

To: MR. JAMES E. KAPTEINA Bldg. _____ Mail Code or Rm. No. _____
To: _____ Bldg. _____ Mail Code or Rm. No. _____
To: _____ Bldg. _____ Mail Code or Rm. No. _____
Location: SANTA FE, NM

Route Ticket	Please Handle	Remarks: _____
	Please Approve	_____
	Please Note and return	_____
	For Your Information	_____
	Please See Me	_____
	Please Advise	_____
Your File	From: <u>C. J. Christensen</u> Date: <u>4/4/75</u>	