

#8351

HOLLAND & HART<sup>LLP</sup>  
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SANTA FE, NEW MEXICO 87504-2208  
110 NORTH GUADALUPE, SUITE 1  
SANTA FE, NEW MEXICO 87501-6525

TELEPHONE (505) 988-4421  
FACSIMILE (505) 983-6043

William F. Carr

wcarr@hollandhart.com

November 26, 2002

**HAND DELIVERED**

Ms. Lori Wrotenbery, Director  
Oil Conservation Division  
New Mexico Department of Energy,  
Minerals and Natural Resources  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

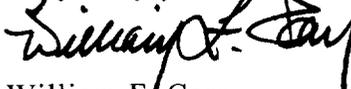
Re: West Bravo Dome Carbon Dioxide Gas Unit Agreement  
Harding County, New Mexico  
2003 Plan of Development

Dear Ms. Wrotenbery,

Pursuant to Article 4.2 of the Unit Agreement for the Development and Operation of the West Bravo Dome Carbon Dioxide Gas Unit and Division Order No. R-7707, Amerada Hess Corporation, unit operator, hereby submits the 2003 Plan of Development.

If you have questions concerning the enclosed, please advise.

Very truly yours,



William F. Carr

cc: Robert L. Cawood  
Amerada Hess Corporation

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2002

# AMERADA HESS CORPORATION

P. O. Box 2040  
Houston, Texas 77252-2040

Robert A. Harrison  
Technical Manager  
The Americas – Onshore Production

500 Dallas, Level 2  
Houston, Texas 77002  
Phone: (713) 609-5935  
Fax: (713) 609-5609

November 15, 2002

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

RE: Proposed Plan of Development: January 1, 2003 through December 31, 2003  
West Bravo Dome Carbon Dioxide Gas Unit (WBDCDU)  
Harding County, New Mexico

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator, hereby submits five (5) copies of the proposed Plan of Development for January 1, 2003 through December 31, 2003.

Presently, there are twenty (20) shut-in carbon dioxide (CO<sub>2</sub>) gas wells in the Unit which are capable of production. Lack of market has resulted in no CO<sub>2</sub> gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 2002, AHC performed lease road repairs as required under the leases within West Bravo Dome Unit.

Also, during 2002, AHC continued its assessment of the carbon dioxide demand in markets that could be supplied by the Unit and continued to review the economic viability of Unit development.

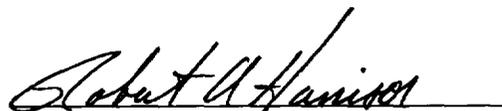
Amerada Hess Corporation proposes a Plan of Development for January 1, 2003 through December 31, 2003, to include:

- Continue to assess the economic feasibility of developing WBDCDU based on the results of the 1997 workover program.
- Continue working with power providers to bring low cost electricity into WBDCDU.
- Continue to assess regional CO<sub>2</sub> supply vs. demand and develop an appropriate strategy for marketing carbon dioxide from WBDCDU.
- Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
- Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 2003, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-5935.

Yours Truly,

AMERADA HESS CORPORATION

A handwritten signature in cursive script, reading "Robert A. Harrison", is written over a horizontal line.

Robert A. Harrison  
Technical Manager

cc: Mr. Brian Davis - Bureau of Land Management

# AMERADA HESS CORPORATION

Robert A. Harrison  
Technical Manager  
The Americas – Onshore Production

P. O. Box 2040  
Houston, Texas 77252-2040

500 Dallas, Level 2  
Houston, Texas 77002  
Phone: (713) 609-5935  
Fax: (713) 609-5609

November 15, 2002

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088



DEC 08 2002

/s/ Brian W. Davis

RE: Proposed Plan of Development: January 1, 2003 through December 31, 2003  
West Bravo Dome Carbon Dioxide Gas Unit (WBDCDU)  
Harding County, New Mexico

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator, hereby submits five (5) copies of the proposed Plan of Development for January 1, 2003 through December 31, 2003.

Presently, there are twenty (20) shut-in carbon dioxide (CO<sub>2</sub>) gas wells in the Unit which are capable of production. Lack of market has resulted in no CO<sub>2</sub> gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 2002, AHC performed lease road repairs as required under the leases within West Bravo Dome Unit.

Also, during 2002, AHC continued its assessment of the carbon dioxide demand in markets that could be supplied by the Unit and continued to review the economic viability of Unit development.

Amerada Hess Corporation proposes a Plan of Development for January 1, 2003 through December 31, 2003, to include:

- Continue to assess the economic feasibility of developing WBDCDU based on the results of the 1997 workover program.
- Continue working with power providers to bring low cost electricity into WBDCDU.
- Continue to assess regional CO<sub>2</sub> supply vs. demand and develop an appropriate strategy for marketing carbon dioxide from WBDCDU.
- Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
- Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 2003, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-5935.

Yours Truly,

AMERADA HESS CORPORATION



Robert A. Harrison  
Technical Manager

cc: Mr. Brian Davis - Bureau of Land Management

8351

# AMERADA HESS CORPORATION

Robert A. Harrison  
Manager, Permian Business Unit  
U.S. Onshore/Shelf Business

P. O. Box 2040  
Houston, Texas 77252-2040

500 Dallas, Level 2  
Houston, Texas 77002  
Phone: (713) 609-5935  
Fax: (713) 609-5609

November 29, 1999

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

99 DEC 10 PM 3:24  
OIL CONSERVATION DIV.

RE: Proposed Plan of Development: January 1, 2000 through December 31, 2000  
West Bravo Dome Carbon Dioxide Gas Unit (WBDCDU)  
Harding County, New Mexico

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator, hereby submits five (5) copies of the proposed Plan of Development for January 1, 2000 through December 31, 2000 on behalf of the Unit Working Interest Owners.

Presently, there are twenty (20) shut-in carbon dioxide (CO<sub>2</sub>) gas wells in the Unit which are capable of production. Lack of market has resulted in no CO<sub>2</sub> gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 1999, AHC performed road maintenance in accordance with the requirements in the leases included in West Bravo Dome Unit.

Also, during 1999, AHC continued its assessment of the carbon dioxide demand in markets that could be supplied by the Unit and continued to review the economic viability of Unit development.

The Working Interest Owners propose a Plan of Development for January 1, 2000 through December 31, 2000, to include:

- Continue to assess the economic feasibility of developing WBDCDU based on the results of the 1997 workover program.
- Continue working with power providers to bring low cost electricity into WBDCDU.
- Continue to assess regional CO<sub>2</sub> supply vs. demand and develop an appropriate strategy for marketing carbon dioxide from WBDCDU.
- Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
- Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 2000, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-5935.

Yours Truly,

AMERADA HESS CORPORATION

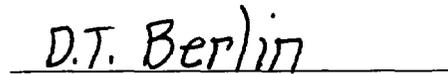


Robert A. Harrison  
Manager, Permian Business Unit

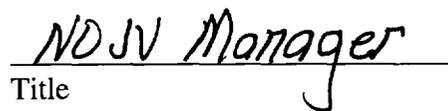
2000 Plan of Development  
Approved by Chevron USA



Signature



Name



Title

Date: 12-1-99

cc: Robert Kent- Bureau of Land Management

CAMPBELL, CARR, BERGE  
& SHERIDAN, P.A.  
LAWYERS

MICHAEL B. CAMPBELL  
WILLIAM F. CARR  
BRADFORD C. BERGE  
MARK F. SHERIDAN  
MICHAEL H. FELDEWERT  
TANYA M. TRUJILLO  
ROBERT J. SUTPHIN, JR.  

---

JACK M. CAMPBELL  
1916-1999

JEFFERSON PLACE  
SUITE 1 - 110 NORTH GUADALUPE  
POST OFFICE BOX 2208  
SANTA FE, NEW MEXICO 87504-2208  
TELEPHONE: (505) 988-4421  
FACSIMILE: (505) 983-6043  
E-MAIL: law@westofpecos.com

November 27, 2000

**HAND DELIVERED**

Ms. Lori Wrotenbery, Director  
Oil Conservation Division  
New Mexico Department of Energy,  
Minerals and Natural Resources  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505

OIL CONSERVATION DIV  
NOV 28 AM 5:02

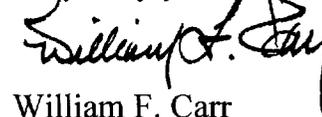
Re: West Bravo Dome Carbon Dioxide Gas Unit Agreement  
Harding County, New Mexico  
2001 Plan of Development

Dear Ms. Wrotenbery,

Pursuant to Article 4.2 of the Unit Agreement for the Development and Operation of the West Bravo Dome Carbon Dioxide Gas Unit and Division Order No. R-7707, Amerada Hess Corporation, unit operator, hereby submits the 2001 Plan of Development.

If you have questions concerning the enclosed, please advise.

Very truly yours,

  
William F. Carr

enc.

cc: Robert L. Cawood  
Amerada Hess Corporation

# AMERADA HESS CORPORATION

P. O. Box 2040  
Houston, Texas 77252-2040

Robert A. Harrison  
Manager, Permian Business Unit  
U.S. Onshore/Shelf Business

500 Dallas, Level 2  
Houston, Texas 77002  
Phone: (713) 609-5935  
Fax: (713) 609-5609

November 15, 2000

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

RE: Proposed Plan of Development: January 1, 2001 through December 31, 2001  
West Bravo Dome Carbon Dioxide Gas Unit (WBDCDU)  
Harding County, New Mexico

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator, hereby submits five (5) copies of the proposed Plan of Development for January 1, 2001 through December 31, 2001.

Presently, there are twenty (20) shut-in carbon dioxide (CO<sub>2</sub>) gas wells in the Unit which are capable of production. Lack of market has resulted in no CO<sub>2</sub> gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 2000, AHC accepted assignment of Chevron's working interest in WBDCDU, and as a result, AHC is sole lessee of WBDCDU.

Also, during 2000, AHC continued its assessment of the carbon dioxide demand in markets that could be supplied by the Unit and continued to review the economic viability of Unit development.

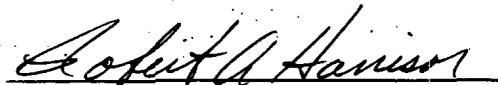
Amerada Hess Corporation proposes a Plan of Development for January 1, 2001 through December 31, 2001, to include:

- Continue to assess the economic feasibility of developing WBDCDU based on the results of the 1997 workover program.
- Continue working with power providers to bring low cost electricity into WBDCDU.
- Continue to assess regional CO<sub>2</sub> supply vs. demand and develop an appropriate strategy for marketing carbon dioxide from WBDCDU.
- Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
- Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 2001, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-5935.

Yours Truly,

AMERADA HESS CORPORATION



Robert A. Harrison  
Manager, Permian Business Unit

cc: Robert Kent- Bureau of Land Management

# AMERADA HESS CORPORATION

P. O. Box 2040  
Houston, Texas 77252-2040

Robert A. Harrison  
Manager, Permian Business Unit  
U.S. Onshore/Shelf Business

500 Dallas, Level 2  
Houston, Texas 77002  
Phone: (713) 609-5935  
Fax: (713) 609-5609

November 15, 2000

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

ACCEPTED FOR RECORD



RE: Proposed Plan of Development: January 1, 2001 through December 31, 2001  
West Bravo Dome Carbon Dioxide Gas Unit (WBDCDU)  
Harding County, New Mexico

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator, hereby submits five (5) copies of the proposed Plan of Development for January 1, 2001 through December 31, 2001.

Presently, there are twenty (20) shut-in carbon dioxide (CO<sub>2</sub>) gas wells in the Unit which are capable of production. Lack of market has resulted in no CO<sub>2</sub> gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 2000, AHC accepted assignment of Chevron's working interest in WBDCDU, and as a result, AHC is sole lessee of WBDCDU.

Also, during 2000, AHC continued its assessment of the carbon dioxide demand in markets that could be supplied by the Unit and continued to review the economic viability of Unit development.

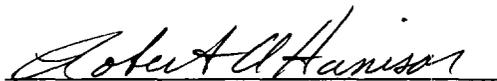
Amerada Hess Corporation proposes a Plan of Development for January 1, 2001 through December 31, 2001, to include:

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- Continue working with power providers to bring low cost electricity into WBDCDU.
- Continue to assess regional CO<sub>2</sub> supply vs. demand and develop an appropriate strategy for marketing carbon dioxide from WBDCDU.
- Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
- Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 2001, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-5935.

Yours Truly,

AMERADA HESS CORPORATION



Robert A. Harrison  
Manager, Permian Business Unit

cc: Robert Kent- Bureau of Land Management

APPROVED:



1/22/01

# AMERADA HESS CORPORATION

P. O. Box 2040  
Houston, Texas 77252-2040

Robert A. Harrison  
Manager, Permian Business Unit  
U.S. Onshore/Shelf Business

500 Dallas, Level 2  
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Phone: (713) 609-5935  
Fax: (713) 609-5609

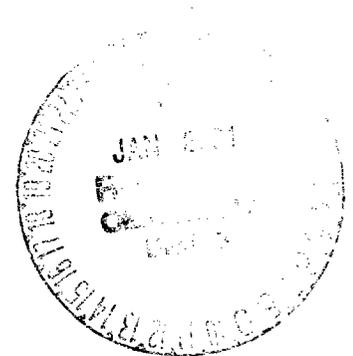
November 15, 2000

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

ACCEPTED FOR RECORD



RE: Proposed Plan of Development: January 1, 2001 through December 31, 2001  
West Bravo Dome Carbon Dioxide Gas Unit (WBDCDU)  
Harding County, New Mexico

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator, hereby submits five (5) copies of the proposed Plan of Development for January 1, 2001 through December 31, 2001.

Presently, there are twenty (20) shut-in carbon dioxide (CO<sub>2</sub>) gas wells in the Unit which are capable of production. Lack of market has resulted in no CO<sub>2</sub> gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 2000, AHC accepted assignment of Chevron's working interest in WBDCDU, and as a result, AHC is sole lessee of WBDCDU.

Also, during 2000, AHC continued its assessment of the carbon dioxide demand in markets that could be supplied by the Unit and continued to review the economic viability of Unit development.

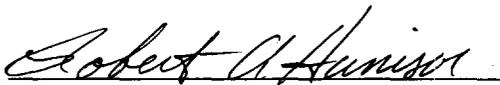
Amerada Hess Corporation proposes a Plan of Development for January 1, 2001 through December 31, 2001, to include:

- Continue to assess the economic feasibility of developing WBDCDU based on the results of the 1997 workover program.
- Continue working with power providers to bring low cost electricity into WBDCDU.
- Continue to assess regional CO<sub>2</sub> supply vs. demand and develop an appropriate strategy for marketing carbon dioxide from WBDCDU.
- Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
- Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 2001, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-5935.

Yours Truly,

AMERADA HESS CORPORATION



Robert A. Harrison  
Manager, Permian Business Unit

cc: Robert Kent- Bureau of Land Management

APPROVED  
D.E.  
03/22/01

1051  
**AMERADA HESS CORPORATION**

P. O. BOX 2040  
HOUSTON, TEXAS 77252-2040  
Phone 713 609-5000

November 19, 1997

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

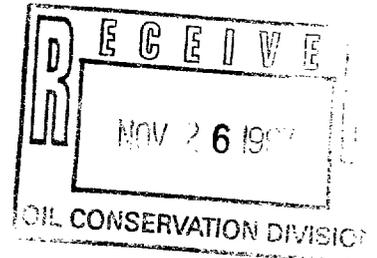
RE: Proposed Plan of Development for  
January 1, 1998 through December 31,  
1998, West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico.

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator hereby submits five (5) copies of the proposed Plan of Development for January 1, 1998, through December 31, 1998, on behalf of the Unit Working Interest Owners.

Presently, there are twenty (20) shut-in carbon dioxide gas wells in the Unit which are capable of production. Lack of market has resulted in no carbon dioxide gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 1997, AHC performed a nine (9) well workover program to assess the production potential for each well using the latest completion technology. In October 1997, six (6) wells were hydraulically fractured and three (3) wells were perforated with increased shot density high performance charges. Afterwards, these wells were tested up production casing and CO<sub>2</sub> rates measured.



Also, during 1997, AHC began discussions with Public Service of New Mexico and Springer Electric Cooperative to assess the cost for construction of a power grid and electrical service to West Bravo Dome Unit.

The Working Interest Owners propose a Plan of Development for January 1, 1998 through December 31, 1998, to include:

1. Evaluate results of the 1997 workover program and update the economic feasibility study.
2. Continue working with power providers to bring low cost electricity into WBDCDU.
3. Develop a marketing strategy for carbon dioxide and identify potential buyers for carbon dioxide from WBDCDU.
4. Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
5. Continue to maintain the roads within the unit.
6. Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 1998, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-4211.

Yours truly,

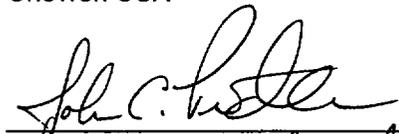
AMERADA HESS CORPORATION



---

Gerald W. Born  
Manager, U.S. Onshore Production Services

1998 Plan of Development  
Approved by  
Chevron USA



---

Name JOHN C. Prindle

Area Advisor  
Title

11-20-97  
Date

cc: Robert Kent - Bureau of Land Management

AHC

AMERADA HESS CORPORATION

P.O. Box 2040  
HOUSTON, TEXAS 77252-2040  
Phone 713 609-5000

1/15/97

D- Unit letter  
Tax Rg

November 21, 1996

State of New Mexico  
Commissioner of Public Lands  
P.O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501-2088

RE: Proposed Plan of Development for  
January 1, 1997 through December 31,  
1997, West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico.

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator hereby submits five (5) copies of the proposed Plan of Development for January 1, 1997, through December 31, 1997, on behalf of the Unit Working Interest Owners.

Presently, there are twenty (20) shut-in carbon dioxide gas wells in the Unit which are capable of production. Lack of market has resulted in no carbon dioxide gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 17 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 73 patented tracts (22,860.55 acres). The unit was contracted effective on November 15, 1994 and now contains 33,174.18 acres consisting of 15 Federal tracts (6,714.47 acres) 25 State of New Mexico tracts (12,880.68 acres) and 47 patented tracts (13,579.03 acres).

During 1996, AHC performed a detailed geologic study and CO<sub>2</sub> reserve reassessment. The six (6) man month intensive study was undertaken as a result of the earlier geological/geophysical report for unit contraction submitted on July 14, 1995. The detailed geologic study and CO<sub>2</sub> reserve reassessment has produced a new set of structure/isopach maps and a revised carbon dioxide reserve estimate for WBDCDU.

The Working Interest Owners have been monitoring improvement in the carbon dioxide market. We are encouraged by recent price trends and are working with certain others to bring low cost electrical power into the area.

The Working Interest Owners propose a Plan of Development for January 1, 1997 through December 31, 1997, to include:

1. An economic feasibility study for facility construction and drilling that incorporates current technology.
2. Develop a marketing strategy for carbon dioxide and identify potential buyers for carbon dioxide from WBDCDU.
3. Continue investigating third party options to bring low cost electrical power in the area.
4. Continue Unit payments which escalate 5% yearly until the Unit is connected and producing.
5. Monitor and maintain the condition of existing wells in accordance with State regulations.

If there are questions regarding this proposed Plan of Development for 1997, please call the undersigned at (713) 609-5637.

Yours truly,

AMERADA HESS CORPORATION



W.S. Lehmann *SLM*  
Manager, U.S. Onshore Technical Services

1997 Plan of Development  
Approved by  
Chevron USA



Name

*Area Advisor - NOJV*

Title

*12-2-96*

Date

cc: Robert Kent - Bureau of Land Management

CAMPBELL, CARR & BERGE, P.A.  
LAWYERS

MICHAEL B. CAMPBELL  
WILLIAM F. CARR  
BRADFORD C. BERGE

MICHAEL H. FELDEWERT  
TANNIS L. FOX  
TANYA M. TRUJILLO  
PAUL R. OWEN

JACK M. CAMPBELL  
OF COUNSEL

*D-unit letter  
Tax Ry*

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

August 4, 1995

**HAND-DELIVERED**

Mr. R. E. Johnson, District Supervisor  
Oil Conservation Division, District IV  
New Mexico Department of Energy and Minerals  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505

**RECEIVED**

AUG 4 1995

Oil Conservation Division

Re: ***Application for Approval from the Oil Conservation Division of Contraction of the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico***

Dear Mr. Johnson:

Article 5.2 of the Unit Agreement for the West Bravo Dome Carbon Dioxide Gas Unit provides that the unit working interest owners must redetermine the tract participation of each tract in the unit within ten years after its effective date. This action is subject to approval of the New Mexico Commissioner of Public Lands. In compliance with this directive, by resolution dated November 15, 1994, the working interest owners contracted this unit and redetermined the tract participations.

On August 2, 1995 representatives of Amerada Hess Corporation, unit operator, met with you and other representatives of State and Federal Governmental agencies to review its efforts to define the productive limits of the Tubb formation in the Unit Area, contract the unit boundary, and redetermine the tract participation for each tract in the Unit Area. Following that meeting, the Commissioner of Public Lands approved the contraction effective November 15, 1994. The Commissioner's approval is subject to like approval by the Bureau of Land Management and the New Mexico Oil Conservation Division.

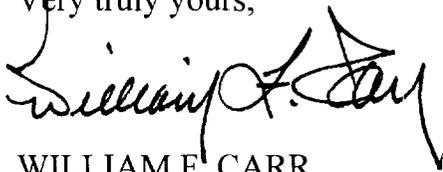
Mr. R. E. Johnson, District Supervisor  
Oil Conservation Division, District IV  
New Mexico Department of Energy and Minerals  
August 4, 1995  
Page 2

The purpose of this letter is to request Oil Conservation Division approval of the November 15, 1994 decision of the West Bravo Dome Carbon Dioxide Gas Unit working interest owners to contract the unit and redetermine the tract participations therein.

The Amerada Hess study upon which contraction of the unit was based has previously been provided to you. If you have additional questions concerning this request, please advise.

Your attention to this request is appreciated.

Very truly yours,

A handwritten signature in black ink, appearing to read "William F. Carr". The signature is fluid and cursive, with a large initial "W" and "C".

WILLIAM F. CARR  
ATTORNEY FOR AMERADA HESS CORPORATION

WFC:mlh

cc: Jim Hefley  
Dan Foland

# AMERADA HESS CORPORATION

P.O. Box 2040  
HOUSTON, TEXAS  
77252-2040  
Phone (713) 609-5000

August 7, 1995

State of New Mexico  
Commissioner of Public Lands  
P.O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy & Minerals Department  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501-2088

RE: Proposed Plan of Development  
for January 1, 1995 through  
December 31, 1995, West Bravo  
Dome Carbon Dioxide Gas Unit,  
Harding County, New Mexico

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Division Order Number R-7707, Amerada Hess Corporation, as Unit Operator, hereby submits five (5) copies of the proposed Plan of Development for January 1, 1995 through December 31, 1995, on behalf of the Unit Working Interest Owners.

Presently, there are twenty (20) shut-in carbon dioxide gas wells in the Unit which are capable of production. Lack of market has resulted in no CO<sub>2</sub> production since unitization.

The Unit became effective on December 1, 1984. The Unit Area comprised approximately 42,713.54 acres. The Unit was expanded effective as of May 1, 1986. The expansion increased the Unit Area by 7,307.24 acres, resulting in a total of 50,020.78 acres in the Unit Area. Subsequent to this expansion, title to 235.9 acres of patented land failed. Pursuant to the Unit Agreement the acreage was removed and the Unit Area was reduced to 49,784.88 acres.

Effective August 1, 1994 Oxy USA and Martin, Judson and Williams withdrew from unit operations. The Amerada Hess Corporation was elected operator and assumed the duties and obligations thereof on the same date.

Unit contraction was approved by the Working Unit Owners on November 15, 1994, leaving out some 16,845.82 acres of non-CO<sub>2</sub> bearing lands including the two dry hole locations. The contracted unit now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

The Working Interest Owners propose a Plan of Development for January 1, 1995, through December 1, 1995, to include:

1. Continue to monitor CO<sub>2</sub> market conditions and Working Interest Owner's need for future production development.
2. Conduct a geological/geophysical study to define the Tubb Formation bearing moveable carbon dioxide. This study will become the basis to contract the unit pursuant to Article 5.2.
3. Continue Unit payments which escalate 5% yearly until the Unit is connected and producing.
4. Monitor and maintain the condition of the existing wells in accordance with State regulations.

Sincerely,

AMERADA HESS CORPORATION



W. S. Lehmann  
Manager, Joint Venture Operations  
United States - Onshore

APPROVED BY CHEVRON U.S.A INC.

Name Wm Sell

Title MANAGER NON-OPERATED JOINT VENTURES

Date 8-16-95

AMERADA HESS CORPORATION

P.O. Box 2040  
HOUSTON, TEXAS 77252-2040  
Phone (713) 609-5000

March 22, 1994

*By letter 11-2-95  
R&J*

James B. Lewis  
Director, Oil, Gas, & Mineral Division  
Oil Conservation Commission  
State of New Mexico  
310 Old Santa Fe Trail  
P.O. Box 1148  
Santa Fe, New Mexico 87504-1148

**RE: West Bravo Dome Carbon Dioxide Gas Unit  
Contraction of Unproductive Acreage  
1995 Plan of Development  
Harding County, New Mexico**

Dear Mr. Lewis:

In response to your request for data to be submitted justifying the lands contracted for the above referenced Unit effective December 1, 1994, Amerada Hess will require additional time to allow our Geologists to review and reprocess all the data from our files plus the data we received from Oxy, U.S.A., the former Unit operator.

Please understand that Amerada Hess succeeded Oxy, U.S.A., as operator on August 1, 1994 and all the data files were not made available to us until mid October, 1994. The contraction proposal previously submitted represented basic reservoir engineering work performed by Amerada Hess in conjunction with a fault interpretation made by Oxy, U.S.A. The December 1, 1994 deadline came in a time frame when we were moving our operations from Tulsa, OK to Houston, TX and were also restructuring our organization. We have assigned your request to a newly formed Exploitation Group that will need a minimum of 60 days to put the interpretation together. To fully comply with your requests Amerada Hess proposes the following plan of action:

1. The unit owners shall continue to make rental and minimum royalty payments associated with the original 50,020.78 acre unit until such time as the new contract area is approved by all agencies.
2. Amerada Hess will develop a geological and technical report defining the productive area to be presented to your office no later than July, 1, 1995.

If you find this plan acceptable please signify with your approval below.

Very truly yours,



C.R. Richard  
Manager,  
Engineering & Technical Services

Approved By: \_\_\_\_\_

\_\_\_\_\_  
Title  
for the State of New Mexico

cc:

Jami Bailey, New Mexico Land Dept., Santa Fe  
Roy Johnson, OCD, Santa Fe  
Richard Kent, BLM, Albuquerque., NM



RECEIVED  
OIL, GAS AND MINERALS DIVISION  
NOV 8 1995

**State of New Mexico**  
**Commissioner of Public Lands**

**RAY POWELL, M.S., D.V.M.**  
**COMMISSIONER**

310 OLD SANTA FE TRAIL P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

(505) 827-5760  
FAX (505) 827-5766

November 6, 1995

Amerada Hess Corporation  
P.O. Box 2040  
Houston, Texas 77252-2040

Attention: Mr. W.S. Lehmann

Re: 1995 Plan of Development  
West Bravo Dome Carbon Dioxide Gas Unit  
Harding County, New Mexico

Dear Mr. Lehmann:

The Commissioner of Public Lands has this date approved the above-captioned Plan of Development for the West Bravo Dome Carbon Dioxide unit. Our approval is subject to like approval by all other appropriate agencies.

The possibility of drainage by wells outside of the Unit Area and the need for further development of the unit may exist. You may be contacted at a later date regarding these possibilities.

If you have any questions, or if we may be of further help, please contact Pete Martinez at (505) 827-5791.

Very truly yours,

**RAY POWELL, M.S., D.V.M.**  
**COMMISSIONER OF PUBLIC LANDS**

BY:   
LARRY KEHOE, Director  
Oil, Gas and Minerals Division  
(505) 827-5744

RP/LK/cpm

Enclosure

cc: Reader File

Enclosure

OCD-Roy Johnson

BLM-Albuquerque--Attention: Mr. Robert Kent

# AMERADA HESS CORPORATION

P. O. BOX 2040  
HOUSTON, TEXAS 77252-2040  
Phone 713 609-5000

November 19, 1997

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

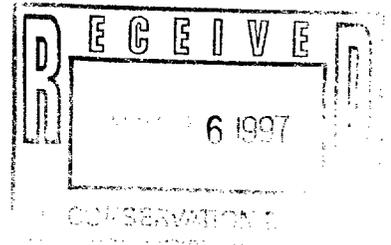
RE: Proposed Plan of Development for  
January 1, 1998 through December 31,  
1998, West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico.

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator hereby submits five (5) copies of the proposed Plan of Development for January 1, 1998, through December 31, 1998, on behalf of the Unit Working Interest Owners.

Presently, there are twenty (20) shut-in carbon dioxide gas wells in the Unit which are capable of production. Lack of market has resulted in no carbon dioxide gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 1997, AHC performed a nine (9) well workover program to assess the production potential for each well using the latest completion technology. In October 1997, six (6) wells were hydraulically fractured and three (3) wells were perforated with increased shot density high performance charges. Afterwards, these wells were tested up production casing and CO<sub>2</sub> rates measured.



Also, during 1997, AHC began discussions with Public Service of New Mexico and Springer Electric Cooperative to assess the cost for construction of a power grid and electrical service to West Bravo Dome Unit.

The Working Interest Owners propose a Plan of Development for January 1, 1998 through December 31, 1998, to include:

1. Evaluate results of the 1997 workover program and update the economic feasibility study.
2. Continue working with power providers to bring low cost electricity into WBDCDU.
3. Develop a marketing strategy for carbon dioxide and identify potential buyers for carbon dioxide from WBDCDU.
4. Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
5. Continue to maintain the roads within the unit.
6. Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 1998, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-4211.

Yours truly,

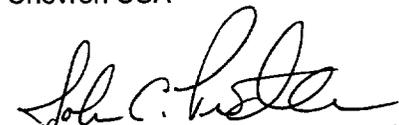
AMERADA HESS CORPORATION



---

Gerald W. Born  
Manager, U.S. Onshore Production Services

1998 Plan of Development  
Approved by  
Chevron USA



---

Name JOHN C. Prindle

Area Advisor  
Title

11-20-97  
Date

cc: Robert Kent - Bureau of Land Management

# AMERADA HESS CORPORATION

NOV 13 11:10:39

P O Box 2040  
HOUSTON, TEXAS 77252-2040  
Phone (713) 809-5000

November 1, 1995

State of New Mexico  
Commissioner of Public Lands  
P.O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501-2088

RE: Proposed Plan for Development for  
January 1, 1996 through December 31,  
1996, West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico

*11-28-95  
D-unit letter  
TKR Ry*

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as Unit Operator hereby submits five (5) copies of the proposed Plan of Development for January 1, 1996, through December 31, 1996, on behalf of the Unit Working Interest Owners.

Presently, there are twenty (20) shut-in carbon dioxide gas wells in the Unit which are capable of production. Lack of market has resulted in no carbon dioxide gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 17 Federal tracts (10,743.70 acres) 27 State of New Mexico tracts (16,416.53 acres) and 73 patented tracts (22,860.55 acres). The unit was contracted effective on November 15, 1994 and now contains 33,174.18 acres consisting of 15 Federal tracts (6,714.47 acres) 25 State of New Mexico tracts (12,880.68 acres) and 47 patented tracts (13,579.03 acres).

During 1995, AHC performed a geological/geophysical study of the unit area identifying the production limits and confirming the exclusion of some 16,800 acres of non carbon dioxide gas bearing lands. AHC also serviced and painted well head equipment on all unit wells.

The working interest owners have continued to evaluate carbon dioxide gas and market opportunities for this project. It now appears that a market will not develop in 1996 and therefore there are no plans for drilling, workovers, or construction. We are encouraged that recent business trends and plans for additional electric power for the area may open the door for future development.

The Working Interest Owners propose a Plan of Development for January 1, 1996, through December 1, 1996, to include:

1. Continue to monitor market conditions and Working Interest Owner's need for carbon dioxide gas supply.

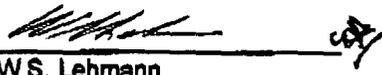
Page 2  
Revised Plan of Development  
1/1/96 through 12/31/96  
West Bravo Dome Carbon Dioxide Gas Unit  
Harding County, New Mexico

- 2. Continue Unit payments which escalate 5% yearly until the Unit is connected and producing.
- 3. Monitor and maintain the condition of the existing wells in accordance with State regulations.
- 4. Drilling and development may be proposed if market conditions improve and the Working Interest Owner's need for carbon dioxide gas warrants.

If there are questions regarding this proposed Plan of Development for 1996, please call the undersigned at (713) 609-5637.

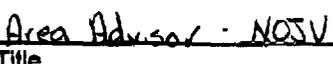
Yours truly,

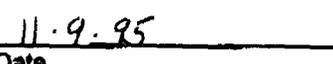
AMERADA HESS CORPORATION

  
 \_\_\_\_\_  
 W.S. Lehmann  
 Manager, U.S. Onshore Joint Venture

1996 Plan of Development  
Approved by  
Chevron USA

  
 \_\_\_\_\_  
 Name

  
 \_\_\_\_\_  
 Title

  
 \_\_\_\_\_  
 Date

WSL/ar

cc: Robert Kent - Bureau of Land Management

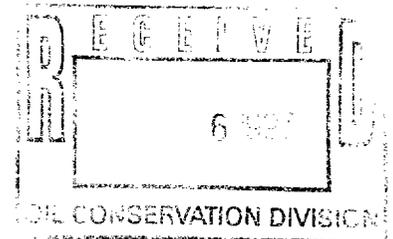
# AMERADA HESS CORPORATION

P. O. BOX 2040  
HOUSTON, TEXAS 77252-2040  
Phone 713 609-5000

November 19, 1997

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division



State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

RE: Proposed Plan of Development for  
January 1, 1998 through December 31,  
1998, West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico.

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator hereby submits five (5) copies of the proposed Plan of Development for January 1, 1998, through December 31, 1998, on behalf of the Unit Working Interest Owners.

Presently, there are twenty (20) shut-in carbon dioxide gas wells in the Unit which are capable of production. Lack of market has resulted in no carbon dioxide gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

During 1997, AHC performed a nine (9) well workover program to assess the production potential for each well using the latest completion technology. In October 1997, six (6) wells were hydraulically fractured and three (3) wells were perforated with increased shot density high performance charges. Afterwards, these wells were tested up production casing and CO<sub>2</sub> rates measured.

Also, during 1997, AHC began discussions with Public Service of New Mexico and Springer Electric Cooperative to assess the cost for construction of a power grid and electrical service to West Bravo Dome Unit.

The Working Interest Owners propose a Plan of Development for January 1, 1998 through December 31, 1998, to include:

1. Evaluate results of the 1997 workover program and update the economic feasibility study.
2. Continue working with power providers to bring low cost electricity into WBDCDU.
3. Develop a marketing strategy for carbon dioxide and identify potential buyers for carbon dioxide from WBDCDU.
4. Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
5. Continue to maintain the roads within the unit.
6. Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 1998, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-4211.

Yours truly,

AMERADA HESS CORPORATION



Gerald W. Born  
Manager, U.S. Onshore Production Services

1998 Plan of Development  
Approved by  
Chevron USA



Name JOHN C. Prindle

Area Advisor

Title

11-20-97

Date

cc: Robert Kent - Bureau of Land Management

# AMERADA HESS CORPORATION

P. O. BOX 2040  
HOUSTON, TEXAS 77252-2040  
Phone 713 609-5000

November 19, 1997

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Attention: Director of the Oil and Gas Division

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

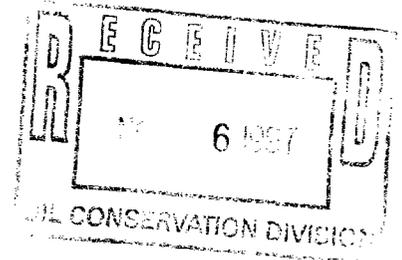
RE: Proposed Plan of Development for  
January 1, 1998 through December 31,  
1998, West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico.

Gentlemen:

With respect to the West Bravo Dome Carbon Dioxide Gas Unit and in accordance with New Mexico Oil Conservation Order Number 7707, Amerada Hess Corporation, as unit operator hereby submits five (5) copies of the proposed Plan of Development for January 1, 1998, through December 31, 1998, on behalf of the Unit Working Interest Owners.

Presently, there are twenty (20) shut-in carbon dioxide gas wells in the Unit which are capable of production. Lack of market has resulted in no carbon dioxide gas production since unitization. The Unit originally contained 50,020.78 acres consisting of 18 Federal tracts (10,743.70 acres), 27 State of New Mexico tracts (16,416.53 acres) and 69 patented tracts (22,624.65 acres). The unit was contracted effective on November 15, 1994 and now contains 34,655.33 acres consisting of 15 Federal tracts (6,834.47 acres) 24 State of New Mexico tracts (13,201.18 acres) and 46 patented tracts (14,619.68 acres).

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Also, during 1997, AHC began discussions with Public Service of New Mexico and Springer Electric Cooperative to assess the cost for construction of a power grid and electrical service to West Bravo Dome Unit.

The Working Interest Owners propose a Plan of Development for January 1, 1998 through December 31, 1998, to include:

1. Evaluate results of the 1997 workover program and update the economic feasibility study.
2. Continue working with power providers to bring low cost electricity into WBDCDU.
3. Develop a marketing strategy for carbon dioxide and identify potential buyers for carbon dioxide from WBDCDU.
4. Continue Unit payments which escalate at 5% yearly until the unit is connected and producing.
5. Continue to maintain the roads within the unit.
6. Monitor and maintain the condition of existing wells in accordance with state regulations.

If there are questions regarding this proposed Plan of Development for 1998, please call Robert Cawood at (713) 609-5636 or the undersigned at (713) 609-4211.

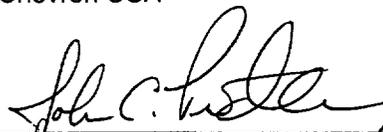
Yours truly,

AMERADA HESS CORPORATION



Gerald W. Born  
Manager, U.S. Onshore Production Services

1998 Plan of Development  
Approved by  
Chevron USA



Name JOHN C. Prindle

Area Advisor

Title

11-20-97

Date

cc: Robert Kent - Bureau of Land Management



State of New Mexico  
Commissioner of Public Lands

310 OLD SANTA FE TRAIL P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

RAY POWELL, M.S., D.V.M.  
COMMISSIONER

(505) 827-5760  
FAX (505) 827-5766

January 8, 1998

Amerada Hess Corporation  
P.O. Box 2040  
Houston, Texas 77252-2040

Attn: Mr. Gerald W. Born

Re: 1998 Plan of Development  
West Bravo Dome Carbon Dioxide Unit  
Harding County, New Mexico

Dear Mr. Born:

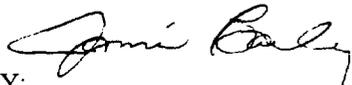
The Commissioner of Public Lands has, of this date, approved the above-captioned Plan of Development. Our approval is subject to like approval by all other appropriate agencies.

The possibility of drainage by wells outside of the unit area and the need for further development of the unit may exist. You may be contacted at a later date regarding these possibilities.

If you have any questions or if we may be of further help, please contact Pete Martinez at (505) 827-5791.

Very truly yours,

RAY POWELL, M.S., D.V.M.  
COMMISSIONER OF PUBLIC LANDS

  
BY:  
JAMI BAILEY, Director  
Oil, Gas and Minerals Division  
(505) 827-5744

RP/JB/cpm  
xc: Reader File

OCD

BLM

8551

State of New Mexico  
**ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT**  
Santa Fe, New Mexico 87505



August 8, 1995

Campbell, Carr & Berge  
Attorneys at Law  
PO Box 2208  
Santa Fe, New Mexico 87504-2208

Attention: William F. Carr

Re: Contraction of the West Bravo Dome  
Carbon Dioxide Gas Unit, Harding  
County, New Mexico

Dear Mr. Carr:

The above-referenced submittal has been approved by the New Mexico Oil Conservation Division effective this date. Such approval is contingent upon like approval by the New Mexico Commissioner of Public Lands and the Bureau of Land Management.

Sincerely,

A handwritten signature in black ink, appearing to read "Roy E. Johnson".

ROY E. JOHNSON,  
Senior Petroleum Geologist

REJ/dr

cc: Commissioner of Public Lands  
Bureau of Land Management

---

**VILLAGRA BUILDING - 408 Galisteo**  
Forestry and Resources Conservation Division  
P.O. Box 1948 87504-1948  
827-5830  
Park and Recreation Division  
P.O. Box 1147 87504-1147  
827-7485

---

**2940 South Pacheco**  
Office of the Secretary  
827-5950  
Administrative Services  
827-5925  
Energy Conservation & Management  
827-5900  
Mining and Minerals  
827-5970  
Oil Conservation  
827-7131



State of New Mexico  
Commissioner of Public Lands

RAY POWELL, M.S., D.V.M.  
COMMISSIONER

310 OLD SANTA FE TRAIL P.O. BOX 1148

(505) 827-5760  
FAX (505) 827-5766

August 2, 1995

SANTA FE, NEW MEXICO 87504-1148

Campbell, Carr, Berge & Sheridan, P. A.  
P. O. Box 2208  
Santa Fe, New Mexico 87504-2208

Attn: Mr. William F. Carr

Re: Contraction of West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico

Dear Mr. Carr:

This office is in receipt of your contraction letters of November 29, 1994 and July 14, 1995. Included with your letter of July 14, 1995 were revised Exhibits "A", and "B" as well as geologic and engineering data justifying the contraction of the West Bravo Dome Carbon Dioxide Gas Unit pursuant to Article 5.2 of the agreement.

Please be advised that pursuant to Article 5.2 of the West Bravo Dome Carbon Dioxide Gas Unit, the Commissioner of Public Lands hereby approves the contraction of the West Bravo Dome Carbon Dioxide Gas Unit effective November 15, 1994. This action is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

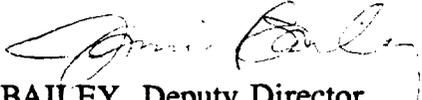
Please notify the New Mexico Oil Conservation Division and the Bureau of Land Management and all other interested parties of this action.

If you have any questions, or if we may be of further help, please contact Pete Martinez at (505) 827-5791.

Very truly yours,

RAY POWELL, M.S., D.V.M.  
COMMISSIONER OF PUBLIC LANDS

BY:

  
JAMI BAILEY, Deputy Director  
Oil, Gas and Minerals Division  
(505) 827-5745

RP/JB/pm

cc: Reader File

OCD-Santa Fe Attn: Mr. Roy Johnson  
BLM-Albuquerque, New Mexico Attn: Mr. Robert Kent  
Amerada Hess Corporation Attn: Mr. Jim Hefley



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Rio Puerco Resource Area  
435 Montano N.E.  
Albuquerque, New Mexico 87107



3180 (017)  
West Bravo Dome (UA)

195 AUG 7 11 08 52

AUG 9 1995

RECEIVED  
AUG 11 1995

OIL CON. DIV.  
DIST. 3

Mr. William F. Carr  
Campbell, Carr, Berge & Sheridan, P.A.  
P.O. Box 2208  
Santa Fe, NM 87504-2208

Dear Mr. Carr:

We have received and reviewed the documentation that Amerada Hess has prepared concerning the contraction of the West Bravo Dome Carbon Dioxide Unit. On August 2, 1995, representatives from this office met with representatives from Amerada Hess and the State of New Mexico to discuss the information presented in the study.

Pursuant to Article 5.2 of the West Bravo Dome Carbon Dioxide Unit Agreement, the Bureau of Land Management hereby accepts the new unit boundary and tract participation schedule as determined by the working interest owners in the unit. The contraction will be effective November 15, 1994.

If you have any questions concerning this matter, please contact Robert Kent at (505) 761-8762.

Sincerely,

Joe Incardine

Acting Chief, Lands and Minerals

cc:

Commissioner of Public Lands, Attention: Pete Martinez

NMOCD, Attention: Roy Johnson

Amerada Hess Corporation, Attention: Dan Foland and Jim Hefley



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Rio Puerco Resource Area  
435 Montano N.E.  
Albuquerque, New Mexico 87107

IN REPLY REFER TO:  
West Bravo Dome Unit (POD)  
3180 (017)

DEC 1 1998

Amerada Hess Corporation  
Attention: Mr. W.S. Lehmann  
P.O. Box 2040  
Houston, TX 77252-2040

Dear Mr. Lehmann:

Three approved copies of your 1996 Plan of Development for the West Bravo Dome unit area, Harding County, New Mexico, are enclosed. Such plan, proposing to monitor market conditions for further development potential and to maintain existing wells, was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

If you have any questions, please contact Robert Kent at the above address or telephone (505) 761-8762.

Sincerely,

**Joe Incardine**

Joe Incardine  
Chief, Lands and Minerals

Enclosures

cc:

✓ NMOCD w/o enclosure  
Commissioner of Public Lands w/o enclosure  
NM (943)



COMMERCIAL RESOURCES  
(505)-827-5724

SURFACE RESOURCES  
(505)-827-5793

MINERAL RESOURCES  
(505)-827-5744

ROYALTY  
(505)-827-5772

State of New Mexico  
Commissioner of Public Lands

Ray Powell, M.S., D.V.M.  
310 Old Santa Fe Trall, P. O. Box 1148  
Santa Fe, New Mexico 87504-1148  
Phone (505)-827-5760, Fax (505)-827-5766

PUBLIC AFFAIRS  
(505)-827-5765

ADMINISTRATIVE MGMT.  
(505)-827-5700

LEGAL  
(505)-827-5715

PLANNING  
(505)-827-5752

January 9, 1997

Amerada Hess Corporation  
P.O. Box 2040  
Houston, Texas 77252-2040

Attn: Mr. W.S. Lehmann

Re: 1997 Plan of Development  
West Bravo Dome Carbon Dioxide Gas Unit  
Harding, County, New Mexico

Dear Mr. Lehmann:

The Commissioner of Public Lands has, of this date, approved the above-captioned Plan of Development. Our approval is subject to like approval by all other appropriate agencies.

The possibility of drainage by wells outside of the Unit Area and the need for further development of the unit may exist. You may be contacted at a later date regarding these possibilities.

If you have any questions, or if we may be of further help, please contact Pete Martinez at (505) 827-5791.

Very truly yours,

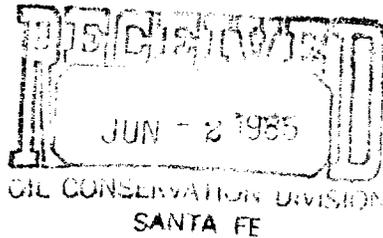
RAY POWELL, M.S., D.V.M.  
COMMISSIONER OF PUBLIC LANDS

BY: *Jami Bailey*  
JAMI BAILEY, Director  
Oil, Gas and Minerals Division  
(505) 827-5744

RP/JB/cpm  
cc: Reader File

OCD

BLM



CITIES SERVICE OIL AND GAS CORPORATION  
P.O. BOX 300 TULSA, OKLAHOMA 74102

May 28, 1986

#8351

WORKING INTEREST OWNERS  
(See attached list)

Re: West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico  
CSOG - Operator

Gentlemen:

Please be advised that Cities Service Oil and Gas Corporation, as Unit Operator, has received approval for the First Enlargement to the captioned Unit, effective May 1, 1986, from the State of New Mexico Oil Conservation Division; State of New Mexico Commissioner of Public Lands; and the District Manager of the Bureau of Land Management (please find letters from each enclosed). We are in the process of filing a Certificate of Effectiveness covering the Enlargement in Harding County, a copy of said instrument is enclosed.

Please note the total acreage remained at 50,020.78, but we had to add an additional Tract, F-118, to cover the NE/4 NW/4 Section 19, T17N-R29E, a U.S.A. lease currently held by William H. Martin, R. Ken Williams, and Edward H. Judson. We are enclosing a large and small Exhibit A, Exhibit B, Exhibit C, an Exhibit B (including just the Enlargement acreage), Ratifications executed by the Working Interest Owners and Overriding Royalty Owners in the Enlargement Area, and Revised Exhibit F to the Unit Operating Agreement.

We are also providing to you copies of all previously approved First, Second, and Third Amendments to the Unit Operating Agreement in case we have not previously done so.

If you should have any questions concerning the above, please feel free to call on me.

Yours very truly,

Charles E. Creekmore  
Staff Landman  
Unitization and Acquisitions

CEC/gw  
Encl.

Working Interest Owner Letter  
West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico

Page 2

cc: Bureau of Land Management - with copy of Certificate  
Albuquerque District Office of Effectiveness enclosed  
505 Marquette, N.W.  
P. O. Box 6770  
Albuquerque, New Mexico 87197-6770  
ATTN: Mr. Gary A. Stephens

State of New Mexico - with copy of Certificate  
Energy and Minerals Department of Effectiveness enclosed  
Oil Conservation Division  
310 Old Santa Fe Trail  
Land Office Bldg., Rm. 206  
Santa Fe, New Mexico 87504  
ATTN: Mr. R. L. Stamets

State of New Mexico - with copy of Certificate  
Commissioner of Public Lands of Effectiveness enclosed  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87504  
ATTN: Mr. Floyd O. Prando

Nicole Nauman - Room 11 ADB/TC - Exhibits A, B, C, & F and  
Certificate of Effectiveness  
enclosed

David Evans - Midland - " " "  
Russ Ledbetter - Room 2431/CSB - " " "  
Gene Motter - Midland - " " "  
Tim House - Room 2131/CSB - " " "  
Beverly Philbeck - Midland - " " "

WEST BRAVO DOME CO<sub>2</sub> GAS UNIT  
HARDING COUNTY, NEW MEXICO

WORKING INTEREST OWNERS

AMERADA HESS CORPORATION  
P. O. BOX 2040  
TULSA, OK 74102  
ATTN: Mr. J. C. Hefley

AMERIGAS, INC.  
CARBON DIOXIDE DIVISION  
4455 LBJ FREEWAY, STE. 1000  
DALLAS, TX 75234  
ATTN: MR. W. P. HECKEL, JR.

AMERIGAS, INC.  
U.G.I. CORPORATION  
IRWIN BUILDING  
P. O. BOX 858  
VALLEY FORGE, PA 19482  
ATTN: MR. DAVID KNIPEL

CHEVRON U.S.A. INC.  
P. O. BOX 1150  
MIDLAND, TX 79702  
ATTN: MR. CHARLES FRISBIE

CO<sub>2</sub>-IN-ACTION  
P. O. BOX 2748  
AMARILLO, TX 79105  
ATTN: MR. DAVID COOPER

MARTIN, WILLIAMS, AND JUDSON  
1804 FIRST NATIONAL BANK BLDG.  
MIDLAND, TX 79701  
ATTN: SCOTT A. BRYANT

CERTIFICATE OF EFFECTIVENESS  
FIRST ENLARGEMENT OF UNIT AREA  
WEST BRAVO DOME CARBON DIOXIDE GAS UNIT  
HARDING COUNTY, NEW MEXICO

THIS CERTIFICATE OF EFFECTIVENESS for the FIRST ENLARGEMENT of UNIT AREA of the WEST BRAVO DOME CARBON DIOXIDE GAS UNIT, located in HARDING COUNTY, NEW MEXICO, prepared for recordation and executed by CITIES SERVICE OIL AND GAS CORPORATION, a Delaware corporation, the UNIT OPERATOR:

WITNESSETH That in accordance with Article 12, ENLARGEMENTS OF UNIT AREA, of the UNIT AGREEMENT for the DEVELOPMENT and OPERATION of the WEST BRAVO DOME CARBON DIOXIDE GAS UNIT ("Unit Agreement"), dated September 1, 1983, filed of record on December 12, 1984, in Book 14, page 18, et seq., Oil and Gas Lease Records, Harding County, New Mexico, all requirements have been met for THE FIRST ENLARGEMENT of UNIT AREA, which enlarged and expanded the original Unit Area by 7,307.24 acres, more or less, bringing the total Unit Area to 50,020.78 acres, more or less, and

THAT the Working Interest Owners have approved THE FIRST ENLARGEMENT after determining the acreage within the enlarged and expanded Unit Area is reasonably proved to be productive of Unitized Substances, the use of the same Initial Tract Participation formula found in Article 5 of the Unit Agreement is fair and reasonable to determine the Tract Participations of THE FIRST ENLARGEMENT acreage, and there are no retroactive allocations or adjustments of Unit Expense, or of interests in the Unitized Substances produced, or proceeds thereof, other than an adjustment of investment caused by reason of the FIRST ENLARGEMENT; and

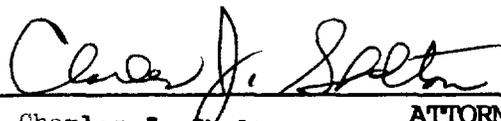
THAT CITIES SERVICE OIL AND GAS CORPORATION, as Unit Operator, has received written approval of THE FIRST ENLARGEMENT from the State of New Mexico Oil Conservation Division; the State of New Mexico Commissioner of Public Lands, and the Authorized Officer, Bureau of Land Management, Department of the Interior; and

THAT revised EXHIBITS A, B, and C, showing the addition of Tracts F-110 to F-118 and S-508A, were filed of record in Harding County on April 30, 1986, in Book 15, page 610, et seq., Oil and Gas Lease Records, Harding County, New Mexico; and

THAT, the EFFECTIVE DATE of THE FIRST ENLARGEMENT of the UNIT AREA of the WEST BRAVO DOME CARBON DIOXIDE GAS UNIT is May 1, 1986, at 7:00 a.m., Mountain Standard Time.

IN WITNESS WHEREOF, this CERTIFICATE OF EFFECTIVENESS executed on the date of acknowledgment by UNIT OPERATOR.

CITIES SERVICE OIL AND GAS CORPORATION

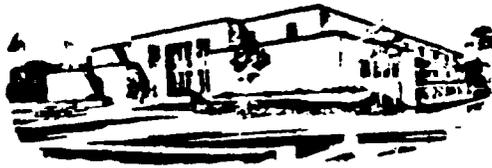
  
\_\_\_\_\_

Charles J. Shelton

ATTORNEY-IN-FACT



State of New Mexico



Commissioner of Public Lands

May 14, 1986

P.O. BOX 1148

SANTA FE, NEW MEXICO 87504-1148

JIM BACA  
COMMISSIONER

Cities Service Oil and Gas Corporation  
ATTN: Mr. Charles E. Creekmore  
P. O. Box 300  
Tulsa, Oklahoma 74012

Re: First Enlargement and  
Expansion of the Unit Area  
West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico  
Effective May 1, 1986

Gentlemen:

The Commissioner of Public Lands has this date approved the First Enlargement and Expansion of the West Bravo Dome CO<sub>2</sub> Gas Unit Area, Harding County, New Mexico and has also accepted revised Exhibits "A", "B" and "C" showing the addition of Tracts F110 to F118 and S-508-A to the unit agreement. The Effective date of the First Expansion is May 1, 1986.

The First Expansion adds 7,307.24 acres to the unit area or a 17.11% increase in acreage over the initial unit area. The total Unit Area is now 50,020.78 acres.

Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Your filing fee in the amount of \$210.00 has been received.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

BY: *Floyd O. Prando*

FLOYD O. PRANDO, Director  
Oil and Gas Division  
(505) 827-5744

JB/FOP/pm

cc: OCD-Santa Fe, New Mexico

BLM-Albuquerque, New Mexico Attn: Fluids Branch



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
ALBUQUERQUE DISTRICT OFFICE

505 Marquette, N.W.  
P.O. Box 6770  
Albuquerque, New Mexico 87197-6770

West Bravo Dome  
CO2  
3180 (015)

RECEIVED

MAY 23 1986

LAND DEPT.  
RECEIVED

MAY 27 1986

UNIT. & ACQ.

Cities Service Oil and Gas Corporation  
P.O. Box 300  
Tulsa, OK 74102

Gentlemen:

Your application for the First Expansion of the West Bravo Dome Carbon Dioxide Gas Unit area, Harding County, New Mexico, No. 14-08-0001-19588, is hereby accepted, effective as of May 1, 1986. The expansion increases the unit by 7,307.24 acres, resulting in a total of 50,020.78 acres in the unit area.

One copy of the accepted application is enclosed. You are requested to furnish all interested principles with appropriate evidence of this acceptance.

If you have any questions on this matter, please contact Shirley Bryant at the above address or telephone (505) 766-2841.

Sincerely,

*Sid Caspell*

For District Manager

Enclosure



1935 - 1985

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE NEW MEXICO 87501  
(505) 827-5800TONEY ANAYA  
GOVERNORSTATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

April 14, 1986

Oxy Cities Service  
P. O. Box 1919  
Midland, Texas 79702

Attention: E. F. Motter

Re: Enlargement - West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico

Gentlemen:

The above-referenced submittal has been approved by the New Mexico Oil Conservation Division effective this date. Such approval is contingent upon like approval by the New Mexico Commissioner of Public Lands and the Bureau of Land Management.

Sincerely,

ROY E. JOHNSON,  
Senior Petroleum Geologist

REJ/dr

cc: Commissioner of Public Lands - Santa Fe  
Bureau of Land Management - Albuquerque  
OCD District Office - Santa Fe

Bureau of Land Management  
Albuquerque District Office  
Minerals Division  
P.O. Box 6770  
Albuquerque, NM 87197-6770

MAY 19 1986

West Bravo Dome  
CO<sub>2</sub>  
3180 (015)

Cities Service Oil and Gas Corporation  
P.O. Box 300  
Tulsa, OK 74102

Gentlemen:

Your application for the First Expansion of the West Bravo Dome Carbon Dioxide Gas Unit area, Harding County, New Mexico, No. 14-08-0001-19588, is hereby accepted, effective as of May 1, 1986. The expansion increases the unit by 7,307.24 acres, resulting in a total of 50,020.78 acres in the unit area.

One copy of the accepted application is enclosed. You are requested to furnish all interested principles with appropriate evidence of this acceptance.

If you have any questions on this matter, please contact Shirley Bryant at the above address or telephone (505) 766-2841.

Sincerely,

(Orig. Signed) - Sid Vogelwohl

For District Manager

Enclosure

cc:

Micrographics (943B-1)  
FRA Fluids (016)  
✓ NMOCD  
Com. of Pub. Lands  
O&G chron

015:SBryant:klm:5-13-86:1867M

State of New Mexico



JIM BACA  
COMMISSIONER

Commissioner of Public Lands

May 14, 1986

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

Cities Service Oil and Gas Corporation  
ATTN: Mr. Charles E. Creekmore  
P. O. Box 300  
Tulsa, Oklahoma 74012

Re: First Enlargement and  
Expansion of the Unit Area  
West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico  
Effective May 1, 1986

Gentlemen:

The Commissioner of Public Lands has this date approved the First Enlargement and Expansion of the West Bravo Dome CO<sub>2</sub> Gas Unit Area, Harding County, New Mexico and has also accepted revised Exhibits "A", "B" and "C" showing the addition of Tracts F110 to F118 and S-508-A to the unit agreement. The Effective date of the First Expansion is May 1, 1986.

The First Expansion adds 7,307.24 acres to the unit area or a 17.11% increase in acreage over the initial unit area. The total Unit Area is now 50,020.78 acres.

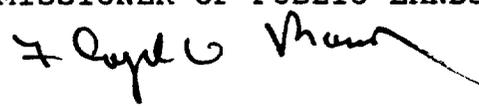
Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Your filing fee in the amount of \$210.00 has been received.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

BY: 

FLOYD O. PRANDO, Director  
Oil and Gas Division  
(505) 827-5744

JB/FOP/pm

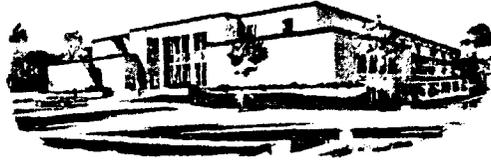
cc: OCD-Santa Fe, New Mexico

BLM-Albuquerque, New Mexico Attn: Fluids Branch

# State of New Mexico



JIM BACA  
COMMISSIONER



## Commissioner of Public Lands

March 7, 1986

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148  
Express Mail Delivery User  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

Cities Service Oil and Gas Corp.  
P. O. Box 300  
Tulsa Oklahoma 74102

Re: First Enlargement and  
Expansion of the Unit Area  
West Bravo Dome CO2 Gas Unit  
Harding County, New Mexico  
Cities Service Oil and Gas  
Corporation - Unit Operator

ATTENTION: Mr. Charles E. Creekmore

Gentlemen:

This office is in receipt of your letter of February 21, 1986, wherein as Unit Operator of the West Bravo Dome CO2 Gas Unit you have notified this office of the First Enlargement and Expansion of the Captioned Unit Area.

Please be advised that before we can give preliminary approval to your First Enlargement and Expansion to the unit area we will need additional information. Your letter dated February 18, 1986, to all royalty interest owners and working interest owners, mentions that "Due to their location, Unit Operator and other Working Interest Owners in the Unit Feel these additional acres have been reasonably proved to be productive of Unitized Substances by geological and petroleum engineering evidence. They also feel this additional acreage should increase total Unit production in approximately the same percentage amount as the additional acres compare in size to the original Unit Area."

Please submit an engineering or geologic report in support of your application, together with a structure and isopachous maps of total zone, pay or reservoir, porosity data, permeability data, pressures (initial or present) anticipated production and any other data that will help us in making a decision.

The filing fee for a unit expansion or enlargement for a unit agreement is Thirty (\$30.00) Dollars per section or partial section thereof.

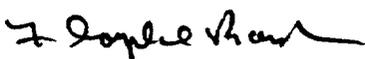
Cities Service Oil and Gas Corp.  
March 7, 1986  
page 2

Also, please be advised that approval of this First Enlargement and Expansion to the Unit Area should also be approved by the New Mexico Oil Conservation Division as per OCD Case No. 8351, Order No. R-7707.

If we may be of further help please do not hesitate to call on us.

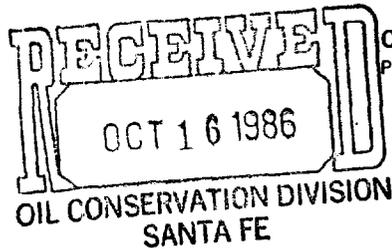
Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

BY:   
FLOYD O. PRANDO, Director  
Oil and Gas Division  
AC 505/827-5744

JB/RDG/pm  
encls.

cc: OCD-Santa Fe, New Mexico  
BLM-Albuquerque, New Mexico Attn: Fluids Branch  
BLM-Roswell, New Mexico Attn: Mr. Armando Lopez



CITIES SERVICE OIL AND GAS CORPORATION  
P. O. BOX 1919 MIDLAND, TEXAS 79702

(915) 685-5600

October 9, 1986

Re: Plan of Development  
West Bravo Dome Carbon Dioxide Gas Unit  
Harding County, New Mexico

Mr. Jim Baca  
Commissioner of Public Lands  
State of New Mexico  
P. O. Box 1148  
Santa Fe, NM 87501

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe NM 87501  
Attn: Mr. R. L. Stamets

Gentlemen:

In accordance with Article 4 of the West Bravo Dome Carbon Dioxide Gas Unit (WBDCDGU) Agreement, and New Mexico Oil Conservation Division Order No. 7707, Cities Service Oil & Gas Corporation, as unit operator, hereby submits a plan of development for 1986-87 on behalf of the unit working interest owners.

Seventeen wells have been drilled in the unit which are capable of carbon dioxide production. Certain wells are monitored by obtaining BHP data for reservoir information. A majority of the design work for the gathering system and process facility has been completed. Early in 1986 Cities began negotiations for enlarging the unit which was approved by the working interest owners and the regulatory agencies in May, 1986. The unit was enlarged by the addition of 6,867 acres which now contains 50,020.78 acres consisting of 17 federal tracts (10,743.70 ac.), 27 state tracts (16,416.53 ac.) and 73 patented tracts (22,860.55 ac.).

At the hearing on September 29, 1984, Cities presented testimony and exhibits outlining 1985-86 development which included drilling 50 wells, installing gathering system and construction of the process (dehydration-compression) facility. Early in 1985 the price of carbon dioxide delivered to the Permian Basin was dramatically reduced. The WBDCDGU working interest owners became concerned and mutually agreed to observe demand and price levels before proceeding with a major development requiring large capital

expenditures. Most of the early carbon dioxide purchase contracts contain provisions for the commodity price of CO<sub>2</sub> to be directly related to the crude price, thus, as crude prices continued to lower, economic conditions would not support development.

No additional development of the unit is specifically planned through 1987. Cities will continue to observe market conditions to determine appropriate timing for development of the unit. We remain confident that crude prices will improve, which in turn will increase the CO<sub>2</sub> demand, permitting full development of the WBDCDGU.

Attached is a plat showing the outline of the enlarged unit and location of wells drilled to date. If you have any questions on this matter, please feel free to call me at 915-685-5848. We solicit your early approval of this plan of development.

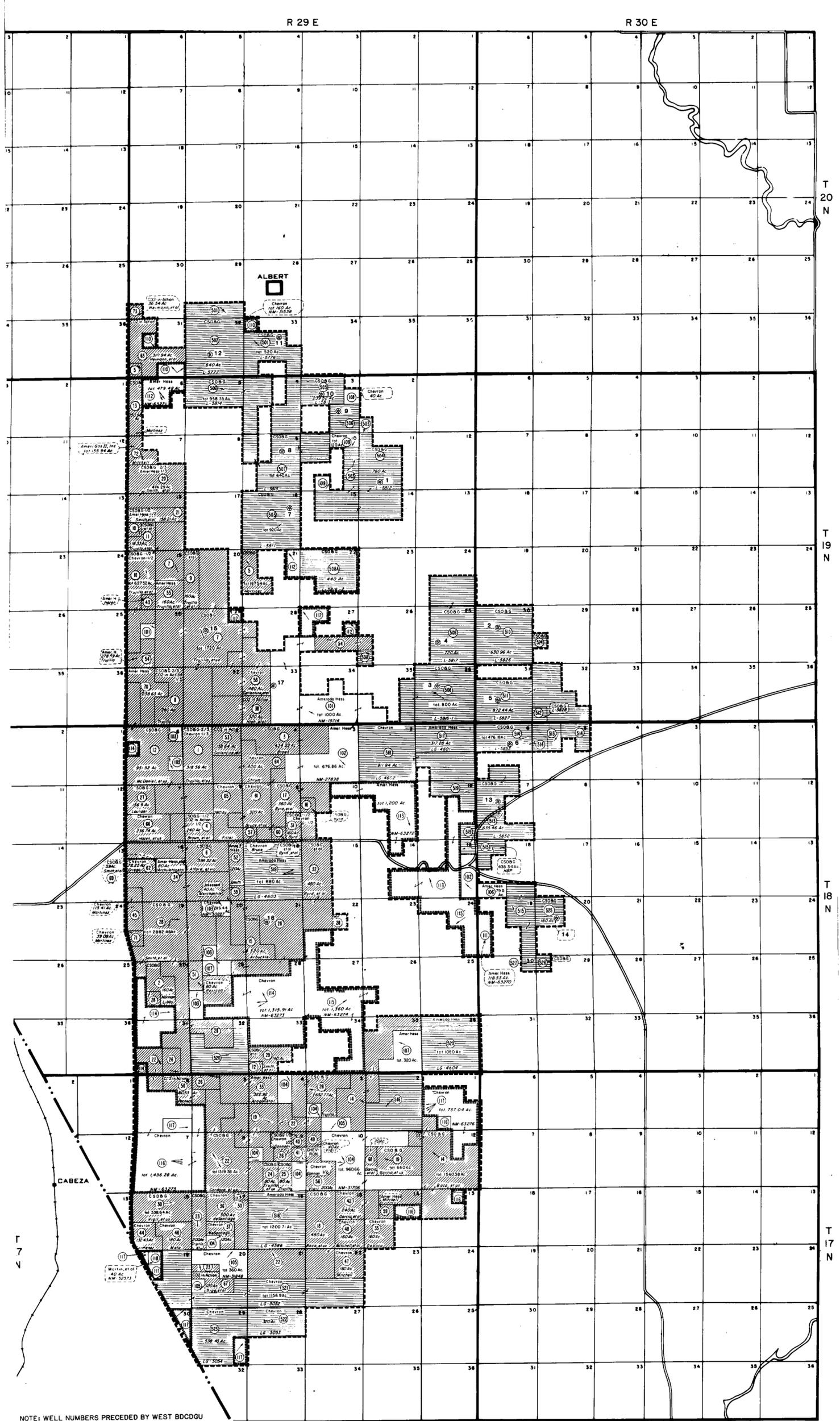
Yours very truly,



E. F. Motter  
Engineering Manager  
Southwest Region  
E & P Division

EFM:wc

CC: Assistant District Manager - Minerals  
Bureau of Land Management  
P. O.Box 6770  
Albuquerque, NM 87197-67703

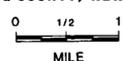


NOTE: WELL NUMBERS PRECEDED BY WEST BDCDGU AS DESIGNATED BY NEW MEXICO OIL CORPORATION COMMISSION.

18 FEDERAL TRACTS	10,743.70 AC.	21.48 % OF UNIT
27 STATE TRACTS	16,416.53 AC.	32.82 % OF UNIT
73 PATENTED TRACTS	22,860.55 AC.	45.70 % OF UNIT
<b>TOTAL</b>	<b>50,020.78 AC.</b>	<b>100.00 % OF UNIT</b>

- FEDERAL LANDS (F-- Series numbers on Exhibit "B")
- ▨ STATE OF NEW MEXICO LANDS (S--Series numbers on Exhibit "B")
- ▩ PATENTED LANDS (2000 Series numbers on Exhibit "B")
- TRACT NUMBERS AS LISTED IN EXHIBIT "B"
- - - UNIT BOUNDARY
- ==== FIRST ENLARGEMENT

**EXHIBIT "A"**  
**WEST BRAVO DOME UNIT AREA**  
**HARDING COUNTY, NEW MEXICO**



REVISED 9-30-86



CITIES SERVICE OIL AND GAS CORPORATION  
P. O. BOX 1919 MIDLAND, TEXAS 79702

(915) 685-5600

October 9, 1986

Re: Plan of Development  
West Bravo Dome Carbon Dioxide Gas Unit  
Harding County, New Mexico

Mr. Jim Baca  
Commissioner of Public Lands  
State of New Mexico  
P. O. Box 1148  
Santa Fe, NM 87501

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe NM 87501  
Attn: Mr. R. L. Stamets

Gentlemen:

In accordance with Article 4 of the West Bravo Dome Carbon Dioxide Gas Unit (WBDCDGU) Agreement, and New Mexico Oil Conservation Division Order No. 7707, Cities Service Oil & Gas Corporation, as unit operator, hereby submits a plan of development for 1986-87 on behalf of the unit working interest owners.

Seventeen wells have been drilled in the unit which are capable of carbon dioxide production. Certain wells are monitored by obtaining BHP data for reservoir information. A majority of the design work for the gathering system and process facility has been completed. Early in 1986 Cities began negotiations for enlarging the unit which was approved by the working interest owners and the regulatory agencies in May, 1986. The unit was enlarged by the addition of 6,867 acres which now contains 50,020.78 acres consisting of 17 federal tracts (10,743.70 ac.), 27 state tracts (16,416.53 ac.) and 73 patented tracts (22,860.55 ac.).

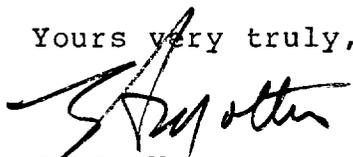
At the hearing on September 29, 1984, Cities presented testimony and exhibits outlining 1985-86 development which included drilling 50 wells, installing gathering system and construction of the process (dehydration-compression) facility. Early in 1985 the price of carbon dioxide delivered to the Permian Basin was dramatically reduced. The WBDCDGU working interest owners became concerned and mutually agreed to observe demand and price levels before proceeding with a major development requiring large capital

expenditures. Most of the early carbon dioxide purchase contracts contain provisions for the commodity price of CO<sub>2</sub> to be directly related to the crude price, thus, as crude prices continued to lower, economic conditions would not support development.

No additional development of the unit is specifically planned through 1987. Cities will continue to observe market conditions to determine appropriate timing for development of the unit. We remain confident that crude prices will improve, which in turn will increase the CO<sub>2</sub> demand, permitting full development of the WBDCDGU.

Attached is a plat showing the outline of the enlarged unit and location of wells drilled to date. If you have any questions on this matter, please feel free to call me at 915-685-5848. We solicit your early approval of this plan of development.

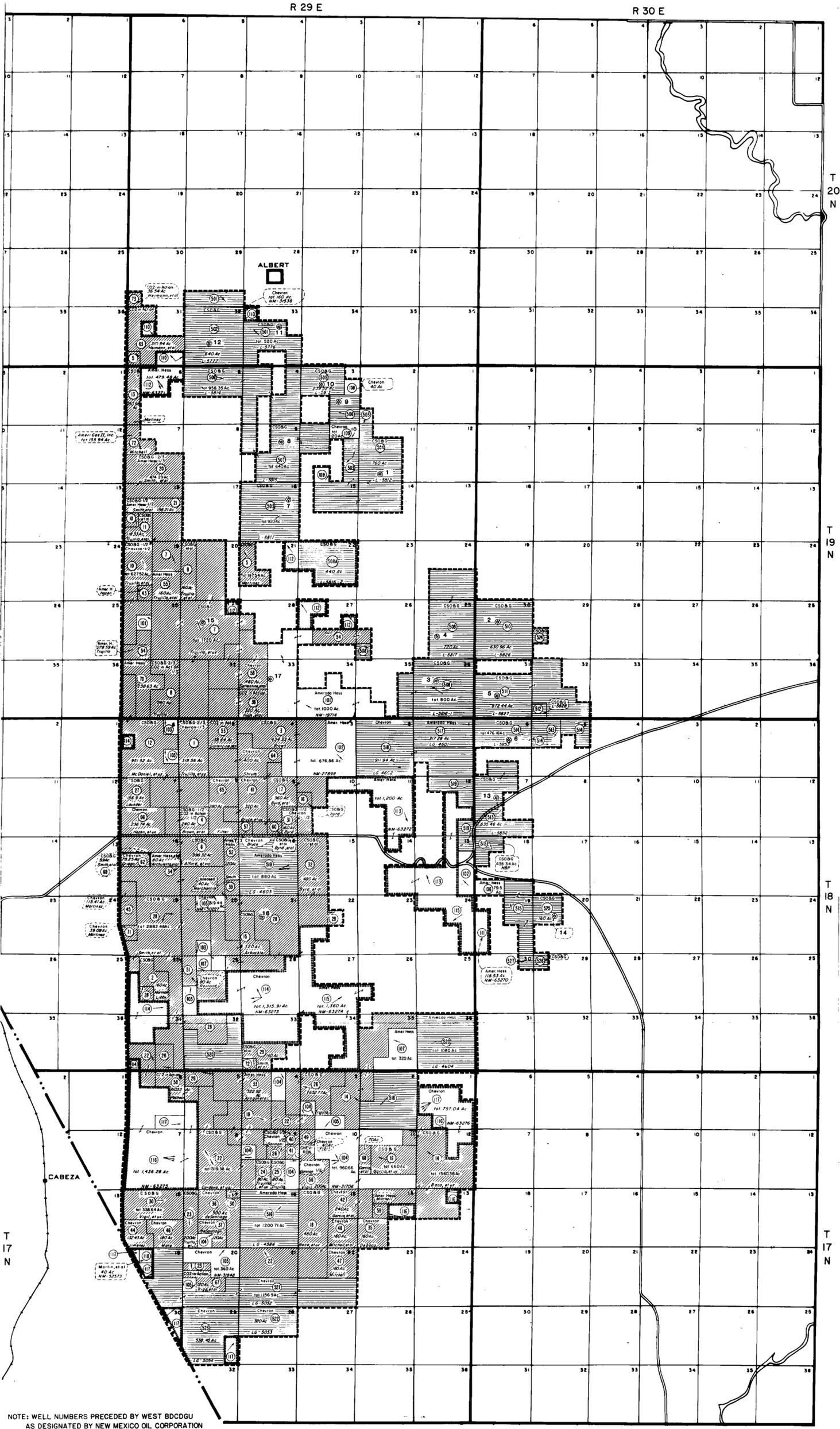
Yours very truly,



E. F. Motter  
Engineering Manager  
Southwest Region  
E & P Division

EFM:wc

CC: Assistant District Manager - Minerals  
Bureau of Land Management  
P. O.Box 6770  
Albuquerque, NM 87197-67703



NOTE: WELL NUMBERS PRECEDED BY WEST BDC0GU AS DESIGNATED BY NEW MEXICO OIL CORPORATION COMMISSION.

18 FEDERAL TRACTS	10,743.70 AC.	21.48 % OF UNIT
27 STATE TRACTS	16,416.53 AC.	32.82 % OF UNIT
73 PATENTED TRACTS	22,860.55 AC.	45.70 % OF UNIT
<b>TOTAL</b>	<b>50,020.78 AC.</b>	<b>100.00 % OF UNIT</b>

- FEDERAL LANDS (F - Series numbers on Exhibit "B")
- ▨ STATE OF NEW MEXICO LANDS (S - Series numbers on Exhibit "B")
- ▩ PATENTED LANDS (2000 Series numbers on Exhibit "B")
- TRACT NUMBERS AS LISTED IN EXHIBIT "B"
- UNIT BOUNDARY
- FIRST ENLARGEMENT

**EXHIBIT "A"**  
**WEST BRAVO DOME UNIT AREA**  
**HARDING COUNTY, NEW MEXICO**



REVISED 9-30-88



JIM BACA  
COMMISSIONER

State of New Mexico  
OFFICE OF THE  
Commissioner of Public Lands  
Santa Fe

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

October 24, 1986

Cities Service Oil and Gas Corp.  
ATTENTION: Mr. E. F. Motter  
P. O. Box 1919  
Midland, Texas 79702

Re: Plan of Development  
West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico

Gentlemen:

The Commissioner of Public Lands has this date approved your 1986 Plan of Development for the West Bravo Dome CO<sub>2</sub> Gas Unit Area, Harding County, New Mexico. Such plan calls for no additional development through 1987, but will continue to observe market conditions to determine appropriate timing for development of the unit.

Our approval is subject to like approval by the New Mexico Oil Conservation Division.

Enclosed is an approved copy for your files.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

BY: 

FLOYD O. PRANDO, Director  
Oil and Gas Division  
(505) 827-5744

JB/FOP/pm  
encls.

cc: OCD-Santa Fe, New Mexico  
BLM-Albuquerque, New Mexico Attn: Fluids Branch



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONY ANAYA  
GOVERNOR

October 20, 1986

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Cities Service Oil and  
Gas Corporation  
P. O. Box 1919  
Midland, Texas 79702

Attention: E. F. Motter

Re: Plan of Development  
West Bravo Dome Carbon Dioxide  
Gas Unit  
Harding County, New Mexico

Gentlemen:

The above-referenced submittal has been approved by the New Mexico Oil Conservation Division effective this date. Such approval is contingent upon like approval by the New Mexico Commissioner of Public Lands and the Bureau of Land Management.

Sincerely,

A handwritten signature in cursive script, appearing to read "Roy E. Johnson", written over a horizontal line.

ROY E. JOHNSON,  
Senior Petroleum Geologist

REJ/dr

cc: Commissioner of Public Lands - Santa Fe  
Bureau of Land Management - Albuquerque



CITIES SERVICE OIL AND GAS CORPORATION  
P.O. BOX 300 TULSA, OKLAHOMA 74102

May 14, 1986

AIRBORNE

State of New Mexico  
Commissioner of Public Lands  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87504

ATTN: Mr. Floyd O. Prando,  
Director

Re: First Enlargement and  
Expansion of the Unit Area  
West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico  
Unit Operator-Cities Service  
Oil and Gas Corporation

Gentlemen:

Please find enclosed two Ratifications to the captioned Unit,  
executed by William H. Martin, R. Ken Williams, and Edward H. Judson,  
as mentioned in our letter dated April 29, 1986.

Yours very truly,

Charles E. Creekmore  
Staff Landman  
Unitization and Acquisitions

CEC/gw

cc: Mr. R. L. Stamets  
State of New Mexico  
Energy and Minerals Dept.  
Oil Conservation Division  
310 Old Santa Fe Trail  
Land Office Bldg., Rm. 206  
Santa Fe, New Mexico 87504  
(with 1 original Ratification enclosed)

Please send out airborne  
to attached address and  
charge to:

1-3570268 X6520.1

West Bravo Dome CO<sub>2</sub> Gas Unit  
First Enlargement and Expansion

Page 2

cc: Mr. R. L. Stamets ← **THIS COPY FOR** →  
State of New Mexico  
Energy and Minerals Dept.  
Oil Conservation Division  
310 Old Santa Fe Trail  
Land Office Bldg., Rm. 206  
Santa Fe, New Mexico 87504  
(with 1 original Ratification enclosed)

Mr. Gary A. Stephens  
Bureau of Land Management  
Albuquerque District Office  
505 Marquette, N.W.  
P. O. Box 6770  
Albuquerque, New Mexico 87197-6770  
Ref: West Bravo Dome CO<sub>2</sub> Gas Unit  
3180 (015) (GC)  
(with 2 original and 2 copies of  
Ratifications enclosed)

Gene Motter - Midland  
David Evans - Midland - one original enclosed to be filed  
of Record in Harding County, New  
Mexico.

Russ Ledbetter - Room 2431/CSB  
Nicole Nauman - Room 11 ADB/TC

RATIFICATION OF  
THE FIRST ENLARGEMENT  
UNDER THE  
"UNIT AGREEMENT" AND "UNIT OPERATING AGREEMENT"  
OR BOTH  
FOR THE DEVELOPMENT AND OPERATION OF THE  
WEST BRAVO DOME CARBON DIOXIDE GAS UNIT  
HARDING COUNTY, NEW MEXICO

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, an agreement entitled "Unit Agreement for the Development and Operation of the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico", dated September 1, 1983 ("Unit Agreement") provides that any owner of Carbon Dioxide Gas Rights may sign an instrument agreeing to become a party to the Unit Agreement; and

WHEREAS, a companion agreement entitled "Unit Operating Agreement for the Development and Operation of the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico", dated September 1, 1983 ("Unit Operating Agreement") provides that an owner of a Working Interest may sign an instrument agreeing to become a party to the Unit Operating Agreement; and

WHEREAS, the West Bravo Dome Carbon Dioxide Gas Unit became effective as of December 1, 1984, at 7:00 a.m., Mountain Standard Time, as found in the CERTIFICATE OF EFFECTIVENESS filed in Book 14 of O & G, Pages 388-389, Harding County, New Mexico; and

WHEREAS, it is desirous to enlarge the Unit Area to include acreage reasonably proved to be productive of Unitized Substances; and

WHEREAS, Article 12, ENLARGEMENTS OF UNIT AREA, found on pages 19 and 20 of the Unit Agreement provides for the "Working Interest Owners and owners of such acreage" to approve any such enlargement of the Unit Area; and

WHEREAS, each of the undersigned represents that it is either the owner of a Royalty Interest in one or more of the Tracts identified in exhibits describing the Enlargement acreage, or the owner of a Working Interest in the Unit Area as enlarged, or both.

NOW, THEREFORE, the undersigned owners of a Royalty Interest in the enlargement acreage:

1. Hereby acknowledge receipt of First Enlargement Exhibits A, B, and C to the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico, showing the addition of Tracts F-110 to F-117 and Tract S-508A and hereby approve said enlargement of the Unit Area.

ACKNOWLEDGMENT

STATE OF TEXAS )  
 ) SS.  
COUNTY OF MIDLAND )

(Individual)

The foregoing instrument was acknowledged before me this  
1st day of May, 19 86, by William H. Martin  
R. Ken Williams & Edward H. Judson.

My commission expires:

September 20, 1989

Lisa Gayle Salmon  
Lisa Gayle Salmon - Notary Public

STATE OF \_\_\_\_\_ )  
 ) SS.  
COUNTY OF \_\_\_\_\_ )

(Married Couple)

The foregoing instrument was acknowledged before me this  
\_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_, by \_\_\_\_\_  
\_\_\_\_\_ and by \_\_\_\_\_, his wife.

My commission expires:

\_\_\_\_\_

\_\_\_\_\_  
Notary Public

STATE OF \_\_\_\_\_ )  
 ) SS.  
COUNTY OF \_\_\_\_\_ )

(Attorney-in-Fact)

The foregoing instrument was acknowledged before me this  
\_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_, by \_\_\_\_\_  
\_\_\_\_\_, as Attorney-in-Fact, on behalf of \_\_\_\_\_  
\_\_\_\_\_, a \_\_\_\_\_ corporation.

My commission expires:

\_\_\_\_\_

\_\_\_\_\_  
Notary Public

2. Hereby acknowledge receipt of a full and correct copy of the Unit Agreement and hereby approve and otherwise ratify said Unit Agreement, if said owners have not previously so approved or ratified.

The undersigned owners of a Working Interest in the Unit Area as enlarged:

1. Hereby acknowledge receipt of First Enlargement Exhibits A, B, C and F to the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico, showing the addition of Tracts F-110 to F-117 and Tract S-508A and hereby approve said enlargement of the Unit Area.
2. Hereby acknowledge receipt of a full and correct copy of the Unit Agreement and the Unit Operating Agreement, as previously amended, and hereby approve and otherwise ratify said Unit Agreement and Unit Operating Agreement, if said owners have not previously so approved or ratified.

IN WITNESS WHEREOF, each of the undersigned has executed this instrument on the date set forth opposite its signature.

ROYALTY OWNER(S)

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

ATTEST: \_\_\_\_\_ By \_\_\_\_\_

WORKING INTEREST OWNER

NAME: \_\_\_\_\_

DATE: 5-1-86 William H. Martin

DATE: 5-1-86 R. Ken Williams

DATE: 5-1-86 Edward H. Judson



CITIES SERVICE OIL AND GAS CORPORATION  
P.O. BOX 300 TULSA, OKLAHOMA 74102

April 30, 1986

AIRBORNE

State of New Mexico  
Commissioner of Public Lands  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87504

ATTN: Mr. Floyd O. Prando,  
Director

Re: First Enlargement and  
Expansion of the Unit Area  
West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico  
Unit Operator-Cities Service  
Oil and Gas Corporation

Gentlemen:

Please find enclosed two Ratifications to the captioned Unit,  
executed by Chevron U.S.A. Inc., as mentioned in our letter dated  
April 29, 1986.

Yours very truly,

Charles E. Creekmore  
Staff Landman  
Unitization and Acquisitions

CEC/gw  
Encl.



4-30-86

19

TO Mailroom

Please send this AIRBORNE to:

Mr. R. L. Stamets  
State of New Mexico  
Energy and Minerals Dept.  
Oil Conservation Division  
310 Old Santa Fe Trail, Rm. 206  
Land Office Bldg.  
Santa Fe, New Mexico 87504

LEUM CORPORATION

CHARGE TO: 1-3570268X6520.1

West Bravo Dome CO<sub>2</sub> Gas Unit  
First Enlargement and Expansion

Page 2

cc: Mr. R. L. Stamets ← THIS COPY FOR ←  
State of New Mexico  
Energy and Minerals Dept.  
Oil Conservation Division  
310 Old Santa Fe Trail  
Land Office Bldg., Rm. 206  
Santa Fe, New Mexico 87504  
(with 1 original Ratification enclosed)

Mr. Gary A. Stephens  
Bureau of Land Management  
Albuquerque District Office  
505 Marquette, N.W.  
P. O. Box 6770  
Albuquerque, New Mexico 87197-6770  
Ref: West Bravo Dome CO<sub>2</sub> Gas Unit  
3180 (015) (GC)  
(with 2 original and 2 copies of  
Ratifications enclosed)

Gene Motter - Midland  
David Evans - Midland  
Russ Ledbetter - Room 2431/CSB  
Nicole Nauman - Room 11 ADB/TC

RATIFICATION OF  
THE FIRST ENLARGEMENT  
UNDER THE  
"UNIT AGREEMENT" AND "UNIT OPERATING AGREEMENT"  
OR BOTH  
FOR THE DEVELOPMENT AND OPERATION OF THE  
WEST BRAVO DOME CARBON DIOXIDE GAS UNIT  
HARDING COUNTY, NEW MEXICO

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, an agreement entitled "Unit Agreement for the Development and Operation of the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico", dated September 1, 1983 ("Unit Agreement") provides that any owner of Carbon Dioxide Gas Rights may sign an instrument agreeing to become a party to the Unit Agreement; and

WHEREAS, a companion agreement entitled "Unit Operating Agreement for the Development and Operation of the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico", dated September 1, 1983 ("Unit Operating Agreement") provides that an owner of a Working Interest may sign an instrument agreeing to become a party to the Unit Operating Agreement; and

WHEREAS, the West Bravo Dome Carbon Dioxide Gas Unit became effective as of December 1, 1984, at 7:00 a.m., Mountain Standard Time, as found in the CERTIFICATE OF EFFECTIVENESS filed in Book 14 of O & G, Pages 388-389, Harding County, New Mexico; and

WHEREAS, it is desirable to enlarge the Unit Area to include acreage reasonably proved to be productive of Unitized Substances; and

WHEREAS, Article 12, ENLARGEMENTS OF UNIT AREA, found on pages 19 and 20 of the Unit Agreement provides for the "Working Interest Owners and owners of such acreage" to approve any such enlargement of the Unit Area; and

WHEREAS, each of the undersigned represents that it is either the owner of a Royalty Interest in one or more of the Tracts identified in exhibits describing the Enlargement acreage, or the owner of a Working Interest in the Unit Area as enlarged, or both.

NOW, THEREFORE, the undersigned owners of a Royalty Interest in the enlargement acreage:

1. Hereby acknowledge receipt of First Enlargement Exhibits A, B, and C to the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico, showing the addition of Tracts F-110 to F-117 and Tract S-508A and hereby approve said enlargement of the Unit Area.

2. Hereby acknowledge receipt of a full and correct copy of the Unit Agreement and hereby approve and otherwise ratify said Unit Agreement, if said owners have not previously so approved or ratified.

The undersigned owners of a Working Interest in the Unit Area as enlarged:

1. Hereby acknowledge receipt of First Enlargement Exhibits A, B, C and F to the West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico, showing the addition of Tracts F-110 to F-117 and Tract S-508A and hereby approve said enlargement of the Unit Area.
2. Hereby acknowledge receipt of a full and correct copy of the Unit Agreement and the Unit Operating Agreement, as previously amended, and hereby approve and otherwise ratify said Unit Agreement and Unit Operating Agreement, if said owners have not previously so approved or ratified.

IN WITNESS WHEREOF, each of the undersigned has executed this instrument on the date set forth opposite its signature.

ROYALTY OWNER(S)

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

ATTEST: \_\_\_\_\_ By \_\_\_\_\_

WORKING INTEREST OWNER

NAME: CHSA, INC.  
[Signature]  
D. L. Rowland, General Manager  
Production, Southern Region

DATE: April 29, 1986

DATE: \_\_\_\_\_

ATTEST: \_\_\_\_\_ By [Signature]  
Assistant Secretary  
ASSISTANT SECRETARY

B. T. Dumas





STATE OF TEXAS §

COUNTY OF HARRIS §

This instrument was acknowledged before me on this the 29th day of April, 1986, by B. T. Dumas, Assistant Secretary of Chevron U.S.A. Inc., a Pennsylvania corporation, on behalf of said corporation.

*Kathryn Maxwell*  
Notary Public, State of Texas

My Commission Expires: 5-30-89



KATHRYN MAXWELL  
Notary Public, State of Texas  
My Commission Expires 5-30-89

STATE OF TEXAS §

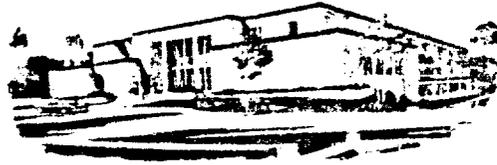
COUNTY OF HARRIS §

This instrument was acknowledged before me on this the 29th day of April, 1986, by J. L. Rowland, General Manager - Production, of Chevron U.S.A. Inc., a Pennsylvania corporation, on behalf of said corporation.

*Lydia Joan Anderson*  
Notary Public, State of Texas

My Commission Expires:  
Lydia Joan Anderson  
~~My Commission Expires~~  
9/17/88

State of New Mexico



JIM BACA  
COMMISSIONER

Commissioner of Public Lands

May 14, 1986

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

Cities Service Oil and Gas Corporation  
ATTN: Mr. Charles E. Creekmore  
P. O. Box 300  
Tulsa, Oklahoma 74012

Re: First Enlargement and  
Expansion of the Unit Area  
West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico  
Effective May 1, 1986

Gentlemen:

The Commissioner of Public Lands has this date approved the First Enlargement and Expansion of the West Bravo Dome CO<sub>2</sub> Gas Unit Area, Harding County, New Mexico and has also accepted revised Exhibits "A", "B" and "C" showing the addition of Tracts F110 to F118 and S-508-A to the unit agreement. The Effective date of the First Expansion is May 1, 1986.

The First Expansion adds 7,307.24 acres to the unit area or a 17.11% increase in acreage over the initial unit area. The total Unit Area is now 50,020.78 acres.

Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Your filing fee in the amount of \$210.00 has been received.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

BY: *Floyd O. Prando*

FLOYD O. PRANDO, Director  
Oil and Gas Division  
(505) 827-5744

JB/FCP/pm

cc: OCD-Santa Fe, New Mexico

BLM-Albuquerque, New Mexico Attn: Fluids Branch

Unit Name WEST BRAVO DOME CARBON DIOXIDE GAS UNIT  
 Operator Cities Service Oil and Gas Corporation  
 County Harding County, New Mexico

DATE	OCC CASE NO.	8351	EFFECTIVE DATE	TOTAL ACREAGE	STATE	FEDERAL	INDIAN-FEE	SEGREGATION CLAUSE	TERM
APPROVED	OCC ORDER NO.	R-7707	DECEMBER 1, 1984	<del>42,713.54</del>	15,967.53	<del>3,876.46</del>	22,860.55	Modified	so long as

OCD: November 1, 1984  
 Commissioner: November 20, 1984  
 ELM: November 21, 1984

*(1st expansion) Eff: 5-1-86 50,020.78 16,416.53 10,743.70*  
 APP: 5-14-86 SEE ATTACHED REVISED EXHIBIT

UNIT AREA

TOWNSHIP 20 NORTH, RANGE 29 EAST

Section 29: S/2S/2  
 Section 30: SW/4SW/4  
 Section 31: N/2NW/4, SW/4NW/4, SW/4, N/2SE/4  
 Section 32: All  
 Section 33: SW/4NE/4, S/2NW/4, N/2SW/4, SW/4SW/4, N/2SE/4, SE/4SE/4

TOWNSHIP 19 NORTH, RANGE 29 EAST CONT.....

Section 26: N/2S/2  
 Section 28: SW/4NW/4, W/2SW/4, SE/4SW/4, S/2SE/4, NE/4SE/4  
 Section 29: NW/4NE/4, W/2, SE/4, S/2NE/4  
 Sections 30 through 33: All  
 Section 34: S/2, SW/4NE/4  
 Section 35: SE/4NE/4, W/2SW/4, SE/4SW/4, E/2SE/4  
 Section 36: All

TOWNSHIP 39 NORTH, RANGE 30 EAST

Section 29: NW/4SW/4  
 Section 30: All  
 Section 31: S/2, S/2N2  
 Section 32: W/2, W/2SE/4, SE/4SE/4

TOWNSHIP 18 NORTH, RANGE 29 EAST

Section 2: SW/4SW/4  
 Section 3: S/2NE/4, NW/4NE/4, NW/4, se/4  
 Section 4: E/2NE/4, NW/4, W/2SW/4, SE/4  
 Section 5: N/2  
 Section 6: N/2W/2  
 Section 7: NW/4NW/4, S/2NW/2, S/2  
 Section 9: NE/4, W/2NW/4, E/2SW/4, SE/4  
 Section 10: N/2NE/4, SE/4NE/4, NW/4, SE/4SW/4, E/2SE/4  
 Section 11: SW/4NE/4, NW/4NW/4, S/2NW/4, SW/4, W/2SE/4  
 Section 14: W/2NE/4, NW/4  
 Section 15: NE/4, E/2NW/4  
 Section 16: All  
 Sections 18 and 19: All  
 Section 20: W/2, W/2E/2  
 Section 21: W/2NW/4, N/2SW/4  
 Section 24: E/2SW/4, SE/4  
 Section 25: E/2, E/2W/2  
 Section 26: W/2SW/4

Section 1: N/2, N/2SW/4, SE/4SW/4, SE/4  
 Sections 2 through 5: All  
 Section 6: NE/4, N/2NW/4, SE/4NW/4, S/2  
 Sections 7 through 9: All  
 Section 10: W/2W/2, E/2NW/4  
 Section 12: N/2NE/4, SE/4NE/4, NE/4NW/4, SE/4SE/4  
 Section 13: E/2E/2  
 Section 15: W/2

CONTINUED ON NEXT PAGE.....

7  
OCD

UNIT AREA CONTINUEDTOWNSHIP 18 NORTH, RANGE 29 EAST, CONTINUED FROM PAGE 1

Sections 16 through 21: All  
 Section 22: SW/4NE/4, NW/4  
 Section 28: NW/4NE/4, N/2NW/4  
 Section 29: N/2N/2, SW/4NE/4, S/2NW/4, N/2SW/4, NW/4SE/4, SW/4SW/4  
 Section 30: NE/4, E/2NW/4, NW/4NW/4, NE/4SW/4, N/2SE/4, SE/4SE/4  
 Section 31: NE/4NE/4, S/2NE/4, N/2SW/4, SE/4SW/4, SE/4  
 Section 32: All  
 Section 33: SW/4, NW/4SE/4  
 Section 35: E/2, E/2N/2, SW/4NW/4, N/2SW/4  
 Section 36: All

TOWNSHIP 18 NORTH, RANGE 30 EAST

Section 5: E/2NE/4, NW/4NE/4, NW/4  
 Section 6: N/2, SE/4SW/4, SW/4SE/4  
 Section 7: NW/4NE/4, NW/4, SW/4, S/2SE/4  
 Section 18: N/2NW/4, SW/4NW/4, S/2S/2  
 Section 19: E/2E/2, W/2NE/4  
 Section 20: NW/4  
 Section 29: NW/4NW/4  
 Section 30: NE/4NE/4

TOWNSHIP 17 NORTH, RANGE 29 EAST

Section 1: SW/4SW/4  
 Sections 2 through 4: All  
 Section 5: E/2, E/2W/2, W/2NW/4  
 Section 6: N/2NE/4, SE/4NE/4, NE/4NW/4  
 Section 8: E/2, E/2W/2  
 Sections 9 through 11: All  
 Section 12: SE/4NE/4, W/2, SE/4  
 Section 13: SW/4NE/4, NW/4  
 Section 14: N/2NE/4, W/2  
 Sections 15 through 17: All  
 Section 18: All (only those portions in Harding County)  
 Section 19: E/2, NE/4SW/4 (only those portions in Harding County)  
 Sections 20 through 22: All  
 Section 28: N/2  
 Section 29: N/2, W/2SE/4, SW/4 (only those portions in Harding County)

EXHIBIT OF PROPOSED ENLARGEMENT TO  
WEST BRAVO DOME CARBON DIOXIDE GAS UNIT  
HARDING COUNTY, NEW MEXICO

TOWNSHIP 17 NORTH, RANGE 29 EAST  
OF THE NEW MEXICO PRIN. MERIDIAN, NEW MEXICO

- Section 1: SW/4 NE/4, SE/4 N/2 SW/4,  
SE/4 SW/4, S/2 NW/4  
containing 400 acres, more or  
less;
- Section 5: W/2 SW/4  
containing 30 acres, more or  
less;
- Section 6: SW/4 NE/4, S/2, S/2 NW/4,  
NW/4 NW/4  
containing 478.12 acres,  
more or less;
- Section 7: All  
containing 638.16 acres,  
more or less;
- Section 8: W/2 W/2  
containing 160 acres,  
more or less;
- Section 12: N/2 NE/4, SW/4 NE/4  
containing 120 acres,  
more or less;
- Section 13: NW/4 NE/4  
containing 40 acres,  
more or less;
- Section 14: S/2 NE/4  
containing 80 acres,  
more or less;
- Section 19: Lots 1, 2, 3, NE/4 NW/4  
containing 83.76 acres,  
more or less;
- Section 29: E/2 SW/4  
containing 80 acres,  
more or less;

EXHIBIT OF PROPOSED ENLARGEMENT TO  
WEST BRAVO DOME CARBON DIOXIDE GAS UNIT  
HARDING COUNTY, NEW MEXICO

TOWNSHIP 17 NORTH, RANGE 29 EAST  
OF THE NEW MEXICO PRIN. MERIDIAN, NEW MEXICO

- Section 30: Lots 1, 2, 3, and 5  
containing 73.28 acres,  
more or less;

TOWNSHIP 18 NORTH, RANGE 29 EAST  
OF THE NEW MEXICO PRIN. MERIDIAN, NEW MEXICO

- Section 5: Lot 5  
containing 38.72 acres,  
more or less;
- Section 10: N/2 NE/4  
containing 30 acres,  
more or less;
- Section 11: E/2, N/2 NW/4, SE/4 NW/4  
containing 440 acres,  
more or less;
- Section 12: SW/4 NE/4, N/2 SE/4, SW/4 SE/4  
containing 160 acres,  
more or less;
- Section 13: W/2 E/2, SW/4  
containing 320 acres,  
more or less;
- Section 14: NW/4 NE/4, SE/4  
containing 200 acres,  
more or less;
- Section 22: N/2 SW/4, SW/4 SW/4  
containing 120 acres,  
more or less;
- Section 24: NE/4, E/2 SE/4, N/2 NW/4  
containing 320 acres,  
more or less;
- Section 26: NW/4 SW/4  
containing 40 acres,  
more or less;
- Section 27: S/2, W/2 NW/4  
containing 400 acres,  
more or less;

TOWNSHIP 18 NORTH, RANGE 29 EAST  
OF THE NEW MEXICO PRIN. MERIDIAN, NEW MEXICO

Section 28: NE/4 NE/4, S/2 N/2, S/2  
containing 520 acres,  
more or less;

Section 29: SE/4 NE/4, E/2 SE/4, SW/4 SE/4  
SE/4 SW/4  
containing 200 acres,  
more or less;

Section 30: Lots 1, 3, 4, SE/4 SW/4,  
SW/4 SE/4  
containing 198.44 acres,  
more or less;

Section 31: Lots 1, 2, 4, E/2 NW/4, NW/4 NE/4  
containing 238.25 acres,  
more or less;

Section 33: N/2  
containing 320 acres,  
more or less;

Section 34: E/2 E/2, NW/4 NE/4, SW/4 SE/4,  
NE/4 NW/4  
containing 280 acres,  
more or less;

TOWNSHIP 19 NORTH, RANGE 29 EAST  
OF THE NEW MEXICO PRIN. MERIDIAN, NEW MEXICO

Section 6: Lots 1, 2, 3, SW/4 NE/4, SE/4 NW/4  
containing 199.48 acres,  
more or less;

Section 21: E/2 NE/4  
containing 80 acres,  
more or less;

Section 22: N/2, N/2 SE/4, NE/4 SW/4  
containing 440 acres,  
more or less;

Section 27: SE/4 NE/4, N/2 NW/4, SW/4 NW/4  
containing 160 acres,  
more or less;

TOWNSHIP 19 NORTH, RANGE 29 EAST  
OF THE NEW MEXICO PRIN. MERIDIAN, NEW MEXICO

Section 29: NE/4 NE/4  
containing 40 acres,  
more or less;

TOWNSHIP 20 NORTH, RANGE 29 EAST,  
OF THE NEW MEXICO PRIN. MERIDIAN, NEW MEXICO

Section 31: S/2 SE/4, SE/4 NW/4  
containing 120 acres,  
more or less;

Section 33: NW/4 NW/4  
containing 40 acres,  
more or less;

TOWNSHIP 18 NORTH, RANGE 30 EAST  
OF THE NEW MEXICO PRIN. MERIDIAN, NEW MEXICO

Section 19: W/2 SW/4, SW/4 NW/2  
containing 118.53 acres,  
more or less.

EXHIBIT OF PROPOSED ENLARGEMENT TO  
 WEST BRAVO DOME CARBON DIOXIDE GAS UNIT  
 HARDING COUNTY, NEW MEXICO

RECAPITULATION OF LANDS  
 WITHIN FIRST ENLARGEMENT

<u>TYPE</u>	<u>ACRES</u>	<u>PERCENT</u>
Federal	6,867.24	93.97857
State	440.00	6.02143
Patented	<u>-0-</u>	<u>-0-</u>
TOTAL	7,307.24	1.0000000

RECAPITULATION OF LANDS  
 AFTER APPROVAL OF FIRST ENLARGEMENT

<u>TYPE</u>	<u>ACRES</u>	<u>PERCENT</u>
Federal	10,743.70	21.47847
State	16,416.53	32.81942
Patented	<u>22,860.55</u>	<u>45.70211</u>
TOTAL	50,020.78	1.0000000

Unit Name Bravo Dome Carbon Dioxide Gas Unit  
 Operator Cities Service Oil and Gas Corporation  
 County Harding County, New Mexico

\* IN FIRST EXHAUSTION App: 5-14-86 ECR: 5-1-86

STATE TRACT NO.	LEASE NO.	INSTI-TUTION	SEC.	TWP.	RGE.	SUBSECTION	RATIFIED DATE	ACRES	ACREAGE NOT RATIFIED	LESSEE
S-501	L-5776-2	PEN	29	20N	29E	S $\frac{1}{2}$ S $\frac{1}{2}$	9/10/84	520.00		Cities Service O&G Corp.
S-502	L-5777-2	C. S.	32	20N	29E	S $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{2}$ SE $\frac{1}{4}$ , SW $\frac{1}{2}$ SW $\frac{1}{4}$	9/10/84	640.00		Cities Service O&G Corp.
S-503	L-5811-2	C. S.	2	19N	29E	SW $\frac{1}{2}$ SW $\frac{1}{4}$				
		C. S.	10	19N	29E	SE $\frac{1}{4}$ NE $\frac{1}{4}$ , E $\frac{1}{2}$ SE $\frac{1}{4}$				
		C. S.	15	19N	29E	NE $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{2}$ NW $\frac{1}{4}$				
		C. S.	16	19N	29E	All	9/10/84	920.00		Cities Service O&G Corp.
S-504	L-5812-2	T. Wat Res	11	19N	29E	SW $\frac{1}{2}$ , NW $\frac{1}{2}$ SE $\frac{1}{4}$ , SW $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{2}$ NE $\frac{1}{4}$ , SW $\frac{1}{2}$ NW $\frac{1}{4}$ , NW $\frac{1}{2}$ NW $\frac{1}{4}$				
		T. Wat Res	14	19N	29E	W $\frac{1}{2}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$				
S-505	L-5813-2	T. Wat Res	15	19N	29E	S $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{2}$ NW $\frac{1}{4}$	9/10/84	760.00		Cities Service O&G Corp.
S-506	L-5814-2	UNIV.	3	19N	29E	Lots 2, 3, 4, S $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{2}$ NE $\frac{1}{4}$	9/10/84	239.52		Cities Service O&G Corp.
		MIN. HOSP.	3	19N	29E	SE $\frac{1}{4}$				
		MIN HOSP.	4	19N	29E	Lots 1, 3, 4, S $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{2}$ , W $\frac{1}{2}$ SW $\frac{1}{4}$				
		MIN. HOSP.	5	19N	29E	Lots 1, 2, 3, 4, S $\frac{1}{2}$ N $\frac{1}{2}$	9/10/84	958.35		Cities Service O&G Corp.
S-507	L-5815-2	Min Hosp.	9	19N	29E	E $\frac{1}{2}$ , W $\frac{1}{2}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$				
* S-508	L-5816-2	C. S.	10	19N	29E	NW $\frac{1}{4}$	9/10/84	640.00		Cities Service O&G Corp.
		C. S.	26	19N	29E	SW $\frac{1}{2}$ SW $\frac{1}{4}$				
		C. S.	35	19N	29E	SE $\frac{1}{2}$ NE $\frac{1}{4}$ , E $\frac{1}{2}$ SE $\frac{1}{4}$				
		C. S.	36	19N	29E	All	9/10/84	800.00		Cities Service O&G Corp.
S-509	L-5817-2	T. WAT RES	24	19N	29E	E $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$				
		T. WAT RES.	25	19N	29E	E $\frac{1}{2}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$	9/10/84	720.00		Cities Service O&G Corp.
S-510	L-5826-2	T. WAT RES	30	19N	30E	Lots 1, 2, 3, 4, E $\frac{1}{2}$ SW $\frac{1}{4}$ , E $\frac{1}{2}$	9/10/84	630.96		Cities Service O&G Corp.
S-511	L-5827-2	T. WAT RES	31	19N	30E	Lots 2, 3, 4, E $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{2}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$				
		T. WAT RES	32	19N	30E	NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{2}$ SW $\frac{1}{4}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$ , SE $\frac{1}{2}$ SE $\frac{1}{4}$	9/10/84	872.44		Cities Service O&G Corp.
S-512	L-5828-2	C. S.	32	19N	30E	SW $\frac{1}{2}$ SW $\frac{1}{4}$	9/10/84	40.00		Cities Service O&G Corp.
S-513	L-5852-2	C. S.	5	18N	30E	Lots 3, 4, SE $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{2}$ SE $\frac{1}{4}$ , SE $\frac{1}{2}$ SW $\frac{1}{4}$				
		C. S.	6	18N	30E	SW $\frac{1}{2}$ SE $\frac{1}{4}$ , SE $\frac{1}{2}$ SW $\frac{1}{4}$	9/10/84	635.46		Cities Service O&G Corp.
		C. S.	7	18N	30E	Lots 1, 2, 3, 4, E $\frac{1}{2}$ W $\frac{1}{2}$ , NW $\frac{1}{2}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ SE $\frac{1}{4}$				
S-514	L-5853-2	T. WAT RES	5	18N	30E	Lots 1, 2, SW $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{2}$ NE $\frac{1}{4}$	9/10/84	476.18		Cities Service O&G Corp.
		T. WAT RES	6	18N	30E	Lots 1, 2, 3, 4, 5, SE $\frac{1}{2}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$ NE $\frac{1}{4}$	9/10/84	476.18		Cities Service O&G Corp.
S-515	L-5856-2	C. S.	18	18N	30E	Lots 1, 2, NE $\frac{1}{2}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$ SE $\frac{1}{4}$	9/10/84	438.34		Cities Service O&G Corp.
		C. S.	19	18N	30E	NE $\frac{1}{2}$ , E $\frac{1}{2}$ SE $\frac{1}{4}$				
S-516	LG-4586	C. S.	2	17N	29E	Lots 1, 2, 3, S $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{2}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$	8/15/84	1,200.71		Amerada Hess Corp.
		C. S.	16	17N	29E	All	8/15/84	317.28		Amerada Hess Corp.
S-517	LG-4601	T. WAT RES	1	18N	29E	Lots 1, 2, 3, 4, S $\frac{1}{2}$ N $\frac{1}{2}$				
* S-508A	L-5816	C. S.	22	19N	29E	N $\frac{1}{2}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$	4-24-86	440.00		Cities Service O&G Corp.

Unit Name BRAVO DOME CARBON DIOXIDE GAS UNIT  
 Operator Cities Service Oil and Gas Corporation  
 County Harding

STATE TRACT NO.	LEASE NO.	INSTI-TUTION	SEC.	TMP.	RGE.	SUBSECTION	RATIFIED		ACRES	ACREAGE		LESSEE
							DATE	NOT RATIFIED		NOT RATIFIED	RATIFIED	
S-518	LG-4603-2	C. S.	1	18N	29E	N $\frac{1}{2}$ S $\frac{1}{2}$ , SE $\frac{1}{2}$ SW $\frac{1}{2}$ , S $\frac{1}{2}$ SE $\frac{1}{2}$	9/21/84		911.94			C02-IN-ACTION
		C. S.	2	18N	29E	ALL						
S-519	LG-4603	C. S.	12	18N	29E	NE $\frac{1}{4}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ NE $\frac{1}{2}$ , SE $\frac{1}{2}$ NE $\frac{1}{2}$ , SE $\frac{1}{2}$ SE $\frac{1}{2}$						
		C. S.	13	18N	29E	NE $\frac{1}{2}$ NE $\frac{1}{2}$						
		C. S.	16	18N	29E	ALL	8/15/84		80.00			Amerada Hess Corp.
S-520	LG-4604	C. S.	32	18N	29E	E $\frac{1}{2}$ NE $\frac{1}{2}$ , SW $\frac{1}{2}$ NW $\frac{1}{2}$ , S $\frac{1}{2}$						
		C. S.	36	18N	29E	ALL	8/15/84		1,080.00			Amerada Hess Corp.
S-521	LG-5052	C. S.	19	17N	29E	LOTS 4, 5, 6, NE $\frac{1}{4}$ , E $\frac{1}{2}$ SE $\frac{1}{2}$						
		C. S.	20	17N	29E	S $\frac{1}{2}$ S $\frac{1}{2}$ , NE $\frac{1}{2}$ SE $\frac{1}{2}$						
		C. S.	21	17N	29E	S $\frac{1}{2}$						
		C. S.	22	17N	29E	S $\frac{1}{2}$						
S-522	LG-5053	C. S.	28	17N	29E	N $\frac{1}{2}$	9/21/84		1,156.90			Gulf Oil Corporation
S-523	LG-5054	C. S.	29	17N	29E	N $\frac{1}{2}$	9/21/84		320.00			Gulf Oil Corporation
S-524	L-5823-2	T. Wat Res	29	19N	30E	LOTS 4, 6, N $\frac{1}{2}$ , NE $\frac{1}{2}$ SE $\frac{1}{2}$ , E $\frac{1}{2}$ SW $\frac{1}{2}$	9/10/84		538.45			Gulf Oil Corporation
S-525	L-5857-2	C. S.	20	18N	30E	NW $\frac{1}{4}$ SW $\frac{1}{4}$	9/10/84		40.00			Cities Service O&G Corp.
S-526	L-5859-2	C. S.	29	18N	30E	NW $\frac{1}{4}$	9/10/84		160.00			Cities Service O&G Corp.
S-527	<del>L-5860-1</del>	C. S.	30	18N	30E	NW $\frac{1}{4}$ NW $\frac{1}{4}$	9/10/84		40.00			Cities Service O&G Corp.
	LH-3499					NE $\frac{1}{2}$ NE $\frac{1}{2}$			40.00			Cities Service O&G Corp.

UNO SUBSEQUENT SURVEY  
 EPP: 10-4-85



TONEY ANAYA  
GOVERNOR

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

50 YEARS



1935 - 1985

April 14, 1986

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Oxy Cities Service  
P. O. Box 1919  
Midland, Texas 79702

Attention: E. F. Motter

Re: Enlargement - West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico

Gentlemen:

The above-referenced submittal has been approved by the New Mexico Oil Conservation Division effective this date. Such approval is contingent upon like approval by the New Mexico Commissioner of Public Lands and the Bureau of Land Management.

Sincerely,

ROY E. JOHNSON,  
Senior Petroleum Geologist

REJ/dr

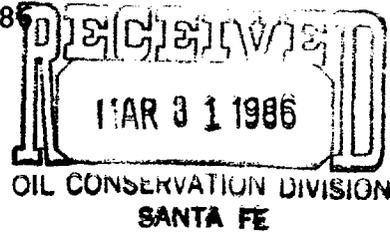
cc: Commissioner of Public Lands - Santa Fe  
Bureau of Land Management - Albuquerque  
OCD District Office - Santa Fe



CITIES SERVICE OIL AND GAS CORPORATION  
P. O. BOX 1919 MIDLAND, TEXAS 79702

(915) 685-5600

March 26, 1986



Mr. R. L. Stamets  
State of New Mexico  
Energy & Minerals Dept.  
Oil Conservation Division  
P. O. Box 288  
Santa Fe, New Mexico 87501

Re: Enlargement - West Bravo Dome Carbon Dioxide  
Gas Unit, Harding County, New Mexico

Dear Mr. Stamets:

Cities Service Oil & Gas Corporation, operator of the West Bravo Dome Carbon Dioxide Gas Unit (WBDCDGU), requests your approval as provided in Order #R-7707 to enlarge the WBDCDGU. Unit Agreement, which was approved and made part of Order #R-7707 on November 1, 1984, provides in Article 12 for enlargement of unit area subject to approval by certain regulatory groups.

Attached is an engineering-geological report which reasonably proves the 6867 acres to be included in the enlargement is productive. This conclusion is based on information gained from the drilling of 17 wells on the unit and engineering-geological testimony presented in Case #8351 on September 26, 1984, correlating these wells to those drilled outside the WBDCDGU area.

Participation of the tracts to be included is allocated on acreage based on the original participation formula: ratio of surface acres in a tract to the total surface acres contained in all tracts. No carbon dioxide has been produced from the unit area since the unit was authorized, therefore, the relationship of tracts remains the same including those considered for enlargement.

Enlarged Unit will contain 50,020.78 acres consisting of: 17 Federal tracts (10,743.70 ac.), 27 State tracts (16,416.53 ac.) and 73 Patented tracts (22860.55 ac.). Enlargement of the unit has been approved by the working interest owners according to Article 4.3 VOTING PROCEDURES of the unit operating agreement.

Page 2, 3/26/86  
Mr. R. L. Stamets  
WBDCDGU Enlargement

Copies of this request are being sent to the State of New Mexico, Commissioner of Public Lands, Santa Fe, New Mexico and the Bureau of Land Management, Albuquerque, New Mexico.

I will schedule informal meetings with you and your staff, Mr. Floyd O. Prando and his staff and the Bureau of Land Management to answer any questions anyone may have. Hopefully, we can combine the Division and State Land Office meetings. If you have any questions prior to this meeting, please call me at 915-685-5848. In the event you determine, after reviewing this request, the matter should be set for hearing, please set the hearing at an early date.

Yours very truly,



E. F. Motter  
Engineering Manager  
Southwest Region  
E & P Division

EFM:wc

CC: U. S. Dept. of Interior  
Bureau of Land Management  
P. O. Box 6770  
Albuquerque, New Mexico 87197-6770  
Attn: Shirley Bryant

State of New Mexico  
Commissioner of Public Lands  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148  
Attn: Mr. Floyd O. Prando



**CITIES SERVICE OIL AND GAS CORPORATION**

**SOUTHWEST REGION  
MIDLAND, TEXAS**

**WEST BRAVO DOME  
CARBON DIOXIDE GAS UNIT  
HARDING COUNTY, NEW MEXICO**

**MARCH, 1986**

**WEST BRAVO DOME CARBON DIOXIDE GAS UNIT**

Harding County, New Mexico

## **General Overview**

The West Bravo Dome Carbon Dioxide Gas Unit, Harding County, New Mexico (Attachment 1), operated by Cities Service Oil and Gas Corporation, is composed of an area taken from the southwest corner of the original area proposed by Amoco for their Bravo Dome Carbon Dioxide Gas Unit. This area failed to qualify for the Bravo Dome Carbon Dioxide Gas Unit when Amerigas, holder of leases on the Mitchell Ranch, elected not to participate. The Unit area consists of 43,154 acres, including nine federal tracts (8.98%), twenty-seven state tracts (38.05%), and seventy-three patented tracts (52.97%). There are five working interest owners and over one hundred royalty owners. Recoverable reserves are estimated at 197 billion cubic feet of carbon dioxide.

Cities Service has received working interest approval for a Unit enlargement that would expand the Unit area to 50,021 productive acres. The Unit will then consist of 17 federal tracts (21.48%), twenty-seven state tracts (32.82%), and 73 patented tracts (45.70%). This proposed enlargement will increase Unit reserves by 47 billion cubic feet of CO<sub>2</sub>.

Cities Service plans to develop the entire area and produce up to 75 million cubic feet per day of carbon dioxide. The gas will be gathered and compressed for delivery to a pipeline or pipelines constructed to the Permian Basin for use in enhanced recovery projects (Attachment 2).

Seventeen carefully selected sites have been drilled in the West Bravo Dome Carbon Dioxide Gas Unit. These wells provide widespread geological and engineering data over the West Bravo Dome area including the acreage to be added with the first Unit enlargement. As a result of this drilling activity, Cities Service maintains an excellent rapport with land owners in the area. Cities is pledged to protecting the environment and will abide by the rules, procedures, and requirements of all regulatory agencies as well as maintain our fine relationship with land owners.

### **Geology**

Carbon dioxide is produced from the Permian aged Tubb Formation at Bravo Dome. The Tubb Formation is encountered at a depth of 2000' at a subsurface elevation of 2500' above sea level in the West Bravo Dome area. The formation's southeast dip is apparent on the structure map of the top of the Tubb Sandstone, included as Attachment 3. The maximum net pay thickness in the West Bravo Dome area is approximately 50'. A thickening in the eastern portion of the Unit results from Tubb deposition in a northwest-southeast trending paleo-valley in the surface of the underlying granite. Other major features of the Tubb Sandstone include a thinning net pay to the northwest, resulting from a thinning of gross interval thickness, and a thinning of net pay to the southeast, resulting from the presence of the gas-water contact. A net pay isopach map of the Tubb Sandstone is included as

Attachment 4. The cross-sections, included as Attachments 6, 7, 8, and 9, show these features in greater detail. The western reservoir boundary occurs where shale has replaced sand deposition, as in the CO2-In-Action George Trujillo No. 1, included in Attachment 8. The thinning to the northwest, the facies change to the west, and the gas-water contact to the south form the reservoir boundaries of the Tubb Sandstone in the West Bravo Dome area.

The Tubb Sandstone was deposited on the underlying granite basement or granite wash by streams transporting sediment from the Sierra Grande Uplift to the Palo Duro Basin. The description of the core from the Cities Service State DS #1 is typical of fluvial deposition. The lowermost conglomerates and conglomeritic sandstones are representative of an alluvial fan - braided stream environment. The overlying sandstone sequence indicates a transition to a meandering stream environment. The uppermost shaley sandstone and limey sandstone is typical of an intertidal region. This sequence of events is illustrated in Attachment 10. The Tubb Sandstone is overlain by the Cimarron Formation, a 20' thick anhydrite deposited uniformly over the Bravo Dome area, sealing the carbon dioxide reserves below. The formation sequence and an expanded section of the Tubb formation from the Unit type log (West BDCDGU #3) are included as Attachments 11 and 12.

Net pay porosity averages 18% in the wells of the West Bravo Dome Carbon Dioxide Gas Unit. The cut-offs used to determine net pay are 12% porosity and 60% water saturation. The average core permeability of the productive intervals of the Cities Service State DS #1 is 13.2 md. Based on comparisons of well performance and log appearance, this permeability is typical of the area. An average reservoir pressure of 650 psi has been found to extend across the entire West Bravo Dome area.

Considerable geological and engineering testimony, including substantiating exhibits, was presented to the New Mexico Oil Conservation Commission in Cases 8351 and 8352, heard on September 26, 1984. In their findings, the Commission concluded that there is good geological continuity in the West Bravo Dome Carbon Dioxide Gas Unit area and that the evidence submitted shows the Tubb Sandstone to constitute a common source of supply for the entire Bravo Dome area, including the Bravo Dome Carbon Dioxide Gas Unit. The majority of the leases recommended for the enlargement lie between the West Bravo Dome Carbon Dioxide Gas Unit and the Bravo Dome Carbon Dioxide Gas Unit. Based on these findings and our own geological and engineering studies, the leases included in the enlargement acreage can reasonably be assumed to be productive of carbon dioxide.

## A T T A C H M E N T S

1. Unit Boundary
  2. CO2 Pipelines for the Permian Basin
  3. Structure Map
  4. Net Isopach Map
  5. Cross-Section Locator
  6. Cross-Section A-A'
  7. Cross-Section B-B'
  8. Cross-Section C-C'
  9. Cross-Section D-D'
  10. Paleogeographic Reconstruction
  11. Type Log - Permian Section
  12. Type Log - Tubb Formation
- Unit Agreement Exhibit A - Revised 3/17/86

R 28 E

R 29 E

R 30 E

T 20 N

T 20 N

T 19 N

T 19 N

T 18 N

T 18 N

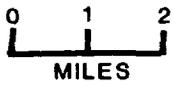
T 17 N

T 17 N

R 28 E

R 29 E

R 30 E



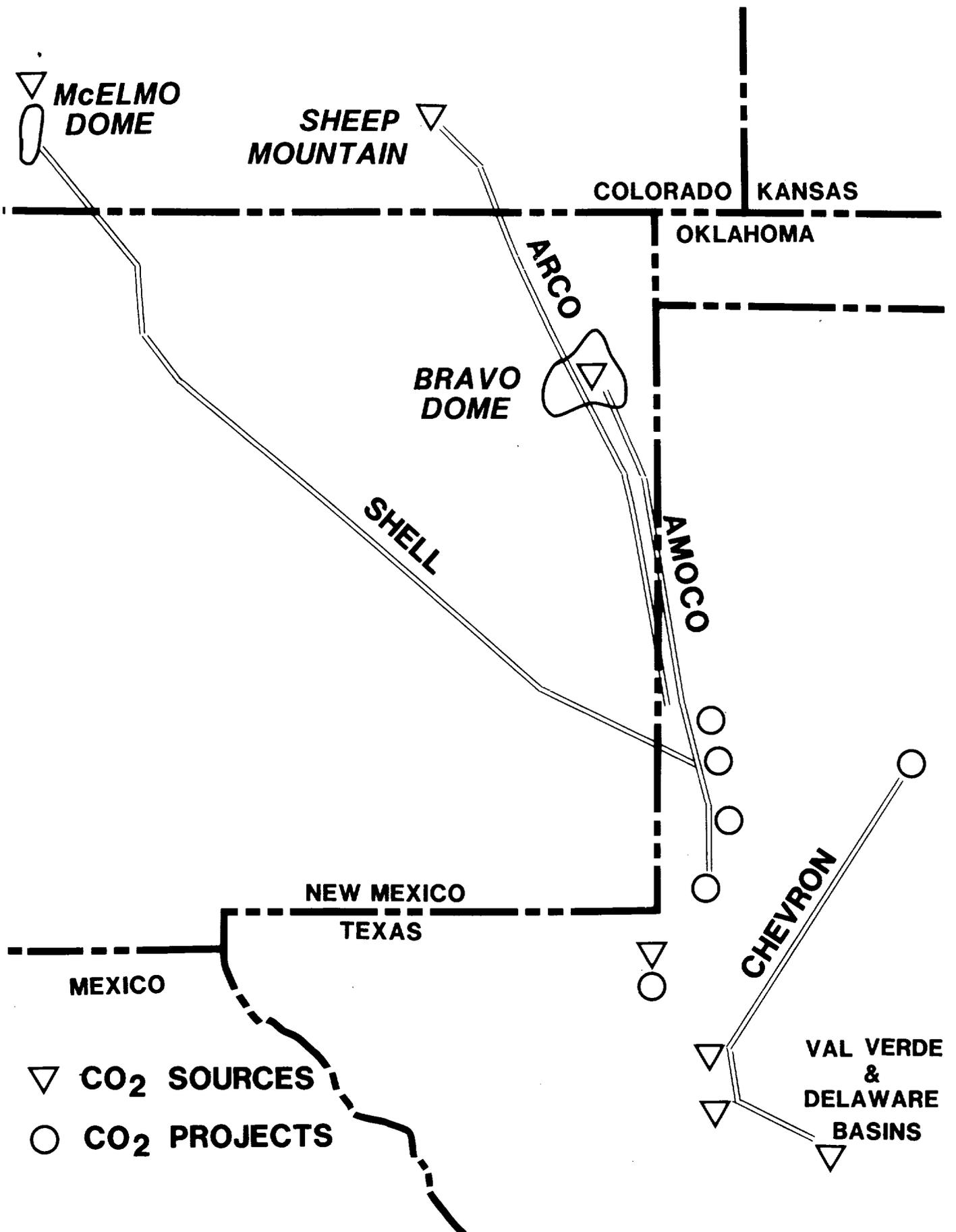
**UNIT BOUNDARY**

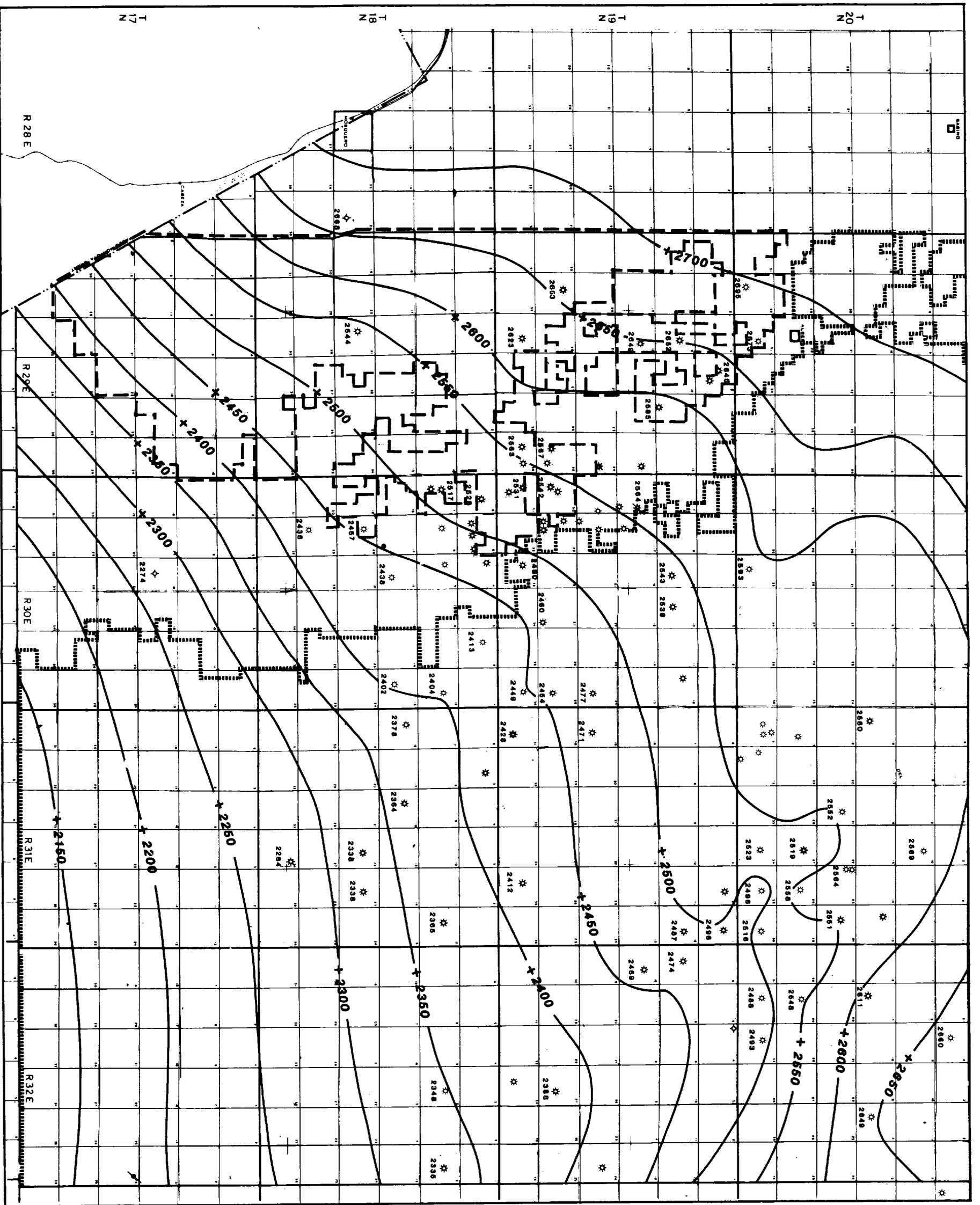
- MITCHELL RANCH
- STATE
- FEE

**— — — — — CURRENT WEST BRAVO DOME CO<sub>2</sub> UNIT BOUNDARY**

**— / — / — / — / — PROPOSED UNIT BOUNDARY**

**..... AMOCO BRAVO DOME CO<sub>2</sub> UNIT BOUNDARY**



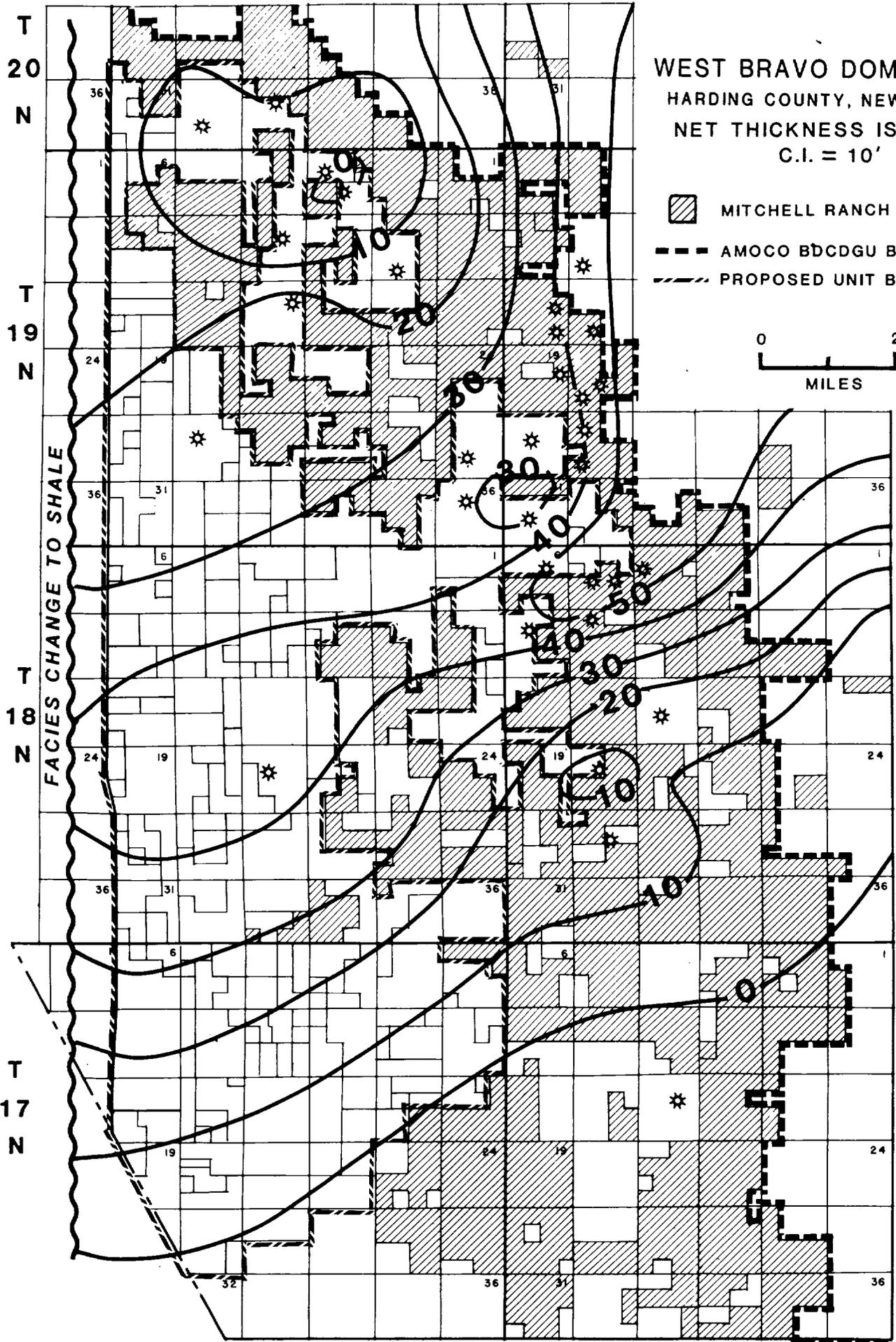


AMOCO BDCDGU BOUNDARY  
 UNIT BOUNDARY  
 AFTER ENLARGEMENT

WEST BRAVO DOME  
 HARDING COUNTY, NEW MEXICO  
 TOP OF TUBBS SANDSTONE  
 STRUCTURE MAP  
 C. I. 50'

GEOL. R. EGG DATE: SEPT., 1984

ATTACHMENT



WEST BRAVO DOME AREA  
 HARDING COUNTY, NEW MEXICO  
 NET THICKNESS ISOPACH  
 C.I. = 10'

-  MITCHELL RANCH
-  AMOCO BDCDGU BOUNDARY
-  PROPOSED UNIT BOUNDARY

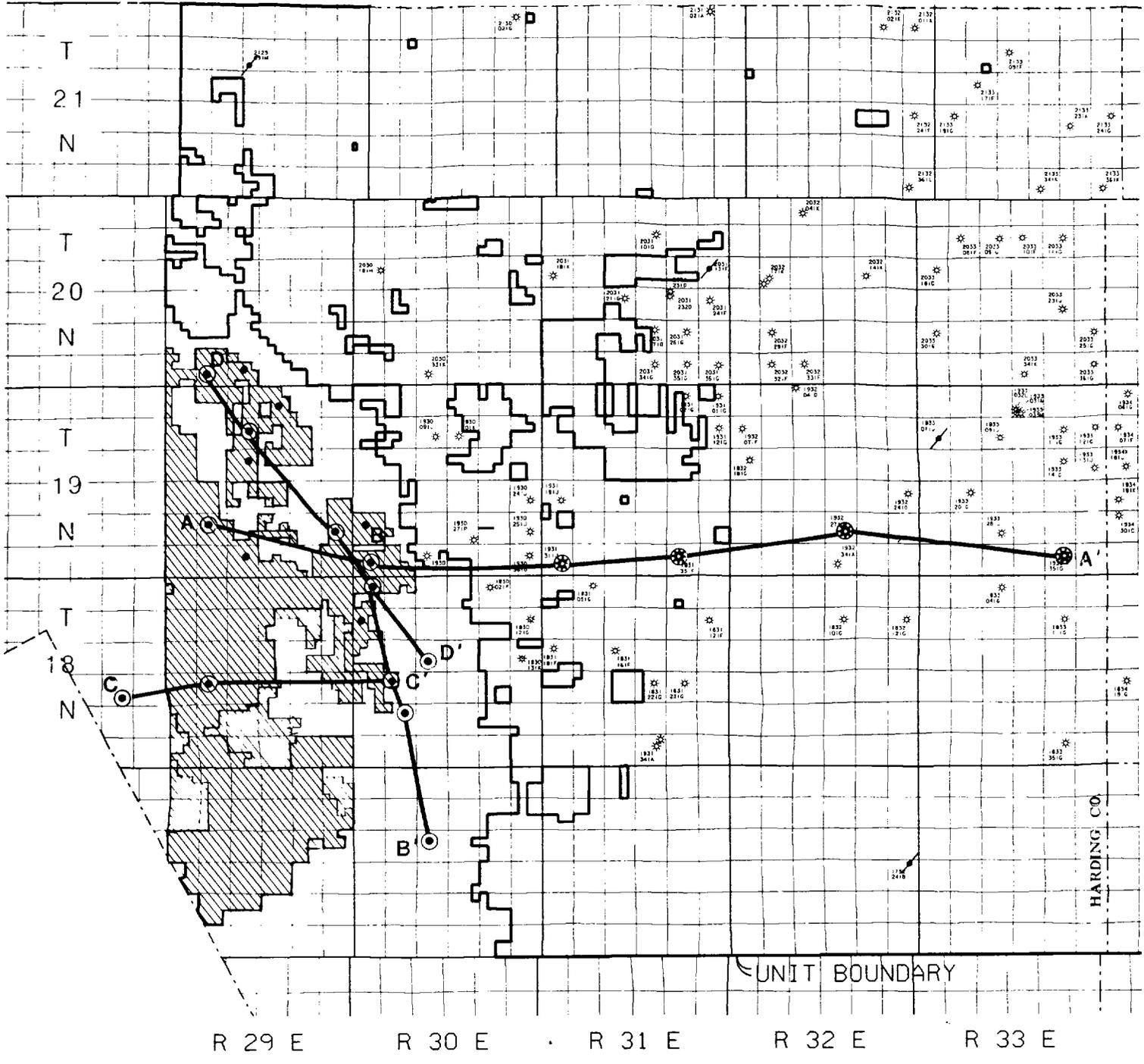


FACIES CHANGE TO SHALE

R-29-E

R-30-E

ATTACHMENT 4



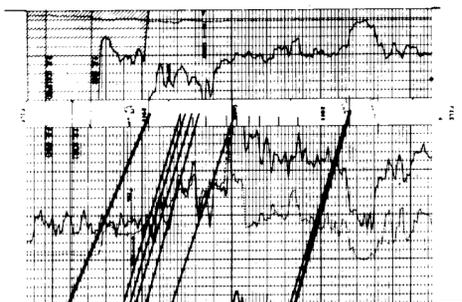
R 29 E      R 30 E      R 31 E      R 32 E      R 33 E



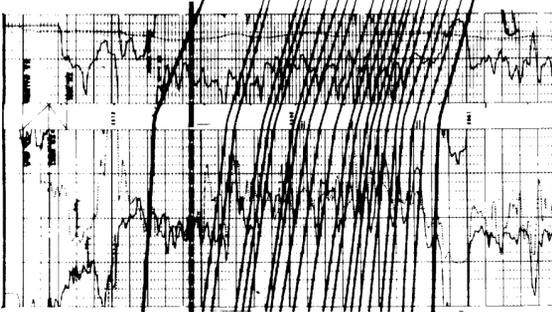
CROSS SECTION LOCATOR MAP  
 WEST BRAVO DOME AREA  
 HARDING COUNTY, NEW MEXICO

A

CITIES SERVICE  
W. BDCDGU NO. 15  
19-N, 29-E, SEC. 29  
SCHLUMBERGER NEUTRON

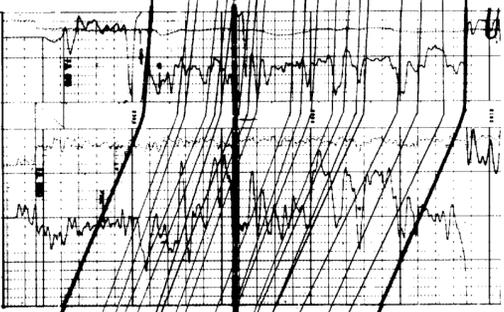


CITIES SERVICE  
W. BDCDGU NO. 5  
19-N, 30-E, SEC. 31  
SCHLUMBERGER NEUTRON DENSITY

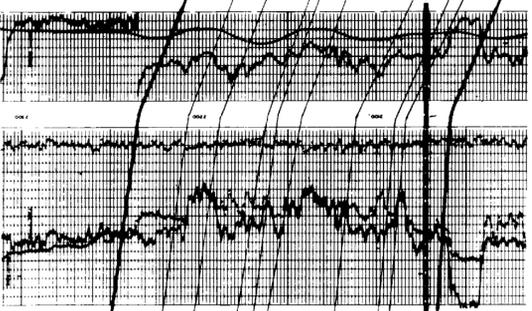


TOP TUBB SANDSTONE  
TOP GRANITE WASH

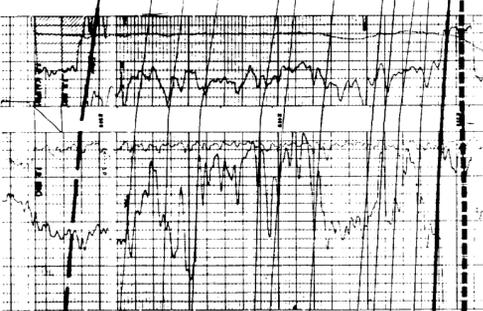
AMOCO  
BDCDGU 1931-311 J  
19-N, 31-E, SEC. 31  
SCHLUMBERGER DENSITY



AMOCO  
BDCDGU 1931-351 F  
19-N, 31-E, SEC. 35  
SCHLUMBERGER NEUTRON DENSITY



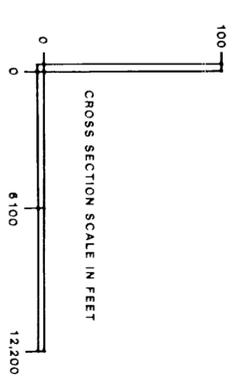
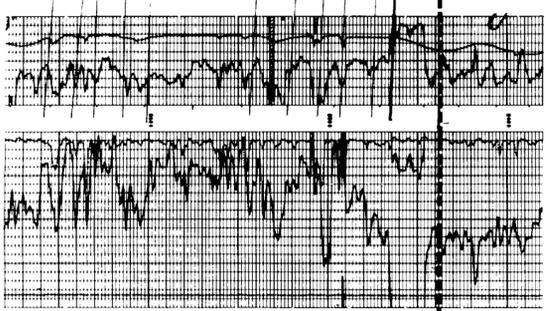
AMOCO  
BDCDGU 1932-271 J  
19-N, 32-E, SEC. 27  
SCHLUMBERGER DENSITY



+ 2400

WEST BRAVO DOME AREA  
HARDING COUNTY, NEW MEXICO  
E-W CROSS SECTION

AMOCO  
BDCDGU 1933-351 G  
19-N, 33-E, SEC. 35  
SCHLUMBERGER DENSITY

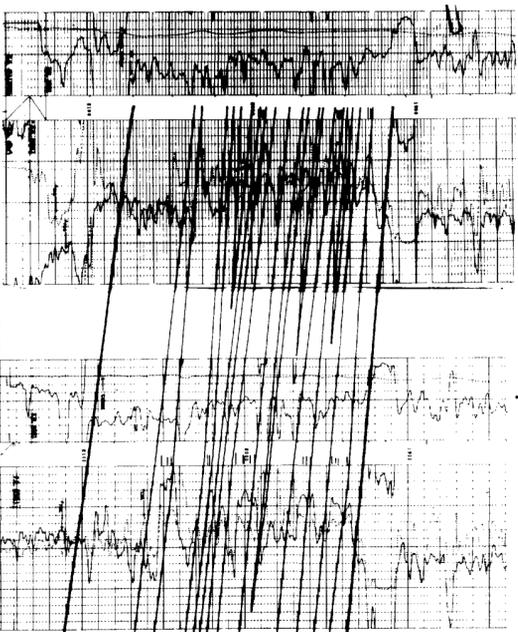


A

B

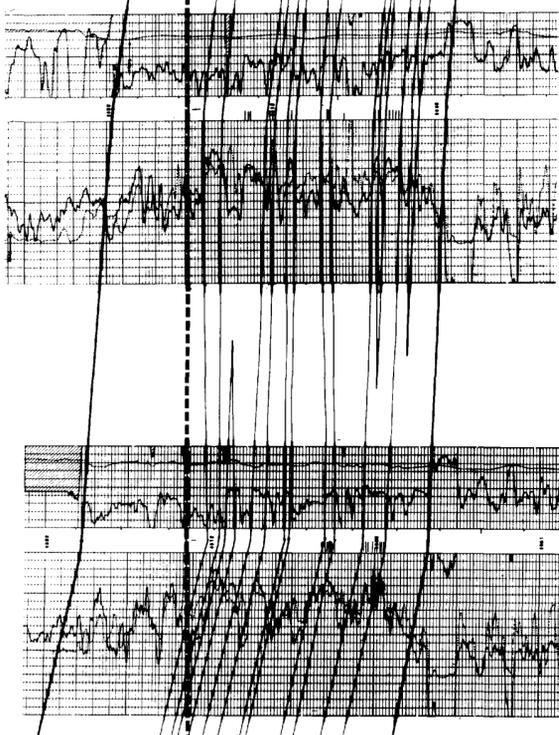
CITIES SERVICE  
W. BDCDGU NO. 5  
19-N, 30-E, SEC. 31  
SCHLUMBERGER NEUTRON DENSITY

CITIES SERVICE  
W. BDCDGU NO. 6  
18-N, 30-E, SEC. 6  
SCHLUMBERGER NEUTRON DENSITY



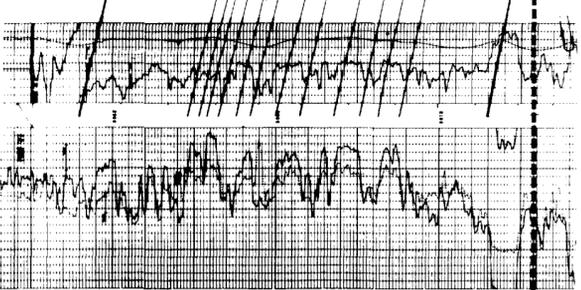
CITIES SERVICE  
W. BDCDGU NO. 14  
18-N, 30-E, SEC. 20  
SCHLUMBERGER NEUTRON DENSITY

CITIES SERVICE  
STATE "DS" NO. 1  
18-N, 30-E, SEC. 29  
SCHLUMBERGER NEUTRON DENSITY

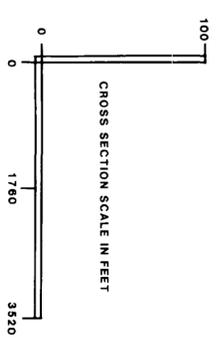


PROPOSED WEST BRAVO DOME UNIT  
HARDING COUNTY, NEW MEXICO  
N-S CROSS SECTION

CITIES SERVICE  
STATE "DP" NO. 1  
17-N, 30-E, SEC. 16  
SCHLUMBERGER NEUTRON DENSITY



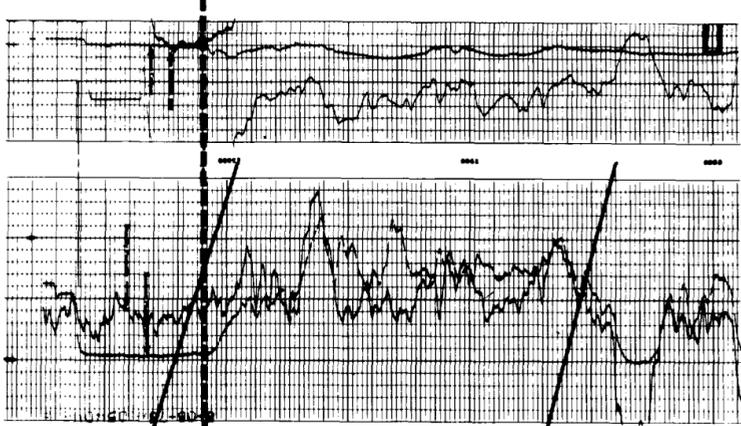
TOP TUBB SANDSTONE  
+ 2300  
TOP GRANITE WASH



B'

C

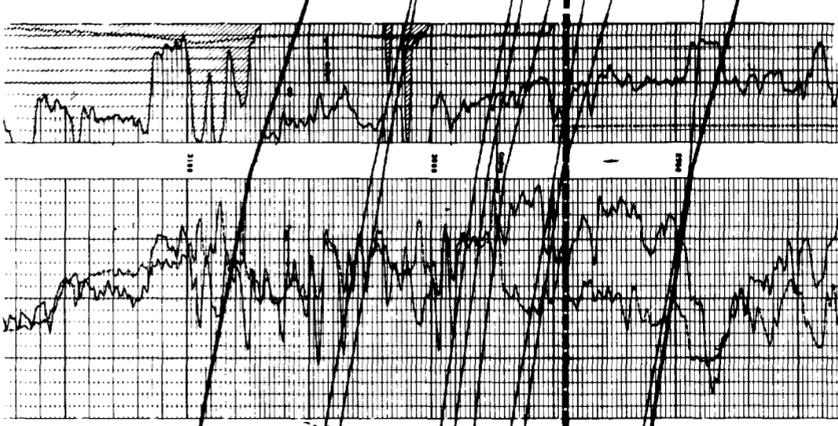
CO<sub>2</sub> IN ACTION  
GEORGE TRUJILLO NO. 1  
18-N, 28-E, SEC. 23  
SCHLUMBERGER NEUTRON DENSITY



TOP TUBB SANDSTONE

TOP GRANITE WASH

CITIES SERVICE  
W. BDCDGU NO. 16  
18-N, 29-E, SEC. 21  
SCHLUMBERGER NEUTRON DENSITY

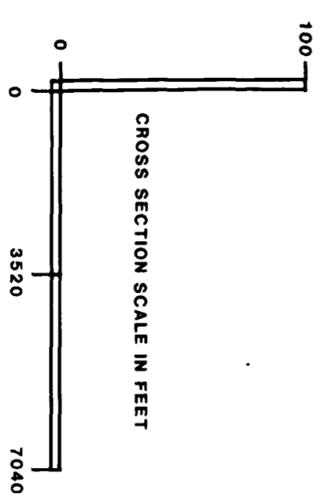
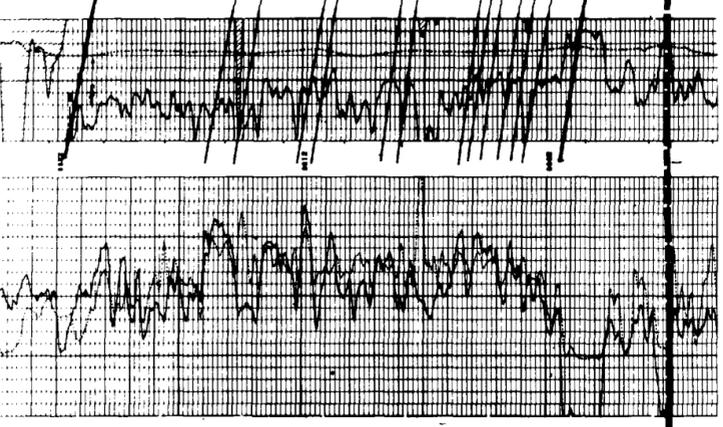


+ 2500'

WEST BRAVO DOME AREA  
HARDING COUNTY, NEW MEXICO

E-W CROSS SECTION

CITIES SERVICE  
BDCDGU NO. 14  
18-N, 30-E, SEC. 20  
SCHLUMBERGER NEUTRON DENSITY



CROSS SECTION SCALE IN FEET

C'



D'

PROPOSED WEST BRAVO DOME  
 CO2 GAS UNIT  
 HARDING COUNTY, NEW MEXICO  
 NW-SE CROSS SECTION

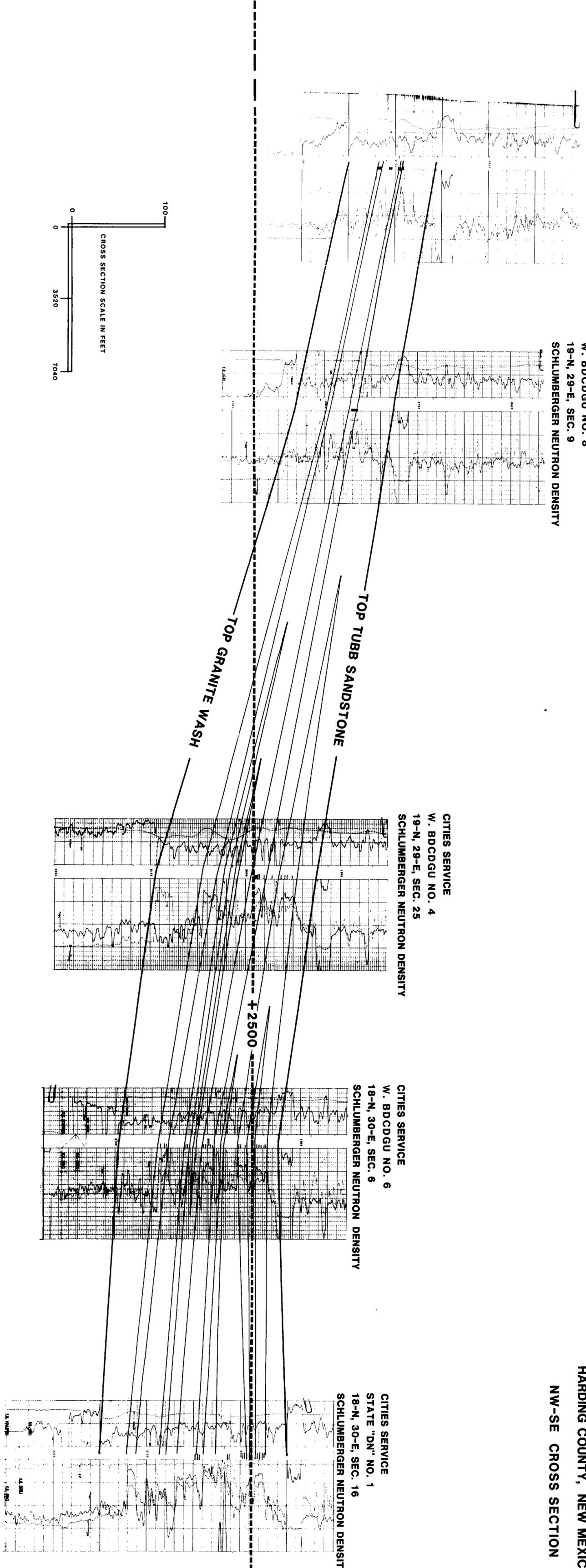
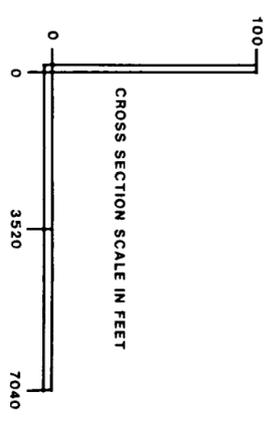
CITIES SERVICE  
 W. BDCDGU NO. 12  
 20-N, 29-E, SEC. 32  
 SCHLUMBERGER NEUTRON DENSITY

CITIES SERVICE  
 W. BDCDGU NO. 8  
 19-N, 29-E, SEC. 9  
 SCHLUMBERGER NEUTRON DENSITY

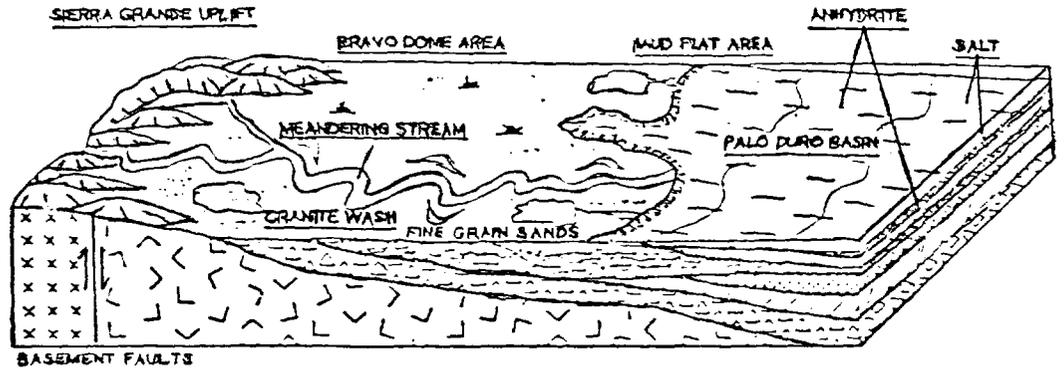
CITIES SERVICE  
 W. BDCDGU NO. 4  
 19-N, 29-E, SEC. 25  
 SCHLUMBERGER NEUTRON DENSITY

CITIES SERVICE  
 W. BDCDGU NO. 6  
 18-N, 30-E, SEC. 6  
 SCHLUMBERGER NEUTRON DENSITY

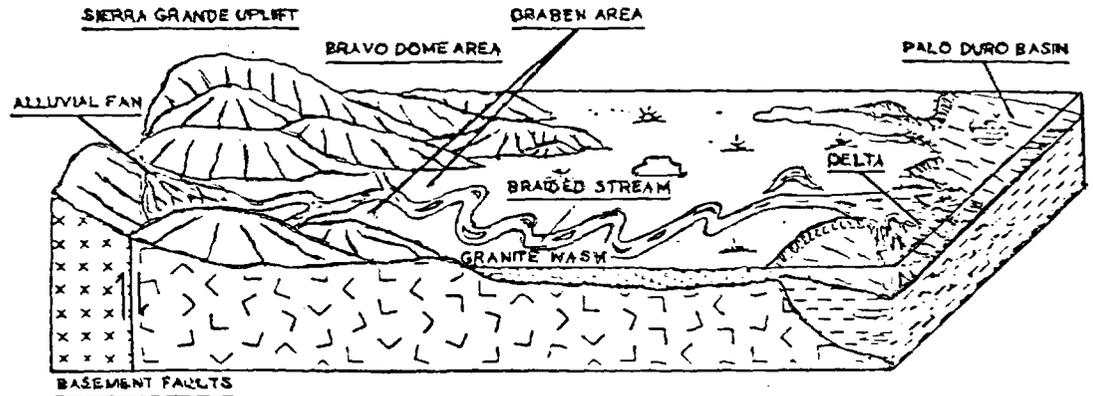
CITIES SERVICE  
 STATE "DN" NO. 1  
 18-N, 30-E, SEC. 16  
 SCHLUMBERGER NEUTRON DENSITY



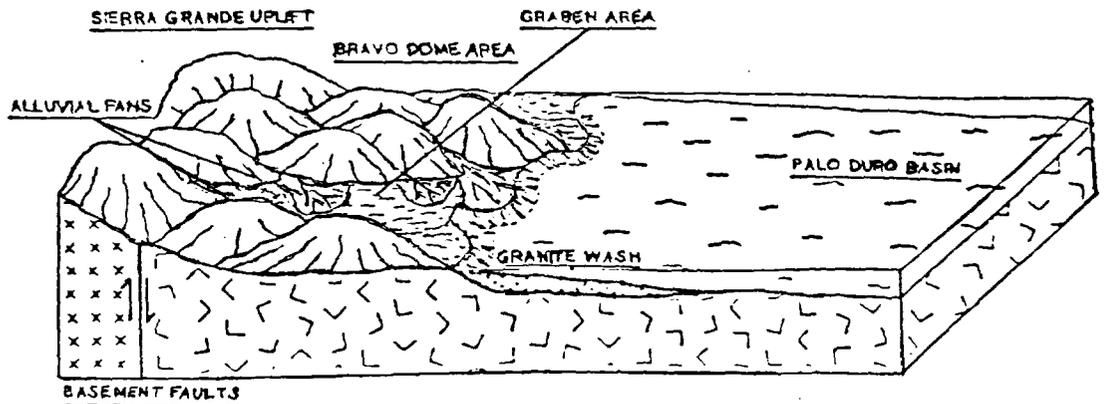
# PALEOGEOGRAPHIC RECONSTRUCTION OF BRAVO DOME



EARLY PERMIAN



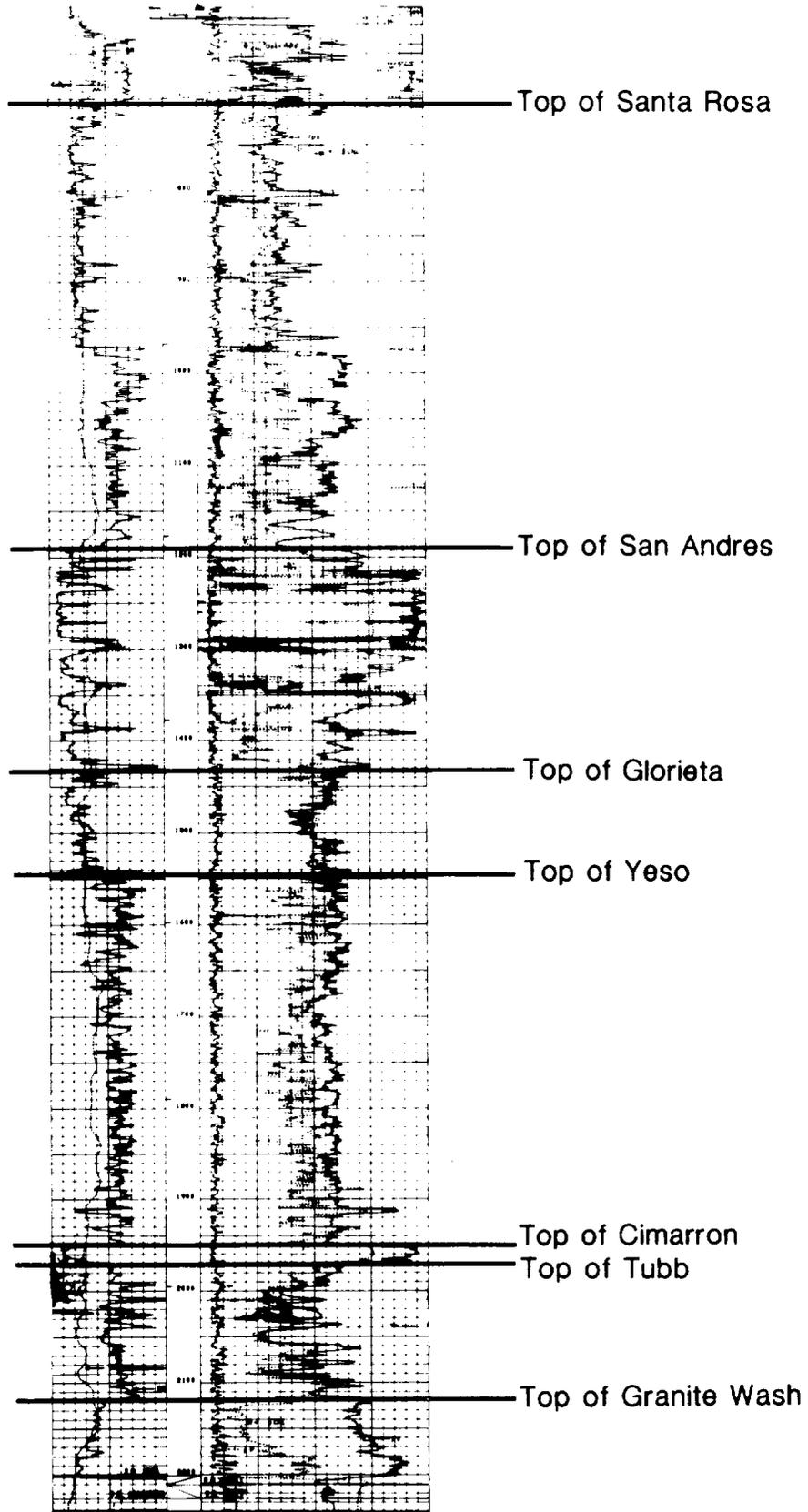
LATE PENNSYLVANIAN



MIDDLE PENNSYLVANIAN

CITIES SERVICE  
W. BDCDGU NO. 3

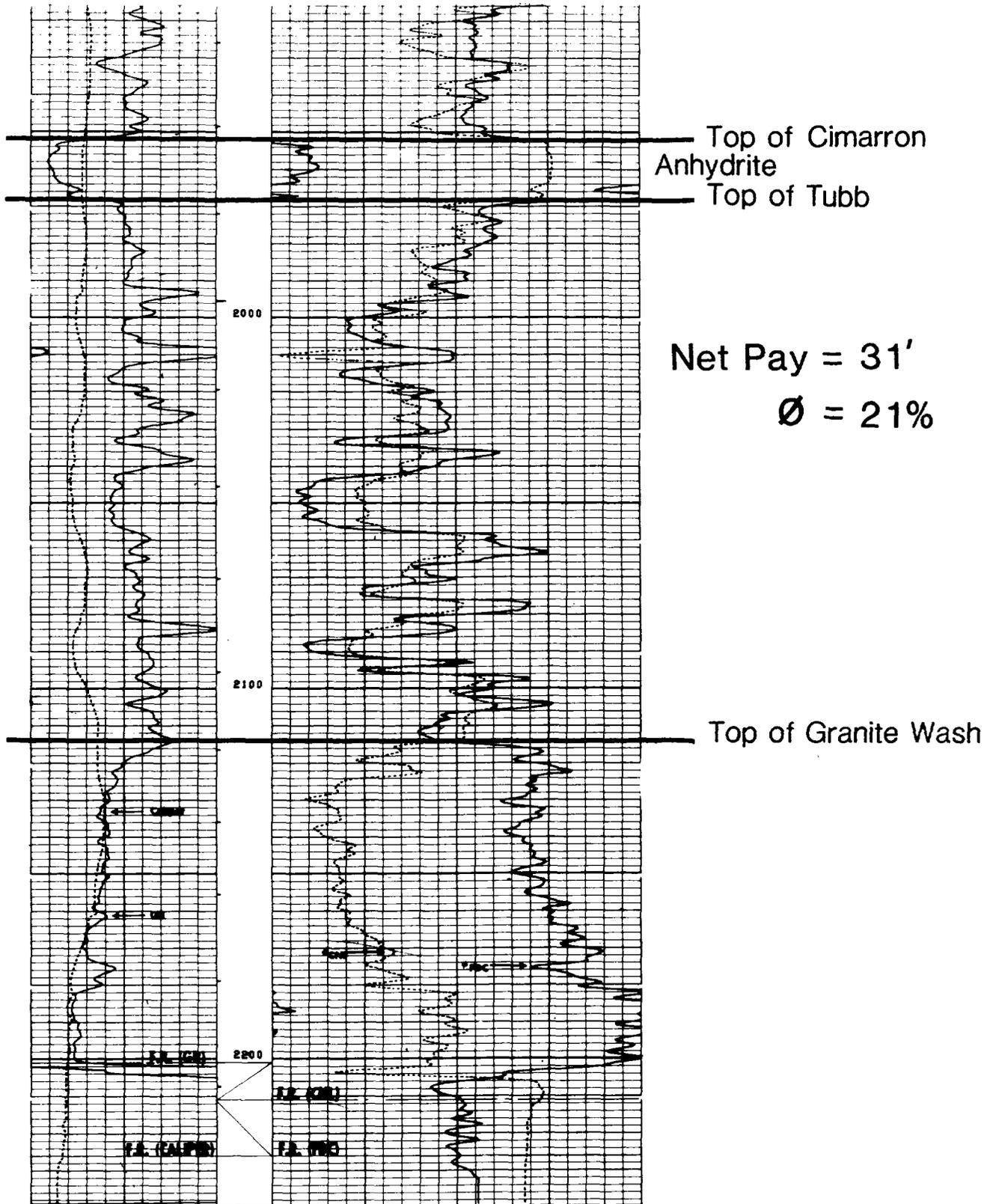
Compensated Neutron-Formation Density Log  
Type Log



CITIES SERVICE  
W. BDCD GU NO. 3

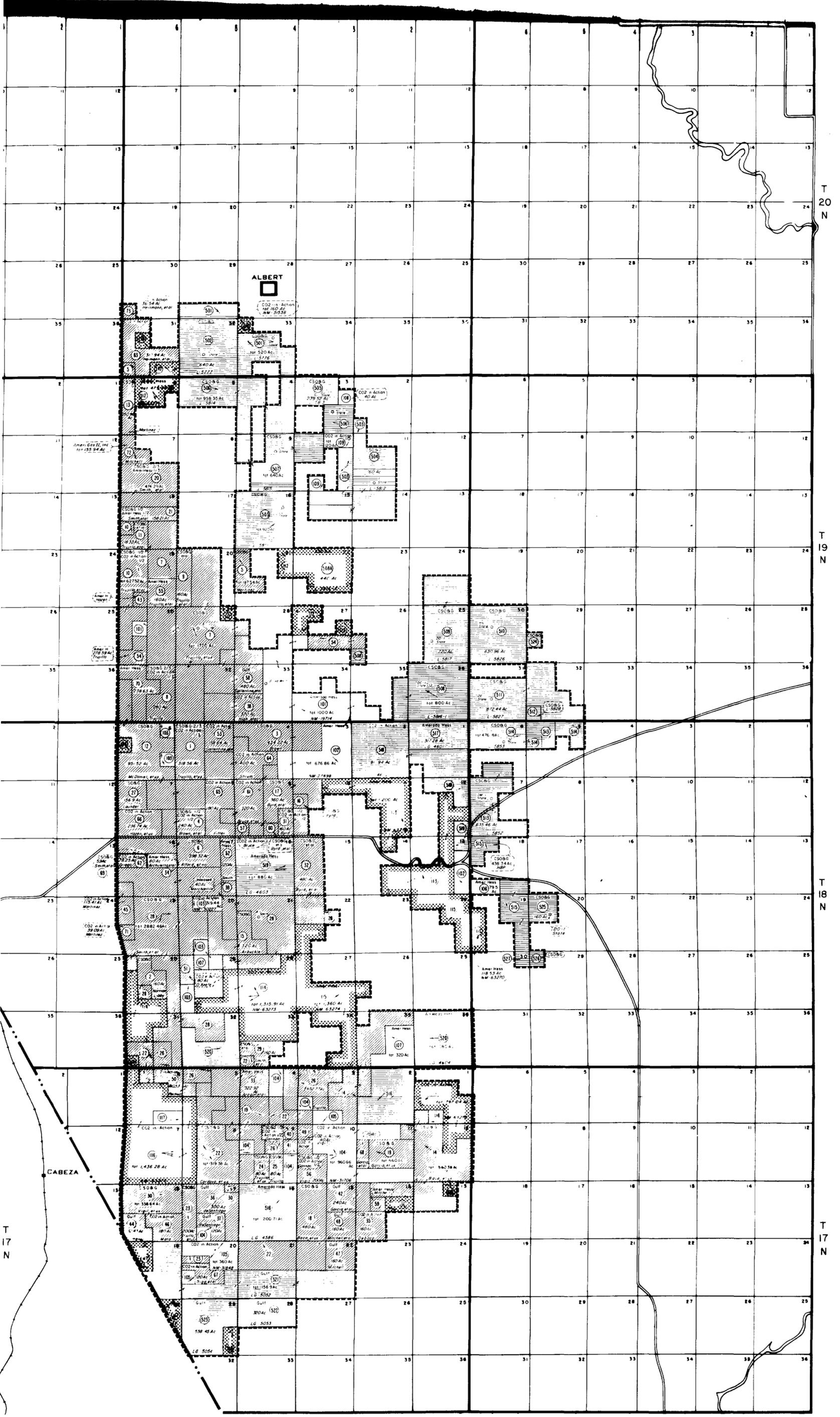
Tubb Formation

Type Log



R 29 E

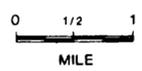
R 30 E



17 FEDERAL TRACTS	10,743.70 AC.	21.48 % OF UNIT
27 STATE TRACTS	16,416.53 AC.	32.82 % OF UNIT
73 PATENTED TRACTS	22,860.55 AC.	45.70 % OF UNIT
<b>TOTAL</b>	<b>50,020.78 AC.</b>	<b>100.00 % OF UNIT</b>

- FEDERAL LANDS (F - Series numbers on Exhibit "B")
- STATE OF NEW MEXICO LANDS (S - Series numbers on Exhibit "B")
- PATENTED LANDS (2000 Series numbers on Exhibit "B")
- TRACT NUMBERS AS LISTED IN EXHIBIT "B"
- UNIT BOUNDARY
- FIRST ENLARGEMENT

**EXHIBIT "A"**  
**WEST BRAVO DOME UNIT AREA**  
**HARDING COUNTY, NEW MEXICO**





CITIES SERVICE OIL AND GAS CORPORATION  
P.O. BOX 300 TULSA, OKLAHOMA 74102

September 19, 1984

AmeriGas  
Carbon Dioxide Division  
Suite 1100  
4455 LBJ Freeway  
Dallas, Texas 75234

ATTN: Mr. W. P. Heckel, Jr.

Re: West Bravo Dome CO<sub>2</sub> Gas Unit  
Harding County, New Mexico

Gentlemen:

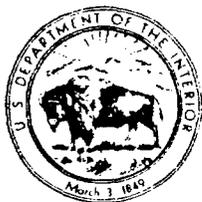
Please be advised that on Wednesday, September 12, 1984, I contacted your Lessor, Mr. Albert Mitchell of T. E. Mitchell and Son, Inc., in reference to his execution of the Ratification to the West Bravo Dome CO<sub>2</sub> Gas Unit. Mr. Mitchell stated that he was in favor of the Unit as far as the 160 acres we have set out and placed in the Unit under Tract 2072. At that time, Mr. Mitchell informed me the only thing keeping him from executing the Ratification was that he had not received the Segregation of Lease instruments from your company.

Would you please look into this matter, and if there is anything we can do to assist you in expediting his receipt of these instruments, please let us know.

Yours very truly,

Charles E. Creekmore  
Land Unitization and Acquisitions

CEC/gw



# United States Department of the Interior

IN REPLY REFER TO:  
West Bravo Dome

## BUREAU OF LAND MANAGEMENT ALBUQUERQUE DISTRICT OFFICE

505 Marquette, N.W.  
P.O. Box 6770  
Albuquerque, New Mexico 87197-6770

AUG 28 1984

Cities Service Oil and Gas Corporation  
Attention: Mr. Charles E. Creekmore  
P.O. Box 300  
Tulsa, OK 74102

Gentlemen:

We have received five copies of the proposed form of unit agreement for the West Bravo Dome Carbon Dioxide Gas Unit. In view of the small percentage of Federal lands (8.98%), designation of this unit by the Bureau of Land Management is not required. This unit will be treated as a non-federal control unit, and normal Federal supervision will be maintained only over the Federal leases involved. Four copies of the unit agreement with appropriate collateral material should be filed with this office after final approval thereof by the New Mexico Oil Conservation Division and performance of all requirements necessary to establish the effective date.

Notwithstanding the above procedure, we would appreciate being kept informed of your progress towards unitization of the area and of the docket dates arranged for the New Mexico Oil Conservation Division hearing.

We are also returning three extra copies of the proposed form of unit agreement.

Sincerely yours,

  
for L. Paul Applegate  
District Manager

CAMPBELL & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL  
BRUCE D. BLACK  
MICHAEL B. CAMPBELL  
WILLIAM F. CARR  
BRADFORD C. BERGE  
J. SCOTT HALL  
PETER N. IVES  
RUTH S. MUSGRAVE  
LOURDES A. MARTINEZ

JEFFERSON PLACE  
SUITE 1 - 110 NORTH GUADALUPE  
POST OFFICE BOX 2208  
SANTA FE, NEW MEXICO 87501  
TELEPHONE: (505) 968-4421  
TELECOPIER: (505) 983-6043

October 2, 1984

Mr. R. L. Stamets  
Acting Director  
Oil Conservation Division  
New Mexico Department of  
Energy and Minerals  
Post Office Box 2088  
Santa Fe, New Mexico 87501

Re: Case 8352: Application of Cities Service Oil & Gas Corp.  
for Temporary Special Spacing Rules in the West Bravo Dome  
Area, Harding County, New Mexico.

Dear Mr. Stamets:

As you are aware, Amoco Production Company is the operator of the Bravo Dome Carbon Dioxide Gas Unit and as such is responsible for the overall supervision and control of all matters pertaining to unit operations.

The application of Cities Service Oil & Gas Corporation in the above-referenced case includes certain lands which are located within the outer boundary of the Bravo Dome Carbon Dioxide Gas Unit. These lands were the subject of a hearing before the Oil Conservation Commission on May 15, 1984, at which time Amoco Production Company sought an order promulgating 640-acre temporary spacing rules for all lands within the unit. We support the application of Cities Service for we believe that the testimony submitted at the May 15 hearing, as well as that presented by Cities on September 26, justifies an order establishing 640-acre spacing rules on a temporary basis for carbon dioxide development from the Tubb formation in this general area.

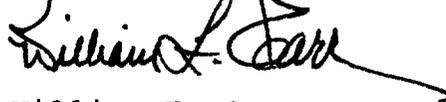
At the September 26 hearing you requested proposed Orders from the attorneys for Cities Service and Amerigas. Although we do not desire to file a proposed Order nor think it appropriate for us to do so in this case, we do, however, request that should

R. L. Stamets  
October 2, 1984  
Page Two

an order be entered in this case which would change the spacing rules for acreage within the outer boundaries of the Bravo Dome Carbon Dioxide Gas Unit that such rules be consistent with the rules already in effect within the unit area. Amoco particularly requests that any new spacing rules within the Bravo Dome Carbon Dioxide Gas Unit area not prohibit the drilling of a well on each of the quarter sections within the unit. This language will be consistent with Rule 2 of the Special Rules and Regulations for the Bravo Dome 640-acre Spacing Area, will provide flexibility Amoco believes necessary to enable it to efficiently carry out operations within the unit area and will prevent the possible confusion which could result from numerous rules affecting various portions of the Bravo Dome Unit area.

Your attention to this request is appreciated.

Very truly yours,

A handwritten signature in cursive script, appearing to read "William F. Carr", with a long horizontal flourish extending to the right.

William F. Carr

WFC/cv

cc: W. Thomas Kellahin, Esq.  
Owen M. Lopez, Esq.

KELLAHIN and KELLAHIN  
*Attorneys at Law*  
El Patio - 117 North Guadalupe  
Post Office Box 2265  
Santa Fe, New Mexico 87504-2265

Telephone 982-4285  
Area Code 505

Jason Kellahin  
W. Thomas Kellahin  
Karen Aubrey

October 2, 1984

RECEIVED

OCT 5 - 1984

OIL CONSERVATION DIVISION

Mr. Richard L. Stamets  
Acting Director  
Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

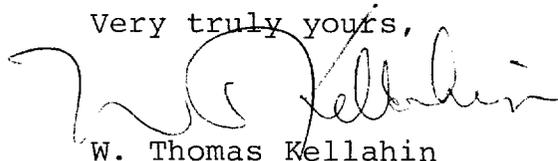
"Hand Delivered"

Re: Cities Service Oil & Gas Corporation  
Commission Case 8351  
West Bravo Dome Unit

Dear Mr. Stamets:

Please find enclosed for your consideration, a proposed order which would approve Cities Service Oil and Gas Corporation's application for approval of the West Bravo Dome Carbon Dioxide Unit which was heard on September 16, 1984.

Very truly yours,



W. Thomas Kellahin

WTK:ca  
Enc.

cc: Mr. E. F. Motter  
Cities Service Company  
P. O. Box 1919  
Midland, Texas 79702

Dick Hocker  
Cities Service Company  
P. O. Box 300  
Tulsa, Oklahoma 74102

STATE OF NEW MEXICO  
ENERGY AND MINERAL DEPARTMENT  
OIL CONSERVATION COMMISSION

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

CASE: 8351  
ORDER R-

APPLICATION OF CITIES SERVICE  
OIL & GAS CORPORATION FOR  
APPROVAL OF THE WEST BRAVO  
DOME CARBON DIOXIDE GAS UNIT  
AGREEMENT, HARDING COUNTY,  
NEW MEXICO.

CITIES SERVICE OIL & GAS  
CORPORATION PROPOSED ORDER

BY THE COMMISSION:

This cause came for hearing at 9 a.m. on September 26, 1984, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this \_\_\_\_\_ day of October, 1984, the Commission, a quorum being present, having considered the testimony, the record, and the exhibits, 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 with respect to prevention of waste and protection of correlative rights.

(2) That the applicant, Cities Service Oil & Gas Corporation, seeks approval of the West Bravo Dome Carbon Dioxide Gas Unit Agreement covering 43,153.54 acres, more or less, of State, Federal, and Fee lands described in Exhibit A attached hereto and incorporated herein by reference.

Case 8351  
Order R-

(3) That all plans of development and operation and all expansions or contractions of the unit area should be submitted to the Director of the Oil Conservation Division, hereinafter referred to as the Division, for approval.

(4) That approval of the proposed unit agreement should promote the prevention of waste and the protection of correlative rights within the unit area.

IT IS THEREFORE ORDERED:

(1) That the West Bravo Dome Carbon Dioxide Gas Unit Agreement is hereby approved.

(2) That the plan contained in said unit agreement for the development and operation of the unit area is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty, or obligation which is now, or may hereafter be, vested in the Division to supervise and control operations for the exploration and development of any lands committed to the unit and production of carbon dioxide gas therefrom.

(3) That the unit operator shall file with the Division an executed original or executed counterpart of the unit agreement within 30 days after the effective date thereof; that in the event of subsequent joinder by any party or expansion or contraction of the unit area, the unit operator shall file with the Division within 30 days thereafter counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(4) That all plans of development and operation and all expansions or contractions of the unit area shall be submitted to the Director of the Oil Conservation Division for approval.

(5) That this order shall become effective upon the approval of said unit agreement by the Commissioner of Public Lands for the State of New Mexico and the Director of the United States Bureau of Land Management; that this order shall terminate ipso facto upon the termination of

Case 8351  
Order R-

said unit agreement; and that the last unit operator shall notify the Division immediately in writing of such termination.

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

(7) That 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 COMMISSION

JIM BACA, Member

ED KELLEY, Member

RICHARD L. STAMETS, Member &  
Secretary

S E A L

EXHIBIT A

T20N R29E

Sec 29: S/2 S/2  
Sec 30: SW/4 SW/4  
Sec 31: N/2 NW/4; SW/4 NW/4; SW/4; N/2 SE/4  
Sec 32: All  
Sec 33: SW/4 NE/4; S/2 NW/4; N/2 SW/4;  
SW/4 SW/4; N/2 SE/4; SE/4 SE/4

T19N R29E

Sec 2: SW/4 SW/4  
Sec 3: S/2 NE/4; NW/4 NE/4; NW/4; SE/4  
Sec 4: E/2 NE/4; NW/4; W/2 SW/4; SE/4  
Sec 5: N/2  
Sec 6: W/2 W/2  
Sec 7: NW/4 NW/4; S/2 NW/4; S/2  
Sec 9: NE/4; W/2 NW/4; E/2 SW/4; SE/4  
Sec 10: N/2 NE/4; SE/4 NE/4; NW/4; SE/4 SW/4;  
E/2 SE/4  
Sec 11: SW/4 NE/4; NW/4 NW/4; S/2 NW/4; SW/4;  
W/2 SE/4  
Sec 14: W/2 NE/4; NW/4  
Sec 15: NE/4; E/2 NW/4  
Sec 16: All  
Sec 18: All  
Sec 19: All  
Sec 20: W/2; W/2 E/2  
Sec 21: W/2 NW/4; N/2 SW/4  
Sec 22: NE/4; NW/4; NE/4 SW/4; N/2 SE/4  
Sec 24: E/2 SW/4; SE/4  
Sec 25: E/2; E/2 W/2  
Sec 26: W/2 SW/4  
Sec 27: N/2 S/2  
Sec 28: SW/4 NW/4; W/2 SW/4; SE/4 SW/4;  
S/2 SE/4; NE/4 SE/4  
Sec 29: NW/4 NE/4; W/2; SE/4; S/2 NE/4  
Sec 30: All  
Sec 31: All  
Sec 32: All  
Sec 33: All  
Sec 34: S/2; SW/4 NE/4  
Sec 35: SE/4 NE/4; W/2 SW/4; SE/4 SW/4; E/2 SE/4  
Sec 36: All

T19N R30E

Sec 29: NW/4 SW/4  
Sec 30: All  
Sec 31: S/2; S/2 N/2  
Sec 32: W/2; W/2 SE/4; SE/4 SE/4

T18N R29E

Sec 1: N/2; N/2 SW/4; SE/4 SW/4; SE/4  
Sec 2: All  
Sec 3: All  
Sec 4: All  
Sec 5: All  
Sec 6: NE/4; N/2 NW/4; SE/4 NW/4; S/2  
Sec 7: All  
Sec 8: All  
Sec 9: All  
Sec 10: W/2 W/2; E/2 NW/4  
Sec 12: N/2 NE/4; SE/4 NE/4; NE/4 NW/4; SE/4 SE/4  
Sec 13: E/2 E/2  
Sec 15: W/2  
Sec 16: All  
Sec 17: All  
Sec 18: All  
Sec 19: All  
Sec 20: All  
Sec 21: All  
Sec 22: SW/4 NE/4; NW/4  
Sec 28: NW/4 NE/4; N/2 NW/4  
Sec 29: N/2 N/2; SW/4 NE/4; S/2 NW/4;  
N/2 SW/4; NW/4 SE/4; SW/4 SW/4  
Sec 30: NE/4; E/2 NW/4; NW/4 NW/4; NE/4 SW/4;  
N/2 SE/4; SE/4 SE/4  
Sec 31: NE/4 NE/4; S/2 NE/4; N/2 SW/4;  
SE/4 SW/4; SE/4  
Sec 32: All  
Sec 33: SW/4; NW/4 SE/4  
Sec 35: E/2; E/2 W/2; SW/4 NW/4; W/2 SW/4  
Sec 36: All

T18N R30E

Sec 5: E/2 NE/4; NW/4 NE/4; NW/4  
Sec 6: N/2; SE/4 SW/4; SW/4 SE/4  
Sec 7: NW/4 NE/4; NW/4; SW/4; S/2 SE/4  
Sec 18: N/2 NW/4; SW/4 NW/4; S/2 S/2  
Sec 19: E/2 E/2; W/2 NE/4  
Sec 20: NW/4  
Sec 29: NW/4 NW/4  
Sec 30: NE/4 NE/4

T17N R29E

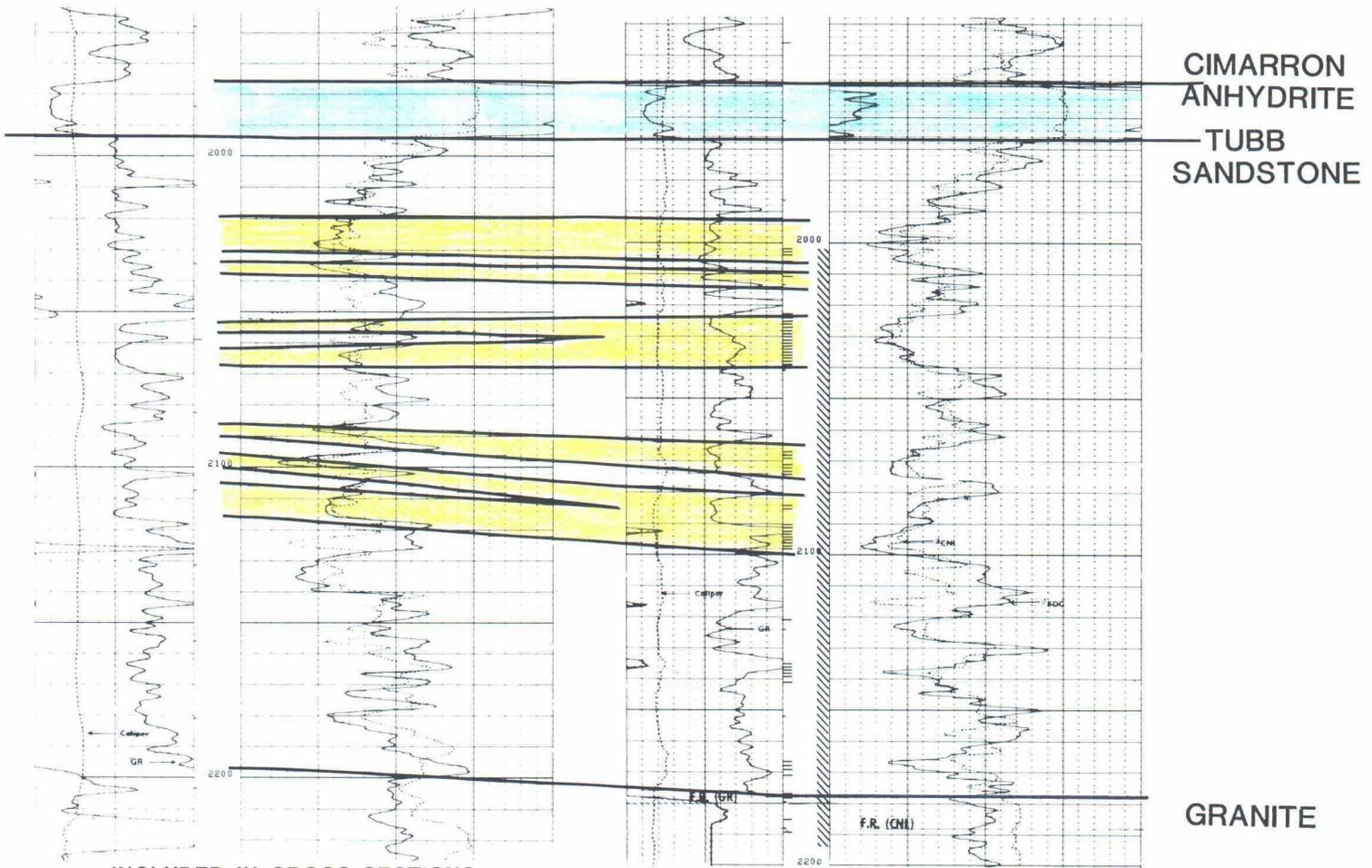
Sec 1: SW/4 SW/4  
Sec 2: All  
Sec 3: All  
Sec 4: All  
Sec 5: E/2; E/2 W/2; W/2 NW/4  
Sec 6: N/2 NE/4; SE/4 NE/4; NE/4 NW/4  
Sec 8: E/2; E/2 W/2  
Sec 9: All  
Sec 10: All  
Sec 11: All  
Sec 12: SE/4 NE/4; W/2; SE/4  
Sec 13: SW/4 NE/4; NW/4  
Sec 14: N/2 NE/4; W/2  
Sec 15: All  
Sec 16: All  
Sec 17: All  
Sec 18: All  
Sec 19: E/2; NE/4 SW/4  
Sec 20: All  
Sec 21: All  
Sec 22: All  
Sec 28: N/2  
Sec 29: N/2; W/2 SE/4; SW/4

CITIES SERVICE  
 STATE "DO" NO. 1  
 T18N, R30E, SEC. 20

CITIES SERVICE  
 STATE "DS" NO. 1  
 T18N, R30E, SEC. 29

SCHLUMBERGER NEUTRON DENSITY

SCHLUMBERGER NEUTRON DENSITY



INCLUDED IN CROSS SECTIONS  
 B-B' AND C-C'



CORED INTERVAL  
 PERMEABILITY > 5 md

**CORRELATION OF LOG RESPONSE  
 AND CORE PERMEABILITY  
 WEST BRAVO DOME AREA**

GEOLOGY: R. EGG

SEPT., 1984