DHC 1-2-96
1183

OIL CONSERVATION DIVISION
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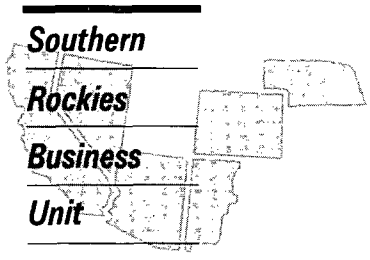


December 6, 1995

Mr. Benjamin E. Stone
New Mexico Oil Conservation Division
2040 S. Pacheco Street
P. O. Box 6429
Santa Fe, NM 87505

Application for Exception to Rule 303-C
Downhole Commingling
Bolack E #1M
1590' FSL & 1090' FNL, Unit I Section 33-T28N-R8W
Blanco Mesaverde and Basin Dakota Pools
San Juan County, New Mexico

Referencing your letter dated July 25, 1995 wherein our administrative application for downhole commingling was disqualified for the subject well. This application was disqualified on the basis that the lower pressure zone must not be less than 50% of the higher pressure zone. As you may recall, we were making application before this well was drilled and estimating pressures from offset information. Now that we have drilled the well, we have run pressure bombs to record pressures for each of the formations.

We perforated and fracture stimulated the Dakota, then flowed back the well until no nitrogen was present. A pressure bomb was set for 3 days recording shut-in formation pressure. Pressure gradients were then measured and recorded coming out of the hole. A cast iron bridge plug was set above the Dakota and the same procedure was followed for the Mesaverde with the exception that the pressure bomb was left in the well for 5 days. Attached you will find the recorded pressures and gradients for the Mesaverde and the Dakota formations.

As you can see, the pressure at 4500' (which is the approximate depth of the Mesaverde perforations records a pressure of 641.1 psi. The Dakota when measured at the depth corresponding to Mesaverde perfs (4500') is 1253.6 psi. The difference between these two pressures is 51% when adjusted to the common datum of the Mesaverde in this well. Therefore, the pressure does meet rule 303-C(1)(b)(vi).

I do not believe that there was any protest to our application at the time it was submitted. Since we have run pressure tests on the actual formations to be commingled, we request that you reconsider approving our application. This well was cased with 3 1/2" casing which makes a dual completion very difficult. We believe that this is the best way to produce this well and will await your decision.

Should you have questions or wish to discuss this further, do not hesitate to contact me at (303) 830-5344.

Again, thank you for your assistance.

Sincerely,

Pamela W. Staley
Enclosures

cc: Frank Chavez, Supervisor
NMOCD District III
1000 Rio Brazos Road
Aztec, NM 87410

Mark Rothenberg, Amoco
Patty Haefele, Amoco

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Oil Conservation Division

July 25, 1995

Amoco Production Company
P.O. Box 800
Denver, Colorado 80201

Attn: Pamela W. Staley

Re: Disqualified Application for Downhole Commingling

Dear Ms. Staley:

Reference is made to your recent application for downhole commingling in Amoco's Bolack 'E' Well No.1E. Please note that to qualify for administrative approval, the lower pressure zone must not be less that 50% of the higher pressure zone.

Additionally, Mr. Ernie Busch of the Aztec district office of the Division, has advised me that the well does not require a permit for a non-standard proration unit nor for an unorthodox location. Mr. Busch may assist you in this matter.

If you would like to pursue the application for downhole commingling, the matter may be set for an examiner hearing at your request.

Very truly yours,

Benjamin E. Stone
Petroleum Engineering Specialist

/BES

cc: Oil Conservation Division - Aztec

HALLIBURTON

HALLIBURTON ENERGY SERVICES

3110 East Bloomfield Highway / Post Office Box 1590 / Farmington, New Mexico 87401 / Tel: 505-327-4751 / Fax: 505-326-7510

DAKOTA

BOTTOM HOLE PRESSURE REPORT

CUSTOMER:AMOCO PROD.CO.
LEASE:BOLACK E1E
DATE:10-17-95
STATIC GRADIENT SURVEY
WELLHEAD GAUGE 1105#
TAGGED T.D.6606'W/L MEAS.

DEPTH	PRESSURE	GRADIENT
-0-	1104.1	
1000	1138.0	.034
2000	1169.9	.032
3000	1203.8	.034
4000	1237.7	.034
4500	1253.6	.032
5000	1319.4	.132
5500	1397.2	.156
6000	1457.0	.120
6200	1473.0	.080
6400	1492.9	.099
6600	1530.8	.189

HALLIBURTON

HALLIBURTON ENERGY SERVICES

3110 East Bloomfield Highway / Post Office Box 1590 / Farmington, New Mexico 87401 / Tel: 505 327-4751 / Fax: 505-326-7510

MESAVERDE

BOTTOM HOLE PRESSURE REPORT

CUSTOMER:AMOCO PROD.CO.
LEASE:BOLACK E1M
DATE:11-27-95
STATIC GRADIENT SURVEY
WELLHEAD GAUGE TBG.570#
TAGGED T.D.4558'W/L MEAS.

DEPTH	PRESSURE	GRADIENT
-0-	566.0	
1000	583.1	.017
2000	600.2	.017
3000	617.4	.017
4000	631.9	.014
4250	635.8	.016
4500	641.1	.021
4558	656.9	.272

July 25, 1995

Amoco Production Company
P.O. Box 800
Denver, Colorado 80201

Attn: Pamela W. Staley

Re: Disqualified Application for Downhole Commingling

Dear Ms. Staley:

Reference is made to your recent application for downhole commingling in Amoco's Bolack 'E' Well No.1E. Please note that to qualify for administrative approval, the lower pressure zone must not be less that 50% of the higher pressure zone.

Additionally, Mr. Ernie Busch of the Aztec district office of the Division, has advised me that the well does not require a permit for a non-standard proration unit nor for an unorthodox location. Mr. Busch may assist you in this matter.

If you would like to pursue the application for downhole commingling, the matter may be set for an examiner hearing at your request.

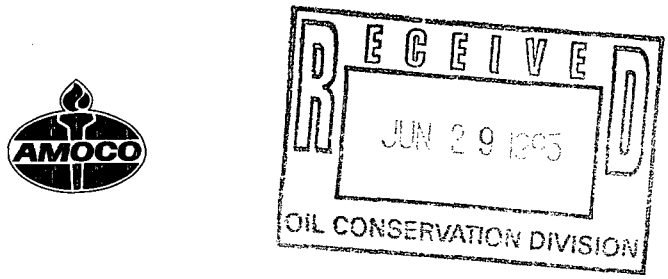
Very truly yours,

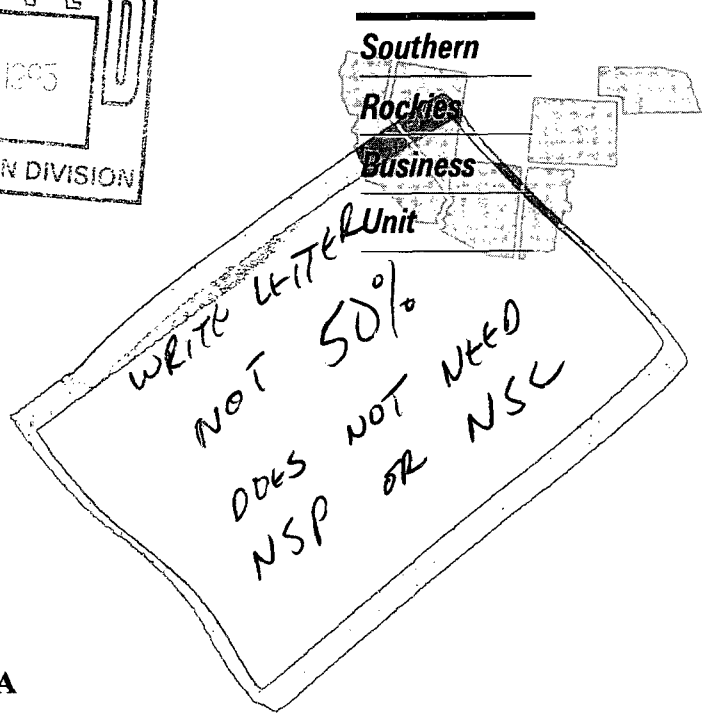
Benjamin E. Stone
Petroleum Engineering Specialist

/BES

cc: Oil Conservation Division - Aztec

DHC 7-19-95





June 20, 1995

Mr. William J. LeMay, Director
New Mexico Oil Conservation Division
2040 S. Pacheco Street
P. O. Box 6429
Santa Fe, NM 87505

Application for Exception to Rule 303-A
Downhole Commingling
and Application for Non-Standard Proration Unit
Bolack E # 1E Well
1590' FSL & 1090' FNL, Unit I Section 33-T28N-R8W
Blanco Mesaverde and Basin Dakota Pools
San Juan County, New Mexico

Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Basin Dakota Pools in the Bolack E # 1E well referenced above. The Bolack E # 1E well is proposed to be drilled at a legal location 1590' FSL and 1090' FNL of Unit I Section 33-T28N-R8W, San Juan County, New Mexico. The ownership (WI, RI, ORRI) of these pools is identical in this wellbore. Downhole commingling will offer an economical method of production from the two zones while protecting against reservoir damage, waste of reserves and violation of correlative rights.

With this application we also request administrative approval of an unorthodox location. This well is to be drilled on a nonstandard gas Proration Unit to be comprised of 295.36 acres in the south half of section 33. Approval for this unorthodox location is required since the spacing unit consists of less than 320 acres.

The allocation method that we plan to use for this commingled well is based on sustained production out of offset wells. Average gas production from the Mesaverde is 207 MCFD while the Dakota offsets produce an average of 80 MCFD. Recommended allocation for gas on this well is 72% from the Mesaverde and 28% from the Dakota based on the above averages. Liquid production from the Mesaverde in offsets averages 1.8 BOPD while liquid production from the Dakota averages 1.5 BOPD. Based on these offset production averages, we recommend allocation of liquids in this well to be 55% from the Mesaverde and 45% from the Dakota. The actual commercial value of the commingled production will not be less than the sum of the values of the production from each of the common sources of supply.

Attached to aid in your review are plats showing the location of the proposed well and offset wells producing from the same formations, production averages from the same horizons in offset wells, and a C-102 for each formation. This spacing unit is on federal lease number NM-012202. A copy of the application will be sent to the BLM requesting their consent.

Should you have questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,

Pamela W. Staley
Enclosures

cc: Paul Edwards
Julie Acevedo

Frank Chavez, Supervisor
NMOCD District III
1000 Rio Brazos Road
Aztec, NM 87410

Duane Spencer
Bureau of Land Management
1235 La Plata Hwy
Farmington, NM 87401

Application for Exception to Rule 303: SEGREGATION OF PRODUCTION FROM POOLS

Requirements

(1) Name and address of the operator:

Amoco Production Company
P.O. Box 800
Denver, CO 80201

(2) Lease name, well number, well location, name of the pools to be commingled:

Lease Name:	**Bolack E**
Well Number:	**#1E**
Well Location:	**1590' FSL and 1090' FNL**
	Unit I Section 33-T28N-R8W
	San Juan County, New Mexico
Pools Commingled:	**Blanco Mesaverde**
	Basin Dakota

(3) A plat of the area showing the acreage dedicated to the well and the ownership of all offsetting leases.

Offset Operator Plats and Addresses Attached.

(4) A current (within 30 days) 24-hour productivity test on Division Form C-116 showing the amount of oil, gas and water produced from each zone.

Offset production provided as well has not been drilled yet. See offset production data.

(5) A production decline curve for both zones showing that for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes. (This requirement may be dispensed within the case of a newly completed or recently completed well which has little or not production history. However, a complete resume of the well's completion history including description of treating, testing, etc., of each zone, and a prognostication of future production from each zone shall be permitted.)

See attached compilation of production averages from offset wells from which allocations were derived. Production from this well not provided as this well has not been drilled.

(6) Estimated bottomhole pressure for each artificially lifted zone. A current (within 30 days) measured bottom hole pressure for each zone capable of flowing.

Provided is offset pressure information from several Mesaverde and Dakota completions from which we estimate the bottom hole pressures to be as follows:

Formation	Average BH Pressure
Mesaverde Completion:	476 PSI
Dakota Completion:	1035 PSI

These pressures are the result of averaging any available pressure data in the immediate area. These are not pressures from the well as it has yet to be drilled. We do not anticipate any problems due to these pressure differences.

(7) A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the wellbore.

The fluids are not anticipated to have any abnormal components that would prohibit commingling. API gravities should be comparable and do not suggest potential scale or commingling problems. The API gravity for the Mesaverde is anticipated to be approximately 49 degrees while the Dakota gravity is expected to be 59 degrees.

(8) A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams:

Since the produced fluids are expected to be very similar, we would anticipate the commingled production to have the same value as the sum of the individual streams.

(9) A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula:

The allocation method that we plan to use for this commingled well is based on sustained offset production out of surrounding wells. Average gas production from the Mesaverde is 207 MCFD while the Dakota offsets produce an average of 80 MCFD. Recommended allocation for gas on this well is 72% from the Mesaverde and 28% from the Dakota based on the above averages. Liquid production from the Mesaverde in offsets averages 1.8 BOPD while liquid production from the Dakota averages 1.5 BOPD. Based on these production averages, we recommend allocation of liquids in this well to be 55% from the Mesaverde and 45% from the Dakota. The actual commercial value of the commingled production will not be less than the sum of the values of the production from each of the common sources of supply.

(10) A statement that all offset operators and, in the case of a well on federal land, the United States Bureau of Land Management, have been notified in writing of the proposed commingling.

BLM will receive a copy of this application by certified mail. The offsetting operators listed on the attached sheets will receive a copy of this application by certified mail.

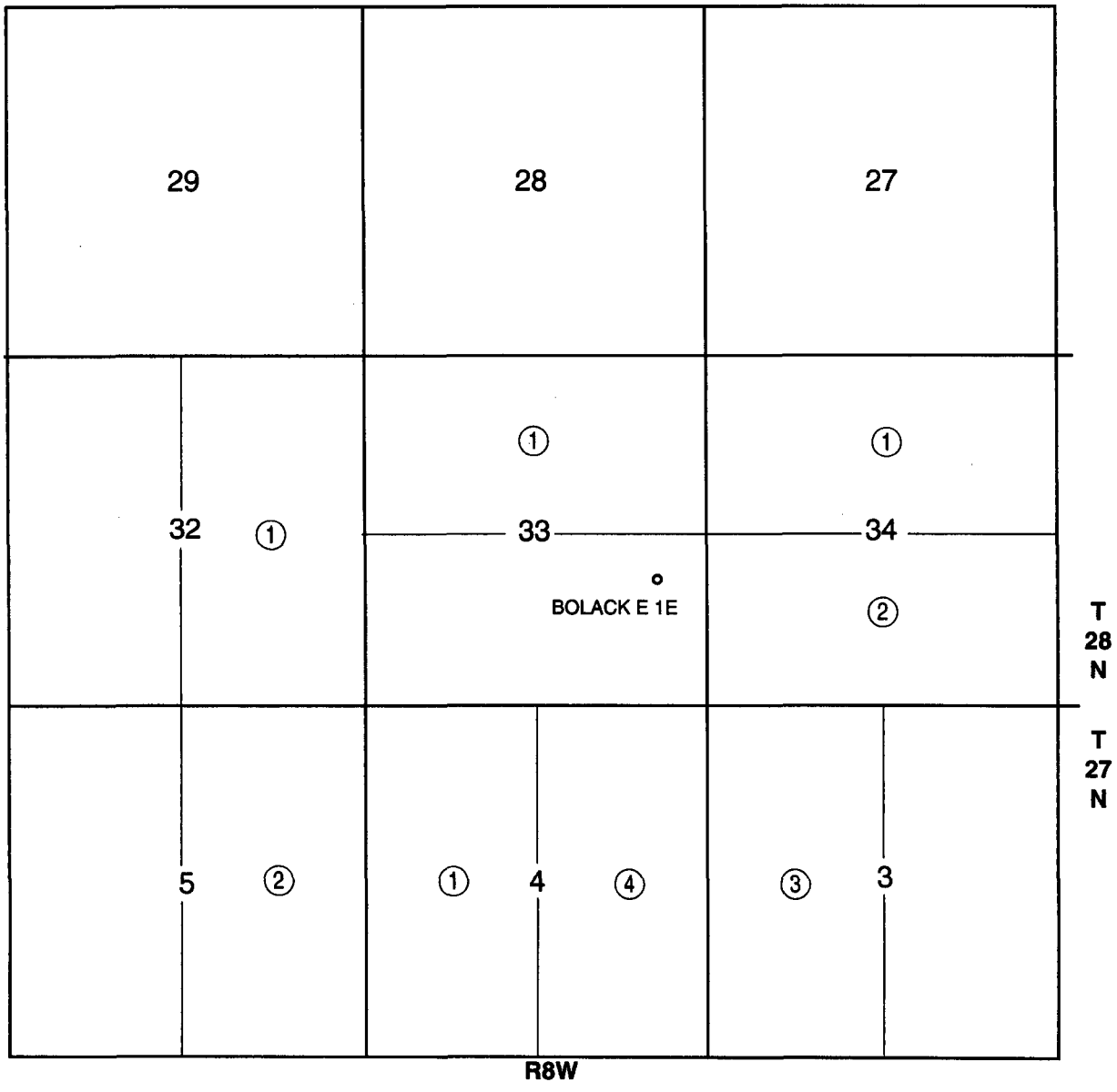
LIST OF ATTACHMENTS
Bolack E #1E

ATTACHMENTS

1 List of offset operators and their addresses
2 9 section plat for Mesaverde and Dakota showing offset wells
3 Form C-102 for the Basin Dakota
4 Form C-102 for the Blanco Mesaverde
5 Offset Pressure Data for both formations
6 Offset Production Data, Gravity Data and Allocation Computation for Dakota and Mesaverde

Amoco Production Company

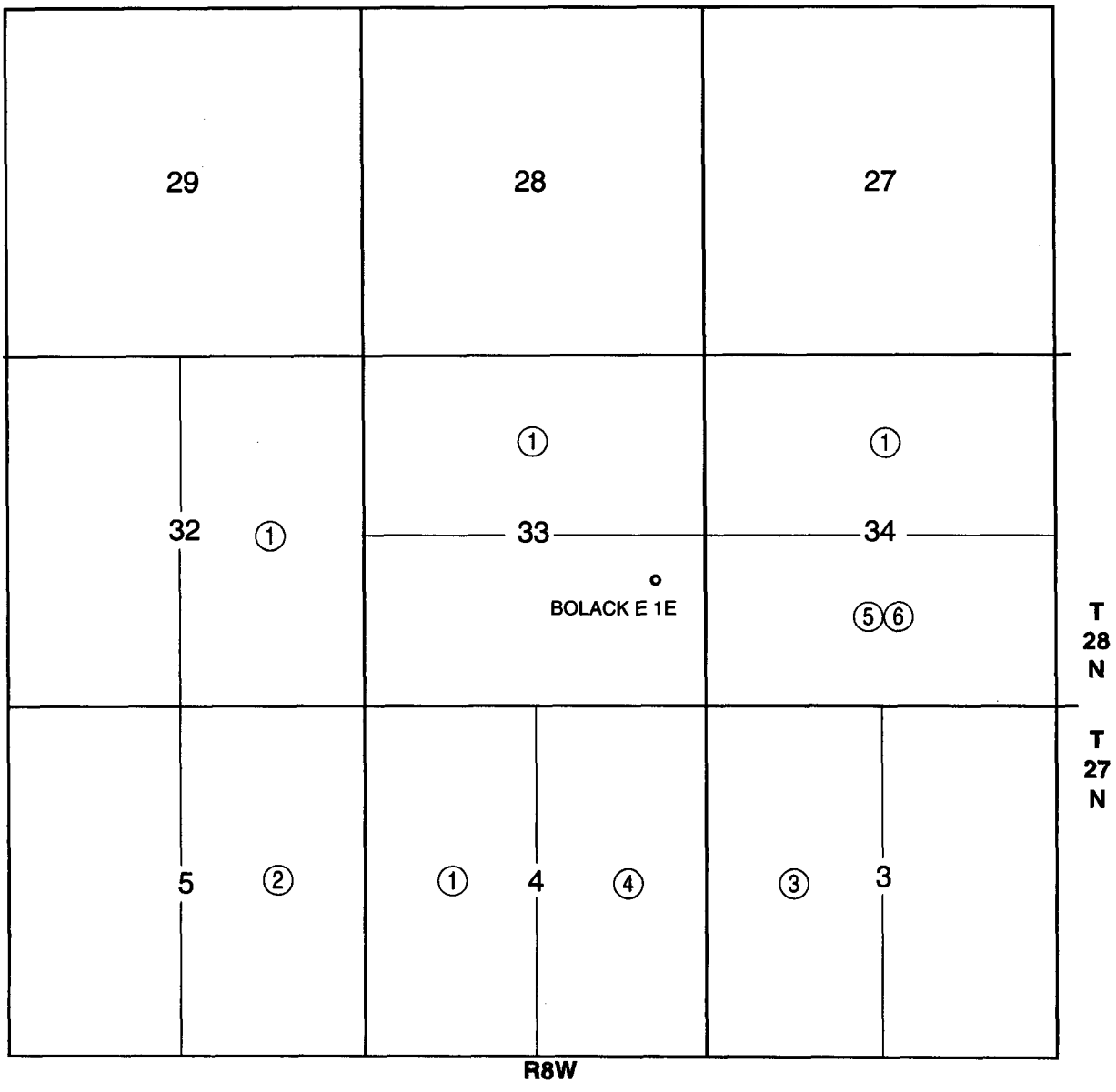
Offset Operator Plat
Bolack E #1E
T28N-R8W Sec. 33
1590' FSL & 1090' FEL
Blanco Mesaverde Formation



① Amoco Production Company
② Meridian Oil Production, Inc.
P.O. Box 4289
Farmington, NM 87499-4289
③ Bledsoe Petroleum Corporation
5850 Bank One Center
1717 Main Street
Dallas, TX 75201
④ M&G Drilling Company, Inc.
P.O. Box 9560
Palm Springs, CA 92263

Amoco Production Company

Offset Operator Plat
Bolack E #1E
T28N-R8W Sec. 33
1590' FSL & 1090' FEL
Dakota Formation



① Amoco Production Company

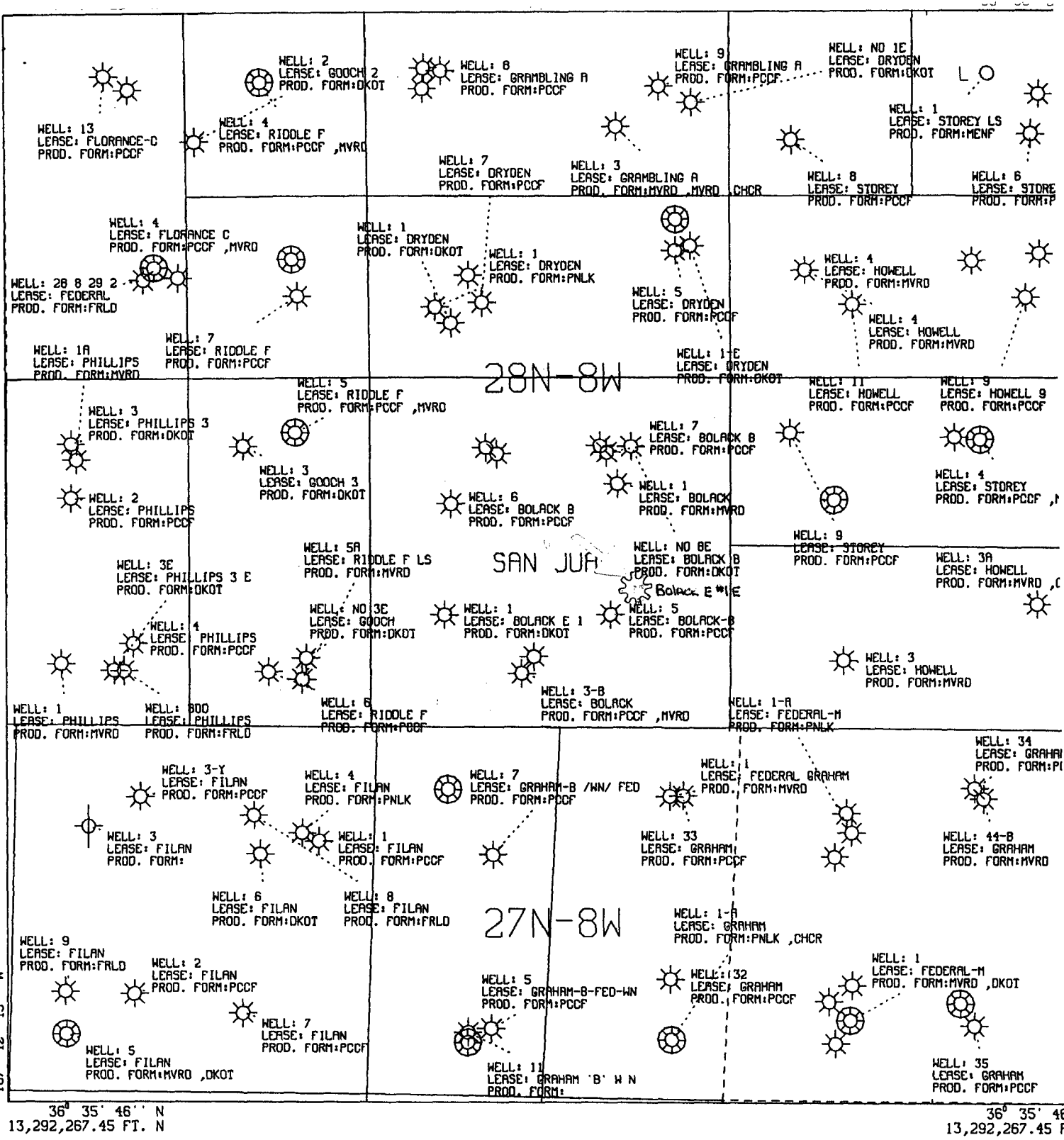
② Meridian Oil Production, Inc.
P.O. Box 4289
Farmington, NM 87499-4289

③ Bledsoe Petroleum Corporation
5850 Bank One Center
1717 Main Street
Dallas, TX 75201

④ M&G Drilling Company, Inc.
P.O. Box 9560
Palm Springs, CA 92263

⑤ Koch Exploration Company
P.O. Box 2256
Witchita, KS 67201

⑥ Four Star Oil & Gas Company
1111 Bagby
Houston, TX 77002



PDLYCONIC CENTRAL MERIDIAN - 107° 41' 7" W LON
SPHEROID - 6

AMOCO PRODUCTION COMPANY
PLAT MAP
Bolack E 1E
9 - Section Plat

SCALE 1 IN. = 2,000 FT. MAR 21, 199

13.58.38 TUES 21 MAR, 1995 JOB-P1229202, ISSCO DISSPLA 10.0

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

RECEIVED BLM
95 APR 26 AM 10: 18
070 FARMINGTON, NM

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code	³ Pool Name
	71599	Basin Dakota

⁴ Property Code	⁵ Property Name	⁶ Well Number
	BOLACK E	# 1E

⁷ OGRID No.	⁸ Operator Name	⁹ Elevation
00778	AMOCO PRODUCTION COMPANY	5841

¹⁰ Surface Location

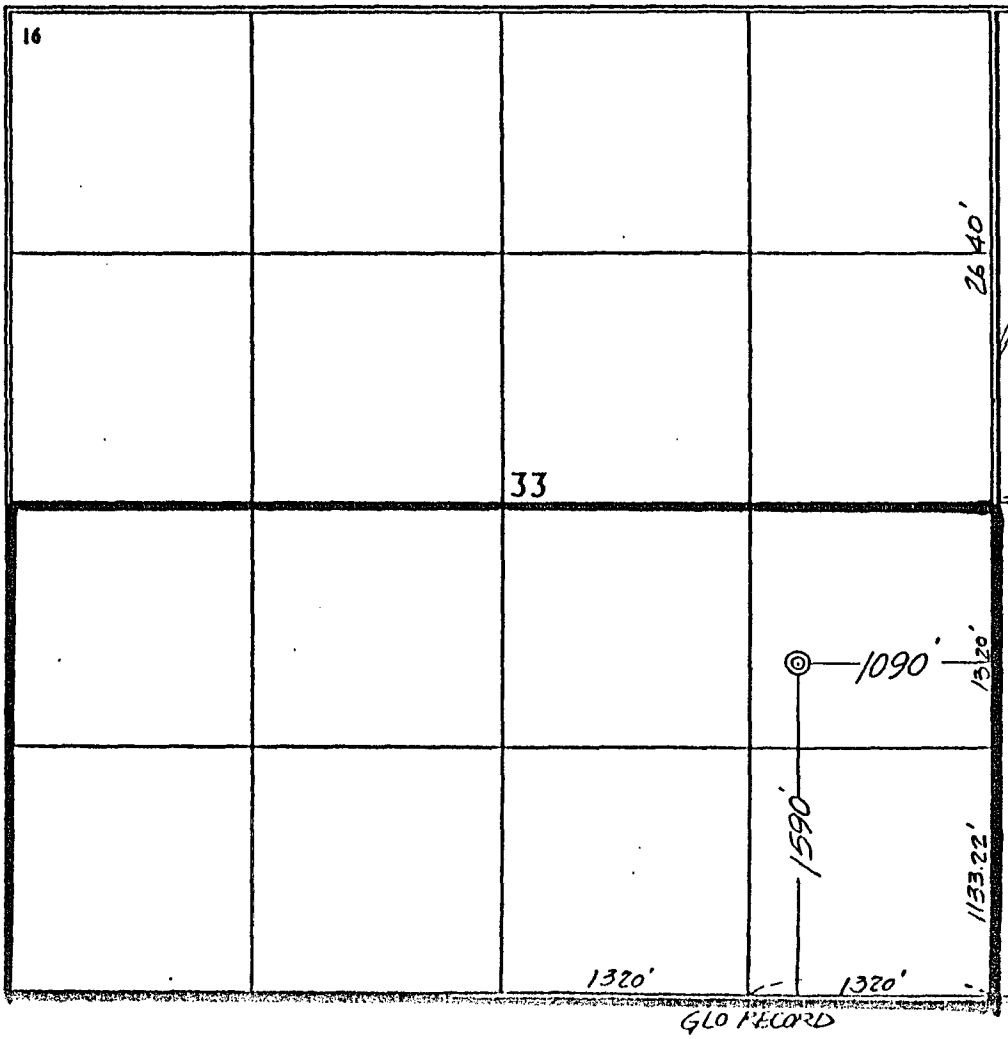
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	33	28 N	8 W		1590	SOUTH	1090	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
295.36			

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



¹⁷ OPERATOR CERTIFICATION

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

Signature

Julie L. Acevedo
Printed Name

Sr. Staff Assistant
Title

3/9/95
Date

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

February 9, 1995
Date of Survey

Signature and Seal of Professional Surveyor:

GARY D. VANN
NEW MEXICO
7016
REGISTERED PROFESSIONAL LAND SURVEYOR

7016
Certificate Number

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

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95 APR 26 AM 10: 18
070 FARMINGTON NM

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	72319	Blanco Mesaverde

[4] Property Code	[5] Property Name	[6] Well Number
	BOLACK E	# 1E

[7] OGRID No.	[8] Operator Name	[9] Elevation
000778	AMOCO PRODUCTION COMPANY	5841

[10] Surface Location

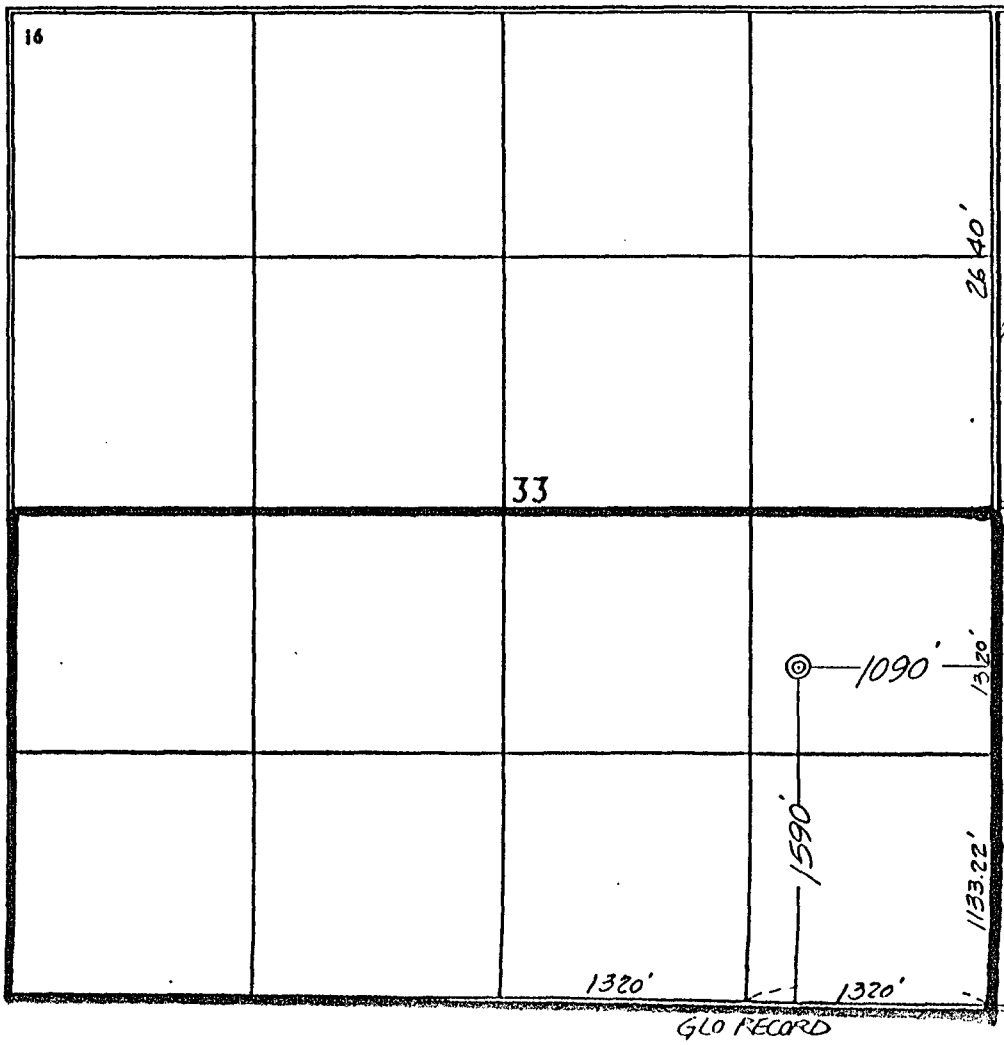
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	33	28 N	8 W		1590	SOUTH	1090	EAST	SAN JUAN

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
295.36			

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



[17] OPERATOR CERTIFICATION

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

Signature

Julie L. Acevedo
Printed Name

Sr. Staff Assistant
Title

3/9/95
Date

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

February 9, 1995
Date of Survey

Signature and Seal of Professional Surveyor:

GARY P. VANN
NEW MEXICO
7016
REGISTERED PROFESSIONAL LAND SURVEYOR

7016
Certificate Number

BOLACK E 1E
OFFSET WELL PRESSURES

WELLNAME	LOCATION	DATE	SI DURATION	DK PRESSURE	MV PRESSURE
Bolack B LS 1 MV	T28N R08W SEC 33 NE	06/26/86	7 days		540 psig
Bolack B LS 1A MV	T28N R08W SEC 33 NW	11/02/88	7 days		361
Bolack B LS 3 MV	T28N R08W SEC 33 SW	09/15/94	3 days		332
Bolack B 8E DK	T28N R08W SEC 33 NE	06/16/88	? days	1350 psig	
Bolack E 1 DK	T28N R08W SEC 33 SW	06/22/88	7 days	1113	
Bolack B 8 DK	T28N R08W SEC 33 NW	05/08/89	7 days	1141	
Dawson A 1M DK	T27N R08W SEC 04 NW	05/19/90	5 days	662	
Dawson A 1M MV	T27N R08W SEC 04 NW	05/19/90	3 days		492
Storey LS 4A DK	T28N R08W SEC 34 NW	06/23/94	3 days	909	
Storey LS 4A MV	T28N R08W SEC 34 NW	06/23/94	3 days		658
			AVE.:	1035 PSI	476 PSI

Bolack E 1E Commingling Info.

BOLACK E 1E COMMINGLING						
SUPPORTING DATA FROM OFFSETS:						
Offset MV wellname	**Location**	**Avg. Gas Prod.**	**Avg. Oil Prod.**			
Bolack B LS 3	N33-28-08	270 MCFD	1.5 BOPD			
Bolack B LS 1	G33-28-08	200 MCFD	2.5 BOPD			
Dawson A 1M	D04-27-08	170 MCFD	0.5 BOPD			
Bolack B LS 1A	C33-28-08	275 MCFD	3.0 BOPD			
Riddle F LS 5A	P32-28-08	200 MCFD	3.0 BOPD			
Graham 1	A04-27-08	160 MCFD	0.0 BOPD			
Federal M 1A	F03-27-08	200 MCFD	2.0 BOPD			
Howell 3	N34-28-08	180 MCFD	2.0 BOPD			
Storey LS 4A	F34-28-08	NA	NA	Not enough data to use in evaluation		
AVG. MV PROD.		**207 MCFD**	**1.8 BOPD**			
% OF TOTAL PROD. TO ALLOCATE TO MV:		**72%**	**55%**			
API GRAVITY OF MV:			**49**			
Offset DK wellname	**Location**	**Avg. Gas Prod.**	**Avg. Oil Prod.**			
Bolack E 1	L33-28-08	55 MCFD	1.0 BOPD			
Bolack B 8	C33-28-08	110 MCFD	1.5 BOPD			
Bolack B 8E	B33-28-08	110 MCFD	3.0 BOPD			
Dawson A 1M	D04-27-08	80 MCFD	2.0 BOPD			
Gooch 3E	P32-28-08	45 MCFD	0 BOPD			
AVG. DK PROD.		**80 MCFD**	**1.5 BOPD**			
% OF TOTAL PROD. TO ALLOCATE TO DK:		**28%**	**45%**			
API GRAVITY OF DK:			**59**			