



Robert B. Wilson
Division Land Manager

Amoco Production Company

Southern Division
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

SEP 6 1988

DISTRICT MANAGER
Bureau of Land Management
435 Mantano N. E.
Albuquerque, NM 87101
Attn: Fluid Minerals

Re: Application for Approval of the
Initial Gallup Formation
Participating Area "A"
Bear Canyon Unit Area
Rio Arriba County, New Mexico

Dear Sir:

Amoco Production Company, as Unit Operator for the Bear Canyon Unit Agreement, respectfully requests your approval, pursuant to Section 11 of the Unit Agreement, of the selection of the lands indicated on the land ownership map, attached hereto as Exhibit "A", to constitute the Initial Gallup Formation Participating Area "A" which embraces 640.00 acres.

The schedule of lands attached hereto as Exhibit "B" describes the lands within the Initial Gallup Formation Participating Area "A" and indicates the percentage of participation of each lease and tract within said area.

A geologic and engineering report and other pertinent data are attached as justification for the proposed definition of the Initial Gallup Formation Participating Area "A".

The Initial Gallup Formation Participating Area "A" is predicated upon the information obtained by the completion on July 25, 1987 of Well No. 1, in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 15, Township 26 North, Range 2 West, N.M.P.M. Initial production from Well No. 1 was 360 BOPD and 131 MCF of gas per day from the Gallup Formation at depths of 7,346'~7,442'. Pursuant to Section 11 of the Unit Agreement, the effective date of the Initial Gallup Formation Participating Area "A" should be July 25, 1987.

Bear Canyon Unit Area
Page 2

Your approval is, therefore, requested for the selection of lands indicated on the attached Exhibit "A" and "B" as the Initial Gallup Formation Participating Area "A" effective as of July 25, 1987.

Very truly yours,

AMOCO PRODUCTION COMPANY

By



Michael E. Cuba

MEC:PSC:ks
Enclosures

ENGINEERING REPORT

Bear Canyon Unit No. 1
NE/4 Section 15-T26N-R2W
Rio Arriba county, New Mexico

Bear Canyon Unit No. 1, located 1680 feet from the north line and 1780 feet from the east line of Section 15, Township 26 North, Range 2 West, was spudded on May 21, 1987 and completed on July 25, 1987. The well was drilled to a total depth of 8316 feet and 5.5-inch 15.5/17 lb/ft casing was set. The Gallup formation was perforated from 7346 to 7442 feet with 2 JSPF and fracture stimulated with 163M gallons of 30 pound gelled water and 144M pounds of 20/40 sand at an average treating rate of 67 barrels per minute. The well was then placed on beam lift and showed the first sign of production on August 4th by producing 28 MCFD. Production inclined from the first date of production to an average rate of 313 BOPD.

The well was then shut in because of lack of gas sales until January 6, 1988. The well was placed back on production until April at which time the AB-zone of the Gallup formation was perforated from 7158 to 7258 feet with 2 JSPF and fracture stimulated with 108M gallons of 30 pound gelled water and 58M pounds of 20/40 sand. The well was then placed on production in May with the AB and C-zones commingled downhole. The production rate increased to over 300 BOPD initially but has since increased to a level of 625 BOPD with an associated GOR of 189 scf per barrel.

Reservoir modelling has been performed by Amoco on the Gallup formation in an area to the southwest of Bear Canyon Unit. The reservoir characteristics of the formation in BCU are virtually identical; therefore, we have applied the modelling results and performance predictions to estimate the reserves for the Bear Canyon Unit No. 1 well.

ECONOMICS

The data used in conjunction with Amoco's economic model to determine the payout for the Bear Canyon Unit No. 1 well is illustrated on the following page:

Well Cost:

Tangible:	\$ 112.8 M
Intangible:	\$ 720.7 M
Total:	\$ 833.5 M

Monthly Operating Cost:	\$ 2000 per month No escalation in calculations
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Working Interest:	84.38 %
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Net Revenue Interest:	67.50 %
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Discount Rate:	12.00 %
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Severance and Ad Valorum Taxes:	8.60 %
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Gas Price:	\$ 1.88 per MCF No escalation in calculations
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Oil Price:	\$ 15.95 per barrel No escalation in calculations
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Date of Economics first Production:	October 1987
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Initial Production Rate:	313 BOPD x 86 MCFD
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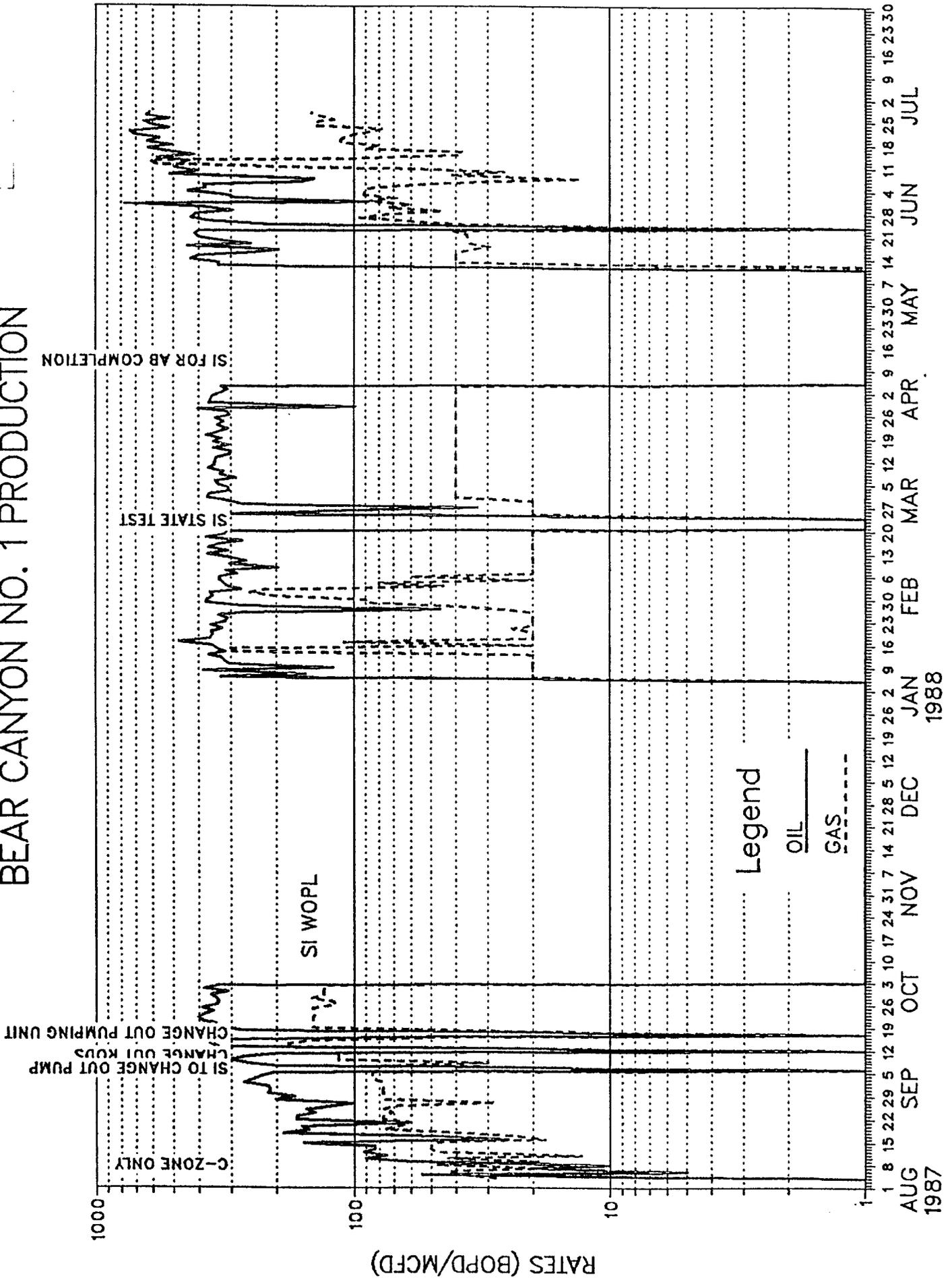
Calculated Results

Year	Gross Production	Net Production	Net Revenue	Discount Factor	Net Value	Payout Column 6 plus Column 7
0						(891.68)
1	47.619	32.144	175.9	0.892	156.9	(734.78)
2	397.342	268.214	1462.8	0.797	1165.9	431.07

<u>Discount Rate:</u>	0 %	12 %
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Payout:	1.66 years	1.73 years
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BEAR CANYON NO. 1 PRODUCTION



1987
AUG
1 8 15 22 29 5 12 19 26 3 10 17 24 31 7 14 21 28 5 12 19 26 2 9 16 23 30 6 13 20 27 5 12 19 26 2 9 16 23 30 7 14 21 28 4 11 18 25 2 9 16 23 30
JUL

Legend
OIL ———
GAS - - - -

RATES (BOPD/MCFD)

1000

C-ZONE ONLY

SI TO CHANGE OUT PUMP
CHANGE OUT KUDS
CHANGE OUT PUMPING UNIT

SI WOPL

SI STATE TEST

SI FOR AB COMPLETION

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

5a. Indicate Type of Lease
State Fee

5. State Oil & Gas Lease No.

1a. TYPE OF WELL
OIL WELL GAS WELL DRY OTHER _____
b. TYPE OF COMPLETION
NEW WELL WORK OVER DEEPEN PLUG BACK DIFF. RESVR. OTHER _____

7. Unit Agreement Name
Bear Canyon Unit

8. Farm or Lease Name

2. Name of Operator
Amoco Production Company

9. Well No.
1

3. Address of Operator
2325 E. 30th Farmington, NM 87401

CONFIDENTIAL

10. Field and Pool, or Willcat
Gavilan-Mancos Ext

4. Location of Well
UNIT LETTER G LOCATED 1680 FEET FROM THE North LINE AND 1780 FEET FROM

12. County
Rio Arriba

THE East LINE OF SEC. 15 TWP. 26N RGE. 2W

15. Date Spudded 05-23-87 16. Date T.D. Reached 06-25-87 17. Date Compl. (Ready to Prod.) 07-30-87 18. Elevations (DF, RKB, RT, GR, etc.) KB 7418' 19. Elev. Casinghead Gr 7395'

20. Total Depth 8316' 21. Plug Back T.D. 8256' 22. If Multiple Compl., How Many One 23. Intervals Drilled By: Rotary Tools O-Td Cable Tools _____

24. Producing Interval(s), of this completion - Top, Bottom, Name
7346' - 7442' Gavilan Mancos Ext 25. Was Directional Survey Made Yes

26. Type Electric and Other Logs Run BHC, CAL, GR; ZDL, CN, CAL, GR; CALOG/ORIEN; CDL, SL, CAL, GR 27. Was Well Cored No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8"	36# J55	361'	12-1/4"	295 cf Class B Ideal	
5-1/2"	17# & 15.5#	8316'	7-7/8"	1408 cf Class B Ideal	
	N-80 & J55				

29. LINER RECORD | 30. TUBING RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
					2-7/8"	7478'	

31. Perforation Record (Interval, size and number)
7346' - 7442' 2 jspf, .51" dia, 192 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
<u>7346' - 7442'</u>	<u>162988 gal 30# xlink gel</u>
	<u>143600# 20-40 mesh brady sand</u>

33. PRODUCTION

Date First Production: <u>8/5/87</u>	Production Method (Flowing, gas lift, pumping - Size and type pump) <u>Pumping 2" x 2" x 28' RWBC</u>	Well Status (Prod. or Shut-in) <u>Shut-in</u>					
Date of Test <u>10/2/87</u>	Hours Tested <u>24</u>	Choke Size	Prod'n. For Test Period	Oil - Bbl. <u>360</u>	Gas - MCF <u>131</u>	Water - Bbl. <u>1</u>	Gas-Oil Ratio <u>364</u>
Flow Tubing Press. <u>80</u>	Casing Pressure <u>150</u>	Calculated 24-Hour Rate	Oil - Bbl. <u>360</u>	Gas - MCF <u>131</u>	Water - Bbl. <u>1</u>	Oil Gravity - API (Corr.) <u>42</u>	

34. Disposition of Gas (Sold, used for fuel, vented, etc.)
To be sold Test Witnessed By Mike McClelland

35. List of Attachments
None

CONFIDENTIAL

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.
SIGNED B. Shaw Adm. Supervisor



#8998

OIL CONSERVATION DIVISION
RECEIVED

1991 AUG 6 AM 8 45

Southern

Rockies

Business

Unit

August 6, 1991

Assistant District Manager, Minerals
Bureau of Land Management
425 Montano, N.E.
Albuquerque, NM 87107

Bureau of Land Management
P. O. Box 1449
Santa Fe, NM 87504

State of New Mexico
Oil Conservation Commission
P.O. Box 2088
Santa Fe, NM 87501

Office of District Engineer
Bureau of Land Management
1235 LaPlata Highway
Farmington, NM 87401

WORKING INTEREST OWNERS

File:DJD-117-416

Bear Canyon Unit
1991 Plan of Development
Rio Arriba County, New Mexico

Amoco Production Company as Unit operator of the Bear Canyon Unit submits the following 1991 plan of development for your approval.

1991 Plan of Development

Amoco has no development plans for the Unit in 1991. Amoco's interest in the Unit have been sold to Apache Corporation effective July 1, 1991.

Don J. Duhrkopf

BAM

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



GARREY CARRUTHERS
GOVERNOR

September 9, 1988

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

Unit Source Incorporated
P. O. Box 1707
Denver, Colorado 80201

Attention: Paul S. Conner

Re: Application for the Initial
Gallup Participating Area "A"
for the Bear Canyon Unit Area,
Rio Arriba 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 black ink, 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



United States Department of the Interior

CONSERVATION DIVISION
RECEIVED

90 SEP 14 AM 10 08

BUREAU OF LAND MANAGEMENT
FARMINGTON RESOURCE AREA
1235 LAPLATA HIGHWAY
FARMINGTON, NEW MEXICO 87401



IN REPLY REFER TO:

Bear Canyon Unit (POD)
3180 (019)

SEP. 13 1990

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

#8998

Gentlemen:

One approved copy of your 1990 Plan of Development for the Bear Canyon Unit area, Rio Arriba County, New Mexico is enclosed. Such plan, proposing no new wells, was approved on this date.

The possibility of drainage by wells outside of the unit boundary may exist. You will be contacted at a later date about this possibility.

If you have any questions, please contact Kenny Howell, Petroleum Engineer, at the above address or telephone (505) 327-5344.

Sincerely,

/s/ John L. Keller

John L. Keller, Chief
Branch of Mineral Resources

Enclosure

cc: New Mexico Oil Conservation Division, 310 Old Santa Fe Trail, Room 206,
Santa Fe, NM 87503

EXHIBIT "B"
 INITIAL GALLUP FORMATION PARTICIPATING AREA "A"
 BEAR CANYON UNIT AREA
 RIO ARRIBA COUNTY, NEW MEXICO

TRACT NO.	LEASE NO. OR TYPE OF LAND	DESCRIPTION	PARTICIPATING ACRES	PERCENT OF PARTICIPATION
23	Patented	T26N-R2W, N.M.P.M. Sec. 15: SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$	280.00	43.7500%
24	Patented	T26N-R2W, N.M.P.M. Sec. 15: SE $\frac{1}{4}$ SE $\frac{1}{4}$	40.00	6.2500%
25	Patented	T26N-R2W, N.M.P.M. Sec. 15: N $\frac{1}{2}$	320.00	50.0000%
Totals			640.00	100.0000%

SUMMARY

TYPE LAND	COMMITTED ACRES	NON-COMMITTED ACRES	PERCENT
Federal	-0-	-0-	-0-
State	-0-	-0-	-0-
Patented	640.00	-0-	100.0000%
TOTAL	640.00	-0-	100.0000%

#8998

Bear Canyon (PA)
3180 (019)

MAY 08 1989

Amoco Production Company
Attn: T. D. Autry
P. O. Box 800
Denver, CO 80201

Gentlemen:

We have received your letter of March 30, 1989, requesting the approval of the First Expanded Participating Area, Gallup Formation, Bear Canyon Unit, Rio Arriba County, New Mexico.

The application for approval of the First Expanded Participating Area seeks to add 640.00 acres described as section 10, T. 26 N., R. 2 W., N.M.P.M. to the Gallup 'A' Participating Area. Contributing to this area is the completion of the Bear Canyon well No. 2. The First Expanded Participating Area was approved on this date and is effective February 1, 1988.

If you have any questions, please contact Gail Keller at the above address or telephone (505) 327-5344.

Sincerely,

/s/ John L. Keller

John Keller
Chief, Branch of Minerals

Enclosure

cc: Minerals Management Service, RMP, P. O. Box 25165, Denver, CO 80223
~~New Mexico Oil Conservation Division, State Land Office Building,
P. O. Box 2000, Santa Fe, NM 87504~~

Bear Canyon (PA)
3180 (019)

MAY 08 1989

RECEIVED

Amoco Production Company
Attn: T. D. Autry
P. O. Box 800
Denver, CO 80201

MAY 10 1989
OIL CONSERVATION DIV.
SANTA FE

Gentlemen:

We have received your letter of April 7, 1989, requesting the approval of the Second Expanded Participating Area, Gallup Formation, Bear Canyon Unit, Rio Arriba County, New Mexico.

The application for approval of the Second Expanded Participating Area seeks to add 640.00 acres described as section 11, T. 26 N., R. 2 W., N.M.P.M. to the Gallup 'A' Participating Area. Contributing to this area is the completion of the Bear Canyon well No. X3. The Second Expanded Participating Area was approved on this date and is effective April 1, 1988.

If you have any questions, please contact Gail Keller at the above address or telephone (505) 327-5344.

Sincerely,

/s/ John L. Keller

John Keller
Chief, Branch of Minerals

Enclosure

cc: Minerals Management Service, RMP, P. O. Box 25165, Denver, CO 80223
~~New Mexico Oil Conservation Division, 2000 Office Building,
P. O. Box 2000, Santa Fe, NM 87504~~



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONY ANAYA
GOVERNOR

November 13, 1936

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

Mr. Ed Kendrick
Montgomery and Andrews
Attorneys at Law
P. O. Box 2307
Santa Fe, New Mexico

Re: CASE NO. 8998
ORDER NO. R-8350

Applicant:

Amoco Production Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Sincerely,

R. L. STAMETS
Director

RLS/fd

Copy of order also sent to:

Hobbs OCD X
Artesia OCD X
Aztec OCD X

Other _____



March 20, 1988

#8998

Amoco Production Company

Denver Region
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

4-11-89

Assistant District Manager, Minerals
Bureau of Land Management
425 Montano, N.E.
Albuquerque, NM 87107

State of New Mexico
Commissioner of Public Lands
ATTN: Floyd O. Prando
P.O. Box 1148
Sante Fe, NM 87501

P. J. H. / Unit 124

State of New Mexico
Oil Conservation Commission
ATTN: William J. LeMay
P.O. Box 2088
Sante Fe, NM 87501

WORKING INTEREST OWNERS

File: LF-030-416

Bear Canyon Unit
Rio Arriba County, New Mexico
Plan of Development for Gallup Formation

Amoco Production Company as unit operator of the Bear Canyon Unit submits the following 1989 plan of development for your approval.

1989 Plan of Development

Amoco drilled the Bear Canyon Unit No. 5 well located in 850 feet from the south line and 850 feet from the west line of Section 12, Township 26 North, Range 2 West during January and February of 1989. We are currently in the process of completing the Gallup formation in this well. Our additional plans for 1989 include the deepening of the Bear Canyon Unit No. 3 well to develop the C-zone reserves in the Gallup formation.

Historical Development

Bear Canyon Unit No. 1

Bear Canyon Unit No. 1, located 1680 feet from the north line and 1780 feet from the east line of Section 15, Township 26 North, Range 2 West, was spud on May 21, 1987 and completed on July 25,

1987. The well was drilled to a total depth of 8316 feet and 5.5-inch 15.5/17 lb/ft casing was set. The Gallup formation was perforated from 7346 to 7442 feet with 2 JSPF and fracture stimulated with 163M gallons of 30-pound gelled water and 144M pounds of 20/40 sand at an average treating rate of 67 barrels per minute. The well was then placed on beam lift and showed the first sign of production on August 4th by producing 28 MCFD. Production inclined from the first date of production to an average rate of 313 BOPD.

The well was then shutin because of lack of gas sales until January 6, 1988. The well was placed back on production until April when the AB-zone of the Gallup formation was perforated from 7158 to 7258 feet with 2 JSPF and fracture stimulated with 108M gallons of 30-pound gelled water and 58M pounds of 20/40 sand. The well was then placed on production in May and the commingled AB- and C-zones production rate has averaged 544 BOPD and 95 MCFD (through February 1989) since that time.

Bear Canyon Unit No. 2

Bear Canyon Unit No. 2, located 880 feet from the north line and 2280 feet from the west line of Section 10, Township 26 North, Range 2 West, was spud on November 20, 1987 and completed on February 3, 1988. The well was drilled to a total depth of 7510 feet and 5.5-inch 15.5/17 lb/ft casing was set. A cement squeeze was performed to isolate the Gallup formation to allow fracture stimulation. The Gallup C-zone was perforated from 7194 to 7338 feet with 2 JSPF and fracture stimulated with 96M gallons of 30-pound gelled water and 110M pounds of 20/40 sand at an average treating rate of 65 barrels per minute. The well was then swab tested and showed the first sign of production on February 3, 1988 by making 1 barrel of oil. The well was placed on pump on February 11, 1988 and production increased and stabilized at 200 BOPD and 63 MCFD. Completion of the Gallup AB-zone began on April 8, 1988. The AB-zone was perforated from 7014 to 7110 feet with 2 JSPF and fracture stimulated with 93M gallons of 30-pound gelled water and 70M pounds of 20/40 sand at an average rate of 78 barrels per minute. During cleanout operations after the stimulation, the casing was found to be collapsed at 7109 feet. Attempts to swedge out the casing between the AB and C-zones were unsuccessful. The well was then placed on on-line, June 3, 1989 and the average production from the AB-zone since that time has been 322 BOPD and 58 MCFD with a cumulative production of 97,166 BO and 17,459 MCF (2/89).

Bear Canyon Unit No. 3

Bear Canyon Unit No. 3, located 1820 feet from the south line and 970 feet from the west line of Section 11, Township 26 North, Range 2 West, was spud on January 05, 1988 and completed on April 21, 1989. The well was drilled to a total depth of 8411 feet. Intermediate casing, 7-inch 23 lb/ft, was set at a depth of 6898 feet and cemented with 2469 cubic feet of Class B cement. A 4-inch liner was set from 6898 feet to 8411 feet and cemented with 570 cubic feet of cement. The Dakota formation was perforated from 8170 to 8222 feet with 2 JSPF and was fracture stimulated with 60M gallons of 30-pound crosslink gelled water and 85M pounds of 20/40 sand at an average treating rate of 40 barrels per minute. The swab tests showed the formation to be wet. A bridge plug was set above the Dakota perforations and the 4-inch liner was pressure tested. A leak was found at the top of liner and was squeezed with 130 sacks of Class B cement. The C-zone was then perforated from 7326 feet to 7470 feet with 2 JSPF and was fracture stimulated with 120M gallons of 30-pound crosslink gelled water and 85M pounds of 20/40 sand at an average treating rate of 72 barrels per minute. The well was swab tested then placed on pump test on May 3, 1989. The C-zone production increased to and stabilized at 265 BOPD and 59 MCFD. The well was subsequently completed in the Gallup AB-zone. The AB-zone was perforated from 7144 to 7226 feet with 2 JSPF and fracture stimulated with 116M gallons of 30-pound gelled water and 88M pounds of 20/40 sand at an average rate of 75 barrels per minute. The hole was lost during fishing operations after the fracture stimulation and the well had to be sidetracked. The sidetrack operation began on September 18, 1989. A whipstock was set at 6516 to 6534 feet and window was cut in the casing. The well was sidetracked to a depth of 7240 feet and operations were ceased because of the inability to circulate the large amount of fluid (oil) entry into the hole. The well was placed on pump and production stabilized at 273 BOPD and 49 MCFD with cumulative production of 45,098 BO and 8115 MCF (2/89).

Bear Canyon Unit No. 4

Bear Canyon Unit No. 4, located 790 feet from the south line and 850 feet from the west line of Section 02, Township 26 North, Range 2 West, was spud on October 01, 1988 and completed on December 4, 1988. The well was drilled to a total depth of 7602 feet. Intermediate casing, 7.625-inch 29.7 lb/ft, was set at a depth of 6715 feet and cemented with 925 sacks of Class G cement. A 5-inch, 15 lb/ft liner was set from 6715 feet to 7602 feet and cemented with 200 sacks of 50/50 POZ cement. The Gallup C-zone was perforated from 7246 to 7392 feet with 2 JSPF and was fracture stimulated with 125M gallons of 30-pound crosslink gelled water and 152M pounds of 20/40 sand at an average treating rate of 65 barrels per minute. The Gallup A/B-zone was then perforated from

7060 feet to 7170 feet with 2 JSPF and was fracture stimulated with 113M gallons of 30-pound crosslink gelled water and 150M pounds of 20/40 sand at an average treating rate of 65 barrels per minute. The well was swab tested then placed on pump test on December 04, 1989. Production increased and has stabilized at 72 BOPD and 85 MCFD with a cumulative production of 4859 BO and 5746 MCF (2/89).

Simmons Federal No. 1

Simmons Federal No. 1, located 1750 feet from the north line and 2200 feet from the west line of Section 03, Township 26 North, Range 2 West, was spud on November 04, 1988 and completed on January 14, 1989. The well was drilled to a total depth of 7594 feet. Intermediate casing, 7.625-inch 29.7 lb/ft, was set at a depth of 6645 feet and cemented with 850 sacks of Class G cement. A 5-inch, 15 lb/ft liner was set from 6645 feet to 7594 feet and cemented with 260 sacks of 50/50 POZ cement. The Gallup C-zone was perforated from 7312 to 7458 feet with 2 JSPF and was fracture stimulated with 114M gallons of 30-pound crosslink gelled water and 142M pounds of 20/40 sand at an average treating rate of 66 barrels per minute. The Gallup A/B-zone was then perforated from 7134 feet to 7240 feet with 2 JSPF and was fracture stimulated with 87M gallons of 30-pound crosslink gelled water and 126M pounds of 20/40 sand. The well was swab tested then placed on pump test on January 24, 1989. Production increased and has stabilized at 147 BOPD and 66 MCFD with a cumulative production of 5419 BO and 2434 MCF (2/89).

Bear Canyon Unit No. 8

Bear Canyon Unit No. 8, located 1750 feet from the south line and 1800 feet from the west line of Section 14, Township 26 North, Range 2 West, was spud on August 26, 1988 and completed on December 30, 1988. The well was drilled to a total depth of 7710 feet. Intermediate casing, 7.625-inch 29.7 lb/ft, was set at a depth of 6839 feet and cemented with 960 sacks of Class G cement. The well was drilled to total depth and natural production was established from the Gallup formation. Subsequently, a perforated 5.5-inch, 15 lb/ft liner was set from 6774 feet to 7675 feet to keep the hole from sloughing in. The well was then placed on pump test on February 24, 1989. Production increased and has stabilized at 266 BOPD and 704 MCFD with a cumulative production of 4009 BO and 11,594 MCF (2/89).

Bear Canyon Unit No. 5

Bear Canyon Unit No. 5, located 850 feet from the south line and 850 feet from the west line of Section 12, Township 26 North,

Range 2 West, was spud on January 21, 1989 and is in the process of being completed in the Gallup formation. The well was drilled to a total depth of 7658 feet. Intermediate casing, 7.625-inch 29.7 lb/ft, was set at a depth of 6640 feet and cemented with 250 sacks of Class G cement. A 5-inch, 15 lb/ft liner was set from 6640 feet to 7658 feet and cemented with 260 sacks of 50/50 POZ cement. Our plans include the stimulation of both the A/B and the C-zones of the Gallup formation. We anticipate that the well will be placed on production by the end of March, 1989.

Please direct any questions concerning this matter to Richard Jones, telephone number 303-830-4085.

T D Autry 107

T. D. Autry
Southern Division Production Manager



United States Department of the Interior
BUREAU OF LAND MANAGEMENT
ALBUQUERQUE DISTRICT OFFICE

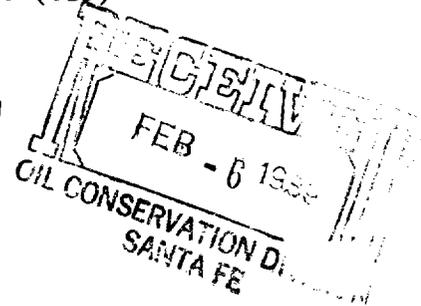
435 Montano N.E.
Albuquerque, New Mexico 87107



IN REPLY REFER TO:

Bear Canyon Ut (GPPA)
3180 (015)

FEB - 3 1989



Amoco Production Company
Attn: Michael E. Cuba
P.O. Box 800
Denver, Colorado 80201

Gentlemen:

Your application of September 6, 1988, requesting approval of the Initial Gallup Participating Area for the Bear Canyon Unit Agreement, Rio Arriba County, New Mexico, No. 14-08-0001-19597, was approved on this date. The Initial Participating Area is effective as of July 25, 1987.

The Initial Participating Area is 640.00 acres described as Section 15, T. 26 N., R. 2 W., NMPM. The Initial Participating Area is based on the completion of Unit Well No. 1.

Pursuant to Section 10 of the unit agreement an annual Plan of Development is now required. Annual Plans of Development are due by March 1 each year.

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

If you have any questions, please contact Robert Kent at (505) 761-4503.

Sincerely,

(Orig. Signed) - Sid Vogelpohl

Sid Vogelpohl
ADM, Minerals Resources

Enclosures

✓ NMOCD

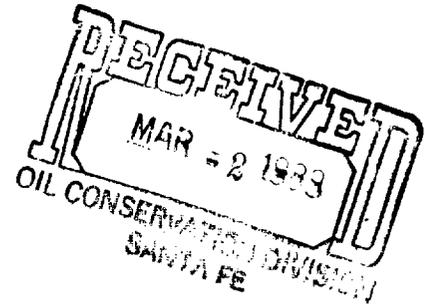
UnitSource INCORPORATED

BRAD W. HENTSCHEL
PAUL S. CONNER
BONITA L. LIMPUS

UNITIZATION

February 27, 1989

The Oil Conservation Division of New Mexico
P. O. Box 2088
Sante Fe, New Mexico 87504-2088



RE: Bear Canyon Unit Area,
Rio Arriba County, New Mexico

Ladies and Gentlemen:

Enclosed for your review and file please find a copy of a letter from the Bureau of Land Management approving the Initial Gallup Participating Area "A" for the Bear Canyon Unit Agreement, Rio Arriba County, New Mexico.

Please note the effective date of apporval is July 25, 1987. I request that you note your records accordingly. If you should have any questions please feel free to contact me.

Sincerely,

UNITSOURCE INCORPORATED


Paul S. Conner

psc
enclosure

FEB 7 1989



United States Department of the Interior
BUREAU OF LAND MANAGEMENT
ALBUQUERQUE DISTRICT OFFICE

435 Montano N.E.
Albuquerque, New Mexico 87107



IN REPLY REFER TO:

Bear Canyon Ut (GPPA)
3180 (015)

FEB -- 3 1989

Amoco Production Company
Attn: Michael E. Cuba
P.O. Box 800
Denver, Colorado 80201

Gentlemen:

Your application of September 6, 1988, requesting approval of the Initial Gallup Participating Area for the Bear Canyon Unit Agreement, Rio Arriba County, New Mexico, No. 14-08-0001-19597, was approved on this date. The Initial Participating Area is effective as of July 25, 1987.

The Initial Participating Area is 640.00 acres described as Section 15, T. 26 N., R. 2 W., NMPM. The Initial Participating Area is based on the completion of Unit Well No. 1.

Pursuant to Section 10 of the unit agreement an annual Plan of Development is now required. Annual Plans of Development are due by March 1 each year.

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

If you have any questions, please contact Robert Kent at (505) 761-4503.

Sincerely,

Sid Vogelpohl
ADM, Minerals Resources

Enclosures



Amoco Production Company

Western Division
1670 Broadway
Post Office Box 800
Denver, Colorado 80201
303-830-4040

W. R. Francis
Division Land Manager

June 13, 1986

Case 8998

TO: The Director
Bureau of Land Management
Washington, D.C. 20025

THROUGH: District Manager
Bureau of Land Management
505 Marquett NW, Room 815
Albuquerque, New Mexico 87102

Re: Application for Designation of
Proposed Unit Area and Determination
of Depth of Test Well for the
Bear Canyon Unit Area
Rio Arriba County, New Mexico

Dear Sir:

Attached hereto is a map, marked Exhibit "A", on which the proposed Bear Canyon Unit is outlined. We request that 4,800.00 acres, more or less, of Federal and Patented lands within the outline be designated as a logical Unit Area pursuant to the unitization provisions of the Mineral Leasing Act, as amended. The proposed Unit Area of 4,800.00 acres, more or less, is composed of 1,280.00 acres (26.67%) Federal lands and 3,520.00 acres (73.33%) Patented lands.

For the lands within the proposed Unit Area, we refer you to the attached Exhibit "A", which shows, in addition to the proposed Unit boundary, the boundaries and identity of the various tracts and leases in the proposed Unit Area to the extent of our present knowledge. The serial numbers of all Federal leases within the proposed Unit are listed on Exhibit "B", hereto attached.

It is requested that a test well, drilled to a depth of 8,300 feet or to test the upper 15 feet of the Morrison formation, whichever is the lesser depth, unless commercial production in paying quantities, as defined in the Unit Agreement, is encountered at a lesser depth, be approved as the required test well.

Amoco Production Company anticipates submitting, at a later date, a standard form Unit Agreement (1983 reprint) which will deviate from the standard form as follows:

1. Section 18, Paragraph H, will be stricken in its entirety.

To the best of our knowledge, there are no Federal lands within the proposed Unit Area requiring the inclusion of special provisions in the Unit Agreement other than those set forth above.

In support of this Application, we are submitting separately, in duplicate, a geological report with a map showing the geologic conditions within the proposed Unit Area. It is requested that this information be held confidential.

Please transmit all correspondence regarding this Application to Edmundson & Associates, Inc., P. O. Box 1707, Denver, Colorado 80201.

Very truly yours,

AMOCO PRODUCTION COMPANY

By



W. R. Francis
Division Land Manager



WRF:PSC:ncd
Enclosures

EXHIBIT "B"
AREA AND DEPTH APPLICATION
BEAR CANYON UNIT AREA
RIO ARriba COUNTY, NEW MEXICO

<u>TRACT NUMBER</u>	<u>FEDERAL SERIAL NUMBER</u>	<u>EXPIRATION DATE</u>
1	NM-7993	HBP
2	NM-13809	HBP
3	NM-19560	HBP
4	NM-28811	10-31-86
5	NM-29756	HBP
6	NM-58703	8-31-94
7	NM-62743	