



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 11, 1996

Amoco Production Company
P. O. Box 800
Denver, Colorado 80201
Attention: J. W. Hawkins

AMENDED Administrative Order DD-125

Dear Mr. Hawkins:

By Division Administrative Order DD-125(H), dated November 14, 1995, authorization was given Amoco Production Company ("Amoco") to utilize its Barnes "LS" Well No. 6-A (API No. 30-045-22396), located at a standard gas well location 1720 feet from the South line and 850 feet from the East line (Unit I) of Section 23, Township 32 North, Range 11 West, NMPM, San Juan County, New Mexico, to drill multiple horizontal drainholes within the vertical limits of the Blanco-Mesaverde Pool by kicking-off from vertical at various depths by milling windows in the existing 4-1/2 inch linear, drill out with short radius curves (64 degrees per 100 feet or 90 foot radius), and continue drilling horizontally a lateral distance of approximately 500 feet for each.

Reference is now made to your application dated December 6, 1995, to amend said Order DD-125(H), for authorization to recomplete said well with a single high-angle (45 degrees) directionally drilled wellbore instead.

The Division Director Finds That:

- (1) This amendment has been duly filed under the provisions of **Rule 111.D** and **E** of the General Rules and Regulations of the New Mexico Oil Conservation Division ("Division"), revised by Division Order No. R-10388, issued by the Oil Conservation Commission in Case 11,274 on June 13, 1995;
- (2) It is our understanding that Amoco now intends to kick-off from vertical at a depth of approximately 4,200 feet by milling a window in the existing production casing, drill in a southerly direction, build to an angle of approximately 45 degrees and continue to drill a slant hole in such a manner as to bottom back into the Blanco-Mesaverde Pool, with total horizontal displacement of said well to be approximately 924 feet;
- (3) A high angle wellbore as proposed should provide Amoco a better opportunity to encounter the naturally occurring fracture system in the Mesaverde formation, which should result in a higher production rate and an increased ultimate recovery of gas from this GPU;

- (4) The applicable drilling window or "producing area" for said wellbore will change from that area prescribed in said original order DD-125(H), which includes that area within the E/2 of said Section 23 that is no closer than 790 feet to the outer boundary of the subject GPU to an area within the SE/4 of said Section 23 that is no closer than 790 feet to any quarter section line; and,
- (5) It appearing the applicant has satisfied all of the appropriate requirements prescribed in said **Rule 111.D and E**, the subject application should be approved and the well should be governed by the provisions contained within this order and all other applicable provisions of Division General **Rule 111**.

IT IS THEREFORE ORDERED THAT:

- (1) Decretory Paragraph (1) of Division Administrative Order DD-125(H) shall be amended to read in its entirety as follows:

"(1) The applicant, Amoco Production Company, is hereby authorized to recomplete its existing Barnes "LS" Well No. 6-A (API No. **30-045-22396**), located at a standard gas well location 1720 feet from the South line and 850 feet from the East line (Unit I) of Section 23, Township 32 North, Range 11 West, NMPM, San Juan County, New Mexico by milling a window in the existing production casing at a depth of approximately 4,200 feet, kick-off from vertical in a southerly direction, build to an angle of approximately 45 degrees and continue to drill a slant hole in such a manner as to bottom back into the Blanco-Mesaverde Pool, with total horizontal displacement of said well to be approximately 924 feet.

PROVIDED HOWEVER THAT prior to commencing directional drilling operations in said wellbore, the applicant shall establish the location of the kick-off point by means of a directional survey acceptable to the Division.

PROVIDED FURTHER THAT during or upon completion of directional drilling operations, the applicant shall conduct an accurate wellbore survey from the kick-off point to total depth in order that the subsurface bottomhole location, as well as the wellbore's true depth and course, may be determined."

- (2) Decretory Paragraph (3) of Division Administrative Order DD-125(H) shall be amended to read in its entirety as follows:

"(3) The "project area" for said high angle/slant wellbore shall correspond with the existing 320-acre standard gas spacing and proration

unit ("GPU") comprising the E/2 of said Section 23, whereby both the subject well and Amoco's Barnes "LS" Well No. 6 (API No. 30-045-11366), located at a standard gas well location 990 feet from the North and East lines (Unit A) of said Section 23, are both to be simultaneously dedicated."

(3) Decretory Paragraph (4) of Division Administrative Order DD-125(H) shall be amended to read in its entirety as follows:

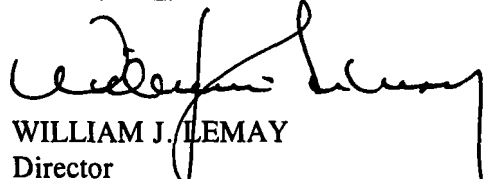
"(4) The applicable drilling window or "producing area" for said high angle/slant wellbore shall include that area within the SE/4 of said Section 23 that is no closer than 790 feet to any quarter section line."

(4) All other provisions of said Order DD-125(H), dated November 14, 1995, not in conflict with this change shall remain in full force and effect until further notice.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director

S E A L

WJL/MES/kv

cc: Oil Conservation Division - Aztec
U. S. Bureau of Land Management - Farmington
File: DD-125(H)

DD-125. AMP

Rec. 12-11-95
Susp. = 12-96 NA
Released 3-11-96

March 11, 1996

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

Attention: J. W. Hawkins

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- (3) A high angle wellbore as proposed should provide Amoco a better opportunity to

encounter the naturally occurring fracture system in the Mesaverde formation, which should result in a higher production rate and an increased ultimate recovery of gas from this GPU;

- (4) The applicable drilling window or "producing area" for said wellbore will change from that area prescribed in said original order DD-125(H), which includes that area within the E/2 of said Section 23 that is no closer than 790 feet to the outer boundary of the subject GPU to an area within the SE/4 of said Section 23 that is no closer than 790 feet to any quarter section line; and,
- (5) It appearing the applicant has satisfied all of the appropriate requirements prescribed in said **Rule 111.D** and **E**, the subject application should be approved and the well should be governed by the provisions contained within this order and all other applicable provisions of Division General **Rule 111**.

IT IS THEREFORE ORDERED THAT:

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PROVIDED HOWEVER THAT prior to commencing directional drilling operations in said wellbore, the applicant shall establish the location of the kick-off point by means of a directional survey acceptable to the Division.

PROVIDED FURTHER THAT during or upon completion of directional drilling operations, the applicant shall conduct an accurate wellbore survey from the kick-off point to total depth in order that the subsurface bottomhole location, as well as the wellbore's true depth and course, may be determined."

(2) Decretory Paragraph (3) of Division Administrative Order DD-125(H) shall be amended to read in its entirety as follows:

"(3) The "project area" for said high angle/slant wellbore shall correspond with the existing 320-acre standard gas spacing and proration unit ("GPU") comprising the E/2 of said Section 23, whereby both the subject well and Amoco's Barnes "LS" Well No. 6 (API No. 30-045-11366), located at a standard gas well location 990 feet from the North and East lines (Unit A) of said Section 23, are both to be simultaneously dedicated."

(3) Decretory Paragraph (4) of Division Administrative Order DD-125(H) shall be amended to read in its entirety as follows:

"(4) The applicable drilling window or "producing area" for said high angle/slant wellbore shall include that area within the SE/4 of said Section 23 that is no closer than 790 feet to any quarter section line."

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

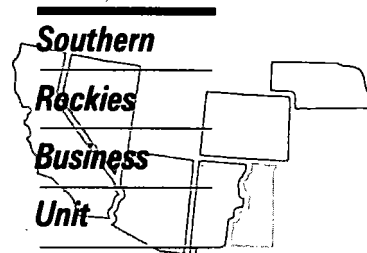
WJL/MES/kv

cc: Oil Conservation Division - Aztec
U. S. Bureau of Land Management - Farmington
File: DD-125(H)



OIL CONSERVATION DIVISION
RECEIVED

'95 DEC 11 AM 8 52



December 6, 1995

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

Notice of Change of Plans

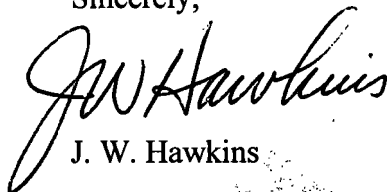
Barnes LS #6A Well - NMOCD Administrative Order DD-125(H)
Scott LS #3 Well - NMOCD Administrative Order DD-112(H)
Blanco Mesaverde Pool
San Juan County, New Mexico

This letter is to notify you of a change in our plans for drilling two high angle/horizontal wells which have previously been approved by your office. Amoco Production Company is planning to drill the two above referenced wells as high angle (45 degree) directional wellbores as shown on the attached wellbore directional plats. The NMOCD orders referenced above approved these two wells as "horizontal" wellbores. This will require a change in the kick-off points and lateral length and angle that is set forth as condition (1) in the above referenced orders. All other conditions set forth in the orders regarding these wells will not be affected. It is our understanding that modifications of this nature are allowed by the division without requiring a new application filing or notice to offset operators.

We are providing information on each well for your files as follows:

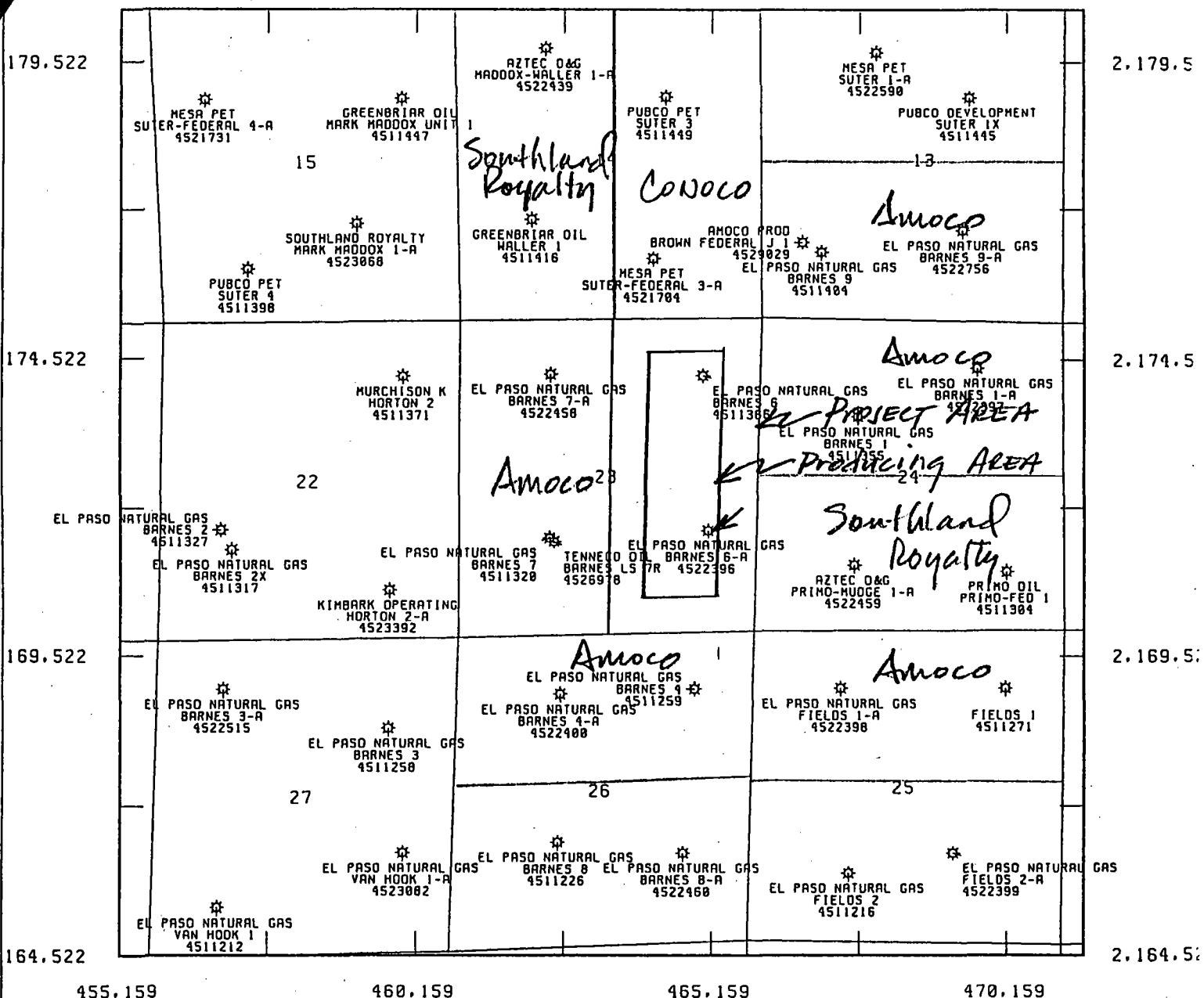
- 1) a plat showing the well location, project area and producing area for the project well and the offset spacing units, their wells and operators;
- 2) a plat showing the directional wellbore plan in both the horizontal and vertical plan view;
- 3) a proposed direction plan for the wellbore.

Sincerely,


J. W. Hawkins

cc: Jack St. John
Gail Jefferson

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



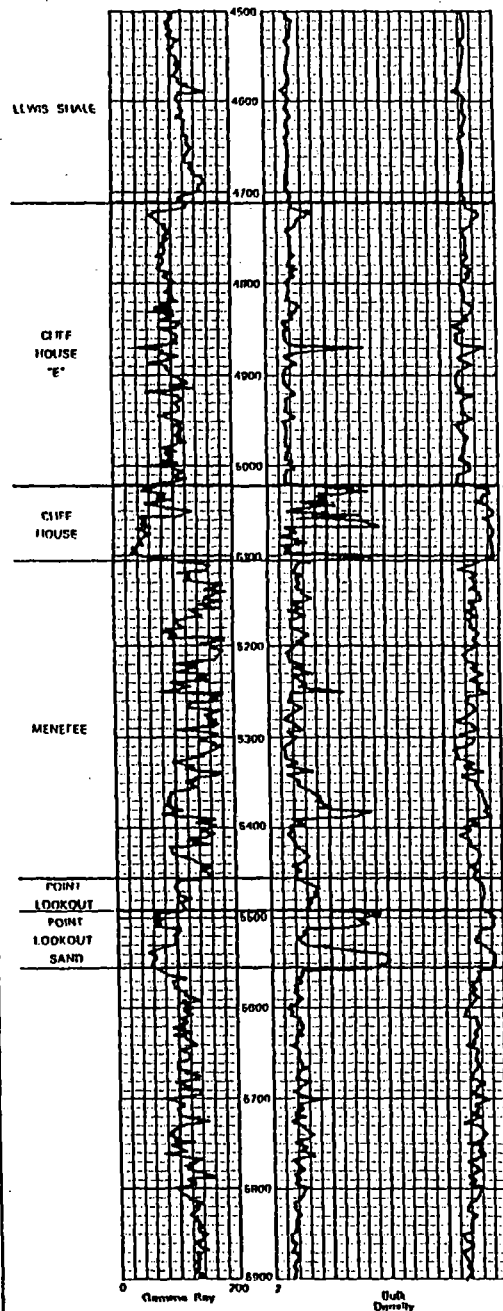
AMOCO E&P SECTOR		
SOUTHERN ROCKIES BUSINESS UNIT		
SAN JUAN BASIN		
BARNES 6A		
T32N-R11W		
1:24000	N. LANDSAT	1-SEP-93

1:24000

STATUTE MILES 0 .5 STATUTE MILES

KILOMETERS 0 .5 1.0 KILOMETERS

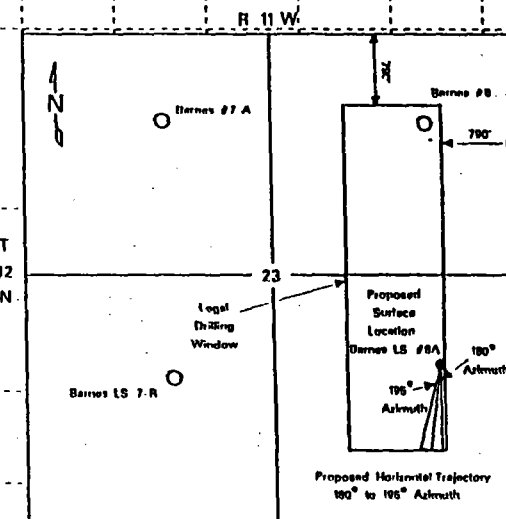
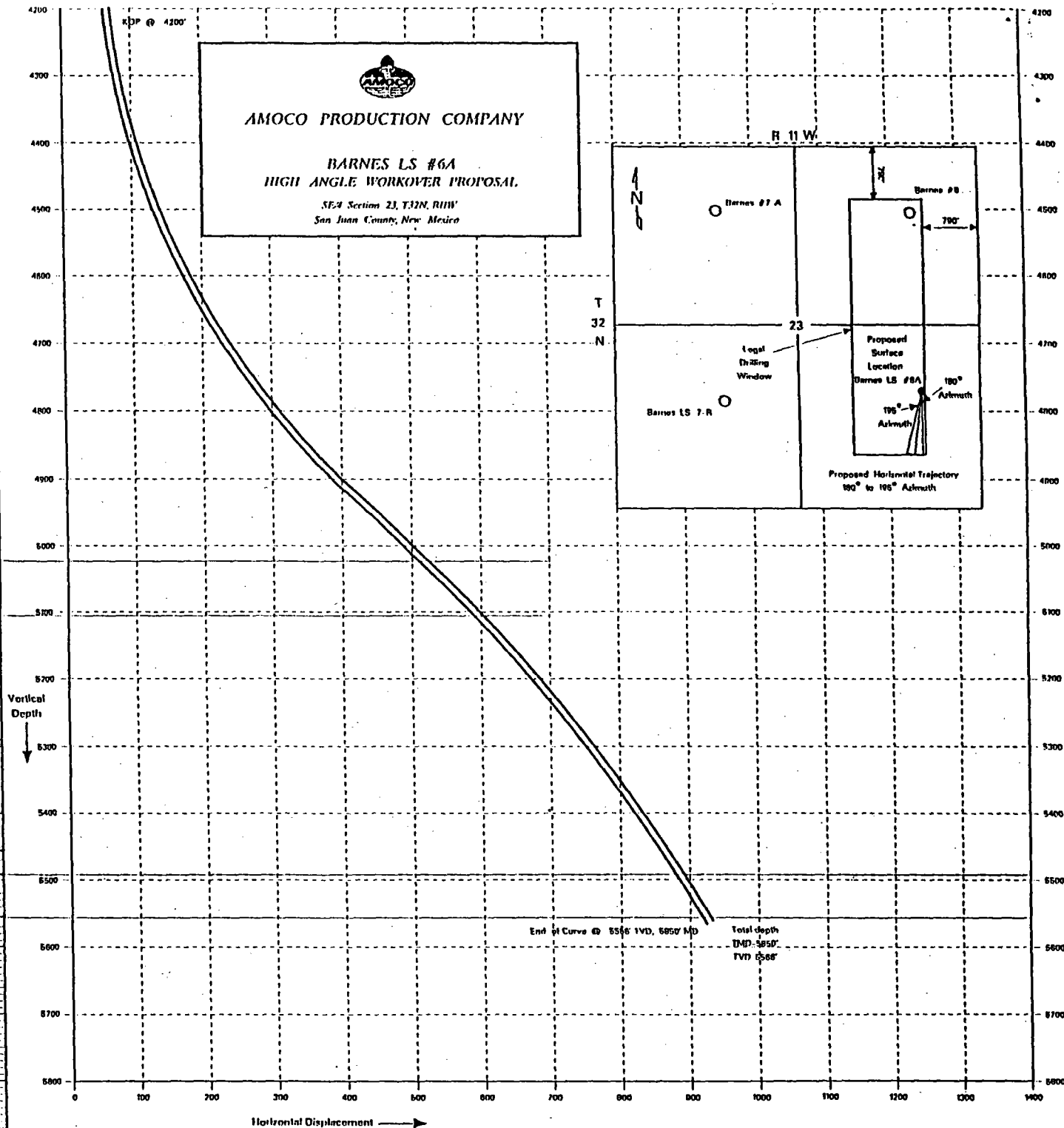
BARNES #6A
SE, 23-32N-11W
KB 6462
Cedar Hill Area



AMOCO PRODUCTION COMPANY

BARNES LS #6A HIGH ANGLE WORKOVER PROPOSAL

SE4 Section 23, T32N, R11W
San Juan County, New Mexico



Borneo L S # 6-A

11/03/95

J

Units are FEET

T I	Meas. Depth	Survey Incl Dir	Depth (TVD)	North -South	East -West	Vert. Section	Closure Dist Dir	Dog Leg
	.00	.00 180.00	.00	.00	.00	.00	0 0	.0
	3375.00	.00 180.00	3375.00	.00	.00	.00	0 0	.0
	3500.00	3.00 180.00	3499.94	-3.27	.00	3.27	3 180	2.4
	3600.00	4.00 180.00	3599.76	-9.38	.00	9.38	9 180	1.0
	3700.00	5.00 180.00	3699.45	-17.22	.00	17.22	17 180	1.0
	3800.00	5.00 180.00	3799.06	-25.94	.00	25.94	26 180	.0
	3900.00	5.00 180.00	3898.68	-34.65	.00	34.65	35 180	.0
	4000.00	5.00 180.00	3998.30	-43.37	.00	43.37	43 180	.0
	4200.00	5.00 180.00	4197.54	-60.80	.00	60.80	61 180	.0
	4300.00	10.00 180.00	4296.66	-73.85	.00	73.85	74 180	5.0
	4400.00	15.00 180.00	4394.25	-95.49	.00	95.49	95 180	5.0
	4500.00	20.00 180.00	4489.60	-125.55	.00	125.55	126 180	5.0
	4600.00	25.00 180.00	4581.95	-163.80	.00	163.80	164 180	5.0
	4700.00	30.00 180.00	4670.63	-209.96	.00	209.96	210 180	5.0
	4800.00	35.00 180.00	4754.94	-263.68	.00	263.68	264 180	5.0
	4900.00	40.00 180.00	4834.25	-324.53	.00	324.53	325 180	5.0
	5000.00	45.00 180.00	4907.95	-392.07	.00	392.07	392 180	5.0
	5100.00	45.00 180.00	4978.66	-462.78	.00	462.78	463 180	.0
	5150.00	45.00 180.00	5014.02	-498.14	.00	498.14	498 180	.0
	5165.00	45.00 180.00	5024.63	-508.74	.00	508.74	509 180	.0
	5175.00	45.00 180.00	5031.70	-515.81	.00	515.81	516 180	.0
	5200.00	45.00 180.00	5049.38	-533.49	.00	533.49	533 180	.0
	5300.00	43.00 180.00	5121.31	-602.95	.00	602.95	603 180	2.0
	5340.00	41.00 180.00	5151.03	-629.72	.00	629.72	630 180	5.0
	5440.00	39.00 180.00	5227.63	-693.99	.00	693.99	694 180	2.0
	5500.00	37.00 180.00	5274.91	-730.93	.00	730.93	731 180	3.3
	5600.00	35.00 180.00	5355.81	-789.71	.00	789.71	790 180	2.0
	5700.00	33.00 180.00	5438.71	-845.62	.00	845.62	846 180	2.0
	5800.00	31.00 180.00	5523.51	-898.61	.00	898.61	899 180	2.0
	5850.00	30.00 180.00	5566.59	-923.99	.00	923.99	924 180	2.0



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

November 14, 1995

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

Attention: J. W. Hawkins

Administrative Order DD-125(H)
High Angle/Horizontal Wellbore

Dear Mr. Hawkins:

Reference is made to Amoco Production Company's application dated October 9, 1995 for authorization to utilize its Barnes "LS" Well No. 6-A (API No. 30-045-22396) to drill multiple horizontal drainholes within the vertical limits of the Blanco-Mesaverde Pool underlying the existing 320-acre standard gas spacing and proration unit ("GPU") comprising the E/2 of Section 23, Township 32 North, Range 11 West, NMPM, San Juan County, New Mexico.

The Division Director Finds That:

- (1) The application has been duly filed under the provisions of Rule 111(D) and (E) of the General Rules and Regulations of the New Mexico Oil Conservation Division ("Division"), revised by Division Order No. R-10388, issued by the Oil Conservation Commission in Case 11,274 on June 13, 1995;
- (2) The Barnes "LS" Well No. 6-A, located at a standard gas well location 1720 feet from the South line and 850 feet from the East line (Unit I) of said Section 23, was originally drilled in 1977 to a depth of 5,952 feet and dually completed in both the Blanco-Pictured Cliffs and Blanco-Mesaverde Pools;
- (3) This well serves as an "infill" Blanco-Mesaverde well to the original Barnes "LS" Well No. 6 (API No. 30-045-11366), drilled and completed in 1954 at a standard gas well location 990 feet from the North and East lines (Unit A) of said Section 23 in the subject 320-acre GPU;

- (4) By Order No. R-8170, as amended, the Division promulgated the "*General Rules For The Prorated Gas Pools of New Mexico/Special Rules and Regulations For The Blanco-Mesaverde Pool*", which includes provisions for 320-acre gas spacing and proration units and well location requirements whereby the initial well drilled on a GPU shall be located be no closer than 790 feet to the outer boundary of the quarter section on which the well is located and not closer than 130 feet to any quarter-quarter section line or subdivision inner boundary and the infill well drilled on an existing GPU shall be in the quarter section not containing a Mesaverde gas well and shall be located with respect to the restrictions as previously described;
- (5) The "project area" for the proposed high angle/horizontal wellbore is to correspond with the subject GPU;
- (6) Multiple high angle/horizontal drainholes from the subject wellbore should provide Amoco a better opportunity to encounter the naturally occurring fracture system in the Mesaverde formation, which should result in a higher production rate and an increased ultimate recovery of gas from this well;
- (7) The applicant/operator proposes to kick-off from vertical at various depths by milling windows in the existing 4-1/2 inch linear, drill out with short radius curves (64 degrees per 100 feet or 90 foot radius); and continue to drill horizontally within the vertical limits of the Blanco-Mesaverde Pool a lateral distance of approximately 500 feet for each;
- (8) The applicable drilling window or "producing area" for said wellbore and drainholes should include that area within the E/2 of said Section 23 that is no closer than 790 feet to the outer boundary of the subject GPU; and,
- (9) It appearing the applicant has satisfied all of the appropriate requirements prescribed in said Rule 111.D and E, the subject application should be approved and the well should be governed by the provisions contained within this order and all other applicable provisions of Division General Rule 111.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Amoco Production Company, is hereby authorized to utilize its Barnes "LS" Well No. 6-A (API No. 30-045-22396), located at a standard gas well location 1720 feet from the South line and 850 feet from the East line (Unit I) of Section 23, Township 32 North, Range 11 West, NMPM, San Juan County, New Mexico, to drill multiple horizontal drainholes within the vertical limits of the Blanco-Mesaverde Pool by kicking-off from vertical

at various depths by milling windows in the existing 4-1/2 inch linear, drill out with short radius curves (64 degrees per 100 feet or 90 foot radius), and continue drilling horizontally a lateral distance of approximately 500 feet for each.

PROVIDED HOWEVER THAT prior to commencing directional drilling operations in said wellbore, the applicant shall establish the location of each kick-off point by means of a directional survey acceptable to the Division.

PROVIDED FURTHER THAT during or upon completion of directional drilling operations, the applicant shall conduct an accurate wellbore survey from the kick-off point to the termination point in each drainhole in order that the subsurface bottomhole locations for each, as well as the drainhole's true depth and course, may be determined.

(2) The applicant shall notify the supervisor of the Aztec district office of the Division of the date and time said wellbore surveys are to be conducted so that they may be witnessed. The applicant shall further provide a copy of said wellbore surveys for each lateral to the Santa Fe and Aztec offices of the Division upon completion.

(3) The "project area" for said horizontal well shall correspond with the existing 320-acre standard gas spacing and proration unit ("GPU") comprising the E/2 of said Section 23, whereby both the subject well and Amoco's Barnes "LS" Well No. 6 (API No. 30-045-11366), located at a standard gas well location 990 feet from the North and East lines (Unit A) of said Section 23, are both to be simultaneously dedicated.

(4) The applicable drilling window or "producing area" for said wellbore and drainholes should include that area within the E/2 of said Section 23 that is no closer than 790 feet to the outer boundary of the subject GPU.

(5) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F and Order No. R-8170, as amended.

(6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depths in addition to measured depths.

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

Administrative Order DD-125(H)
Amoco Production Company
November 14, 1995
Page No. 4

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

WJL/MES/kv

cc: Oil Conservation Division - Aztec
U. S. Bureau of Land Management - Farmington
File: Case 11,274

DD. AMOC. 7

Rec. 10/16/95
Sup. 11/6/95
Released 11/14/95

November 14, 1995

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

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Administrative Order DD-*****^(H)
High Angle/Horizontal Wellbore

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on a GPU shall be located be no closer than 790 feet to the outer boundary of the quarter section on which the well is located and not closer than 130 feet to any quarter-quarter section line or subdivision inner boundary and the infill well drilled on an existing GPU shall be in the quarter section not containing a Mesaverde gas well and shall be located with respect to the restrictions as previously described;

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PROVIDED FURTHER THAT during or upon completion of directional drilling operations, the applicant shall conduct an accurate wellbore survey from the kick-off point to the termination point in each drainhole in order that the subsurface bottomhole locations for each, as well as the drainhole's true depth and course, may be determined.

(2) The applicant shall notify the supervisor of the Aztec district office of the Division of the date and time said wellbore surveys are to be conducted so that they may be witnessed. The applicant shall further provide a copy of said wellbore surveys for each lateral to the Santa Fe and Aztec offices of the Division upon completion.

(3) The "project area" for said horizontal well shall correspond with the existing 320-acre standard gas spacing and proration unit ("GPU") comprising the E/2 of said Section 23, whereby both the subject well and Amoco's Barnes "LS" Well No. 6 (API No. 30-045-11366), located at a standard gas well location 990 feet from the North and East lines (Unit A) of said Section 23, are both to be simultaneously dedicated.

(4) The applicable drilling window or "producing area" for said wellbore and drainholes should include that area within the E/2 of said Section 23 that is no closer than 790 feet to the outer boundary of the subject GPU.

(5) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F and Order No. R-8170, as amended.

(6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depths in addition to measured depths.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

*Administrative Order DD-****(H)*
Amoco Production Company
November 14, 1995
Page No. 4

S E A L

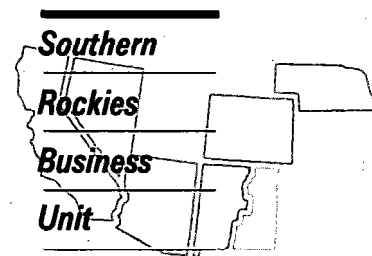
WJL/MES/kv

cc: Oil Conservation Division - Aztec
U. S. Bureau of Land Management - Farmington
File: Case 11,274



OIL CONSERVATION DIVISION
RECEIVED

'95 OCT 16 AM 8 52



October 9, 1995

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

Application to Drill a Directional Well
Rule 111 as Amended by Order No. R-10388
Barnes LS #6A Well
1720' FSL, 850' FEL, Section 23-T32N-R11W
Blanco Mesaverde Pool
San Juan County, New Mexico

Amoco Production Company hereby requests administrative approval to enter the existing wellbore in the Barnes LS #6A Well referenced above and directionally drill the well as a high angle / horizontal well in the Blanco Mesaverde Pool. We are planning to drill two laterals in this wellbore, one each in the Point Lookout and Cliffhouse members of the Mesaverde formation. The well is currently completed as a producing well in the Blanco Mesaverde Pool, however Amoco believes that directionally drilling the well will provide a better opportunity to encounter the naturally occurring fracture system in the Mesaverde formation which will increase the producing rate and ultimate recovery of gas for this well. We are requesting the Project Area for this well to be the Blanco Mesaverde gas proration unit consisting of E/2 Section 23, T32N-R11W with the Producing Area for the well to consist of a rectangle inside the gas proration unit that is not closer than 790' from the outer boundaries of the gas proration unit.

In accordance with Rule 111-D.(2), attached to aid in your review are:

- 1) a plat showing the well location, project area and producing area for the project well and the offset spacing units, their wells and operators;
- 2) a vertically oriented plan view for the project well showing top and bottom of the pool, degree of angle to be built, kickoff points, penetration points and lateral lengths;
- 3) a horizontal plan view for the project well showing the project area, producing area, estimated azimuth and maximum length of the lateral;
- 4) a type log section identifying the top and bottom of the pool.

As notification, a copy of this application will be sent by certified mail return receipt requested to the offset operators shown on the attached list advising them that if they have any objection, it must be filed in writing within twenty (20) days of the date notice was sent.

Sincerely,

J. W. Hawkins

cc: Jack St. John
Gail Jefferson

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

OFFSET OWNERS

Meridian Oil Inc.
PO Box 4289
Farmington NM 87499
Attn: Alan Alexander

Conoco Inc
10 Desda Dr., Ste 100W
Midland, TX 79705-4500
Attn: Jerry Hoover

179.522

2,179.5

174.522

2,174.5

169.522

2,169.5

164.522

2,164.5

455.159

460.159

465.159

470.159



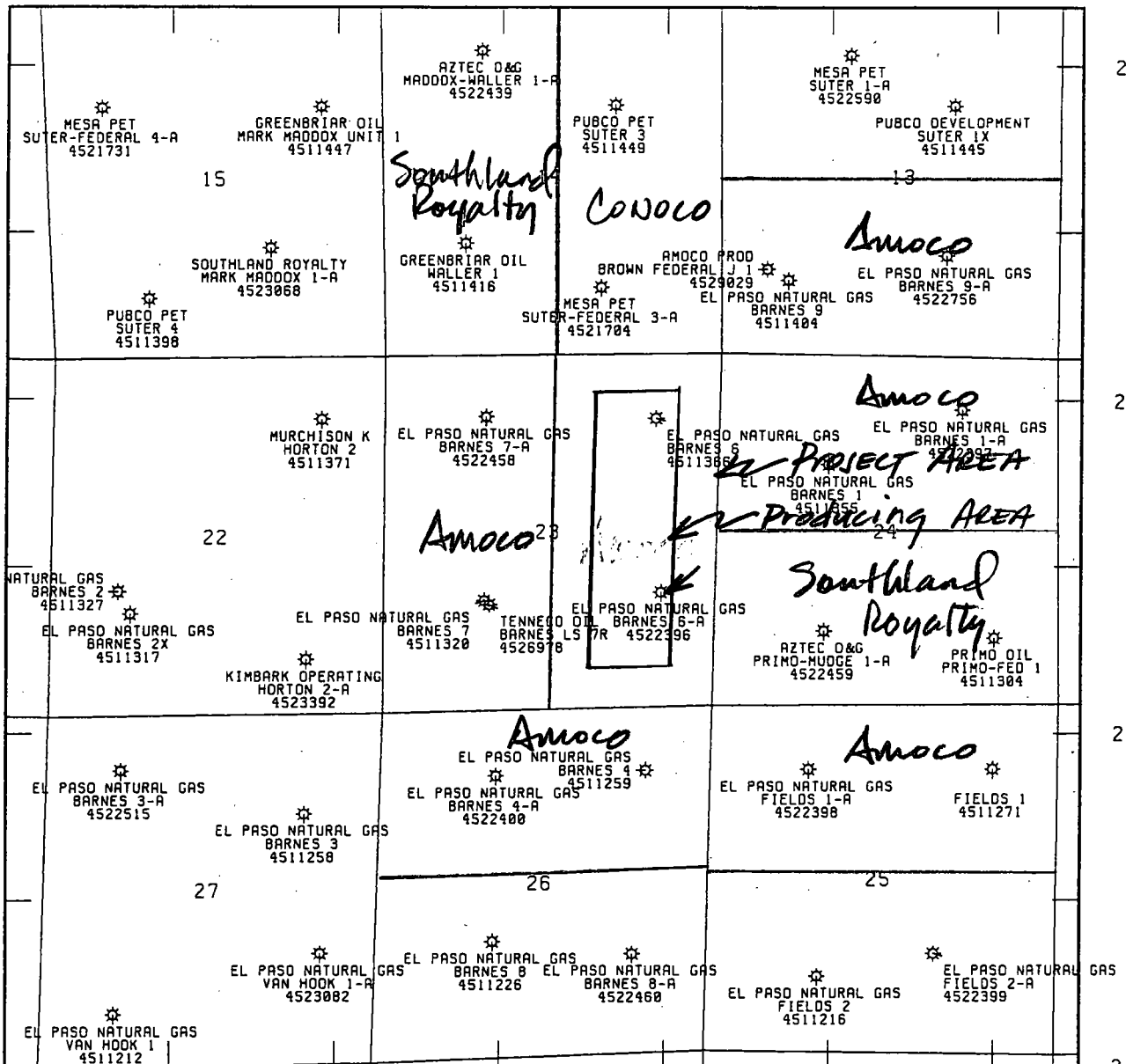
AMOCO E&P SECTOR
SOUTHERN ROCKIES BUSINESS UNIT

SAN JUAN BASIN

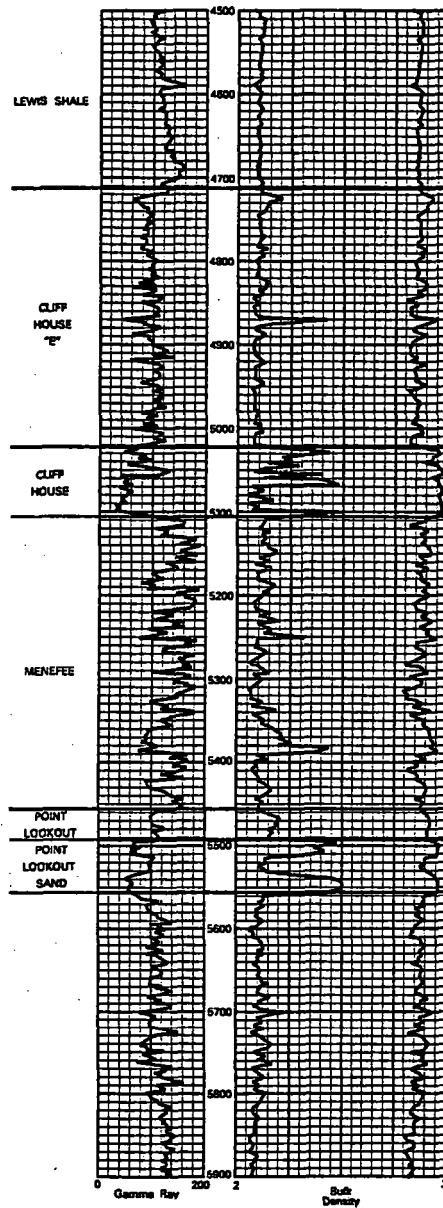
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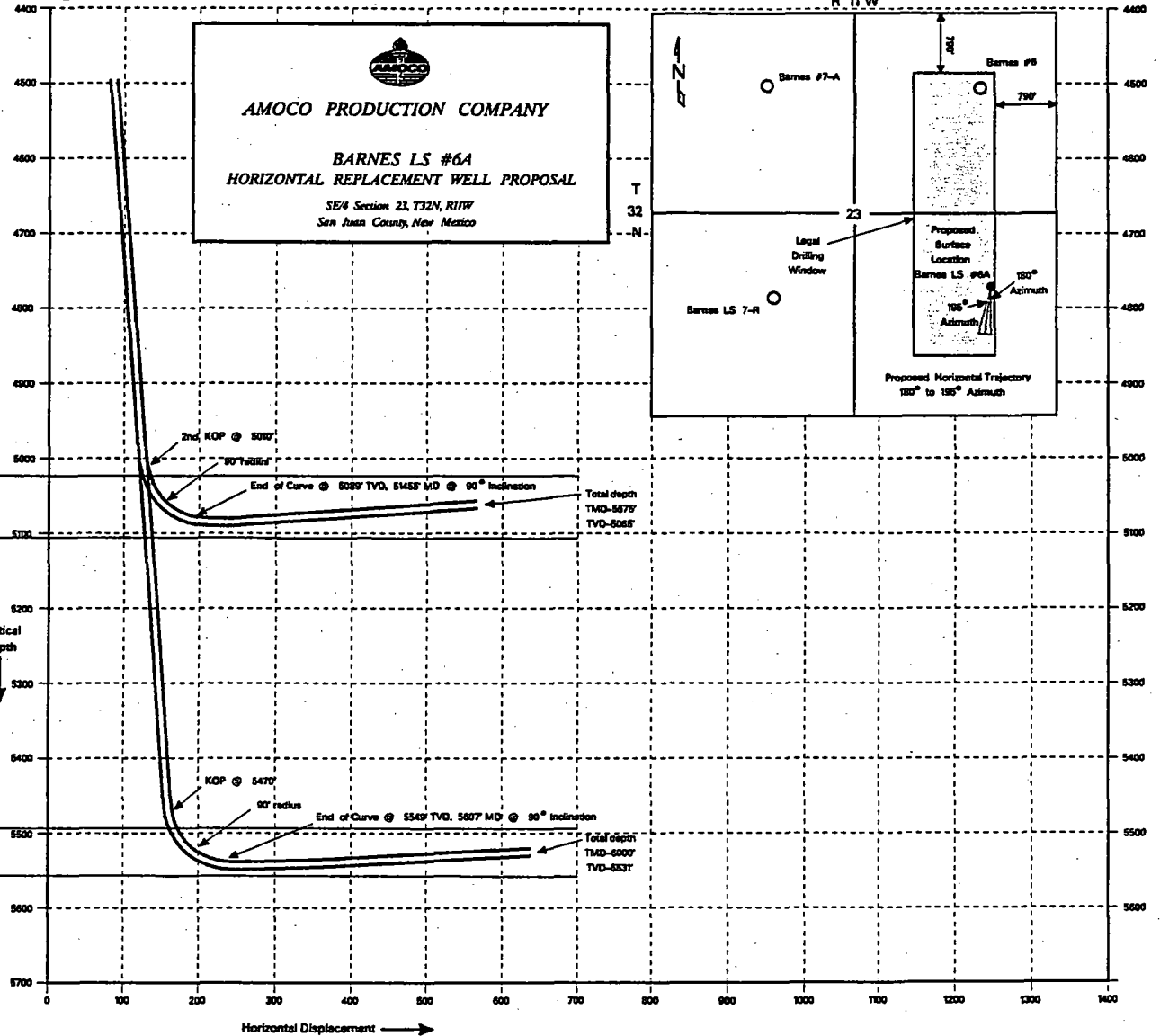
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KILOMETERS 0 0.5 1.0



BARNES #6A
SE, 23-32N-11W
KB 6482
Cedar Hill Area



Sidetrack
@ 3375'



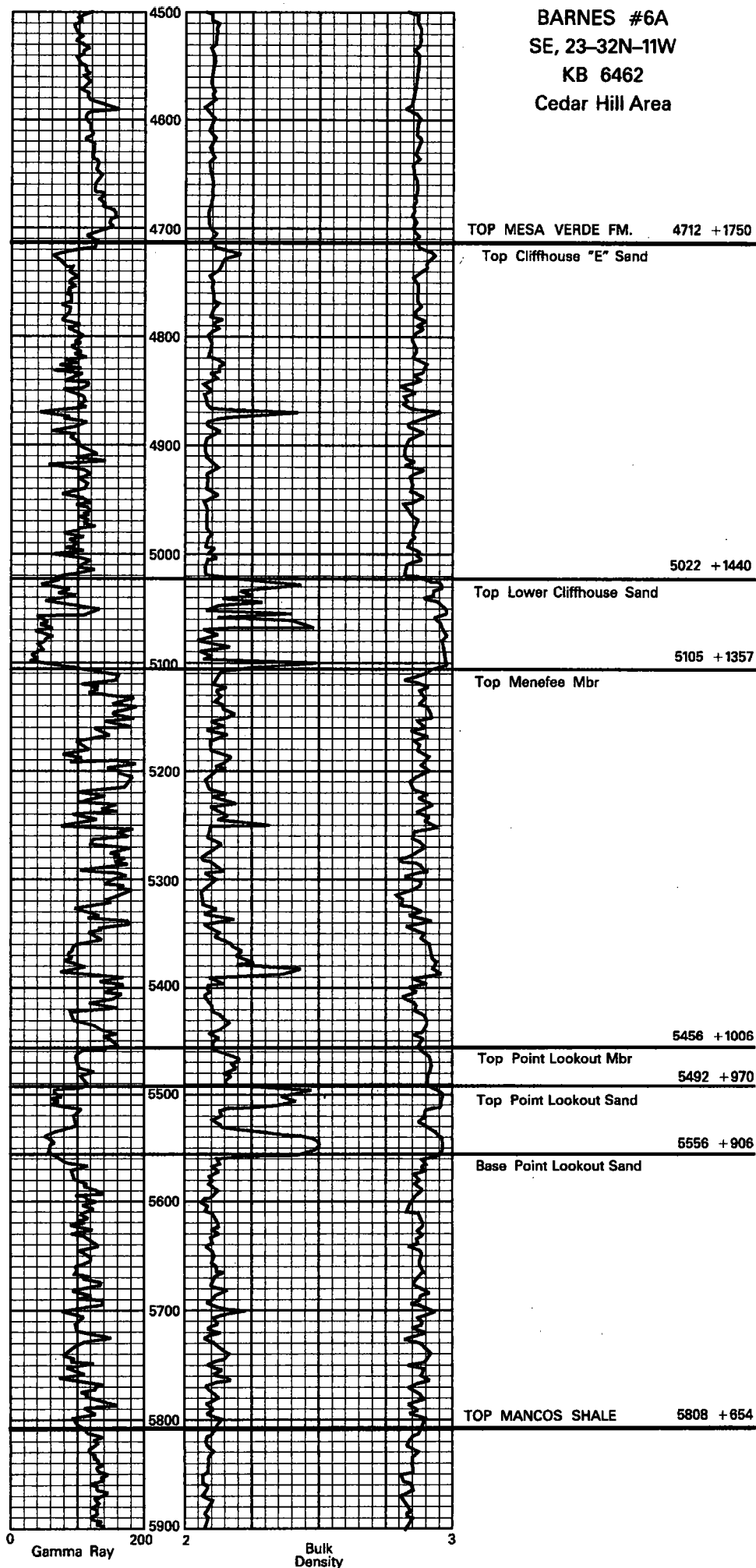
TYPE LOG

BARNES #6A

SE, 23-32N-11W

KB 6462

Cedar Hill Area



CMD :
OG5SECT

ONGARD
INQUIRE LAND BY SECTION

11/14/95 07:55:39
OGOMES -EMDZ
PAGE NO: 1

Sec : 23 Twp : 32N Rng : 11W Section Type : NORMAL

D 40.00 Federal owned	C 40.00 Fee owned A	B 40.00 Fee owned A	A 40.00 Fee owned A
E 40.00 Federal owned A	F 40.00 Federal owned	G 40.00 Federal owned	H 40.00 Federal owned

PF01 HELP
PF07 BKWD

PF02
PF08 FWD

PF03 EXIT
PF09 PRINT

PF04 GoTo
PF10 SDIV

PF05
PF11

PF06
PF12

CMD :
OG5SECT

ONGARD
INQUIRE LAND BY SECTION

11/14/95 07:55:46
OGOMES -EMDZ
PAGE NO: 2

Sec : 23 Twp : 32N Rng : 11W Section Type : NORMAL

L 40.00 Fee owned	K 40.00 Federal owned A A	J 40.00 Federal owned	I 40.00 Federal owned A
M 40.00 Fee owned A	N 40.00 Federal owned	O 40.00 Federal owned	P 40.00 Federal owned

PF01 HELP
PF07 BKWD

PF02
PF08 FWD

PF03 EXIT
PF09 PRINT

PF04 GoTo
PF10 SDIV

PF05
PF11

PF06
PF12

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OIL CONSERVATION DIVISION

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.

Use "APPLICATION FOR PERMIT - " for such proposals

RECEIVED

5. Lease Designation and Serial No.

SF-078039

6. Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Barnes LS 6A

9. API Well No.

3004522396

10. Field and Pool, or Exploratory Area

Blanco PC/Blanco MV

11. County or Parish, State

San Juan New Mexico

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Amoco Production Company

Attention:

Gail M. Jefferson, Rm 1295C

3. Address and Telephone No.

P.O. Box 800, Denver, Colorado 80201

(303) 830-6157

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1720FSL 850FEL Sec. 23 T 32N R 11W Unit O

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

TYPE OF ACTION

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☒ Other Directional Drill

☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Amoco Production Company requests permission to directionally drill the well referenced above per the attached procedures.

If you have any technical questions please contact Brad Bilyeu at (303) 830-4832 or Gail Jefferson for any administrative concerns.

14. I hereby certify that the foregoing is true and correct

Signed

Gail M. Jefferson

Title

Sr. Admin. Staff Asst.

Date

10-16-1995

(This space for Federal or State office use)

Approved by

Title

Conditions of approval, if any:

APPROVED

OCT 19 1995

DISTRICT MANAGER

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instructions on Reverse Side

October 03, 1995

Barnes LS #6-A

Amoco Rotatable Dual Short Radius Horizontal
San Juan County, New Mexico

DRILLING PROCEDURES

1. Move in and rig up Aztec Well Service Rig #124 complete with two double-gate ram preventers, dual 6 inch blooie lines, air-package and associated safety equipment.
2. Nipple down tree, install casing spool to allow hanging a full string of 4.500" casing and nipple up blowout prevention equipment. Test to 250 and 1,000 psi.
3. Pull and lay down rod string. Pull and inspect both tubing strings. Dual string (2.375" at 3,271' with a Baker Model "D" anchor on bottom and 2.375" at 5,540' stung through a Baker Model "F" packer at 3,300'). Pick up a packer mill/plucker on a 3.500" drill string and remove the Model "F" packer. Set a 4.500" retainer at 4,400' and squeeze the Mesaverde with 150 sacks of 50:50 Pozmix containing 2 % gel, 2 % CaCl, 10 #/sx gilsonite 0.50 #/sx flocele mixed at 13.1 ppg (yield of 1.50 cubic feet/sack). Set second retainer at 3,100' in the 7.000" casing and squeeze the Pictured Cliff perforations from 3,204-3,244' with 150 sacks of the same mixture. Obtain a 500 psi test on the squeeze-if necessary pump an additional 100 sacks. WOC. Pick up a 6.250" tooth bit and clean out to the top of the 4.500" liner at 3,396'.
4. Set an oriented whipstock at 3,375', cut window at an approximate 180 degrees. Air drill 6.250" hole to +/-5,400' building and holding angle to 4-5 degrees with an azimuth of 160-180 degrees with the bottom hole assembly. Run single shot surveys while drilling and at 5,450 run a multishot to confirm bottom hole location. (If the direction and angle can not be maintained, pick up a 4.750" Sperry A/D motor and proceed to kick-off point.) KOP at 5,464' TVD.) At KOP, the bottom hole location should be approximately 150' to the South of the surface location.
5. Pick up the Amoco short radius rotational tools, complete with off-center 4.500" bit and build an approximate 90' radius curve into the lower portion of the Point Lookout member of the Mesaverde. Orient this tool to an azimuth of 175 degrees. At 90 degrees of angle and 5,549' TVD, the bottom hole location should be approximately 5,607' MD and 245' South of the surface location. Singleshot survey on wireline using fiberglass rods as sinkers per the research department's recommendation.
6. Drill lateral approximately 400' South holding a 93-94 degree build angle. Make every effort to maintain this build to allow gravity drainage towards the vertical hole. At a MD of 6,000', the TVD should be 5,531' and approximately 640' South of the surface location. Bottom hole location of this lateral should be approximately 1,080' FSL and 850' FEL. After reaching TVD, pick up a pilot reamer ream the 4.500" hole to 6.125" from KOP to 5,530' TVD (top of Point Lookout-- +/- 60')

7. Lay down the drill string and run 4.500" 11.6 #/ft N-80 LT & C casing to 5,560' MD; into top of the Point Lookout. Utilizing CTC International's ECP's (external casing packer) and a Howco hydraulically set stage tool on bottom to prevent cement from contacting the Point Lookout in the open hole. Cement will be run back into the 7.000" casing from the top of the ECP. The cement shall be 50:50 Pozmix containing 2% gel, 0.25 #/sx flocele, 0.4% Halad 344 and 6 % salt mixed and pumped at 13.5 ppg with a yield of 1.40 feet cubed per sack. Use 3-4 joints of Hydril 521 casing on bottom.
8. Set an oriented retrievable whipstock at 180 degrees in the 4.500" casing at 5,005' TVD, pick up a 2.375" drill string and cut window in the 4.500" casing. Run the smaller Amoco rotatable short radius tools and cut a 90' curve into the Cliff House. At the bottom of the curve, TVD should be 5,090', TMD at 5,145'. Drill laterally at 93 degrees angle to the South for approximately 450'. At Total Depth, the TVD should be +/- 5,067'. Bottom hole location should be 1,180' FSL and 850' FEL. Retrieve whipstock
9. Pick up a 3.750" bit on 2.375" drill string and cleanout to the shoe. Lay down drill string and pick up 2.375" tubing. Use several joints of "wedge thread" tubing on bottom. Complete as required and if well is capable of flowing without artificial lift, run 2.375" tubing to the deepest TVD. Use a mule shoe on bottom, one joint of tubing, a seating nipple, the remainder of the special tubing, a second seating nipple and EUE tubing to surface. If the well requires artificial lift, apply the jet pump technology to pump from the horizontal.



brad
10/07/95 12:08 PM

ENGINEERING CHART

FILE

APP'D

DATE 10/2/92

BY

SUBJECT

Barnes LS 6A

9 5/8", 32.3 #/ft
K-55 CSG

CSG SA 215'

PCO

39 x 3/4" rods

89 x 5/8" rods

2" x 1 1/2" x 16' pump

2 3/8", 10.5 #/ft TBG

Perfs : 3204' - 44'

Baker model D Anchor

Baker model F PKR

7", 20 #/ft, K-55

CSG

TOC = 2500' (+s)

ANCHOR SA 3271'

TBG LA 3271'

PKR SA 3300'

LNR TOP @ 3396'

CSG SA 3566'

Perfs : 4724' - 40'

4876' - 84'

5026' - 5106'

5498' - 5750'

TOC = ?

2 3/8", 4.7 #/ft, J-55 TBG

4 1/2", 10.5 #/ft, K-55 LNR

TBG LA 5340'

LNR SA 5952'

TD - 5957' PGTD - 5935'

Barnes L S # 6

Point Lookout

10/07/95

Units are FEET

T I	Meas. Depth	Survey Incl Dir	Depth (TVD)	North -South	East -West	Vert. Section	Closure Dist Dir	Dog Leg
	.00	.00 180.00	.00	.00	.00	.00	0 0	.0
	3375.00	.00 180.00	3375.00	.00	.00	.00	0 0	.0
	3500.00	4.50 180.00	3499.87	-4.91	.00	4.91	5 180	3.6
	4000.00	4.00 180.00	3998.50	-41.96	.00	41.96	42 180	.1
	4500.00	5.00 180.00	4496.95	-81.19	.00	81.19	81 180	.2
	5000.00	4.00 180.00	4995.40	-120.42	.00	120.42	120 180	.2
	5470.00	4.50 180.00	5464.11	-155.25	.00	155.25	155 180	.1
	5490.00	16.00 180.00	5483.75	-158.80	.00	158.80	159 180	57.5
	5515.00	32.00 180.00	5506.52	-168.94	.00	168.94	169 180	64.0
	5540.00	48.00 180.00	5525.61	-184.96	.00	184.96	185 180	64.0
	5565.00	64.00 180.00	5539.54	-205.61	.00	205.61	206 180	64.0
	5590.00	80.00 180.00	5547.24	-229.31	.00	229.31	229 180	64.0
	5607.00	90.00 180.00	5548.72	-246.23	.00	246.23	246 180	58.8
	5700.00	93.00 180.00	5546.29	-339.18	.00	339.18	339 180	3.2
	5800.00	93.00 180.00	5541.05	-439.05	.00	439.05	439 180	.0
	5900.00	93.00 180.00	5535.82	-538.91	.00	538.91	539 180	.0
	6000.00	93.00 180.00	5530.59	-638.77	.00	638.77	639 180	.0

Jarves L S 6-H
Cliff House
10/07/95

Units are FEET

T I	Meas. Depth	Survey		Depth (TVD)	North -South	East -West	Vert. Section	Closure		Dog Leg
		Incl	Dir					Dist	Dir	
	.00	.00	180.00	.00	.00	.00	.00	0	0	.0
	3375.00	.00	180.00	3375.00	.00	.00	.00	0	0	.0
	3500.00	4.50	180.00	3499.87	-4.91	.00	4.91	5	180	3.6
	4000.00	4.00	180.00	3998.50	-41.96	.00	41.96	42	180	.1
	4500.00	5.00	180.00	4496.95	-81.19	.00	81.19	81	180	.2
	5010.00	4.00	180.00	5005.37	-121.20	.00	121.20	121	180	.2
	5030.00	16.00	180.00	5025.03	-124.67	.00	124.67	125	180	60.0
	5055.00	32.00	180.00	5047.79	-134.81	.00	134.81	135	180	64.0
	5080.00	48.00	180.00	5066.88	-150.82	.00	150.82	151	180	64.0
	5105.00	64.00	180.00	5080.82	-171.48	.00	171.48	171	180	64.0
	5130.00	80.00	180.00	5088.52	-195.18	.00	195.18	195	180	64.0
	5145.00	90.00	180.00	5089.82	-210.10	.00	210.10	210	180	66.7
	5200.00	94.00	180.00	5087.90	-265.06	.00	265.06	265	180	7.3
	5300.00	94.00	180.00	5080.93	-364.82	.00	364.82	365	180	.0
	5400.00	94.00	180.00	5073.95	-464.57	.00	464.57	465	180	.0
	5500.00	94.00	180.00	5066.98	-564.33	.00	564.33	564	180	.0