



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

July 23, 1997

Amoco Production Company
San Juan Business Unit
P. O. Box 800
Denver, Colorado 80201
Attention: Pamela Staley

Administrative Order DD-122-A

Dear Ms. Staley:

Reference is made to Amoco Production Company's application dated June 5, 1997 for authorization to recomplete the existing Schwerdtfeger "LS" Well No. 2-A (API No. 30-045-22425) by side tracking off of the vertical portion of the wellbore and drill a high angle slant hole to a predetermined bottomhole location in order to further develop the Blanco-Mesaverde Pool underlying its existing 314.53-acre standard gas spacing and proration unit ("GPU") comprising Lots 1 through 6 and the W/2 NW/4 (N/2 equivalent) of Section 27, Township 31 North, Range 9 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 11274 on June 13, 1995;
- (2) 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 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;
- (3) The Schwerdtfeger "LS" Well No. 2-A, located at a standard gas well location for said 314.53-acre GPU 1557 feet from the North line and 1050 feet from the West line (Unit E) of said Section 27, was originally drilled and completed in 1977 as an infill well to the Schwerdtfeger "LS" Well No. 2 (API No. 30-045-10343), located at a standard gas well location 1750 feet from the North line and 1650 feet from the East line (Lot 5/Unit G) of said Section 27;

- (4) Within this 314.53-acre GPU, or "project area," Amoco is also producing Blanco-Mesaverde gas from its Schwerdtfeger Com Well No. 1-E (API No. 30-045-24278), located at a standard gas well location 1700 feet from the North line and 1765 feet from the West line (Lot 4/Unit F) of said Section 27;
- (5) A high angle slant hole drilled off of the existing vertical wellbore in the Schwerdtfeger "LS" Well No. 2-A 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 well;
- (6) The applicant/operator proposes to kick-off from vertical at a depth of approximately 4,900 feet by milling a window in the existing 4 ½-inch liner, drill in a northwesterly direction, build to an angle of approximately 44 degrees in order to bottom back into the Blanco-Mesaverde Pool, with total horizontal displacement of said wellbore to be approximately 300 feet;
- (7) The applicable drilling window or "producing area" for said wellbore should include that area within the NW/4 equivalent of said Section 27 that is no closer than 790 feet to any quarter section line; and,
- (8) 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 recomplete its existing Schwerdtfeger "LS" Well No. 2-A (API No. 30-045-22425), located at a standard infill gas well location 1557 feet from the North line and 1050 feet from the West line (Unit E) of Section 27, Township 31 North, Range 9 West, NMPM, San Juan County, New Mexico, by milling a window in the existing 4 ½-inch liner at a depth of approximately 4,900 feet, kick-off from vertical in a northwesterly direction, build to an angle of approximately 44 degrees in order to bottom back into the Blanco-Mesaverde Pool (total horizontal displacement of said wellbore to be approximately 300 feet) within a drilling window or "producing area" comprising the NW/4 equivalent of said Section 27 that is no closer than 790 feet to any quarter section line.

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) 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 to the Santa Fe and Aztec offices of the Division upon completion.

(3) Blanco-Mesaverde gas production from the existing Schwerdtfeger "LS" Well No. 2 (API No. 30-045-10343), located at a standard gas well location 1750 feet from the North line and 1650 feet from the East line (Lot 5/Unit G) of said Section 27, the Schwerdtfeger Com Well No. 1-E (API No. 30-045-24278), located at a standard gas well location 1700 feet from the North line and 1765 feet from the West line (Lot 4/Unit F) of said Section 27, and the Schwerdtfeger "LS" Well No. 2-A, as described above, shall be attributed to the existing 314.53-acre standard gas spacing and proration unit ("GPU") comprising Lots 1 through 6 and the W/2 NW/4 (N/2 equivalent) of Section 27.

(4) Said wells and subject 314.53-acre GPU will be subject to all existing rules, regulations, policies, and procedures applicable to prorated gas pools in Northwest New Mexico.

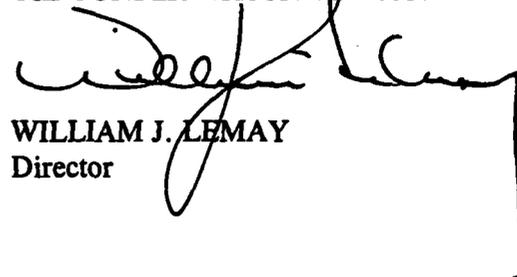
(5) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F and Order No. R-8170, as amended.

(6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth 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

SEAL

WJL/MES/kv

cc: Oil Conservation Division - Aztec
U. S. Bureau of Land Management - Farmington
File: DD-122(H)



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

October 16, 1995

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

Attention: J. W. Hawkins

Administrative Order DD-122(H)
High Angle/Horizontal Wellbore

Dear Mr. Hawkins:

Reference is made to Amoco Production Company's application dated September 15, 1995 for authorization to recomplete its existing Schwerdtfeger "LS" Well No. 2 (API No. 30-045-10343) by side tracking off of the vertical wellbore and drill horizontally in order to further develop the Blanco-Mesaverde Pool underlying its existing 314.53-acre standard gas spacing and proration unit ("GPU") comprising Lots 1 through 6 and the W/2 NW/4 (N/2 equivalent) of Section 27, Township 31 North, Range 9 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 Schwerdtfeger "LS" Well No. 2, located at a standard gas well location 1750 feet from the North line and 1650 feet from the East line (Lot 5/Unit G) of said Section 27, was originally drilled and completed in 1952 as an initial Blanco-Mesaverde gas well, and was assigned the above-described 314.53-acre GPU;
- (3) 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;

- (4) The "project area" for the proposed high angle/horizontal wellbore is to correspond with the subject GPU;
- (5) Within this GPU, or "project area", Amoco is also producing Blanco-Mesaverde gas from its Schwerdtfeger "LS" Well No. 2-A (API No. 30-045-22425), located at a standard infill gas well location 1557 feet from the North line and 1050 feet from the West line (Unit E) of said Section 27;
- (6) A high angle/horizontal 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 a depth of approximately 4,884 feet by milling a window in the existing production casing, drill in an easterly direction with a short radius curve (64 degrees per 100 feet or 90 foot radius), and drill horizontally within the Mesaverde formation a lateral distance of approximately 400 feet;
- (8) The applicable drilling window or "producing area" for said wellbore should include that area within the NE/4 equivalent of said Section 27 that is no closer than 790 feet to the quarter section line; 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 recomplete its existing Schwerdtfeger "LS" Well No. 2, located at a standard gas well location 1750 feet from the North line and 1650 feet from the East line (Lot 5/Unit G) of Section 27, Township 31 North, Range 9 West, NMPM, San Juan County, New Mexico by milling a window in the existing production casing at a depth of approximately 4,884 feet, kick-off from vertical in an easterly direction with a short radius curve (64 degrees per 100 feet or 90 foot radius), and continue drilling horizontally within the Mesaverde formation a lateral distance of approximately 400 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) 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 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 314.53-acre standard gas spacing and proration unit ("GPU") comprising Lots 1 through 6 and the W/2 NW/4 (N/2 equivalent) of said Section 27, whereby both the subject well and Amoco's Schwerdtfeger "LS" Well No. 2-A (API No. 30-045-22425), located at a standard infill gas well location 1557 feet from the North line and 1050 feet from the West line (Unit E) of said Section 27, are both to be simultaneously dedicated.

(4) The drilling window or "producing area" for said wellbore shall include that area within the NE/4 equivalent of said Section 27 that is no closer than 790 feet to the quarter section line.

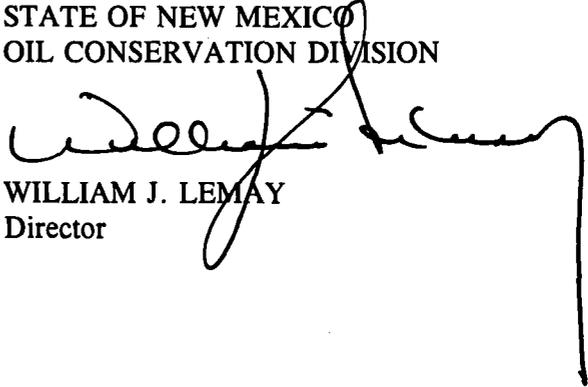
(5) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F and Order No. R-8170, as amended.

(6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth 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

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, 3

Rec. 9/22/95
Susp: 10/12/95
Released: 10/13/95

October 13, 1995

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

Attention: J. W. Hawkins

122

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

Dear Mr. Hawkins:

Reference is made to Amoco Production Company's application dated September 15, 1995 for authorization to recomplete its existing Schwerdtfeger "LS" Well No. 2 (API No. 30-045-10343) by side tracking off of the vertical wellbore and drill horizontally in order to further develop the Blanco-Mesaverde Pool underlying its existing 314.53-acre standard gas spacing and proration unit ("GPU") comprising Lots 1 through 6 and the W/2 NW/4 (N/2 equivalent) of Section 27, Township 31 North, Range 9 West, NMPM, San Juan County, New Mexico.

The Division Director Finds That:

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- (2) The Schwerdtfeger "LS" Well No. 2, located at a standard gas well location 1750 feet from the North line and 1650 feet from the East line (Lot 5/Unit G) of said Section 27, was originally drilled and completed in 1952 as an initial Blanco-Mesaverde gas well, and was assigned the above-described 314.53-acre GPU;
- (3) 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;

- (4) The "project area" for the proposed high angle/horizontal wellbore is to correspond with the subject GPU;
- (5) Within this GPU, or "project area", Amoco is also producing Blanco-Mesaverde gas from its Schwerdtfeger "LS" Well No. 2-A (API No. 30-045-22425), located at a standard infill gas well location 1557 feet from the North line and 1050 feet from the West line (Unit E) of said Section 27;
- (6) A high angle/horizontal 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 a depth of approximately 4,884 feet by milling a window in the existing production casing, drill in an easterly direction with a short radius curve (64 degrees per 100 feet or 90 foot radius), and drill horizontally within the Mesaverde formation a lateral distance of approximately 400 feet;
- (8) The applicable drilling window or "producing area" for said wellbore should include that area within the NE/4 equivalent of said Section 27 that is no closer than 790 feet to the quarter section line; 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 recomplete its existing Schwerdtfeger "LS" Well No. 2, located at a standard gas well location 1750 feet from the North line and 1650 feet from the East line (Lot 5/Unit G) of Section 27, Township 31 North, Range 9 West, NMPM, San Juan County, New Mexico by milling a window in the existing production casing at a depth of approximately 4,884 feet, kick-off from vertical in an easterly direction with a short radius curve (64 degrees per 100 feet or 90 foot radius), and continue drilling horizontally within the Mesaverde formation a lateral distance of approximately 400 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) 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 to the Santa Fe and Aztec offices of the Division upon completion.

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(4) The drilling window or "producing area" for said wellbore shall include that area within the NE/4 equivalent of said Section 27 that is no closer than 790 feet to the quarter section line.

(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 depth 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

S E A L

*Administrative Order DD-****(H)*

Amoco Production Company

October 13, 1995

Page No. 4

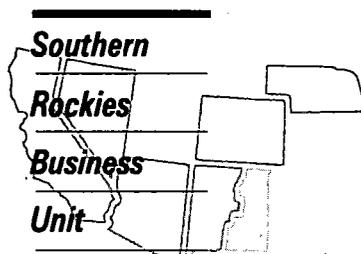
WJL/MES/kv

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



OIL CONSERVATION DIVISION
RECEIVED

95 SE# 22 AM 8 52



September 15, 1995

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

1st

**Application to Drill a Directional Well
Rule 111 as Amended by Order No. R-10388**

Schwerdtfeger LS #2 Well

1750' FNL, 1650' FEL, Section 27-T31N-R9W

Blanco Mesaverde Pool

San Juan County, New Mexico

Amoco Production Company hereby requests administrative approval to enter the existing wellbore in the Schwerdtfeger LS #2 well referenced above and directionally drill the well as a high angle / horizontal well in the Blanco Mesaverde Pool. 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 N/2 Section 27, T31N-R9W 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 point, penetration point and lateral length;
- 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,

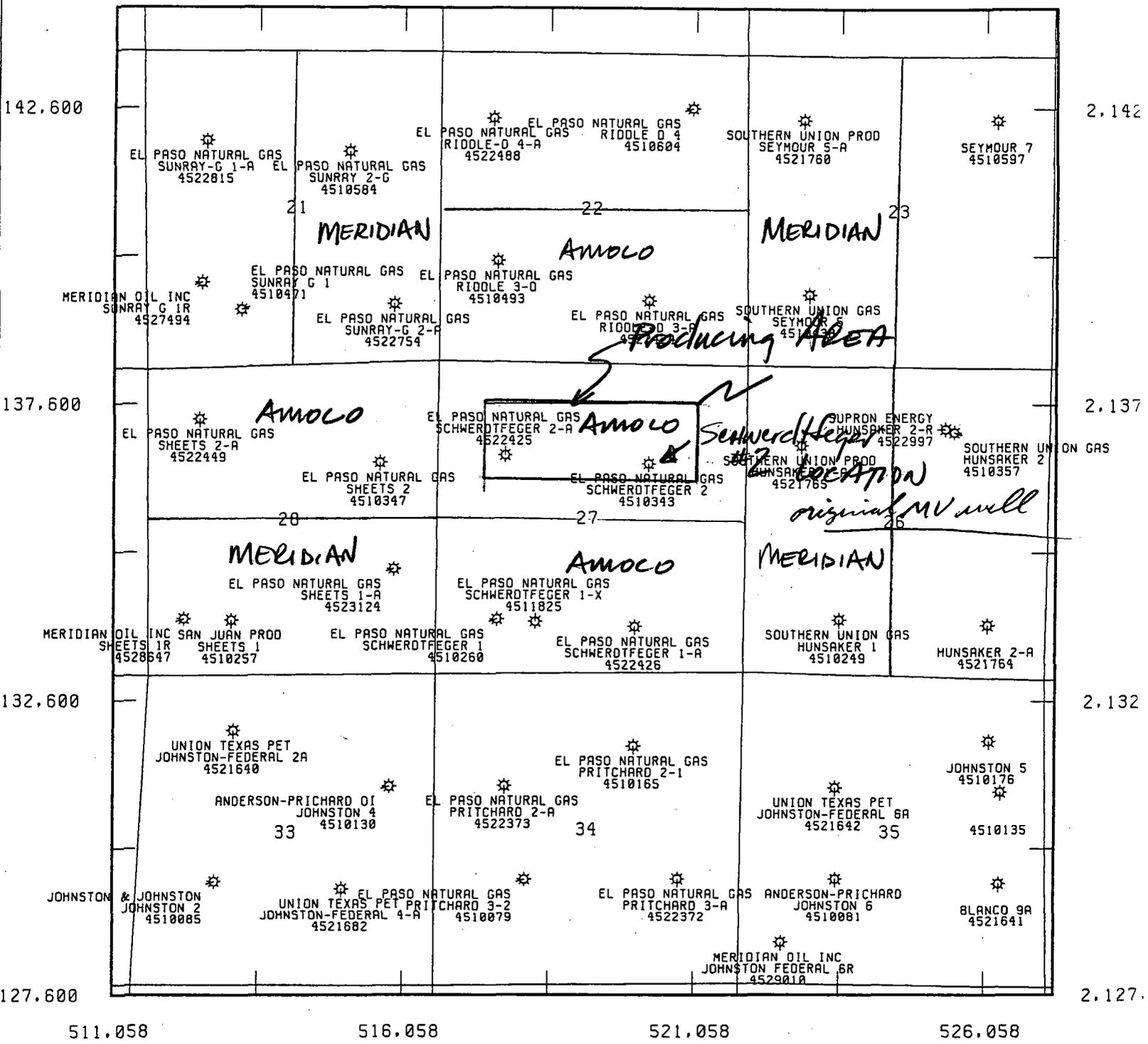
J. W. Hawkins
J. W. Hawkins

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



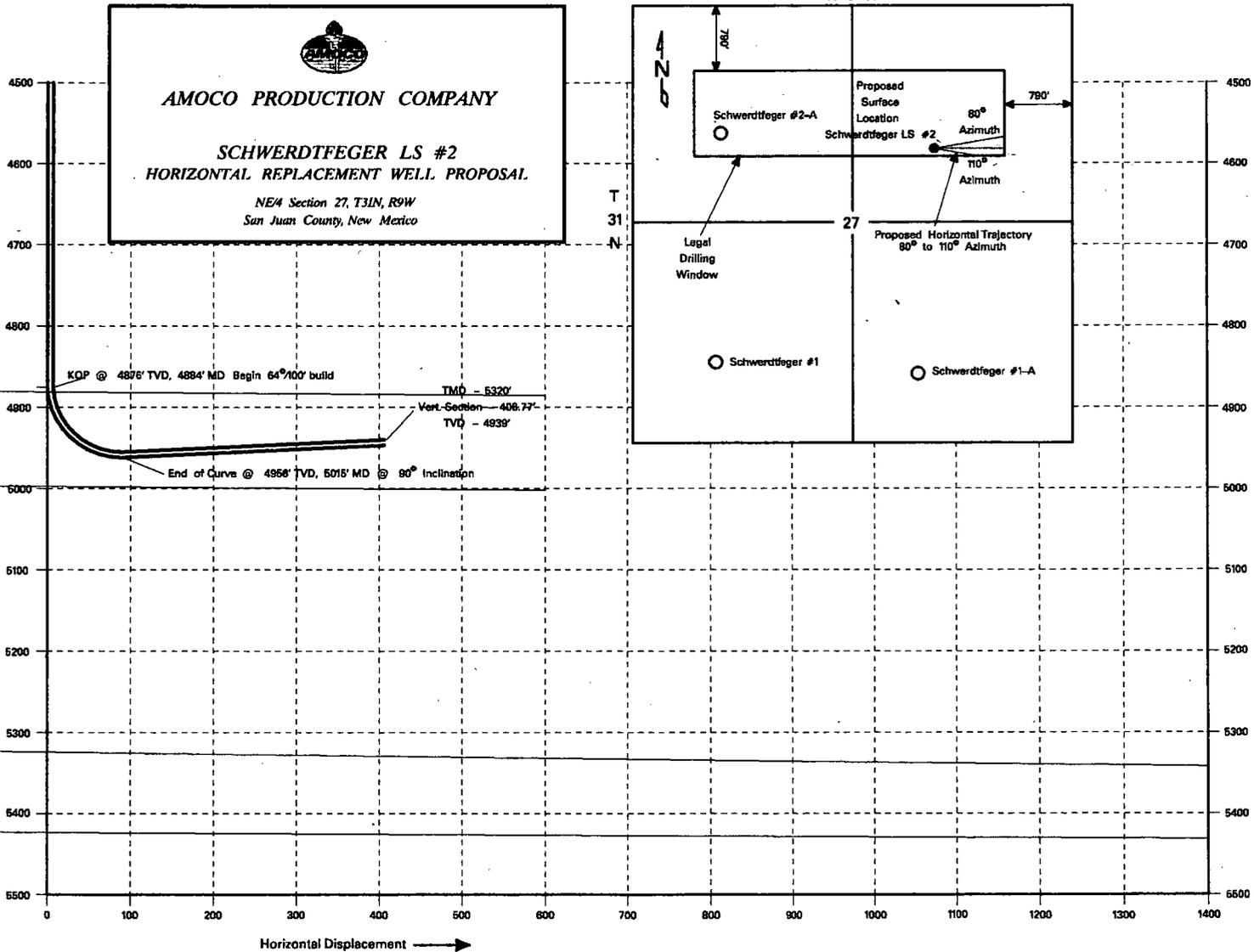
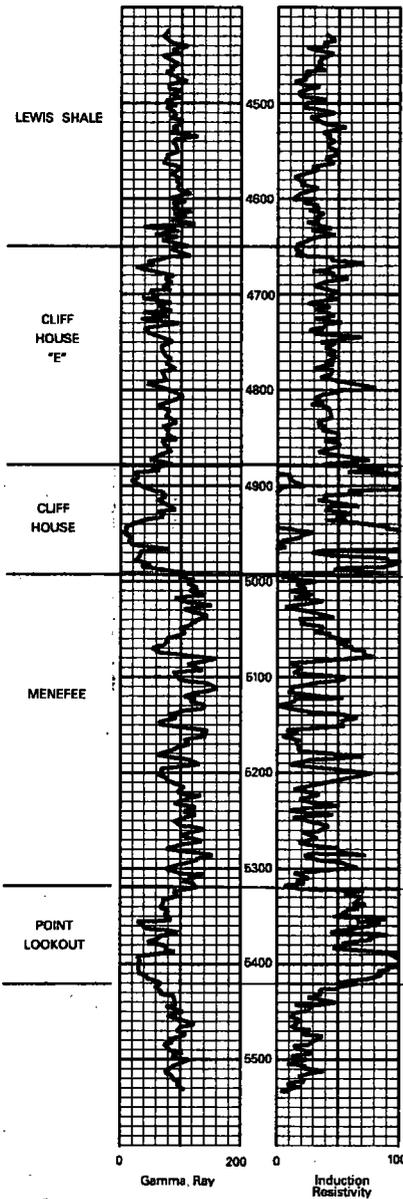
1:24000

STATUTE MILES 0 .5 1.0

KILOMETERS 0 .5 1.0

AMOCO E&P SECTOR		
SOUTHERN ROCKIES BUSINESS UNIT		
SAN JUAN BASIN		
T31N-R9W		
1:24000	K. LAMBERT	1-SEP-85

Typical M.V. Log
T31N, R9W
San Juan County, New Mexico



Sec : 27 Twp : 31N Rng : 09W Section Type : NORMAL

D 40.00 Fee owned	3 39.06 Federal owned	2 39.03 Federal owned	1 38.99 Federal owned
E 40.00 Federal owned	4 39.18 Federal owned	5 39.15 Federal owned	6 39.12 Federal owned
A	A	A A	

PF01 HELP
PF07 BKWD

PF02
PF08 FWD

PF03 EXIT
PF09 PRINT

PF04 GoTo
PF10 SDIV

PF05
PF11

PF06
PF12

80.0

78.24

78.18

1
78.11
78.18
156.29
78.24
234.53
80
314.53

Sec : 27 Twp : 31N Rng : 09W Section Type : NORMAL

L 40.00 Federal owned	K 40.00 Federal owned	J 40.00 Federal owned	I 40.00 Federal owned
7 39.45 Federal owned A A	N 40.00 Federal owned A	O 40.00 Federal owned A A	P 40.00 Federal owned

PF01 HELP
PF07 BKWD

PF02
PF08 FWD

PF03 EXIT
PF09 PRINT

PF04 GoTo
PF10 SDIV

PF05
PF11

PF06
PF12

CMD :
OG6IWCM

ONGARD
INQUIRE WELL COMPLETIONS

10/13/95 15:14:15
OGOMES -EMG5

API Well No : 30 45 10343 Eff Date : 01-01-1900 WC Status : A
Pool Idn : 72319 BLANCO-MESAVERDE (G)
OGRID Idn : 778 AMOCO PRODUCTION CO
Prop Idn : 1032 SCHWERDTFEGER LS

Well No : 002
GL Elevation: 99999

	U/L	Sec	Township	Range	North/South	East/West	Prop/Act (P/A)
B.H. Locn	: 5	27	31N	09W	FTG 999 F S	FTG 999 F E	P

Lot Identifier:

Dedicated Acre: 314.53

Lease Type : F

Type of consolidation (Comm, Unit, Forced Pooling - C/U/F/O) :

M0025: Enter PF keys to scroll

PF01 HELP	PF02	PF03 EXIT	PF04 GoTo	PF05	PF06
PF07	PF08	PF09	PF10 NEXT-WC	PF11 HISTORY	PF12 NXTREC

CMD :
OG6IWCM

ONGARD
INQUIRE WELL COMPLETIONS

10/13/95 15:13:27
OGOMES -EMG5

API Well No : 30 45 22425 Eff Date : 03-01-1978 WC Status : A
Pool Idn : 72319 BLANCO-MESAVERDE (G)
OGRID Idn : 778 AMOCO PRODUCTION CO
Prop Idn : 1032 SCHWERDTFEGER LS

Well No : 002A
GL Elevation: 99999

	U/L	Sec	Township	Range	North/South	East/West	Prop/Act (P/A)
B.H. Locn	: E	27	31N	09W	FTG 999 F S	FTG 999 F E	P

Lot Identifier:
Dedicated Acre: 314.53
Lease Type : F

Type of consolidation (Comm, Unit, Forced Pooling - C/U/F/O) :

M0025: Enter PF keys to scroll

PF01 HELP	PF02	PF03 EXIT	PF04 GoTo	PF05	PF06
PF07	PF08	PF09	PF10 NEXT-WC	PF11 HISTORY	PF12 NXTREC