STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

September 16, 1993

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

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

RECEIVED
SEP 23 1993
OIL CON. DIV.
DIST. 3

Attention: J.W. Hawkins

Administrative Order NSL-3312

Dear Mr. Hawkins:

Reference is made to your application dated August 12, 1993 for an unorthodox gas well location in both the Basin Dakota Pool and Undesignated East Blanco-Pictured Cliffs Pool for Amoco's proposed Carson Federal "H" Well No. 1 to be drilled 1900 feet from the North line and 790 feet from the East line (Unit H) of Section 4, Township 29 North, Range 4 West, NMPM, Rio Arriba County, New Mexico.

By the authority granted me under the provisions of Rule 2(c) of the Special Rules and Regulations for the Basin Dakota Pool, as promulgated by Division Order No. R-8170, as amended, and Division General Rule 104.F(1), the above-described unorthodox gas well location is hereby approved. Further, Lots 1 and 2, the S/2 NE/4 and the SE/4 (E/2 equivalent) and Lots 1 and 2, and the S/2 NE/4 (NE/4 equivalent) of said Section 4 shall be dedicated to said well forming standard 319.85-acre and 159.85-acre gas spacing and proration units for the Basin Dakota Pool and Undesignated East Blanco-Pictured Cliffs Pool, respectively.

Also, Amoco shall comply with all necessary and applicable provisions of Division General Rule 112-A or 303.C pertaining to multiple completion or downhole commingling.

Sincerely,

William J. LeMay
Director

WJL/MES/amg

cc: Oil Conservation Division - Aztec
US Bureau of Land Management - Farmington
US Forest Service - Blanco

STATE OF NEW MEXICO

ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Date: 9-7-93

attn: Mike Stogner

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

RE: Proposed MC_____ Proposed DHC_____
Proposed NSL X Proposed SWD_____
Proposed WFX_____ Proposed PMX_____
Proposed NSP_____ Proposed DD_____

Gentlemen:

I have examined the application received on 8-16-93

for the Amoco (OPERATOR) Reference #12 (LEASE & WELL NO.)

H-4-29N-04W (UL-S-T-R) and my recommendations are as follows:

Approve

Yours truly,

Jerie Bush

Amoco Production Company

Southern Rockies Business Unit
Amoco Building
1670 Broadway
Post Office Box 800
Denver, Colorado 80201
303-830-4040

August 12, 1993

Mr. William J. LeMay, Director
New Mexico Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87504

File: CAW-207-986.511

Application for Unorthodox Location
Carson Federal H #1 Well
NE/4 Section 4-T29N-R4W
Basin Dakota Pool
East Blanco Pictured Cliffs Pool
Rio Arriba County, New Mexico

Amoco Production Company hereby requests administrative approval for an unorthodox location in the Basin Dakota Pool and East Blanco Pictured Cliffs Pool. Amoco proposes to drill the Carson Federal H #1 Well at a location 1,900' FNL and 790' FEL of Section 4. This location is necessary due to the topographical condition in this area. Since this well is being moved 50' toward the interior of the spacing unit, no offset owners will be adversely affected and the additional cost to directionally drill the well back to an orthodox location is not justified. This spacing unit is in the E/2 Section 4, T29N-R4W. The offset operator will receive a copy of the application by certified mail with a request that they furnish your Santa Fe office with a waiver of objection and return one copy to Amoco.

Sincerely,

J. W. Hawkins

JWH/jmc

cc: Lori Arnold

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

RECEIVED
AUG 16 1993
OIL CON. DIV.
DIST. 3

WAIVER

_____ hereby waives objection to Amoco's application for unorthodox well location for the Carson Federal H #1 Well in the Basin Dakota Pool and East Blanco Pictured Cliffs Pool as proposed above.

By: _____ Date: _____

VERIFICATION AND AFFIDAVIT

STATE OF COLORADO)
) ss
COUNTY OF DENVER)

J. W. Hawkins, of lawful age, being first duly sworn on his oath, deposes and says:

That he is employed in an engineering capacity by Amoco Production Company in its Denver, Colorado office; that he has been qualified as an expert engineering witness by the New Mexico Oil Conservation Division and his qualifications have been made of record; that Amoco's application for administrative approval for unorthodox location for the Carson Federal H #1 well in the Basin Dakota Pool and the East Blanco Pictured Cliffs Pool, Rio Arriba County, New Mexico was prepared under his direction and supervision; that the matter and things therein set forth are true and correct to the best of his knowledge and beliefs. Copies of the application have been mailed by certified mail to the affected operators.

J. W. Hawkins

Subscribed and sworn to before me this 12th day of August, 1993.

Notary Public

My Commission expires: 4-7-94

Amoco Production Company

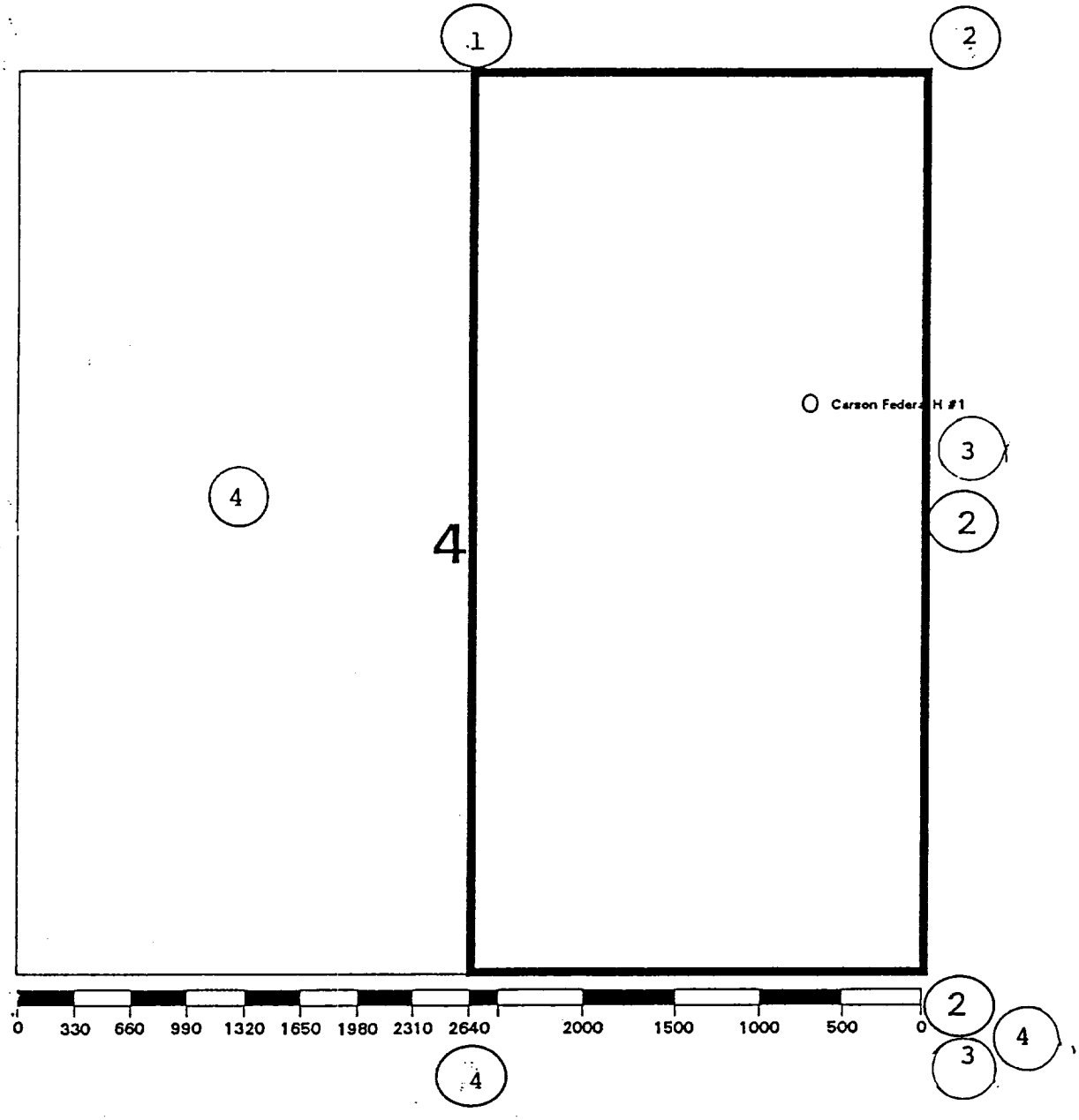
Offset Operator Plat

Carson Federal H #1

Township 29North - Range 4West

1900' FNL, 790' FEL Sec. 4

Basin Dakota and East Blanco Pc ext.

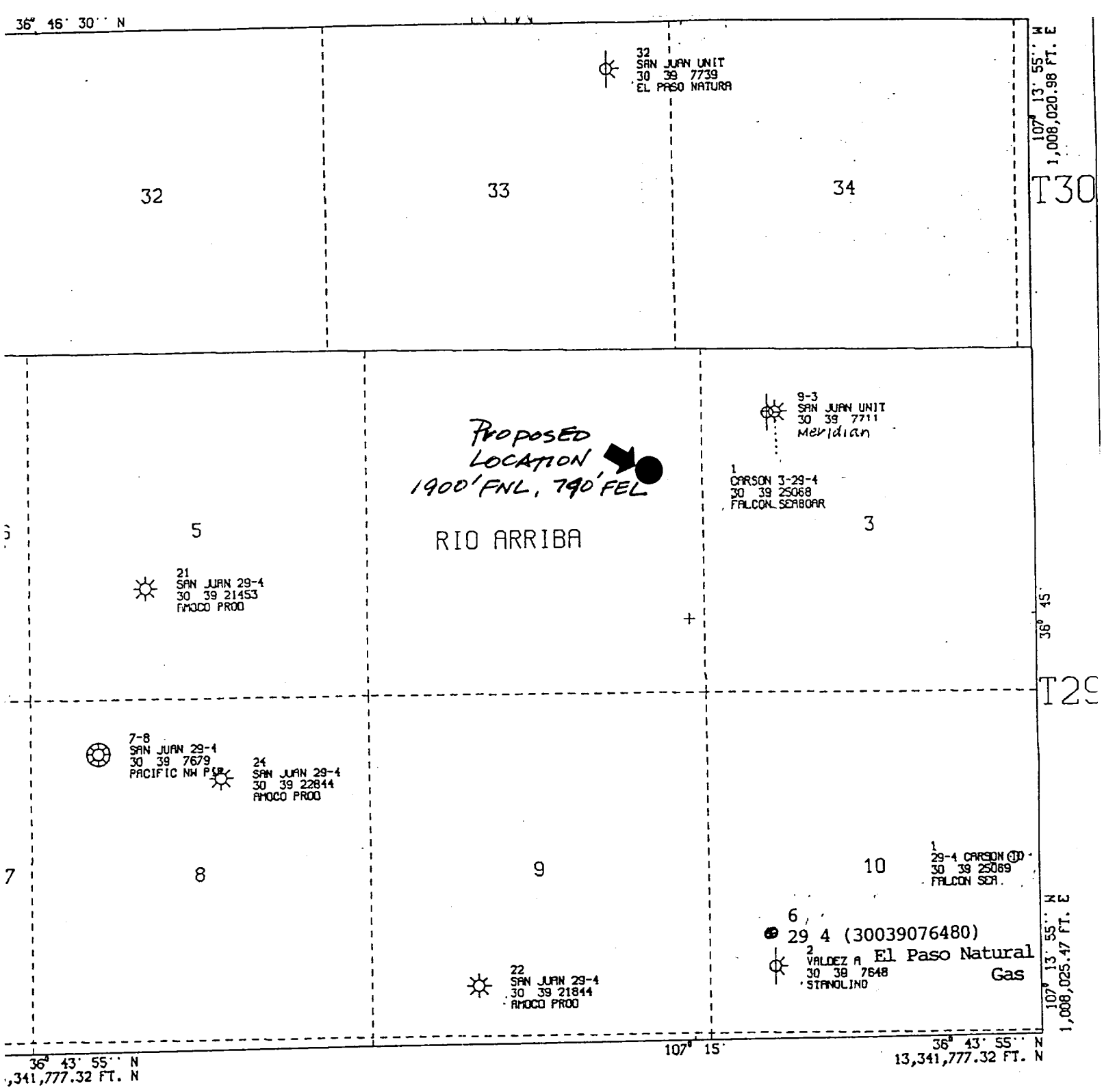


1. El Paso Natural Gas , P. O. Box 4289, Farmington, NM 87499

2 Meridian Oil Prod., P.O. Box 4289, Farmington, NM 87499

3. Falcon Seaboard, Five Post Oak Park #1400, Houston, TX 77027

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

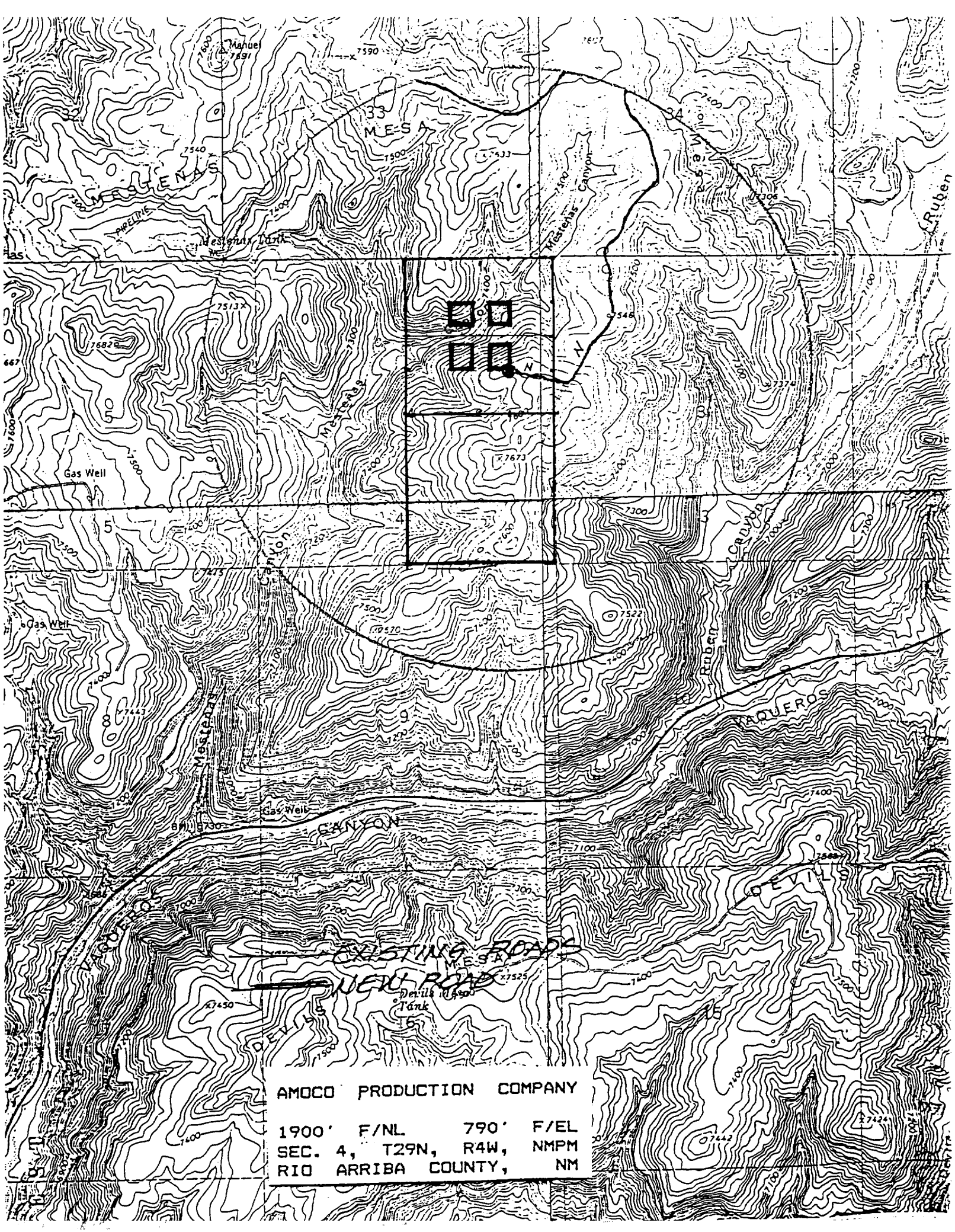


DLYCONIC CENTRAL MERIDIAN - 107° 15' 33" W LON
PHERDID - 6

AMOCO PRODUCTION COMPANY
CARSON FEDERAL H 1
SEC 4-T29N-R04W
SAN JUAN NM

SCALE 1 IN. = 2,000 FT. AUG 5, 1993

RUN=93217110058


Manuel
7591
MESA
33
34
MESTENAS
Mesteñas Canyon
Ruben
Gas Well
Mesteñas
5
4
3
9
8
CANYON
VAQUEROS
DEVILS
MESA
Devils Mesa Tank
EXISTING ROAD
NEW ROAD
AMOCO PRODUCTION COMPANY
1900' F/NL 790' F/EL
SEC. 4, T29N, R4W, NMPM
RIO ARRIBA COUNTY, NM

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
AMOCO PRODUCTION COMPANY	Reference	12

Unit Letter	Section	Township	Range	County
H	4	29 NORTH	4 WEST NMPM	RIO ARRIBA

Actual Footage Location of Well:
1900 feet from the NORTH line and 790 feet from the EAST line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
7585	Basin Dakota	Basin Dakota	E/2 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

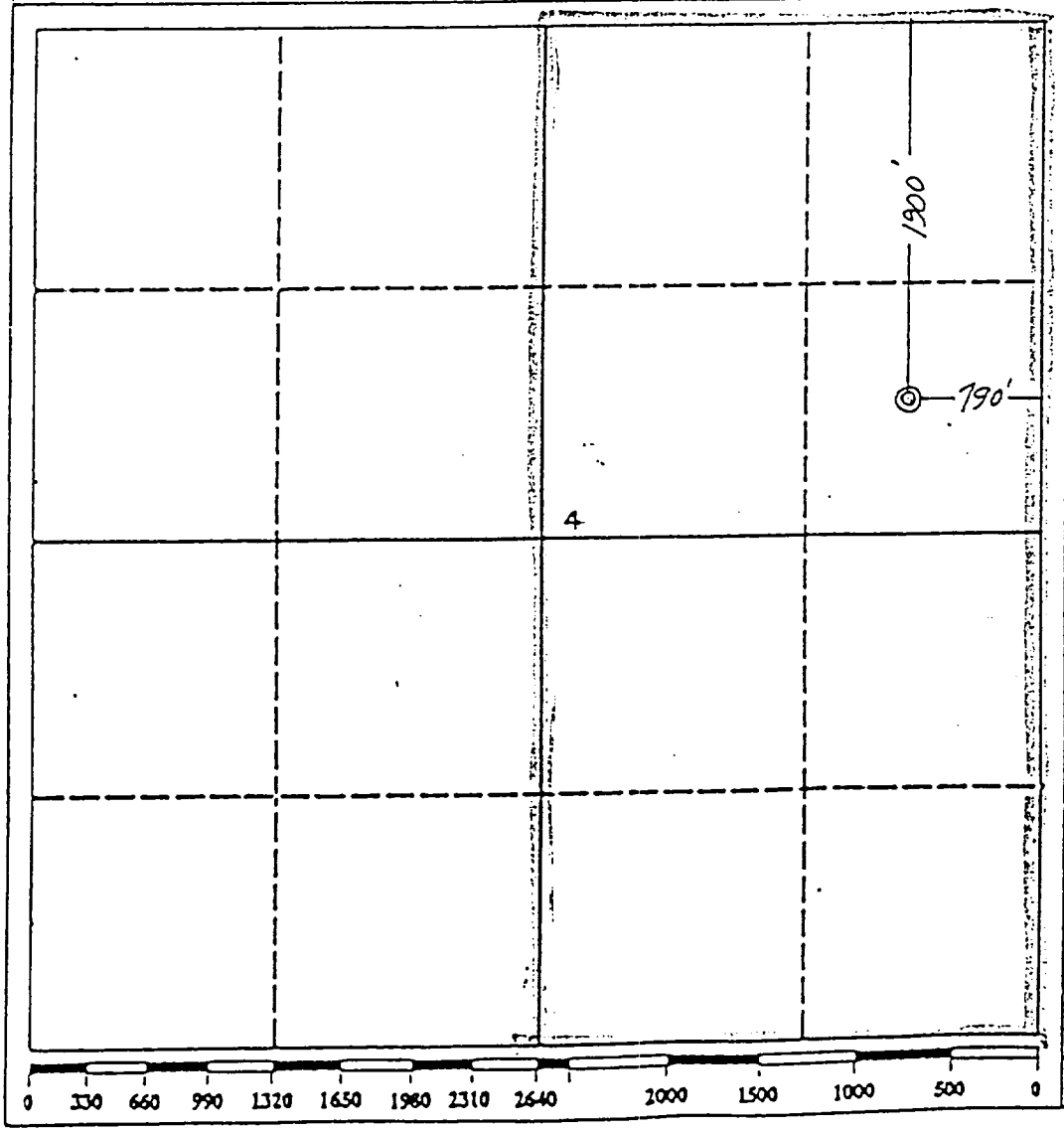
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Lori Arnold
Signature

LORI ARNOLD
Printed Name

BUSINESS ANALYST
Position

AMOCO PRODUCTION
Company

4/26/93
Date

SURVEYOR CERTIFICATION

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

Date Surveyed
April 12, 1993

Signature & Seal of Professional Surveyor
GARY D. VANN
NEW MEXICO
7016
REGISTERED PROFESSIONAL LAND SURVEYOR

Gary Vann

Certificate No.
7016

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
AMOCO PRODUCTION COMPANY	Reference	12

Unit Letter	Section	Township	Range	County
H	4	29 NORTH	4 WEST NMPM	RIO ARRIBA

Actual Footage Location of Well:
1900 feet from the NORTH line and 790 feet from the EAST line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
7585	East Blanco PC Ext.	East Blanco PC Ext.	NE/4 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

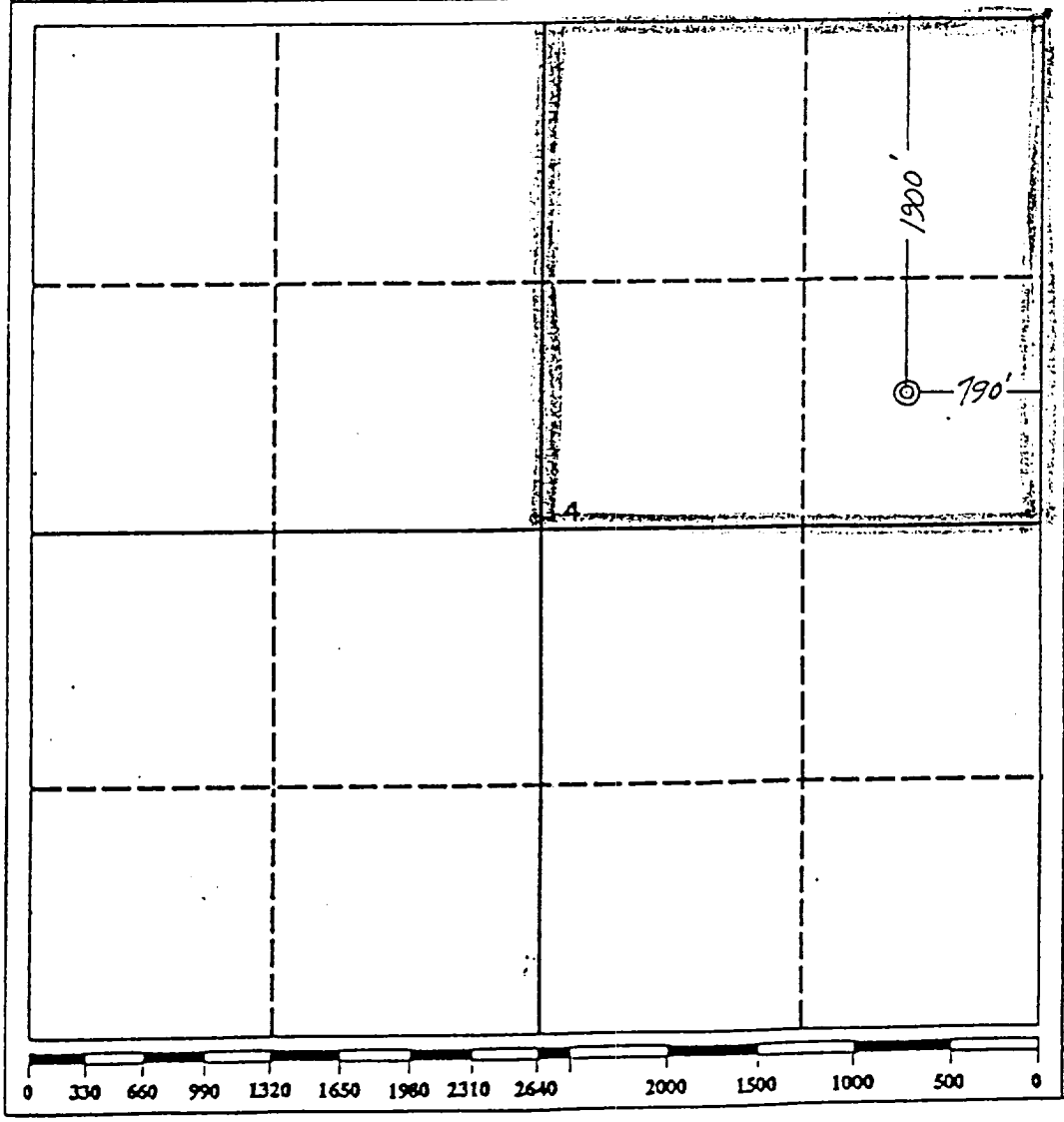
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Lori Arnold
Signature

LORI ARNOLD
Printed Name

Business Analyst
Position

Amoco Production
Company

Date

SURVEYOR CERTIFICATION

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

Date Surveyed
April 12, 1993

Signature & Seal of Professional Surveyor
GARY D. VANN
NEW MEXICO
7016
REGISTERED PROFESSIONAL LAND SURVEYOR

Gary Vann

Certificate No.
7016

Form 3160-3
(December 1990)

Form approved.
Budget Bureau No.1004-0136
Expires: December 31, 1991

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.: SF-079756-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME, WELL NO.: Carson Federal /H/ 1

9. API WELL NO.:

10. FIELD AND POOL, OR WILDCAT: Basin Dakota/East Blanco PC Ext.

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 4 Township 29N Range 4W

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [X]

2. NAME OF OPERATOR: Amoco Production Company

Attention: Lori Arnold

3. ADDRESS AND TELEPHONE NO.: P.O. Box 800, Denver, Colorado 80201 (303) 830-5651

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1900 FNL 790 FEL
At proposed prod. zone:

12. COUNTY OR PARISH: Rio Arriba

13. STATE: New Mexico

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 68.37 miles from Aztec, NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 2235.89

16. NO. OF ACRES IN LEASE

17. NO. OF ACRES ASSIGNED TO THIS WELL: 320 E/2 & 160 NE/4

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.:

19. PROPOSED DEPTH: 9197'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR., etc.): 7585' GR

22. APPROX. DATE WORK WILL START*: 09-01-93

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8" J-55	68#	400'	625cf Cl B W/2% CaCl2 (Cement to surface)
12 1/4"	9 5/8" J-55	36#	4932'	3299 cf Cl B (Cement to surface)
8 3/4"	7" J-55	23#	8601'	982 cf Cl B
6 1/4"	4 1/2" N-80	11.6#	8501'-9197'	143 cf Cl G

Notice of Staking was submitted on 6/29/93 under the name of Reference #12.

Lease Description: T 29N-R 4W
Sec. 3: All
Sec. 4: All
Sec. 5: All
Sec. 6: W/2

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED Lori Arnold TITLE Business Analyst DATE 08-06-1993

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY _____ TITLE _____ DATE _____

*See Instructions On Reverse Side

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.

FEDERAL CEMENTING REQUIREMENTS

1. All permeable zones containing fresh water and other usable water containing 10,000 ppm or less total dissolved solids will be isolated and protected from contamination by cement circulated in place for the protection of permeable zones per the NTL-FRA 90-1 section III A.

2. The hole size will be no smaller than 1 1/2" larger diameter than the casing O.D. across all usable water zones.

3. An adequate spacer will be pumped ahead of the cement slurry to help prevent mud contamination of the cement.

4. An adequate number of casing centralizers will be run through usable water zones to ensure that the casing is centralized through these zones. The adequate number of centralizers to use will be determined by API Spec 10D.

5. Centralizers will impart a swirling action around the casing and will be used just below and into the base of the lowest usable water zone.

6. A chronological log will be kept recording the pump and slurry information and will be sent to the BLM with the subsequent sundry.

RW #12

Amoco proposes to drill the well to further develop the Dakota reservior.
The well will be drilled to the surface casing point using native mud.
The well will then be drilled to the intermediate casing point with a non-dispersed mud system.
The protective hole will be drilled with air to the top of the Greenhorn were protective casing will be set.
The production hole will be drilled with a non-dispersed mud system to TD.

Surface Casing:

Quanity (ft)	Size (in)	Weight (ppf)	Description	Cement program
400	13.375	68	J-55, ST&C	625 cf Class B, 2% CaCl2 + 0.25 #/sx Flocele. 1.18 cf/sx, 15.6 ppg

Hole size 17.5", 125% excess, circulate cement to surface.

Intermediate Casing:

Quanity (ft)	Size (in)	Weight (ppf)	Description	Cement program
4932	9.625	36	J-55, LT&C	* 2 stage

* 1st Stg Tail: 721 cf Class B, 0.4% CFR-3, 0.4% Halad 344, 5 #/sx Gilsonite, + 0.25 #/sx Flocele. 1.29 cf/sx, 15.11 ppg.

Top of Fruitland Coal 3986 ft
Stage tool depth 3886 ft, 100' above top of Fruitland Coal.

* 2nd Stg Lead: 2549 cf Class B, 65:35:6, 7#/sx salt, 0.375 #/sx Flocele, 5% Calseal, 2% Microbond. 1.8 cf/sx, 13.0 ppg.

* 2nd Stg Tail: 129 cf Class B, 0.4% CFR-3, 0.4% Halad 344, 5 #/sx Gilsonite, + 0.25 #/sx Flocele. 1.29 cf/sx, 15.6 ppg.

Hole size 12.25", 120% excess, circulate cement to surface.

Protective Casing:

Quanity (ft)	Size (in)	Weight (ppf)	Description	Cement program
8601	7	23	J-55, LT&C	* 2 stage

* 1st Stg Tail: 682 cf Class B, 50/50 poz, 2% gel, 0.4% Halad 413, 0.1% SCR 100, 5 #/sx Gilsonite, 5% Microbond HT, 0.4% VersaSet, 0.25 #/sx Flocele. 1.35 cf/sx, 13.4 ppg.

Top Picture Cliffs 4437 ft Est Top Cmt 4337
Top of Mesa Verde 6266 ft
Stage tool depth 5766 ft, 500' above top of Mesa Verde.

* 2nd Stg Tail: 300 cf Class B, 50/50 poz, 2% gel, 0.4% Halad 413, 5 #/sx Gilsonite, 5% Microbond HT, 0.4% VersaSet, 0.25 #/sx Flocele. 1.35 cf/sx, 13.4 ppg.

Hole size 8.75", 60% excess, circulate cement to surface.

Production Liner:

Quanity (ft)	Size (in)	Weight (ppf)	Description	Cement program
696	4.5	11.6	N-80, LT&C	* single stage

* 1st Stg Tail: 143 cf Class G, 35% SSA 1, 1.0% CFR 3, 0.5% Halad 24, 0.25 #/sx Flocele. 1.56 cf/sx, 15.6 ppg.

Estimated Total Depth 9197 ft
Estimated Top of Liner 8501 ft 100' overlap into intermediate casing.

Hole size 6.25", 60% excess, tie cement back.

BY: FRANK SEIDEL/BARRY PEISER 08/05/93
= input depths from form 46 in shaded areas to calculate cement volumes.
H:\GROUP\SRBU\NMEXDK\CMTFORM.WK3

FINAL COPY

AMOCO PRODUCTION COMPANY
DRILLING AND COMPLETION PROGRAM

File: H:\group\srbu\nmexdk\dak12f46.wk3
Revision Date: 08/05/93

Lease: Carson Federal /H/ Well No. 1 Field: Basin Dakota
County: Rio Arriba, New Mexico Location: 1900' FNL x 790' FEL, Sec. 4, T29N, R4W
Formerly Reference Well #12

OBJECTIVE: Evaluate and develop Pictured Cliff, Mesa Verde and Dakota reserves.

METHOD OF DRILLING

TYPE OF TOOLS	DEPTH OF DRILLING
Rotary	0 – TD

LOG PROGRAM

Type	Depth Interval
DIL–CAL–NGT–GR	SFC to TD
FDC–CNL	SFC to TD
MICROLOG	TD + 1000'
MRI	*ICP to Top Fruitland (6" tool)
	**TD to PCP (4.5" tool)

REMARKS:
Magnetic Resonance Image (MRI), pulls at 7'/min.
(409) 836 – 2955 (Numar, Brenham District).
*Contact Roger Gierhart (303/830–5053) for authorization.
**Contact Harry TerBest (303/830–6038) for authorization.

SPECIAL TESTS

TYPE	DEPTH INTERVAL, ETC
None	

Remarks:

APPROXIMATE DEPTHS OF GEOLOGICAL MARKER

7,585 Est. GL Elev. 7,601 Est. KB Elev.

Marker	Depth (ft)	SS Elev. (ft)
Ojo Alamo	3,760	3,841
Fruitland	3,986	3,615
Pictured Cliffs *	4,437	3,164
Lewis Shale	4,782	2,819
Cliff House	6,266	1,335
Menefee	6,385	1,216
Point Lookout	6,587	1,014
Mancos Shale	7,022	579
Greenhorn	8,601	(1,000)
Dakota #	8,777	(1,176)
TOTAL DEPTH:	9,197	(1,596)

Probable completion interval
* Possible pay.
OJO ALAMO IS POSSIBLE USEABLE WATER.

DRILL CUTTING SAMPLES		DRILLING TIME	
FREQUENCY	DEPTH	FREQUENCY	DEPTH
20'	6980' – TD	Geolograph	0 – TD

Remarks:
Mudlogging Program:
Mudlogger to monitor chromatograph 100' above Cliff House to TD.
Full one man mudlogging services for Dakota Mud Up to TD.

MUD PROGRAM:

Approx Interval	Type Mud	Weight, #/gal	Vis, sec/qt	W/L, cc's/30 min
0' – 400'	SPUD	8.5 – 9.0	Sufficient to clean hole and maintain hole conditions for logs.	
400'–INT CSG	LSND	8.8 – 11.0		
INT CSG– T. Dakota	AIR	–		
T. Dakota – TD	LSND	9.5 – 10		

REMARKS:

* Use minimum mud weight to control formation pressures.

CASING PROGRAM:

Casing String	Estimated Depth (ft)	Casing Size	Hole Size	Landing Point, Cement, Etc
Conductor				
Surface	400	13–3/8"	17–1/2"	1,2
Intermediate	4,932	9–5/8"	12–1/4"	1,2,3
Protective	8,601	7"	8–3/4"	2,4
Production	9,197	4–1/2"	6–1/4"	2,5

Remarks:
1. Circulate cement to surface.
2. Southern Rockies Drilling Team to design cement programs.
3. Casing set 100'–150' into Lewis Shale.
4. Casing set at top of Greenhorn Limestone.
5. Casing set 50' into Morrison.

GENERAL REMARKS:
Southern Rockies Dakota Engineer to design completion program.

Form 46 Reviewed by: Logging program reviewed by:

PREPARED BY:	APPROVED:	APPROVED:
F. Seidel/R. Gierhart/H. TerBest		
Form 46 7–84bw	For Production Dept	For Exploration Dept

SAN JUAN BASIN
DAKOTA FORMATION
PRESSURE CONTROL EQUIPMENT

Background

The objective Dakota formation maximum surface pressure is anticipated to be 1400 PSI, based on completion testing. Pressure control equipment working pressure minimum requirements are therefore 2000 PSI. Equipment to be used will conform to API RP-53 (Figure 2.C.2) for a 2000 PSI system per Federal Onshore Order No. 2. Due to available conventional equipment within the area, 3000 PSI rated pressure control equipment will typically be utilized in a double ram type arrangement. Regional drilling rigs to be utilized have substructure height limitations which exclude use of annular preventers; therefore a rotating head will be installed above these rams. This pressure control equipment will be utilized for conventional drilling below surface to total depth. No abnormal temperature, pressure or H_2S anticipated.

Prior to drilling below intermediate casing, a modified two (2) double ram pressure control equipment system will be installed. This system is designed for Dakota formation interval drilling with air and water. A service unit will typically be used to drill this interval, and the wellbore will be completed as an uncased open hole if commercial productivity is established. If not, the wellbore will be cased and cemented with a 4 1/2" contingency liner. Based upon maximum surface pressure criteria, 2000 PSI equipment is required. However, as stated above, 3000 PSI working pressure equipment will typically be utilized. The No. 3 pipe ram in Exhibit 2 will be 4 3/4" if 4 3/4" drill collars are run in the bottom hole assembly.

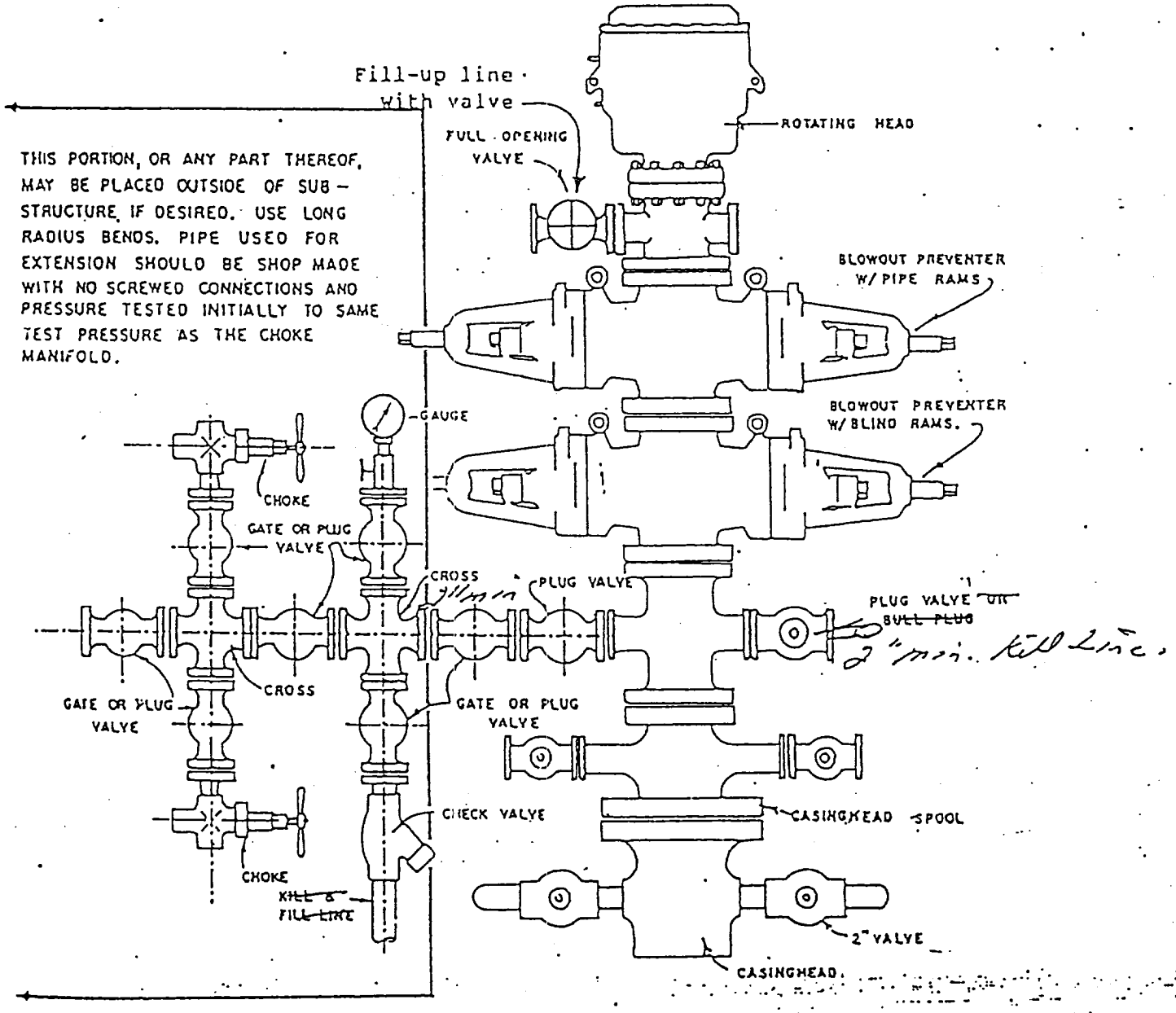
Equipment Specification

Interval	BOP Equipment
Below Surface Casing to Total Depth	12" nominal, 3000 PSI double ram preventer with with rotating head

All ram type preventers and related control equipment will be hydraulically tested to 250 PSI (low pressure) and 2000 PSI (high pressure), upon installation, following any repairs or equipment replacements, or at 30 day intervals. Accessories to BOP equipment will include kelly cock, floor safety valved and choke manifold which will also be tested to equivalent pressure.

Please direct any questions to Frank Seidel at (303) 830-4832 in our Denver office.

1. Upper kelly cock valve, with handle will be utilized.
2. There will be safety valves and subs to fit all drill strings in use.



BLOWOUT PREVENTER HOOKUP

NEW MEXICO MULTIPOINT REQUIREMENTS

1. Existing Roads

A. The proposed location is staked as shown on the Certified Plat.
B. Route and distance from nearest town is identified on the form 3160-3, item #14 (also, see Exhibit A).
C. Access road(s) to location are identified on Exhibits A and B.
D. Not applicable unless exploratory well.
E. All existing roads within one-mile radius of the well site are shown on Exhibit B.
F. Improvement and/or maintenance of existing roads may be done as deemed necessary for Amoco's operations, or as required by the surface management agency.

2. Access Roads

A. Width 18'.
B. Maximum grades 8%.
C. Turnouts none.
D. Drainage will be used as required.
E. Size and location of culverts, if needed, will be determined at the onsite inspection or during construction.
F. Surfacing materials may be applied to the proposed road and/or location if conditions merit it.
G. Gates and/or cattle guards will be installed at fence crossings if deemed necessary by the land owner or the surface management agency.
H. The proposed new access road is center-line flagged, if applicable.

3. Location of Existing Wells

A-H. All existing wells, to the best of our knowledge, are identified on Exhibit C. (9 section plat).

4. Location of Existing and/or Proposed Facilities

A. All existing facilities owned or controlled by Amoco are shown on Exhibits D and E.
B. If this proposed well is productive, Amoco will own or have control of these facilities on location: storage tanks, wellhead, production unit, and if applicable, a pump jack and/or compressor. Also there will be buried production lines from the wellhead to the production unit and/or storage tanks. Amoco will submit a Sundry Notice when off-pad plans are finalized.

C. Rehabilitation, whether the well is productive or not, will be made on all unused areas in accordance with surface owner or manager approval.

C. Rehabilitation, whether the well is productive or not, will be made on all unused areas in accordance with surface owner or manager approval.

5. Location and Type of Water Supply

Water will be obtained from a privately permitted water source secured through a contract water hauling company. It will be hauled in vacuum trucks via the access road (Exhibit A). The appropriate permits for this activity have been obtained by the water transporter.

6. Source of Construction Materials

A.-D. No off-site materials will be needed to build the proposed location or access road.

7. Methods of Handling Waste Disposal

A. Cuttings, drilling fluids, and produced fluids will be contained in the reserve pit and be allowed to evaporate. The reserve pit will be fenced on three sides and the 4th side will be fenced upon removal of the rig. The pits will be allowed to sit for 90 days and then pulled as required by NTL-2B. Produced water will be disposed of at an approved injection well or an evaporation site. Sanitary facilities and a steel mesh portable trash container will remain on location throughout drilling operations and will then be removed to a designated disposal area. The well site will be properly cleaned up upon removal of the rig.

8. Ancillary Facilities

A. To the best of our knowledge, no ancillary facilities will be needed at this time.

9. Well Site Layout

A.-C. Cross-sections, etc. – See Exhibit D.– Exact location of rig related equipment will be determined when Amoco contracts a drilling rig; however, all this equipment will be contained on location. The location diagram reflects actual area of well pad. Total disturbed area will vary due to cut and fill slopes.

D. Reserve pit(s) Unlined _____
Lined ✓ (8-10 mil reinforced plastic, size sufficient to cover pit area and fit underneath a rig tank.)

10. Plans for Restoration of Surface

A. Restoration of the surface will be conducted after the reserve pit has dried. The pit will then be cleaned up and back filled and the entire disturbed area will be re-contoured. The topsoil stockpile will then be uniformly placed over this area and reseeding of the site will be carried out as instructed by the appropriate management agency. Methods to protect against erosion will be employed. After final abandonment, additional restoration efforts will be applied.

11. Surface Ownership

A. The surface owner is BLM.

12. Other Information

A. General Description

1. Archeological clearance, topography, soil character, and flora and fauna are detailed in the archeologist's report forwarded by an approved contract archeologist to the appropriate management agency.

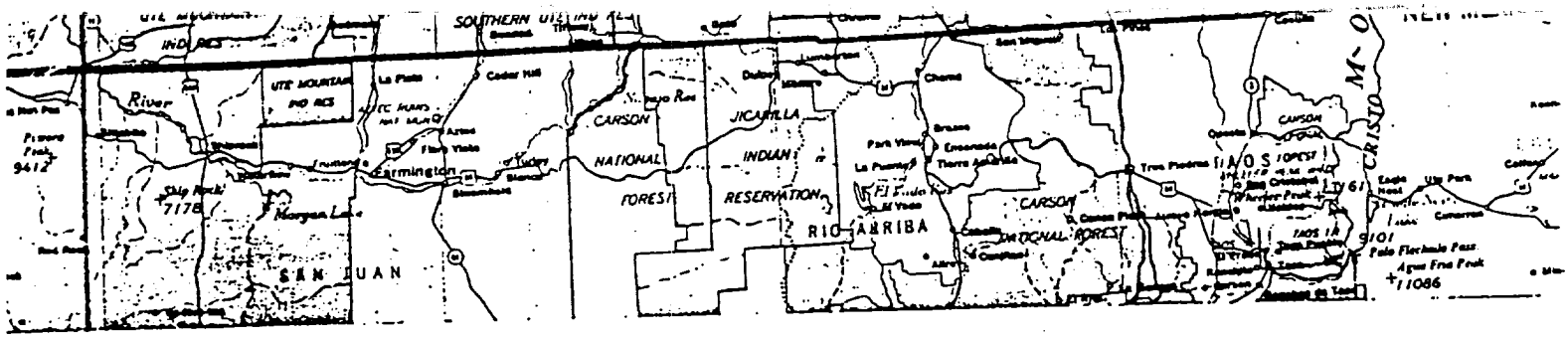
2. Land uses include recreation, grazing and oil and gas development.

13. Operator's Representative and Certification

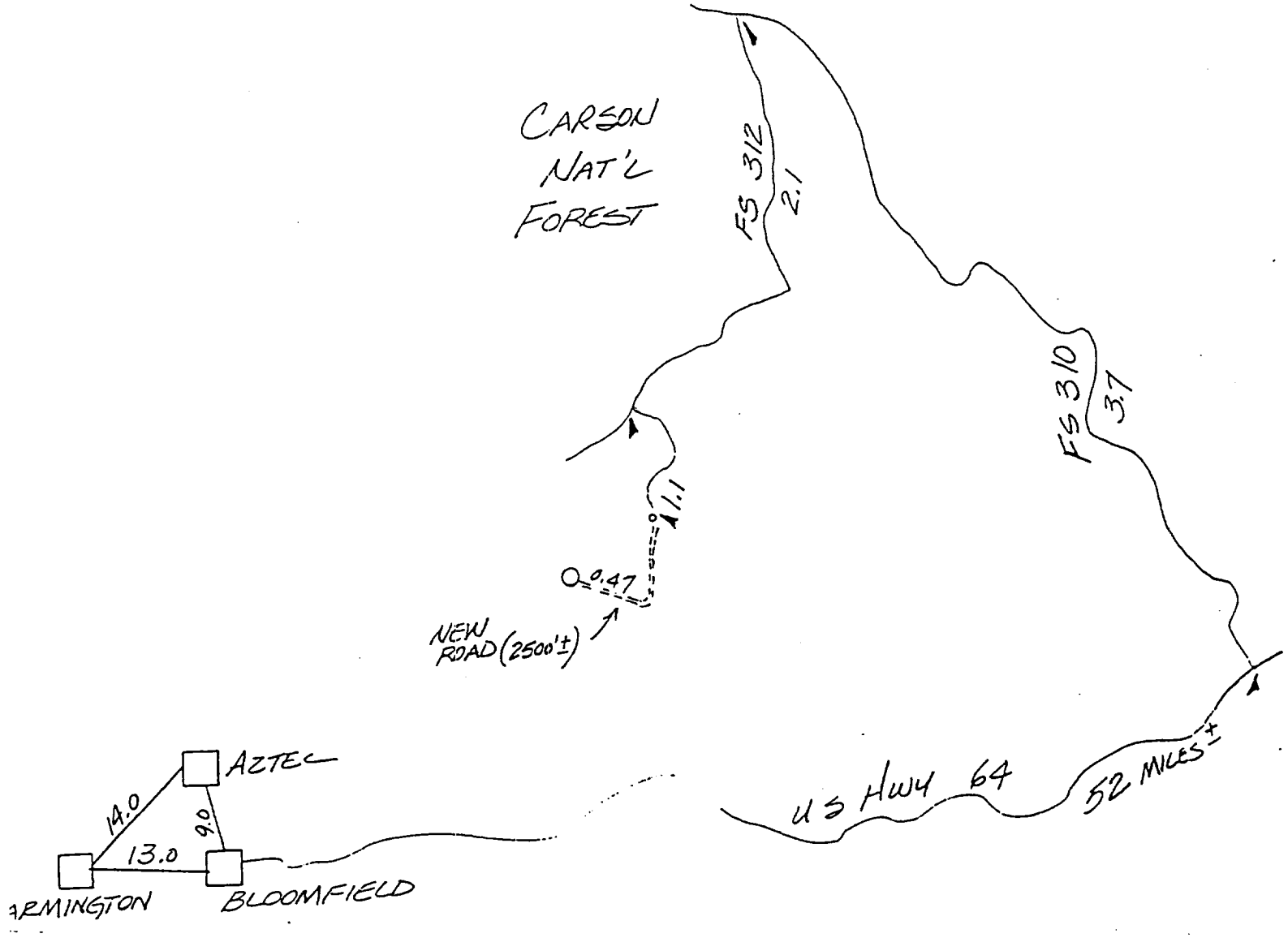
Amoco Production Company
John R. Pantaleo
Drilling Superintendent
P.O. Box 800
Denver, Colorado 80201
(303) 830-4822

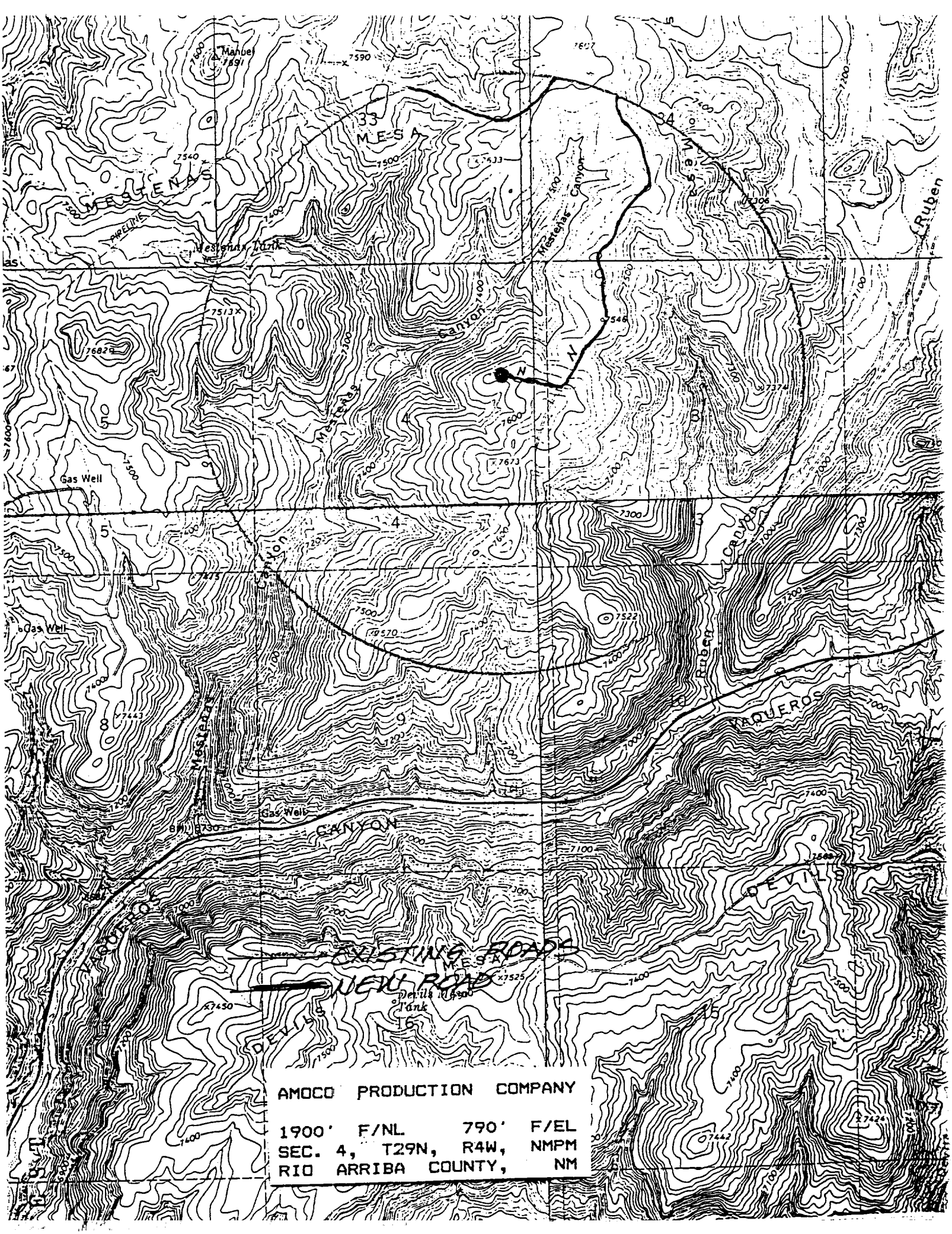
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by AMOCO PRODUCTION COMPANY and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

Date: 6/4/93 J.R. Pantaleo, Drilling Supt.

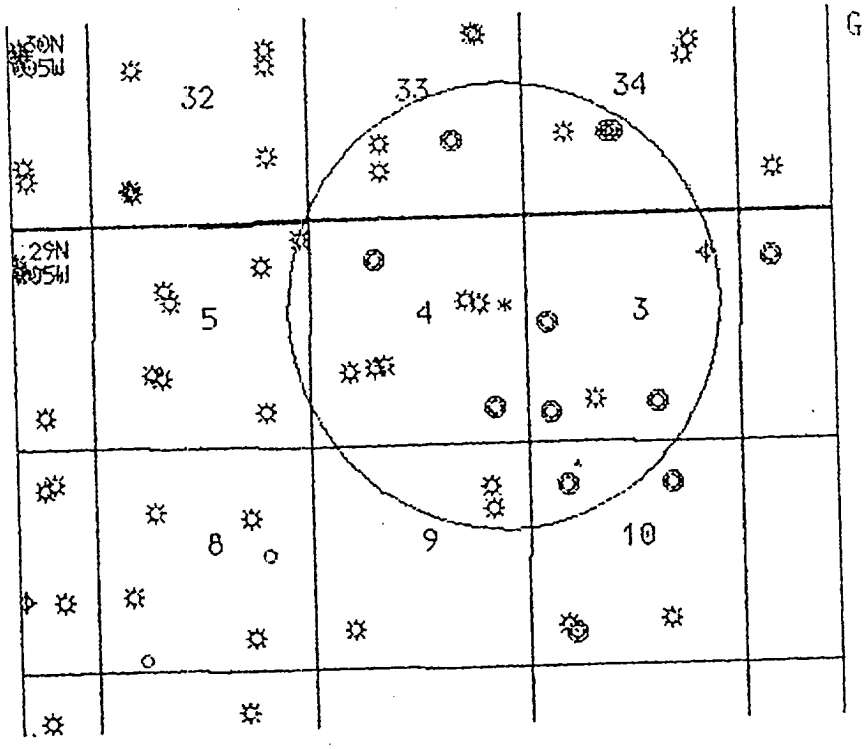


00' F/NL 790' F/EL
C. 4, T29N, R4W, NMPM
O ARRIBA COUNTY, NM
IL POINT: 211.37 miles from Montrose, CO
D POINT: 68.37 miles from Aztec, NM
MENT POINT: 72.37 miles from Farmington, NM.




MESA
MESTENAS
Mestenas Canyon
Mestenas Tank
PIPELINE
Gas Well
CANYON
TAQUEROS
DEVILS
Devils Tank
EXISTING ROAD
NEW ROAD
AMOCO PRODUCTION COMPANY
1900' F/NL 790' F/EL
SEC. 4, T29N, R4W, NMPM
RIO ARRIBA COUNTY, NM

Operator: AMOCO PRODUCTION COMPANY			Lease: Reference	Well No.: 12
Unit Letter: H	Section: 4	Township: 29 NORTH	Range: 4 WEST NMPM	County: RIO ARRIBA
Actual Footage Location of Well: 1900 feet from the NORTH line and 790 feet from the EAST line				
Ground level Elev.: 7585	Producing Formation: Basin Dakota		Pool: Basin Dakota	Dedicated Acreage: E/2 Acres
	Producing Formation: East Blanco PC Ext.		Pool: East Blanco PC Ext.	Dedicated Acreage: NE/4 Acres

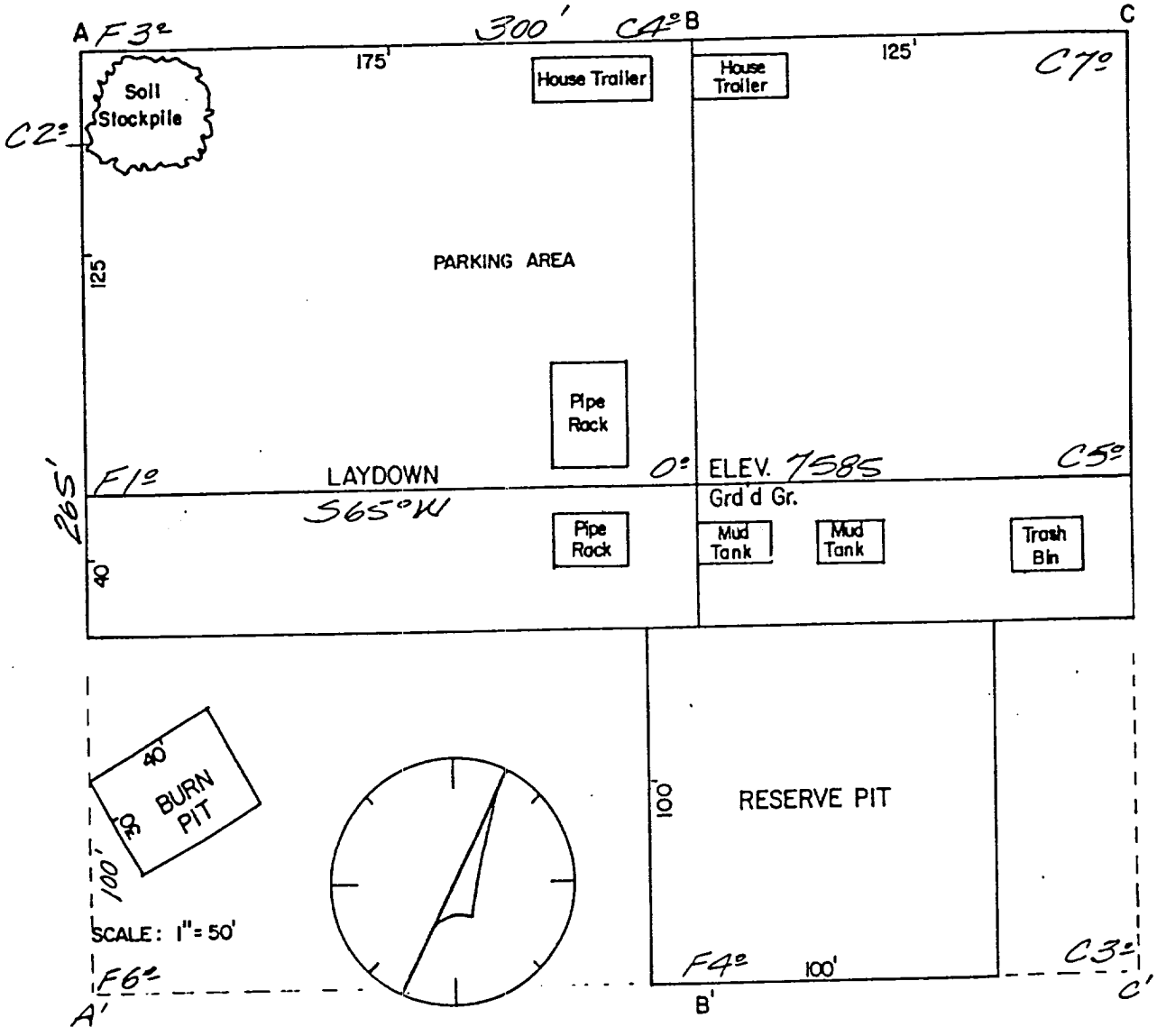


PROFILE FOR

AMOCO PRODUCTION COMPANY

EXHIBIT "D"

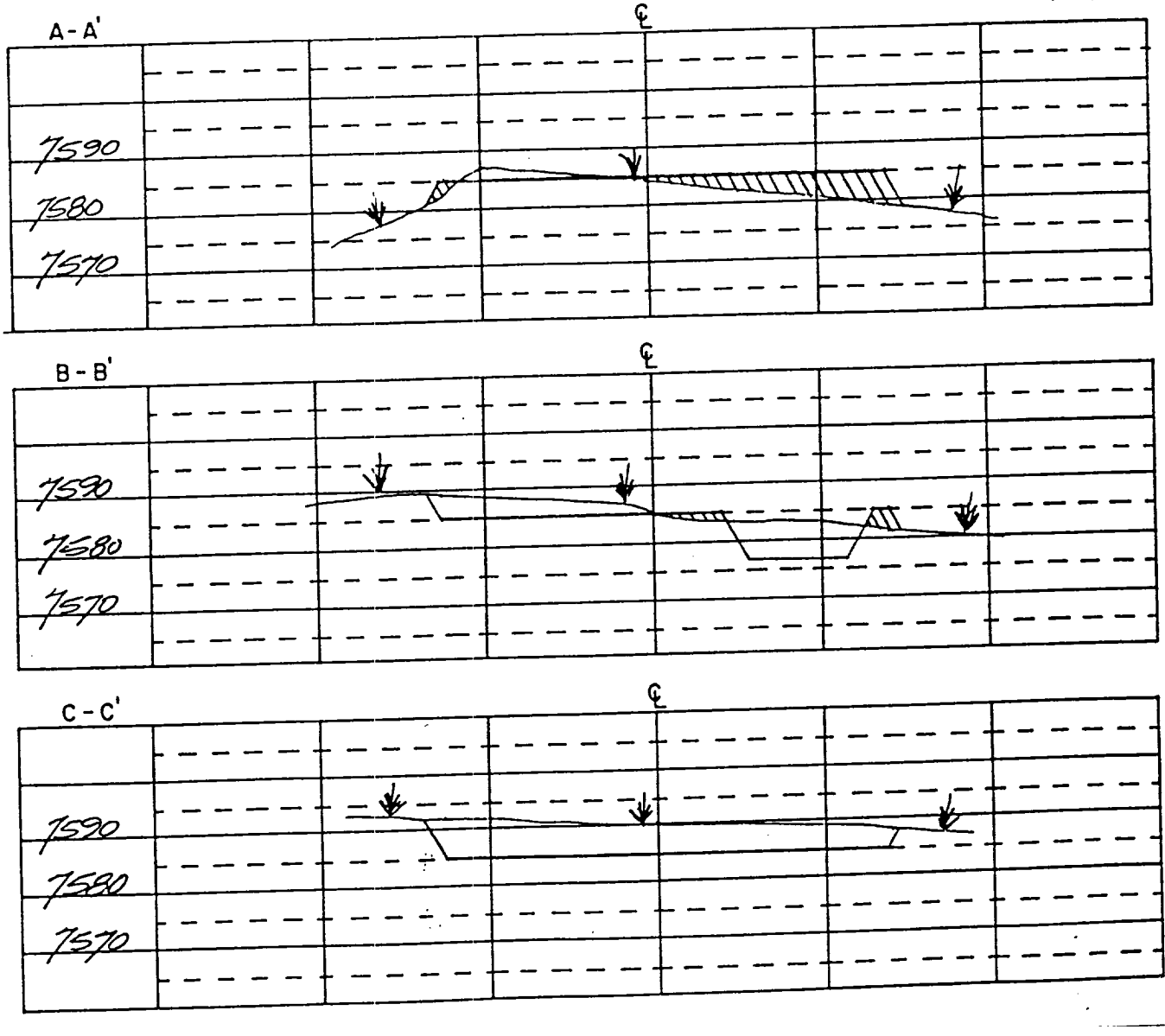
1900' F/NL 790' F/EL
SEC. 4, T29N, R4W, NMPM
RIO ARRIBA COUNTY, NM



AMOCO PRODUCTION COMPANY

1900' F/NL 790' F/EL
SEC. 4, T29N, R4W, NMPM
RIO ARRIBA COUNTY, NM

SCALE: 1" = 100' Horiz.
1" = 30' Vert.



AMOCO LOCATION

EXHIBIT E