

INFILL DRILLING FINDINGS PURSUANT TO  
SECTION 271.305(b) OF THE FEDERAL ENERGY REGULATORY  
COMMISSION REGULATIONS, NATURAL GAS POLICY ACT OF 1978  
AND OIL CONSERVATION DIVISION ORDER NO. R-6013-A

I.  
Operator C & E Operators, Inc. Well Name and No. Fee Well No. 9-Y  
Location: Unit D Sec. 9 Twp. 30-N Rng. 11-W Cty. San Juan

II.

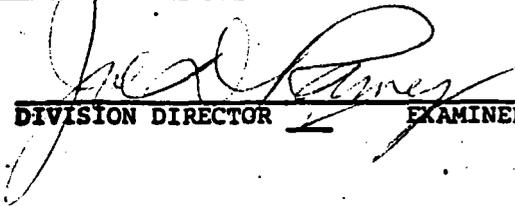
THE DIVISION FINDS:

- (1) That Section 271.305(b) of the Federal Energy Regulatory Commission Regulations promulgated pursuant to the Natural Gas Policy Act of 1978 provides that, in order for an infill well to qualify as a new onshore production well under Section 103 of said Act, the Division must find that the infill well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be so drained by any existing well within that unit.
- (2) That by Order No. R-6013-A, dated February 8, 1980, the Division established an administrative procedure whereby the Division Director and the Division Examiners are empowered to act for the Division and find that an infill well is necessary.
- (3) That the well for which a finding is sought is completed in the Aztec-Pictured Cliffs Pool, and the standard spacing unit in said pool is 160 acres.
- (4) That a 159.27-acre proration unit comprising the NW/4 of Sec. 9, Twp. 30-N, Rng. 11-W, is currently dedicated to the Brown Well No. 1 located in Unit F of said section.
- (5) That this proration unit is (X) standard ( ) nonstandard; if nonstandard, said unit was previously approved by Order No. \_\_\_\_\_.
- (6) That said proration unit is not being effectively and efficiently drained by the existing well(s) on the unit.
- (7) That the drilling and completion of the well for which a finding is sought should result in the production of an additional 136,000 MCF of gas from the proration unit which would not otherwise be recovered.
- (8) That all the requirements of Order No. R-6013-A have been complied with, and that the well for which a finding is sought is necessary to effectively and efficiently drain a portion of the reservoir covered by said proration unit which cannot be so drained by any existing well within the unit.
- (9) That in order to permit effective and efficient drainage of said proration unit, the subject application should be approved.

IT IS THEREFORE ORDERED:

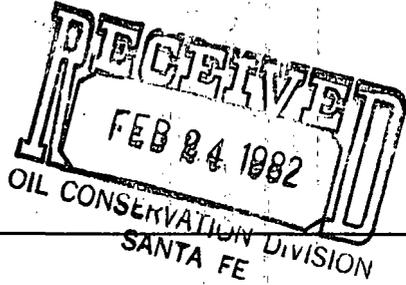
- (1) That the applicant is hereby authorized to drill the well described in Section I above as an infill well on the existing proration unit described in Section II(4) above. The authorization for infill drilling granted by this order is necessary to permit the drainage of a portion of the reservoir covered by said proration unit which cannot be effectively and efficiently drained by any existing well thereon.
- (2) That 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 this 24th day of March, 19 82.

  
\_\_\_\_\_  
DIVISION DIRECTOR EXAMINER

A. R. "Al" Kendrick

P. O. BOX 516 • AZTEC, NEW MEXICO 87410 • (505) 334-2555



February 22, 1982

Mr. Joe D. Ramey  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

RE: Application for Approval of Infill Well for Gas Pricing

Dear Mr. Ramey:

We respectfully request that the C & E Operators, Inc. Fee #9-Y well located 152' FNL 910' FWL of Section 9, T30N, R11W be approved as a necessary infill well in the Aztec-Pictured Cliffs Pool to effectively and efficiently drain the spacing unit shared with the Brown #1 well.

The standard spacing unit in the Aztec-Pictured Cliffs Pool is 160 acres.

Enclosed for your consideration are copies of the Permit to Drill, Acreage Dedication Plat, Data Sheet, Structure Map and Map showing the cumulative gas production to 1/1/81.

A copy of this application is being sent by certified mail to the operator of each developed offset spacing unit at the time of this mailing.

If further information is desired, please contact us.

Yours very truly,

*AR Kendrick*  
A. R. Kendrick

Enclosures

xc: Offset operators

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FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION

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 Revised 1-1-82  
 FEB 24 1982  
 OIL CONSERVATION COMMISSION  
 SANTA FE

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work  
 b. Type of Well DRILL  DEEPEN  PLUG BACK   
 OIL WELL  GAS WELL  OTHER  SINGLE ZONE  MULTIPLE ZONE

7. Unit Agreement Name  
 8. Farm or Lease Name  
 Fee

9. Well No.  
 9-Y

10. Field and Pool, or Wellcat:  
 Aztec, PC; Blanco MV

11. Location of Well  
 UNIT LETTER D LOCATED 152 FEET FROM THE North LINE  
910 FEET FROM THE West LINE OF SEC. 9 T4S. 30N R11W

17. County  
 San Juan

19. Proposed Depth  
 4800'

19A. Formation  
 Mancos

20. History or C.T.  
 Rotary

21A. Casing & Bottom Plug Bond  
 Blanket

21B. Drilling Contractor  
 Young Drilling Co.

22. Approx. Date Work will start  
 2-10-81

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12-1/4"	9-5/8"	36	250' plus	160 3% CaCl	Surface
8-3/4"	7"	23	4800'	280 1st stg.	3000'
Stage collar @ approx. 2200'				320 2nd stg.	Surface

A replacement well for the Fee #9 that was abandoned 2-3-81 due to surface casing problems.

Propose to set 9-5/8" casing w/spud mud and cement back to surface. WOC - 16 hrs. Install BOP's and bleed-off manifold. Press. test to 600 psi. for 30 min. Drill 8-3/4" hole with light gel-chemical mud to TD. Run IES and GRD/N logs. Run and stage cement, 7" casing. Perf., stimulate Mesaverde; set plug. Perf., stimulate and test PC zone. Drill out plug. Clean up Mesaverde. Set Baker Mod. "D" packer, run 2-3/8" tubing w/seal assy. on Mesaverde. Run 1 1/2" tubing on zone. Install dual well head; clean up and test.

Location inside City Limits of Aztec, N. M.

APPROVAL VALID FOR 90 DAYS UNLESS DRILLING COMMENCED, 8-3-81

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 FEB 4 1981  
 OIL CON. COM.  
 DIST. 3

ABOVE SPACE DESCRIBE PROPOSED PROGRAM IF PROPOSAL IS TO DEEPEN OR PLUG BACK EXPIRES

I hereby certify that the information above is true and complete to the best of my knowledge and belief.  
 John M. Haller NM Reg. Eng. #4361, P. O. Box 1507, Durango, Co  
 Title Consultant

APPROVED BY Frank J. Long TITLE SUPERVISOR DISTRICT #3. DATE FEB 4 1981

CONDITIONS OF APPROVAL, IF ANY:

Hand  
 C-104 for  
 NSE

**REGISTERED**  
FEB 24 1982

All distances must be from the north boundary of the Section.

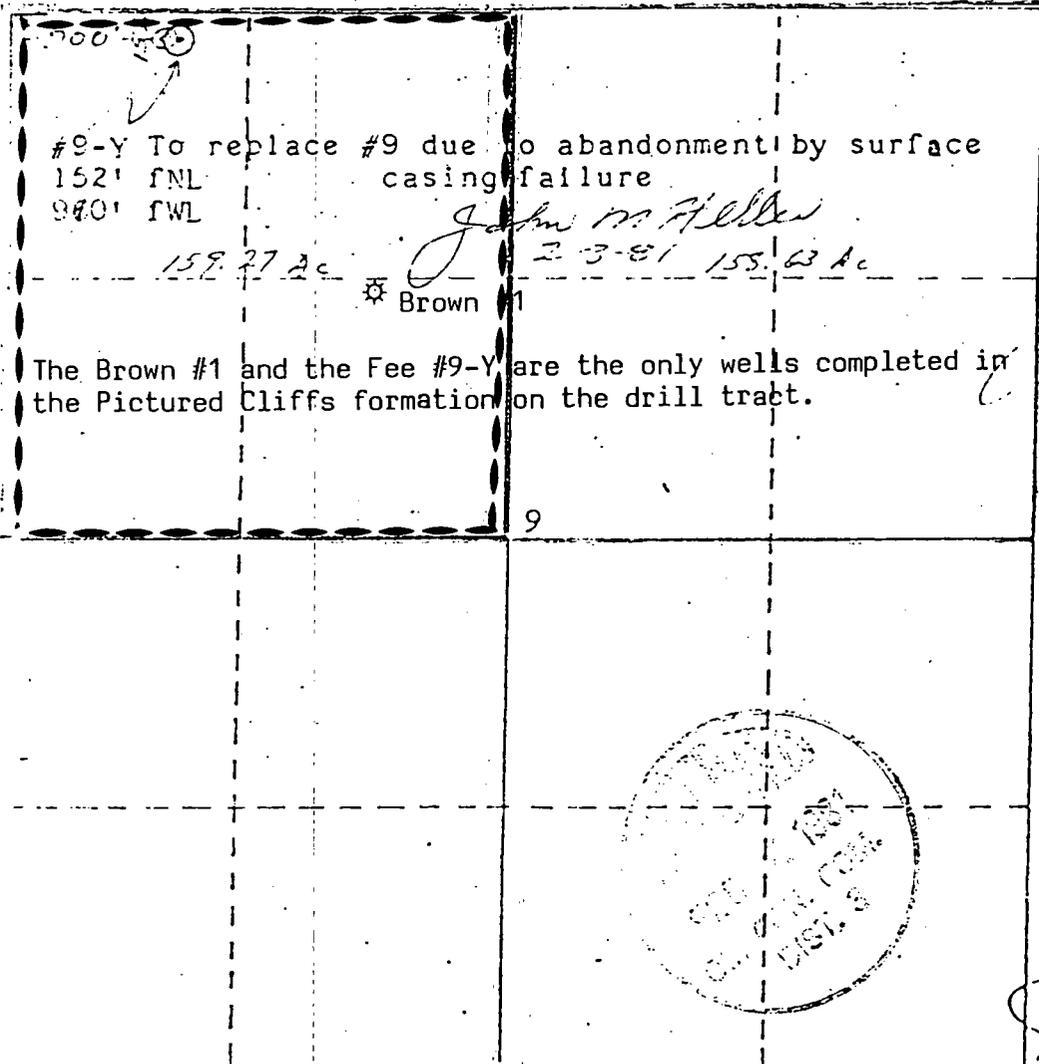
C&E OPERATORS, INC.		FEE		SANTA FE	
Letter	Section	Township	Range	County	
	9	30 NORTH	11 WEST	SAN JUAN	
152 feet from the NORTH line and		940 feet from the WEST line		Dedicated Acreage: 319.9	
Producing Formation: Pictured Cliffs		Pool: Blanco, NM		159.27/60	

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes  No If answer is "yes," type of consolidation Force Pooling by Order on Dec. 10, 1980

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, force-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



**CERTIFICATION**

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

Signature: John M. Keller  
Position: Consultant  
Company: C&E Operators  
Date: Nov. 24, 1980

I hereby certify that the information shown on this plat was plotted from field notes of equal or better accuracy and under proper conditions and that it is true and correct to the best of my knowledge and belief.

**REGISTERED PROFESSIONAL ENGINEER & SURVEYOR**  
STATE OF NEW MEXICO  
1983  
JAMES P. LOESE  
JIBESP. LEET

Date Surveyed: October 23, 1980  
Registered Professional Engineer and/or Land Surveyor  
James P. Loese  
Certificate No. 1463

DATA SHEET

ORIGINAL WELL:

Operator: C & E Operators, Inc.  
Lease: Brown #1  
Location: 1390' FNL 1900' FWL Section 9, T30N, R11W  
Spud: 5/29/54 Completed: 7/22/54  
Stimulation: Shot w/ 175 quarts of solidified nitroglycerin  
Mechanical problems: none  
Retreatment: Sand/oil fractured 10/4/54 w/ 8401 gallons of oil and  
6100 pounds of sand  
Current producing rate: 15,521 MCF during 1980

REASON that the existing well cannot effectively and efficiently drain the drill tract is because of the narrow radius of effective stimulation by the shot and low-volume fracture treatments. A high-volume fracture treatment is not feasible at this time due to the possibility of casing rupture. Four wells are shown on the structure map which have been plugged because of casing failure.

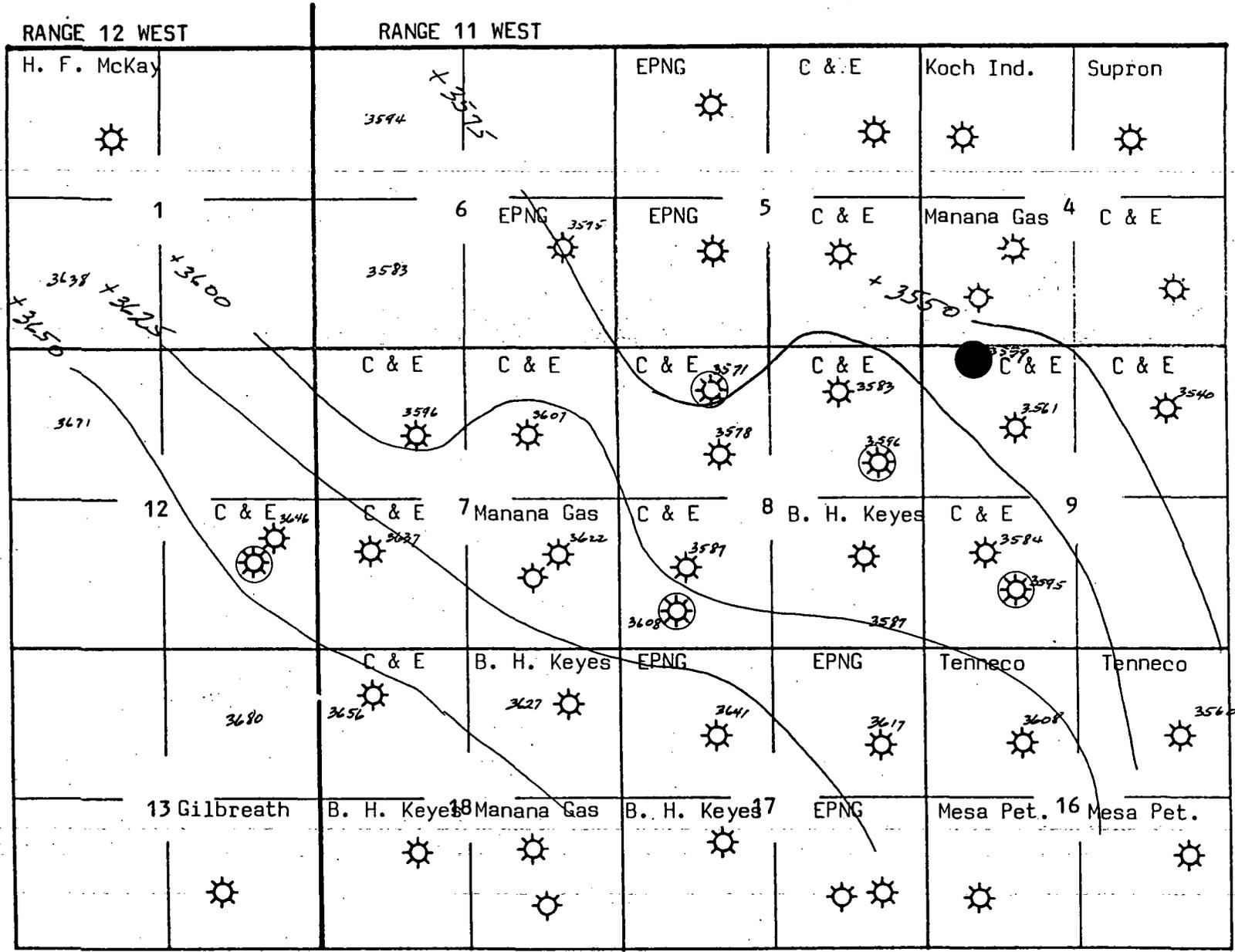
INFILL WELL:

Operator: C & E Operators, Inc.  
Lease: Fee #9-Y  
Location: 152' FNL 910' FWL Section 9, T30N, R11W  
Spud: 2/13/81 Completed: 7/27/81  
Stimulation: Sand/foam fracture w/ 70 quality foam and 57,000 pounds of sand.

VOLUME of expected additional recovery: 136 MMCF

BASED on Boyle's Law, if the initial shut-in pressure of 672 psi represented 100% of the recoverable reserves, and if the shut-in pressure of 190 psi measured 10/19/81 represented the remaining recoverable reserves, and considering the production of 796 MMCF having been produced through 10/31/81; then, the remaining recoverable reserves were 231 MMCF at an abandonment pressure of 50 psi. The shut-in pressure of 272 psi measured 9/30/81 on the infill well indicates recoverable reserves of 367 MMCF at an abandonment pressure of 50 psi. Therefore, the additional recoverable reserves will be 136 MMCF.

PICTURED CLIFFS STRUCTURE MAP



TOWNSHIP 30 NORTH

☀ = Gas Well      ☀ = Infill Gas Well      ☀ = Plugged Well



# CITY OF AZTEC

## 9-6 REGULATION OF THE DRILLING AND PRODUCTION OF OIL AND/OR GAS WELLS

### 9-6-1 SCOPE:

The scope of this article shall be for the regulation of the drilling and production of oil and/or gas or for liquid hydrocarbons within the City of Aztec, New Mexico, and shall include any well to be used as an injection well for secondary recovery.

### 9-6-2 PERMITS

Every person, firm, partnership or corporation hereafter desiring to drill a well within the City of Aztec, New Mexico, or rework an existing well shall obtain a permit for the drilling or reworking of such well and the production thereof, such permit to be obtained as follows:

- a. Written application shall be filed therefore with the City Clerk and shall contain the following:
  1. The name of the operator desiring to drill and produce such well.
  2. The exact location of the proposed well together with a description of the area to be occupied by the drilling machinery pits and equipment in the drilling of such well and the area to be occupied by the machinery to be used in the production of such well, and
  3. Names and address of all property owners within 200 feet of well location.
  4. A certificate of insurance which certifies that the operator and all persons who may be engaged in the drilling or operation of such well are insured to the public for any operation in the sum of One Hundred Thousand (\$100,000.00) dollars for damages to any one (1) person, and Three Hundred Thousand Dollars (\$300,000.00) for damages to more than one person, from any one (1) accident; also, for the sum of One Hundred Thousand Dollars (\$100,000.00) for damages to property.
  5. Such application shall be accompanied by a \$350.00 filing fee.
- b. Upon the receipt of all of the above the City Clerk shall establish a hearing date when the application is to be considered by the City Commission. Public notice of the hearing at which the application is to be considered must be given by at least one publication in a newspaper of general circulation in the municipality at least 15 days before the date of the hearing. All property owners within 200 feet of the proposed well location shall be notified of the hearing date by written notice by certified mail, return receipt requested, not less than five days before the date of the hearing.

- c. The City Clerk shall issue a written recommendation for approval or denial to the City Commission at the hearing.
- d. In all matters pertaining to this chapter the City Manager shall advise the City Commission and shall make recommendations concerning all matters pertaining to this chapter.

9-6-3 OBSTRUCTING STREETS BY DRILLING, ETC.:

No well shall be drilled and no permit shall be issued for any well to be drilled at any one location which is within any of the streets or alleys of the City. No such street or alley shall be blocked or encumbered or closed in any drilling, production or pipeline operation except by written permission of the oil and gas inspector and the City Manager and then only temporarily.

9-6-4 PROXIMITY OF WELL, TANKS OR PIPELINES TO BUILDINGS:

No well shall be drilled and no permit shall be issued for any well to be drilled at any location or storage tank to be located which is nearer than two hundred (200) feet to any residence or commercial building without the applicant having first secured the written permission of the City Commission.

No high pressure gas injection well or a compressor used in conjunction with the gas injection well shall be located nearer than two hundred (200) feet to any residential, commercial or industrial structure, except by permission of the City Commission. In exceptional cases for reasons of safety, the City Commission may require that any such facility shall be located at a greater distance than 200 feet to any such structure.

No residential, commercial or industrial structure other than structures necessary to operate the pipeline shall be erected or moved to a location nearer than thirty (30) feet to any pipeline transporting gas when the pipeline operating pressure is greater than 250 PSI unless a greater or lesser distance is recommended by the then applicable ASA Code.

9-6-5 REQUIREMENT FOR OPERATION OF PRODUCING WELL:

Any person, firm partnership or corporation who completes an oil or gas well within the limits of the City of Aztec, New Mexico, shall operate the same in accord with the following provisions:

- a. The area to be occupied by the producing equipment in the event any well located within the City of Aztec is completed as a commercial producer shall be confined to an area not to exceed one hundred (100) feet by one hundred and fifty (150) feet and the 100 feet by 150 feet area to be occupied by the producing equipment shall be enclosed in a chain link fence six (6) feet in height and three (3) strands of barbed wire at the top, which barbed wire strands shall slope outward.

- b. The fence and area referred to in sub-paragraph above shall be landscaped and maintained if such well location is within five hundred (500) feet of a residential lot as described in the City Zoning Ordinance.
- c. Any tank containing oil or distillate shall be located within a dike or fire wall capable of holding one and one-half (1½) times the volume of the tank; and all operations shall be maintained so as not to be a fire hazard and so as not to jeopardize the health and safety of the Citizens of the City of Aztec.
- d. All fluids produced shall be produced into a tank and hauled off the location.
- e. All operations shall be conducted in such a manner so that they will make the least noise possible.

9-6-6 REQUIREMENTS FOR OPERATION OF DRILLING WELL:

Any person, firm, partnership or corporation drilling a well for oil and gas within the limits of the City of Aztec, New Mexico, shall contain all drilling fluids in pits which will be completely covered at the completion of drilling.

9-6-7 PENALTY

Any firm, person, partnership or corporation convicted of drilling or operating a well in violation of the provisions of this article shall be punished by a fine of not less than one hundred dollars (\$100.00) or more than three hundred dollars (\$300.00) and each day that any person, firm, partnership or corporation shall be in violation of this ordinance shall be taken as a separate offense.

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MAR 01 1982  
OIL CONSERVATION DIVISION  
SANTA FE

A. R. "Al" Kendrick

P. O. BOX 516 • AZTEC, NEW MEXICO 87410 • (505) 334-2555

February 22, 1982

Dear Offset Operator:

If you have no objection to the attached Application for Approval of Infill Well for Gas Pricing, please sign the waiver below and send it to the New Mexico Oil Conservation Division office in Santa Fe, New Mexico.

Yours very truly,

*AR Kendrick*  
A. R. Kendrick

Mr. Joe D. Ramey  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

We, as offset operator, hereby waive objection to the Application for Approval of Infill Well for Gas Pricing filed for C & E Operators, Inc.

WELL: Fee #9-Y

LOCATION: D-9-T30N-R11W

OPERATOR: Manana Gas Inc.

BY: Ed Hartman

DATE: 2/25/82

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Michael E. Senger

March 18, 1982

MMOI Conservation Division

Infill Well Application  
A.R. "A1" Handrik for C+E Operators  
Fee Well No. 9-7, D-9-730N, R11W, San Juan Co.  
Offsetting Brown Well No. 1 in Unit F.

Given: I.S.I.P. = 672 psi,  
Current S.I.P. = 190 psi,  
Cumulative Production to date = 796 mcf  
Abandonment Pressure = 50 psi,  
Infill Well S.I.P. = 272 psi.

672 psi - 190 psi = 482 psi.

$\frac{7}{672 \text{ psi}} = 796 \text{ mcf} / 482 \text{ psi}$

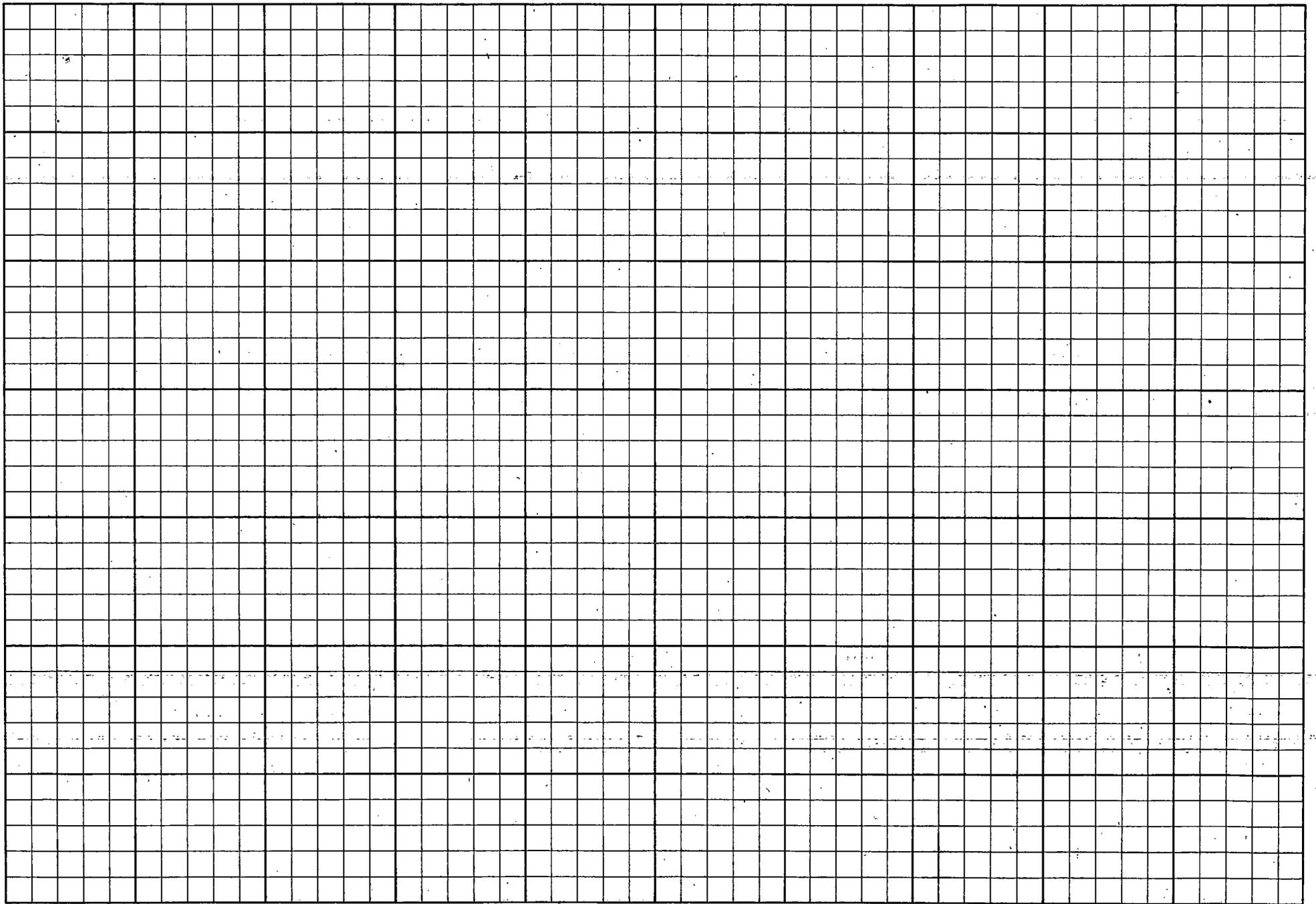
$x = 1110 \text{ mcf}$ , Original Res. @ 672 psi

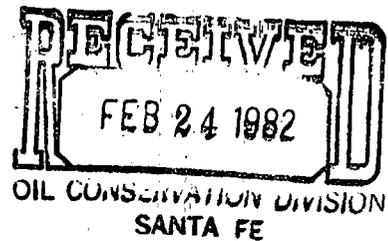
$50 \text{ psi} / 672 \text{ psi} (1110 \text{ mcf}) = 82 \text{ mcf}$ , Res. @ Abandonment

1110 mcf  
- 796 mcf  
314 mcf Remaining Reserves to date  
- 82 mcf  
232 mcf Remaining Recoverable Res.

$272 \text{ psi} / 672 \text{ psi} (1110 \text{ mcf}) = 449 \text{ Res. of infill well, mcf}$

449 mcf  
- 82 mcf  
367 mcf Res. Res. of infill well  
- 232 mcf  
135 mcf, Add'l Res.





A. R. "Al" Kendrick

P. O. BOX 516 • AZTEC, NEW MEXICO 87410 • (505) 334-2555

February 22, 1982

Mr. Joe D. Ramey  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

RE: Application for Approval of Infill Well for Gas Pricing

Dear Mr. Ramey:

We respectfully request that the C & E Operators, Inc. Fee #9-Y well located 152' FNL 910' FWL of Section 9, T30N, R11W be approved as a necessary infill well in the Aztec-Pictured Cliffs Pool to effectively and efficiently drain the spacing unit shared with the Brown #1 well.

The standard spacing unit in the Aztec-Pictured Cliffs Pool is 160 acres.

Enclosed for your consideration are copies of the Permit to Drill, Acreage Dedication Plat, Data Sheet, Structure Map and Map showing the cumulative gas production to 1/1/81.

A copy of this application is being sent by certified mail to the operator of each developed offset spacing unit at the time of this mailing.

If further information is desired, please contact us.

Yours very truly,

A handwritten signature in cursive script that reads "A. R. Kendrick".

A. R. Kendrick

Enclosures

xc: Offset operators

NEW MEXICO OIL CONSERVATION COMMISSION

20-045-208  
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 OIL CONSERVATION DIVISION  
 SANTA FE

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U.S.G.S.	
LAND OFFICE	
OPERATOR	

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work

b. Type of Well  
 DRILL  DEEPEN  PLUG BACK   
 OIL WELL  GAS WELL  OTHER  SINGLE ZONE  MULTIPLE ZONE

2. Name of Operator  
 C. & E. Operators, Inc.

3. Address of Operator  
 One Energy Square, Suite 170, Dallas, Texas 75206

4. Location of Well  
 UNIT LETTER D LOCATED 152 FEET FROM THE North LINE  
910 FEET FROM THE West LINE OF SEC. 9 TWP. 30N RCP. 11W

7. Unit Agreement Name

8. Form of Lease Name  
 Fee

9. Well No.  
 9-Y

10. Fluid and Prod. or Willcase  
 Aztec, PC; Blanco MV

17. County  
 San Juan

19. Proposed Depth  
 4800'

19A. Formation  
 Mancos

20. Rotary or C.T.  
 Rotary

21. Kind & Status Plug. Bond  
 Blanket

21B. Drilling Contractor  
 Young Drilling Co.

22. Approx. Date Work will start  
 2-10-81

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12-1/4"	9-5/8"	36	250' plus	160 3% CaCl	Surface
8-3/4"	7"	23	4800'	280 1st stg.	3000'
Stage collar @ approx. 2200'				320 2nd stg.	Surface

A replacement well for the Fee #9 that was abandoned 2-3-81 due to surface casing problems.

Propose to set 9-5/8" casing w/spud mud and cement back to surface. WOC - 16 hrs. Install BOP's and bleed-off manifold. Press. test to 600 psi. for 30 min. Drill 8-3/4" hole with light gel-chemical mud to TD. Run IES and GRD/N logs. Run and stage cement, 7" casing. Perf., stimulate Mesaverde; set plug. Perf., stimulate and test PC zone. Drill out plug. Clean up Mesaverde. Set Baker Mod. "D" packer, run 2-3/8" tubing w/seal assy. on Mesaverde. Run 1 1/2" tubing on zone. Install dual well head; clean up and test.

Location inside City Limits of Aztec, N. M.

APPROVAL VALID  
 FOR 90 DAYS UNLESS  
 DRILLING COMMENCED,

8-3-81

**RECEIVED**  
 FEB 4 1981  
 OIL CON. COM.  
 DIST 3

ABOVE SPACE DESCRIBE PROPOSED PROGRAM; IF PROPOSAL IS TO DEEPEN OR PLUG BACK EXISTING WELL, INDICATE PROPOSED DEPTH AND PRODUCTION ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.  
 and John M. Haller Title Consultant Date \_\_\_\_\_  
 NM Reg. Eng. #4361, P. O. Box. 1507, Durango, Co

(This space for State Use)  
 APPROVED BY Frank J. Dwyer TITLE SUPERVISOR DISTRICT #3 DATE FEB 4 1981

CONDITIONS OF APPROVAL, IF ANY:

Hand  
 C-104 for  
 NSL

**RECEIVED**  
**FEB 24 1982**

All distances must be from the outer boundaries of the Section

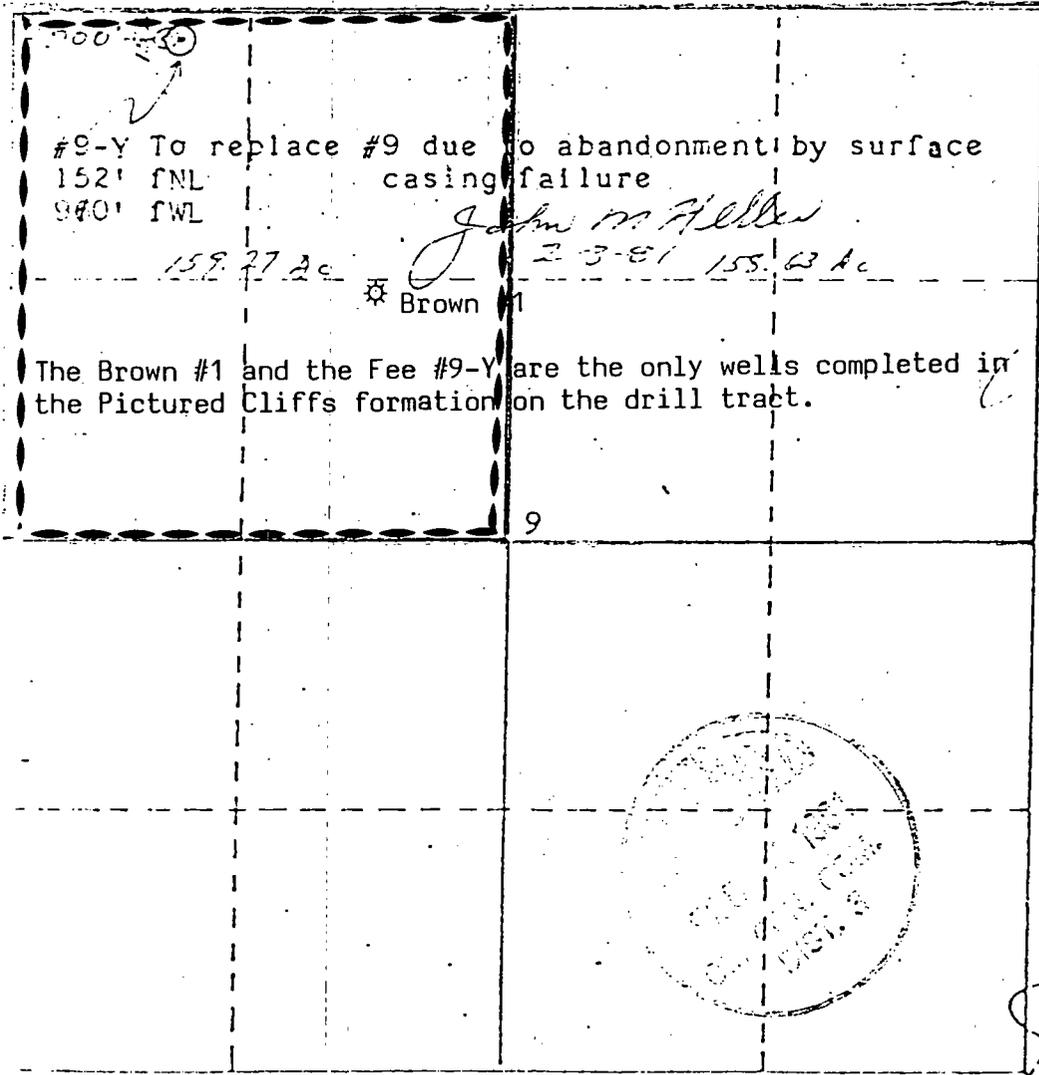
C&E OPERATORS, INC.		FEE	
Section 9	Township 30 NORTH	Range 11 WEST	County SANTA FE SAN JUAN
152 feet from the NORTH line and	940 feet from the WEST line	Dedicated Acres: 319.9 159.27/60	

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes  No If answer is "yes," type of consolidation unitization force pooling by order on Dec. 10, 1979

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, force-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



**CERTIFICATION**

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

Signature: John M. Keller  
 Position: Consultant  
 Company: C&E Operators  
 Date: Nov. 24, 1980

I hereby certify that the plat was plotted from notes equal and under my supervision and is true and correct to the best of my knowledge and belief.

**NEW MEXICO PROFESSIONAL ENGINEERS AND SURVEYORS**  
 STATE OF NEW MEXICO  
 NO. 1463  
 1983  
 JAMES P. LEESE

Date Surveyed: October 23, 1980  
 Registered Professional Engineer and/or Land Surveyor  
James P. Leese  
 Certificate No. 1463

DATA SHEET

ORIGINAL WELL:

Operator: C & E Operators, Inc.  
Lease: Brown #1  
Location: 1390' FNL 1900' FWL Section 9, T30N, R11W  
Spud: 5/29/54 Completed: 7/22/54  
Stimulation: Shot w/ 175 quarts of solidified nitroglycerin  
Mechanical problems: none  
Retreatment: Sand/oil fractured 10/4/54 w/ 8401 gallons of oil and  
6100 pounds of sand  
Current producing rate: 15,521 MCF during 1980

REASON that the existing well cannot effectively and efficiently drain the drill tract is because of the narrow radius of effective stimulation by the shot and low-volume fracture treatments. A high-volume fracture treatment is not feasible at this time due to the possibility of casing rupture. Four wells are shown on the structure map which have been plugged because of casing failure.

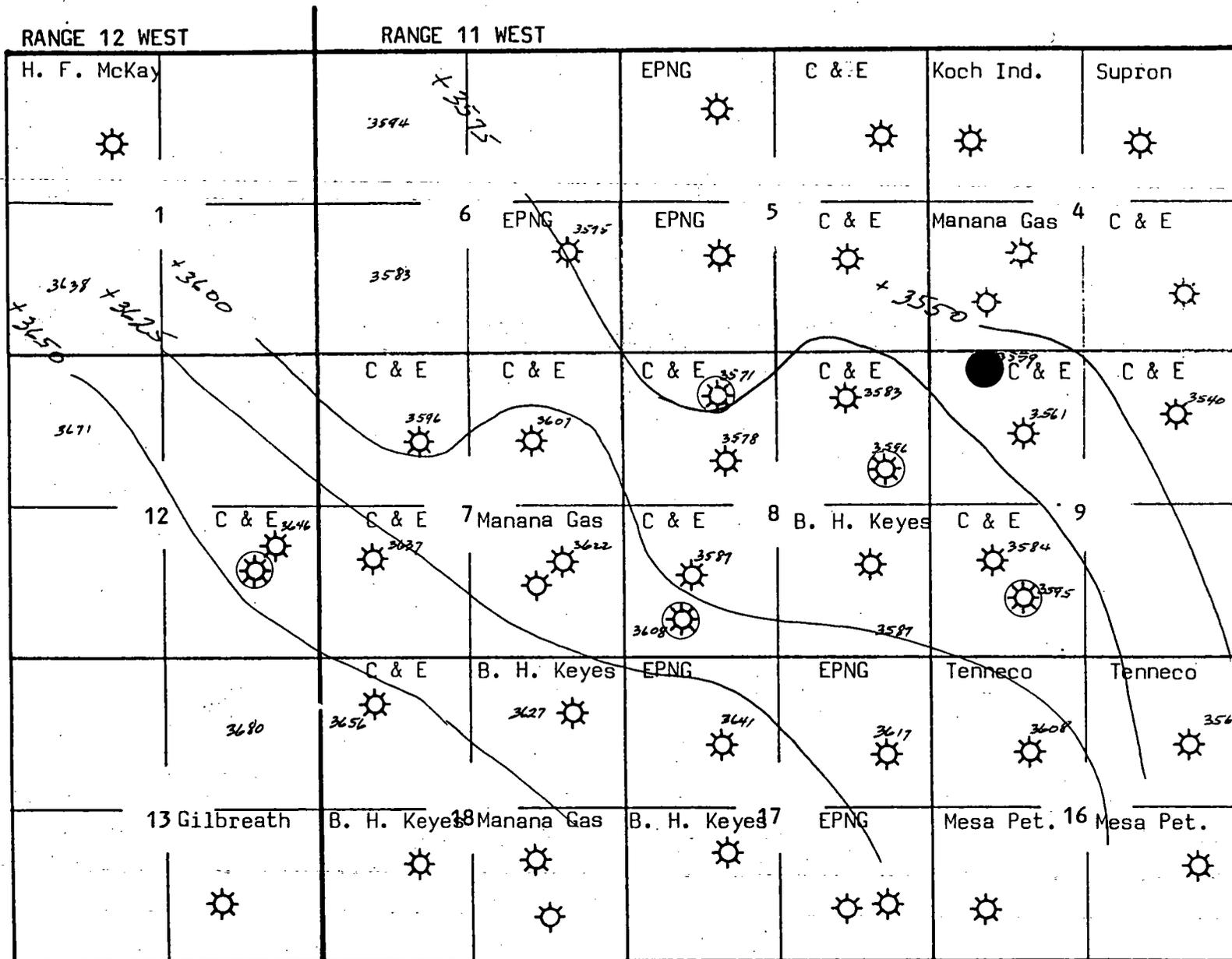
INFILL WELL:

Operator: C & E Operators, Inc.  
Lease: Fee #9-Y  
Location: 152' FNL 910' FWL Section 9, T30N, R11W  
Spud: 2/13/81 Completed: 7/27/81  
Stimulation: Sand/foam fracture w/ 70 quality foam and 57,000 pounds of sand.

VOLUME of expected additional recovery: 136 MMCF

BASED on Boyle's Law, if the initial shut-in pressure of 672 psi represented 100% of the recoverable reserves, and if the shut-in pressure of 190 psi measured 10/19/81 represented the remaining recoverable reserves, and considering the production of 796 MMCF having been produced through 10/31/81; then, the remaining recoverable reserves were 231 MMCF at an abandonment pressure of 50 psi. The shut-in pressure of 272 psi measured 9/30/81 on the infill well indicates recoverable reserves of 367 MMCF at an abandonment pressure of 50 psi. Therefore, the additional recoverable reserves will be 136 MMCF.

PICTURED CLIFFS STRUCTURE MAP



TOWNSHIP 30 NORTH

☀ = Gas Well      ⦿ = Infill Gas Well      ⦿ = Plugged Well



# CITY OF AZTEC

## 9-6 REGULATION OF THE DRILLING AND PRODUCTION OF OIL AND/OR GAS WELLS

### 9-6-1 SCOPE:

The scope of this article shall be for the regulation of the drilling and production of oil and/or gas or for liquid hydrocarbons within the City of Aztec, New Mexico, and shall include any well to be used as an injection well for secondary recovery.

### 9-6-2 PERMITS

Every person, firm, partnership or corporation hereafter desiring to drill a well within the City of Aztec, New Mexico, or rework an existing well shall obtain a permit for the drilling or reworking of such well and the production thereof, such permit to be obtained as follows:

- a. Written application shall be filed therefore with the City Clerk and shall contain the following:
  1. The name of the operator desiring to drill and produce such well.
  2. The exact location of the proposed well together with a description of the area to be occupied by the drilling machinery pits and equipment in the drilling of such well and the area to be occupied by the machinery to be used in the production of such well, and
  3. Names and address of all property owners within 200 feet of well location.
  4. A certificate of insurance which certifies that the operator and all persons who may be engaged in the drilling or operation of such well are insured to the public for any operation in the sum of One Hundred Thousand (\$100,000.00) dollars for damages to any one (1) person, and Three Hundred Thousand Dollars (\$300,000.00) for damages to more than one person, from any one (1) accident; also, for the sum of One Hundred Thousand Dollars (\$100,000.00) for damages to property.
  5. Such application shall be accompanied by a \$350.00 filing fee.
- b. Upon the receipt of all of the above the City Clerk shall establish a hearing date when the application is to be considered by the City Commission. Public notice of the hearing at which the application is to be considered must be given by at least one publication in a newspaper of general circulation in the municipality at least 15 days before the date of the hearing. All property owners within 200 feet of the proposed well location shall be notified of the hearing date by written notice by certified mail, return receipt requested, not less than five days before the date of the hearing.

- c. The City Clerk shall issue a written recommendation for approval or denial to the City Commission at the hearing.
- d. In all matters pertaining to this chapter the City Manager shall advise the City Commission and shall make recommendations concerning all matters pertaining to this chapter.

9-6-3 OBSTRUCTING STREETS BY DRILLING, ETC.:

No well shall be drilled and no permit shall be issued for any well to be drilled at any one location which is within any of the streets or alleys of the City. No such street or alley shall be blocked or encumbered or closed in any drilling, production or pipeline operation except by written permission of the oil and gas inspector and the City Manager and then only temporarily.

9-6-4 PROXIMITY OF WELL, TANKS OR PIPELINES TO BUILDINGS:

No well shall be drilled and no permit shall be issued for any well to be drilled at any location or storage tank to be located which is nearer than two hundred (200) feet to any residence or commercial building without the applicant having first secured the written permission of the City Commission.

No high pressure gas injection well or a compressor used in conjunction with the gas injection well shall be located nearer than two hundred (200) feet to any residential, commercial or industrial structure, except by permission of the City Commission. In exceptional cases for reasons of safety, the City Commission may require that any such facility shall be located at a greater distance than 200 feet to any such structure.

No residential, commercial or industrial structure other than structures necessary to operate the pipeline shall be erected or moved to a location nearer than thirty (30) feet to any pipeline transporting gas when the pipeline operating pressure is greater than 250 PSI unless a greater or lesser distance is recommended by the then applicable ASA Code.

9-6-5 REQUIREMENT FOR OPERATION OF PRODUCING WELL:

Any person, firm partnership or corporation who completes an oil or gas well within the limits of the City of Aztec, New Mexico, shall operate the same in accord with the following provisions:

- a. The area to be occupied by the producing equipment in the event any well located within the City of Aztec is completed as a commercial producer shall be confined to an area not to exceed one hundred (100) feet by one hundred and fifty (150) feet and the 100 feet by 150 feet area to be occupied by the producing equipment shall be enclosed in a chain link fence six (6) feet in height and three (3) strands of barbed wire at the top, which barbed wire strands shall slope outward.

- b. The fence and area referred to in sub-paragraph above shall be landscaped and maintained if such well location is within five hundred (500) feet of a residential lot as described in the City Zoning Ordinance.
- c. Any tank containing oil or distillate shall be located within a dike or fire wall capable of holding one and one-half (1½) times the volume of the tank; and all operations shall be maintained so as not to be a fire hazard and so as not to jeopardize the health and safety of the Citizens of the City of Aztec.
- d. All fluids produced shall be produced into a tank and hauled off the location.
- e. All operations shall be conducted in such a manner so that they will make the least noise possible.

9-6-6 REQUIREMENTS FOR OPERATION OF DRILLING WELL:

Any person, firm, partnership or corporation drilling a well for oil and gas within the limits of the City of Aztec, New Mexico, shall contain all drilling fluids in pits which will be completely covered at the completion of drilling.

9-6-7 PENALTY

Any firm, person, partnership or corporation convicted of drilling or operating a well in violation of the provisions of this article shall be punished by a fine of not less than one hundred dollars (\$100.00) or more than three hundred dollars (\$300.00) and each day that any person, firm, partnership or corporation shall be in violation of this ordinance shall be taken as a separate offense.

RECEIVED  
MAR 01 1982  
OIL CONSERVATION DIVISION  
SANTA FE

A. R. "Al" Kendrick

P. O. Box 516 • AZTEC, NEW MEXICO 87410 • (505) 334-2555

February 22, 1982

Dear Offset Operator:

If you have no objection to the attached Application for Approval of Infill Well for Gas Pricing, please sign the waiver below and send it to the New Mexico Oil Conservation Division office in Santa Fe, New Mexico.

Yours very truly,

*AR Kendrick*  
A. R. Kendrick

Mr. Joe D. Ramey  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

We, as offset operator, hereby waive objection to the Application for Approval of Infill Well for Gas Pricing filed for C & E Operators, Inc.

WELL: Fee #9-Y

LOCATION: D-9-T30N-R11W

OPERATOR: Manana Gas Inc.

BY: Ed Hartman

DATE: 2/25/82

RECEIVED FEB 24 1982



Michael E. Seeger

March 18, 1982

McMCI Construction Division

Infill Well Application  
 A.R. "H1" Kendrick for C&E Operators  
 Fee Well No. 9-7, D-9-730A, R11W, San Juan Co.  
 Offsetting, Brown Well No. 1 in Unit F.

Given: I.S.I.P. = 672 psi,

Current S.I.P. = 190 psi,

Cumulative Production to date = 796 mMcF

Abandonment Pressure = 50 psi,

Infill Well S.I.P. = 272 psi.

672 psi - 190 psi = 482 psi.

$\frac{7}{672}$  psi = 796 mMcF / 482 psi.

$x = 1110$  mMcF, Original Res. @ 672 psi.

$50 \text{ psi} / 672 \text{ psi} (1110 \text{ mMcF}) = 82 \text{ mMcF}$ , Res. @ Abandonment

1110 mMcF

- 796 mMcF

314 mMcF Remaining Reserves to date

- 82 mMcF

232 mMcF Remaining Recoverable Res.

$2720 \text{ psi} / 672 \text{ psi} (1110 \text{ mMcF}) = 449$  Res. of infill well, mMcF

449 mMcF

- 81 mMcF

367 mMcF Res. Res. of infill well

- 232 mMcF

135 mMcF, Add'l Res.