Midland Division
Exploration and Production

'90 NOV 6 AM 8 53

Conoco Inc.
10 Desta Drive West
Midland, TX 79705-4514
(915) 686-5400

November 1, 1990

Mr. William LeMay
State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
P. O. Box 1088
Santa Fe. NM 87501-2088

Dear Mr. LeMay:

Application for Authority to Inject CO_2 in MCA No. 386,
A Proposed Replacement Injector for MCA No. 157
MCA Unit - Lea County, New Mexico

Conoco Inc. requests administrative approval to inject CO_2 into the proposed MCA Well No. 386 which will be drilled as a replacement wellbore for the previously approved injection well No. 157. The MCA CO_2 project was originally approved on October 30, 1979, under Order R-6157. Expansion of the project to include injection into MCA 157, for which MCA 386 will be a replacement wellbore, was approved January, 1989 by Order No. PMX-153.

The MCA No. 157 CO_2 injector was plugged and abandoned in July, 1990 due to mechanical problems. This well provided injection support for eight producing wells in its inverted 9-spot pattern. To prevent waste and maximize recovery from this pattern it is essential that injection support be resumed as soon as possible. It is anticipated that 800 MBO would be lost if injection is not resumed at this location.

The following items are attached for your consideration of this application:

1. Form C-108.

2. Attachment to Form C-108.

3. Copy of Application for Permit to Drill MCA No. 386 as filed with the BLM.

4. Copy of Order No. PMX-153 which authorized expansion of the CO_2 project to include injection into MCA No. 157 for which MCA No. 386 is a replacement wellbore.

5. Copy of the application and exhibits filed with the OCD in seeking the approval granted by Order No. PMX-153.

It is anticipated that these attachments will include the required data and exhibits that will be needed for approval of this replacement injection well. If any further information or data is needed, please contact Jerry W. Hoover at (915) 686-6548.

Jerry W. Hoover
Regulatory Coordinator

JWH/tm

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Conoco Inc.

Address: 10 Desta Drive West

Contact party: Jerry W. Hoover Phone: (915) 686-6548

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project PMX-153.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Jerry W. Hoover Title Regulatory Coordinator

Signature: Jerry W. Hoover Date: 11/1/90

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Dec. 12, 1988 administrative application for expansion under Order R-6157. Order No. PMX-153 approved this expansion.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

ATTACHMENT TO C-108

III. Well data for the proposed injection well is included in the attached copy of the Application for Permit to Drill as filed with the BLM.

V. This map was included in the attached copy of the Dec. 12, 1988 application for approval to inject CO_2 in this part of the MCA Unit .

VI. This tabulated data is also a part of the previous application.

VII. This tabulated data is also a part of the previous application.

VIII. This tabulated data is also a part of the previous application.

IX. This well will receive only a matrix acid treatment.

X. Logs will be filed with the NMOCD following the drilling of this well.

X1. See the previous application.

XII. See the previous application.

XIII. The BLM owns the surface and this sell is offset only Conoco, therefore no notification or proof of notice was required.

Form 3160-3
(July 1989)
(formerly 9-331C)

CONTACT RECEIVING OFFICE FOR NUMBER OF COPIES REQUIRED
(Other instructions on reverse side)

BLM Roswell District
Modified Form No.
NM060-3160-2

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL ☒ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER CO_2 Injection SINGLE ZONE ☐ MULTIPLE ZONE ☐

2. NAME OF OPERATOR: Conoco Inc.

3a. Area Code & Phone No.: (915) 686-6548

3. ADDRESS OF OPERATOR: 10 Desta Drive West, Midland, TX 79705

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1921' FNL & 1995' FWL
At proposed prod. zone:

5. LEASE DESIGNATION AND SERIAL NO.: LC 029410A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME: MCA

8. FARM OR LEASE NAME:

9. WELL NO.: 386

10. FIELD AND POOL, OR WILDCAT: Maljamar Grayburg-SA

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 29, T-17S, R-32E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

12. COUNTY OR PARISH: Lea

13. STATE: NM

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

16. NO. OF ACRES IN LEASE

17. NO. OF ACRES ASSIGNED TO THIS WELL: 20

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

19. PROPOSED DEPTH: 4350'

20. ROTARY OR CABLE TOOLS

21. ELEVATIONS (Show whether DF, RT, GR, etc.): GR 3938

22. APPROX. DATE WORK WILL START*

23. PROPOSED CASING AND CEMENTING PROGRAM

HOLE SIZE	CASING SIZE	WEIGHT/FOOT	GRADE	THREAD TYPE	SETTING DEPTH	QUANTITY OF CEMENT
14-3/4"	10-3/4"	45#	K-55	LT&C	900'	455sx
9-1/2"	7"	23#	K-55	LT&C	4350'	1425sx

This well is proposed to be drilled as a replacement CO_2 injector in the Maljamar CO_2 Flood Project.

Attachments
1) Well Location and Acreage Dedication Plat.
2) Attachment to Form 3160-3.
3) Proposed Well Plan Outline.
4) Surface Use Plan.
5) EXHIBIT A - New Mexico road map.
6) EXHIBIT B - Lease road map.
7) EXHIBIT B.1 - Location facility plat.
8) EXHIBIT C - Rig layout plat.
9) BOP Specifications.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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 Jerry W. Hoover TITLE Regulatory Coordinator DATE October 24, 1990

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for

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

State of New Mexico
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.
CONOCO, INC.	MCA	386

Unit Letter	Section	Township	Range	County
F	29	17 South	32 East NMPM	Lea

Actual Footage Location of Well:
1921 feet from the North line and 1995 feet from the West line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3938.1	Grayburg-San Andres	Maljamar Grayburg-SA	20 Acres

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

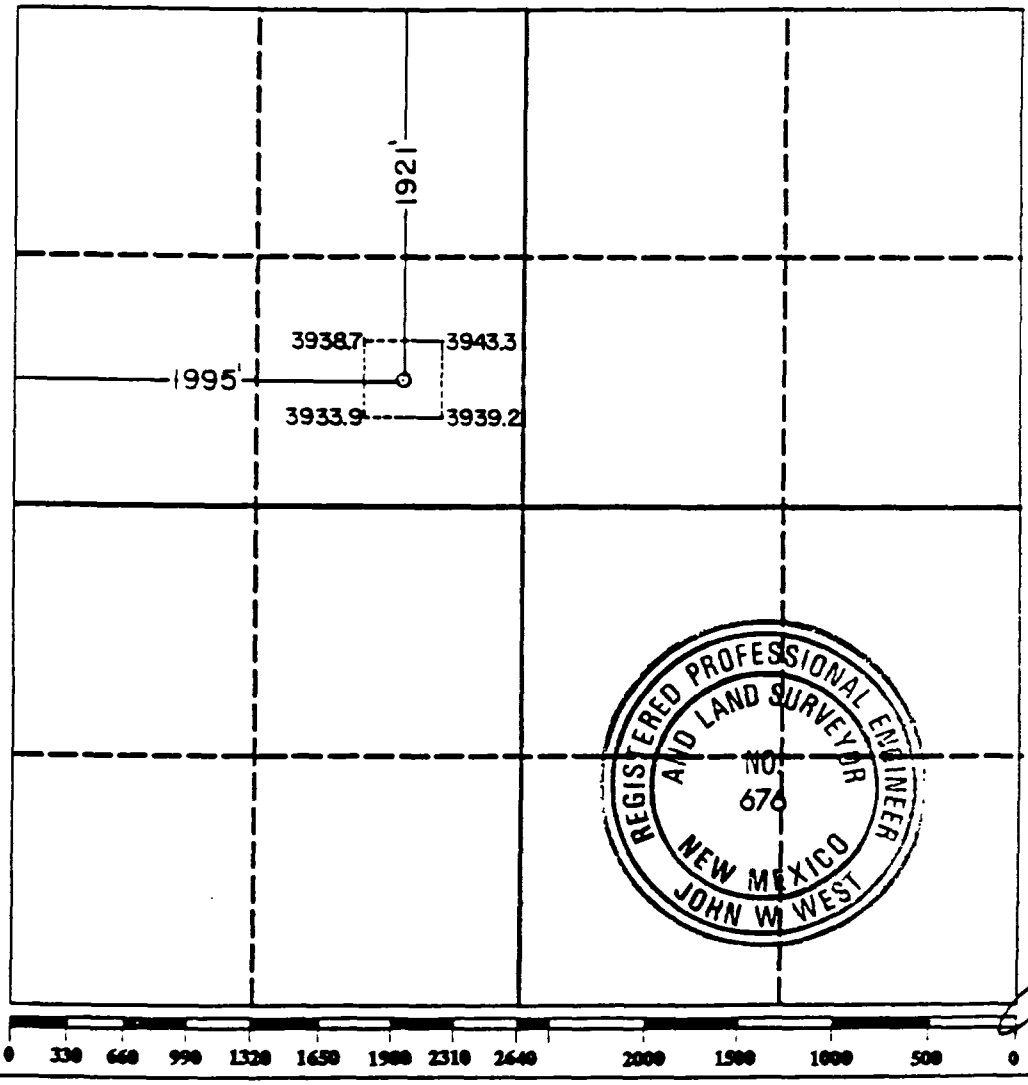
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.

Signature: Jerry W. Hoover

Printed Name: Jerry W. Hoover

Position: Regulatory Coordinator

Company: Conoco Inc.

Date: 10/24/90

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: October 3, 1990

Signature & Seal of Professional Surveyor

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

125830

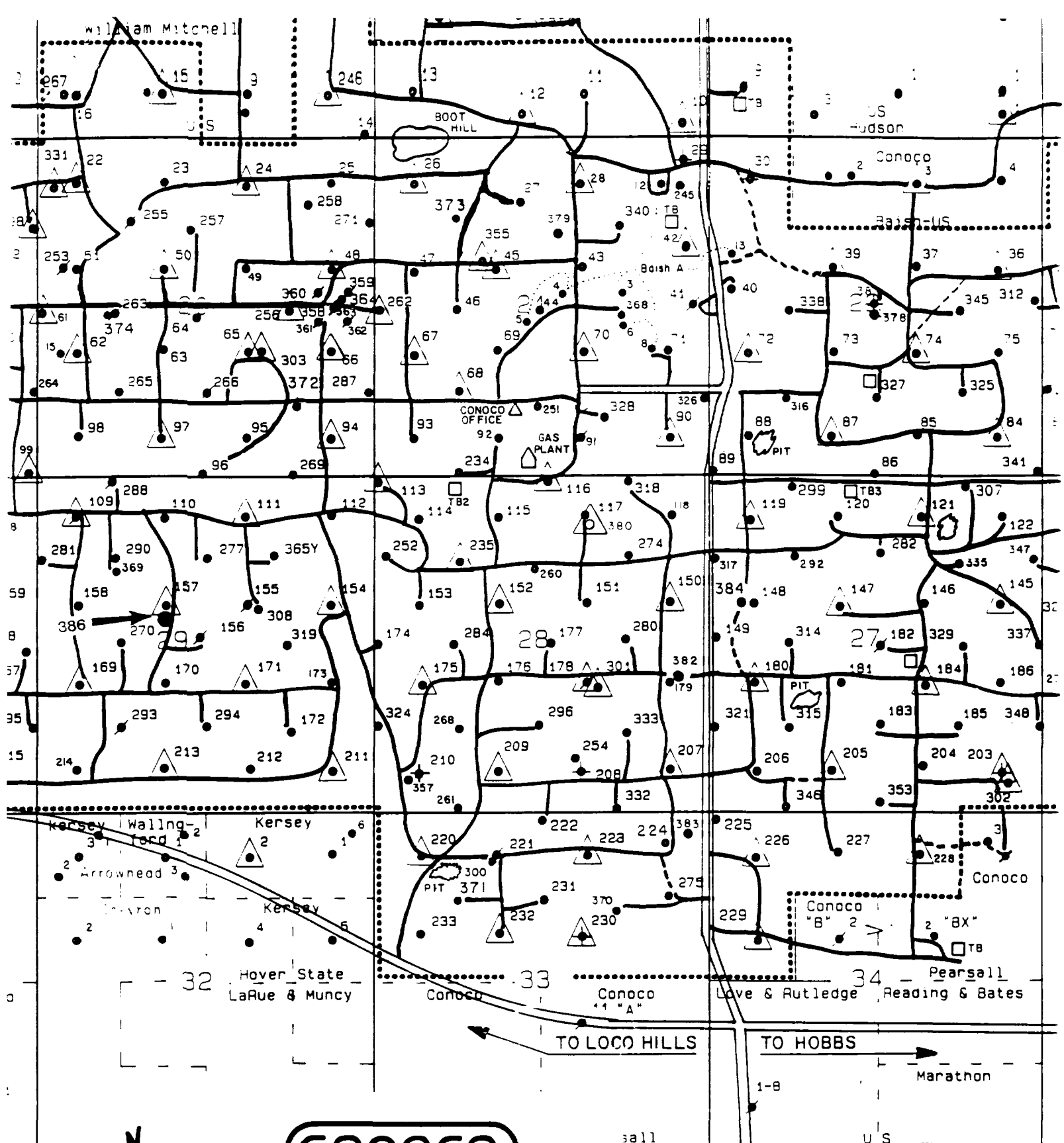
PROPOSED WELL PLAN OUTLINE

WELL NAME: MCA 386 COUNTY: LEA STATE NM

LOCATION: 1921' FNL & 1995' FWL EST. KB: 3948'

Sec. 29, T-17S, R-32E EST. GL: 3938'

DEPTH	FORMATION TOPS & TYPE	TYPE OF DRILLING PROBLEMS	FORMATION EVALUATION	CASING HOLE SIZE	CASING SIZE-DEPTH	FORM FRAC GRAD	MUD PRESS GRAD	MUD (PPG) WT & TYPE	DAYS
			0-1000'					Spud	
	Red Beds	Possible	Deviation					8.6-9.0	
	surface-850'	sloughing	survey each						
		clays	250' <3 deg.						1
500									
			fluid caliper						
			surface hole						
									2
1000	Salado			14-3/4	10-3/4,45.#			Salt	3
	950'/+2998				K-55 @ 900'			sat	
					w/455 sx "C"			10 ppg	
					(isolate red			brine	
					beds and				
1500		Salt section			fresh water)				4
		washout is	1000'-T.D						
		likely	Deviation						
			Survey each						
			500' <3 deg.						
2000	Yates								5
	2085'/+1863'		Temp. surv.						
		Waterflows	if cmt. doesn't						
		possible	circ.						
	7-Rivers	from 2000'							
2500	2460'/+1488'	to TD							6
	Queen	Gas flows	H2S monitor						
3000	3060'/+888'	possible	@3000'			18.8	10-17	10-17.5	
		from 3000'						Sat.	7
	Grayburg	to TD						brine/	
	3430'/+518'							starch	
		H2S 25-50ppm						gel or	
3500	Grayburg 6th	from Grayburg						$CaCO_3$/	
	3660'/+288'	in most MCA						Hema-	
	San Andres 7th	wells						tite	8
	3817'/+131'							mud	
	San Andres 9th								
4000	3985'/-37'								
	9th Massive								
	4080'/-132'								
	TD 4350'		GR-DLL-NEUT						9
			DEN-CAL-RFT	9-1/2"	7", 23#				10
			4350'-2000'		K-55 @ 4350'				11
					w/1425 sx				



CONOCO

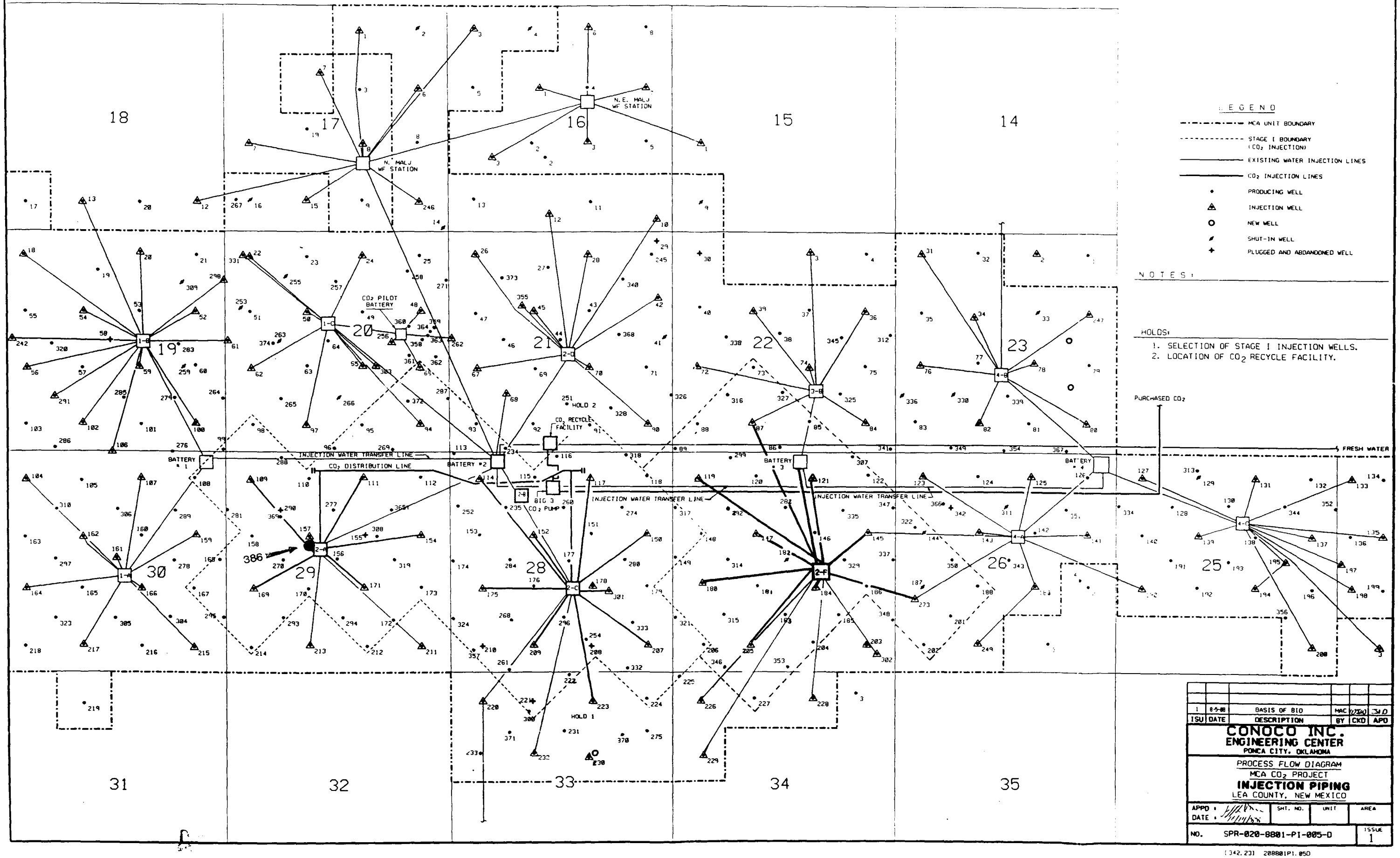
MCA UNIT

GRAYBURG-SAN ANDRES

LEA COUNTY, NEW MEXICO

Lease Road Plat

EXHIBIT B



LEGEND

- MCA UNIT BOUNDARY
- STAGE I BOUNDARY (CO_2 INJECTION)
- EXISTING WATER INJECTION LINES
- CO_2 INJECTION LINES
- PRODUCING WELL
- INJECTION WELL
- NEW WELL
- SHUT-IN WELL
- PLUGGED AND ABOANDONED WELL

NOTES:

HOLDS:

1. SELECTION OF STAGE I INJECTION WELLS.
2. LOCATION OF CO_2 RECYCLE FACILITY.

PURCHASED CO_2

FRESH WATER

ISU	DATE	DESCRIPTION	BY	CKD	APD
1	8-5-88	BASIS OF BID	MAC	WTW	JHD

CONOCO INC.
ENGINEERING CENTER
PONCA CITY, OKLAHOMA

PROCESS FLOW DIAGRAM
MCA CO_2 PROJECT
INJECTION PIPING
LEA COUNTY, NEW MEXICO

APPD: / DATE:	SHT. NO.	UNIT	AREA
NO. SPR-020-8801-PI-005-D			ISSUE 1

[342.23] 20880IP1.050

EXHIBIT B.1