District I
PO Box 1980, Hobbs, NM 88241 1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-101
Revised February 10, 1994
Instructions on back
Submit to Appropnate District Offico
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DR1LL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

' Operator Name and Address.	' OGRID No_
Conoco Inc 10 Desta Dr. Ste. 430E Midland, Tx. 79705-4500	005073
	' API Number 30 - 025 -34794

' Property Code	' Property Name	' Well No.
13396	HARDY STATE 36	27

' Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	36	20-S	37-E		2200	SOUTH	1650	EAST	LEA

s Proposed Bottom Hole Location If Different From Surface

UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

' Proposed Pool 1	" Proposed Pool 2
SOUTH CASS STRAWN	

" Work Type Code	" Well Type Code	" Cable/Rotary	" Lease type Code	14 Ground Level Elevation
N	O	R	S	3493
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
NO	8260	STRAWN	CAPSTAR DRLG.	2-10-00

21 Proposed Casiing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12-1/4"	9-5/8" J-55	36#	1500"	550	SURFACE
8-3/4"	7" NSS-S95-110	23#	7900'	1025	SURFACE

Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention_program, if any._Use additional sheets if necrssary.

It is proposed to drill a vertical wellbore through the Strawm formation. The well will be drilled and equipped according to the following additional attachments:

1. Well Location & Acreage Dedication Plat (C-102)
2. Proposed Well Plan Outline
3. Cementing program
4. BOP = Double Ram - 11" 3000 PSI WP
5. TOPO indicatiing access route to well location

Permit Expires 1 Year From Approval Date Unless Drilling Underway

23 I hereby cenify that the information given above is true and complute to the best of my knowledge and belief.	OIL CONSERVATION DIVISION
Signature: Stephen R Wilson	Approved by: BRYAN G. ARRANT WILLIAMS DISTRICT I SUPERVISOR
Printed name: Stephen R. Wilson	Title:
Title: ROW Agent	Approval Date: / Expiration Date:
Date: 12-9-99 / Phone: 915-686-5579	Conditions of Approval: Attached

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 February 10, 1994
Instruction on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-34794	10460	South Cass Strawn

Property Code	Property Name	Well Number
13396	HARDY STATE ~~"36"~~	27

OGRID No.	Operator Name	Elevation
005073	CONOCO INC.	3493'

Surface Location

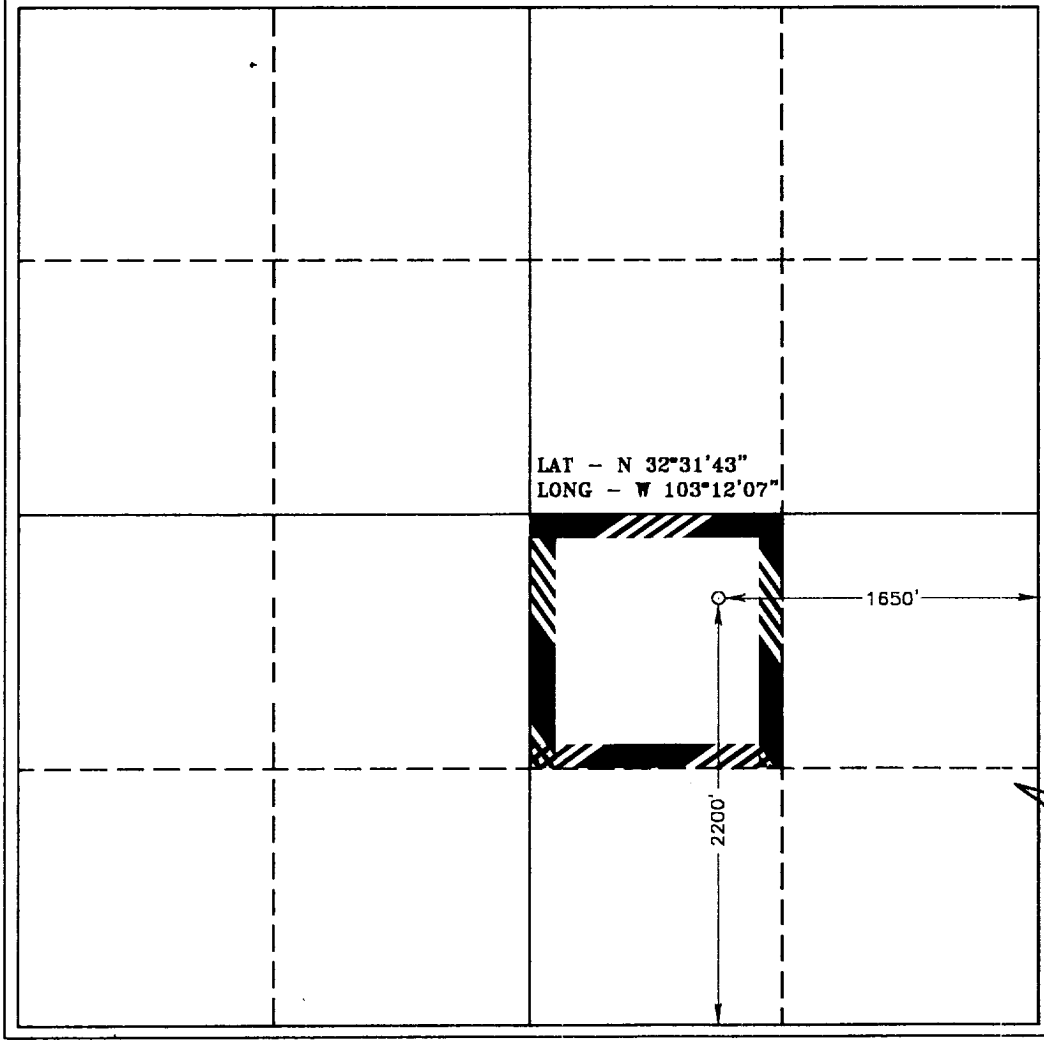
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	36	20 S	37 E		2200	SOUTH	1650	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

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

Signature

STEPHEN R. WILSON
Printed Name

ROW AGENT
Title

12-9-99
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 belief.

November 11, 1999
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

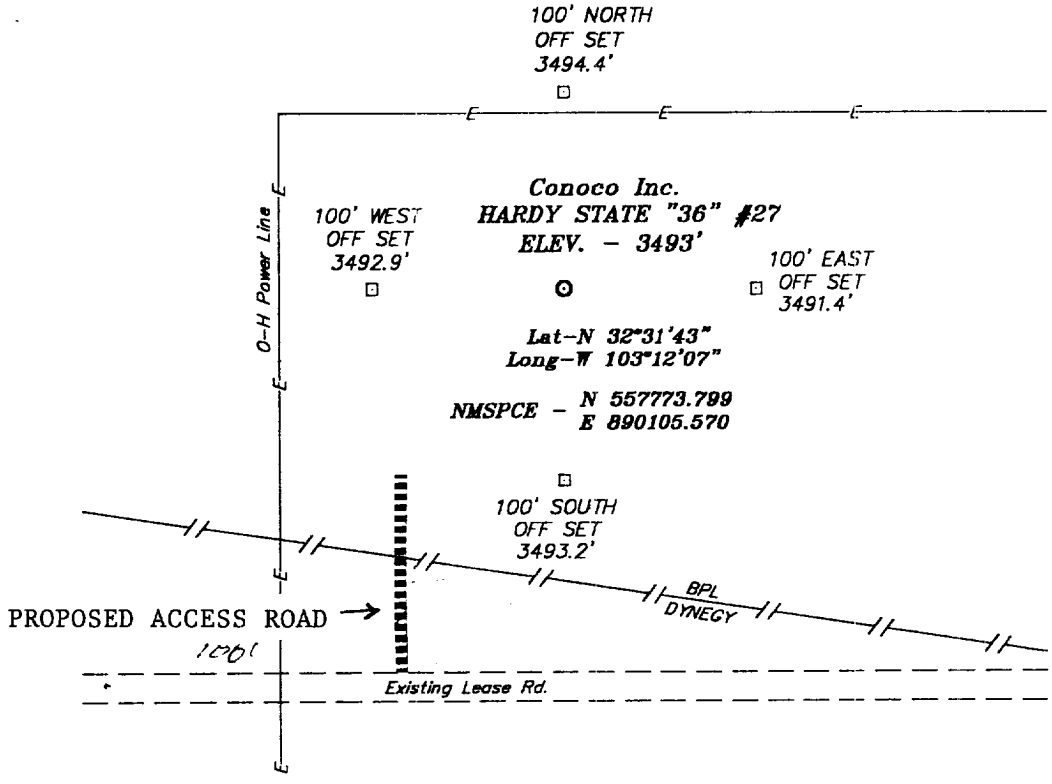
No. 9399A

Certificate No. 7977

BASIN SURVEYS

SECTION 36, TOWNSHIP 20 SOUTH, RANGE 37 EAST, N.M.P.M.,

LEA COUNTY, **NEW MEXICO.**



DIRECTIONS TO WELL LOCATION:

FROM JUNCTION NORTH LOOP 18 AND COUNTY ROAD C-22 IN EUNICE, GO NORTH ON LOOP 18 TO COUNTY ROAD C-34; THENCE NORTHWEST ON C-34 APPROX. 3.5 MILES TO A POINT WHICH LIES 200' SOUTH OF THE PROPOSED WELL LOCATION.

100 0 100 200 FEET

SCALE: 1" = 100'

Conoco Inc.

REF: HARDY STATE "36" No. 27 / Well Pad Topo

THE HARDY STATE "36" No. 27 LOCATED 2200' FROM THE SOUTH LINE AND 1650' FROM THE EAST LINE OF SECTION 36, TOWNSHIP 20 SOUTH, RANGE 37 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 9399	Drawn By: K. GOAD		
Date: 11-12-99	Disk: KJG #122 - 9399A.DWG	Survey Date: 11-11-99	Sheet 1 of 1 Sheets

PROPOSED WELL PLAN OUTLINE

WELL NAME: Hardy 36 State No. 27
LOCATION: 1650' FEL & 2200' FSL Sec 36, T20S, R37E

Ground Level : 3492'
Kelly Bushing:

Depth MD	FORMATION TOPS	DRILLING PROBLEMS	TYPE OF FORMATION EVALUATION	HOLE SIZE	CASING PROGRAM	FRAC GRAD	FORM. PRES. GRAD.	Mud Weight & Type	Days
0		Possible Hole Enlargement & Sloughing		12-1/4"			Less than 8.3	8.4 - 9.5 Fresh	
1000									
	Top Salt @ 1,430'				9-5/8", 36#, J-55 ST&C @ 1,500'				3
		Washouts in Salt Section		8-3/4"	Circulate Cement			10 Brine	
2000							Less than 8.4		
	Base Salt @ 2.500'								
	Yates 2,707'		Mud Loggers F/ Yates to TD						
	7 Rivers 2,957'		H2S Monitor on at 2900'						
3000									
	Queen 3,540'								
	Grayburg 3,810'								
4000	San Andres 4,020'	Lost Returns in San Andres							7
5000									
	Glorietta 5,290'	Possible differential sticking thru Glorietta & Paddock							
	Blinebry Mkr 5,825'								
6000									
	Tubb 6,360'								
	Drinkard 6,600'								
	Abo 6,890'								
7000			First Log Run: GR-CAL-DLL-MLL-Sonic FDC-CNL-PE : TD to 2650' Pull GR-CNL-Cal to Surf						
	Strawn 7,460'		Second Log Run: 60 rotary sidewall cores						
	TD @ 7,960'	STOP DRILLING WHEN WOODFORD SHALE IS CUT	Third Run: FMI imaging log		7", 23.0#, S/P110 LT&C f/0'-7,960'			10 ppg Starch Gel	
8000	Devonian 7,960'	Severe losses in Devonian			Circulate Cement				20

Note: The Devonian formation is associated with severe lost circulation problems. This well will be TD'd very close to the top of the Devonian. The mud loggers will pick the Woodford shale which is 40' thick and sits on top of the Devonian. Stop drilling once the Woodford is entered.

DATE 06-Dec-99

Joe Huck, Geophysical Advisor

APPROVED

Yong Cho, Drilling Engineer

Joe Miller, Reservoir Engineer

Proposal No: 180252708A

Conoco
Hardy 36 St. #27

Sec. 36-T20S-R37E
Lea County, New Mexico
December 2, 1999

Well Recommendation

Prepared for:
Yong Cho
Drilling Engineer

Prepared by:
Rocky Chambers
Region Engineer
Bus Phone: 915/683-2781
Mobile: 915/557-1239
Pager: 915/498-1605

POWERVISION™

Service Point:
Hobbs
Bus Phone: (505) 392-5556
Fax: (505) 392-7307

Service Representatives:
Wayne Davis
Account Manager
Bus Phone: (915) 683-2781

Operator Name: Conoco
Well Name: Hardy 36 St. #27
Job Description: 9-5/8" Surface
Date: December 2, 1999

Proposal No: 180252703A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
12.250 HOLE	1,500	1,500

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
9.625	8.921	36	1,500	1,500

Float Collar set @	1,460 ft
Mud Density	9.00 ppg
Est. Static Temp.	86 ° F
Est. Circ. Temp.	85 ° F

TOC - SURFACE

VOLUME CALCULATIONS

1,200 ft	x	0.3132 cf/ft	with	100 % excess	=	750.4 cf
300 ft	x	0.3132 cf/ft	with	96 % excess	=	184.3 cf
40 ft	x	0.4341 cf/ft	with	0 % excess	=	17.4 cf (inside pipe)
				TOTAL SLURRY VOLUME	=	952.1 cf
					=	170 bbls

Operator Name: Conoco
Well Name: Hardy 36 St. #27
Job Description: 9-5/8" Surface
Date: December 2, 1999

Proposal No: 160252708A

FLUID SPECIFICATIONS

Spacer — 1,500.0 gals Mud Clean I @ 8.4 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	750	/	1.88	= 400 sacks (35:65) Poz (Fly Ash):Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 6% bwoc Bentonite + 0.005 gps FP-6L + 96.5% Fresh Water
Tail Slurry	202	/	1.34	= 150 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.005 gps FP-6L + 56.3% Fresh Water
Displacement				112.9 bbls FRESH WATER + 56.3% Fresh Water

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	12.70	14.80
Slurry Yield (cf/sack)	1.88	1.34
Amount of Mix Water (gps)	10.07	6.35
Amount of Mix Fluid (gps)	10.07	6.35

Operator Name: Conoco
Well Name: Hardy 36 St. #27
Job Description: 7" Long String
Date: December 2, 1999

Proposal No: 180252708A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
8.921 CASING	1,500	1,500
8.750 HOLE	7,900	7,900

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
7.000	6.366	23	7,900	7,900

Float Collar set @	7,860 ft
Mud Density	8.70 ppg
Est. Static Temp.	128 ° F
Est. Circ. Temp.	121 ° F

TOC @ SURFACE

VOLUME CALCULATIONS

1,500 ft	x	0.1668 cf/ft	with	0 % excess	=	250.2 cf
4,000 ft	x	0.1503 cf/ft	with	51 % excess	=	906.0 cf
2,400 ft	x	0.1503 cf/ft	with	47 % excess	=	528.7 cf
40 ft	x	0.2210 cf/ft	with	0 % excess	=	8.8 cf (inside pipe)
				TOTAL SLURRY VOLUME	=	1693.8 cf
					=	302 bbls

Operator Name: Conoco
Well Name: Hardy 36 St. #27
Job Description: 7" Long String
Date: December 2, 1999

Proposal No: 1502-2708A

FLUID SPECIFICATIONS

Spacer — 1,500.0 gals Mud Clean I @ 8.4 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	1156	/	1.85	= 625 sacks (35:65) Poz (Fly Ash):Class C Cement + 0.25 lbs/sack Cello Flake + 0.005 gps FP-6L + 6% bwoc Bentonite + 95.7% Fresh Water
Tail Slurry	538	/	1.34	= 400 sacks Class C Cement + 0.8% bwoc FL-50 + 0.4% bwoc CD-32 + 0.005 gps FP-6L + 0.2% bwoc Sodium Metasilicate + 1% bwoc BA-58 + 55.8% Fresh Water
Displacement				309.4 bbls FRESH WATER + 55.8% Fresh Water

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	12.70	14.80
Slurry Yield (cf/sack)	1.85	1.34
Amount of Mix Water (gps)	9.98	6.29
Amount of Mix Fluid (gps)	9.99	6.30

PRODUCT DESCRIPTIONS

BA-58
very fine, gray, free flowing siliceous powder combined with high molecular weight resins which improves the bond between the cement particles, formation and casing. It is applicable at low to high temperatures.

Bentonite
Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.

CD-32
A patented, free-flowing, water soluble polymer that is an efficient and effective dispersant for primary and remedial cementing.

Calcium Chloride
A powdered, flaked or pelletized material used to decrease thickening time and increase the rate of strength development.

Cello Flake
Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.

Class C Cement
Intended for use from surface to 6000 ft., and for conditions requiring high early strength and/or sulfate resistance.

FL-50
A water soluble, high molecular weight fluid loss additive used in medium to low density slurries. It is functional from low to high temperature ranges.

FP-6L
A clear liquid that decreases foaming in slurries during mixing.

Poz (Fly Ash)
A synthetic pozzolan, (primarily Silicon Dioxide). When blended with cement, Pozzolan can be used to create lightweight cement slurries used as either a filler slurry or a sulfate resistant completion cement.

Sodium Metasilicate
An extender used to produce an economical, low density cement slurry.

8/24/01

ELF _____

ABOVE DATE DOES NOT
INDICATE WHEN
CONFIDENTIAL LOGS
WILL BE RELEASED