

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE

FORM APPROVED  
Budget Bureau No. 1004-0136  
Expires: December 31, 1991

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. Type of Work 1b. Type of Well OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> HORIZONTAL LATERAL <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>	2. Name of Operator TEXACO EXPLORATION & PRODUCTION INC.	3. Address and Telephone No. 205 E. Bender, HOBBS, NM 88240 397-0405	5. Lease Designation and Serial No. LC 032650 B	6. If Indian, Alottee or Tribe Name	7. If Unit or CA, Agreement Designation	8. Well Name and Number COATES, A. B. -C-	9. API Well No. 30 025 11728	10. Field and Pool, Exploratory Area JUSTIS ABO, MID GAS	11. SEC., T., R., M., or BLK. and Survey or Area Sec. 24, Township 25S, Range 37E	12. County or Parish LEA	13. State NEW MEXICO	14. Distance In Miles and Direction from Nearest Town or Post Office*	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 160	18. Distance From Proposed Location* to Nearest Well, Drilling, Completed or Applied For, On This Lease, Ft.	19. Proposed Depth TVD 6458'	20. Rotary or Cable Tools R	21. Elevations (Show whether DF, RT, GR, etc.) 3084' KB	22. Approx. Date Work Will Start* 3/15/99
---	---	---	--	-------------------------------------	---	--	---------------------------------	---	--	-----------------------------	-------------------------	---	---	---------------------------	---	--	---------------------------------	--------------------------------	--	--

23. EXISTING PROPOSED CASING AND CEMENT PROGRAM				
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17.5"	13.375"		544'	500 SX
12.250"	9.625"		3320'	1300 SX
8.750"	7"		8050'	950 SX

TEXACO INTENDS TO DRILL A SINGLE HORIZONTAL LATERAL IN THE ABO FORMATION.  
THE OVERVIEW, AND PROPOSED WORK PROCEDURE IS ATTACHED.

*Verbal Approval Was Granted By Alexis Sweetada 02-11-1999*

SUBJECT TO  
LIKE APPROVAL  
BY STATE

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 true verticle depths. Give blowout preventer program, if any.

24. I hereby certify that the foregoing is true and correct.  
SIGNATURE *J. Denise Leake* TITLE Engineering Assistant DATE 2/11/99  
TYPE OR PRINT NAME J. Denise Leake

(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.

APPROVED BY (ORIG. SGD.) DAVID R. GLASS TITLE DATE FEB 24 1999

CONDITIONS OF APPROVAL, IF ANY:

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.

## OVERVIEW

The A. B. Coates "C" # 15 well was drilled in early 1963 as a conventional test of the Ellenburger formation. The well initially produced from Ellenburger perforations 8000'-8024'. This interval was abandoned in 1966 and the Montoya formation was perforated from 6803'-6848', 6864'-6876' and 6943'-6966'. The Montoya interval was abandoned in 1996 with a CIBP set at 6660' and 35' of cement located on top of the plug (PBTD 6625'). The Abo formation was perforated from 6193'-6202', 6213'-6219', 6225'-6233', 6243'-6255', 6260'-6263', 6275'-6283', 6299'-6301', 6305'-6307', 6312'-6316', 6395'-6400', 6405'-6408', 6413'-6415', 6421'-6430', 6452'-6460', 6464'-6473', 6480'-6484', 6489'-6492', 6498'-6506', 6521'-6524', 6531'-6534' and 6538'-6543'. The Abo was acid-frac'd and potential for 0 BOPD, 13 BWPD and 650 MCFD. Successful horizontal laterals have been drilled to the north in the Drinkard formation at the West Dollarhide Drinkard Unit. It is proposed to employ this technology on the subject well and drill single +/- 1400 foot horizontal lateral (azimuth 64 degrees) in the Abo formation. A second lateral could follow if the initial lateral is successful. The basic well plan is as follows:

- a) Kill well (7" x 9-5/8" casing is currently holding 150 psi – verified by K. Locklar). TOOH with the 2-3/8" tubing and packer. Cement squeeze Upper Abo perforations 6193'-6316'. Drill out the cement retainer and cement to +/- 6302'. Pressure test cement squeeze to 1000 psi.
- b) TIH with a 3 degree bottom set whipstock (top of window +/- 6292', bottom of window +/- 6299').
- c) Drill a short radius curve using a 4-3/4" bit to a measured depth of +/- 6471' (TVD +/- 6423'). The final angle will be 78.3 degrees from vertical.
- d) Drill +/- 1400' horizontal section (azimuth 64 degrees).
- e) Acid frac the horizontal lateral in the well. Place well on pump.

**LOST IN HOLE INSURANCE FOR THE DOWNHOLE MOTOR AND MWD IS INCLUDED WITH THE DAILY RATE FROM SCIENTIFIC DRILLING.**

## PROPOSED WORK

### PRODUCTION HOLE:

1. TOOH with the following production equipment: 195 joints of 2-3/8" J-55 tubing (6112'), 2-3/8" X 2-7/8" crossover, 7" Arrowset packer, 2-7/8" X 2-3/8" crossover and 15 joints of 2-3/8" fiberglass tubing (437'). TIH with a 7" casing scraper and tag PBTD at +/- 6625'. TOOH. TIH with a CIBP and set at +/- 6325'. TOOH. TIH with a cement retainer and set at +/- 6175'. Establish an injection rate. Cement squeeze Abo perforations 6193'-6316'' with 100 sacks of Class "H" cement containing 0.3% D156 fluid loss, and 0.4% D65 dispersant followed by 100 sacks Class "H" neat (15.6 ppg). Pump at less than 2 BPM, slowing to 1/2 BPM at the end of the job (no hesitation). TOOH. TIH with a 6-1/4" bit and drill out the cement retainer and cement to +/- 6302'. Pressure test the squeeze to 1000 psi. TOOH. TIH with a Smith 3 degree bottom set retrievable whipstock, starting mill, orienting sub and drill pipe. Stop at a point 5-10' above the CIBP, reciprocate pipe and rig up a wireline to run the gyro. Take a gyro reading and determine the direction of the whipstock face. Rotate the pipe as needed to achieve the required direction. Reciprocate and lower the pipe to within one foot of the CIBP and take another gyro reading. Rotate pipe again if needed to achieve the required direction (64 degrees). This step may need to be repeated several times until confident the whipstock is oriented in the correct direction.
2. Lower drill pipe to set the whipstock. The weight indicator will jump indicating lower plunger shear pin is sheared and the whipstock is set. Continue setting down to shear the starting mill bolt. The weight indicator will jump again indicating the bolt is sheared. Commence milling operations.
3. Pick up the power swivel and begin circulating. Pick up drill pipe until starting mill has cleared the whipstock and start rotation. Lower the drill pipe slowly until the torque gauge suggest the starting mill is contacting the casing. Adjust weight and speed until satisfied with the penetration rate. Mill to a predetermined depth that will assure the setting lug is completely removed and a cutout in the casing has been initiated. TOOH.
4. TIH with the metal muncher window mill, string mill and the watermelon mill. Resume milling operations and mill until the complete assembly has cleared the casing. Pick up and lower the string several times without rotation to assure a good clean window has been obtained. Circulate the hole clean. TOOH.
5. Inspect the mill on the surface. If extreme wear is evident, consideration should be given to repeating the above step.

## HORIZONTAL PRODUCTION HOLE:

1. Rig up Scientific Drilling. Adjust plan to target as necessary. Trip in the hole with Scientific Drilling's curve building assembly. This will be a 4-3/4" insert, 3-3/4" PDM, float sub/orienter combo, 2-flexable monel collars and 2-7/8" AOH drill pipe.
2. Build curve to estimated target depths and angles as follows:  
True Vertical Depth ..... 6423'  
Measured Depth ..... 6471'  
Final Angle ..... 78.3 degrees  
Target Azimuth ..... 64.3 degrees  
Build Rate ..... 46.75 degrees/100'

Drill the curve sliding as necessary to stay on target. It is recommended that after each slide, the bit be pulled back and washed through the slide. Once the curve is built, rotate through the curve section noting tight spots and fill. Make at least one short trip prior to tripping out of the hole.

3. Trip in the hole with Scientific Drilling's lateral assembly. This will be a 4-3/4" insert or PDC bit (R382G), 3-3/4" articulated motor, float sub/orienting combo, 2 - flexible monel collars and 2-7/8" AOH drill pipe.
4. Drill +/- 1400' of horizontal hole per the attached Scientific Drilling well plan.
5. Continue drilling the horizontal section per the Texaco Engineer recommendations.
6. Trip out of the hole with the drilling assembly. TIH with drill pipe and set a retrievable bridge plug for 7", 23 #/ft casing at +/- 6000'. Test plug to 1000 psi.
7. Lay down the drill pipe. Nipple down the BOP stack. Install a manual 3000 psig BOP equipped with blind rams and 2-7/8" pipe rams. Release the rig. Rig down and move out rotary tools.

### **COMPLETION PROCEDURE:**

1. Back drag the location and set pulling unit anchors.
2. Move in and rig up a pulling unit.
3. Trip in the hole with a retrieving head on 2-7/8" tubing. Retrieve the plug. Trip out of the hole and lay down the plug. TIH with tubing and ported subs to within 300 foot of the end of the lateral. Use a bent joint to orient into the lateral.
4. Rig up Dowell. Acid frac the horizontal lateral with 85,000 gallons of 15% HCL and gelled water spacers. The acid frac will be done down tubing using ported subs.
5. Flow back immediately. Flow/swab test.
6. Place on pump.

# Scientific Drilling Planning Report

Company: Texaco E & P, Inc.	Date: 12/14/98	Time: 16:08:58	Page: 1
Field: Justis Abo	Co-ordinate(N/E) Reference: Site: Lea County, New Mexico, True North		
Site: Lea County, New Mexico	Vertical (TVD) Reference: SITE 0.0 above Mean Sea Level		
Well: A.B. Coates "C" #15	Section (VS) Reference: Site (0.0E, 0.0N, 64.3Azi)		
Wellpath: NE Lower Lateral	Plan: Plan #1		

Field: Justis Abo	Local Coordinate Reference: Site Centre
	Location of Field Centre: N/A
	Field Centre Map Easting: m
	Field Centre Map Northing: m
Map Projection & Zone: US State Plane Coordinate System 1927 Texas, Central Zone	Direction of Local North: True
Ellipsoid: Clarke - 1866	Local Vertical Reference: Wellpath Datum
Field Datum: Mean Sea Level	Geomagnetic Model: IGRF95

Site: Lea County, New Mexico

Site Centre:	m E	Latitude
	m N	Longitude

Site Water Depth: 0.0 ft

Magnetic Declination: 0.00 deg

Grid Convergence: 0.00 deg

Measured Depths Referenced To: SITE 0.0 ft above Mean Sea Level

Well: A. B. Coates "C" #15  
660°FSL & 1980°FEL Sec 24 T2SS R37E

Originating From:	0.0 ft +N/-S	Map Easting :	0.00 m
	0.0 ft +E/-W	Map Northing:	0.00 m

Wellpath: NE Lower Lateral

Origin of Vertical Section: Site Centre	0.0 ft +N/-S
	0.0 ft +E/-W

Direction of Vertical Section: 64.27 deg

Plan: Plan #1	Date Composed: 12/14/98
	Version: 1

Principal: Yes	Locked: No
----------------	------------

## Plan Section Information

MD ft	Incl deg	Azimuth deg	TVD ft	+N/-S ft	+E/-W ft	DLS d/100ft	Build d/100ft	Turn d/100ft	TFO deg	Target
6000.0	0.00	64.27	6000.0	0.0	0.0	0.00	0.00	0.00	0.00	
6303.0	0.00	64.27	6303.0	0.0	0.0	0.00	0.00	0.00	0.00	
6470.5	78.30	64.27	6423.0	42.4	88.0	46.75	46.75	0.00	0.00	
6962.0	78.30	64.27	6522.7	251.4	521.6	0.00	0.00	0.00	0.00	
7083.8	90.07	64.27	6535.0	303.9	630.6	9.66	9.66	0.00	0.00	Target 1
7143.8	90.07	64.27	6534.9	329.9	684.6	0.00	0.00	0.00	0.00	
7789.9	103.64	64.27	6458.0	607.8	1261.2	2.10	2.10	0.00	0.01	Target 2

## Section 1 : Straight MD Part 1 Hold

MD ft	Incl deg	Azimuth deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS d/100ft	Build d/100ft	Turn d/100ft	TFO deg
6000.0	0.00	64.27	6000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6100.0	0.00	64.27	6100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6200.0	0.00	64.27	6200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
6303.0	0.00	64.27	6303.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00

RECEIVED  
FEB 27 1999  
ELEANOR  
ROSWELL NM

# Scientific Drilling Planning Report

Company: Texaco E & P, Inc.	Date: 12/14/98	Time: 1608:58	Page: 2
Field: Justis Abo	Co-ordinate(NE) Reference:	Site: Lea County, New Mexico, True North	
Site: Lea County, New Mexico	Vertical (TVD) Reference:	SITE 0.0 above Mean Sea Level	
Well: A. B. Coates "C" #15	Section (VS) Reference:	Site (0.0E, 0.0N, 64.3Azi)	
Wellpath: NE Lower Lateral	Plan:	Plan #1	

## Section 2 : Inc Azi TVD Part 1 Build 46.75

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS d/100ft	Build d/100ft	Turn d/100ft	TFO deg
6310.0	3.27	64.27	6310.0	0.1	0.2	0.2	46.75	46.75	0.00	0.00
6320.0	7.95	64.27	6319.9	0.5	1.1	1.2	46.75	46.75	0.00	0.00
6330.0	12.62	64.27	6329.8	1.3	2.7	3.0	46.75	46.75	0.00	0.00
6340.0	17.30	64.27	6339.4	2.4	5.0	5.5	46.75	46.75	0.00	0.00
6350.0	21.97	64.27	6348.9	3.9	8.0	8.9	46.75	46.75	0.00	0.00
6360.0	26.65	64.27	6358.0	5.7	11.7	13.0	46.75	46.75	0.00	0.00
6370.0	31.33	64.27	6366.7	7.8	16.1	17.9	46.75	46.75	0.00	0.00
6380.0	36.00	64.27	6375.0	10.2	21.1	23.4	46.75	46.75	0.00	0.00
6390.0	40.68	64.27	6382.9	12.9	26.7	29.6	46.75	46.75	0.00	0.00
6400.0	45.35	64.27	6390.2	15.8	32.8	36.4	46.75	46.75	0.00	0.00
6410.0	50.03	64.27	6396.9	19.0	39.5	43.5	46.75	46.75	0.00	0.00
6420.0	54.70	64.27	6403.0	22.5	46.6	51.7	46.75	46.75	0.00	0.00
6430.0	59.38	64.27	6408.5	26.1	54.2	60.1	46.75	46.75	0.00	0.00
6440.0	64.05	64.27	6413.2	29.9	62.1	68.9	46.75	46.75	0.00	0.00
6450.0	68.73	64.27	6417.2	33.9	70.3	78.1	46.75	46.75	0.00	0.00
6460.0	73.40	64.27	6420.4	38.0	78.9	87.5	46.75	46.75	0.00	0.00
6470.5	78.30	64.27	6423.0	42.4	88.0	97.7	46.75	46.75	0.00	0.00

## Section 3 : Straight MD Part 1 Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS d/100ft	Build d/100ft	Turn d/100ft	TFO deg
6500.0	78.30	64.27	6429.0	55.0	114.1	126.6	0.00	0.00	0.00	180.00
6600.0	78.30	64.27	6449.3	97.5	202.3	224.5	0.00	0.00	0.00	180.00
6700.0	78.30	64.27	6469.5	140.0	290.5	322.5	0.00	0.00	0.00	180.00
6800.0	78.30	64.27	6489.8	182.5	378.7	420.4	0.00	0.00	0.00	180.00
6900.0	78.30	64.27	6510.1	225.0	466.9	518.3	0.00	0.00	0.00	180.00
6962.0	78.30	64.27	6522.7	251.4	521.6	579.0	0.00	0.00	0.00	180.00

## Section 4 : DT6 Curve Part 1 Build 9.66 Tu

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS d/100ft	Build d/100ft	Turn d/100ft	TFO deg
7000.0	81.97	64.27	6529.2	267.6	555.3	616.4	9.66	9.66	0.00	0.00
7050.0	86.80	64.27	6534.1	289.2	600.1	666.2	9.66	9.66	0.00	0.00
7083.8	90.07	64.27	6535.0	303.9	630.6	700.0	9.66	9.66	0.00	0.00

## Section 5 : Straight MD Part 1 Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS d/100ft	Build d/100ft	Turn d/100ft	TFO deg
7100.0	90.07	64.27	6535.0	310.9	645.2	716.2	0.00	0.00	0.00	0.00
7143.8	90.07	64.27	6534.9	329.9	684.6	760.0	0.00	0.00	0.00	0.00

## Section 6 : DT6 Curve Part 1 Build 2.10 Tu

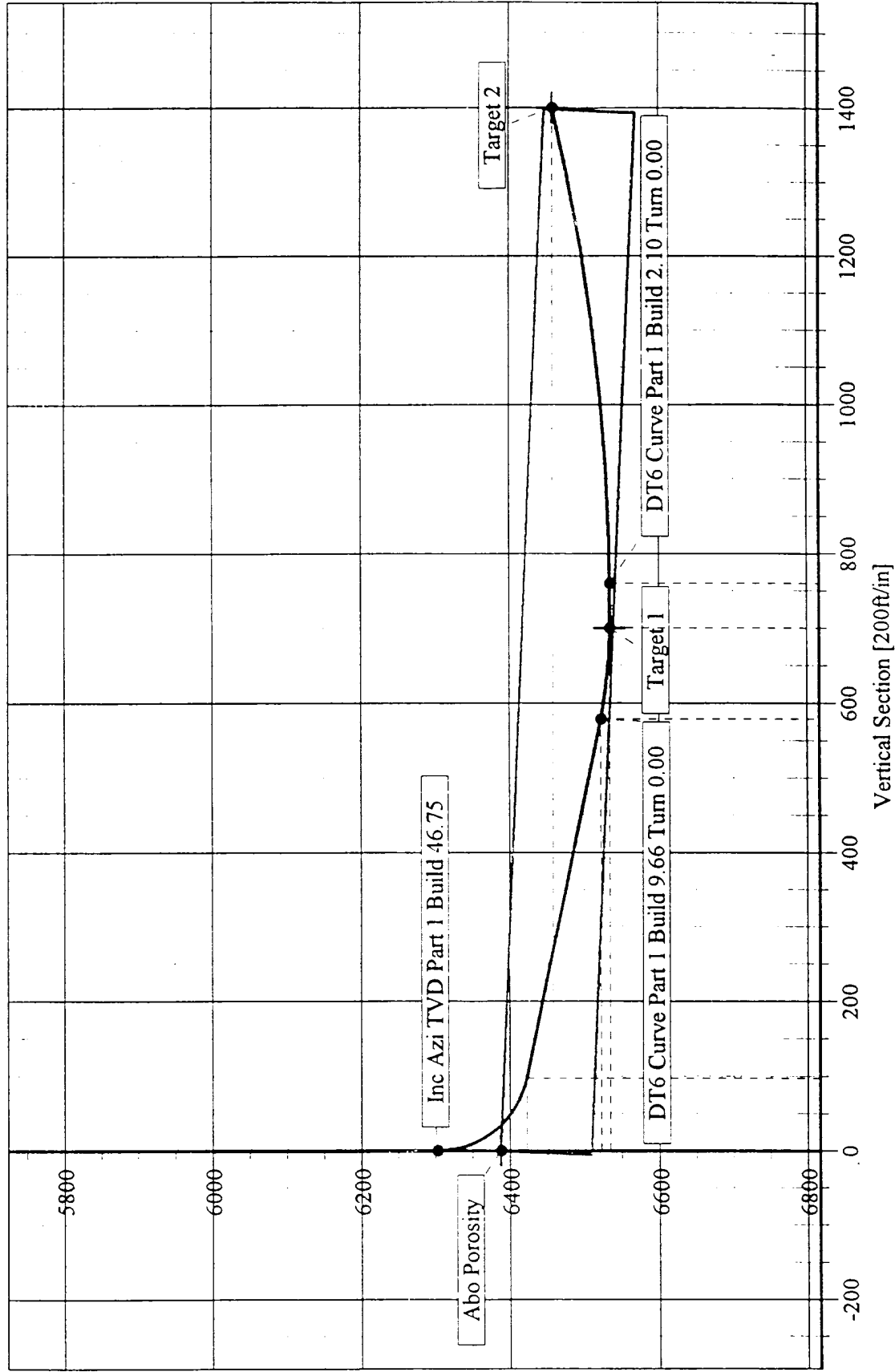
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS d/100ft	Build d/100ft	Turn d/100ft	TFO deg
7200.0	91.25	64.27	6534.3	354.3	735.2	816.2	2.10	2.10	0.00	0.01
7300.0	93.35	64.27	6530.3	397.7	825.3	916.1	2.10	2.10	0.00	0.01
7400.0	95.45	64.27	6522.6	441.0	915.1	1015.8	2.10	2.10	0.00	0.01
7500.0	97.55	64.27	6511.3	484.1	1004.6	1115.1	2.10	2.10	0.00	0.01
7600.0	99.65	64.27	6496.3	527.0	1093.6	1214.0	2.10	2.10	0.00	0.01
7700.0	101.75	64.27	6477.8	569.7	1182.1	1312.3	2.10	2.10	0.00	0.01
7789.9	103.64	64.27	6458.0	607.8	1261.2	1400.0	2.10	2.10	0.00	0.01





Scientific  
Drilling

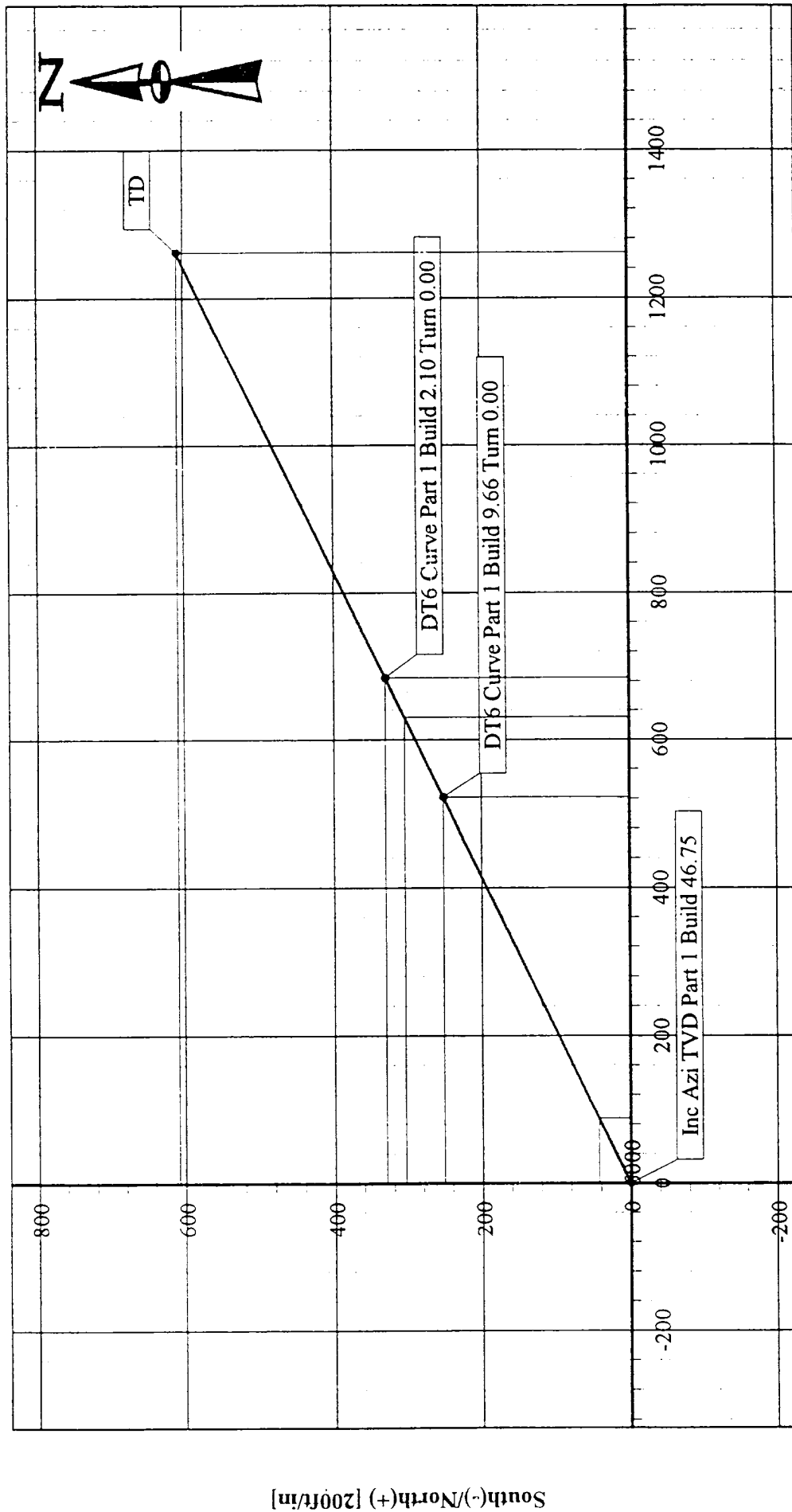
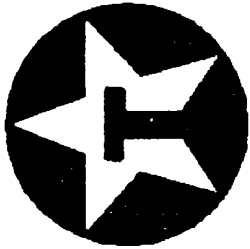
Texaco E & P, Inc.  
Field: Justis Abo  
Site: Lea County, New Mexico  
Well: A. B. Coates "C" #15  
Wellpath: NE Lower Lateral  
Plan: Plan #1





Scientific  
Drilling

Texaco E & P, Inc.  
Field: Justis Abo  
Site: Lea County, New Mexico  
Well: A. B. Coates "C" #15  
Wellpath: NE Lower Lateral  
Plan: Plan #1

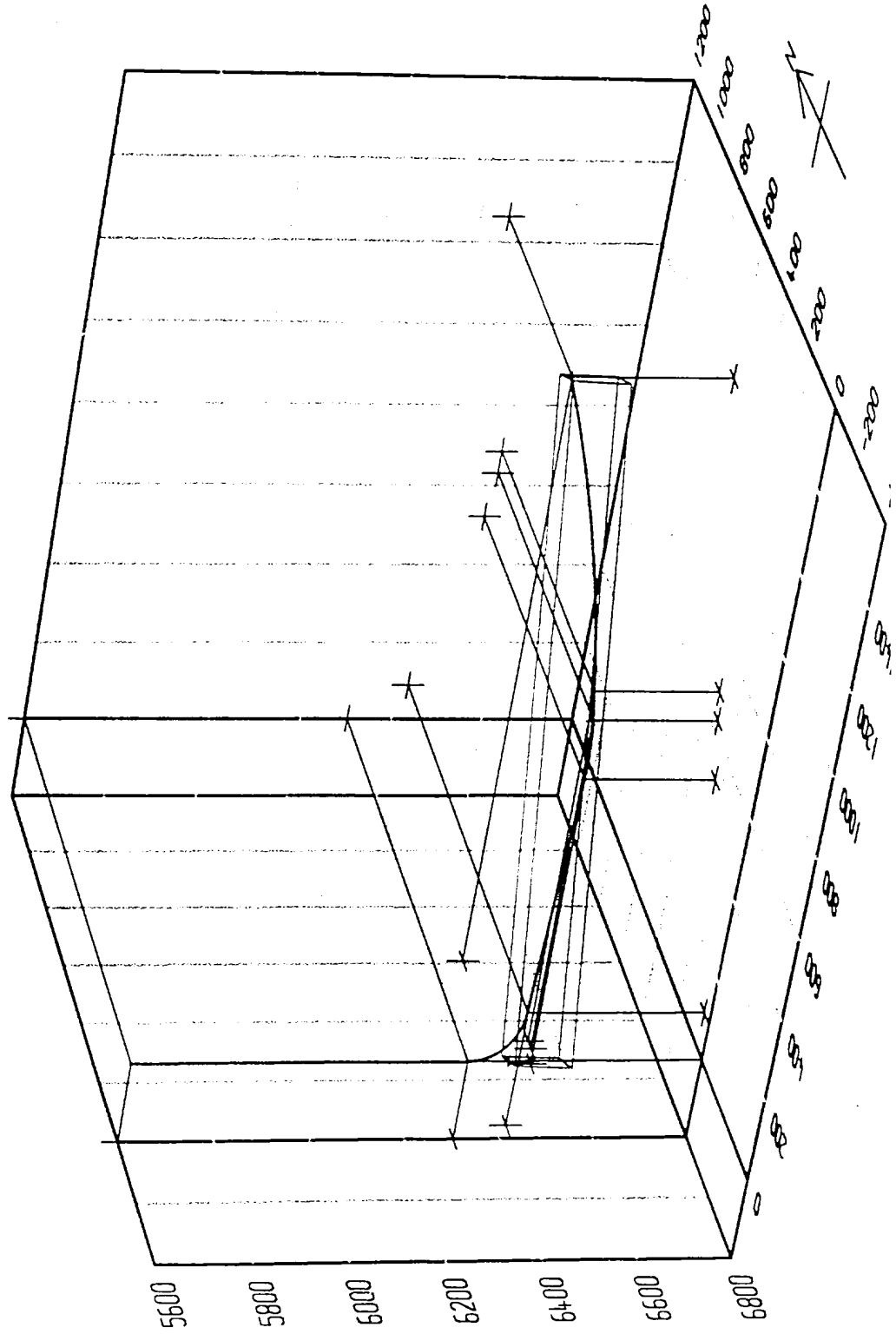


South(-)/North(+) [200ft/in]



Scientific  
Drilling

Texaco E & P, Inc.  
Field: Justis Abo  
Site: Lea County, New Mexico  
Well: A. B. Coates "C" #15  
Wellpath: NE Lower Lateral  
Plan: Plan #1



RECEIVED  
JUL 17 1966  
U.S. ROYAL MARINE  
CORPS

10

## DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

## DISTRICT II

P.O. Box Drawer DD, Artesia, NM 88211-0719

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

P.O. Box 2088, Santa Fe, NM 87504-2088

## State of New Mexico

Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

Form C-102

Revised February 10, 1994

Instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30 025 11728	<sup>2</sup> Pool Code 96543	<sup>3</sup> Pool Name JUSTIS ABO, <i>41d.</i>
<sup>4</sup> Property Code 10913	<sup>5</sup> Property Name COATES, A. B. -C-	<sup>6</sup> Well No. 15
<sup>7</sup> OGRID Number 022351	<sup>8</sup> Operator Name TEXACO EXPLORATION & PRODUCTION INC.	<sup>9</sup> Elevation 3084' KB

<sup>10</sup> Surface Location

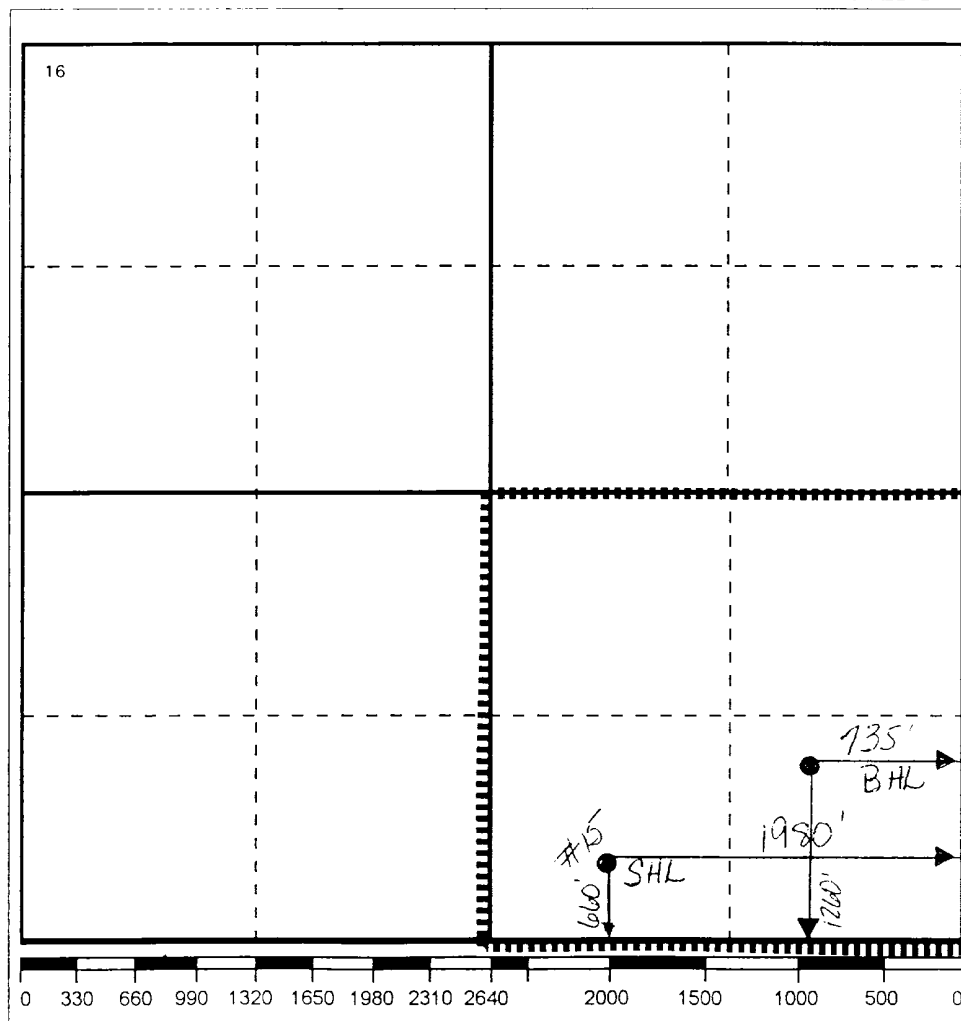
Ul or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
O	24	25S	37E		660	SOUTH	1980	EAST	LEA

<sup>11</sup> 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
P	24	25S	37E		1260	SOUTH	735	EAST	LEA

<sup>12</sup> Dedicated Acres 160	<sup>13</sup> Joint or Infill No	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
--------------------------------------	-------------------------------------	----------------------------------	-------------------------

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



## 17 OPERATOR CERTIFICATION

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

Signature

*J. Denise Leake*

Printed Name

J. Denise Leake

Position

Engineering Assistant

Date

2/11/99

## 18 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  
supervision, and that the same is true and  
correct to the best of my knowledge and  
belief.

Date Surveyed

Signature &amp; Seal of

Professional Surveyor

Certificate No.