Form 3160-3
(November 1983)
formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR 30-039-25693
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: Contract 701-90-0001

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Jicarilla Apache

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

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

7. UNIT AGREEMENT NAME: N/A

8. FARM OR LEASE NAME: Jicarilla 81

2. NAME OF OPERATOR: American Hunter Exploration Ltd.

9. WELL NO.: 81-1

3. ADDRESS OF OPERATOR: 410 - 17 Street, Suite 1220, Denver, Colorado 80202

10. FIELD AND POOL, OR WILDCAT: ~~Wildcat~~ E-Puerto Chiquito Mancos

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2000' FSL & 500' FEL (NESE)
At proposed prod. zone: (= Total Depth) 2000' FSL & 3365' FEL (NESW)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 8-27N-1E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 27 + miles southeast of Dulce, New Mexico

12. COUNTY OR PARISH: Rio Arriba

13. STATE: New Mexico

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
500'	N/A	640
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
---	4761'MD (2621'TVD)	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 7066' GR

22. APPROX. DATE WORK WILL START*: August 24, 1991

23. PROPOSED CASING AND CEMENTING PROGRAM

This action is subject to technical and procedural review pursuant to 43 CFR 3185.3 and appeal pursuant to 43 CFR 3185.4.

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
13 3/4"	10 3/4"	40.5 J55	300'	210 sx Class B
9 7/8"	7 5/8"	26.4 K55	2189' (2016'TVD)	195 sx Class B + 250 sx Class B Light
6 3/4"	5"	13.0 K55	4761' (2621'TVD)	

A vertical pilot hole will be drilled to ≈ 2250' for geological control. After logging, the well will be plugged back to the kickoff point at ≈ 1552'. A medium radius curve will be built along an azimuth of ≈ 270° to ≈ 2189' MD (≈ 2016' TVD), the top of the Niobrara A. After setting intermediate casing, a high angle lateral hole will be drilled for ≈ 2500' to a total measured depth of ≈ 4761' (≈ 2621' TVD).

The application of American Hunter Exploration Ltd. (AHEL) to drill a horizontal well and form a non-standard spacing and proration unit was approved per NMOCD Order No. R-9535.

Surface activities will be limited to the conditions agreed to at the onsite meeting of July 30, 1991 which was attended by representatives of AHEL, the BLM, BIA, Jicarilla Apache Fish & Wildlife, and the Jicarilla Oil and Gas Minerals Group.

Exhibits Attached

"A" Location Survey Plat
"B" Drilling Program
"C" Preliminary Directional Profile
"D" Blowout Preventer Diagram
"E" Drill Pad Layout, Cuts & Fills
"F" Cross Sections of Drill Pad
"G" Drill Rig Layout

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 Alex Hondarchuk TITLE Senior Drilling Engineer DATE August 12, 1991

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED AS AMENDED
AUG 22 1991
AREA MANAGER

RECEIVED
AUG 27 1991
OIL CON. DIV.
DIST. 3

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

R-9535

NMOCD

*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.

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

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.
AMERICAN HUNTER Exp., Ltd.	Jicarilla 81	~~Jicarilla 81~~ 1

Unit Letter	Section	Township	Range	County
I	8	27 N.	1 E. NMPM	Rio Arriba

Actual Footage Location of Well:
2000 feet from the South line and 500 feet from the East line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
7,066'	Mancos	East Puerto-Chiquito Mancos	640 Acres

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

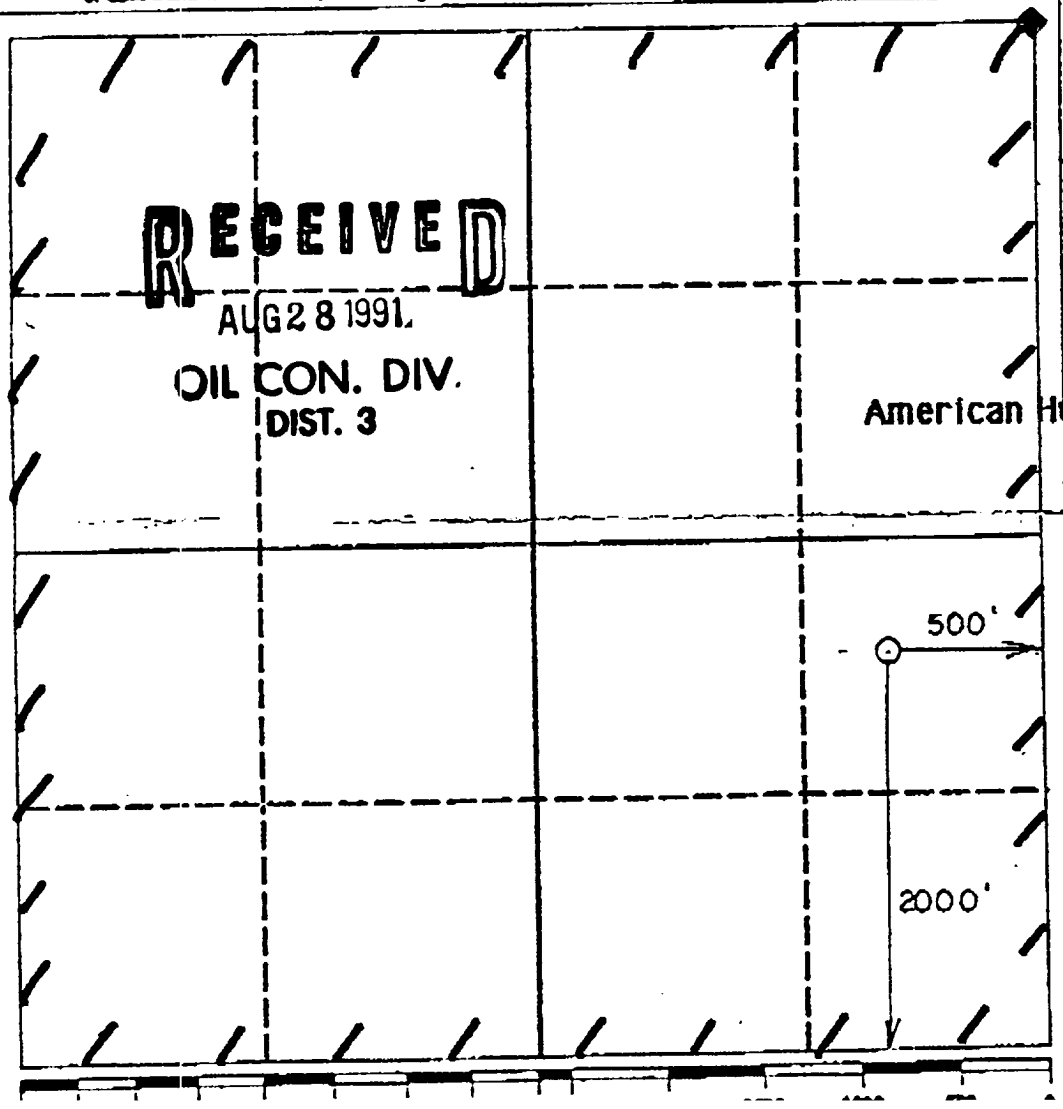
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.



RECEIVED
AUG 28 1991
OIL CON. DIV.
DIST. 3

American Hunter Exploration Ltd.

OPERATOR CERTIFICATION

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

Signature: Brian Wood

Printed Name: Brian Wood

Position: Consultant

Company: American Hunter Exploration Ltd.

Date: August 22, 1991

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: 1 June 91

Signature & Seal of Professional Surveyor: GERALD L. RUDOLESTON, NEW MEXICO, 6844, REGISTERED LAND SURVEYOR

Certificate No. 6844

Exhibit 'B'

DRILLING PROGRAM

AMERICAN HUNTER EXPLORATION LTD.
Jicarilla 8I-1
NESE 8-27N-1E
2000' FSL & 5000' FEL (surface)
2000' FSL & 3365' FEL (TD)
Rio Arriba County, New Mexico

1. SURFACE FORMATION: Lewis Shale

2&3. ESTIMATED GEOLOGICAL FORMATION TOPS:

FORMATION	VERTICAL PILOT		HORIZONTAL		
	Subsea Elev (ft)	Drilling Depth (ft MD)	Subsea Elev* (ft)	Drilling Depth ftMD (ftTVD)	
Lewis Shale		Surface			
Cliff House	+ 6690	380			
Point Lookout	+ 6485	585			possible gas
Mancos Shale	+ 6285	795			
Niobrara A	+ 5125	1945	+ 5054	2189 (2016)	possible oil/gas
Niobrara B	+ 5053	2017	+ 4688	3745 (2382)	possible oil/gas
Niobrara C	+ 4947	2123			possible oil/gas
Sanastee	+ 4581	2489			
TD	+ 4520	2550	+ 4449	4761 (2621)	

* Based on preliminary directional profile and estimated formation dip of 15° west.

4. WELL DESIGN

A vertical pilot hole will be drilled to ≈ 2250' for geological control. After logging, the well will be plugged back to the kickoff point at ≈ 1552'. A medium radius curve will be built along an azimuth of ≈ 270° to ≈ 2189' MD (≈ 2016' TVD), the top of the Niobrara A. After setting intermediate casing, a high angle lateral hole will be drilled for ≈ 2500' to a total measured depth of ≈ 4761' (≈ 2621' TVD). Exhibit 'C' is a schematic of the preliminary directional profile.

The application of American Hunter Exploration Ltd. (AHEL) to drill a horizontal well and form a non-standard spacing and proration unit was approved per NMOCD Order No. R-9535.

CASING PROGRAM

HOLE SIZE	INTERVAL	LENGTH	CASING SIZE	WEIGHT	GRADE	JOINT	COND
13¾"	0 - 300'	300'	10¾"	40.5	J55	ST&C	New
9⅞"	0 - 2189'	2189'	7⅝"	26.4	K55	LT&C	New
6¾"	2090 - 4761'	2671'	5"	13.0	K55	LT&C	New

CEMENTING PROGRAM

The 10¾" surface casing will be cemented to surface with 210 sacks Class B + 2% $CaCl_2$.

The 7⅝" intermediate casing will be cemented to surface as follows:

- 2189 - 1500' 195 sx Class B + 2% $CaCl_2$
- 1500' - Surface 250 sx Class B Light + 2% $CaCl_2$ + 6% Bentonite

The 5" production liner will be uncemented. A packer will be run at the top to seal off the annular overlap between the liner and intermediate casing.

Cement slurry volumes will be calculated as follows:

- 100% excess over gauge (annular) hole volume for surface casing.
- 20% excess over annular hole volume (based on caliper log) for intermediate casing.

5. PRESSURE CONTROL EQUIPMENT

Exhibit "D" is a schematic diagram of the proposed blowout preventer equipment.

Ram type preventers and associated equipment (choke manifold, kelly cocks, etc.) shall be pressure tested to 100% of their rated working pressure (with BOP stack isolated from casing by a test plug) for a period of 10 minutes. Annular preventers shall be tested to 50% of rated working pressure for 10 minutes. Tests will be run after initial installation, prior to drilling out of surface casing shoe and after any use under pressure, or a minimum of once every 14 days. Pipe rams will be operationally checked each 24 hour period, as will blind rams and annular preventer each time pipe is pulled out of the hole. Annular preventers will be functionally operated at least weekly. BOP checks will be noted on daily drilling reports.

6. MUD PROGRAM

	MW	WL	VIS	TYPE
0 - 300'	8.5 - 9.0	NC	35-50	Gel-Lime
300 - 2189'	8.5 - 8.8	8-10	32-36	KOH-PHPA
2189 - 4761'	6.0 - 7.0	NC	NC	Nitrified Crude Oil

7. AUXILIARY EQUIPMENT

1) Upper and lower kelly cock.
2) Drillpipe float (except for lost circulation drilling conditions).
3) A mud logging unit with gas detecting device will be used throughout the intermediate and main hole sections. A pit volume monitoring system and flo-sho will be used to detect any influx of formation fluids.
4) A sub on the floor with a full opening valve to be stabbed into drillpipe when a kelly is not in the string.
5) A remote controlled automatic choke will be installed on the BOP manifold system for well control purposes.

8. EVALUATION

Logging:	Interval	Log Run
	300 - 2550' (Vertical Pilot)	1. DIL/BHCS/GR/CAL 2. LDT/CNL/GR/DAC
	1552 - 4761' (Horizontal)	1. MWD-GR

Coring: A 60' conventional core of the Niobrara A will be cut in the vertical pilot hole.

Testing: No DSTs are planned.

Mud Logging: Full mud logging services from surface casing to TD.

Stimulation: Stimulation procedures will be determined after evaluation of logs. If treatment is indicated, appropriate sundry notice will be submitted for approval.

9. ABNORMAL PRESSURES

No abnormal pressures or temperatures have been noted or reported in wells drilled in the area nor at the depths anticipated in this well. The Niobrara is an underpressured reservoir (0.33 psi/ft). Maximum expected bottomhole pressure is 865 psi.

10. The anticipated starting date for this well is set for August 28, 1991. Operations will cover 25 days for drilling and 7 days for completion.

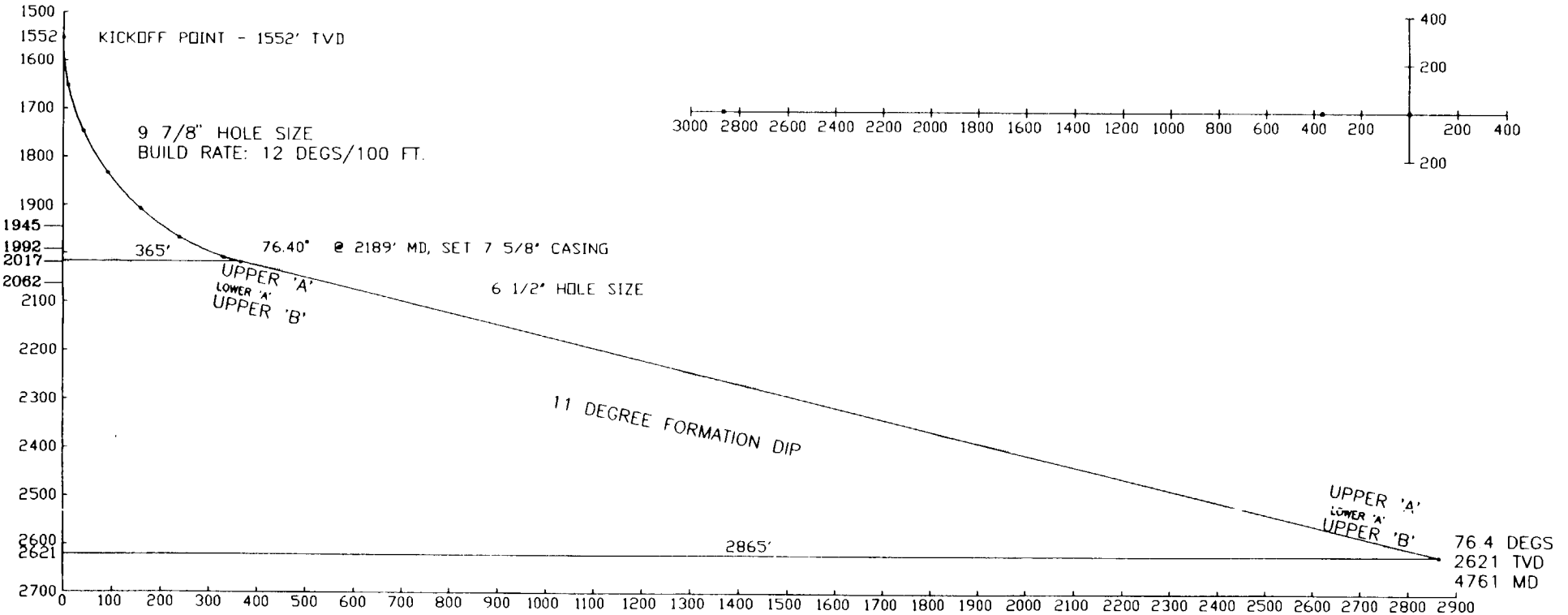
AB:ys
0080

AMERICAN HUNTER EXPLORATION LTD.
AHEL N. PUERTO CHIQUITO #81-1
SEC 8-T27N-R01E
RIO ARRIBA COUNTY, NEW MEXICO

SMITH

VERTICAL PLANE
SCALE: 100 FEET/DIVISION

HORIZONTAL PLANE
SCALE: 200 FEET/DIVISION



VERTICAL SECTION PLANE: 270.00 DEGREES

Drawn by: Terry Ke
16 Apr 1991
File Name: AHEL3P

EXHIBIT C