

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 ☐

SINGLE
ZONE ☐

MULTIPLE
ZONE ☐

2. NAME OF OPERATOR

American Hunter Exploration Ltd.

3. ADDRESS OF OPERATOR

410 - 17 Street, Suite 1220, Denver, Colorado 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*

At surface
660' FNL & 700' FEL (NENE)

At proposed prod. zone
660' FNL & 3567' FEL (NENW)

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

25 + miles southeast of Dulce, New Mexico

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drg. unit line, if any)

660'

16. NO. OF ACRES IN LEASE

N/A

17. NO. OF ACRES ASSIGNED
TO THIS WELL

640

18. DISTANCE FROM PROPOSED LOCATION*

TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

19. PROPOSED DEPTH

5087' MD (2935' TVD)

20. ROTARY OR CABLE TOOLS

Rotary

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

7177' GR

22. APPROX. DATE WORK WILL START*

October 22, 1991

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
4 3/4"	10 3/4"	40.5 J55	300'	290 sx Class G
9 7/8"	7 5/8"	26.4 K55	2519' (2345' TVD)	191 sx Class G + 290 sx
6 3/4"	5 1/2"	15.5 K55	5087' (2935' TVD)	Litepoz

A vertical hole will be drilled and logged to $\approx 1880'$. The well will then be kicked off at this point and a medium radius curve built along an azimuth of $\approx 270^\circ$ to $\approx 2519'$ MD ($\approx 2345'$ TVD), the top of the Niobrara A. After setting intermediate casing, a high angle lateral hole will be drilled for $\approx 2500'$ to a total measured depth of $\approx 5087'$ ($\approx 2935'$ 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-9537.

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

"H" Access Road

"I" Surface Use Program

RECEIVED

NOV 1 1991

OIL CON. DIV.

DIST. 3

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and 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

A. Boyarchuk

TITLE

Senior Drilling Engineer

DATE

October 4, 1991

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED
AS AMENDED

APPROVED BY

TITLE

CONDITIONS OF APPROVAL, IF ANY:

OCT 9 1991
AREA MANAGER

*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
Per Lease - 2 copies

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-185
Revised 1-1-89

OIL CONSERVATION DIVISION

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

DISTRICT I
P.O. Box 1940, Hobbs, NM 88249

DISTRICT II
P.O. Drawer 60, Azusa, NM 88210

DISTRICT III
1000 Rio Grande Rd., Azusa, NM 87410

WELL LOCATION AND AGREEMENT DEDICATION PLAT

All Distances must be from the outer boundaries of the Section

AMERICAN HUNTER Exp., Ltd.		TICARILLA 6A		WELL NO.	
USDA	Section	Township	Range	Hearings 0-1	
A	6	27 N.	E.	Rio Arriba	

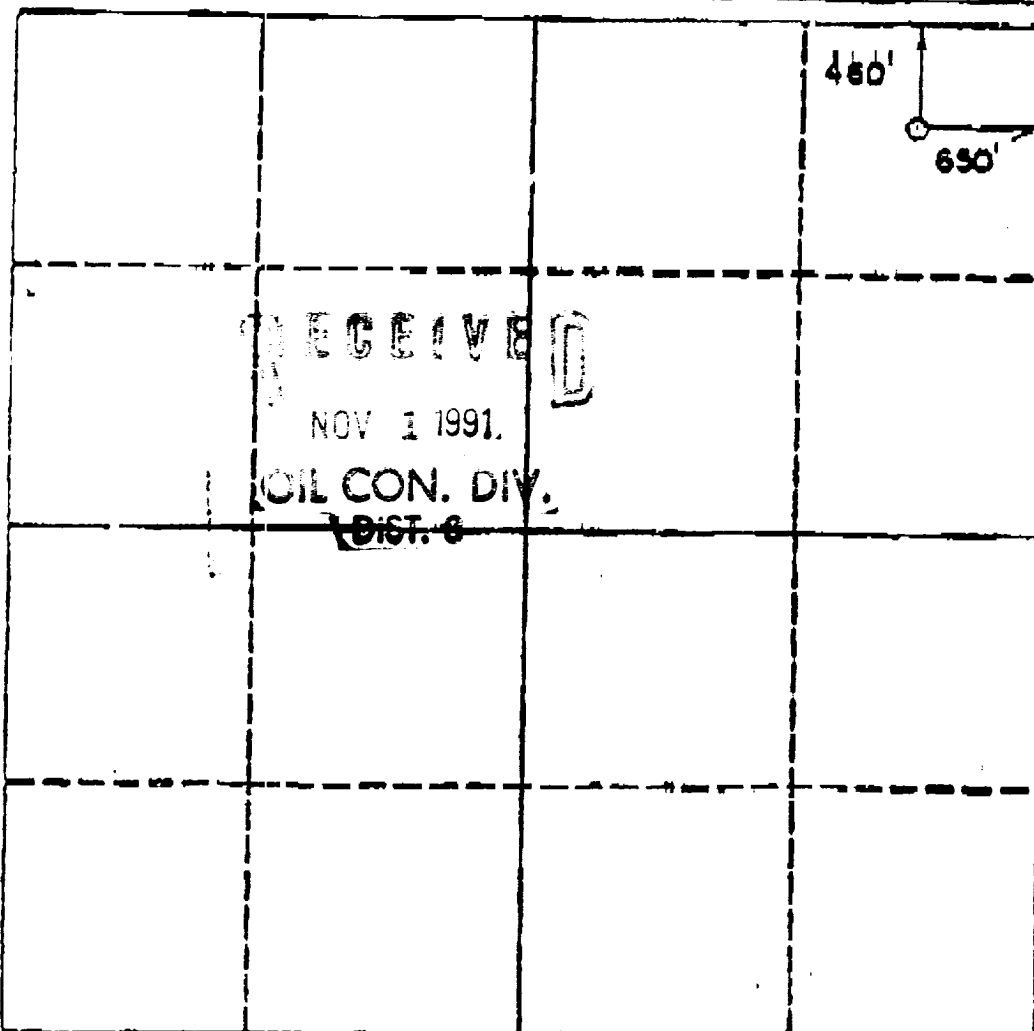
Actual Surface Contour at 1/27/91		480 feet from the North		650 feet from the East	
Ground Level Elev.	Producing Formation	Foot	Dedicated Acreage		
7170'	Niobrara		EAST Puerto Chiquito 148N		640 Acres

- Outline the acreage dedicated to the subject well by colored pencil or ink 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 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 correct and exact descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable well be assigned to the well until all interests have been consolidated (by communitization, unitization, force-pooling, or otherwise) or until a pre-arranged 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: *Jeffrey Greening*

Print Name: Jeffrey Greening

Position: Dir. / Surface

Company: American Hunter Exp. Ltd.

Date: 10/23/91

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.

License Number: 6844

Signature: *Jeffrey Greening*

Print Name: Jeffrey Greening

Position: Dir. / Surface

Company: American Hunter Exp. Ltd.

REV 10-23-91

*Exhibit 'B'***DRILLING PROGRAM**

AMERICAN HUNTER EXPLORATION LTD.

Jicarilla 6A-1

NENE 6-27N-1E

660' FNL. & 700' FEL (surface)

660' FNL. & 3567' FEL (TD)

Rio Arriba County, New Mexico

1. SURFACE FORMATION: Lewis Shale2&3. ESTIMATED GEOLOGICAL FORMATION TOPS:

FORMATION	VERTICAL		HORIZONTAL		
	Subsea Elev (ft)	Drilling Depth (ft MD)	Subsea Elev* (ft)	Drilling Depth ftMD (ftTVD)	
Lewis Shale		Surface			
Cliff House	+ 6470	705			
Point Lookout	+ 6265	910			possible gas
Mancos Shale	+ 6065	1110			
Niobrara A	+ 4900	2275		2519 (2345)	possible oil/gas
Niobrara B	+ 4826	2349		4122 (2713)	possible oil/gas
TD				5807 (2935)	
* Based on preliminary directional profile and estimated formation dip of 10.7° west.					

4. WELL DESIGN

A vertical hole will be drilled and logged to $\approx 1880'$. The well will then be kicked off at this point and a medium radius curve built along an azimuth of $\approx 270^\circ$ to $\approx 2519'$ MD ($\approx 2345'$ TVD), the top of the Niobrara A. After setting intermediate casing, a high angle lateral hole will be drilled for $\approx 2500'$ to a total measured depth of $\approx 5087'$ ($\approx 2935'$ 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-9537.

CASING PROGRAM

HOLE SIZE	INTERVAL	LENGTH	CASING SIZE	WEIGHT	GRADE	CONN	COND
14 3/4"	0 - 300'	300'	10 3/4"	40.5	J55	ST&C	New
9 7/8"	0 - 2519'	2519'	7 7/8"	26.4	K55	LT&C	New
6 3/4"	2419 - 5087'	2668'	5 1/2"	15.5	K55	Premium	New

CEMENTING PROGRAM

The 10 3/4" surface casing will be cemented to surface with 290 sacks Class G + 2% CaCl₂.

The 7 7/8" intermediate casing will be cemented to surface as follows:

- 2519 - 1780' 191 sx Class G + 2% CaCl₂
- 1780' - Surface 290 sx Litepoz + 2% CaCl₂ + 6% Bentonite

The 5 1/2" 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.
- 30% 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	Water/Gel-Lime
300 - 2519'	8.5 - 8.8	8-10	32-36	KOH-PHPA
2519 - 5087'	5.5 - 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

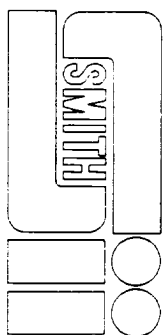
Logging:	<u>Interval</u> 300 - 1880' (Vertical)	<u>Log Run</u> 1. DIL/BHCS/GR/CAL 2. LDT/CNL/GR/DAC
	1880 - 5087' (Horizontal)	1. MWD-GR
Coring:	No cores will be cut.	
Testing:	No DSTs are planned.	
Mud Logging:	Full mud logging services from surface casing to TD.	
Stimulation:	Stimulation procedures 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 969 psi.

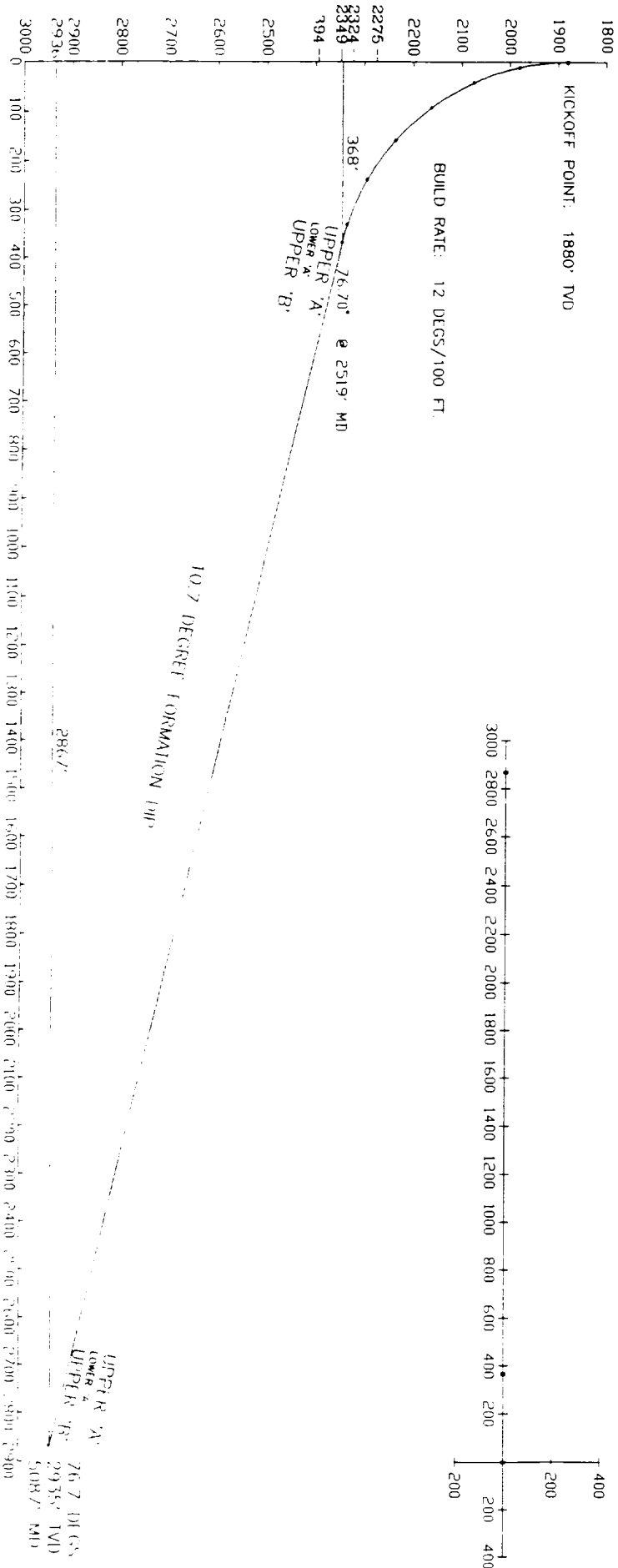
10. The anticipated starting date for this well is set for October 22, 1991. Operations will cover 21 days for drilling and 7 days for completion.

AMERICAN HUNTER EXPLORATION LTD. AHEL S.W. HORSE ISLAND #6A-1 SEC 6-T27N-R01E RIO ARRIBA COUNTY, NEW MEXICO



VERTICAL PLANE
 SCALE: 100 FEET/DIVISION

HORIZONTAL PLANE
 SCALE: 200 FEET/DIVISION



VERTICAL SECTION PLANE: 270.00 DEGREES

Drawn by: Terry Ford
 15 Apr 1994
 File Name: 20060001

OUNDS MESA QUAT RANGLE
7.5 MINUTE TOPO
RIO ARRIBA CO, NEW MEXICO

