

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

P. O. BOX 1000  
HOLLY, NEW MEXICO 88240

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

30-02531139

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

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. LC 058418	
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR Greenhill Petroleum Corp.		7. UNIT AGREEMENT NAME Lovington Paddock Unit	
3. ADDRESS OF OPERATOR 16010 Barker's Point, Ste., 325, Houston, TX 77079		8. FARM OR LEASE NAME <del>Federal</del>	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface 1605 FNL and 265 FWL At proposed prod. zone		9. WELL NO. 88	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 4 miles SE from Lovington NM		10. FIELD AND POOL, OR WILDCAT Lovington Paddock	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 265'		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 31 T16S-R37E	
16. NO. OF ACRES IN LEASE 40		12. COUNTY OR PARISH Lea	
17. NO. OF ACRES ASSIGNED TO THIS WELL 40 49.68		13. STATE NM	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 852'		20. ROTARY OR CABLE TOOLS Rotary	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3828.9		22. APPROX. DATE WORK WILL START* 12/15/90	
23. PROPOSED CASING AND CEMENTING PROGRAM			

HOLE SIZE	CASING SIZE	WEIGHT/FOOT	GRADE	THREAD TYPE	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4	8 5/8	24#	K55	ST & C	2050	800 SKIRCULE
7 7/8	5 1/2	15.5#	K55	LT & C	6350	500 SXSEE Stips

ELECTRIC LOGS:

DLL, MSFL, GAMMA RAY, SDL, CNL, CALIPER.

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED

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 Michael J. Harp TITLE Landman DATE 11-20-90  
(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_  
APPROVED BY AREA MANAGER TITLE AREA MANAGER DATE 1-18-91  
CONDITIONS OF APPROVAL, IF ANY: \_\_\_\_\_

\*See Instructions On Reverse Side

## Application For Permit To Drill

Greenhill Petroleum Corporation  
Lovington Paddock Unit 88  
1605' FNL & 265' FWL  
SEC 31, T16S, R37E  
Lea County, New Mexico

Greenhill Petroleum Corporation submits the following attachments in addition to the Form 3160-3, Application for Permit to Drill, in accordance with Onshore Oil and Gas Order Nos. 1 and 2.

1. The well location plat depicting the location of well number 88.
2. The unprepared ground elevation is: 3828.9' for #88.
3. A rotary drilling rig will be used for drilling these wells. The contractor has not been determined at this time.
4. The drilling program contained the following information:  
Estimated tops of geologic markers  
Estimated depths of fresh water and producing horizons  
Proposed electric logging program  
Proposed casing program and wellheads  
Proposed mud program  
Proposed cementing program  
Emergency Notification call list
5. The estimated duration of each well is 28 days; drilling 14 days, completion 10 days, rig moves 4 days.
6. Operational requirements.
7. BOP requirements and equipment.
8. BOP sketch.
9. A H<sub>2</sub>S Contingency Plan. H<sub>2</sub>S equipment will be installed before drilling H<sub>2</sub>S or suspected H<sub>2</sub>S formations.
10. Surface use and operation plan
11. Well site layout
12. Topographical and well location maps

13. Archaeological Survey

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Greenhill Petroleum Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of false statement.

Date: 17 DEC 1990

*Eng. D. Salvo for*  
H.P. Bezner  
Drilling Manager

Submit to Appropriate  
District Office  
State Lease - 4 copies  
Fee Lease - 3 copies

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

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210

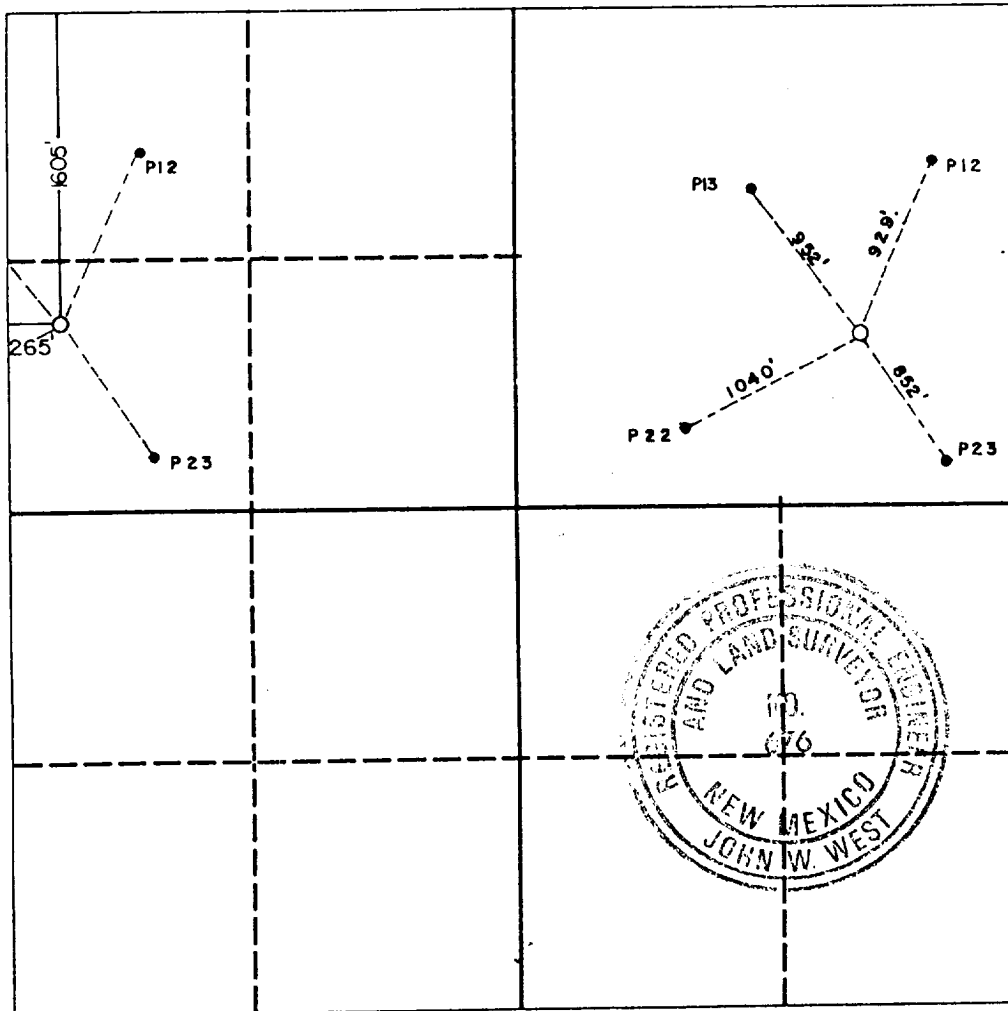
DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator GREENHILL PETROLEUM CORP.			Lease LOVINGTON PADDOCK UNIT		Well No. 88
Unit Letter E	Section 31	Township 16 SOUTH	Range 37 EAST	County LEA	
Actual Footage Location of Well: 1605 feet from the NORTH line and 265 feet from the West line					
Ground level Elev. 3828.9	Producing Formation Lovington Paddock		Pool Lovington Paddock		Dedicated Acreage: 49.6840 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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 Unitized  
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  
Michael Newport  
Printed Name  
Michael J. Newport  
Position  
Greenhill Petroleum  
Company  
Landman  
Date  
12/17/90

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

Date Surveyed  
October 31, 1990  
Signature & Seal of  
Professional Surveyor

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

GREENHILL PETROLEUM CORPORATION  
WELL PROGRAM

WELL NAME: Lovington Paddock Unit #88  
AFE NO. :  
NMOCC PERMIT NO.:

Location: 1605' FNL & 265' FWL, Sec. 31-T16S-R37E, Lea County, NM  
BLM LAND

Directions:

GEOLOGICAL PROGNOSIS

Elevation: Est. 3846' KB (ACT KB 3844)  
SURFACE GEOLOGY: Rolling Rocky Terrain.

Formations	Depth (Est.)	Subsea (Est.)		
Ogalalla	260 (Base)	(+3586)	Top Yates	3100 (+746)
Red Beds	260-2050	(+1796)	Top Queen	3750 (- 96)
Top Salt	2050	(+1796)	San Andres	4650 (-796)
Base Salt	3000	(+ 846)	Top Paddock	6011 (-2165)
			Total Depth	6350' (-2504)

Log(s) at TD: 1) GR-CAL-DLL-MSFL 2) GR-LDT-CNL

Remarks:

Casing Program

Intervals	Length	Casing	Burst PSI (DF)	Coll PSI (DF)	Ten Lbs (DF)	Torque Ft-Lbs Optimum
0 - 2050'	2050'	8-5/8" 24# J-55, ST&C, ERW	2950	1370	244M	2440
0 - 6350'	6350'	5-1/2" 15.5# J-55, LTC, ERW	4810	4040	217M	2170

Wellheads: 8-5/8": Larkin (weld on) 5-1/2": Larkin (threaded)

Remarks: Set 5-1/2" Csg. Head w/side outlets 8"-10" AGL

Cement Program

Hole Size	Depth	Csg. Size	Cement	Yield CF/SX	Excess %	TOC	WOC Hr.
12-1/4"	2050'	8-5/8"	800 SX C + 2% CaCl2 (14.8 ppg)	1.32	130	Surf.	8
7-7/8"	6350'	5-1/2"	500 SX C + Add. for 2-3 hr TTT, $\phi$ FW, $\pm$ 300 Fl, 14.8 PPG	1.32	60	$\pm$ 3000'	8

Remarks:

Surface Casing: Run a centralizer on joints 1, 2, 6, and top joint. Run GS, 1 jt, FC and csg. Threadlock bottom 2 joints.

Production Casing: Remove varnish from bottom 900' (sandblast). Run FS, 1 jt, FC. Threadlock the bottom 2 joints. Centralize 1 per jt to top of SA, and 1 every other jt to the top of the Yates. Displace with water after dropping plug.

Lovington Paddock Unit #88

Mud Program

<u>Interval</u>	<u>WT (LB/GAL)</u>	<u>VIS (SEC)</u>	<u>PH</u>	<u>WL (CC)</u>	<u>Type Mud &amp; Additives</u>
0-2050'	8.6-8.8	30-35		NC	Fresh wtr., lime, gel, paper
2050'-6350'	10.0-10.5	30-35	AS NEEDED		Brine wtr., salt gel & starch & paper sweeps as needed

Remarks: Raise VIS to 40-45 (sec) for logging. Continue to use 10-15% X-S on caliper for top of cement 200' above Yates.

NOTIFICATION:

Name

Title

Hugh Bezner	Drilling Manager	713/980-0808
Jeff Hughes	Drilling Superintendent	713/320-8088
Cy Jones	Production Foreman	504/394-2474
Charles Little	Operations Manager-TX/NM	713/251-5156
David Tilley	Production Engineer	713/868-1413
Norby Renaud	Production Engineer	713/320-0940
Ken Pfau	Production Geological Engineer	713/334-2072
Harry Faulkner	Production Petrophysical Engineer	713/556-6466
Greg Salvo	Production Drilling Engineer-TX/NM	713/376-8433
NMOCC	HOBBS	505/393-6161
GREENHILL - KATY	DRILLING OFFICE	713/558-0281
GREENHILL - JONES ROAD	PRODUCTION OFFICE	713/955-1146
GREENHILL - LOVINGTON	FIELD OFFICE	505/396-7503

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ELF

JAN 21 1991