UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 20071a. Type of work: ☒ DRILL ☐ REENTER  
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

Split Estate

2. Name of Operator **HUDSON OIL COMPANY OF TEXAS** (RANDALL HUDSON 817-336-7190)  
(JON SMITH 575-676-2266)3a. Address **616 TEXAS STREET**  
**FORT WORTH, TEXAS 76102-4612** 3b. Phone No. (include area code)  
**817-336-7190**4. Location of Well (Report location clearly and in accordance with any State requirements.)\*  
At surface **1680' FNL & 1828' FEL SECTION 12 T17S-R31E**  
At proposed prod. zone **SAME**14. Distance in miles and direction from nearest town or post office\*  
**Approximately 6 miles Northwest of Maljamar, New Mexico**15. Distance from proposed\*  
location to nearest  
property or lease line, ft. **1680'**  
(Also to nearest drig. unit line, if any)16. No. of acres in lease  
**1920**17. Spacing Unit dedicated to this well--  
**40**18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft. **1400'**19. Proposed Depth  
**4300'**20. BLM/BIA Bond No. on file  
**BLM NM-1055 STATEWIDE**21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
**3993' GL.**22. Approximate date work will start\*  
**WHEN APPROVED**23. Estimated duration  
**15 Days**

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature **Joe T. Janica**  
Title **Permit Eng.**Name (Printed/Typed)  
**Joe T. Janica**Date  
**03/16/10**Approved by (Signature) **/s/ Don Peterson**

Name (Printed/Typed)

Date **JUN 15 2010**Title **FIELD MANAGER**Office **CARLSBAD FIELD OFFICE**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.  
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

\*(Instructions on page 2)

Roswell Controlled Water Basin

SEE ATTACHED  
CONDITIONS OF APPROVALGENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED



DISTRICT I  
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II  
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III  
1000 RIO BRAZOS RD., AZTEC, NM 87410

DISTRICT IV  
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION  
11885 SOUTH ST. FRANCIS DR.  
Santa Fe, New Mexico 87505

Form C-102

Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number <b>30-015-37947</b>	Pool Code <b>43329</b>	Pool Name <b>MALJAMAR GRAYBURG SAN ANDRES</b>
Property Code <b>35554</b>	Property Name <b>PUCKETT NORTH</b>	Well Number <b>8</b>
OGRID No. <b>25111</b>	Operator Name <b>HUDSON OIL COMPANY</b>	Elevation <b>3993'</b>

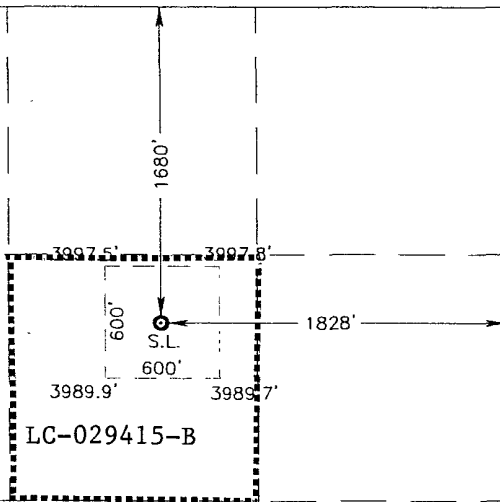
Surface Location

UL or lot No. <b>G</b>	Section <b>12</b>	Township <b>17-S</b>	Range <b>31-E</b>	Lot Idn	Feet from the <b>1680</b>	North/South line <b>NORTH</b>	Feet from the <b>1828</b>	East/West line <b>EAST</b>	County <b>EDDY</b>
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Bottom Hole Location If Different From Surface

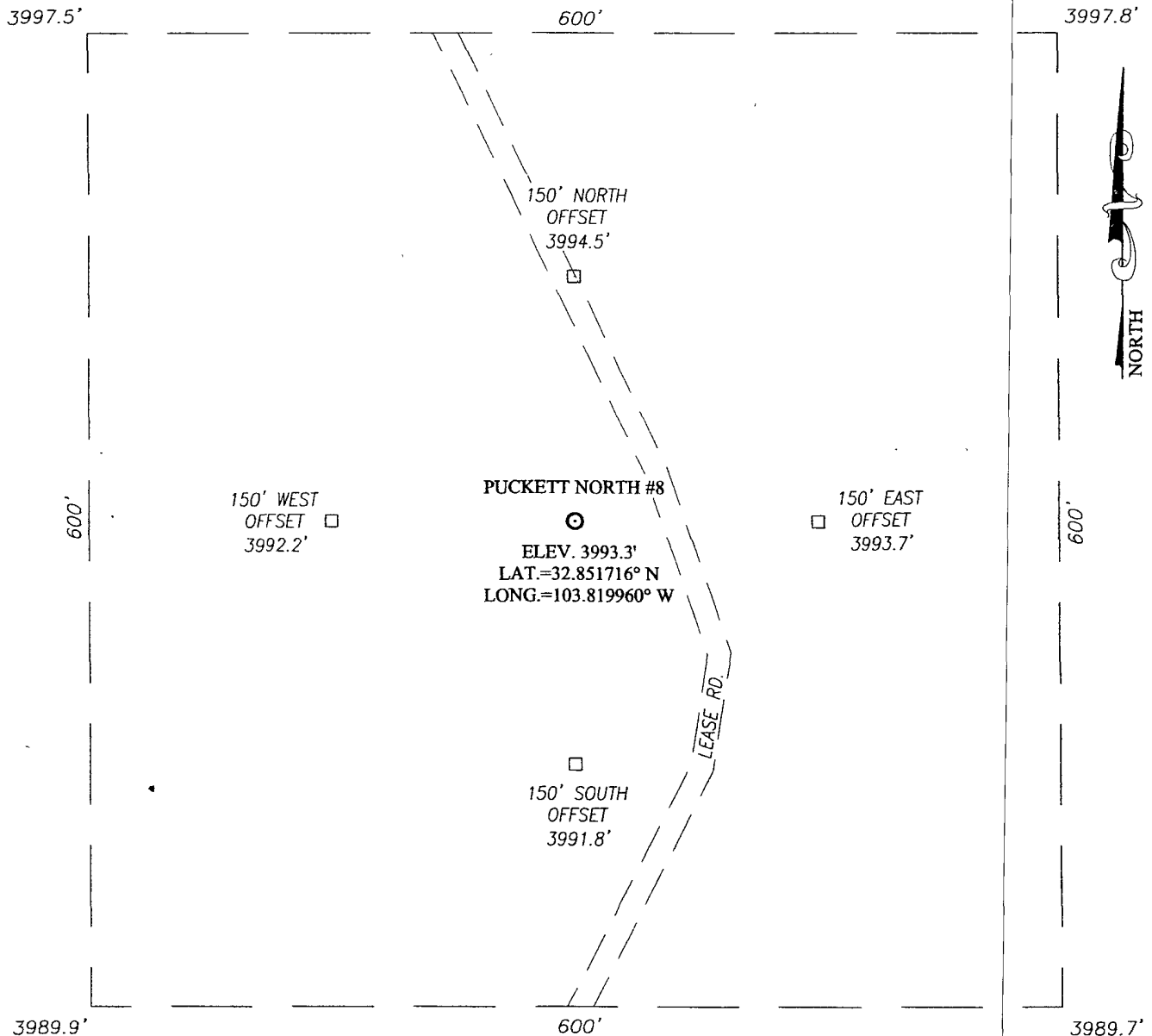
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres <b>40</b>	Joint or Infill	Consolidation Code	Order No.						

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

	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Joe T. Janica</i> Signature Date <b>Joe T. Janica</b> <b>03/16/10</b> Printed Name</p>
<p>GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=673948.8 N X=657655.2 E LAT.=32.851716° N LONG.=103.819960° W</p>	<p><b>SURVEYOR CERTIFICATION</b></p> <p>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 belief.</p> <p>FEBRUARY 9, 2010 Date Surveyed Signature &amp; Seal of Professional Surveyor <i>Ronald J. Eidson</i> 10.11.0174 Certificate No. <b>GARY G. EIDSON 12641</b> <b>RONALD J. EIDSON 3239</b></p>
<p>EXHIBIT "A"</p>	

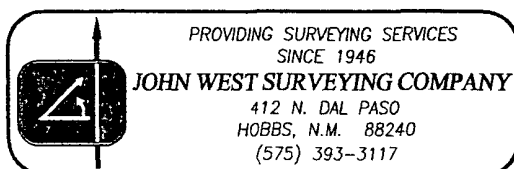
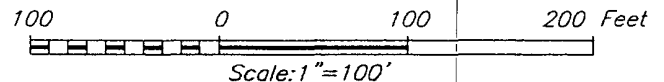


**SECTION 12, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.**  
 EDDY COUNTY NEW MEXICO



**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD. #224 (RIPPLE ROAD), GO SOUTHWEST ON U.S. HWY. #82 APPROX. 1.2 MILES. TURN RIGHT AND GO NORTHWEST APPROX. 0.3 MILES. TURN RIGHT AND GO NORTH APPROX. 0.3 MILES. VEER RIGHT AND GO NORTHEAST APPROX. 0.5 MILES. VEER LEFT AND GO NORTH APPROX. 1.0 MILE. TURN RIGHT AND GO EAST APPROX. 1.0 MILE. TURN LEFT AND GO NORTH APPROX. 0.4 MILES. THIS LOCATION STAKE IS APPROX. 60 WEST OF LEASE RD.



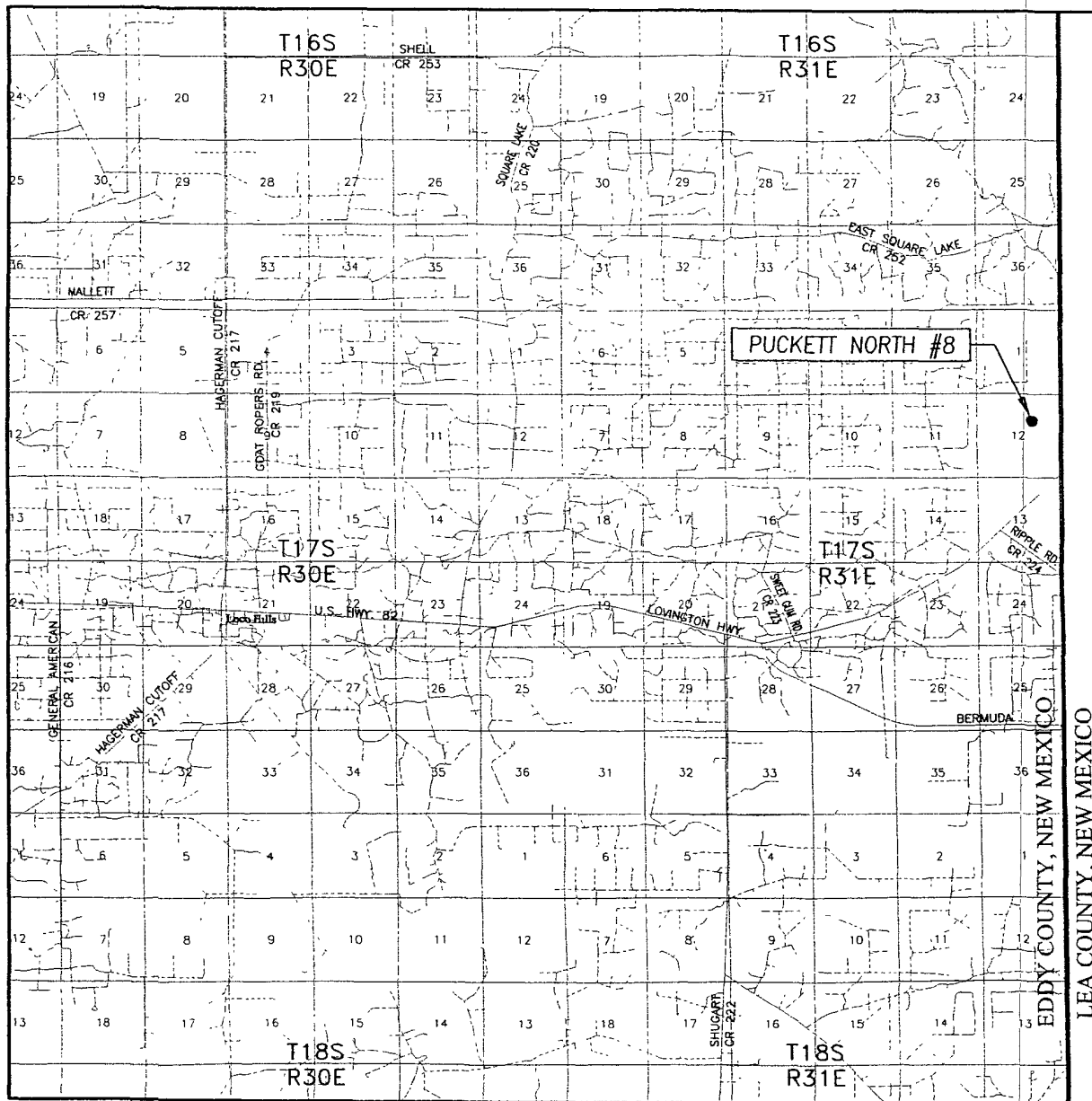
**HUDSON OIL COMPANY**

PUCKETT NORTH #8 WELL  
 LOCATED 1680 FEET FROM THE NORTH LINE  
 AND 1828 FEET FROM THE EAST LINE OF SECTION 12,  
 TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.,  
 EDDY COUNTY, NEW MEXICO

Survey Date: 02/09/10	Sheet 1 of 1 Sheets
W.O. Number: 10.11.0174	Dr By: DSS
Date: 02/11/10	10110174
	Scale: 1"=100'




# VICINITY MAP



SCALE: 1" = 2 MILES

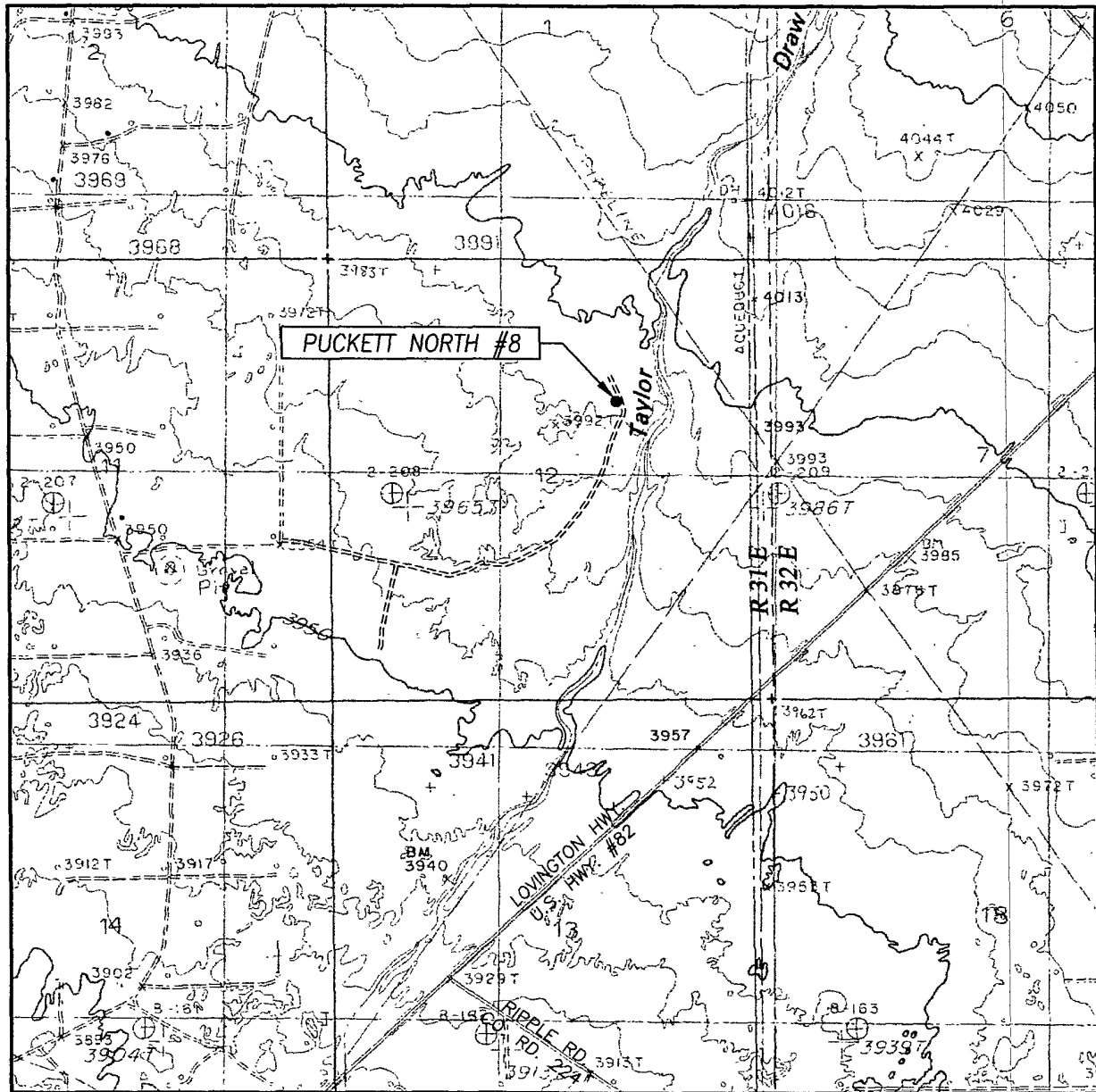
SEC. 12 TWP. 17-S RGE. 31-E  
 SURVEY N.M.P.M.  
 COUNTY EDDY STATE NEW MEXICO  
 DESCRIPTION 1680' FNL & 1828' FEL  
 ELEVATION 3993'  
 OPERATOR HUDSON OIL COMPANY  
 LEASE PUCKETT NORTH



PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO  
 HOBBS, N.M. 88240  
 (575) 393-3117

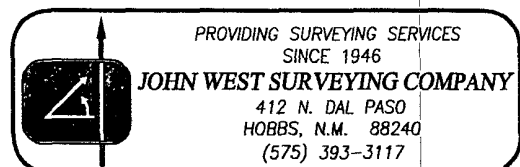


NORTH

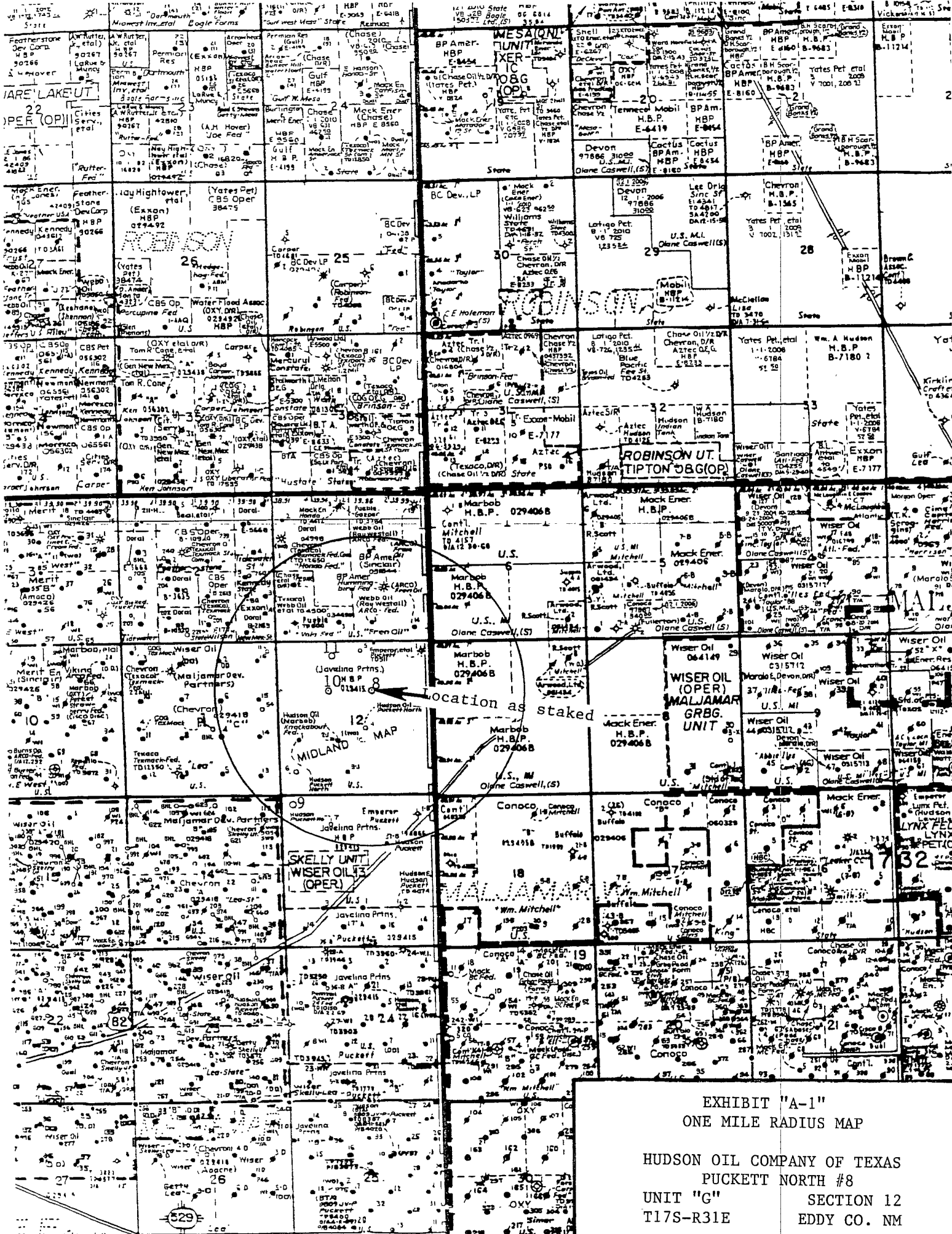


CONTOUR INTERVAL:  
MALJAMAR, N.M. - 10'

U.S.G.S. TOPOGRAPHIC MAP  
MALJAMAR, N.M.









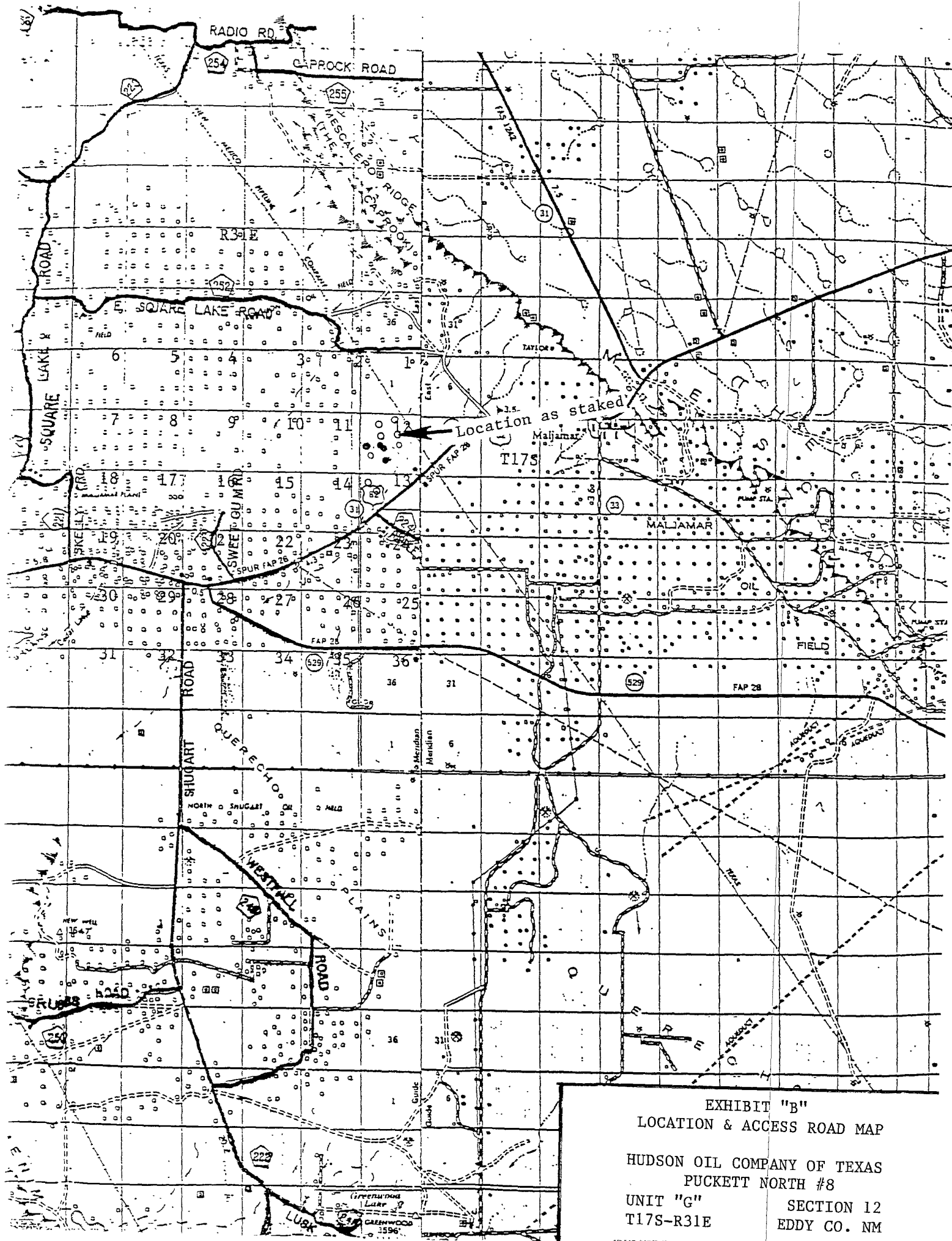
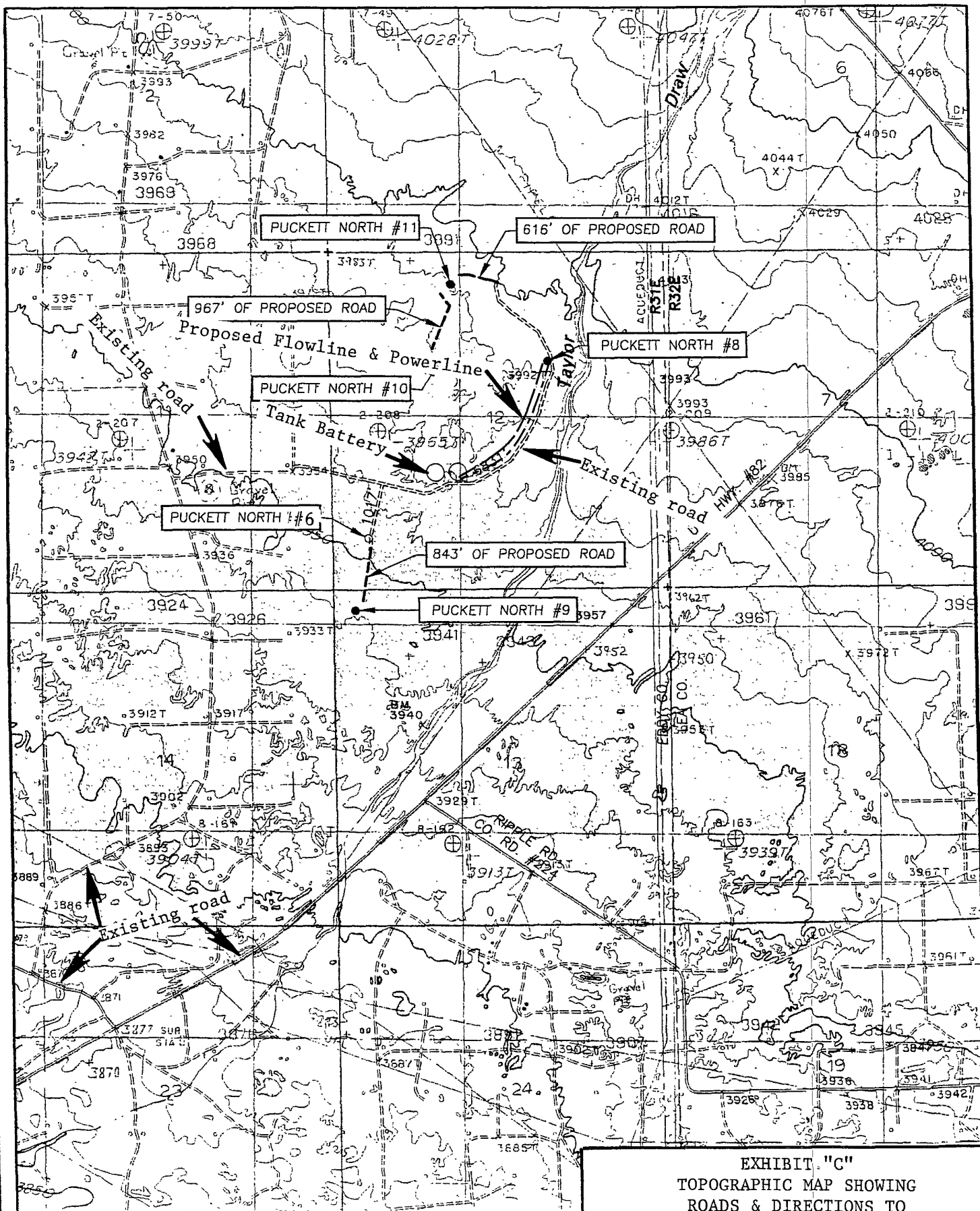


EXHIBIT "B"  
LOCATION & ACCESS ROAD MAP  
HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
UNIT "G" SECTION 12  
T17S-R31E EDDY CO. NM







## APPLICATION TO DRILL

HUDSON OIL COMPANY OF TEXAS  
 PUCKETT NORTH #8  
 UNIT "G" SECTION 12  
 T17S-R31E EDDY CO. NM

In response to questions asked under Section II of Bulletin NTL-6, the following information on the above well will be provided.

1. LOCATION: 1680' FNL & 1828' FEL SECTION 12 T17S-R31E EDDY CO. NM
2. ELEVATION ABOVE SEA LEVEL: 3994' GL
3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits;
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for the removal of solids from hole.
5. PROPOSED DRILLING DEPTH: 4300'
6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	700'
Queen	3140'
Grayburg	3643'
San Andres	3954'
7. POSSIBLE MINERAL BEARING FORMATIONS:

Queen	Oil
Grayburg	Oil
San Andres	Oil
8. CASING PROGRAM:

HOLE SIZE	INTERVAL	CASING OD	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
20"	0-40'	16"	NA	NA	NA	Conductor	New
12 1/4"	0-725'	8 5/8"	24#	8-R	ST&C	J-55	New
7 7/8"	0-4300'	5 1/2"	17#	8-R	ST&C	J-55	New

Casing design factors:

Collapse	1.125	Burst	1.0	Body Yield	1.5	Joint Strength	8-R	1.8
						Buttress		1.6



## APPLICATION TO DRILL

HUDSON OIL COMPANY OF TEXAS  
 PUCKETT NORTH #8  
 UNIT "G" SECTION 12  
 T17S-R31E EDDY CO. NM

9. CASING CEMENTING & SETTING DEPTHS:

16"	Conductor	Set 40' of 16" conductor pipe and cement to surface with Redi-mix.
8 5/8"	Surface	Run and set 725' of 8 5/8" 25# J-55 ST&C casing. Cement with 200 Sx. of Premium Plus cement + 2% CaCl <sub>2</sub> + 4% Bentonite, + 0.125#/Sx Polyflakes, Yield 1.75, tail in with 250 Sx. of Premium Plus cement + 2% CaCl <sub>2</sub> , Yield 1.35, circulate cement.
5 1/2"	Production	Run and set 4300' of 5 1/2" 17# J-55 ST&C casing. Cement with 600 Sx. of Halliburton Light Premium Plus cement + 0.125#? Sx. Yield 1.87, tail in with 350 Sx. of Premium Plus 50/50 POZ, + 0.4% LAP-1 + 0.4% CFR-3, + 0.25 LBMD-AIR 3000, + 1 LBM Salt, Yield 1.4, circulate cement to surface.

Exhibit "E" shows a 2000 PSI working pressure B.O.P. with an annular bag type preventor, with 2" inlets and 2" outlets to the choke manifold. This B.O.P. will be nipples up on the 8 5/8" casing. The B.O.P. will be tested to the pressures acceptable to the BLM. Exhibit "E-1" shows a 2-3M PSI choke manifold with two adjustable chokes and a 3" blow down line to the pit. No abnormal pressures or abnormal temperatures are expected while drilling this well. Other wells drilled in this section and area have not encountered any problems while drilling.

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VLSC.	FLUID LOSS	TYPE MUD SYSTEM
40-725'	8.4-8.7	29-32	NC	Fresh water Spud Mud use paper to control seepage.
725-TD	10.1-10.2	29-38		Brine water add Salt Water Gel if native mud does not have the desired viscosity. Use paper to control seepage. If water loss control is needed use starch to accomplish these needs.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run logs and casing the mud system may have to be altered to meet these needs,



ALLOCATION TO DRILL  
HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
UNIT "G" SECTION 12  
T17S-R31E EDDY CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM: *See COA*

- A. Open hole logs: Dual Laterolog, SNP, MSFL, LDT, Caliper and Gamma Ray log from TD back to the 8 5/8" casing shoe.
- B. Cased hole log: Gamma Ray, Neutron from the 8 5/8" casing shoe to the surface.
- C. No DST's, Cores, or Mud Logger is planned at this time.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H<sup>2</sup>S in this area. If H<sup>2</sup>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 2150± PSI, and Estimated BHT 135°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

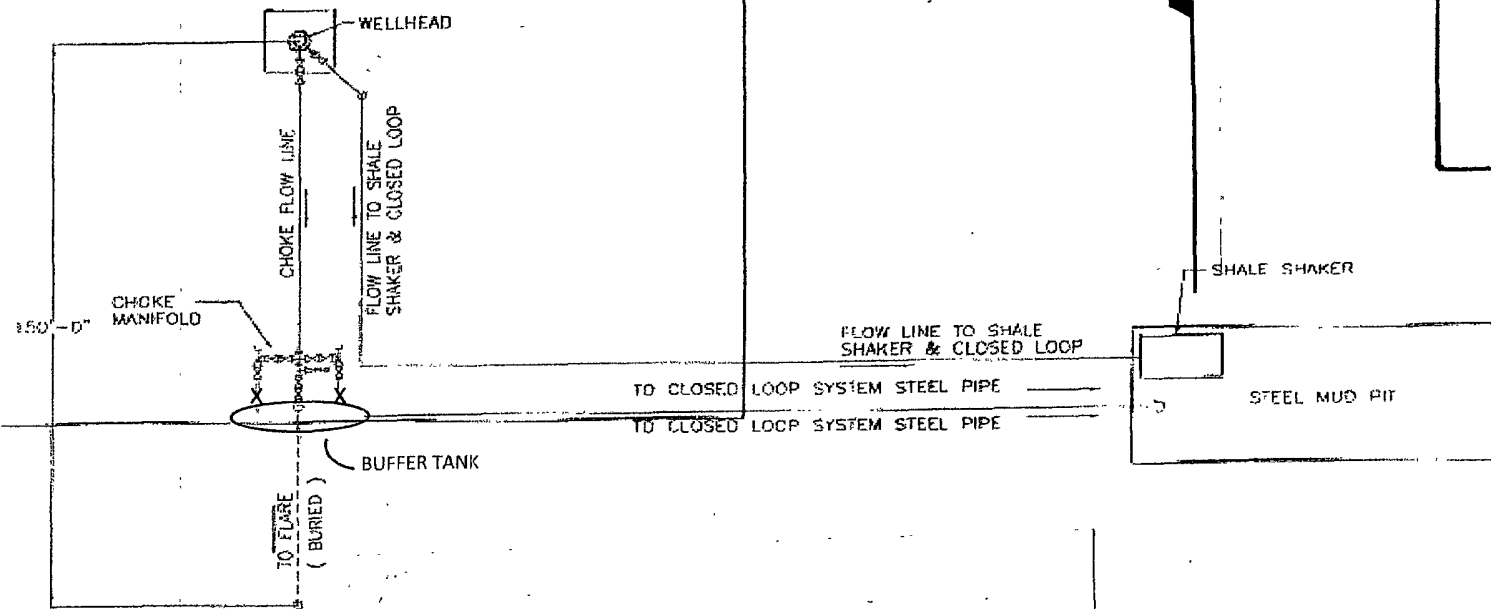
Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 15 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The GRBG-SAN ANDRES formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as an oil well.



300'



S

300'

# DRILLING OPERATIONS WELL PAD PLAN LAYOUT

NOT TO SCALE

DRAWING SAVED AS C:\DRAWINGS\2010dwg\10-028\10-028-02.dwg

EPS PROJECT NUMBER = 10-028  
DATE: JANUARY 29, 2010

EXHIBIT "D"  
RIG LAY OUT PLAT

HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
UNIT "G"  
T17S-R31E  
SECTION 12  
EDDY CO. NM



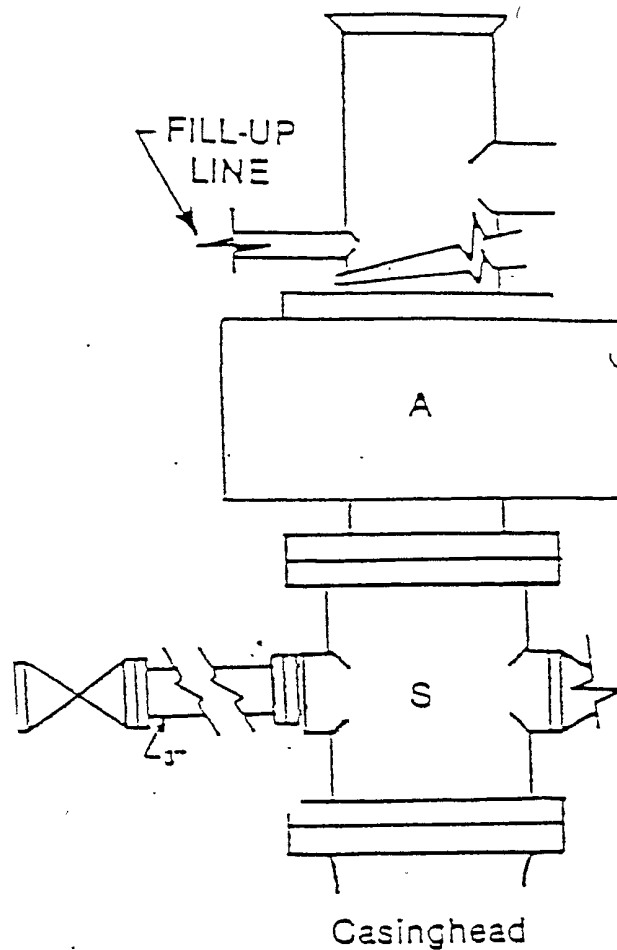


FIGURE K1-1. Recommended IADC Class 2 BOP stack, 2000 psi WP.  
Either SRd (left) or SA (right) arrangement is acceptable and drilling  
spool is optional

EXHIBIT "E"  
SKETCH OF B.O.P. TO BE USED ON

HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
UNIT "G" SECTION 12  
T17S-R31E EDDY CO. NM



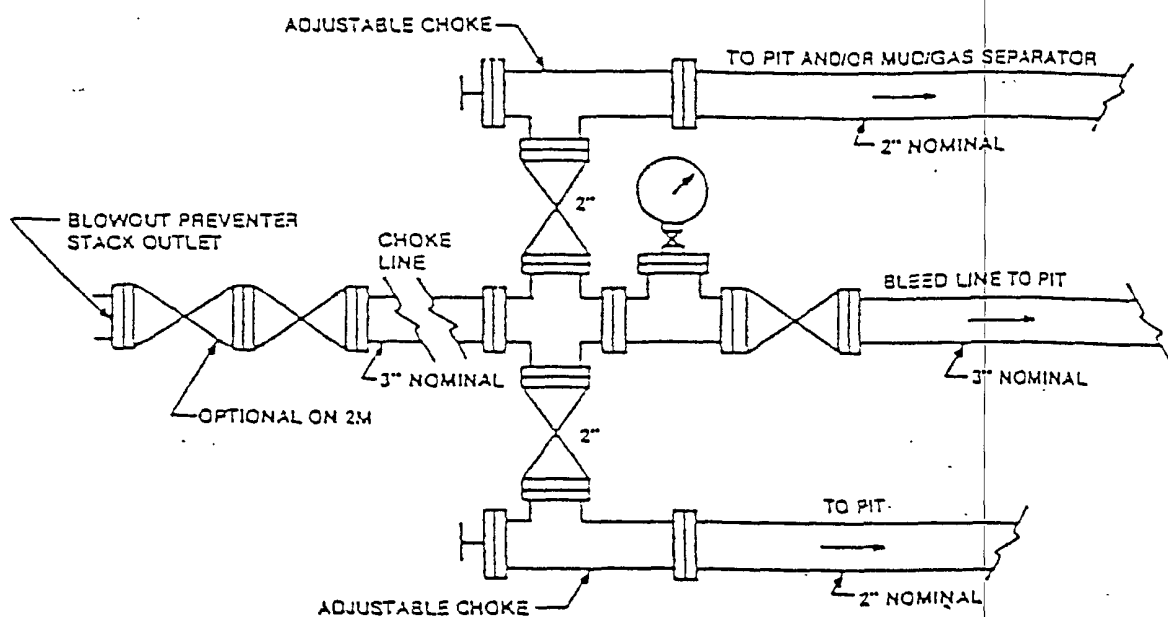


FIGURE K-1. Typical choke manifold assembly for 2M and 3M rated working pressure service — surface installation.

EXHIBIT "E-1"  
CHOKE MANIFOLD & CLOSING UNIT

HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
UNIT "G" SECTION 12  
T17S-R31E EDDY CO, NM



HUDSON OIL COMPANY OF TEXAS  
HYDROGEN SULFIDE CONTINGENCY PLAN  
FOR DRILLING/WORKOVER/FACILITY

This well and its anticipated facility are not expected to have Hydrogen Sulfide releases. However, there may be Hydrogen Sulfide production in the nearby area. There are no private residences in the area but a contingency plan has been orchestrated. Hudson Oil Company of Texas will have a Company representative available to the rig personnel through out drilling or production operations. If Hydrogen Sulfide is detected or suspected, monitoring equipment will be acquired for monitoring and/or testing.



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### General H2S Emergency Actions:

1. All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (Self Contained Breathing Apparatus).
3. Always use the "buddy system"
4. Isolate the well/problem if possible
5. Account for all personnel
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the Company personnel as soon as possible if not at the location (use the enclosed call list as instructed)

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of the emergency response agencies and nearby residents.

### EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1. All personnel will don the self contained breathing apparatus
2. Remove all personnel to the "safe area" (always use the buddy system)
3. Contact company personnel if not on location]
4. Set in motion the steps to protect and or remove the general public to and upwind "safe area" Maintain strict security & safety procedures while dealing with the source.
5. No entry to any unauthorized personnel
6. Notify the appropriate agencies:   City Police – City Street(s)  
  State Police – State Rd.  
  County Sheriff – County Rd.
7. Call the NMOCD



## Hydrogen Sulfide Contingency Plan For Drilling/Workover/Facility

If at this time the supervising person determines the release of H<sub>2</sub>S cannot be contained to the site location and the general public is in harms way he will take the necessary steps to protect the workers and the public.

EMERGENCY CALL LIST: (Start and continue until ONE of these people has been contacted)

	OFFICE	MOBILE	HOME
JON B. SMITH	575-676-2266	575-365-8064	575-396-4494
RANDELL HUDSON	817-336-7190		

### EMERGENCY RESPONSE NUMBERS:

State Police	Eddy County		575-748-9718
State Police	Lea County		575-392-5588
Sheriff	Eddy County		575-746-2701
Sheriff	Lea County		
Emergency Medical Service (Ambulance)	Eddy County		911 or 505-746-2701
	Lea County	Eunice	911 or 505-394-3258
Emergency Response	Eddy County SERC		575-476-9620
	Lea County		
Artesia Police Dept			575-746-5001
Artesia Fire Dept			575-746-5001
Carlsbad Police Dept			575-885-2111
Carlsbad Fire Dept			575-885-3125



Loco Hills Police Dept		575-677-2349
Jal Police Dept		575-395-2501
Jal Fire Dept		575-395-2221
Jal Ambulance		575-395-2221
Eunice Police Dept		575-394-0112
Eunice Fire Dept		575-394-3258
Eunice Ambulance		575-394-3258
Hobbs Police Dept		
NMOCD	District 1 (Lea, Roosevelt, Curry)	575-393-6161
	District 2 (Eddy, Chavez)	575-748-1283
Lea County Information		575-393-8203
Callaway Safety	Eddy/Lea Counties	575-392-2973
BJ Services	Artesia	575-746-3140
	Hobbs	575-392-5556
Halliburton	Artesia	1-800-523-2482
	Hobbs	1-800-523-2482
Wild Well Control	Midland	432-550-6202
	Mobile	432-553-1166



#### PROTECTION OF THE GENERAL PUBLIC (ROE)

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road with the general public may travel)
- 100 ppm radius of ¼ mile in New Mexico will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H<sub>2</sub>S could be present in concentrations greater than 100 ppm in the gas mixture

#### CALCULATIONS FOR THE 100 PPM (ROE) "PASQUILL-GIFFORD EQUATION"

$X = [(1.589) (\text{mole fraction}) (Q\text{-volume in std cu ft}) \text{ to the power of } (0.6258)]$

#### CALCULATION FOR THE 500 PPM ROE:

$X = [(0.4546) (\text{mole fraction}) (Q - \text{volume in std cu ft}) \text{ to the power of } (0.6258)]$

#### Example:

If a well/facility has been determined to have 150 / 500 ppm H<sub>2</sub>S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

150 ppm  $X = [(1.589) (.00015) (100,000 \text{ cfd})] \text{ to the power of } (.6258)$   
 $X = 7 \text{ ft.}$

500 ppm  $X = [(0.4546) (.0005) (100,000 \text{ cfd})] \text{ to the power of } (.6258)$   
 $X = 3.3 \text{ ft.}$

(These calculations will be forwarded to the appropriate District NMOCD office when Applicable)

#### PUBLIC EVACUATION PLAN:

- Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- A trained person in H<sub>2</sub>S safety shall monitor with detection equipment the H<sub>2</sub>S concentration, wind and area exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. (All monitoring equipment shall be UL approved, for use in class 1 groups A, B, C & D, Division 1, hazardous locations. All monitor will have a minimum capability of measuring H<sub>2</sub>S, oxygen and flammable values.)



### PROTECTION OF THE GENERAL PUBLIC (ROE)

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road with the general public may travel)
- 100 ppm radius of ¼ mile in New Mexico will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H2S could be present in concentrations greater than 100 ppm in the gas mixture

### CALCULATIONS FOR THE 100 PPM (ROE) "PASQUILL-GIFFORD EQUATION"

$X = [(1.589) (\text{mole fraction}) (Q\text{-volume in std cu ft})] \text{ to the power of } (0.6258)$

### CALCULATION FOR THE 500 PPM ROE:

$X = [(.4546) (\text{mole fraction}) (Q - \text{volume in std cu ft})] \text{ to the power of } (0.6258)$

#### Example:

If a well/facility has been determined to have 150 / 500 ppm H2S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

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 $X = 7 \text{ ft.}$

500 ppm  $X = [(.4546) (.0005) (100,000 \text{ cfd})] \text{ to the power of } (.6258)$   
 $X = 3.3 \text{ ft.}$

(These calculations will be forwarded to the appropriate District NMOC D office when Applicable)

### PUBLIC EVACUATION PLAN:

- Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- A trained person in H2S safety shall monitor with detection equipment the H2S concentration, wind and area exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. (All monitoring equipment shall be UL approved, for use in class 1 groups A, B, C & D, Division 1, hazardous locations. All monitor will have a minimum capability of measuring H2S, oxygen and flammable values.)



- Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- The company supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

#### PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:

1. Human life and/or property are in danger.
2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

#### INSTRUCTION FOR IGNITION:

1. Two people are required. They must be equipped with positive pressure, self contained breathing apparatus and a "D" ring style full body, OSHA approved safety harness. Non flammable rope will be attached.
2. One of the people will be qualified safety person who will test the atmosphere for H<sub>2</sub>S, oxygen and LFL. The other person will be the company supervisor; he is responsible for igniting the well.
3. Ignite up wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25 mm flare gun shall be used, with a  $\pm$  500 ft. range to ignite the gas.
4. Prior to ignition, make a final check with combustible gases.
5. Following ignition, continue with the emergency actions & procedures as before.



## REQUIRED EMERGENCY EQUIPMENT:

### 1. Breathing apparatus:

- Rescue packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- Work/Escapes packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity
- Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

### 2. Signage & Flagging:

- One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- A colored conditioned flag will be on display, reflecting the condition at the site at the time.

### 3. Briefing Area:

- Two perpendicular areas will be designated by signs and readily accessible.

### 4. Wind Socks:

- Two windsocks will be placed in strategic locations, visible from all angles.

### 5. H2S Detectors & Alarms:

- The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible at 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
  - Rig Floor
  - Bell Nipple
  - End of flow line or where well bore fluid are being discharged.

### 6. Auxiliary Rescue Equipment:

- Stretcher
- Two OSHA full body harness
- 100 ft. 5/8 inch OSHA approved rope.
- 1 – 20# class ABC fire extinguisher
- Communication via cell phones on location and vehicles on location.



#### USING SELF CONTAINED BREATHING AIR EQUIPMENT (SCBA):

- (SCBA) SHOULD BE WORN WHEN ANY OF THE FOLLOWING ARE PERFORMED:
  - Working near the top or on the top of a tank
  - Disconnecting any line where H<sub>2</sub>S can reasonably be expected
  - Sampling air in the area to determine if toxic concentration of H<sub>2</sub>S can exist.
  - Working in areas where over 10 ppm on H<sub>2</sub>S has been detected.
  - At any time there is a doubt as the level of H<sub>2</sub>S in the area.
- All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
- Facial hair and standard eyeglasses are not allowed with SCBA.
- Contact lenses are never allowed with SCBA.
- Air quality shall be continuously checked during the entire operation.
- After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.
- All SCBA shall be inspected monthly.

#### RESCUE AND FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H<sub>2</sub>S) POISONING:

- Do not panic
- Remain calm and think
- Get on the breathing apparatus



- Remove the victim to the safe breathing area as quickly as possible. Up wind and uphill from source or cross wind to achieve upwind.
- Notify emergency response personnel.
- Provide artificial respiration and or CPR, as necessary.
- Remove all contaminated clothing to avoid further exposure.
- A minimum of two personnel on location shall be trained in CPR and First Aid.



H<sub>2</sub>S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H<sub>2</sub>S is approximately 20% heavier than air (Sp. Gr = 1.19) (Air = 1) and colorless. It forms an explosive mixture with air between 4.3% and 46%. By volume hydrogen sulfide is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

COMMON NAME	CHEMICAL ABBREV.	SPECIFIC GRVTY.	THRESHOLD LIMITS	HAZARDOUS LIMITS	LETHAL CONCENTRATIONS
Hydrogen Sulfide	H <sub>2</sub> S	1.19	10 ppm 15 ppm	100 ppm/hr	600ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL <sub>2</sub>	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO <sub>2</sub>	1.52	5000 ppm	5%	10%
Methane	CH <sub>4</sub>	0.55	90,000	Combustible @ 5%	N/A

**Threshold Limit:** Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.

**Hazardous Limit:** Concentrations that may cause death.

**Concentrations:** Concentrations that will cause death with short term exposure.

**Threshold Limit:** NIOSH guide to chemical hazards  
(10 ppm)

#### PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATION	PHYSICAL EFFECTS
.001% 10 ppm	Obvious and unpleasant odor. Safe for 8 hr. exposure
.005% 50 ppm	Can cause some flu like symptoms and can cause pneumonia.
.01% 100 ppm	Kills the sense of smell in 3-15 minutes. May irritate the eyes and throat.
.02% 200 ppm	Kills the sense of smell rapidly. Severely irritates the eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and or death.
.06% 600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.



SURFACE USE PLAN

HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
UNIT "G" SECTION 12  
T17S-R31E EDDY CO. NM

1. EXISTING AND PROPOSED ROADS:

- A. Exhibit "B" is a reproduction of a County General Hi-way map showing existing roads. Exhibit "C" is a reproduction of a USGS topographic map showing existing roads and and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed to BLM specifications.
- B. Exhibit "A" shows the proposed well site as staked.
- C. Directions to location: From Hobbs New Mexico take U. S. Hi-way 62-180 West 15± miles to the junction with State Hi-way 529 bear Right follow 529 29 miles to the junction woth U. S. Hi-way 82 turn Right go 2+ miles turn Left on lease road go .3 miles, turn Right go .3 miles bear Right go .3 miles bear Left follow lease road North 1.6± miles, turn Right (East) go .85 miles to well # 2 continue Northeast past well # 4 continue .26 mi to location on the West side of road.
- D. Exhibit "G" shows a topographic map showing existing roads and proposed roads, proposed flowline routes and powerline routes.

2. PLANNED ACCESS ROADS: No new road will be required.

- A. The access roads will be crowned and sitched to a 14' wide travel surface, within a 30' R-O-W.
- B. Gradient of all roads will be less than 5%.
- C. Turn-outs will be constructed where necessary.
- D. If require new access roads will be surface with a minimum of 4-6" of caliche. this material will be obtained from a local source.
- E. Center line for new roads will be flagged, road construction will be done as field conditions require.
- F. Culverts will be placed in the access road as drainage conditions require. Roads will be constructed to use low water crossings for drainage as required by the topographic conditions.

3. LOCATION OF EXISTING WELLS WITHIN A ONE MILE RADIUS: EXHIBIT "A-1"

- A. Water wells - None in the immediate area
- B. Disposal wells - None known
- C. Drilling wells - none known
- D. Producing wells - As shown on Exhibit "A-1"
- E. Abandoned wells - As shown on Exhibit "A-1"



## SURFACE USE PLAN

HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
UNIT "G" SECTION 12  
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4. If on completion this well is a producer the operator will lay pipelines and construct powerlines along existing road R-O-W's or other existing R-O-W's. Exhibit "C" shows proposed roads , flowlines and powerlines.

### 5. LOCATION & TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the location access roads or piped to location in flexible lines laid on top of the ground.

### 6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from the excavation of the drill site, if additional material is required it will be obtained from a local source and transported over the location access roads as shown on Exhibit "C".

### 7. METHODS OF HANDLING WASTE:

- A. All trash, junk and other waste material will be contained in trash cages or trash bins in order to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- B. Sewage from living quarters will be drained into holding tanks and will be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of well.
- C. Where a closed loop mud system is used to drill a well the drilling fluid that remains after the drilling and casing is run or the well is Plugged and abandoned will be removed from the location and in some cases may be used on another well or transported to a State approved disposal site. The drilling cuttings that result from drilling the well will likewise be transported to a State approved disposal site.
- D. All water produced while completing this well and completion fluids will be treated in the same procedure as the drilling fluids.
- E. Any remaining salts or mud additive that was not used will be removed by the supplier, this includes all broken sacks and containers.

### 8. ANCILLARY FACILITIES:

- A. No camps or air strips will be constructed on this location.



## SURFACE USE PLAN

HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
UNIT "G" SECTION 12  
T17S-R31E EDDY CO. NM

### 9. WELL SITE LAYOUT

- A. Exhibit "D" shows the proposed well site layout.
- B. This exhibit indicated proposed location of reserve and sump pits and living facilities.
- C. Mud pits in the active circulating system will be steel pits & the reserve pit is proposed to be unlined unless subsurface condition encountered during pit construction indicate that lining is needed for lateral containment of fluids.
- D. If needed, the reserve pit is to be lined with polyethelene. The pit liner will be 12 mils thick. Pit liner will extend a minimum 2'00" over the reserve pits dikes where the liner will be anchored down.
- E. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

### 10. PLANS FOR RESTORATION OF SURFACE

Rehabilitation of the location and reserve pit will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.8 as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be contoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.



SURFACE USE PLAN

HUDSON OIL COMPANY OF TEXAS  
PUCKETT NORTH #8  
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T17S-R31E EDDY CO. NM

11. OTHER INFORMATION:

- A. Topography consists of many sand dunes both large and small with corresponding blow outs with a slight dip to the East and drainage is into Taylor Creek. Soil consists of deep sands, and sandy loams where present. Vegetation consists of Shinnery Oak, Mesquite, Yucca Sand Sage and native grasses.
- B. The surface is owned by Olane Caswell 1702 Gillham Drive, Brownfield Texas \* 79316. The minerals are owned by The U.S. Department of Interior and is administered by The Bureau of Land Management. The surface is used to graze livestock and for the production of Oil and Gas.
- C. There are no dwellings in the near vicinity of these locations.
- D. The PERMIAN BASIN MOA system will be used in lieu of a contract archaeological report.

\* An agreement has been made with the surface owner for access and any surface damage resulting from the drilling and producing of this well.



## CERTIFICATION

I HEREBY CERTIFY THAT I OR PERSONS UNDER MY DIRECT SUPERVISION HAVE INSPECTED THE PROPOSED DRILL SITE AND THE ACCESS ROAD ROUTES, THAT I AM FAMILIAR WITH THE CONDITIONS THAT CURRENTLY EXIST, THAT THE STATEMENTS MADE IN THIS PLAN ARE TO THE BEST OF MY KNOWLEDGE ARE TRUE AND CORRECT, AND THAT THE WORK ASSOCIATED WITH THE OPERATIONS PROPOSED HEREIN WILL BE PERFORMED BY HUDSON OIL COMPANY OF TEXAS. ITS CONTRACTORS AND/OR ITS SUB-CONTRACTORS AND IS IN CONFORMANCE WITH THIS PLANS AND TERMS AND THE CONDITIONS UNDER WHICH IT IS APPROVED. THIS STATEMENT IS SUBJECT TO THE PROVISIONS OF U.S.C. FOR FILING A FALSE REPORT.

### OPERATOR'S REPRESENTATIVES:

#### BEFORE CONSTRUCTION

TIERRA EXPLORATION, INC  
P. O. BOX 2188  
HOBBS, NEW MEXICO 88241  
JOE JANICA 575-391-8503  
CELL 575-390-1598

#### DURING & AFTER CONSTRUCTION

HUDSON OIL COMPANY OF TEXAS  
616 TEXAS STREET  
FORT WORTH, TEXAS  
JON SMITH OFFICE 575-676-2266  
CELL 575-365-8064

NAME

TITLE

Permit Eng.

DATE

03/16/10



## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	HUDSON OIL COMPANY OF TEXAS
LEASE NO.:	NMLC 029415B
WELL NAME & NO.:	PUCKETT NORTH #8
SURFACE HOLE FOOTAGE:	1680' FNL & 1828' FEL
BOTTOM HOLE FOOTAGE:	SAME
LOCATION:	Section 12, T. 17 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

### TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☒ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
- ☒ **Construction**
  - Notification
  - V-Door Direction - East
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - H2S Requirements-Onshore Order #6
  - Logging Requirements
- ☒ **Production (Post Drilling)**
  - Pipelines
  - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**



## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.



## **V. SPECIAL REQUIREMENT(S)**

### **1) Wildlife - Special Status Species/Lesser Prairie-Chicken**

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

### **2) Watershed – Hydrology/Water Quality/Floodplain**

- Surface disturbance will not be allowed (well pad will be 300 x 300).
- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.
- Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control.



EXHIBIT NO. 1

Date of Issue:

4/4/2010

Bureau of Land Management, Carlsbad Field Office  
620 E. Greene Street Carlsbad, NM 88220

Cultural and Archaeological Resources

**NOTICE OF STIPULATIONS**

BLM Report No

10-NM-523-5124

**Historic properties in the vicinity of this project are protected by federal law. In order to ensure that they are not damaged or destroyed by construction activities, the project proponent and construction supervisors shall ensure that the following stipulations are implemented.**

<b>Project Name:</b>	Pocket North #8 Well Location
<b>Required</b>	<p><b><u>1. A 3-day preconstruction call-in notification.</u></b> Contact BLM Inspection and Enforcement at</p> <p><b><u>2. Professional archaeological monitoring.</u></b> Contact Trish Badbear at 575-393-9642 or 575-390-2258 [cell].</p> <p>A. <input checked="" type="checkbox"/> These stipulations must be given to your monitor at least <b>5 days</b> prior to the start of construction.</p> <p>B. <input checked="" type="checkbox"/> No construction, including vegetation removal or other site prep may begin prior to the arrival of the monitor.</p> <p><b><u>3. Cultural site barrier fencing.</u></b> (Your monitor will assist you).</p> <p>A. <input type="checkbox"/> <b><u>A temporary site protection barrier(s)</u></b> shall be erected prior to all ground-disturbing activities. The minimum barrier(s) shall consist of upright wooden survey lath spaced no more than ten (10) feet apart and marked with blue ribbon flagging blue paint. There shall be no construction activities or vehicular traffic past the barrier(s) at any time.</p> <p>B. <input type="checkbox"/> <b><u>A permanent, 4-strand barbed wire fence</u></b> strung on standard "T-posts" shall be erected prior to all ground-disturbing activities. No construction activities or vehicle traffic are allowed past the fence.</p> <p><b>Required</b></p> <p><b><u>4. The archaeological monitor shall:</u></b></p> <p>A. <input type="checkbox"/> Ensure that all site protection barriers are located as indicated on the attached map(s).</p> <p>B. <input type="checkbox"/> Observe all ground-disturbing activities within 100 feet of cultural site no.</p> <p>C. <input type="checkbox"/> Ensure that all reroutes are adhered to avoid cultural site no.(s) LA</p> <p><b>Cultural conditions of approval shall consist of having Trish Badbear monitor the initial well construction to ensure that the pad is no more than 300 feet by 300 feet as per conversation with Hudson Oil Company Jon B. Smith on 2/4/2010.</b></p> <p>D. <input checked="" type="checkbox"/></p> <p>E. <input type="checkbox"/> Submit a brief monitoring report within 30 days of completion of monitoring.</p> <p>If subsurface cultural resources are encountered during the monitoring, all activities shall cease and a BLM-CFO archaeologist shall be notified immediately.</p> <p><b>Other:</b></p>

**Site Protection and Employee Education:** It is the responsibility of the project proponent and construction supervisor to inform all employees and subcontractors that cultural and archaeological sites are to be avoided by all personnel, vehicles, and equipment; and that it is illegal to collect, damage, disturb cultural resources on Public Lands.

For assistance, contact  
BLM Cultural Resources:

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Bruce Boeke (575) 234-5917



## **CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Hobbs Field Station at (575) 393-3612 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

**B. V-DOOR DIRECTION:** East

### **C. TOPSOIL**

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil will be used for interim and final reclamation.

### **D. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **E. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **F. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.



## VI. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the **Grayburg** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
3. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

### B. CASING

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.**



**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**Possible lost circulation in the Grayburg and San Andres formations.**

**Possible brine and water flows in the Salado and Artesia Groups.**

**Possible high pressure pockets in the Rustler and Salado Formations.**

1. The **8-5/8 inch** surface casing shall be set at approximately **725 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **5-1/2 inch** production casing is:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

3. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

### **C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi**.



3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. Casing cut-off and BOP installation will not be initiated until the cement has had a minimum of 8 hours setup time for a water basin. The casing shall remain stationary and under pressure for at least eight hours after the operator places the cement. In the potash area, the minimum time is 12 hours and the casing shall remain stationary and under pressure during this time period. Casing shall be under pressure if the operator uses some acceptable means of holding pressure or if the operator employs one or more float valves to hold the cement in place. Testing the BOP/BOPE against a plug can commence after meeting the above conditions plus the BOP installation time.
  - b. The tests shall be done by an independent service company utilizing a test plug.
  - c. The results of the test shall be reported to the appropriate BLM office.
  - d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
  - e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

**D. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**CRW 040810**



## **VII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Containment Structures**

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color  
Shale Green, Munsell Soil Color Chart # 5Y 4/2

### **B. PIPELINES**

#### **STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES**

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the



Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.

b. Activities of other parties including, but not limited to:

- (1) Land clearing.
- (2) Earth-disturbing and earth-moving work.
- (3) Blasting.
- (4) Vandalism and sabotage.

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.



6. All construction and maintenance activity will be confined to the authorized right-of-way width of 25 feet.
7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.
8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.
9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.
10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.
12. Excluding the pipe, all above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.
13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.
14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.
15. Any cultural and/or paleontological resource (historic or prehistoric site or object)



discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

(March 1989)

### **C. ELECTRIC LINES**

#### **STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES**

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.



4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Powerlines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Powerlines, " Raptor Research Foundation, Inc., 1981. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- Limit all disturbance to authorized width of approved access road.



- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

### **VIII. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

### **X. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared; these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).



Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

#### Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*\*Four-winged Saltbush 5lbs/A

\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed