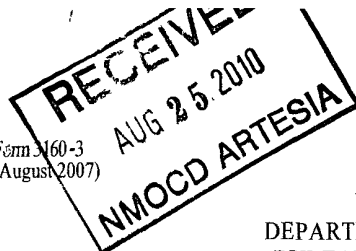


Form M-60-3  
(August 2007)



OCD-ARTESIA

ATS-10-605

FORM APPROVED  
OMB No 1004-0137  
Expires July 31, 2010

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No NMNM-106718	
1b Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name	
2 Name of Operator Nadel and Gussman HEYCO, LLC		7 If Unit or CA Agreement, Name and No	
3a Address P O Box 1936 Roswell N M 88202		8 Lease Name and Well No Taylor Deep 12 Federal 6 305063	
3b Phone No (include area code) (575) 623-6601		9 API Well No 30-015-38143	
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 400' FNL & 510' FEL At proposed prod zone Same		10 Field and Pool, or Exploratory Bone Spring-Tamano 58040	
14 Distance in miles and direction from nearest town or post office* 10 miles South Maljamar, N.M.		11 Sec, T R M or Blk. and Survey or Area Sec 12, 18S, R31E NE/4 NE/4	
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 400'		12 County or Parish Eddy	
16 No of acres in lease 600 06		13 State NM	
17 Spacing Unit dedicated to this well 40			
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1170'		20 BLM/BIA Bond No on file NMB000520	
19 Proposed Depth 9275'			
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3795' GL		22 Approximate date work will start* 07/15/2010	
		23 Estimated duration 45 days	
24 Attachments			

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

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

25 Signature 	Name (Printed/Typed) JJ McGlasson	Date 06/08/2010
Title Completions Engineer		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date AUG 24 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

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

\*(Instructions on page 2)

Capitan Controlled Water Basin

KZ 9/2/10

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

DISTRICT I  
1675 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	Pool Code	Pool Name
	58040	Tamano Bone Spring
Property Code	Property Name	Well Number
26108	TAYLOR DEEP 12 FEDERAL	6
OGRID No	Operator Name	Elevation
258462	NADEL AND GUSSMAN HEYCO, LLC	3795'

Surface Location

UL or lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	12	18-S	31-E		400	NORTH	510	EAST	EDDY

Bottom Hole Location If Different From Surface

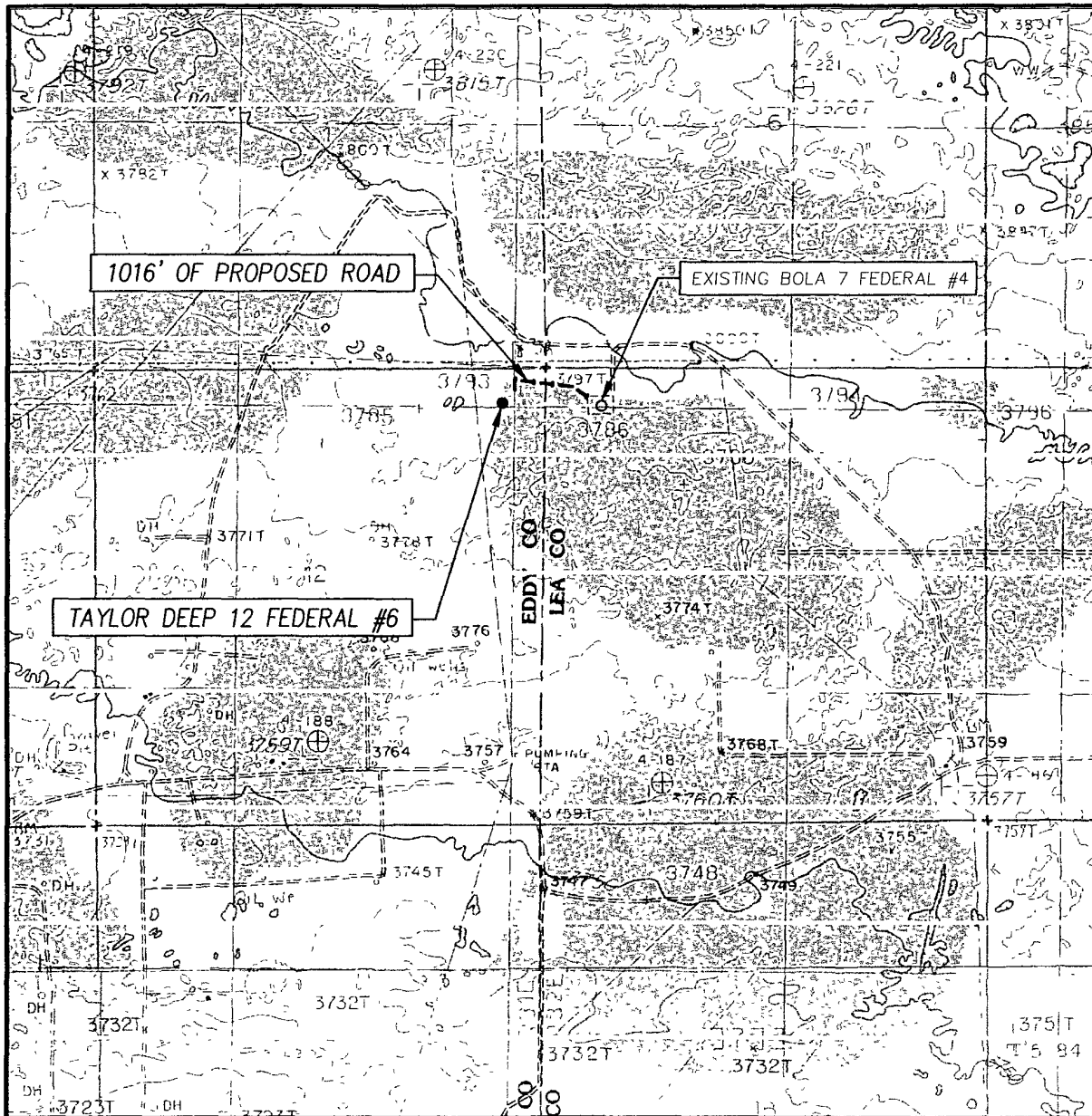
UL or lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	12	18S	31E		400	North	510	East	Eddy

Dedicated Acres	Joint or Infill	Consolidation Code	Order No
40			

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>GEODETIC COORDINATES NAD 27 NME</p> <p>SURFACE LOCATION Y=643556.4 N X=659145.6 E</p> <p>LAT=32 768159" N LONG=103 815592" W</p>	<p>DETAIL</p> <p>3799.7' 3798.2'</p> <p>600'</p> <p>600'</p> <p>3798.5' 3792.2'</p>	<p>400'</p> <p>510'</p> <p>NMM-106718</p>	<p>OPERATOR CERTIFICATION</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>[Signature]</i> 6/8/10 Signature Date JJ McGlasson Printed Name</p> <p>SURVEYOR CERTIFICATION</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>MAY 18, 2010</p> <p>Date Surveyed DSS</p> <p>Signature &amp; Seal of Professional Surveyor</p> <p><i>[Signature]</i> 5/28/10 10.11.0669</p> <p>Certificate No. GARY G. EIDSON 12641 RONALD J. EIDSON 3239</p>
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# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

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

SEC 12 TWP 18-S RGE 31-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 400' FNL & 510' FEL

ELEVATION 3795'

OPERATOR NADEL AND GUSSMAN HEYCO, LLC

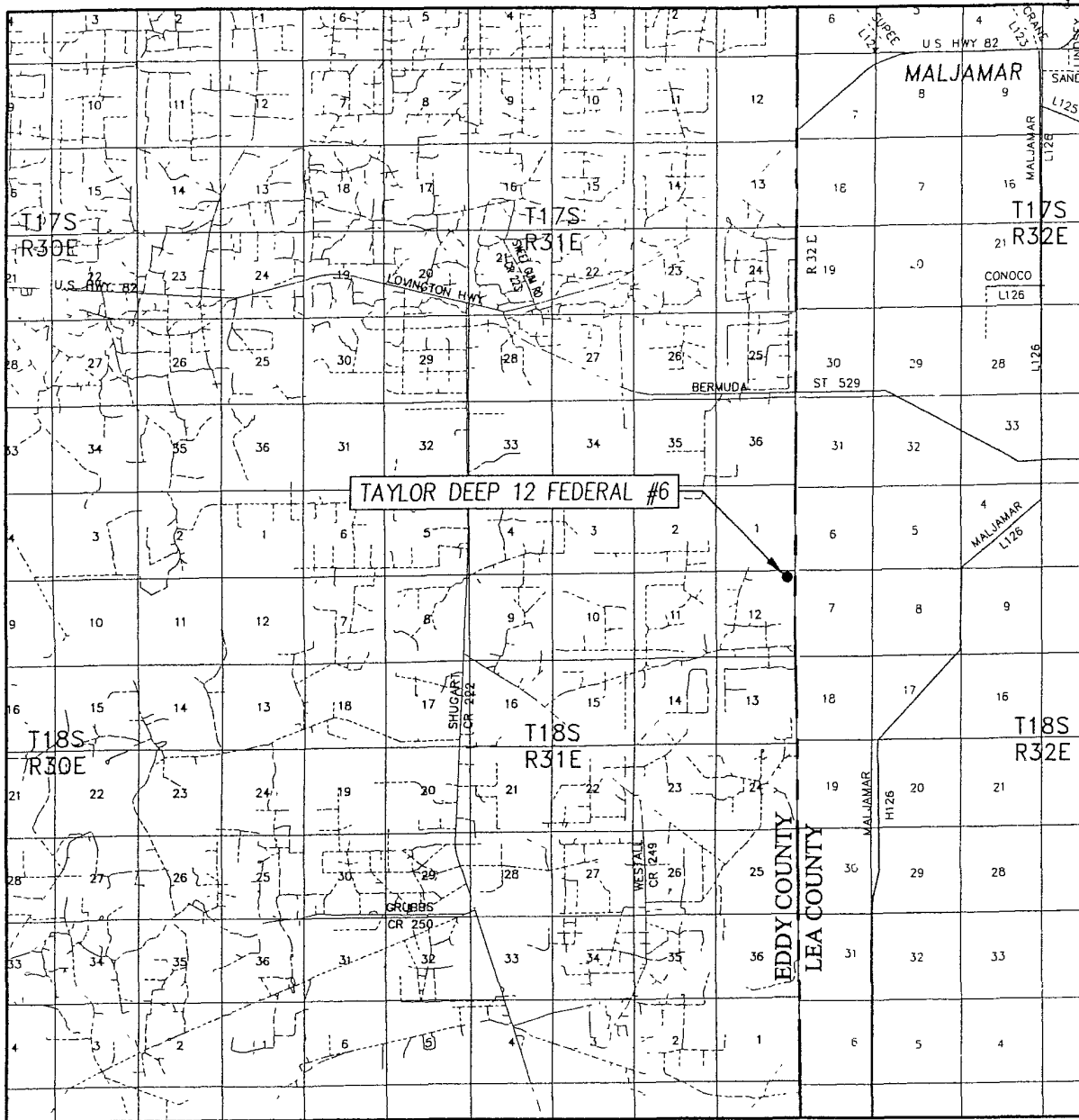
LEASE TAYLOR DEEP 12 FEDERAL

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




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

# VICINITY MAP



SCALE 1" = 2 MILES

SEC 12 TWP. 18-S RGE 31-E  
 SURVEY N M P M  
 COUNTY EDDY STATE NEW MEXICO  
 DESCRIPTION 400' FNL & 5'10' FEL  
 ELEVATION 3795'  
 OPERATOR NADEL AND GUSSMAN HEYCO, LLC  
 LEASE TAYLOR DEEP 12 FEDERAL

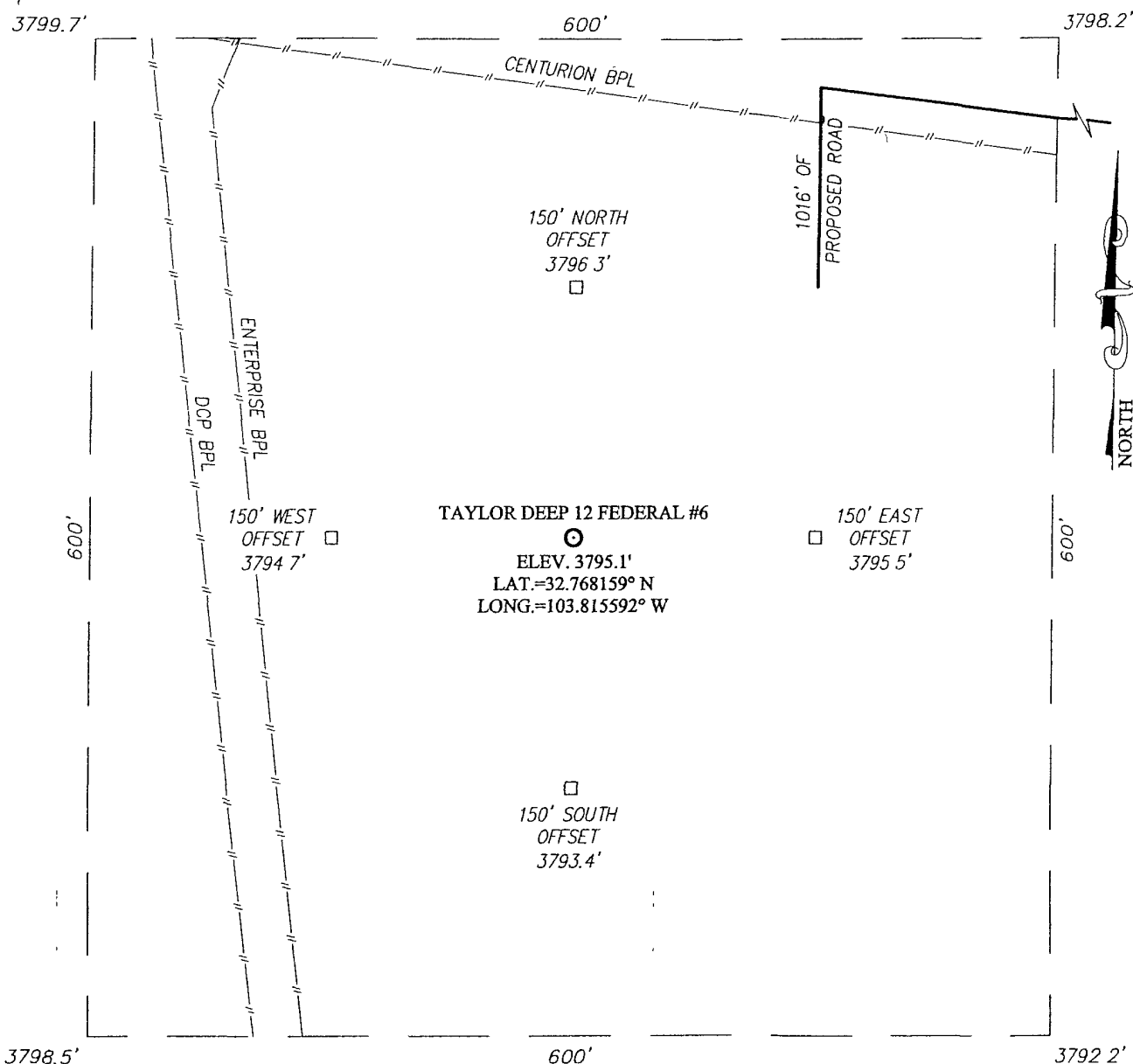


PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N DAL PASO  
 HOBBS, N M 88240  
 (575) 393-3117

# SECTION 12, TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.

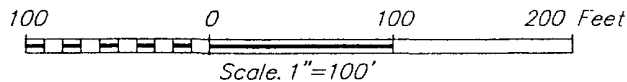
EDDY COUNTY

NEW MEXICO



## DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST HWY 529 AND CO RD #L126 (MALJAMAR RD.), GO SOUTH ON MALJAMAR RD APPROX 2.5 MILES. TURN RIGHT AND GO WEST APPROX 0.6 MILES TURN RIGHT AND GO NORTH APPROX 0.45 MILES TURN LEFT AND GO WEST APPROX 0.5 MILES VEER RIGHT AND GO NORTHWEST APPROX 0.8 MILES TURN LEFT AND GO SOUTH APPROX 0.1 MILE TO THE EXISTING BOLA 7 FEDERAL #4 WELL FOLLOW PROPOSED ROAD SURVEY FROM THE NORTHWEST CORNER OF THE BOLA 7 FEDERAL #4 WELL PAD APPROX 895 FEET, THEN SOUTH APPROX 120 FEET THIS LOCATION STAKE IS APPROX 212 FEET SOUTHWEST



## NADEL AND GUSSMAN HEYCO, LLC

TAYLOR DEEP 12 FEDERAL #6 WELL  
LOCATED 400 FEET FROM THE NORTH LINE  
AND 510 FEET FROM THE EAST LINE OF SECTION 12,  
TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO

Survey Date: 5/18/10	Sheet 1 of 1 Sheets
W.O. Number: 10.11.0669	Dr By: DSS
Date: 5/27/10	10110669
	Scale: 1"=100'

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

[illegible]

TAYLOR DEEP 12 Feb 6

NADEL + GUSSMAN

HEYCO LLZ

# ROAD MAP

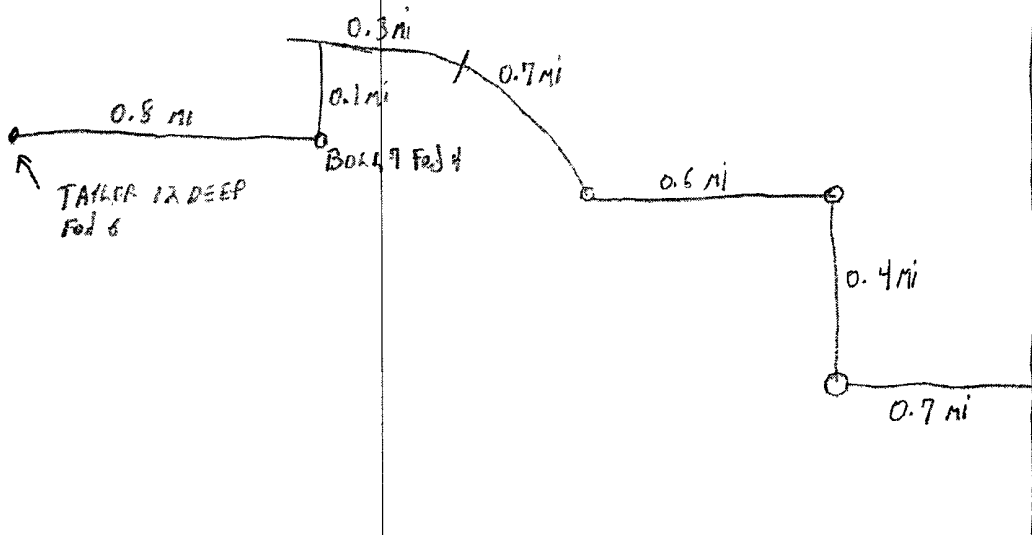


NM HWY 529

MA 7

CR 126

2.7 mi

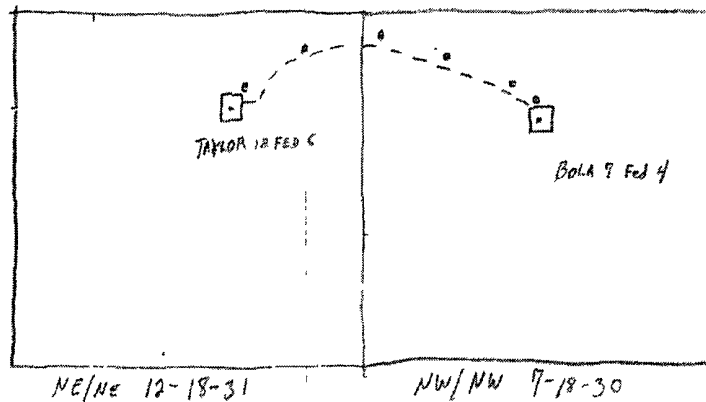


TAYLOR DEEP 12 FED 6

NADEL + GUSSMAN

HEYCO LLC

## PROPOSED POWER LINE INSTALLATION



1" = 660'

NOTE: APPROX 1016' OF NEW LEASE  
ROAD WILL BE CONSTRUCTED

POWER LINE WILL TIE IN AT  
BOLA 7 FED 4 LOCATION AND  
POLES WILL OFFSET NEW ROAD  
BY APPROX. 10 FEET.

---- PROPOSED  
NEW ROAD

• PROPOSED  
POWER POLE



Application  
Nadel and Gussman Heyco, LLC  
**Taylor Deep 12 Federal 6**  
Sec 12, T18S, R31E  
400' FNL & 510' FEL  
Eddy County, New Mexico

In conjunction with Form 3160-3, Application For Permit To Drill Or Deepen subject well, Nadel and Gussman Heyco, LLC submits the following ten items of pertinent information in accordance with Onshore Oil & Gas Order No. 10.

- 1 Geologic Name of Surface Formation:  
PERMIAN

2. Estimated Tops of Significant Geologic Markers:

<u>Formation</u>	<u>Depth</u>				
Rustler	950'	Water			
Salado	1,120'				
BX (BASE OF SALT)	2,220'		Bone Spring Ls	5,885'	Oil
Yates	2,380'		A – Zone Carb	7,620'	Oil
Seven Rivers	2,840'	Oil	Bone Spring 1 <sup>st</sup> Sand	7,660'	Oil
Bowers	3,305'	Oil	B – Zone Carb	7,950'	Oil
Queen	3,555'	Oil	Bone Spring 2 <sup>nd</sup> Sand	8,325'	Oil
Penrose	3,775'	Oil	C Bench Pay	8,675'	Oil
Grayburg	4,060'	Oil	C – zone Carb	8,915'	Oil
Loco Hills	4,170'	Oil	Bone Spring 3 <sup>rd</sup> Sand	9,115'	Oil
Metex	4,350'	Oil	PTD	9,275'	
Premier Sand	4,420'	Oil			
San Andres	4,480'	Oil			
Delaware (CRCN Tongue)	4,635'	Oil			
Brushy Canyon	4,970'	Oil			

No other formations are expected to yield oil, gas, or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 1005' and circulating Cement back to surface. All other intervals will be isolation by setting 9 5/8" Casing at 3100' and circulating cement back to surface. Bone Spring intervals will be isolation by setting 5 1/2" casing to total depth and circulating cement 200' up into 9 5/8" casing.

3. Casing Program:

<u>Hole Size</u>	<u>Depth</u>	<u>OD Csg.</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>	<u>New/Used</u>
17 1/2"	0' – 950'	13 3/8"	54.5#	ST&C	J-55	New
12 1/4"	0' – 2220'	9 5/8"	36#	ST&C	J-55	New
7 7/8"	0' – 2650'	5 1/2"	17#	LT&C	L-80	New
7 7/8"	2650' – 8350'	5 1/2"	15.5#	LT&C	L-80	New
7 7/8"	8350' – 9275'	5 1/2"	17#	LT&C	L-80	New

Safety factors: Burst 1.0 Collapse 1.125 Tension 1.8

4. Cement Program: (Note yields; and dv tool depths if multiple stages)

- a. 13 3/8" Surface Cement to surface with:  
Lead - 620 sx 35:65 Poz C, 5% Salt, 0.25# Celloflake, 6% Bentonite, 12.8 ppg and 0.25% Defoamer, 1.89 cu.ft./sk yield, TOC @ surface.  
Tail - 200 sx C and 0.25% Defoamer, 14.8 ppg, 1.32 cu.ft./sk yield, TOC @ SURFACE'.
- b. 9 5/8" Intermediate Cement to surface with:  
Lead - 550 sx 35:65 Poz C, 5% Salt, 0.25# Celloflake, 6% Bentonite and 0.25% Defoamer, 12.4 ppg, 2.09 cu.ft./sk yield, TOC @ surface.  
Tail - 200 sx C and 0.25% Defoamer, 14.8 ppg, 1.32 cu.ft./sk yield, TOC @ SURFACE'.
- c. 5 1/2" Production Cement to 2780' with:  
Lead - 250 sx 50:50 Poz H, 5% Salt, 10% Bentonite, 0.25% Celloflake, 0.2% Fluid Loss Agent and 0.25% Defoamer, 11.9 ppg, 2.37 cu.ft./sk yield, TOC @ ~~2780'~~ 2050'  
Tail - 1000 sx H, 0.6% Fluid Loss Agent, 0.25% Suspension Aid, 0.3% Gilsonite, 3% Salt and 0.25% Defoamer, 13.22 ppg, 1.60 cu.ft./sk yield, TOC @ 5500'.

See  
COA

The above volumes, additives and depths may be revised based on open hole logs, conditions encountered while drilling and on cement field blend tests. The top of cement for the production string is designed to reach approximately 200' above the 9 5/8" casing shoe.

##### 5. Proposed Mud Circulation System

See COA

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' - 1005' 950'	8.4 - 8.8	80 - 55	NC	Fresh Water
950' - 755' - 3100' 2250'	9.8 - 10.0	28 - 30	NC	Brine Water
2250' - 3100' - 9275'	8.8 - 9.4	28 - 32	NC	Cut Brine Water

The necessary mud products for weight addition and fluid loss control will be on location at all times.

##### 6. Pressure Control Equipment:

The blowout preventor equipment (BOPE) shown in Exhibit #1 will consist of a (2m system) for the intermediate 12 1/4" hole w/ Double ram type (3000psi WP) preventor A (3m system) w/ double ram type 3000psi preventor for the 7 7/8" production hole, and a bag type (hydril) preventor (3000psi WP)

Both unit will be hydraulically operated and the ram type preventor will be equipped with blind rams on top, 4 1/2" drill pipe rams on bottom. The BOP's and Hydril will be tested as per BLM Drilling Operations Order #2

Pipe rams will be Operated and checked each 24hr period and each time drill pipe is out of the hole

These functional Test will be documented on the daily driller log A flex hose will be use from BOP to choke manifold, ( see specification attached ), a 2" kill line and 3" choke line will be incorporated In the drilling spool below the ram-type BOP Other accessory BOP equipment will include a Kelly Cock, floor safety valve, choke line and choke manifold having a 3000psi wp rating

↑  
3" Steel line  
Per Operator 8/17/10  
DW

**7. Auxiliary Equipment:**

- a A Kelly Cock will be in the drill string at all times
- b A full opening drill pipe stabbing valve having the appropriate Connections will be on the rig floor at all times.
- c Hydrogen Sulfide detection equipment will be in operation after drilling Out the 9 5/8" casing shoe unit the 5 1/2" casing is cemented. Breathing Equipment will be on location upon drilling the 9 5/8" shoe unit total Depth is reached.
- d A flex hose from the BOPE to the manifold (specification attached)

**8. Testing, Logging, & Coring Program:**

*See COA*

- a Mud logging unit from the base intermediate casing to depth 10' samples will be caught by loggers
- b Possible rotary sidewall cores
- e. Platform express ( GR / LDT – CNL – PE / DLL – MCFL / NGT)

**9. Abnormal Conditions, Pressures, Temperature, or Potential Hazards:**

No abnormal conditions are expected. There is no known presence of H<sub>2</sub>S in this area. If H<sub>2</sub>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No 6. Lost circulation might occur in the Capitan Reef. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 2500 psi and estimated BHT 140 F. No H<sub>2</sub>S is anticipated to be encountered.

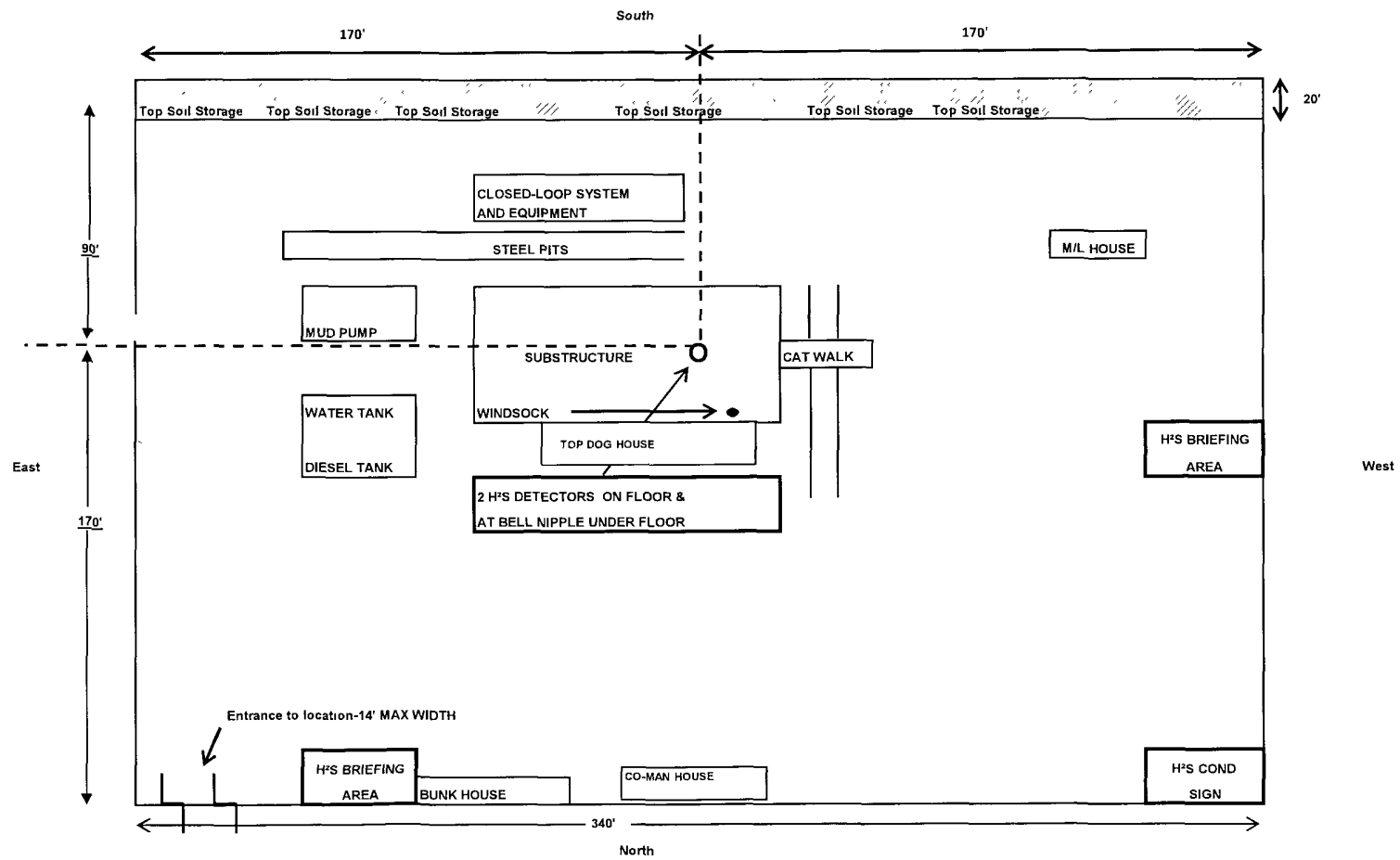
*?? 0.27 gradient ??*

**10. Anticipated Starting Date & Duration of Operation:**

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

EXHIBIT "D" LOCATION DIAGRAM

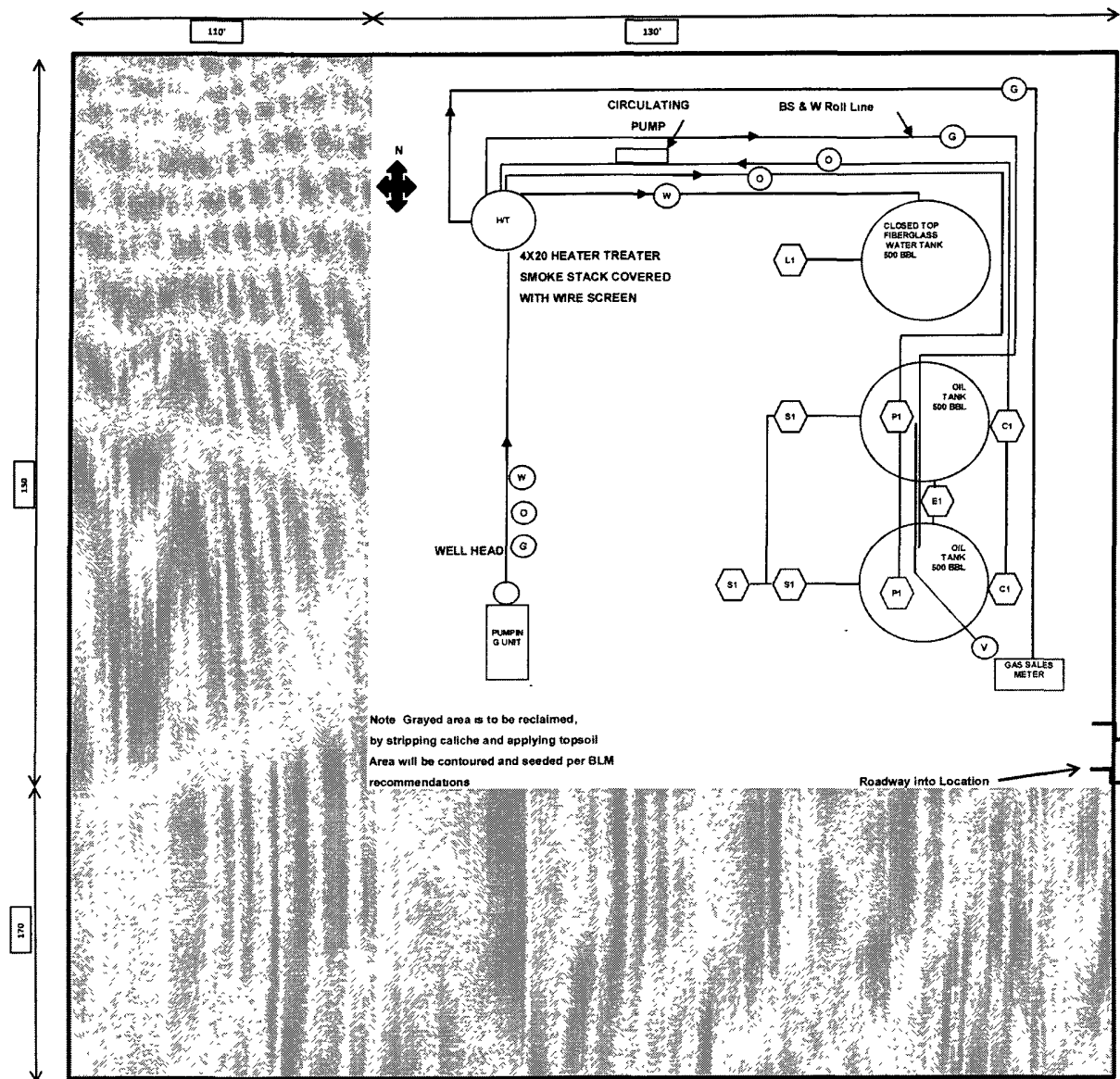
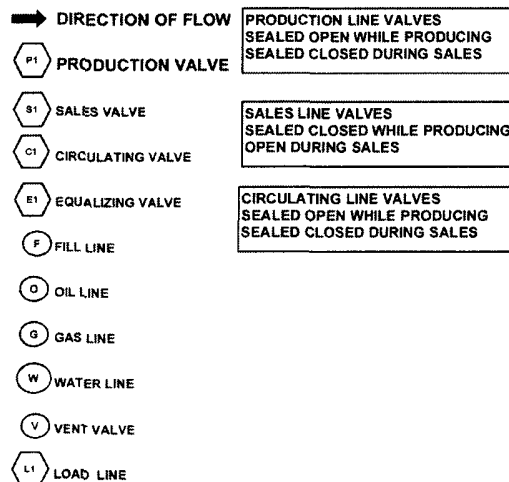
Taylor Deep 12 Federal 6  
400' FNL & 500' FEL  
SEC 12, T18S, R31E  
Eddy Co, NM



# Production Facility Layout

Taylor Deep 12 Federal 6  
400' FNL & 500' FEL  
SEC 12, T18S, R31E  
Eddy Co, NM

NADEL AND GUSSMAN HEYCO, LLC  
500 NORTH MAIN SUITE ONE  
ROSWELL, NM



NADEL + GUSSMAN HEYCO LLC

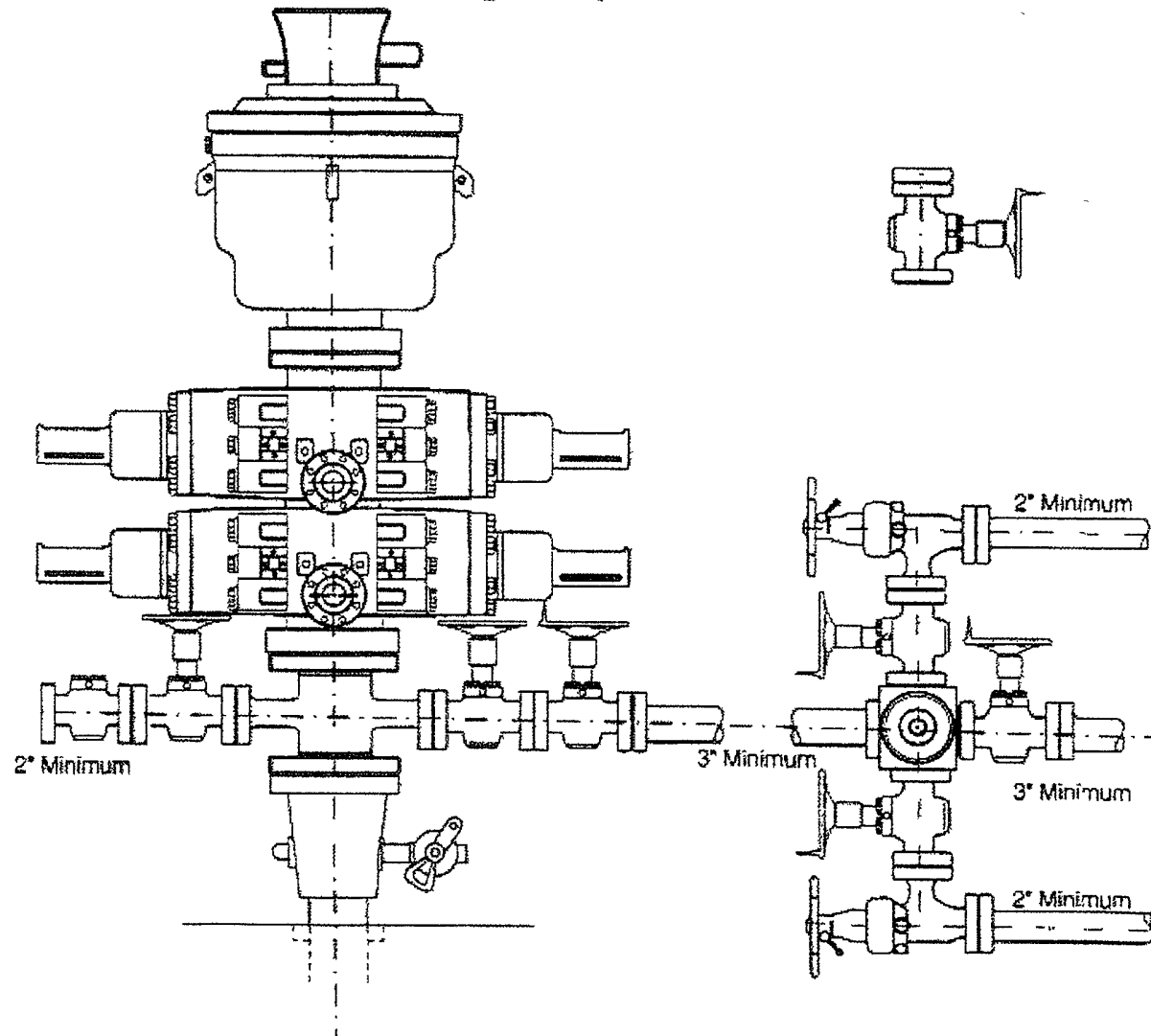
TAYLOR DEEP 12 FEDERAL 6

400 FNL 510 FEL

SEC 12 T185 - R31E

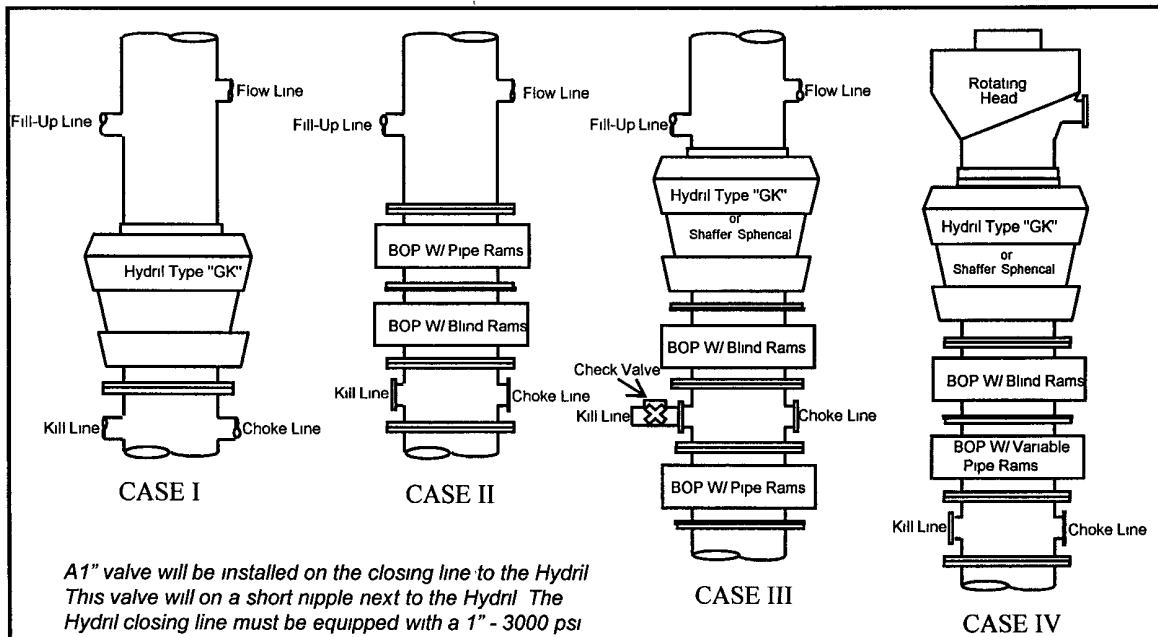
EDDY CO. NM

**3000 psi System**

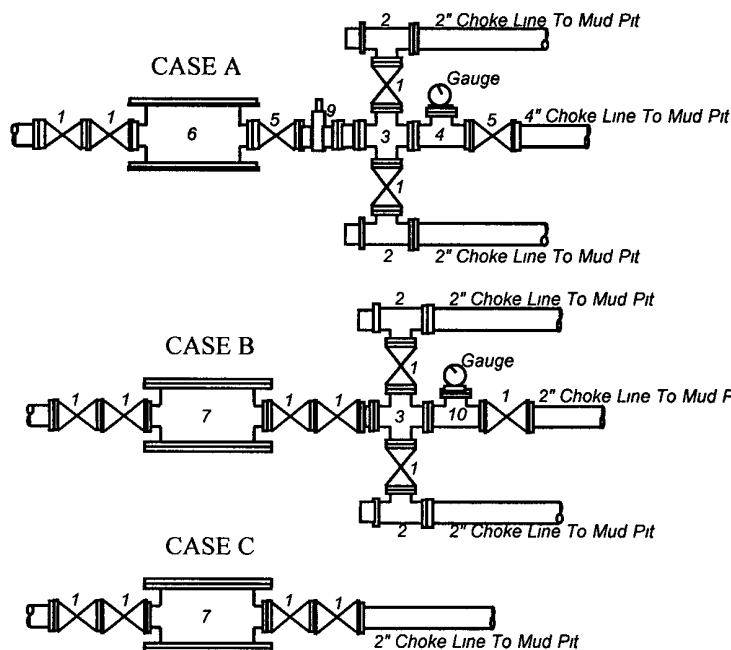


# Nadel and Gussman Heyco, LLC

## MINIMUM BLOWOUT PREVENTER REQUIREMENTS



A1" valve will be installed on the closing line to the Hydril  
 This valve will on a short nipple next to the Hydril The  
 Hydril closing line must be equipped with a 1" - 3000 psi  
 WP plug valve on the nipple into the Hydril



BOP SIZE	BOP CASE	WORKING PRESSURE	CHOKE CASE
13- 3/8"	II	2000 psi	B
9"	III	3000 psi	B

**\*Rotating head required**

Bradenhead	
Mfr:	_____
Size	Type: _____

### Legend

- 1 2" flanged all steel valve must be either Cameron "F", Halliburton Low Torque or Shaffer Flo-Seal
- 2 2" flanged adjustable chokes, min 1" full opening & equipped with hard trim
- 3 4" x 2" flanged steel cross
- 4 4" flanged steel tee
- 5 4" flanged all steel valve (Type as in no 1)
- 6 Drilling Spool with 2" x 4" flanged outlet
- 7 Drilling Spool with 2" x 2" flanged outlet
- 8 2" x 2" flanged steel cross
- 9 4" pressure operated gate valve
- 10 2" flanged steel tee

### Notes

Choke manifold may be located in any convenient position. Use all steel fittings throughout. Make 90° turns with bull plugged tees only. No field welding will be permitted on any of the components of the choke manifold and related equipment upstream of the chokes. The choke spool and all lines and fittings must be at least equivalent to the test pressure of the preventers required. Independent closing control unit with clearly marked controls to be located on derrick floor near driller's position

(10-31-96) WTXBOPS PPT

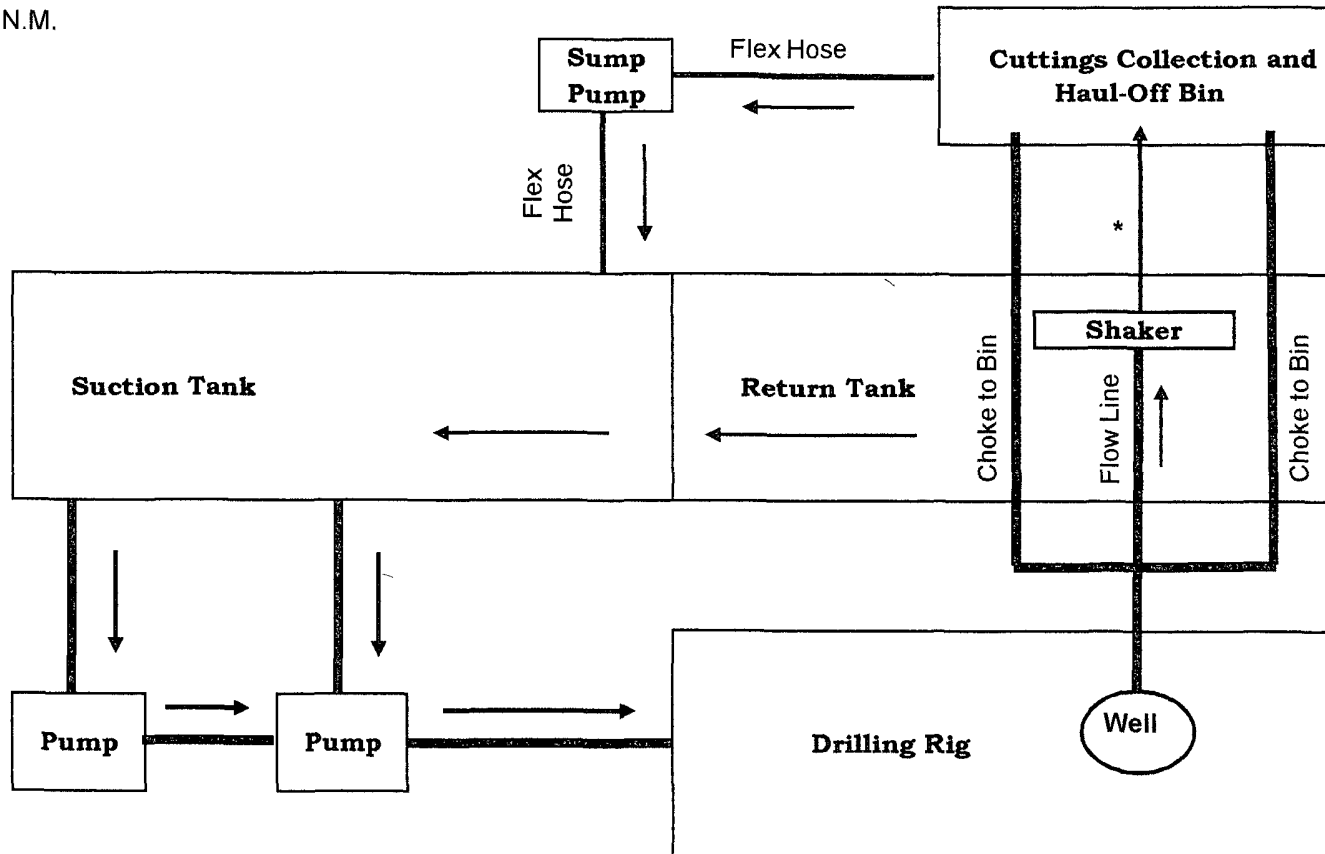
## Choke Manifold Schematic for Closed Loop System

Taylor Deep 12 Federal 6

Sec 12, T18S, R31E

400' FNL & 510' FEL

Eddy Co. N.M.



\* Flex hose from BOPE to manifold

\* No pipe manifold from shaker to haul-off bin.



**Hydrogen Sulfide Drilling Operations Plan**  
**Taylor Deep 12 Federal 6**  
**Sec 12, T18S, R31E**  
**400' FNL & 510' FEL**  
**Eddy Co. N.M.**

1. Company and contract personnel admitted on location should be trained by a qualified H<sub>2</sub>S safety instructor to the recognize and handle following:
  - A. Characteristics of H<sub>2</sub>S gas
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing knowledge
  - E. Evacuation procedure, routes and first aid support
  - F. Proper use of 30 minutes Pressure-on-Demand Air Pack
2. H<sub>2</sub>S Detection and Alarm Systems
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse
3. Windsock and/or Wind Streamers
  - A. Windsock at mud pit area (high enough to be visible)
  - B. Windsock at briefing area (high enough to be visible)
  - C. Windsock at location entrance
4. Condition Flags and Signs
  - A. H<sub>2</sub>S warning signs on lease access road into location
  - B. Flags displayed on sign at location entrance
    1. Green flag indicates "Normal Safe Conditions"
    2. Yellow Flag indicates "Potential Pressure and Danger"
    3. Red Flag indicates "Danger - H<sub>2</sub>S Present in High Concentrations" *admit only emergency personnel*
5. Well Control Equipment
  - A. See Exhibit #5.
6. Communication
  - A. While working under masks chalkboards will be used for communication
  - B. Hand signals will be used where chalk board is inappropriate
  - C. Two -way radios or cell phones used to communicate off location or minimally in Drilling Foreman's trailer or living quarters
7. Drillstem Testing
  - A. Exhausts watered
  - B. Flare line equipped with electric Igniter/propane pilot light in case gas reaches surface
  - C. If location near dwelling closed DST will be performed
8. Drilling Supervisor required to be familiar with effects of H<sub>2</sub>S on tubular goods/mechanical equipment
9. If H<sub>2</sub>S encountered, mud system shall be addressed to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers, if necessary.

PUBLIC PROTECTION PLAN FOR EMERGENCY CONTACTS

**NADEL AND GUSSMAN HEYCO, LLC** (575) 623-6601

**Company Personnel**

Terry West	Drilling Enrineer	432-682-4429 432-238-2874
Keith Cannon	Drilling Supt.	575-623-6601 575-626-1936

**ARTESIA N.M**

Ambulance	911
State Police	575-746-5000
City Police	575-746-5000
Sheriff's Office	575-746-9888
Fire Department	575-746-5050 or 575-746-5051
N M O C D	575-748-1283

**CARLSBAD N.M.**

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-885-3125 or 575-885-2111
Carlsbad BLM	575-887-6544

**HOBBS N.M.**

Ambulance	911
State Police	575-392-5588
City Police	575-397-9265
Sheriff's Office	575-396-3611
Fire Department	575-397-9308
N M.O.C.D	575-393-6161
Hobbs BLM	575-393-3612

Flight for Life (Lubbock Tx)	806-743-9911
Aerocare (Lubbock Tx)	806-747-8923
Med flight air Ambulance (Albuq NM)	505-842-4433
SB air Med Services (Albuq NM)	505-842-4949

Boots & Coots IWC	800-256-9688 or 281-931-8884
Cudd Pressure Control	915-699-0139 or 915-563-3356
BJ Services (Artesia NM)	575-746-3569
(Hobbs NM)	575-392-5556

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

**\*\*REVISED\*\***

**Surface Use Plan**

Nadel and Gussman Heyco LLC  
Taylor Deep 12 Federal 6  
Section 12, T18S, R31E  
400' FSL & 510' FEL  
Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations

**1 Existing Roads:**

C-102 attached well site and elevation plat

Exhibit A, Location Verification Map, surveyed by John West Surveying Company, is a portion of a New Mexico map showing the location of the proposed location. The location is approximately 10 miles South/Southeast of Loco Hills, NM

From the intersection of St Hwy 529 and Co rd 126, Go south on Co rd 126 approx 2.7 miles. Turn right and go west approx 0.7 miles. Turn right and go north approx 0.4 miles, Turn left and go west approx 0.6 miles, Turn right and go approx 0.7 miles and veer left, Go 0.3 mile. Turn left go 0.1 miles to Bola 7 Federal 4 location. Continue on newly constructed lease road 0.8 miles to location.

Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

**2. Planned Access Roads:**

XXXX' of new road will be built to access this location and will enter location from the east.

Prior to any construction of new lease roads, all topsoil will be stripped and stored along the roadside temporarily.

Road will not exceed 14 feet in width.

Road will be crowned with a 2% grade.

Road will be ditched on both sides to a depth of 1 foot with 3:1 sloping.

No turnouts will be expected to be constructed.

Due to the relative flat nature of the area, erosion is expected to be minimal, however if erosion becomes excessive during operations, lead off ditches will be installed.

No culverts nor cattle guards are anticipated to be installed.

No finelines will have to be crossed.

Newly constructed road will be covered with 6" of rolled/packed caliche.

A portion of the new lease road will parallel a buried pipeline. Road will be kept approximately 25 feet from the pipeline.

Any disturbed areas outside the driving surfaces will be recovered with topsoil and seeded. This will include the ditches along side the newly constructed lease road.

**3. Location of Existing Wells:**

See EXHIBIT B From the surveying company / vicinity map

See also attached map with 1 mile radius circle.

**4 Location of Tank Batteries, Electric Lines, Etc:**

A In the event the well is found productive, the tank battery would be utilized and the necessary production equipment will be installed on the east side of location.

## OPERATOR CERTIFICATION

I certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal Laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true, and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 8 day of June 2010.

Name: JJ McGlasson

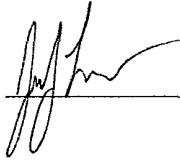
Position: Completions Engineer

Address: P.O. Box 1936, Roswell, NM 88202

Telephone: 575-623-6601

Email: jmcglasson@heycoenergy.com

Signed: \_\_\_\_\_



## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Nadel & Gussman HEYCO LLC
LEASE NO.:	NM106718
WELL NAME & NO.:	6 Taylor Deep 12 Federal
SURFACE HOLE FOOTAGE:	400' FNL & 510' FEL
BOTTOM HOLE FOOTAGE:	Same
LOCATION:	Section 12, T. 18 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

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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
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - H2S – Onshore Order 6
  - Casing/Cement
  - Logging Requirements
  - Waste Material and Fluids
- ☒ **Production (Post Drilling)**
  - Well Structures & Facilities
  - 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)**

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.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 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. TOPSOIL**

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

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

### **D. 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.

#### **E. 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.

#### **F. ON LEASE ACCESS ROADS**

##### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

##### **Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

##### **Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

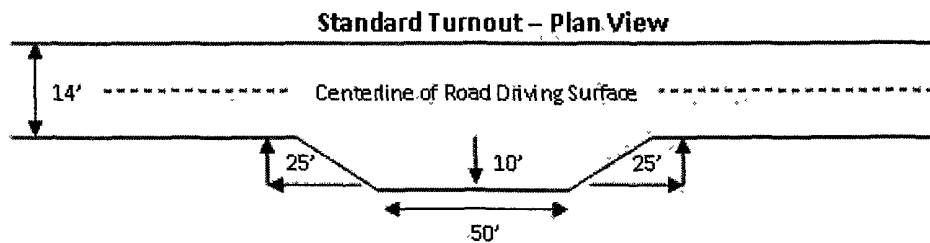
##### **Ditching**

Ditching shall be required on both sides of the road.

##### **Turnouts**



Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

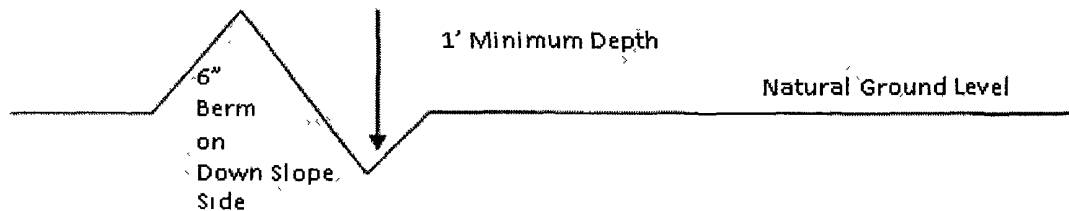


### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

### Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

**Cattleguards**

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

**Fence Requirement**

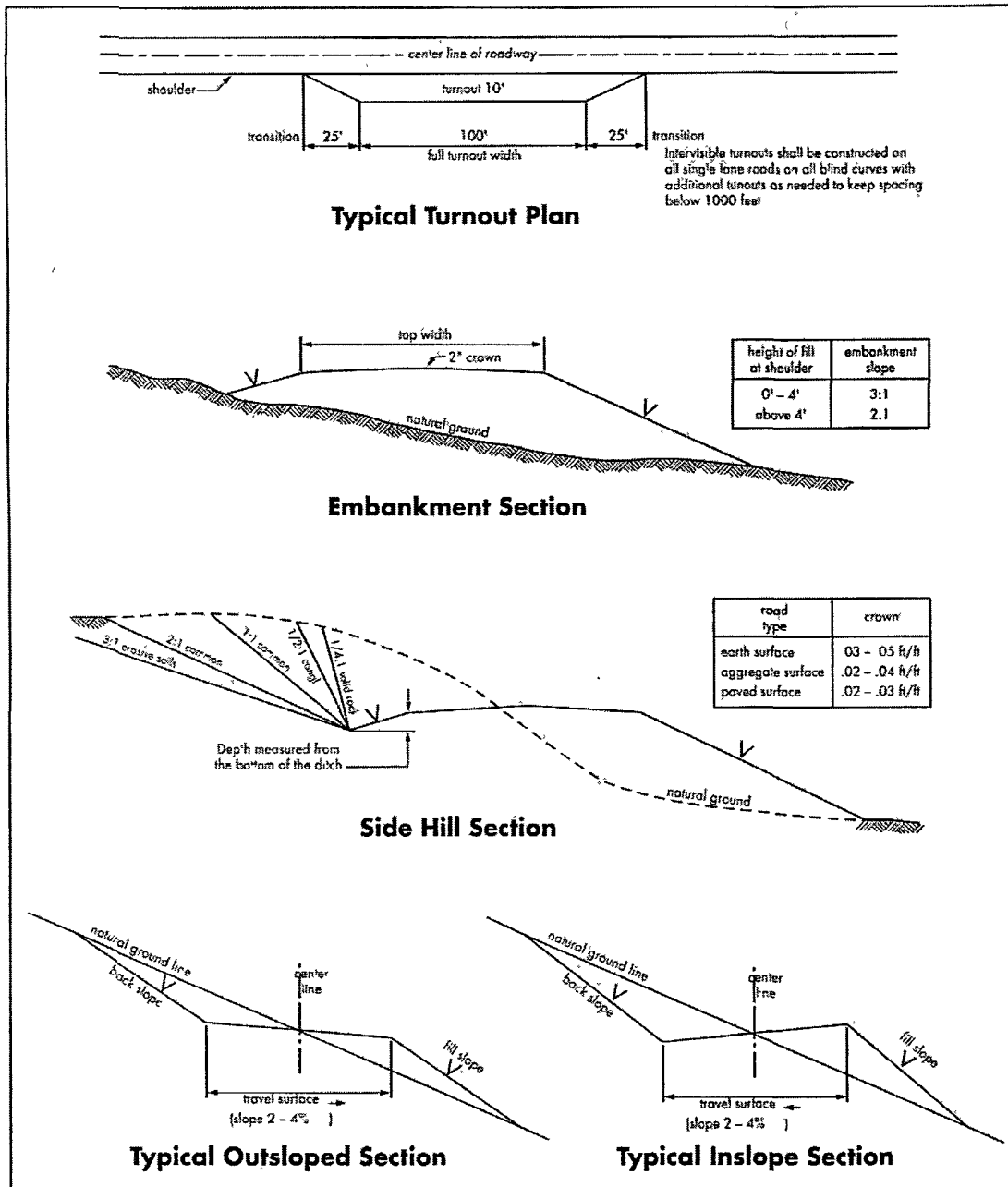
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



## VII. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the 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 prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. 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.**

1. The 13-3/8 inch surface casing shall be set at **approximately 950 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 9-5/8 inch intermediate casing is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Set intermediate casing within the Tansill at approximately 2250 feet.**
3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

4. 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.
  - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **3000 (3M)** psi.
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips or where the float does not hold, the minimum wait time before cut-off is eight hours after bumping the plug or when the cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. BOP/BOPE testing can begin after the above conditions are satisfied.
  - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) prior to initiating the test.
  - 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.

#### **E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

**DHW 081810**

### **VIII. 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. ELECTRIC LINES**

## STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

**A copy of the APD 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:

- Poles shall not be placed farther than 10 from the proposed access road.
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

## **IX. 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