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Form 3160-3
(August 2007)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No 1004-0137
Expires July 31, 20105 Lease Serial No.
NMNM-033487-40450

6 If Indian, Allottee or Tribe Name

7 If Unit or CA Agreement, Name and No.

1a. Type of work ☒ DRILL ☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone2. Name of Operator
Nadel and Gussman HEYCO, LLC3a Address P.O. Box 1936
Roswell N M 882023b Phone No. (include area code)
(575) 623-66018 Lease Name and Well No.
Bella 7 Federal # 4 3050159. API Well No.
30-025-39554

4 Location of Well (Report location clearly and in accordance with any State requirements *)

At surface 420' FNL & 660' FWL

At proposed prod. zone Same

10. Field and Pool, or Exploratory
Young: Bone Spring North

11. Sec., T. R. M. or Blk. and Survey or Area

Sec 7, 18S, R32E
NW/4 NW/414. Distance in miles and direction from nearest town or post office*
10 miles South Maljamar, N.M.12. County or Parish
Lea13. State
NM15 Distance from proposed*
location to nearest
property or lease line, ft
(Also to nearest drig. unit line, if any)

420'

16. No of acres in lease
32017 Spacing Unit dedicated to this well
4018 Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.


1400'

19 Proposed Depth
9220'20. BLM/BIA Bond No. on file
NMB00052021. Elevations (Show whether DF, KDB, RT, GL, etc.)
3793' GL22. Approximate date work will start*
10/09/200923 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:

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

25. Signature Name (Printed/Typed)
Keith CannonDate
08/31/2009

Title

Drilling Superintendent

Approved by (Signature) /s/ Don Peterson

Name (Printed/Typed)

Date OCT 16 2009

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)

Roswell Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Roswell Resource Area

P.O. Drawer 1857

Roswell, New Mexico 88202-1857

Statement Accepting Responsibilities for Operations

Operator Name: Nadel and Gussman Heyco, LLC

Street or Box: P.O. Box 1936

City, State: Roswell, New Mexico

Zip Code: 88202

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below.

Lease No.: NMNM - 033437

Lease Name: ^{Bola} ~~Bolla~~ 7 Federal #4

Legal description of land: Sec 7, T18S, R32E, Lea County, New Mexico

Formation(s) (if applicable): Bone Spring 2nd Sand, Bone Spring 1st Sand, Bone Spring B&C Carb., Grayburg-SanAndres,

Bond Coverage: Statewide Bond

BLM Bond File No.: NM B 000520

Authorized Signature: 

Title: Drilling Superintendent

Date: 8/31/2009

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OCT 20 2009

State of New Mexico

DISTRICT I

1625 N. FRENCH DR., HOBBBS, NM 88240

HOBBSOCO

Energy, Minerals and Natural Resources Department

Form C-102

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Revised October 12, 2005
Submit to Appropriate District Office

State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39554	Pool Code 65350 ✓	Pool Name Young; Bone Spring North
Property Code 26560 305015	Property Name Bola BOLA 7 FEDERAL	Well Number 4
OGRID No. 258462	Operator Name NADEL AND GUSSMAN HEYCO, LLC.	Elevation 3793'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	7	18-S	32-E	-	420	NORTH	660	WEST	LEA

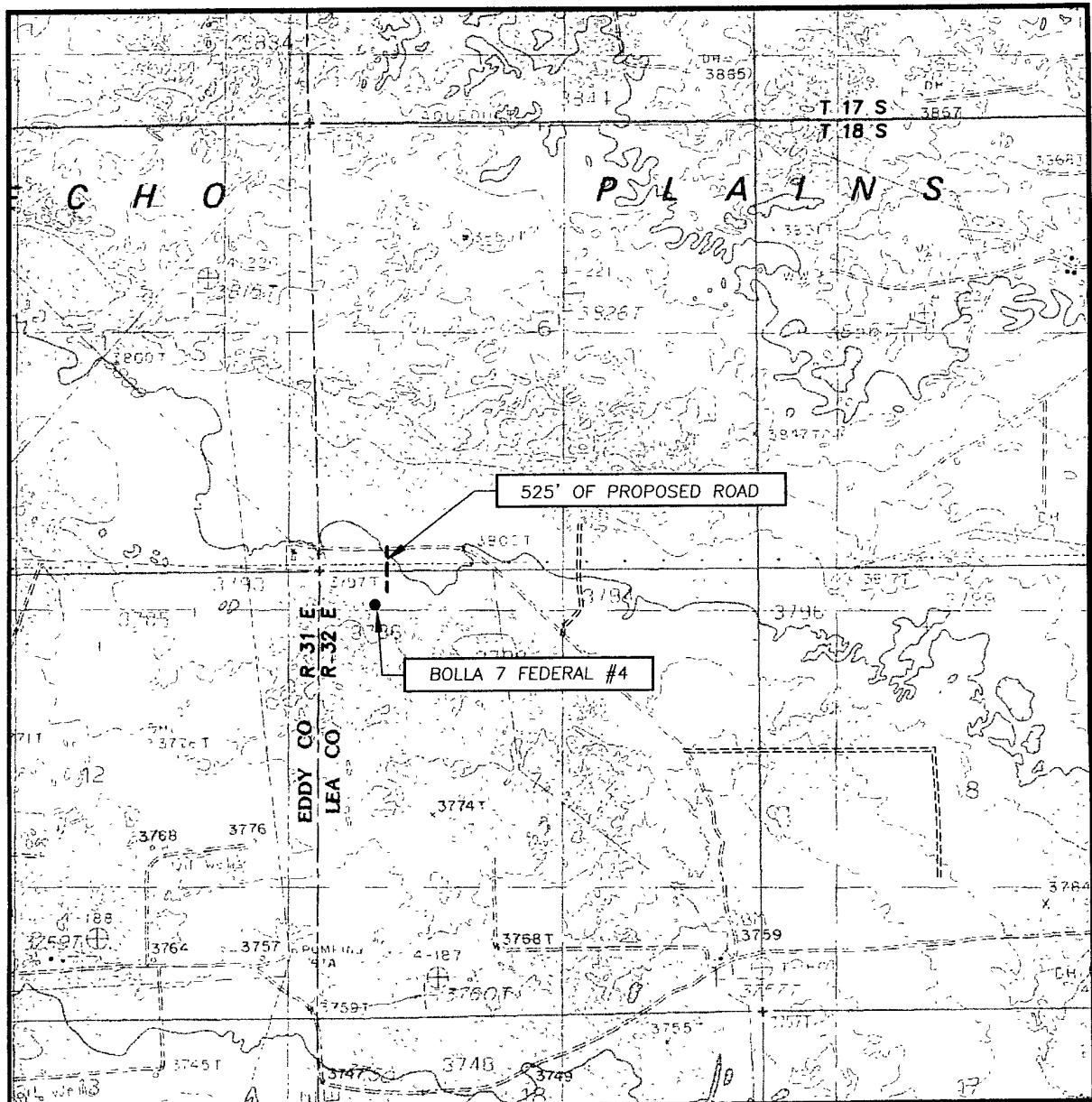
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	7	18S	32E	-	420	North	660	West	Lea
Dedicated Acres 40	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>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=643542.2 N X=660315.5 E</p> <p>LAT.=32.768104° N LONG.=103.811786° W</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> Signature 8/31/09 Date Keith Cannon Printed Name</p>
<p>LOT 2</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> Date Surveyed Signature & Seal of Professional Surveyor Certificate No. GARY EIDSON 12641 RONALD J. EIDSON 3239</p>
<p>LOT 3</p> <p>40.95 AC</p>		
<p>LOT 4</p> <p>40.95 AC</p>		

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

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

SEC. 7 TWP. 18-S RGE. 32-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

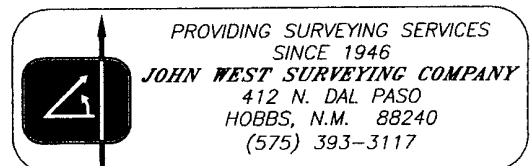
DESCRIPTION 420' FNL & 660' FWL

ELEVATION 3793'

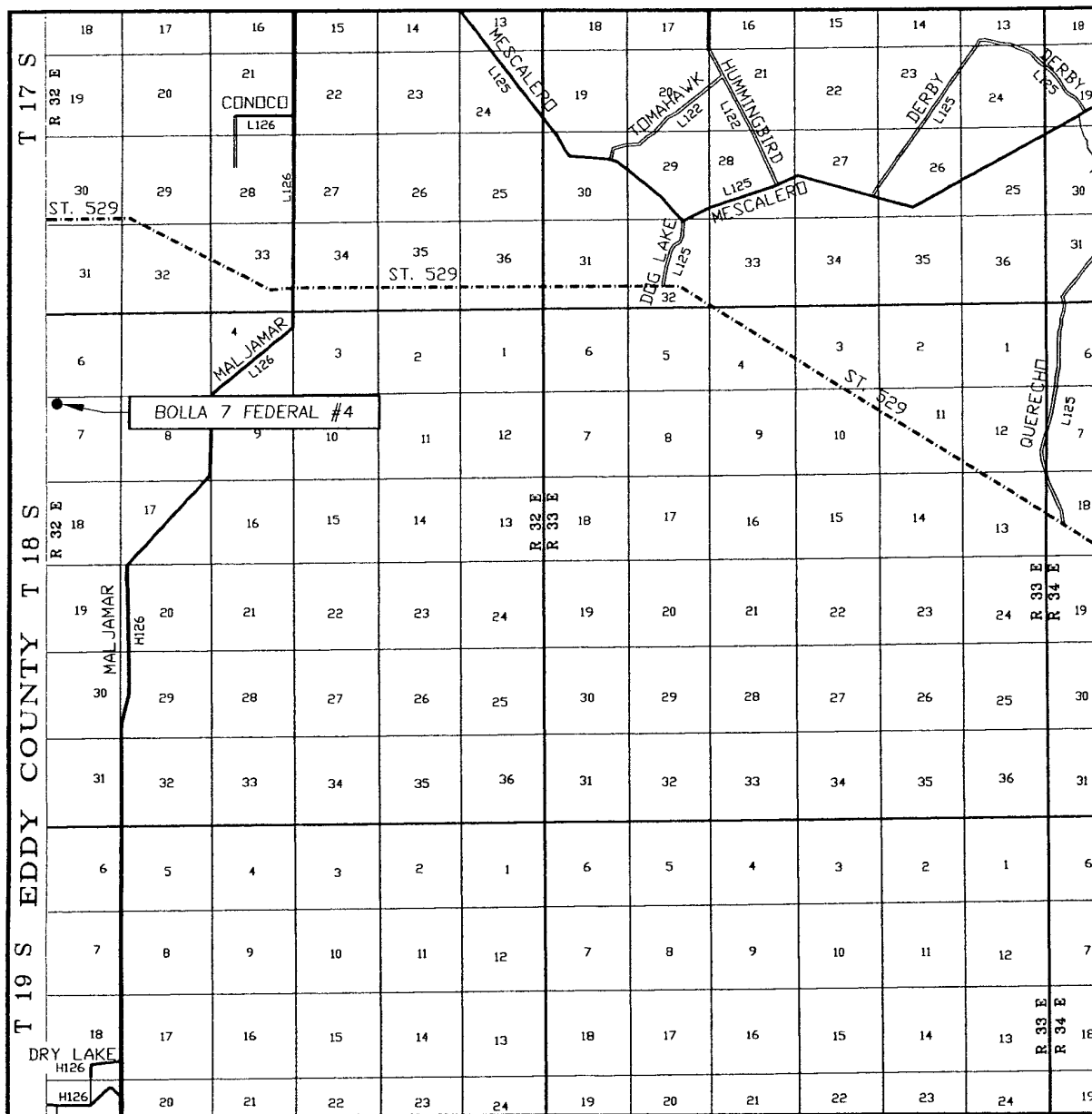
OPERATOR NADEL AND GUSSMAN
HEYCO, LLC.

LEASE BOLLA 7 FEDERAL

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



VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 7 TWP. 18-S RGE. 32-E

SURVEY N.M.P.M.

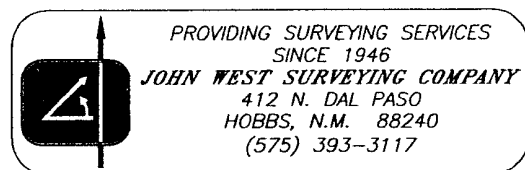
COUNTY LEA STATE NEW MEXICO

DESCRIPTION 420' FNL & 660' FWL

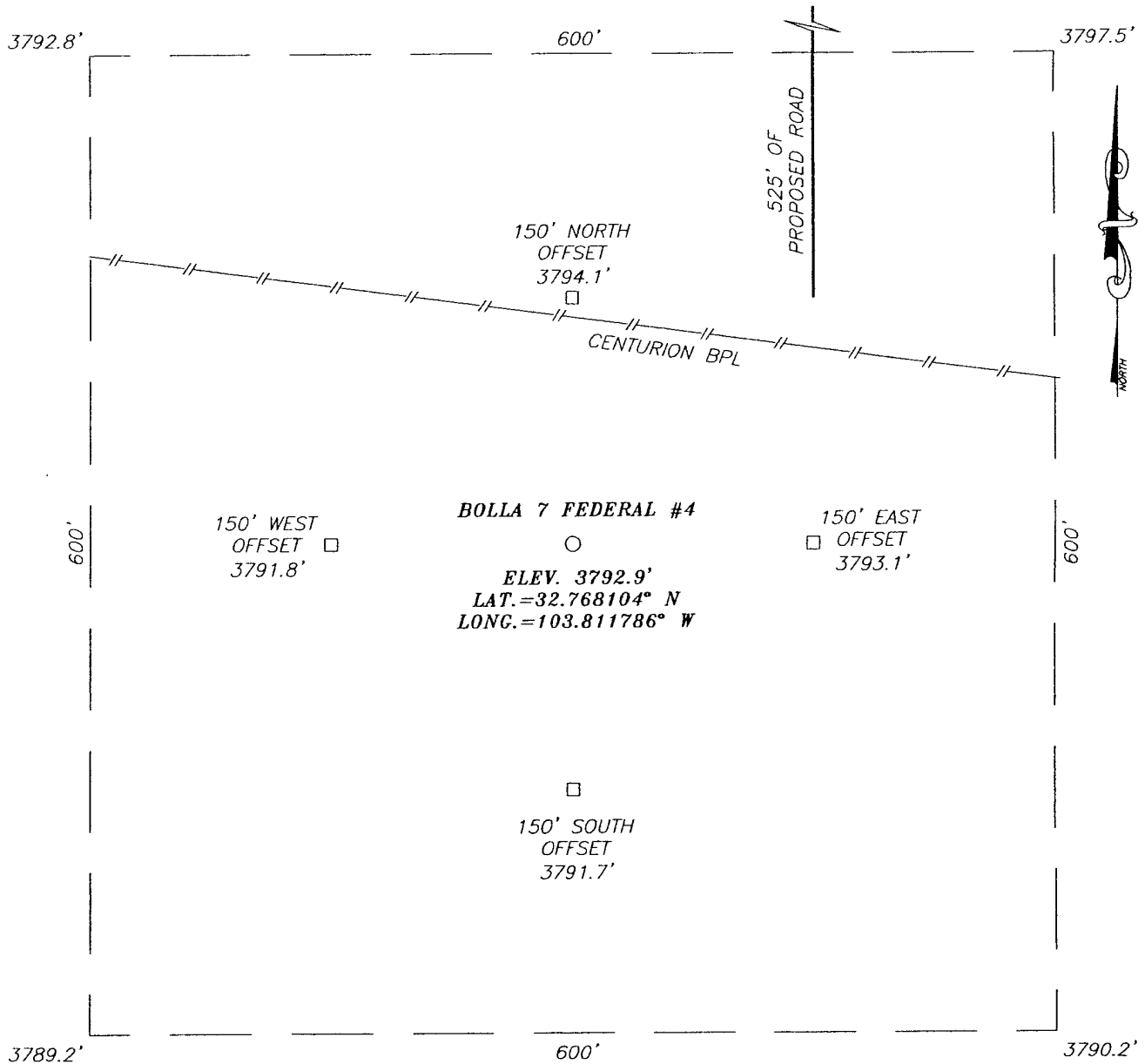
ELEVATION 3793'

OPERATOR NADEL AND GUSSMAN HEYCO, LLC.

LEASE BOLLA 7 FEDERAL

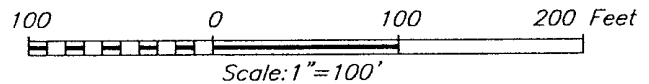


SECTION 7, TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M.,
 LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST. HWY. #529 AND CO. RD. #L126, GO SOUTH ON CO. RD. #126 APPROX. 2.7 MILES. TURN RIGHT AND GO WEST APPROX. 1.4 MILES. TURN RIGHT AND GO NORTHWEST APPROX. 0.7 MILES TO A PROPOSED ROAD SURVEY. FOLLOW ROAD SURVEY APPROX. 0.3 MILES. VEER LEFT AND GO WEST APPROX. 0.2 MILES. TURN LEFT AND FOLLOW PROPOSED ROAD APPROX. 525 SOUTH TO THIS LOCATION.



NADEL AND GUSSMAN HEYCO, LLC.

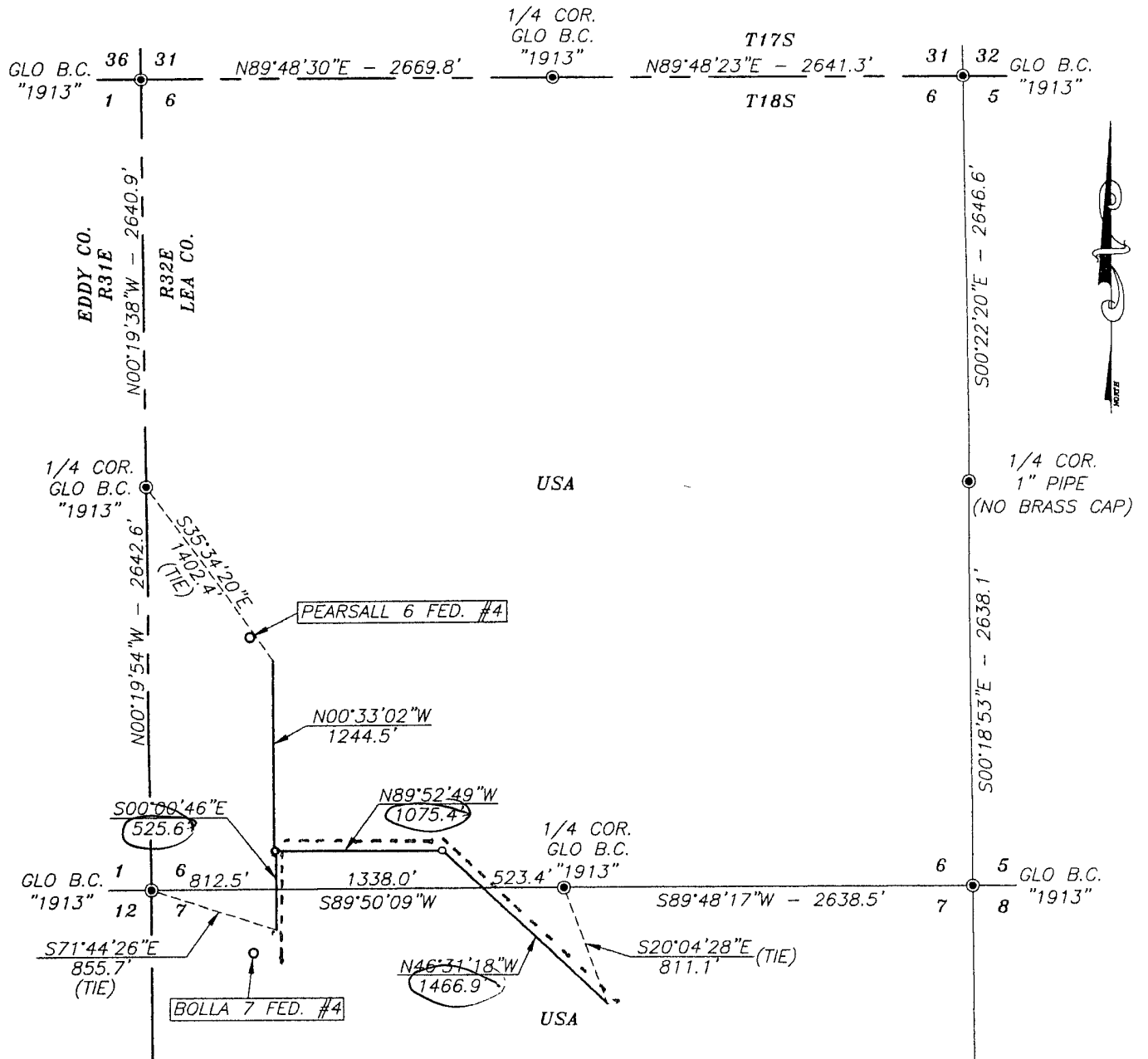
BOLLA 7 FEDERAL #4 WELL
 LOCATED 420 FEET FROM THE NORTH LINE
 AND 660 FEET FROM THE WEST LINE OF SECTION 7,
 TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M.,
 LEA COUNTY, NEW MEXICO.

Survey Date: 8/12/09	Sheet 1 of 1 Sheets
W.O. Number: 09.11.0710	Dr By: LA
Date: 8/17/09	09110710
	Scale: 1"=100'



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

SECTIONS 6 & 7, TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND ³⁰50.0 FEET WIDE AND 4312.4 FEET OR 0.817 MILES IN LENGTH CROSSING USA LAND IN ¹⁵SECTIONS 6 & 7, TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING ^{25.0}25.0 FEET LEFT AND ¹⁵25.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

Electronic line

NOTE: BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I HEREBY CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

Ronald J. Eidson 8-19-09

GARY G. EIDSON, N.M. P.S. No. 12641
RONALD J. EIDSON, N.M. P.S. No. 3239



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

1000 0 1000 2000 FEET
Scale: 1"=1000'

NADEL AND GUSSMAN HEYCO, LLC.

CENTERLINE SURVEY OF A MULTI-USE
RIGHT-OF-WAY AND ACCESS ROAD CROSSING
SECTIONS 6 & 7, TOWNSHIP 18 SOUTH, RANGE 32 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO

Survey Date: 8/12/09	Sheet 1 of 1 Sheets
W.O. Number. 09110709	Drawn By: LA
Date: 8/17/09	09110709_MULTI_USE

Application
Nadel and Gussman Heyco, LLC
Bola 7 Federal # 4
Sec 7, T18S, R32E
420' FNL & 660' FWL
Lea 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	980'	Water	L. San Andres Equiv.	5,850'	Oil	
Salado	1,120'		Bone Spring Ls	6,100'	Oil	
BX (BASE OF SALT)	2,230'		A – Zone Carb	7,625'	Oil	
Yates	2,400'		Bone Spring 1 st Sand	7,690'	Oil	
Seven Rivers	2,845'	Oil	B – Zone Carb	7,960'	Oil	
Bowers	3,310'	Oil	Bone Spring 2 nd Sand	8,375'	Oil	
Queen	3,560'	Oil	C Bench Pay	8,680'	Oil	
Penrose	3,790'	Oil	C – zone Carb	8,895'	Oil	
Grayburg	4,075'	Oil	Bone Spring 3 rd Sand	9,070'	Oil	
Loco Hills	4,175'	Oil	PTD	9,200'		
Metex	4,295'	Oil				
Premier Sand	4,430'	Oil				
San Andres	4,555'	Oil				
Delaware (CRCN Tongue)	4,750'	Oil				
Brushy Canyon	5,200'	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:** See COA

<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' – 1065'	13 3/8"	54.5#	ST&C	J-55	New
12 1/4"	0' – 3100'	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' – 9220'	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)
 See COA

- a. 13 3/8" Surface Cement to surface with:
Lead - 640 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 @ 782'.
- b. 9 5/8" Intermediate Cement to surface with:
Lead - 533 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 @ 1576'.
- c. 5 1/2" Production Cement to 2050' with:
Lead - 383 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 @ 2050'.
Tail - 533 sx H, 0.6% Fluid Loss Agent, 0.25% Suspension Aid, 03% Gilsonite, 3% Salt and 0.25% Defoamer, 13.22 ppg, 1.60 cu.ft./sk yield, TOC @ 5500'.

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

	<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
See COA	0' - 1065'	8.4 - 8.8	80 - 55	NC	Fresh Water
	755' - 3100'	9.8 - 10.0	28 - 30	NC	Brine Water
	3100' - 9220'	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 Hydrill 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.

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:

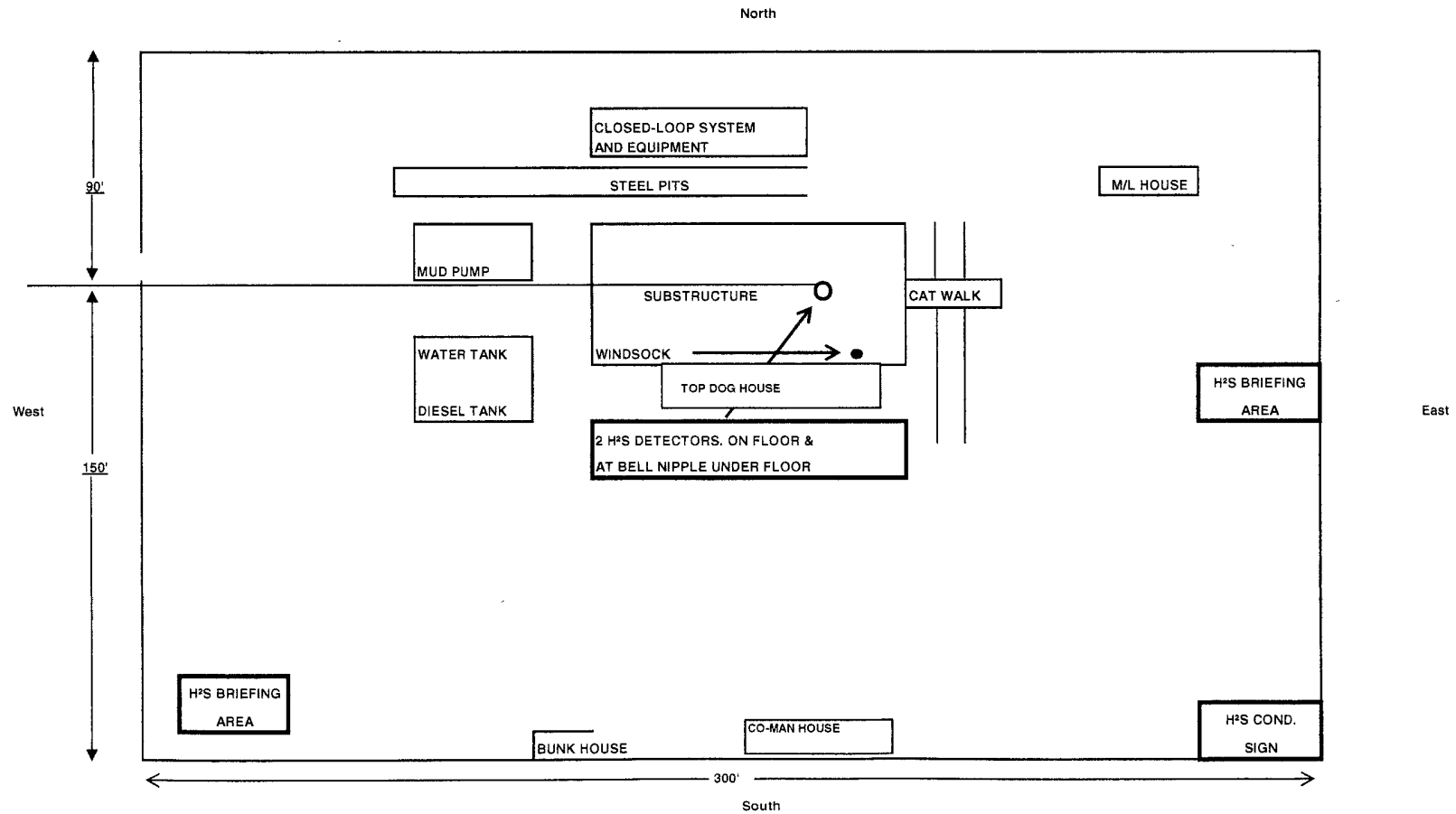
No abnormal conditions are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No 6. Lost circulation might occur in the Capitan Reef. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 4700 psi and estimated BHT 180 F. No H₂S is anticipated to be encountered.

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.

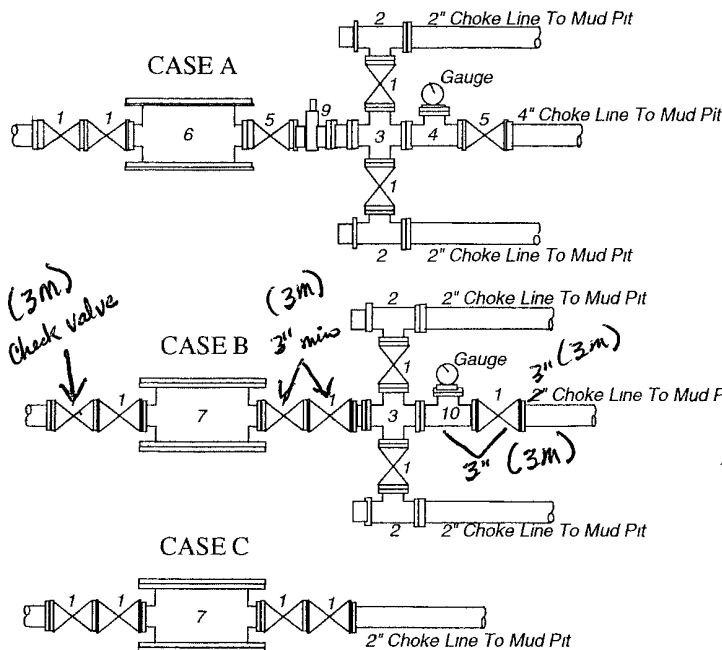
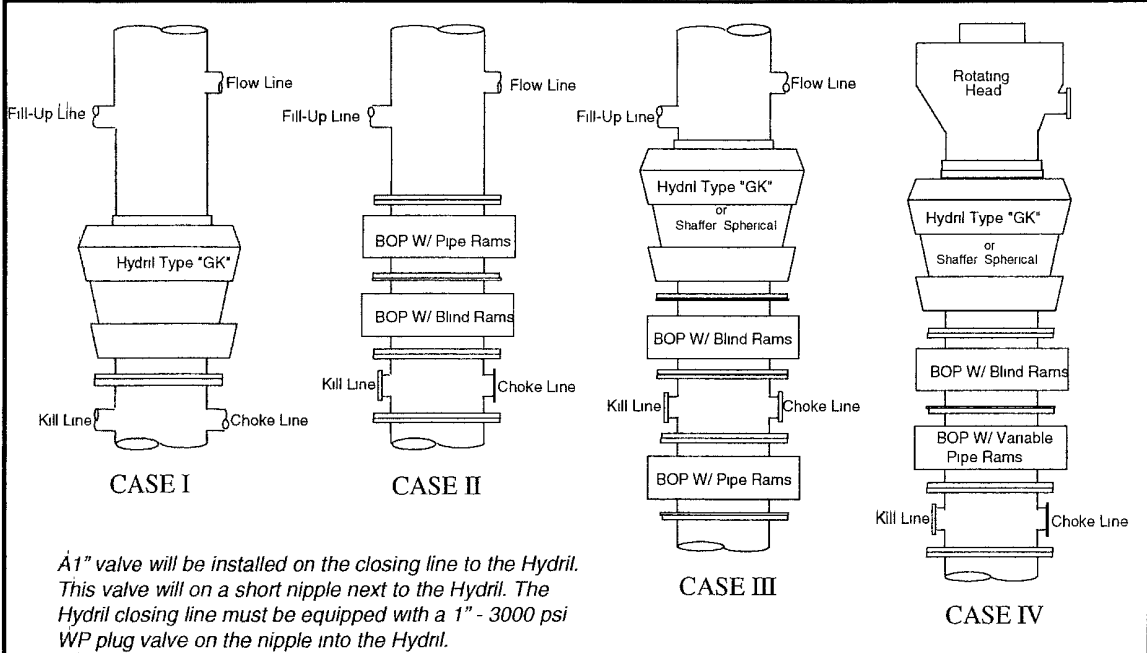
EXHIBIT "D" LOCATION DIAGRAM

Bolla 7 Federal #4
420' FNL & 660' FSL
SEC. 7, T18S, R32E
Lea Co, NM



Nadel and Gussman Heyco, LLC

MINIMUM BLOWOUT PREVENTER REQUIREMENTS



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

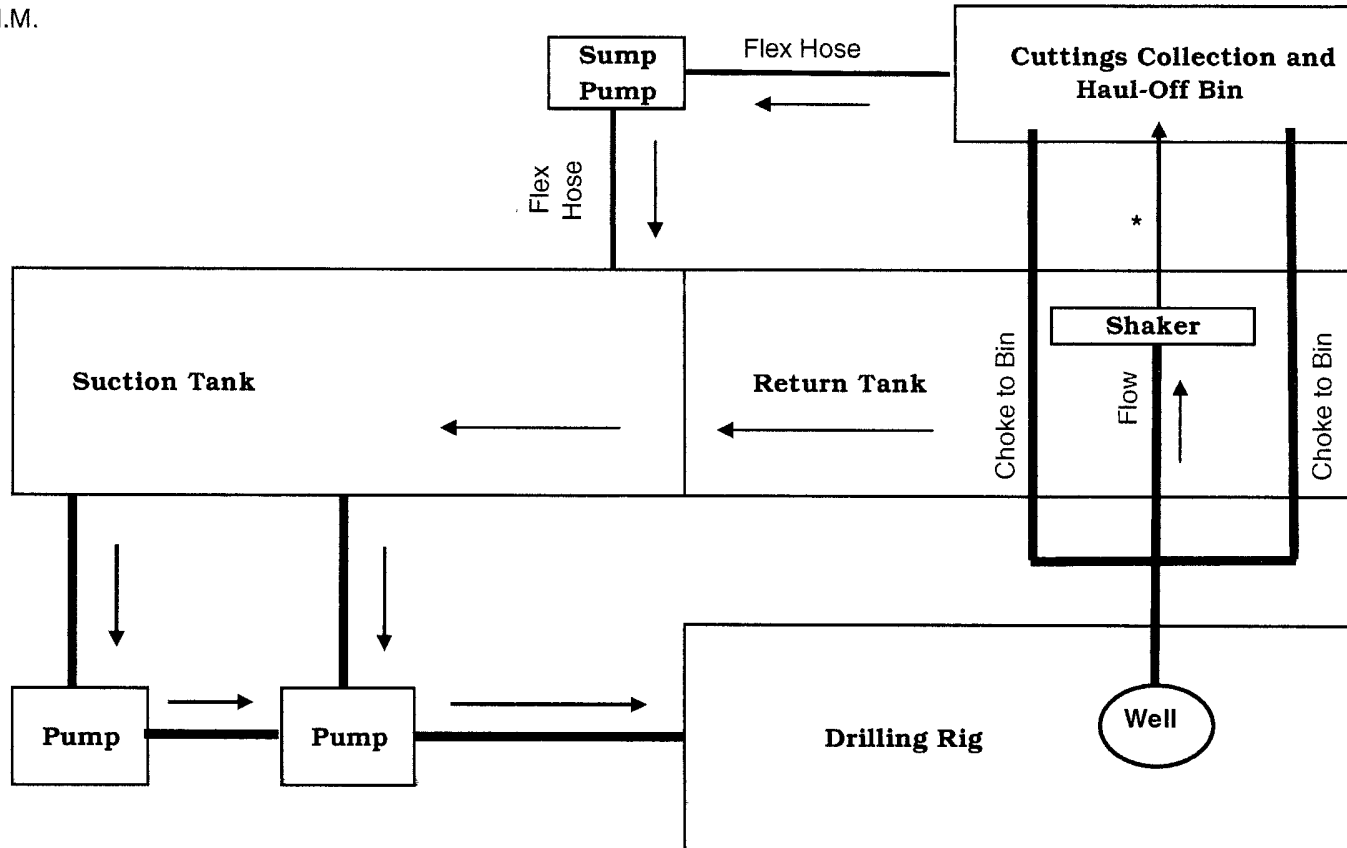
- 1 2" flanged all steel valve must be either Cameron "F", Halliburton Low Torque or Shaffer Flo-Seal.
- 2 2" flanged adjustable chokes, min. 1" full opening & equipped with hard trim.
- 3 4" x 2" flanged steel cross.
- 4 4" flanged steel tee.
- 5 4" flanged all steel valve (Type as in no. 1).
- 6 Drilling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

Choke Manifold Schematic for Closed Loop System

Bolla 7 Federal #4
Sec 7, T18S, R32E
420' FNL & 660' FWL
Lea Co. N.M.



* Flex hose from BOPE to manifold

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

NADEL AND GUSSMAN HEYCO, L.L.C.
P.O. BOX 1936
ROSWELL N.M. 88202
(575) 623-6601 (Office)
(575) 624-5321 (Fax)

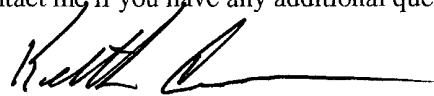
Re: Bola 7 Federal #4
420' FNL & 660' FWL
Unit No 1, Sec. 7, T18S, R32E
Lea, NM
Rule 118 H2S Exposure

Dear Mr. Ingram

Nadel and Gussman Heyco, LLC have evaluated this well and we do not expect to encounter hydrogen sulfide. However, we will employ a third party monitoring system. We will begin monitoring prior to drilling out the intermediate casing and will continue monitoring the remainder of the well.

Please contact me if you have any additional questions.

Sincerely,



Keith Cannon
Drilling superintendent

Hydrogen Sulfide Drilling Operations Plan
Bola 7 Federal #4
Sec 7, T18S, R32E
420' FNL & 660' FWL
Lea Co. N.M.

1. Company and contract personnel admitted on location should be trained by a qualified H₂S safety instructor to the recognize and handle following:
 - A. Characteristics of H₂S gas
 - B. Physical effects and hazards
 - C. Proper use of safety equipment and life support systems
 - D. Principle and operation of H₂S 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. H₂S Detection and Alarm Systems
 - A. H₂S 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. H₂S 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 - H₂S 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 H₂S on tubular goods/mechanical equipment
9. If H₂S encountered, mud system shall be addressed to maintain control of formation. A mud gas separator will be brought into service along with H₂S 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

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 31 day of August 2009.

Name: Keith Cannon

Position: Drilling Superintendent

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

Telephone: 575-623-6601

Email: kcannon@heycoenergy.com

Signed: _____



PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	NADEL AND GUSSMAN HEYCO LLC
LEASE NO.:	NM 40450
WELL NAME & NO.:	BOLLA 7 FEDERAL #4
SURFACE HOLE FOOTAGE:	420' FNL & 660' FWL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 7, T. 18 S., R 32 E., NMPM
COUNTY:	Lea 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**
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 - Ground Level Abandoned Well Marker
- ☒ **Construction**
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 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - H2S Requirements, Onshore Order # 6
 - Logging Requirements
 - Casing Depth Change
- ☒ **Production (Post Drilling)**
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 - Electric Lines
- ☒ **Reseeding Procedure/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, geophysical exploration other than 3-D operations, and 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 ft. 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 of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Although this is a closed loop system and reserve pits will not be utilized, the v-door will be on the East side of the location.

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

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. 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

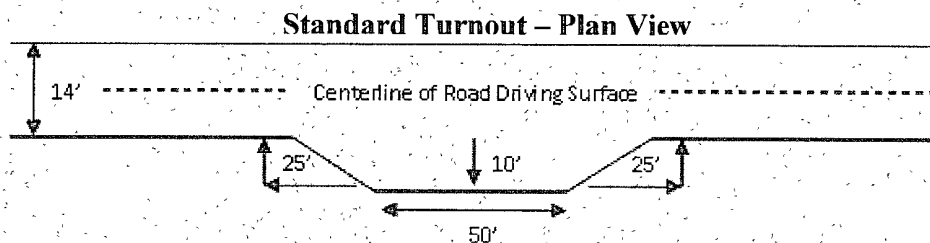
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

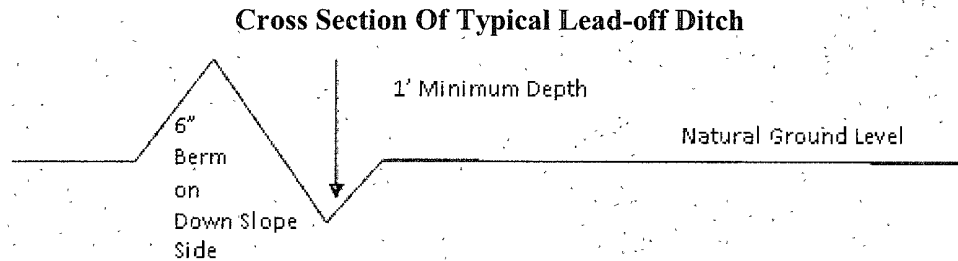
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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.



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:

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

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

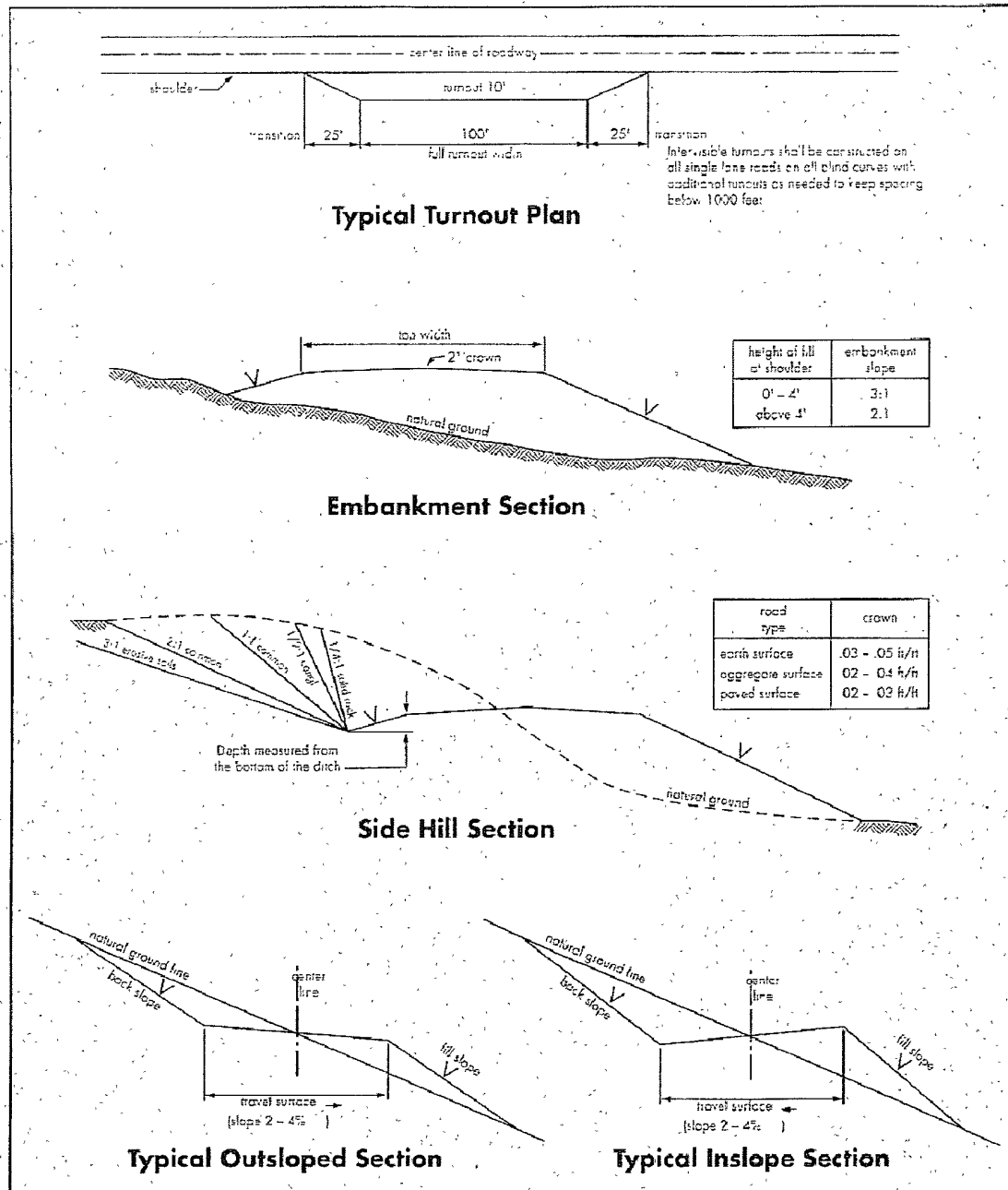
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

☒ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H₂S) Drilling Plan should be activated 500 feet prior to drilling into the **Queen** 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. 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 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. 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 water flows in the Salado and Artesia Groups.

Possible lost circulation in the Grayburg and San Andres Formations.

1. The 13-3/8 inch surface casing shall be set at approximately 1065 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. Fresh water mud to be used to setting depth.

- 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 a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
- 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.

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. **Variance approved to use flex line from BOP to choke manifold. Check condition of 3" flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends. Install anchors as required by manufacturer.**
3. 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.
4. 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.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. The tests shall be done by an independent service company.
 - b. The results of the test shall be reported to the appropriate BLM office.
 - c. 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.**
 - d. 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 092409

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:

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

IX. INTERIM RECLAMATION & RESEEDING PROCEDURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

Operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

B. RESEEDING PROCEDURE

Once the well is drilled, all completion procedures accomplished, and all trash removed, reseed the location and all surrounding disturbed areas as follows:

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	11lbs/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

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.