6054 S ATS-08-831

OCD-ARTESIA

AUG – 6 2008

OCD-ARTESIA

1093

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No. NMNM-28095	
6. If Indian, Allotee or Tribe Name	
1a Type of work: ☐ DRILL ☑ REENTER	7 If Unit or CA Agreement, Name and No
1b Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	8 Lease Name and Well No. CAN KEN 4 FEDERAL #2 305018
2. Name of Operator NADEL AND GUSSMAN HEYCO, LLC 258462	9 API Well No. 30-015-26257
3a. Address P.O. BOX 1936 ROSWELL N.M 88202 / 3b Phone No. (include area code) (575) 623-6601	10 Field and Pool, or Exploratory SHUGART; BONE SPRING NORTH
4 Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 1980' FNL & 1980 FEL At proposed prod. zone	11 Sec., T R. M. or Blk and Survey or Area SEC 4, T18S, R31E
14 Distance in miles and direction from nearest town or post office* 8 MILES SOUTH EAST OF LOCO HILLS N.M.	12 County or Parish EDDY / 13 State N

15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any) 660'	16 No of acres in lease 650.16	17 Spacing Unit dedicated to this well 40 Acre
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1320'	19. Proposed Depth 4170'	20 BLM/BIA Bond No. on file NMB00520
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3730.0' GL	22. Approximate date work will start* 07/15/2008	23. Estimated duration 40 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
2 A Drilling Plan
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).
4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5 Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name (Printed/Typed) Keith Cannon	Date 06/26/2008
Title Drilling superintendent		
Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed)	Date AUG 2 2008
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

NOTE: NEW PIT RULE
19-15-17 NMAC PART 17
A form C-144 must be approved
before starting drilling operations.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-26257	50385	Power Grayburg

[4] Property Code	[5] Property Name	[6] Well Number
12933 / 305018	Can Ken 4 Federal	2

[7] OGRID No.	[8] Operator Name	[9] Elevation
258462	Nadel and Gussman HEYCO, LLC	3730.0

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	4	18S	31E		1980'	North	1980'	East	Eddy

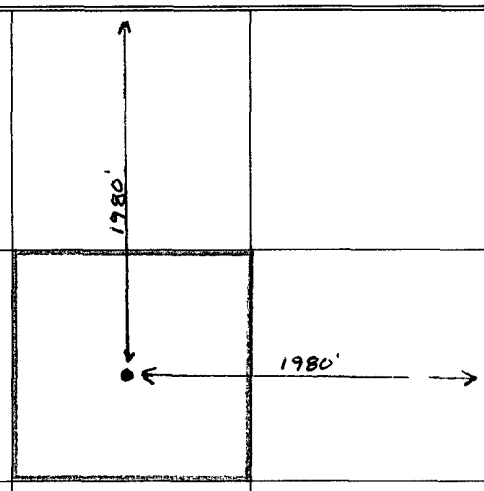
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] 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.

16



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

6/26/08
Signature Date

Keith Cannon
Printed Name

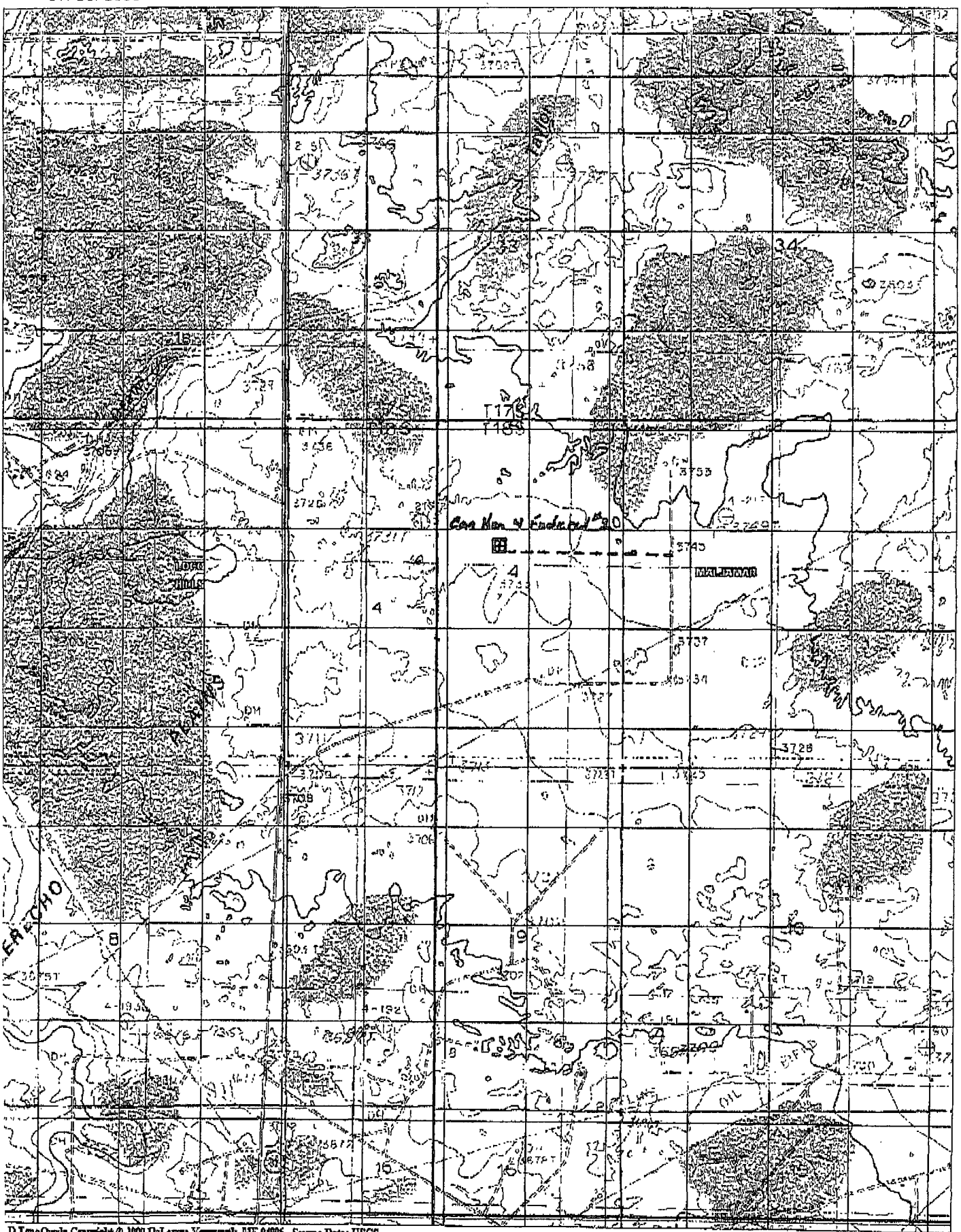
[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number



700 ft Scale: 1 : 24,000 Detail: 14-0 Datum: WGS84

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

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

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

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator			Lease		Well No.
Harvey E. Yates Company			Canken 4 Federal		2
Unit Letter	**Section**	**Township**	**Range**		**County**
G	4	18 South	31 East	NMPM	Eddy

Actual Footage Location of Well:
1980 feet from the North line and 1980 feet from the East line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3730.0			Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

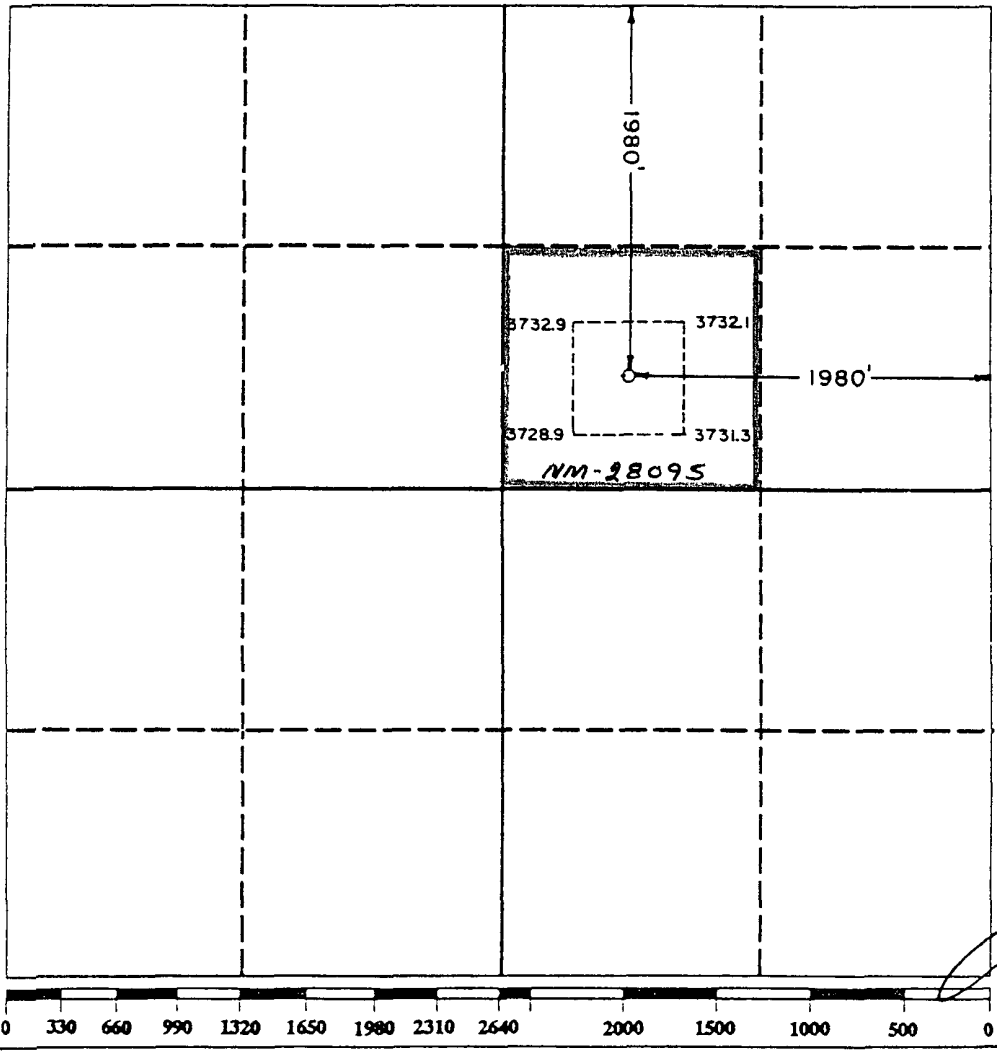
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Printed Name

Position

Company

Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
November 11, 1989

Signature & Seal of Professional Surveyor

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NEW MEXICO JOHN W. WEST

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

125630

Can Ken 4 Fed 2
G-4-18S-31E
Eddy Co., NM

Reentry Procedure
9 May 08

Basic Data:

13-3/8" @ 360' Circ. Cmt.
8-5/8" @ 2099' Circ. Cmt.
5-1/2" @ 8550', TOC @ 210' CBL, top cement plug 0-60' when plugged
5.5"/17ppf/N80/LTC Burst=7740 psi, 6192 psi at 80% Nom. ID=4.892" Drift ID=4.767"
2.875"/6.5ppf/J55/EUE Burst=7260 psi, 5808 psi at 80% Nom ID=2.441" Drift ID=2.347"
Collapse=7680 psi, 6144 at 80%
Tensile=99660 lb with no safety factor

Objective: Reenter well to test Grayburg sand, 7 Rivers dolomites and/or Yates sand.

Outline:

1. Dig out wellhead, dress off 8-5/8", weld extension onto 5-1/2" casing, weld 3000 psi slip on wellhead onto 8-5/8", dress off 5-1/2", install tubing head adaptor, install BOP and test wellhead to 3000 psi.

2. MIRU WSU and reentry package. Pick up 4.75" bit and collars and drill out the following plugs using fresh water. Use 2-7/8"/6.5/J55/EUE tubing. Clean out to 4120'. POOH with bit, pick up scraper, make scraper run to PBD, pickle tubing with 500 gals 15% HCl, circulate hole clean then fill hole with clean 2% KCl water (approx. 100 bbls volume with tubing OOH).

Surface plug 0-60'
Plug from 158-410'
Plug from 1806-2150'
Cement and CIBP from 3453-3700'

3. RU wireline, install lubricator and perf the Grayburg Sand with 3-3/8" or 4" casing guns loaded 3 spf at 60-120° phasing at the depths shown below (inclusive):

Grayburg Sd: 3945-54' (30) OH Logs
Grayburg Sd: 3943-52' (30) GR/CCL CBL

4. RIH with retrievable packer assembly to approx. 3800' (open perfs 3756-66'), set packer, open bypass, pump acid close to packer, close bypass, load annulus (and keep loaded with fluid), and acidize with 500 gals. NE Fe 7.5% HCl . Pump acid at 3-5 bpm while limiting treating pressure to 5500 psi and keeping annulus full of fluid. Drop slug of 15 ballsealers after pumping 350 gals acid. Swab/flow test until notified to do otherwise.

5. If decision made to frac, install treating valve and frac down tubing at 15 bpm using low gel load crosslink fluid carrying 30,000 lbs 16/30 curable resin coated white sand (4 ppg max). Will flush 1-2 bbls short of top perf or when calculated bottom hole sand concentration is getting ready to fall, whichever occurs first. Engineer will work with service company on final frac design. Limit treating pressure to 5500 psi while

keeping annulus full of fluid. Recommend having kill truck on annulus in case well screens out or packer fails and it becomes necessary to circulate the well clean.

Note: Service company needs to run a family of breaker tests to yield data showing a range of break tests from fast to slow gel breaks on location. If their tests on location don't yield a wide-enough range of break times, they will have to re-run their tests on location, leading to a delay in pumping the job (est BHT = 100° F).

6. Leave well **shut in overnight** to allow resin to cure. Bleed pressure down (1 bpm max), clean out fill if needed and PWOP for a few weeks to get test of this zone before making decision whether to add pay uphole.

==========

7. When ready to move uphole, plugback method will be determined based on results of previous zone. If abandoning the Grayburg Sand, will set CIBP + 35' cement at 3725'. Load casing with fluid and test plug and casing to 3000 psi.

8. RU wireline, install lubricator and perf the 7R with 3-3/8" or 4" casing guns loaded 1 spf at any phasing at the depths shown below (inclusive):

7R: 2468', 2470', 2507', 2509', 2511', 2516', 2518', 2656', 2658', 2662', 2677', 2678' (12) OH Logs
7R: 2464', 2466', 2503', 2505', 2507', 2512', 2514', 2652', 2654', 2658', 2673', 2674' (12) GR/CCL/CBL

9. RIH with retrievable packer assembly, spot 200 gals NE Fe 20% HCl acid at 2650', pull packer to 2400', reverse 5 bbls down annulus, set packer, put 1000 psi on annulus and acidize with 1500 gals. NE Fe 20% HCl. Pump acid at 3-5 bpm while limiting treating pressure to 5500 psi and holding 500 psi on annulus. Drop 30 ballsealers through job. Swab/flow test until notified to do otherwise.

10. If decision made to frac, unseat packer and TOOH. Install 5k frac valve (assuming we've had no indications of casing problems) and frac down casing at 40 bpm using low gel load crosslink fluid carrying 100,000 lbs 16/30 white sand (last 50,000 lbs curable resin coated, 3 ppg max). Will flush 2-3 bbls short of top perf or when calculated bottom hole sand concentration is getting ready to fall, whichever occurs first. Engineer will work with service company on final frac design.

11. Leave well **shut in overnight** to allow resin to cure. Bleed pressure down (1 bpm max) and PWOP for a few weeks to get test of this zone before making decision whether to add pay up hole.

==========

12. When ready to move uphole, plugback method will be determined based on results of previous zone. If abandoning the 7R, will set CIBP at 2460'.

13. RU wireline, install lubricator and perf the Yates Sand with 3-3/8" or 4" casing guns loaded 3 spf at 60-120° phasing at the depths shown below (inclusive):

Yates Sd: 2375-84' (30) OH Logs
Yates Sd: 2371-80' (30) GR/CCL/CBL

14. RIH with retrievable packer assembly, set packer, open bypass, pump acid close to packer, close bypass, load annulus, and acidize with 500 gals. NE Fe 7.5% HCl . Pump acid at 3-5 bpm while limiting treating

pressure to 5500 psi and keeping annulus full of fluid. Drop slug of 15 ballsealers after pumping 350 gals acid. Swab/flow test until notified to do otherwise.

15. If decision made to frac, unseat packer and TOOH. Install 5k frac valve (assuming we've had no indications of casing problems) and frac down casing at 15 bpm using low gel load crosslink fluid carrying 30,000 lbs 16/30 curable resin coated white sand (4 ppg max). Will flush 2-3 bbls short of top perf or when calculated bottom hole sand concentration is getting ready to fall, whichever occurs first. Engineer will work with service company on final frac design.

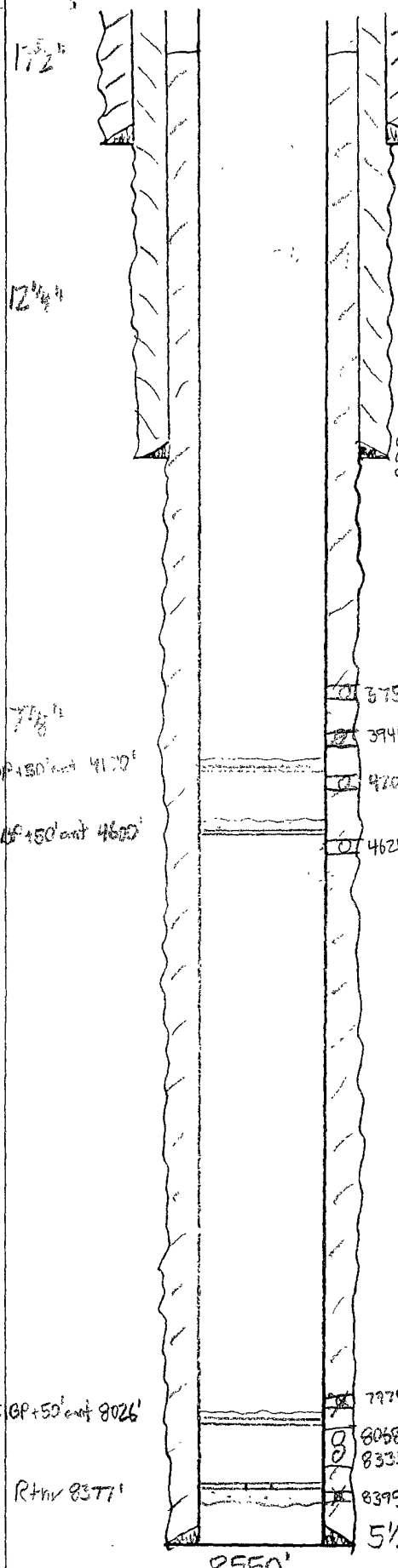
16. Leave well **shut in overnight** to allow resin to cure. Bleed pressure down (1 bpm max), clean out fill if needed and PWOP for a few weeks to get test of this zone before making decision whether to drill out plug(s) and commingle with zone(s) down hole—let's discuss.

Kbc/can ken 4 fed 2 grbg 7r yates reentry

30-015-26257

Canyon
1980' FNL, 1980' FEL
6-4-18S-31E
Eddy, NM

Zero: 13' AGL
KB: 3743'
GL: 3730'



Size	Wt	Gr	Conn	Set At
13⅜"	54.5	J55	STC	360'
8⅝"	32	J55	STC	2099'
5½"	17	N80	LTC	8550'

8⅝" @ 2099'
900 sx 65/35 Poz C + 200 sx "C"
(circ 212 sx)

3190: 2nd BS Sd 8395-97' (6) Run Sondia test
barrier breakdown test. Fg: 0.81 psi/ft
CIBP + 10' cmt 8390'.
2nd BS Sd: 8068', 98', 8117', 34', 70', 88', 97',
8207', 19', 30', 64', 72', 8326',
8335' (42)
Acdz 7300g 12 HCl / 3 HF Acid.
4.2 @ 4000. ISI: 1850
Swab dry 2bo / 2bw.
"B" carb?: 7979-81' (6) CIBP 8052'
Run Sondia test barrier test.
Sqz 7979-81' 384 sx "H"
Ø out sqz - 1st 4500 psi.
Ø CIBP 8390' - CO to 8998'
BO perfs 8395-97' 500g. 15% then
Sqz 200 sx "H" (CR tnr 8377')
Foam frac 8068-8335'
110,000g 70Q WF 20 + 171,250# (20/40 sd)
16/20 Carbolite 45 @ 5100 psi.
Flow back & tag sand cut. Fill.
CO to 8374'. Pwop.
39 bopd / 43 bwpd

3/97: Hvy paraffin - strip POH.
CIBP 8026' + 50' cmt.
Delaware: 4624', 25, 26, 27, 46, 28' (5)
Acdz 200g 15% HCl 3@2120 ISI: 950 psi.

↓ Back

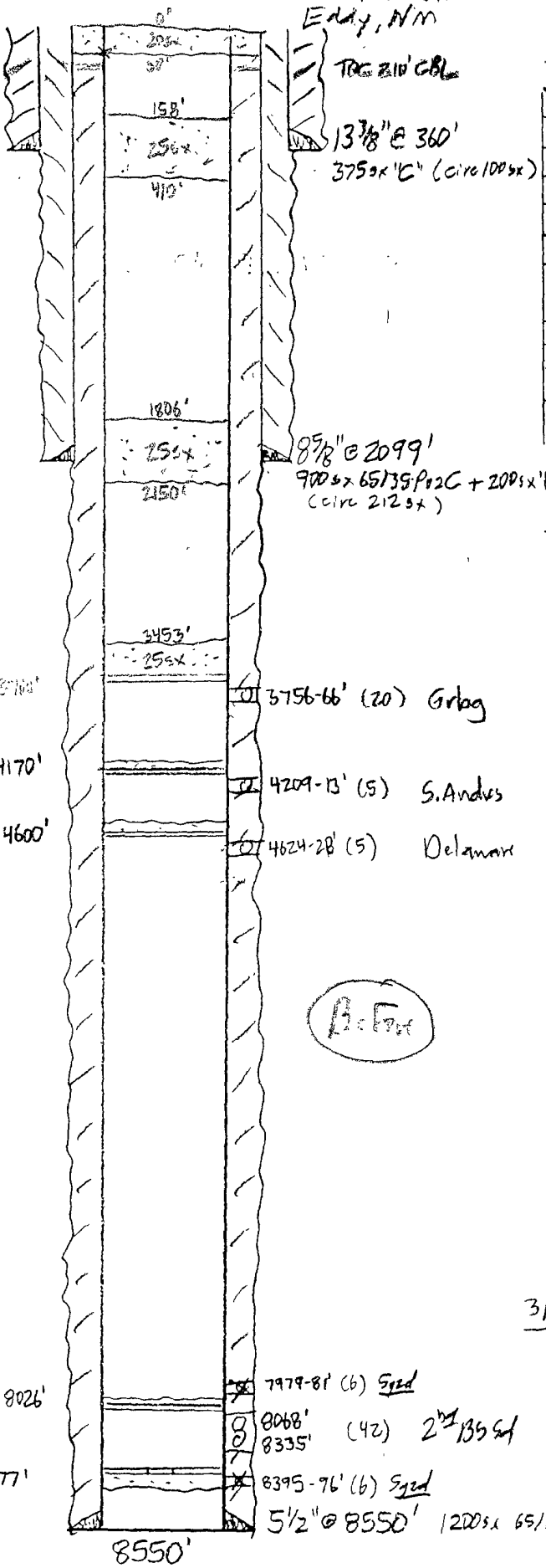
30-015-26257

Can/Sen 4 Mesa 2
1980' FNL, 1980' FEL
G-4-18S-31E
Eddy, NM

Zero: 13' AGL
KB: 3743'
GL: 3730'

Perf @ 60'
1½"

Size	Wt	Gr	Conn	Set At
13 3/8"	54.5	J55	STC	360'
8 5/8"	32	J55	STC	2099'
5½"	17	N80	LTC	8550'



3190: 2nd BS Sd 8395-97' (6) Run Sandia tool barrier breakdown test FG = 0.81 psi/ft
CIBP + 10' cmt 8390'.
2nd BS Sd: 8068', 98', 8117', 34', 70', 88', 97', 8207', 19', 30', 64', 72', 8326', 8335' (42)
Acdz 7300g 12-HCl / 3HF Acid.
4.2 e 4000. ISI = 1850
Swab dry 2bo / 2bw.

"B" carb?: 7979-81' (6) CIBP 8050'.
Run Sandia / CBL barrier test.
Sqz 7979-81' 384sx "H"
Ø out sqz - test 4500psi.
Ø CIBP 8390' - CO to 8498'.
BD perfs 8395-97' 500g. 15% then
Sqz 200sx "H" (Rtnr 8377')
Foam frac 8068-8335'
110,000g 70Q WF-20 + 171,250# (2ppg avg)
16/20 Carbolite 45 @ 5100psi.
Flow back & tag sand 547' fill.
CO to 8374'. PWOP.
39 bopd / 43 bwpd

3/97: Hvy paraffin - strip OOH.
CIBP 8026' + 50' cmt.
Delaware: 4624', 25, 26, 27, 4628' (5)
Acdz 200g 15% HCl 3@2120 ISI = 950psi.

↓ Back

3/97: 50-200' Frac oil on top. 5% cut swab dry.

- Frac 15,000g 30#XL + 36,340# 16/30 white 11.2 @ 1600psi ISI = 970psi
  PWOP.
  80 bopd / 57 bwpd / 65 mcfd.

6/97: Lower pump intake below perfs.

9/97: Pump chg 1½" to 1¼" plunger.

3/00: CIBP 4600' + 50' cmt
S. Andres: 4209', 10, 11, 12, 4213' (5) Acdz 1200g 15% HCl 3.3 @ 1600psi ISI = 970psi
Swab 100% wtr.

10/04: Acdz 5000g. 15% HCl 4.4 @ 2100psi. ISI = 1220psi Swab wtr.

1/05: CIBP 4170' + 50' cmt
Perf Grbg 3756-3766' (20) Acdz 3000g 15% HCl. 5 @ 3150psi. ISI 1450psi.
Swab 1 bo / 11 bw.
Readz 6000g. 15% HCl 6.8 @ 4000psi. ISI = 1400psi
Swab 1 bo / 37 bw.
PWOP. 0 bopd / 5 bwpd / 0 mcfd.

Application
Nadel and Gussman Heyco, LLC
Can Ken 4 Federal #2
Sec 4, T18S, R31E
1980' FNL & 1980' 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:

Formation	Depth	
Rustler	665'	Water
Yates	2020'	Oil
Seven Rivers	2435'	Oil
Bowers	2885'	Oil
Queen	3125'	Oil
Penrose	3330'	Oil
Grayburg	4605'	Oil
PTD	4170'	

7-31-08
NOT VALID WWI

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 450' and circulating Cement back to surface. Potash/ fresh water sands will be protected by setting 9 5/8" casing at 3000' and circulating cement back to surface. Morrow intervals will be isolation by setting 5 ½" Casing to total depth and circulating cement up into the 9 5/8" casing.

3. Proposed Casing Program:

Hole size	Depth	OD Csg	Weight	Collar	Grade	New/Used
17 ½"	0' – 360'	13 3/8"	54#	ST&C	J-55	In Place CMT
12 ¼"	0' –2099'	8 5/8"	32#	ST&C	J-55	In place CMT
7 7/8"	0' – 4170'	5 ½"	17#	LT&C	N-80	In Place CMT

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:
      Cmtd w/- 375 sx Cl class C w/ 2% CaCl Circ 100 sx to pit

   b. 9 5/8" Intermediate — Cement to surface with:
      Cmtd w/ - 900 sx 65/35 "C" poz w/ 2% CaCl +200 sx Cl "C" w/ 2% CaCl Circ 212 sx to pit

   c. 5 1/2" Production — First Stage:
      Cmtd w/ 1200 sx 65/35 "H" + 400 sx Cl "H" Circ 220 sx to pit

5. Pressure Control Equipment:

   The blowout preventor equipment (BOPE) shown in Exhibit #1 will consist of a (3m system) ← See COA
   Double ram type (3000psi WP) preventor

6. Drilling Fluid Program:

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – 4170'	8.4	NA	NC	Fresh Water

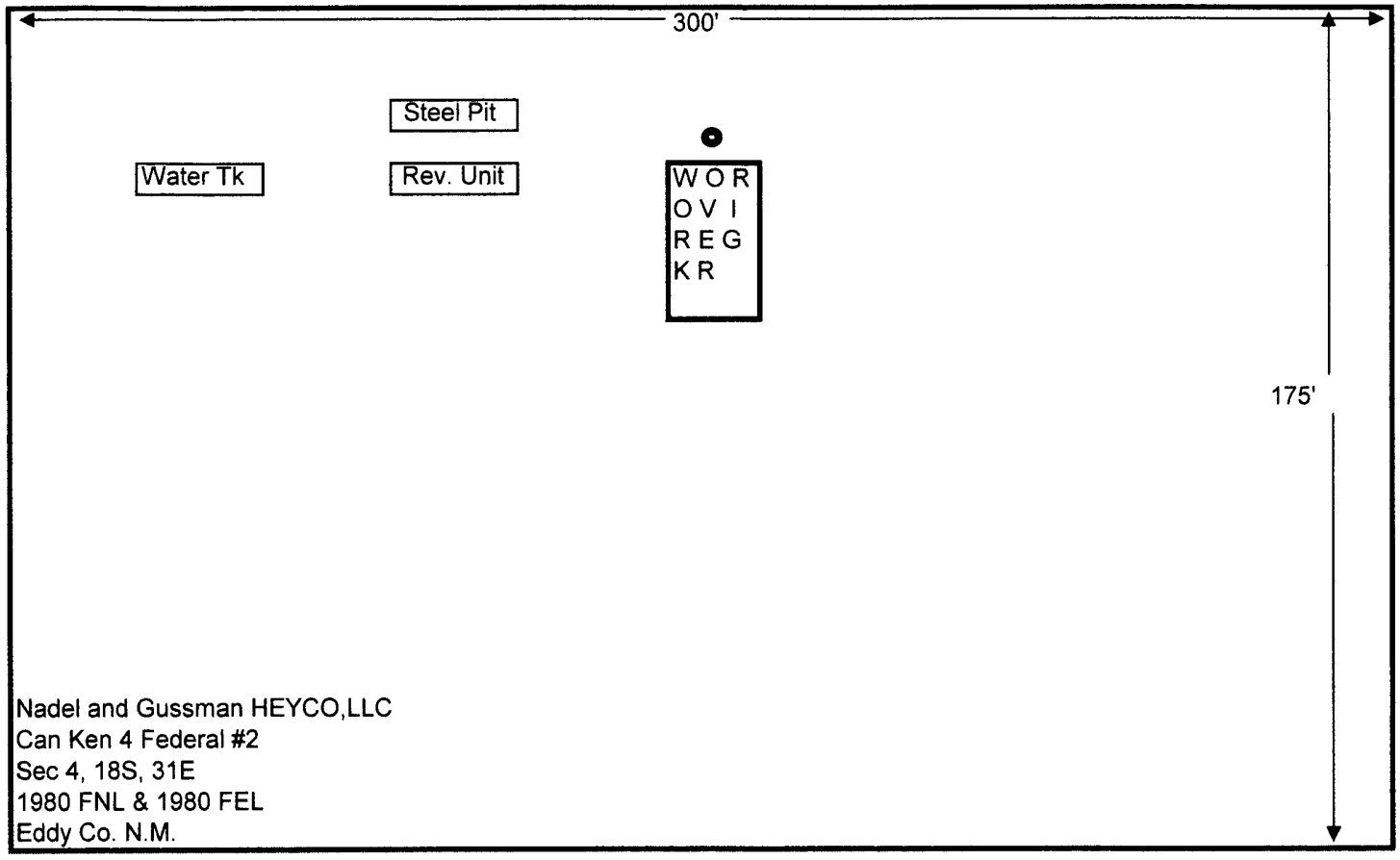
The necessary mud products for weight addition and fluid loss control will be on Location at all times. Mud Program Sudject to change due to hole conditions.

7. Auxiliary Equipment:
   a. A full opening drill pipe stabbing valve having the appropriate Connections will be on the rig floor at all times.
   b. Hydrogen Sulfide detection equipment will be in operation after drilling Out the Surf plug Down to Depth

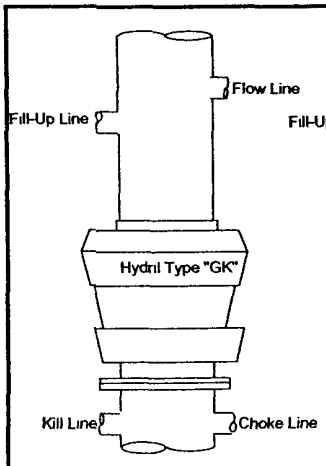
8. Testing, Logging, & Coring Program:
   There will been no Logging or coring

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. All personnel will be familiar with all aspects of safe operation of equipment being used to Reenter this well.

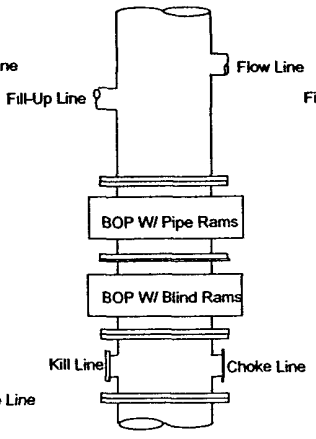
9. Anticipated Starting Date & Duration of Operation:
   The anticipated starting date is set for as soon as possible after examination and approval of all drilling requirements. Duration of this project will be approximately 15 days from start of Construction of drilling pad until finish of completion operations


300'
Steel Pit
Water Tk
Rev. Unit
W O R
O V I
R E G
K R
175'
Nadel and Gussman HEYCO,LLC
Can Ken 4 Federal #2
Sec 4, 18S, 31E
1980 FNL & 1980 FEL
Eddy Co. N.M.

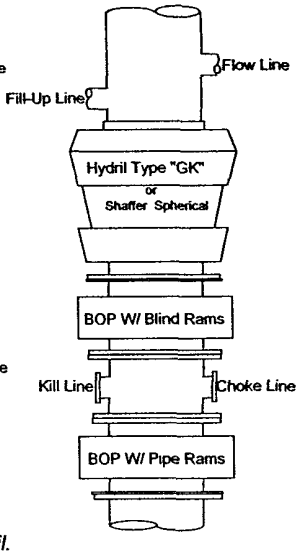
Nadel and Gussman Heyco, LLC
MINIMUM BLOWOUT PREVENTER REQUIREMENTS



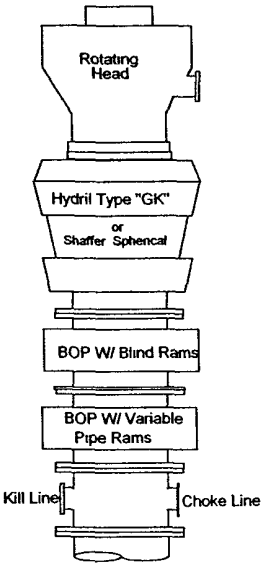
CASE I



CASE II



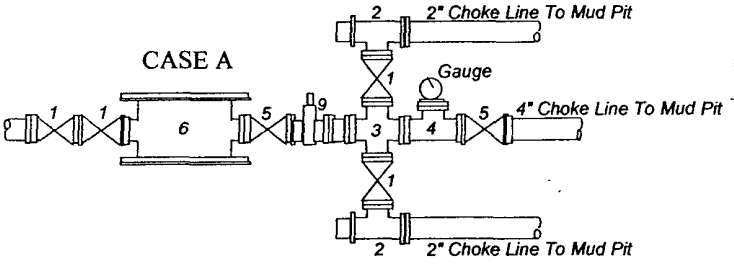
CASE III



CASE IV

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.

CASE A



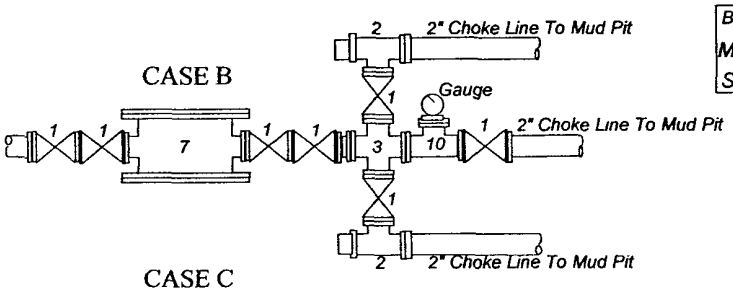
BOP SIZE	BOP CASE	WORKING PRESSURE	CHOKE CASE
13-5/8"	II	2000 psi	C

See COA

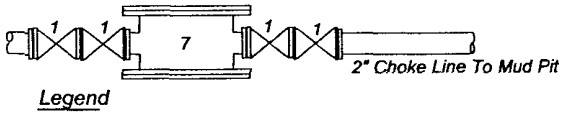
*Rotating head required

Bradenhead :
Mfr: _____
Size: _____ *Type:* _____

CASE B



CASE C



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 & equiped 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

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

Re: Can Ken 4 Federal #2
SHL: 1980' FNL & 1980' FEL
Unit Letter G, Sec. 4-T18S-R31E
Eddy, NM
Rule 118 H2S Exposure

Dear Mr. Ingram

Nadel and Gussman Heyco 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.(575) 626-1936

Sincerely,

Keith Cannon
Drilling Superintendent
6/12/08

CONTACTING AUTHORITIES

Nadel and Gussman HEYCO personnel must liason with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as; type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. This response plan must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

LOCATION	ENTITY	PHONE NUMBER:
Artesia	Sheriff's Office	(575) 746-9888
Artesia	State Police	(575) 748-9718
Carlsbad	Bureau of land Management	(575) 887-6544
	Ambulance	911
Loco Hills	Fire Department	(575) 677-2349
Artesia	Fire Department	(575) 746-2701
Carlsbad	Local Emergency Planning Committee	(575) 887-3798
Roswell	Nadel and Gussman HEYCO, LLC	Off. (575) 623-6601
Midland Tx	Terry West, Drilling Engineer.	Cell (432) 682-1472
Artesia	Keith Cannon, Drlg Superintendent	Cell (575) 626-1936
Artesia	Clay Stevens, Safety Man	Cell (575) 626-1965
OTHER CONTACTS		
Artesia	Schlumberger Technology	(575) 748-1392
Artesia	South Environmental	(575) 420-1942
Hobbs	Horizon Mud	(575) 393-8641
Lovington	Assurance Fire Safety	(575) 396-7004
Odessa, TX	Wild Well Control, Inc.	(432) 550-6202
Odessa, TX	Cudd Pressure Control, Inc.	(432) 563-3356
Lubbock, TX	Flight for Life	(806) 743-9911
Albuquerque, NM	Med Flight Air Ambulance	(505) 842-4433

WELL CONTROL

The following procedures will be implemented when a loss of primary control is indicated.

Indicators of loss of primary control are flow from th well; an increase in pit volume; or when the drilling fluid used to fill the hole in trips is less than the calculated pipe displacement volume. The emergency signal for well control procedures will be a single long blast of the rig air horn.

Kick While Drilling – Procedures and Responsibilities

Driller:

1. Stop the rotary and hoist the kelly above the rotary table.
2. Stop the mud pump(s).
3. Check for flow.
4. If flowing, sound the alarm immediately.
5. Ensure that all crew members fulfill their responsibilities to secure the well.
6. Record drill pipe and casing shut-in pressures and pit volume increase and begin kill sheet.

Hydrogen Sulfide Drilling Operations Plan

1. Company and Contract personnel admitted on location should be trained by a qualified H_2S safety instructor to the following:
   A. Characteristics of H_2S.
   B. Physical Effects and Hazards.
   C. Proper Use of Safety Equipment and Life Support Systems.
   D. Principle and Operation of H_2S Detectors, Warning System and Briefing.
   E. Evacuation Procedure, Routes and First Aid.
   F. Proper Use of 30 minute Pressure Demand Air Pack.

2. H_2S Detection and Alarm Systems
   A. H_2S 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 Should be High Enough to be Visible.
   B. Windsock at Briefing Area Should be High Enough to be Visible.
   C. There Should be a Windsock at Entrance to Location.

4. Condition Flags and Signs
   A. Warning Sign on Access Road to Location.
   B. Flags to be Displayed on Sign at Entrance to Location.
      1. Green Flag, Normal Safe Condition.
      2. Yellow Flag, Indicates Potential Pressure and Danger.
      3. Red Flag, Danger H_2S Present in Dangerous Concentration Only Emergency Personnel Admitted to Location.

5. Well Control Equipment
   A. See Attached Diagram.

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 Radio or Cell Phone will be Used to Communicate off Location in Case of Available at Most Drilling Foreman's Trailer or Living Quarters.

7. Drillstem Testing
   A. Exhausts will be Watered.
   B. Flare Line will be Equipped with an Electric Igniter or a propane pilot light in case gas reaches the surface.
   C. If Location is near any Dwelling a Closed DST will be Performed.

8. Drilling Contractor Supervisor will be Required to be Familiar with the Effects H_2S has on tubular goods and other mechanical equipment.

9. If H_2S Encountered, Mud system will be Altered if Necessary to Maintain Control of Formation. A Mud Gas Separator will be Brought into Service Along with H_2S Scavengers if Necessary.

1. **Existing Roads:**
   Exhibit A is a portion of a New Mexico map showing the location of the proposed location. The location is approximately 10 miles South East of Loco Hills, NM. Leave Loco Hills on US 82 & travel East 5 miles & turn South on Co Rd.222 Go 3.2 mile & turn left on Caliche road. Go 1.3 miles Turn left. Go 0.3 turn left. Go 0.6 mile to location.

2. **Planned Access Roads:**
   No new road will be built to access this location

3. **Location of Existing Wells:**
   See EXHIBIT B From the surveying company / vicinity map

4. **Location of Tank Batteries, Electric Lines, Etc:**
   In the event a producing well is drilled, a tank battery will be built on the location.

5. **Location and Type of Water Supply:**
   Water will be obtained from commercial sources.

6. **Source of Construction Material:**
   There will be no new Construction, will be using Existing well pad

7. **Methods of Handling Waste Disposal:**
   Waste will be handled in an approved manner. The wellsite will be cleaned of all waste within 30 days of final completion of the well.

8. **Ancillary Facilities:**
   N/A

9. **Wellsite Layout:**
   a. EXHIBIT D shows the relative location and dimensions of the well pad, reserve pits, and major rig components.

   b. The land is relatively flat with sandy soil

   c. The pad and pit area have been staked.

10. **Plan for Restoration of the Surface:**
    a. After drilling and completion operations are completed, all equipment and other materials not needed for further operations will be removed. Pits will be back filled and the location cleaned of all trash to leave the wellsite as pleasant in appearance as possible.

    b. If the proposed operation is nonproductive, all restoration and/or vegetation requirements of the BLM will be complied with, and will be accomplished as quickly as possible. All pits will be filled and leveled within 90 days after abandonment.

11. **Other Information:**

a. The mineral and surface owner is the Federal Government, Land and Grazing leasing Bill Williams had been contacted.

b. The topography consists of sandy soil with native grasses. No wildlife was observed, but the usual inhabitants of this region are Jackrabbits, Reptiles, Coyotes, etc.

c. There are no ponds, lakes, or rivers in this area.

d. An Archaeological Survey has been made and a copy has been sent to the Carlsbad BLM office. There is no evidence of any significant archaeological, historical, or cultural sites in the area. Further, there are no occupied dwellings or windmills in the area.

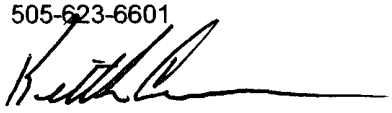
e. Should any incidental oil be recovered during testing of this well, this oil will be considered waste oil and not sellable due to contamination by drilling and/or completion fluids.

Keith Cannon, Drilling Superintendent
Nadel and Gussman Heyco, LLC
P.O. Box 1936
Roswell, NM
505-623-6601

May 5, 2008

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

Keith Cannon, Drilling Superintendent
Nadel and Gussman Heyco, LLC
P.O. Box 1936
Roswell, NM
505-623-6601



June 26, 2008

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.:

Lease Name: Can Ken 4 Federal #2
Legal description of land: Sec 4, T18S, R31E, Eddy County, New Mexico

Formation(s) (if applicable): Middle Morrow

Bond Coverage: Statewide Bond

BLM Bond File No.: NMb00520

Authorized Signature: 

Title: Drilling Superintendent

Date: 6/26/08

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	NADEL & GUSSMAN HEYCO LLC
LEASE NO.:	NM28095
WELL NAME & NO.:	Can Ken 4 Federal #2
SURFACE HOLE FOOTAGE:	1980' FNL & 1980' FEL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 4, T. 18 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

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.

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

Pad is already built.

C. RESERVE PITS

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.

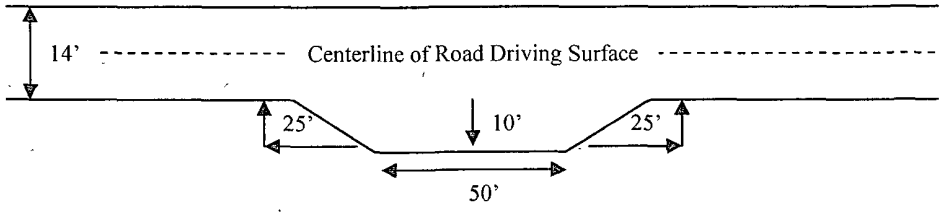
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

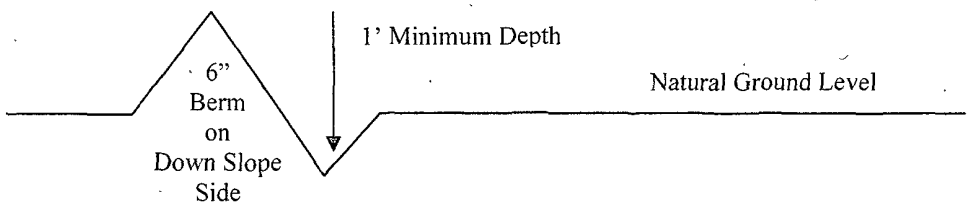
Standard Turnout – Plan View



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping 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:

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

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.

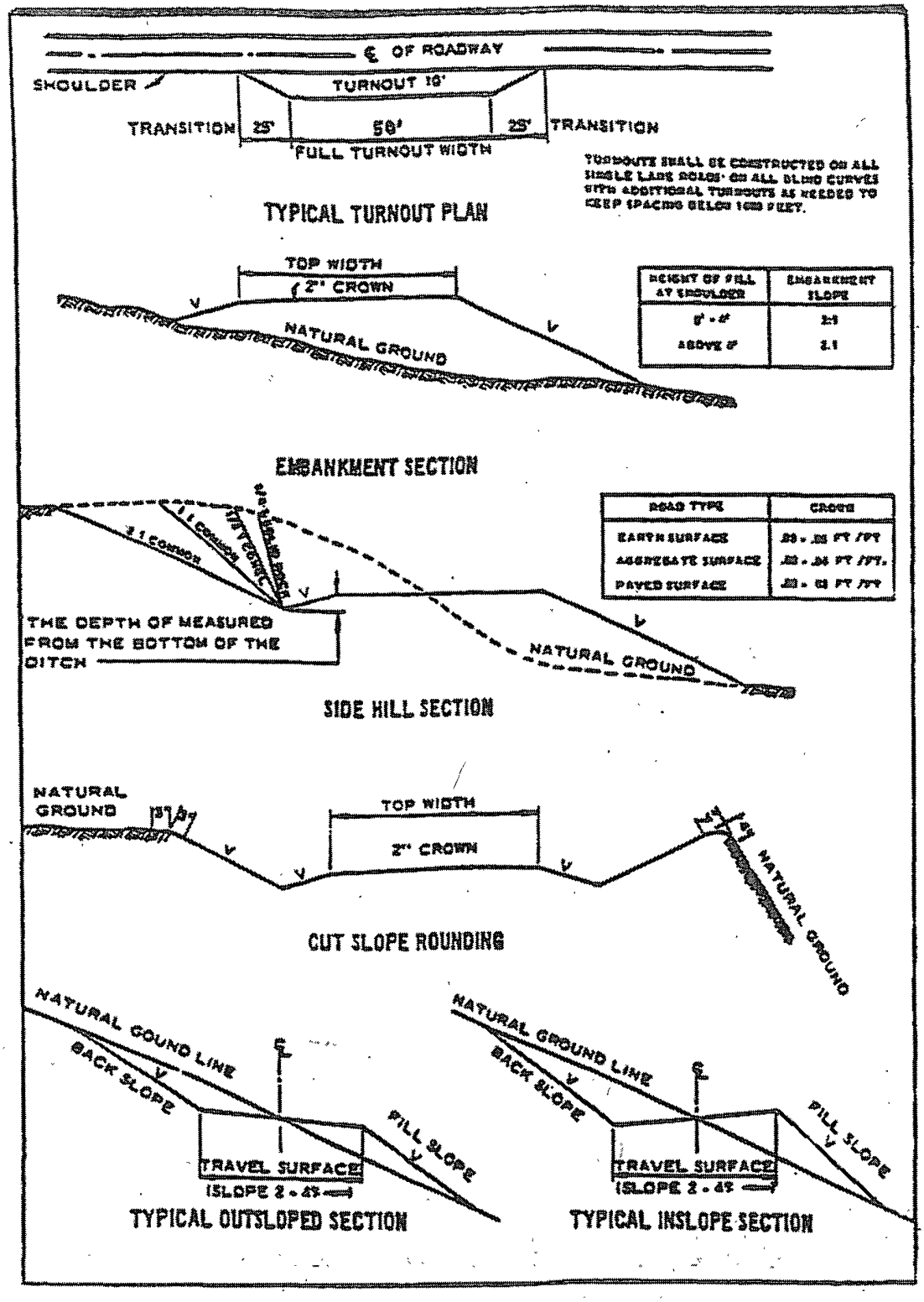
Fence Requirement

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 – RE-ENTRY

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 – re-entry
b. BOPE tests

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

1. **Hydrogen Sulfide monitoring system will be on location. Hydrogen Sulfide has been reported in the Queen formation which is behind cemented casing. 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.

B. CASING – RE-ENTRY

NB! When the well was plugged, the plug at the top of the Bone Spring formation was not set. Based on offset wells, the top of the Bone Spring formation is approximately 5600'. A 160 foot plug is to be set at 5650-5490'. This will require drilling out the plugs/CIBPs at 4170' and 4600' in addition to the work already planned.

A CIT is to be performed on the 5-1/2" casing per Onshore Oil and Gas Order 2.III.B.1.h prior to drilling the plug at 3700'. Contact BLM 575-361-2822 for witness.

Prior to setting the plug at the top of the Bone Spring formation, a pressure test is to be done of the casing and perforations below the Delaware perforations to verify that the perforations squeezed at 7979-7981' are holding. If this test is okay, the Bone Spring plug can be set at 5650-5490'. If test fails, a plug will be required at the lower perforations. Other zones above this will also require plugs to be reset. BLM to witness pressure test and plugs that will be required to be reset to block existing perforations.

1. **The 13-3/8" surface casing is set at 360' with cement circulated to the surface.**

2. **The 8-5/8" intermediate casing is set at 2099' and cement circulated to the surface.**

3. **The 5-1/2" production casing is set at 8550' with TOC at 210' with CBL.**

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. **Per Onshore Order 2.III.A.2.a.ii, a choke manifold is required.**

3. 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.

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

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

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.

The 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.

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:

Species	lb/acre
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

(Insert Seed Mixture Here)

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.