

PLEASE EXPEDITE STATE MINERAL LEASE EXPIRES APRIL 01 2012

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

Split Estate
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

RECEIVED

MAR 20 2012

NMOCD ARTESIA

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator
CAZA OPERATING, LLC.

3a. Address 200 NORTH LORRAINE
SUITE 1550 MIDLAND, TEXAS 79701

3b. Phone No. (include area code)
423-682-7424

4. Location of Well (Report location clearly and in accordance with any State requirements *)
At surface 252' FNL & 1900' FEL SECTION 27 T23S-R27E
At proposed prod. zone 330' FSL & 1900' FEL SECTION 27 T23S-R27E

14. Distance in miles and direction from nearest town or post office*
Approximately 8 miles South of Carlsbad, New Mexico

15. Distance from proposed*
location to nearest
property or lease line, ft. 252'
(Also to nearest drig. unit line, if any)

16. No. of acres in lease
160

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft. NA

19. Proposed Depth
TVD-9200'
MD-13,000'

20. BLM/BIA Bond No. on file
NMB-000471

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3158' GL

22. Approximate date work will start*
WHEN APPROVED

23. Estimated duration
35 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 *Joe T. Janica*
Title Permit Eng.

Name (Printed/Typed)
Joe T. Janica

Date 02/21/12

Approved by (Signature) *Is/ Don Peterson*

Name (Printed/Typed)

Date MAR 14 2012

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)

Carlsbad Controlled Water Basin Instructions on page 2)

CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

OPERATOR CERTIFICATION

I hereby 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 which currently exist; that I have full knowledge of state and federal laws applicable to this operation; that the statements made in the 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 that 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 a false statement.

OPERATORS REPRESENTATIVES

BEFORE CONSTRUCTION

TIERRA EXPLORATION, INC.

P. O. BOX 2188

HOBBS, NEW MEXICO 88241

OFFICE PHONE 575-391-8503

JOE T. JANICA CELL PH. 575-390-1598

DURING AND AFTER CONSTRUCTION

CAZA OPERATING, LLC.

200 NORTH LORAIN

SUITE 1550

MIDLAND, TEXAS 79701

RICHARD WRIGHT

OFFICE PH. 432-682-7424

CELL PH 432-556-7595

NAME Joe T. Janica

TITLE Permit Eng.

DATE 02/21/12

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

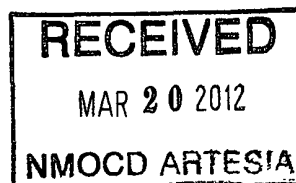
1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. NM-112915
2. Name of Operator CAZA OPERATING, LLC.		6. If Indian, Allottee or Tribe Name -----
3a. Address 200 NORTH LORRAINE SUITE 1550 MIDLAND, TX 79701	3b. Phone No. (include area code) 432-682-7424	7. If Unit or CA/Agreement, Name and/or No. -----
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 252' FNL & 1900' FEL SECTION 27 T23S-R27E 330' FSL & 1900' FEL SECTION 27 T23S-R27E		8. Well Name and No. COM. FOREHAND RANCH "27" STATE#1H
		9. API Well No.
		10. Field and Pool, or Exploratory Area WILDCAT BONE SPRING
		11. County or Parish, State EDDY CO. NEW MEXICO

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other CHANGE NAME
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

1. CAZA OPERATING, LLC requests the approval to change the name of this well from FOREHAND RANCH "27" STATE # 1H to FOREHAND RANCH "27" STATE COM. #1H



14. I hereby certify that the foregoing is true and correct Name (Printed/Typed) Joe T. Janica		Title Permit Eng
Signature <i>Joe T. Janica</i>		Date 03/06/12
THIS SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved by /s/ Don Peterson		Title Date MAR 14 2012
Conditions of approval, if any, are attached. Approval of this notice 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.		Office CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

RECEIVED

MAR 20 2012

NMOCD ARTESIA

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-38844	Pool Code 24660	Pool Name FOREHAND RANCH; B.S.
Property Code 39026	Property Name FOREHAND RANCH "27" STATE COM	Well Number 1H
GRID No. 249099	Operator Name CAZA OPERATING, LLC.	Elevation 3158'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	27	23 S	27 E		252	NORTH	1900	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	27	23 S	27 E		330	SOUTH	1900	EAST	EDDY
Dedicated Acres 160	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>SURFACE LOCATION Lat - N 32°16'57.04" Long - W 104°10'32.30" NMSPCE- N 466546.109 E 590070.832 (NAD-83)</p> <p>PRODUCING AREA →</p> <p>PROJECT AREA →</p> <p>PROPOSED BOTTOM HOLE LOCATION Lat - N 32°16'09.45" Long - W 104°10'30.73" NMSPCE- N 461737.505 E 590212.581 (NAD-83)</p>	<p>252</p> <p>1900'</p> <p>POE</p> <p>1900' FEL & 500' FNL</p> <p>4810.7</p> <p>330</p> <p>1900'</p> <p>NM-112915</p>	<p>OPERATOR CERTIFICATION</p> <p>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.</p> <p>Signature: <i>Joe T. Janica</i> Date: 02/21/12</p> <p>Printed Name: Joe T. Janica</p> <p>Email Address: joejanica@valornet.com</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>JANUARY 11, 2011</p> <p>Date Surveyed</p> <p>Signature & Seal of Professional Surveyor: <i>[Signature]</i></p> <p>W.O. No. 25998</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS 25998</p>
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EXHIBIT "A"

CAZA OPERATING, LLC.
 FOREHAND RANCH "27" STATE #1H
 UNIT "B" SECTION 27
 T23S-R27E EDDY CO. NM

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

1. LOCATION: 252' FNL & 1900' FEL SECTION 27 T23S-R27E EDDY CO. NM
2. ELEVATION ABOVE SEA LEVEL: 3158' GL
3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits;
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for the removal of solids from the hole.
5. PROPOSED DRILLING DEPTH: MD-13,000' TVD-9200'
6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	425'				
Castile	1450'	Brushy Canyon	4400'	3rd B.Spring	8600'
Lamar Lime	2150'	Bone Spring	5600'	Wolfcamp Sh	9000'
Bell Canyon	2200'	1st Bone Spring	6600'	TVD	9200'
Cherry Canyon	3200'	2nd Bone Spring	7100'		
7. POSSIBLE MINERAL BEARING FORMATIONS:

Brushy Canyon	Oil/Gas/Water	Wolfcamp	Poss Oil/Gas/Water
Bone Spring Sands	Oil/Gas/Water	Possible Fresh Water	150'±

8. CASING PROGRAM:

HOLE SIZE	INTERVAL	CASING OD	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40'	20"	NA	NA	NA	Conductor	New
17½"	0-450'	13 3/8"	48#	8-R	ST&C	H-40	New
12½"	0-2150'	9 5/8"	36#	8-R	LT&C	J-55	New
8½"	0-9200'						
7 7/8"	0-13,000'	5½"	17#	8-R	LT&C	L-80	New

CASING SAFETY FACTORS: Collapse 1.125 Burst 1.00 Body Yield 1.5
 Joint Strength 8-Round 1.8
 Buttress 1.6

9. CASING CEMENTING & SETTING DEPTHS:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Radi-mix.
13 3/8"	Surface	Drill 17 1/2" hole to 450'. Run and set 450' of 13 3/8" 48# H-40 ST&C casing. Cement with 163 Sx. of 35/65 Class "C" POZ cement + 5% Salt, Yield 1.89, tail in with 150 Sx. of Class "C" cement + 2% CaCl, Yield 1.32, 50% Excess, circulate cement to surface.
9 5/8"	Intermediate	Drill 12 1/2" hole to 2150'. Run and set 2150' of 9 5/8" 36# J-55 LT&C casing. Cement with 350 Sx. of 35/65 Class "C" POZ cement + 5% Salt, + 6% Gel, Yield 2.09, tail in with 200 Sx. of Class "C" cement + 2% CaCl, Yield 1.32 Excess 50% circulate cement to surface, <i>500</i> * After running open hole logs Set a 300 Sx cement plug from 9200'± back to KO point (8050'±) Class "H" cement + additives. <i>Used yield of 0.99</i>
5 1/2"	Production	<i>LT&C</i> Drill 8 1/2" hole to end of curve @ 8874±' MD, change to 7 7/8" bit and drill to 13,000±'. Run and set 13,000' of 5 1/2" 17# L-80 ST&C casing. Cement in two stages with DV-tool at 5500±'. cement 1st stage with 885 Sx. of 50/50 POZ Class "H" cement + additives, Yield 1.3, tail in with 619 Sx. of Class "H" cement + additives, Yield 1.18. Cement 2nd stage with 598 Sx. of 50/50 POZ Class "H" cement + 5# Gilsonite/Sx, + 0.125# Cello flakes/Sx. + 0.25% Econolite, Yield 1.3, tail in with 100 Sx. of Class "C" cement Yield 1.3 35% excess top of cement 1950'

see COA Pilot hole

see COA

see COA

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" show a 1500 Series 5000 PSI working pressure B.O.P. consisting of an annular bag type preventor, middle blind rams, and bottom pipe rams. This B.O.P. will be nipped up on the 13 3/8" surface casing head and tested to API specifications. The B.O.P. will be operated at least once in each 24 hour period, and the blind rams will be operated when the drill pipe is out of the hole on trips. Full opening stabbing valve and upper kelly cock will be available on the rig floor at all time during drilling operations. Exhibit "E-1" shows a hydraulically operated closing unit and a 5000 PSI working pressure choke manifold with dual adjustable chokes. No abnormal pressures or temperatures are expected while drilling of this well. A 13 5/8" X 13 3/8" SOW will be used to install B.O.P.

APPLICATION TO DRILL

CAZA OPERATING, LLC.
 FOREHAND RANCH "27" STATE #1H
 UNIT "B" SECTION 27
 T23S-R27E EDDY CO. NM

11. PROPOSED MUD CIRCULATING SYSTRM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-450'	8.6-8.9	29-34	NC	Fresh water spud mud use paper to control seepage
450-2150'	9.2-9.8	29-34	NC	Use cut brine to drill to top of Lamar Lime, Use Paper to control seepage and high viscosity sweeps to clean hole.
2150-9200'	8.5-9.2	29-34	NC	Fresh water to cut brine if necessary use high viscosity sweeps to clean hole. In order to run open hole logs.
K. O. Point 8024±'-13,000'	8.5-9.2	29-36	12 cc or less	Same as above but to maintain hole stability and water loss control use Dynazan and starch.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, cut cores and casing, the viscosity, water loss and other properties may have to be altered to meet these requirements.

THIS WELL WILL BE DRILLED USING A CLOSED MUD SYSTEM.

APPLICATION TO DRILL

CAZA OPERATING, LLC.
FOREHAND RANCH "27" STATE #1H
UNIT "B" SECTION 27
T23S-R27E EDDY CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

See COF

- A. Open hole logs: Run Dual Laterolog, SNP, DENSITY, GAMMA RAY, CALIPER FROM 9200' back to 9 5/8" casing shoe. Run Gamma Ray, Neutron from 9 5/8" casing shoe back to surface.
- B. Install mud logger on hole after setting 9 5/8" casing and keep on hole to TD.
- C. No cores or DST's are planned at this time.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures 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. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 5500 PSI, and Estimated BHT 185°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

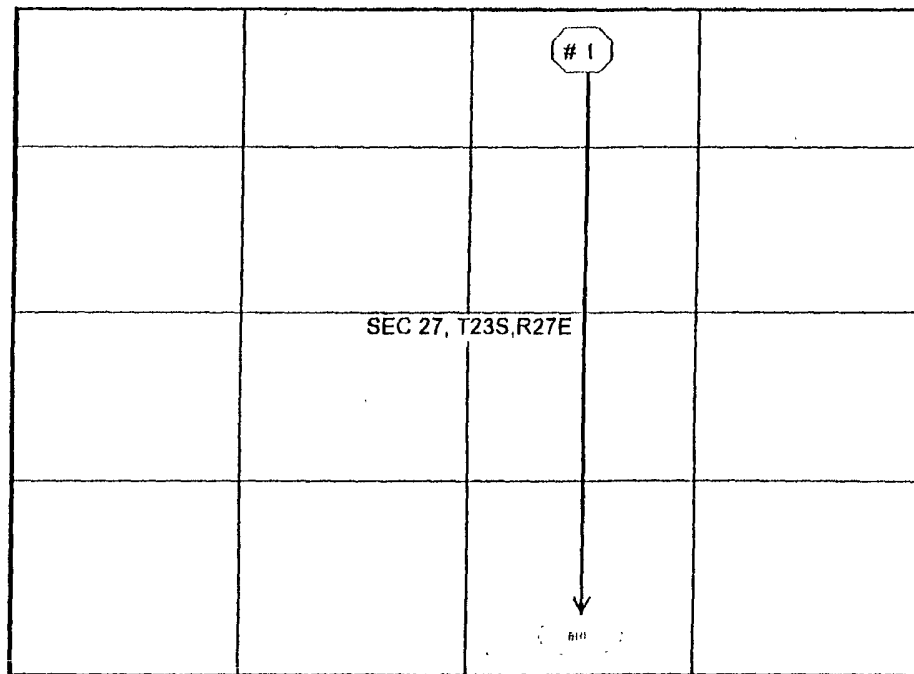
Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 35 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The BONE SPRING formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as AN OIL WELL.

Forehand Ranch 27 State # 1H 3rd Bones Springs Horizontal

Sec 27, T-23-S, R-27-E, Eddie County, New Mexico



Well Name	Surface Location	Depth and Strata	Current Prod Zone	Bottom Hole Location	
Round Tank 27 State # 1	330 FNL & 1980 FEL	TD = 9200 3rd Bone Springs Hrzs	Vertical in Wlfcmp	330 FSL & 1980 FEL	± 8600 FVI

LONG'S METHOD OF SURVEY COMPUTATION

OBLIQUE CIRCULAR ARC INTERPOLATION

6000	MD OF INTERPOLATION DEPTH, (feet)
#N/A	TVD COORDINATE OF THE DEPTH (feet)
#N/A	N/S COORDINATE OF DEPTH (feet)
#N/A	EW COORDINATE OF DEPTH (feet)

3 D DISTANCE BETWEEN STATION A AND STATION B

DISTANCE TABLE

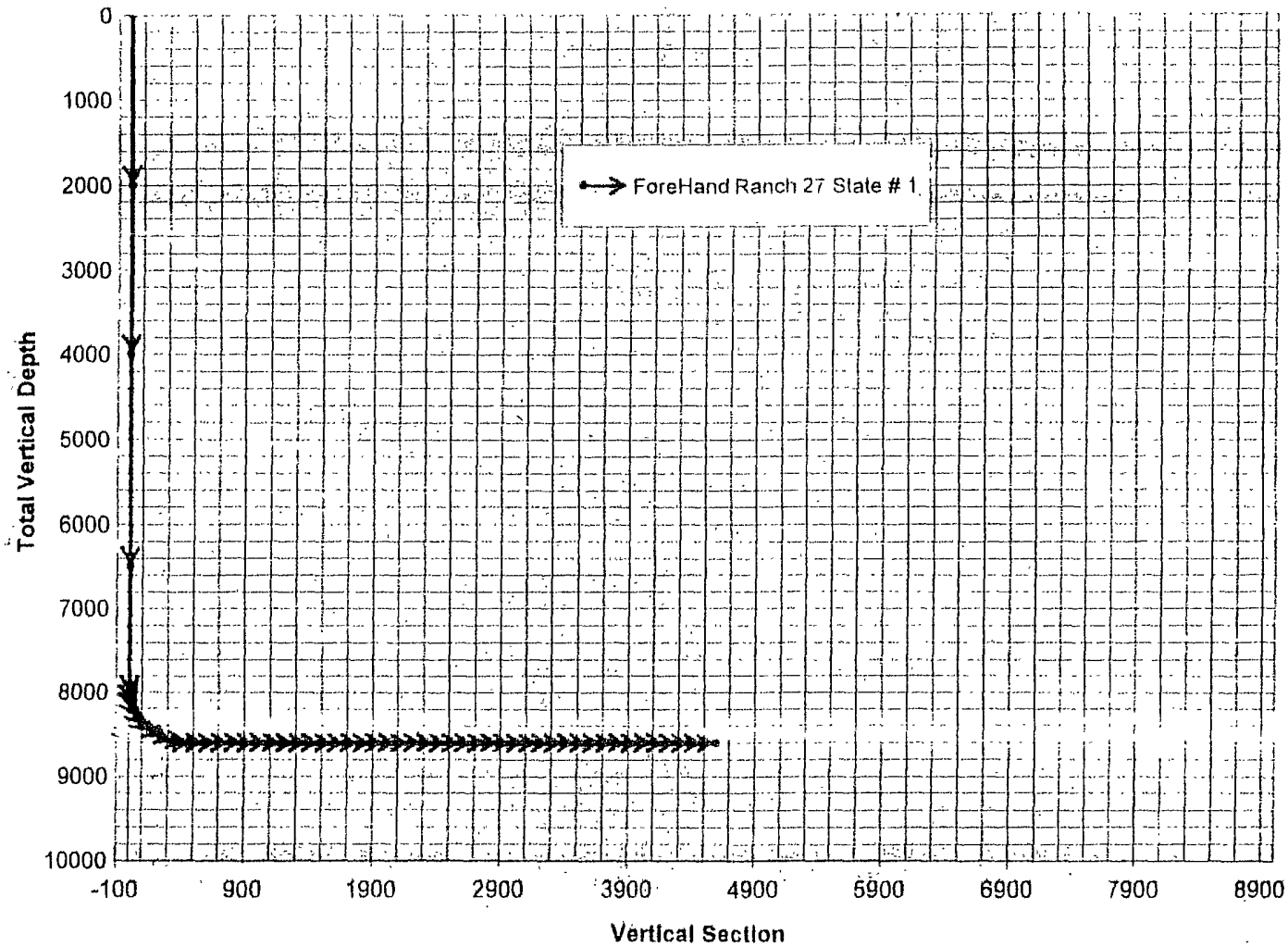
STATION A	STATION B
400.00	600.00
300.00	400.00
100.00	300.00
300.00	ft

Calculator =

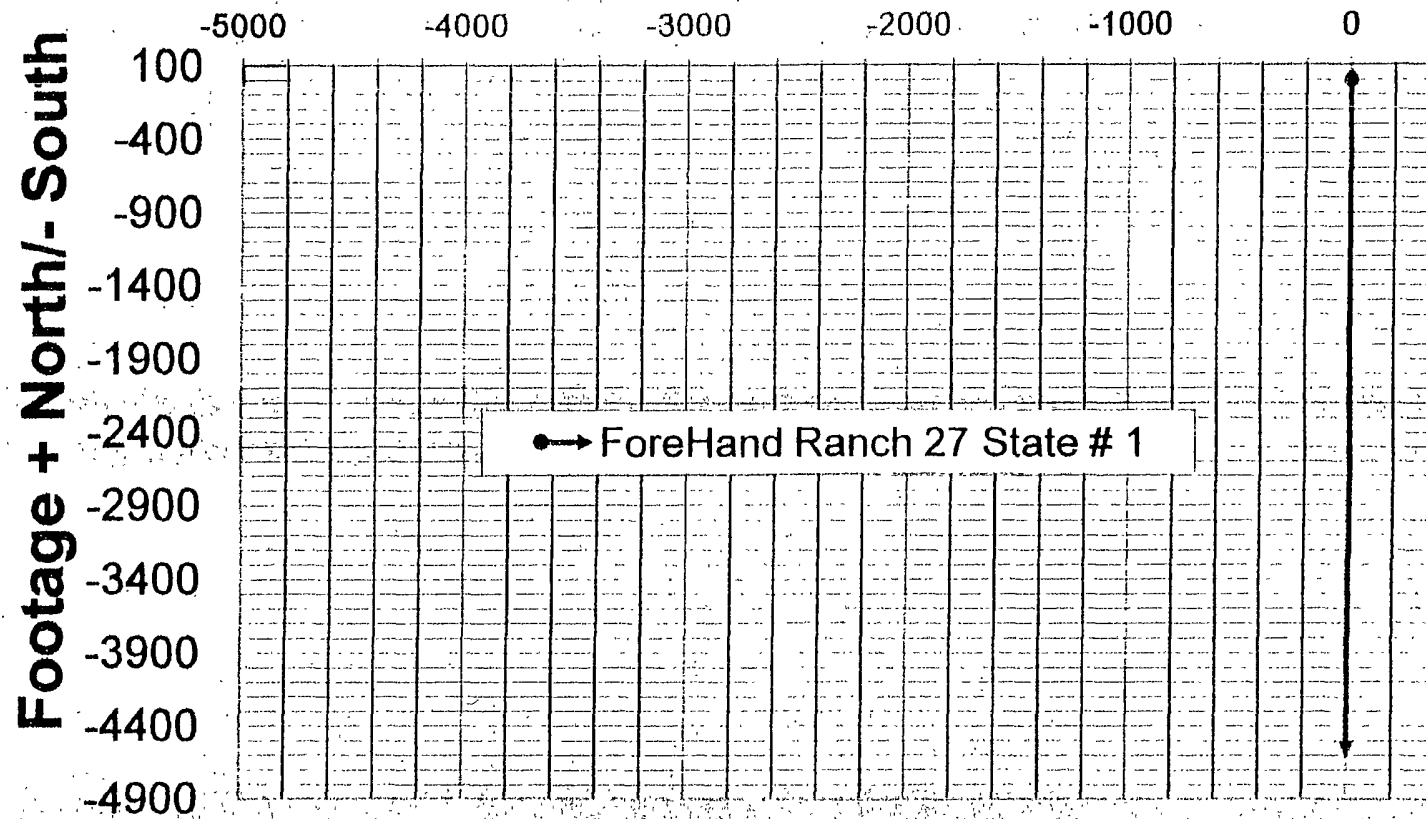
TABLE OF SURVEY STATIONS

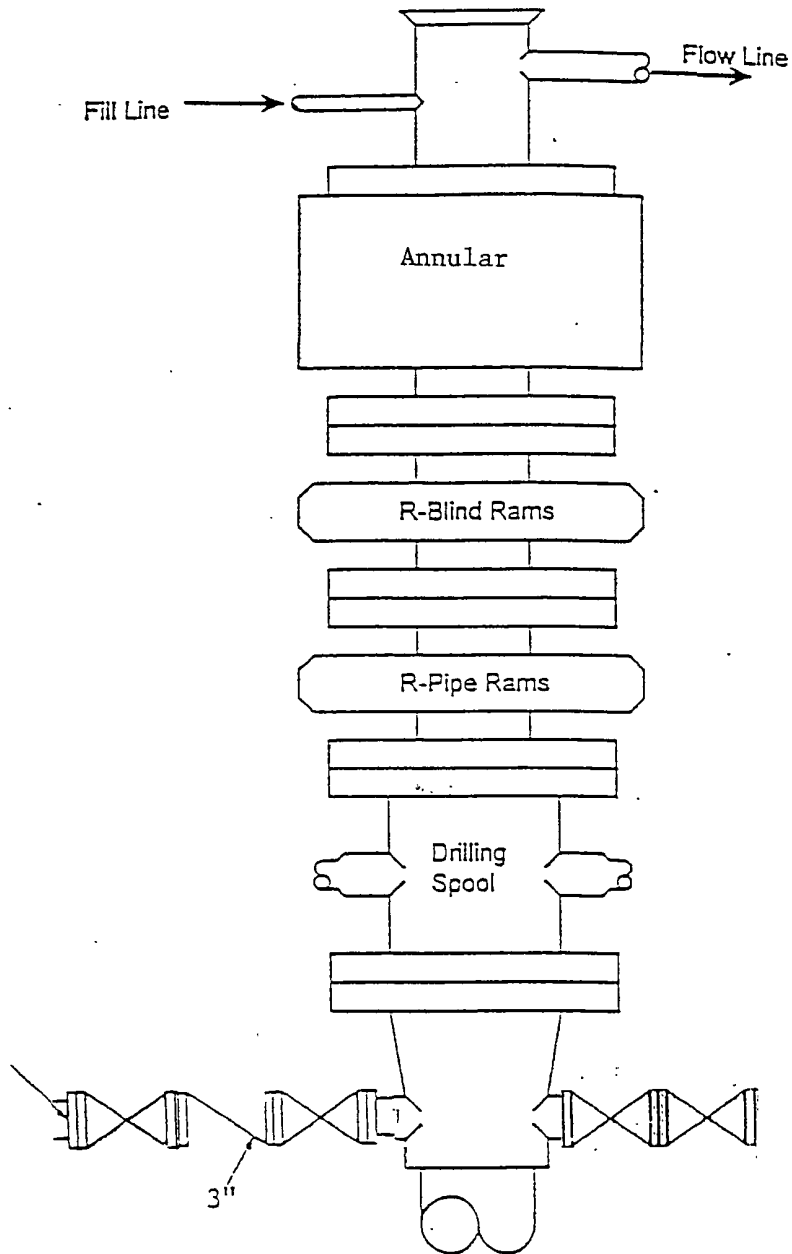
STA #	AMD ft	INCL deg	AZIM deg	MD ft	TVD ft	N-S ft	E-W ft	DLS deg/100FT
1	THE POINT =>	0	0	8024.00	8024.00	0.00	0.00	
2	100	8	180	8124.00	8123.68	-6.97	0.00	8.00
3	100	12	180	8224.00	8222.14	-24.33	0.00	4.00
4	100	24	180	8324.00	8317.07	-55.18	0.00	12.00
5	100	36	180	8424.00	8403.51	-105.09	0.00	12.00
6	100	48	180	8524.00	8477.69	-171.88	0.00	12.00
7	100	60	180	8624.00	8536.36	-252.63	0.00	12.00
8	100	72	180	8724.00	8576.96	-343.82	0.00	12.00
9	100	84	180	8824.00	8597.71	-441.45	0.00	12.00
10	50	90	180	8874.00	8600.33	-491.36	0.00	12.00
11	100	90	180	8974.00	8600.33	-591.36	0.00	0.00
12	100	90	180	9074.00	8600.33	-691.36	0.00	0.00
13	100	90	180	9174.00	8600.33	-791.36	0.00	0.00
14	100	90	180	9274.00	8600.33	-891.36	0.00	0.00
15	100	90	180	9374.00	8600.33	-991.36	0.00	0.00
16	100	90	180	9474.00	8600.33	-1091.36	0.00	0.00
17	100	90	180	9574.00	8600.33	-1191.36	0.00	0.00
18	100	90	180	9674.00	8600.33	-1291.36	0.00	0.00
19	100	90	180	9774.00	8600.33	-1391.36	0.00	0.00
20	100	90	180	9874.00	8600.33	-1491.36	0.00	0.00
21	100	90	180	9974.00	8600.33	-1591.36	0.00	0.00
22	100	90	180	10074.00	8600.33	-1691.36	0.00	0.00
23	100	90	180	10174.00	8600.33	-1791.36	0.00	0.00
24	100	90	180	10274.00	8600.33	-1891.36	0.00	0.00
25	100	90	180	10374.00	8600.33	-1991.36	0.00	0.00
26	100	90	180	10474.00	8600.33	-2091.36	0.00	0.00
27	100	90	180	10574.00	8600.33	-2191.36	0.00	0.00
28	100	90	180	10674.00	8600.33	-2291.36	0.00	0.00
29	100	90	180	10774.00	8600.33	-2391.36	0.00	0.00
30	100	90	180	10874.00	8600.33	-2491.36	0.00	0.00
31	100	90	180	10974.00	8600.33	-2591.36	0.00	0.00
32	100	90	180	11074.00	8600.33	-2691.36	0.00	0.00
33	100	90	180	11174.00	8600.33	-2791.36	0.00	0.00
34	100	90	180	11274.00	8600.33	-2891.36	0.00	0.00
35	100	90	180	11374.00	8600.33	-2991.36	0.00	0.00
36	100	90	180	11474.00	8600.33	-3091.36	0.00	0.00
37	100	90	180	11574.00	8600.33	-3191.36	0.00	0.00
38	100	90	180	11674.00	8600.33	-3291.36	0.00	0.00
39	100	90	180	11774.00	8600.33	-3391.36	0.00	0.00
40	100	90	180	11874.00	8600.33	-3491.36	0.00	0.00
41	100	90	180	11974.00	8600.33	-3591.36	0.00	0.00
42	100	90	180	12074.00	8600.33	-3691.36	0.00	0.00
43	100	90	180	12174.00	8600.33	-3791.36	0.00	0.00
44	100	90	180	12274.00	8600.33	-3891.36	0.00	0.00
45	100	90	180	12374.00	8600.33	-3991.36	0.00	0.00
46	100	90	180	12474.00	8600.33	-4091.36	0.00	0.00
47	100	90	180	12574.00	8600.33	-4191.36	0.00	0.00
48	100	90	180	12674.00	8600.33	-4291.36	0.00	0.00
49	100	90	180	12774.00	8600.33	-4391.36	0.00	0.00
50	100	90	180	12874.00	8600.33	-4491.36	0.00	0.00
51	100	90	180	12974.00	8600.33	-4591.36	0.00	0.00
52	28	90	180	13002.00	8600.33	-4619.36	0.00	0.00

ForeHand Ranch 27 St # 1



Horizontal Plane Footage +East/-West





Type 1500 SERIES
5000 psi WP

EXHIBIT "E"
SKETCH OF BOP TO BE USED ON

CAZA OPERATING, LLC.
FOREHAND RANCH "27" STATE #1H
UNIT "B" SECTION 27
T23S-R27E EDDY CO. NM

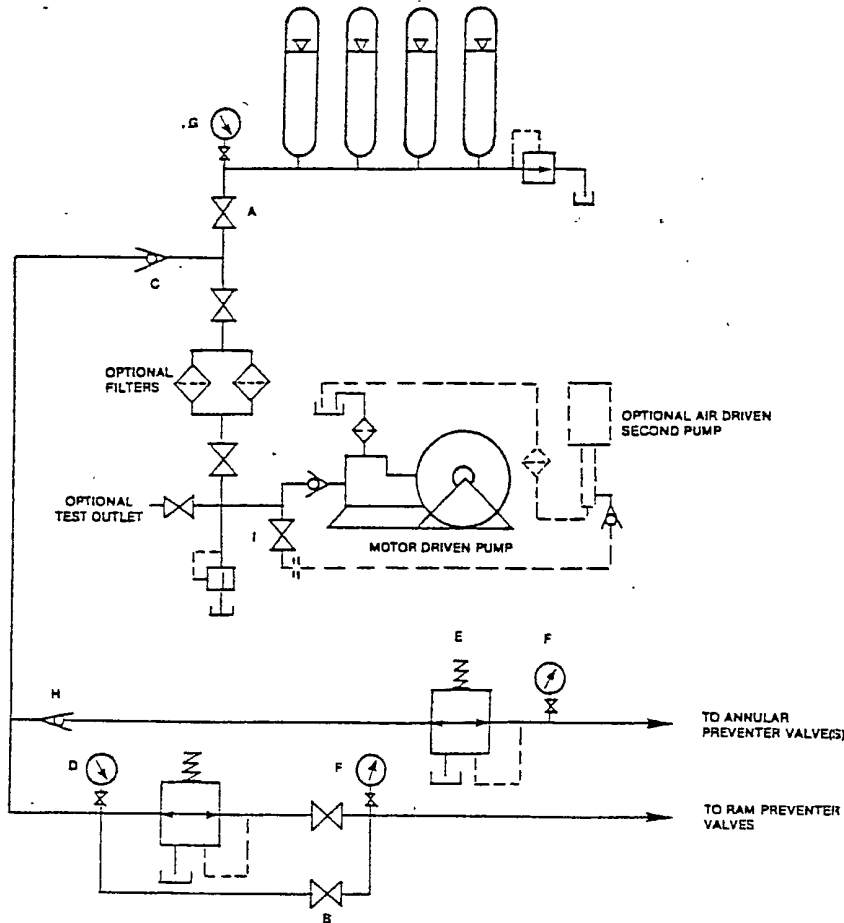


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

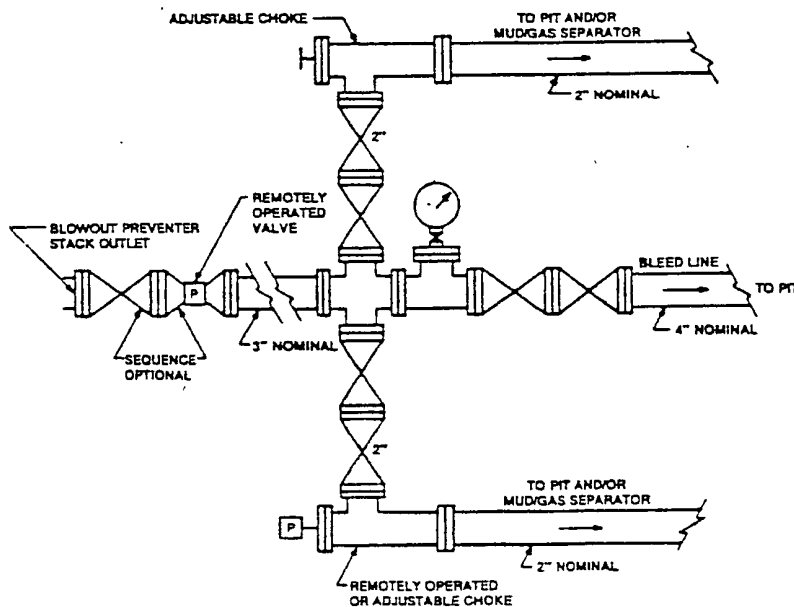
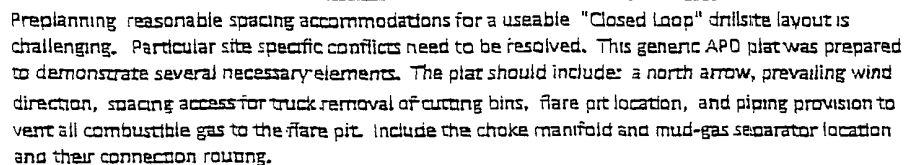


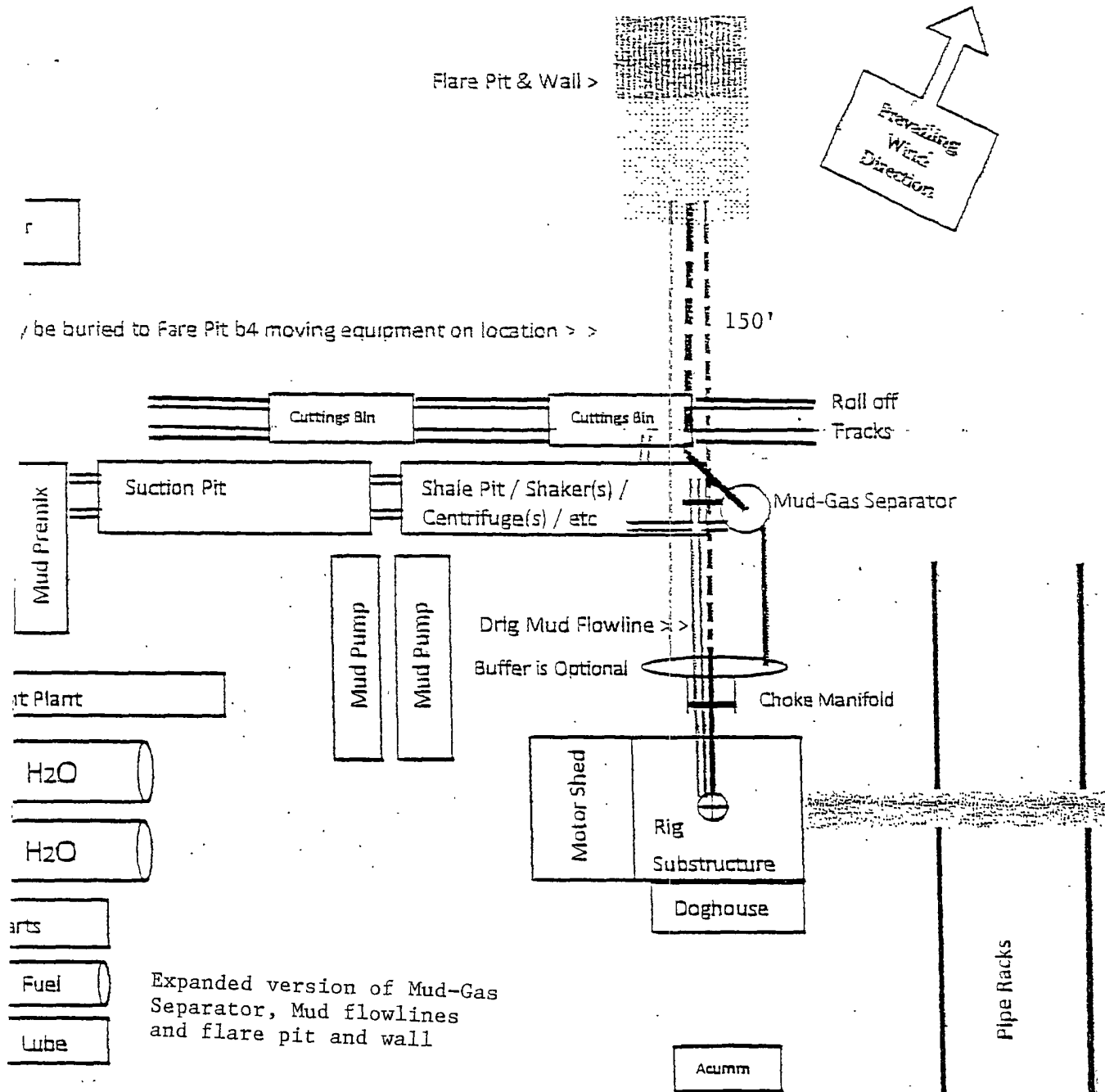
FIGURE K4-2. Typical choke manifold assembly for 5M rated working pressure service — surface installation.

EXHIBIT "E-1"
CHOKE MANIFOLD & CLOSING UNIT

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UNIT "B" SECTION 27
T23S-R27E EDDY CO. NM



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EXPANDED VIEW OF MUD GAS
SEPERATOR AND FLOWLINES

CAZA OPERATING, LLC.
FOREHAND RANCH "27" STATE #1H
UNIT "B" SECTION 27
T23S-R27E EDDY CO. NM

CAZA OPERATING, LLC.

Hydrogen Sulfide contingency plan For drilling/workover/facility

This well and it's anticipated facility are not expected to have Hydrogen Sulfide releases. However, there may be Hydrogen Sulfide production in the nearby area. There are no dwellings in the area but a contingency plan has been orchestrated. CAZA OPERATING, LLC. Will have a Company representative available to Rig personnel throughout the drilling or production operations. If Hydrogen Sulfide is detected or suspected, monitoring equipment will be available for monitoring and/or testing.

HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN
FOR DRILLING/COMPLETING/WORKOVER/FACILITY
WITH THE EXPECTATION OF H₂S IN EXCESS OF 100 PPM

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

	<u>OFFICE</u>	<u>MOBILE</u>	<u>HOME</u>
RICHARD WRIGHT	432-682-7424	432-556-7595	432-699-7108

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

State Police	575-392-5588
Lea County Sheriff	575-396-3611
Emergency Medical Service (Ambulance)	911 or 575-393-2677
State Emergency Response Center (SERC)	575-476-9620
Hobbs Police Department	575-397-9265
Hobbs Fire Department	575-393-2677
Lovington Police Department	575-396-3144
Lovington Fire Department	575-396-2359
Loco Hills Fire Department	575-677-2349
Maljamar Fire Department	575-676-4100
(NMOCD) New Mexico Oil Conservation Division, District I (Lea, Roosevelt, Chaves, Curry)	575-393-6161
District II (Eddy, Chaves)	575-748-1283
American Safety	575-746-1096
Indian Fire & Safety	575-746-4660 or 800-530-8693
Callaway Safety	575-746-2847
BJ Services	575-746-3569

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GENERAL H2S EMERGENCY ACTIONS:

In the event of an H2S emergency, the following plan will be initiated.

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

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

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

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

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way he will take necessary steps to contact the following:

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

OFFICE

MOBILE

HOME

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

State Police	575-392-5588
Lea County Sheriff	575-396-3611
Emergency Medical Service (Ambulance)	911 or 575-393-2677
State Emergency Response Center (SERC)	575-476-9620
Hobbs Police Department	575-397-9265
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(NMOCD) New Mexico Oil Conservation Division, District I (Lea, Roosevelt, Chaves, Curry)	575-393-6161
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American Safety	575-746-1096
Indian Fire & Safety	575-746-4660 or 800-530-8693
Callaway Safety	575-746-2847
BJ Services	575-746-3569

PROTECTION OF THE GENERAL PUBLIC/ROE:

In the event greater than 100 ppm H₂S is present, the ROE (Radius Of Exposure) calculations will be done to determine if the following is warranted:)

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road which the general public may travel)
- 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H₂S could be present in concentrations greater than 100 ppm in the gas mixture.

Calculation for the 100 ppm ROE:

$$X = [(1.589) (\text{concentration}) (Q)]^{(0.6258)}$$

Calculation for the 500 ppm ROE:

$$X = [(0.4546) (\text{concentration}) (Q)]^{(0.6258)}$$

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

$$\begin{aligned} 100 \text{ PPM} \quad X &= [(1.589)(150/1,000,000)(100,000)]^{0.6258} \\ X &= 7' \end{aligned}$$

$$\begin{aligned} 500 \text{ PPM} \quad X &= [(0.4546)(150/1,000,000)(100,000)]^{0.6258} \\ X &= 3' \end{aligned}$$

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

PUBLIC EVACUATION PLAN:

(When the supervisor has determined that the General Public will be involved, the following plan will be implemented)

- 1) Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- 2) A trained person in H₂S safety, shall monitor with detection equipment the H₂S concentration, wind and area of exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. **(All monitoring equipment shall be UL approved, for use in class I groups A,B,C, & D, Division I, hazardous locations. All monitors will have a minimum capability of measuring H₂S values.)**
- 3) Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- 4) The company supervising personnel shall stay in communications with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLABLE CONDITION:

The decision to ignite a well should be a last resort and one if not both of the following pertain.

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

INSTRUCTIONS FOR IGNITION:

- 1) Two people are required. They must be equipped with positive pressure; self contained breathing apparatus and a "D" –ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
- 2) One of the people will be a qualified safety person who will test the atmosphere for H₂S, Oxygen, & LFL. The other person will be the company supervisor; he is responsible for igniting the well.
- 3) Ignite up-wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun shall be used, with a $\pm 500'$ range to ignite the gas.
- 4) Prior to ignition, make a final check for combustible gases.
- 5) Following ignition, continue with the emergency actions & procedures as before.

REQUIRED EMERGENCY EQUIPMENT:

- 1) Breathing Apparatus:
 - Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
 - Work/Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
 - Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.
- 2) Signage & Flagging:
 - One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - A Colored Condition flag will be on display, reflecting the condition at the site at that time.
- 3) Briefing Area: Two, perpendicular areas will be designated by signs and readily accessible.

- 4) Wind Socks: Two windsocks will be placed in strategic locations, visible from all angles.
- 5) H2S Detectors and Alarm: The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The 3 sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
 - Rig Floor
 - Bell Nipple
 - End of Flow line or where well bore fluid are being discharged.
- 6) Auxiliary Rescue Equipment:
 - Stretcher
 - Two OSHA full body harness
 - 100' of 5/8" OSHA approved rope
 - 1 – 20# Class ABC fire extinguisher
 - Communication via cell phones on location and vehicles on location.

USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA):

SCBA should be worn when any of the following are performed:

- Working near the top or on top of a tank.
- Disconnecting any line where H2S can reasonably be expected.
- Sampling air in the area to determine if toxic concentrations of H2S exist.
- Working in areas where over 10 ppm on H2S has been detected.
- At any time there is a doubt as the level of H2S in the area.

All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.

Facial hair and standard eyeglasses are not allowed with SCBA.

Contact lenses are never allowed with SCBA.

Air quality shall continuously be checked during the entire operation.

After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.

All SCBA shall be inspected monthly.

RESCUE & FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H₂S) POISONING

Do not panic.

Remain calm & think.

Get on the breathing apparatus.

Remove the victim to the safe breathing area as quickly as possible. Upwind an uphill from source of cross wind to achieve upwind.

Notify emergency response personnel.

Provide artificial respiration and/or CPR, as necessary.

Remove all contaminated clothing to avoid further exposure.

A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

H2S TOXIC EFFECTS:

H2S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H2S is approximately 20% heavier than air (Sp.Gr=1.19 / Air=1) and colorless. It forms an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H2S) is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

Various Gases

Common Name	Chemical Abbrev.	Sp. Gr.	Threshold Limits	Hazardous Limits	Lethal Concentration
Hydrogen Sulfide	H2S	1.19	10 ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO2	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO2	1.52	5000 ppm	5%	10%
Methane	CH4	0.55	90,000	Combustible @ 5%	N/A

1. Threshold limit – Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.
2. Hazardous limit – Concentration that may cause death.
3. Lethal concentration – Concentration that will cause death with short-term exposure.
4. Threshold limit – 10 ppm – NIOSH guide to chemical hazards.
5. Short-term threshold limit.

PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

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

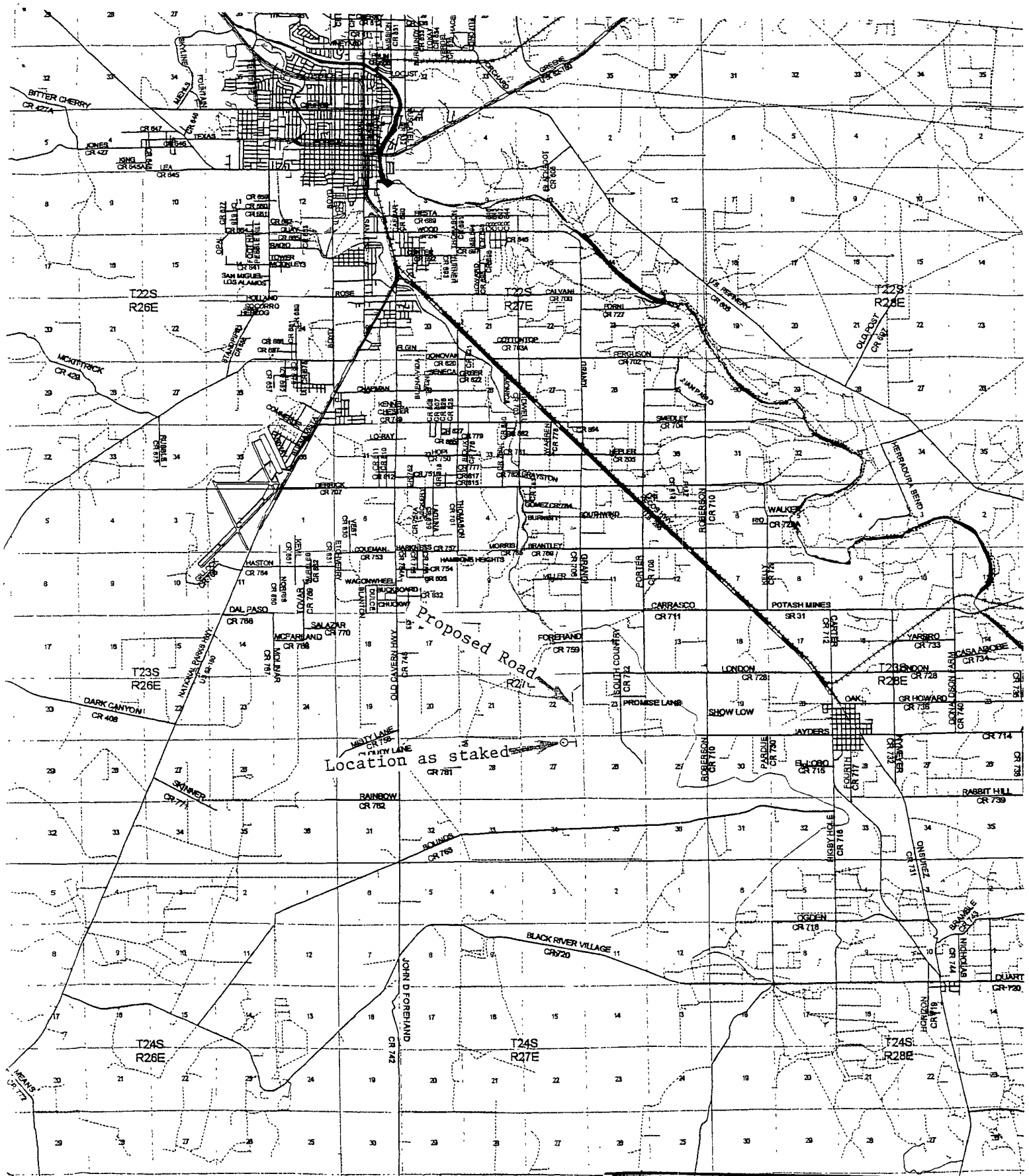
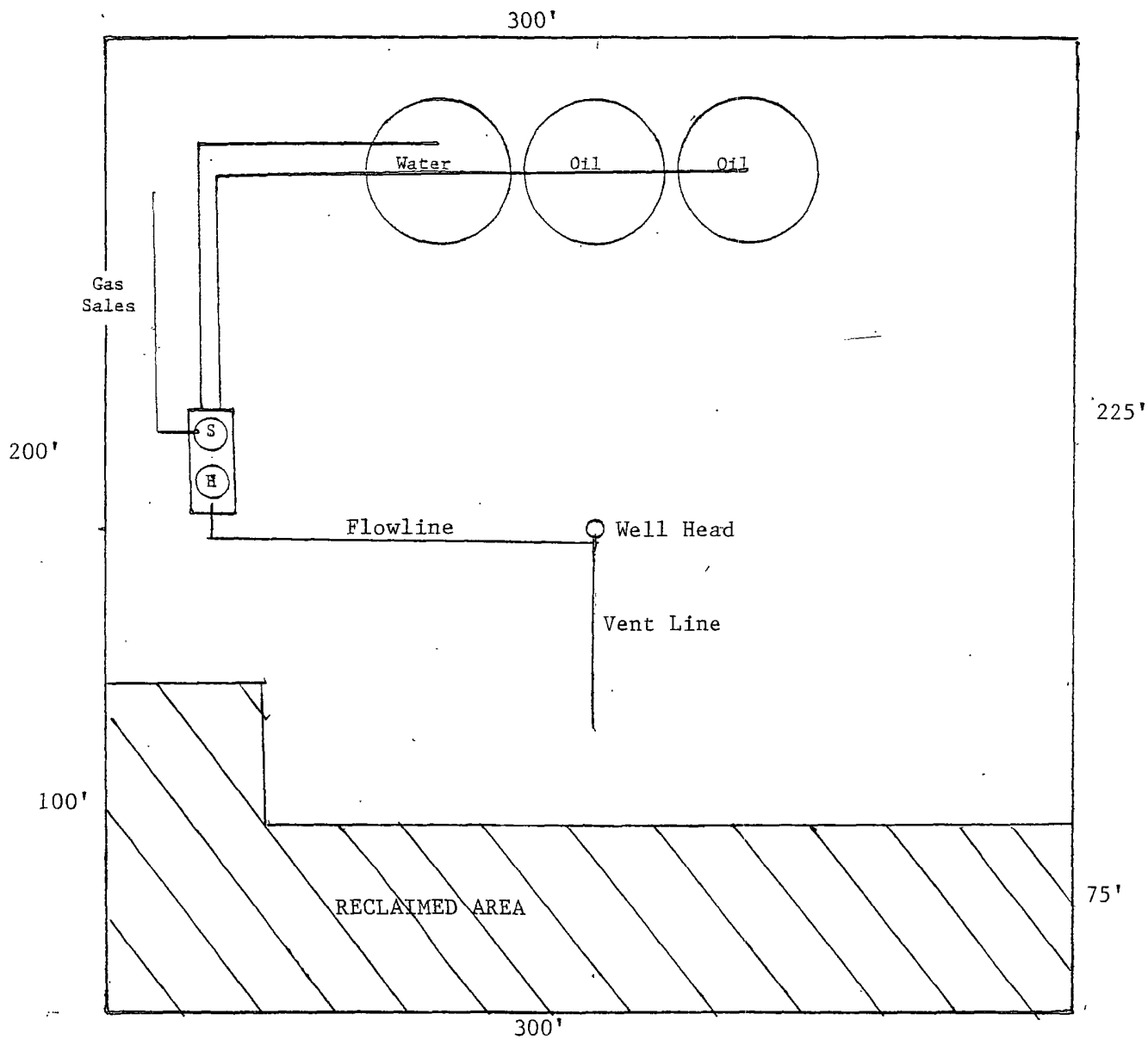
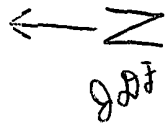


EXHIBIT "B"
LOCATION & ACCESS ROAD MAP

CAZA OPERATING, LLC.
FOREHAND RANCH "27" STATE #1H
UNIT "B" SECTION 27



CAZA OPERATING, LLC.
PROPOSED RECLAIMED AREA
& PRODUCTION FACILITY

FOREHAND RANCH "27" STATE #1H
UNIT "B" SECTION 27
T23S-R27E EDNY CO NM

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Caza Operating
LEASE NO.:	NM112915
WELL NAME & NO.:	1H Forehand Ranch 27 State
SURFACE HOLE FOOTAGE:	252' FNL & 1900' FEL
BOTTOM HOLE FOOTAGE:	330' FSL & 1900' FEL
LOCATION:	Section 27, T.23 S., R.27 E., NMPM
COUNTY:	Eddy County, New Mexico

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Berming/Production facilities**
 - Communitization Agreement
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - H2S requirements
 - Logging requirements
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☒ **Interim Reclamation**
- ☒ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

The north, west, and south sides of the well pad shall be bermed to prevent contaminants from leaving the well pad and entering the playa to the west.

Production facilities shall be placed on the east side of the well pad to allow reclamation on the west side of the well pad toward the playa.

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

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) 234-6235 at least 3 working days prior to commencing construction of the access road and/or well pad.

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

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 4 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) 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

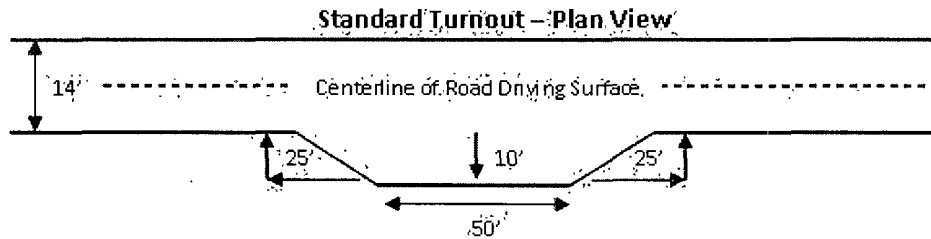
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

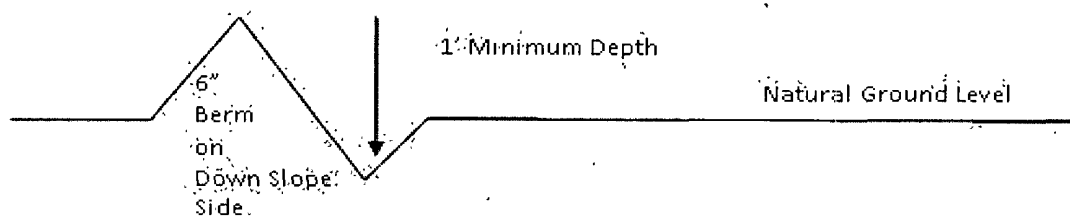


Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Culvert Installations

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

Cattleguards

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

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

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

Fence Requirement

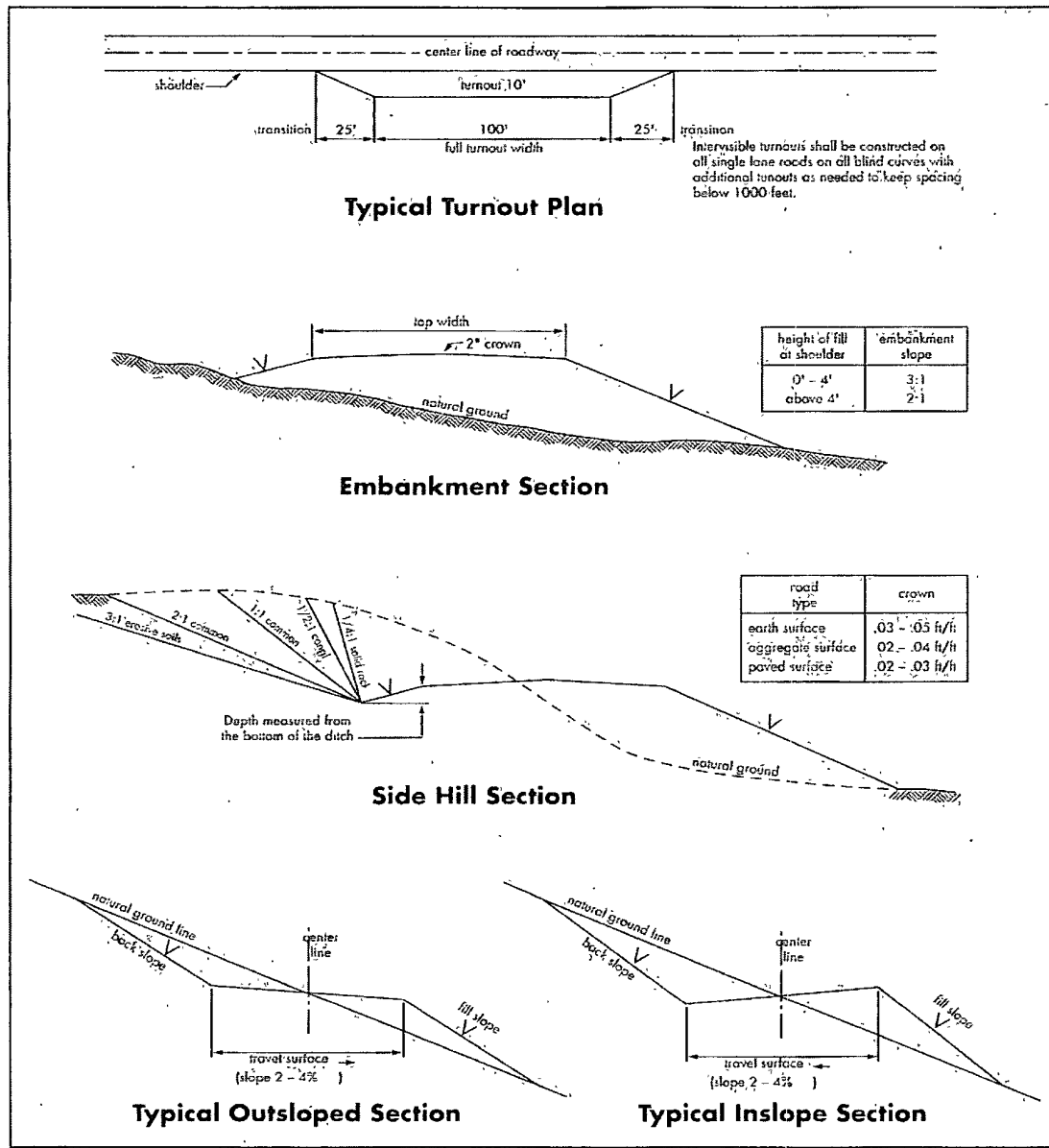
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

Public Access

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☒ **Eddy County**

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

1. A Hydrogen Sulfide (H₂S) Drilling Plan should be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

Medium cave/karst.

Possible lost circulation in the Delaware.

Possible high pressure may be encountered in the Wolfcamp formation.

1. The **13-3/8** inch surface casing shall be set at approximately **450** feet into a competent formation above the salt and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

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.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Pilot hole cement procedure – yield was not provided. BLM used a yield of 0.99 cubic feet / sack. The plug from 9200' to KOP will require a minimum of 500 sacks of Class H cement.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

Operator has proposed a DV tool in the 5-1/2" casing at a depth of +/-5500'. If DV tool cannot be set within +/-50' of 5500', operator shall submit a sundry with new depth.

3. The minimum required fill of cement behind the 5-1/2 inch 17# L-80 LT&C production casing is:

a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.
Additional cement will be required as excess cement calculates to a negative 17%.

b. Second stage above DV tool:

- ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Additional cement will be required as excess cement calculates to 10%.**

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 **5000 (5M) psi. 5M/10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**
 - c. The results of the test shall be reported to the appropriate BLM office.
 - d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

- f. **For pilot hole:** BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD – Pilot Hole

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

Proposed mud weight may not be adequate for drilling through Wolfcamp.

E. DRILL STEM TEST

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

F. WASTE MATERIAL AND FLUIDS

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

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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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. PIPELINES (not applied for in APD)

C. ELECTRIC LINES (not applied for in APD)

IX. INTERIM RECLAMATION

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

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

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

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Seed Mixture 1, for Loamy 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 regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/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 lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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