AT S-09-186

OCD-ARTESIA MAY 12 2009

41 LM

262

Form 3160-3
(April 2004)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. **NMLC 059365**

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. **Big Eddy Unit #199**

2 Name of Operator **BOPCO, L. P.** ✓

9 API Well No **30-015-37066**

3a Address **P. O. Box 2760 Midland, TX 79702**

3b. Phone No. *(include area code)* **432-683-2277**

10 Field and Pool, or Exploratory ~~**Fenton Draw**~~ **(Morrow)** East Carlsbad 73920

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

At surface **NESW 1650' FSL, 1850' FWL, Lat: N 32.47765, Long: W 104.128425**

At proposed prod zone **Same**

11 Sec, T R M or Blk and Survey or Area **Sec. 18, T-21S, R-28E, ME NMP**

14 Distance in miles and direction from nearest town or post office* **Approximately 4.2 miles northeast of Carlsbad, NM**

12 County or Parish **Eddy**

13 State **NM**

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any)	16 No of acres in lease	17 Spacing Unit dedicated to this well
990'	**2553.61**	**320**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19 Proposed Depth	20 BLM/BIA Bond No. on file
6,040.57'	**12,200'**	**COB 000050**
21 Elevations (Show whether DF, KDB, RT, GL, etc)	22 Approximate date work will start*	23 Estimated duration
3,180' GL	**05/20/2009**	**36 Days**

24. Attachments

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

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

25 Signature	Name *(Printed/Typed)*	Date
Annette Childers	**Annette Childers**	12-22-08

Title **Administrative Assistant**

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Don Peterson		**MAY 8 2009**
Title **FIELD MANAGER**	Office **CARLSBAD FIELD OFFICE**	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached **APPROVAL FOR TWO YEARS**

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

**(Instructions on page 2)*

Capitan Controlled Water Basin

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 St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-37066	~~76580~~ 73920	~~FENTON DRAW (MORROW)~~ Carlsbad; Morrow E

Property Code	Property Name	Well Number
~~059365~~ 305860	BIG EDDY UNIT	199

OGRID No.	Operator Name	Elevation
260737	✓ BOPCO, L.P.	3180'

Surface Location

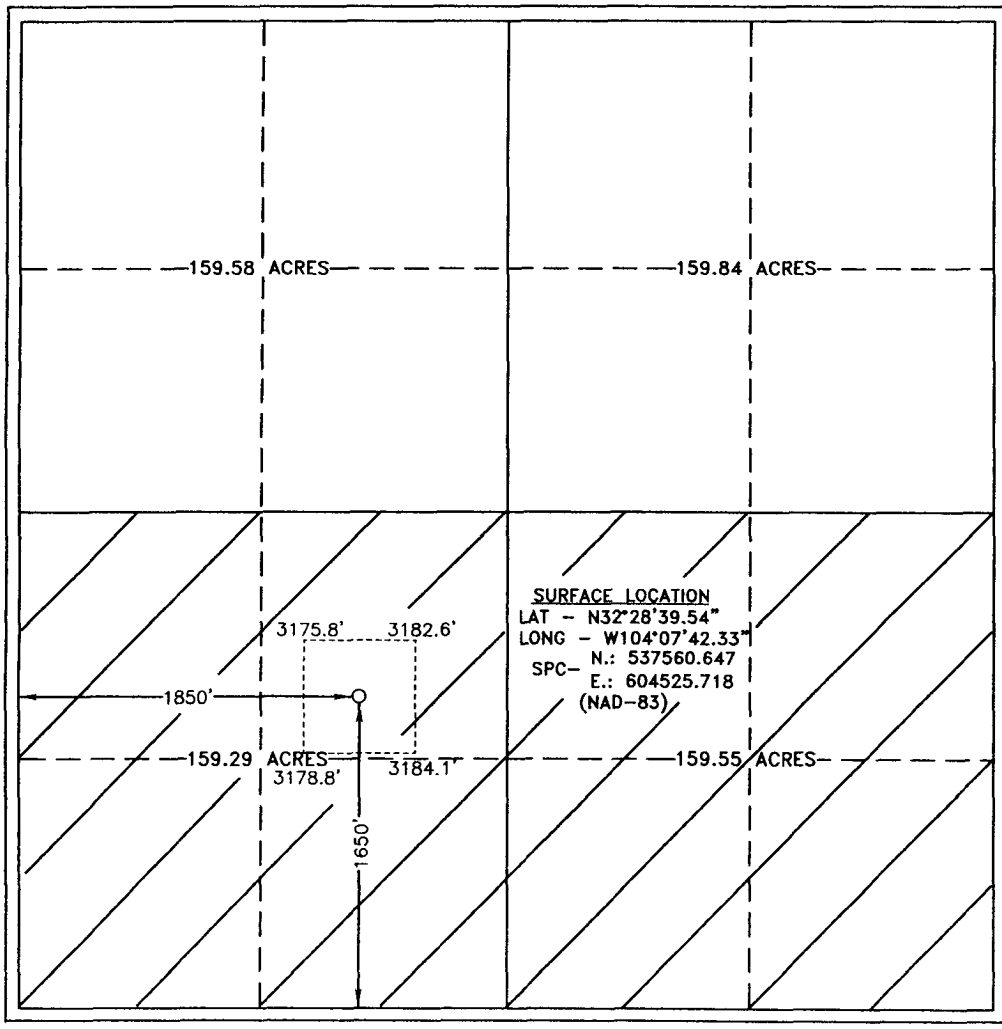
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	18	21 S	28 E		1650	SOUTH	1850	WEST	EDDY

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320	N		

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



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 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.

Stephen M. Martinez 12/11/08
Signature Date

Printed Name

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 belief.

FEBRUARY 22, 2008
Date Surveyed

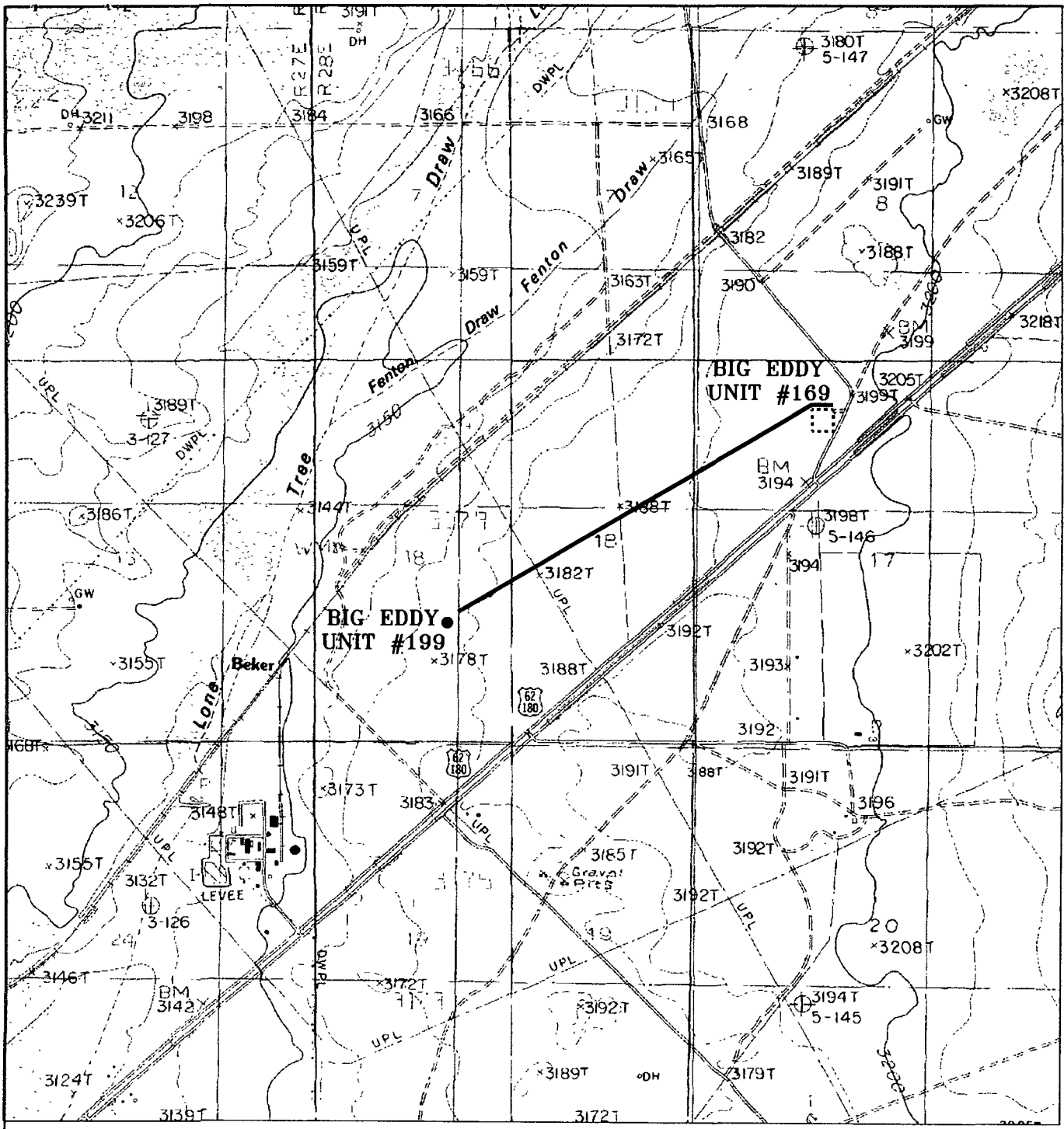
Signature & Seal of Professional Surveyor

GARY L. JONES NEW MEXICO 7977

W.O.: 19154

Certificate No. Gary L. Jones 7977

BASIN SURVEYS



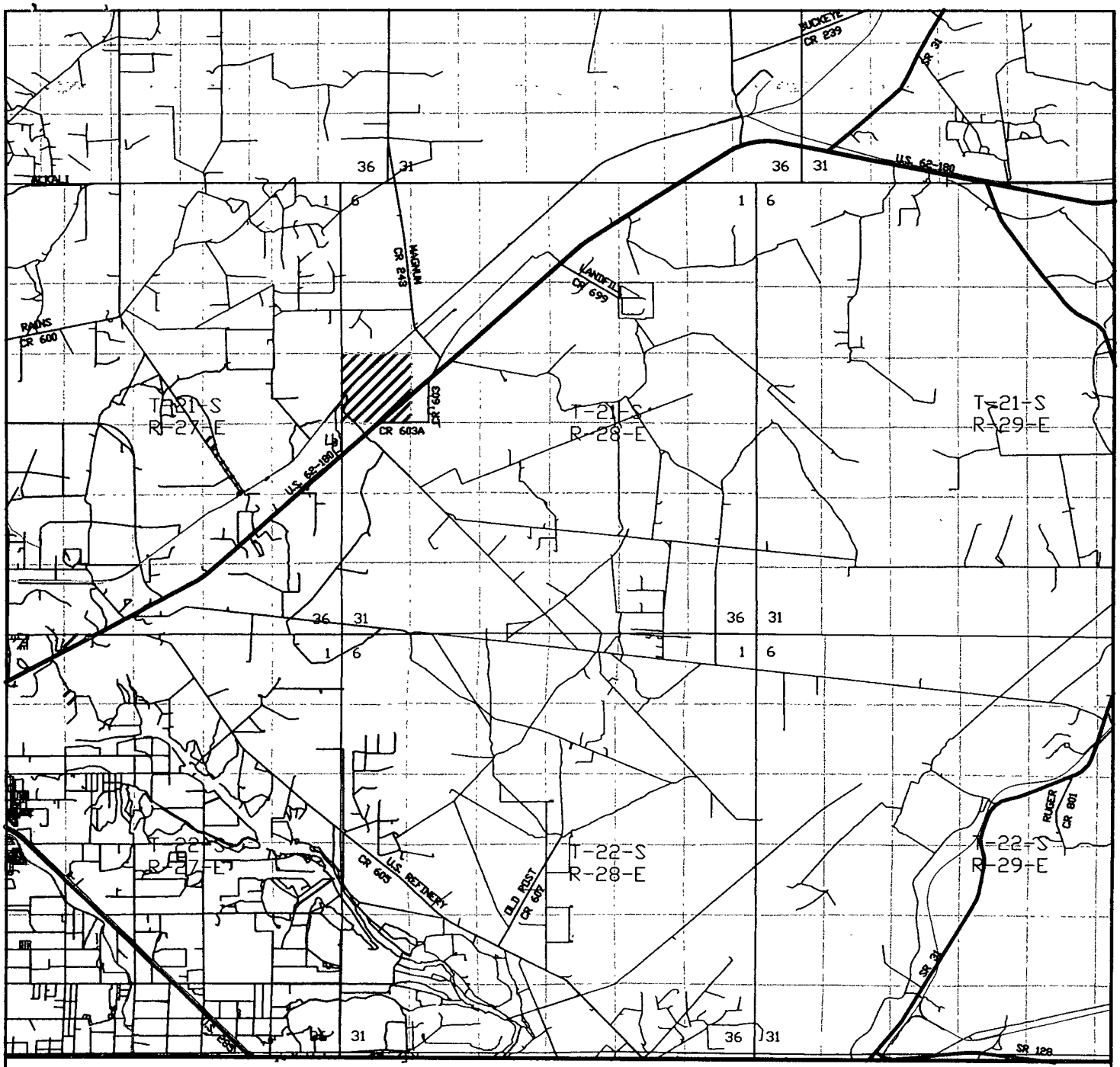
BIG EDDY UNIT #199
1650' FSL and 1850' FWL
Section 18, Township 21 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number	JMS 19151T
Survey Date	02-22-2008
Scale	1" = 2000'
Date	02-27-2008

BOPCO, L.P.



BIG EDDY UNIT #199
1650' FSL and 1850' FWL
Section 18, Township 21 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

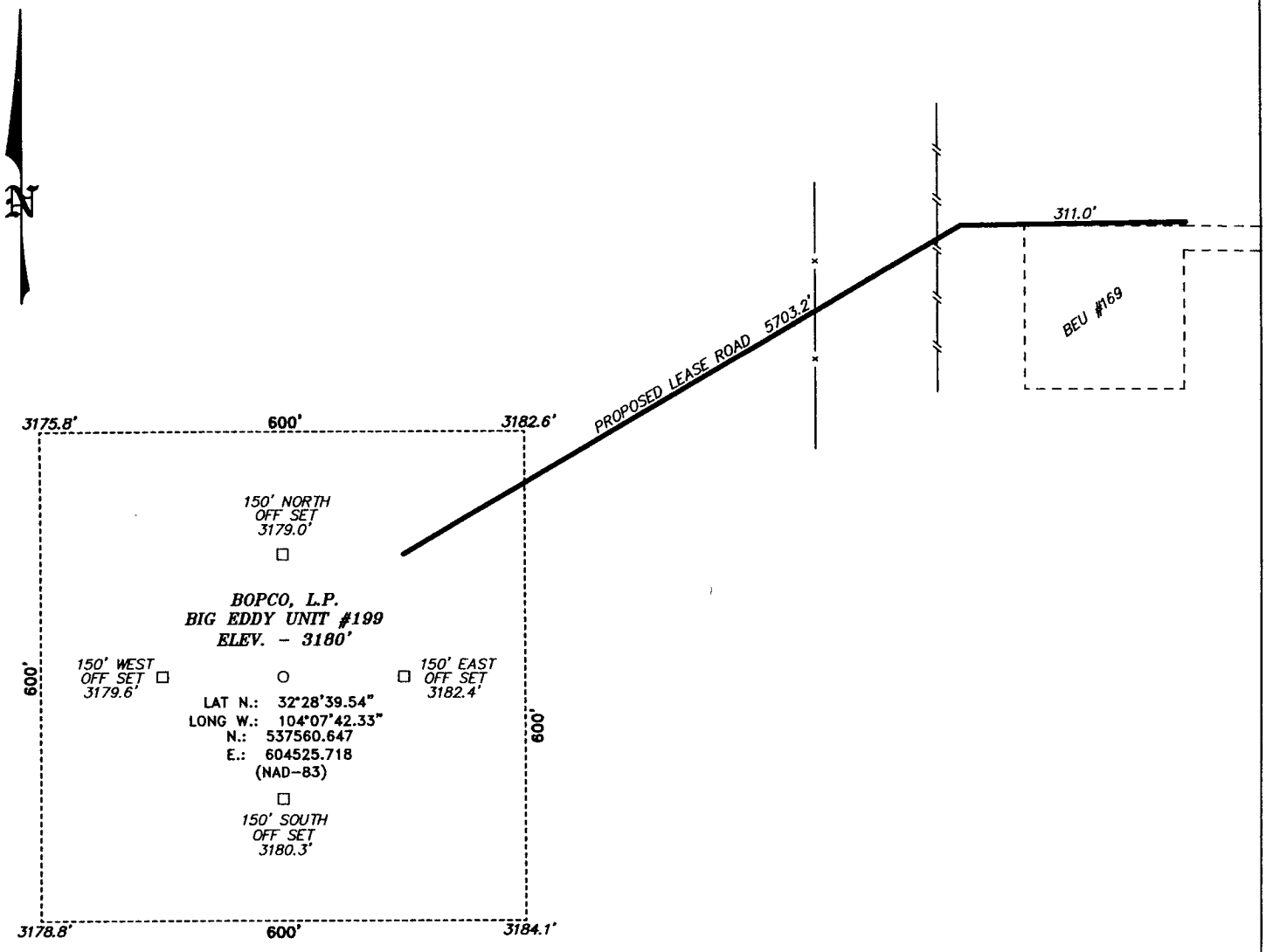
basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 – Office
(505) 392-3074 – Fax
basinsurveys.com

W.O. Number: JMS 19151TR
Survey Date: 02-22-2008
Scale: 1" = 2 MILES
Date: 02-27-2008

BOPCO, L.P.

SECTION 18, TOWNSHIP 21 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF 62-180 AND CO. RD. 243, GO NORTHEAST 0.1 MILES TO THE BEU 169 LOCATION AND PROPOSED LEASE ROAD.

BOPCO, L.P.

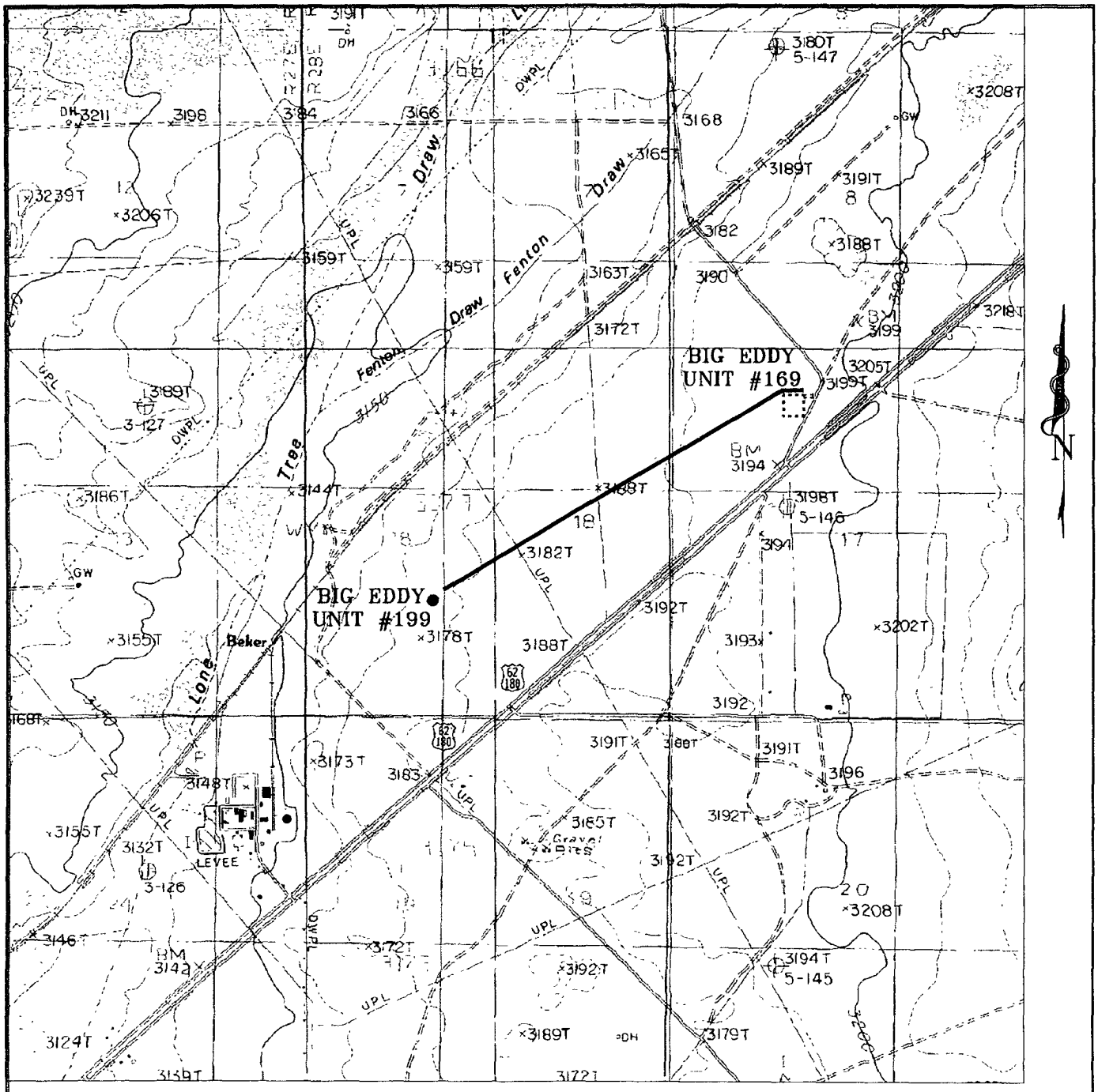
REF: BID EDDY UNIT #199 / WELL PAD AND TOPO

THE BIG EDDY UNIT #199 LOCATED 1650' FROM THE SOUTH LINE AND 1850' FROM THE WEST LINE OF SECTION 18, TOWNSHIP 21 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 19151	Drawn By: J. SMALL		
Date: 02-27-2008	Disk: 19151W JMS	Survey Date: 02-22-2008	Sheet 1 of 1 Sheets

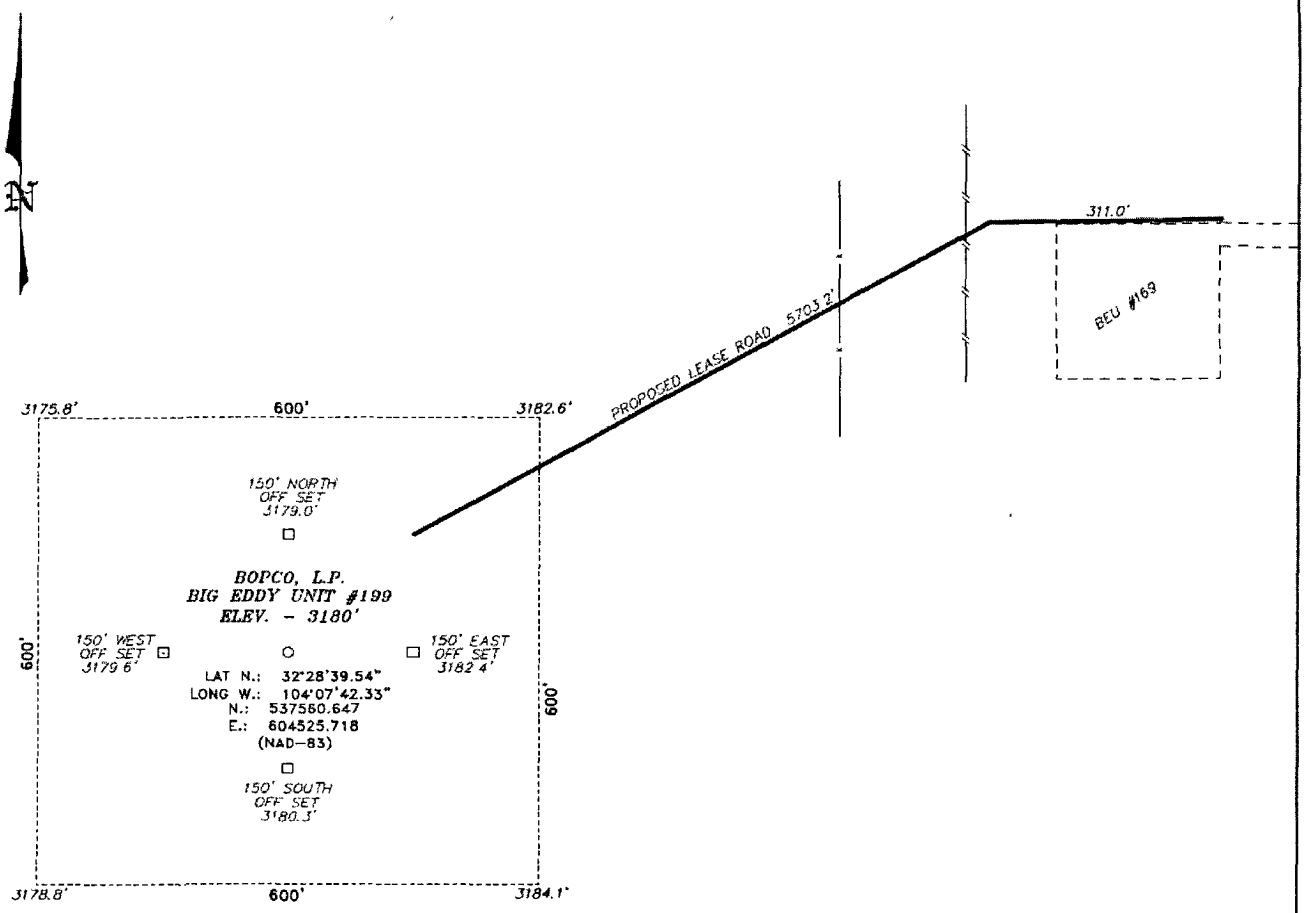
Big Eddy Unit #199
Exhibit "A"



BIG EDDY UNIT #199
1650' FSL and 1850' FWL
Section 18, Township 21 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

Big Eddy Unit #199
Exhibit "B"

SECTION 18, TOWNSHIP 21 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF 62-180 AND CO. RD. 243, GO NORTHEAST 0.1 MILES TO THE BEU 169 LOCATION AND PROPOSED LEASE ROAD

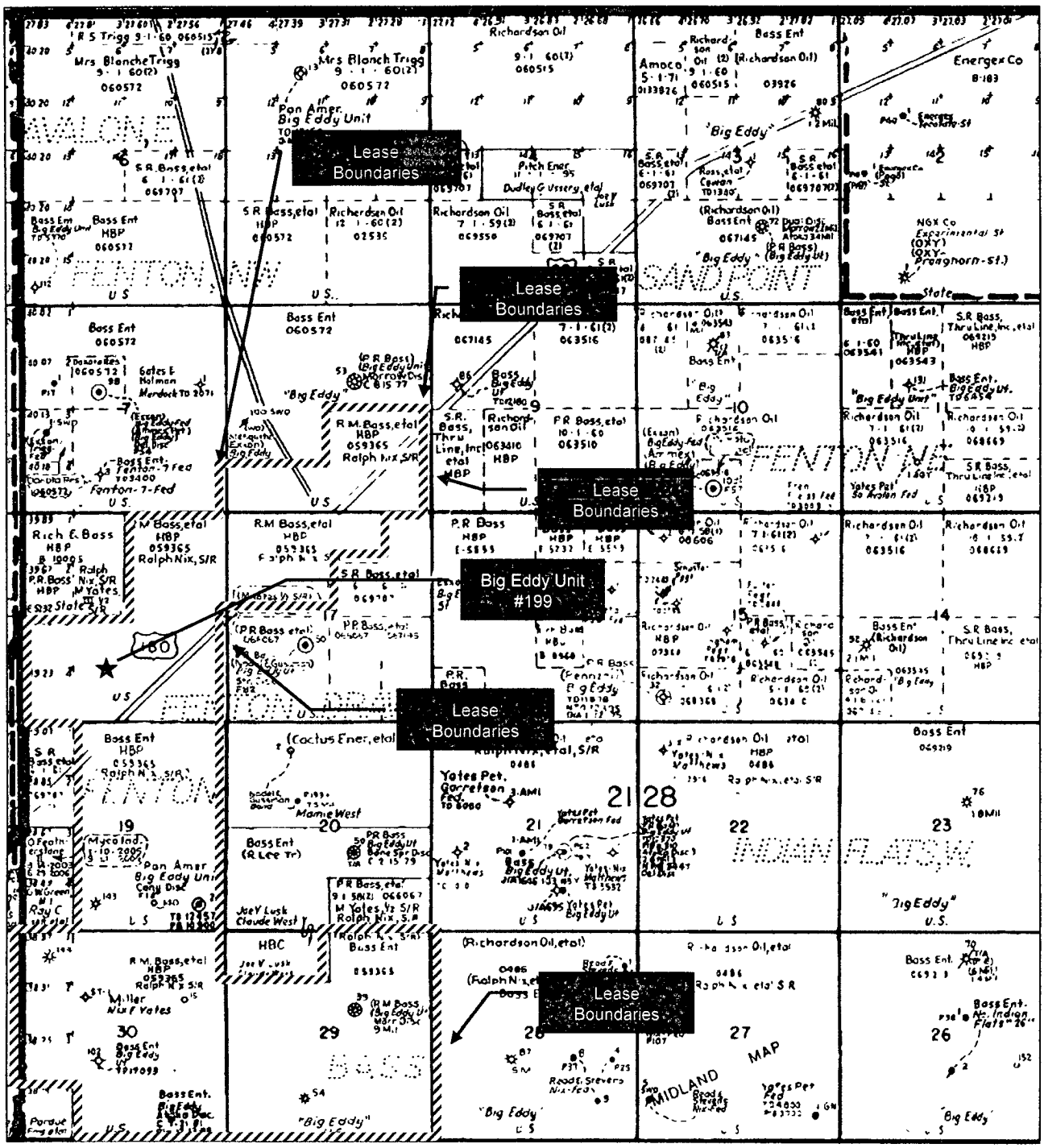
BOPCO, L.P.

REF: BID EDDY UNIT #199 / WELL PAD AND TOPO

THE BIG EDDY UNIT #199 LOCATED 1650' FROM THE SOUTH LINE AND 1850' FROM THE WEST LINE OF SECTION 18, TOWNSHIP 21 SOUTH, RANGE 28 EAST,

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

Big Eddy Unit #199
Exhibit 'C'



Surface casing to be set into the Rustler below all fresh water sands. Production casing will be cemented using Halliburton Class "H" plus additives with TOC 500' into intermediate casing. Drilling procedure, BOP diagram, anticipated tops and surface plans attached.

This well is located outside the Secretary's Potash area and outside the R-111 Potash area. There are no potash leases within 5 miles of the location.

BOPCO, L.P., at P. O. Box 2760, Midland, TX, 79702 is a division office of BOPCO, L.P., 201 Main Street, Ft. Worth, TX 76102, Bond No. COB 000050 (Nationwide).

EIGHT POINT DRILLING PROGRAM
BOPCO, L.P.

NAME OF WELL: BIG EDDY UNIT #199

LEGAL DESCRIPTION - SURFACE: 1,650' FSL & 1,850' FWL, Section 18, T21S, R28E, Eddy County, New Mexico.

POINT 1: ESTIMATED FORMATION TOPS

(See No. 2 Below)

POINT 2: WATER, OIL, GAS AND/OR MINERAL BEARING FORMATIONS

Anticipated Formation Tops: KB 3,198'
GL 3,180'

Formation	Estimated Top From KB	Estimated Subsea Top	BEARING
T/Rustler	Not Present		
T/Salado	632'	2,566'	Barren
T/Artesia	782'	2,416'	Oil/Gas
T/Reef	1,282'	1,916'	Oil/Gas
T/Delaware Mtn. Group	2,423'	775'	Oil/Gas
T/1st Delaware Sand	2,553'	645'	Oil/Gas
T/Old Indian Draw	3,048'	150'	Oil/Gas
T/Bone Spring Lime	5,548'	-2,350'	Oil/Gas
T/Wolfcamp	9,193'	-5,995'	Oil/Gas
T/Strawn	10,348'	-7,150'	Oil/Gas
T/Atoka	10,768'	-7,570'	Oil/Gas
T/Upper Morrow	11,315'	-8,117'	Oil/Gas
T/Middle Morrow	11,433'	-8,235'	Oil/Gas
T/Lower Morrow	11,693'	-8,495'	Oil/Gas
TD	12,200'	-9,002'	Oil/Gas

POINT 3: CASING PROGRAM

TYPE	HOLE SIZE	INTERVALS	PURPOSE	CONDITION
30", 118#, SCH STD	48"	0' – 60'	Conductor	Contractor Discretion
20", 94#, H-40, STC	26"	0' – 532'	Surface	New
54.5 13-3/8", ~~53.5#~~, J-55, LTC	17-1/2"	0'–1250' See COA	1st Intermediate	New
9-5/8", 36#, J-55, LTC	12-1/4"	0' – 2,483' COA	2nd Intermediate	New
5-1/2", 17 #, HCP-110, LTC	8-3/4"	0' – 11,300'	Production Casing	New
5-1/2", 20#, P-110, LTC	8-3/4"	11,300' – 12,200'	Production Casing	New

CASING DESIGN SAFETY FACTORS:

TYPE	TENSION	COLLAPSE	BURST
20", 94#, H-40, STC	13.52	1 99	1.49
54.5 13-3/8", ~~53.5#~~, J-55, LTC	14 83	1 66	3.91
9-5/8", 36#, J-55, LTC	7.25	1.75	5 05
5-1/2", 17 #, HCP-110, LTC	3.09	1 15	2 23
5-1/2", 20#, P-110, LTC	42 41	1 65	2 65

DESIGN CRITERIA AND CASING LOADING ASSUMPTIONS:

SURFACE CASING

Tension — A 1.6 design factor utilizing the effects of buoyancy (9.0 ppg).

Collapse — A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.468 psi/ft). The effects of axial load on collapse will be considered.

Burst — A 1.3 design factor with a surface pressure equal to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure a that depth. Backup pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient. The effects of tension on burst will not be utilized.

PROTECTIVE CASING

Tension — A 1.6 design factor utilizing the effects of buoyancy (8.5 ppg).

Collapse — A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.442 psi/ft). The effects of axial load on collapse will be considered.

In the case of development drilling, collapse design should be analyzed using internal evacuation equal to 1/3 the proposed total depth of the well. This criterion will be used when there is absolutely no potential of the protective string being used as a production casing string.

Burst — A 1 0 surface design factor and a 1.3 downhole design factor with a surface pressure equivalent to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Back pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient.

PRODUCTION CASING

Tension — A 1 6 design factor utilizing the effects of buoyancy (10.5 ppg).

Collapse — A 1 0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.546 psi/ft) The effects of axial load on collapse will be considered.

Burst — A 1.25 design factor with anticipated maximum tubing pressure (4,664 psig) on top of the maximum anticipated packer fluid gradient. Backup on production strings will be formation pore pressure (0.546 psi/ft). The effects of tension on burst will not be utilized.

POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM)

A rotating head will be nippled up on the intermediate casing. The rotating head will not be hydro-tested.

A BOP equivalent to Diagram 1 will be nippled up on the surface casing head and the intermediate casing. The BOP stack, choke, etc. when rigged up on surface casing, will be tested to 70% of interval yield of casing or 1000 psig whichever is less. On the intermediate casing, the BOP stack, choke, kill lines, kelly cocks, inside BOP, etc. will be hydro-tested to 5,000 psi on the intermediate casing. The annular will be tested to 2500 psi. In addition to the rated working pressure test, a low pressure (250 psi) test will be required. These tests will be performed as per Onshore Oil and Gas Order No. 2, Drilling Operations, paragraph III.A.2.h.iv:

See COA

a) When initially installed
b) Whenever any seal subject to test pressure is broken
c) Following related repairs
d) At 30 day intervals

A function test to insure that the preventers are operating correctly will be performed on each trip. See the attached Diagram 1 for the minimum criteria for the choke manifold.

POINT 5: MUD PROGRAM

DEPTH	MUD TYPE	WEIGHT	FV	PV	YP	FL	Ph
0' – 532'	FW/Gel Spud	8.5 - 9 0	32-38	NC	NC	NC	9 0-10 0
532' – 1250'	BW	10 0 - 10.2	28-32	NC	NC	NC	9 0-10.0
1250' – 2,483'	FW/Gel	8 5	28-32	NC	NC	NC	9 0-10 0
2,483' – 9,000'	FW/Gel	8.5 – 9.0	28-32	NC	NC	NC	9 0-10.0
9,000' – 10,300'	BW	10 0 - 10.2	28-32	NC	NC	NC	9 0-10 0
10,300' – 12,200'	BW/Polymer	10 2 - 10 5	30-36	6-10	6-10	<10	9 0-10 0

POINT 6: TECHNICAL STAGES OF OPERATION

A) TESTING

Drill stem tests may be performed on significant shows in zones of interest, but none are anticipated.

B) LOGGING

Run #1:
PEX (GR-CNL/LDT-HRLA) run from TD to ICP, GR-CNL to surface. Possible GR-CNL/LDT-AIT over Delaware.

C) CORING

No cores are anticipated.

D) CEMENT ← See COA

INTERVAL	AMOUNT SX	FT OF FILL	TYPE	GALS/SX	PPG	FT³/SX
SURFACE						
Lead 0' – 332' (100% excess)	535	332'	Haliburton Light + 2 7 pps salt	10.14	12 80	1 87
Tail 332' – 532' (100% excess)	446	200'	Premium Plus + 1% $CaCl_2$	6.37	14.80	1.35
1st INTERMEDIATE						
Lead 0 –750' (100% Excess)	378	750'	Premium Interfill H + 8 pps Gilsonite	16 43	11.50	2 76
Tail 750' -1,250' (100% Excess)	434	500'	Super H + 5 pps Gilsonite + 3 pps Salt + 0.5% LAP-1 + 0.4% CFR-3 + 0.25 pps Defoamer + 0.25 pps Pol-E-Flake	4 72	13.2	1 60
2nd INTERMEDIATE						
Lead 0 –1,983' (100% Excess)	450	1,983'	Premium Interfill H + 8 pps Gilsonite	16 43	11 50	2.76
Tail 1,983' -2,483' (100% Excess)	196	500'	Super H + 5 pps Gilsonite + 3 pps Salt + 0 5% LAP-1 + 0.4% CFR-3 + 0.25 pps Defoamer + 0 25 pps Pol-E-Flake	4.72	13 2	1 60
PRODUCTION 1st Stage	(Two stage w/DV tool @ 7500' and circulate cement to ~~7500'~~ 1983'					
Lead 7,500'-10,000' (50% excess)	385	2,500'	Interfill H + 5 pps Gilsonite + 0.125 pps Pol-E-Flake + 0 5% Halad 9 + 0 3% HR-601	13 61	11.90	2.46
Tail 10,000'-12,200' (50% excess)	521	2,200'	Super H + 0.5% Halad 344 + 0 4% CFR3 + 5 pps Gilsonite + 1 pps Salt + 0 3% HR-601	7.73	13.20	1 60
2nd Stage						
Lead 1,983'-7,000' (50% excess)	450	5,017'	Premium Interfill H + 0 125 pps Pol-E-Flake	14 10	11 90	2 46
Tail 7,000'-7,500' (50% excess)	196	500'	Premium Cement + 0 5% Halad 9	5 20	15.6	1 18

See COA

CEMENTING SUMMARY

CASING	HOLE SIZE	INTERVAL	TOC	COMPRESSIVE STRENGTH
20", 94#, H-40, STC	26"	0' – 532'	Surface	950 psi
13-3/8", ~~58~~ 54.5#, J-55, LTC	17-1/2"	0' –1,250'	Surface	950 psi
9-5/8", 36#, J-55, LTC	12-1/4"	0' – 2,483'	Surface	2250 psi
5-1/2", 17 #, HCP-110, LTC	8-3/4"	0' – 11,300'	1,983'	1700 psi
5-1/2", 20#, P-110, LTC	8-3/4"	11,300' – 12,200'	1,983'	1700 psi

E) DIRECTIONAL DRILLING

No directional services anticipated. A straight hole will be drilled to 12,200' TD.

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout the Delaware, Bone Spring & Wolfcamp sections. The Strawn expected BHP is 5488 (max) or an equivalent mud weight of 10.2 ppg. The Atoka may have pressures of 5800 - 6200 psi (10.5 ppg). The Morrow will be normally pressured. Due to the tight nature of the reservoir rock (high pressure, low volume), the well will be drilled under balanced utilizing a rotating head. The expected BHT at TD is 200°F. No H_2S is expected, however; in the event that H_2S is encountered, a Hydrogen Sulfide Drilling Operations Plan as detailed in **Exhibit "E"** will be implemented.

POINT 8: OTHER PERTINENT INFORMATION

A) Auxiliary Equipment

Upper and lower kelly cocks. Full opening stab in valve on the rig floor.

B) Anticipated Starting Date

Spud date is 05/20/2009.

36 days drilling operations

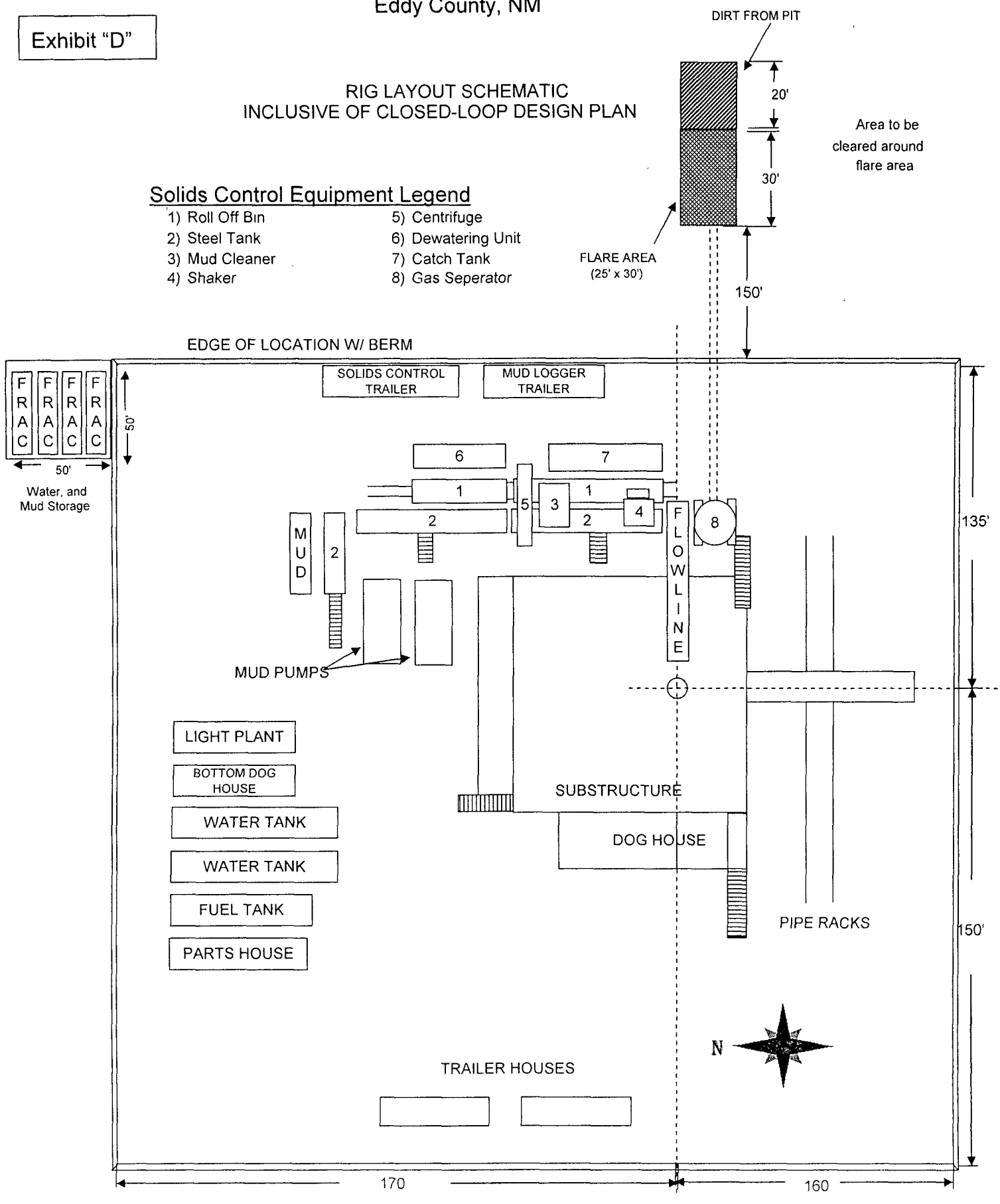
20 days completion operations

SMM/jdb

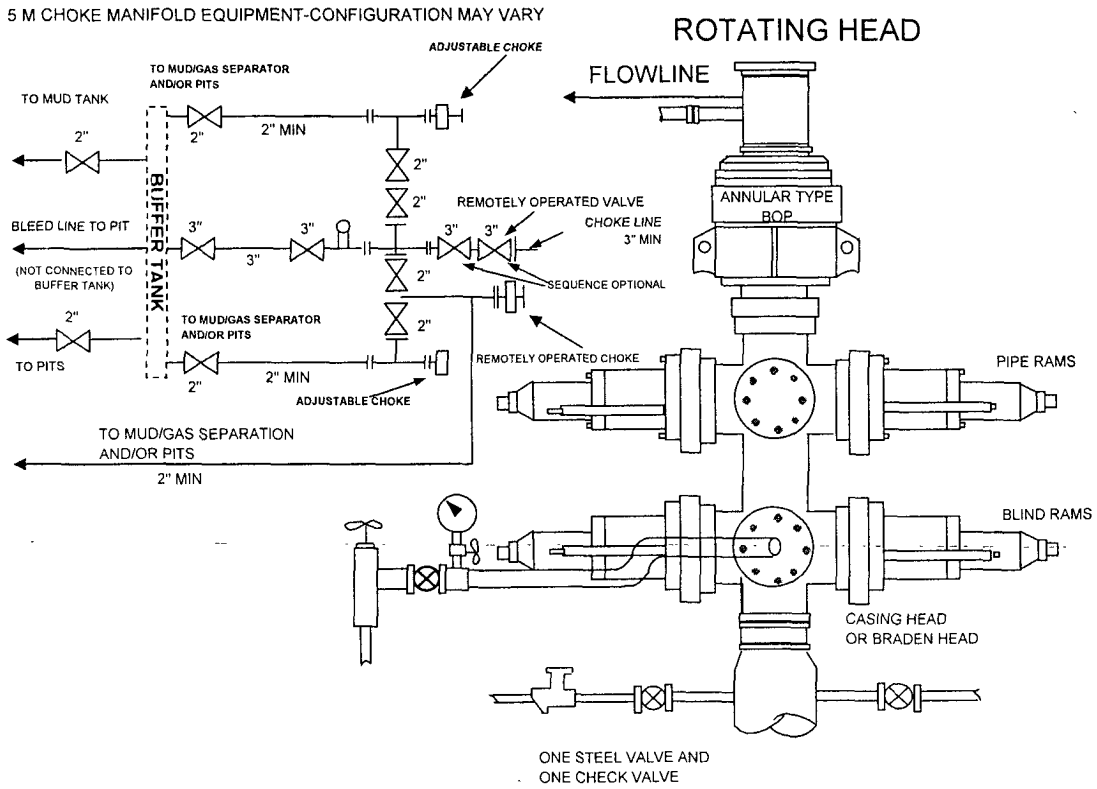
BOPCO, L.P.
Big Eddy Unit #199
Section 18, T-21-S, R-28-E
Eddy County, NM

Exhibit "D"

RIG LAYOUT SCHEMATIC
INCLUSIVE OF CLOSED-LOOP DESIGN PLAN



BOPCO, L. P.
5-M WP BOPE WITH 5-M WP ANNULAR



THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

A One double gate Blowout preventer with lower pipe rams and upper blind rams, all hydraulically controlled.

B. Opening on preventers between rams to be flanged, studded or clamped and at least two inches in diameter.

C. All connections from operating manifold to preventers to be all steel hose or tube a mininum of one inch in diameter.

D The available closing pressure shall be at least 15% in excess of that required with sufffficient volume to operate (close, open, and re-close) the preventers.

E. All connections to and from preventers to have a pressure rating equivalent to that of the BOPs.

F. Manual controls to be installed before drilling cement plug.

G Valve to control flow through drill pipe to be located on rig floor.

H Chokes must be adjustable. Choke spool may be used between rams

DIAGRAM 1

Big Eddy Unit #199
Exhibit "E"

HYDROGEN SULFIDE (H_2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

BOPCO L.P. personnel must liaison 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 including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New México's "Hazardous Materials Emergency Response Plan" (HMER).

H_2S CONTINGENCY PLAN EMERGENCY CONTACTS

BOPCO L.P. Midland Office 432-683-2277

Key Personnel

Name	Title	Cell Phone Number
Bill Dannels	Drilling Supt.	432-638-9463
Buddy Jenkins	Assistant Supt.	432-238-3295
Stephen Martinez	Engineer	432-556-0262
Gary Gerhard	Engineer	432-238-2197

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-8885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National Emergency Response Center (Washington, DC)	800-424-8802

Other

Boots & Coots IWC	800-256-9688 or 281-931-8884
Cudd PressureControl	432-580-3544 or 432-570-5300
Halliburton	575-746-2757
B. J. Services	575-746-3569
Flight For Life – 4000 24th St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuq., NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuq., NM	505-842-4949

MULTI-POINT SURFACE USE PLAN

NAME OF WELL: BIG EDDY UNIT #199

LEGAL DESCRIPTION – SURFACE: 1,650' FSL & 1,850' FWL, Section 18, T21S, R28E, Eddy County, NM.

POINT 1: EXISTING ROADS

A) Proposed Well Site Location

See Exhibit "A".

B) Existing Roads

From the junction of 62-180 and CO. RD. 243 go Northeast 0.1 miles to Big Eddy Unit #169 location and proposed lease road.

C) Existing Road Maintenance or Improvement Plan

See Exhibit "B"

POINT 2: NEW PLANNED ACCESS ROUTE

A) Route Location

See Exhibit "B". The new road will be 12' wide and approximately 6,014.2' long from existing lease road. The road will be constructed of 6" of watered and compacted caliche.

B) Width

12' Wide

C) Maximum Grade

Not Applicable.

D) Turnouts

As required by BLM stipulations.

E) Culverts, Cattle Guards, and Surfacing Equipment

None.

POINT 3: LOCATION OF EXISTING WELLS

Exhibit "C" indicates existing wells within the surrounding area.

POINT 4: LOCATION OF EXSITING OR PROPOSED FACILITIES

A) One existing facility is within approximately 6,040.' owned or controlled by lessee/operator: Big Eddy Unit #169, Sec.7, T21S, R28E

B) New Facilities in the Event of Production:

New production facilities will be installed at the new location

C) Rehabilitation of Disturbed Areas Unnecessary for Production:

Following the construction of production facilities, those access areas required for continued production will be graded to provide drainage and minimize erosion. The areas necessary for use will be graded to blend in the surrounding topography – See Point 10.

POINT 5: LOCATION AND TYPE OF WATER SUPPLY

A) Location and Type of Water Supply

Fresh water will be hauled from the City of Carlsbad or piped from the IMC Booster Station water well located 5.2 miles east of Carlsbad. Brine water will be hauled from I & W Brine Water Station 0.75 miles southeast of Carlsbad.

B) Water Transportation System

Water hauled to the location will be over the existing and proposed roads or transported via temporary poly-line from the fresh water source.

POINT 6: SOURCE OF CONSTRUCTION MATERIALS

A) Materials-

Caliche from BLM approved pits will be used.

Land Ownership

Federally Owned.

B) Materials Foreign to the Site

This well will be drilled utilizing a closed loop mud system. Therefore no earthen pits will be dug nor will onsite caliche will be used. Caliche will be purchased and hauled from the nearest BLM approved caliche pit

C) Access Roads

6,014.2' of new access roads are required. See Exhibit "B".

POINT 7: METHODS FOR HANDLING WASTE MATERIAL

A) Cuttings

A closed loop system will be utilized. Cuttings will be contained in roll off bins and hauled off to Controlled Recovery Inc. located approximately 25 miles NE of Carlsbad, N.M.

B) Drilling Fluids

Drilling fluids will be contained in the steel pits as part of the closed loop system. Excess drilling fluids including fresh water and brine water used for drilling will be contained within steel storage tanks located on location.

Produced Fluids

Water production will be contained in the steel pits as part of the closed loop system

Hydrocarbon fluid or other fluids that may be produced during testing will be retained in the test tanks. Prior to cleanup operations, any hydrocarbon material remaining in the steel pits will be removed by skimming and hauling as the situation would dictate.

C) Sewage

Current laws and regulations pertaining to the disposal of human waste will be complied with.

D) Garbage

Portable containers will be utilized for garbage disposal during the drilling of this well.

E) Cleanup of Well Site

Upon release of the drilling rig, the surface of the drilling pad will be graded to accommodate a completion rig if testing indicates potential productive zones. In any case, the "mouse" hole and the "rat" hole will be covered. Reasonable cleanup will be performed prior to the final restoration of the site.

POINT 8: ANCILLARY FACILITIES

None Required.

POINT 9: WELL SITE LAYOUT

A) Rig Orientation and Layout

Exhibit "D" shows the dimensions of the well pad and the location of major rig components. Only minor leveling of the well site will be required. No significant cuts or fills will be necessary. An earthen berm preventing fluids from entering the location or leaving the location will encompass the entire location. A secondary containment berm will encompass the steel "frac" tanks used for temporary fluids storage.

B) Locations of Access Road

See Exhibits "B" & "D

C) Lining of the Pits

No earthen pits for fluid storage are planned. A closed loop mud system with steel pits will be employed for liquid storage. An unlined flare pit may be required as gas is liberated from the drilling fluid Any well fluids left standing within the flare pit shall be immediately suctioned off and sent to disposal. All other earthen pits will be allowed only in case of an emergency.

POINT 10: PLANS FOR RESTORATION OF THE SERVICE.

A) Closed loop system.

The closed loop system will be utilized to drill the subject well. No earthen pits will be used that require remediation. All solids and drill fluids will be hauled off location to Controlled Recovery Inc. located approximately 25 miles Northeast of Carlsbad, N.M.

B) Restoration Plans – Production Developed

Those areas not required for production will be graded to blend with the surrounding topography. Topsoil, as available, will be placed upon those areas and seeded. The portion of the site required for production will be graded to minimize erosion and provide access during inclement conditions. Following depletion and abandonment of the site, restoration procedures will be those that follow under Item C.

C) Restoration Plans – No Production Developed

With no production developed, the entire surface disturbed by construction of the well site will be restored. The site will be contoured to blend with the surrounding topography and provide drainage of surface water. The topsoil, as available, shall be replaced in a uniform layer and seeded according to the BLM stipulations.

D) Rehabilitation Timetable

Upon completion of drilling operations, the initial cleanup of the site will be performed as soon as weather and site conditions allow economic execution of the work.

POINT 11: OTHER INFORMATION

A) Terrain

Relatively Flat

B) Soil

Caliche and sand.

C) Vegetation

Sparse, primarily grasses and mesquite with very little grass

D) Surface Use

Primarily grazing

E) Surface Water

There are no ponds, lakes, streams, or rivers within several miles of the wellsite

F) Water Wells

There is one water well within 1 mile of location, located in the NW, SW, SE quarter of Sec 18, T21S, R28E. See Exhibit "C".

G) Residences and Buildings

None in the immediate vicinity.

H) Historical Sites

None observed.

I) Archeological Resources

An archeological survey will be obtained for this area. The survey area will be a 600' x 600' square with its center on the wellhead stake. Before any construction begins, a full and complete archeological survey will be submitted to the BLM. Any location or construction conflicts will be resolved before construction begins.

J) Surface Ownership

The well site and access road are both on federally owned land.

K) Well signs will be posted at the drilling site.

L) Open Pits

No earthen pits will be used. A closed loop system will be used and employ steel pits only.

POINT 12: OPERATOR'S FIELD REPRESENTATIVE

(Field personnel responsible for compliance with development plan for surface use).

DRILLING
Stephen M. Martinez
Box 2760
Midland, Texas 79702
(432) 683-2277

PRODUCTION
Dean Clemmer
3104 East Green Street
Carlsbad, New Mexico 88220
(505) 887-7329

Steve Johnson
Box 2760
Midland, Texas 79702
(432) 683-2277

B O P C O, L.P.

P. O. Box 2760
Midland, Texas 79702

432-683-2277 FAX-432-687-0329

December 15, 2008

Bureau of Land Management
Carlsbad Field Office
620 East Green Street
Carlsbad, New Mexico 88220-6292

Attn: Mr. Don Peterson – Assistant Field Manager, Minerals

RE: APPLICATION FOR PERMIT TO DRILL – 3162.4
BIG EDDY UNIT #199, LEASE NMLC 059365
1,650' FSL, 1,850' FWL, SEC. 18, T21S, R28E, EDDY COUNTY, NM

Dear Mr. Peterson,

In reference to the above captioned well, I hereby 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 the attached eight point drilling plan and multi-use surface plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by BOPCO, L.P. and it's 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.

If you have any questions regarding the accuracy of the plan provided herein, please do not hesitate to contact me at (432) 683-2277.

Sincerely,

Stephen M. Martinez
Drilling Engineer

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, LP
LEASE NO.:	NMLC059365
WELL NAME & NO.:	Big Eddy unit # 199
SURFACE HOLE FOOTAGE:	1650' FSL & 1850' FWL
BOTTOM HOLE FOOTAGE	Same
LOCATION:	Section 18, T. 21 S., R 28 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. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

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

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. 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.

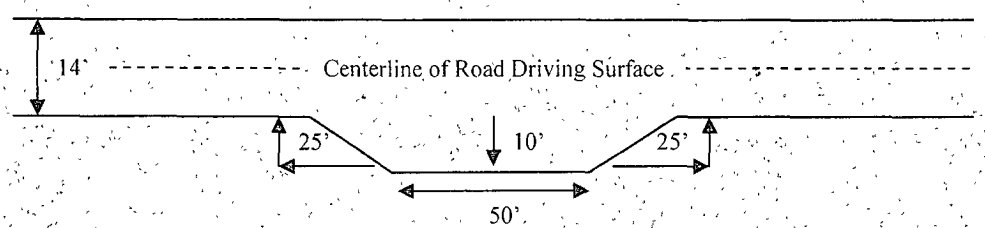
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

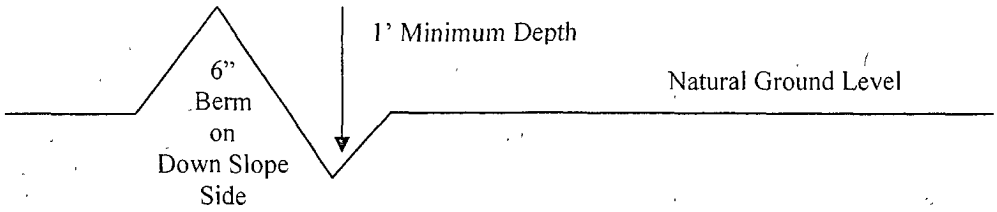
Standard Turnout – Plan View



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.

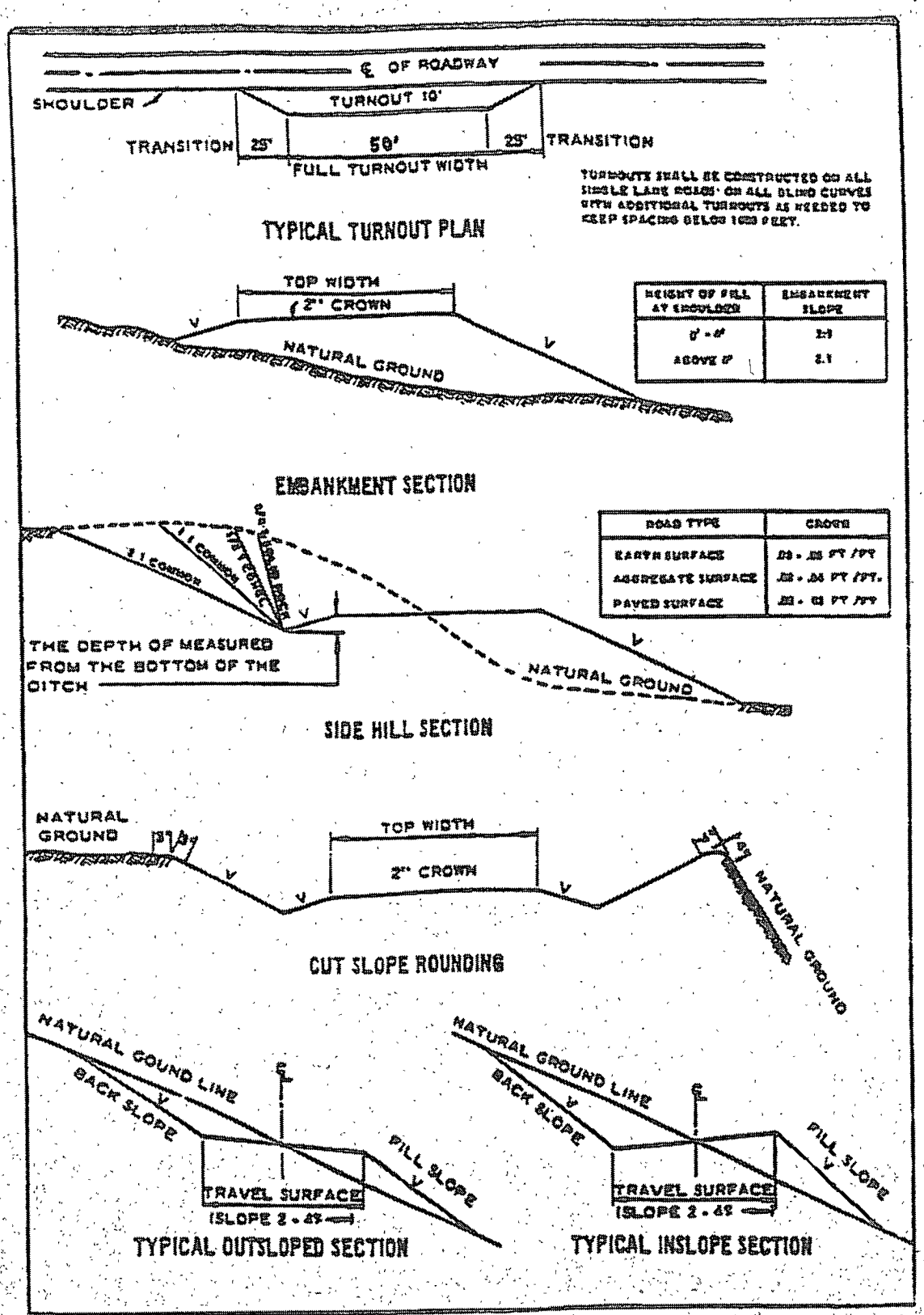
A gate shall be constructed and fastened securely to H-braces.

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



VI. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a possible hazard. Hydrogen Sulfide has been noted in the Delaware formation in the section to the North. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

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

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

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

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

Medium cave/karst.
Possible lost circulation in the Delaware and Bone Spring formations.
Possible of high pressure in the Wolfcamp formation and over pressure in the Pennsylvanian section.

1. The **20 inch** surface casing shall be set **at approximately 530 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If salt is penetrated surface casing shall be set 25 feet above the salt.**

    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.

    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 action will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **13-3/8 inch** first intermediate casing **(to be set in the Seven Rivers formation at approximately 1250 feet)** 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.

3. The minimum required fill of cement behind the **9-5/8 inch** sceond intermediate casing **(to be set in the top of the Lamar Lime at approximately 2400 feet)** 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 the Capitan Reef.**

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 and the mud weight for the bottom of the hole. If formation fails test, casing design will require review. Report results to BLM office.

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

a. **First stage to DV tool, cement shall:**

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job.

b. **Second stage above DV tool, cement shall:**

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Additional cement will be required as excess cement calculates to a negative 5% on the second stage.**

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.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the first intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve and a remote kill line. The remote kill line is to be installed prior to testing the 5M system and tested to stack pressure.**

4. 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.

   e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp formation**. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

   f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILLING MUD

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.

E. DRILL STEM TEST

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

WWI 043009

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

VIII. 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 4, for Gypsum 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
Alkali Sacaton (Sporobolus airoides)	1.0
DWS Four-wing saltbush (Atriplex canescens)	5.0

DWS: DeWinged Seed

*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.