ATS-08-1056

OCD-ARTESIA

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OCD-ARTESIA

1404

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM 092757

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No.
NMNM 116790

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

8. Lease Name and Well No.
SECOND CHANCE FED COM #2

2. Name of Operator
LEGEND NATURAL GAS III LIMITED PARTNERSHIP 258894

9 API Well No.
30 015 36864

3a. Address 410 W. Grand Parkway South, #400
Katy, TX 77494

3b Phone No. *(include area code)*
432 684-6381/281 644-5951

10. Field and Pool, or Exploratory
Malaga, Morrow (Gas)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface ~~1360~~ FSL & 1290 FWL
At proposed prod. zone 1980 FSL & 1980 FWL

Carlsbad Controlled Water Basin

11. Sec., T. R. M. or Blk. and Survey or Area
Section 29, T24S, R28E

14 Distance in miles and direction from nearest town or post office*
6.5 miles to Malaga

12 County or Parish
EDDY COUNTY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1290'

16 No. of acres in lease
320 acres

17. Spacing Unit dedicated to this well
320 acres

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 3290'

19 Proposed Depth
13,000'

20 BLM/BIA Bond No. on file
NMB 000525

21 Elevations (Show whether DF, KDB, RT, GL, etc.)
3014' GR

22. Approximate date work will start*
11/11/2008

23. Estimated duration
45 days

24. Attachments

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

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

25 Signature

Name *(Printed/Typed)*
Ann E. Ritchie

Date
09/08/2008

Title
Regulatory Agent

Approved by *(Signature)* /s/ Don Peterson

Name *(Printed/Typed)* /s/ Don Peterson

Date
DEC 19 2008

Title
FIELD MANAGER

Office
CARLSBAD FIELD OFFICE

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

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

*(Instructions on page 2)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

ENTERED
1-6-09

Statement Accepting Responsibility for Operations

Legend Natural Gas III Limited Partnership (258894)
Second Chance Fed Com, Well #2
Section 29, T24S, R28E, Eddy County, NM
1360 FSL & 1290 FWL

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

Lease Name & Well Number: Second Chance Fed Com, Well #2

Lease No.: NMNM 092757

Legal Description of land: ~~1360'~~ 1960' FSL & 1290' FWL, Sec 29, T24S, R28E

Formation: Morrow

Bond Coverage: NMB 000525

Authorized Signature: _____

Printed Name: Floyd Hernandez

Title: Drilling Engineer
Telephone No.: (281) 644-5950 – off; (832) 477-8293-cell

Date: 9-8-08

Address: 410 W. Grand Parkway South, #400, Katy, TX 77494

Form 3160-5
(August 2007)

OCD-ARTESIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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 page 2.*

5. Lease Serial No.
NMNM 092757

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.
NMNM 166790

1. Type of Well
☐ Oil Well ☑ Gas Well ☐ Other

8. Well Name and No.
SECOND CHANCE FED COM #2

2. Name of Operator
LEGEND NATURAL GAS III LIMITED PARTNERSHIP 258894

9. API Well No.
30 015 36866

3a. Address
410 W. Grand Parkway South, #400, Katy, TX 77494

3b. Phone No. *(include area code)*
4326846381/2816445951

10. Field and Pool or Exploratory Area
MALAGA, MORROW (GAS)

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
(L) 1960' FSL & 1290' FWL, Section 29, T24S, R28E

11. Country or Parish, State
EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other _____
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	_____
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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 must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

In response to your letter of 9-23-08 (sent to Legacy Resources, should be Legend Natural Gas III, LP)

Please see Form C102 and maps for the amended location for this well.
Please see attached the justification for the bottom hole pressure estimate.
Please see Operator's Representative signed in blue.
The casing will be new for all strings.

14. I hereby certify that the foregoing is true and correct.
Name *(Printed/Typed)*
Ann E. Ritchie

Title Regulatory Agent

Signature

Date 10/06/2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by /s/ Don Peterson

Title FIELD MANAGER

Date DEC 19 2008

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
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals 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
(Location)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-36864	80920	Malaga, Morrow (Gas)

Property Code	Property Name	Well Number
305431	SECOND CHANCE FEDERAL COM	2

OGRID No.	Operator Name	Elevation
258894	LEGEND NATURAL GAS III, L.P.	3032'

Surface Location

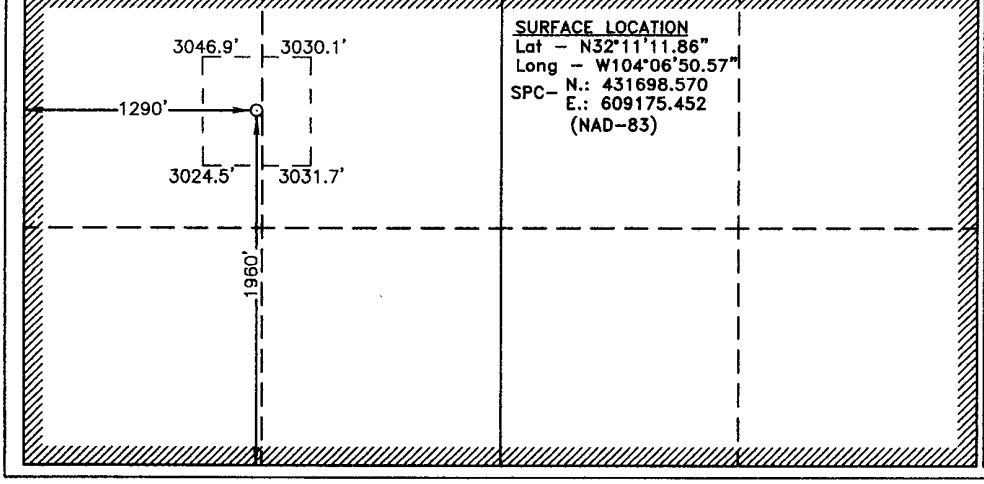
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	29	24 S	28 E		1960	SOUTH	1290	WEST	EDDY

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			

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.

10-6-08
Signature Date

Ann E. Ritchie, Agent
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.

SEPTEMBER 30, 2008
Date Surveyed

Signature & Seal of Professional Surveyor

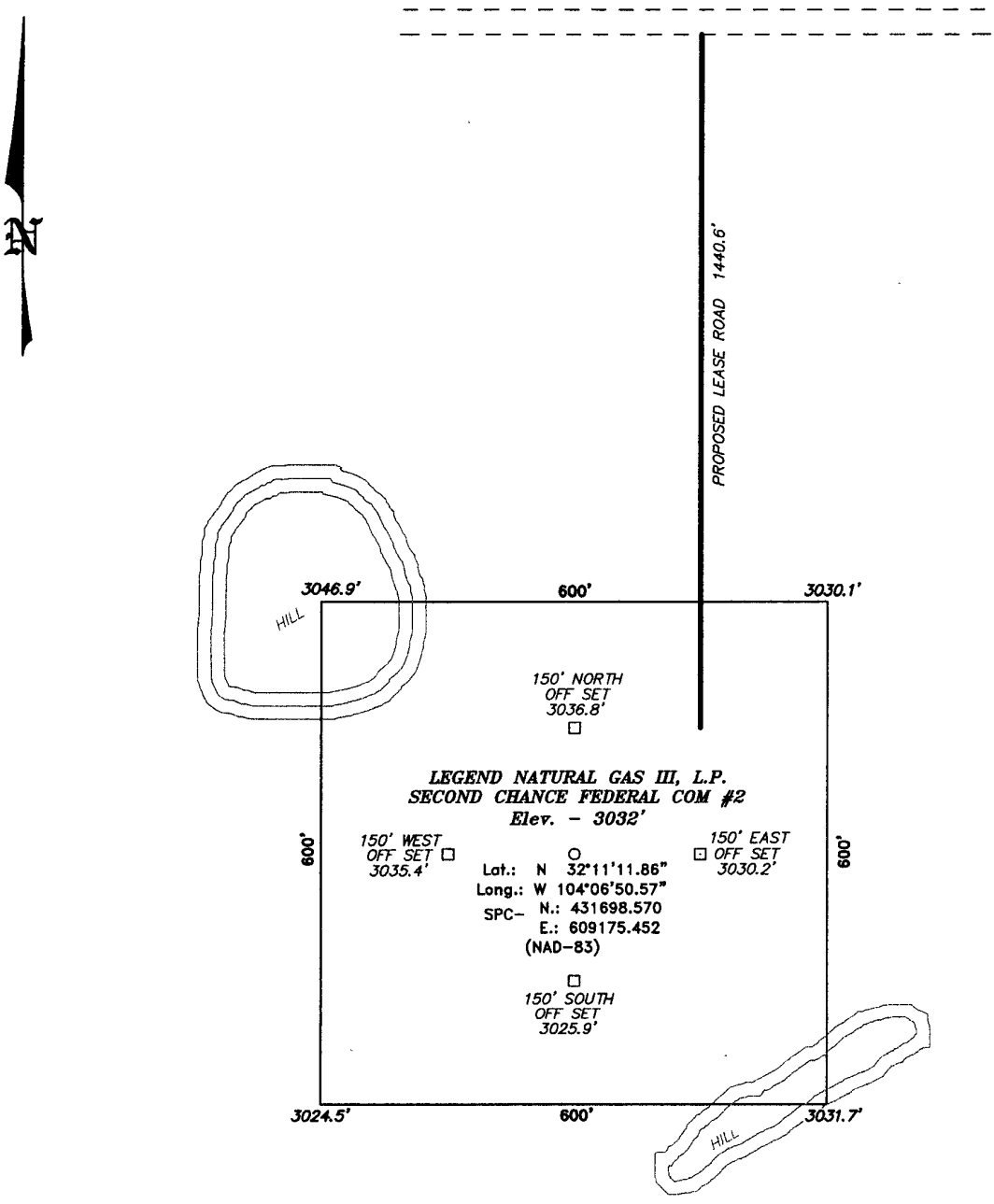
GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

W.O. Number: 21686

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

SECTION 29, TOWNSHIP 24 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 BLACK RIVER VILLAGE AND HIGBE HOLE, GO SOUTH ON HIGBE HOLE FOR 0.7 MILES TO LEAS ROAD, ON LEASE ROAD GO WEST 350' TO A "Y", TAKE LEFT FORK AND GO 0.6 MILES SOUTHERLY TO A "Y" TAKE LEFT FORK AND GO 0.2 MILES SOUTH WINDING SOUTHWESTERLY FOR 1.2 MILES, GO WEST AROUND PAD 0.1 MILES TO PROPOSED LEASE ROAD.

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

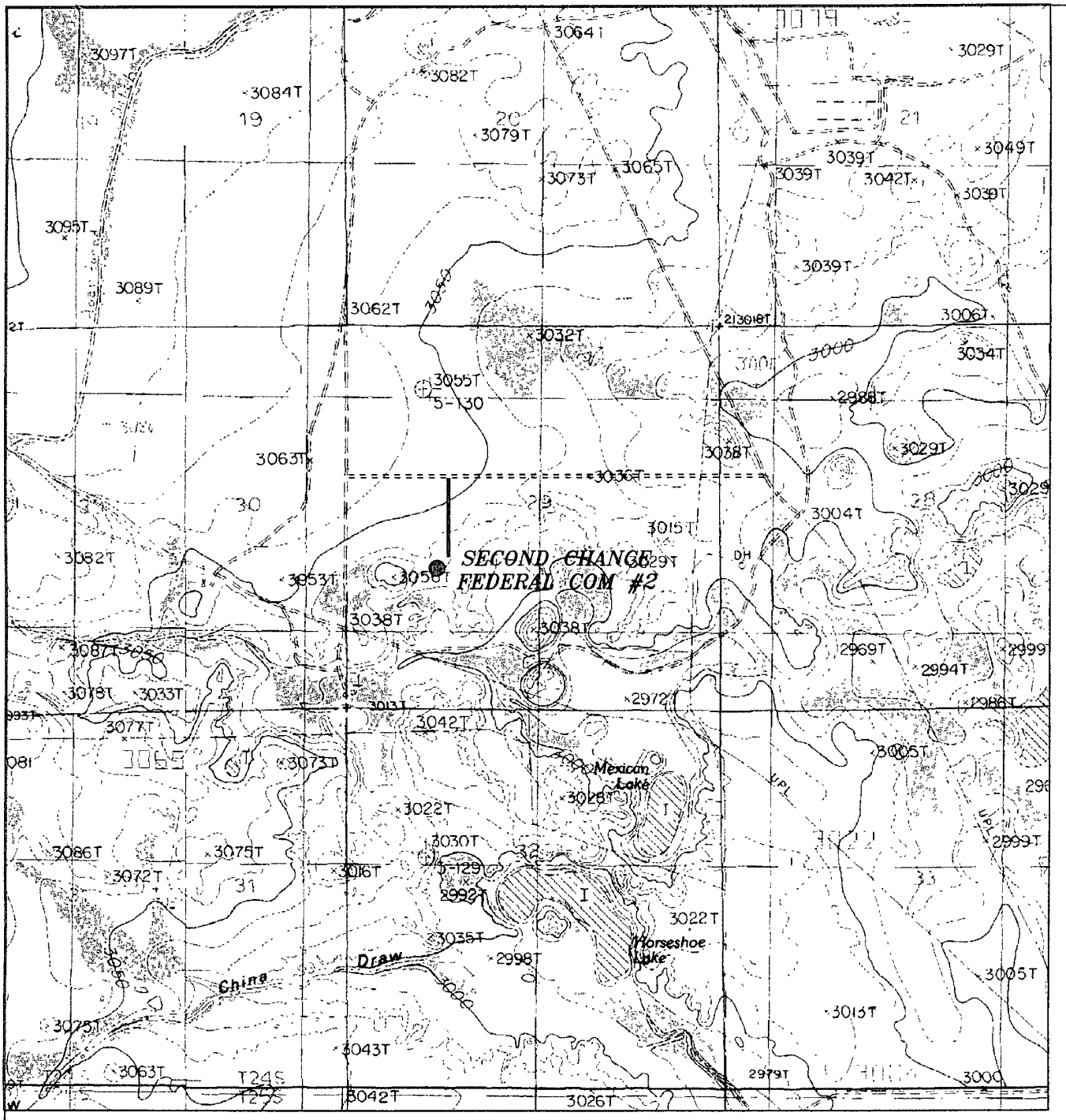
W.O. Number: 20586	Drawn By: J. M. SMALL
Date: 10-01-2008	Disk: 20586 JMS

LEGEND NATURAL GAS III, L.P.

REF: SECOND CHANCE FEDERAL COM #2 / WELL PAD TOPO

THE SECOND CHANCE FEDERAL COM #2 LOCATED 1960' FROM THE SOUTH LINE AND 1290' FROM THE WEST LINE OF SECTION 29, TOWNSHIP 24 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 09-29-2008	Sheet 1 of 1 Sheets



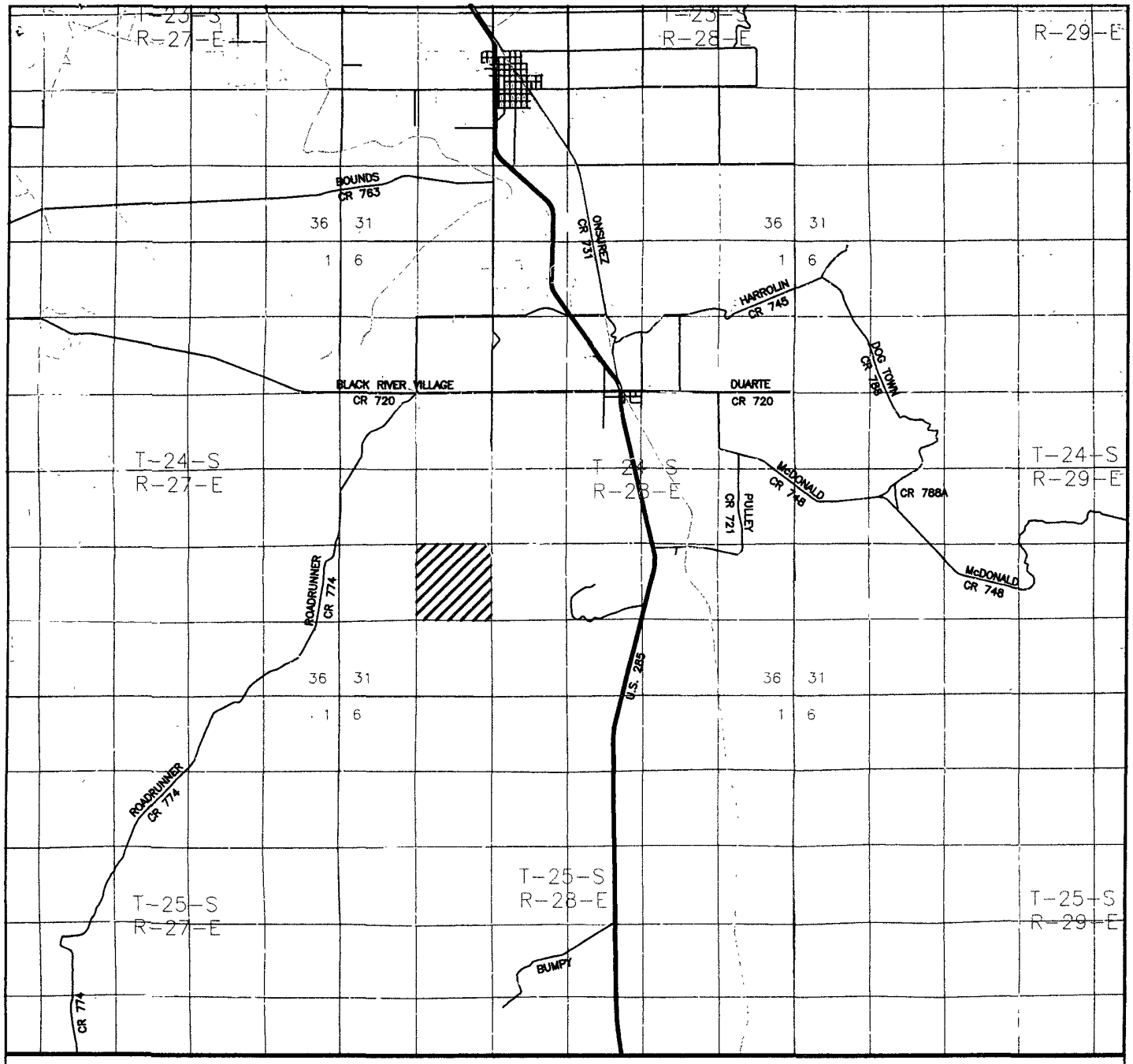
SECOND CHANCE FEDERAL COM #2
Located at 1960' FSL AND 1290' FWL
Section 29, Township 24 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O Number	20586
Survey Date	09-29-2008
Scale	1" = 2000'
Date	10-01-2008

LEGEND
NATURAL GAS
III, L.P.



SECOND CHANCE FEDERAL COM #2
Located at 1960' FSL AND 1290' FWL
Section 29, Township 24 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
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number:	JMS 20586
Survey Date:	09-29-2008
Scale:	1" = 2 MILES
Date:	10-01-2008

LEGEND
NATURAL GAS
III, L.P.

BOP Justification

JOB INFORMATION SHEET

PRO WELL TESTING & WIRELINE

Company Information	
Company Name:	OXY PERMIAN
Address:	
Well Information	
Well Name:	STENT FED. #1
Location:	
Field – Pool:	
Status:	SHUT IN
Test Information	
Type of Test:	STATIC GRADIENT
Gauge Depth:	12627 ft
Production Interval:	12718 ft to 12733 ft
Production Through:	2.375" TUBING
Tubing Pressure:	4091.65 psi
Casing Pressure:	0 psi
Shut In Time	
Status:	SHUT IN
Temperature @ Run Depth	207.18 degF
Surface Temperature:	67.62 degF

Gauge Information	Top Recorder	Bottom Recorder
Serial Number:	76228HHH	76222hhh
Calibration Date:	8/22/01	8/22/01
Pressure Range:	10000 psi	0 psi

Comments

Pro Well Testing & Wireline, Inc.
P.O. Box 791 Hobbs, NM 88241
(505) 397-3590

Offsetting well BOP calculations
Legend Natural Gas III, LP
Second Chance Federal, Well # 2

12. Operator's Representative:

A. Through A.P.D. Approval:

Bradley Penn, Landman
Legend Natural Gas III, LP
410 W. Grand Parkway South
Suite 400
Katy, TX 77494
Phone (281)644-5951
Cell (713) 303-4445

B. Through Drilling Operations

Floyd Hernandez, Drilling Engineer
Legend Natural Gas III, LP
410 W. Grand Parkway South
Suite 400
Katy, TX 77494
Phone (281)644-5950
Cell (832) 477-8293

13. Certification:

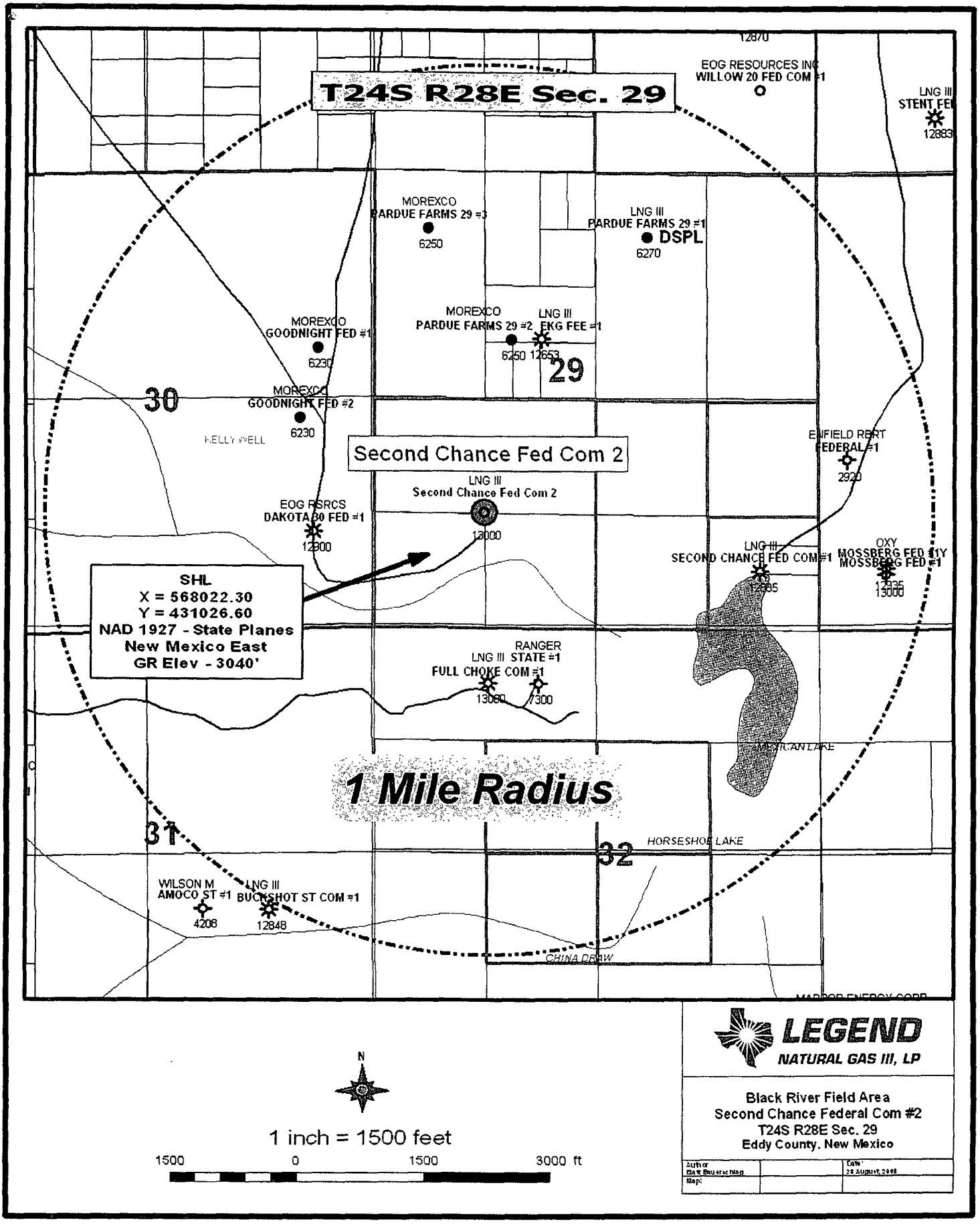
I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route herein, that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Bradley G Penn

Executed on this 10th day of September, 2008.

Name: Bradley G. Penn
Title: Land Professional
Address: 410 W. Grand Parkway South
Suite 400
Katy, TX 77494
Telephone: (281)644-5951
Email Address: bpenn@lng2.com

Exhibit D


T24S R28E Sec. 29
EOG RESOURCES INC
WILLOW 20 FED COM #1
12870
LNG III
STENT FED
12883
MOREXCO
PARDUE FARMS 29 #3
6250
LNG III
PARDUE FARMS 29 #1
DSPL
6270
MOREXCO
GOODNIGHT FED #1
6230
MOREXCO
PARDUE FARMS 29 #2
6250
LNG III
EKG FEE #1
12653
29
30
MOREXCO
GOODNIGHT FED #2
6230
KELLY WELL
Second Chance Fed Com 2
LNG III
Second Chance Fed Com 2
13000
EOG RSRCS
DAKOTA 30 FED #1
12900
ENFIELD RBRT
FEDERAL #1
2920
LNG III
SECOND CHANCE FED COM #1
12985
OXY
MOSSBERG FED #1Y
MOSSBERG FED #1
13000
SHL
X = 568022.30
Y = 431026.60
NAD 1927 - State Planes
New Mexico East
GR Elev - 3040'
RANGER
LNG III STATE #1
FULL CHOKE COM #1
13080
7300
AMERICAN LAKE
1 Mile Radius
31
32
HORSESHOE LAKE
WILSON M
AMOCO ST #1
4206
LNG III
BUCKSHOT ST COM #1
12848
CHINA DRAW
N
1 inch = 1500 feet
1500
0
1500
3000 ft
LEGEND
NATURAL GAS III, LP
Black River Field Area
Second Chance Federal Com #2
T24S R28E Sec. 29
Eddy County, New Mexico
Author
Map:
Date
28 August, 2008

Legend Natural Gas III, LP
Drilling Program

Second Chance Fed Com #2

Surface Location : 1360' FSL & 1290' FWL, Section 29-T24S-R28E, Eddy County, NM
Bottom Hole Location : 1360' FSL & 1290' FWL, Section 29-T24S-R28E, Eddy County, NM

1. **Geologic Name of Surface Formation:** Quaternary Alluvium Deposits

2. **Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil, & Gas:**

	Geological Marker	Depth	Type
a.	Top of Salt	950	
b.	Bottom of Salt	2,167	
c.	Lamar Limestone	2,382	Oil
d.	Delaware	2,422	Oil
e.	Cherry Canyon	3,240	Oil
f.	Brushy Canyon	5,680	Oil
g.	Bone Springs	5,935	Oil
h.	Wolfcamp Shale	9,896	Gas
i.	Cisco - Canyon	11,147	Gas
j.	Strawn	11,511	Gas
k.	Atoka	11,818	Gas
l.	Morrow Lime	12,138	Gas
m.	Morrow Poker Lake	12,315	Gas
n.	Morrow Chert	12,333	Gas
o.	Morrow A	12,428	Gas
p.	Morrow Paduca	12,555	Gas
q.	Morrow Lotos	12,681	Gas
r.	Morrow Teal	12,766	Gas
s.	Barnett Shale		Gas
t.	Total Depth	13,000	

No other formations are expected to yield oil, gas, or fresh water in measureable volumes. The surface fresh water sands will be protected by setting 13-3/8" casing at 650' and circulating cement back to surface. Fresh water sands will be protected by setting 9-5/8" casing at 2600' and circulating cement to surface. Both the 7" and 4-1/2" casing strings will circulate cement into the previous casing shoe to isolate any zones which contain commercial quantities of ail and/or gas.

3. **Casing Program:** (New) see COA

Hole Size	Hole Interval	OD Casing	Casing Interval	Weight	Grade	Collar
17-1/2"	0' - 650'	13-3/8"	0' - 650'	48#/ft	H-40	ST&C
12-1/4"	650' - 2600'	9-5/8"	0' - 2600'	36#/ft	J-55	LT&C
8-3/4"	2600' - 10,500'	7"	0' – 10,500'	26#/ft	P-110	LT&C
6-1/8"	10,500' – 13,000'	4-1/2"	0' – 13,000'	13.5#/ft	P-110	LT&C

Design Parameter Factors:

Casing Size	Burst Design Factor	Collapse Design Factor	Tension Design Factor
13-3/8"	1.73	2.37	2.47
9-5/8"	2.08	1.73	2.52
7"	1.42	1.23	2.09
4-1/2"	1.20	1.44	1.71

4. **Cement Program:** ← see COA

a. 13-3/8" Surface — Cement with **Lead Slurry:** 253 sacks (35:65) Poz (Fly Ash): Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 6% bwoc Bentonite + 99.7% Fresh Water. **Weight:** 12.6 ppg **Yield:** 1.92 cf/sack. **Tail** with 340 sacks Class C Cement + 2% bwoc Calcium Chloride + 56.4% Fresh Water. **Weight:** 14.8 ppg **Yield:** 1.34 cf/sack. **Displacement:** 104 bbls displacement fluid. **TOC @ surface.**

b. 9-5/8" Intermediate #1 — Cement with **Lead Slurry:** 465 sacks (35:65) Poz (Fly Ash): Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 5 lbs/sack LCM-1 + 6% bwoc Bentonite + 98.4% Fresh Water. **Weight:** 12.5 ppg **Yield:** 1.98 cf/sack. **Tail** with 195 sacks Class C Cement + 2% bwoc Calcium Chloride + 56.4% Fresh Water. **Weight:** 14.8 ppg **Yield:** 1.34 cf/sack. **Displacement:** 198 bbls displacement fluid. **TOC @ surface.**

c. 7" Intermediate #2 — Cement with **Lead Slurry:** 555 sacks (50:50) Poz (Fly Ash): Class H Cement + 5% bwoc Sodium Chloride + 0.125 lbs/sack Cello Flake + 10% bwoc Bentonite + 0.3% bwoc FL-52A + 139.7% Fresh Water. **Weight:** 11.8 ppg **Yield:** 2.45 cf/sack. **Tail** with 410 sacks Class H Cement + .5% bwoc FL-25 + 46.2% Fresh Water. **Weight:** 15.6 ppg **Yield:** 1.18 cf/sack. **Displacement:** 400 bbls displacement fluid. **TOC @ 2300'.**

d. 4-1/2" Production Cement with **Tail** Slurry with 319 sacks Class H Cement + .4% bwoc BA-10A + 0.3% bwoc CD-32 + 1% bwoc FL-62 + 45.5% Fresh Water. **Weight:** 15.6 ppg **Yield:** 1.19 cf/sack. **Displacement:** 205 bbls displacement fluid. **TOC @ 10,200'.**

see COA

5. **Pressure Control Equipment:**
The blowout preventor equipment (BOP) shown in Exhibit #1 will consist of a (5M system) double ram type (5000 psi WP) preventor and a bag-type (Hydril) preventer (5000 psi WP) and rotating head. Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and and drillpipe rams on bottom. The BOP will be installed on the 13-3/8" surface casing and will be utilized continuously until total depth is reached. All BOP's and associated equipment will be tested to ~~1200~~ psi with the rig pump before drilling out of the 13-3/8" casing shoe (70% of 48# H-40 casing). Prior to drilling out the 9-5/8" casing shoe, the BOP and Annular Preventor will be tested as per BLM Drilling Operations Order #2.

see COA

Pipe rams will be operated and checked each 24 hr period and each time the drill pipe is out of the hole. These functional yesys will be documented on the daily drillers log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram type BOP. Other accessory BOP equipment will include a Kelley cock, floor safety valve, choke lines, and choke manifold having a 5000 psi WP rating.

6. **Proposed Mud Circulating System:**

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – 650'	8.8 – 9.2	32 - 38	N/C	Fresh Water/Native Mud
650' – 2600'	10.0 – 10.1	29 - 30	N/C	Brine
2600' – 11,500'	8.4 – 10.0	28 - 29	N/C	Fresh Water/Brine
11,500' – 12,100'	10.0 – 13.5	38-45	10 – 12	Cut Brine/XD Polymer/Barite
12,100' – 13,000'	10.0 – 13.5	38-45	6 - 8	Cut Brine/XD Polymer/Barite

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run open hole logs and casing, the viscosity and water loss may have to be adjusted in order to meet these needs. Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until production casing is run and cemented.

7. **Auxiliary Well Control and Monitoring Equipment:**
   a. A Kelley cock will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

8. **Logging, Coring, & Testing Program:**
   a. No drill stem tests are planned.
   b. No coring program is planned
   c. Mud Loggers will be utilized from 9-5/8" casing shoe to TD of well (2600' to 13,000').
   d. Open hole electrical logs will be run. Logging program consist of the following:

Interval	Open Hole Logging Program
2600' – 10,500'	Gamma Ray / Array Laterolog / Neutron / Density
10,500' – 13,000'	Gamma Ray / Array Laterolog / Neutron / Density Formation Micro Imager

9. **Potential Hazards:**
   a. No abnormal pressures or temperatures are expected.
      i. Both the Strawn and Atoka formation could experience abnormal pressure (mud weights for some offset wells have been as high 11.0 ppg to 13.5 ppg)
   b. 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.
   c. No lost circulation is expected to occur.
   d. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
   e. Estimated BHP is approximately 5430 psi @ the Top of the Morrow formation (12,138')
   f. Estimated BHT is approximately 185 deg F @ TD of the well (13,000')

10. **Anticipated Starting Date and Duration of Operations:**
    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 operations and drilling is expected to take 50 days. If production casing is run then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.

Wellsite Layout

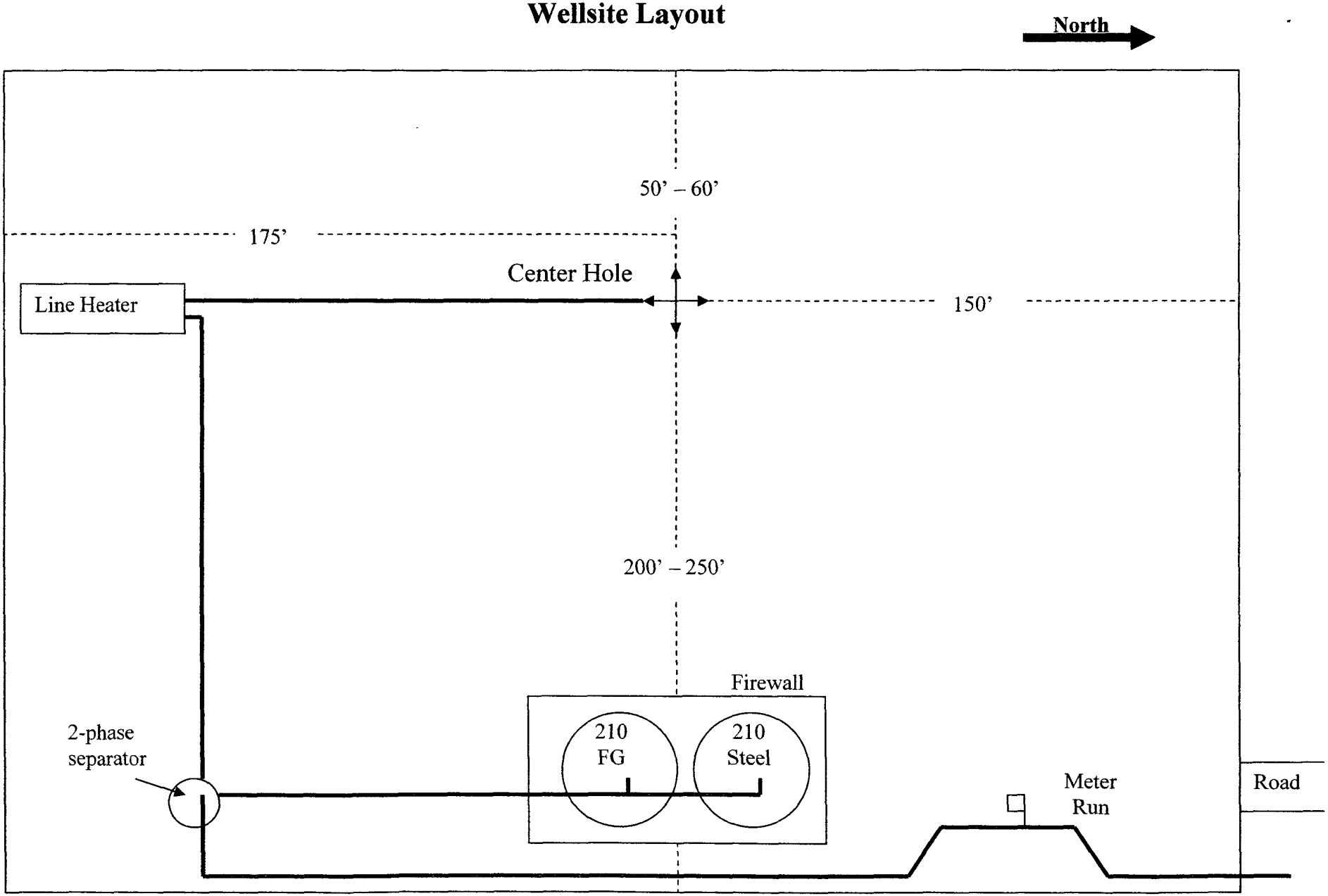
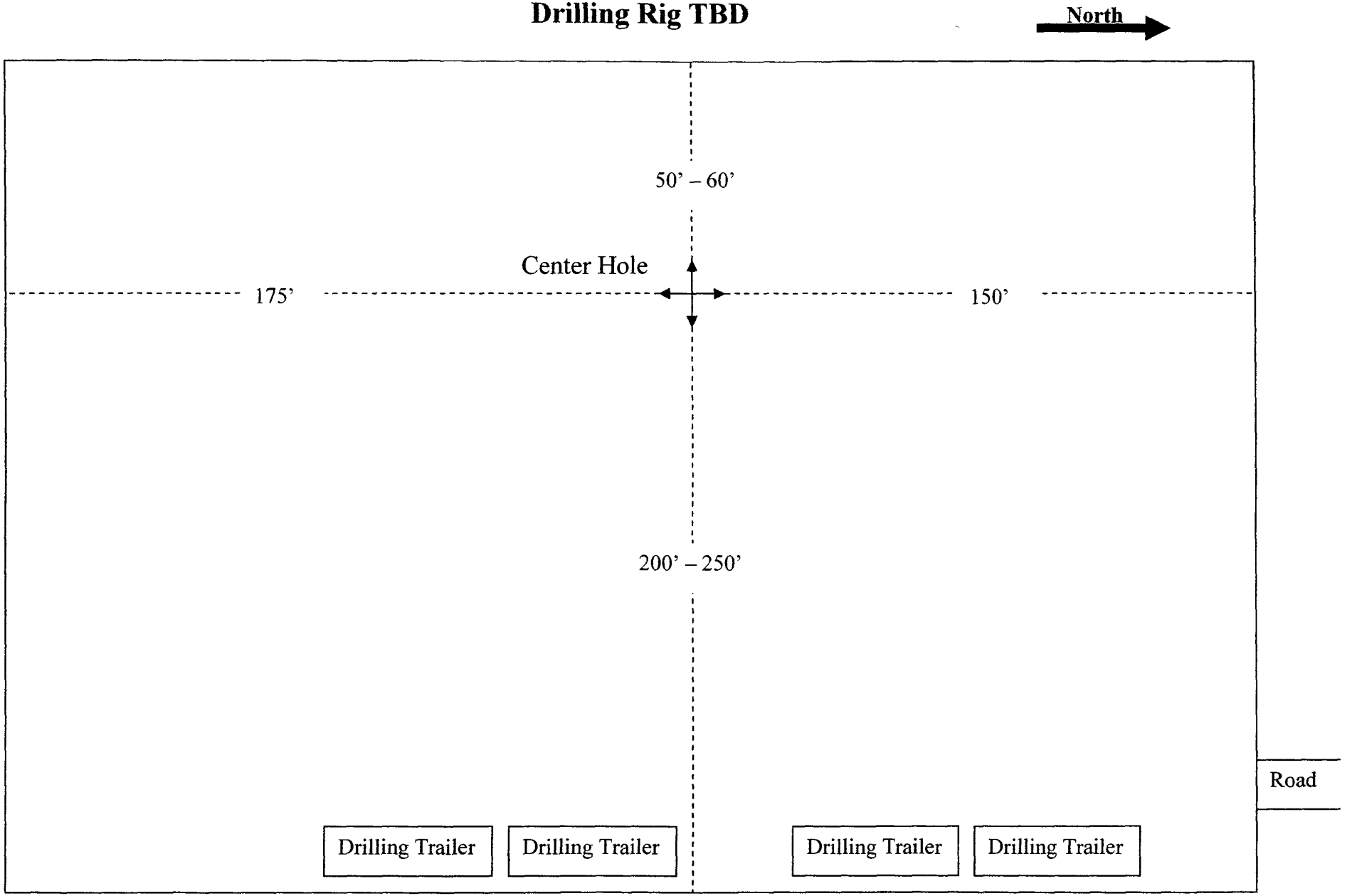
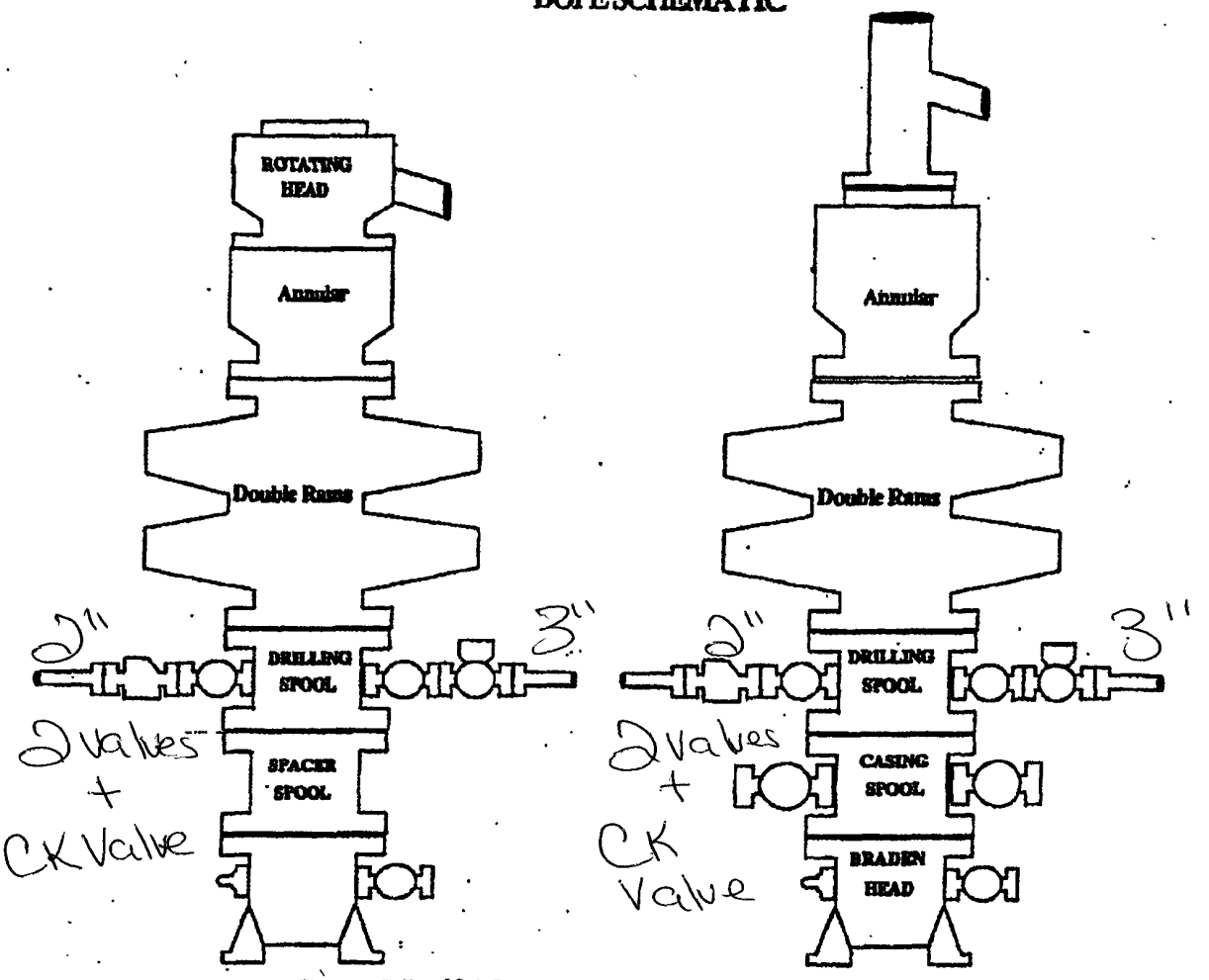


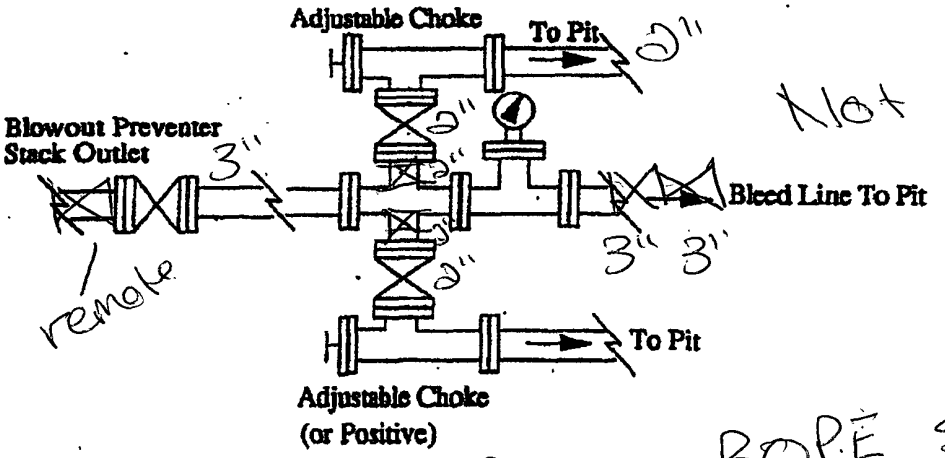
Exhibit E
Rig Location Layout
Drilling Rig TBD



BOPE SCHEMATIC



Choke Manifold



Not 5M Manifold

Remote required

BOPE schematics are required to show valve sizes

Legend Natural Gas III Limited Partnership

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

Legend 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. Legend's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

Legend Natural Gas III Limited Partnership

H_2S CONTINGENCY PLAN EMERGENCY CONTACTS

Company Office	505-123-5555
Answering Service (During Non-Office Hours)	505-123-5556

Key Personnel

Name	Title	Phone Number
Bradley Penn	Land Supervisor bpe@lng2.com	281 644 5951
Floyd Hernandez	Engineer	281 644-5950; cell 832 477-8293

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	575-885-3137
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

Smith International	432.570-0065
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

Legend Natural Gas III, LP
Surface Use Plan of Operations

Second Chance Fed Com #2
1360' FSL & 1290' FWL
Section 29-T24S-R28E
Eddy County, New Mexico

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

1. Existing Roads:

   Exhibit B is a reproduction of Eddy Co. General Highway Map. Exhibit C is a reproduction of a USGS Topographic Map showing the existing roads in the vicinity of the proposed location. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.

   A. Exhibits A1 & A2 show the proposed well site as staked.
   B. From the junction of Black River Village and Higbe Hole, go south on Higbe Hole for 0.7 miles to Leas Road, on lease road go west 350' to a "Y", take left fork and go 0.6 miles southerly to a "Y", take left fork and go 0.2 miles south winding southwesterly for 1.2 miles, go west around pad 0.1 miles to proposed lease road.

2. Planned Access Road:

   A new access road of 1740.5 feet will be necessary, all of which will be on-lease. The new road will be constructed as follows:

   A. The maximum width of the running surface will be 15'. The road will be crowned and ditched and constructed of 6" of rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage and to be consistent with local drainage patterns. BLM may specify any additions or changes during the onsite inspection.
   B. The average grade will be less than 1%.
   C. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM-approved caliche pit. Any additional materials that are required will be purchased from the dirt contractor.
   D. No turnouts are planned.
   E. No culverts, cattleguard, gates, low-water crossings, or fence cuts are necessary.
   F. The proposed access road as shown in Exhibit A2, has been centerline flagged by Basin Surveys.

3. Location of Existing Wells

   Exhibit D shows all existing wells within a one-mile radius of this well.

   A. Water wells – None known
   B. Disposal wells (1) Pardue Farms 29 #1
   C. Drilling wells – None known
   D. Producing wells (9) Second Chance Fed Com #1, Full Choke Com #1,OXY Mossberg Fed #1, EOG Dakota 30 Fed #1, EKG Fee #1, Morexco Goodnight Fed #1, #2 , 29 #2 and 29 #3
   E. Abandoned wells (2) Enfield Fed #1 and Ranger State #1
   F. Planned Wells (1) Full Choke #2

4. Location of Existing and/or Proposed Facilities:

   A. In the event the well is found to be productive, the Second Chance Federal Com #2 tank battery would be utilized and the necessary production equipment will be installed at the well site. See Production Facilities Layout diagram (Exhibit F).
   B. As a proposed gas well, we do not anticipate the need for electrical service.
   C. If on completion this well is a producer, Legend Natural Gas III, LP will furnish maps and/or plats showing on site facilities or offsite facilities and flow lines if needed. This will be accompanied by a Sundry Notice.

5. Location and Type of Water Supply:

   Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.

6. Source of Construction Material:

   If possible, construction material will be obtained from the excavation of drill site. If additional material is needed, it will be purchased from a local source and transported over the access route as shown on Exhibit C.

7. Methods of Handling Waste Disposal:

   A. Drill cuttings and fluids will be hauled to a state approved disposal facility such as CRI.
   B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in and approved sanitary land fill.
   C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
   D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John if needed will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.

E. Drilling fluids will be contained in steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8. Ancillary Facilities:

No camps or airstrips to be constructed.

9. Wellsite Layout:

A. Exhibit E shows location and rig layout.
B. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
C. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
D. If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

10. Plans for Restoration:

A. Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.
B. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.
C. If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegatation will comply with BLM standards.
D. Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

11. Other Information:

A. Topography consists of sloping plane. The area around the well site is grassland and the top soil is sandy. The vegetation is native scrub grasses with oakbrush, sagebrush, yucca, and prickly pear.
B. The well site is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
C. An Archaeological Survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Carlsbad BLM office.
D. There are no dwellings within 1.5 miles of this location.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Legend Natural Gas III Partnership
LEASE NO.:	NMNM92757
WELL NAME & NO.:	Second Chance Fed Com No 2
SURFACE HOLE FOOTAGE:	1960' FSL & 1290' FWL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 29, T. 24 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. SPECIAL REQUIREMENT(S)

Conditions of Approval
Cave and Karst

Berming

Berming of this location on all sides is important due to the large draw and water filled playa. This will help prevent any flow from the location and working area to flow into the draw and playa, not only for fluids but also caliche and sedemetation.

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

Delayed Blasting:
Any blasting will be phased and time delayed.

Tank Battery Liners and Berms:
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone.. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

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 (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

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

B. TOPSOIL

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

C. CLOSED LOOP SYSTEM

Although this is a closed loop system and no reserve pits will be utilized, the frac tank farm will be on the north side of the location and the v-door will be on the east side of the location.

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the
Carlsbad Field Office at (505) 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.

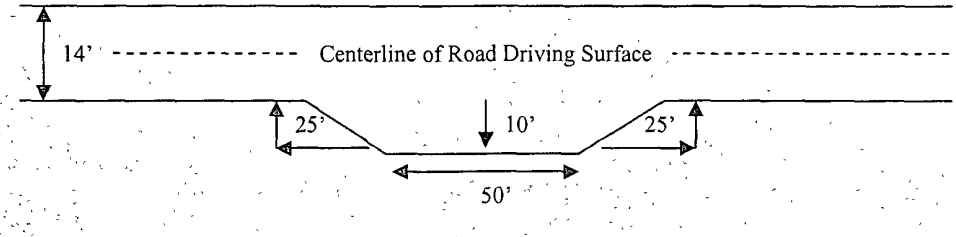
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

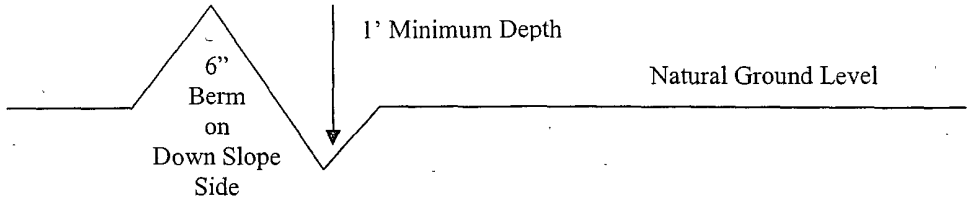
Standard Turnout – Plan View



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:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ 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.

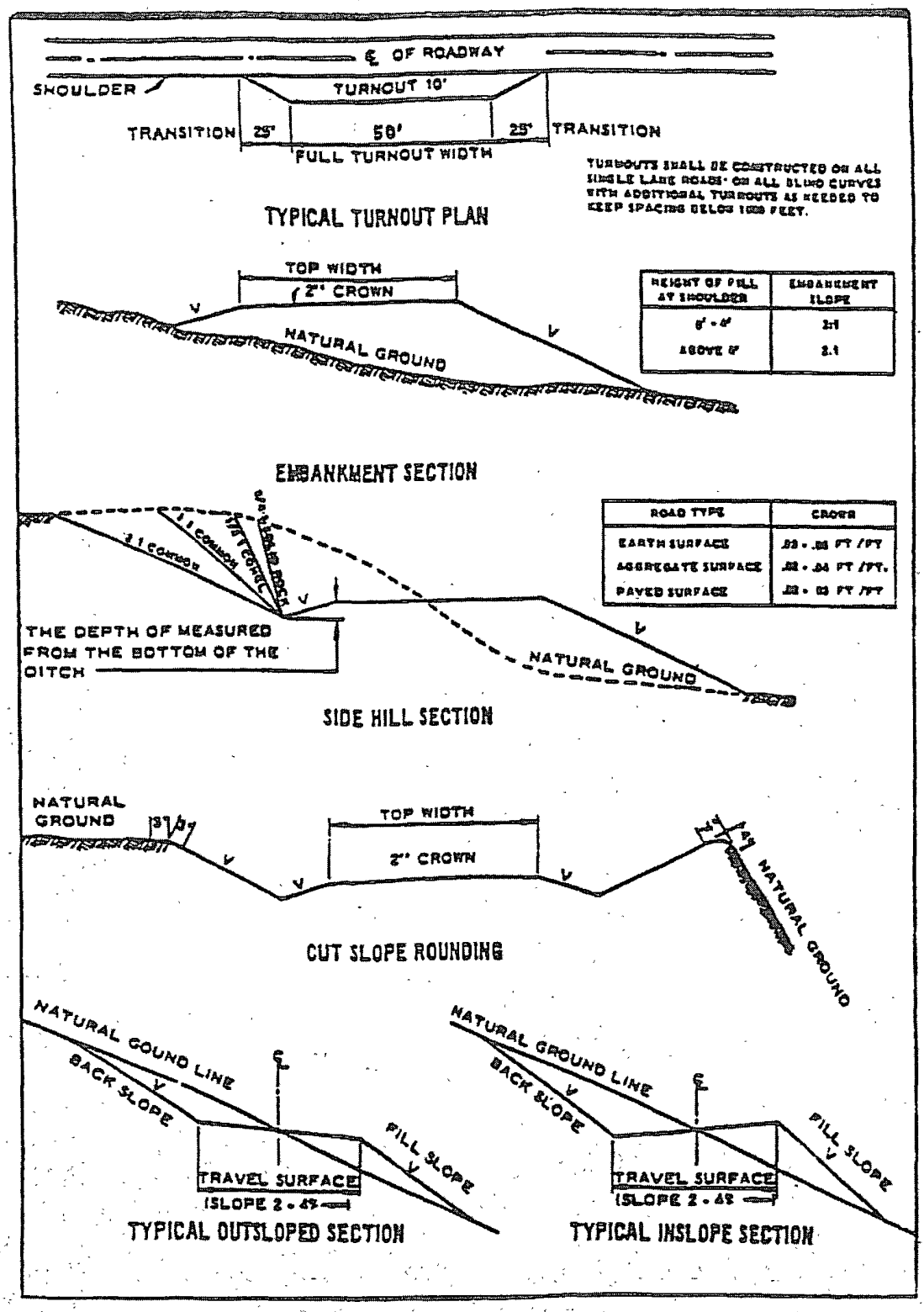
A gate shall be constructed and fastened securely to H-braces.

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. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

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

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

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.

High cave/karst.
Possible lost circulation in the Triassic Redbeds and the Castile Group.
High pressures expected in the Wolfcamp and Pennsylvanian Section.

1. The **13-3/8** inch surface casing shall be **set at approximately 650 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **This casing may have to be set in the Castile Anhydrite at approximately 1120 feet if the Rustler has collapsed out in this area. If the casing has to be set at 1120 feet, additional cement will be required.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to high cave/karst.**

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the second intermediate casing must come to surface with the wait on cement (WOC) time for a primary cement job to include the lead cement slurry due to high 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.

3. The minimum required fill of cement behind the **7** inch second intermediate casing is:

   ☒ Cement should tie-back at least 300 feet into previous casing string. Operator shall provide method of verification.

Formation below the 7" 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.

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

   ☒ Cement should tie-back at least 300 feet into previous casing string. Operator shall provide method of verification.

5. 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

BOP/BOPE schematics do not meet requirements of Onshore Order 1 or 2.

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 **9-5/8"** intermediate casing shoe shall be **10,000 (10M)** psi. **Mud program proposed calculates to a maximum absolute surface pressure of approximately 6300 psi. Operator has provided offset data from one section to the northeast that calculates to a bottom hole pressure for the Morrow of approximately 5600 psi. However, operator has also stated that offset wells have required 11-13.5 ppg mud in the Strawn and Atoka formations and BLM geologist concurs. Therefore, a 10M BOP/BOPE system is required.**

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 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.

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.

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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

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

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

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

Operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

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

B. Reseeding Procedure

Once the well has been drilled, completion procedures have been accomplished, and all trash removed from the area, reseed the entire location and any surrounding disturbed areas as follows:

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

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.