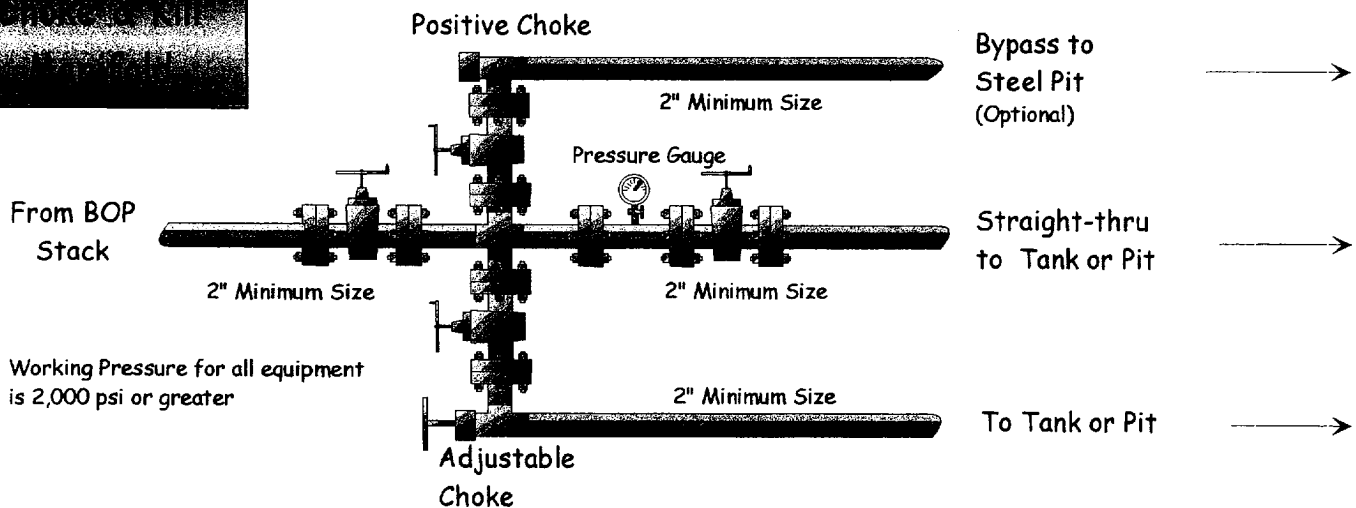
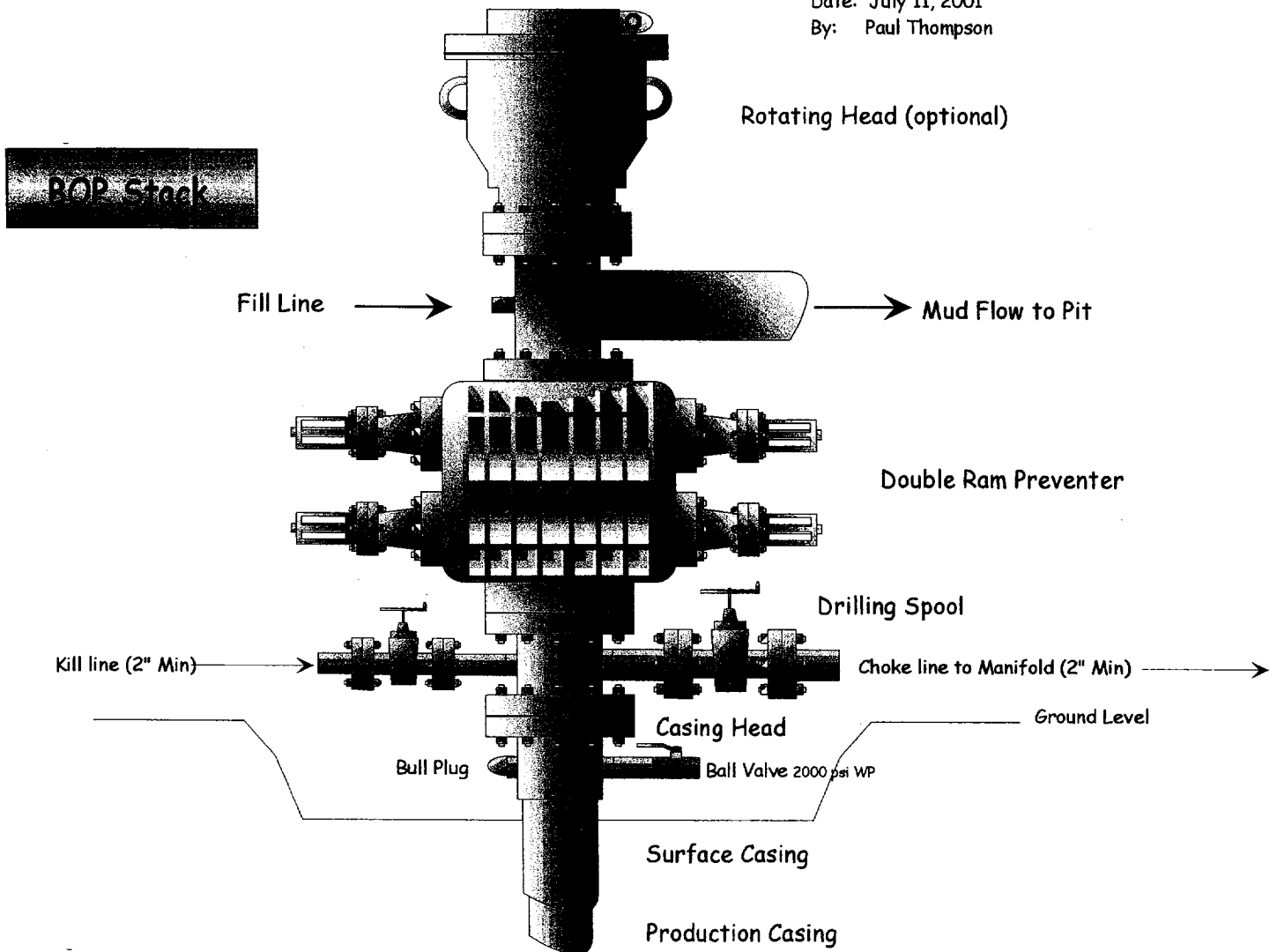


Calpine Natural Gas Company

Well Control Equipment Schematic for 2M Service

Date: July 11, 2001
By: Paul Thompson



C. Cont.

The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

IV. Materials

A. Casing Program:

Hole Size	Depth	Casing Size	Wt. & Grade
8-3/4"	120'	7"	20# K-55
6-1/4"	1555'	4-1/2"	10.5# K-55

B. Float Equipment:

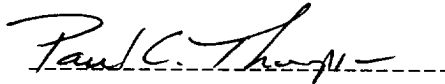
a) Surface Casing: None

b) Production Casing: 4-1/2" cement guide shoe and self fill insert float collar. Place float one joint above shoe. Five centralizers spaced every other joint above shoe and five turbolizers every other joint from the top of the well.

V. Cementing:

Surface casing: 7" - Use 50 sx (59 cu. ft.) of Cl "B" with 2% CaCl₂ (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG). 100% excess to circulate cement to surface. WOC 12 hours. Pressure test surface casing to 600 psi for 30 min.

Production Casing: 4-1/2" - Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 30 bbls of fresh water. Lead with 130 sx (268 cu.ft) of Cl "B" with 2% metasilicate. (Yield = 2.06 cu.ft./sk; slurry weight = 12.5 PPG). Tail with 50 sx (59 cu.ft.) of Cl "B" with 2% CaCl₂ (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG) Total cement volume is 327 cu.ft. (100% excess to circulate cement to surface).


Paul C. Thompson, P.E.

CALPINE NATURAL GAS CORP.
OPERATIONS PLAN
Morton #4

I. Location: 1650' FSL & 1695' FWL Date: September 19, 2002
 Sec 23 T30N R14W
 San Juan County, NM

Field: Basin Fruitland Coal Elev: GL 5710'
Surface: Bureau of Land Management
Minerals: Federal NM 20314

II. Geology: Surface formation _ Nacimiento

<u>A. Formation Tops</u>	<u>Depths</u>
Fruitland	790'
Pictured Cliffs	1402'
Total Depth	1555'

Estimated depths of anticipated water, oil, gas, and other mineral bearing formations which are expected to be encountered:

Water and gas - 790' and 1402'.

B. Logging Program: Induction/GR and density logs at TD.

C. No over pressured zones are expected in this well. No H₂S zones will be penetrated in this well. Max. BHP = 600 psig.

III. Drilling

A. Contractor:

B. Mud Program:

The surface hole will be drilled with a fresh water mud.

The production hole will be drilled with a fresh water polymer mud. The weighting material will be drill solids or if conditions dictate, barite. The maximum mud weight expected is 8.5 ppg.

C. Minimum Blowout Control Specifications:

Double ram type or annular type 2000 psi working pressure BOP with a rotating head. See the attached exhibits (#1 and #2) for details on the BOP equipment. All ram type preventers and related equipment will be hydraulically tested at nipple-up and after any use under pressure to 1000 psi.

PLAT #1

5638 x 5638

Morton #4



Cottonwood

Drill site of Gas Well

Harper Windmill

Harper Tank

5638 x 5638

5579

5548

5500

5600

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5500

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

5. Lease Serial No.

NM 26357

6. If Indian, Allottee or Tribe Name

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

28111

8. Lease Name and Well No.

Morton #4

9. API Well No.

30 045 31214

10. Field and Pool, or Exploratory

Basin Fruitland Coal

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

K Section 23, T30N, R14W

12. County or Parish

San Juan

13. State

NM

1a. Type of Work: ☒ DRILL

☐ REENTER

b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

☒ Single Zone ☐ Multiple Zone

2. Name of Operator

Calpine Natural Gas Company

3A. Address

c/o Walsh Engineering, 7415 E. Main, Farmington, NM 87402

3b. Phone No. (include area code)

505.327.4892

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

At surface 1650' FSL and 1695' FWL

At proposed prod. Zone

14. Distance in miles and direction from nearest town or post office*

3 miles west of Farmington, NM

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

1650'

16. No. of Acres in lease

640

17. Spacing Unit dedicated to this well

W/2 320 acres

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

2000'

19. Proposed Depth

1555'

20. BLM/BIA Bond No. on file

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

5710' GL

22. Approximate date work will start*

October 2002

23. Estimated duration

2 weeks

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 office.

25. Signature

Paul C. Thompson

Name (Printed/Typed)

Paul C. Thompson, P.E.

Date

9/23/02

Title

Agent

Approved by (Signature)

Wayne Townsend

Name (Printed/Typed)

Wayne Townsend

Date

10/23/02

Title

Office

FFO

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.

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 reverse)

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

NM000

State of New Mexico
Energy, Minerals & Mining Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C - 102

☐ AMENDED REPORT

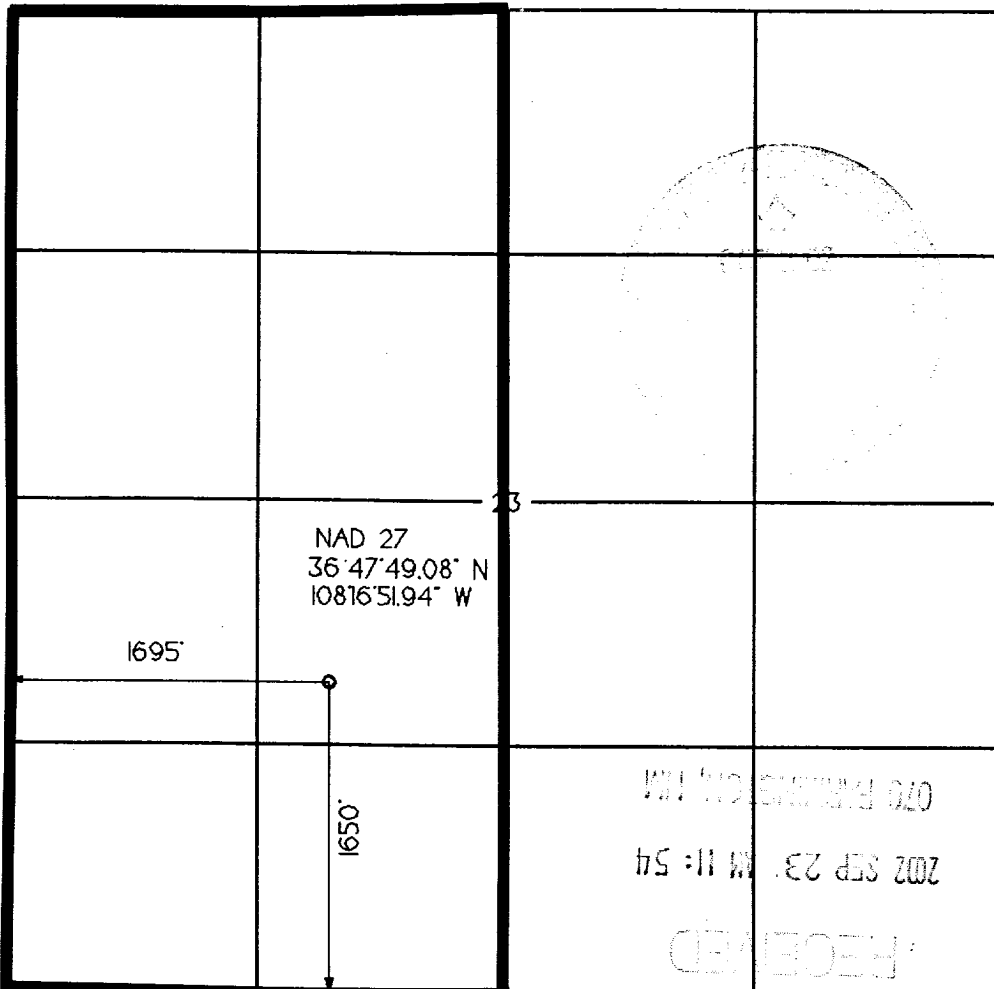
WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number 30-045-31214	Pool Code	Pool Name BASIN FILLWATER C&L
Property Code 28111	Property Name MORTON	
OGRD No. 194807	Operator Name CALPINE NATURAL GAS	
		Well Number 4
		Elevation 5710'

Surface Location									
UL or Lot K	Sec 23	Twp. 30 N.	Rge. 14 W.	Lot Idn.	Feet from > 1650'	North/South SOUTH	Feet from > 1695'	East/West WEST	County SAN JUAN

Bottom Hole Location If Different From Surface									
UL or Lot	Sec	Twp.	Rge.	Lot Idn.	Feet from >	North/South	Feet from >	East/West	County
Dedication W/2	Joint ? Y	Consolidation			Order No.				

NO ALLOWABLE WILL 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.	
Signature <i>Paul C. Thompson</i>	
Printed Name	
Title	
Date	
SURVEYOR CERTIFICATION I hereby certify that the well location on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.	
Date of Survey	
Signature and Seal of Professional Surveyor <div style="text-align: center;"> </div>	