



COPY

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 DEEPEN

5. Lease Serial No.  
NMNM18327 9:46

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.

Many Canyons 29-04-28 21H

9. API Well No.

30-039-30231

10. Field and Pool, or Exploratory

East Blanco / Gobernador Pictured Cliffs

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

Sec. 28 T 29N R 4W  
NM PM

12. County or parish

Rio Arriba

13. State

New Mexico

1a. Type of Work



DRILL



REENTER

1b. Type of Well



Oil Well



Gas Well



Other



Single Zone



Multiple Zone

2. Name of Operator

Black Hills Gas Resources, Inc.

E-mail: ibenally@bhep.com

Contact: Lynn Benally

3a. Address

P.O. Box 249

Bloomfield

NM

87413

3b. Phone No. (include area code)

505-634-1111

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

At surface

1,895' FNL

670' FWL

SW 1/4

NW 1/4

Lat: 36.69839°

Long: 107.26506°

At proposed production zone

±2,185' FNL ±660' FEL (SE 1/4 NE 1/4)

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

Well is located approximately 52 miles east of Bloomfield, New Mexico.

15. Distance from proposed location to nearest property of lease line, ft. (Also nearest Drig, unit line, if any)

Unit= n/a  
Lease= ±670'

16. No. of acres in lease

640.00

17. Spacing Unit dedicated to this well

320 N/A

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

Carson  
29-04-28  
± 1,500'

19. Proposed depth

4,278' TVD

20. BLM/BIA Bond No. on file

NMB000230

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

7,472' GR

22. Approximate date work will start \*

April 23, 2007

23. Estimated duration

45-60 days drig + completion

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

Kathy L. Schneebeck

Name (Printed/Typed)

Kathy L. Schneebeck, 303-820-4480

Date

March 22, 2007

Title

Permit Agent for Black Hills Gas Resources, Inc.

Approved by (Signature)

[Signature]

Name (Printed/Typed)

Office

FFO

Date

5/7/07

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.

HOLD G104 FOR directional  
Survey

(continued on page 2) NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT

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

NMOCD

B 5/10

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

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II  
1301 W. Grand Ave., Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005

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

2007 MAR 23 AM 9:46

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-039-30231</b>		<sup>2</sup> Pool Code <b>77440</b>	<sup>3</sup> Pool Name <b>GOBERNADOR PICTURED CLIFF</b>
<sup>4</sup> Property Code <b>301949-36479</b>	<sup>5</sup> Property Name <b>MANY CANYONS 29-04-28</b>		<sup>6</sup> Well Number <b>21H</b>
<sup>7</sup> GRID No. <b>013925</b>	<sup>8</sup> Operator Name <b>BLACK HILLS GAS RESOURCES</b>		<sup>9</sup> Elevation <b>7472'</b>

<sup>10</sup>Surface Location

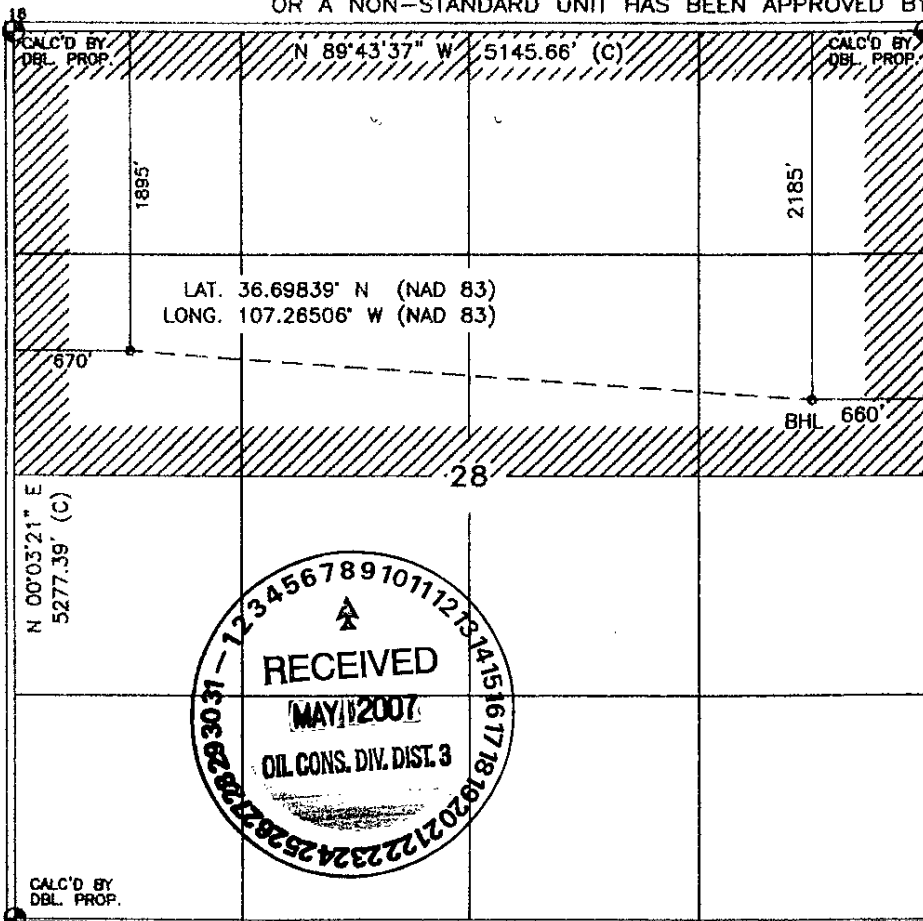
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	28	29-N	4-W		1895	NORTH	670	WEST	RIO ARRIBA

<sup>11</sup>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
H	28	29-N	4-W		2185	NORTH	660	EAST	RIO ARRIBA

<sup>12</sup> Dedicated Acres <b>320 - N/2</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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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



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or is a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Kathy L. Schneebeck* March 22, 2006  
Signature Date  
Kathy L. Schneebeck  
Printed Name Permit Agent for BHGR

18 SURVEYOR CERTIFICATION

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

JUN 14 2007  
Date of Survey  
Signature and Seal of Registered Surveyor:  
8894  
Certificate Number

Submit 3 Copies To Appropriate District Office  
**District I**  
1625 N. French Dr., Hobbs, NM 88240  
**District II**  
1301 W. Grand Ave., 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

Form C-103  
May 27, 2004

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

WELL API NO.

30-039-30231

5. Indicate Type of Lease

STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

**Many Canyons 29-04-28**

8. Well Number

**21H**

9. OGRID Number

**013925**

10. Pool name or Wildcat

**Pictured Cliffs**

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

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

2. Name of Operator

**Black Hills Gas Resources, Inc.**

3. Address of Operator

**P.O. Box 249 Bloomfield, NM 87413**

4. Well Location

Unit Letter: E : 1,895 feet from the North line and 670 feet from the West line

Section: 28 Township 29N Range 4W NM PM County: Rio Arriba

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

**7,472' GR**

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type: Drilling Pit Depth to Groundwater > 100 Distance from nearest fresh water well > 1000 Distance from nearest surface water > 200

Pit Liner Thickness: 15 mil Below-Grade Tank: Volume \_\_\_\_\_ bbls; Construction Material \_\_\_\_\_

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐ CHANGE PLANS ☐

PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

OTHER: **Pit Registration**

☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐ P AND A ☐

CASING/CEMENT JOB ☐

OTHER:

☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Drilling Pit Registration

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOC guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Kathy L. Schneebeck TITLE: Permit Agent for Black Hills Gas Resources, Inc. DATE: March 22, 2007

Type or print name: **Kathy L. Schneebeck** E-mail address: **kathys@banko1.com** Telephone No. **303-820-4480**

For State Use Only

APPROVED BY: [Signature] TITLE: **DEPUTY OIL & GAS INSPECTOR, DIST. #3** DATE: 5/10/07

Conditions of Approval (if any):

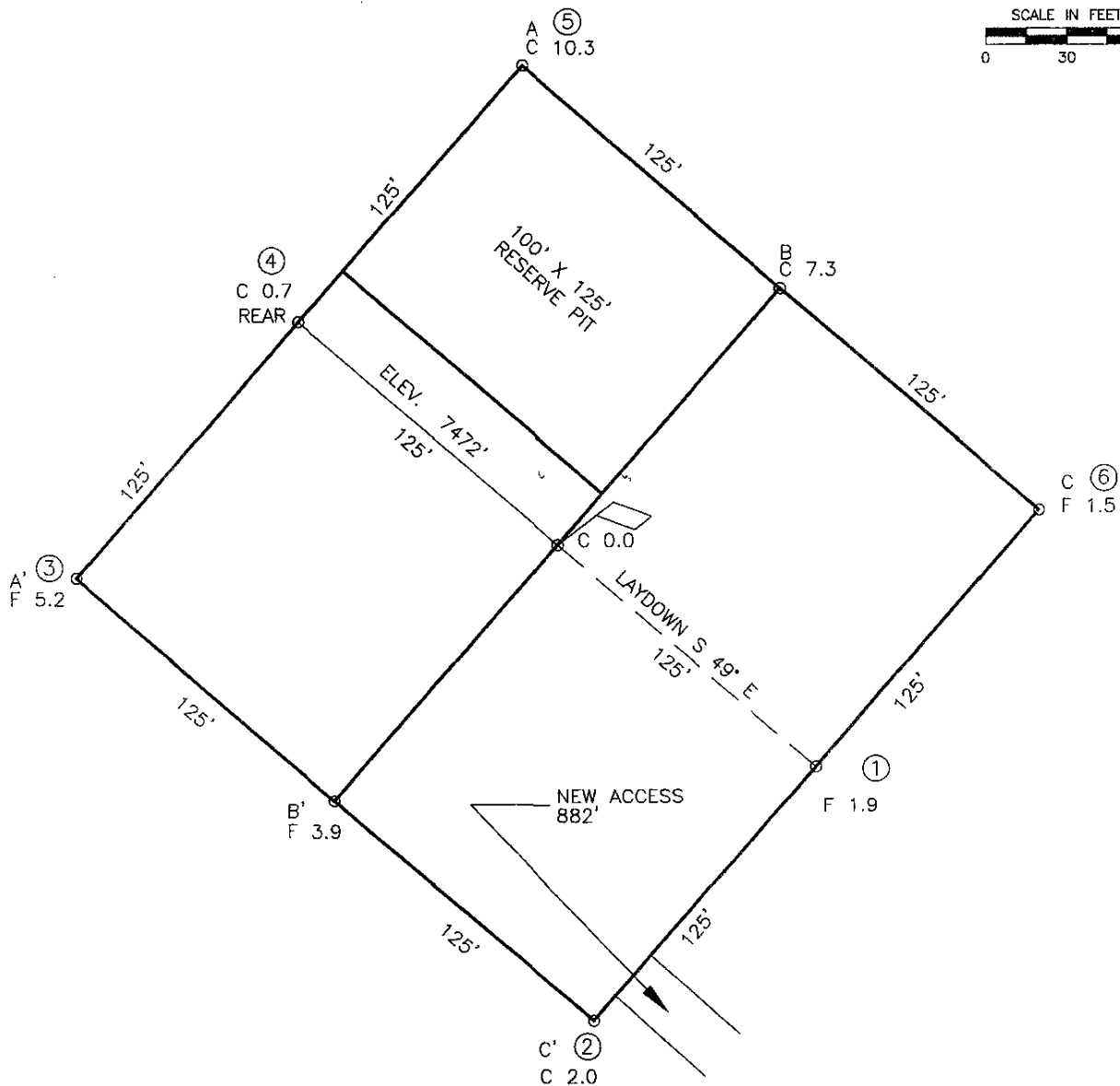
8

# WELL PAD DIAGRAM

COMPANY: BLACK HILLS GAS RESOURCES  
 LEASE: MANY CANYONS 29-04-28 No. 21H  
 FOOTAGE: 1895 FNL 670 FWL  
 SEC.: 28 TWN: 29-N RNG: 4-W NMPM  
 ELEVATION: 7472'




SCALE IN FEET  
 0 30 60



## NOTE:

DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.

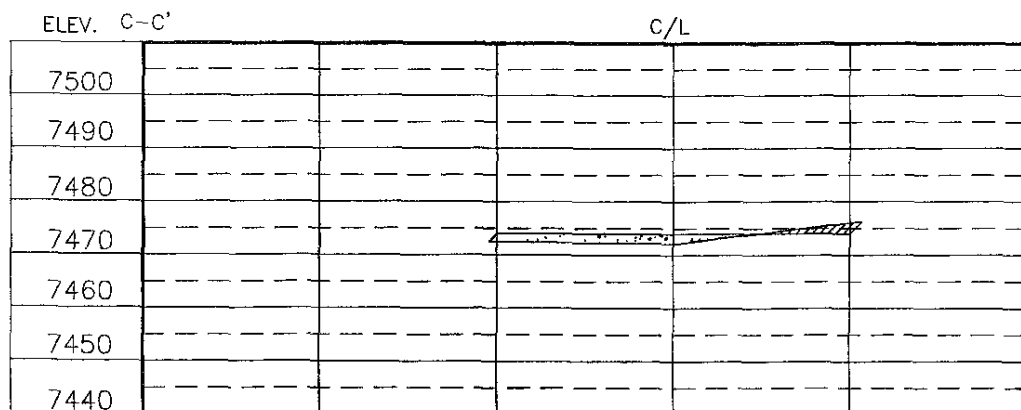
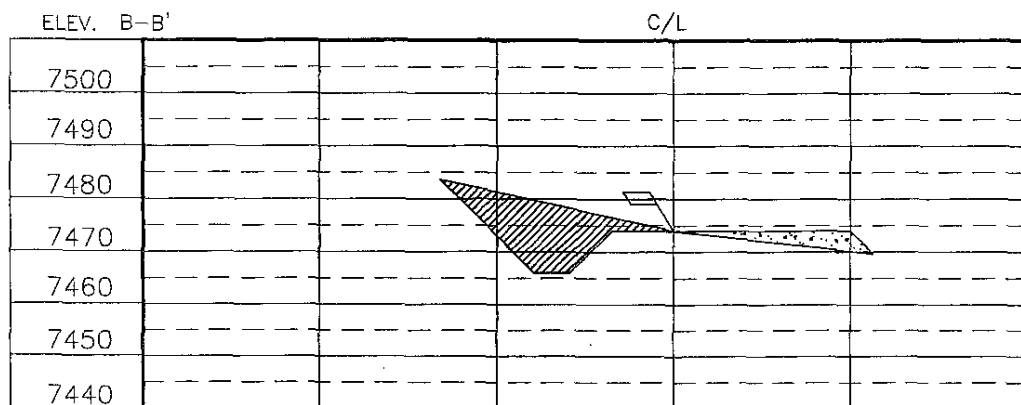
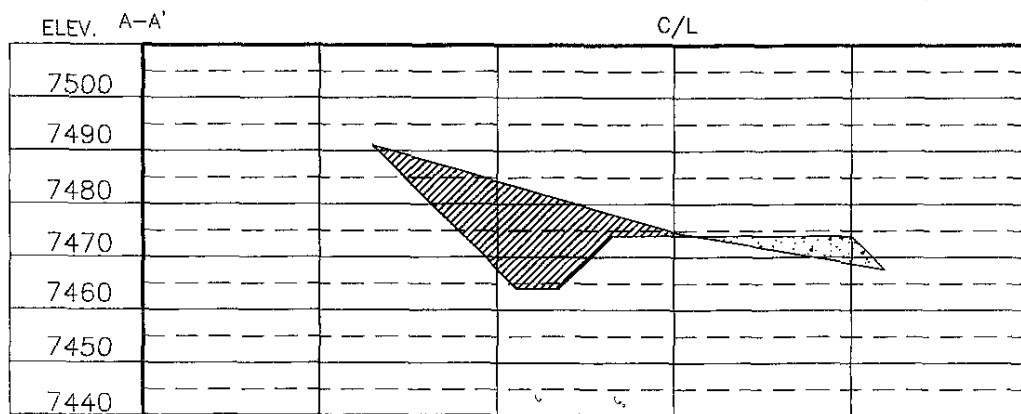
REVISION:	DATE:	REVISED BY:
CHANGE PAD SIZE	10/12/05	B. LEIDY
 <b>Daggett Enterprises, Inc.</b> Surveying and Oil Field Services P. O. Box 15068 • Farmington, NM 87401 Phone (505) 326-1772 • Fax (505) 326-6019 NEW MEXICO L.S. 8894		
DRAWN BY: G.V.	CADFILE: MN435PL8	
ROW#: MN435	DATE: 07/18/05	

# WELL PAD CROSS-SECTIONAL DIAGRAM

COMPANY: BLACK HILLS GAS RESOURCES  
 LEASE: MANY CANYONS 29-04-28 No. 21H  
 FOOTAGE: 1895 FNL, 670 ~~FNL~~ FWL  
 SEC.: 28, TWN: 29-N, RNG: 4-W, NMPM  
 ELEVATION: 7472'

## NOTE:

DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR  
 UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO  
 ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO  
 EXCAVATION OR CONSTRUCTION.



REF. DWG. MN435PL8 WELL PAD DIAGRAM

REVISIONS: DATE 10/18/05 BY: B.L.

Daggett Enterprises, Inc.  
 Surveying and Oil Field Services  
 P. O. Box 15068 • Farmington, NM 87401  
 Phone (505) 326-1772 • Fax (505) 326-6018  
 NEW MEXICO L.S. 8894  
 CAPFILE MN435CF8  
 DATE 07/18/05



DRAWN BY: G.V.  
 ROW#: MN435

Black Hills Gas Resources, Inc.  
**Many Canyons 29-04-28 21H**  
Surface: 1,895' FNL 670' FWL (SW/4 NW/4)  
BHL: ±2,185' FNL ±660' FEL (SE/4 NE/4)  
Sec. 28 T29N R4W  
Rio Arriba County, New Mexico  
Federal Lease: NMNM18327

### DRILLING PROGRAM

This Application for Permit to Drill (APD) is filed under the Notice of Staking (NOS) process as stated in Onshore Order No. 1 (OSO #1) and supporting Bureau of Land Management (BLM) documents. This NOS process included an on-site meeting on November 28, 2005, prior to the submittal of the application, at which time the specific concerns of Black Hills Gas Resources, Inc. (Black Hills) and the United States Forest Service – Jicarilla Ranger District (USFS) were discussed. USFS is the Surface Management Agency (SMA) for this wellpad and access road. All specific concerns of the USFS representatives are addressed herein, as are specific stipulations from the BLM.

**This is a new vertical and horizontal well to be drilled into the Gobernador Pictured Cliffs formation. See also the attached Horizontal Drilling Program.**

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,472'

ESTIMATED FORMATION TOPS - (Water, oil, gas and/or other mineral-bearing formations)

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	2,410'	Sandstone, shales & siltstones
Ojo Alamo	3,635'	Sandstone, shales & siltstones
Kirkland	3,860'	Sandstone, shales & siltstones
Fruitland Coal	4,070'	Sandstone, shales & siltstones
Pictured Cliffs	4,190'	Sandstone, shales & siltstones

TOTAL DEPTH	4,278'	TVD
	<u>8,071.04</u>	<u>MD (end of horizontal bore)</u>

Estimated depths of anticipated fresh water, oil, or gas:

Tertiary

San Jose	surface	Gas
Nacimiento	2,410'	Gas
Ojo Alamo	3,635'	Gas
Fruitland Coal	4,070'	Gas
Pictured Cliffs	4,190'	Gas

**HORIZONTAL DRILLING PROGRAM**

- A) Kick-Off-Point is estimated to be at  $\pm 4,190'$  TVD.  
 B) 5-1/2" casing will be set to 4,278' in the vertical portion of the well. After the casing is set vertically, a window will be milled out at the Kick-Off-Point, the horizontal portion of the well will be drilled and a liner will run the distance of the horizontal hole.

**CASING PROGRAM**

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' – 250' TVD	12-1/4"	8-5/8"	J-55 24# ST&C New	To surface ( $\pm 175$ sxs Standard Cement containing 2% CaCl <sub>2</sub> and 0.25 lb/sx LCM) **
0' – 4,278' TVD	7-7/8"	5-1/2"	J-55 15.5# LT&C New	TD to surface (Lead: $\pm 300$ sxs Lite Standard Cement. Tail: $\pm 400$ sxs 50:50 POZ containing 0.25 lb/sx LCM)* **
4,190' TVD (KOP) – End of Lateral Bore	4-3/4"	2-7/8"	PH-6 (Liner)	None

\* Actual cement volume to be determined by caliper log.

\*\* Cement will be circulated to surface.

**Yields:**

Surface: Standard Cement yield: = 1.2 ft<sup>3</sup>/sx (mixed at 15.6 lb/gal)

Production: Lite Standard Cement yield: = 1.59 ft<sup>3</sup>/sx (mixed at 13.4 lb/gal)  
 50:50 POZ yield = 1.27 ft<sup>3</sup>/sx (mixed at 14.15 lb/gal)

All fresh water and prospectively valuable minerals encountered during drilling, will be recorded by depth and protected.

**PRESSURE CONTROL**

BOPs and choke manifold will be installed and pressure tested before drilling out under surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOP's will be pressure tested at least once every 30 days. Ram type preventors and related pressure control equipment will be pressure tested to 1,000 psi. Annular type preventor will be pressure tested to 50% of the rated working pressure, not to exceed 1,000 psi. All casing strings will be pressure tested to 0.22 psi/ft. or 1,000 psi, whichever is greater, not to exceed 70% of internal yield.

BOP to be either double gate rams or an annular preventor as per Onshore Order No. 2 (OSO #2).

Statement on Accumulator System and Location of Hydraulic Controls

The drilling rig has not yet been selected for this well. Selection will take place after approval of this application. Manual and/or hydraulic controls will be in compliance with Onshore Order No. 2 for 2M systems.

A remote accumulator will be used. Pressures, capacities, location of remote hydraulic and manual controls will be identified at the time of the BLM supervised BOP test.

MUD PROGRAM

0'	-	250'	Fresh water – M.W. 8.5 ppg, Vis 30-33
250'	-	TD'	Clean Faze - Low solids non-dispersed
			M.W.: 8.5 – 9.2 ppg
			Vis.: 28 – 50 sec
			W.L.: 15cc or less

Sufficient mud materials to maintain mud properties, control lost circulation and to contain “kick” will be available at wellsite.

AUXILIARY EQUIPMENT

- A) A Kelly cock will be kept in the drill string at all times
- B) Inside BOP or stab-in valve (available on rig floor)
- C) Mud monitoring will be visually observed

LOGGING, CORING, TESTING PROGRAM

- A) Logging: DIL-CNL-FDC-GR – TD – BSC (GR to surface)  
Sonic (BSC to TD)
- B) Coring: None
- C) Testing: Possible DST – None anticipated. Drill stem tests may be run on shows of interest

ABNORMAL CONDITIONS

- A) Pressures: No abnormal conditions are anticipated  
Bottom hole pressure gradient – 0.31 psi/ft
- B) Temperatures: No abnormal conditions are anticipated
- C) H<sub>2</sub>S: See H<sub>2</sub>S Plan in the event H<sub>2</sub>S is encountered.
- D) Estimated bottomhole pressure: 1,326 psi

ANTICIPATED START DATE

April 23, 2007

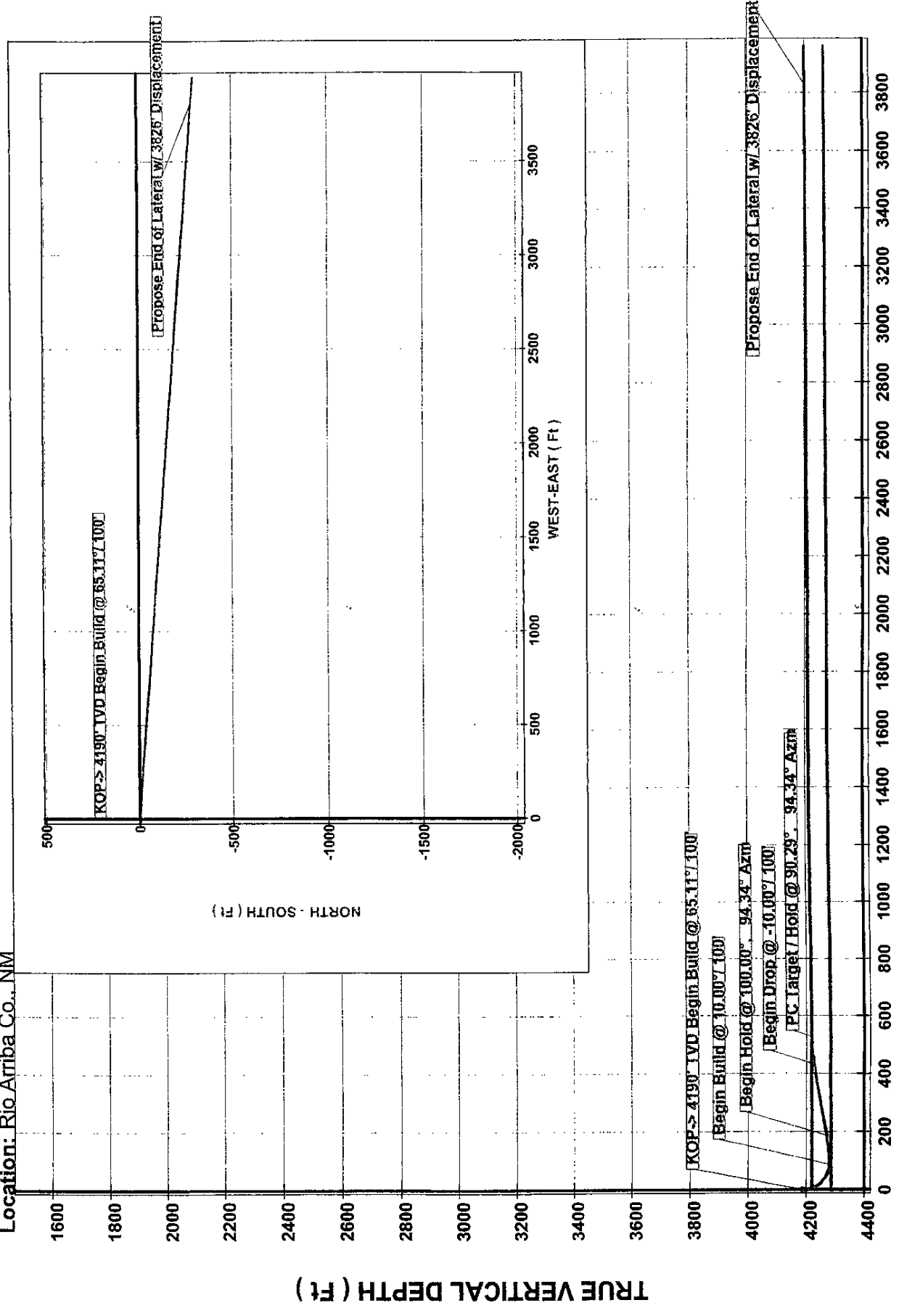
COMPLETION

The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2-7/8” PH-6 tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.





Job Number: 61xxx  
Company: Black Hills Gas Resources  
Lease/Well: Many Canyons 29-04-28 #21H  
Location: Rio Arriba Co., NM

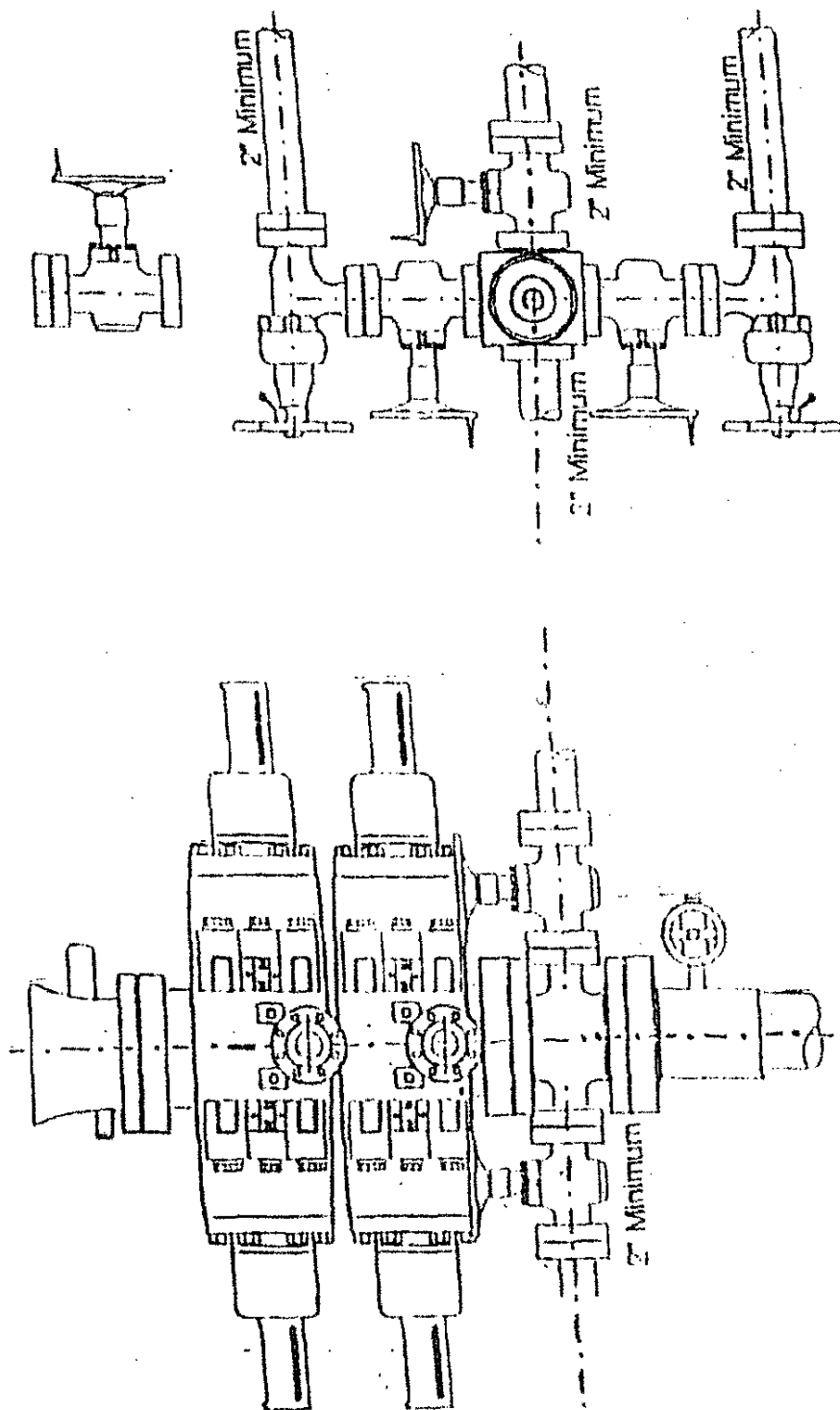


VERTICAL SECTION ( Ft ) @ 94.34°

## 2-M SYSTEM

Black Hills Gas Resources, Inc.

ANNULAR PREVENTOR MAY BE SUBSTITUTED FOR DOUBLE GATE PREVENTORS  
BOP PRESSURE TEST TO 1,000 PSI



## Hydrogen Sulfide Drilling Operations Plan

### I. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide ( $H_2S$ ).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of  $H_2S$  detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of  $H_2S$  on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the  $H_2S$  Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable  $H_2S$  zone (within 3 days or 500 feet) and weekly  $H_2S$  and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific  $H_2S$  Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

### II. $H_2S$ Safety Equipment and Systems

Note: All  $H_2S$  safety equipment and systems, if necessary, will be installed, tested, and operational when drilling reaches a depth of 500 feet above or three days prior to penetrating the first zone containing or reasonably expected to contain  $H_2S$ .

#### A. Well control equipment:

1. Choke manifold with a minimum of one remote choke.
2. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

**Black Hills Gas Resources, Inc.**

- B. Protective equipment for essential personnel:
  - 1. Mark II Surviveair 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.
- C. H<sub>2</sub>S detection and monitoring equipment:
  - 1. Two portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H<sub>2</sub>S levels of 10 ppm are reached.
- D. Visual warning systems:
  - 1. Wind direction indicators as shown on well site diagram.
  - 2. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate. See example attached.
- E. Mud program:
  - 1. The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.
- F. Metallurgy:
  - 1. All drill strings, casings, tubing, wellhead, blowout preventors, drilling spools, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
  - 2. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.
- G. Communication:
  - 1. Cellular telephone communications in company vehicles.
- H. Well testing:
  - 1. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.