

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

COPY

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

2006 JUN 14

RECEIVED  
070

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. Lease Serial No.  
NMSF79484A ~~3460~~ 079484A  
6. If Indian, Allottee or Tribe Name  
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1a. Type of Work ☒ DRILL ☐ REENTER  
1b. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.  
8. Lease Name and Well No.  
Many Canyons 30-04-14 44H

2. Name of Operator **Black Hills Gas Resources, Inc.** E-mail: lbenally@bhep.com  
3a. Address P.O. Box 249 Bloomfield CO 87413  
3b. Phone No. (include area code) 505-634-1111

9. API Well No.  
30-039-29958  
10. Field and Pool, or Exploratory  
East Blanco / Pictured Cliffs

4. Location of Well (Report location clearly and in accordance with any State Requirements.)  
At surface 1,055' FSL 405' FEL SE 1/4 SE 1/4  
Lat: 36° 48' 26.3" Long: 107° 12' 59.5"  
At proposed production zone ±1,055' FSL ±660' FWL (SW/4 SW/4) Sec. 14 T30N R4W

11. Sec., T., R., M., or Blk. and Survey or Area  
p Sec. 14 T 30N R 4W  
New Mexico PM

14. Distance in miles and direction from nearest town or post office. \*  
Well is approximately 50 miles east of Bloomfield, New Mexico.

12. County or parish  
Rio Arriba  
13. State  
NM

15. Distance from proposed location to nearest property or lease line, ft. (Also nearest Drig, unit line, if any) Unit= NA Lease= ±100'  
16. No. of acres in lease  
1530.69  
17. Spacing Unit dedicated to this well  
316.98 316.16 320  
18. Distance from proposed location to nearest well, drilling, completed or applied for, on this lease, ft. ± 2,000'  
19. Proposed depth  
4,000' TVD  
20. BLM/BIA Bond No. on file  
NMB000230  
21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
7,050' GR  
22. Approximate date work will start \*  
July 13, 2006  
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 June 13, 2006  
Title Permit Agent for Black Hills Gas Resources, Inc.

Approved by (Signature) *[Signature]* Name (Printed/Typed) Date 7/2/07  
Title AFM 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.

File application for permit on NM OGD Form C-103 prior to construction.  
Location.  
HOLD C-103 FOR directional survey  
DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO MISCING & CEMENT

JUL 2 '07  
OIL CONS. DIV.  
DIST. 3

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

07-17-07  
B/x

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 June 10, 2003

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-039-29958	<sup>2</sup> Pool Code 72400	<sup>3</sup> Pool Name East Blanco / Pictured Cliffs
<sup>4</sup> Property Code 36585	<sup>5</sup> Property Name MANY CANYONS 30-04-14	<sup>6</sup> Well Number 44H
<sup>7</sup> OGRID No. 013925	<sup>8</sup> Operator Name BLACK HILLS GAS RESOURCES	<sup>9</sup> Elevation 7050

<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
P	14	30-N	4-W		1055	SOUTH	405	EAST	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
M	14	30-N	4-W		1055	SOUTH	660	WEST	RIO ARRIBA

<sup>12</sup> Dedicated Acres See Attached	<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

<div><p>16</p></div>	<div><p>17 OPERATOR CERTIFICATION</p><p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p><p><u>Kathy L. Schneebeck</u> Signature</p><p>Kathy L. Schneebeck Printed Name</p><p>Permit Agent for Black Hills Title</p><p>June 13, 2006 Date</p></div>
<div><p>18 SURVEYOR CERTIFICATION</p><p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p><p><u>JOHN VUKONICH</u> Signature and Seal of Professional Surveyor</p><p>14831 REGISTERED PROFESSIONAL SURVEYOR</p><p>Certificate Number</p></div>	

## C102 Attachment

### 12) Dedicated Acres

<del>57.02</del> acres fee	59.466
<del>261.96</del> acres federal	256.69
<del>318.98</del> total acres	316.16

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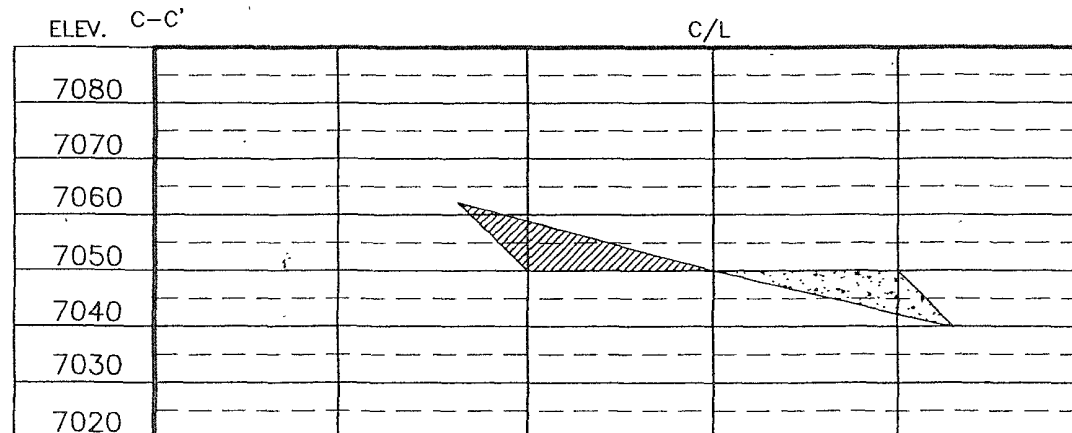
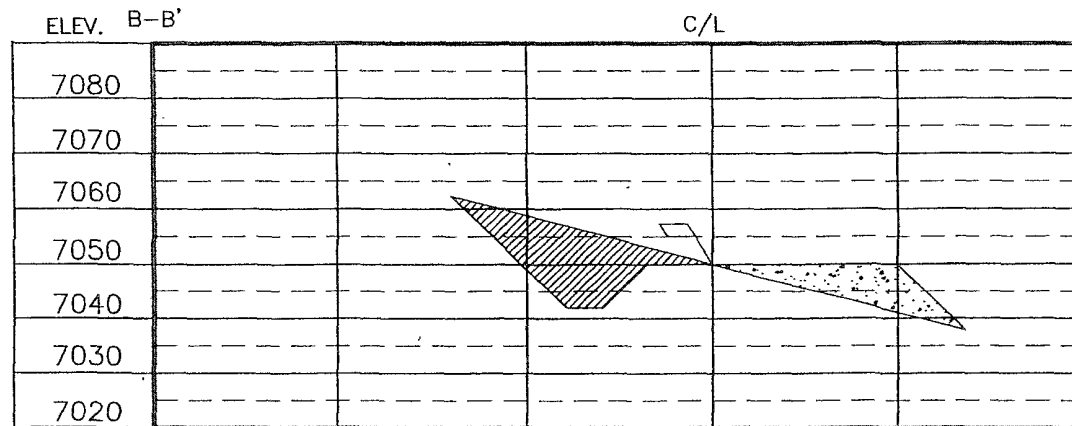
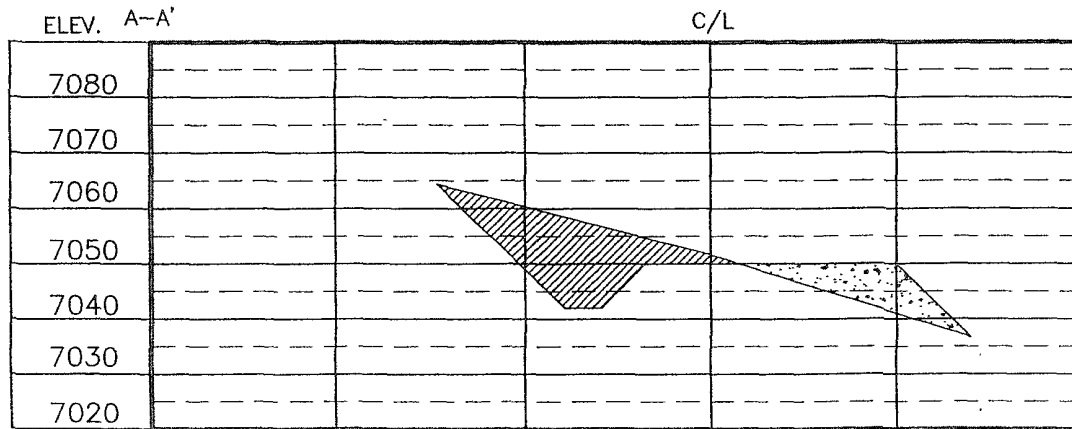
S/2 (a/d/a Lots 8 – 10, SW/4, W/2SE/4 – Federal, and that portion of HES 287 located in the S/2 of Section 14)

# WELL PAD CROSS-SECTIONAL DIAGRAM

COMPANY: BLACK HILLS GAS RESOURCES  
 LEASE: MANY CANYONS 30-04-14 NO. 44H  
 FOOTAGE: 1055 FSL, 405 FEL  
 SEC.: 14, TWN: 30-N, RNG: 4-W, NMPM  
 ELEVATION: 7050'

## 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. MN415_PL8	WELL PAD DIAGRAM
REVISION: CHANGE L.S. NUMBER	DATE: 03/10/06
REVISION: G. VELOZ	DATE: 06/20/05

**Daggett Enterprises, Inc.**  
 Surveying and Oil Field Services  
 P. O. Box 15068 • Farmington, NM 87401  
 Phone (505) 326-1772 • Fax (505) 326-6019  
 NEW MEXICO L.S. 14831  
 CADFILE: MN415\_CFB  
 DRAWN BY: G.V.  
 ROW#: MN415

Black Hills Gas Resources, Inc.  
**Many Canyons 30-04-14 44H**  
1,055' FSL 405' FEL (SE/4 SE/4) – H.E.S. 287  
BHL: ±1,055' FSL ±660' FWL (SW/4 SW/4)  
Sec. 14 T30N R4W  
Rio Arriba County, New Mexico  
Surface Lease: Fee  
Mineral Lease: NMSF79484A & Fee

### DRILLING PROGRAM

This APD is filed under the APD process as stated in Onshore Order No. 1 and supporting BLM documents. This APD process may include an on-site meeting as determined by BLM, at which time the specific concerns of Black Hills Gas Resources, Inc. (Black Hills) and BLM will be discussed. Best efforts will be made to address specific concerns of the BLM representatives.

Please contact Lynn Benally at 505-634-1111 (office) or 505-793-6336 (cell) to schedule an on-site meeting, if necessary.

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

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,050'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimientos	1,960'	Sandstone, shales & siltstones
Ojo Alamo	3,200'	Sandstone, shales & siltstones
Kirkland	3,430'	Sandstone, shales & siltstones
Fruitland Coal	3,610'	Sandstone, shales & siltstones
Pictured Cliffs	3,803'	Sandstone, shales & siltstones
 TOTAL DEPTH	 4,000'	 TVD
	8,071.11'	MD (length of horizontal section)

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

Tertiary

San Jose	surface	Gas
Nacimiento	1,960'	Gas
Ojo Alamo	3,200'	Gas
Fruitland Coal	3,610'	Gas
Pictured Cliffs	3,803'	Gas

HORIZONTAL DRILLING PROGRAM

A) Kick Off Point is estimated to be at  $\pm 3,795'$  TVD

*3 1/2" casing will be set to 4000'. Will come up hole to KOP & mill through casing  
Casing program for horizontal hole.*

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' - 4,000' 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: 400 sxs 50:50 POZ containing 0.25 lb/sx LCM)* **
3,795' 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 circulated to surface

Yields:

Surface: Standard Cement yield: =  $1.2 \text{ ft}^3/\text{sx}$  (mixed at 15.6 lb/gal)

Production: Lite Standard Cement yield: =  $1.59 \text{ ft}^3/\text{sx}$  (mixed at 13.4 lb/gal)

50:50 POZ yield =  $1.27 \text{ ft}^3/\text{sx}$  (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.

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

250' 0' - 300' Fresh water - M.W. 8.5 ppg, Vis 30-33  
250' 300' - 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 if H<sub>2</sub>S is encountered.
- D) Estimated bottomhole pressure: 1,240 psi

ANTICIPATED START DATE

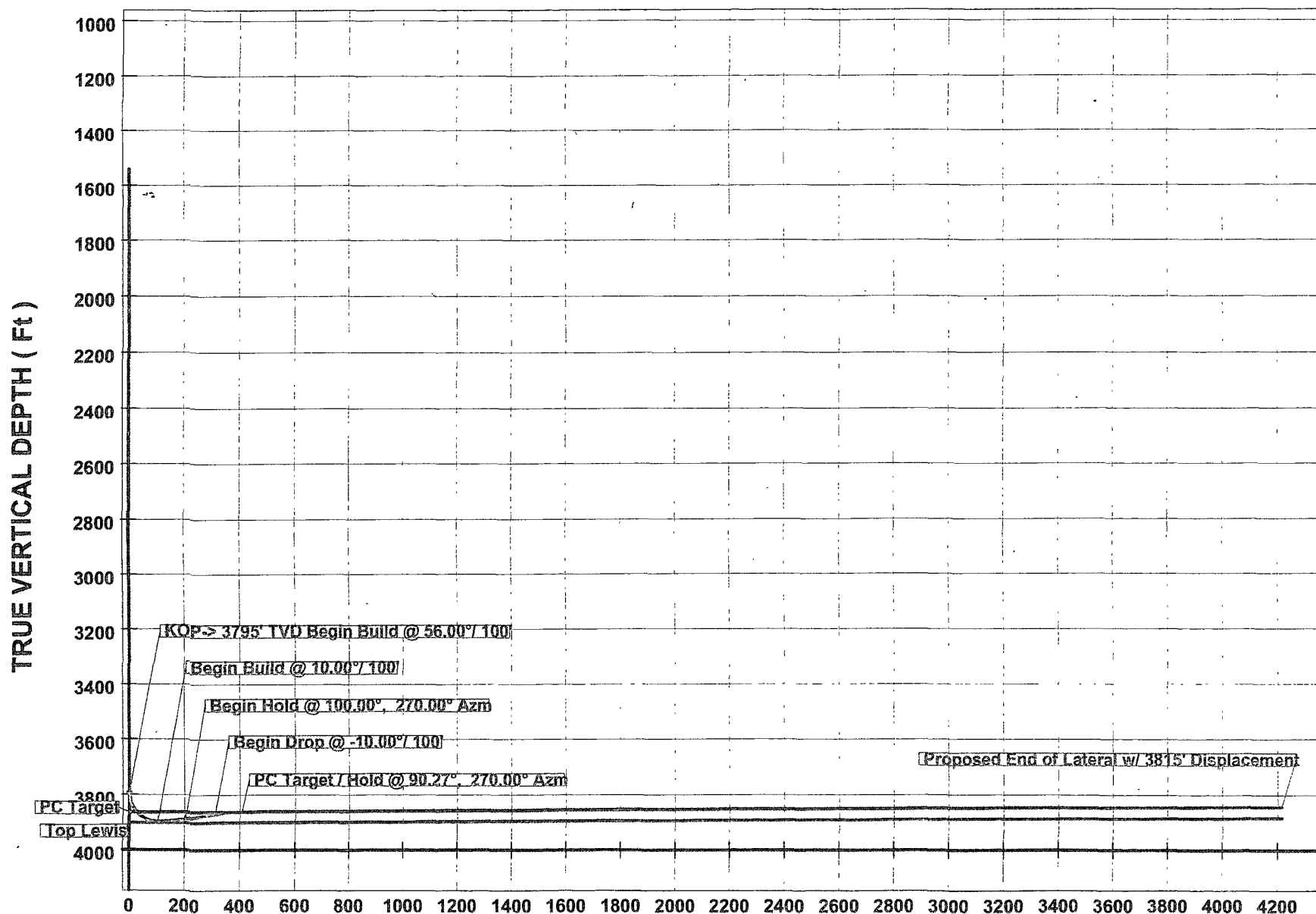
July 17, 2006

COMPLETION

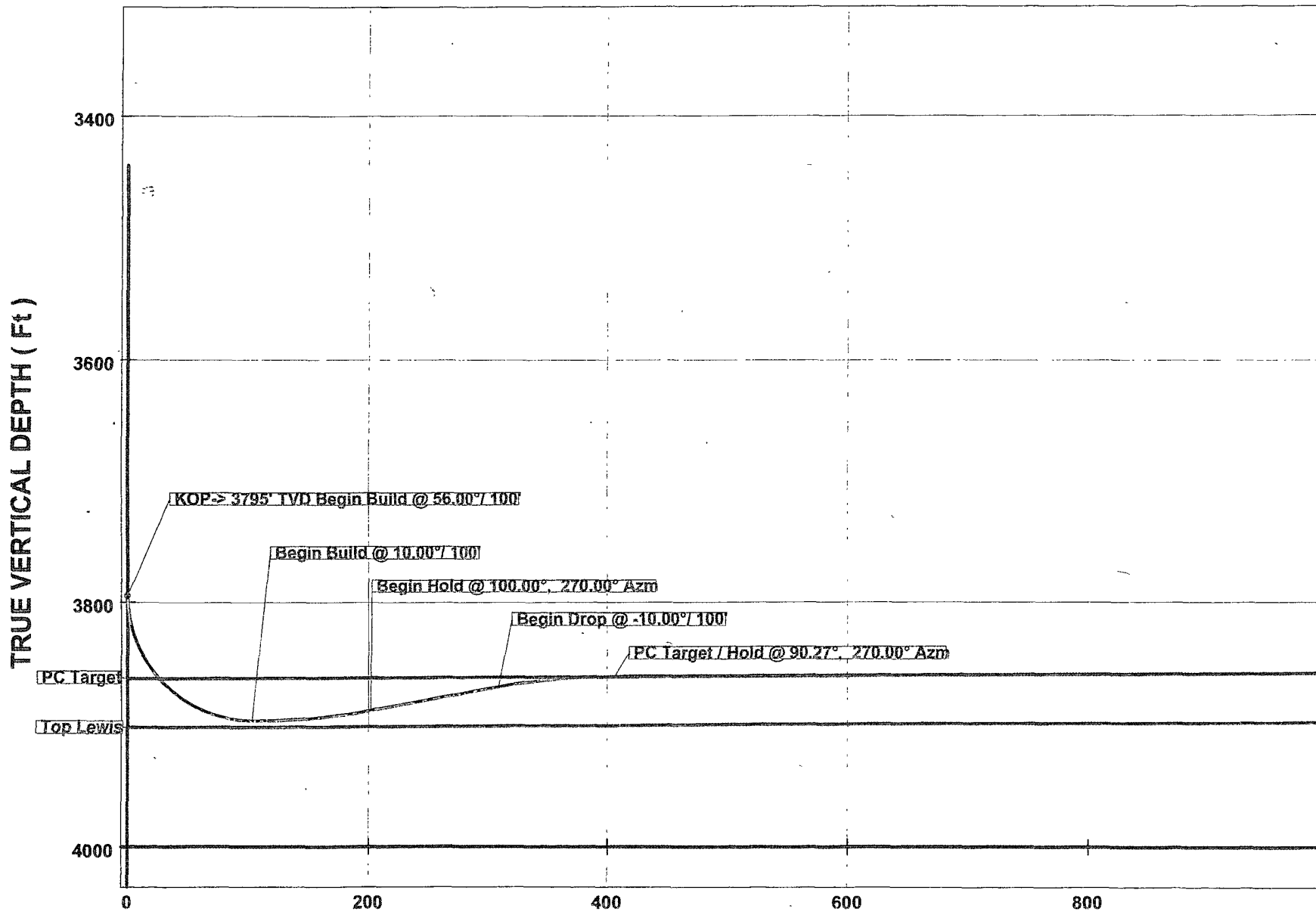
The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2-7/8" PH-6 tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.



Job Number: 61xxx  
Company: Black Hills E&P  
Lease/Well: Many Canyons 30-04-14 #44H  
Location: Rio Arriba Co., NM



Job Number: 61xxx  
Company: Black Hills E&P  
Lease/Well: Many Canyons 30-04-14 #44H  
Location: Rio Arriba Co., NM



VERTICAL SECTION (Ft) @ 270.00°

## 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.

## Black Hills Gas Resources, Inc.

Black Hills Gas Resources, Inc.

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

