Rerm 3160-5

Approved by

FORM APPROVED

(April 2004)		/	OMB No. 1004-013	5	
	NITED STATES	/ _	Expires: March 31, 2007		
DEPARTMENT OF THE INTERIOR			5. LEASE SERIAL NO.		
BUREAU C	OF LAND MANAGEMENT	153456	MDA 701-98-0013, Trac	14	
SUNDRY NOTICE	S AND REPORTS ON	WELLS A	INDIAN, ALLOTTEE OR TRIBE NAM	E	
Do not use this form for proposals to drill, or to re-enter an Man			Jicarilla Apache Nation		
abandoned well. Use	Form 3160-3 (APD) for such pro	posals 700 7.16	元度UNIT OR CA, AGREEMENT DESIGNATION		
SUBI	MIT IN TRIPLICATE 🖂	<b>(</b> ) ( ) ( ) ( )			
1 TYPE OF WELL	V.S.	1. 0/2. 8.W	ELL NAME AND NO.		
Oil Well Gas Well X	Other:		Jicarilla 29-02-21 2		
2. NAME OF OPERATOR		9. AF	PI WELL NO.		
Black Hills Gas Reso	urcae Inc	Calla Disalta	30-039-27460		
		k Maybaa			
3. ADDRESS AND TELEPHONE NO. 350 Indiana St., Suite 400	CONTACT: Chuc PHONE: 720.2	•	FIELD AND POOL, OR EXPLORATOR	YAREA	
Golden CO	80401 Fax: 720.2		East Blanco Pictured Cliffs		
4. LOCATION OF WELL (Footage, T, R, M, c 640' FNL 1,975' F			COUNTY OR PARISH, STATE  Rio Arriba  Ne	w Mexico	
040 FNL 1,973 f	-EL Sec. 21 12	9IN K 2VV	RIO ATTIDA NE	w Mexico	
12. CHECK APPROPRIATE BC	X(s) TO INDICATE NATURE	OF NOTICE, REPORT	, OR OTHER DATA		
TYPE OF SUBMISSION	TYPE OF SUBMISSION TY			PE OF ACTION	
X Notice of Intent	Acidize X	Deepen	Production (start/resume)	Water Shut-Off	
	Alter Casing	Reclamation	Reclamation	Well Integrity	
Subsequent Report	Casing Repair	New Construction	Recomplete X	1 1	
Gabbaquani Kapan	X Change Plans	Plug and Abandon	Temorarily Abandon	Change to	
Final Abandanment Nation			•	original APD	
Final Abandonment Notice	Convert to Injection	Plug Back	Water Disposal		
true vertical depths of all pertinent with the BLM/BIA.	e proposal is to deepen directionally o markers and zones. Attach the Bond	or recomplete horizontally, of under which the work will be	give subsurface locations and me be performed or provide the Bond	easured and I No. on file	
completion or recompletion in a ne	be filed within 30 days following com w interval, a form 3160-4 shall be file cluding reclamation, have been compl	d once testing has been co	empleted. Final Abandonment No	tices shall be	
permitted for Black Hills Gas (BLM) in Farmington, New M	Revised Drilling Program, BOI Resources, Inc. (Black Hills) w lexico and the New Mexico Oil izontally drill this location with a	vith an APD submitted Conservation Division	to the Bureau of Land Man (NMOCD) on May 8, 2003	agement Black Hills	
640' FNL 1,980' FWL (NE/4	NW/4) of Section 22 T29N R2V	<b>N</b> .	·		
	respondence to Banko Petrole	<del>-</del>	•	Suite 420,	
david@banko1.com.or.kothy	. Please contact David Banko o s@banko1.com, respectively, i	or Nathy Schneedeck a	al Juj-8/U-448U, or at	11	
Thank you.	s@banko1.com, respectively, i	ma (Survey)	and Clo2 Form	errific compres	
14. I hereby certify that the foregoing is true a					
Name (Printed/Typed)			(		
Kathy L. Schneebeck		Title: Permit Agent for Black Hills Gas Resources, Inc.			

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

THIS SPACE FOR FEDERAL OR STATE OFFICE USE.
Division of Multi-Resources

Date: February 11, 2005

Date

MAR

2 2005

## Black Hills Gas Resources, Inc.

Jicarilla 29-02-21 2 API #30-039-27460

Surface: 640' FNL 1,975' FEL (NW/4 NE/4)

T29N R2W Sec. 21

End of Horizontal Hole: 640' FNL 1,980' FWL (NE/4 NW/4)

T29N R2W Sec. 22

Rio Arriba County, New Mexico Lease: MDA 701-98-0013, Tract 4

#### **DRILLING PROGRAM**

This Sundry Notice is submitted per CFR 3162.3-2. The existing well pad and reserve pit will be utilized "as is."

# This is a horizontal entry into and a deepening of the existing well Jicarilla 29-02-21 2 to the Pictured Cliffs Formation. See also the attached Horizontal Re-completion Plan.

#### **SURFACE FORMATION** – San Jose

Surface water protection plan: Surface casing will be cemented to surface.

#### **GROUND ELEVATION - 7,121' GL**

# ESTIMATED FORMATION TOPS (Water, oil, gas and/or other mineral-bearing formations). All Depths are True Vertical Depth (TVD)

San Jose	Surface	Sandstone, shales and siltstones
Naimiento	2,022'	Sandstone, shales and siltstones
Ojo Alamo	3,135'	Sandstone, shales and siltstones
Kirtland	3,352'	Sandstone, shales and siltstones
Pictured Cliffs	3,454	Sandstone, shales and siltstones
Lewis	3,578'	Sandstone, shales and siltstones

TOTAL DEPTH 3,476' TVD (end of horizontal hole) 3,954.99' (anticipated horizontal section) 7,500.55' MD

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

**Tertiary** 

Pictured Cliffs 3,454' Gas

#### RE-ENTRY - HORIZONTAL DRILLING PROGRAM

- A) A 2,000-psi WP double-gated BOP will be installed on the tubing head with blind rams on bottom and pipe rams on top controlled by an accumulator placed within easy access to drill and other crew members.
- B) No annular preventor with a 2,500-psi WP will be placed above BOP stack.
- C) Retrievable whipstock to be set at  $\pm 3,490$ .
- D) Window to be milled out of 5-1/2" csg at  $\pm 3,700$ '.

**CASING PROGRAM** 

True Vertical Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0'-500'	12-1/4"	8-5/8"	K-55 24# ST&C	To surface (140 sxs Type "III"
0'-4,500'	7-7/8"	5-1/2"	K-55 15,5# ST&C	To surface (1,550 sxs "50:50 Poz)
3,476' – 7,501' (MD)	4-3/4"	Open hole	None	None

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

3,476' - 7,501' MD

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:

None

B) Coring:

None

C) Testing:

None anticipated.

# **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)  $H_2S$ :

See H<sub>2</sub>S plan from originally submitted APD if H<sub>2</sub>S is encountered.

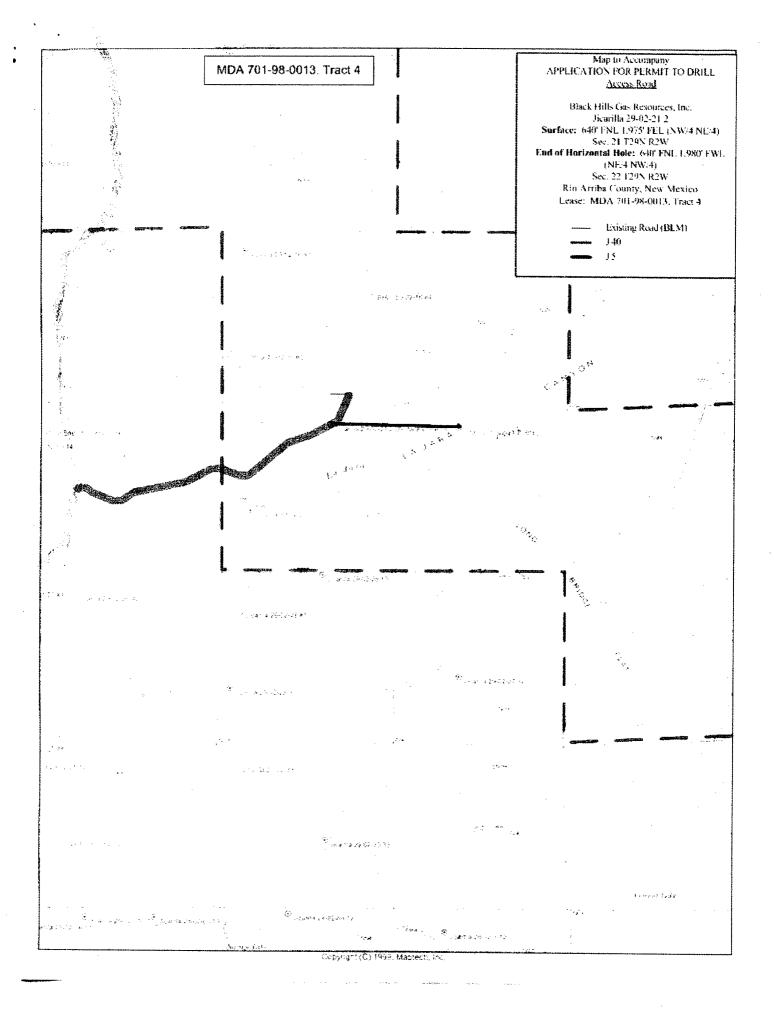
D) Estimated bottomhole pressure: 1,060 psi

# ANTICIPATED START DATE

March 1, 2005

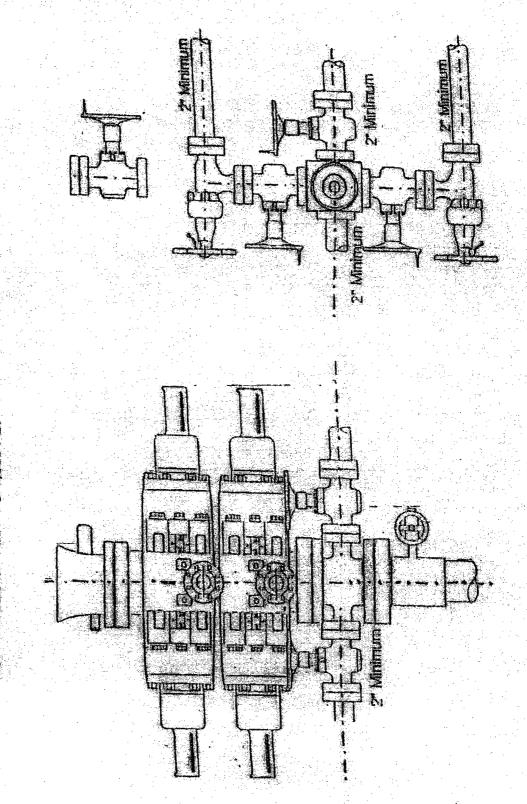
# **COMPLETION**

The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2-3/8" J-55 4.7#/ft tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.



# 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

# 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<sub>2</sub>S).
- 2. The proper use and maintenance of personal protective equipment and life support systems.
- 3. The proper use of H<sub>2</sub>S 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<sub>2</sub>S 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<sub>2</sub>S 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<sub>2</sub>S Safety Equipment and Systems

Note: All H<sub>2</sub>S safety equipment and systems 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<sub>2</sub>S.

#### 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.
- 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.
- 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  $H_2S$  circulated to the surface. Proper mud weight, safe drilling practices, and the use of  $H_2S$  scavengers will minimize hazards when penetrating  $H_2S$  bearing zones.

## F. Metallurgy:

- 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:

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.