Form 3160-3 (April 2004)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENTUS 24 671 1

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

Lease Serial No. D 79484A

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NMSF794	84	A		(1	3HL

6 If Indian, Allottee or Tribe Name APPLICATION FOR PERMIT TO DRILL OR DEEPENVED ARMITICION 7, If Unit or CA Agreement, Name and No 1a Type of Work X DRILL REENTER 8. Lease Name and Well No Oil Well X Gas Well Other X Single Zone 1b Type of Well Multiple Zone Many Canvons 30-04-14 24H E-mail: lbenally@bhep.com 2 Name of Operator 9. API Well No Contact: Lynn Benally 30-039-*3*0n4 (Black Hills Gas Resources, Inc. 3a. Address P.O. Box 249 3b. Phone No. (include area code) 10. Field and Pool, or Exploratory 87413 Bloomfield NM 505-634-1111 East Blanco / Pictured Cliffs 4. Location of Well (Report location clearly and in accordance with any State Requirements.*) Sec , T , R , M., or Blk. and Survey or Area At surface 900' FEL 1,900' FNL SE /4 NE /4 Sec. 14 Lat: 36° 48' 49.3" Long: 107° 13' 05.7" ±1,900' FNL ±660' FWL (SW/4 NW/4) At proposed production zone 14. Distance in miles and direction from nearest town or post office. 12. County or parish 13 State Well is located approximately 52 miles east of Bloomfield, New Mexico. Rio Arriba New Mexico 15 Distance from proposed location to nearest Unit= 17 Spacing Unit dedicated to this well property of lease line, ft. (Also nearest Drig, unit 1530.69 line, if any) Lease= ±660 19. Proposed depth 20 BLM/BIA Bond No on file 18. Distance from proposed location to nearest Canyons well drilling, completed or applied for on this 30-04-14 ± 2,200 ' TVD NMB000230 lease, ft 44H 21 Elevations (Show whether DF, KDB, RT, GL, etc.) 22. Approximate date work will start 23 Estimated duration 6,980 'GR September 25, 2006 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: 4. Bond to cover the operations unless covered by an existing bond 1. Well plat certified by a registered surveyor. on file (see Item 20 above). 2. A Drilling Plan. 5. Operator certification. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate 6. Such other site specific information and/or plans as may be Forest Service Office). required by the authorized officer. Name (Printed/Typed) 25 Signature Date August 22, 2006 Kathy L. Schneebeck, 303-820-4480 Permit Agent for Black Hills Gas Resources, Inc. Approved by (Signature, Name (Printed/Typed) Title 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

Conditions of approval, if any, are attached.

thereon.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section1212, 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.

PRIOR TO CASING & CEMENT 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

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

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

UL or lot no.

E

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

County

RIO ARRIBA

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

Section

14

¹² Dedicated Acres 308-44 320 acres - N/2

Township

30-N

Range

4-W

13 Joint or Infill

		٧	VELL L	OCATIO	N AND A	CREAGE DED	ICATION P	LAT	
30-0	Number 29 - 3	10046		Pool Code		E Blanco	³Pool Nam ictured Cli		
⁴ Property Co	ode				⁵ Property	Nome		6	Well Number
36585 MANY CANYONS 30-04-14 24					24H				
⁷ OGRID No. ⁸ Operator Name ⁹ Eleva				⁹ Elevation					
013925		BLACK HILLS GAS RESOURCES 6980'			6980'				
					¹⁰ Surfac	e Location			,
UL or lot no.	Section 14	Township 30-N	Ronge 4-W	Lot Idn	Feet from the 1900	North/South line NORTH	Feet from the 900	East/West line EAST	County RIO ARRIBA
L			11 Botto	om Hole	Location	If Different Fr	om Surfaçe	.1	

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

North/South line

NORTH

Feet from the

660

¹⁵Order No.

East/West line

WEST

Feet from the

1900

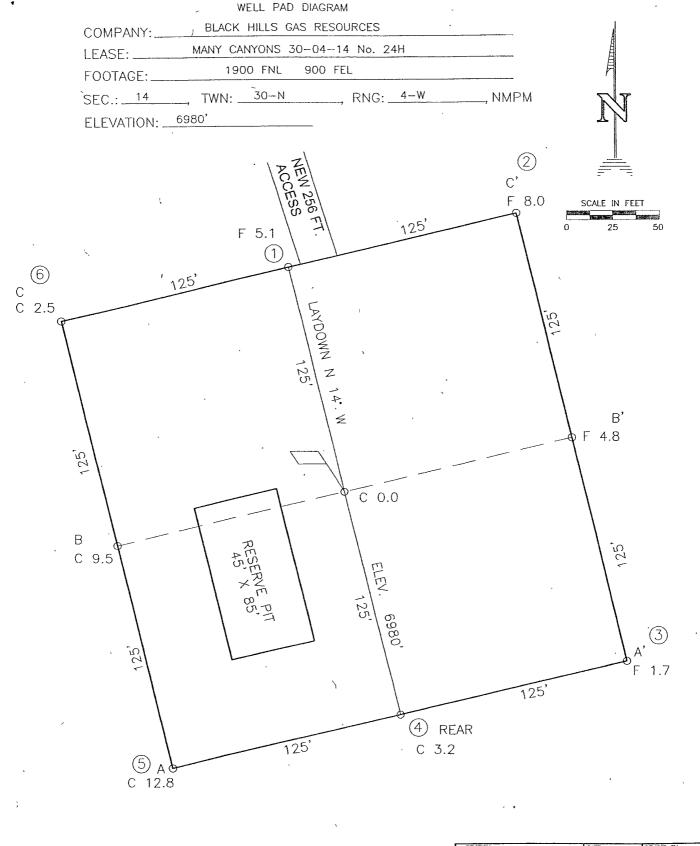
14 Consolidation Code

Lot Idn

16	QTR. CORNER FD. 3 1/4" B.C. B.L.M. 1953 LOT 4 H.E.S. 368 AT. 36346'40 7" No. (ALC. 6.7)	
B.H.L. o	LAT. 36'48'49.3" N (NAD 83) LONG107'13'05.7"-W-(NAD 83) LOT 5 LOT 6	H.E.S. 287 Signature Kathy L. Schneebeck Printed Name Permit Agent for Black Hills Title August 22, 2004
	·	QTR. CORNER FD. 3 1/4" B.C. B.L.M. 1953 Thereby 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 the true and correct to the best of the less of the latest the same is true and correct to the best of the less of the latest the la
		Signature of Stol of PARSON Surveyor 14831 Certificate Number

Submit 3 Copies To Appropriate District Office	State of New Me	xico	Form C-103
District I	Energy, Minerals and Natu	ral Resources	May 27, 2004
1625 N. French Dr., Hobbs, NM 88240 District II	1		WELL API NO.
1301 W. Grand Ave , Artesia, NM 88210	OIL CONSERVATION		5. Indicate Type of Lease
District III	1220 South St. Fran	ncis Dr.	STATE FEE
1000 Rio Brazos Rd., Aztec, NM 87410 District IV	Santa Fe, NM 87	7505	6. State Oil & Gas Lease No.
1220 S. St. Francis Dr., Santa Fe, NM	•		,
87505 SUNIDRY NOTI	CES AND REPORTS ON WELLS		7. Lease Name or Unit Agreement Name
	SALS TO DRILL OR TO DEEPEN OR PLU		7. Lease Name of Olit Agreement Name
	CATION FOR PERMIT" (FORM C-101) FO	OR SUCH	Many Canyons 30-04-14
PROPOSALS.) 1. Type of Well: Oil Well [Gas Well Other:		8. Well Number
			24H
2. Name of Operator	•		9. OGRID Number
Black Hills Gas Resources, Inc.			013925
3. Address of Operator	412		10. Pool name or Wildcat Pictured Cliffs
P.O. Box 249 Bloomfield, NM 87	+13		Fictured Chris
4. Well Location		(
Unit Letter: H :	1,900 feet from the North		· · · · · · · · · · · · · · · · · · ·
Section: 14 To		4W NMPN	
	11. Elevation (Show whether DR)		
Pit or Below-grade Tank Application 🛛 o	698	30'	
			200
Pit type: <u>Drilling Pit</u> Depth to Groun			
Pit Liner Thickness: 15 mil Below-	Grade Tank: Volumebbls;	Construction Materi	al Synthetic
	Appropriate Box to Indicate		•
NOTICE OF IN	ITENITION TO:	l cum	SEQUENT REPORT OF:
NOTICE OF IN PERFORM REMEDIAL WORK □	PLUG AND ABANDON	REMEDIAL WOR	
TEMPORARILY ABANDON	CHANGE PLANS	COMMENCE DR	
PULL OR ALTER CASING	MULTIPLE COMPL	CASING/CEMEN	
OTHER: Pit Registration	\boxtimes	OTHER:	
			nd give pertinent dates, including estimated date ttach wellbore diagram of proposed completion
		•	,
/-			gar and a second of the second
			I Alley
	•		•
	Drilling Pit Ro	egistration	
	8	6	· ·
	-		
		-	
			,
I hereby certify that the information	above is true and complete to the h	est of my knowleds	ge and belief. I further certify that any pit or below-
			or an (attached) alternative OCD-approved plan .
SIGNATURE Landy & Schneibe	TITLE: Permit Agent for	Black Hills Gas Re	esources, Inc. DATE August 22, 2006
Type or print name: Kathy L. Schi	neebeck E-mail address: kathys	a@banko1.com	Telephone No. 303-820-4480
For State Use Only	\mathcal{A}	Deputy Oil &	Gas Inspector,
APPROVED BY:	TITLE	ופוכו	DATEUL 1 7 2007
Conditions of Approval (if any):			

*



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:
Ī	CHANGE ACCESS	& PIT	11/08/05	B. LEIDY
		Surveying P. O. Box 150 Phone (505) 32	Enterprise and Oil Field 268 · Farmingto 26–1772 · Fox (5 EXICO L.S. 14	Services n, NM 87401 05) 326-6019 4831
I	DRAWN BY: A.G.		CADFILE: MN414	PL8
1	ROW#: MN414		DATE: 06/27/0)5

WELL PAD CROSS-SECTIONAL DIAGRAM COMPANY: BLACK HILLS GAS RESOURCES LEASE: MANY CANYONS 30-04-14 No. 24H FOOTAGE: 1900' FNL, 900' FEL SEC.: 14 , TWN: 30-N , RNG: 4-W , NMPM ELEVATION: 6980' 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. ELEV. A-A' C/L 6710 6700 6990 6980 6970 6960 6950 C/L ELEV. B-B' 6710 6700 6990 6980 6970 6960 6950 Daggett Enterprises, Inc. Surveying and Oil Fleid Services P. O. Box 15068 • Farmington, NW 87401 Phone (505) 326-1772 • Fax (505) 326-6019 NEW MEXICO L.S. 14831 ELEV. C-C' C/L 6710 WELL PAD DIAGRAM 6700 6990 6980 MN414PL8 6970 6960

6950

Black Hills Gas Resources, Inc. Many Canyons 30-04-14 24H

Surface: 1,900' FNL 900' FEL (SE/4 NE/4) – H.E.S. 287 BHL: ±1,900' FNL ±660' FWL (SW/4 NW/4)

Sec. 14 T30N R4W
Rio Arriba County, New Mexico
Surface Lease: Fee
Mineral Lease: NMSF79484A

DRILLING PROGRAM

This Application for Permit to Drill (APD) is filed under the APD process as stated in Onshore Order No. 1 and supporting Bureau of Land Management (BLM) documents. This APD process included an on-site meeting held on July 12, 2006, as determined by BLM, at which time the specific concerns of Black Hills Gas Resources, Inc. (Black Hills) and BLM were discussed. Best efforts will be made to address specific concerns of the BLM representatives.

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 - 6,980'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	1,900'	Sandstone, shales & siltstones
Ojo Alamo	3,140'	Sandstone, shales & siltstones
Kirkland	3,315'	Sandstone, shales & siltstones
Fruitland Coal	3,520'	Sandstone, shales & siltstones
Pictured Cliffs	3,743'	Sandstone, shales & siltstones

TOTAL DEPTH	4,000'	TVD
	7,516.72	MD (length of horizontal section)

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

Tertiary

San Jose	surface	Gas
Nacimiento	1,900'	Gas
Ojo Alamo	3,140'	Gas
Fruitland Coal	3,520'	Gas
Pictured Cliffs	3,743'	Gas

HORIZONTAL DRILLING PROGRAM

- A) Kick Off Point is estimated to be at $\pm 3,735$ ' TVD
- B) 5-1/2" casing will be set to 4,000' 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 (±175 sxs Standard Cement containing 2% CaCl2 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: ±300 sxs Lite Standard Cement. Tail: 400 sxs 50:50 POZ containing 0.25 lb/sx LCM)* **
3,735' 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 ft³/sx (mixed at 15.6 lb/gal)

Production: Lite Standard Cement yield: = 1.59 ft³/sx (mixed at 13.4 lb/gal) 50:50 POZ yield = 1.27 ft³/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

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 ppgVis.: 28 - 50 secW.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_2S : See H_2S Plan if H_2S is encountered.

D) Estimated bottomhole pressure: 1,240 psi

ANTICIPATED START DATE

September 25, 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.

Many Canyons 30-04-14 24H

Sec. 14 T 30N

Surface:

1,900' FNL 900' FEL Y SE /4 NE /4) **R 4W**

BHL: ±1,900' FNL ±660' FWL (SW/4 NW/4)

Rio Arriba County, New Mexico

BHL

NMSF79484A

SURFACE CASING AND CENTRALIZER DESIGN

4.000 ' Proposed Total Depth: Proposed Depth of Surface Casing: 250 ' 0.31 psi/ft Estimated Pressure Gradient: Bottom Hole Pressure at 4,000 ' 1,240 psi 0.31 psi/ft x 4,000 ' 0.22 psi/ft Hydrostatic Head of gas/oil mud: 880 psi

0.22 psi/ft x 4,000 '

Maximum Design Surface Pressure

Bottom Hole Pressure Hydrostatic Head 0.22 psi/ft 0.31 psi/ft x 4,000 ' 4,000 ') (880 360 psi 1.240 psi psi

Casing Strengths

8-5/8" J-55 24# ST&C New

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
24 #	244,000	2,950	1,370
32 #	372,000	3,930	2,530

Safety Factors

1.125 Tension (Dry): .1.8 Burst: 1.0 Collapse: 250 ' 6.000 # Tension (Dry): 24 #/ft x 40.67 Safety Factor = 244,000 ok 6,000 Burst: 2,950 Safety Factor = 8.19 ok psi = 360 psi 0.052 x 9.0 ppg x Collapse: Hydrostatic = 250 '= 117 psi Safety Factor = 1,370 11.71 psi ok

117

8-5/8" J-55 24# ST&C New 250 '

Use 2,000 psi minimum casinghead and BOP's

Centralizers

5 Total

1 near surface at 40'

2 -1 each at middle of bottom joint, second joint

2 -1 each at every other joint

±40' spacing

psi

Total centralized

± 200 '(

50 ' -250 ')

Note that field experience indicates that additional centralizers greatly increase the chance of "sticking" the surface casing prior to reaching surface casing total depth.

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 (H₂S).
- 2. The proper use and maintenance of personal protective equipment and life support systems.
- 3. The proper use of H₂S 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 H₂S 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.
- The contents and requirements of the H₂S 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. H₂S Safety Equipment and Systems

Note: All H₂S 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 H₂S.

A. Well control equipment:

- 1. Choke manifold with a minimum of one remote choke.
- 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. H₂S detection and monitoring equipment:

1. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S 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:

- 1. All drill strings, casings, tubing, wellhead, blowout preventors, drilling spools, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.
- 2. All elastomers used for packing and seals shall be H₂S trim.

G. Communication:

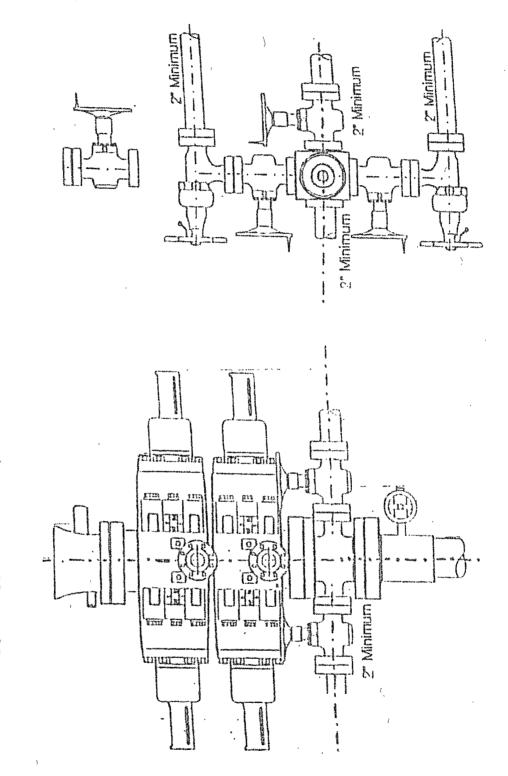
1. Cellular telephone communications in company vehicles.

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 H₂S environment will use the closed chamber method of testing.

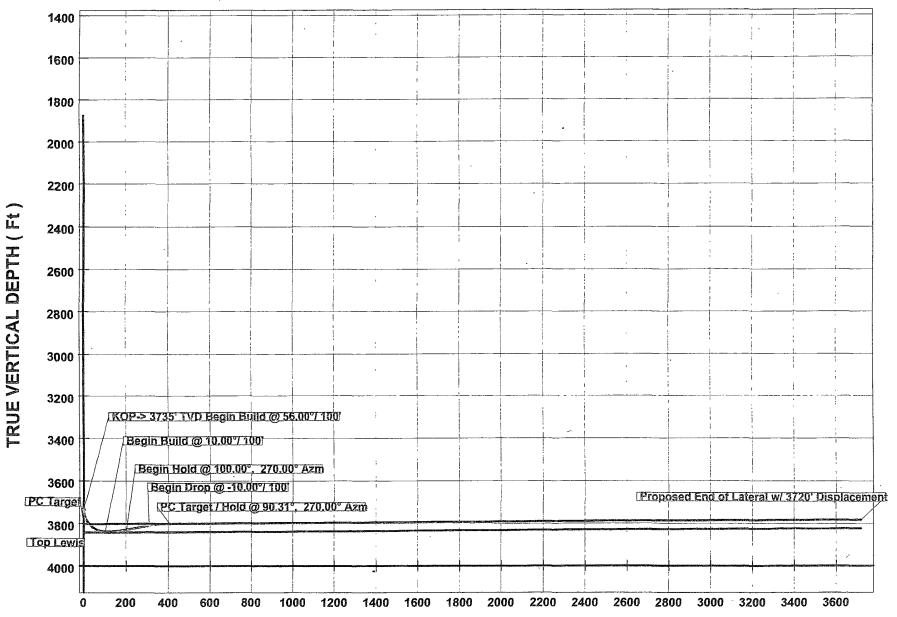
2-M SYSTEM Black Hills Gas Resources, Inc.

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

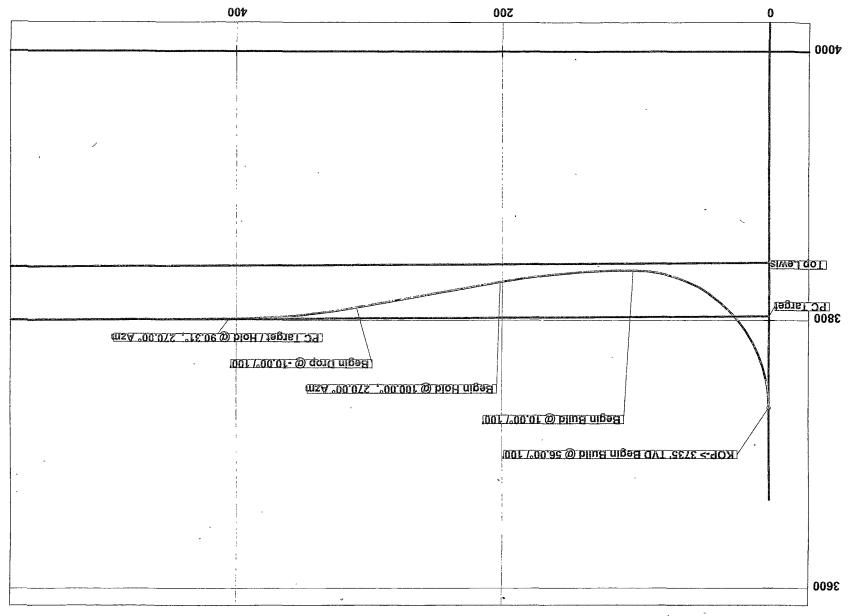


Job Number: 61xxx Company: Black Hills E&P Lease/Well: Many Canyons 30-04-14 #24H Location: Rio Arriba Co., NM





VERTICAL SECTION (Ft) @ 270.00°





Job Number: 61xxx Company: Black Hills E&P Lease(Well: Many Canyons 30-04-14 #24H Location: Rio Amba Co., NM TRUE VERTICAL DEPTH (Ft)