

## **UNITED STATES** DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT**

FORM APPROVED OMB No. 1004-0135 Expires: January 31, 2004

	SUNI	DRY NO	TICES	AND R	<b>EPORTS</b>	S ON V	VELLS	
Do n	ot use	this for	m for p	roposal	s to dril	l or to	re-enter	an
aban	ndoned	well. Us	se Form	3160-3 (	(APD) for	r such i	proposal	S.

5. I Contract 464

Lease	Serial	No.	

6. If Indian, Allottee or Tribe Name

apandoned W		o-o (Al D) for Such pr	2)°	7 JUL 19	Jibarilla?	Apach	e
the state of the s	RIPLICATE - Oth	er instructions on I	reverse side	RECEIVE	7. If Unit o	or CA/	Agreement, Name and/or No.
1. Type of Well  Oil Well  Gas Well	Other		7.3	3" (*	8. Well N	ome or	ad No
2. Name of Operator	_ Other		-		Jicarilla 4		
Black Hills Gas Resources, Inc.	Contact: Lynn H. Be	enally			9. API W		
3a. Address	Contact. By In. 11. 2.	<del></del>	Phone No. (include area code) 30-039-27731				
2200 N 1-4 Carry of DO Dom 240 D	11		505-634-1111 ext 27			10. Field and Pool, or Exploratory Area	
3200 N 1st Street PO Box 249 B 4. Location of Well (Footage, Sec.			11 ext 27		E. Blanco/Pictured Cliffs		
Surface: 660' FNL 1,050' FWL Bottom Hole: 660' FNL 50' FEI	NE/NW Unit C Sec.	31 T30N Ŕ3W	રજ (W			11. County or Parish, State	
12 CHECK AD	DDODDIATE DO	Z(ES) TO DIDICATE	MATINE OI	CNOTICE DI	Rio Arril		
	PROPRIATE BOX	K(ES) TO INDICATE			EPORT, O	KUI	HER DATA
TYPE OF SUBMISSION			TYPE OF	ACTION			
·	Acidize	Deepen		Production (Start	(Resume)		Water Shut-Off
Notice of Intent	☐ Alter Casing	Fracture Ti	reat 🔲	Reclamation	•		Well Integrity
Subsequent Report	Casing Repair	New Const	truction	Recomplete		$\square$	Other Convert Vertical
Subsequent Report	Change Plans	Plug and A	=	Temporarily Aba	ındon		well to Horizontal well
Final Abandonment Notice	Convert to Inje		=	Water Disposal			
3. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)							
The initial APD to drill a Picture drilling data in the imediate area, submitting an updated drilling pladrilled several years ago included	BHGR has determin an, Nevis Report, and	ed to re-enter the well and a revised C-102 to chan	nd horizontally	drill to maximiz	e productio	n of th	ne well. BHGR is
BHGR is planning to plug back the bottom of the surface casing a							
Surface disturbance will not chan 660' FNL 50' FEL NE/NE Unit A	ge from the initial A	PD, therefore the Surface	Use Plan will:	not be updated	or modified	, but ti	he new bottom hole willbe
000 THE 50 TEE NEARE OILL	1 500. 31 13011 13 11	•				RCV	D JUL26'07
SEE ATTACHE	CONDITIONS OF	APPROV	ΔI			_ CONS. DIV.	
Adhere to previously issued stipulations.   Survey & as dilled DIST. 3  HOLD 0404 FOR directiona   Survey & as dilled DIST. 3  HOLD 0404 FOR directiona   Survey & as dilled DIST. 3  C-102 For 13116 & 5th tus Change to #6-  in same 1/4.14-							
14. 1 hereby certify that the foregoin	g is true and correct				`	1	n same 1/4.1/4-

(Printed/Typed) Office Conditions of approval, if any, are attached. Approval of this notice 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.

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

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.

Name (PrintedlTyped)

Approved by (Signature)

Lynn H. Benally

Signature

Name

Title Regulatory Specialist

2007

Title



## Black Hills Gas Resources (BHGR)

## Jicarilla 464-31 #11

Surface Location: 660' FNL 1050' FWL NE/NW Unit C Bottom Hole Location: 660' FNL 50' FEL NE/NE Unit A Sec. 31 T30N R3W

Rio Arriba County, New Mexico
Jicarilla Contract 464

## DRILLING PROGRAM (Per Rule 320)

The Application for Permit to Drill (APD) was initiated under the NOS process as stated in Onshore Order No. 1 and supporting Bureau of Land Management (BLM) documents. This APD process includes an onsite meeting as determined by Bureau of Land Management (BLM) and the Jicarilla Nation.

The APD for this well was permitted and approved on May 7, 2004. This new drilling plan addresses the horizontal re-entry into the existing Jicarilla 464-31 #11 well.

## **SURFACE FORMATION - San Jose**

**GROUND ELEVATION - 7,138'** 

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

TOTAL DEDTH	2 9202	TVD
Pictured Cliffs	3,644'	Sandstone, shales & siltstones
Fruitland	3,590'	Sandstone, shales & siltstones
Kirtland	3,307'	Sandstone, shales & siltstones
Ojo Alamo	2,026'	Sandstone, shales & siltstones
San Jose	Surface	Sandstone, shales & siltstones

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

San Jose	surface	Gas
Ojo Alamo	2,026'	Gas
Kirtland	3,307'	Gas
Fruitland	3,590'	Gas
Pictured Cliffs	3.644'	Gas

## <u>HORIZONTAL DRILLING PROGRAM</u> Kick Off Point (KOP) is estimated to be $\pm 200^{\circ}$ TVD

## **CASING PROGRAM**

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0-278' TVD	11"	8 5/8"	Existing Casing J-55 24#	Cemented to surface
278' - ±3883' TVD	7-7/8 	5-1/2 "	K-55 15.5# LT&C New	TD to surface (Lead: ± 375 sxs lite standard cement. Tail: 500 sxs 50:50 poz containing 0.25 lb/sx LCM) * **
±3883' TVD- End of Lateral Bore	4-3/4"	2-7/8"	J-55 4.7# LT&C New	None

- \* Actual cement volume to be determined by caliper log.
- \*\* Cement will be 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 ft<sup>3</sup>/sx (mixed at 13.4 lb/gal)

 $50:50 \text{ poz yield} = 1.27 \text{ ft}^3/\text{sx} \text{ (mixed at 14.15 lb/gal)}$ 

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 conditions. 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' - 125' Fresh water - M.W. 8.5 ppg, Vis 30-33 125' - TD' Clean Faze - Low solids non-dispersed

TD' Clean Faze - Low solids non-dispersed M.W. 8.5 – 9.2 ppg

W. w. 8.5 - 9.2 pp 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 well site.

## **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 attached H<sub>2</sub>S plan in event H<sub>2</sub>S is encountered.

D) Estimated bottomhole pressure: 1,184 psi

## **ANTICIPATED START DATE**

August 1, 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.

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

# 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 — 4 Copies
Fee Lease — 3 Copies

☐ AMENDED REPORT

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

·	WELL LOCATION AND	ACREAGE DEDICATION PLAT
<sup>1</sup> API Number 30-039-27731	<sup>2</sup> Pool Code 72400	<sup>3</sup> Pool Nome East Blanco Pictured Cliffs
<sup>4</sup> Property Code	<sup>5</sup> Proc	erty Name * Well Number
34022	JÍCARILI	A 464-31 11
OGRID No.	, ® Oper	ator Name * Elevation
013925	BLACK HILLS	GAS RESOURCES 7138'

<sup>10</sup> Surface Location UL or lot no. East/West line Section Township Feet from the North/South line Lot Idn Feet from the RIO ARRIBA WEST С 31 30-N 3-W 660 NORTH 1050 11 Bottom Hole Location If Different From Surface UL or lot no. Lot Idn North/South line Section Township Feet from the Feet from the East/West line County 31 30-N **EAST** 3-W NORTH RIO ARRIBA 660 50 Α 12 Dedicated Acres 13 Joint or Infill 14 Consolidation Code 15 Order No. 271.31 - N/2

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

16	OR A NON-STANDAR	RD UNIT HAS BEEN APPROVED	BY THE DIVISION
SEC. CORNER FD. 2 1/2" BC. G.L.O. 1917	1050' SURFACE LOCATION LAT. 36'46'25" N (NA LONG. 107'11'37" W (1	(M) FD. MARKED STONE.  50'-	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 unleased 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 to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.
W 530	.от. 2	·	Signature 7/19/2007 Signature Date Printed Name Printed Name  Date Printed Name  Date Printed Name
S 00-01-33	.0Т 3		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.  DECEMBER 16, 2003  Date of Survey A. R. C. Signeture and sent of my respectated supervision.
SEC. CORNER FD. 2 1/2" B.C. G.L.O. 1917	OT 4		Certificate Humb



## 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<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 tubular are to be used, personnel will be trained in their special maintenance requirements.
- 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 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 sessions shell 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 required to carry documentation that they have received the proper training.

## II. H2S safety equipment and Systems

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

#### 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

 Mark II Surniveair 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:

Two portable H<sub>2</sub>S monitors positioned on location for best coverage and response.
 These units have warning lights and aqudilbesirens when H<sub>2</sub>S levels of 10ppm.

#### 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:

The mud programs 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 preventers, drilling spool, 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.

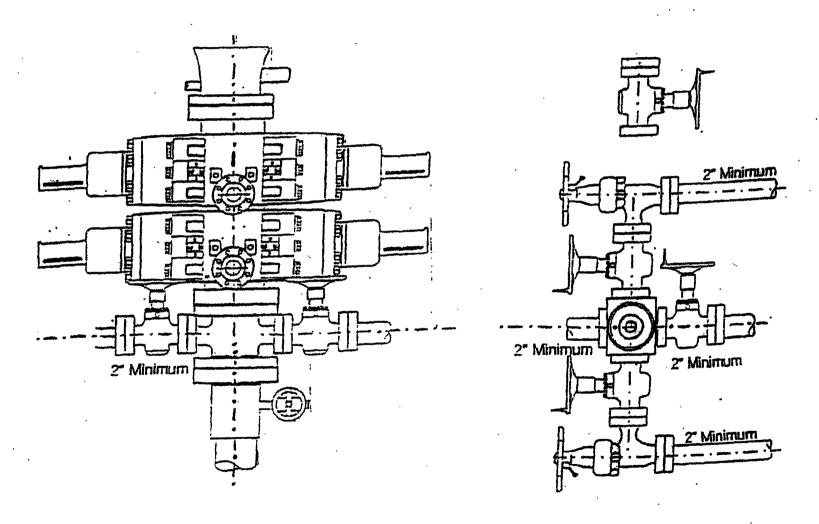
## H. Well testing:

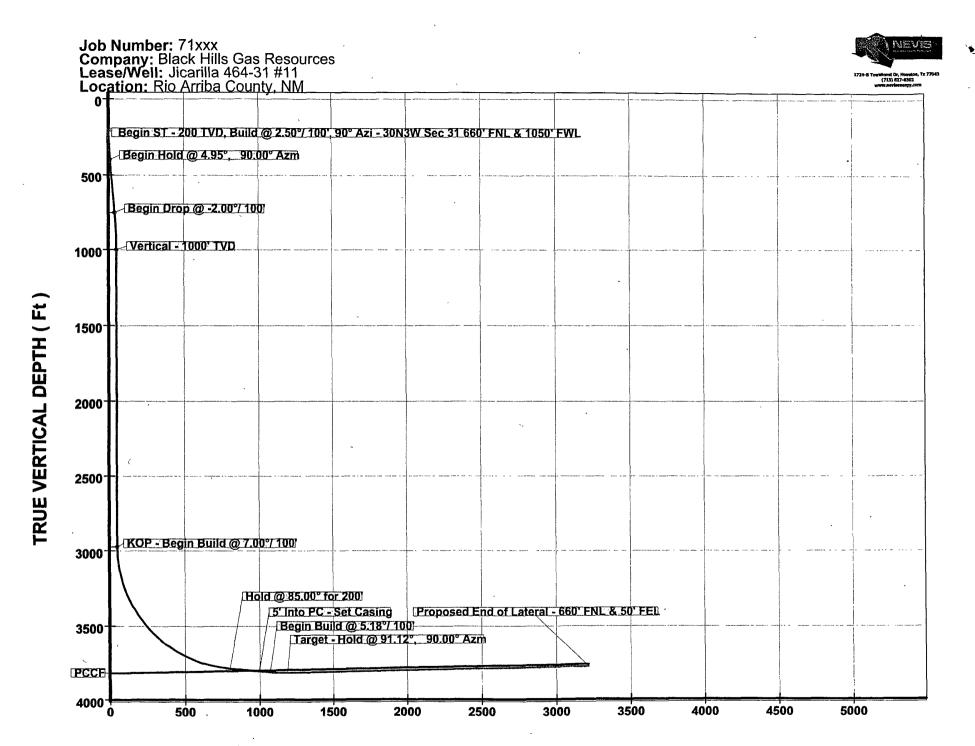
 Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. The drill stem lesting will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.

## 2-M SYSTEM

Black Hills Gas Resources, Inc.

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





## Black Hills Gas Resources

July 13, 2007

## Jicarilla 464 - 31 #11

API # 30-039-27731

## 660' FNL & 1050' FWL, Section 31, T30N, R03W

Rio Arriba County, New Mexico GL: 7138', KB: 7151', PBTD: 3838'

Surface casing:

8.625", 24.0 lb/ft, Casing at 278'; TOC at surface

Production casing:

5.5", 15.5 lb/ft, K-55, Casing at 3883'; Completion Report/

CBL shows good bond at 530' and fair bond at 250'

Current prod tubing:

2.375" 116 jts, 4.7#, J-55 tubing at 3684' with Arrow set

packer at 3734'.

Current pump/ rods:

N/A

**Current Perforated Zones:** 

**Pictured Cliffs:** 

3820' - 3840'

Fruitland Coal:

3766' - 3469'

Ojo Alamo:

2228' - 2140'

**Formation Tops:** 

Nacimiento:

2190'

Ojo Alamo:

3289'

Kirtland:

3519'

Fruitland:

3694

**Pictured Cliffs:** 

3819"

PLUG BACK PROCDURE: Plan to plug back the well for use as re-entry.

Note: All cement volumes use 100% excess outside pipe and 50' excess inside pipe. The stabilizing wellbore fluid will be 8.3 ppg, sufficient to balance all exposed formation pressures.

All cement will be ASTM Type III, mixed at 14.8 ppg with a 1.32 cf/sx yield.

- 1. This project will use a lined reserve pit for holding waste fluids.
- Install and test location rig anchors. Comply with all NMOCD, BLM, and Black Hills safety regulations. MOL and RU daylight pulling unit. Conduct safety meeting for all personnel on location. NU relief line and blow down well; kill with water as necessary. ND wellhead and NU BOP. Test BOP.
- 3. PU on tubing and release packer. TOH and tally 116 joints 4.7#, J-55 2.375" tubing, 3684' and LD packer. Visually inspect tubing and if necessary LD and PU workstring. Round trip 5.5" gauge ring or casing scraper to 3706'. (Note: run gauge ring/scraper due to CR going through Ojo Alamo perforations).

- 4. Plug #1 (Pictured Cliffs perforations and Fruitland Coal perforations and Kirtland tops, 3840' 3469'): Note: S. Mason, BLM, approved setting CR at 3706', 7/18/07). TIH and set a 5.5" CR at 3706'. Pressure test tubing to 1000#. Mix 57 sxs Type III cement, squeeze 28 sxs below CR (100% excess) to fill Pictured Cliffs and Fruitland Coal perforations and leave 29 sxs above CR to cover the Fruitland and Kirtland tops. TOH with tubing.
- 5. Plug #2 (Ojo Alamo perforations and Nacimiento top, 2879' 2779'): Round trip 5.5" gauge ring or casing scraper to 2228' or as deep as possible. RIH and set a 5.5" CR at 2228'. Load casing with water and circulate well clean. Pressure test casing to 800#. If casing does not test, spot or tag subsequent plugs as appropriate. Mix #6 sxs cement and spot a balanced plug above CR to isolate the Ojo Alamo interval and cover the Nacimiento perforations. TOH with tubing.

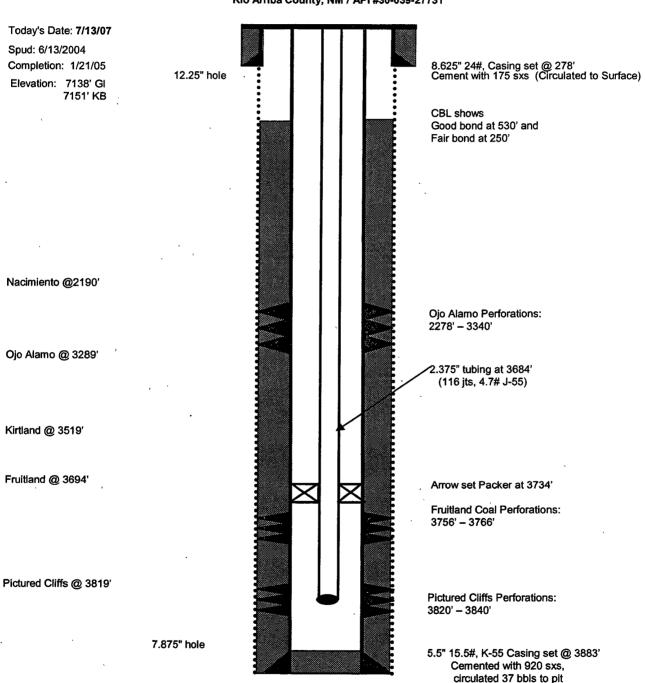
6. Plug #3 (650' – 500'): Mix 16 sxs cement and spot a balanced plug inside the casing for the sidetrack kick off point. Pull tubing up to 500' and reverse circulate the well clean. TOH and LD tubing.

- Connect the pump line to the bradenhead valve. Load the bradenhead annulus with water, note
  volume to fill, and then attempt to pressure test the BH annulus to 800 PSI. If the BH annulus took a
  volume to fill, then calculate the BH annulus top of cement.
- 8. ND the BOP and tubing head. Weld a slip on collar on the 5.5" casing stub and pick up on the 5.5" casing to attempt to remove the wellhead slips. Note: use a 5.5" 11.6#, N-80 LTC slip on collar and an N-80 (or L-80) pick up joint. If the slips are free then determine the free point by stretch calculation.
- 9. If the slips can be pulled up enough, then remove them from the 5.5" casing. If the free point calculates to be of sufficient depth (by stretch or BH annulus filling volume), then RU Wireline Specialties and run a free point in the 6.5" casing. Then chemical cut the 5.5" casing as deep as possible. Pull and LD any casing cut. Install a steel plate cover on the casing head. RD and move off location.
- 10. If the 5.5" casing slips will not unseat, [Maximum rig pull on 4 lines: 7/8" swedged 115,900#; 1" swedged line 150,300#] then dig out the surface casing head and cut both the 8.625" and 5.5" casing below the head. Weld an 8.625" casing extension onto the casing stub to bring a new casing head up to ground level or the desired height for the drilling rig to work with.
- 11. Install a steel plate cover on the 8.625" casing extension or a new surface casing head. RD and move off location.

## Jicarilla 464 - 31 #11

## Current

Cabresto Canyon, Fruitland Coal Basin, East Blanco Pictured Cliffs 660' FNL & 1050' FWL, NW, Section 31, T-30-N, R-3-W Rio Arriba County, NM / API #30-039-27731



TD 3885' PBTD 3838'

## Jicarilla 464 - 31 #11

## Current'

Cabresto Canyon, Fruitland Coal Basin, East Blanco Pictured Cliffs 660' FNL & 1050' FWL, NW, Section 31, T-30-N, R-3-W Rio Arriba County, NM / API #30-039-27731

Today's Date: 7/13/07

Spud: 6/13/2004 Completion: 1/21/05

Elevation: 7138' GI

7151' KB

12.25" hole

Nacimiento @2190'

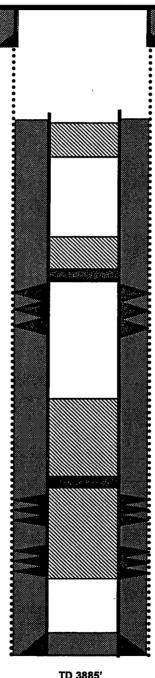
Ojo Alamo @ 3289'

Kirtland @ 3519'

Fruitland @ 3694'

Pictured Cliffs @ 3819'

7.875" hole



8.625" 24#, Casing set @ 278' Cement with 175 sxs (Circulated to Surface)

Cut the 5.5" casing at 500' To sidetrack and drill a horizontal well into the PC.

CBL shows Plug #3: 650' – 500' Good bond at 530' and Type III cement, 16 sxs Fair bond at 250'

> Plug #2: 2228' - 2140' Type III cement, 16 sxs

Set CR @ 2228'

Ojo Alamo Perforations: 2278' – 3340'

Plug #1: 3840' - 3469' Type III cement, 57 sxs: 28 below CR and 29 above CR

Set CR @ 3706'

Fruitland Coal Perforations: 3756' – 3766'

Pictured Cliffs Perforations: 3820' – 3840'

5.5" 15.5#, K-55 Casing set @ 3883' Cemented with 920 sxs, circulated 37 bbls to pit

TD 3885' PBTD 3838'