Form 3160-5 (September 2001)

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

2006	JAN 12	AM	FORM APPROVED OMB No. 1004-0135 Expires: January 31, 200
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SUNDRY NOTICES AND REPORTS ON WELLS

RECENTAGE Serial No.

Do not use thi abandoned we	is form for proposals to NI. Use Form 3160-3 (APD	anii or to re-en)) for such propo	ter an sals.	6. If Indian, All	ottee or Tribe Name
			<u> </u>	Jicarilla Apac	he Tribe
	IPLICATE - Other instru	uctions on reve	rse side	7. If Unit or CA	/Agreement, Name and/or No.
1. Type of Well ☐ Oil Well ☐ Gas Well ☐	Other			8. Well Name	and No.
2. Name of Operator				Jicarilla 462-2	
Black Hills Gas Resources, Inc.				9. API Well N	
3a. Address		3b. Phone No. (inc	clude area code)	30-039-2926	9
PO Box 249 Bloomfield, NM 874	413	505-634-1111		(ool, or Exploratory Area
4. Location of Well (Footage, Sec.,)			Dakota Basin
1695' FSL 1812' FEL Sec 23 T 30	ON R 3W NW/4 SE/4			11. County or F	·
12. CHECK API	PROPRIATE BOX(ES) TO	INDICATE NA	TURE OF NOTICE, R	EPORT, OR O	THER DATA
TYPE OF SUBMISSION			TYPE OF ACTION		
✓ Notice of Intent ✓ Subsequent Report	Acidize Alter Casing Casing Repair	Deepen Fracture Treat New Construction	Production (Star Reclamation Recomplete	t/Resume)	Water Shut-Off Well Integrity Other
	Change Plans	Plug and Aband	on Temporarily Ab	andon	
Final Abandonment Notice	Convert to Injection	Plug Back	Water Disposal		
Black Hills Gas Resources (BHG Dakota. The well was submitted simultaneously with the Sundry M Dakota, Gallup, Mesa Verde, Lev be an revised Drilling Program arremain the same. An application Comp	via APD and approved on 7/2 Notice for deepening the well. vis, Pictured Cliffs, Ojo Alam nd Surface Casing and Central	6/05. To date, the v BHGR also propos o, Nacimiento, and izer Design and the	well has not been drilled a es potential testing and m San Jose. TD will chang initial approved APD. A	nd a revised API ultiple completic e from 4,000 fee ill other informati	owill be submitted ons in the following zones; to 8,800 feet. Attached will ion in the initial APD will on the initial APD will are the submitted of the submitted on the submitted of the submit
14. 1 hereby certify that the foregoin	g is true and correct	n			CONS. UTV: 6
Name (PrintedlTyped)	<u> </u>				DIST. 3
Lynn H. Benally		Title	Regulatory Specialist		
Signature Sturry	7	Date	January 11, 2006	10 81 L	91,51, b1, 61, 61, 62, 62, 62, 62, 62, 62, 62, 62, 62, 62
	THIS SPACE F	CONTRACTOR STREET	R STATE OFFICE USE		
Approved by (Signature)	bree Brink	щ <u> </u>	Name (Printed/Typed)	Tie	ie Pet. Eng
Conditions of approval, if any, are certify that the applicant holds legs which would emitle the applicant to c	d or equitable title to those right	does not warrant o	Office FF	9	Date 1/26/ap
Title 18 U.S.C. Section 1001 and Tit States any false, fictitious or fraudule	tle 43 U.S.C. Section 1212, make nt statements or representations a	it a crime for any per s to any matter within	son knowingly and willfully its jurisdiction.	to make to any de	partment or agency of the Unite

Black Hills Gas Resources (BHGR) Jicarilla 462-23 33

1,695' FSL 1,812' FEL (NW/4 SE/4)

Sec. 23 T30N R3W

Rio Arriba County, New Mexico Lease: Contract 462



DRILLING PROGRAM (Per Rule 320)

This 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 NOS process includes an onsite meeting which was held on August 11, 2004 as determined by Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA) and Jicarilla Oil & Gas Administration (JOGA), and at which time the specific concerns of Mallon Oil Company (Mallon) the predecessor of BHGR, BLM, BIA and JOGA were discussed.

MALLON RESPECTFULLY REQUESTS THAT ALL INFORMATION REGARDING THIS WELL BE KEPT CONFIDENTIAL.

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,187'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	1,977'	Sandstone, shales & siltstones
Ojo Alamo	3,185'	Sandstone, shales & siltstones
Fruitland	3,611'	Sandstone, shales & siltstones
Pictured Cliffs	3,700'	Sandstone, shales & siltstones
Lewis	3,808'	Sandstone, shales & siltstones
Cliffhouse	5790'	Sandstone
Menefee	5 87 0'	Coal
Point Lookout	6000'	Sandstone
Gallup	7180'	Sandstone
Dakota	8240'	Sandstone,
TOTAL DEPTH	8 800'	

TOTAL DEPTH 8,800'

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

Tertiary

San Jose	surface	Gas
Nacimiento	1,977'	Gas
Ojo Alamo	3,185'	Gas
Fruitland	3,611'	Gas
Pictured Cliffs	3,700'	Gas
Cliffhouse	5790'	Gas, Water
Menefee	5870'	Gas, Water
Point Lookout	6000'	Gas, Water
Gallup	7180'	Gas, Water
Dakota	8240'	Gas/Oil, water

CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0-300'	12-1/4"	9 5/8"	J-55 36# ST&C	+/- 305 sxs Class B
0-3908	8-3/4"	7"	N_80 23# LT&C	+/- 792 sxs lite or 65:35 poz and +/- 166 sxs 50:50 poz
3908-TD	6-1/8"	4-1/2"	L-80 11.6# LT&C	+/- 656 sxs lite or 65:35 poz and +/- 206 sxs 50:50 poz

^{*} Actual cement volume to be determined by caliper log.

Yields:

Class B yield = $1.18 \text{ ft}^3/\text{sx}$ 65:35 Poz yield = $1.62 \text{ ft}^3/\text{sx}$ 50:50 Poz yield = $1.26 \text{ ft}^3/\text{sx}$

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' - 3908' Fresh water - Low solids non-dispersed

M.W. 8.5 – 9.2 ppg Vis – 28 – 50 sec W.L. 15cc or less

3908' - 8800' Air – Deliver ± 2400 SCFM (Air) @ 1700 psi & 35 gpm fluid.

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

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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) H₂S: See attached H₂S plan in event H₂S is encountered.

D) Estimated bottomhole pressure: 2720 psi

ANTICIPATED START DATE

March 1, 2006

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.

Jicarilla 462-23 33

1,695' FSL 1,812' FEL

(NW /4 SE /4)

Sec. 23 Rio Arriba T 30N County, R 3W New Mexico

Contract 462

INTERMEDIATE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 8,800 '
Proposed Depth of Intermediate Casing: 300 3,850 '

Estimated Pressure Gradient: 0.31 psi/ft

Bottom Hole Pressure at 8,800 '

 $0.31 \text{ psi/ft} \times 8,800 \text{ } = 2,728 \text{ psi}$ Hydrostatic Head of gas/oil mud: 0.22 psi/ft

 $0.22 \text{ psi/ft} \times 8,800 \text{ } = 1,958 \text{ psi}$

Maximum Design Surface Pressure

Bottom Hole Pressure – Hydrostatic Head =

(0.31 psi/ft x 8,800 ') – (0.22 psi/ft x 8,800 ') =

2,728 psi – 1,936 psi = 792 psi

Casing Strengths 8.625 J-55 32# J-55 32# ST&C

 Wt.
 Tension (lbs)
 Burst (psi)
 Collapse (psi)

 32 #
 372,000
 3,930
 2,530

 36 #
 434,000
 4,460
 3,450

Safety Factors

Tension (Dry): 1.8 Burst: 1.0 Collapse: 1.125 32 #/ft x 3,850 ' 123,200 # Tension (Dry): 372,000 3.02 Safety Factor = ok 123,200 Burst: Safety Factor = 3.930 4.96 psi ok 792 psi Collapse: **Hydrostatic** $0.052 \times 9.0 \text{ ppg } x$ 3,850' = 1,802 psiSafety Factor = 2,530 psi 1.40 ok

1,802

psi

Use 3,850 ' |-55 32# J-55 24# ST&C____

Use 2,000 psi minimum casinghead and BOP's but will test to 1,000 psi

Centralizers

13 Total

1 near surface at 40'

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

10 -1 each at every 10 its.

350' spacing

Total centralized

± 3500 '(

350 ' - 3,850 ')

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

Jicarilla 462-23 33

1,695' FSL 1,812' FEL

(NW /4 SE /4)

Sec. 23 T 30N

R 3W

Rio Arriba County, New Mexico

Contract 462

SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth:		8,800 '
Proposed Depth of Surface Casing:	#	300 '
Estimated Pressure Gradient:		0.31 psi/ft
Bottom Hole Pressure at		8,800 '
0.31 psi/ft x 8,800 '	=	2,728 psi
Hydrostatic Head of gas/oil mud:		0.22 psi/ft
0.22 psi/ft x 8,800 '	=	1,958 psi

Maximum Design Surface Pressure

Casing Strengths 13 3/8 J-55 54.5# LTC

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
55 #	514,000	2,730	1,130
61 #	595,000	3,090	1,540

Safety Factors

Tension (Dry):	1.8	Burst:	1.	0		Colla	pse:	1.125
Tension (Dry):	54.5 #/ft	x	300	•	=	16,350 #	ţ	
	Safety Factor =	: 	514,000 16,350		=	31.44		ok
Burst:	Safety Factor =	<u></u>	2,730 792	psi psi	=	3.45		ok
Collapse:	Hydrostatic =	0.0	52 x 9.0	ppg	x	300 '	= 140	psi
	Safety Factor =	=	1,130 140	psi psi	=	8.05		ok

Use 300 13.38 J-55 24# ST&C

Use 2,000 psi minimum casinghead and BOP's but will test to 1,000 psi

Centralizers

6 Total

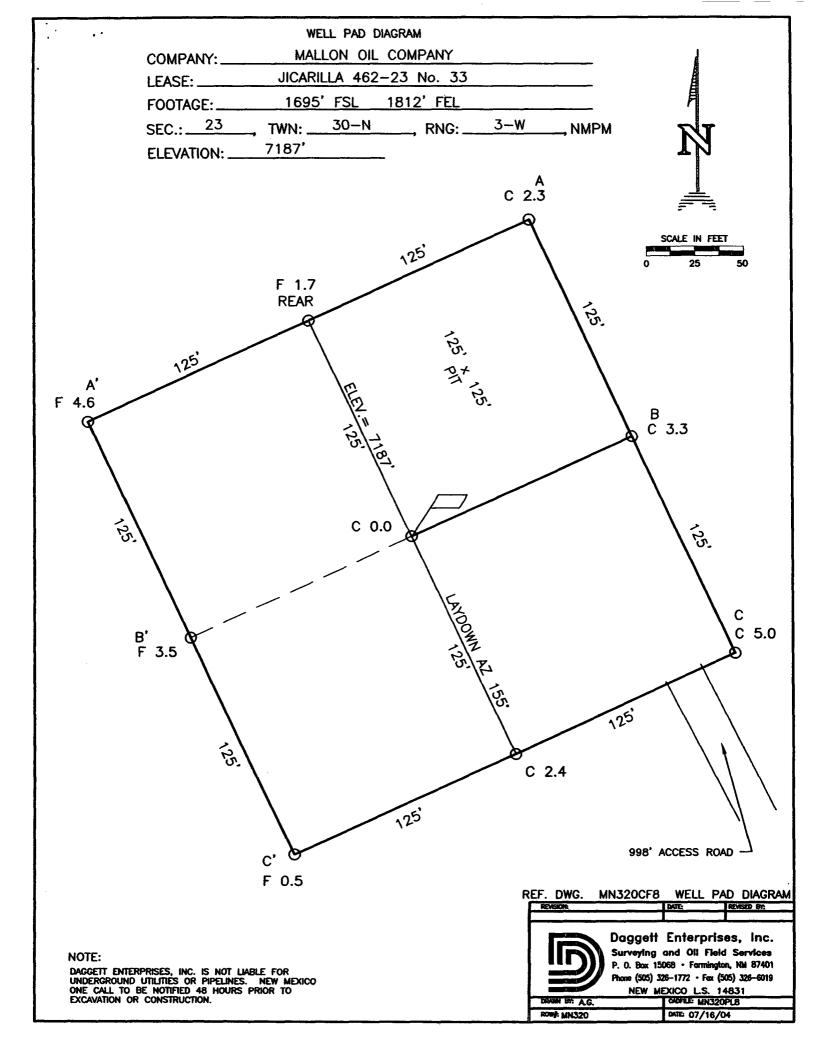
1 near surface at 40'

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

2 -1 each at every other joint 40' spacing

Total centralized ± 200 '(100 ' - 300 ')

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



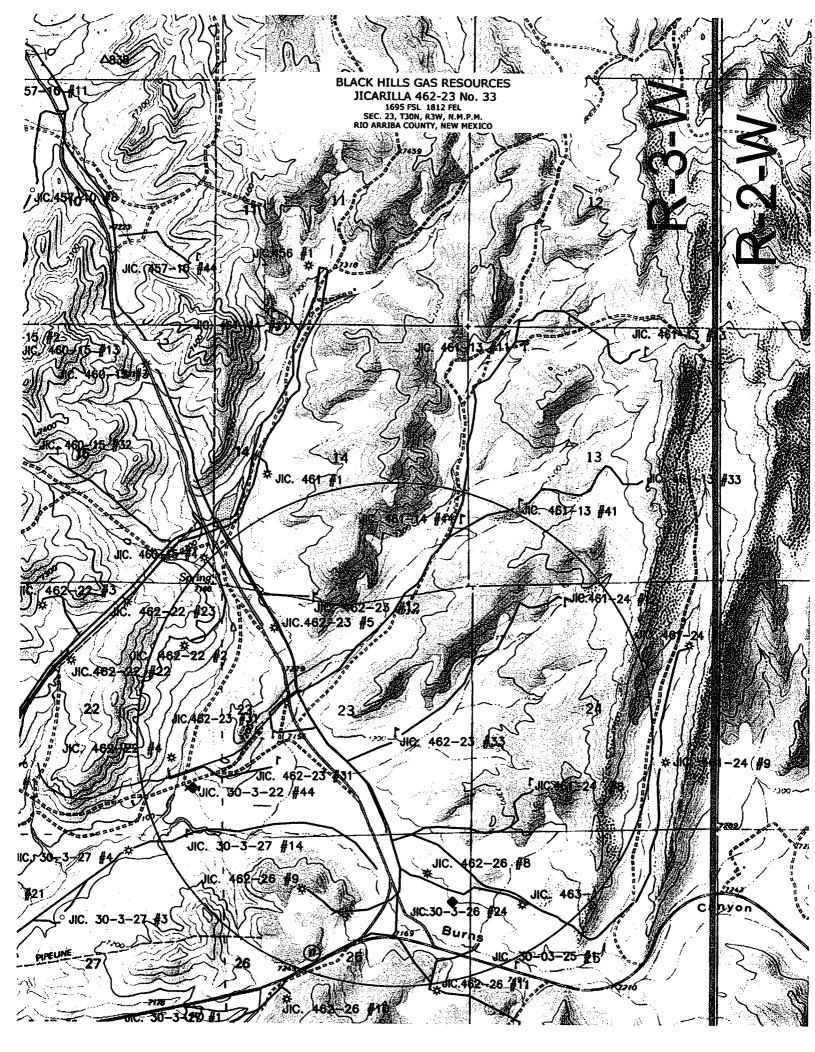
WELL PAD CROSS-SECTIONAL DIAGRAM

MALLON OIL COMPANY

LEASE: ______ JICARILLA 462-23 No. 33

COMPANY: ____

	FOOTAGE:	1695' FSL 1812'	FEL	
		_, TWN:30-N		, NMPM
	ELEVATION:	7187'		
			NOTE: DAGGETT ENTERPRISE UNDERGROUND UTILI ONE CALL TO BE NO EXCAVATION OR CON	ES, INC. IS NOT LIABLE FOR TIES OR PIPELINES. NEW MEXICO DITFIED 48 HOURS PRIOR TO STRUCTION.
ELEV. A-	-A'	C/L		1
7210				
7200				
7190				
7180				
7170				
7160				
7150	<u> </u>			
ELEV. B	-B'	C/L		
7210				
7200				
7190				
7180				
7170				
7160				
7150	<u> </u>]
ELEV. C.	-c'	C/L		
7210				17 17 18 18 18 18 18 18 18 18 18 18 18 18 18
7200				GRAM Reveso 36.5, II 36.5, II 36.5, X8- 305, X8-
7190				O DIAC Propries (compage)
7180		- Villillillillillillillillillillillillill		Daggett Enterprises, Inc. Surveying and Oil Fleid Services P. 0. 8xx 15088 - Famington, Na 87401 NEW MEXICO L.S. 14831 NEW MEXICO L.S. 14831 NEW MEXICO L.S. 14831
7170				igett syng Box 15 (365) X (365) X (365) X
7160				Dagge Surveyi P. 0. Bon Phone (50
7150	<u> </u>			
				REF. DWG.



A PRELIMINARY SURVEY BEING A CENTERLINE SURVEY CROSSING JICARILLA APACHE LANDS FOR MALLON OIL COMPANY PROPOSED JICARILLA 462-23 No. 33 PIPELINE AND ACCESS ROAD S/2 SEC. 23, T-30-N, R-3-W, N.M.P.M. LOCATED SOUTHWEST OF DULCE. RIO ARRIBA COUNTY, NEW MEXICO 13 14 15 14 24 23 23 22 TAKEOFF AT EDGE OF WELL PAD E.S. 0+00 ON PROPOSED PIPELINE AND ACCESS ROAD S 69*09'57" W 256.20 P.I. 7809 JICARILLA 462-23 No.7 P.I. 1821 WELL FLAG E.S. 2+56.20 S 66°33'31" W 741.88 WELL FLAG TO TAKEOFF £ 02°36'26" LT. S 28°58'12" W P.I. 1822 E.S. 9+98.08 = E.O.L. ON **EXISTING MALLON PIPELINE** 1000 500

> (BOB) N 89°37'18" E 5217.53

1) BASIS OF BEARING - BETWEEN FOUND MONUMENTS AT THE SOUTHWEST CORNER AND THE SOUTHEAST CORNER OF SECTION 23, T-30-N, R-3-W, N.M.P.M LINE BEARS N 89-37-18 E A DISTANCE OF 5217.53 FEET AS MEASRUED BY GPS OBSERVATION.

26 FD P&C LS# 8894

23

22

27

2) DATE OF SURVEY - 7/12/2004

NOTES:

3) 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

OWNER	STATION	FT./RODS
JIC. APACHE	E.S. 0+00 TO 9+98.08	998.08/60.49
TRIBE		1

23

26

DATE: 7-27-04 CERTIFY THAT THIS BY WAS PREPARED FROM AN ACTUAL SURVEY PERFORMED BY ME OR UNDER MY DIRECTION AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEY IN NEW MEXICO.

I FURTHER CERTIFY THAT THIS IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT. Daggett Enterprises, Inc.

REVISION

Surveying and Oil Field Services P. O. Box 15068 Farmington, NM 87401 Phone (505) 326-1772 Fax (505) 326-6019

REV. BY

DATE

SCALE: 1°=1000

24 FD. STONE

25

REGISTERED LAND SURVEYOR NEW MEXICO No.14831

SHEET 1 OF 1 CADFILE: MN320P01 ROW#: MN320 DATE: 07/16/04 DRAWN BY: A.G.