Form 3160-5 (NOVEMBER 1994)

# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT



FORM APPROVED OMB No. 1004-0135 EXPIRES: July 31, 1996

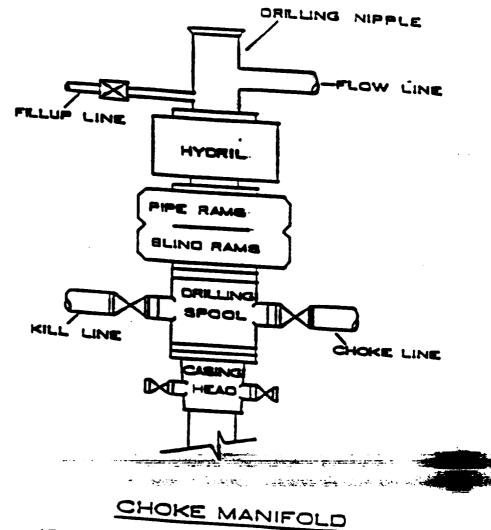
Do not use this fo		D REPORTS ON WEL	ESPER 21 PM 12:	NM83503	
abaadaaad u	orm for proposals	to drill or to deepen	or re-enter an	6. iff Indian, Allottee or Tribe Name	
abandoned w SUBMIT IN 1	RIPLICATE - Oth	er instruction on reve	roposals.	THE THE PARTY OF T	
Type of Well Oil Well X Gas Well	•	Other		7. If Unit or CA/ Agreement, Name and/or No.	
Name of Operator			-	8. Well Name and No.	
CNG PRODUCING COMPANY  3a. Address  3b. Phone No. (include area code)				GRASSY CANYON #4 (CNG #3955)	
39. Phone No. (included 1450 POYDRAS ST, NEW ORLEANS, LA 70112-6000 (504) 593-700			su C308)	9. API Well No. 30-045-28480	
Location of Well (Footage, Sec., T., R., M				10. Field and Pool, or Exploratory Area	
Surface: 834' FNL & 2,505' FEL of Sec. 31-T32N-R7W  Bottom hole location: 1,047' FNL & 1,605' FWL of Sec. 31-T32N-R7W				BASIN FRUITLAND COAL	
				11. County or Parish, State SAN JUAN, NEW MEXICO	
12. CHECK AP	PROPRIATE BOX	(ES) TO INDICATE N		PORT, OR OTHER DATA	
TYPE OF SUBMISSION			TYPE OF ACTION		
X Notice of Intent Subsequent Report	Acidize	Deepen	Production (Start/Resume)	Water Shut-Off	
	Alter Casing	Fracture Treat	Reclamation	Well integrity	
	Casing Repair	New Construction	Recomplete	X Office CAVITATION WORK AND WORKOVER	
Finel Abendonment Notice	Change Plans	Plug and Abandonment	Temporarily Abandon		
	Convert to injection	Plug Beck	Water Disposal		
CNG Producing Company Sec. 31-T32N-R7W, San	Juan County, New	Mexico per_the attache	d workover procedure.		
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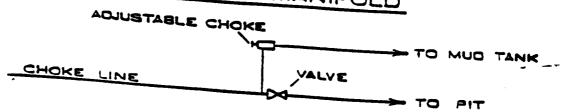


or fraudulent statements or representations as to any matter within its jurisdiction.

## BOP STACK

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#### **DATE September 1998**

#### **PRESENT**

The Grassy Canyon Number 4 well was temporary plugged & abandoned in November, 1991.

#### **OBJECTIVE & RECOMMENDATION:**

Perform a workover to drill out T&A cement plugs, pull 5-1/2 liner and perform a recavitation stimulation on the productive Fruitland coal seams. Rerun the 5-1/2 liner to TD @ 3925'. Restore the well to commercial production.

#### **WELL HISTORY:**

CNG PRODUCING COMPANY owns 100% WI in the Grassy Canyon field and produces three wells from the Fruitland coal formation between 3,400' - 3,900'. The Number 4 well was spudded on 12/17/90. The well was drilled to 3,600' and 7" casing was set on 1/03/91. Operations were suspended until 6/5/91. A completion rig was rigged up, and drilled 6-1/4 hole through the Fruitland coal to TD of 3926'. The Fruitland coal interval 3,597' - 3,700' was drilled with water and caused damage to the formation. The well was killed with water and logged to 3,850' and the open hole coal interval was cavitated. A 5-1/2" liner was run to 3,925'. On 6/24/91 the well tested at AOF of 434 MCFD. Attempts were made to produce the well for 6 months with low gas rates and high water rates The well would load-up. In November, 1991, a coil tubing unit was mobilized and an attempt was made to deepen the well unsuccessfully. The well was temporary plugged & abandoned on 11/21/91, 5 cement plugs were set as follows:

Cement Plug # 1	Surface to 80'	(14 sks)
Cement Plug # 2	201' to 357'	(28 sks)
Cement Plug # 3	994' to 1,150'	(28 sks)
Cement Plug # 4	2,578' to 3,128'	(97 sks)
Cement Plug # 5	3,324' to 3,400'	(14 sks)

After review of geologic details, the well has been drilled deep enough and has penetrated through the Fruitland coal intervals and does not need to be deepened. Careful study of the original completion reports yields the fact that the Fruitland coal interval, 3,597' - 3,700', was drilled with water and damaged the formation. The cavitation employed at the time was inadequate to remove the damage.

#### **WELLBORE CONFIGURATION:**

Location

SECTION 31, TOWNSHIP 32N, RANGE 7W

SAN JUAN COUNTY, NEW MEXICO

**API Number** 30-045-28480

Casing:

9-5/8" 36# K-55 STC @ 307'

7" 23# K-55 LTC @ 3,358'

Internal Id. 6.366 Drift Diameter 6.241

5-1/2" 23# P-110 LTC 3,492"-3,925 Liner

Internal Drift Diameter 3.833"

#### **Coal Intervals**

3733-3744', 3770-3771', 3780'-3783', 3823-3824', 3833-3834', 3838'-3849', 3850-3854', 3857'-3859', 3917'-3919', 3921-3923',

#### Perforations:

2 SPF 3563'-3576' 3825-3827' 3831-3853' 3910-3616' MD

**Hole Angle** Directional

**Tubing Head** 11" X 10M

Tree

2-1/2 X 5M

#### PROCEDURE

- 1. Dig reserve pit 20' X 30' X 7' for cavitation blow down.
- 2. Move in and rig up Big "A" Cavitation rig # 19 with high pressure air package 2, 000 PSI. 3000 cfm air compressors. Nipple up BOP's Double ram 7-1/16 X 5M 7-1/16 X 5M preventor with 2-7/8 pipe & blind rams Annular preventor 7-1/16 X 5M Choke manifold dual 2" X 2" 5M Dual 7" blow down Blooie lines connected to casing with dual 4-1/16 5M HCR valves.
- 3. Test BOP' to 250 & 3500 PSI. Ensure casing valve is open during testing. 3-1/2 drill pipe 2-7/8 and tubing safety valves and choke manifold.
- 4. Pick up 6-1/4 bit and casing scrapper with 4-3/4" drill collar and 3-1/2" 13.30 Grade E Drill Pipe. Go in hole and drill out cement plugs in 7" casing. Displace mud in 7" casing with Fruit land Coal produced lease salt water.

Cement Plug # 1 Surface to 80' (14 sks Class B 15.6 ppg)

Cement Plug # 2 201' to 357' (28 sks Class B 15.6 ppg)

Cement Plug # 3 994' to 1,150' (28 sks Class B 15.6 ppg)

Cement Plug # 4 2,578' to 3,128' (97 sks Class B 15.6 ppg)

Cement Plug # 5 3,324' to 3,400' (14 sks Class B 15.6 ppg)

Cement Retainer 3,450'

- 5. Circulate wellbore clean of cement at top of retainer at 3,450'.
- 6. Displace fluid in wellbore with air before drilling retainer. Clean out to top of 5-1/2 Liner at 3,492'. Pull out of hole with 6-1/4 bit.
- 7. Pick up 4 ½ bit and 475' of 2-7/8" tubing xo to 3-1/2" drill pipe.
- 8. Go in hole with 4 ½" bit. Clean out inside of 5-1/2" liner to ±3,925' circulating with air.
- 9. Test well.
- 10. Pick up Metal Muncher mill. Go in hole to the top of 5-1/2 liner at 3.492'.

- 11. Mill up T.I.W. liner hanger assembly estimated 5' and 1' ± of 5-1/2" liner. Pull out of hole.
- 12. Pick up overshot and jars and latch onto 5-1/2" liner top.
- 13. Attempt to work jar liner free. If unable to jar free.
- 14. Rig up E-line Go in hole with free point. Determine free point and cut 5 ½" in mid joint above stuck point.
- 15. Continue jarring pulling 5-1/2" liner out of hole until liner has been pulled from wellbore.

### NOTE: A contingency is prepared to sidetrack in the event 5-1/2" liner can not be pulled.

- 16. Pick up 6-1/4" bit. Trip in hole. Clean out coal and shale fill to 3,770'.
- 17. Pick up 9-1/2" Baker underreamer. Underream open hole interval to 3,925'.
- 18. Circulate until wellbore is clean.
- 19. Pull out of hole with underreamer.
- 20. Go in hole with 6-1/4" bit and 4-3/4" drill collar assembly.
- 21. Pick up bit inside 7" casing at 3,598' MD.

#### Perform Cavitation Stimulation Procedure

- 22. Pressure up on formation with high pressure air and 10-50 bbls Fruitland Coal produced formation water not to exceed equivalent of BHP estimated at 1,510 PSI.
- 23. Measure time and volume of air on each Cavitation cycle and gas flow after blow down and volume of coal cleaned out .
- 24. Blow down through dual 7" blooie lines to reserve pit.
- 25. Repeat Cavitation cycle 20 30 times until little or no coal fill is found on subsequent clean out trips and gas rates do not increase.
- 26. Before attempting to run liner, ensure wellbore is stable and no fill is encountered.
- 27. Pick up Baker liner hanger and run 5-1/2" liner, setting 433' from 3,492' to 3,925'.
- 28. Perforate 5-1/2" liner with 4 SPF at each coal interval to be determined later.
- 29. Run 2-7/8" 6.5 # J-55 tubing from surface to 3,900'.
- 30. Swab back and unload well. Flow back on choke to atmosphere until well has cleaned up.
- 31. Run BHP Gauge after well has cleaned up before placing well on production.
- 32. Place well on production.

30-60 days after placing well on regular production make arrangement to run, Gamma Ray Noise, Temp, combo log to determine volume of gas /water being produced from each individual producing zone. 33.

#### **CNG PRODUCING COMPANY**

#### **GRASSY CANYON #04**

COMPLETED: WORKED OVER: SEC: <u>31,</u> T: <u>32N</u> R: <u>07W</u> API: 30-045-28480

**PROPOSED PRESENT** NOTE: Unless Stated All Depths are Measured. 51' plug NOT DRAWN TO SCALE. T&A November 1991 12-1/4" hole 307" 9 5/8",36# K-55 @. 307 2-7/8 6.5# J-55 Tubing Surface to 3900' Cmit'd to surface w/ 450 skc Class 100' cement plug from 257' - 357' COAL 3733 -3734 3' Flare 3770 - 3771 3780 - 3783 3823 - 3824 3833 - 3834 3838 - 3849 11' 100' cement plug from 1,050' - 1,150 ' 3850 - 3854 4 3'Flare 3857 - 3859 3917 - 3919 3921 - 3923 Total Coal 344' cement plug from 2,784' - 3,128 ' Cement retainer set @ 3,450° 20'cement set on Top 8-3/4" hole 7" K-55 23# Casing @ 3,598'MD Cemented w/1548 Class G Additives Perfs: Perfs: 3,763' - 3,776 MD 4 SPF 3,763' - 76 MD 2 SFF 3,825' - 3,876 MD 4 SPF 3,825' - 27 MD 2 SPF 3,831' - 3,853 MD 4 SPF 3,831 - 53 MD 2 SPF 3,910' 3,916 MD 4 SPF 3,910 - 16 MD 2 SPF 5-1/2" P110 23# liner top @3492' MD

TOTAL DEPTH: 3925 'MD 3,603' TVD

PREPARED BY: Relph Hamrick GC#04

DATE: September 1998