

Navajo Nation

APD

Tribal Operations on

Tribal Lands

Permit

Accepted for

Record Only

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 3/7/12

Well information:

Operator NNOGC, Well Name and Number CBM APD 10E#1

API# 30-045-35397, Section 10, Township 27N, Range 14E

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☐ Hold C-104 for directional survey & "As Drilled" Plat
- ☐ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☒ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☐ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils

NMOCD Approved by Signature

7-8-13

Date

JUL 09 2013 ca

Preliminary

RECEIVED

AUG 09 2012

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Farmington Field Office
Bureau of Land Management

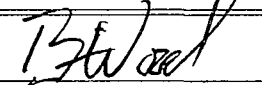
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NO-G-1008-1773
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name NAVAJO NATION
2. Name of Operator NNOGC Exploration and Production LLC		7. If Unit or CA Agreement, Name and No.
3a. Address 1675 BROADWAY, SUITE 1100 DENVER, CO 80202	3b. Phone No. (include area code) 303 534 8300	8. Lease Name and Well No. CBM A Pod 10 E #1
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1398' FNL & 1200' FWL At proposed prod. zone SAME		9. API Well No. 30-045-35397
14. Distance in miles and direction from nearest town or post office* 11 AIR MILES SW OF FARMINGTON, NM		10. Field and Pool, or Exploratory BASIN FRUIT. COAL, WC GALL, & DK
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 14,640'	16. No. of acres in lease 150,000	11. Sec., T. R. M. or Blk. and Survey or Area SWNW 10-27N-14W NMPM
17. Spacing Unit dedicated to this well N2 (Fruit. Coal & Dakota) & SWNW (Gallup) 320 40	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2,853' (CBM A 10 H 1)	12. County or Parish SAN JUAN
19. Proposed Depth 6,000'	20. BLM/BIA Bond No. on file RLB0006712	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 5,848' UNGRADED	22. Approximate date work will start* 06/21/2012	23. Estimated duration 1 MONTH DIST. 3

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest/Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed/Typed) BRIAN WOOD (505 466-8120)	Date 03/07/2012
Title CONSULTANT (FAX 505 466-9682)		
Approved by (Signature)	Name (Printed/Typed)	Date
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 thereon.
Conditions of approval, if any, are attached.

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.

(Continued on page 2)

*(Instructions on page 2)

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

NMOCD
AV

ATCE FIELD OFFICE RECORD

JUN 18 2013

FARMINGTON FIELD OFFICE
BY T.L. Salyers

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

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Mining Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C - 102
Revised July 16, 2010
Submit one copy to appropriate
District Office

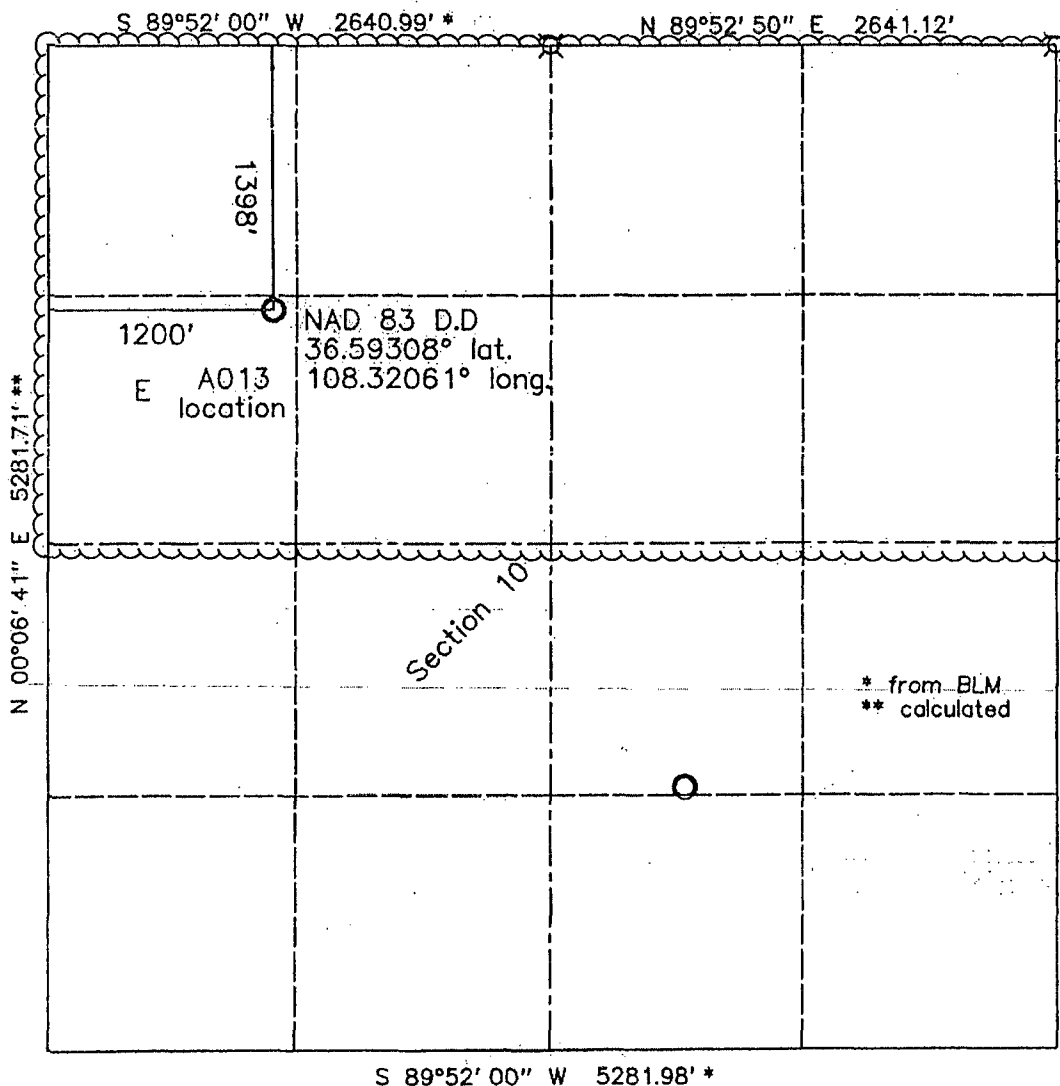
AUG 09 2012

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT
Farmington Field Office
Bureau of Land Management

¹ API Number 30-045- 35397		² Pool Code 71629		³ Pool Name BASIN FRUITLAND COAL (GAS)					
⁴ Property Code 39994		⁵ Property Name CBM A Pod 10E						⁶ Well Number 1	
⁷ OGRID No. 242841 292875		⁸ Operator Name NNOGC Exploration and Production LLC						⁹ Elevation 5848'	
¹⁰ Surface Location									
UL or Lot E	Section 10	Township 27 N.	Range 14 W.	Lot Idn. 400	Feet from the 1398'	North/South line NORTH	Feet from the 1200'	East/West line WEST	County SAN JUAN
¹¹ Bottom Hole Location If Different From Surface									
UL or Lot	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
¹² Dedicated Acres 320		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

No allowable will assigned to this completion until all interests have been consolidated or a non standard unit has been approved by the division.



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 undivided mineral interest in the land including the bottom hole location or has the right to drill this well at this location pursuant to a contract with an owner of a mineral interest or working interest, or to a voluntary pool agreement or a compulsory pooling order hereafter entered by the Division.	
Signature <i>Brian Wood</i>	Date 3-7-12
Printed Name BRIAN WOOD	
E-mail Address brian@permitswest.com	
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.	
Date of Survey 06/08/11	
Signature and seal of the Professional Surveyor <i>Gerald G. Woodleston</i>	
Certificate Number 6844	

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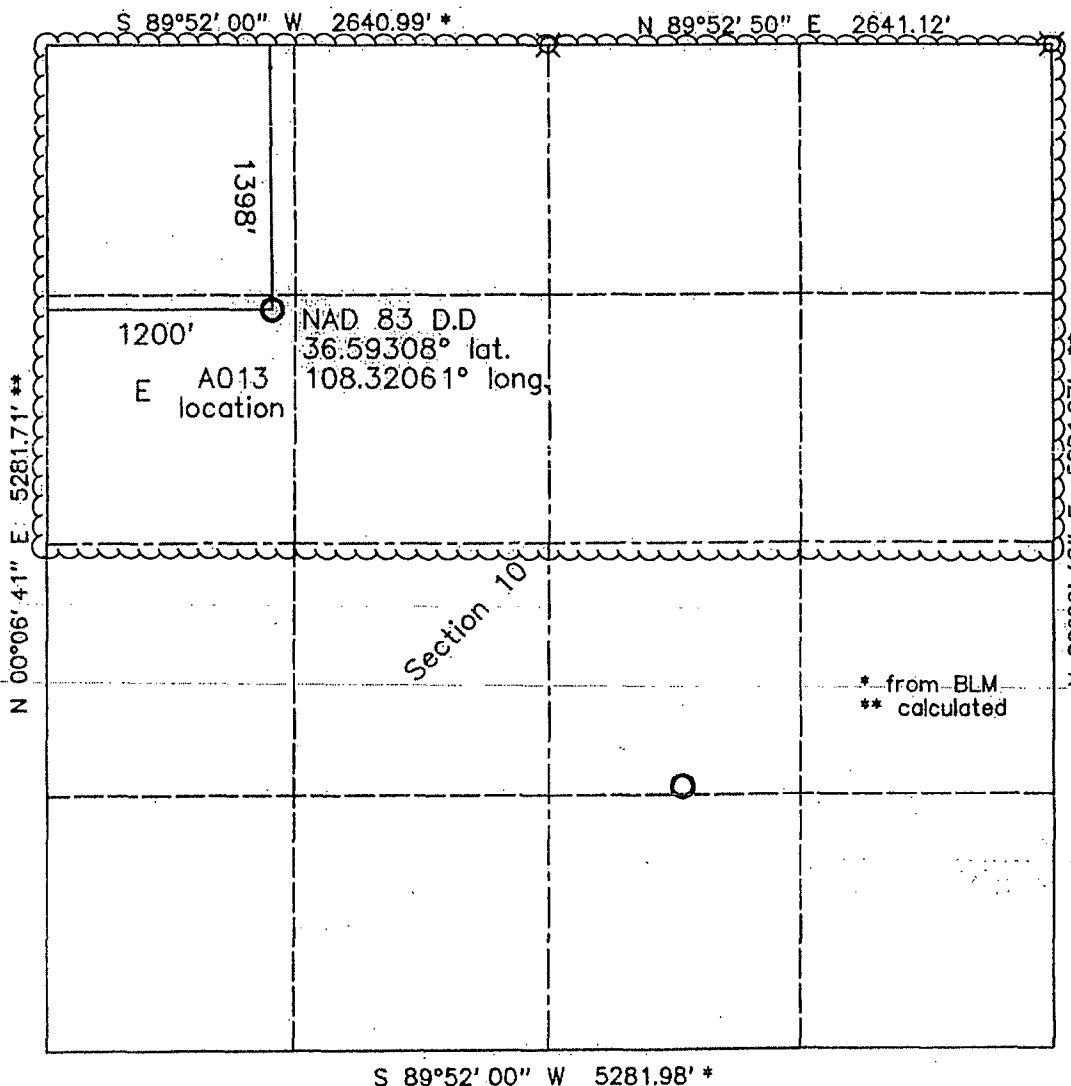
Form C - 102
Revised July 16, 2010
Submit one copy to appropriate
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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045- 35397		² Pool Code 71599		³ Pool Name BASIN DAKOTA	
⁴ Property Code 39996		⁵ Property Name CBM A Pod 10E			⁶ Well Number 1
⁷ OGRID No. 242841 292875		⁸ Operator Name NNOGC Exploration and Production LLC			⁹ Elevation 5848'
¹⁰ Surface Location					
UL or Lot E	Section 10	Township 27 N.	Range 14 W.	Lot Idn. 100	Feet from the North/South line 1398'
			Feet from the East/West line 1200'	County SAN JUAN	
¹¹ Bottom Hole Location If Different From Surface					
UL or Lot	Section	Township	Range	Lot Idn.	Feet from the North/South line
			Feet from the East/West line	County	
¹² Dedicated Acres 320		¹³ Joint or Infill		¹⁴ Consolidation Code	
¹⁵ Order No.					

No allowable will assigned to this completion until all interests have been consolidated or a non standard unit has been approved by the division.



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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 undivided mineral interest in the land including the bottom hole location or has the right to drill this well at this location pursuant to a contract with an owner of mineral interest or working interest, or to a voluntary pool agreement or a compulsory pooling order previously entered by the division.	
Signature <i>Brian Wood</i>	Date 3-7-12
Printed Name brian@permitswest.com	
E-mail Address	
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.	
Date of Survey 06/08/11	
Signature and seal of Professional Surveyor <i>Gerald G. Huddleston</i>	
Certificate Number 6844	

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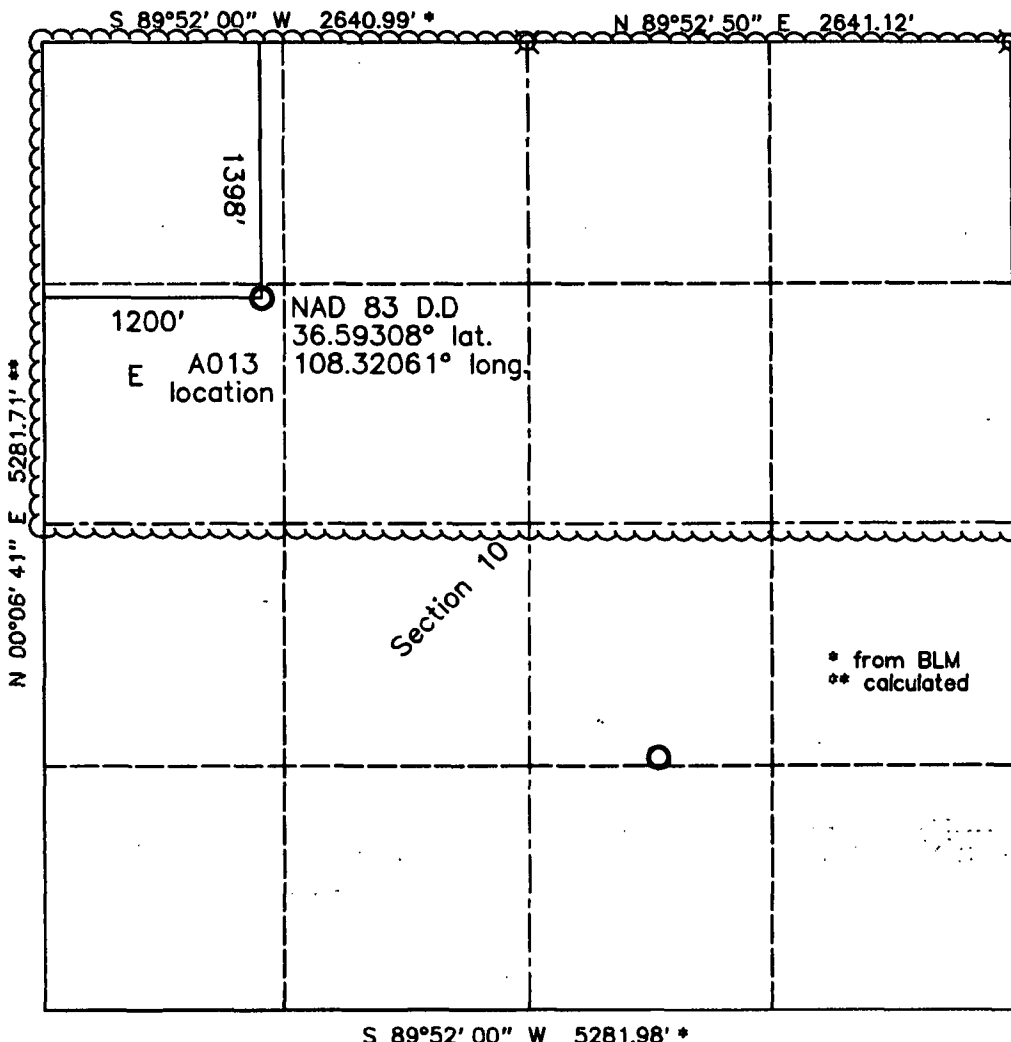
WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045- 35397	² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 39996	⁵ Property Name CBM A Pod 10E	
⁷ OGRID No. 292875	⁸ Operator Name NNOGC Exploration and Production LLC	⁶ Well Number 1
		⁹ Elevation 5848'

¹⁰ Surface Location									
UL or Lot E	Section 10	Township 27 N.	Range 14 W.	Lot Idn. 400	Feet from the 1398'	North/South line NORTH	Feet from the 1200'	East/West line WEST	County SAN JUAN

¹¹ Bottom Hole Location If Different From Surface									
UL or Lot	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
OIL CONS. DIV DIST. 3									
¹² Dedicated Acres 320		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No. JUL 01 2013			

No allowable will assigned to this completion until all interests have been consolidated or a non standard unit has been approved by the division.



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 undivided mineral interest in the land including the bottom hole location or has the right to drill this well at this location pursuant to a contract with an owner of mineral interest or working interest or to a voluntary pool agreement or a compulsory pooling order or a leasehold interest in the location.	
Signature <i>Brian Wood</i>	Date 6-28-13
Printed Name BRIAN WOOD	
E-mail Address brian@permitswest.com	
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.	
Date of Survey 06/08/11	
Signature and seal of Professional Surveyor <i>Gerald C. Huddleston</i>	
Certificate Number 6844	

NNOGC Exploration and Production LLC
CBM A Pod 10 E #1
1398' FNL & 1200' FWL
Sec. 10, T. 27 N., R. 14 W.
San Juan County, New Mexico

PAGE 1

Drilling Program

1. FORMATION TOPS

The estimated tops of important geologic markers are:

<u>Formation</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Elevation</u>
Kirtland Shale	0'	10'	+5,848'
Fruitland Formation	823'	833'	+5,025'
Pictured Cliffs Sandstone	1,048'	1,058'	+4,800'
Lewis Shale	1,388'	1,398'	+4,460'
Mesa Verde Sandstone	1,973'	1,983'	+3,875'
Point Lookout Sandstone	3,723'	3,733'	+2,125'
Mancos Shale	3,913'	3,923'	+1,935'
Upper Gallup Sandstone	4,813'	4,823'	+1,035'
Lower Gallup Sandstone	5,003'	5,013'	+845'
Sanostee	5,273'	5,283'	+575'
Dakota Sandstone	5,698'	5,708'	+150'
Morrison Formation	5,873'	5,883'	-25'
Total Depth (TD)	6,000'	6,010'	-152'

2. NOTABLE ZONES

Fruitland coal gas is the primary goal. Gallup and Dakota are the secondary goals. Oil and gas shows which appear to the well geologist to be commercial will be tested. All fresh water and prospectively valuable minerals will be recorded by depth and protected with casing and cement. Water could be found in the Fruitland, Pictured Cliffs, Point Lookout, Gallup, and Dakota formations.



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3. PRESSURE CONTROL

A double ram type $\geq 2,000$ psi working pressure BOP with a rotating head system will be used. See the preceding page for a diagram of the typical BOP equipment. All ram type preventers and related equipment will be hydraulically tested to $\approx 1,500$ psi at nipple-up and after any use under pressure. A typical diagram is attached.

The blind rams will be hydraulically activated and checked for operational readiness each time the pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold. All will be rated to $\geq 2,000$ psi.

4. CASING & CEMENT

<u>Hole Size</u>	<u>O. D.</u>	<u>Weight</u>	<u>Grade</u>	<u>Age</u>	<u>Coupling</u>	<u>Depth Set</u>
12-1/4"	8-5/8"	24#	J-55	New	ST & C	350'
7-7/8"	4-1/2"	10.5#	J-55	New	LT & C	6,000'

Surface casing will be cemented to the surface with 245 sacks (289 cubic feet) Class B with 3% CaCl_2 . Yield = 1.18 cubic feet per sack. Slurry weight = 15.6 pounds per gallon. Excess = 100%. W.O.C.=12 hours. Pressure test the surface casing to $\approx 1,500$ psi for 30 minutes. A notched collar and 3 centralizers will be used on the bottom 3 collars.

Production casing will be cemented to the surface. A DV tool will be set at $\approx 3,000'$. Hole will first be circulated with $\geq 150\%$ hole volume of mud and ≈ 30 barrels of fresh water. Total cement volume = 2,284 cubic feet ($\approx 65\%$ excess). A 4-1/2" cement guide shoe and self filling float collar will be used. Place the float one joint above the shoe. Place 10 centralizers spaced every



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other joint above the shoe, 2 turbolizers on the collar below the DV tool, and 2 turbolizers above the DV tool. Place 5 turbolizers every third joint from the top of the well.

First Stage: Lead with 570 sacks (1,003 cubic feet) Class B 65/35 poz with 6% gel + 1% CaCl_2 + 4% phenoseal + 1/4 pound per sack cello flake. Yield = 1.76 cubic feet per sack. Slurry weight = 12.8 pounds per gallon.

First Stage: Tail with 100 sacks (146 cubic feet) Class B 50/50 poz with 0.15% dispersant + 1% CaCl_2 + 1/4 pound per sack cello flake. Yield = 1.46 cubic feet per sack. Slurry weight = 13.0 pounds per gallon.

Second Stage: Precede cement with ≈ 20 barrels of water. Cement with ≈ 645 sacks (1,135 cubic feet) Class B 65/35 poz with 6% gel + 1% CaCl_2 + 1/4 pound per sack cello flake. Yield = 1.76 cubic feet per sack. Slurry weight = 12.8 pounds per gallon.

5. MUD PROGRAM

The surface hole will be drilled with a fresh water mud. The production hole will be drilled with a fresh water polymer. Weighting materials will be drill solids or, if conditions dictate, barite. Maximum expected mud weight = 9.5 pounds per gallon.

6. CORES, LOGS, & TESTS

No cores or drill stem tests are currently planned. FDC/CNL/GR/SP and DIL logs will be run from the base of the surface casing to TD.



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7. DOWN HOLE CONDITIONS

No abnormal temperatures, abnormal pressures, or hydrogen sulfide are expected. Maximum expected bottom hole pressure will be $\approx 2,598$ psi.

8. OTHER INFORMATION

It is expected it will take ≈ 10 days to drill and ≈ 2 weeks to complete the well.



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Surface Use Plan

1. DIRECTIONS (See PAGES 11 - 14)

From the NM 371 San Juan River bridge in southwest Farmington
Go South $\approx 6\frac{1}{2}$ miles on NM 371 to the equivalent of Mile Post 99.8
Then turn right and go West 2.3 miles on paved N-3003
Then turn left and go South 3.0 miles on paved N-4055
Then turn right and go West 3.0 miles on paved N-4050
Then turn left and go South 0.1 mile on paved N-4065
Then turn left and go SE 0.5 mile on a dirt power line & pipeline patrol road
Then turn right and go Southwest 2,022.45' cross country to the pad

Roads will be maintained to at least equal to their present condition.

2. ROAD WORK (See PAGES 13 & 14)

NM One Call (811) and NAPI (505 566-2623 or 505 793-4923) will be called at least 2 working days before construction starts. The 2,022.45' of new road will be built to BLM Gold Book standards. Road will be crowned and ditched, have a $\approx 14'$ wide running surface, and will be rocked as needed. No culvert, vehicle turn out, or cattle guard is needed. Maximum disturbed width will be 20'. Maximum cut or fill = 2'. Maximum grade = 3%. Upgrading the existing road will consist of rocking sandy spots.

3. EXISTING WELLS (See PAGE 12)

There is one plugged well within a mile radius. There are no water, oil, gas, or injection wells within a mile radius.



Navajo Nation Oil & Gas Company

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Exhibit #1

Typical BOP setup

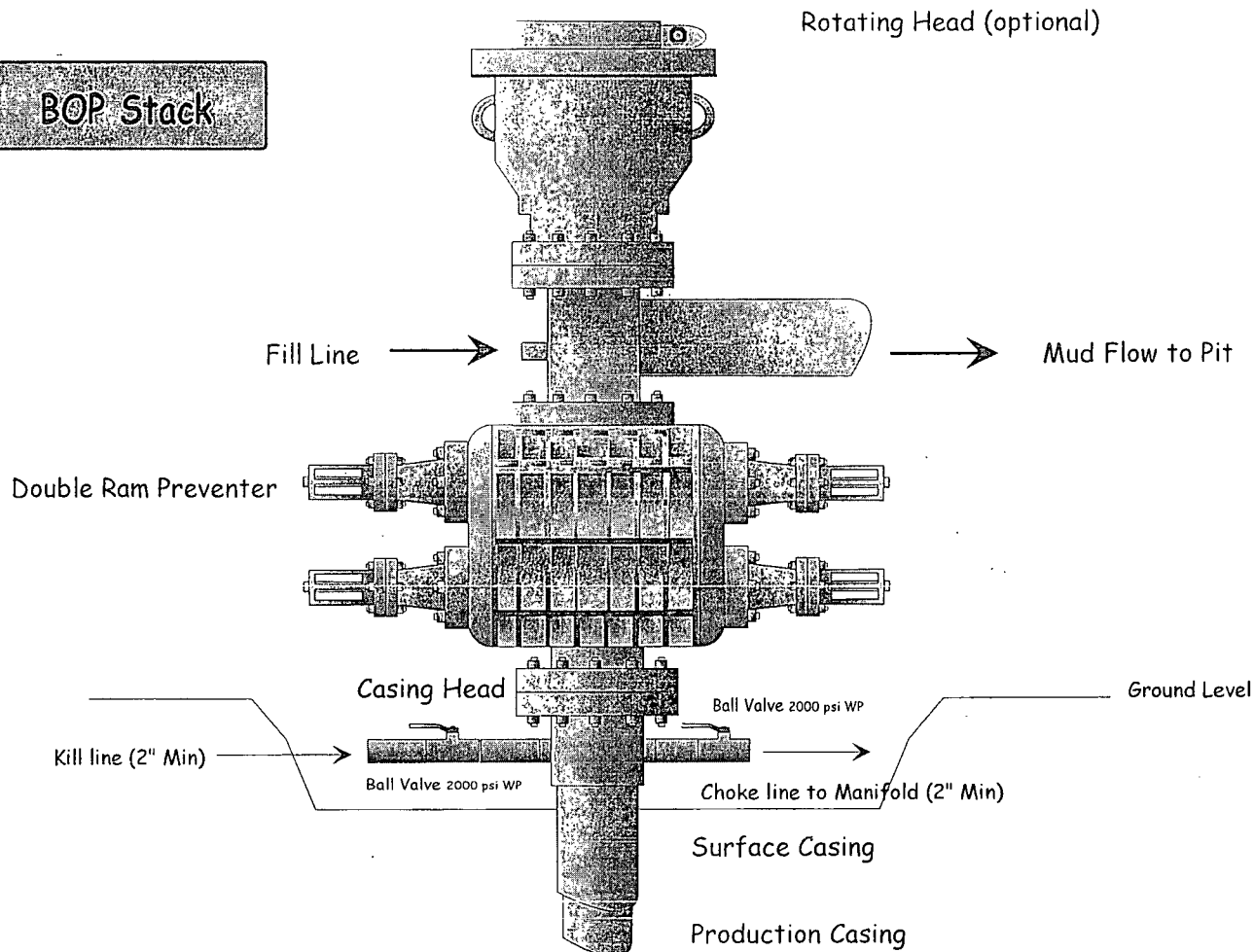
Location: San Juan Basin, New Mexico

Date: January, 2012

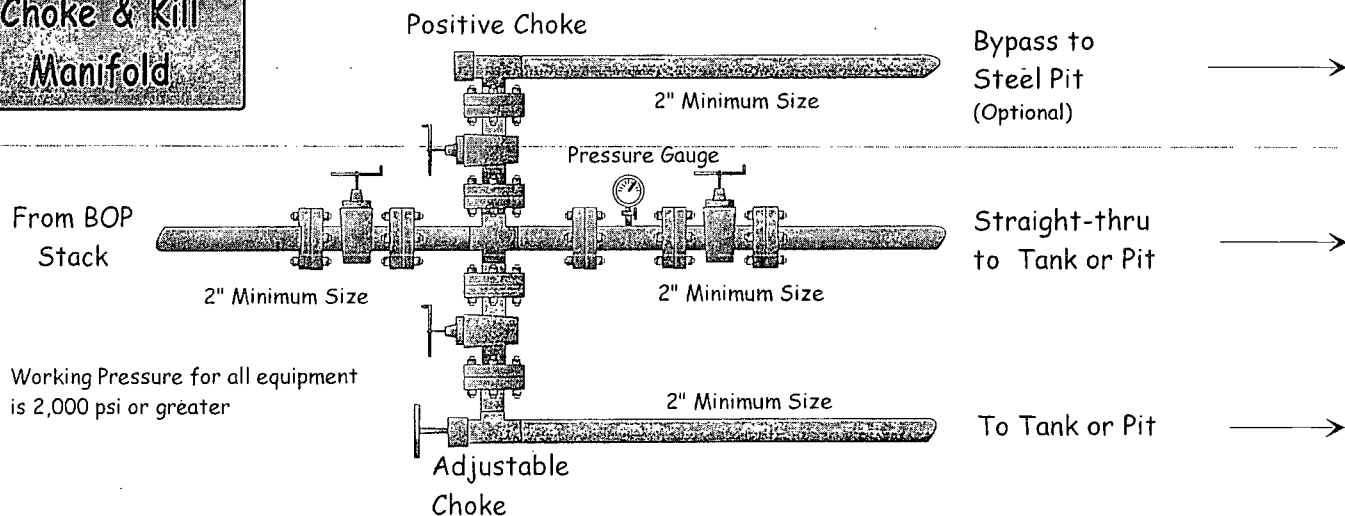
By: John Thompson (Walsh E&P)

Rotating Head (optional)

BOP Stack



Choke & Kill Manifold



Working Pressure for all equipment
is 2,000 psi or greater