

**NAVAJO NATION**

**APD**

**Tribal Operations on  
Tribal Lands**

**PERMIT**

**ACCEPTED FOR  
RECORD ONLY**

RECEIVED

PRELIMINARY

Form 3160-3 (August 2007) JUL 24 2012

Farmington Field Office UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

Form with fields: 1a. Type of work: [X] DRILL [ ] REENTER; 1b. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other [ ] Single Zone [X] Multiple Zone; 2. Name of Operator: NNOGC Exploration and Production LLC; 3a. Address: 1675 BROADWAY, SUITE 1100 DENVER, CO 80202; 3b. Phone No.: 303 534 8300; 4. Location of Well: At surface 2213' FSL & 1025' FWL; 5. Lease Serial No.: NO-G-1008-1773; 6. If Indian, Allottee or Tribe Name: NAVAJO NATION; 7. If Unit or CA Agreement, Name and No.; 8. Lease Name and Well No.: CBM A Pod 11 L #1; 9. API Well No.: 30-045-35393; 10. Field and Pool, or Exploratory: BASIN FRUIT. COAL, WC GALL, & DK; 11. Sec., T. R. M. or Blk. and Survey or Area: NWSW 11-27N-14W NMPM; 12. County or Parish: SAN JUAN; 13. State: NM; 15. Distance from proposed location to nearest property or lease line, ft.: 9,535'; 16. No. of acres in lease: 150,000; 17. Spacing Unit dedicated to this well: S2 (Fruit. Coal & Dakota) & NWSW (Gallup); 18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.: 2,349' (CBM A 11 G 1); 19. Proposed Depth: 6,000'; 20. BLM/BIA Bond No. on file: RLB0006712 RCVD FEB 25 '13; 21. Elevations (Show whether DF, KDB, RT, GL, etc.): 5,932' UNGRADED; 22. Approximate date work will start\*: 06/01/2012; 23. Estimated duration: 1 MONTH; 24. Attachments

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

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

25. Signature: [Signature] Name (Printed/Typed): BRIAN WOOD (505 466-8120) Date: 02/27/2012

Title: CONSULTANT (FAX 505 466-9682) ACCEPTED FOR RECORD

Approved by (Signature): [Signature] Name (Printed/Typed): [Signature] Date: FEB 22 2013

Title: [Signature] Office: FARMINGTON FIELD 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)

NOTIFY AZTEC OCD 24 HRS PRIOR TO CASING & CEMENT

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 A

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOCD FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOCD PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

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

FEB 28 2013 ca

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

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045-35393		<sup>2</sup> Pool Code 71599	<sup>3</sup> Pool Name BASIN DAKOTA
<sup>4</sup> Property Code 39755	<sup>5</sup> Property Name CBM A Pod. 11L		<sup>6</sup> Well Number 1
<sup>7</sup> OGRID No. 242841	<sup>8</sup> Operator Name NNOGC Exploration and Production LLC		<sup>9</sup> Elevation 5932'

<sup>10</sup> Surface Location

Ul. or Lot	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
L	11	27 N.	14 W	000	2213'	SOUTH	1025'	WEST	SAN JUAN

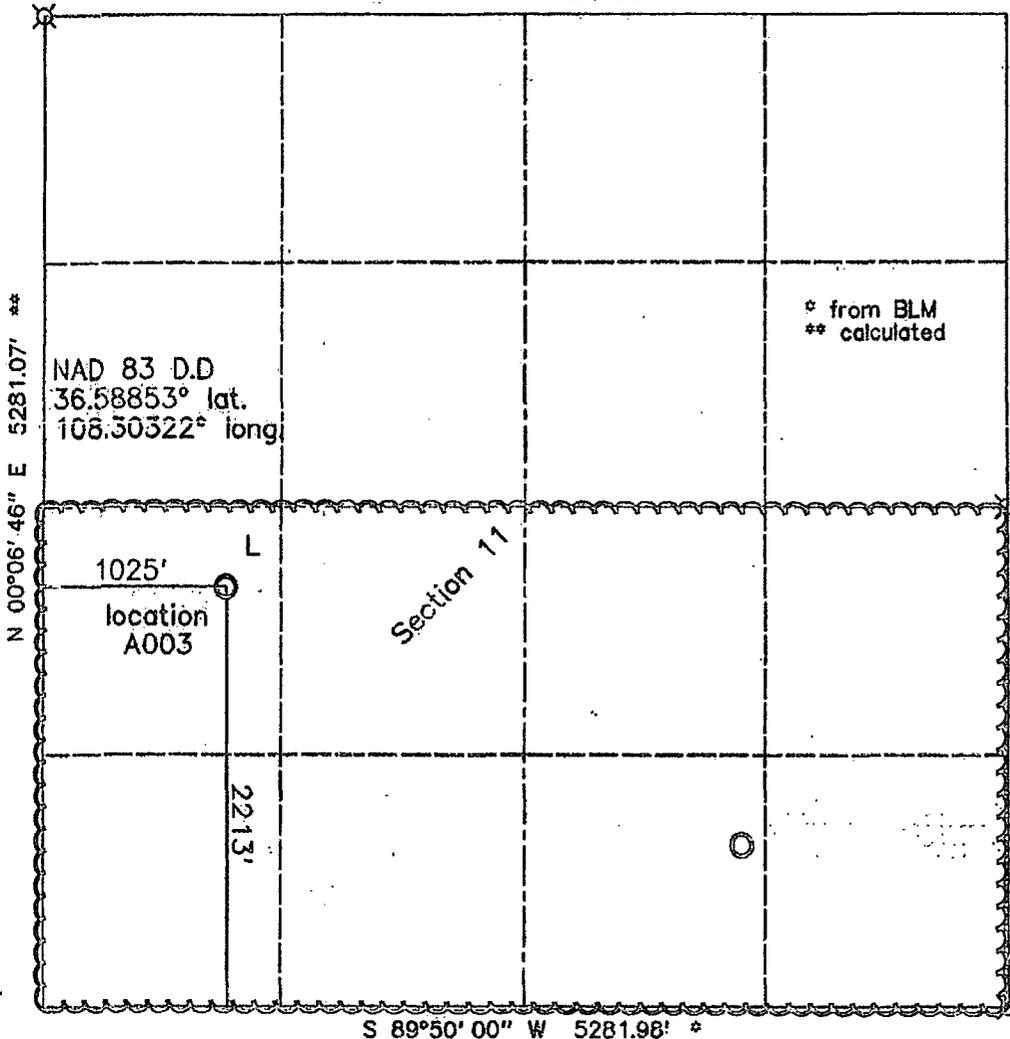
<sup>11</sup> Bottom Hole Location If Different From Surface

Ul. or Lot	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres 320	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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.

S 89°50' 42" W 5284.32' \*\*



<b>OPERATOR CERTIFICATION</b>	
I hereby certify that the information contained herein is true, and complete to the best of my knowledge and belief, and that the organization either owns a working interest or unleased 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 pursuant to a pool agreement or a community pooling order heretofore entered by the division.	
Signature <i>Brian Wood</i>	Date 2-27-12
Printed Name BRIAN WOOD	
E-mail Address brian@permitswest.com	
<b>SURVEYOR CERTIFICATION</b>	
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 05/24/' 11	
Signature and seal of Professional Surveyor <i>Gerald G. Woodleston</i>	
Certificate Number 6844	

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<sup>1</sup> API Number 30-045-35393		<sup>2</sup> Pool Code 71629	<sup>3</sup> Pool Name BASIN FRUITLAND COAL (GAS)
<sup>4</sup> Property Code 39755	<sup>5</sup> Property Name CBM A Pod 11L		<sup>6</sup> Well Number 1
<sup>7</sup> OGRID No. 242841	<sup>8</sup> Operator Name NNOGC Exploration and Production LLC		<sup>9</sup> Elevation 5932'

10 Surface Location									
UL or Lot	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
L	11	27 N.	14 W.	400	2213'	SOUTH	1025'	WEST	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

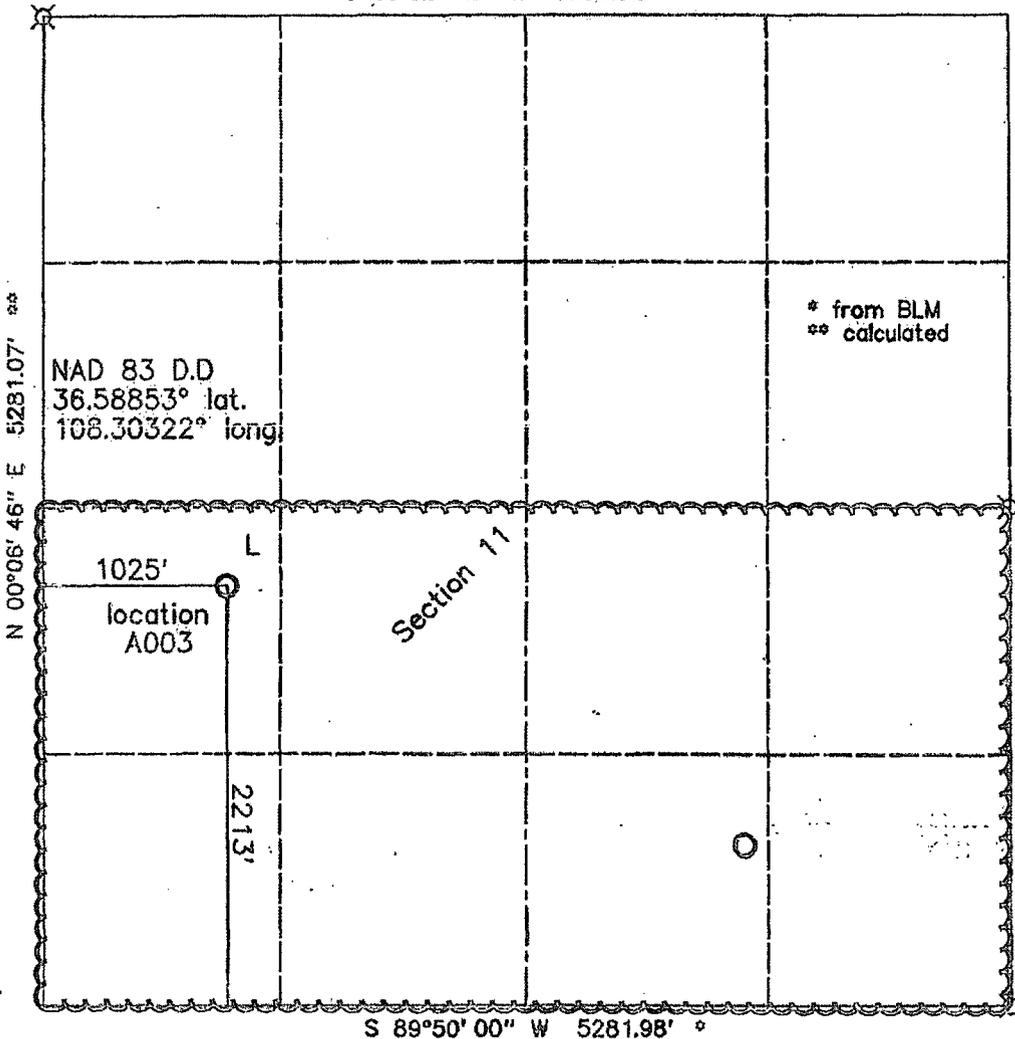
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RECEIVED

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S 89°50' 42" W 5284.32' \*\*

JUL 24 2012



Farmington Field Office  
Bureau of Land Management

**17 OPERATOR CERTIFICATION**  
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*[Signature]* 2-27-12  
Signature Date

BRIAN WOOD  
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.

05/24/' 11  
Date of Survey

*[Signature]*  
Signature and seal of Professional Surveyor

GERALD C. HODDLESTON  
NEW MEXICO  
6844  
REGISTERED LAND SURVEYOR

Certificate Number 6844

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WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045- 35393		<sup>2</sup> Pool Code 97232		<sup>3</sup> Pool Name Basin Mancos WC27NT4W11; GALLUP OIL	
<sup>4</sup> Property Code 39755		<sup>5</sup> Property Name CBM A Pod 11L			<sup>6</sup> Well Number .1
<sup>7</sup> OGRID No. 242841		<sup>8</sup> Operator Name NNOGC Exploration and Production LLC			<sup>9</sup> Elevation 5932'

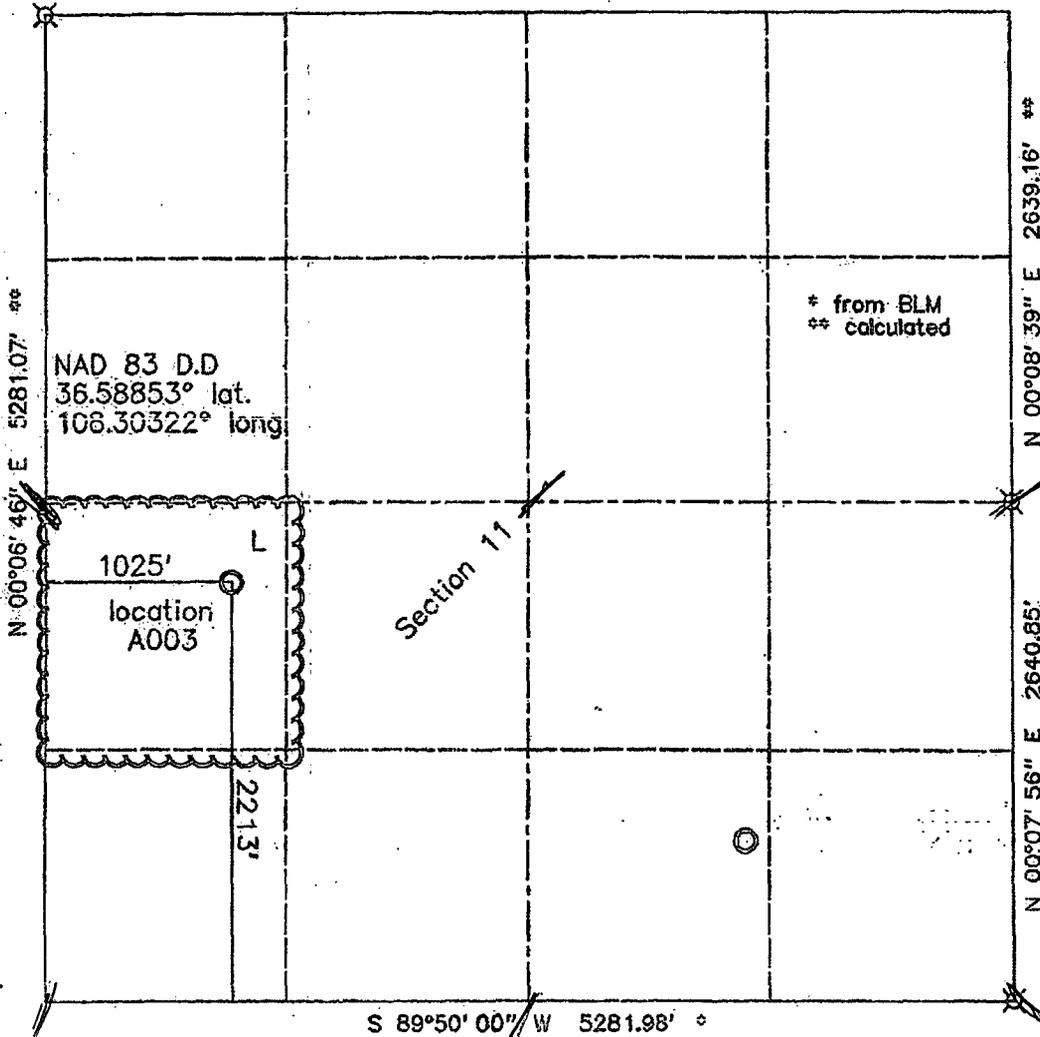
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<sup>11</sup> Bottom Hole Location If Different From Surface									
UL or Lot	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres 40 3209/2	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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Signature <i>Brian Wood</i>	Date 2-27-12
Printed Name BRIAN WOOD	
E-mail Address brian@permitswest.com	
<b>SURVEYOR CERTIFICATION</b> 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 05/24/' 11	
Signature and Seal of Professional Surveyor <i>Gerald G. Hoodleston</i>	
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CBM A Pod 11 L #1  
2213' FSL & 1025' FWL  
Sec. 11, T. 27 N., R. 14 W.  
San Juan County, New Mexico

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## 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'	+5,932'
Fruitland Formation	907'	909'	+5,025'
Pictured Cliffs Sandstone	1,152'	1,162'	+4,780'
Lewis Shale	1,457'	1,467'	+4,475'
Mesa Verde Sandstone	2,022'	2,032'	+3,910'
Point Lookout Sandstone	3,757'	3,767'	+2,175'
Mancos Shale	3,957'	3,967'	+1,975'
Upper Gallup Sandstone	4,857'	4,867'	+1,075'
Lower Gallup Sandstone	5,067'	5,077'	+865'
Sanostee	5,307'	5,317'	+625'
Dakota Sandstone	5,782'	5,792'	+150'
Morrison Formation	5,957'	5,967'	-25'
Total Depth (TD)	6,000'	6,010'	-68'

### 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<sub>2</sub>. 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  $\approx 30$  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<sub>2</sub> + 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<sub>2</sub> + 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<sub>2</sub> + 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

The anticipated spud date is upon approval. It is expected it will take  $\approx 10$  days to drill and  $\approx 2$  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  $\approx$ 6-1/2 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 4.0 miles on paved N-4055  
Then turn right and go West and Southwest 1.55 miles on paved N-4150  
Then turn right and go Northwest 0.45 miles on a dirt power and pipeline road  
Then turn left and go cross country Southwest 237.2' onto the pad

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

### 2. ROAD WORK (See PAGE 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 237.2' of new road will be built to BLM Gold Book standards. Road will have a  $\approx$ 14' wide running surface and will be rocked where needed. No culvert, vehicle turn out, or cattle guard is needed. Maximum disturbed width will be 20'. Maximum cut or fill = 7'. Maximum grade = 5%. Upgrade of the existing road will consist of rocking sandy areas where needed.

### 3. EXISTING WELLS (See PAGE 12)

There are 2 plugged wells and 2 gas wells awaiting completion within a mile radius. There are no water, oil, or injection wells within a mile radius.



# Navajo Nation Oil & Gas Company

## Well Control Equipment Schematic for 2A 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)

