

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

SEP 25 2007

RCVD JAN 14 '09  
OIL CONS. DIV.

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER Management  
Farmington Field Office

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM-061273
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 N/A
2. Name of Operator QUESTAR EXPLORATION AND PRODUCTION COMPANY		7. If Unit or CA Agreement, Name and No. N/A
3a. Address 1050 17TH ST., SUITE 500 DENVER, CO 80265	3b. Phone No. (include area code) (303) 308-3093	8. Lease Name and Well No. WEST BISTI 23 #2
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 1509' FNL & 1586' FWL At proposed prod. zone SAME		9. API Well No. 30-045- 34438
14. Distance in miles and direction from nearest town or post office* 22 AIR MILES SOUTH OF FARMINGTON		10. Field and Pool, or Exploratory BASIN FRUITLAND COAL GAS
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1509'		11. Sec., T. R. M. or Blk. and Survey or Area F 23-25N-13W NMPM
16. No. of acres in lease 1,440	17. Spacing Unit dedicated to this well W2 320 / FC	12. County or Parish SAN JUAN
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2,098' (WBC 23-1)	19. Proposed Depth 1,320'	13. State NM
20. BLM/BIA Bond No. on file BLM NATIONWIDE ESB000024	21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6,351' GL	22. Approximate date work will start* 02/01/2008
23. Estimated duration 2 WEEKS	24. Attachments	

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer.

25. Signature 	Name (Printed/Typed) BRIAN WOOD	Date 09/21/2007
Title CONSULTANT		
PHONE: (505) 466-8120 FAX: (505) 466-9682		
Approved by (Signature) 	Name (Printed/Typed)	Date 11/13/09
Title AFM	Office FFO	

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.

\*(Instructions on page 2)

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

NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT

JAN 14 2009

NMOC

PERMITS 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

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 Ave., 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  
2040 South Pacheco  
Santa Fe, NM 87505

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Form C - 102

Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION

APA Number <b>30-045-34438</b>	Pool Code <b>71629</b>	Field Office <b>BASIN FRUITLAND COAL</b>
Property Code <b>37557</b>	Property Name <b>WEST BISTI 23</b>	Well Number <b>2</b>
OGRD No. <b>23846</b>	Operator Name <b>QUESTAR EXPLORATION &amp; PRODUCTION CO.</b>	Elevation <b>6351'</b>

Surface Location

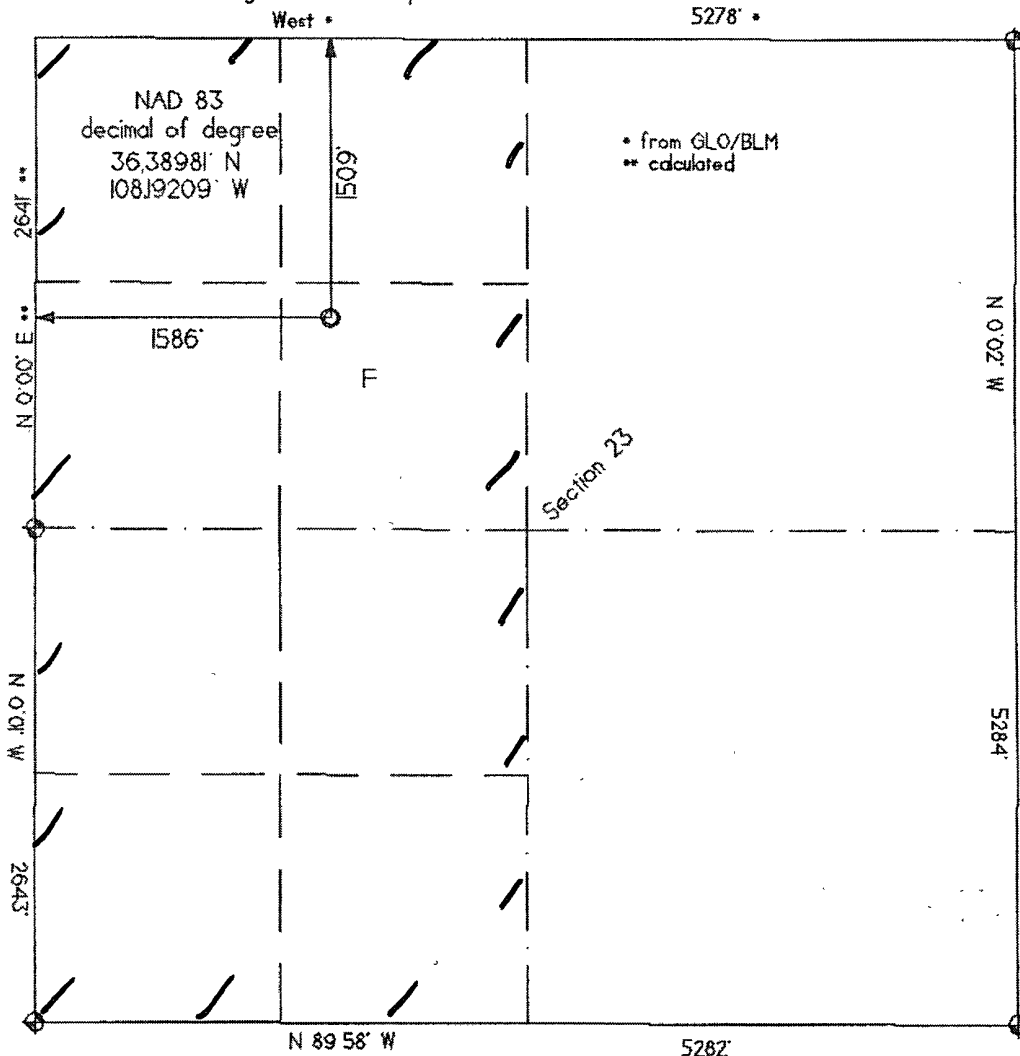
UL or Lot	Sec.	Twp.	Rge.	Lot Ltn.	Feet from >	North/South	Feet from >	East/West	County
F	23	25 NORTH	13 WEST		1509'	NORTH	1586'	WEST	SAN JUAN

Bottom Hole Location If Different From Surface

UL or Lot	Sec.	Twp.	Rge.	Lot Ltn.	Feet from >	North/South	Feet from >	East/West	County

Dedicated Acres <b>320</b>	Joint or Infill	Consolidation Code	Order No.
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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.



**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 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 pool agreement or a compulsory pooling order heretofore entered by the division.

Date  
**SEPT. 21, 2007**

Signature  
*Brian Wood*

Printed Name  
**BRIAN WOOD**

**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  
**05 31 '07**

Signature and Seal of Professional Surveyor



Certificate Number  
**6844**

Questar Exploration and Production Company  
West Bisti 23 #2  
1509' FNL & 1586' FWL  
Sec. 23, T. 25 N., R. 13 W.  
San Juan County, New Mexico

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## Drilling Program

### 1. FORMATION TOPS

<u>Name</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Elevation</u>
Nacimiento	0'	5'	+6,351'
Ojo Alamo Sandstone	50'	55'	+6,301'
Fruitland	971'	976'	+5,375'
Pictured Cliffs Sandstone	1,220'	1,225'	+5,131'
Lewis Shale	1,286'	1,291'	+5,065'
Total Depth (TD)	1,320'	1,325'	+5,031'

### 2. NOTABLE ZONES

<u>Gas Zones</u>	<u>Water Zones</u>	<u>Coal Zone</u>
Fruitland	Ojo Alamo	Fruitland
Pictured Cliffs	Fruitland	

The entire well bore will be cased. Both casing strings cemented to the surface to protect water, oil, gas, or other mineral bearing zones. Fresh water will be recorded by depth, cased, and cemented. Oil and gas shows will be tested and evaluated for commercial potential as determined by the company geologist.

### 3. PRESSURE CONTROL

The drilling contract has not yet been awarded, thus the exact type of BOP to be used is not now known. Diagrams of a typical 2,000 psi BOP stack and manifold are on PAGE 3.

Will functional test daily. All casing strings will be pressure tested to 0.2

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psi/foot or 1,500 psi (whichever is greater) before drilling out the surface casing plug after it is cemented. Test pressure shall not exceed the internal yield pressure of the casing.

Ram type preventers and associated equipment will be tested to approved stack working pressure if isolated by test plug or to 50% of the internal yield pressure of the casing, whichever is less. BOP and related equipment shall meet the minimum requirements of Onshore Oil and Gas Order 2 for equipment and testing requirements, procedures, etc., for a minimum 2,000 psi system and individual components shall be operable as designed.

Auxiliary equipment will include kelly cock, float at the bit, mud monitoring equipment, full opening safety valve on the rig floor, and a rotating head.

#### 4. CASING & CEMENT

<u>Hole Size</u>	<u>O. D.</u>	<u>Weight</u>	<u>Grade</u>	<u>Type</u>	<u>Age</u>	<u>Collapse</u>	<u>Burst</u>	<u>&gt;Tensile</u>	<u>Depth</u>
8-3/4"	7"	23#	J-55	S T & C	New	3270 psi	4360 psi	313,000#	120'
6-1/4"	4-1/2"	10.5#	K-55	L T & C	New	4010 psi	4790 psi	146,000#	1,320'

Design factors are collapse = 1.125, burst = 1.10, tension = 1.80, area fracture gradient = 0.9 psi/foot, maximum anticipated mud weight = 8.4 pounds per gallon, and maximum surface treating pressure = 1,200 psi.

Surface casing will be cemented to the surface with  $\approx 30$  sacks ( $\approx 41$  cubic feet) premium plus cement + 1/8 pound per sack cello flake + 1/4 pound per sack quick seal + 2% CaCl<sub>2</sub>. Slurry weight = 14.6 pounds per gallon, yield = 1.39 cubic feet per sack, and  $\geq 100\%$  excess. Four centralizers will be installed.

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Production casing will be cemented to the surface with  $\approx 90$  sacks ( $\approx 205$  cubic feet) San Juan PRB II cement +  $1/8$  pound per sack cello flake +  $1/4$  pound per sack quick seal + 5 pounds per sack pheno seal medium. Slurry weight = 12.5 pounds per gallon, yield = 2.28 cubic feet per sack, and  $\geq 50\%$  excess. Twelve centralizers will be installed.

Final actual cement volumes will be calculated from a caliper log. A bond log will be run across the zone of interest and across zones as required by the authorized officer to insure protection of natural resources.

#### 5. MUD PROGRAM

Surface hole will be drilled with air, air/mist, foam, or mud depending on hole conditions. Drilling below surface casing will be with water based drilling fluids consisting primarily of fresh water, bentonite, and polymers. Maximum anticipated mud weight is 9.0 pounds per gallon.

Pressure, volume, temperature, and flow sensor will be used from the base of the surface casing to TD. A gas detector will be used from the base of the surface casing depth to TD.

#### 6. CORES, TESTS, & LOGS

No cores or drill stem tests are planned. A GR-SP-Induction, Neutron Density log will be run.

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7. DOWN HOLE CONDITIONS

Maximum anticipated bottom hole pressure will be  $\approx 520$  psi. Maximum anticipated bottom hole temperature will be  $\approx 100^\circ$  F. No hydrogen sulfide is expected.

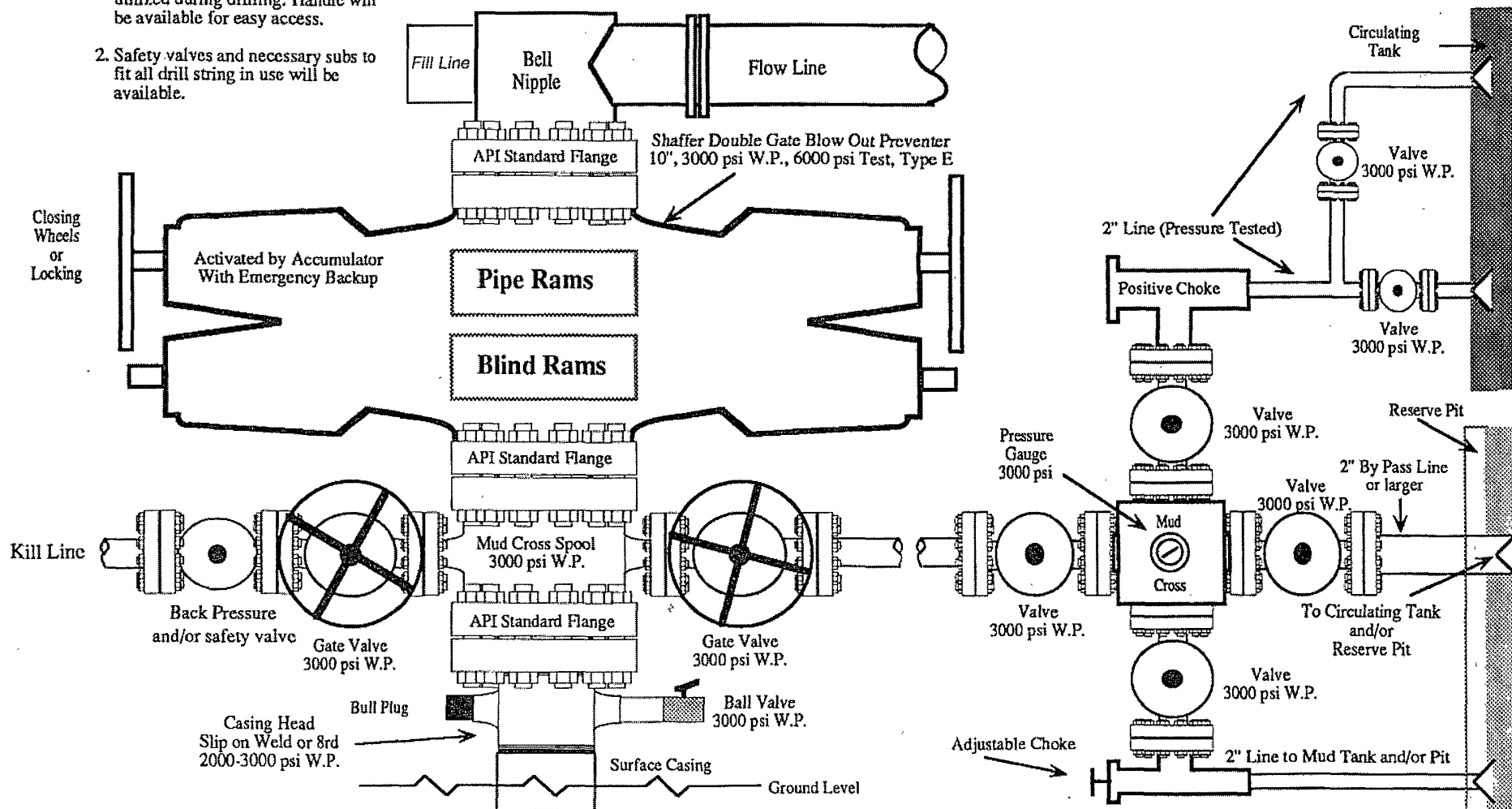
8. MISCELLANEOUS

Anticipated spud date is upon approval. It is expected it will take  $\approx 3$  days to drill the well and  $\approx 10$  days to complete the well.

# 2,000 PSI BOP SYSTEM

Note: 1. An upper Kelly cock valve will be utilized during drilling. Handle will be available for easy access.

2. Safety valves and necessary subs to fit all drill string in use will be available.



Note: This equipment is designed to meet requirements for a 2-M rating standard per 43 CFR part 3160 (amended). Proper operation and testing of equipment will be carried out per standard. 2,000 psi equipment can be substituted in the drawing to meet minimum requirements per standard.