

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

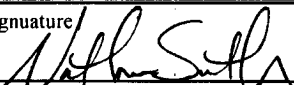
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. USA SF 079011
1b. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Energen Resources Corporation		7. Unit or CA Agreement Name and No.
3a. Address 2198 Bloomfield Highway Farmington, New Mexico 87401		8. Lease Name and Well No. San Juan 32-5 Unit Com #114
3b. Phone No. (include area code) (505) 325-6800		9. API Well No. 30-039-29790
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 1345' FNL, 225' FWL @ Surface, 660' FNL, 1980' FEL @ Bottom At proposed prod. zone		10. Field and Pool, or Exploratory Basin Fruitland Coal
14. Distance in miles and direction from nearest town or post office* 4 miles south of Arboles, CO		11. Sec., T., R., M., or Blk. and Survey or Area E Sec. 24, T32N, R6W, N.M.P.M.
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 225'	16. No. of Acres in lease 1480.00	17. Spacing Unit dedicated to this well E/2 Sec 14 T32N R6W
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 500'	19. Proposed Depth 3229' (TVD), 8588' (MD)	20. BLM/BIA Bond No. on file NM 2707
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6472' GL	22. Approximate date work will start* 7/1/06	23. Estimated duration 30 days

24. Attachments


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

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

25. Signature 	Name (Printed/Typed) Nathan Smith	Date 1/31/06
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Title

Drilling Engineer

Approved by (Signature) 	Name (Printed/Typed) AFEA	Date 5/1/06
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Title

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.

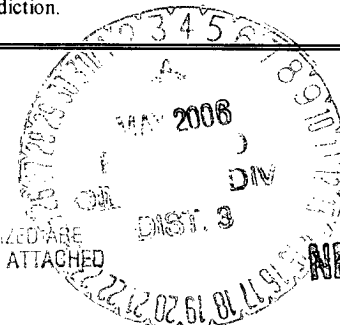
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on page 2)

HOLD C104 FOR Directional Survey

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

✓
SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".



NMOCD

Section 14 is Federal
minerals. surface is
under Navajo RGS - BOR?

ongard shows Fee
everything.

Sent message to S.L.O.
informing them
S H 5-4-06

District II
PO Drawer DD, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

OIL CONSERVATION DIVISION

PO Box 2088
Santa Fe, NM 87504-2088

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-29790	*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL ✓
*Property Code 21996 35674	*Property Name SAN JUAN 32-5 UNIT COM	*Well Number 114 ✓
*OGRID No. 162928	*Operator Name ENERGEN RESOURCES CORPORATION	*Elevation 6472

¹⁰ Surface Location

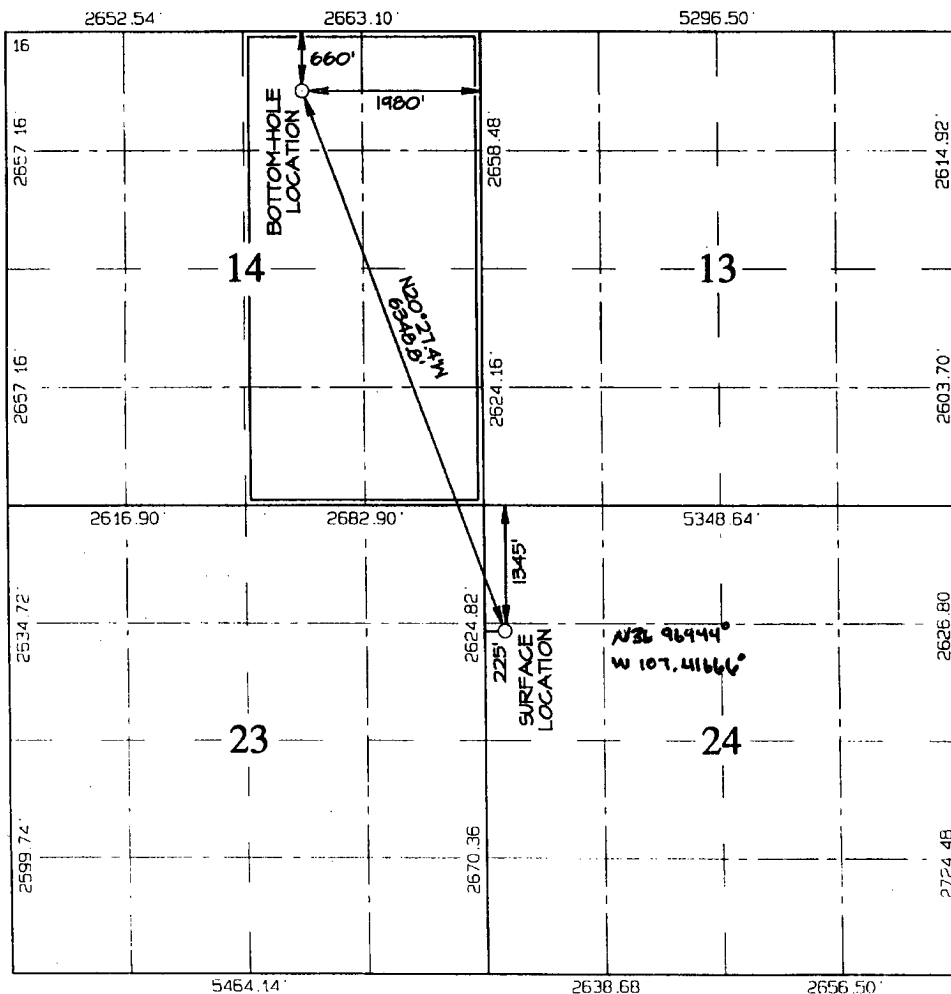
UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	24	32N	6W		1345	NORTH	225	WEST	RIO ARRIBA

¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	14	32N	6W		660	NORTH	1980	EAST	RIO ARRIBA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
320.0 Acres - (E/2)			

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



17 OPERATOR CERTIFICATION

I hereby certify that the information
contained herein is true and complete
to the best of my knowledge and belief

Signature _____

Nathan Smith

Printed Name

Drilling Engineer

Title	Date	Page

1/31/06

Date _____

18 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.

Survey Date: SEPTEMBER 27, 2004

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269

Submit 3 Copies To Appropriate District
Office
District I
1625 N. French Dr., Hobbs, NM 87240
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 and Natural Resources

Form C-103
May 27, 2004

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO <u>30039-29790</u>
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other	7. Lease Name or Unit Agreement Name: <u>San Juan 32-5 Unit Com</u>
2. Name of Operator <u>Energen Resources Corporation</u>	8. Well Number <u># 114</u>
3. Address of Operator <u>2198 Bloomfield Highway, Farmington, NM 87401</u>	9. OGRID Number <u>162928</u>
4. Well Location Unit Letter <u>E</u> : <u>1345</u> feet from the <u>North</u> line and <u>5</u> feet from the <u>West</u> line Section <u>24</u> Township <u>32N</u> Range <u>06W</u> NMPM County <u>Rio Arriba</u>	10. Pool name or Wildcat <u>Basin Fruitland Coal</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>6472' GL</u>	
Pit or Below-grade Tank Application <input checked="" type="checkbox"/> or Closure <input type="checkbox"/> Pit type <u>Drill</u> Depth to Groundwater <u>>100'</u> Distance from nearest fresh water well <u>>1000'</u> Distance from nearest surface water <u>>250'</u> Pit Liner Thickness: <u>12</u> mil Below-Grade Tank: Volume _____ bbls; Construction Material _____	

12. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPLETION ☐
OTHER: Build drilling pit ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐
CASING TEST AND CEMENT JOB ☐
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Energen Resources plans to build a lined pit according to "OCD Pit and Below-grade Tank Guidelines", as issued on November 1, 2004. Energen anticipates the submittal of a C-144 for closure of this pit in accordance with BLM and "OCD Pit and Below-grade Tank Guidelines".

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒ , a general permit ☐ or an (attached) alternative OCD-approved plan ☐

SIGNATURE Nathan Smith TITLE Drilling Engineer DATE 02/01/06
E-mail address: nsmith@energen.com
Type or print name Nathan Smith Telephone No. 505.325.6800

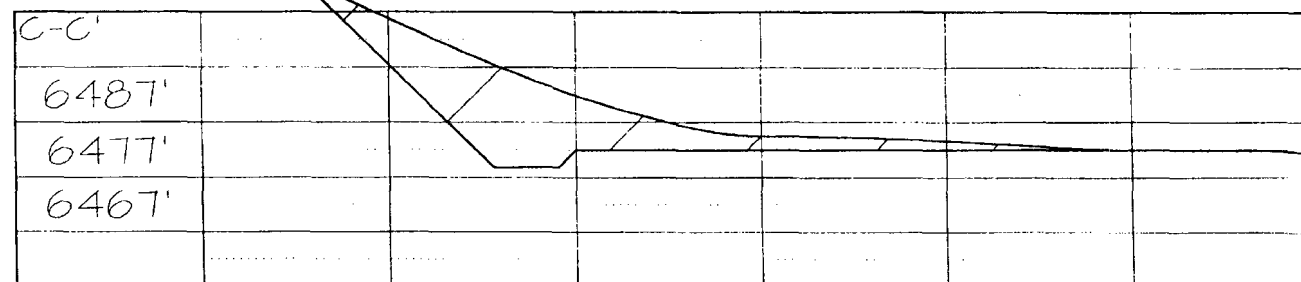
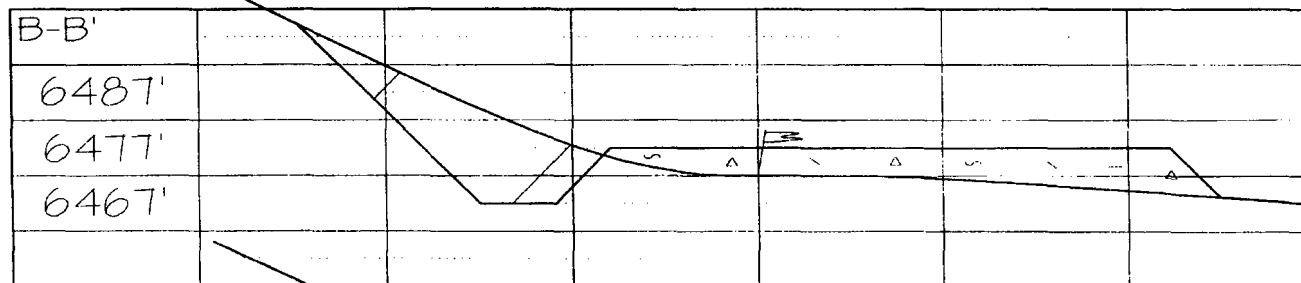
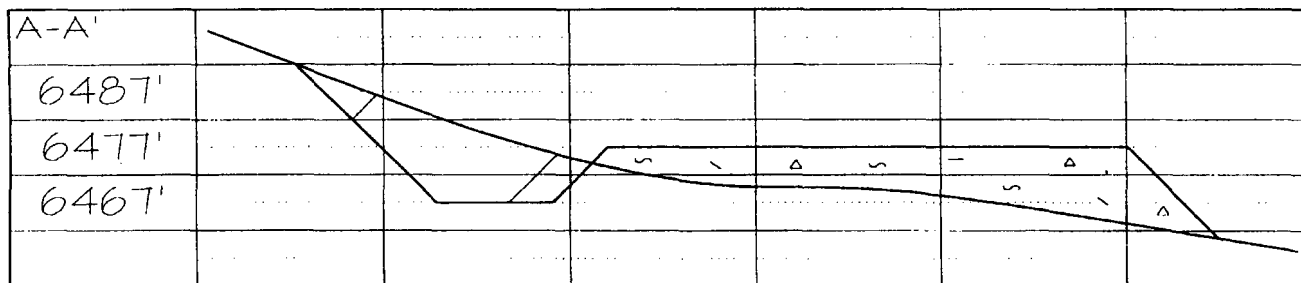
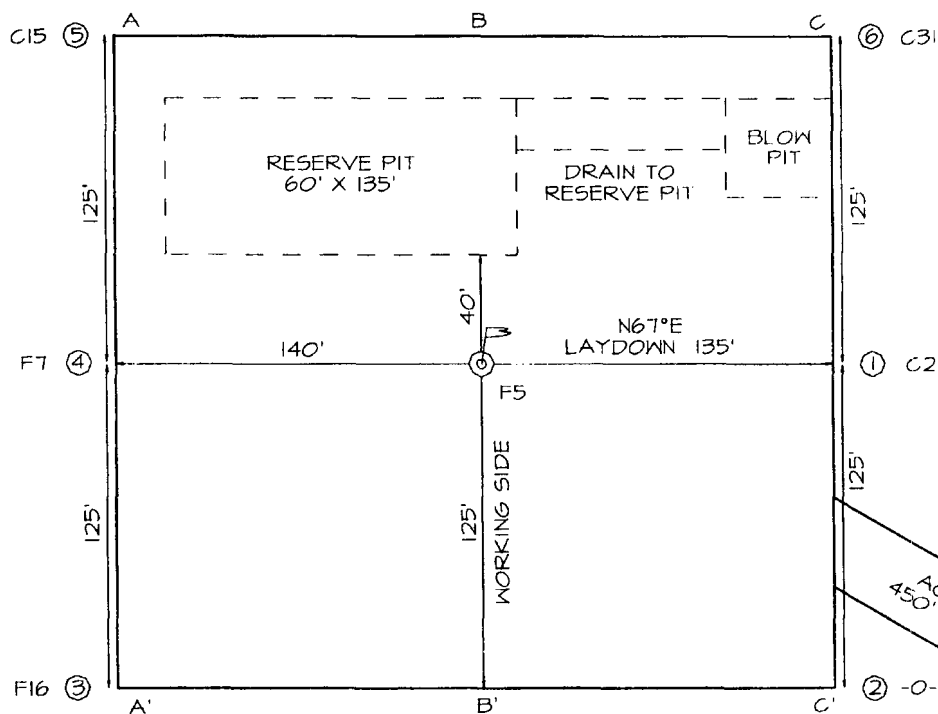
For State Use Only

APPROVED BY [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 3 DATE MAY 03 2006
Conditions of Approval, if any:

ENERGEN RESOURCES CORPORATION SAN JUAN 32-5 UNIT COM #114
1345' FNL & 225' FWL, SECTION 24, T32N, R6W, NMPM
RIO ARriba COUNTY, NEW MEXICO GROUND ELEVATION: 6472'

36.96944
 107.41666

LATITUDE: 36°58'10"
LONGITUDE: 107°25'00"
 DATUM: NAD1927



Operations Plan

January 31, 2006

San Juan 32-5 Unit Com #114

General Information

Location	1345' fnl, 225' fwl at surface (sec 24) 660' fnl, 1980' fwl at bottom (sec 14) swnw S24, T32N, R05W Rio Arriba County, New Mexico
Elevations	6472' GL
Total Depth	8588' +/- (MD); 3230' +/- (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	1027' (TVD)
Ojo Alamo Ss	2397' (TVD), 2550' (MD)
Kirtland Sh	2507' (TVD), 2690' (MD)
Fruitland Fm	2957' (TVD), 3550' (MD)
Top Coal	3082' (TVD), 3875' (MD)
Target Coal Top (1)	3082' (TVD), 3875' (MD)
Target Coal Base (1)	3102' (TVD), 3900' (MD)
Target Coal Top (2)	3162' (TVD), 4028' (MD)
Target Coal Base (2)	3167' (TVD), 4032' (MD)
Bottom Coal	3167' (TVD), 4032' (MD)
Pictured Cliffs Ss	3167' (TVD), 4032' (MD)
Total Depth	3229' (TVD), 8588' (MD)

Drilling

The 12 1/4" wellbore will be drilled with a fresh water mud system.

The 8 3/4" wellbore will be drilled with a low solids fresh water/polymer mud system. Weighting materials will be drill cuttings and if needed barite. Mud density is expected to range from 8.3 ppg to 8.9 ppg. Kick off point is anticipated to be at 1100 ft (TVD).

The 6 1/4" wellbore will be drilled with a fresh water system or CaCl₂ brine as wellbore and formation pressures dictate.

Blowout Control Specifications:

A 2000 psi minimum double ram or annulus BOP stack (figure 1) will be used following nipple up of casing head. A 2" nominal, 2000 psi minimum choke manifold will also be used. An upper Kelly Cock valve handle and drill string valve should be available to fit each drill string and be available on the rig floor during drilling operations.

Logging Program:

Open hole logs: Gamma Ray MWD and mud logs.

Surveys: Surface and as needed for directional surveys.

Tubulars

Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-200	12 ¼"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	200'-4175' (MD)				
	3229' (TVD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	3793'-8570' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
	3082'-3102' (TVD)				
	3959'-8588' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
	3162'-3167' (TVD)				
Tubing	0'-3196' (TVD)		2 3/8"	4.7 ppf	J-55
	4100' (MD)				

Casing Equipment:

Surface Casing: Depending on wellbore conditions, a Texas Pattern Guide Shoe on bottom. Casing centralization with standard bow spring centralizers to achieve optimal standoff.

Intermediate Casing: Depending on wellbore conditions, a Cement nose guide shoe with self fill insert float collar on top of bottom joint and casing centralization with standard bow spring centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

Wellhead

11" 3000 x 9 5/8" casing head. 11" 3000 x 7 1/16" Christmas Tree..

Cementing

Surface Casing: 125 sks Std (class B) with 2.0 % CaCl₂ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft³/sk 148 ft³ of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 1000 psi for 30 min.

Intermediate Casing: Before cementing, circulate hole at least 1 ½ hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 550 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.96 ft³/sk) and a tail of 150 sks of Standard (Class B) cement with 5.0 #/sk Gilsonite, and ¼ #/sk Flocele (15.2ppg, 1.24 ft³/sk). (1264 ft³ of slurry, 100 % excess to circulate to surface).

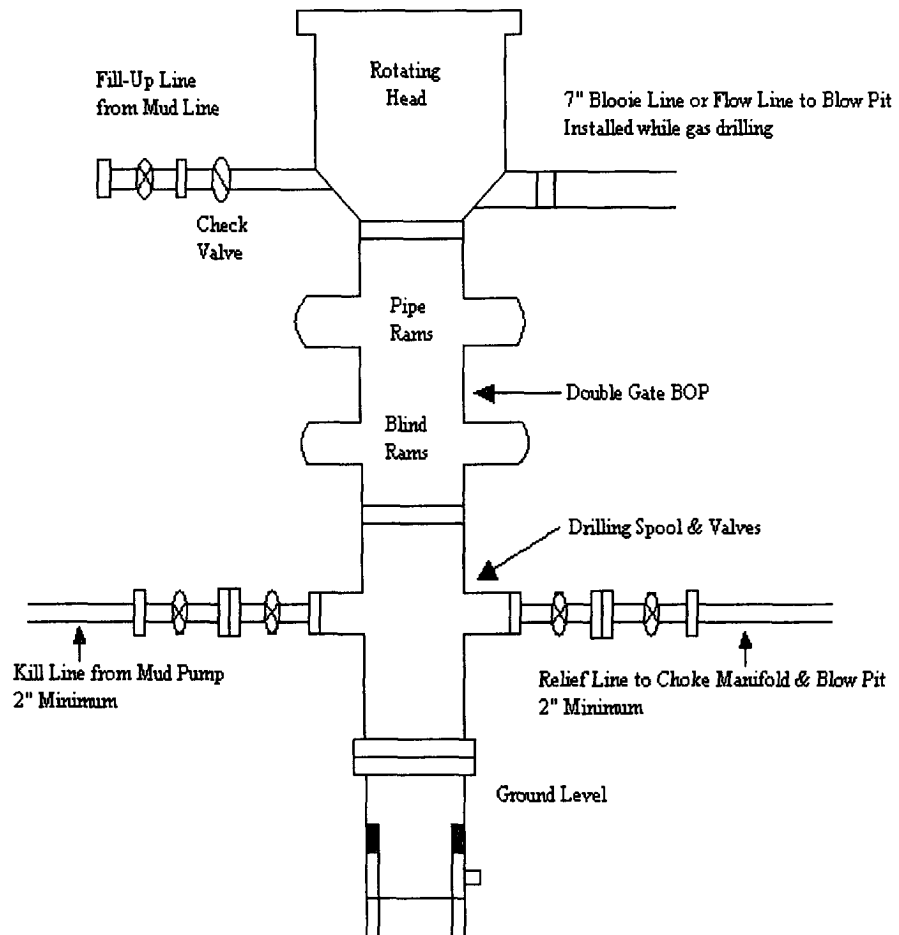
Production: un-cemented pre-drilled liner

Other Information

- 1) This well will be an open hole completion
- 2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The production string may need to be cemented in multiple stages with a slurry design deviated from that listed above.
- 3) If high reservoir pressures or water flows are encountered slurry design may need to be deviated to from those listed above to satisfy wellbore and formation conditions.
- 4) No abnormal temperatures are anticipated. Anticipated BHP is 1500 psi.
- 5) This gas is dedicated.

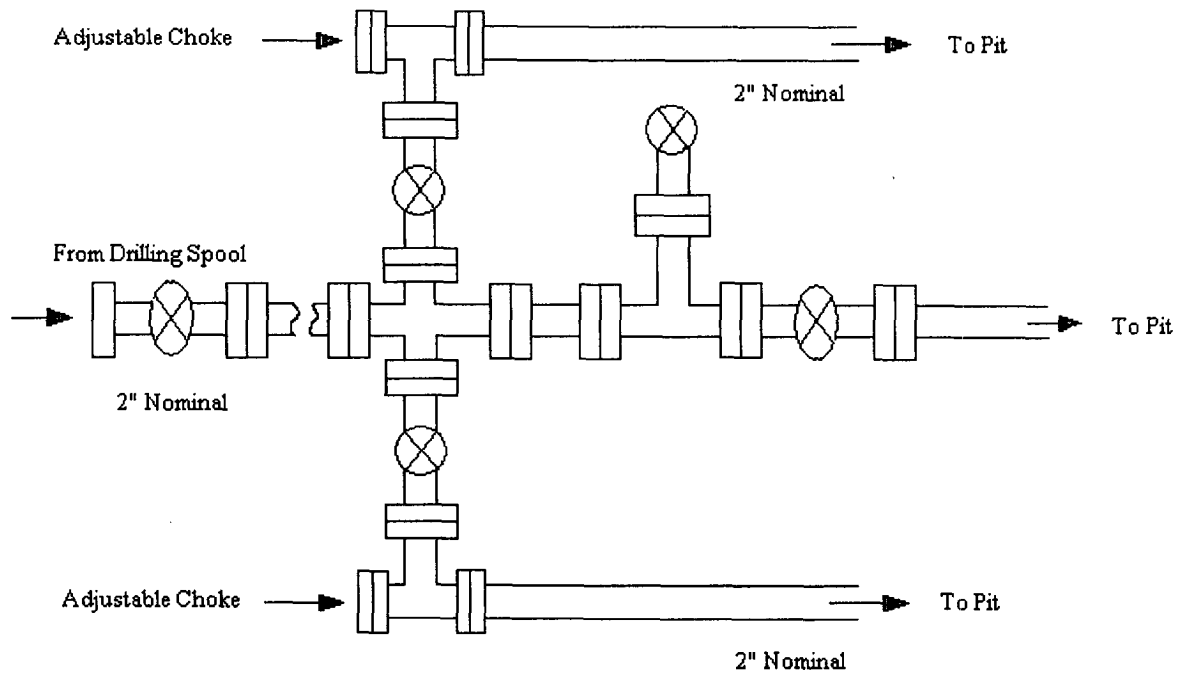
Energen Resources Corporation

Typical BOP Configuration for Gas Drilling



Energen Resources Corporation

Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD

Energen Resources Corporation

Field: Rio Arriba, NM
 Site: San Juan 32-5 Unit
 Well: San Juan 32-5 Unit Com. No. 114 (Kfc-Horizontal)
 Wellpath: Motherbore
 Plan: Plan #2

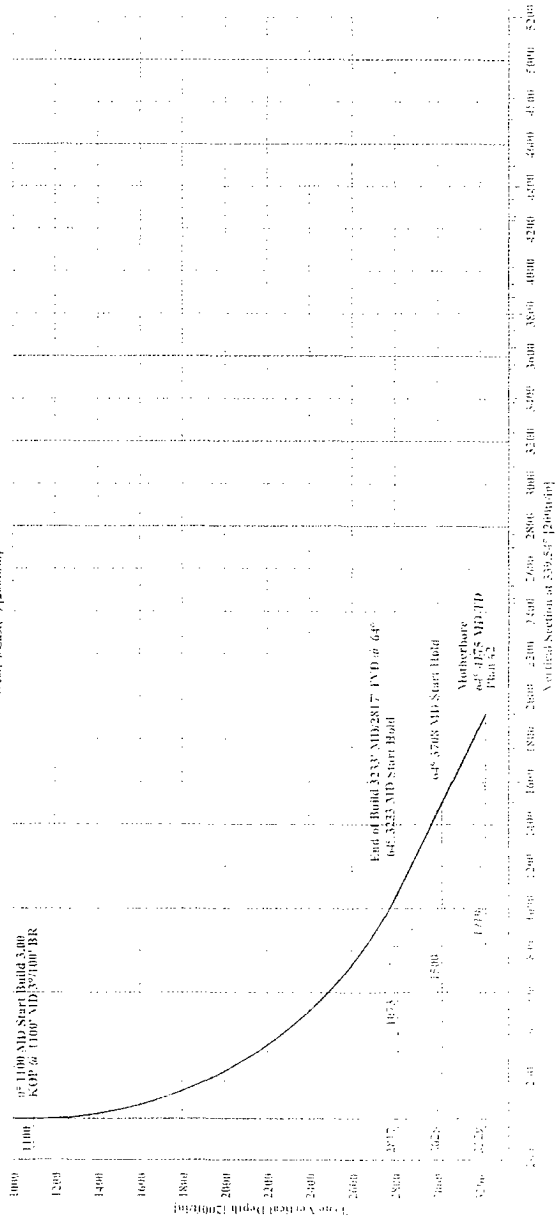
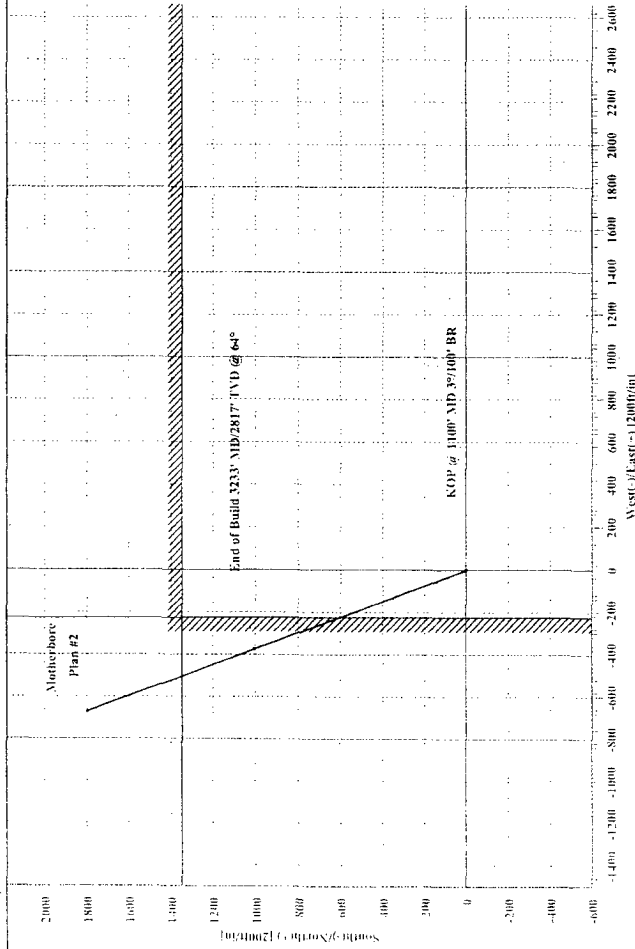
COMPANY DETAILS
 Energen Resources Corporation
 Calculation Method: Minimum Curvature
 Scan Method: ISOLAR
 Scan Method: Closest Approach 3D
 Error Surface: Elliptical Gait
 Warning Method: Error Ratio



WELL DETAILS

Name
 San Juan 32-5 Unit Com. No. 114 (Kfc-Horizontal)

+N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.00 0.00 0.00 0.00 30°59'24.511N 107°50'44.190W N/A



SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00
3	3233.33	64.00	339.54	2816.57	1004.97	-374.94	3.00	339.54	1072.63
4	3708.33	64.00	339.54	3024.80	1404.96	-524.18	0.00	0.00	1499.56
5	4175.00	64.00	339.54	3229.37	1797.94	-670.79	0.00	0.00	1919.00

WELLPATH DETAILS

Motherbore

Rig: 6487.00ft
 Ref. Datum: SITE
 V-Section Angle: 339.54°
 Origin +N/-S: 0.00
 Starting From TVD: 0.00

SITE DETAILS
 San Juan 32-5 Unit
 Ground Level: 6472.00
 Positional Uncertainty: 0.00
 Convergence: 0.00

WELL PATH
 Motherbore
 Plan #2

Energen Resources Corporation

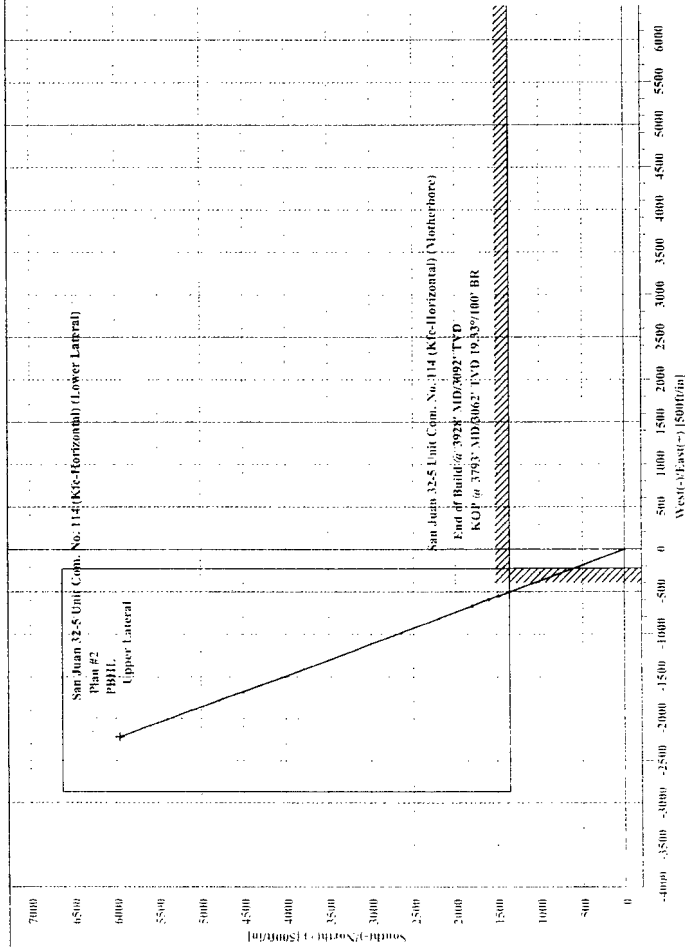
Field: Rio Arriba, NM
Site: San Juan 32-5 Unit
Well: San Juan 32-5 Unit Com. No. 114 (Kfe-Horizontal)
Wellpath: Upper Lateral
Plan: Plan #2

COMPANY DETAILS
Energen Resources Corporation
Calculation Method: Minimum Curvature
Error System: ISCWSA
Scan Method: Closest Approach 3D
Error Surface: Elliptical Conic
Warning Method: Error Ratio



WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
San Juan 32-5 Unit Com. No. 114 (Kfe-Horizontal)	0.00	0.00	0.00	0.00	30°59'24.511N	107°50'44.190W	N/A



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	3793.20	64.00	339.54	3062.00	1476.43	-550.84	0.00	0.00	1575.84	
2	3927.71	90.00	339.54	3092.00	1598.17	-596.26	19.33	0.00	1705.77	PBHL
3	8570.73	90.00	339.54	3092.00	5948.30	-2219.24	0.00	0.00	6348.80	PBHL

WELLPATH DETAILS

Upper Lateral

Parent Wellpath:
Tie on MID:

Motherbore
3793.20

Rig: 6487.00ft
Ref. Datum: SITE

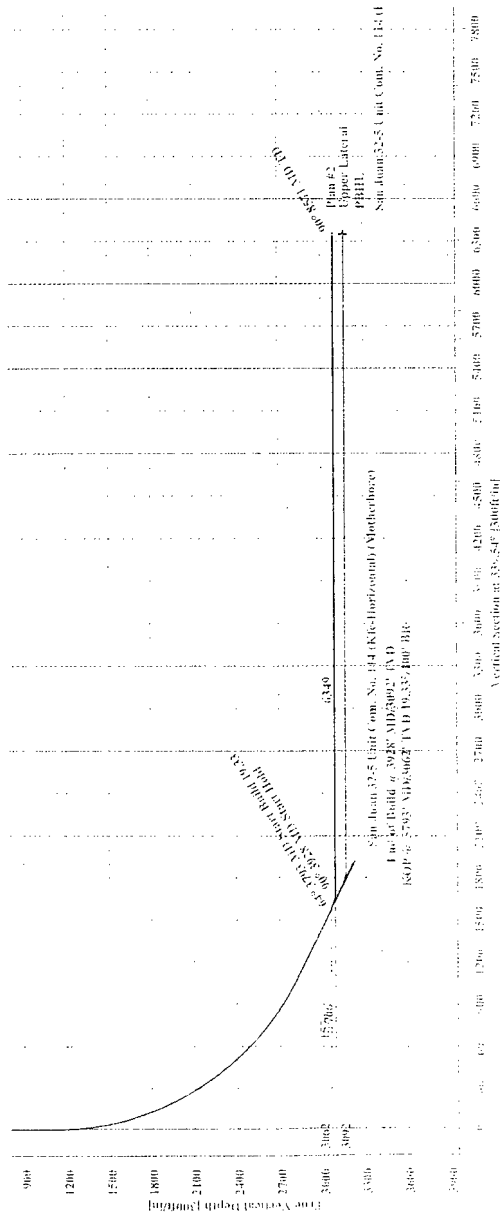
V. Section Angle: 339.54°
Origin: 0.00
From TVD: 0.00

SITE DETAILS

San Juan 32-5 Unit
Ground Level: 6472.00
Positional Uncertainty: 0.00
Convergence: 0.00

LEGEND

San Juan 32-5 Unit Com. No. 114 (Kfe-Horizontal) (Lower Lateral)
San Juan 32-5 Unit Com. No. 114 (Kfe-Horizontal) (Motherbore)
Upper Lateral
Plan #2



Plan: Plan #2 (San Juan 32-5 Unit Com. No. 114 (Kfe-Horizontal) Upper Lateral)

Created By: Matthew North

Date: 01/31/2009