Form 3160-3
(April 2004)

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

5. Lease Serial No.: SF - 079483

1a Type of Work: [X] DRILL [ ] REENTER

2007 JUL -9 PM 4:10

6 If Indian, Allotee or Tribe Name

1b. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone

RECEIVED

7 Unit or CA Agreement Name and No.

2. Name of Operator: Energen Resources Corporation

210 FARMINGTON NM

8. Lease Name and Well No.: Carson #204

3a Address: 2198 Bloomfield Hwy Farmington, NM 87401

3b. Phone No. (include area code): 505.325.6800

9. API Well No.: 30-039-30292

4. Location of Well (*Report location clearly and in accordance with any State equirements*)*

At surface: 1108 fsl, 63 fwl (section 5) at surface

At proposed prod. zone: 760 fnl, 1000 fel (section 6) at bottom

10. Field and Pool, or Exploratory: Basin Fruitland Coal

11. Sec., T., R., M., or Blk. and Survey or Area: A 6 30N 4W BH (M) S5, T30N, R4W SH

14. Distance in miles and direction from nearest town or post office*: Approximately 11.5 miles Northeast of Gobernador

12. County or Parish: Rio Arriba

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
63'	1213.88	340.98 E/2
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
500'	7720' MD	NM 2707
21. Elevations (Show whether DF, KDB, RT, GL, etc.	**22. Approximate date work will start***	**23. Estimated duration**
7243' GL	8/25/07	25 days

24. Attachments

RCVD MAR 12 '08

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

OIL CONS. DIV.

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 shall 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 authorized officer.

DIST. 3

25. Signature	Name (*Printed/Typed*)	Date
	Nathan Smith	7-9-07

Title: Drilling Engineer

Approved by (Signature)	Name (*Printed/Typed*)	Date
/s/ Duane W. Spencer		3/11/08
Title	**Office**	
AFM	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 & as drl'd. file C-102

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

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

NMOCD

MAR 20 2008

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, N.M. 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised October 12, 2005

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

2007 JUL -9 PM 4:10
RECEIVED
070 FARMINGTON NM

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-30292	71629	Basin Fruitland Coal

[4] Property Code	[5] Property Name	[6] Well Number
21185	CARSON	204

[7] OGRID No.	[8] Operator Name	[9] Elevation
162928	ENERGEN RESOURCES CORPORATION	7243'

[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
M	5	30N	4W		1108'	SOUTH	63'	WEST	RIO ARRIBA

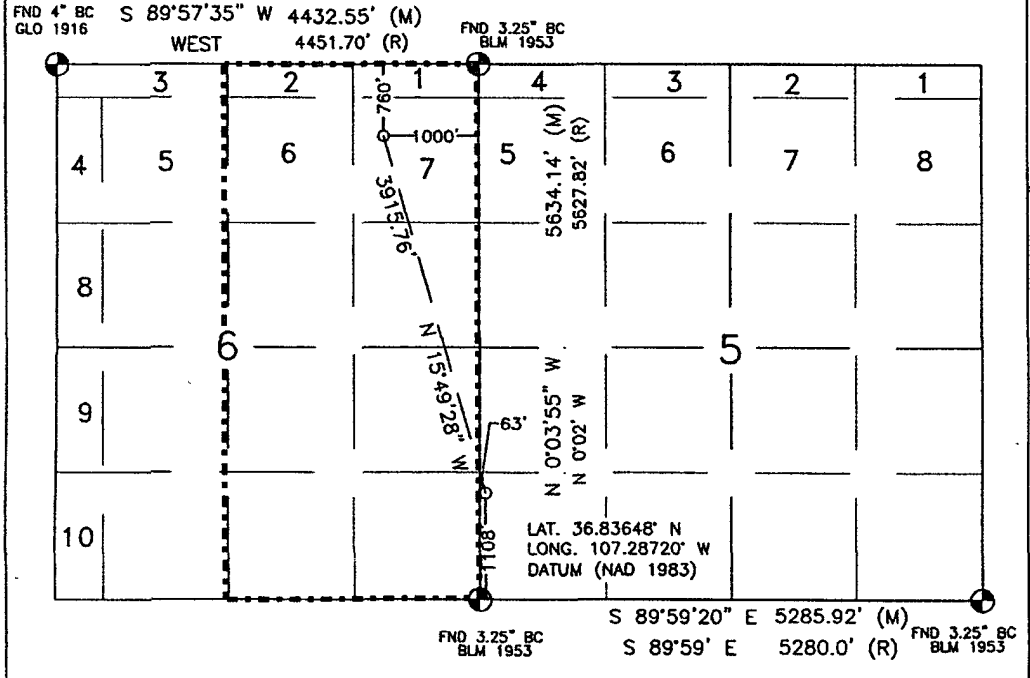
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	6	30N	4W	7	760'	NORTH	1000'	EAST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
E/2 340.98			

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

16



[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 unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner or a compulsory pooling order heretofore entered by the division.

Signature — Date: 6/18/2007

Nathan Smith
Printed Name

[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.

APRIL 17, 2007
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID R. RUSSELL
NEW MEXICO
10201
REGISTERED PROFESSIONAL LAND SURVEYOR

DAVID RUSSELL
Certificate Number 10201

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

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

Form C-103
May 27, 2004

WELL API NO. 30-039-30292

5. Indicate Type of Lease STATE ☐ FEE ☐

6. State Oil & Gas Lease No. SF - 079483

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.)

7. Lease Name or Unit Agreement Name: Carson

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

8. Well Number 204

2. Name of Operator: Energen Resources Corporation

9. OGRID Number 162928

3. Address of Operator: 2198 Bloomfield Hwy Farmington, NM 87401

10. Pool name or Wildcat: Basin Fruitland Coal

4. Well Location

Unit Letter M : 1108 feet from the south line and 63 feet from the west line

Section 5 Township 30N Range 4W NMPM County Rio Arriba

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 7243' GL

Pit or Below-grade Tank Application ☒ **or Closure** ☐

Pit type Drill **Depth to Groundwater** >200' **Distance from nearest fresh water well** >1000' **Distance from nearest surface water** >250'

Pit Liner Thickness: 12 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:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPLETION	☐	CASING TEST AND CEMENT JOB	☐		
OTHER: Build a drilling reserve pit	☒			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 in accordance with 'OCD Pit and Below Grade Tank Guidelines' issued on November1, 2004 and also plans to submitt a C-144 for the closure of such 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 6/19/07

E-mail address:

Type or print name Nathan Smith Telephone No. 505.325.6800

For State Use Only

APPROVED BY Bill Liell TITLE Deputy Oil & Gas Inspector, District #3 DATE MAR 20 2008

Conditions of Approval, if any:

Operations Plan

Revised August 17, 2007

Carson #204

General Information

Location	1108 fsl, 63 fwl at surface 760 fnl, 1000 fel at bottom nwsw S5, T30N, R4W Rio Arriba County, New Mexico
Elevations	7243' GL
Total Depth	6675' (MD), 4036' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	2093' (TVD), 2113' (MD)
Ojo Alamo Ss	3383' (TVD), 3719' (MD)
Kirtland Sh	3558' (TVD), 4019' (MD)
Fruitland Fm	3648' (TVD), 4193' (MD)
Top Coal	4013' (TVD), 5433' (MD)
Bottom Coal	4036' (TVD)
Total Depth	**4036' (TVD), 6675' (MD)**

Drilling

The 12 ¼" wellbore will be drilled with a fresh water mud system.
The 8 ¾" 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 8.9 ppg to 9.5 ppg.
Projected KOP is 1100' TVD with a BUR of 1.96°/100'.
The 6 ¼" wellbore will be drilled with a fresh water or brine water system depending on reservoir characteristics. Anticipated BHP can be as high as 1000 psi.
Blowout Control Specifications:

A 2000 psi minimum double ram or annulus BOP stack will be used following nipple up of casing head. During air drilling operations, a Shaffer Type 50 or equivalent rotating head will be installed on top of the stack. 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: None
Mud logs: From 3648' (TVD), 3842' (MD) to TD. (Top of Fruitland Fm).
Surveys: Surface to KOP every 500' and a minimum of every 250' for directional.

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	0'-4024' (TVD) 5700' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	4013'-4036' (TVD) 5670'-6675' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-5600' (MD)		2 3/8"	4.7 ppf	J-55

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 and rigid centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

Liner: Bull nose guide shoe on bottom of first joint, H-Latch liner drop off tool on top of last joint.

Wellhead

3000 psi 11" x 9 5/8" casing head. 9 5/8" x 7"x 2 3/8" 3000 psi Flanged Wellhead .

Cementing

Surface Casing: 125 sks Std (class B) with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk 148 ft^3 of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min.

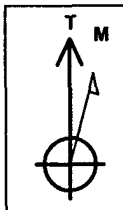
Intermediate Casing: Before cementing, circulate hole at least 1 ½ hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 825 sks 65/35 with 6.0 % Bentonite, 2.0 % $CaCl_2$, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.93 ft^3/sk) and a tail of 125 sks Sks with ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk). (~~1402~~ 1790 ft^3 of slurry, 100 % excess to circulate to surface). Test casing to 750 psi for 30 min.

Other Information

1) This well will be an open hole completion lined with an uncemented pre-drilled liner.
2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The intermediate 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 or pressures are anticipated. This gas is dedicated.

Project: SJBR - S5, T30N, R4W
Site: American Mesa
Well: Carson #204
Wellbore: Preliminary Plan
Plan: Plan #1 (Carson #204/Preliminary Plan)

PROJECT DETAILS: SJBR - S5, T30N, R4W	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Central Zone
System Datum:	Mean Sea Level

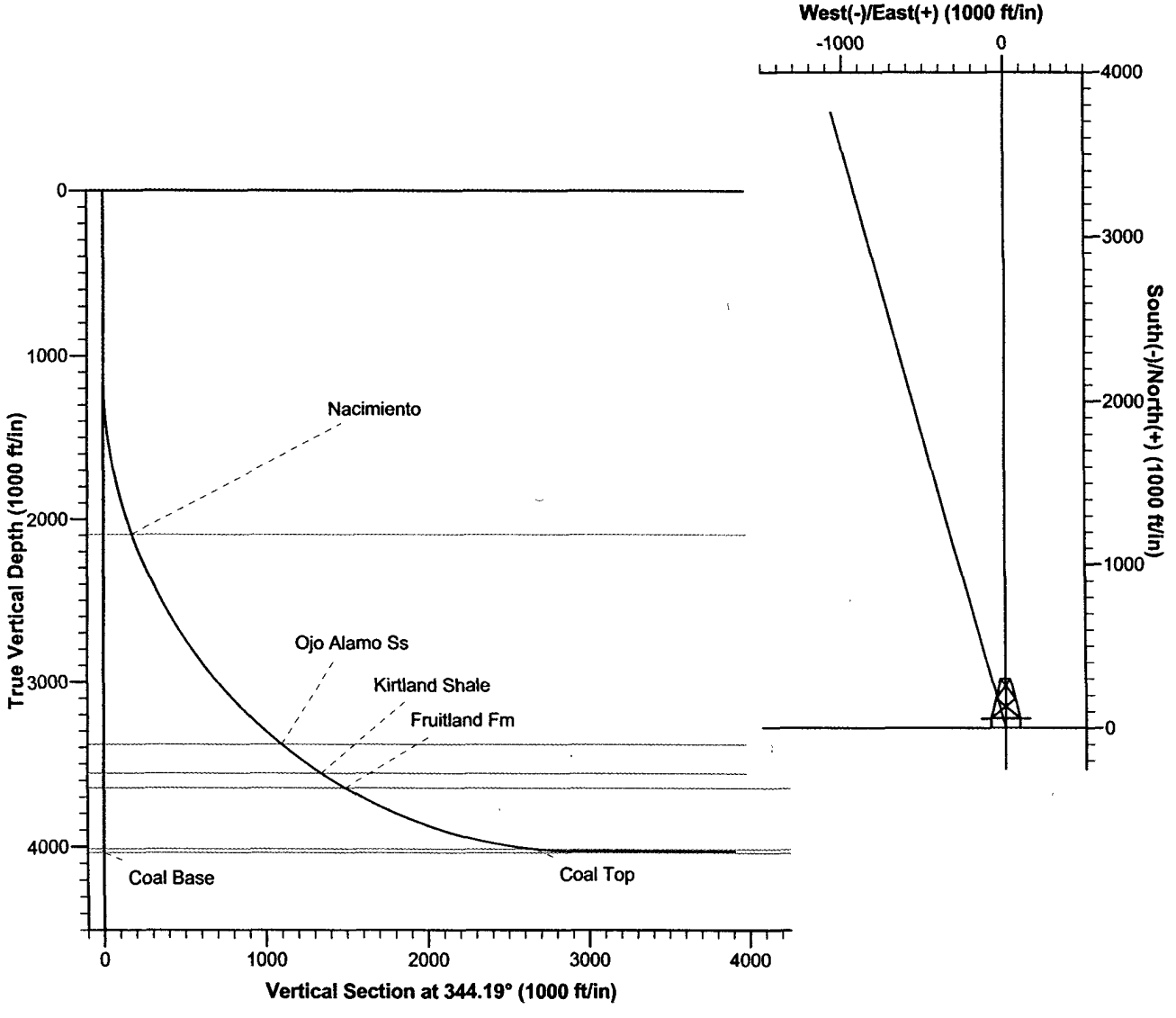


Azimuths to True North
Magnetic North: 10.18°

Magnetic Field
Strength: 51265.0snT
Dip Angle: 63.74°
Date: 6/19/2007
Model: IGRF200510

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1100.0	0.00	0.00	1100.0	0.0	0.0	0.00	0.00	0.0	
3	5183.3	80.00	344.19	3980.0	2325.2	-658.4	1.96	344.19	2416.6	
4	5700.2	90.00	344.19	4025.0	2820.1	-798.5	1.93	0.00	2931.0	
5	6675.2	90.00	344.19	4025.0	3758.2	-1064.2	0.00	0.00	3906.0	



Energen

Planned Wellpath

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carson #204
Project:	SJBR - S5, T30N, R4W	**TVD Reference:**	KB @ 7246.0ft
Site:	American Mesa	**MD Reference:**	KB @ 7246.0ft
Well:	Carson #204	**North Reference:**	True
Wellbore:	Preliminary Plan	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	V. Sec (ft)	N/S (ft)	E/W (ft)
4,800.0	3,888.9	72.49	344.19	1.96	2,044.6	1,967.2	-557.0
4,900.0	3,917.4	74.45	344.19	1.96	2,140.5	2,059.5	-583.2
5,000.0	3,942.5	76.41	344.19	1.96	2,237.2	2,152.6	-609.5
5,100.0	3,964.4	78.37	344.19	1.96	2,334.8	2,246.5	-636.1
5,183.3	3,980.0	80.00	344.19	1.96	2,416.6	2,325.2	-658.4
5,200.0	3,982.9	80.32	344.19	1.93	2,433.1	2,341.0	-662.9
5,300.0	3,998.0	82.26	344.19	1.93	2,531.9	2,436.1	-689.8
5,400.0	4,009.8	84.19	344.19	1.93	2,631.2	2,531.7	-716.9
5,433.5	4,013.0	84.84	344.19	1.93	2,664.6	2,563.8	-726.0
Coal Top							
5,500.0	4,018.2	86.13	344.19	1.93	2,730.9	2,627.6	-744.0
5,600.0	4,023.3	88.06	344.19	1.93	2,830.7	2,723.6	-771.2
5,700.2	4,025.0	90.00	344.19	1.93	2,931.0	2,820.1	-798.5
5,800.0	4,025.0	90.00	344.19	0.00	3,030.7	2,916.1	-825.7
5,900.0	4,025.0	90.00	344.19	0.00	3,130.7	3,012.3	-853.0
6,000.0	4,025.0	90.00	344.19	0.00	3,230.7	3,108.5	-880.2
6,100.0	4,025.0	90.00	344.19	0.00	3,330.7	3,204.7	-907.4
6,200.0	4,025.0	90.00	344.19	0.00	3,430.7	3,300.9	-934.7
6,300.0	4,025.0	90.00	344.19	0.00	3,530.7	3,397.1	-961.9
6,400.0	4,025.0	90.00	344.19	0.00	3,630.7	3,493.4	-989.2
6,500.0	4,025.0	90.00	344.19	0.00	3,730.7	3,589.6	-1,016.4
6,600.0	4,025.0	90.00	344.19	0.00	3,830.7	3,685.8	-1,043.7
6,675.2	4,025.0	90.00	344.19	0.00	3,906.0	3,758.2	-1,064.2

Formations

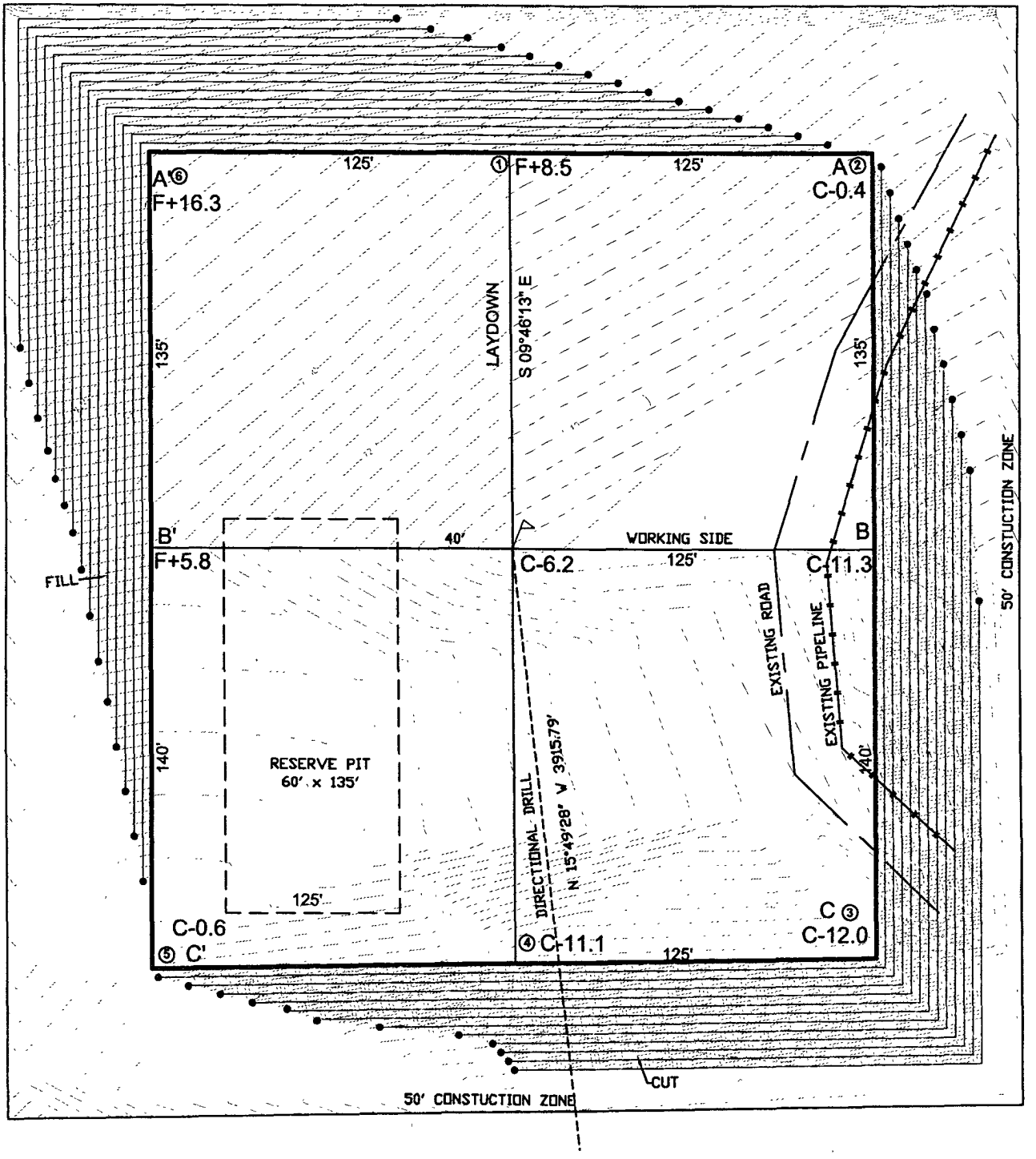
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	4,036.0	Coal Base		0.00	
4,193.5	3,648.0	Fruitland Fm		0.00	
5,433.5	4,013.0	Coal Top		0.00	
0.0	0.0	San Jose		0.00	
4,019.2	3,558.0	Kirtland Shale		0.00	
2,113.1	2,093.0	Nacimiento		0.00	
3,719.5	3,383.0	Ojo Alamo Ss		0.00	

Checked By: _____ Approved By: _____ Date: _____

LATITUDE: 36.83648°N
LONGITUDE: 107.28720°W
DATUM: NAD 83

ENERGEN RESOURCES CORPORATION

CARSON #204
1108' FSL & 63' FWL
LOCATED IN THE SW/4 SW/4 OF SECTION 5,
T30N, R4W, N.M.P.M.,
RIO ARRIBA, NEW MEXICO
GROUND ELEVATION: 7243.2', NAVD 88
FINISHED PAD ELEVATION: 7237.0', NAVD 88



1 FOOT CONTOUR INTERVAL SHOWN
SCALE: 1" = 50'
JOB No.: ERG108
DATE: 05/01/07

Russell Surveying
1409 W. Aztec Blvd. #2
Aztec, New Mexico 87410
(505) 334-8637

ENERGEN RESOURCES CORPORATION

CARSON #204
1108' FSL & 63' FWL
LOCATED IN THE SW/4 SW/4 OF SECTION 5,
T30N, R4W, N.M.P.M.,
RIO ARRIBA, NEW MEXICO
GROUND ELEVATION: 7243.2', NAVD 88
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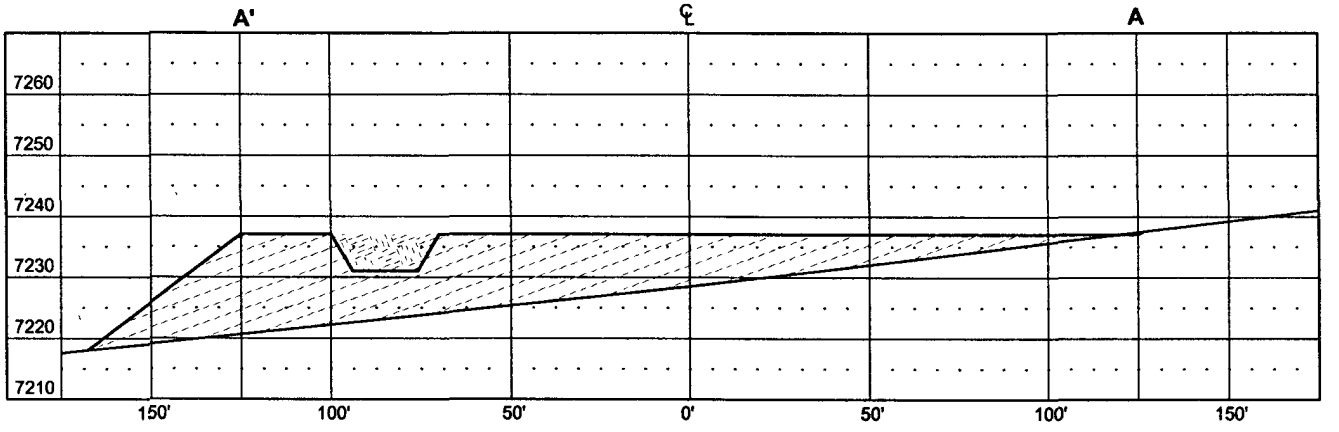
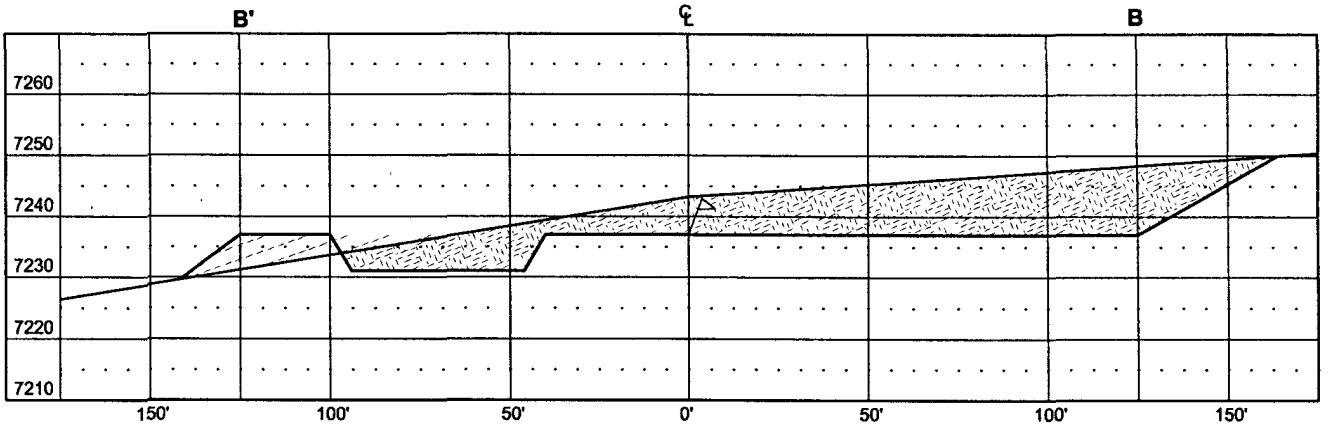
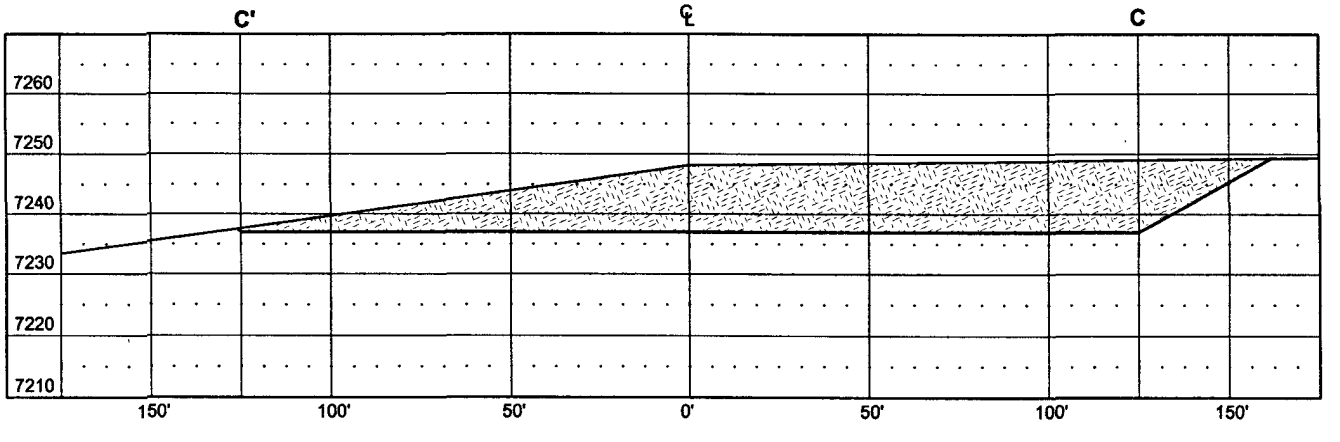






VERT. SCALE: 1" = 30'
HORZ. SCALE: 1" = 50'
JOB No.: ERG108
DATE: 05/01/07

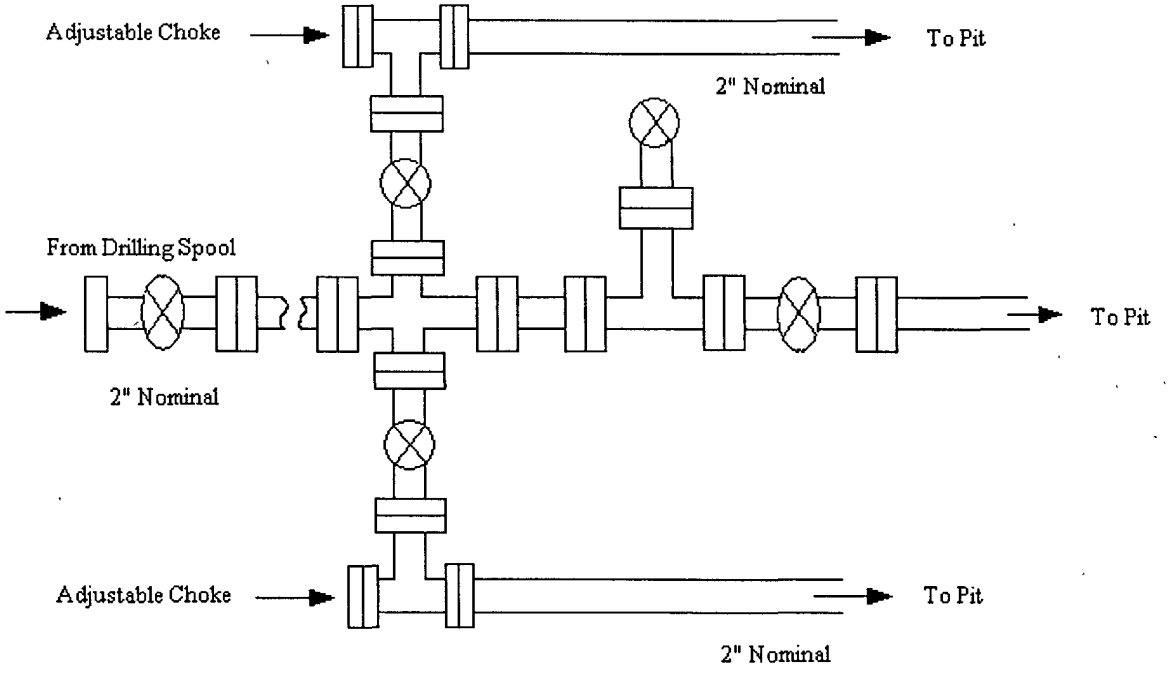
CUT

FILL

Russell Surveying
1409 W. Aztec Blvd. #2
Aztec, New Mexico 87410
(505) 334-8637

Energen Resources Corporation

Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD

Energen Resources Corporation

Typical BOP Configuration for Gas Drilling