

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM 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. <b>NM 29340</b>
1b Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
2. Name of Operator <b>Energen Resources Corporation</b>		7. Unit or CA Agreement Name and No.
3a Address <b>2198 Bloomfield Hwy Farmington, NM 87401</b>		8. Lease Name and Well No. <b>Carracas Canyon Unit 35 A #16</b>
3b. Phone No. (include area code) <b>505.325.6800</b>		9. API Well No. <b>30-039-30138</b>
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface <b>1590' fnl, 910' fel</b> At proposed prod. zone <b>760' fsl, 1880' fel</b>		10 Field and Pool, or Exploratory <b>Basin Fruitland Coal</b>
14. Distance in miles and direction from nearest town or post office* <b>Approximately 7 miles southeast of Arboles, CO</b>		11 Sec., T., R., M., or Blk. and Survey or Area <b>(H) S35, T32N, R5W</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) <b>760'</b>	16. No. of Acres in lease <b>824.25</b>	17. Spacing Unit dedicated to this well <b>320 E/2</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>50'</b>	19. Proposed Depth <b>6227' (MD)</b>	20. BLM/BIA Bond No. on file <b>NM2707</b>
21 Elevations (Show whether DF, KDB, RT, GL, etc) <b>6919' GL</b>	22. Approximate date work will start* <b>4/1/2007</b>	23. Estimated duration <b>25 days</b>


## 24. Attachments

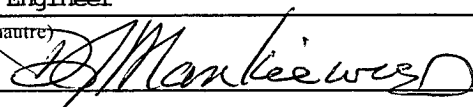
RCVD MAY 28 '08  
OIL CONS. DIV.

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

DIST. 3

- |   |  |
|---|--|
| 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) <b>Nathan Smith</b>	Date <b>12/07/06</b>
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Approved by (Signature) 	Name (Printed/Typed) <b>AEM</b>	Date <b>5/27/08</b>
Title <b>Drilling Engineer</b>	Office <b>FFO</b>	

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.

Min. BOPF test pressure: 750<sup>#</sup>

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  
and "As Drilled" platNOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT

JUN 03 2008

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

NMOCD

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

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

DISTRICT II  
811 South First, Artesia, N.M. 88210

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

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

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

2006 DEC 8 AM 3 57

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30.039.30138	<sup>2</sup> Pool Code 71629	<sup>3</sup> Pool Name Basin UP FRUITLAND COAL
<sup>4</sup> Property Code 35670	<sup>5</sup> Property Name CARRACAS CANYON UNIT 35A	<sup>6</sup> Well Number <del>35670</del> 16
<sup>7</sup> OGRID No. 162928	<sup>8</sup> Operator Name ENERGEN RESOURCES CORPORATION	<sup>9</sup> Elevation 6919'

<sup>10</sup> Surface Location

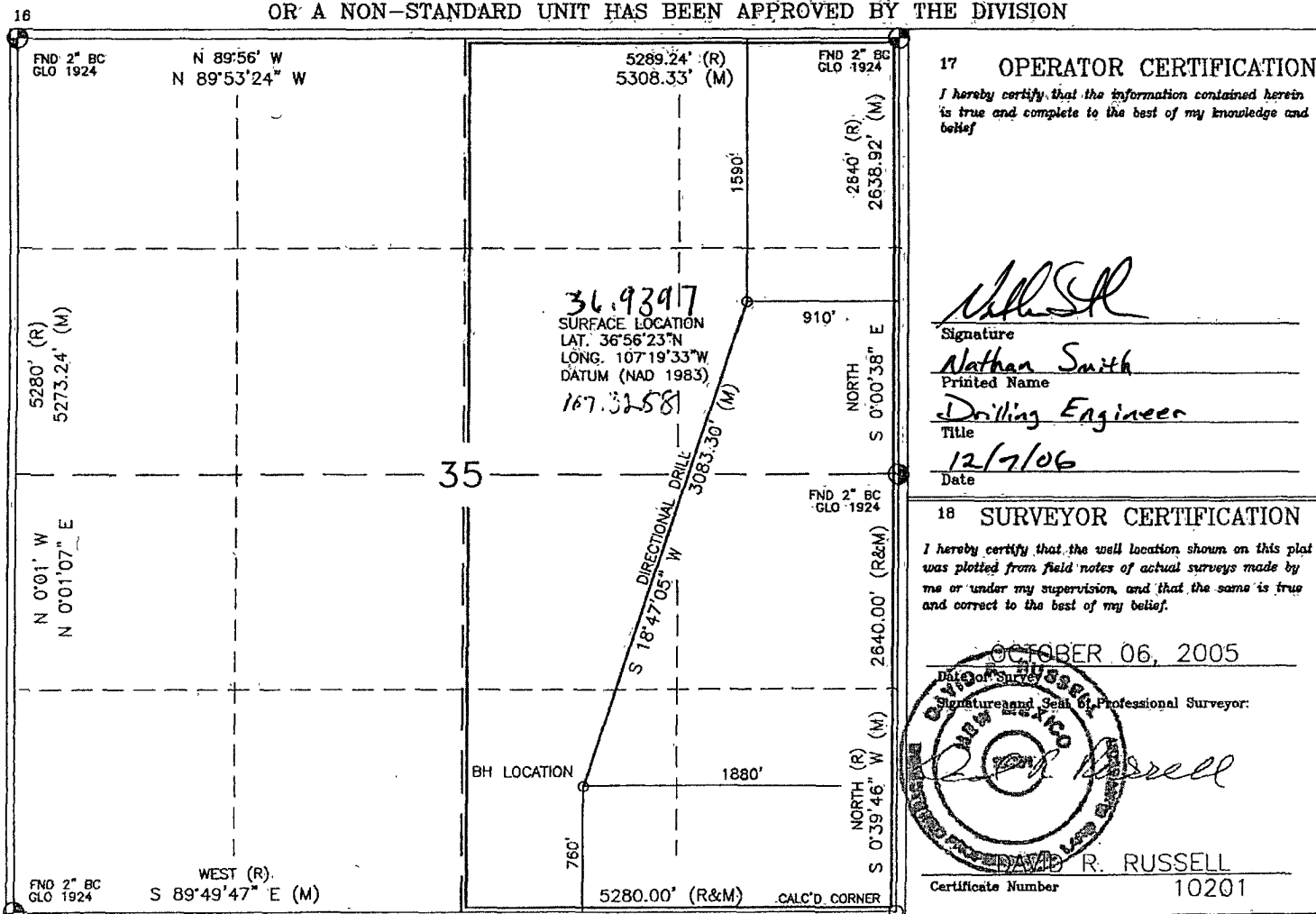
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	35	32N	5W		1590'	NORTH	910'	EAST	RIO ARRIBA

<sup>11</sup> 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
0	35	32N	5W		760'	SOUTH	1880'	EAST	RIO ARRIBA

<sup>12</sup> Dedicated Acres 320.96 Acres - (E/2)	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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



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>30-039-30138</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>Carracas Canyon Unit 35 A</u>
2. Name of Operator <u>Energen Resources Corporation</u>	8. Well Number <u>#16</u>
3. Address of Operator <u>2198 Bloomfield Hwy Farmington, NM 87401</u>	9. OGRID Number <u>162928</u>
4. Well Location Unit Letter <u>H</u> : <u>1590</u> feet from the <u>North</u> line and <u>910</u> feet from the <u>East</u> line Section <u>35</u> Township <u>32N</u> Range <u>5W</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>6919' 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>&gt;100'</u> Distance from nearest fresh water well <u>&gt;1000'</u> Distance from nearest surface water <u>&gt;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 <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPLETION <input type="checkbox"/>
OTHER: <u>Build a drilling pit</u> <input checked="" type="checkbox"/>	

SUBSEQUENT REPORT OF:

REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
CASING TEST AND CEMENT JOB <input type="checkbox"/>	
OTHER: <input type="checkbox"/>	

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' issued on November 1, 2004 and also plans to submit a C-144 form for the closure of such pit in accordance with BIM 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 12/7/06

Type or print name Nathan Smith E-mail address: nsmith@energen.com Telephone No. 505.325.6800

For State Use Only

APPROVED BY [Signature] TITLE Deputy Oil & Gas Inspector, District #3 DATE JUN 03 2008  
Conditions of Approval, if any:

## Tubulars

### Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-200'	12 1/4"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-3659' (TVD) 4500' (MD)	8 3/4"	7"	23.0 ppf	J-55 LT&C
Production	3647'-3638' (TVD) 3671'-6227' (MD)	6 1/4"	4 1/2"	11.6 ppf	J-55 LT&C
Tubing	0'-4450' (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<sub>2</sub> and 1/4 #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk 148 ft<sup>3</sup> of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 600 psi for 30 min.

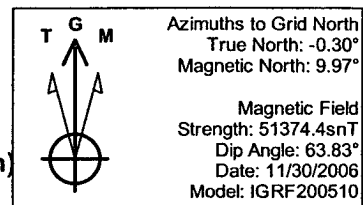
Intermediate Casing: Before cementing, circulate hole at least 1 1/2 hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 625 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl<sub>2</sub>, 10 #/sk Gilsonite, and 1/2 #/sk Flocele (12.3 ppg, 1.96 ft<sup>3</sup>/sk) and a tail of 125 sks Sks with 1/4 #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk). (1354 ft<sup>3</sup> of slurry, 100 % excess to circulate to surface). Test casing to 1200 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:** Carson National Forest  
**Site:** Carracas Mesa  
**Well:** Carracas Canyon Unit 35 A #16  
**Wellbore:** Preliminary Plan  
**Plan:** Plan #1 (Carracas Canyon Unit 35 A #16/Preliminary Plan)

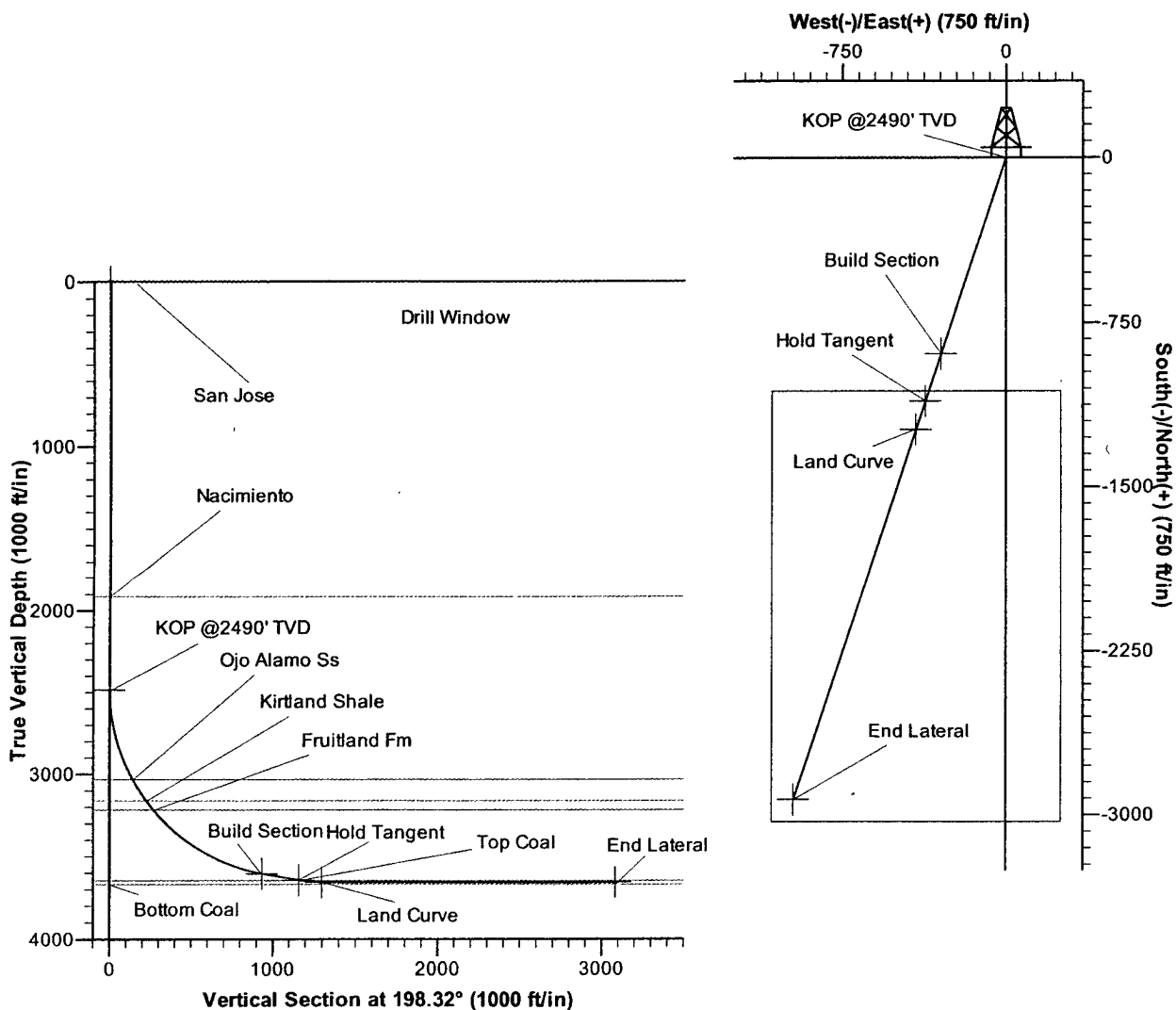


PROJECT DETAILS: Carson National Forest; S35, T32N, R5W	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Western Zone
System Datum:	Mean Sea Level

SURFACE LOCATION	
Easting:	875205.46
Northing:	658912.62

#### 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	2490.0	0.00	0.00	2490.0	0.0	0.0	0.00	0.00	0.0	KOP @2490' TVD
3	4073.7	80.00	198.31	3607.0	-889.8	-294.5	5.05	198.31	937.3	Build Section
4	4304.0	80.00	198.27	3647.0	-1105.2	-365.7	0.02	-87.97	1164.1	Hold Tangent
5	4441.9	90.00	198.36	3659.0	-1235.4	-408.8	7.25	0.54	1301.3	Land Curve
6	6227.0	90.00	198.28	3659.0	-2930.0	-970.0	0.00	-86.84	3086.4	End Lateral



# ENERGEN RESOURCES CORPORATION

CARRACAS CANYON UNIT 35A-16

1590' FNL & 910' FEL

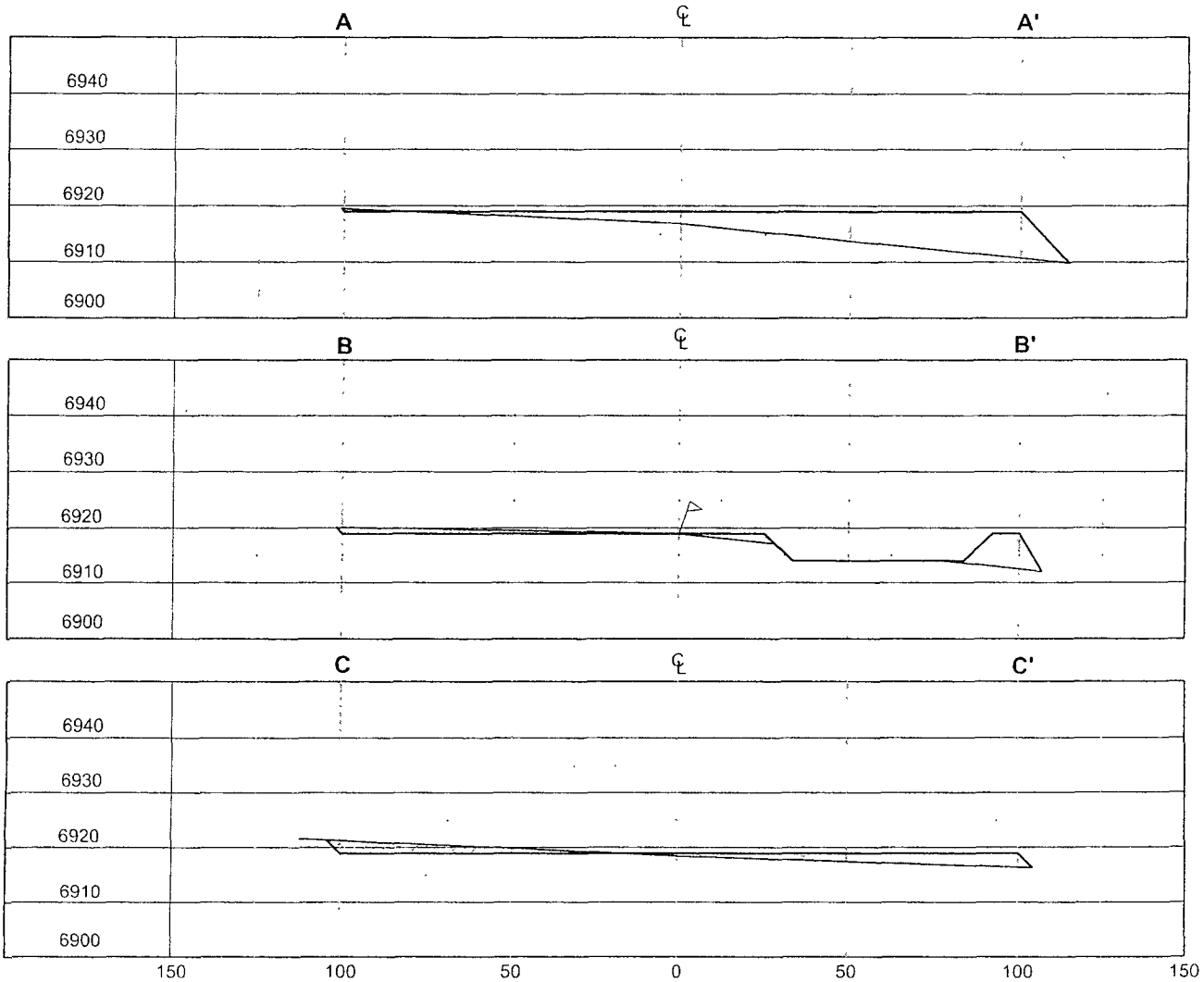
LOCATED IN THE SE/4 NE/4 OF

SECTION 35, T32N, R5W, N.M.P.M.,

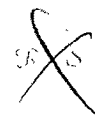
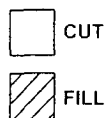
RIO ARriba COUNTY, NEW MEXICO

GROUND ELEVATION: 6920', NAVD 88

FINISHED PAD ELEVATION: 6920.1', NAVD 88

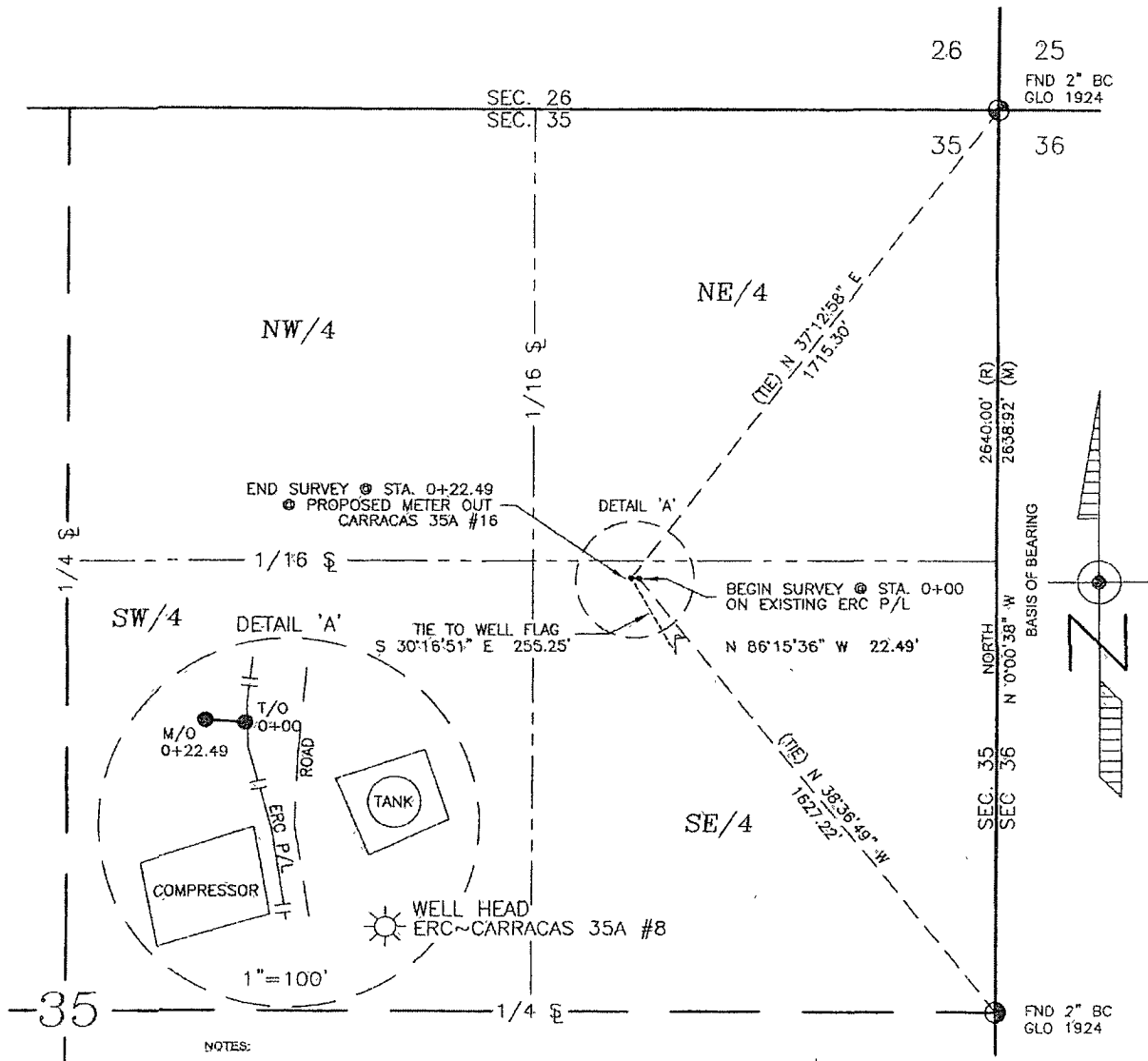


VERT. SCALE: 1" = 30'  
 HORZ. SCALE: 1" = 50'  
 JOB No.: ERG082  
 DATE: 09/26/06



**Russell Surveying**  
 1409 W. Aztec Blvd. #5  
 Aztec, New Mexico 87410  
 (505) 334-8637

A PROPOSED PIPELINE SURVEY  
FOR  
**ENERGEN RESOURCES CORPORATION**  
**CARRACAS 35A #16**  
LOCATED IN THE  
SE/4, NE/4 SECTION 35, T32N, R5W, N.M.P.M.  
RIO ARriba COUNTY, NEW MEXICO



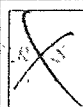
**NOTES:**

- 1.) BASIS OF BEARING: BETWEEN FOUND MONUMENTS AT THE NORTHEAST CORNER AND THE EAST QUARTER CORNER OF SECTION 35, TOWNSHIP 32 NORTH, RANGE 5 WEST, N.M.P.M. RIO ARriba COUNTY, NEW MEXICO. LINE BEARS: N 0°00'38" W A DISTANCE OF 2638.92 FEET AS MEASURED BY C.P.S.
- 2.) LOCATION OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. PRIOR TO EXCAVATION UNDERGROUND UTILITIES SHOULD BE FIELD VERIFIED. ALL CONSTRUCTION ACTIVITIES SHOULD BE FIELD VERIFIED WITH NEW MEXICO ONE-CALL AUTHORITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

I, DAVID R. RUSSELL, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAN MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

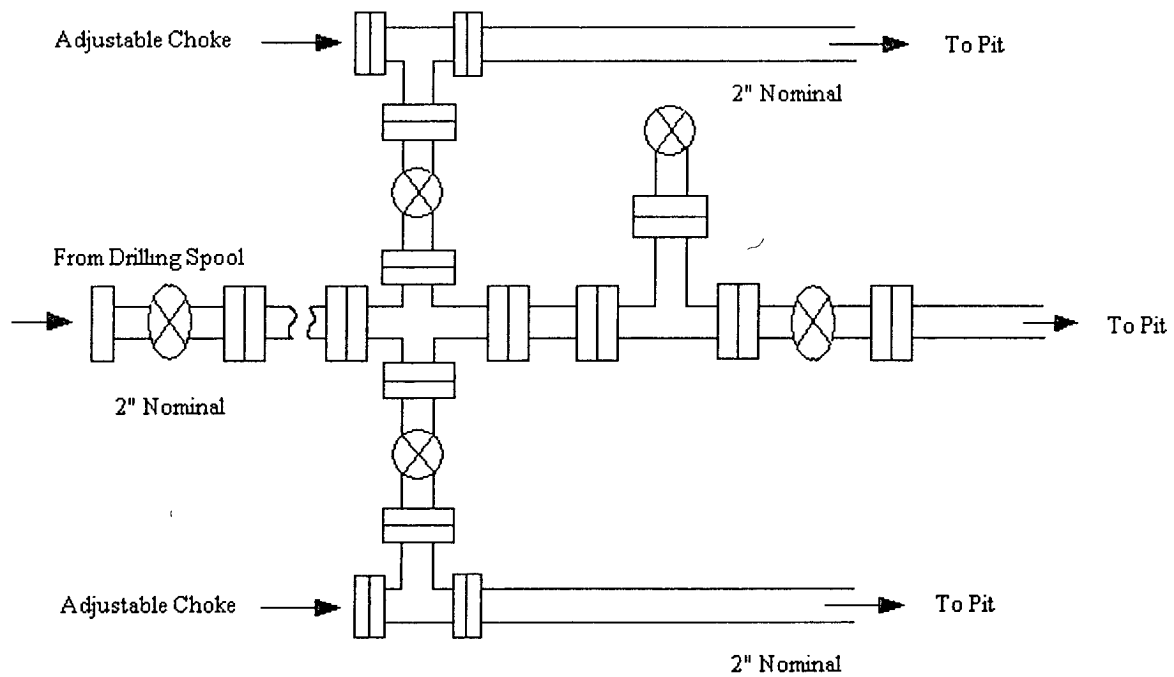
*David R. Russell* DATE: 11/15/05  
DAVID R. RUSSELL, PLS  
NEW MEXICO L.S. #10201

SURFACE OWNERSHIP	
CARSON NATIONAL FOREST	
0+00 TO 0+22.49	
22.49 FT / 1.36 RODS	
DATE OF SURVEY	11/09/05 RRJE



**Russell Surveying, Inc.**  
Specializing in Oil field Surveying  
1409 W. Aztec Blvd. #5, Aztec, N.M. 87410  
Phone (505) 334-8637 Fax (505) 333-2945  
REGISTERED LAND SURVEYOR  
NEW MEXICO LS #10201

**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

