

RCVD SEP 4 '07
OIL CONS. DIV.

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

2007 AUG 10 AM 11:18

RECEIVED
BLM
210 FARMINGTON NM

5 Lease Designation and Serial No
NMNM-100295 (expiring 11/30/07)

6 If Indian, Allottee or Tribe Name

7 If Unit or CA, Agreement, Name and No.

8. Lease Name and Well No
Synergy 21-8-13 # 151

9 API Well No
30-045-34391

10 Field and Pool, or Exploratory
Basin Fruitland Coal

11 Sec., T., R., M., or Blk. and Survey or Area

H Sec 13, T-21-N, R-08-W

12. County or Parish,
San Juan

13. State
New Mexico

17 Spacing Unit dedicated to this well
320 Acres - East Half
(323 30 per survey)

20 BLM/BIA Bond No on file
NM-2559

23 Estimated duration
20 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:

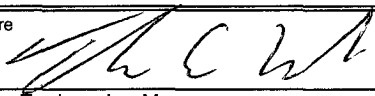
- 1 Well plat certified by a registered surveyor.
- 2 A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office.
- 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20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

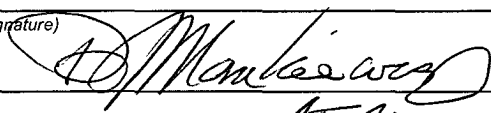
Size of Hole	Grade, Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
12-1/4"	8-5/8" K-55	24 #	120'	70 sxs, 99 ft3 - 100% Excess
7"	5-1/2" K-55	15.5#	750'	110 sxs, 153 ft3 - 100% OH Excess

LEASE EXPIRES 11/30/2007

SEE ATTACHED APD INFORMATION

Latitude: 36.05369 Deg N
Longitude: 107.62888 Deg W

25 Signature 	Name (Printed/Typed) Thomas E. Mullins	Date 8-10-2007
Title Engineering Manager		

Approved by (Signature) 	Name (Printed/Typed) AFM	Date 8/31/07
Title AFM	Office FED	

Application approval does not warrant or certify 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.

212, make it a crime for any person knowingly and willfully to make to any department or agency of the
s or representations as to any matter within its jurisdiction.

Obtain a pit permit from NMOCD
prior to constructing location

procedural review pursuant to 43 CFR 3165.4-1
and appeal pursuant to 43 CFR 3165.4

NMOCD

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

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

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
511 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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 15, 2000

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

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, NM 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-34391	² Pool Code 71629	³ Pool Name Basin FRUITLAND COAL
⁴ Property Code 36705	⁵ Property Name SYNERGY 21-8-13	⁶ Well Number 151
⁷ GRID No. 163458	⁸ Operator Name SYNERGY OPERATING, L.L.C.	⁹ Elevation 6605.3'

¹⁰ Surface Location

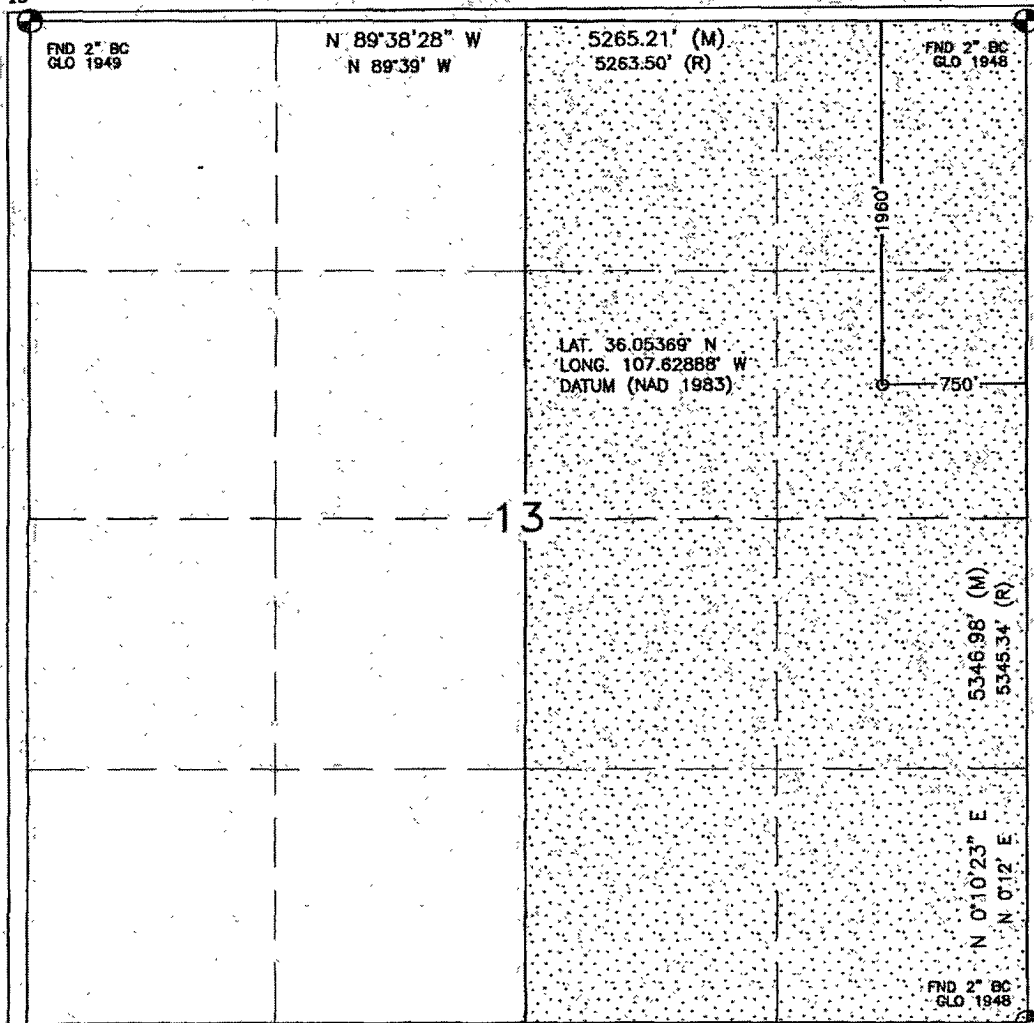
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	13	21N	8W		1960'	NORTH	750'	EAST	SAN JUAN

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
¹² Dedicated Acres 323.30 Acres - (E/2)					¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.

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

18



17 OPERATOR CERTIFICATION

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

Signature

Printed Name

Title

Date

18 SURVEYOR CERTIFICATION

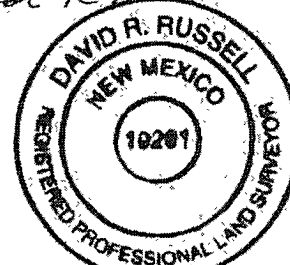
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

AUGUST 1, 2006

Date of Survey

Signature and Seal of Professional Surveyor

DAVID R. RUSSELL



DAVID RUSSELL

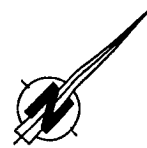
Certificate Number

10201

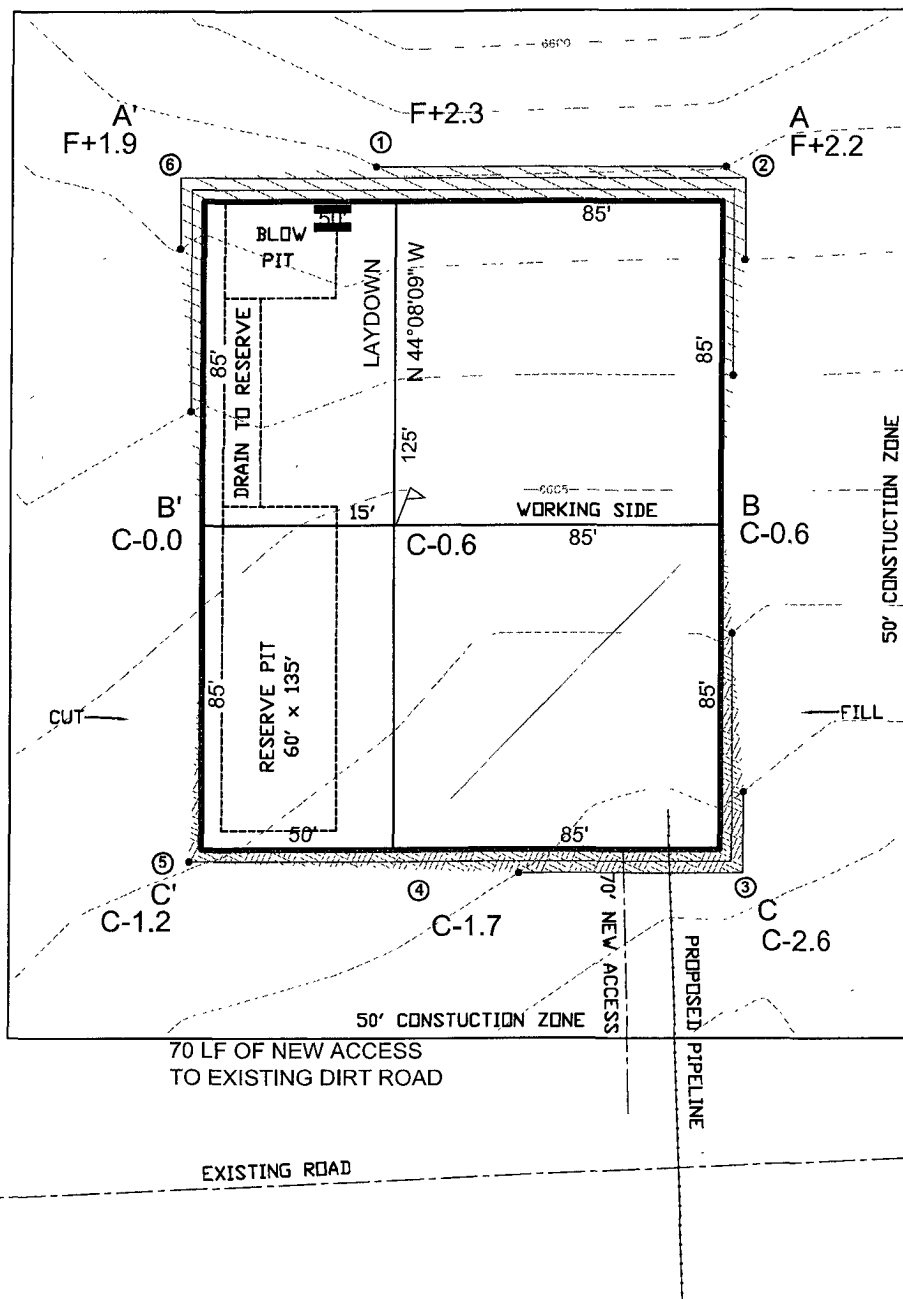
LATITUDE: 36.05369°N
LONGITUDE: 107.62888°W
DATUM: NAD 83

SYNERGY OPERATING, L.L.C.

SYNERGY 21-8-13 #151
1960' FNL & 750' FEL
LOCATED IN THE SE/4 NE/4 OF
SECTION 13, T21N, R8W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO
GROUND ELEVATION: 6605.3', NAVD 88
FINISHED PAD ELEVATION: 6604.7', NAVD 88



25' 0 25' 50'
SCALE = 50'



1 FOOT CONTOUR INTERVAL SHOWN
SCALE: 1" = 50'
JOB No.: SYN033
DATE: 08/10/06



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

SYNERGY OPERATING, L.L.C.

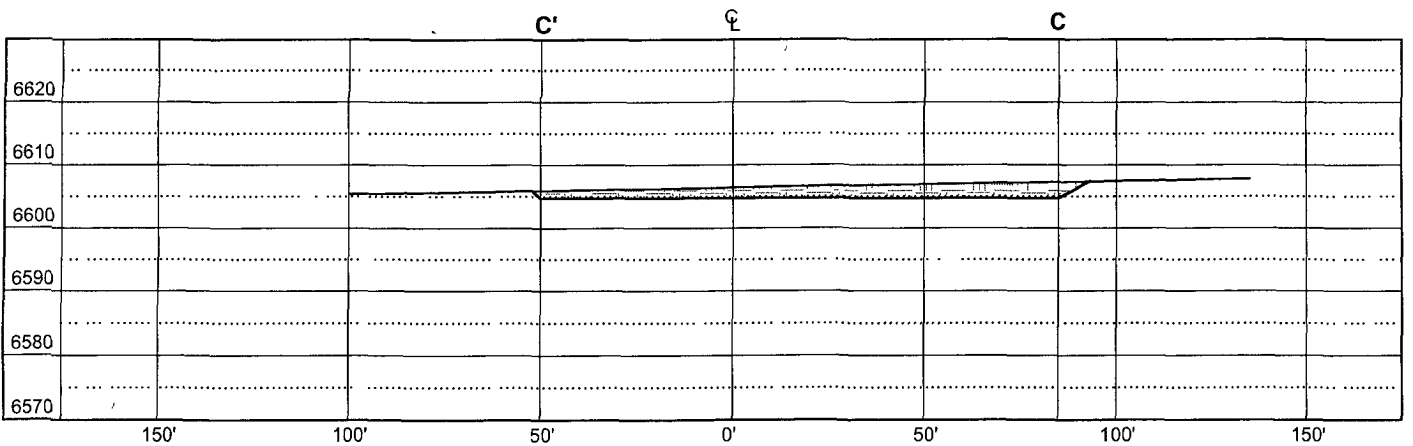
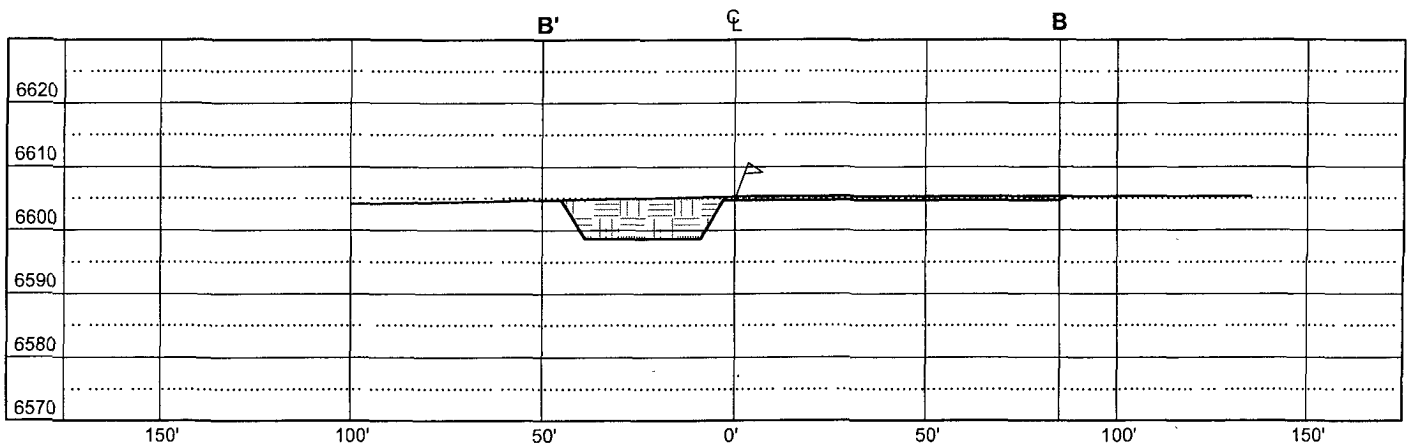
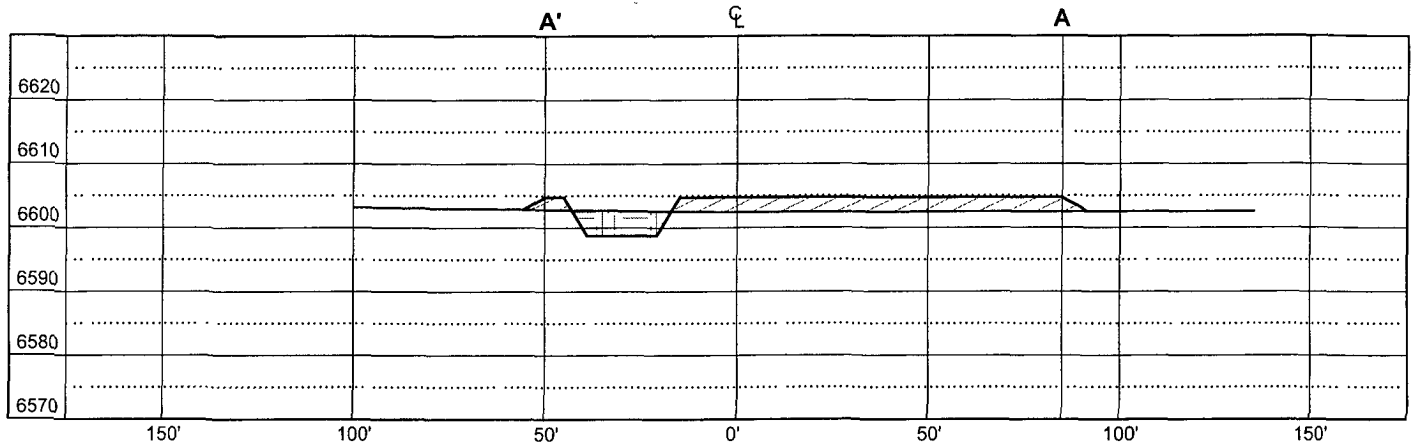
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SECTION 13, T21N, R8W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

GROUND ELEVATION: 6605.3', NAVD 88

FINISHED PAD ELEVATION: 6604.7', NAVD 88



VERT. SCALE: 1" = 30'
HORZ. SCALE: 1" = 50'
JOB No.: SYN033
DATE: 08/10/06



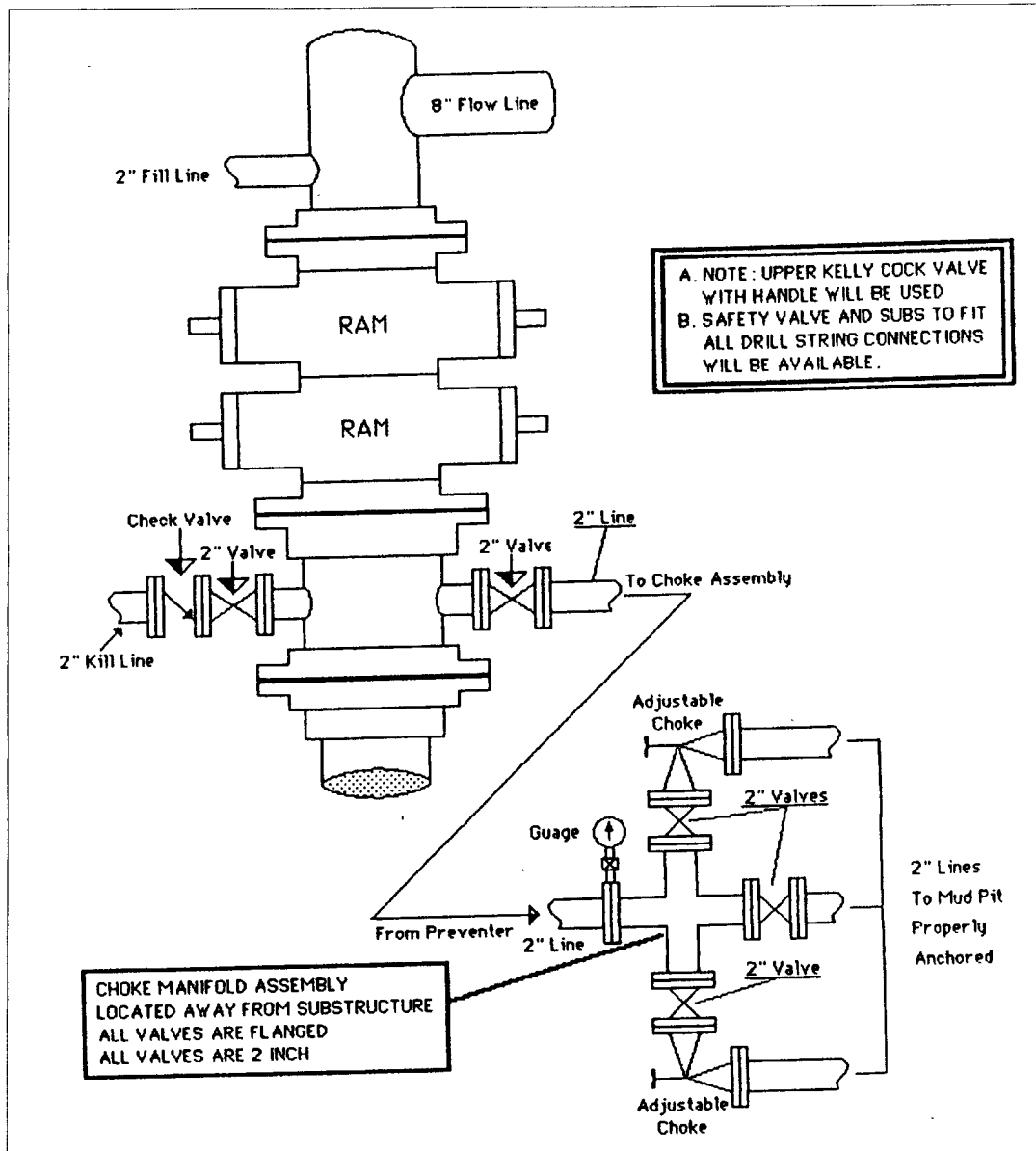
Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637

Synergy Operating, LLC

San Juan Basin

~~2M~~ BOPE - ~~Class 1~~ BOPE

Minimum of ~~2000~~ psi Working Pressure



2M system per Onshore Oil & Gas Order #2

A BOP Stack consisting of either a manual two(2) ram preventer, (double or 2 singles) or a single Hydraulic annular preventer with a minimum of 1000 psi working pressure. The upper ram cavity Shall contain pipe rams to fit the drill pipe in use. The lower cavity shall contain blind rams.

The choke and kill manifold shall be minimum 2" in diameter and rated to minimum of ~~2000~~#.

Synergy Operating LLC

Operations Plan

Well Name: Synergy 21-8-13 # 151

Location: Unit H – 1960' FNL, 750' FEL, Sec. 13, T-21-N, R-8-W, San Juan Co. NM
Latitude 36.05369° N, Longitude 107.62888° W (NAD 83)

Field: Basin Fruitland Coal

Elevation: 6605' GL

GEOLOGIC PROGRAM

Formations:	Tops/Depth	Fluids
Base Ojo/Top Kirtland	Surface'	None
Fruitland	135'	Natural gas & produced water
Lower Fruitland Coal	465'	Natural gas & produced water
Pictured Cliffs	523'	Natural gas & produced water
TOTAL Depth	750'	

Logging Program:

- A) Open Hole: Density/Caliper & Gamma Ray: TD to Surface Csg Shoe
B) Cased Hole: GR-CCL

Mudlogs, Cores, DST's:

No mudlogs, coring or drill-stem testing (DST's) are scheduled.

Anticipated Downhole Conditions:

It is not anticipated that any abnormal temperatures, abnormal pressures or hydrogen sulfide gas will be encountered. The maximum anticipated formation pressures are expected to be less than 300-PSIG. A minimum of MMS Class 1 BOP equipment will be used.

DRILLING PROGRAM

Contractor: A local rotary drilling company is yet to be determined.

Mud Program: Freshwater based mud system will be utilized. Water sourced from commercial suppliers.

Depth	Type	Viscosity	#'s/Gal
0-120'	Spud	40-50	8.4-8.9
120'-TD	Low Solids, Non-dispersed	30-60	8.4-9.5*

* Barite will be used as a weighting material if needed

Pressure Control / Blow Out Preventers (BOP's):

All BOP systems will be in accordance with ^{BLM} MMS Onshore Oil & gas Order No2. Until the drilling contract has been let, the exact make, model and pressure rating of BOP's is unknown. A typical double gate BOP with a rotating head is shown in the attached Exhibit #1. A typical Choke & Kill manifold is also shown in the attached Exhibit #1.

The minimum requirements necessary to drill this well comply with a Class 1 Well Control Equipment rated to ^{-?} 2000 psi operating conditions.

An upper kelly cock valve with handle and drill string safety valves for each size of drill pipe will be available on the rig floor.

BOP Testing:

Surface – TD: An 11" or a 7-1/16" ~~1000#~~, 2000#, 3000#, or 5000# double gate BOP Stack & choke manifold will be utilized. Prior to drilling out the surface casing, the rams and casing will be tested to a minimum of 500#. All tests will be charted.

Pipe rams will be hydraulically actuated at least once a day. The blind rams will be function tested on each pipe trip. All ram function testing and BOP pressure testing will be recorded on the daily IADC drilling logs.

Casing & Tubing Program:

All casing shall be new and constructed to API standards.

Hole Size	OD	Weight	Grade	GL Set Depth	Clearance Hole/Collar
12-1/4"	8.625"	24#/ft	J-55	0' – 120'	1.3125"
7"	5.500"	15.5#/ft	J-55	0' – TD(750'+/-)	0.475"
2-3/8"	2.375"	4.7#/ft	J-55	Unknown	

Per BLM Onshore Order # 2 - Casing collars shall have a minimum clearance of 0.422 inches on all sides in the hole/casing annulus, with recognition that variances can be granted for justified exceptions.

Float Equipment & Centralizers:

8-5/8" Surface Casing: Cement Guide Shoe, 1-Jt 8-5/8" casing as shoe joint, float collar and 8-5/8" casing to surface. A centralizer will be run 10' above the shoe, secured with a stop ring, around each of the collars of the planned three (3) casing joints. Surface casing will be run to a minimum depth of 120' to ensure protection of surface waters. No wiper plug will be run, cement will be just be displaced to within 20' of the shoe.

5-1/2" Production Casing: Cement guide shoe w/ auto-fill, 1-Jt 5-1/2" casing as shoe joint, float collar, and 5-1/2" casing to surface. A centralizers will be run on every other joint of casing. Additional centralizers will be deployed every other joint from the fifth most bottom joint to surface. Estimated total of twenty (20) centralizers. No turbolizers are planned to be

run, as there are no indications of any problems to be encountered with the cementing of such shallow wells.

All strings of casing and all cement will be circulated to the surface and topped off if necessary.

Wellhead Equipment:

A 8-5/8" x 5-1/2" 1000# or 1500# wellhead will be screwed on to the top joint of the 8-5/8" surface casing, w/ 3" line pipe outlets. A 5-1/2" screw-on 1500# wellhead with a 4" line pipe outlets and 2" line pipe outlet will be run. 2-3/8" production tubing is forecast to be run.

Cementing Program:

8-5/8" Surface Casing: Pump 70-sxs (99-ft³) Type III Cement w/ 3% CaCl₂ + 1/4-#/sx Celloflake. Yield = 1.42 ft³/sx, Slurry Weight = 14.5 PPG. Cement volume is 100% of annular excess to ensure circulation to surface. Wait on Cement (WOC) for 8-Hours. Pressure test surface casing to 750# for 15-Minutes.

5-1/2" Production Casing: Pump 110-sxs (153-ft³) Type III Cement w/ 1% CaCl₂ + 1/4-#/sx Celloflake + 0.2% FL-52 + 2-#/sx Pheno-Seal. Yield = 1.39 ft³/sx, Slurry Weight = 14.6 PPG. Total slurry volume is 27.3 bbls.

The projected annular hole volume from 750' to surface is: 76 ft³. Cement volume is 100% excess of annular openhole volume to ensure circulation to surface. Cement will be brought to surface on all strings of casing.

Estimated Drilling Time:

Spud date will occur after the APD has been approved, the location built and a drilling contractor selected. Once drilling operations commence, it is anticipated that the drilling phase should be completed within three (3) days.

Estimated Completion Time:

Rig completion activities are estimated to take approximately five (5) days. No separator or production tank is anticipated, only a rod pumping unit or small electric submersible pump will be installed. No oil production is anticipated from this well. A gas meter will be utilized temporarily for 30 days to measure the anticipated gas production.

Synergy will be installing a 4" Gas Sales Line and a 3" water gathering line to gather all produced waters to a central facility should the well be deemed commercial.

Reserve Pit Construction/Closure:

The planned reserve pit is located on the attached plat. The pit dimensions are projected to be 65 feet by 15 feet. The pit will be lined with an approved lining material, a minimum of a 12 mils

in thickness. The pit will be constructed and closed per the most recent NMOCD pit guideline information. A form C-144 will be prepared and submitted for the reserve pit in conjunction with this APD submittal.