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

RECEIVED
070 FARMINGTON NM

5. Lease Designation and Serial No.: NMNM-99735

6. If Indian, Allottee or Tribe Name:

1a. Type of Work: ☒ DRILL ☐ REENTER

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

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: Synergy 21-7-5 # 142

2. Name of Operator: Synergy Operating, LLC — NM OGRID # 163458

9. API Well No.: 30-043-21036

3a. Address: PO Box 5513, Farmington, NM 87499

3b. Phone Number: (505) 325-5449

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

4. Location of Well (Footage, Sec, T. R., M, or Survey Description)
At surface: Unit Letter J, 1810' FSL, 1950' FEL, Sec 5, T21N-R7W
At proposed prod. Zone: Same

11. Sec., T., R., M., or Blk. and Survey or Area: Sec 05, T-21-N, R-07-W

14. Distance in miles and direction from nearest town or post office*: 11 Miles South of Lybrook, New Mexico. Turn South US Hwy 550 MM - 113.25

12. County or Parish: Sandoval

13. State: New Mexico

15. Distance from proposed* location to nearest propety or lease line, ft. (Also to nearest drlg. Unit line, if any): 1810 Feet from South Line

16. No of Acres in lease: 1,921.60 Acres

17. Spacing Unit dedicated to this well: 320.62 ~~322.98~~ Acres - East Half

18. Distance from proposed* location to nearest propety or lease line, ft.: 1950 Feet from East Line

19. Proposed Depth: 950'

20. BLM/BIA Bond No. on file: NM-2559

21. Elevation (Show whether DF, KDB, RT, GL, etc.): 6708' Ground Level

22. Approximate date work will start*: September 1, 2006

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.
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 |
| 7-7/8" | 5-1/2" K-55 | 15.5# | 950' | 236 sxs, 329 ft3 - 100% OH Excess |
| | | | | |
| | | | | |

**SEE ATTACHED APD INFORMATION**

Latitude: 36.07855 Deg N
Longitude: 107.59733 Deg W

25. Signature: [signature] — Name(Printed/Typed): Thomas E. Mullins — Date: 7-10-06

Title: Engineering Manager

Approved by (Signature): [signature] — Name(Printed/Typed): — Date: 9/14/06

Title: AFM — Office: FFO

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.

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

*(Instructions on reverse)

Submit pit application prior to starting site construction

NMOCD

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

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

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised August 15, 2000

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| [1] API Number | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-043-21036 | 71629 | FRUITLAND COAL |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 35857 | SYNERGY 21-7-5 | 142 |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| ~~163458~~ 163458 | SYNERGY OPERATING, L.L.C. | 6708' |

## [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 |
|---|---|---|---|---|---|---|---|---|---|
| J | 5 | 21N | 7W | | 1810' | SOUTH | 1950' | EAST | SANDOVAL |

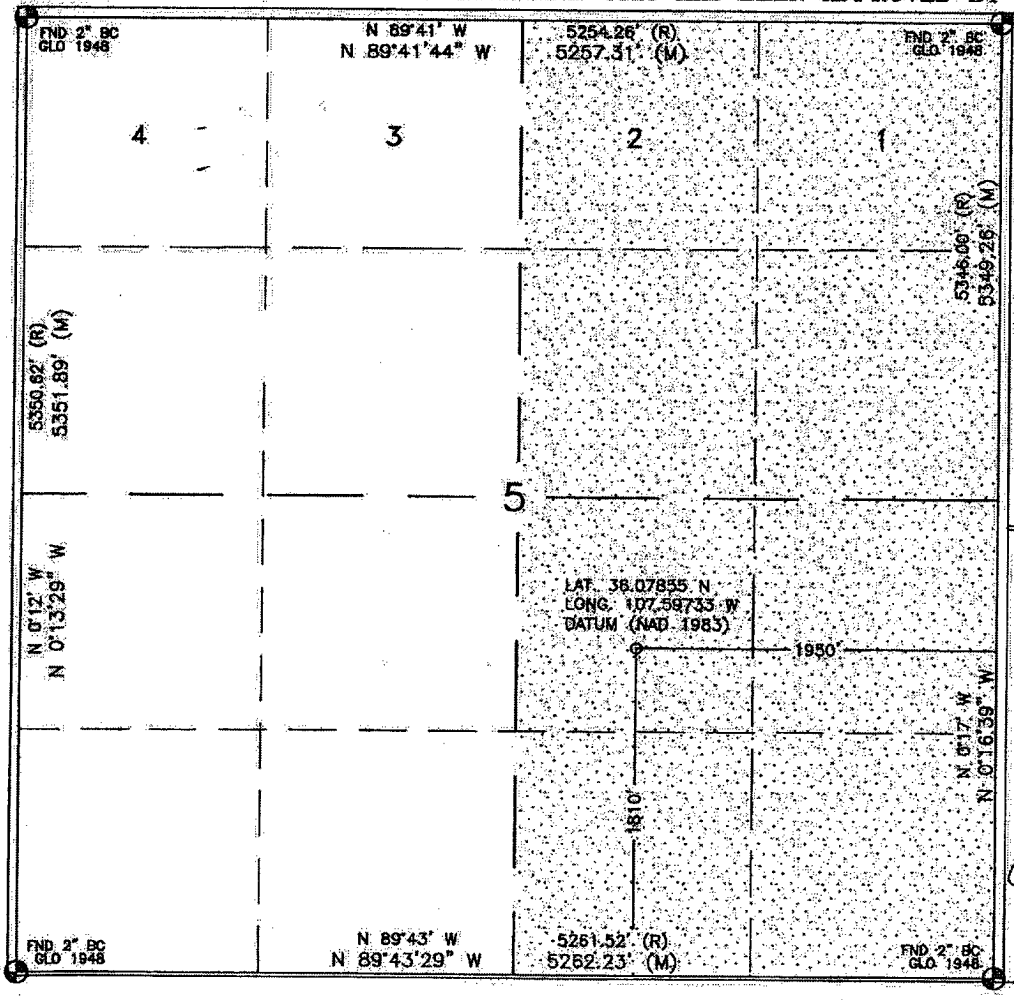
## [11] Bottom Hole Location If Different From Surface

| 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 | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| ~~322.56~~ 320.52 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

[16]




## [17] OPERATOR CERTIFICATION

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

Signature

THOMAS E. MULLINS
Printed Name

ENGINEERING MANAGER
Title

4-26-06
Date

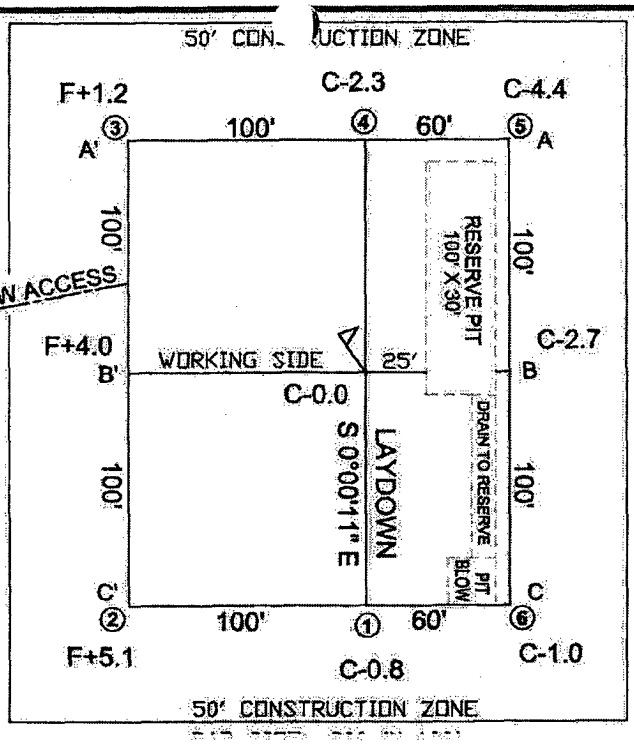
## [18] SURVEYOR CERTIFICATION

*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.*

MARCH 27, 2006
Date of Survey

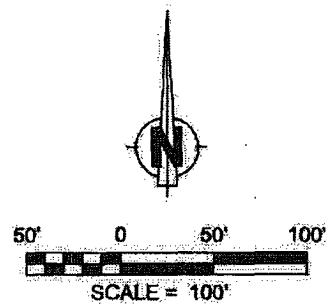
Signature and Seal of Professional Surveyor:

DAVID RUSSELL
Certificate Number 10201

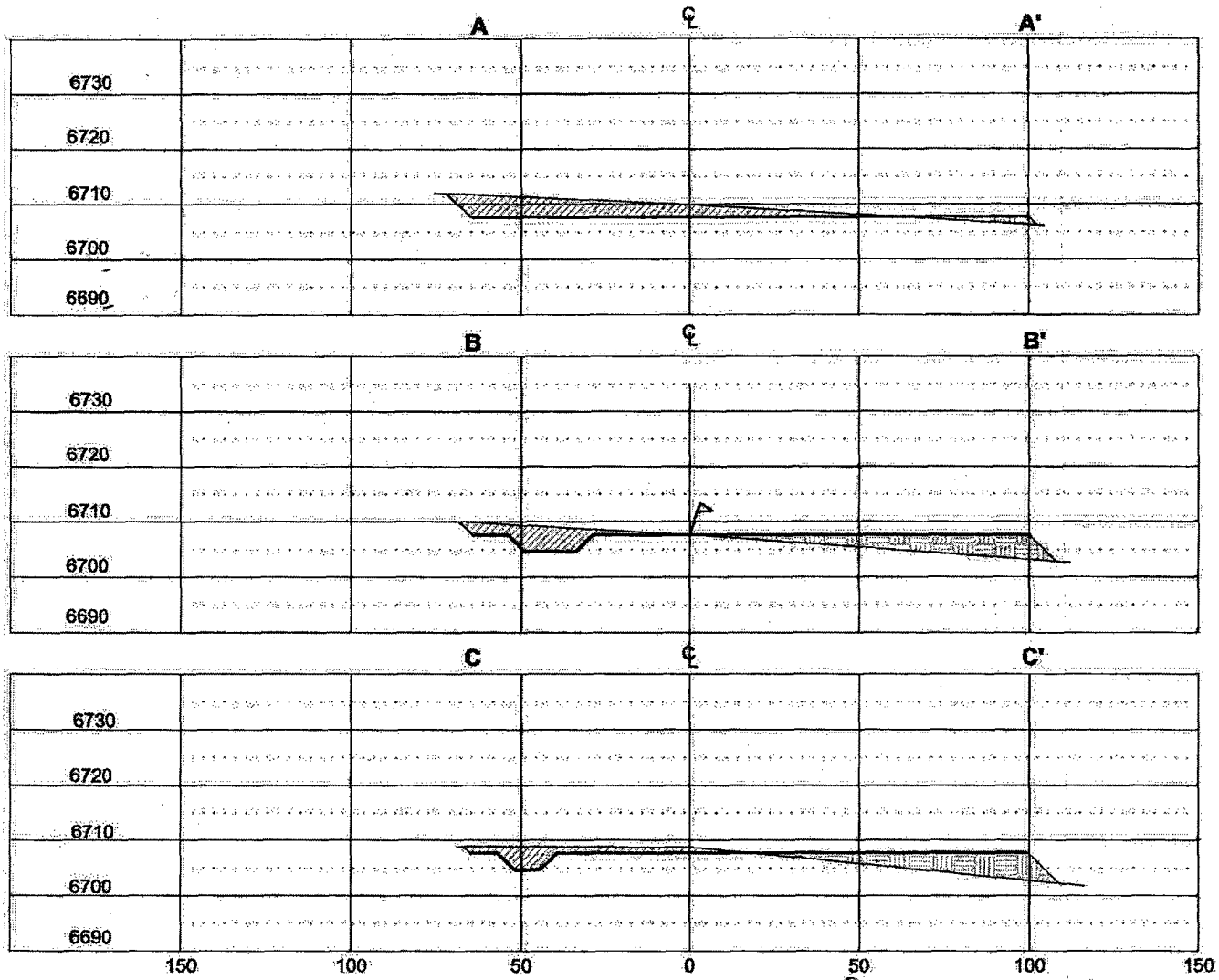



# SYNERGY OPERATING, L.L.C.

SYNERGY 21-7-5 #142
1810' FSL & 1950' FEL
LOCATED IN THE NW/4 SE/4 OF SEC. 5,
T21N, R7W, N.M.P.M.,
SANDOVAL COUNTY, NEW MEXICO
ELEVATION: 6707', NAVD 88




LATITUDE: 36.07855 N
LONGITUDE: 107.59733 W
DATUM: NAD 83




HORIZ. SCALE: 1"=50'
VERT. SCALE: 1"=30'

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

# Synergy Operating LLC
## Operations Plan

**Well Name:** Synergy 21-7-5 # 142

**Location:** Unit J – 1810' FSL, 1950' FEL, Sec. 5, T-21-N, R-7-W, Sandoval Co. NM
Latitude 36.07855° N, Longitude 107.59733° W (NAD 83)

**Field:** Basin Fruitland Coal

**Elevation:** 6708' GL

## GEOLOGIC PROGRAM

| **Formations:** | **Tops/Depth** | **Fluids** |
|---|---|---|
| Base Ojo/Top Kirtland | 265' | None |
| Fruitland | 453' | Natural gas & produced water |
| Lower Fruitland Coal | 740' | Natural gas & produced water |
| Pictured Cliffs | 764' | Natural gas & produced water |
| TOTAL Depth | 950' | |

**Logging Program:**

A) Open Hole: Density/Calipher & 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 500-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 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 1000 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" 1000#, 2000#, or 3000# double gate BOP Stack & choke manifold will be utilized. Prior to drilling out the surface casing, the ~~rams~~ Bope will be tested to 500#.

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" |
| 7-7/8" | 5.500" | 15.5#/ft | J-55 | 0' – TD(950'+/-) | 0.9125" |
| 2-3/8" | 2.375" | 4.7#/ft | J-55 | Unknown | |

**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.

**Cementing Program:**

8-5/8" Surface Casing: Pump 70-sxs (99-$ft^3$) Type III Cement w/ 3% $CaCl_2$ + ¼-#/sx Celloflake. Yield = 1.42 $ft^3$/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 236-sxs (329-$ft^3$) Type III Cement w/ 1% $CaCl_2$ + ¼-#/sx Celloflake + 0.2% FL-52 + 2-#/sx Pheno-Seal. Yield = 1.39 $ft^3$/sx, Slurry Weight = 14.6 PPG. Total slurry volume is 329 ft3.

The projected annular hole volume from 950' to surface is: 164 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. Surface facilities anticipated will include a rod pumping unit, a small separator, and one four hundred (400) bbl water production tank. 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:**

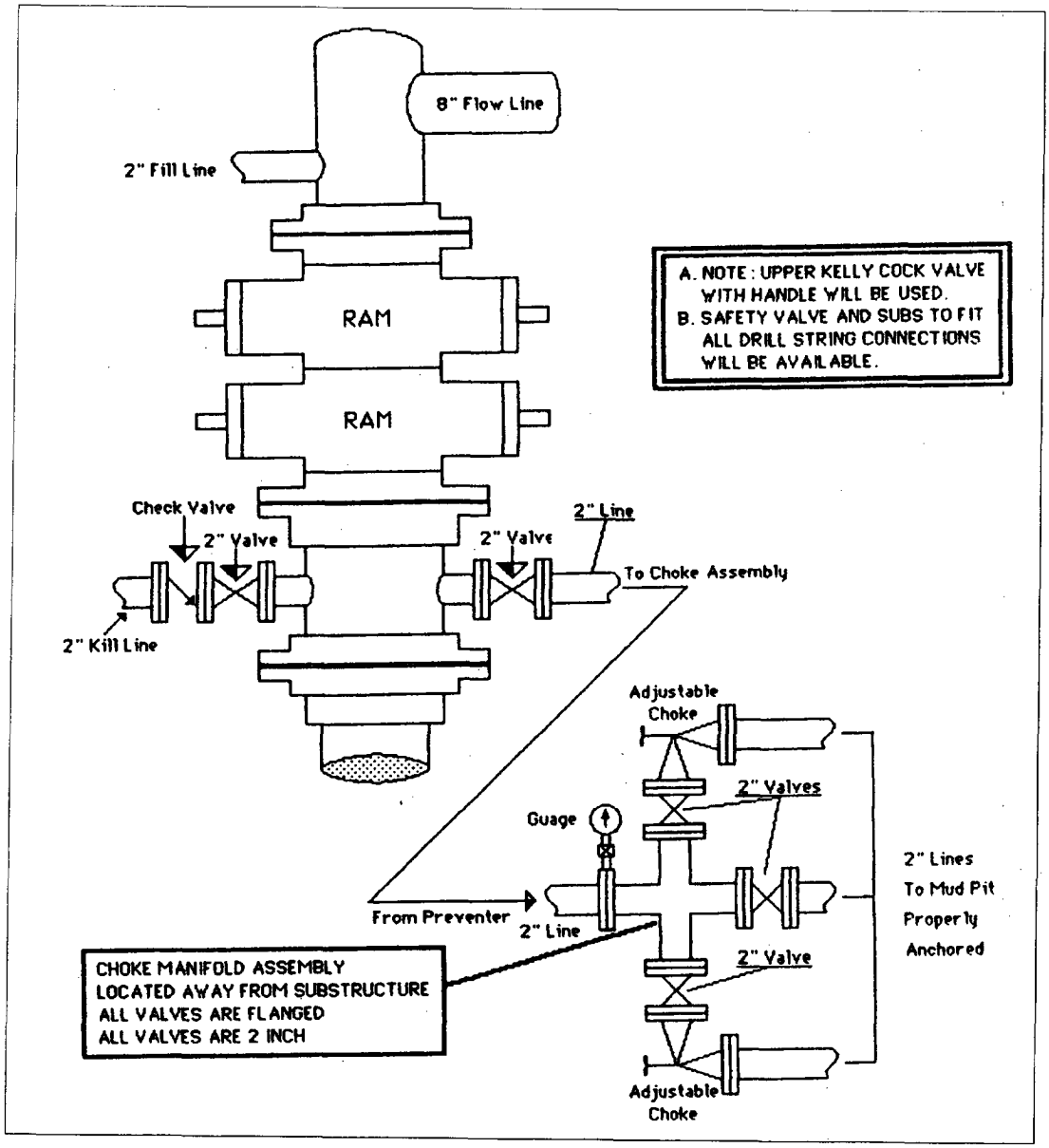
The planned reserve pit is located on the attached plat. The pit dimensions are projected to be 65 feet by 15 feet. The pit will be lined with an approved lining material, a minimum of a 12 mils in thickness. The pit will be constructed and closed per the November 1, 2004 NMOCD pit guideline information. A form C-144 will be prepared and submitted for the reserve pit in conjunction with this APD submittal.

# Synergy Operating, LLC

## San Juan Basin

## 1M BOPE - Class 1 BOPE

## Minimum of 1000 psi Working Pressure




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 1000#.

TEM - 2006