

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

OCT 9 2007

RCVD NOV 19 '07

OIL CONS. DIV.

FORM APPROVAL

OMB No 1004-0137

Expires March 31, 2007

DIST 3

APPLICATION FOR PERMIT TO DRILL OR REENTER

Bureau of Land Management
Farmington Field Office
SF-079033

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Designation and Serial No SF-079033	
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 Synergy Operating, LLC Designated Agent through Completion for ConocoPhillips (C-202959)		7. If Unit or CA, Agreement, Name and No	
3a. Address PO Box 5513 Farmington, NM 87499		8. Lease Name and Well No San Juan 29-5 Unit Com # 92	
3b. Phone Number (505) 325-5449		9. API Well No. 30-039-30395	
4. Location of Well (Footage, Sec, T, R, M, or Survey Description) At surface. Unit Letter G, 1655' FNL, 1405' FEL, Sec 23, T29N-R05W At proposed prod. Zone Same		10. Field and Pool, or Exploratory Blanco Mesaverde	
14. Distance in miles and direction from nearest town or post office* 1.5 Miles from Gobernador		11. Sec, T, R, M, or Blk. and Survey or Area G Sec 23, T-29-N, R-05-W	
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg Unit line, if any) 1655 Feet from North Line		12. County or Parish, Rio Arriba	
16. No of Acres in lease 280.00 Acres		13. State New Mexico	
18. Distance from proposed* location to nearest property or lease line, ft 1405 Feet from East Line		17. Spacing Unit dedicated to this well 320 Acres - East Half (313.16 Acres Survey)	
19. Proposed Depth 6200' +/-		20. BLM/BIA Bond No on file NM-2559	
21. Elevation (Show whether DF, KDB, RT, GL, etc.) 6607' Ground Level		23. Estimated duration 30 days	
22. Approximate date work will start* As Soon As Possible			

24. Attachments

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

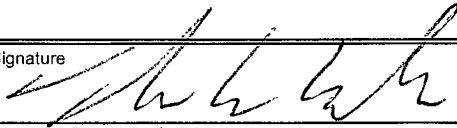
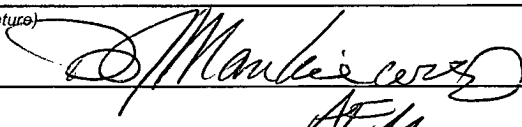
- Well plat certified by a registered surveyor
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
- Operator certification
- 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"	9-5/8" K-55	36 #	360'	158 sxs (225 ft3) - 100% excess
8-3/4"	7" K-55	23 #	4000'	417 sxs/ 44 sxs (1254 ft3) - 100%
6-1/4"	4-1/2" K-55 Liner	11.6#	3800' to 6200'	353 sxs (513 ft3) - 100%

SEE ATTACHED APD INFORMATION

NAD 83

Latitude: 36.71363889 Deg N
Longitude: -107.3227778 Deg W

25. Signature 	Name(Printed/Typed) Thomas E. Mullins	Date 10-7-2007
Title Engineering Manager		
Approved by (Signature) 	Name(Printed/Typed) AFM	Date 11/16/07
Title AFM	Office PFO	

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.

- Obtain a pit permit from NMOCD prior to constructing location

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

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 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 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 CT 9 2007

2040 South Pacheco.

Santa Fe, NM 87505 Bureau of Land Management

Bureau of Land Management
Farmington Field Office

State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-30395	*Pool Code 72319	*Pool Name BIANCO MESA VERDE / PAKOTA
*Property Code 36844	*Property Name SAN JUAN UNIT 29-5 UNIT COM	*Well Number 92
*OGRID No. 163458	*Operator Name SYNERGY OPERATING, L.L.C.	*Elevation 6607'

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
G	23	29N	5W		1655'	NORTH	1405'	EAST	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
18 Dedicated Acres 313.16 Acres. — (E/2)			19 Joint or Infill		14 Consolidation Code		18 Order No.		

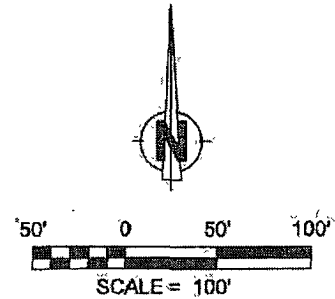
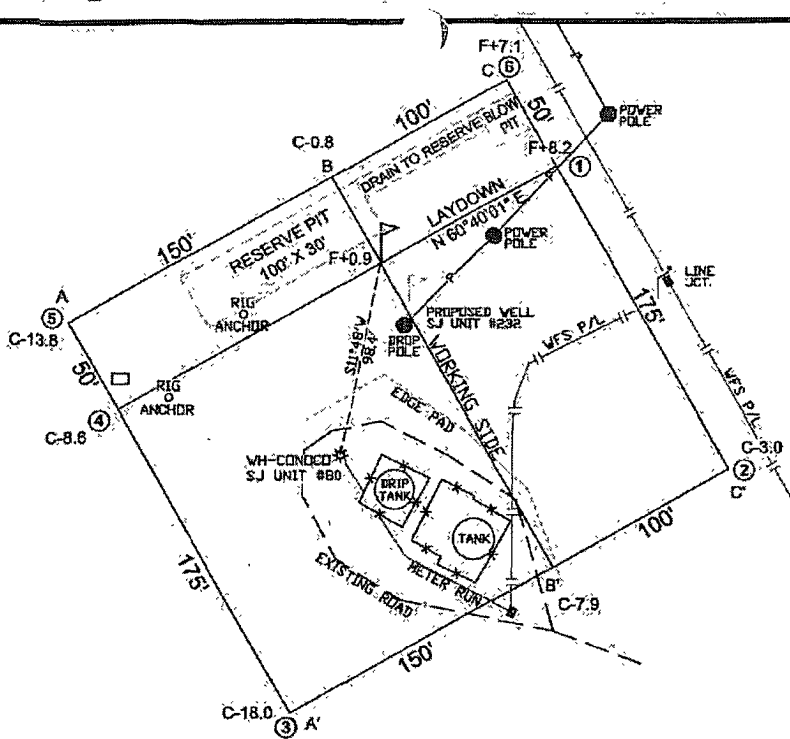
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

FND 2" BC
 GLO 1914
 S 89°50' E
 S 89°58'34" E
 2634.06' (R)
 2603.83' (M)
 FND 2" BC
 GLO 1914
 N 01°47' E
 N 01°47' E
 2630.89' (M)
 2640.00' (R)
 LAT. 36°42'49.1"N
 LONG. 107°19'22.0"W
 DATUM: (NAD 1983)
 1405'
 FND 2" BC
 GLO 1914
 23

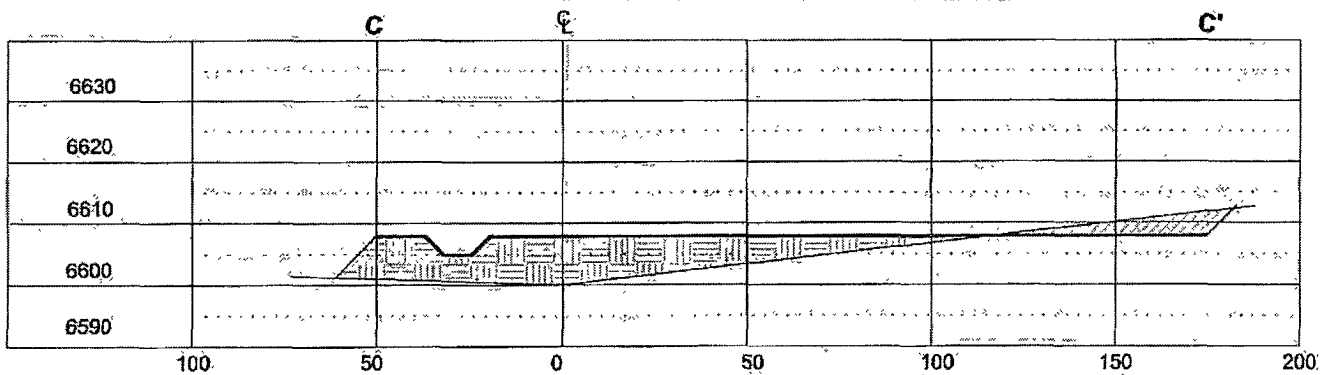
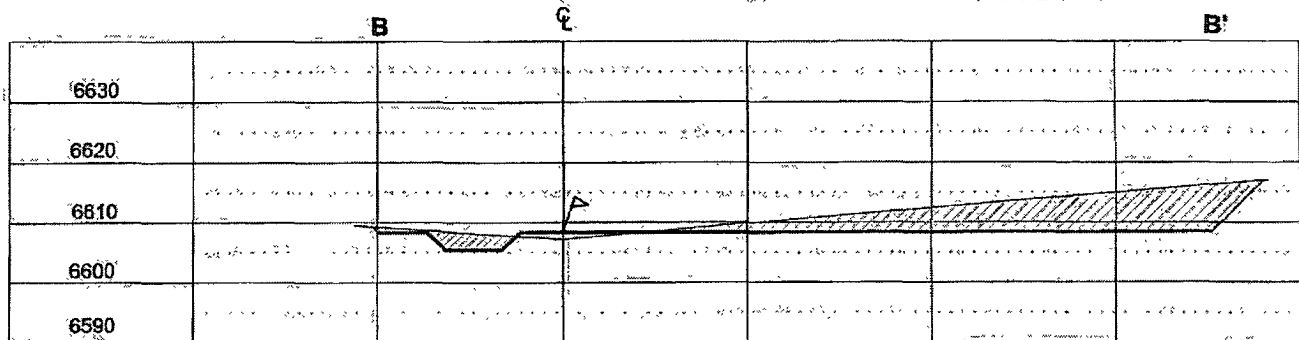
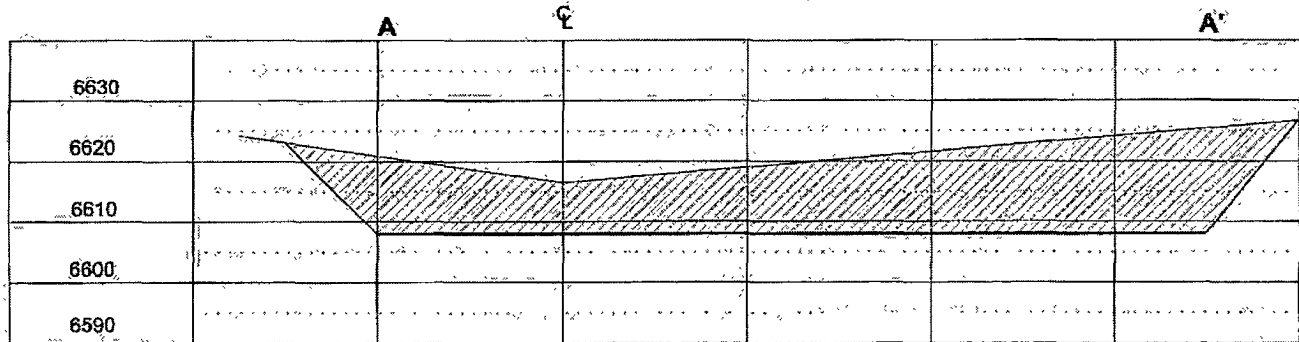
17. OPERATOR CERTIFICATION
 I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.
 COPY
 ORIGINAL DATED
 Signature
 Thomas E. Mullins
 Printed Name
 Engineering Manager
 Title
 2-23-06
 Date

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.
 JANUARY 03, 2006
 Date of Survey
 Signature and Seal of Professional Surveyor
 DAVID R. RUSSELL
 Certificate Number
 10201

SAN JUAN UNIT#92
1655' FNL & 1405' FEL
LOCATED IN THE SW/4 NE/4 OF SEC. 23,
T29N, R5W, N.M.P.M.,
RIO ARriba COUNTY, NEW MEXICO
ELEVATION: 6607', NAVD 88



LATITUDE: 36°42'49.1"N
LONGITUDE: 107°19'22.0"W
DATUM: NAD 83



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

~~RS~~

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

Synergy Operating LLC

Operations Plan

Well Name: San Juan 29-5 Unit Com # 92

Location: Unit G – 1655' FNL, 1405' FEL, Sec. 23, T-29-N, R-5-W, Rio Arriba Co. NM
Latitude 36 Deg 42 Min 49.1 Sec N, Longitude 107 Deg 19 Min 22.0 Sec W (NAD 83)
*** Decimal Degrees = 36.71363889 Deg North, 107.3227778 Deg West

Field: Blanco Mesaverde

Elevation: 6607' GL

GEOLOGIC PROGRAM

Formations:	Tops/Depth	Fluids
Ojo Alamo	2603'	Water
Kirtland	2813'	
Fruitland	3242'	Natural gas & produced water
Basal Fruitland Coal	3529'	Natural gas & produced water
Pictured Cliffs	3543'	Natural gas & produced water
Lewis Shale (Chacra)	4350'	Natural gas & produced water
Mesaverde – Cliffhouse	5430'	Natural gas & produced water
Meneffe		Natural gas & produced water
Point Lookout	5916'	Natural gas & produced water
Mancos	6108'	Natural gas & produced water
 TOTAL Depth	 6200'+/-	

Logging Program:

A) Cased Hole: GR-CCL-Neutron Log from PBTD to surface

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 1500-PSIG. A minimum of MMS Class 2 BOP equipment will be used.

DRILLING PROGRAM

Contractor: A local rotary drilling company is yet to be determined. It is anticipated that a surface casing setter may be utilized to run and cement the 9-5/8" Surface Casing to 400'. A larger rig will be moved in to drill the 8-3/4" hole and 6-1/4" hole with appropriate casing strings.

Mud Program: Freshwater based mud system will be utilized. Water sourced from commercial suppliers. Bentonite Gel and Polymer will be utilized as needed. No lost circulation zones are predicted.

Depth	Type	Viscosity	#'s/Gal
0-400'	Spud	40-50	8.4-8.9
400'-4000'	Low Solids, Non-dispersed	30-60	8.4-9.5*
4000' to 6200'	Air w/ Mist		

* 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 (Class 2) 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 2 Well Control Equipment rated to 3000 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: Following the installation of the 9-5/8" Surface Casing and its subsequent cementing to surface. A 11" 3000# double gate BOP Stack, w/ rotating head & choke manifold will be utilized. Prior to drilling out the 9-5/8" surface casing, both sets of rams and the 9-5/8" casing will be tested to a minimum of 1200#. Following the installation of the 7" 23# casing, the 7" production casing and both sets of rams on the 11" 3000# double gate preventer will again be tested to a minimum of 1500#. All tests will be charted and submitted for the record.

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"	9.625"	36#/ft	J-55/K-55	0' – 400'	0.8125"
8-3/4"	7.000"	23#/ft	J-55/K-55	0' – 4000'	0.547"
6-1/4"	4.500"	11.6#/ft	J-55/K-55	3800'-6200'	0.625"
2-3/8"	2.375"	4.7#/ft	J-55/K-55	6100'	n/a

Float Equipment & Centralizers:

9-5/8" Surface Casing: Cement Guide Shoe, 9-5/8" 36# casing to surface. Centralizers will be run on each collar of casing, for the planned 10 jts of casing. Surface casing will be run to a minimum depth of 360' to ensure protection of surface waters. No wiper plug will be run, cement will be just be displaced to within 40' of the shoe via swedge and pressure held overnight.

7" Production Casing: Cement guide shoe w/ float, 1-Jt 7" casing as shoe joint, float collar, and remaining 7" casing to surface. A centralizers will be run on every 3rd joint of casing. Additionally turbolizers will be deployed between the Kirtland and Ojo Alamo. Estimated total of twenty (xx) centralizers and xxxxxx (xx) turbolizers will be run.

4-1/2" Production Liner: A cement guide shoe/w float, 1 short jt 4-1/2" as shoe jt, float collar and approximately 2500' of 4-1/2" 11.6# K-55 casing, followed by a Baker Hyflow III Liner Hanger Packer followed by the 3-1/2" 13.3# Drill Pipe. A 4-1/2" Type I Liner Wiper plug and a 3-1/2" DP wiper plug will be utilized. The 4-1/2" liner will be cemented from TD into the 7" casing with 200 feet of overlap. Following cementing. The liner will be hung off with a packing element, and any residual cement reverse circulated to surface. No centralizers will be run in the air section of the hole (6.25" hole).

The 9-5/8" and 7" strings of casing will be circulated to the surface and topped off if necessary.

Wellhead Equipment:

A 9-5/8" 1500# wellhead will be screwed on to the top joint of the 9-5/8" surface casing, w/ 2" line pipe outlets. The 7" casing will be cut and hung inside a flanged 7-1/16" 5000# wellhead w/ 2" line pipe outlets. 2-3/8" production tubing is forecast to be run inside the 4-1/2" liner to surface.

Cementing Program:

9-5/8" Surface Casing: Pump 158-sxs (225-ft³) Type III Cement w/ 3% CaCl₂ + ¼-#/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 1200# for 15-Minutes.

7" Production Casing: Pump Lead 417-sxs (1,202-ft³) Type III Cement w/ ¼-#/sx Celloflake & Sodium Metasilicate. Yield = 2.88 ft³/sx, Slurry Weight = 11.5 PPG. Cement volume is 100% of annular excess to ensure circulation to surface. Tail w/ 44 sxs (52.6 ft³) Type III Neat Cement w/ 1% CaCl. Yield 1.18 ft³/sx. Slurry Weight 15.6 PPG. This shall leave sufficient high quality cement covering the shoe area. Wait on Cement (WOC) for 8-Hours. Pressure test production casing to 1500# for 15-Minutes.

4-1/2" Production Casing: Pump 353-sxs (513-ft³) Type III Cement w/ 1% CaCl₂ + 1/4-#/sx Celloflake + 0.2% FL-52 + 2-#/sx Pheno-Seal. Yield = 1.45 ft³/sx, Slurry Weight = 13.1 PPG. Pumping 100% excess to provide full cement coverage into 7" production casing. Liner Hanger will then be set and cement reverse circulated to surface.

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 ten (10) days.

Estimated Completion Time:

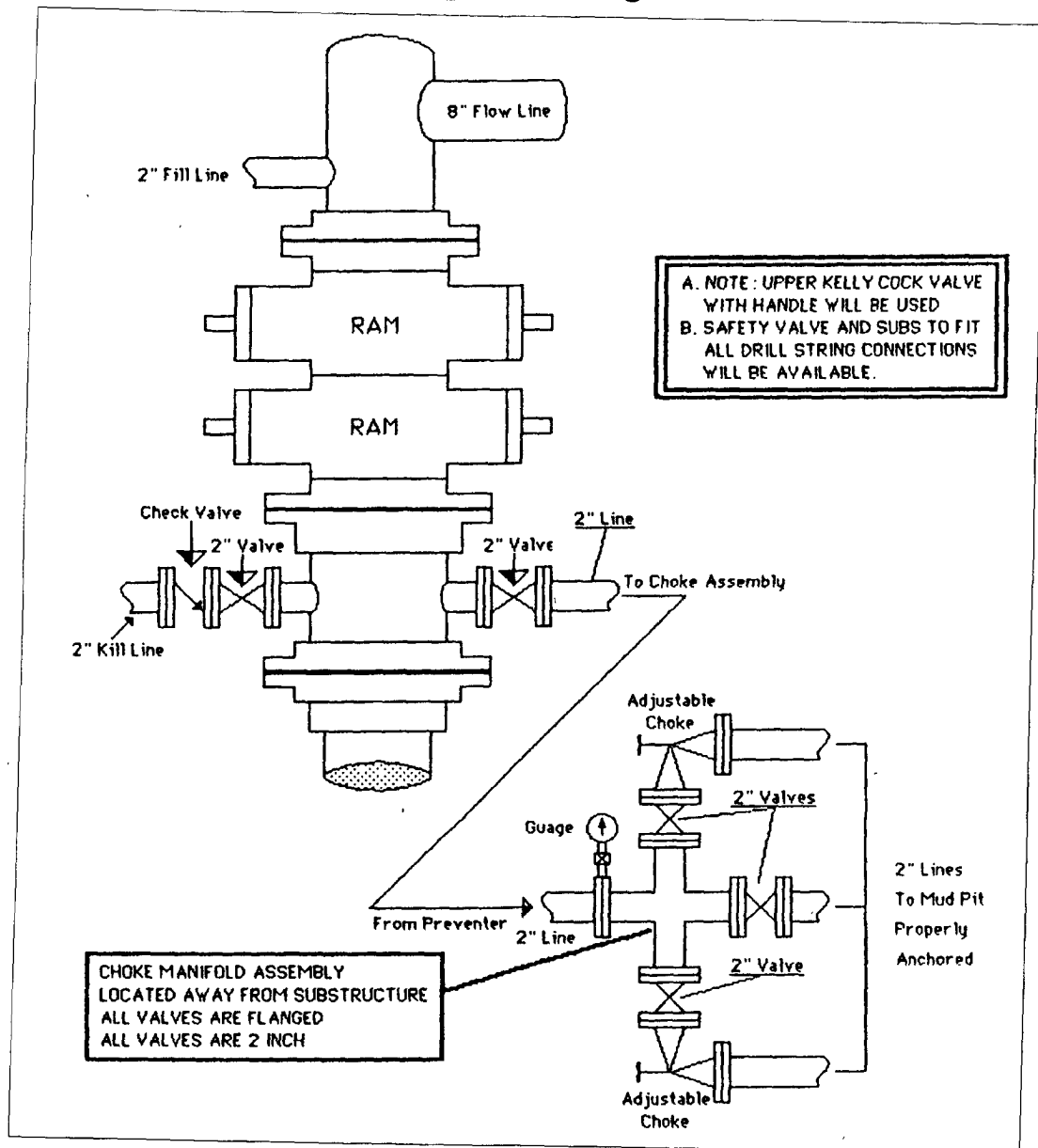
Rig completion activities are estimated to take approximately five (5) days. A single frac stage completion is anticipated followed immediately by installation of 2-3/8" production tubing.

Reserve Pit Construction/Closure:

The planned reserve pit is located on the attached plat. The pit will be lined with an approved lining material, a minimum of a 20 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.

Synergy Operating, LLC

San Juan Basin
3M BOPE - Class 2 BOPE
Minimum of 3000 psi Working Pressure



To Be Included in All Applications to Drill

Cement Calculations

San Juan 29-5 Unit Com # 92 (Mesaverde)

9-5/8" CSG 12.25" Hole Size

9-5/8" Casing Size

ANNULAR AREA CEMENT CALCULATIONS

12.25 ID OF HOLE

9.625 OD OF PIPE

0.055776 Bbls per Ft

0.313185 Ft3 per Ft

14.50 ppg

1.42 Cement Yield (ft3 per sack)

0.220553 Sacks per Ft

360 DEPTH OF CASING

20.07953 BBLS OF CEMENT 100%

112.7466 FT3 OF CEMENT NEEDED 100%

79.39898 SACKS OF CEMENT PER 100%

40.15906 DOUBLED BBLS OF CEMENT

225.4931 FT3 OF CEMENT (W EXCESS)

158.798 SACKS WITH EXCESS

7" CSG

LEAD Cement

8-3/4" Hole Size

7" Casing Size

ANNULAR AREA CEMENT CALCULATIONS

8.75 ID OF HOLE

7.00 OD OF PIPE

0.026773 Bbls per Ft

0.150329 Ft3 per Ft

11.5 ppg

2.88 Cement Yield (ft3 per sack)

0.052197 Sacks per Ft

4000 DEPTH OF CASING

107.0908 BBLS OF CEMENT 100%

601.315 FT3 OF CEMENT NEEDED 100%

208.7899 SACKS OF CEMENT PER 100%

214.1816 DOUBLED BBLS OF CEMENT

1202.63 FT3 OF CEMENT (W EXCESS)

417.5798 SACKS WITH EXCESS

Tail Cement

8-3/4" Hole Size

7" Casing Size

ANNULAR AREA CEMENT CALCULATIONS

8.75 ID OF HOLE

7.00 OD OF PIPE

0.026773 Bbls per Ft

0.150329 Ft3 per Ft

15 ppg

1.18 Cement Yield (ft3 per sack)

0.127397 Sacks per Ft

175 DEPTH OF CASING

4.685223 BBLS OF CEMENT 100%

26.30753 FT3 OF CEMENT NEEDED 100%

22.29452 SACKS OF CEMENT PER 100%

9.370447 DOUBLED BBLS OF CEMENT

52.61506 FT3 OF CEMENT (W EXCESS)

44.58903 SACKS WITH EXCESS

4-1/2" Liner

6-1/4" Hole Size

4-1/2" Casing Size

ANNULAR AREA CEMENT CALCULATIONS

6.25 ID OF HOLE

4.50 OD OF PIPE

0.018273 Bbls per Ft

0.102605 Ft3 per Ft

13.1 ppg

1.45 Cement Yield (ft3 per sack)

0.070762 Sacks per Ft

2500 Length of Liner

45.68358 BBLS OF CEMENT 100%

256.5133 FT3 OF CEMENT NEEDED 100%

176.9057 SACKS OF CEMENT PER 100%

91.36717 DOUBLED BBLS OF CEMENT

513.0267 FT3 OF CEMENT (W EXCESS)

353.8115 SACKS WITH EXCESS