7044 968 ATS-07-400

JUL 24 2007 OCD-ARTESIA

OCD-ARTESIA HIGH CAVEKARST

Form 3160-3
(September 2001)

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMLC050797

6. If Indian, Allottee or Tribe Name: N/A

7. If Unit or CA Agreement, Name and No.: NMNM010194

1a. Type of Work: ☒ DRILL ☐ REENTER

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

8. Lease Name and Well No.: Russell USA# 70 303506

2. Name of Operator: Apollo Energy, L.P. 248192

9. API Well No.: 30-015-36103

3a. Address: 6363 Woodway, Suite 1100, Houston TX 77057

3b. Phone No. *(include area code)*: (337)-502-5227

10. Field and Pool, or Exploratory: Russell Yates

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

At surface: 2310' From the West Line and 660' From the North Line

At proposed prod. zone: Same CAPITAN CONTROLLED WATER BASIN

11. Sec., T., R., M., or Blk. and Survey or Area: Sec. 13-20S-28E

14. Distance in miles and direction from nearest town or post office*: 8 miles North/Northeast of Carlsbad, New Mexico

12. County or Parish: Eddy County

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
660'	1200 Acres	320 Acres
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**
335'	1200'	NMB000458
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3257'	July 1st, 2007	7 - 14 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.

25. Signature: Name *(Printed/Typed)*: Scott St. John — Date: 6/19/07

Title: Agent for Apollo Energy, L.P.

Approved by *(Signature)*: /s/ James Stovall — Name *(Printed/Typed)*: /s/ James Stovall — Date: JUL 20 2007

Title: FIELD MANAGER — Office: CARLSBAD FIELD OFFICE

Application approval does not warrant or certify the 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. APPROVAL FOR TWO YEARS

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 reverse)

Witness Surface & Intermediate Casing

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

SUBJECT TO LIKE APPROVAL BY STATE

WFX – R-12887

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

DISTRICT II
1301 W. Grand Avenue, 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 Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 20
Submit to Appropriate District O
State Lease – 4 cc
Fee Lease – 3 cop

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	52820	

[4] Property Code	[5] Property Name	[6] Well Number
	RUSSELL USA	70

[7] OGRID No.	[8] Operator Name	[9] Elevation
	APOLLO ENERGY, L.P.	3257'

[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
C	13	20 SOUTH	28 EAST, N.M.P.M.		660'	NORTH	2310'	WEST	EDDY

[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.
320			

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

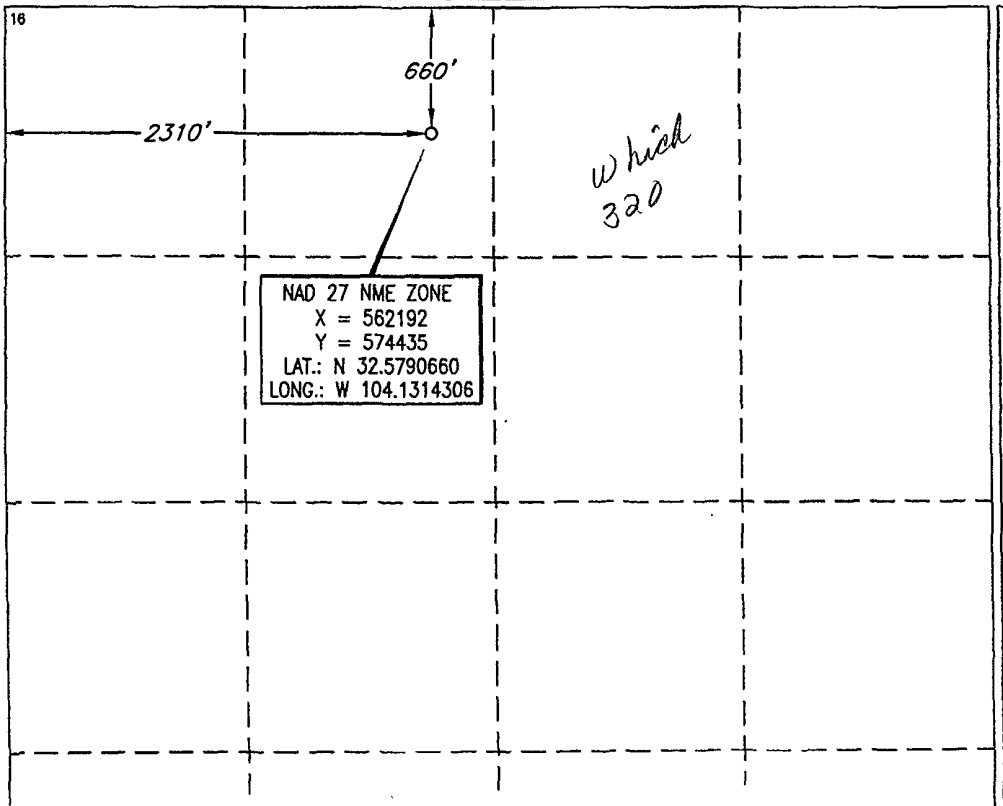


Exhibit A – Well Location and Acreage Dedication Plat

[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete t the best of my knowledge and belief, and that this organization either owns 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 locatio pursuant to a contract with an owner of such a mineral or working interes or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Notified Scott St John.

Signature Date

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 r supervision, and that the same is true and correct to th best of my belief.

MAY 5, 2007

Date of Survey

Signature and Seal of Professional Surveyor

V. L. BEZNER NEW MEXICO 7920 5-24-07

Certificate Number V. L. BEZNER R.P.S. #7920

JOB #123896 / 74 SW / E.U.O.

Drilling Program

APOLLO ENERGY, L.P.
Russell USA #70
2310' FWL & 660' FNL
Section 13-20S-28E Eddy County, New Mexico

Please address inquiries, questions, scheduling of meetings and deficiency statements, if any, to Scott St. John and/or Monica Smith at the address shown below:

Reagan Smith Energy Solutions, Inc.
2525 NW Expressway, Suite 312
Oklahoma City, OK 73112
405-286-9326
sstjohn@rsenergysolutions.com

Drilling Program
Apollo Energy, L.P.
Russell USA #70

2310' FWL & 660' FNL
Section 13-20S-28E Eddy County, New Mexico

2.1 Location:

2310' FWL & 660' FNL

2.2 Elevation Above Sea Level:

GR 3257'

2.3 Geologic Name of Surface Formation:

Permian Age

2.4 Drilling Tools and Associated Equipment:

Conventional rotary drilling rig using fluid will be used as a circulating medium for solids removal.

2.5 Proposed Drilling Depth:

1200'

2.6 Estimated Tops of Geological Markers:

Yates	725'
Seven Rivers	910'
Total Depth	1,200'

2.7 Estimated Depths of Anticipated Fresh Water, Oil, and Gas

Surface	Water	44' – 360'
Yates	Oil/Gas	750' – 800'
Seven Rivers	Oil/Gas	920' – 950'

Base to Treatable Water for well #70 is: 360'

Groundwater to be protected by 8-5/8" surface casing with cement circulated to the surface. Potentially productive horizons to be protected by 4-1/2" production casing with cement tied back to a minimum of the surface casing but with anticipation to circulate to surface.

SEE COA

2.8 Casing Program

Hole Size	Interval	Casing OD	Weight	Thread	Collar	Grade
11"	0 – 385'	8-5/8"	24	STC	STC	J-55
6-3/4"	0 - 1200'	4-1/2"	9.5	STC	STC	J-55

2.9 Cementing & Setting Depth

Surface 8-5/8" – Cement 8-5/8", 24#, J-55 casing with 125 sx of Class "C" cement with 2% CaCl + 1/4 # /sx Flocele. Run Floatshoe and 5 centralizers. Casing specs: collapse resistance is 1370 psi; yield pressure is 2950 psi; Joint strength is 244,000 psi; body yield strength is 381,000.

Production 4-1/2" – Set 1,200' of 4-1/2" J-55 9.5# STC casing. Cement will consist of 150 sks of Class "C" cement with 2% gel, 5 # sx of salt and .75% CFR-2. Use guide shoe and float collar, and 10-12 centralizers where necessary. Use top and bottom rubber plugs, displace cement with clean, fresh water treated with 2% KCL. Casing specs: collapse resistance is 3310 psi; yield pressure is 4380 psi; Joint strength is 101,000 psi; body yield strength is 152,000.

2.10 Pressure Control Equipment

An 8" 1000 psi working pressure B.O.P. will be installed. A choke manifold and accumulator with floor and remote operating stations and auxiliary power system. A Kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. BOP unit will be hydraulically operated. BOP will be nippled up on the 8-5/8" casing and will be operated at least once a day while drilling. No abnormal pressure or temperature is expected while drilling.

2.11 Proposed Mud Circulating System

Depth	Mud Wt	Viscosity	Fluid Loss	Type Mud
0 – 385'	8	33 - 35	NC	Spud with Bentonite/Soda Ash/Caustic slurry using a Fresh Water Gel. Set Surface Casing.
385' – 1200'	9.5 – 9.8	50 – 60, 45 SEC at TD	NC	Fresh water. Drill out using Brine Salt Gel to insure that salt and anhydrite sections do not wash

open per Scott Stidham 6/20/07

The Mud System will be a ~~closed~~ system. All drill cuttings and liquid mud will be hauled to an approved site for disposal. Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. The viscosity and water loss may have to be adjusted in order to meet these needs.

2.12 Evaluation Program:

1. **Samples:** None
2. **Electric Logging:** Dual Induction Tool with Gamma Ray; Density Neutron Porosity Log
3. **Coring:** Yates Formation
4. **Drill Stem Tests:** No DST's

2.13 Potential Hazards:

No abnormal pressures or temperatures or H2S has are expected. Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used. Estimated BHP 300 PSI, estimated BHT 80.

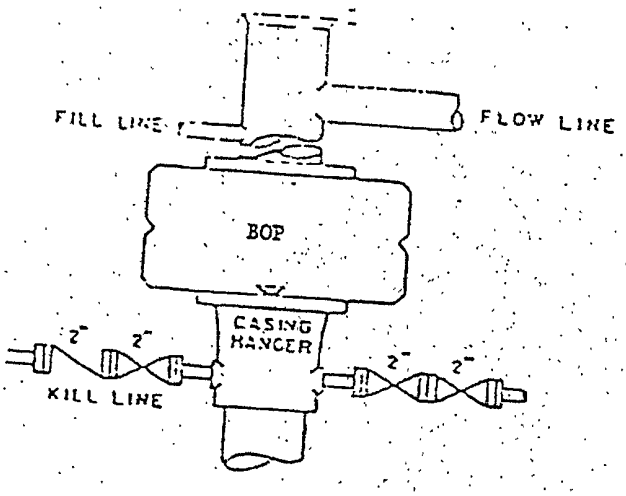
2.14 Anticipated Starting Date and Duration of Operations:

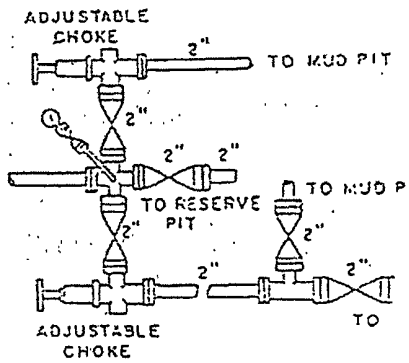
Lease road upgrades and location construction will begin after BLM approval of APD. Anticipated spud date is July 1st, 2007. Total duration of work is estimated to be 7 – 14 days.

2.15 Downhole Conditions:

Zones of Possible Lost Circulation:	Surface Interval
Zones of Abnormal Pressure:	None
Maximum Bottom Hole Temperature:	80 Degrees Fahrenheit
Maximum Bottom Hole Pressure:	300 psi

Exhibit E – Well Control Equipment / Blowout Preventor Stack and Choke Manifold





ANNULAR BOP STACK

PRESSURE 1000#

Hydrogen Sulfide Drilling Operations Plan

APOLLO ENERGY, L.P.
Russell USA #70
2310' FWL & 660' FNL
Section 13-20S-28E Eddy County, New Mexico

Please address inquiries, questions, scheduling of meetings and deficiency statements, if any, to Scott St. John and/or Monica Smith at the address shown below:

Reagan Smith Energy Solutions, Inc.
2525 NW Expressway, Suite 312
Oklahoma City, OK 73112
405-286-9326
sstjohn@rsenergysolutions.com

Hydrogen Sulfide Drilling Operations Plan
Apollo Energy, L.P.
Russell USA #70

2310' FWL & 660' FNL
Section 13-20S-28E Eddy County, New Mexico

3.1. Training

All company and contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of H2S
B. Physical effects and hazards
C. Proper use of safety equipment and life support systems
D. Principle and operation of H2S detectors, warning system and briefing
E. Evacuation procedure, routes, and first aid
F. Proper use of 30 minutes pressure demand air pack

3.2. H2S Detection and Alarm Systems

A. H2S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse

3.3. Windsock and/or wind streamers

A. windsock at mudpit area should be high enough to be visible
B. Windsock at briefing area should be high enough to be visible
C. There should be a windsock at entrance to location

3.4. Condition Flags and Signs

A. Warning sign on access road to location
B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger – H2S present in dangerous concentration. Only emergency personnel admitted to location.

3.5. Well Control Equipment

A. See Exhibit "E"

3.6. Communications

A. While working under masks chalkboards will be used for communication
B. Hand signals will be used where chalk board is inappropriate
C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

3.7. Drillstem Testing

A. Exhausts will be watered
B. Flare line will be equipped with an electric ignitor or a propane pilot light in the event that gas reaches the surface
C. If location is near any dwelling a closed DST will be performed

3.8. Supervision

A. Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment

3.9. Mud System

A. If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

SURFACE USE PLAN
Apollo Energy, L.P.
Russell USA #70
2310' FWL & 660' FNL
Section 13-20S-28E
Eddy County, New Mexico

4.1 Existing Roads:

Area Maps, Exhibit "G" is a reproduction of Eddy Co. General Highway map. Exhibit "C" is a reproduction of a USGS Topographic Map showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.

A. Exhibit "A" shows the proposed well site as staked
B. Detailed Directions to Location – From junction of Greene Street (US 62 US 180), go North 8.0 miles on Magnum Road; thence, West 0.7 miles on lease road, thence southeast 0.2 miles on lease road to a point approximately 80' East of the Russell USA#70 Well location.

4.2 Planned Access Roads

The final .125 miles is an existing trail road which will be upgraded, the remaining of the existing lease road will also be upgraded.

4.3 Location of Existing Wells in a One-Mile Radius Exhibit "H"

A. Water wells -	None Known
B. Disposal wells -	4– Russell USA # 47, #48, #60 & #65
C. Drilling wells -	None Known
D. Producing wells -	7 - Russell USA #6, #14, #18, #25, #38, #56 and #69
E. Abandoned wells -	None Known

4.4 Additional Maps and Plats

See Exhibit "D" for the Rig Layout and Exhibit "E" for well control equipment.

4.5 Location and Typed of Water Supply

Water will be purchased locally from a commercial source and trucked to holding tank in field.

4.6 Source of Construction Material

If possible, construction will be obtained from the excavation of drill site; if additional material is needed it will be purchased from a local source and transported over the access route as shown on Exhibit "B".

4.7 Methods of Handling Waste Material

A. Drill cuttings will be disposed of in a cuttings pit.
B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
E. Excess fluids will be hauled off by transports and be disposed of at a state approved disposal facility. Later pit area will be leveled and contoured to conform with the original and surrounding area. Water and any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

4.8 Ancillary Facilities

A. No camps or airstrips to be constructed.

4.9 Well Site Layout

A. Exhibit "D" Rig layout
B. This exhibit indicates proposed location of reserve and trash pits and living facilities
C. Mud pits in the active circulating system will be ~~steel pits~~ with a cuttings pit. The cuttings pit liner will be 6 mils thick PVC or polyethylene. Pit liner will extend a minimum 2' over the cuttings pit, where it will be anchored down.
D. Upon completion of the well, all excess fluids will be suctioned off from the cuttings pit and hauled off for proper disposal.

open pit scott st. John 4/20/07 CR

E. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

4.10 Plans for Restoration of Surface

Rehabilitation of the location and reserve pit will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

The reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

4.11 Other Information

B. Topography consists of a relatively flat surface with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
C. The well site is on surface owned by The United States Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
D. An Archeological survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Carlsbad BLM office.
E. There are no known dwellings within 1 mile of this location.

4.12 Operators Representative

Before and During Drilling
Gregory H. Hall
P.O. box 30444
Edmond, OK 73003
Office Phone: 405-630-7620

After Construction
Tommy Wright
4823 Ihles Road
Lakes Charles, LA 70605
337-502-5227
337-502-5230

4.13 Certification

CERTIFICATION: I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exit; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Encore Operating and/or its contractors/subcontractors and is in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

Date: 6/19/07

Name: Scott St. John

Title: Project Mgr

Scott St. John, Agent for Apollo Energy, L.P.

Please address inquiries, questions, scheduling of meetings and deficiency statements, if any to Scott St. John and/or Monica Smith at the address shown below:

Reagan Smith Energy Solutions, Inc.
2525 NW Expressway, Suite 312
Oklahoma City, Oklahoma 73112
(405) 286-9326

Conditions of Approval
Cave and Karst

EA#: NM-520-07-0968
Lease #: LC-050797
Apollo Energy, L.P.
Russell USA Fed. #70, #71, #72, #73, #74

Cave/Karst Surface Mitigation
The following stipulations will be applied to minimize impacts during construction, drilling and production.

Berming:
Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

Cave/Karst Subsurface Mitigation
The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. Use depth to the deepest expected fresh water as listed in the geologist report.

Casing:
All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a void (bit drops) of four feet or more and circulation losses greater then 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

Record Keeping:

The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence of absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

CONDITIONS OF APPROVAL - DRILLING

Operator's Name:	**Apollo Energy, L.P.**
Well Name & No.	**70-Russell USA**
Location:	**0660' FNL, 2310' FWL, Sec. 13, T-20-S, R-28-E, Eddy County, NM**
Lease:	**NMLC 050797**

I. DRILLING OPERATIONS REQUIREMENTS:

A. The Bureau of Land Management (BLM) is to be notified a minimum of 2 hours in advance for a representative to witness:

1. Spudding well
2. Setting and/or Cementing of all casing strings
3. BOPE tests

- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822.

B. Although Hydrogen Sulfide has not been reported in the area, it is always a possible hazard.

C. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

II. CASING:

A. The **8-5/8** inch surface casing shall be set **above the salt at approximately 385 feet** and cemented to the surface.

1. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
2. Wait on cement (WOC) time for a primary cement job will be a minimum of 18 hours, 24 hours in the potash area or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
3. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
4. **If cement falls back, remedial action will be done prior to drilling out that string.**

Possible lost circulation in the Yates and Seven Rivers.
High potential for cave/karst features.

B. The minimum required fill of cement behind the **4-1/2** inch production casing is cement to surface. If cement does not come to surface, see A.1 thru 4. **Cement to surface due to high cave/karst.**

C. If hardband drill pipe is rotated inside casing; returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

III. PRESSURE CONTROL:

A. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

B. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** PSI. This can be a 2M annular.

C. The appropriate BLM office shall be notified a minimum of 2 hours in advance for a representative to witness the tests.

1. The tests shall be done by an independent service company.
2. The results of the test shall be reported to the appropriate BLM office.
3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

Engineer on call phone (after hours): Carlsbad - 505-706-2779

WWI 071707