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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

5. Lease Serial No.  
**103856**

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

7. If Unit or CA Agreement, Name and No.  
**N/A**

8. Lease Name and Well No.

**Partagas "32" Fed Com #1H**

9. API Well No.

**30-005-63873**

1a. Type of work: ☒ DRILL ☐ REENTER

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

Name of Operator  
**BC Operating, Inc.**

3a. Address **731 W. Wadley, Suite L-200  
Midland, TX 79705**

3b. Phone No. (include area code)  
**432-684-9696**

10. Field and Pool, or Exploratory  
**Wildcat Wolfcamp (Gas)**

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

At surface **660' FSL, 660' FWL**

At proposed prod. zone **660' FNL, 660' FWL**

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

**Sec 32, T13S, R27E**

14. Distance in miles and direction from nearest town or post office\*  
**Approximately 3 1/2 miles Northeast from Hagerman**

12. County or Parish  
**Chaves**

13. State  
**NM**

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) **660'**

16. No. of acres in lease  
**320**

17. Spacing Unit dedicated to this well  
**320**

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft. **N/A**

19. Proposed Depth  
**5500' TVD; 9950' TMD**

20. BLM/BIA Bond No. on file  
**BLM Bond #432-564**

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
**3419'**

22. Approximate date work will start\*  
**10/25/2006**

23. Estimated duration  
**60 days**

24. Attachments

**ROSWELL CONTROLLED WATER BASIN**

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature  
*Denise Menoud*  
Title  
**Regulatory Specialist**

Name (Printed/Typed)  
**Denise Menoud**

Date  
**08/29/2006**

Approved by  
**DAVID R. GLASS**  
Title  
**Assistant Field Manager,**  
**Lands And Minerals**

Name (Printed/Typed)  
**DAVID R. GLASS**  
Office  
**ROSWELL FIELD OFFICE**

Date  
**NOV 14 2006**  
**APPROVED FOR 1 YEAR**

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.

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)

**APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS ATTACHED**

**DECLARED WATER BASIN**

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

**WITNESS**

## EXHIBIT "E"

## DISTRICT I

1625 N. French Dr., Hobbs, NM 88240

## DISTRICT II

811 South First, Artesia, NM 88210

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

2040 South Pacheco, Santa Fe, NM 87505

## State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised March 17, 1999

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## OIL CONSERVATION DIVISION

2040 South Pacheco

Santa Fe, New Mexico 87505

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 97489	Pool Name Wildcat (g.); Wolfcamp (Gas)
Property Code	Property Name PARTAGAS "32" FEDERAL COM	Well Number 1
OGRID No. 160825	Operator Name BC OPERATING, INC.	Elevation 3419'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	32	13 S	27 E		660	SOUTH	660	WEST	CHAVES

## 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
D	32	13 S	27 E		660	NORTH	660	WEST	CHAVES
Dedicated Acres 320	Joint or Infill	Consolidation Code	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

	<b>OPERATOR CERTIFICATION</b>  I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  <i>Denise Menoud</i> Signature Denise Menoud, Agent Printed Name for BC Oper. Regulatory Specialist Title 8/29/06 Date	
	<b>SURVEYOR CERTIFICATION</b>  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.   Date Surveyed Signature Professional Surveyor 7977 Certificate No. Gary L. Jones 7977 BASIN SURVEYS	

BC Operating  
 Partagas "32" Federal Com #1  
 SL: 660' FSL & 660' FWL  
 BHL: 660' FNL & 660' FWL  
 Sec.32-T13S-R27E  
 Chaves County, NM

W/2 spacing Unit 320 acres.  
 Wolfcamp test

1. Proposed drilling depth and well plan:

This is a 9950' MD Wolfcamp test. Drill an 8 3/4" hole to a TVD of +/- 5500'. Run logs. Set cement kick off plug from +/-5500'- +/- 5000' . Kick well off at +/- 5000' to 90 degrees at +/- 5400' TVD. Drill an 8 3/4" hole horizontally to bottom hole location. Run 5 1/2" Casing to TD and cement in place.

2. Estimated tops of geological markers:

Queen	700'
San Andres	1200'
Tubb	3700'
Abo	4400'
Wolfcamp	5350'

3. Hole Size & Casing Program

Hole size	Interval	OD of Casing	Weight	Thread	Collar	Grade
17-1/2"	0' - +/-300'	13-3/8"	48#	8rd	STC	H40
12 1/4"	+/-300' - +/-1300'	9-5/8"	40#	8rd	STC	J-55
7-7/8"	+/-1300' - 9950'	5-1/2"	17#	8rd	LTC	N-80

4. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0'- 300'	8.4-9.2	28-35	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH
300'- 1300'	9.0- 9.2	28-35	NC	<i>Fresh water</i> Cut brine mud, lime for PH and paper for seepage and sweeps.
1300' - 5000'	8.7 - 8.8	NC	NC	Drill section with Cut Brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.
5000' - 9950'	8.8-9.0	32-40	25cc	Drill section with Cut Brine. Increase vis w/ salt gel and drop fluid loss with starch. Paper for sweeps. Circulate steel pits

5. Pressure Control Equipment:

After setting 13 3/8" casing and installing 3000# casing spool, NU annular BOP. Test annular BOP, manifold and casing to 1250 psig w/ rig pump

After setting 9 5/8" casing and installing 3000# casing spool, NU 3000# double ram BOP and 3000# annular BOP. Test double ram BOP and manifold to 3000# and annular to 1500# using an independent tester.

6. Logging program

Compensated Neutron: TD of +/- 5500' TVD to surface  
Litho-Density: TD of +/- 5500' TVD to +/- 1300'  
Laterolog: TD of +/- 5500' TVD to +/- 1300'

No logs in Horizontal section

7. Cementing

**WITNESS**

13 3/8" surface +/- 300'

Set +/- 300' of 13 3/8" 48# STC casing. Cement w/ 200 sx 35:65 Poz:C + additives followed by 200 sx + 2% CaCl<sub>2</sub>. Circ. cement

**WITNESS**

9 5/8" Intermediate +/- 1300'

Set +/- 1300' of 9 5/8" 40# J-55 STC casing. Cement w/ 500 sx Class "C" light cement + additives followed by 200 sx Class "C" + 2% CaCl<sub>2</sub>. Circ. cement

5 1/2" Production +/- 9950'

Set +/- 9950' of 5 1/2" 17# N-80/J-55 casing. Cement w/ 500 sx Class "H" + additives. Est TOC @ +/- 5000'

**SURFACE USE AND OPERATIONS PLAN FOR  
DRILLING, COMPLETION, AND PRODUCING**

**BC Operating, Inc.  
Partagas "32" Federal Com #1  
Section 32, T-13-S, R-27-E,  
SL: 660 FSL, 660 FWL  
BHL: 660 FNL, 660 FWL  
Chaves County, New Mexico**

**LOCATED**

3 miles northeast of Hagerman, New Mexico

**OIL & GAS LEASE**

BLM 103856

**BOND COVERAGE**

\$50,000 statewide bond of BC Operating, Inc.

**ACRES IN LEASE**

320

**POOL**

Chaves Co. undesignated, Wolfcamp; (Gas)

**OIL & GAS RECORD LESSEES**

NW/4 – Charles D. Ray

SW/4 – Devon Energy

**GRAZING LEASE**

NW/4 - L. J. Wiggins Ranch, Ltd.

Jane Wiggins

Alan Graves

Kathleen E. Glover

SW/4 - Gomez Revocable Living Trust; Gilbert & Elsie Gomez

**SURFACE OWNERS**

NW/4 - State of New Mexico

SW/4 – Gomez Revocable Living Trust; Gilbert & Elsie Gomez

BLM - Minerals

**EXHIBITS**

- |              |  |
|--------------|--|
| A, A-1,2,3,4 | Area Road Map                                |
| B            | Drilling Rig Layout                          |
| C            | Vicinity Oil & Gas Map                       |
| D            | Topographic & Location Verification Map      |
| E, E-1       | Well Location & Acreage Dedication Maps      |
| F, F-1       | BOPE Schematic & Choke Manifold – 5M Service |

This well will be drilled to a depth of approximately 5500' TVD.

**1. EXISTING ROADS**

- A. Exhibit A is a portion of a section map showing the location of the proposed well as
  - B. staked.
- C. Exhibit C is a map showing existing roads in the vicinity of the proposed well site.
- D. Directions to well location:  
FROM THE JUNCTION OF STATE HWY 249 AND QUAIL, GO WEST  
THEN NORTH TO COUNTY ROAD 14 THENCE NORTH ON LEASE  
ROAD 0.1 MILE TO PROPOSED LEASE ROAD TO THE PARTAGAS  
"32" FED COM #1.

**2. ACCESS ROADS**

- A. Length and Width

The access road will be built and is shown on Exhibit A.  
The length of the road is 5425.2' and the width is 30'.

- B. Surface Material

Existing

- C. Maximum Grad

Less than five percent

D. Turnouts

As necessary

E. Drainage Design

Existing

F. Culverts

As necessary

G. Gates and Cattle Guards

As needed

**3. LOCATION OF EXISTING WELLS**

Existing wells in the immediate area are shown in Exhibit C.

**4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES**

Necessary production facilities for this well will be located on the well pad.

**5. LOCATION AND TYPE OF WATER SUPPLY**

It is not contemplated that a water well will be drilled. Water necessary for drilling will be purchased and hauled to the site over existing roads shown on Exhibit A & Exhibit D.

**6. METHODS OF HANDLING WASTE DISPOSAL**

- A. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.
- B. Water produced during tests will be disposed of in the drilling pits.
- C. Oil produced during tests will be stored in test tanks.
- D. Trash will be contained in a trash trailer and removed from well site.
- E. All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations.

**7. ANCILLARY FACILITIES**

None required.

**8. WELL SITE LAYOUT**

Exhibit B shows the relative location and dimensions of the well pad, mud pits, reserve pit, and trash pit, and the location of major rig components.

**9. PLANS FOR RESTORATION OF THE SURFACE**

- A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. The well site will be cleaned of all trash and junk to leave the site in an as aesthetically pleasing condition as possible.
- B. After abandonment, all equipment, trash, and junk will be removed and the site will be clean.



**10. OTHER INFORMATION**

**A. Topography**

The land surface at the well site is rolling native grass with a regional slope being to the south east.

**B. Soil**

Topsoil at the well site is sandy soil.

**C. Flora and Fauna**

The location is in an area sparsely covered with shiner and range grasses.

**D. Ponds and Streams**

There are no rivers, lakes, ponds, or streams in the area.

**E. Residences and Other Structures**

There are no residences within a mile of the proposed well site.

**F. Archaeological, Historical, and Cultural sites**

None observed on this area.

**G. Land Use**

Grazing

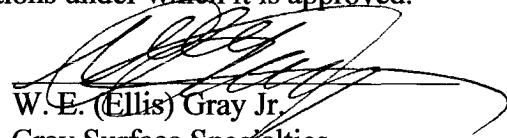
**11. OPERATOR'S REPRESENTATIVE**

W.E (Ellis) Gray Jr.  
3106 N. Big Spring St, Ste. 100  
Midland, Texas 79705  
Office: (432) 685-9158

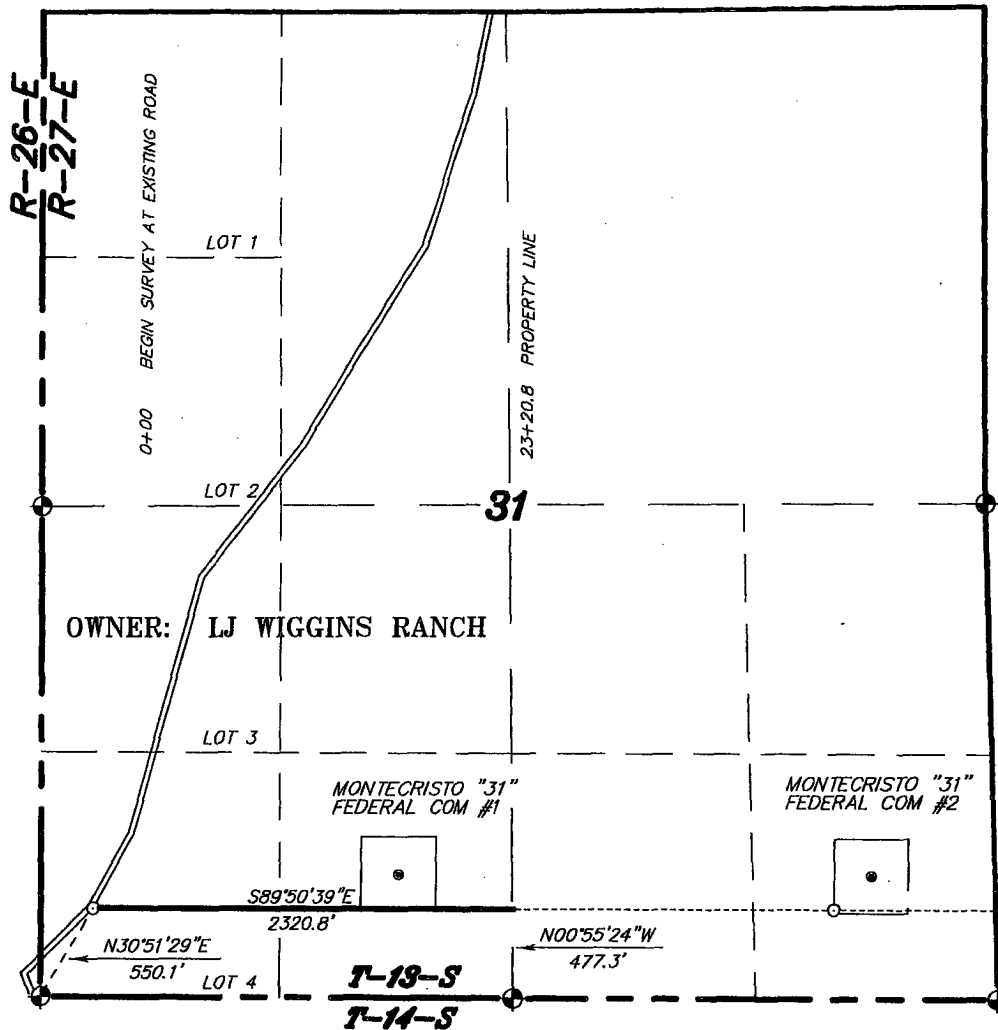
**12. CERTIFICATION**

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 presently exist; 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 preformed by the BC Operating, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

8/29/06  
Date

  
W. E. (Ellis) Gray Jr.  
Gray Surface Specialties  
Agent for BC Operating, Inc.

**SECTION 31, TOWNSHIP 13 SOUTH, RANGE 27 EAST, N.M.P.M.,  
CHAVES COUNTY, NEW MEXICO.**



**LEGAL DESCRIPTION**

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 31, TOWNSHIP 13 SOUTH, RANGE 27 EAST, N.M.P.M., CHAVES COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT ON WHICH LIES N.30°51'29"E., 550.1 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 31; THENCE S.89°50'39"E., 2320.8 FEET TO A POINT ON THE EAST PROPERTY LINE WHICH LIES N.00°55'24"W., 477.3 FEET FROM THE SOUTH QUARTER CORNER OF SAID SECTION 31. SAID STRIP OF LAND BEING 2320.8 FEET OR 140.65 RODS IN LENGTH.

LOT 4 = 1034.9 FEET = 62.72 RODS

SE/4 SW/4 = 1285.9 FEET = 77.93 RODS

I HEREBY CERTIFY THAT THIS MAP WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES

No. 7977  
No. 5074

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 6630

Drawn By: J. M. SMALL

Date: 08-04-2006

Disk: JMS 6630R

Survey Date: 08-04-2006

Sheet 1 of 4 Sheets

1000 0 1000 2000 FEET

**B.C. OPERATING, INC.**

REF: PROP. ROAD TO THE PARTAGAS "32" FEDERAL COM #2

A ROAD CROSSING FEE LAND IN SECTION 31,  
TOWNSHIP 13 SOUTH, RANGE 27 EAST,  
N.M.P.M., CHAVES COUNTY, NEW MEXICO.

## BOPE SCHEMATIC

Rotating Head (Optional)  
Drilling Nipple option  
must include a fill-up  
line. Do not use kill line  
for fill up.

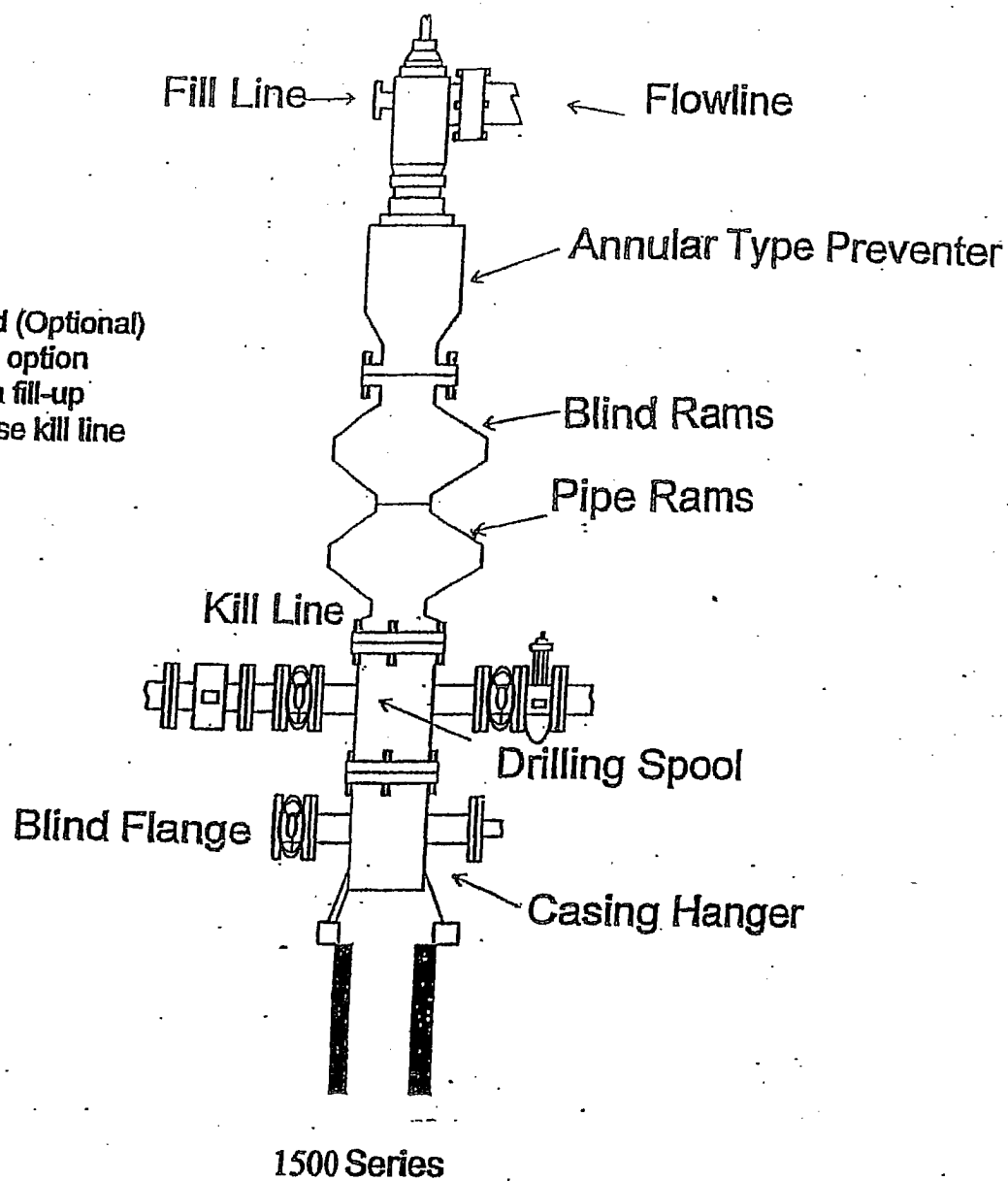
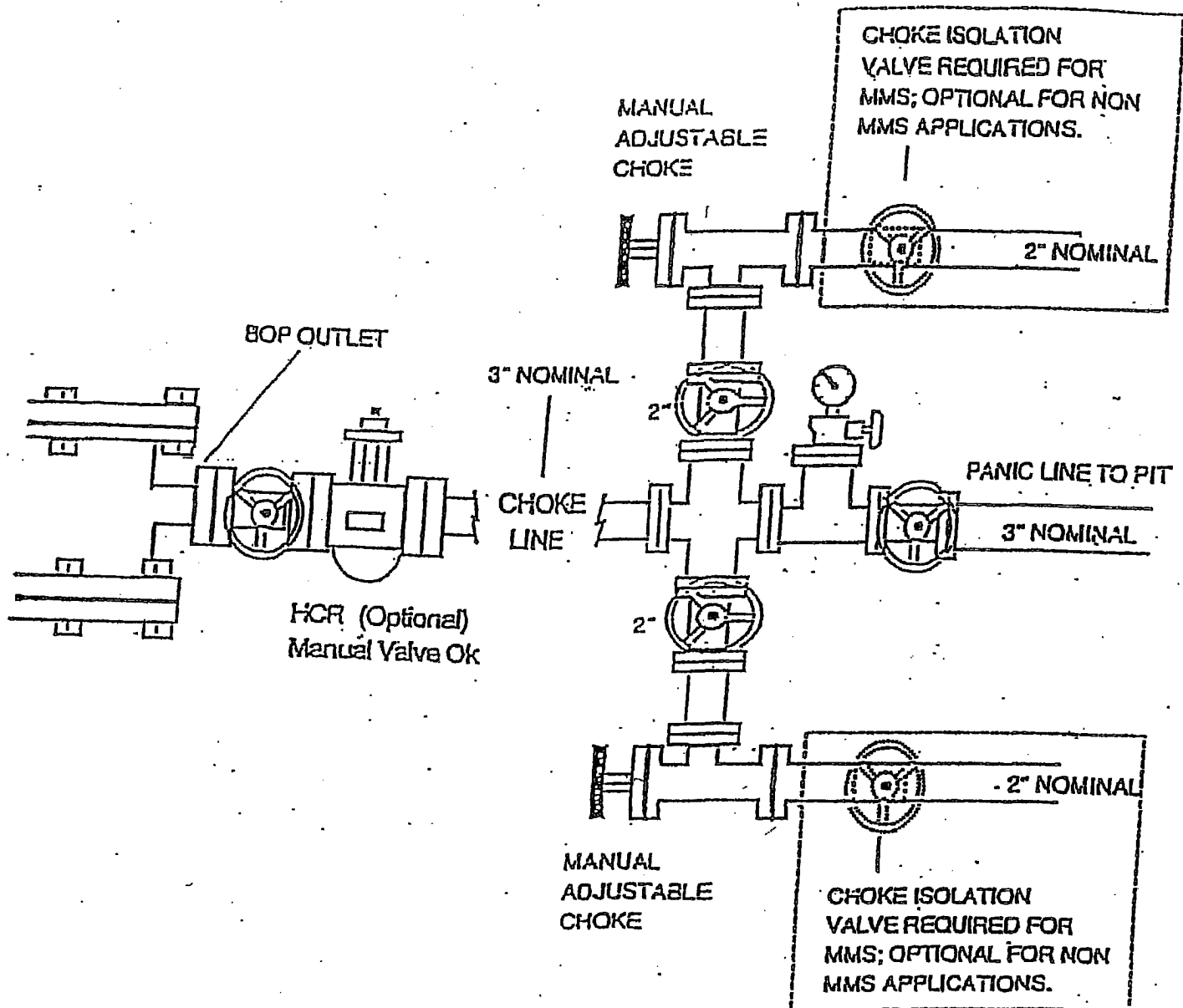


EXHIBIT "F-1"

CHOKE MANIFOLD  
5M SERVICE



# **BC OPERATING, INC.**

**HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN  
FOR DRILLING / COMPLETING / WORKOVER / FACILITY  
WITH THE EXPECTATION OF H<sub>2</sub>S IN EXCESS OF 100 PPM**

**PARTAGAS "32" FEDERAL COM #1  
NEW DRILL WELL  
SL: 660' FSL & 660' FWL  
SECTION 32, T13S, R27E  
CHAVES COUNTY, NEW MEXICO**

**This well / facility is not expected to have H<sub>2</sub>S, but the following is submitted as requested.**

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## **GENERAL H2S EMERGENCY ACTIONS**

In the event of any evidence of H2S emergency, the following plan will be initiated:

1. All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (self-contained breathing apparatus).
3. Always use the "buddy system".
4. Isolate the well / problem if possible.
5. Account for all personnel.
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the company representative as soon as possible if not at the location (use the enclosed call list as instructed).

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

## **EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S**

1. All personnel will don the self-contained breathing apparatus.
2. Remove all personnel to the "safe area: (always use the "buddy system")".
3. Contact company representative if not on location.
4. Set in motion the steps to protect and / or remove the general public to any upwind "safe are". Maintain strict security and safety procedures while dealing with the source.
5. No entry to any unauthorized personnel.
6. Notify the appropriate agencies:      City Police - City streets  
   State Police - State Roads  
   County Sheriff - County Roads
7. Call the NMOCD.

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way, he will immediately notify public safety personnel.



## **EMERGENCY CALL LIST**

	<u>Office</u>	<u>Cell</u>	<u>Home</u>
Erick Nelson	432-683-7443	432-238-7591	432-694-8032
John Coffman	432-683-7443	432-557-0406	N/A

## **EMERGENCY RESPONSE NUMBERS**

**Eddy County, New Mexico**

<b>State Police</b>	<b>505-748-9718</b>
<b>Eddy County Sheriff</b>	<b>505-746-2701</b>
<b>Emergency Medical Services (Ambulance)</b>	<b>911 or 505-746-2701</b>
<b>Eddy County Emergency Management (Harry Burgess)</b>	<b>505-887-9511</b>
<b>State Emergency Response Center (SERC)</b>	<b>505-476-9620</b>
<b>Carlsbad Police Department</b>	<b>505-885-2111</b>
<b>Carlsbad Fire Department</b>	<b>505-885-3125</b>
<b>New Mexico Oil Conservation Division</b>	<b>505-748-1283</b>
<b>Callaway Safety Equipment, Inc.</b>	<b>505-392-2973</b>

## **PROTECTION OF THE GENERAL (ROE) RADIUS OF EXPOSURE**

In the event greater than 100 ppg H<sub>2</sub>S is present, the ROE calculations will be done to determine if the following is warranted:

- \* 100 ppm at any public area (any place not associated with this site)
- \* 500 ppm at any public road (any road which the general public may travel).
- \* 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H<sub>2</sub>S could be present in concentrations greater than 100 ppm in the gas mixture.

### **Calculation for the 100 ppm ROE:**

(H<sub>2</sub>S concentrations in decimal form)

$$X = [(1.589)(\text{concentration})(Q)] (0.6258)$$

$$10,000 \text{ ppm} + = .01$$

$$1,000 \text{ ppm} + = .001$$

### **Calculation for the 500 ppm ROE:**

$$100 \text{ ppm} + = .0001$$

$$10 \text{ ppm} + = .00001$$

$$X = [(0.4546)(\text{concentration})(Q)] (.06258)$$

EXAMPLE: If a well / facility has been determined to have 150 ppm H<sub>2</sub>S in the gas mixture and the well / facility is producing at a gas rate of 200 MCFD then:

$$\text{ROE for 100 ppm} \quad X = [(1.589)(.00010)(200,000)] (0.6258)$$

$$X = 8.8'$$

$$\text{ROE for 500 ppm} \quad X = [(0.4546)(.00050)(200,000)] (0.6258)$$

$$X = 10.9'$$

These calculations will be forwarded to the appropriate NMOCD district office when applicable.

## **PUBLIC EVACUATION PLAN**

When the supervisor has determined that the general public will be involved, the following plan will be implemented.

1. Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
2. A trained person in H<sub>2</sub>S safety shall monitor with detection equipment the H<sub>2</sub>S concentration, wind and area of exposure. This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. All monitoring equipment shall be UL approved for use in Class I Groups A, B, C & D, Division I hazardous locations. All monitors will have a minimum capability of measuring H<sub>2</sub>S, oxygen, and flammable values.
3. Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
4. The company representative shall stay in communication with all agencies throughout the duration of the situation and inform such agencies when the situation has been contained and the effected area is safe to enter.

## **PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION**

The decision to ignite a well should be a last resort and one, if not both, of the following pertain:

1. Human life and / or property are endangered.
2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

### **Instructions for Igniting the Well:**

1. Two people are required. They must be equipped with positive pressure, self-contained breathing apparatus and "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
2. One of the people will be a qualified safety person who will test the atmosphere for H<sub>2</sub>S, oxygen and LFL. The other person will be the company representative.
3. Ignite upwind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun with a range of approximately +/- 500 feet shall be used to ignite the gas.
4. Before igniting, check for the presence of combustible gases.
5. After igniting, continue emergency actions and procedures as before.

## **REQUIRED EMERGENCY EQUIPMENT**

### **1. Breathing Apparatus**

- \* Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- \* Work / Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- \* Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

### **2. Signage and Flagging**

- \* One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- \* A Colored Condition flag will be on display reflecting the condition at the site at that time.

### **3. Briefing Area**

- \* Two perpendicular areas will be designated by signs and readily accessible.

### **4. Windsocks**

- \* Two windsocks will be placed in strategic locations, visible from all angles.

### **5. H2S Detectors and Alarms**

\* The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible alarm @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The three sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer):

- \* Rig Floor
- \* Bell Nipple
- \* End of flow line or where well bore fluid is being discharged

### **6. Auxiliary Rescue Equipment**

- \* Stretcher
- \* Two OSHA full body harnesses
- \* 100' of 5/8" OSHA approved rope
- \* One 20 lb. Class ABC fire extinguisher
- \* Communication via cell phones on location and vehicles on location

## **USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA)**

1. SCBA should be worn when any of the following are performed:
  - \* Working near the top or on top of a tank
  - \* Disconnecting any line where H<sub>2</sub>S can reasonably be expected.
  - \* Sampling air in the area to determine if toxic concentrations of H<sub>2</sub>S exist.
  - \* Working in areas where over 10 ppm of H<sub>2</sub>S has been detected.
  - \* At any time there is a doubt of the level of H<sub>2</sub>S in the area.
2. All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
3. Facial hair and standard eyeglasses are not allowed with SCBA.
4. Contact lenses are never allowed with SCBA.
5. When breaking out any line where H<sub>2</sub>S can reasonably be expected.
6. After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.
7. All SCBA shall be inspected monthly.

## **RESCUE & FIRST AID FOR VICTIMS OF H<sub>2</sub>S POISONING**

- \* Do not panic.
- \* Remain calm and think.
- \* Get on the breathing apparatus.
- \* Remove the victim to the safe breathing area as quickly as possible, upwind and uphill from source or crosswind to achieve upwind.
- \* Notify emergency response personnel.
- \* Provide artificial respiration and / or CPR as necessary.
- \* Remove all contaminated clothing to avoid further exposure.
- \* A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

## Toxic Effects of H2S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table 1. toxicity table for H2S and physical effects are shown in Table II.

**Table 1**  
Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	.97	25 ppm	200 ppm	
Carbon Dioxide	CO2	1.52	5000 ppm	30,000 ppm	
Methane	CH4	.55	4.7% LEL	14% UEL	

### Definitions

- A. TLV – Threshold Limit Value is the concentration employees may be exposed to based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists and regulated by OSHA.
- B. STEL – Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H2S is 19 PPM.
- C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H2S is 100 PPM.
- D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed to based on an TWA.



**TABLE II**  
Toxicity Table of H<sub>2</sub>S

Percent %	PPM	Physical Effects
.0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure
.0015	15	STEL for 15 minutes of exposure
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins in a few minutes.
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

## **PHYSICAL PROPERTIES OF H<sub>2</sub>S**

The properties of all gasses are usually described in the context of seven major categories:

COLOR  
ODOR  
VAPOR DENSITY  
EXPLOSIVE LIMITS  
FLAMMABILITY  
SOLUBILITY (IN WATER)  
BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

### **COLOR – TRANSPARENT**

Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence, a fact that makes the gas extremely dangerous to be around.

### **ODOR – ROTTEN EGGS**

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs". For this reason it earned its common name "sour gas". However, H<sub>2</sub>S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

### **VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192**

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H<sub>2</sub>S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

### **EXPLOSIVE LIMITS – 4.3% TO 46%**

Mixed with the right proportion of air or oxygen, H<sub>2</sub>S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

### **FLAMMABILITY**

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO<sub>2</sub>), another hazardous gas that irritates the eyes and lungs.

### **SOLUBILITY – 4 TO 1 RATIO WITH WATER**

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H<sub>2</sub>S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H<sub>2</sub>S may release the gas into the air.

**BOILING POINT – (-76 degrees Fahrenheit)**

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

## STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

BC Operating  
731 W. Wadley, Ste. L-200  
Midland, Texas 79705

The undersigned accepts all applicable terms, conditions, stipulations and restrictions covering operations conducted on the leased land or portion thereof, as described below:

Lease No: BLM 103856

Legal Description of Land: SL: Unit M, Section 32, T13S, R27E  
660' FSL & 660' FWL  
Chaves County, NM

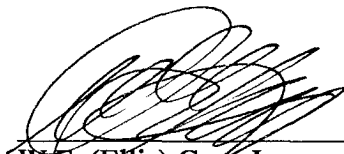
BHL: Unit D, Section 32, T13S, R27E  
660' FNL & 660' FWL  
Chaves County, NM

Formation(s) (if applicable): Wolfcamp; (Gas)

Bond Coverage: \$ 50,000 statewide bond of BC Operating, Inc.

BLM Bond File No: 432-564

8/29/06  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
W.E. (Ellis) Gray Jr.  
Gray Surface Specialties  
Agent for BC Operating, Inc.



United States Department of the Interior  
BUREAU OF LAND MANAGEMENT  
Roswell Field Office  
2909 West Second Street  
Roswell, New Mexico 88201

## EXHIBIT B

### WELL DRILLING REQUIREMENTS

1 of 5 pages

OPERATORS NAME: BC Operating, Inc. LEASE NO.: NM-103856  
WELL NAME & NO: Partagas "32" Federal Com. #1H  
QUARTER/QUARTER & FOOTAGE: SW $\frac{1}{4}$ SW $\frac{1}{4}$  - Surface Location; 660' FSL & 660' FWL  
Bottom Hole Location; NW $\frac{1}{4}$ NW $\frac{1}{4}$  - 660' FNL & 660' FWL  
LOCATION: Section 32, T. 13 S., R. 27 E., NMPM  
COUNTY: Chaves County, New Mexico

#### I. GENERAL PROVISIONS:

- A. The operator has the right of administrative review of these requirements pursuant to 43 CFR 3165.1(a).
- B. The operator shall hereafter be identified as the holder in these requirements. The Authorized Officer is the person who approves the Well Drilling Requirements.

#### II. WELL PAD CONSTRUCTION REQUIREMENTS:

- A. The BLM shall administer compliance and monitor construction of the access road and well pad. Notify Richard G. Hill at least 3 working days (72 Hours) prior to commencing construction of the access road and/or well pad. Roswell Field Office number (505) 627-0247.
- B. Prior to commencing construction of the access road, well pad, or other associated developments, the holder shall provide the dirt contractor with a copy of the approved APD signature page, a copy of the location map (EXHIBIT A), a copy of pages 1 & 2 from the Well Drilling Requirements (EXHIBIT B), and a copy of the Permanent Resource Road Requirements (EXHIBIT D).
- C. The holder shall stockpile the topsoil from the surface of the well pad. The topsoil on the Partagas "32" Federal Com. #1H well pad is approximate 6 inches in depth. Approximately 800 cubic yards of topsoil shall be stockpiled on the Southeast corner of the well pad, opposite the reserve pit.
- D. **Reserve Pit Requirements:**
  - 1. The reserve pit shall be constructed 160' X 160' on the **North** side of the well pad.
  - 2. The reserve pit shall be constructed to a minimum depth of four (4) feet below ground level. The reserve pit shall be constructed, so that the cuttings in the reserve pit can be buried a minimum depth of three (3) feet below ground level. See Exhibit F – Surface Reclamation/Restoration Requirements.
  - 3. A synthetic or fabricated liner 12 mil in thickness shall be used to line the reserve pit. The liner shall meet ASTM standards that are designed to be resistant to the reserve pit contents.

4. The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.
5. The reserve pit shall be constructed so as not to leak, break, or allow discharge of drilling muds. Under no circumstances will the reserve pit be cut to drain drilling muds on the well location.
6. The reserve pit shall not be located in any natural drainage.
7. The reserve pit shall be equipped to deter entry by birds, bats, other wildlife, and livestock, if the reserve pit contains any oil and/or toxic fluids.
8. Drilling muds shall be properly disposed of before the reserve pit is reclaimed. Drilling muds can be allowed to evaporate in the reserve pit or be removed and transported to an authorized disposal site. The reserve pit shall be backfilled when dry.
9. Dumping of junk or trash into the reserve pit is not allowed. Junk or trash shall be removed from within the reserve pit before the reserve pit is reclaimed. **Junk or trash shall not be buried in the reserve pit.**

**E. Federal Mineral Materials Pit Requirements:**

1. Caliche, gravel, or other related materials from new or existing pits on Federal mineral estate shall not be taken without prior approval from the authorized officer. Contact Jerry Dutchover at (505) 627 -0236.
2. Payment for any Federal mineral materials that will be used to surface the access road and the well pad is required prior to removal of the mineral materials.
3. Mineral Materials extracted during construction of the reserve pit may be used for development of the pad and access road as needed, for the Partagas "32" Federal Com. #1H gas well only. Removal of any additional material on location must be purchased from BLM prior to removal of any material.
  - a. An optional mineral material pit may be constructed within the archaeologically cleared area. The mineral material removed in the process can be used for pad and access road construction. However, a mineral material sales contract must be purchased from the BLM prior to removal of any material.

**F. Well Pad Surfacing Requirement:**

The well pad shall be surfaced with 6 inches of compacted caliche, gravel, or other approved surfacing material. The well pad shall be surfaced prior to drilling operations. See **Permanent Resource Road Requirements - EXHIBIT D - requirement #4, for road surfacing.**

**G. Cave Requirements:**

1. If, during any construction activities any sinkholes or cave openings are discovered, all construction activities shall immediately cease. Contact Larry Bray at (505) 627-0250.
2. The BLM Authorized Officer will, within 24 hours of notification in "A" above, conduct an on-the-ground field inspection for karst. At the field inspection the authorized field inspector will authorize or suggest mitigating measures to lessen the damage to the karst environment. A verbal order to proceed or stop the operation will be issued at that time.

**III. WELL SUBSURFACE REQUIREMENTS:****A. GENERAL DRILLING REQUIREMENTS:**

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second Street, Roswell, NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties in sufficient time for a representative to witness:

- A. Well spud                      B. Cementing casing: 13-3/8 inch 9-5/8 inch 5-1/2 inch                      C. BOP tests
2. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Operation Contingency Plan shall be activated prior to drilling into the \_\_\_\_ formation. A copy of the plan shall be posted at the drilling site.
3. 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.
4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15-day time frame.
5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.
6. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

**B. CASING:**

1. The 13-3/8 inch surface casing shall be set at approximately 300 feet and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.
2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is to be circulated to the surface.
3. The minimum required fill of cement behind the 5-1/2 inch production casing is to reach at least 500 feet above the top of the uppermost hydrocarbon productive interval.

**C. PRESSURE CONTROL:**

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 13-3/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi.
3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- The tests shall be done by an independent service company.
  - The results of the test shall be reported to the appropriate BLM office.
  - Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
  - Testing must be done in a safe workman-like manner. Hard line connections shall be required.

**D. DRILLING MUD:**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- Recording pit level indicator to indicate volume gains and losses.
- Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
- Flow-sensor on the flow-line to warn of abnormal mud returns from the well.

## **Arrant, Bryan, EMNRD**

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**From:** Denise [denise@graysurfacespecialties.com]  
**Sent:** Monday, November 20, 2006 9:53 AM  
**To:** Arrant, Bryan, EMNRD  
**Cc:** JOHN COFFMAN; ERICK NELSON; LEEANN ROLLINS  
**Subject:** FW: BC Operating APDs in Chaves County

Bryan, I have just talked with Erick and he says drilling with fresh water mud is no problem. If you still need to speak to him, please just let us know. Thank you.

### ***Denise Menoud***

Regulatory Specialist, Gray Surface Specialties  
Phone: 432-685-9158; Fax: 432-218-7396  
[denise@graysurfacespecialties.com](mailto:denise@graysurfacespecialties.com)

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**From:** Denise [mailto:denise@graysurfacespecialties.com]  
**Sent:** Monday, November 20, 2006 10:02 AM  
**To:** 'Arrant, Bryan, EMNRD'  
**Subject:** RE: BC Operating APDs in Chaves County

Thanks Bryan. I have forwarded all this information to COG, who is handling BC's drilling program and is partners with BC.

### ***Denise Menoud***

Regulatory Specialist, Gray Surface Specialties  
Phone: 432-685-9158; Fax: 432-218-7396  
[denise@graysurfacespecialties.com](mailto:denise@graysurfacespecialties.com)

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**From:** Arrant, Bryan, EMNRD [mailto:bryan.arrant@state.nm.us]  
**Sent:** Monday, November 20, 2006 9:53 AM  
**To:** Denise  
**Subject:** RE: BC Operating APDs in Chaves County

I would go @ the section of interest.  
For example, if the well is located in section 16.

Look for water wells in 8,9,10,15,16,17,20,21,22.  
Of course it depends on a number of factors.  
Water well density in the area, if you are in the Capitan Reef, Western drainage area of the Sacramento Mountains, Artesian Aquifers such as the Roswell Ground Water Basin, etc.  
Old wells drilled by cable tools are also helpful.

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**From:** Denise [mailto:denise@graysurfacespecialties.com]  
**Sent:** Monday, November 20, 2006 8:25 AM  
**To:** Arrant, Bryan, EMNRD  
**Subject:** FW: BC Operating APDs in Chaves County

Hi Bryan. Can you please tell me how far should I be looking for water wells that can affect the drilling program ?  
Thank you.

### ***Denise Menoud***

11/20/2006



Regulatory Specialist, Gray Surface Specialties  
Phone: 432-685-9158; Fax: 432-218-7396  
[denise@graysurfacespecialties.com](mailto:denise@graysurfacespecialties.com)

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**From:** Arrant, Bryan, EMNRD [mailto:bryan.arrant@state.nm.us]  
**Sent:** Friday, November 17, 2006 4:43 PM  
**To:** DENISE MENOUD  
**Cc:** john\_simitz@blm.gov  
**Subject:** BC Operating APDs in Chaves County

Hi Denise and John,

I am in the process of reviewing recent APDs we have received for BC Operating in Chaves County, New Mexico. They are in the far southern part of T-13S R-27E in sections 31 and 32. I found a 'stray water well' on the State Engineer's website to the south of these permitted applications. It lies in the northeast section of 6, T14S R 27E that show a setting depth of @ 1300'. The land owner is Gilbert Gomez. This seems somewhat anomalous as most ground water that needs to be protected in this immediate area occurs at shallower depths. However, I noticed that in these applications to drill that a cut brine fluid is to be used in drilling the 12 1/4" hole. Anyway, if this is an actual water well that has ground water @ this deep depth then I feel BC Operating, Inc. may need to drill this intermediate hole with a fresh water mud. Anyway, I thought it best to bring this to your attention in order to discuss this matter.

Have a Happy Thanksgiving holiday!!!

Bryan G. Arrant  
505-748-1283 ext. 103

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11/20/2006