

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

AUG 24 2009

Sundry Notices and Reports on Wells

Bureau of Land Management  
Durango, Colorado

1. Type of Well  
GAS

2. Name of Operator  
**BURLINGTON**  
RESOURCES OIL & GAS COMPANY LP

3. Address & Phone No. of Operator

P.O. Box 4289, Farmington, NM 87499

4. Location of Well, Footage, Sec., T, R, M

Unit A (NENE), 990' FNL & 1190' FEL, Section 27, T31N, R8W, NMPM

SESE 800FSL 600FEL 13 R14W

5. Lease Number  
MOO-C-1420-0623  
6. If Indian, All. or  
Tribe Name  
Ute Mtn. Tribal  
7. Unit Agreement Name

8. Well Name & Number  
Pinon Mesa D 2

9. API Well No.

30-045-21999  
10. Field and Pool

Basin FC  
11. County and State  
San Juan Co., NM

12. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OTHER DATA

Type of Submission	Type of Action	
<input checked="" type="checkbox"/> Notice of Intent	<input checked="" type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment	<input type="checkbox"/> Plugging	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection

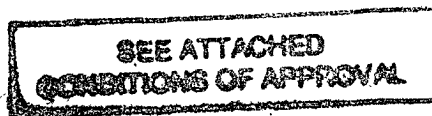
Other  
RCVD NOV 13 '09  
OIL CONS. DIV.  
DIST. 3

13. Describe Proposed or Completed Operations

Burlington Resources wishes to P&A this well per the attached procedures and well bore schematics.

BP Attached is the H2S Contingency plan.

14. I hereby certify that the foregoing is true and correct.



Signed Rhonda Rogers Title Staff Regulatory Technician Date 8/18/09

(This space for Federal or State Office use)

APPROVED BY [Signature] Title AMSC Date 11/5/09

CONDITION OF APPROVAL if any:

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

RECEIVED

18

PC

# ConocoPhillips

## PINON MESA D 2

### Plug & Abandon

Lat 36° 53' 44.808" N

Long 108° 15' 6.084" W

#### PROCEDURE

Note: All cement volumes use 100% excess outside pipe and 50' excess inside. The stabilizing wellbore fluid will be 8.3 ppg, sufficient to balance all exposed formation pressures.

1. This project requires a NMOCD C-144 CLEZ Closed-Loop System Permit for the use of an A-Plus steel tank to handle waste fluids circulated from the well and cement wash up.

#### **Notify CO BLM and the OCD before moving on-site.**

2. Test location rig anchors. Comply with all NMOCD, BLM, and Operator safety regulations. MOL and RU daylight pulling unit. Move in Advanced Safety and conduct safety meeting for all personnel on location. Record casing, tubing and bradenhead pressures. NU relief line but **do not blow down well**. Kill well with at least the tubing capacity of water treated with H2S scavenger pumped down the tubing. The H2S contingency plan must be reviewed and signed by the Expense Rig Manager, ConocoPhillips Rig Superintendent and the Rig Supervisor prior to moving onto location.

3. Rods: Yes   X  , No       , Unknown       ;

Tubing: Yes   X  , No       , Unknown       , Size  2.375" , Length  1477' ;

Packer: Yes       , No   X  , Unknown       , Type                   .

If this well has rods or a packer, then modify the work sequence in step #2 as appropriate.

4. ND wellhead and TOOH with the rod string as follows:

Number	Description
1	1-1/4" x 22' Polished Rod
1	3/4" pony rod (4')
52	3/4" plain sucker rods
2	3/4" pony rod (8', 8')
4	1-1/4" sinker bar
1	Norris shear tool (0.4')
1	3/4" guided pony rod (8')
1	RHAC-Z 2" x 1-1/4" x 14' pump
1	1" x 12" Strainer

5. ND wellhead and NU BOP, function test BOP and remove tubing hanger.

6. TOOH with the tubing string as follows:

Number	Description
46	2-3/8" tubing joints
1	2-3/8" F nipple (ID 1.78")
1	2-3/8" pup joint w/1/2" weep hole (10.18')
1	2-3/8" pup joint (10.12')
1	2-3/8" x 2-1/16" crossover
1	2-1/16" mule shoe

7. **Plug #1 (Pictured Cliffs top, 1416' – 1516')**: Do not circulate the well clean if the casing is filled with corrosion inhibited water. Mix 12 sxs Class B cement and spot @ 1516' to cover the Pictured Cliffs top. TOOH.

8. **Plug #2 (Fruitland top, 1080' – 1180')**: Run a wireline gauge ring to 1160'. PU cement retainer for 4-1/2" 10.5#/ft casing and TIH. Set CR at 1182'. Pressure test the CR to 800 psi. If the casing does not test, then spot or tag the subsequent plugs as appropriate. Mix 12 sxs Class B cement and spot on top of the CR to cover the Mesaverde top. PUH with the tubing.

9. **Plug #3 (Surface casing, 278' – Surface)**: Mix 31 sxs Class B cement and spot a plug from 278' to surface, circulate good cement out casing valve. TOH and LD tubing. Shut well in and WOC.

10. ND BOP and cut off wellhead below surface casing flange. Install P&A marker with cement to comply with regulations. RD, MOL and cut off anchors. Restore location per BLM stipulations.

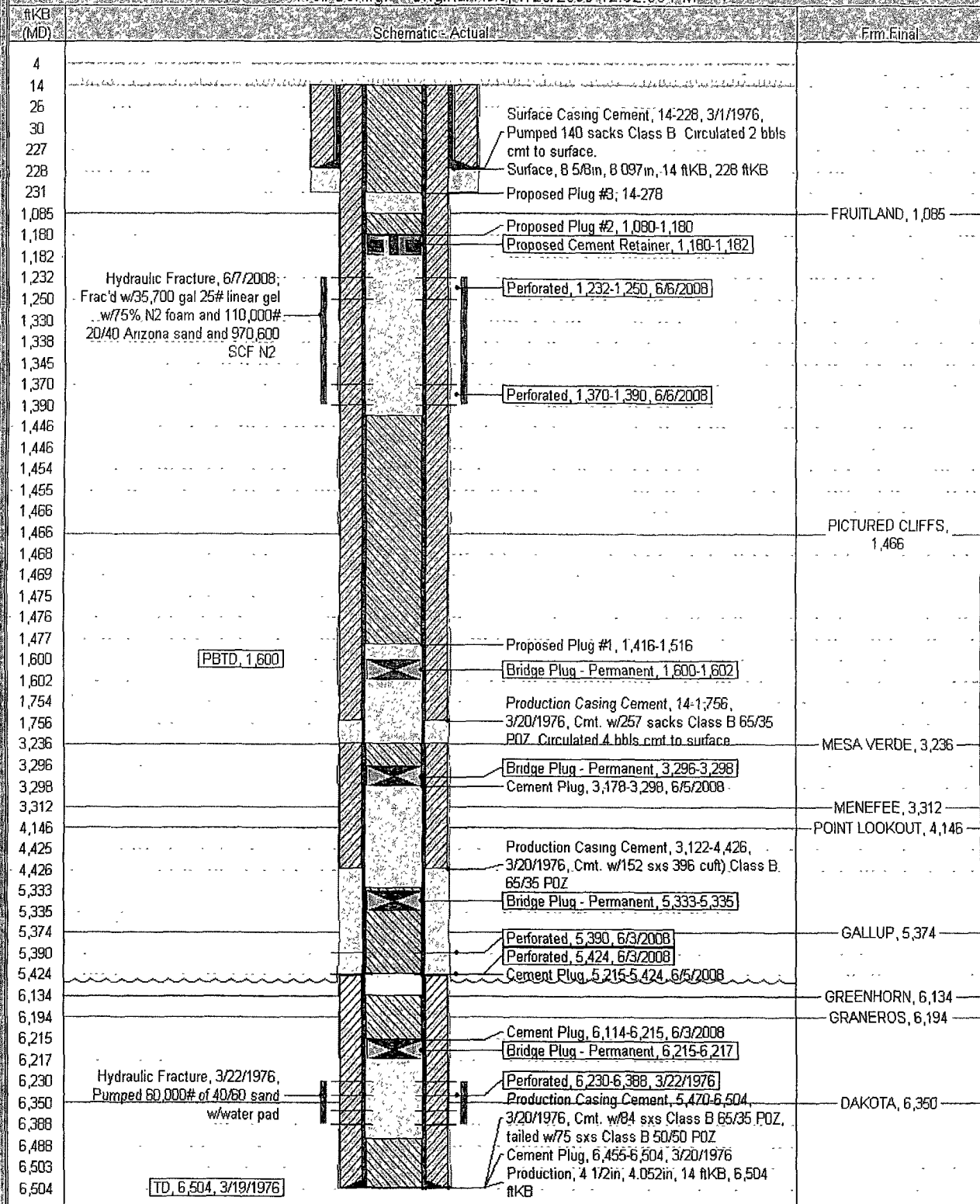
# Proposed Schematic

ConocoPhillips

Well Name: PINON MESA D #2

API / UWI 3004521999	Surface Legal Location NMMPM 013-031N-014W	Field Name BASIN DAKOTA (PRODUCED GAS)	License No	State/Province NEW MEXICO	Well Configuration Type <a href="#">Edit</a>
Ground Elevation (ft) 5,661.00	Original KB/RT Elevation (ft) 5,695.00	KB Ground Distance (ft) 14.00	KB Casing/Flange Distance (ft)	KB Tubing/Hanger Distance (ft)	

Well Config: - Original Hole, 7/28/2009 12:32:05 PM



# Current Schematic

ConocoPhillips

Well Name: PINON MESA D #2

API / UMI 3004521999	Surface Legal Location NMPM 013-031N-014W	Field Name BASIN DAKOTA (PRODUCED GAS)	License No	State/Province NEW MEXICO	Well Configuration Type <a href="#">Edit</a>
Ground Elevation (ft) 5,681.00	Original KB/RT Elevation (ft) 5,695.00	KB-Ground Distance (ft) 14.00	KB-Casing Flange Distance (ft)	KB-Tubing Hanger Distance (ft)	

Well Config: Original Hole 7/13/2009 12:49:45 PM

ftKB (MD)	Schematic - Actual	Form/Final
4		
14		
26		
30		
227		
228		
231		
1,085	Tubing, 2 3/8in, 4.70lbs/ft, J-55, 14 ftKB, 1,454 ftKB	FRUITLAND, 1,085
1,232	Hydraulic Fracture, 6/7/2008; Frac'd w/35,700 gal 25# linear gel w/75% N2 foam and 110,000# 20/40 Arizona sand and 970,600 SCF N2	
1,250		
1,330		
1,338		
1,345		
1,370		
1,390		
1,446		
1,446	F-Nipple, 2 3/8in, 1,454 ftKB, 1,455 ftKB	
1,454	Tbg pup jt w/ 1/2" weep hole, 2 3/8in, 4.70lbs/ft, J-55, 1,455 ftKB, 1,465 ftKB	
1,455		
1,466	Tubing Pup Joint, 2 3/8in, 4.70lbs/ft, J-55, 1,465 ftKB, 1,476 ftKB	PICTURED CLIFFS, 1,466
1,466		
1,468		
1,469		
1,475	Cross Over, 2 3/8in, 1,476 ftKB, 1,476 ftKB	
1,476	Mule Shoe, 2 1/16in, 1,476 ftKB, 1,477 ftKB	
1,477		
1,600	PBTD, 1,600	
1,602		
1,754		
1,756		
3,236		
3,296		
3,298		
3,312		
4,146		
4,425		
4,426		
5,333		
5,335		
5,374		
5,390		
5,424		
6,134		
6,194		
6,215		
6,217		
6,230		
6,350		
6,388		
6,488		
6,503		
6,504		

## TABLE OF CONTENTS

INTRODUCTION	3
GENERAL EMERGENCY ACTION	4
COMMUNICATIONS DIRECTORY	5-6
LIST OF RESIDENTS / BUSINESSES / SCHOOLS	7
RESPONSIBILITIES	7-10
PRECAUTIONARY MEASURES	10
SPECIAL SAFETY TRAINING	11
EQUIPMENT AND MATERIAL SPECIFICATIONS	12
CONOCOPHILLIPS H <sub>2</sub> S CONTINGENCY EQUIPMENT CHECKLIST	13
EFFECTS OF HYDROGEN SULFIDE, CO <sub>2</sub> , ETC. ON OPERATIONS	14
CORROSION EFFECTS OF H <sub>2</sub> S AND CO <sub>2</sub> ON STEEL	15
EFFECTS OF H <sub>2</sub> S AND CO <sub>2</sub> ON WORKING FLUIDS	16
SULFIDE TESTING PROCEDURE	17
ATTACHMENTS	
RADII OF EXPOSURE MAPS	18
LOCATION DIAGRAMS	19-20
DEFINITIONS	21
LIST OF REFERENCES	22

## INTRODUCTION

ConocoPhillips is planning a remedial workover operation on the Pinon Mesa D-2 well for the purpose of Plugging and Abandoning.

Data from the well indicates that hydrogen sulfide ( $H_2S$ ) may be present from the Fruitland Coal formation. Hydrogen sulfide ( $H_2S$ ) is a flammable and highly toxic gas, which in relatively small concentrations, can have adverse effects on people and equipment (refer to the section - Effects of  $H_2S$ ).

Precautionary measures concerning  $H_2S$  in this plan have been formulated based on the following assumptions:

1. ConocoPhillips is expecting  $H_2S$  from this location, levels are determined from gas samples previously analyzed or taking a concentration from a representative well in the area. Levels of 200,000 ppm are expected from this particular well based on an gas sample from this well. Offset wells also show  $H_2S$ , however the levels are much lower. This contingency plan will be provided should  $H_2S$  levels arise during workover operations.
2. Based on Radius of Exposure (ROE) equations provided in the Department of Interior, Bureau of Land Management, Part II, 43 CFR Part 3160, Onshore Order No. 6, Hydrogen Sulfide Operations, the **100 ppm  $H_2S$  ROE** for the proposed well is **5,458 feet** and the **500 ppm  $H_2S$  ROE** is **2,497 feet**. These ROE are based upon **200,000 ppm  $H_2S$  gas** at a rate of **3.0 MMSCFD** which includes a safety margin.
3. No residences, schools, business or parks where the public could reasonably be expected to frequent fall within either the 100 ppm ROE or the 500 ppm ROE. The nearest residence is approximately 2.5 miles to the east. The well is located approximately 65 feet off of BIA 215 and the Thomas Canyon Wildlife Area is 600 feet to the East.

This plan has been designated as a guide for well requirements and special considerations to provide for safe and efficient servicing operations in the presence of hydrogen sulfide.

## GENERAL EMERGENCY ACTION

In the event an emergency situation occurs, the following action shall be initiated:

1. If the H<sub>2</sub>S alarm sounds, stop the workover activities as soon as practical.
2. Evacuate quickly to the pre-designated "Safe Briefing Area".
3. Those who must enter the hazard area must wear self-contained breathing apparatus and use other appropriate safety equipment. Secure rig and close well in, if necessary, using self-contained breathing apparatus and other appropriate safety equipment. (Use the "buddy system" at all times.)
4. Account for all personnel and take appropriate action as necessary for personnel safety.
5. Raise appropriate color warning flag to describe the type of emergency.

The Rig Supervisor will assess the situation and assign duties to various persons to bring the situation under control. The Rig Supervisor will advise the ConocoPhillips Rig Superintendent as soon as the emergency will permit. In the event of a well kick, procedures outlined in the Operations Plan will be followed. Stations to be manned and duties to be performed will be discussed in the safety meeting and captured in the JSA prior to commencing rig operations.

Notification of local law enforcement agencies, residents and emergency vehicles as per the following Communications Directory, will be assigned by the ConocoPhillips Rig Superintendent.

Any press inquiries are to be referred to the ConocoPhillips Expense Rig Manager (Dan Voecks).

**ConocoPhillips**

(505) 326-9700

ALL AREA CODES ARE (505) UNLESS OTHERWISE INDICATED

**Expense Rig Department**

<b><u>Name</u></b>	<b><u>Office</u></b>	<b><u>Home</u></b>	<b><u>Pager/Cellular</u></b>
<b>Expense Rig Manager:</b>			
Dan Voecks	326-9719		Cell: 320-1497
<b>Expense Rig Superintendents:</b>			
Kelly Kolb	326-9582	327-2177	Cell: 320-4785
Stanley Terwilliger	599-4066	334-5914	Cell: 320-5921
Dale Gall	326-9730	324-0904	Cell: 320-1130
<b>Production Engineering:</b>			
Steve Jones (Manager)	326-9715	325-4177	Cell: 947-9292
Steph Dobson (Supervisor)	599-3493	326-3089	Cell: 360-6710
Wahyu Prabowo (Supervisor)	326-9797		Cell: 320-7354
Dustin Morrow (Prod. Engineer)	599-3401		Cell: 486-5782

**Health, Safety & Environmental Department**

<b>HSE Representatives:</b>			
Emerson, Warren (Manager)	326-9754		Cell: 608-0426
Ely, Jay	326-9538	325-8025	949-0238/320-2161
Wurtz, Gregg	326-9537	564-4496	324-7438/320-2653
Johnson, Monica	326-9829	326-2010	Cell: 320-9056
Smith, Robert (WSER)	599-4052	334-8618	Cell: 947-8282
Quintero, Ramon (WSER)	599-4006	334-8106	Cell: 947-9219

**Contract Safety**

<b>DXP Safety Alliance:</b>		
(Farmington, New Mexico)		
Martinez, Steve	O(505) 325-7233	C(505) 320-0544
<b>Advanced Safety:</b>		
(Farmington, New Mexico)		
Ginger Lockeby	O(505) 324-0575	C(505) 320-6250

**Well Control Companies**

<b>Cudd Well Control Co.</b>	24 HR.	(713) 849-2769
------------------------------	--------	----------------



ConocoPhillips  
Emergency Contact Agencies (Cont.)

**NEW MEXICO**

**State Police/Sheriff/City Police:**

San Juan County, NM

New Mexico State Police	325-7547
Sheriff's Department	911 or (505) 334-6622
Police Department	911 or (505) 334-6622
Ambulance	911 or (505) 334-6622
Fire Dept.	911 or (505) 334-6622
Air Care 1	911 or (505) 599-6046 or 1-800-452-9990

**Bureau of Land Management:**

Farmington, NM Office	(505) 599-8900
-----------------------	----------------

**New Mexico Oil Conservation Division:**

Aztec, NM Office	(505) 334-6178
------------------	----------------

**Hospitals**

San Juan Regional Medical Center, Farmington, NM	(505) 325-5011
--	----------------

**COLORADO**

**State Police/Sheriff/City Police:**

La Plata County, CO

Colorado State Police	(970) 249-4392
La Plata Sheriff's Dept.	911 or (970) 247-1157
Durango Police Department	911 or (970) 385-2900
Ambulance	911 or (970) 382-6000
Fire Dept.	911 or (970) 382-6000
Air Care 1	911 or (505) 599-6046 or 1-800-452-9990

Montezuma County, CO Sheriff's Dept.	911 or (970) 565-8454
--------------------------------------	-----------------------

**Bureau of Land Management:**

Durango CO, Office	(970) 247-4874
--------------------	----------------

**Colorado Oil and Gas Conservation Commission:**

Durango CO, Office	(970) 259-4587
--------------------	----------------

**Hospitals**

Mercy Medical Center, Durango, CO	(970) 247-4311
-----------------------------------	----------------

## LIST OF RESIDENTS / BUSINESSES / SCHOOLS

**No** residences, schools, business, parks or other areas where the public could reasonably be expected to frequent were found to be within the 100 ppm ROE. Only Bureau of Indian Affairs roads are located within the 500ppm ROE. These roads are not maintained for public use and they are generally used for accessing wellsites, although there are no gates so they are accessible to the public. Included are maps indicating the physical location of each radii of exposure. All land within the 100 ppm radius of exposure from the wellhead is Bureau of Indian Affairs or part of the Thomas Canyon Wildlife Area. County Road 1191 is the nearest paved road and is over 2 miles from the wellpad.

## RESPONSIBILITIES

### All Personnel

1. All Personnel who spend over one day on the ConocoPhillips location shall be familiarized with the procedures outlined in this directive.
2. All personnel will attend to their personal safety first.
3. If it can be done safely, help anyone who may be injured or overcome from toxic gases by administering first aid.
4. Report to the "Safe Briefing Area" and follow the instructions of the rig supervisor.

### Rig Supervisor

1. Ensure that a Safety Contractor representative and Toolpusher are on site.
2. It is the responsibility of the Rig Supervisor to see that all personnel on the ConocoPhillips location observe these safety and emergency procedures.
3. The Rig Supervisor will advise the ConocoPhillips Rig Superintendent whenever the procedures as specified herein are complied with or cannot be followed. A checklist (attached) will be utilized. One (1) completed copy of the checklist will be forwarded to the ConocoPhillips Rig Superintendent and one copy to ConocoPhillips HSE Department.
4. The Rig Supervisor shall keep the number of personnel on location to a minimum during hazardous operations.
5. The Rig Supervisor shall be trained in the use of all safety equipment and completely briefed on safety and emergency procedures. This shall include full knowledge of the requirements in this contingency plan.
6. It is the responsibility of the Rig Supervisor to see that all Contractors have been adequately trained in the handling of emergency situations. He should satisfy himself that this is the case. He should notify the ConocoPhillips Rig Superintendent if the Contractor fails to fulfill this responsibility.
7. If an unexpected emergency occurs, or the H<sub>2</sub>S alarm sounds, the Rig Supervisor (or Toolpusher) will assess the situation and will advise all personnel what conditions exist. Action to be taken under each of three possible conditions is as follows:

CONDITION I - POTENTIAL DANGER TO LIFE (such as hazardous amount of toxic gasses detected at surface)

- a. Order nonessential personnel out of the potential danger area and display the
- b. YELLOW CONDITION I warning sign and flag.
- c. Order all essential personnel to check their safety equipment to see that it is working properly and in the proper location (see supervisor's checklist). Persons without respiratory protection cannot work in the hazard area.
- d. Notify Rig Superintendent of condition and action taken.
- e. Increase gas monitoring activities and continue operations as appropriate.

CONDITION II - MODERATE DANGER TO LIFE (such as circulating out a potentially toxic gas kick). In addition to Condition I requirements:

- a. Display only the ORANGE CONDITION II warning sign and flag.
- b. Direct corrective action to control flow of gas.
- c. Set up roadblocks and restrict personnel movements to minimum.
- d. Notify other appropriate personnel listed on emergency telephone list.

CONDITION III - EXTREME DANGER TO LIFE (when it appears that well control will be lost). In addition to Conditions I and II requirements:

- a. Contact and request local police to evacuate people and to control traffic within the danger zone. Should the condition be immediately dangerous to the public, take necessary life saving action until local police arrive. Display only the RED CONDITION III warning sign and flag.
- b. Ignite the well if necessary. (See the following section - Igniting the Well.)

**NOTE: The ConocoPhillips Rig Superintendent will dispatch additional ConocoPhillips personnel and/or additional professional safety personnel to the well site as needed to assist the Workover Rig Supervisor.**

Contract Rig Supervisor (Toolpusher)

1. A Toolpusher will be on-site at all times when a contingency plan is in place.
2. In the absence or incapacitation of the Rig Supervisor, the Toolpusher will assume all responsibilities designated herein to the Rig Supervisor.
3. Assist the Rig Supervisor and Safety Representative in training crews for handling emergency situations.
4. Will be trained for all well control or emergency situations as contained herein and how to properly use all safety equipment.

HSE Department

1. Shall provide safety and environmental information and guidance when required.
2. Shall review and approve any changes in safety or environmental procedures.
3. Shall assist as appropriate with operating and maintenance procedures for the safety equipment called for in this plan.
4. Shall assist with arranging initial training on safety procedures and equipment. Shall provide assistance as needed for follow up training.

#### Rig Contractor

1. Shall have personnel properly trained in First Aid/CPR and H<sub>2</sub>S Awareness
2. Shall keep personnel trained in use of safety equipment and safety procedures.

#### Visitors, Service Personnel (Vendors) and Others

1. Only personnel authorized by the Rig Supervisor shall be permitted to enter area when an emergency condition exists.
2. Shall be permitted to enter area under an emergency condition only if needed and then only after being properly instructed in use of safety equipment and have necessary equipment issued or available.
3. Vendors must have all of their personnel trained in H<sub>2</sub>S procedures who will be on location during any work which could result in an H<sub>2</sub>S release through rig release.

### **Igniting the Well**

#### **1. Responsibility**

The decision to ignite the well is the responsibility of the ConocoPhillips Rig Superintendent. However, the decision should be made only as a last resort and in a situation where it is clear that:

- a. Human life or property is endangered.
- b. There is no hope of controlling the blowout under the prevailing conditions at the well.

In all cases, an attempt should be made to notify the Rig Superintendent of the plans to ignite the well, if time permits. However, the Rig Superintendent and Rig Supervisor must not delay a decision if human life is threatened.

**REMEMBER**, if the well is ignited, the burning H<sub>2</sub>S will be converted to sulfur dioxide (SO<sub>2</sub>), which is also highly toxic. Do not assume that the area is safe after the well is ignited. Follow through with all plans to evacuate endangered persons.

#### **2. Means of Ignition**

- a. In preparation for igniting the well, keep unnecessary persons in the "Safe Briefing Area". A two person team is required for the actual ignition. Both team members will wear self-contained breathing units and will have 200 feet retrieval ropes attached to safety harnesses. One team member is responsible for checking the atmosphere for explosive gasses with the explosimeter. The other member is responsible for igniting the well. Persons remaining in the "Safe Briefing Area" will closely watch the ignition team; and should either man be overcome, they will immediately pull him to safety by the retrieval ropes and apply revival measures.
- b. The primary method for igniting the well will be with a 25 mm meteortype flare gun. (The location of the flare gun (if available) will be discussed during and noted in the JSA.) These guns have a range of approximately 500 feet. If this method fails or well conditions are such that a safer or better method is apparent, then an alternate method should be used.
- c. Always ignite the well from upwind and do not approach the well any closer than warranted.
- d. Select a location to fire the flare gun that provides maximum protection to the ignition team (behind equipment) while keeping in visible sight by personnel in the "Safe Briefing Area".
- e. Choose a location that has good accessibility and from which retreat can easily be made.
- f. **REMEMBER**, before firing the flare gun or igniting flammable material, check the atmosphere at your location for combustible gasses with explosimeter.

## PRECAUTIONARY MEASURES

### General

1. Two areas shall be designated as safe briefing areas, each located, as a minimum: 150 feet from the wellhead and vent discharge area; spaced 160 degrees apart on an arc, with the wellhead as the center point; and as best suited for topographical considerations and prevailing winds. Six Niosh approved Positive Pressure SCBAs shall be located as follows: one in the Rig Supervisor's vehicle, one in the Tool Pusher's trailer, and two at each of the "Safe Briefing Areas". Packs should be readily accessible and properly protected from exposure to the elements.
2. Emergency equipment shall be on location as described in the H<sub>2</sub>S Contingency Equipment Checklist.
3. A copy of all emergency telephone numbers shall be posted on the rig equipment trailer, at the "Safe Briefing Areas" and in the Rig Supervisor's vehicle.
4. Wind direction indicators shall be located where at least one can be viewed from any position on the location.
5. An automatic hydrogen sulfide (H<sub>2</sub>S) monitor shall be provided, with detectors placed at the flow line and rig floor. Either of these detectors shall be capable of sensing a minimum of 5 ppm H<sub>2</sub>S in air and shall be able to independently activate visual and audio alarms. Both the visual alarm and the audible alarm will be activated at 10 ppm. The audible alarm must be capable of alerting people at any point on the location.

6. A sign that reads, "Caution - Poisonous Gas May be Present", will be posted at the last intersection leading to location.
7. If conditions warrant, two (2) explosion-proof, 24 inch or larger, electric fans will be located: (a) one on the rig floor to blow fumes downwind; (b) the second under the rig floor to clear gas from the substructure.
8. The well-site shall be equipped with commercial communications. The equipment should be located for safe access and should not be an ignition source.
9. The Rig Supervisor's vehicle should always be parked a safe distance (at least 100 feet) from the rig, and in an upwind direction when feasible.
10. For all well kicks, the Operations Plan will be followed. All rig personnel shall be trained, and drills shall be conducted to insure proper well control procedures.
11. The checklist of all emergency equipment (see Rig Supervisor's checklist) shall be completed prior to starting work as identified in the introduction. The Rig Supervisor shall inspect the equipment with assistance, as needed, from ConocoPhillips HSE personnel as to working condition, proper placement, etc. The inspection will be noted on the checklist. A copy of the checklist will be placed in the Rig Supervisor's files and one copy each will be provided to the Rig Superintendent and HSE Department.
12. A Safety Contractor will be on-site monitoring head count, enforcing that all personnel on location will have no facial hair, keeping only essential personnel on location, and all personnel on location are trained to work in an H<sub>2</sub>S environment.

### **SPECIAL SAFETY TRAINING**

The minimum training for personnel working in affected areas shall include the following elements:

1. Hazards, characteristics and symptoms of hydrogen sulfide (H<sub>2</sub>S), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), methane gas, and other hazardous substances as may be appropriate. Effects of these substances are discussed in a section that follows.
2. Effect on metal components of the system.
3. Safety precautions to include possible sources at the site.
4. Operation of safety equipment and life support means and systems.
5. Corrective action and shutdown procedures.
6. Detection and measurements of H<sub>2</sub>S, CO and combustible gas.

### **THE RIG SUPERVISOR ON LOCATION SHALL BE RESPONSIBLE FOR THE OVERALL ON-SITE OPERATION, INCLUDING THE SAFETY AND TRAINING PROGRAM.**

All personnel, contracted or employed on an unscheduled basis, shall be trained as a minimum in the severity of H<sub>2</sub>S and other toxic gasses, safety precautions, evacuation procedures, and as appropriate, the use of respiratory protection equipment. This training shall be completed prior to entering the H<sub>2</sub>S location. Visitors shall also be instructed regarding these matters.

To promote efficient safety procedures, an on-site toxic gas safety program, which includes a drill and training session, shall be established for all crews. Records of attendance shall be maintained on the workover rig.

#### **EQUIPMENT AND MATERIAL SPECIFICATIONS**

1. Wellhead and blowout equipment is to conform as per Operations Plan.
2. BOP equipment will be tested to pressure rating prior to starting any work, with all testing witnessed and recorded by the Rig Supervisor.
3. The BOP will be operationally tested on every trip. BOP drills will be held prior to operation with the potential to release H<sub>2</sub>S, these will be recorded on the Rig Supervisor's report.
4. Downhole equipment planned for this well will be listed in the Operations' Plan. Ensure that any equipment has been designed in accordance with ConocoPhillips' requirements for sour service.

**ConocoPhillips**  
**H<sub>2</sub>S CONTINGENCY EQUIPMENT CHECKLIST**

Well: \_\_\_\_\_

Rig N/N: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor: \_\_\_\_\_

1. \_\_\_\_ (All) **Personnel training** with attendance records on site.
2. \_\_\_\_ (2) **Cleared land areas** for use as "Safe Briefing Areas"; 150' from wellhead, and 160° apart.
3. \_\_\_\_ (1) **Warning sign** with current well condition indicator, located at last intersection to location so vehicles may have turn-around area.
4. \_\_\_\_ (3) **Wind direction indicators**, located to provide visibility from any place on location.
5. \_\_\_\_ (3) **No Smoking signs** on drive posts.
6. \_\_\_\_ (3) **Safe Briefing Area signs** on drive posts.
7. \_\_\_\_ (2) **Fans** - electric motor driven and explosion proof; one located on rig floor, and one located in substructure (if conditions warrant).
8. \_\_\_\_ (1) **H<sub>2</sub>S monitor** (continuous) located on rig floor with detectors (sensitivity of 5 ppm in air) located at the flow line, mud pits discharge, and on the rig floor.
9. \_\_\_\_ (1) **Alarm system** capable of individual activation by any detector with maximum settings as follows: visual and audible alarms at 10 ppm (audible must be capable of alerting personnel at any point on location).
10. \_\_\_\_ (5) **Niosh Approved Positive Pressure SCBAs** - 30 min. self-contained breathing apparatus: one in the supervisor's office, and two at each of the "Safe Briefing Areas". Easily accessible, and protected from exposure to the elements.
11. \_\_\_\_ (1) **Trailer** - full enclosure, at location entrance (based on prevailing winds), containing the following items (#13 through #24, and also #25d).
12. \_\_\_\_ (3) **Condition warning flags** (1 each yellow, orange, and red).
13. \_\_\_\_ (1) **Length of Stain Polymetric Tube Type Detectors** with lower range tubes for CO<sub>2</sub>, H<sub>2</sub>S, and SO<sub>2</sub>.
14. \_\_\_\_ (1) **MSHA Explosimeter** (or equivalent).
15. \_\_\_\_ (1) **Flare gun** - 25mm meteor type with flares.
16. \_\_\_\_ (2) **Derrick safety belts** with 10' tail ropes.
17. \_\_\_\_ (2) **200' retrieval ropes**.
18. \_\_\_\_ (3) **Hearing protectors** - muff type.
19. \_\_\_\_ (1) **First aid kit** - 25 unit.
20. \_\_\_\_ (3) **Flashlights** w/batteries (explosion-proof & watertight).
21. \_\_\_\_ (1) **Disinfectant, cleaner, and towels** for breathing apparatus.
22. \_\_\_\_ (1) **Inspection records** for breathing apparatus and air supply.
23. \_\_\_\_ (1) **Fire extinguisher** (rated 60:BC).
24. \_\_\_\_ (4) **Emergency telephone numbers** in plastic weatherproof holders located at: rig equipment trailer; Rig Supervisor's vehicle; in both Safe Briefing Areas



## EFFECTS OF HYDROGEN SULFIDE AND OTHER GASSES ON WORKOVER OPERATIONS

### Toxic Effect

#### 1. Hydrogen Sulfide - H<sub>2</sub>S

Hydrogen sulfide is a colorless, flammable, extremely poisonous gas. It is 1.2 times as heavy as air and will accumulate in low areas. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. It can be detected by smell at a concentration in air of only 0.02 ppm. Exposure to 10 ppm can be tolerated up to 8 hours without respiratory equipment. Respiratory equipment is required to protect workers should conditions exceed the foregoing allowable exposure limit. Concentrations in excess of 20 ppm have an effect on the olfactory nerve which deadens the sense of smell. Unconsciousness can occur without warning within seconds of inhalation at concentrations above 500 ppm.

### Physical Effects of Hydrogen Sulfide

Concentration Percent (%)	ppm	Physical Effects
0.001	10	Obvious and unpleasant odor.
0.001	10	Current ACGIH TLV allowed for 8 hour exposure.
0.01	100	Kills smell in 3 to 15 minutes, may sting eyes & throat.
0.02	200	Kills smell shortly, stings eyes & throat.
0.05	500	Dizziness, breathing ceases in a few minutes. Needs prompt artificial respiration.
0.07	700	Unconscious quickly; death will result if not rescued promptly.
0.10	1000	Unconscious at once; followed by death within minutes.

#### 2. Sulfur Dioxide - SO<sub>2</sub>

Sulfur dioxide is a colorless, nonflammable, intensely irritating gas and 2.2 times heavier than air. It is a by-product of combustion of hydrogen sulfide and is highly toxic. Exposure to 2 ppm can be tolerated for a maximum of 8 hrs. Respiratory equipment will be available and should be used by personnel measuring SO<sub>2</sub> concentration downwind from a flare.

#### 3. Methane - CH<sub>4</sub>

Methane is the major component of natural gas and is colorless, odorless and extremely flammable. The chief danger from methane is explosion. Mixture of CO<sub>2</sub>, H<sub>2</sub>S and CH<sub>4</sub> will burn if the total H<sub>2</sub>S and CH<sub>4</sub> content, in any ratio, is above 25 percent. Also the presence of methane causes an oxygen deficient environment and requires adequate ventilation for breathing.

#### 5. Carbon Monoxide - CO

Carbon monoxide is a colorless, odorless toxic gas. Its toxicity results from preferential reaction with the hemoglobin in the blood; however, it has no unique toxic action on any of the bodily

tissues. CO displaces oxygen from hemoglobin and reduces the oxygen carrying capability of the blood.

The primary danger from CO is that it binds with hemoglobin within the blood, thereby preventing oxygen / blood transfer. Respiratory equipment should be considered for atmospheres containing greater than 25 ppm. Exposure to 25 ppm is allowed up to 8 hours; however, at higher levels it will tend to cause headaches, dizziness and nausea. Concentrations above 1200 ppm are considered immediately dangerous to life and health.

In addition to the toxic effects of CO, carbon monoxide burns readily in air. The flammability limits of CO in air change with pressure. At atmospheric pressure, however, the lower limit is  $\pm 12.5\%$  and upper limit is  $\pm 74\%$ .

## 6. Properties of Various Gasses

Common Name & Chemical Formula	Specific Gravity Air=1	Time Weighted Average*	IDLH**	Lethal Concentration***	Flammability
Hydrogen Sulfide (H <sub>2</sub> S)	1.18	10 ppm	100 ppm	600 ppm	4.3% to 46% by volume in air
Sulfur Dioxide (SO <sub>2</sub> )	2.21	2 ppm	---	1000 ppm	
Methane (CH <sub>4</sub> )	0.55	Simple Asphyxiate	---	-----	5.3% to 14.0% by volume in air
Carbon Monoxide (CO)	0.97	25 ppm	1200 ppm	-----	12.5% to 74% by volume in air

\* Time Weighted Average (TWA) - Employee's average exposure in any eight-hour work, of a 40-hour work week that shall not be exceeded.

\*\* Hazardous - Concentration that may cause death.

\*\*\* Lethal - Concentration that will cause death with short term exposure.

## CORROSION EFFECTS OF H<sub>2</sub>S ON STEEL

### 1. Hydrogen Sulfide (H<sub>2</sub>S)

The three forms of hydrogen sulfide corrosion of steel are as follows:

- general or weight loss,
- localized or pitting, and
- sulfide stress cracking.

In both general and localized corrosion, hydrogen sulfide reacts with the steel to produce iron sulfide. General corrosion is characterized by the formation of an iron sulfide film on the surface of the steel. After long periods of exposure, weight loss can lead to a significant reduction in strength. Localized corrosion is much more serious and predominantly occurs in the pH range below six. Chloride or similar ions must be present for pitting to occur. Iron chloride accumulates at the metal to iron sulfide film interface and promotes a localized attack. Pitting corrosion has not presented a significant problem in drilling operations.

Of foremost concern is sulfide stress cracking or hydrogen embrittlement where failure may take place without warning or significant metal loss. This problem is related to strength of the steel, hydrogen sulfide concentration, pH, exposure time, and temperature and stress level of the steel. Hydrogen sulfide absorbed on the metal surface promotes the entry of atomic hydrogen into the

metal. The atomic hydrogen that enters the steel matrix diffuses to positions of high stress where it can induce hydrogen embrittlement. Thus, brittle failure can occur at stress levels significantly less than normal yield stress. A high total dissolved sulfide concentration can be tolerated if the pH is high enough (9.5 or greater).

## EFFECTS OF H<sub>2</sub>S ON FLUIDS

### 1. Hydrogen Sulfide - H<sub>2</sub>S

When H<sub>2</sub>S is entrained in a fluid, it will disassociate to some degree depending on the pH of the system.

Undissociated hydrogen sulfide is the molecule that attacks steel surfaces and causes corrosion and embrittlement. At a low pH, nearly all of the H<sub>2</sub>S in a system is in this molecular state. With increasing pH, H<sub>2</sub>S disassociation increases so that above pH 10, effectively all of the H<sub>2</sub>S is disassociated into bisulfide and sulfide ions. These ions are relatively harmless in the mud as long as the high pH is maintained. If pH is lowered, the reaction will be reversed and hydrogen sulfide gas will be evolved.

In addition to sulfide ions, disassociation of H<sub>2</sub>S in drilling mud produces hydrogen ions, which will react with hydroxyl ions in a high pH mud to form water. With sufficient H<sub>2</sub>S contamination, excess lime, if any, can be depleted and pH will begin to drop. A sufficient decrease in pH will, as previously stated, evolve H<sub>2</sub>S gas.

It is therefore desirable to know whether H<sub>2</sub>S has been encountered at the least possible time. This can be accomplished by testing the mud or other working fluids for sulfide ions daily, as described in the sulfide testing procedures that follow (API RP 13B).

## **SULFIDE TESTING PROCEDURE** **HACH TEST**

### **PROCEDURE FOR ESTIMATING FILTRATE SULFIDE**

**Equipment:** The following materials are required to estimate the sulfide concentration in the mud filtrate:

- a. Special test vial with vented cap
- b. Lead acetate test paper to fit cap
- c. Color comparison chart

(NOTE: THE HACH HYDROGEN SULFIDE TEST KIT (MODEL HS-7) CONSISTS OF ITEMS a, b, and c ABOVE.)

- d. Distilled water
- e. Hypodermic syringe
- f. Defoamer (such as octyl alcohol or sulfated castor oil)
- g. 0.1N acid, sulfuric or hydrochloric

**Procedure:** Place one disk of dry lead acetate test paper inside the dry cap of the test vial.

Measure 2.5 cm<sup>3</sup> of freshly collected mud filtrate into the test vial. Dilute to the 25 cm<sup>3</sup> with distilled water.

Add 2 cm<sup>3</sup> of 0.1N acid, immediately add a fresh seltzer tablet, and quickly place the cap with the test paper on the vial. Allow the seltzer tablet to dissolve and then wait one minute.

Remove lead acetate paper and observe for brown coloration. If no coloration can be detected, then report the soluble sulfide as zero. If brown coloration is present, compare the test paper with color comparison chart. Read the appropriate ppm value (0.1, 0.3, 0.5, 1, 2, or 5) from the color chart and multiply by 10 to obtain the test result (1, 3, 5, 10, 20, or 50).

If the test paper matches the darkest color (5 ppm) on the color chart, the test result must be interpreted as greater than 50 ppm.

To extend the test range to higher concentration, dilute the filtrate as follows:

- a. For a test range of 10 to 500 ppm, dilute 1.0 cm<sup>3</sup> of filtrate with 9.0 cm<sup>3</sup> of distilled water. Use 2.5 cm<sup>3</sup> of the diluted filtrate for the sulfide determination. Multiply the color chart value by 100 to obtain the test result.

Report the test result as filtrate sulfide in ppm.

**NOTE 1:** IT IS IMPORTANT TO NOTE THAT THIS TEST IS NOT HIGHLY ACCURATE. THE RESULTS SHOULD BE INTERPRETED AS ROUGH ESTIMATES.

**NOTE 2:** THE METHOD MAY BE USED FOR WATER USING 25 CM<sup>3</sup> SAMPLES OR THE SAME DILUTION PROCEDURE USED FOR MULLED FILTRATE. THIS METHOD MAY ALSO BE USED FOR MUD BUT THE PROBABLE MEANING OF THE RESULTS IS VERY UNCERTAIN. THERE COULD ALSO BE CONSIDERABLE DIFFICULTY IN OBTAINING A REPRESENTATIVE SAMPLE OF DILUTED MUD.

Lease Review Map Viewer

Refresh Print

- ☒ Show Wells
- ☐ Show Action Items
- ☐ Show Pipeline
- ☒ Show Sensitive Areas

Legend

Wellsite

- ☒ Single Well
- ☐ Multiple Wells

Sensitive Areas

Cultural

Geology

Palaeontology

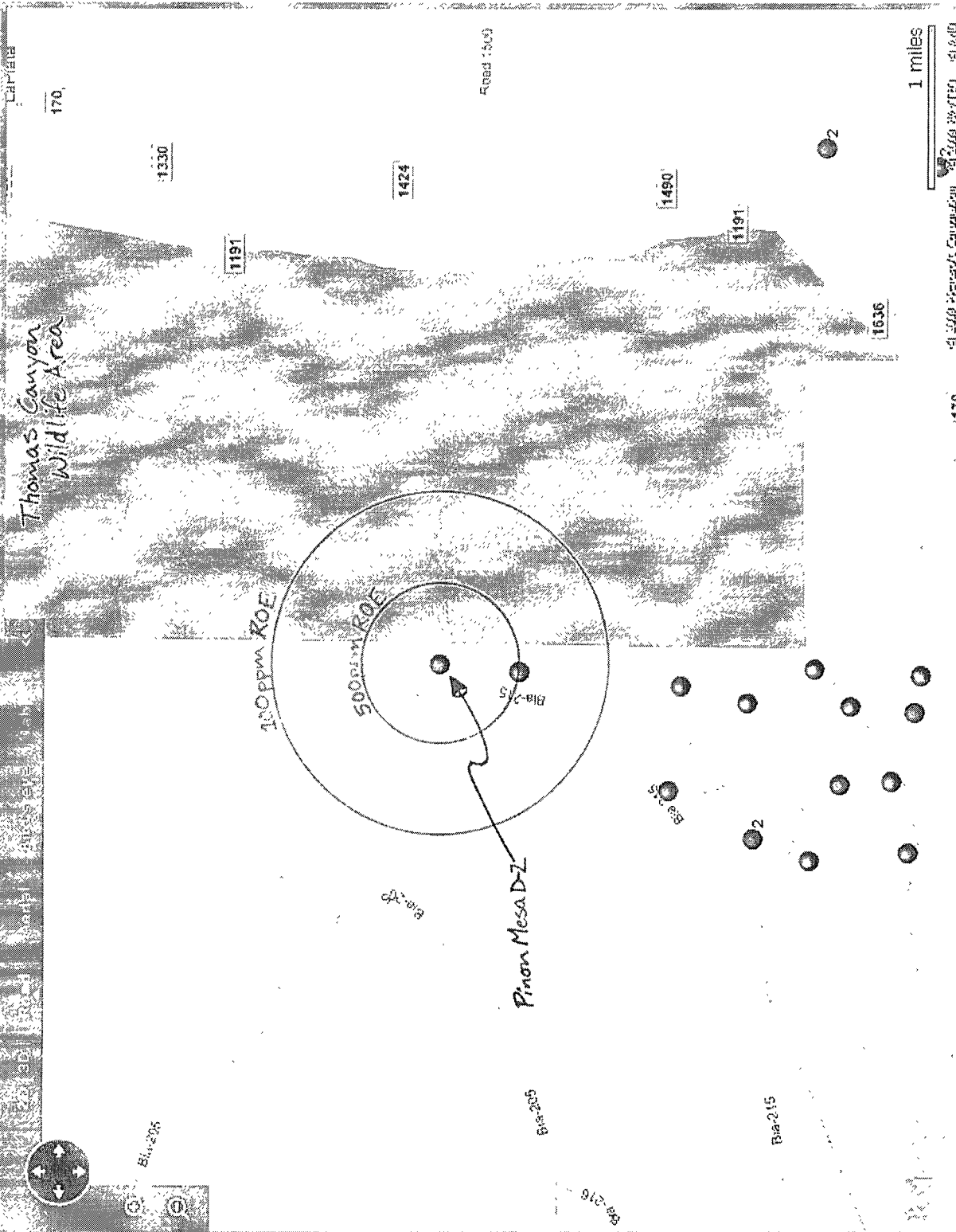
Recreation/Wildlife

Riparian/T&E

Wilderness

Other

Unknown





## Lease Review Map Viewer

Refresh Print

- ☐ Show Wells
- ☐ Show Action Items
- ☐ Show Pipeline
- ☒ Show Sensitive Areas

### Legend

#### Sensitive Areas

Cultural

Geology

Palaeontology

Recreation/Wildlife

Riparian/T&E

Wilderness

Other

Unknown



150 yds

© 2008 Microsoft Corporation. Image courtesy of USGS

# Burlington Resources

DPNO: 4518701 FOREMAN: 331 SWITCHER 386

WELLNAME: PINON MESA D 2

LEASE #: MOO-C-1420-0623

UNIT: P SECTION: 13 TOWNSHIP: 031N RANGE: 014W COUNTY: 045

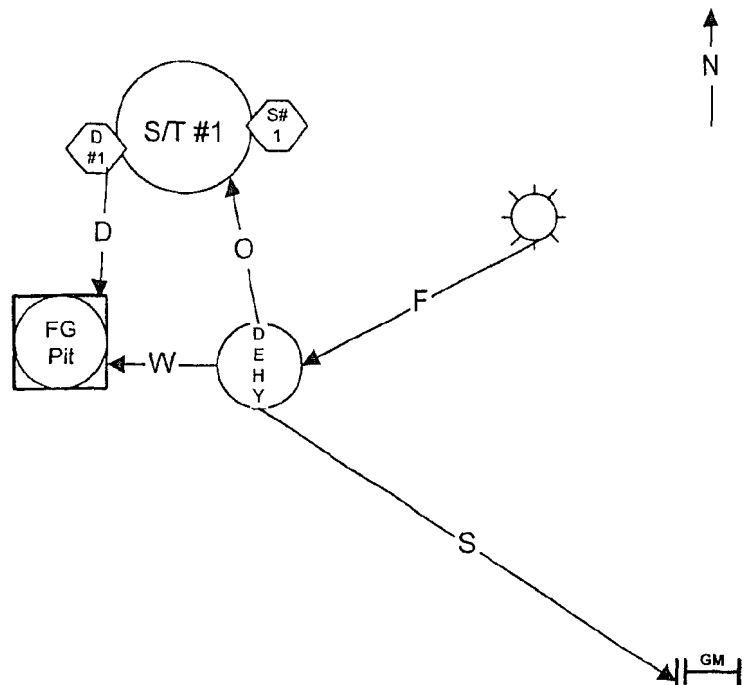
REVISED DATE 10/8/2002

This site security plan is located at:

Burlington Resources

3401 30th Street

Farmington, NM 87402



Attachment to the Site Facility Diagram - Lease NM  
General sealing of valves. Sales by tank gauging

**PRODUCTION PHASE:** All drain valves and all sales valves are sealed closed

**SALES PHASE:** The tank from which sales are being made will be isolated by sealing closed the drain valve, fill valve, and the equalizer valve(s) during sales

**DRAINING PHASE:** The tank being drained will be isolated by sealing closed the sales valve, fill equalizer valve(s), and the drain valves on the other tanks.

## SEALING OF VALVES

**Tank S/T1 - S#1,D#1,SEALED SHUT**

**Tank S/T2 -**

**Tank S/T3 -**

**Tank S/T4 -**

## DEFINITIONS

Toolpusher-	Supervisor employed by the rig contractor (well servicing company) to supervise the rig crew
Rig Supervisor-	Individual contracted by ConocoPhillips to supervise workover operations including all rig operations, commonly referred to as the "Company Man"
Rig Superintendent -	ConocoPhillips employee who supervises the rig supervisor
PPM -	Parts Per Million
JSA -	Job Safety Analysis
H <sub>2</sub> S -	Hydrogen sulfide is a colorless, flammable, extremely poisonous gas. It is 1.2 times as heavy as air and will accumulate in low areas. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. It can be detected by smell at a concentration in air of only 0.02 ppm. Exposure to 10 ppm can be tolerated up to 8 hours without respiratory equipment. Respiratory equipment is required to protect workers should conditions exceed the foregoing allowable exposure limit. Concentrations in excess of 20 ppm have an effect on the olfactory nerve which deadens the sense of smell. Unconsciousness can occur without warning within seconds of inhalation at concentrations above 500 ppm.
CO <sub>2</sub> -	Carbon dioxide is colorless, non-flammable and at low concentrations odorless. At concentrations higher than atmospheric the gas can have a acidic odor and at concentrations much higher than atmospheric the gas will act as an asphyxiant.
SO <sub>2</sub> -	Sulfur dioxide is a colorless, nonflammable, intensely irritating gas and 2.2 times heavier than air. It is a by-product of combustion of hydrogen sulfide and is highly toxic. Exposure to 2 ppm can be tolerated for a maximum of 8 hrs. Respiratory equipment will be available and should be used by personnel measuring SO <sub>2</sub> concentration downwind from a flare.
CH <sub>4</sub> -	Methane is the major component of natural gas and is colorless, odorless and extremely flammable. The chief danger from methane is explosion. Mixture of CO <sub>2</sub> , H <sub>2</sub> S and CH <sub>4</sub> will burn if the total H <sub>2</sub> S and CH <sub>4</sub> content, in any ratio, is above 25 percent. Also the presence of methane causes an oxygen deficient environment and requires adequate ventilation for breathing.
CO -	Carbon monoxide is a colorless, odorless toxic gas. Its toxicity results from preferential reaction with the hemoglobin in the blood; however, it has no unique toxic action on any of the bodily tissues. CO displaces oxygen from hemoglobin and reduces the oxygen carrying capability of the blood. The primary danger from CO is that it binds with hemoglobin within the blood, thereby preventing oxygen / blood transfer. Respiratory equipment should be considered for atmospheres containing greater than 25 ppm. Exposure to 25 ppm is allowed up to 8 hours; however, at higher levels it will tend to cause headaches, dizziness and nausea. Concentrations above 1200 ppm are considered immediately dangerous to life and health. In addition to the toxic effects of CO, carbon monoxide burns readily in air. The flammability limits of CO in air change with pressure. At atmospheric pressure, however, the lower limit is $\pm 12.5\%$ and upper limit is $\pm 74\%$ .



## LIST OF REFERENCES

1. "API Recommended Practices for Safe Drilling of Wells Containing Hydrogen Sulfide", (API RP 49) American Petroleum Institute, Dallas, Texas, 1974.
2. "API Recommended Practice: Standard Procedure for Testing Drilling Fluids", (API RP 13B) American Petroleum Institute, Dallas, Texas, 1976.
3. Clark, R. K., "Hydrogen Sulfide in Water-Base Drilling Fluids - I: Chemistry, Corrosion and Treatment", Technical Progress Report BRC 35-77, Shell Development, Houston, Texas, 1977.
4. "Contingency Plan for Drilling, Completion and Workover, Sour Gas Wells, Safety Regulations and Emergency Procedures", Shell Oil Company, Michigan Operations, Traverse City, Michigan, 1974.
5. "Contingency Plan for the Drilling of Taylor DT 653, Ventura Avenue Field, Ventura County, California; Safety Procedures and Precautionary measures", Shell Oil Company, West Coast Division, Los Angeles, California, 1973.
6. "Drilling Contingency Plan for McElmo Dome Area", Shell Oil Company, Midland Operations, Midland, Texas, 1976.
7. "Drilling Fluid Engineering Manual", Magcobar Operations, Dresser Industries Inc., Houston, Texas, 1972.
8. "Rule 36: Oil, Gas or Geothermal Resource Operation in Hydrogen Sulfide Areas", Railroad Commission of Texas, Oil and Gas Division, Austin, Texas, 1976, as amended effective September 15, 1985.
9. "Safe Practices for Drilling and Well Servicing Operations", Volumes I and II, Shell Oil company Exploration and Production.
10. "Sulfide Stress Cracking Resistant Metallic Material for Oil Field Equipment", NACE Standard MR-01-75, National Association of Corrosion Engineers, Katy, Texas, 1978.
11. "Onshore Order No. 6, Hydrogen Sulfide Operations", Department of the Interior, Bureau of Land Management, 43 CFR Part 3160.

**Burlington Resources Oil & Gas Company.**  
**Tribal Lease: MOO-C-1420-0623**  
**Well: Pinon Mesa D #2**  
**800' FSL & 600' FEL**  
**Sec. 13, T. 31 N., R. 14 W.**  
**San Juan County, New Mexico**

**3160**

**All Activities must be in compliance with Onshore Order #6.**

**Conditions of Approval - Notice of Intent to Abandon:**

1. Notify this office at least **72 hours** prior to commencing plugging operations.
2. Approval of this Notice of Intent to Abandon (NIA) is for down hole plugging only.
3. Materials used will be accurately measured.
4. A tank or approved pit must be used for containment of any fluids from the wellbore during plugging operations. All unattended pits are to be fenced.
5. Pits are not to be used for disposal of any unauthorized materials.
6. All cement plugs are to be placed through a work string. Cement may be bull-headed down the casing with prior approval. Cement caps on top of bridge plugs or cement retainers may be placed by dump bailer.
  - 6a. Cement plugs placed inside casing shall have sufficient volume to fill a minimum of 100 ft. of the casing or annular void(s) between casings, plus 10% excess volume per 1000 ft. of depth.
  - 6b. Surface plugs must be a minimum of 50 ft. within casing and annular voids.
  - 6c. Cement plugs placed to fill an open hole shall have sufficient volume to fill a minimum of 100 ft. of open hole, plus 10% excess volume per 1000 ft. of depth.
  - 6d. An additional 100 ft. cement plug must be placed midway between the Gallup and surface casing plugs.
  - 6e. Tag the Pictured Cliffs plug.
7. The well must be filled with a wellbore mud sufficient to stabilize the wellbore. In the absence of any formation pressure data provided by the operator, this mud will have a minimum weight of **9 ppg**. The mud must be left between all plugs.

Continued on Page 2.

8. A blowout preventer and related equipment shall be installed and tested prior to working in a wellbore with any exposed zones (a) that are overpressured, (b) where pressures are unknown, or (c) known to contain H<sub>2</sub>S.

9. Within 30 days after plugging of the well, file 5 copies of a Subsequent Report of Abandonment (SRA) via Sundry Notice. This report should include the following information:

- a. Date(s) of plugging operations.
- b. Procedure used to plug the well.
- c. Depth of plugs.
- d. Type and volume of plugs set.
- e. Casing types/lengths left in the well.

#### **Surface Use Conditions of Approval:**

**This approval is for the completion of the downhole plugging portion of the well only. Surface reclamation must be completed, weed free vegetation established, and site accepted by the BIA prior to closure and bond release.**

**The Bureau of Land Management, SJPLC ([david\\_swanson@co.blm.gov](mailto:david_swanson@co.blm.gov) or 970.385.1370) shall be notified at least 48 hours prior to commencement of surface reclamation. The BIA-UMU (970.565-6094) and UMU Tribal Energy at 970.564-5690 prior to surface reclamation procedures for specific requirements and seed mixtures.**

- The pits and boreholes shall be filled, access road restored, surface re-contoured to blend with surrounding terrain, top soil evenly redistributed.
- Well equipment, dead-men, concrete slabs, cables, piping and trash shall be removed, slash piles chipped and scattered.
- The site shall require weed control, soil preparation and reseeded with a BIA approved seed mix and shall be monitored for self-sustaining growth. **A full list of "Oil and Gas Well Surface Reclamation" requirements is available through the BLM.**

According to the regulations in 43 CFR 3162.3-4, a well site is to be reclaimed and re-vegetated directly following plugging. The BLM-SJRA stipulates that **surface reclamation** be completed within 180 days of final plugging operation completion. When re-vegetation has subsequently been re-established, BLM shall be notified by the operator with a Final Abandonment Notice. A field inspection will then be arranged between the SUIT/UMU Tribe, the BLM and the respective BIA agency, so that the well pad can be inspected for release from bond liability.