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Form 3160-3  
(April 2004)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, 20075. Lease Serial No.  
NM 2538, NMLC-058709(A)

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.  
TAYLOR DEEP 12 FED #5 129859. API Well No.  
#30-015-26358

10. Field and Pool, or Exploratory

Young - MORROW, Northwest  
11. Sec., T. R. M. or Blk. and Survey or Area

Sec 12 - T18S - R31E

12. County or Parish  
EDDY COUNTY13. State  
NM4. Location of Well (Report location clearly and in accordance with any State requirements.)\*  
At surface 990' FNL & 660' FWL

At proposed prod. zone 990' FNL &amp; 660' FWL

CAPITAN CONTROLLED WATER BASIN

14. Distance in miles and direction from nearest town or post office\*  
12 miles southeast of Loco Hills, New Mexico15. 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  
160 acres & 160 acres17. Spacing Unit dedicated to this well  
320 acres (W/2)18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft. 1,320'19. Proposed Depth  
12,450'20. BLM BIA Bond No. on file  
NM-B00031721. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3,780' GR22. Approximate date work will start\*  
07/01/200623. Estimated duration  
60 days

## 24. Attachments

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

1. Well plat certified by a registered surveyor.

2. A Drilling Plan.

3. A Surface Use Plan (if the location is on National Forest System Lands, the  
SUPO shall be filed with the appropriate Forest Service Office).4. Bond to cover the operations unless covered by an existing bond on file (see  
Item 20 above).

5. Operator certification

6. Such other site specific information and/or plans as may be required by the  
authorized officer.

25. Signature



Name (Printed Typed)

Keith Cannon

Date

06/13/2006

Title

Drilling Superintendent

Approved by (Signature)

/s/ Tony J. Herrell

Name (Printed Typed)

/s/ Tony J. Herrell

Date

JUN 28 2006

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

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

Submit to Appropriate  
District Office  
State Leases - 4 copies  
Fee Leases - 3 copies

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

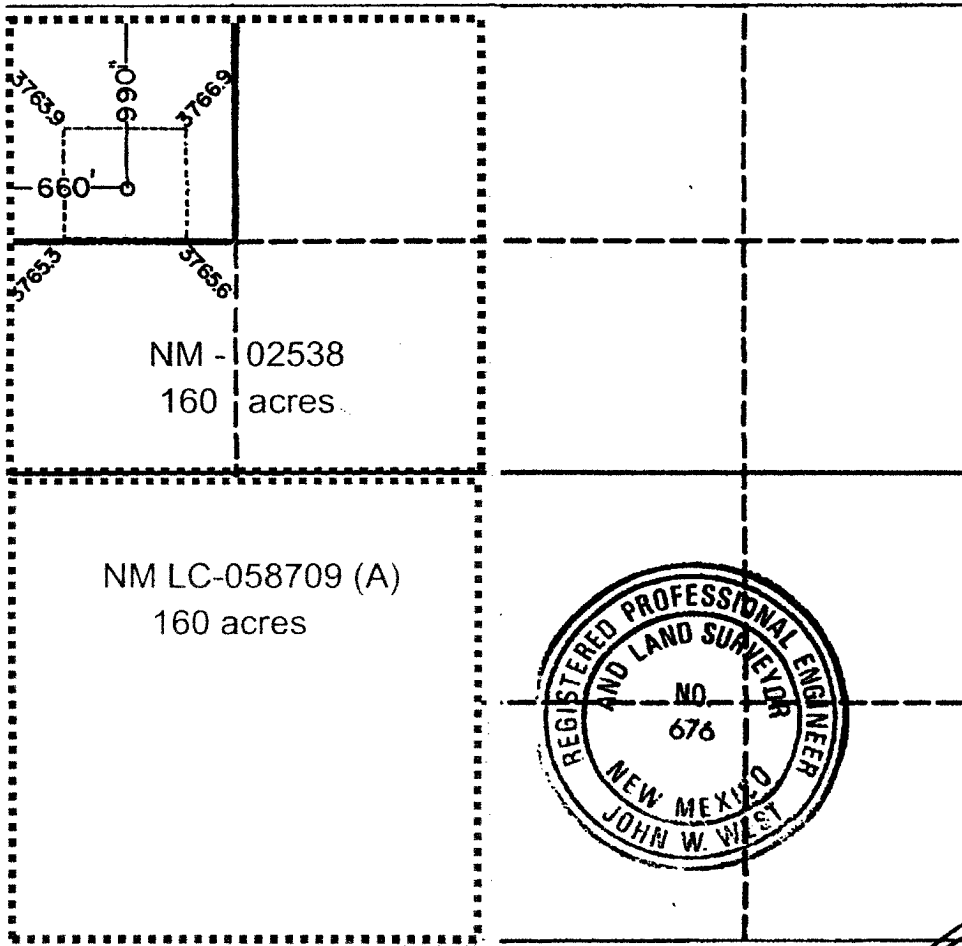
DISTRICT I  
P.O. Box 1940, Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator HARVEY E. YATES CO.		Lease Taylor Deep 12 Federal		Well No. 5
Unit Letter D	Section 12	Township 18 South	Range 31 East	County Eddy
Actual Footage Location of Well: 990 feet from the North line and 660 feet from the West line				
Ground level Elev. 3766.2	Producing Formation Morrow	Pool Unders Young Morrow, NW	Dedicated Acreage: 320.00 Acres	
<p>1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.</p> <p>2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).</p> <p>3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.? <input type="checkbox"/> Yes <input type="checkbox"/> No If answer is "yes" type of consolidation _____</p> <p>If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)</p> <p>No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.</p>				
			<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p>Signature <i>Keith Cannon</i></p> <p>Printed Name Keith Cannon</p> <p>Position Drilling Superintendent</p> <p>Company Harvey E. Yates Company</p> <p>Date May 22, 2006</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p>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 knowledge and belief.</p> <p>Date Surveyed April 5, 1990</p> <p>Signature &amp; Seal of Professional Surveyor <i>John W. West</i></p> <p>Certificate No. JOHN W. WEST, 676 RONALD J. EIDSON, 3239</p>	

Taylor 12 Fed #5  
990' FNL & 660' FWL  
SEC 12, T18S, R31E  
EDDY COUNTY, NEW MEXICO

Harvey E. Yates Company (HEYCO) proposes to re-enter and deepen the Taylor 12 Federal #5 as a 12,450' Morrow test at the captioned location, assigning a 320-acre W/2 proration unit to the well. The Taylor Deep 12 Federal #5 was previously drilled to a total depth of 8900 ft. and completed in 1990 (plugged off the rig) as a development dry hole in the Bone Springs Fm. Procedure will be to nipple up on the existing intermediate casing which was set at 2368', drill out the existing plugs and continue drilling to the PTD. This re-entry can not be started prior to the end of the Prairie Chicken Booming Season on June 15, 2006, therefore, it is our plan to move a rig on the location as soon as reasonably possible after June 15.

Application  
Harvey E. Yates Company  
**Taylor 12 Federal #5**  
990' FNL & 660' FWL  
SEC 12, T18S, R31E  
Eddy County, New Mexico

In conjunction with Form 3160-3, Application For Permit To Drill Or Deepen subject well, Harvey E. Yates Company submits the following ten items of pertinent information in accordance with Onshore Oil & Gas Order No. 10.

1. Geologic Name of Surface Formation:  
Quaternary Alluvium and Bolson deposits

2. Estimated Tops of Significant Geologic Markers:

<u>Formation</u>	<u>Depth</u>
Rustler	875'
BX (BASE OF SALT)	2,150'
Yates	2,370'
Seven Rivers	2,715'
Bowers	3,200'
Queen	3,460'
Penrose	3,700'
Grayburg	3,980'
San Andres	4,505'
Delaware	4,850'
Bone Spring	5,725'
1 <sup>st</sup> Sand	7,600'
B-Zone	7,810'
2 <sup>nd</sup> Sand	8,175'
C-zone	8,780'
3 <sup>rd</sup> Sand	8,980'
Wolfcamp	9,310'
Penn Shale	10,300'
Strawn	11,050'
Atoka	11,400'
Morrow Clastics	11,940'
Lower Morrow	12,150'
U. Miss	12,300'
PTD	12,450'

3. Estimated Depths at which Water, Oil, or Gas Formations are expected:

<u>Formation</u>	<u>Depth</u>	<u>Remarks</u>
Bone Springs	5725'	

4. Proposed Casing Program:

Hole size	Grade, size Csg	Wt/ft	Depth	Quantity of cement
17 1/2"	13 3/8 J-55	54.5#	375'	In place circ to surface
12 1/4"	8 5/8" J-55	32.0#	2368'	In place circ to surface
7 7/8"	5 1/2" N-80 & P-110	17.0#	12,450'	cmt up into 8 5/8 csg

5. Pressure Control Equipment:  
This well will be 5M BOP

6. Drilling Fluid Program:  
8,900' - 12,450' Cut Brine W/ Nitrate Marker, Mud up in Wolfcamp w/ Barazan, 30-60,00 Chlorides, MW 9.6-9.8, Vis 34, WL 10-20, Mud Program Subject to change due to hole conditions.

7. Auxiliary Equipment:  
Blowout Preventer

8. **Testing, Logging, & Coring Program:**  
Mud log, 1 DST- Wolfcamp or Strawn, Platform Express w/HALS, BHC Sonic and Possible Sidewall Cores.
9. **Abnormal Conditions, Pressures, Temperature, or Potential Hazards:**  
No abnormal conditions are anticipated in this well bore.
9. **Anticipated Starting Date & Duration of Operation:**  
The anticipated starting date is set for as soon as possible after examination and approval of all drilling requirements.  
Duration of this project will be approximately 50 days from start of  
Construction of drilling pad until finish of completion operations

**Surface Use Plan**  
Harvey E. Yates Company  
Taylor 12 Federal # 5  
990' FNL & 660' FSL  
Section 9, T18S, R30E  
Eddy County, New Mexico

**1. Existing Roads:**

Exhibit A is a portion of a New Mexico map showing the location of the proposed location. The location is approximately 12 miles Southeast of Loco Hills, NM. Leave Artesia on US 82 & travel East 31 miles & turn South on NM 222. Go 3.0 mile & turn left. Go 1.6 mile turn right. Go 1.6 mile turn right. Go .2 miles turn left. Go .8 mile turn right. Go .2 mile turn right into location.

**2. Planned Access Roads:**

No new road will be built to access this location.

**3. Location of Existing Wells:**

See EXHIBIT B From the surveying company / vicinity map

**4. Location of Tank Batteries, Electric Lines, Etc:**

In the event a producing well is drilled, a tank battery will be built on the location.

**5. Location and Type of Water Supply:**

Water will be obtained from commercial sources.

**6. Source of Construction Material:**

We will use materials from a state, BLM approved pits to build the location.

**7. Methods of Handling Waste Disposal:**

Waste will be handled in an approved manner. The wellsite will be cleaned of all waste within 30 days of final completion of the well.

**8. Ancillary Facilities:**

N/A

**9. Wellsite Layout:**

a. EXHIBIT D shows the relative location and dimensions of the well pad, reserve pits, and major rig components.

b. The land is relatively flat with sandy soil and sand dunes.

c. The pad and pit area have been staked.

**10. Plan for Restoration of the Surface:**

a. After drilling and completion operations are completed, all equipment and other materials not needed for further operations will be removed. Pits will be back filled and the location cleaned of all trash to leave the wellsite as pleasant in appearance as possible.

b. If the proposed operation is nonproductive, all restoration and/or vegetation requirements of the BLM will be complied with, and will be accomplished as quickly as possible. All pits will be filled and leveled within 90 days after abandonment.

**11. Other Information:**

- a. The mineral and surface owner is the Federal Government, and Grazing Lessee Faye Klein had been contacted.
- b. The topography consists of sandy soil with native grasses. No wildlife was observed, but the usual inhabitants of this region are Jackrabbits, Reptiles, Coyotes, etc.
- c. There are no ponds, lakes, or rivers in this area.
- d. An Archaeological Survey has been made and a copy has been sent to the Carlsbad BLM office. There is no evidence of any significant archaeological, historical, or cultural sites in the area. Further, there are no occupied dwellings or windmills in the area.
- e. Should any incidental oil be recovered during testing of this well, this oil will be considered waste oil and not sellable due to contamination by drilling and/or completion fluids.

**12. Operator's Representative:**

I certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; that the work associated with operations proposed herein will be performed by Harvey E. Yates Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Keith Cannon, Drilling Superintendent  
Harvey E. Yates Company  
P.O. Box 1933  
Roswell, NM  
505-623-6601



MAY 22, 2006

**United States Department of the Interior**

**BUREAU OF LAND MANAGEMENT  
Roswell Resource Area  
P.O. Drawer 1857  
Roswell, New Mexico 88202-1857**

**Statement Accepting Responsibilities for Operations**

**Operator Name: Harvey E. Yates Company  
Street or Box: P.O. Box 1933  
City, State: Roswell, New Mexico  
Zip Code: 88202**

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

**Lease No.: NMNM-02538, NMLC- 058709(A)**

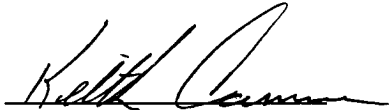
**Lease Name: Taylor 12 Federal #5  
Legal description of land: Sec 12, T18S, R31E, Eddy County, New Mexico**

**Formation(s) (if applicable): Morrow**

**Bond Coverage: Statewide Bond**

**BLM Bond File No.: NM-B000317**

**Authorized Signature:**

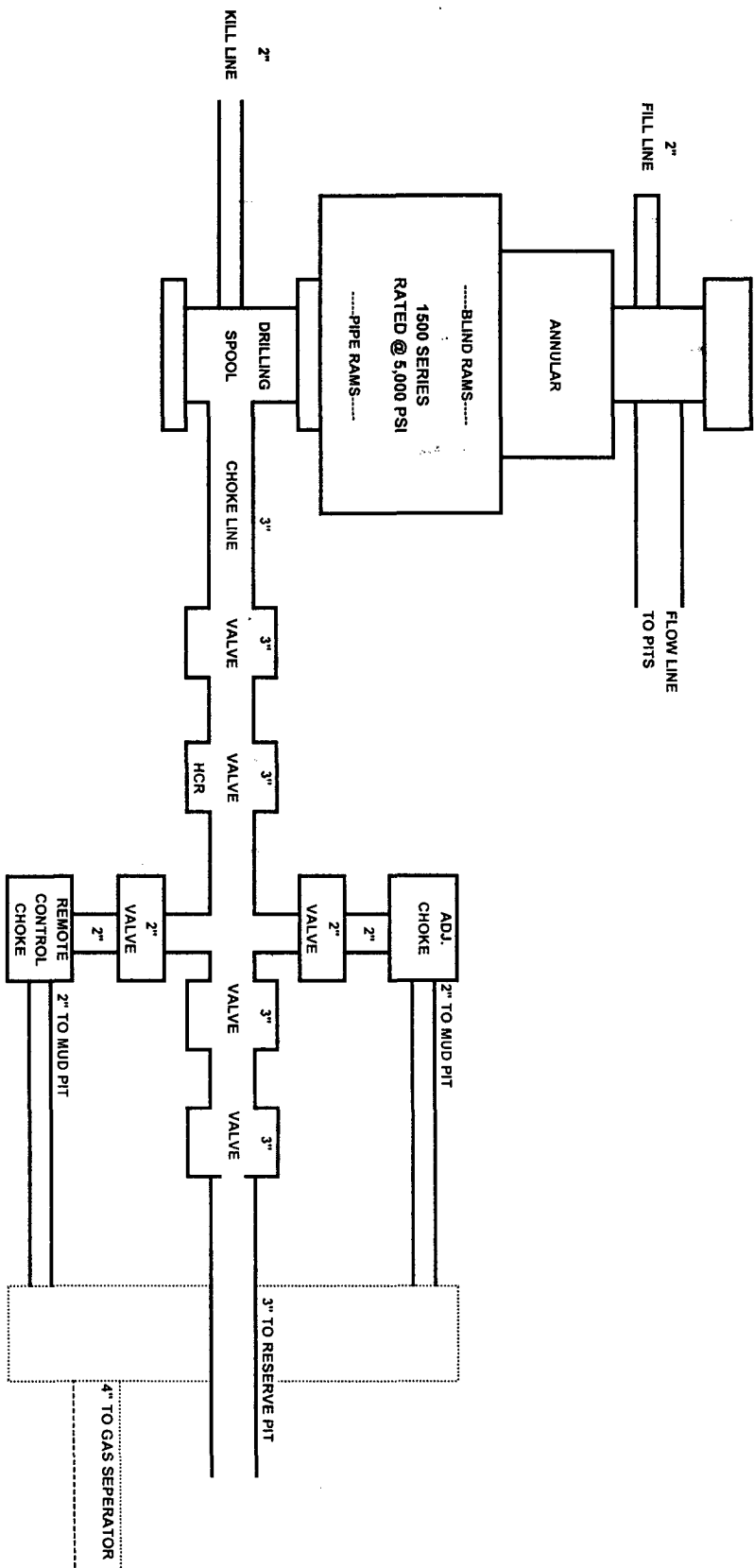


**Title: Drilling Superintendent**

**Date: MAY 22, 2006**

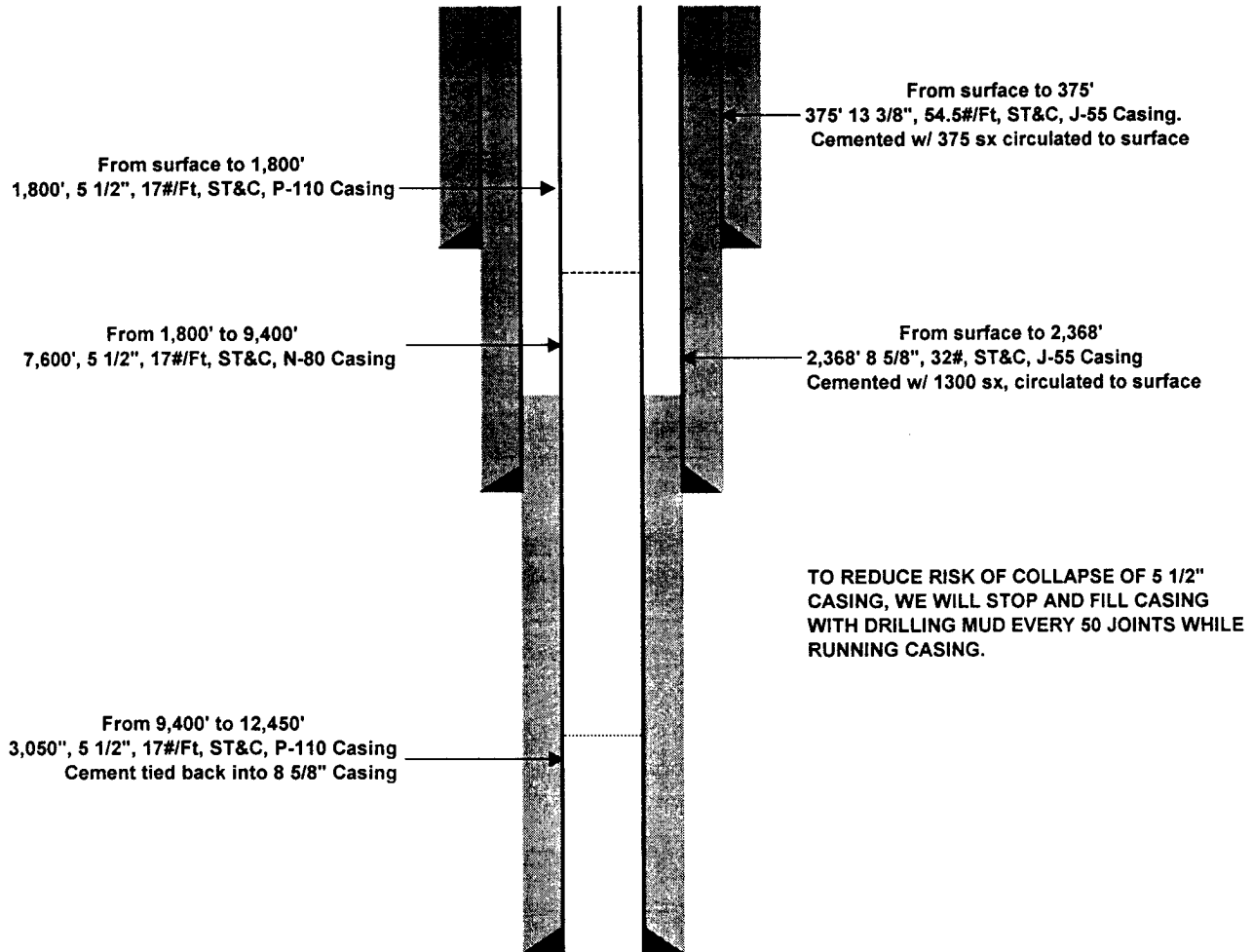


EXHIBIT "C" BOP STACK  
Taylor 12 Fed #5  
990' FNL & 660' FWL  
SEC. 12, T18S, R31E  
EDDY CO, N.M.



**EXHIBIT "E" CASING DESIGN**

**Taylor 12 Fed # 5  
990' FNL & 660' FWL  
SEC 12, T18S, R31E  
Eddy COUNTY, NM**



# HYDROGEN SULFIDE CONTINGENCY PLAN

## SCOPE

THIS CONTINGENCY PLAN ESTABLISHES GUIDELINES FOR THE PUBLIC, ALL COMPANY EMPLOYEES WHO'S WORK ACTIVITIES MAY INVOLVE EXPOSURE TO HYDROGEN SULFIDE (H<sub>2</sub>S) GAS.

## OBJECTIVE

1. PREVENT ANY AND ALL ACCIDENTS, AND PREVENT THE UNCONTROLLED RELEASE OF HYDROGEN SULFIDE INTO THE ATMOSPHERE.
2. PROVIDE PROPER EVACUATION PROCEDURES TO COPE WITH EMERGENCIES.
3. PROVIDE IMMEDIATE AND ADEQUATE MEDICAL ATTENTION SHOULD AN INJURY OCCUR.

## H<sub>2</sub>S CONTINGENCY PLAN

## DISCUSSION

### GEOLOGICAL PROGNOSIS

#### IMPLEMENTATION:

THIS PLAN WITH ALL DETAILS IS TO BE FULLY IMPLEMENTED AFTER DRILLING TO INTERMEDIATE CASING POINT.

#### EMERGENCY RESPONSE PROCEDURE:

THIS SECTION OUTLINES THE CONDITIONS AND DENOTES STEPS TO BE TAKEN IN THE EVENT OF AN EMERGENCY.

#### EMERGENCY EQUIPMENT PROCEDURE:

THIS SECTION OUTLINES THE SAFETY AND EMERGENCY EQUIPMENT THAT WILL BE REQUIRED FOR THE DRILLING OF THIS WELL.

#### TRAINING PROVISIONS:

THIS SECTION OUTLINES THE TRAINING PROVISIONS THAT MUST BE ADHERED TO PRIOR TO DRILLING TO INTERMEDIATE CASING POINT.

#### DRILLING EMERGENCY CALL LISTS:

INCLUDED ARE THE TELEPHONE NUMBERS OF ALL PERSONS TO BE CONTACTED SHOULD AN EMERGENCY EXIST.

#### BRIEFING:

THIS SECTION DEALS WITH THE BRIEFING OF ALL PEOPLE INVOLVED IN THE DRILLING OPERATION.

#### PUBLIC SAFETY:

PUBLIC SAFETY PERSONNEL WILL BE MADE AWARE OF THE DRILLING OF THIS WELL.

#### CHECK LISTS:

STATUS CHECK LISTS AND PROCEDURAL CHECK LISTS HAVE BEEN INCLUDED TO INSURE ADHERENCE TO THE PLAN.

#### GENERAL INFORMATION:

A GENERAL INFORMATION SECTION HAS BEEN INCLUDED TO SUPPLY SUPPORT INFORMATION.

## **EMERGENCY PROCEDURES**

- A. IN THE EVENT OF ANY EVIDENCE OF H<sub>2</sub>S LEVEL ABOVE 10 PPM, TAKE THE FOLLOWING STEPS:
1. SECURE BREATHING EQUIPMENT.
  2. ORDER NON-ESSENTIAL PERSONNEL OUT OF DANGER ZONE.
  3. TAKE STEPS TO DETERMINE IF THE H<sub>2</sub>S LEVEL CAN BE CORRECTED OR SUPPRESSED AND, IF SO, PROCEED IN NORMAL OPERATION.
- B. IF UNCONTROLLABLE CONDITIONS OCCUR:
1. TAKE STEPS TO PROTECT AND/OR REMOVE ANY PUBLIC IN THE DOWN-WIND AREA FROM THE RIG – PARTIAL EVACUATION AND ISOLATION. NOTIFY NECESSARY PUBLIC SAFETY PERSONNEL AND THE BUREAU OF LAND MANAGEMENT OF THE SITUATION.
  2. REMOVE ALL PERSONNEL TO SAFE BREATHING AREA.
  3. NOTIFY PUBLIC SAFETY PERSONNEL TO SAFE BREATHING AREA.
  4. PROCEED WITH BEST PLAN (AT THE TIME) TO REGAIN CONTROL OF THE WELL. MAINTAIN TIGHT SECURITY AND SAFETY PROCEDURES.
- C. RESPONSIBILITY:
1. DESIGNATED PERSONNEL.
    - a. SHALL BE RESPONSIBLE FOR THE TOTAL IMPLEMENTATION OF THIS PLAN.
    - b. SHALL BE IN COMPLETE COMMAND DURING ANY EMERGENCY.
    - c. SHALL DESIGNATE A BACK-UP.

## **EMERGENCY PROCEDURES**

\*(Procedures are the same for both Drilling and Tripping)

- |                   |  |
|-------------------|--|
| ALL PERSONNEL:    | <ol style="list-style-type: none"><li>1. ON ALARM, DON ESCAPE UNIT AND REPORT IN UP WIND BRIEFING AREA.</li><li>2. CHECK STATUS OF PERSONNEL (BUDDY SYSTEM).</li><li>3. SECURE BREATHING EQUIPMENT.</li><li>4. AWAIT ORDERS FROM SUPERVISOR.</li></ol>   |
| DRILLING FOREMAN: | <ol style="list-style-type: none"><li>1. REPORT TO UP WIND BRIEFING AREA.</li><li>2. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH TOOL PUSHER OR DRILLER (BUDDY SYSTEM).</li><li>3. DETERMINE H<sub>2</sub>S CONCENTRATIONS.</li><li>4. ASSESS SITUATION AND TAKE CONTROL MEASURES.</li></ol>     |
| TOOL PUSHER:      | <ol style="list-style-type: none"><li>1. REPORT TO UP WIND BRIEFING AREA.</li><li>2. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH DRILLING FOREMAN OR DRILLER (BUDDY SYSTEM).</li><li>3. DETERMINE H<sub>2</sub>S CONCENTRATION.</li><li>4. ASSESS SITUATION AND TAKE CONTROL MEASURES.</li></ol> |

**DRILLER:**

1. DON ESCAPE UNIT.
2. CHECK MONITOR FOR POINT OF RELEASE.
3. REPORT TO BRIEFING AREA.
4. CHECK STATUS OF PERSONNEL (IN AN ATTEMPT TO RESCUE, USE THE BUDDY SYSTEM).
5. ASSIGNS LEAST ESSENTIAL PERSON TO NOTIFY DRILLING FOREMAN AND TOOL PUSHER BY QUICKEST MEANS IN CASE OF THEIR ABSENCE.
6. ASSUMES THE RESPONSIBILITIES OF THE DRILLING FORMAN AND TOOL PUSHER UNTIL THEY ARRIVE SHOULD THEY BE ABSENT.

**EMERGENCY PROCEDURES**

**DERRICK MAN  
FLOOR MAN #1  
FLOOR MAN #2**

1. WILL REMAIN IN BRIEFING AREA UNTIL INSTRUCTED BY SUPERVISOR.

**MUD ENGINEER:**

1. REPORT TO BRIEFING AREA.
2. WHEN INSTRUCTED, BEGIN CHECK OF MUD FOR PH AND H2S LEVEL. (GARETT GAS TRAIN.)

**SAFETY PERSONNEL:**

1. MASK UP AND CHECK STATUS OF ALL PERSONNEL AND SECURE OPERATIONS AS INSTRUCTED BY DRILLING FOREMAN AND REPORT TO BRIEFING AREA.

**TAKING A KICK**

WHEN TAKING A KICK DURING AN H2S EMERGENCY, ALL PERSONNEL WILL FOLLOW STANDARD BOP PROCEDURES AFTER REPORTING TO BRIEFING AREA AND MASKING UP.

**OPEN-HOLE LOGGING**

ALL UNNECESSARY PERSONNEL OFF FLOOR. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD MONITOR CONDITION, ADVISE STATUS AND DETERMINE NEED FOR USE OF AID EQUIPMENT.

**RUNNING CASING OR PLUGGING**

FOLLOWING HE AME "TRIPPING" PROCEDURE AS ABOVE. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD DETERMINE IF ALL PERSONNEL HAVE ACCESS TO PROTECTIVE EQUIPMENT.

**IGNITION PROCEDURES**

THE DECISION TO IGNITE THE WELL IS THE RESPONSIBILITY OF COMPANY FOREMAN. IN THE EVENT HE IS INCAPACITATED, IT BECOMES THE RESPONSIBILITY OF THE CONTRACT RIG TOOL PUSHER. THE DECISION SHOULD BE MADE ONLY AS A LAST RESORT AND IN A SITUATION WHERE IT IS CLEAR THAT:

1. HUMAN LIFE AND PROPERTY ARE ENDANGERED.
2. THERE IS NO HOPE CONTROLLING THE BLOWOUT UNDER THE PREVAILING CONDITIONS AT THE WELL.

NOTIFY THE DISTRICT OFFICE IF TIME PERMITS, BUT DO NOT DELAY IF HUMAN LIFE IS IN DANGER.

INITIATE FIRST PHASE OF EVACUATION PLAN.

## IGNITION PROCEDURES

### INSTRUCTIONS FOR IGNITING THE WELL

1. TWO PEOPLE ARE REQUIRED FOR THE ACTUAL IGNITING OPERATION. THEY MUST WEAR SELF-CONTAINED BREATHING UNITS AND HAVE SAFETY ROPE ATTACHED. ONE MAN (TOOL PUSHER OR SAFETY ENGINEER) WILL CHECK THE ATMOSPHERE FOR EXPLOSIVE GASES WITH THE EXPLOSIMETER. THE OTHER MAN (DRILLING FOREMAN) IS RESPONSIBLE FOR IGNITING THE WELL.
2. PRIMARY METHOD TO IGNITE: 25 MM FLARE GUN WITH RANGE OF APPROXIMATELY 500 FEET.
3. IGNITE UP WIND AND DO NOT APPROACH ANY CLOSER THAN IS WARRANTED.
4. SELECT THE IGNITION SITE BEST FOR PROTECTION, AND WHICH OFFERS AN EASY ESCAPE ROUTE.
5. BEFORE FIRING, CHECK FOR PRESENCE OF COMBUSTIBLE GAS.
6. AFTER LIGHTING, CONTINUE EMERGENCY ACTION AND PROCEDURE AS BEFORE.
7. ALL UNASSIGNED PERSONNEL WILL LIMIT THEIR ACTIONS TO THOSE DIRECTED BY THE DRILLING FOREMAN.

**REMEMBER:** AFTER WELL IS IGNITED, BURNING HYDROGEN SULFIDE WILL CONVERT TO SULFUR DIOXIDE, WHICH IS ALSO HIGHLY TOXIC. DO NOT ASSUME THE AREA IS SAFE AFTER THE WELL IS IGNITED.

### TRAINING REQUIREMENTS

WHEN WORKING IN AN AREA WHERE HYDROGEN SULFIDE GAS (H<sub>2</sub>S) MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL COMPANIES WILL INSURE THAT ALL PERSONNEL AT THE WELL SITE WILL HAVE HAD ADEQUATE TRAINING IN THE FOLLOWING:

1. HAZARDS AND CHARACTERISTICS OF H<sub>2</sub>S.
2. PHYSICAL EFFECTS OF HYDROGEN SULFIDE ON THE HUMAN BODY.
3. TOXICITY OF HYDROGEN SULFIDE AND SULFUR DIOXIDE.
4. H<sub>2</sub>S DETECTION.
5. EMERGENCY RESCUE.
6. RESUSCITATORS.
7. FIRST AID AND ARTIFICIAL RESPIRATION.
8. EFFECTS OF H<sub>2</sub>S ON METALS.
9. LOCATION SAFETY.

### SERVICE COMPANY AND VISITING PERSONNEL

- A. EACH SERVICE COMPANY THAT WILL BE ON THIS WELL WILL BE NOTIFIED IF THE ZONE CONTAINS H<sub>2</sub>S.
- B. EACH SERVICE COMPANY MUST PROVIDE FOR THE TRAINING AND EQUIPMENT OF THEIR EMPLOYEES BEFORE THEY ARRIVE AT THE WELL SITE.
- C. EACH SERVICE COMPANY WILL BE EXPECTED TO ATTEND A WELL SITE BRIEFING.

### EMERGENCY EQUIPMENT REQUIREMENTS

#### 1. SIGNS

- A. ONE SIGN LOCATED AT LOCATION ENTRANCE WITH THE FOLLOWING LANGUAGE:

(LEASE)  
CAUTION – POTENTIAL POISON GAS  
HYDROGEN SULFIDE  
NO ADMITTANCE WITHOUT AUTHORIZATION

#### 2. WIND SOCK – WIND STREAMERS

- A. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT PROTECTION CENTER, AT HEIGHT VISIBLE FROM RIG FLOOR.
- B. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT HEIGHT VISIBLE FROM PIT AREAS.

3. HYDROGEN - SULFIDE DETECTOR AND ALARMS

- A. H2S MONITORS WITH ALARMS WILL BE LOCATED ON THE RIG FLOOR, AT THE BELL NIPPLE, AND AT THE FLOW LINE. THESE MONITORS WILL BE SET TO ALARM AT 10 PPM WITH RED LIGHT, AND TO ALARM AT 15 PPM WITH RED LIGHT AND AUDIBLE ALARM.
- B. HAND OPERATED DETECTORS WITH TUBES.
- C. H2S MONITOR TESTER.

4. CONDITION FLAGS

- A. ONE EACH OF GREEN, YELLOW, AND RED CONDITION FLAGS TO BE DISPLAYED TO DENOTE CONDITIONS.

GREEN - NORMAL CONDITIONS  
YELLOW - POTENTIAL DANGER  
RED - DANGER, H2S PRESENT

- B. CONDITION FLAG SHALL BE POSTED AT LOCATION SIGN ENTRANCE.

5. AUXILIARY RESCUE EQUIPMENT

- A. STRETCHER
- B. 100' LENGTH OF 5/8" NYLON ROPE.

6. MUD INSPECTION DEVICES

GARRETT GAS TRAIN OR HACH TESTER FOR INSPECTION OF SULFIDE CONCENTRATION IN MUD SYSTEM.

7. FIRE EXTINGUISHER

ADEQUATE FIRE EXTINGUISHERS SHALL BE LOCATED AT STRATEGIC LOCATIONS.

8. BLOW OUT PREVENTION EQUIPMENT

THE WELL SHALL HAVE HYDRAULIC BOP EQUIPMENT FOR THE ANTICIPATED BHP OF 1500 PSI. EQUIPMENT IS TO BE TESTED ON INSTALLATION.

9. COMBUSTIBLE GAS DETECTOR

THERE SHALL BE ONE COMBUSTIBLE GAS DETECTOR ON LOCATION AT ALL TIMES.

10. BOP TESTING

BOP AND CHOKE LINE AND KILL LINE WILL BE TESTED.

11. AUDIO SYSTEM

RADIO COMMUNICATION WILL BE AVAILABLE AT THE RIG.

- A. RIG FLOOR OR TRAILER
- B. VEHICLE

12. SPECIAL CONTROL EQUIPMENT

- A. HYDRAULIC BOP EQUIPMENT WITH REMOTE CONTROL ON GROUND.
- B. ROTATING HEAD

EMERGENCY EQUIPMENT REQUIREMENTS

13. EVACUATION PLAN

EVACUATION ROUTES SHOULD BE ESTABLISHED PRIOR TO SPUDDING EACH WELL AND DISCUSSED WITH ALL RIG PERSONNEL.

14. DESIGNATED AREA

- A. PARKING AND VISITOR AREA: ALL VEHICLES ARE TO BE PARKED AT A PREDETERMINED SAFE DISTANCE FROM THE WELLHEAD. THIS WILL BE THE DESIGNATED SMOKING AREA.
- B. TWO BRIEFING AREAS ON EITHER SIDE OF THE LOCATION AT THE MAXIMUM ALLOWABLE DISTANCE FROM THE WELL BORE SO THEY OFFSET PREVAILING WINDS PERPENDICULARLY, OR AT A 45-DEGREE ANGLE IF WIND DIRECTION TENDS TO SHIFT IN THE AREA.
- C. PROTECTION CENTERS OR IF A MOVABLE TRAILER IS USED, IT SHOULD BE DEPT UPWIND OF EXISTING WINDS. WHEN WIND IS FROM THE PREVAILING DIRECTIONS, BOTH PROTECTION CENTERS SHOULD BE ACCESSIBLE.

STATUS CHECK LIST

NOTE: ALL ITEMS ON THIS LIST MUST BE COMPLETED BEFORE DRILLING TO POSSIBLE FORMATIONS CONTAINING H2S.

- 1. SIGN AT LOCATION ENTRANCE.
- 2. TWO (2) WIND SOCKS LOCATED AS REQUIRED.
- 3. TWO (2) 30-MINUTE PRESSURE DEMAND AIR PACKS ON LOCATION FOR ALL RIG PERSONNEL AND MUD LOGGERS.
- 4. AIR PACK INSPECTED FOR READY USE.
- 5. SAFE BREATHING AREAS SET UP.
- 6. CONDITION FLAG ON LOCATION AND READY FOR USE.
- 7. H2S DETECTION SYSTEM HOOKED UP.
- 8. H2S ALARM SYSTEM HOOKED UP AND READY.
- 9. ALL RIG CREW AND SUPERVISORS TRAINED AS REQUIRED.
- 10. ALL OUTSIDE SERVICE CONTRACTORS ADVISED OF POTENTIAL H2S HAZARD ON WELL.
- 11. NO SMOKING SIGN POSTED.
- 12. HAND OPERATED H2S DETECTOR WITH TUBES ON LOCATION.

CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROCEDURAL CHECK LIST

PERFORM EACH TOUR:

- 1. CHECK FIRE EXTINGUISHERS TO SEE THAT THEY HAVE THE PROPER CHARGE.
- 2. CHECK BREATHING EQUIPMENT TO ENSURE THAT IT HAS NOT BEEN TAMPERED WITH.
- 3. MAKE SURE ALL THE H2S DETECTION SYSTEM IS OPERATIVE.

PERFORM EACH WEEK:

- 1. CHECK EACH PIECE OF BREATHING EQUIPMENT TO MAKE SURE THAT DEMAND REGULATOR IS WORKING. THIS REQUIRES THAT THE BOTTLE BE OPENED AND THE MASK ASSEMBLY BE PUT ON TIGHT ENOUGH SO THAT WHEN YOU INHALE, YOU RECEIVE AIR.
- 2. BLOW OUT PREVENTER SKILLS.
- 3. CHECK SUPPLY PRESSURE ON BOP ACCUMULATOR STAND BY SOURCE.



4. CHECK ALL SKA-PAC UNITS FOR OPERATION: DEMAND REGULATOR, ESCAPE BOTTLE AIR VOLUMES, SUPPLY BOTTLE OF AIR VOLUME.
5. CHECK BREATHING EQUIPMENT MASK ASSEMBLY TO SEE THAT STRAPS ARE LOOSENEED AND TURNED BACK, READY TO PUT ON.
6. CHECK PRESSURE ON BREATHING EQUIPMENT AIR BOTTLES TO MAKE SURE THEY ARE CHARGED TO FULL VOLUME.
7. CONFIRM PRESSURE ON ALL SUPPLY AIR BOTTLES.
8. PERFORM BREATHING EQUIPMENT DRILLS WITH ON-SITE PERSONNEL.
9. CHECK THE FOLLOWING SUPPLIES FOR AVAILABILITY.
  - A. EMERGENCY TELEPHONE LIST.
  - B. HAND OPERATED H2S DETECTORS AND TUBES.

### GENERAL EVACUATION PLAN

THE DIRECT LINES OF ACTION PREPARED BY INDIAN FIRE & SAFETY, INC. TO PROTECT THE PUBLIC FROM HAZARDOUS GAS SITUATIONS ARE AS FOLLOWS:

1. WHEN THE COMPANY APPROVED SUPERVISOR (DRILLING FOREMAN, CONSULTANT, RIG PUSHER, OR DRILLER) DETERMINES THE H2S GAS CANNOT BE LIMITED TO THE WELL LOCATION AND THE PUBLIC WILL BE INVOLVED, HE WILL ACTIVATE THE EVACUATION PLAN. ESCAPE ROUTES ARE NOTED ON AREA MAP.
2. "COMPANY MAN" OR DESIGNEE WILL NOTIFY LOCAL GOVERNMENT AGENCY THAT A HAZARDOUS CONDITION EXISTS AND EVACUATION NEEDS TO BE IMPLEMENTED.
3. COMPANY SAFETY PERSONNEL THAT HAVE BEEN TRAINED IN THE USE OF H2S DETECTION EQUIPMENT AND SELF-CONTAINED BREATHING EQUIPMENT WILL MONITOR H2S CONCENTRATIONS, WIND DIRECTIONS, AND AREA OF EXPOSURE. THEY WILL DELINEATE THE OUTER PERIMETER OF THE HAZARDOUS GAS AREA. EXTENSION TO THE EVACUATION AREA WILL BE DETERMINED FROM INFORMATION GATHERED.
4. LAW ENFORCEMENT PERSONNEL (STATE POLICE, POLICE DEPT., FIRE DEPT., AND SHERIFF'S DEPT.) WILL BE CALLED TO AID IN SETTING UP AND MAINTAINING ROAD BLOCKS. ALSO, THEY WILL AID IN EVACUATION OF THE PUBLIC IF NECESSARY.

IMPORTANT: LAW ENFORCEMENT PERSONNEL WILL NOT BE ASKED TO COME INTO A CONTAMINATED AREA. THEIR ASSISTANCE WILL BE LIMITED TO UNCONTAMINATED AREAS. CONSTANT RADIO CONTACT WILL BE MAINTAINED WITH THEM.

5. AFTER THE DISCHARGE OF GAS HAS BEEN CONTROLLED, COMPANY SAFETY PERSONNEL WILL DETERMINE WHEN THE AREA IS SAFE FOR RE-ENTRY.

### EMERGENCY ACTIONS

#### WELL BLOWOUT – IF EMERGENCY

1. EVACUATE ALL PERSONNEL IF POSSIBLE.
2. IF SOUR GAS – EVACUATE RIG PERSONNEL.
3. IF SOUR GAS – EVACUATE PUBLIC WITHIN 1 HOUR RADIUS OF EXPOSURE.
4. DON SCBA AND RESCUE.
5. CALL 911 FOR EMERGENCY HELP (FIRE DEPT AND AMBULANCE) AND NOTIFY SR. DRILLING FOREMAN AND DISTRICT FOREMAN.
6. GIVE FIRST AID.

**PERSON DOWN LOCATION/FACILITY**

1. IF IMMEDIATELY POSSIBLE, CONTACT 911. GIVE LOCATION AND WAIT FOR CONFIRMATION.
2. DON SCBA AND RESCUE.

**TOXIC EFFECTS OF HYDROGEN SULFIDE**

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 COLORLESS. IT FORMS AN EXPLOSIVE MIXTURE WITH AIR BETWEEN 4.3 AND 46.0 PERCENT BY VOLUME. HYDROGEN SULFIDE IS ALMOST AS TOXIC AS HYDROGEN CYANIDE AND IS BETWEEN FIVE AND SIX TIMES MORE TOXIC THAN CARBON MONOXIDE. TOXICITY DATA FOR HYDROGEN SULFIDE AND VARIOUS OTHER GASES ARE COMPARED IN TABLE I. PHYSICAL EFFECTS AT VARIOUS HYDROGEN SULFIDE EXPOSURE LEVELS ARE SHOWN IN TABLE II.

**TABLE I**  
**TOXICITY OF VARIOUS GASES**

COMMON NAME	CHEMICAL FORMULA	SPECIFIC GRAVITY (SC=1)	THRESHOLD LIMIT (1)	HAZARDOUS LIMIT (2)	LETHAL CONCENTRATION (3)
HYDROGEN CYANIDE	HCN	0.94	10 PPM	150 PPM/HR	300 PPM
HYDROGEN SULFIDE	H <sub>2</sub> S	1.18	10 PPM	250 PPM/HR	600 PPM
SULFUR DIOXIDE	SO <sub>2</sub>	2.21	5 PPM	-	1000 PPM
CHLORINE	CL <sub>2</sub>	2.45	1 PPM	4 PPM/HR	1000 PPM
CARBON MONOXIDE	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
CARBON DIOXIDE	CO <sub>2</sub>	1.52	5000 PPM	5%	10%
METHANE	CH <sub>4</sub>	0.55	90,000 PPM	COMBUSTIBLE ABOVE 5% IN AIR	

1) THRESHOLD LIMIT - CONCENTRATION AT WHICH IT IS BELIEVED THAT ALL WORKERS MAY BE REPEATEDLY EXPOSED DAY AFTER DAY WITHOUT ADVERSE EFFECTS.

2) HAZARDOUS LIMIT - CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

3) LETHAL CONCENTRATION - CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

**TOXIC EFFECTS OF HYDROGEN SULFIDE**

**TABLE II**  
**PHYSICAL EFFECTS OF HYDROGEN SULFIDE**

PERCENT (%)	PPM	CONCENTRATION GRAINS 100 STD. FT <sup>3</sup> *	PHYSICAL EFFECTS
0.001	10	00.65	Obvious and unpleasant odor.
0.002	20	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 - 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; Stings eyes and throat.
0.050	500	32.96	Dizziness; Breathing ceases in a few minutes; Needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; Death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; Followed by death within minutes.

\*AT 15.00 PSIA AND 60°F.

### USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. WRITTEN PROCEDURES SHALL BE PREPARED COVERING SAFE USE OF SCBA'S IN DANGEROUS ATMOSPHERE, WHICH MIGHT BE ENCOUNTERED IN NORMAL OPERATIONS OR IN EMERGENCIES. PERSONNEL SHALL BE FAMILIAR WITH THESE PROCEDURES AND THE AVAILABLE SCBA.

2. SCBA'S SHALL BE INSPECTED FREQUENTLY AT RANDOM TO INSURE HAT THEY ARE PROPERLY USED, CLEANED, AND MAINTAINED.

3. ANYONE WHO MAY USE THE SCBA'S SHALL BE TRAINED IN HOW TO INSURE PROPER FACE-PIECE TO FACE SEAL. THEY SHALL WEAR SCBA'S IN NORMAL AIR AND THEN WEAR THEM IN A TEST ATMOSPHERE. (NOTE: SUCH ITEMS AS FACIAL HAIR {BEARD OR SIDEBURNS} AND EYEGLASSES WILL NOT ALLOW PROPER SEAL.) ANYONE THAT MAY BE REASONABLY EXPECTED TO WEAR SCBA'S SHOULD HAVE THESE ITEMS REMOVED BEFORE ENTERING A TOXIC ATMOSPHERE. A SPECIAL MASK MUST BE OBTAINED FOR ANYONE WHO MUST WEAR EYEGLASSES OR CONTACT LENSES.

4. MAINTENANCE AND CARE OF SCBA'S:

A. A PROGRAM FOR MAINTENANCE AND CARE OF SCBA'S SHALL INCLUDE THE FOLLOWING:

1. INSPECTION FOR DEFECTS, INCLUDING LEAK CHECKS.
2. CLEANING AND DISINFECTING.
3. REPAIR.
4. STORAGE.

B. INSPECTION; SELF-CONTAINED BREATHING APPARATUS FOR EMERGENCY USE SHALL BE INSPECTED MONTHLY FOR THE FOLLOWING PERMANENT RECORDS KEPT OF THESE INSPECTIONS.

1. FULLY CHARGED CYLINDERS.
2. REGULATOR AND WARNING DEVICE OPERATION.
3. CONDITION OF FACE PIECE AND CONNECTIONS.
4. ELASTOMER OR RUBBER PARTS SHALL BE STRETCHED OR MASSAGED TO KEEP THEM PLIABLE AND PREVENT DETERIORATION.

C. ROUTINELY USED SCBA'S SHALL BE COLLECTED, CLEANED AND DISINFECTED AS FREQUENTLY AS NECESSARY TO INSURE PROPER PROTECTION IS PROVIDED.

### USE OF SELF-CONTAINED BREATHING EQUIPMENT

5. PERSONS ASSIGNED TASKS THAT REQUIRES USE OF SELF- CONTAINED BREATHING EQUIPMENT SHALL BE CERTIFIED PHYSICALLY FIT FOR BREATHING EQUIPMENT USAGE BY THE LOCAL COMPANY PHYSICIAN AT LEAST ANNUALLY.

6. SCBA'S SHOULD BE WORN WHEN:

- A. ANY EMPLOYEE WORKS NEAR THE TOP OR ON TOP OF ANY TANK UNLESS TEST REVEALS LESS THAN 10 PPM OF H<sub>2</sub>S.
- B. WHEN BREAKING OUT ANY LINE WHERE H<sub>2</sub>S CAN REASONABLY BE EXPECTED.
- C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H<sub>2</sub>S EXISTS.
- D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H<sub>2</sub>S HAS BEEN DETECTED.
- E. AT ANY TIME THERE IS A DOUBT AS TO THE H<sub>2</sub>S LEVEL IN THE AREA TO BE ENTERED.

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Harvey E. Yates

Well Name & No: Taylor Deep 12 Fed No 05

Location: Surface 990' FNL & 660' FEL, Sec.12, T. 18 S., R. 31 E.

Lease: NMLC 058709

Eddy County, New Mexico

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### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell, NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Existing casing: 13 3/8 inch; 8 5/8 inch; 5 1/2 inch.

C. BOP Tests

2. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan is not required for this well bore.

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.

### II. CASING:

1. The 13 3/8 inch surface casing is set at 375 ft.

2. The 8 5/8 inch Intermediate casing is set at 2368 ft.

3. The 5 1/2 inch Production casing is set at 12,450 ft.

### III. 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 into existing perms or the Wolfcamp formation depth, whichever comes first.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 3 M psi rating.

### III. Pressure Control Continued :

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the test.

- The test 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 safe workman-like manner. Hard line connections shall be required.
- Both low pressure and high pressure testing of BOPE is required.

**G. Gourley RFO 06/02/06**