District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-101
May 27, 2004

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED
SEP 20 2005
OCD-ARTESIA

Submit to appropriate District Office

☐ AMENDED REPORT

# APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

| [1] Operator Name and Address | [2] OGRID Number |
|---|---|
| **Armstrong Energy Corporation** | **001092** |
| | [3] API Number **30 – 015-21236** |

| [5] Property Code | [5] Property Name | [6] Well No. |
|---|---|---|
| 35195 | **Foster State** | **1** |

| [9] Proposed Pool 1 | [10] Proposed Pool 2 |
|---|---|
| WC; Granite Wildcat; Morrow 96542 | |

## [7] Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| **E** | **8** | **24S** | **23E** | | **2310** | **North** | **660** | **West** | **Eddy** |

## [8] Proposed 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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

## Additional Well Information

| [11] Work Type Code | [12] Well Type Code | [13] Cable/Rotary | [14] Lease Type Code | [15] Ground Level Elevation |
|---|---|---|---|---|
| **E** | **G** | **R** | **S** | **4576** |
| [16] Multiple | [17] Proposed Depth | [18] Formation | [19] Contractor | [20] Spud Date |
| **N** | **9450** | **Morrow** | **Unknown** | **December 1, 2005** |

| Depth to Groundwater | Distance from nearest fresh water well | Distance from nearest surface water |
|---|---|---|
| 115 ft. | 1.5 mi., SE/4 Sec. 9-T24S-R23E | Hess Spring 1.6 mi., Sitting Bull Falls 4 mi. |

Pit: Liner: Synthetic X 12 mils thick Clay ☐ Pit Volume: 2000 bbls 50'x50'x5' Drilling Method:

Closed-Loop System ☐ Fresh Water X Brine X Diesel/Oil-based ☐ Gas/Air ☐

## [21] Proposed Casing and Cement Program

| Hole Size | Casing Size | Casing weight/foot | Setting Depth | Sacks of Cement | Estimated TOC |
|---|---|---|---|---|---|
| 26" | 20" (Existing) | | 44' | 2 yds. Redi-mix | Surface |
| 17 ½" | 13 3/8" (Existing) | 48 | 375' | 250 sx. | Surface |
| 12 1/4" | 8 5/8" (Existing) | 24 | 2769' | 800 sx.TLW+200 sx. C +135 C sx. C | Surface |
| 7 7/8" | 5 ½" | 17 | 9450' | 600 sx. | 6000' |

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Armstrong Energy Corporation proposes to reenter the Foster State #1, drill out plugs at 0-30', 2730-2830', 4000-4100', 6170-6270' and 8850-8950', run 5 ½" casing at 9450' and cement from T.D. to 6000'. The Morrow and Strawn zones will be production tested. If these zones are not commercial the well will be plugged and abandoned in accordance to State Regulations.

A mud program, pit plan,blowout preventer plan and $H_2S$ contingency plan are attached.

CEMENT TO COVER ALL OIL, GAS AND WATER BEARING ZONES

NSL-5295

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify that the drilling pit will be constructed according to NMOCD guidelines X, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**

Printed name: Bruce A. Stubbs

Title: Engineer

E-mail Address: pecos@lookingglass.net

Date: 9-20-2005 Phone: 505-624-2800

OIL CONSERVATION DIVISION

Approved by: Paul F. Kautz
District II Supervisor

Title:

Approval Date: OCT 27 2005 Expiration Date: OCT 27 2006

Conditions of Approval Attached ☐

623 1777

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised June 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| [1] API Number | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-015-21236 | | Wildcat |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| | Foster State Com. | 1 |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 001092 | Armstrong Energy Corporation | 4631.8' GL |

## [10] Surface Location

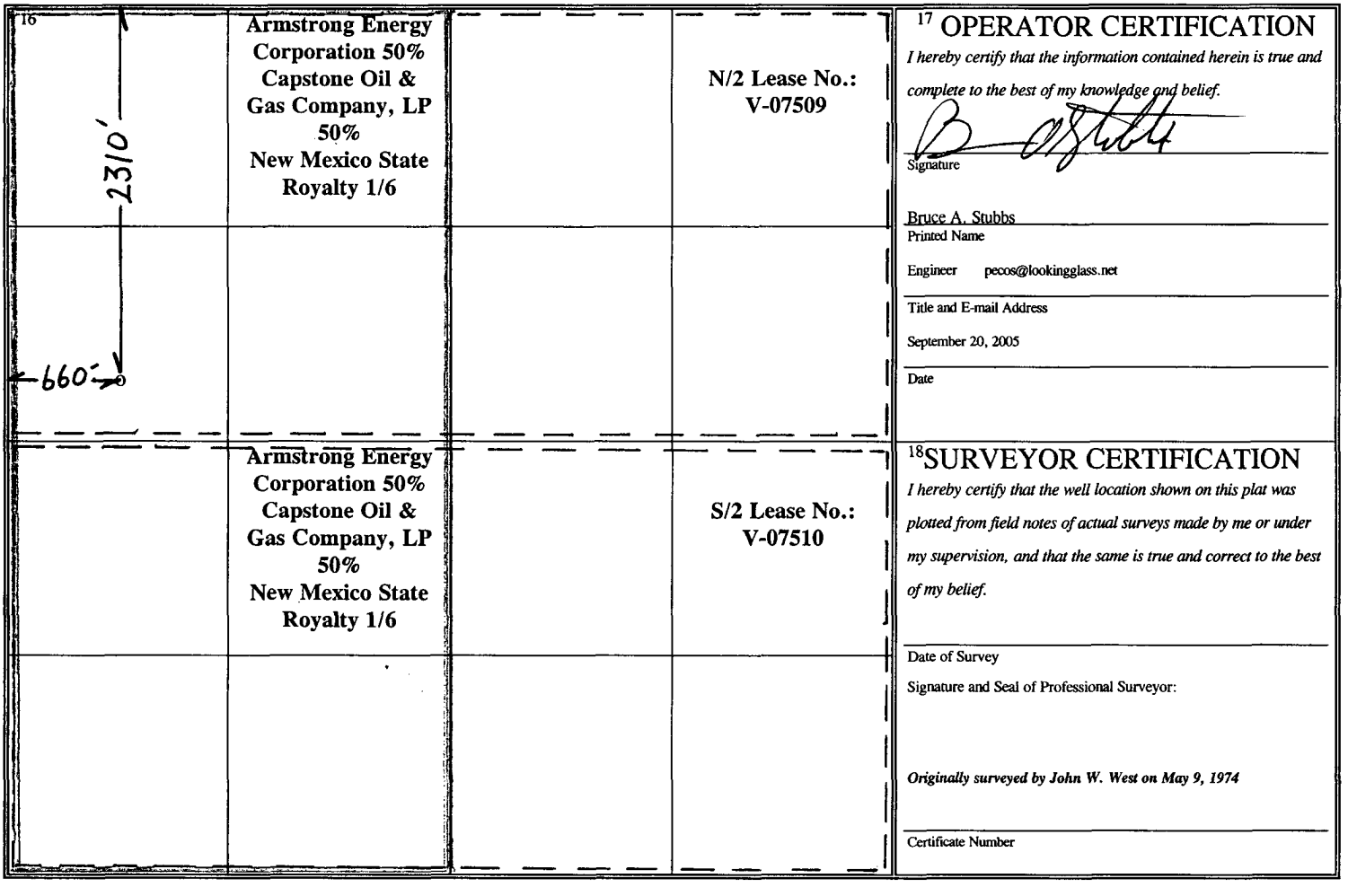
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| | 8 | 24S | 23E | | 2310 | North | 660' | West | Eddy |

## [11] Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| 320 | N | P | |

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




## [17] OPERATOR CERTIFICATION

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.*

Signature

Bruce A. Stubbs
Printed Name

Engineer pecos@lookingglass.net
Title and E-mail Address

September 20, 2005
Date

## [18] SURVEYOR CERTIFICATION

*I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.*

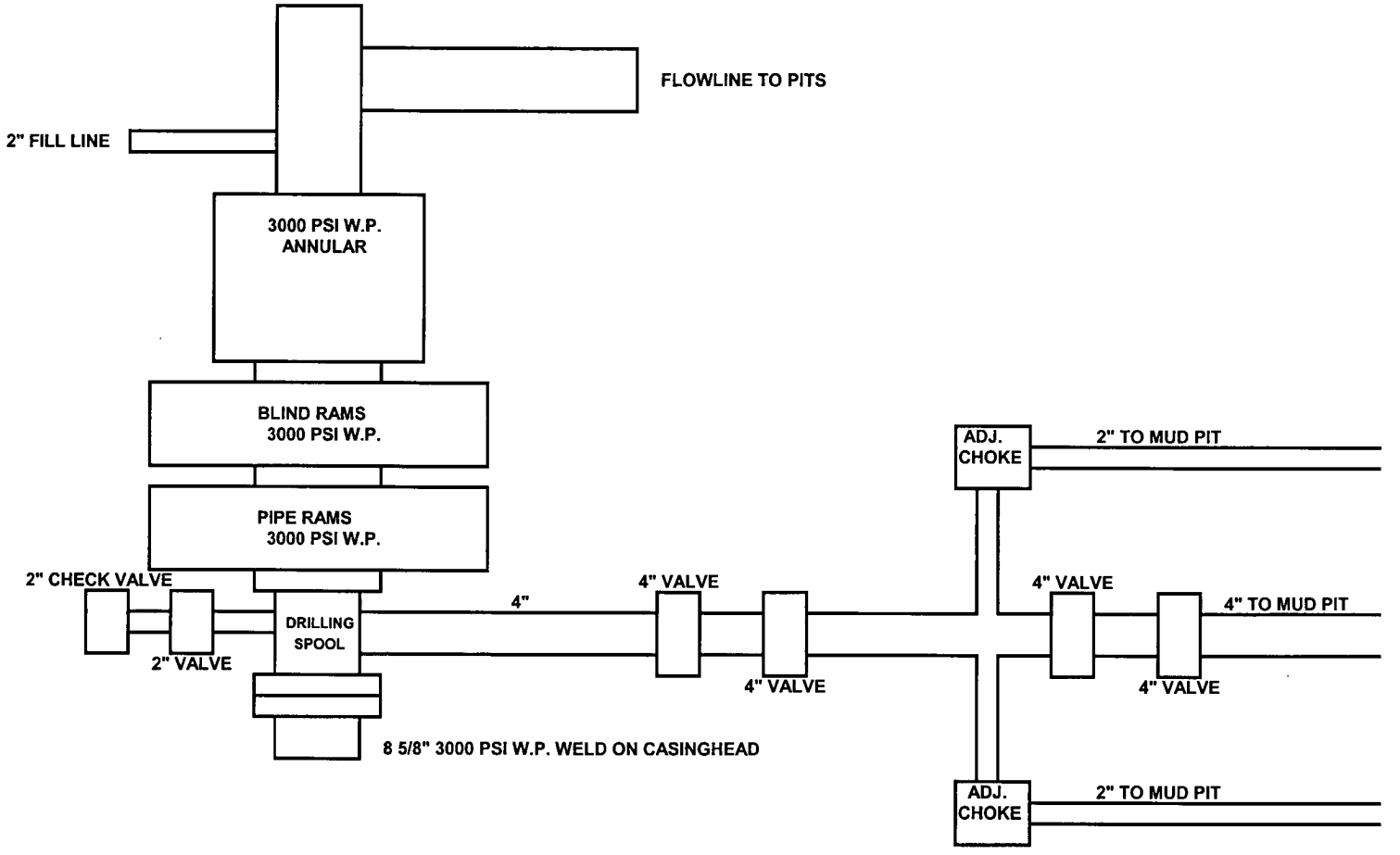
Date of Survey

Signature and Seal of Professional Surveyor:

***Originally surveyed by John W. West on May 9, 1974***

Certificate Number

# BOP STACK




ARMSTRONG ENERGY CORPORATION

FOSTER STATE #1
2130' FNL & 660' FWL
SECTION 8-T24S-R23E
EDDY COUNTY, NEW MEXICO

API No.: 30-015-21236

# Armstrong Energy Corporation
# Foster State #1
# 2310' FNL & 660' FWL
# Section 8-T24S-R23E
# Eddy county, New Mexico

## Reentry Procedure
## September 19, 2005

1. Dig out cellar and install 8 5/8" 3000 psi W.P. S/O casinghead.

2. Rebuild location and highway access as necessary. Install "STOP" sign at the entrance to HWY 137 and "Trucks Turning" warning signs on either side of highway entrance.

3. Construct a 50' x 50' x 5' working pit with a 12 mil synthetic liner properly bedded to prevent punctures. Construct a 8' x 50' flare pit next to the reserve pit. Pit construction will conform to OCD Rule 19.15.2.50.

4. Move in and rig up drilling rig. Install drilling spool, double B.O.P. annular B.O.P. and choke manifold. Close blind rams and test casinghead, B.O.P. and choke manifold to 1000 psi.

5. P.U. 7 7/8" mill tooth bit and drill out surface plug from surface to 30 ft. P.U. nine (9) 6 ½" drill collars and T.I.H. to 2730 ft. Circulate the hole clean and test B.O.P., choke manifold, drilling spool, casing (8 5/8"-24 lb./ft. J-55 casing, burst 2950 psi, collapse 1370 psi) and casinghead at 2000 psi. Test annular B.O.P. at 1500 psi. Install $H_2S$ monitoring equipment, windsocks and warning signs. (See $H_2S$ Contingency Plan for more details)

6. Drill out plug from 2730 to 2830 ft., check for loss or gain. T.I.H. to 4000 ft., drill out plug from 4000 to 4100 ft. T.I.H. to 6170 ft., drill out plug 6170 to 6270 ft. T.I.H. to 8850 ft., drill out plug 8850 to 8950 ft. Maintain mud weight at 9.3 PPG, 70,000 Cl, 34 vis, ph 10 and W.L. at 10 cc.

7. Clean out to T.D. at 9450 ft. Circulate hole and condition mud, Spot 100 BBL. pill on bottom with 45 vis., 9.3 ppg (weight as needed) and 10 cc W.L. P.O.H. for logs and cores.

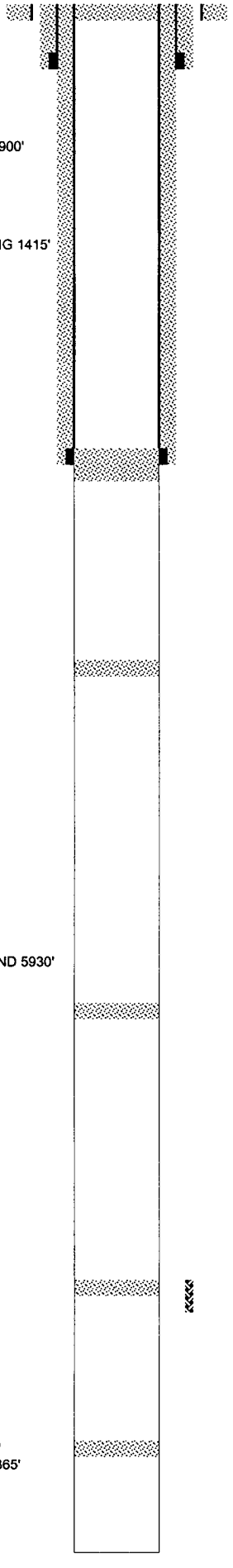
8. Run G.R. log from T.D. to 7500 ft. cut sidewall cores at 9152, 9149, 9034, 9010, 9004, 8963, 8906, 8903, 8285, 8226,7910, 7886, 7852, 7848 and 7826, total 15 cores. Correlate to Schlumberger CNL-FDC log dated 11-7-1974. Send cores to Core Lab in Midland, Texas for analysis.

9. T.I.H. and condition hole to run casing. Spot pill on bottom and come out of the hole laying down drillpipe and collars. P.U. float shoe, shoe joint, float collar and 5 ½"-17 lb./ft. N–80 casing. Run centralizers from T.D. to 7600 ft., one on shoe joint and one on ever other collar, total 25 centralizers.

10. Cement with 600 sx. 50/50 Pozmix "H" with additives. T.O.C. at 6000 ft.

11. Set slips, cut off casing, and install tubinghead. R.D. and move off drilling rig.

12. Clean location, set anchors and prepare for completion.



20" CONDUCTOR @ 44' CEMENTED
30 FT. PLUG @ SURFACE

13 3/8"-48 #/FT. @ 375 FT.
250 SX.
CIRC. 75 SX.

DELAWARE 900'

***SOUTHWEST HESS PROSPECT***
**FOSTER STATE #1**
**2310' FNL & 660 FWL**
**SEC. 8-T24S-R23E**
**EDDY COUNTY, NEW MEXICO**

**API NO.: 30-015-21236**
**LEASE NO.: LG-0281**

**SPUD DATE : 8-30-74**
**K.B.: 4590'**

BONE SPRING 1415'

8 5/8"-24 #/FT. @ 2769FT.
1135 SX.
TOC @ 380 FT., 1" W/ 135 SX, CIRC.
35 SX PLUG 2730-2830 FT.

35 SX PLUG 4000-4100 FT.

7 7/8" HOLE

3RD B.S. SAND 5930'

35 SX PLUG 6170-6270 FT.

35 SX PLUG 7800-7900 FT.
DST STRAWN ???
7815-7920'
130 MCFG , FSIP 2986 PSI
ZONES OF INTEREST
STRAWN 7845-7866' & 7878-7932'

ATOKA 8850'
MORROW 8865'

8850-8950, 35 SX. PLUG
ZONES OF INTEREST
MORROW 8898-8912', 8960-8966', 9002-9012'
& 9146-9153'

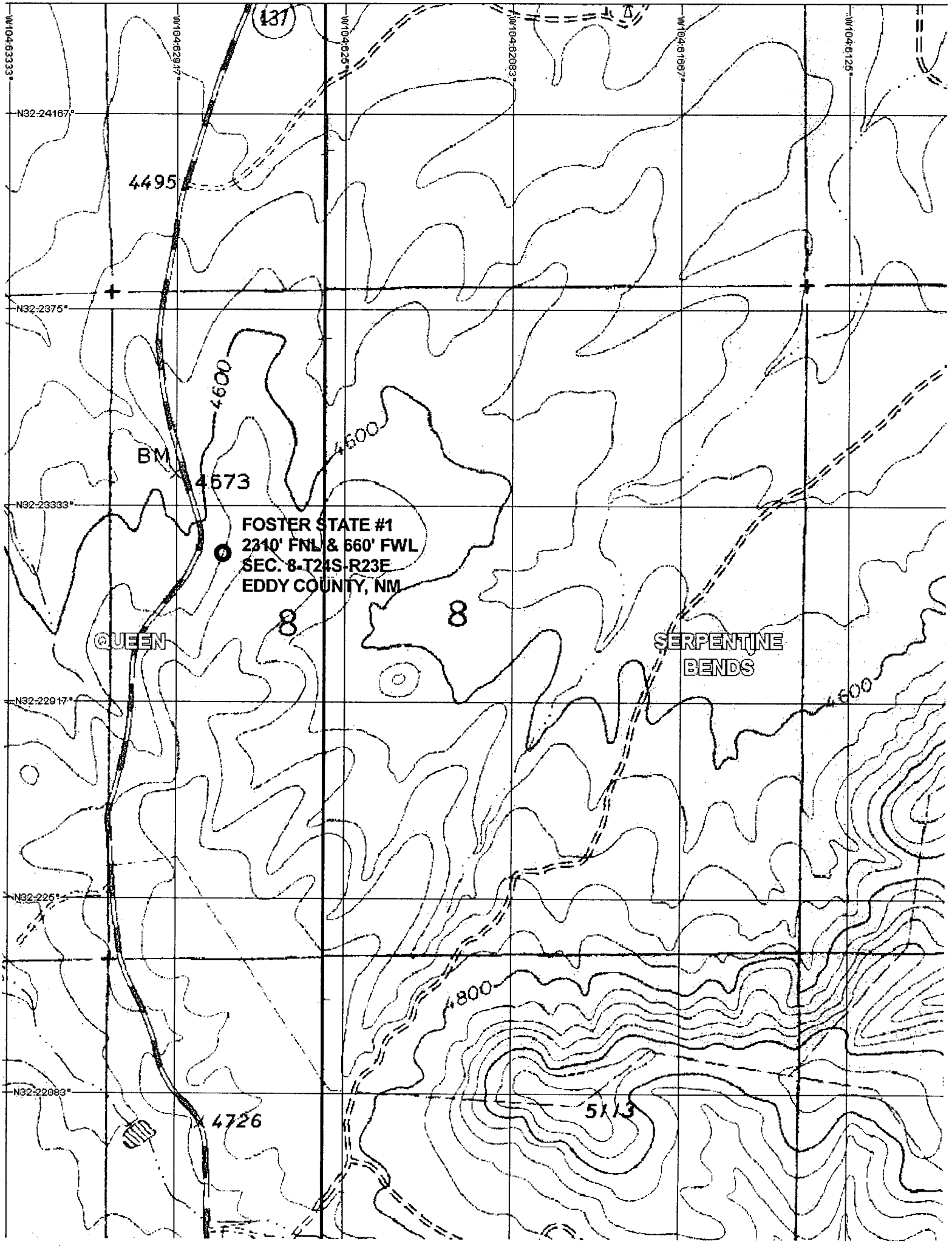
MISS 9400'

T.D. 9450 FT.

# Armstrong Energy Corporation
# Foster State #1
# 2310' FNL & 660' FWL
# Section 8-T24S-R23E
# Eddy county, New Mexico

## Mud Program

| | |
|---|---|
| Surface to 2830 ft. | Fresh water with caustic for ph control, maintain a ph of 10. |
| 2830 ft. to 6270 ft. | Raise weight to 9.3 ppg with brine, maintain a ph of 10 and lower water loss to 10 cc with starch. |
| 6270 ft. to 9450 ft. | Maintain weight at 9.3 ppg, 70,000+ Cl, ph of 10, water loss of 10 cc and a vis of 34. (Adjust mud properties as well conditions dictate) |


W104-83333°
W104-82917°
W104-825°
W104-82083°
W104-81667°
W104-8125°
N32-24167°
N32-2375°
N32-23333°
N32-22917°
N32-225°
N32-22083°
137
4495
4600
4600
BM
4573
FOSTER STATE #1
2310' FNL & 660' FWL
SEC. 8-T24S-R23E
EDDY COUNTY, NM
8
8
QUEEN
SERPENTINE
BENDS
4600
4800
4726
5113

# Armstrong Energy Corporation
# Foster State #1
# 2310' FNL & 660' FWL
# Section 8-T24S-R23E
# Eddy county, New Mexico

## Hydrogen Sulphide ($H_2S$) Contingency Plan

The Foster State #1 was drilled in 1974 and did not report any zones containing $H_2S$ or abnormally pressured zones. Mud weight at T.D. was 9.2 ppg with a 32 vis, 7.4 cc fluid loss and a ph of 10.9. It is possible that zones in the San Andres, Glorietta and Yeso sequence and the Wolfcamp through Canyon sequence have bled into the wellbore and minor accumulations of gas and liquids containing $H_2S$ may be present in the wellbore and could be circulated to the surface during the cleanout of the wellbore. Sufficient mud weights will be utilized to prevent any flow from the well.

$H_2S$ monitoring, emergency response equipment, windsocks and warning signs will be installed and tested prior to drilling out the shoe of the 8 5/8" casing at 2769'.

### Site Description

Th well location is located approximately 200 feet east of State Highway 137 halfway between mile markers 27 and 28. The location is cut into the side of a bluff with a steep hillside to the east and a +/- 10 foot drop off to the west along the highway. Predominately west winds will provide good air flow across location and away from Highway 137. Wind direction should be observed and escape routes modified for changing conditions.

### Radius of Exposure

The 100 ppm radius of exposure is calculated to be 276 ft. with a gas flow of 100,000 SCFGD and a concentration of $H_2S$ of 5.0%.

$$X = [1.589 \times .05 \times 100{,}000]^{0.6258} = 276 \text{ feet}$$

| | |
|---|---|
| X | Radius of Exposure, 100 ppm |
| .05 | 5% by volume concentration of $H_2S$ |
| 100,000 | SCFGD |

### Emergency Plan

In the event of a release of gas containing $H_2S$ the first responder must secure the area and prevent entry of other persons into the 100 ppm radius of exposure (ROE). The ROE should be recalculated and any public places within the ROE must be evacuated.

Evacuation from location shall be upwind of the escaping gas. Escape is via entry onto State Highway 137. At the predetermined meeting point all personnel on location will be accounted for. Teams will be organized to stop traffic on Highway 137 and prevent entry into the ROE.

Any responders entering the ROE for rescue or in order to control the release must be trained in the detection of $H_2S$, measures for the protection against $H_2S$, have the necessary equipment for protection and emergency response. The responders must be equipped with $H_2S$ monitors and air packs in order to enter the ROE area in order to attempt rescue or to control the release. The "Buddy System" will be used to insure the safety of the responders.

Company and local officials must be contacted to aid in the evacuation, control and remediation of an event. The following call list of essential an potential responders for use during a release.

| **Location** | **Entity** | **Phone No.:** |
|---|---|---|
| Carlsbad | Sheriff's office | 505-887-7551 |
| Carlsbad | State Police | 505-885-3137 |
| Artesia | New Mexico Oil Conservation Division | 505-748-1283 |
| | Ambulance | 911 |
| Carlsbad | Fire Department | 505-885-2111 |
| Artesia | Fire Department | 505-746-2701 |
| Carlsbad | Local Emergency Planning Committee | 505-887-3798 |
| Roswell | Armstrong Energy Corporation<br>Robert Armstrong - President<br>Bruce Stubbs - Engineer | O-505-625-2222<br>H-505-622-0429<br>O-505-624-2800<br>H-505-623-6466<br>C-505-626-0973 |
| **Other Contacts** | | |
| Artesia | Haliburton Services | 505-746-2757 |
| Artesia | Sweatt Construction, Inc. | 505-748-1238 |
| Hobbs | Nova Mud, Inc. | 505-393-8786 |
| Artesia | Indian Fire & Safety, Inc. | 505-746-4660 |
| Odessa, TX | Wild Well Control, Inc. | 432-550-6202 |
| Odessa, TX | Cudd Pressure Control, Inc. | 432-563-3356 |
| Lubbock, TX | Flight for Life | 806-743-9911 |
| Albuquerque, NM | Med Flight Air Ambulance | 505-842-4433 |

Should ignition of the gas flow become necessary, coordination between the OCD, State Police, company officials and local officials will be done prior to intentional ignition. The byproduct of combustion of $H_2S$ is sulphur dioxide a potentially toxic gas. All responders must take the necessary precautions to protect against this gas.

**Gas Characteristics**

| Name | Chemical Formula | S.G. Air=1.0 * | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| Hydrogen Sulphide | $H_2S$ | 1.89 | 10 ppm | 100 ppm/hr. | 600 ppm |
| Sulfur Dioxide | $SO_2$ | 2.21 | 2 ppm | | 1000 ppm |

* Caution - Gases are heavier than air and will concentrate in low confined areas.

OCD-Artesia

# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**
Governor
**Joanna Prukop**
Cabinet Secretary

**October 26, 2005**

**Mark E. Fesmire, P.E.**
Director
**Oil Conservation Division**

**Armstrong Energy Corporation**
**c/o Pecos Petroleum Engineering, Inc.**
**P. O. Box 2885**
**Roswell, New Mexico 88202**

RECEIVED
NOV 0 2 2005
OCD-ARTESIA

**Attention: Bruce A. Stubbs, P. E.**
*pecos@lookingglass.net*

***Administrative Order NSL-5295***

Dear Mr. Stubbs:

Reference is made to the following: (**i**) your application filed on behalf of the operator, Armstrong Energy Corporation of Roswell, New Mexico ("Armstrong"), and submitted to the New Mexico Oil Conservation Division ("Division") in Santa Fe, New Mexico on October 12, 2005 (***pMES0-529939192***); and (**ii**) the Division's records in Santa Fe and Artesia: all concerning Armstrong's request for an unorthodox deep Pennsylvanian gas well location within a proposed 320-acre standard stand-up gas spacing unit comprising the W/2 of Section 8, Township 24 South, Range 23 East, NMPM, Eddy County, New Mexico.

Your application has been duly filed under the provisions of Division Rules 104.F and 1210.A (2) [formerly Division Rule 1207.A (2), see Division Order No. R-12327-A, issued by the New Mexico Oil Conservation Commission in Case No. 13482 on September 15, 2005].

This 320-acre unit is to be dedicated to the plugged and abandoned Inexco Oil Company ("Inexco") Foster State Well No. 1 (**API No. 30-015-21236**), to be redesignated by Armstrong as the Foster State Com. Well No. 1, located 2310 feet from the North line and 660 feet from the West line (Unit E) of Section 8.

It is the Division's understanding that Inexco originally drilled this well in August/September, 1974 to a total depth of 9,450 feet in order to test the Morrow formation for gas within a standard 320-acre stand-up gas spacing unit also comprising the W/2 of Section 8. At that time, this deep gas well location was considered to be standard for this 320-acre unit. According to the Division's records, this well tested dry and was subsequently plugged and abandoned in November, 1974.

It is further understood that Armstrong now intends to reenter this well and attempt a deep gas completion within the wildcat Pennsylvanian system.

By the authority granted me under the provisions of Division Rule 104.F (2), as revised, the above-described unorthodox deep Pennsylvanian gas well location for Armstrong's Foster State Com. Well No. 1 within the W/2 of Section 8 is hereby approved.

Sincerely,

Mark E. Fesmire, P. E.
Director

MEF/ms

cc: New Mexico Oil Conservation Division - Artesia
New Mexico State Land Office – Santa Fe

# Armstrong Energy Corporation
# P.O. Box 1973
# Roswell, New Mexico 88202
# 505-625-2222

## Hydrogen Sulfide ($H_2S$)
## Contingency Plan



**For the:**

**Foster State Com. #1**
**Section 8E-T24S-R23E**
**Eddy County, New Mexico**

## Table of Contents

## PREFACE

An effective and viable Contingency Plan is intended to provide prior planning and guidance in responding to emergency incidents. The primary considerations in its development are protection of personnel, the public, company and public property, and the environment.

Although the plan addresses varied emergency situations which may occur, it recognizes that flexibility and the use of the organization's knowledge and experience is critical to safe resolution of emergency incidents. Response actions outlined in the plan provide a framework, which may be placed into operation without confusion. These actions should promote quick and decisive actions during the critical initial period and immediately following an emergency. As the response progresses, additional guidelines and procedures may need to be implemented as the situation dictates. In addition, all emergency incidents must be properly reported per state and federal requirements, etc.

This Contingency Plan is intended for use on (AEC) projects, such as drilling, critical well work, completions, etc.

A copy of the Plan shall be maintained in the Top Dog House, Rig Managers trailer, and Company Representative's trailer if applicable.

## WELL AND SITE DESCRIPTION

**Foster State Com. #1**

The Foster State #1 was drilled in 1974 and did not report any zones containing $H_2S$ or abnormally pressured zones. Mud weight at T.D. was 9.2 ppg with a 32 vis, 7.4 cc fluid loss and a ph of 10.9. It is possible that zones in the San Andres, Glorietta and Yeso sequence and the Wolfcamp through Canyon sequence have bled into the wellbore and minor accumulations of gas and liquids containing $H_2S$ may be present in the wellbore and could be circulated to the surface during the cleanout of the wellbore. Sufficient mud weights will be utilized to prevent any flow from the well.

$H_2S$ monitoring, emergency response equipment, windsocks and warning signs will be installed and tested prior to drilling out the shoe of the 8 5/8" casing at 2769'.

**Site Description**

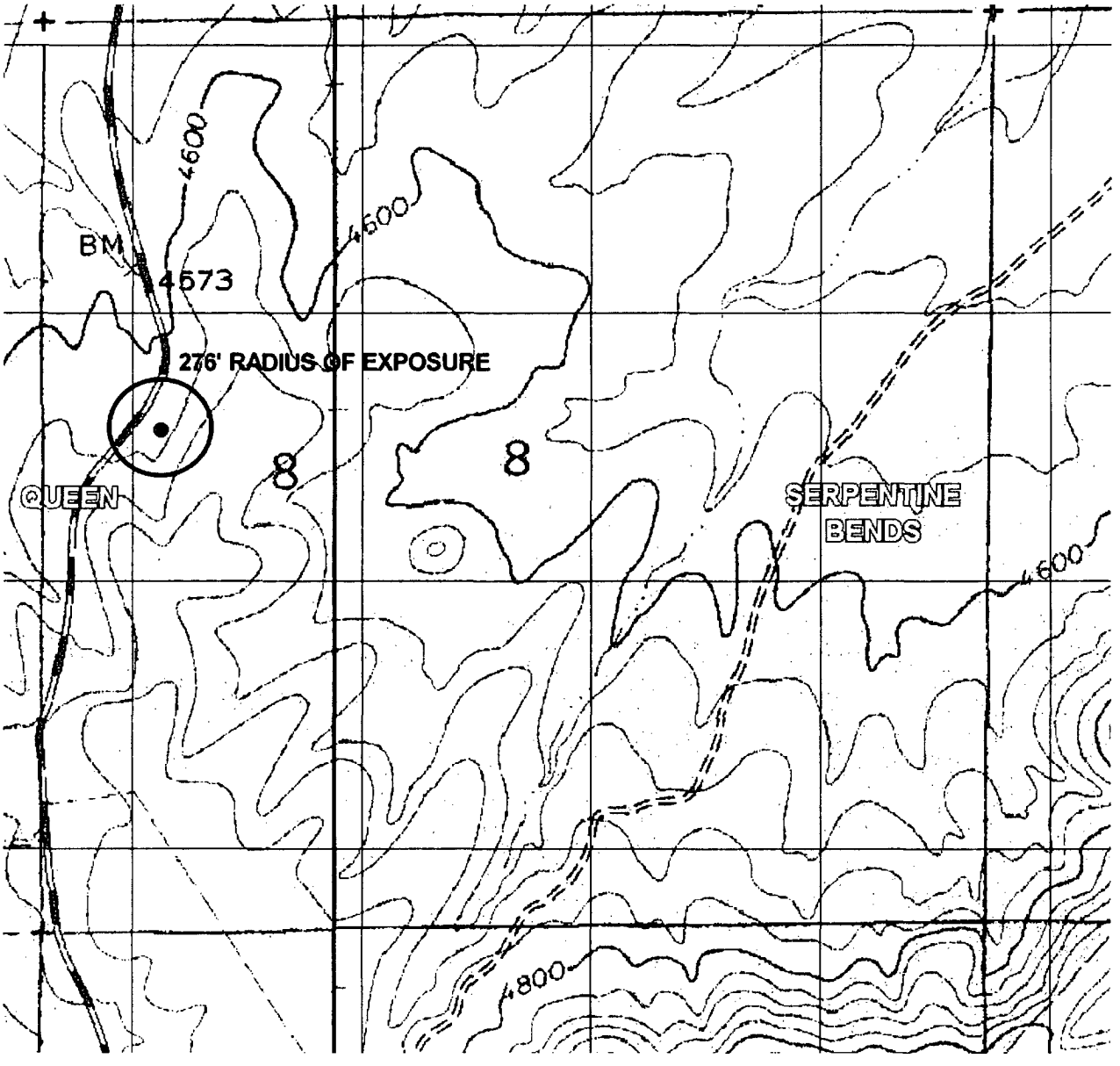
The well location is located approximately 200 feet east of State Highway 137 halfway between mile markers 27 and 28. The location is cut into the side of a bluff with a steep hillside to the east and a +/- 10 foot drop off to the west along the highway. Predominately west winds will provide good air flow across location and away from Highway 137. Wind direction should be observed and escape routes modified for changing conditions.

**Radius of Exposure**

The 100 ppm radius of exposure is calculated to be 276 ft. with a gas flow of 100,000 SCFGD and a concentration of $H_2S$ of 5.0%.

$$\mathbf{X = [1.589 \times .05 \times 100{,}000]^{0.6258} = 276 \text{ feet}}$$

| | |
|---|---|
| X | Radius of Exposure, 100 ppm |
| .05 | 5% by volume concentration of $H_2S$ |
| 100,000 | SCFGD |




**Radius of Exposure Map & Site Location**

## EMERGENCY RESPONSE ACTIVATION AND GENERAL RESPONSIBILITIES

***Activation of the Emergency Action Plan***

A. In the event of any emergency situation, all personnel on location should first ensure that the following items are initiated. After that, they should refer to the appropriate Specific Emergency Guidance sections on pages thirteen (13) through fifteen (15) in this document for further responsibilities:

1. Notify the senior ranking contract representative on site.
2. Notify AEC representative in charge.
3. Notify civil authorities if the AEC Representative cannot be contacted and the situation dictates.
4. Perform rescue and first aid as required (without jeopardizing additional personnel).

***General Responsibilities***

**AEC Personnel:**

A. Engineer: The AEC Drilling Engineer or contract personnel serving in that capacity will serve as Operations Chief Officer for all emergency incidents. The Operations Chief Officer is responsible for:

1. Notification to AEC management.
2. Sole control of all tactical activities directed toward reducing the immediate hazard, establishing situational control and restoring the operations to a non-emergency state.
3. Coordinating with the Drilling Foreman for notification and incident control.
4. Establishing and managing the overall incident command structure and response from inception through restoration of normal activities in the area.

B. Drilling Foreman (or his designate) is responsible for reporting to the incident as soon as reasonably possible, to provide support to the response effort as required by the Operations Chief Officer.

**Contract Drilling Personnel** will immediately report to their assigned stations and perform their duties as outlined in the appropriate Specific Emergency Guidance sections on pages thirteen (13) through fifteen (15) in this document.

**Other Contractor Personnel** will report to the safe briefing area to assist AEC personnel and civil authorities as requested when it is safe to do so and if they have been adequately trained in their assigned duties.

**Civil Authorities** (Law Enforcement, Fire, and **EMS)** will be responsible for:

1. Establishing membership in the Unified Incident Command.
2. As directed by the Incident Commander and the Unified Command, control site access, re-route traffic, and provide escort services for response personnel.
3. Perform all fire control activities in coordination with the Unified Command.
4. Initiate public evacuation plans as instructed by the Incident Commander.
5. Perform rescue or recovery activities with coordination from the Unified Command.
6. Provide medical assistance as dictated by the situation at hand.

## $H_2S$ RELEASE

The following procedures and responsibilities will be implemented on activation of the $H_2S$ siren and lights.

All Personnel:

1. On alarm, don escape unit (if available) and report to upwind briefing area.

Rig Manager/Tool Pusher:

1. Check that all personnel are accounted for and their condition.
2. Administer or arrange for first aid treatment, and /or call EMTs as needed.
3. Identify two people best suited to secure well and perform rescue, and instruct them to don SCBA.
4. Notify Contractor management and AEC Representative.

5. Remain at the briefing area, assess and monitor personnel and overall situation for hazards or conditions that might warrant a change in the action plan.

Two People Responsible For Shut-in and Rescue:

1. Don SCBA and acquire tools to secure well and perform rescue, i.e., wrenches, retrieval ropes, etc.
2. Utilize the buddy system to secure well and perform rescue(s).
3. Return to the briefing area and stand by for further instructions.

All Other Personnel:

1. Isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. Teams will be organized to stop traffic on Highway 137 and prevent entry into the ROE.

2. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE. In the event of a release of gas containing $H_2S$ the first responder must secure the area and prevent entry of other persons into the 100 ppm radius of exposure (ROE). The ROE should be recalculated and any public places within the ROE must be evacuated.

AEC Representative:

1. Remain at the briefing area, assess and monitor personnel and overall situation for hazards or conditions that might warrant a change in the action plan.
2. Notify Drilling Engineer/Operations Chief Officer, and Police, Fire Department, or other local emergency services as required.

Training

There will be an initial training session prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan (Contingency Plan). This plan shall be

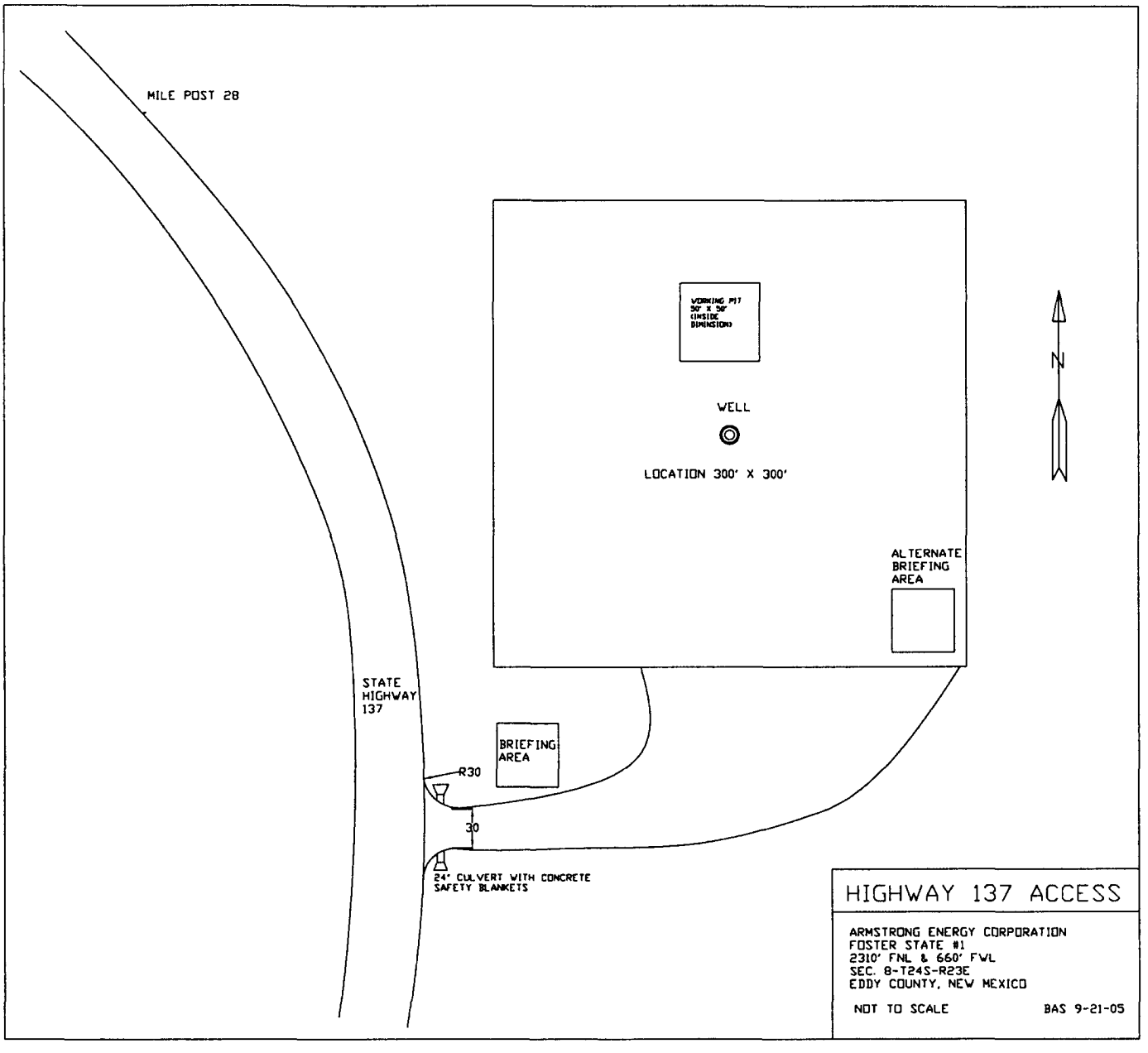
available at the well site. All personnel will be required to carry documentation that they have received the proper training.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police shall be the Incident Command of any major release.

Characteristics of $H_2S$ and $S0_2$

| **Gas Characteristics** | | | | | |
|---|---|---|---|---|---|
| **Name** | **Chemical Formula** | **S.G. Air=1.0 *** | **Threshold Limit** | **Hazardous Limit** | **Lethal Concentration** |
| Hydrogen Sulphide | $H_2S$ | 1.89 | 10 ppm | 100 ppm/hr. | 600 ppm |
| Sulfur Dioxide | $SO_2$ | 2.21 | 2 ppm | | 1000 ppm |
| * Caution - Gases are heavier than air and will concentrate in low confined areas. | | | | | |




**Location Layout**

## Contacting Authorities

AEC personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as; type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. This response plan must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER).

| **Location** | **Entity** | **Phone No.:** |
|---|---|---|
| Carlsbad | Sheriff's office | 505-887-7551 |
| Carlsbad | State Police | 505-885-3137 |
| Artesia | New Mexico Oil Conservation Division | 505-748-1283 |
| | Ambulance | 911 |
| Carlsbad | Fire Department | 505-885-2111 |
| Artesia | Fire Department | 505-746-2701 |
| Carlsbad | Local Emergency Planning Committee | 505-887-3798 |
| Roswell | Armstrong Energy Corporation<br>Robert Armstrong - President<br>Bruce Stubbs - Engineer | O-505-625-2222<br>H-505-622-0429<br>O-505-624-2800<br>H-505-623-6466<br>C-505-626-0973 |
| **Other Contacts** | | |
| Artesia | Halliburton Services | 505-746-2757 |
| Artesia | Sweatt Construction, Inc. | 505-748-1238 |
| Hobbs | Nova Mud, Inc. | 505-393-8786 |
| Artesia | Indian Fire & Safety, Inc. | 505-746-4660 |
| Odessa, TX | Wild Well Control, Inc. | 432-550-6202 |
| Odessa, TX | Cudd Pressure Control, Inc. | 432-563-3356 |
| Lubbock, TX | Flight for Life | 806-743-9911 |
| Albuquerque, NM | Med Flight Air Ambulance | 505-842-4433 |

## WELL CONTROL

The following procedures will be implemented when a loss of primary control is indicated. Indicators of loss of primary control are flow from the well, an increase in pit volume, or when the drilling fluid used to fill the hole on trips is less than the calculated pipe displacement volume. The emergency signal for well control procedures will be a single long blast of the rig air horn.

### Kick While Drilling - Procedures and Responsibilities

Driller:

1. Stop the rotary and hoist the kelly above the rotary table.
2. Stop the mud pump(s).
3. Check for flow.
4. If flowing, sound the alarm immediately.
5. Ensure that all crew members fill their responsibilities to secure the well.
6. Record drill pipe and casing shut-in pressures and pit volume increase and begin kill sheet.

Derrickman:

1. Go to BOP/choke manifold area.
2. Open choke line valve on BOP.
3. Signal to Floorman #1 that the choke line is open.
4. Close chokes after annular or pipe rams are closed.
5. Record shut-in casing pressure and pit volume increase.
6. Report readings and observations to Driller.
7. Verify actual mud weight in suction pit and report to Driller.
8. Be readily available as required for additional tasks.

Floorman # 1:

1. Go to accumulator control station and await signal from Derrickman.
2. Close annular preventer and HCR on signal (if available, if not then close pipe rams).
3. Record accumulator pressures and check for leaks in the BOP or accumulator system.

4. Report to Driller, and be readily available as required for additional tasks.

Floorman # 2:

1. Start water on motor exhausts.
2. Notify Contractor Tool Pusher or Rig Manager of well control situation.
3. Check location for ignition sources and extinguish or turn off, and stop any welding in progress.
4. Report to Driller, and be readily available as required for additional tasks.

Floorman # 3:

1. Stand-by with Driller, and be readily available as required for additional tasks.

Tool Pusher/Rig Manager:

1. Notify AEC Representative and report to rig floor.
2. Review and verify all pertinent information.
3. Communicate information to AEC Representative, and confer on an action plan.
4. Finalize well control worksheets, calculations and preparatory work for action plan.
5. Initiate and ensure the action plan is carried out.
6. Communicate any changes in well or site conditions, or any indications that the action plan needs to be revised to the AEC representative.

AEC Representative:

1. Notify Drilling Engineer/Operations Chief Officer, and Police, Fire Department, or other local emergency services as required.

## Kick While Tripping - Procedures and Responsibilities

Driller:

1. Sound the alarm immediately when pipe displacement volume is less than 75% of calculated.
2. Position the upper tool joint just above rotary table and set slips.
3. Check for flow.

4. Ensure that all crew members fill their responsibilities to secure the well.
5. Record drill pipe and casing shut-in pressures and pit volume increase, and begin kill sheets.

Derrickman: (same as while drilling)

Floor Man # 1:

1. Install full opening valve (with help from Floorman #2) in top drill string connection.
2. Tighten valve with make up tongs.
3. Go to accumulator control station and await signal from Derrickman.
4. Close annular preventer and HCR valve on signal (if available, if not then close pipe rams).
5. Record accumulator pressures and check for leaks in the BOP and accumulator system.
6. Report to Driller, and be readily available as required for additional tasks.

Floor Man # 2:

1. Assist installing full opening valve in drill string.
2. Position back-up tongs for valve make-up.
3. Start water on motor exhausts.
4. Notify Contractor Tool Pusher or Rig Manager of well control situation.
5. Check location for ignition sources and extinguish or turn off, and stop any welding in progress.
6. Report to Driller, and be readily available as required for additional tasks.

Floorman # 3, Rio Manager/Tool Pusher, and AEC Representative: (same as while drilling)

## *PUBLIC RELATIONS*

AEC recognizes that the news media have a legitimate interest in incidents at AEC facilities that could affect the public. It is to the company's benefit to cooperate with the news media when incidents occur because these media are our best liaison with the public.

Our objective is to see that all reports of any emergency are factual and represent the company's position fairly and accurately. Cooperation with news media representatives is the most reliable guarantee that this objective will be met.

All contract and AEC employees are instructed **NOT** to make any statement to the media concerning the emergency incident. If a media representative contacts any employee, they should refer them to the designated Emergency Command Center where they should contact the Incident Commander or his designated relief for any information concerning the incident.