## Hydrogen Sulfide Drilling Operations Plan

#### Lea South 25 Federal Com #10H

Nearburg Producing Co. Agent: Cimarex Energy Co.
UL: N, Sec. 25-20S-34E
Lea Co., NM

## 1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

- A. Characteristics of H<sub>2</sub>S
- B. Physical effects and hazards
- C. Principal and operation of H2S detectors, warning system and briefing areas.
- D. Evacuation procedure, routes and first aid.
- E. Proper use of safety equipment & life support systems
- F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

### 2 H<sub>2</sub>S Detection and Alarm Systems:

- A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.
- B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

## 3 Windsock and/or wind streamers:

- A. Windsock at mudpit area should be high enough to be visible.
- B.
  Windsock on the rig floor and / or top doghouse should be high enough to be visible.

#### 4 Condition Flags and Signs

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

## 5 Well control equipment:

A. See exhibit "E-1"

## 6 Communication:

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

#### 7 Drillstem Testing:

No DSTs or cores are planned at this time.

- 8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
- 9 If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas seperator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

## H₂S Contingency Plan

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Lea Co., NM

## **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the response.
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training in the:
  - · Detection of H<sub>2</sub>S, and
  - · Measures for protection against the gas,
  - · Equipment used for protection and emergency response.

## **Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

| Common           | Chemical        | Specific<br>Gravity | Threshold<br>Limit | Hazardous  | Lethal<br>Concentration<br>600 ppm |  |
|------------------|-----------------|---------------------|--------------------|------------|------------------------------------|--|
| Name             | Formula         |                     |                    | Limit      |                                    |  |
| Hydrogen Sulfide | H₂S             | 1.189 Air=1         | 10 ppm             | 100 ppm/hr |                                    |  |
| Sulfur Dioxide   | SO <sub>2</sub> | 2.21 Air=1          | 2 ppm              | N/A        | 1000 ppm                           |  |

## **Contacting Authorities**

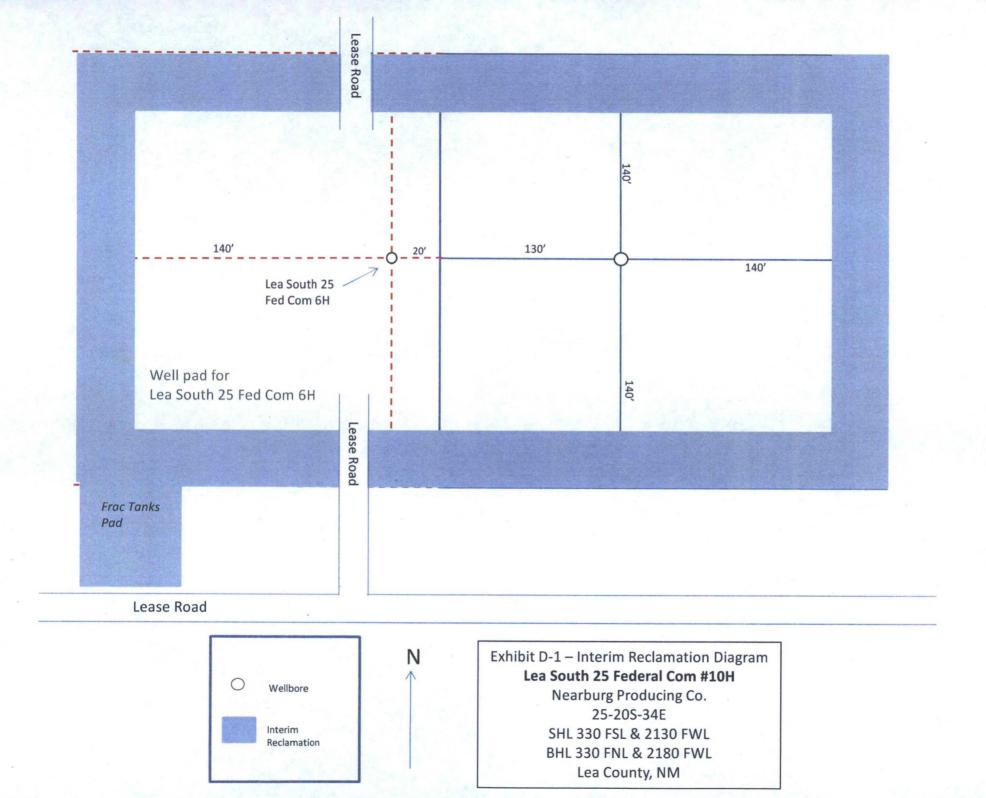
Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release,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

## $H_2S$ Contingency Plan Emergency Contacts

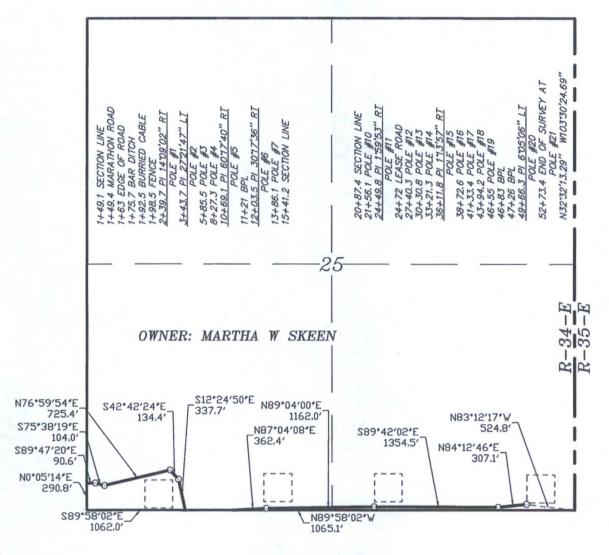
## Lea South 25 Federal Com #10H

Nearburg Producing Co. Agent: Cimarex Energy Co. UL: N, Sec. 25-20S-34E Lea Co., NM

| Company Office  |                                |  |    |              |  |
|---|--------------------------------|--|----|--------------|--|
| Cimarex Energy Co. of Colorado<br>Co. Office and After-Hours Menu | 800-969-4789                   |  |    |              |  |
| co. Office and After-Hours Menu                                   | _                              | -  | -  |              |  |
| Key Personnel   |                                |  |    |              |  |
| Name  | Title                          | Office   |    | Mobile       |  |
| Larry Seigrist  | Drilling Manager               | 432-620-1934   |    | 580-243-8485 |  |
| Doug McQuitty   | Drilling Superintendent        | 432-620-1933   | -  | 806-640-2605 |  |
| Scott Lucas   | Drilling Superintendent        | 432-620-1989   |    | 432-894-5572 |  |
| Conner Cromeens   | Construction Foreman           | 432 020 1303   |    | 432-270-0313 |  |
| Roy Shirley   | Construction Superintendent    |  |    | 432-634-2136 |  |
|   |                                |  |    |              |  |
| Artesia   |                                |  |    |              |  |
| Ambulance   |                                | 911  |    |              |  |
| State Police  |                                | 575-746-2703   |    |              |  |
| City Police   |                                | 575-746-2703   |    |              |  |
| Sheriff's Office  |                                | 575-746-9888   |    |              |  |
| Fire Department   |                                | 575-746-2701   |    |              |  |
| Local Emergency Planning Comm                                     | 575-746-2122                   |  | ·  |              |  |
| New Mexico Oil Conservation Div                                   | 575-748-1283                   |  |    |              |  |
|   |                                | 373 740 1203   |    |              |  |
| Carlsbad  |                                |  |    |              |  |
| Ambulance   |                                | 911  |    |              |  |
| State Police  |                                | 575-885-3137   |    |              |  |
| City Police   | 575-885-2111                   |  |    |              |  |
| Sheriff's Office  | 575-887-7551                   |  |    |              |  |
| Fire Department   | 575-887-3798                   |  |    |              |  |
| Local Emergency Planning Comm                                     | 575-887-6544                   |  |    |              |  |
| US Bureau of Land Management                                      | 575-887-6544                   |  |    |              |  |
|   |                                |  |    |              |  |
| Santa Fe  | a Cammissian (Canta Ca)        | FOF 47C 0C00   |    |              |  |
| New Mexico Emergency Respons                                      | 505-476-9600                   |  |    |              |  |
| New Mexico Emergency Respons                                      | 505-827-9126                   |  |    |              |  |
| New Mexico State Emergency Op                                     | erations Center                | 505-476-9635   |    |              |  |
| <u>National</u>   |                                | Trial and the Control of the Control |    |              |  |
| National Emergency Response Center (Washington, D.C.)             |                                | 800-424-8802   |    |              |  |
| Medical   |                                |  |    |              |  |
| Flight for Life - 4000 24th St.; Lub                              | 806-743-9911                   |  |    |              |  |
| Aerocare - R3, Box 49F; Lubbock,                                  | 806-747-8923                   |  |    |              |  |
| Med Flight Air Amb - 2301 Yale B                                  | 505-842-4433                   |  |    |              |  |
| SB Air Med Service - 2505 Clark C                                 | arr Loop S.E.; Albuquerque, NM | 505-842-4949   |    |              |  |
| Other   |                                |  |    |              |  |
| Boots & Coots IWC   |                                | 800-256-9688   | or | 281-931-8884 |  |
| Cudd Pressure Control   |                                | 432-699-0139   | or | 432-563-3356 |  |
|   |                                | 575-746-2757   |    |              |  |
| Halliburton   |                                | 3/3-/40-2/3/   |    |              |  |



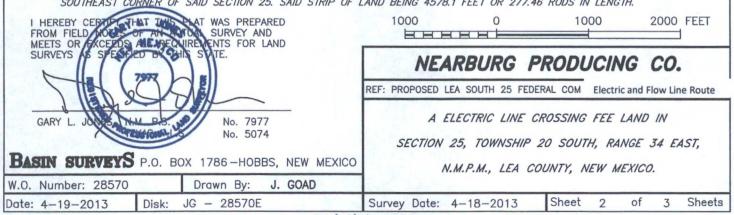
SECTION 25, TOWNSHIP 20 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.



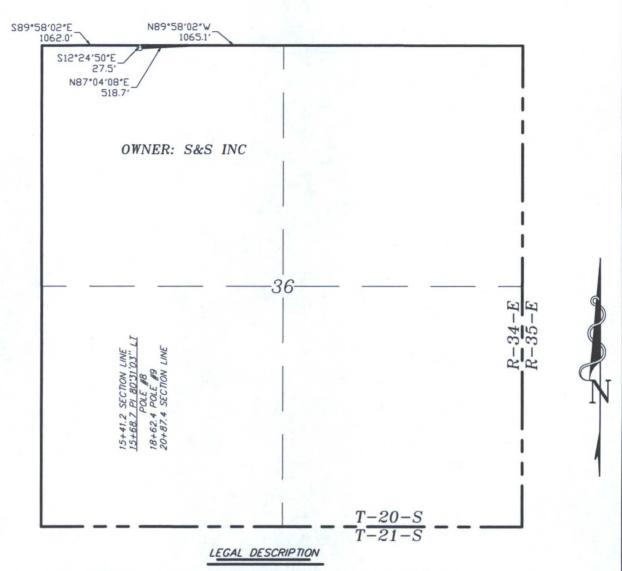
## LEGAL DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 25, TOWNSHIP 20 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT ON THE WEST SECTION LINE WHICH LIES NO'05'14"E., 290.8 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 25; THENCE S89'47'20"E., 90.6 FEET; THENCE S75'38'19"E., 104.0 FEET; THENCE N76'59'54"E., 725.4 FEET; THENCE S42'42'24"E., 134.4 FEET; THENCE S12'24'50"E., 337.7 FEET TO A POINT ON THE SOUTH SECTION LINE WHICH LIES S89'58'02"E., 1062.0 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 25 AND BEGINNING AGAIN AT A POINT ON THE SOUTH SECTION LINE WHICH LIES N89'58'02"W., 1065.1 FEET FROM THE SOUTH QUARTER CORNER OF SAID SECTION 25; THENCE N87'04'08"E., 362.4 FEET; THENCE N89'04'00"E., 1162.0 FEET; THENCE S89'42'02"E., 1354.5 FEET; THENCE N84'12'46"E., 307.1 FEET TO THE END OF THIS LINE WHICH LIES N83'12'17"W., 524.8 FEET FROM THE SOUTHEAST CORNER OF SAID SECTION 25. SAID STRIP OF LAND BEING 4578.1 FEET OR 277.46 RODS IN LENGTH.



# SECTION 36, TOWNSHIP 20 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.



A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 36, TOWNSHIP 20 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT ON THE NORTH SECTION LINE WHICH LIES S89'58'02"E., 1062.0 FEET FROM THE NORTHWEST CORNER OF SAID SECTION 36; THENCE S12'24'50"E., 27.5 FEET; THENCE N87'04'08"E., 518.7 FEET TO A POINT ON THE NORTH SECTION LINE WHICH LIES N89'58'02"W., 1065.1 FEET FROM THE NORTH QUARTER CORNER OF SAID SECTION 36. SAID STRIP OF LAND BEING 546.2 FEET OR 33.10 RODS IN LENGTH.

