

Hydrogen Sulfide Drilling Operations Plan  
**Franklin 18 Federal Com No. 3**  
Cimarex Energy Co. of Colorado  
Unit B, Section 18  
T15S-R31E, Chaves County, NM

30-005-29139

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
- 2 H<sub>2</sub>S Detection and Alarm Systems:
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.
- 3 Windsock and/or wind streamers:
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock at briefing area 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 (H<sub>2</sub>S present in dangerous concentration). Only emergency personnel admitted to location.
- 5 Well control equipment:
  - A. See exhibit "E"
- 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 H<sub>2</sub>S 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 separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

H<sub>2</sub>S Contingency Plan  
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**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 Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
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<sub>2</sub>S Contingency Plan Emergency Contacts  
**Franklin 18 Federal Com No. 3**  
Cimarex Energy Co. of Colorado  
Unit B, Section 18  
T155-R31E, Chaves County, NM

<b>Company Office</b>			
Cimarex Energy Co. of Colorado		800-969-4789	
Co. Office and After-Hours Menu			
<b>Key Personnel</b>			
<b>Name</b>	<b>Title</b>	<b>Office</b>	<b>Mobile</b>
Doug Park	Drilling Manager	972-443-6463	972-333-1407
Dee Smith	Drilling Super	972-443-6491	972-882-1010
Jim Evans	Drilling Super	972-443-6451	972-465-6564
Roy Shirley	Field Super		432-634-2136
<b>Artesia</b>			
Ambulance		911	
State Police		575-746-2703	
City Police		575-746-2703	
Sheriff's Office		575-746-9888	
<b>Fire Department</b>		<b>575-746-2701</b>	
Local Emergency Planning Committee		575-746-2122	
New Mexico Oil Conservation Division		575-748-1283	
<b>Carlsbad</b>			
Ambulance		911	
State Police		575-885-3137	
City Police		575-885-2111	
Sheriff's Office		575-887-7551	
<b>Fire Department</b>		<b>575-887-3798</b>	
Local Emergency Planning Committee		575-887-6544	
US Bureau of Land Management		575-887-6544	
<b>Santa Fe</b>			
New Mexico Emergency Response Commission (Santa Fe)		505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs		505-827-9126	
New Mexico State Emergency Operations Center		505-476-9635	
<b>National</b>			
National Emergency Response Center (Washington, D.C.)		800-424-8802	
<b>Medical</b>			
Flight for Life - 4000 24th St.; Lubbock, TX		806-743-9911	
Aerocare - R3, Box 49F; Lubbock, TX		806-747-8923	
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM		505-842-4433	
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM		505-842-4949	
<b>Other</b>			
Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		

Surface Use Plan  
**Franklin 18 Federal Com No. 3**  
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- 1 Existing Roads: Area maps, Exhibit "B" is a reproduction of Eddy Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.

- A. Exhibit "A" shows the proposed well site as staked.
- B. From mile marker 30 of Hwy 249, go West 0.25 miles to gate and trail road. Follow trail road North for 0.5 miles to proposed lease road.

- 2 Planned Access Roads: 691.6' of on-lease access road will be constructed.

- 3 Location of Existing Wells in a One-Mile Radius - Exhibit A

- A. Water wells - None known
- B. Disposal wells - None known
- C. Drilling wells - None known
- D. Producing wells - As shown on Exhibit "A"
- E. Abandoned wells - As shown on Exhibit "A"

- 4 If on completion this well is a producer, Cimarex Energy Co. of Colorado will furnish maps and/or plats showing on site facilities or off site facilities if needed. This will be accompanied by a Sundry Notice.

- 5 Location and Type of Water Supply:

Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.

- 6 Source of Construction Material:

If possible, construction will be obtained from the excavation of drill site. If additional material is needed, it will be purchased from a local source and transported over the access route as shown on Exhibit "C".

Surface Use Plan  
**Franklin 18 Federal Com No. 3**  
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7 Methods of Handling Waste Material:

- A. Drill cuttings will be separated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state-approved disposal facility.
- B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
- D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
- E. Drilling fluids will be contained in steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8 Ancillary Facilities:

- A. No camps or airstrips to be constructed.

9 Well Site Layout:

- A. Exhibit "D" shows location and rig layout.
- C. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
- D. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- E. If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

10 Plans for Restoration of Surface:

Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

Surface Use Plan  
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11 Other Information

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
- B. The wellsite is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
- C. An Archaeological survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Roswell BLM office.
- D. There are no know dwellings within 1½ miles of this location.

Operator Certification Statement  
**Franklin 18 Federal Com No. 3**  
Cimarex Energy Co. of Colorado  
Unit B, Section 18  
T15S-R31E, Chaves County, NM

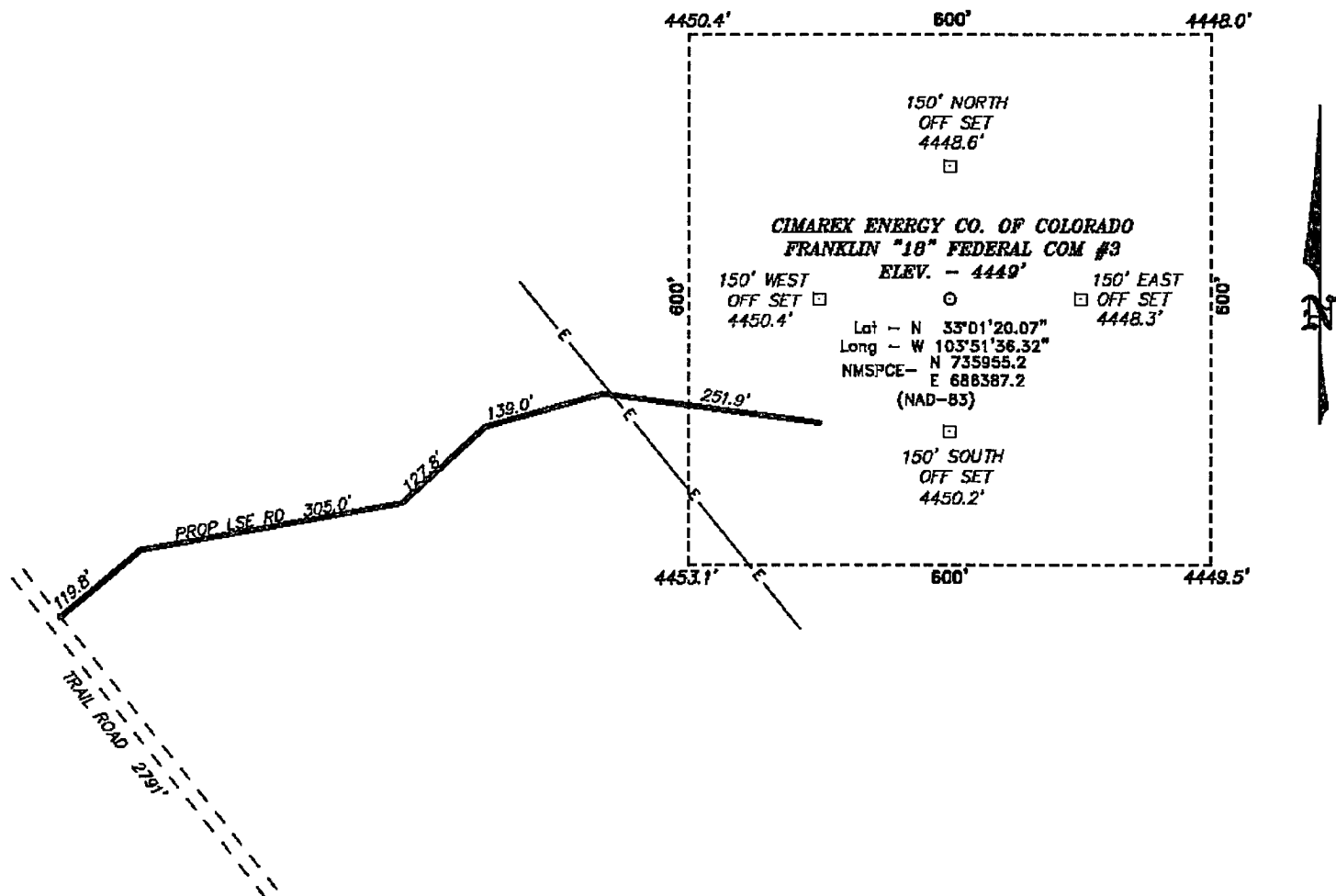
Operator's Representative

Cimarex Energy Co. of Colorado  
600 N. Marienfeld St., Ste. 600  
Midland, TX 79701  
Office Phone: 432-571-7800  
Natalie Krueger

**CERTIFICATION:** I hereby certify that the statements and plans made in this APD are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Cimarex Energy Co. of Colorado and/or its contractors/subcontractors and is in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

NAME: Natalie Krueger  
Natalie Krueger  
DATE: February 5, 2010  
TITLE: Regulatory

SECTION 18, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.,  
CHAVES COUNTY, NEW MEXICO.



200 0 200 400 FEET  
SCALE: 1" = 200'

Directions to Location:

FROM MILE MARKER 30 OF HWY 249, GO WEST 0.25  
MILES TO GATE AND TRAIL ROAD, FOLLOW TRAIL  
ROAD NORTH FOR 0.5 MILES TO PROPOSED LEASE  
ROAD.

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

W.O. Number: 21962 Drawn By: J. SMALL

Date: 11-17-2009 Disk: JMS 21962

**CIMAREX ENERGY CO. OF COLORADO**

REF: FRANKLIN #18 FEDERAL COM #3 / WELL PAD TOPO

THE FRANKLIN #18 FEDERAL COM #3 LOCATED 1830'

FROM THE NORTH LINE AND 2310' FROM THE EAST LINE OF

SECTION 18, TOWNSHIP 15 SOUTH, RANGE 31 EAST,

N.M.P.M., CHAVES COUNTY, NEW MEXICO.

Survey Date: 11-16-2009 Sheet 1 of 1 Sheets



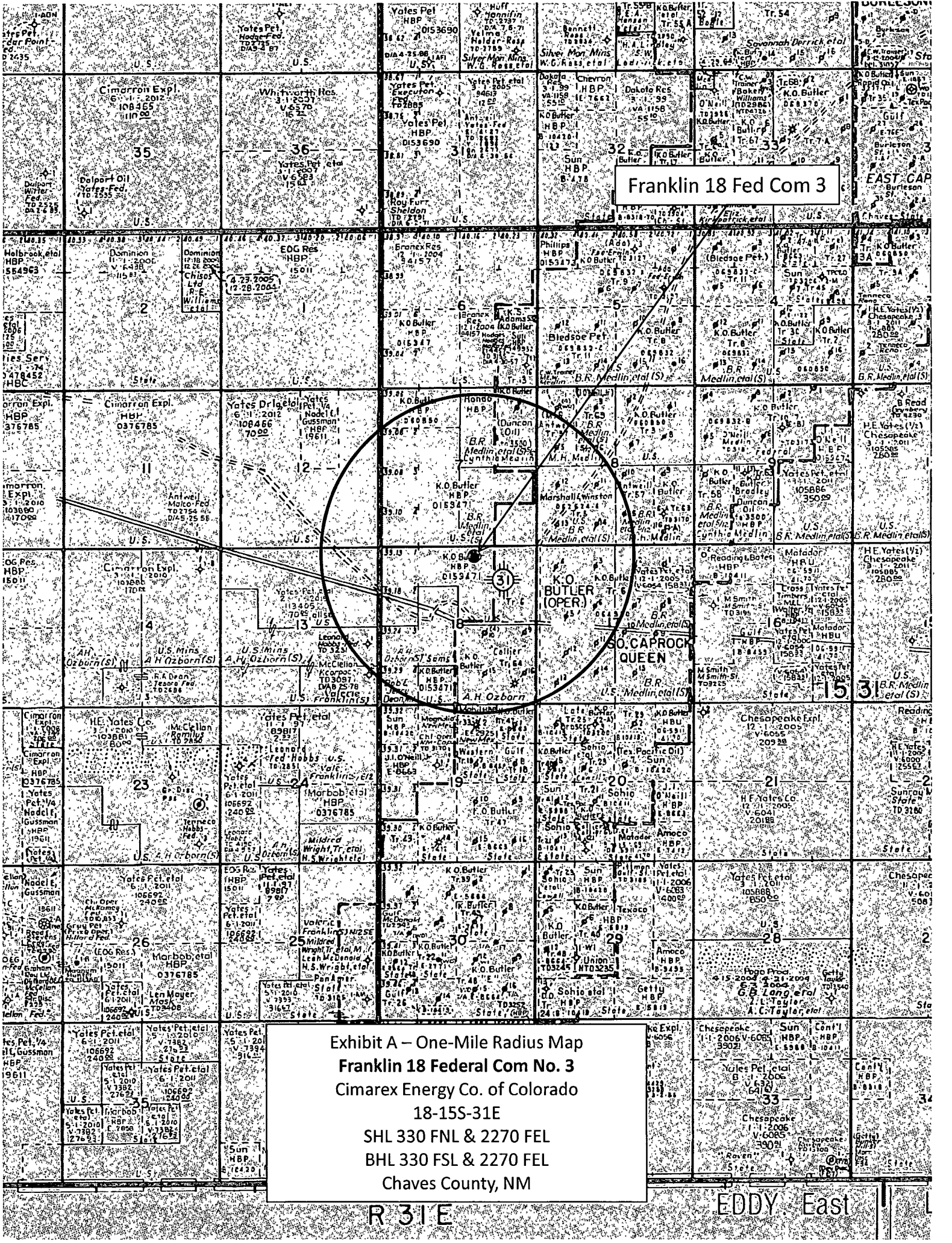
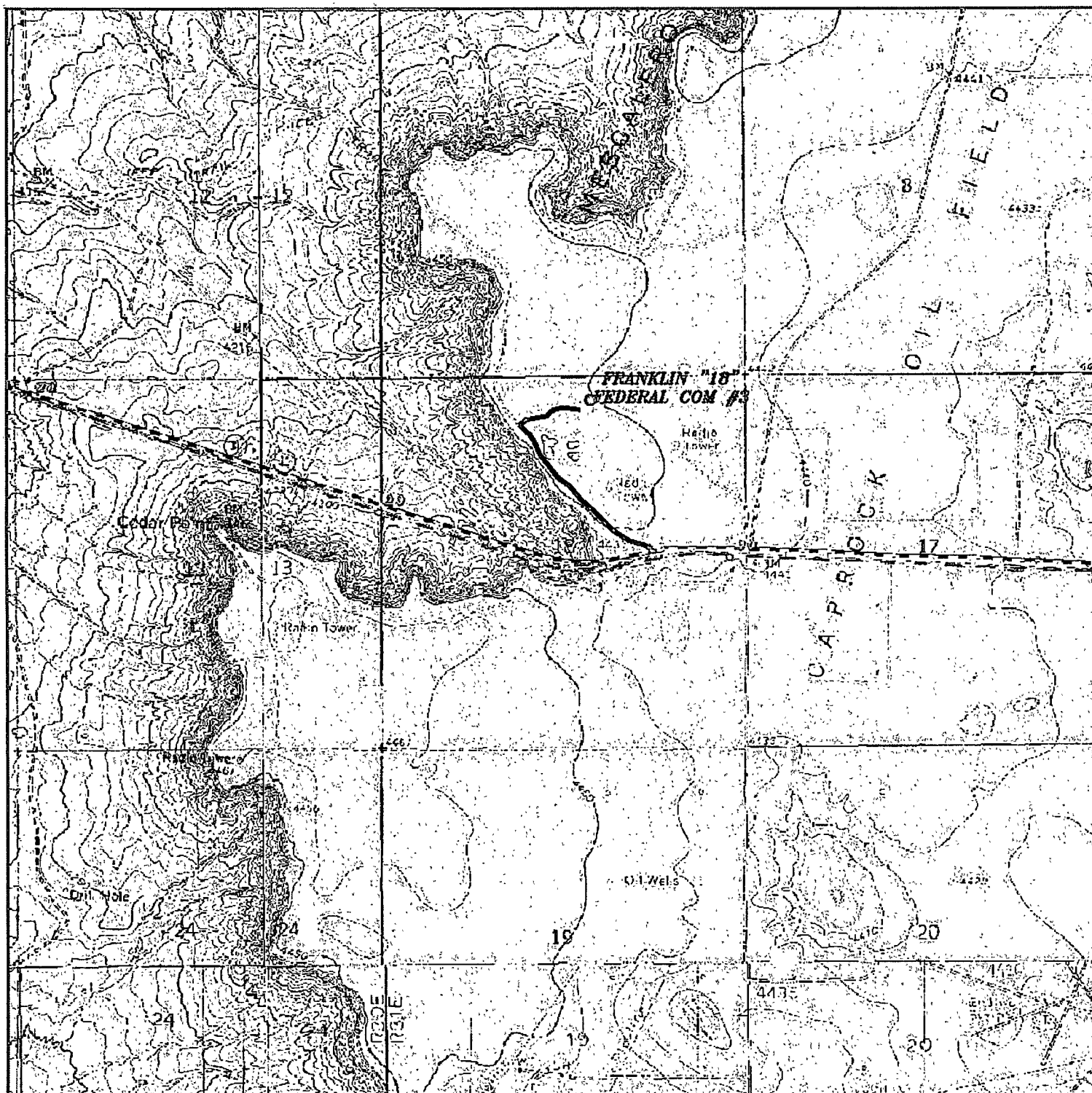


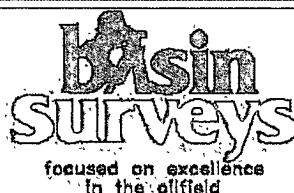
Exhibit A - One-Mile Radius Map  
Franklin 18 Federal Com No. 3  
Cimarex Energy Co. of Colorado  
18-15S-31E  
SHL 330 FNL & 2270 FEL  
BHL 330 FSL & 2270 FEL  
Chaves County, NM

EDDY East



## FRANKLIN "18" FEDERAL COM #2

Section 18, Township 15 South, Range 31 East,  
N.M.P.M., Chaves County, New Mexico.



P.O. Box 1786  
1120 N. West County Rd.  
Hobbs, New Mexico 88241  
(575) 393-7316 - Office  
(575) 392-2208 - Fax  
basinsurveys.com

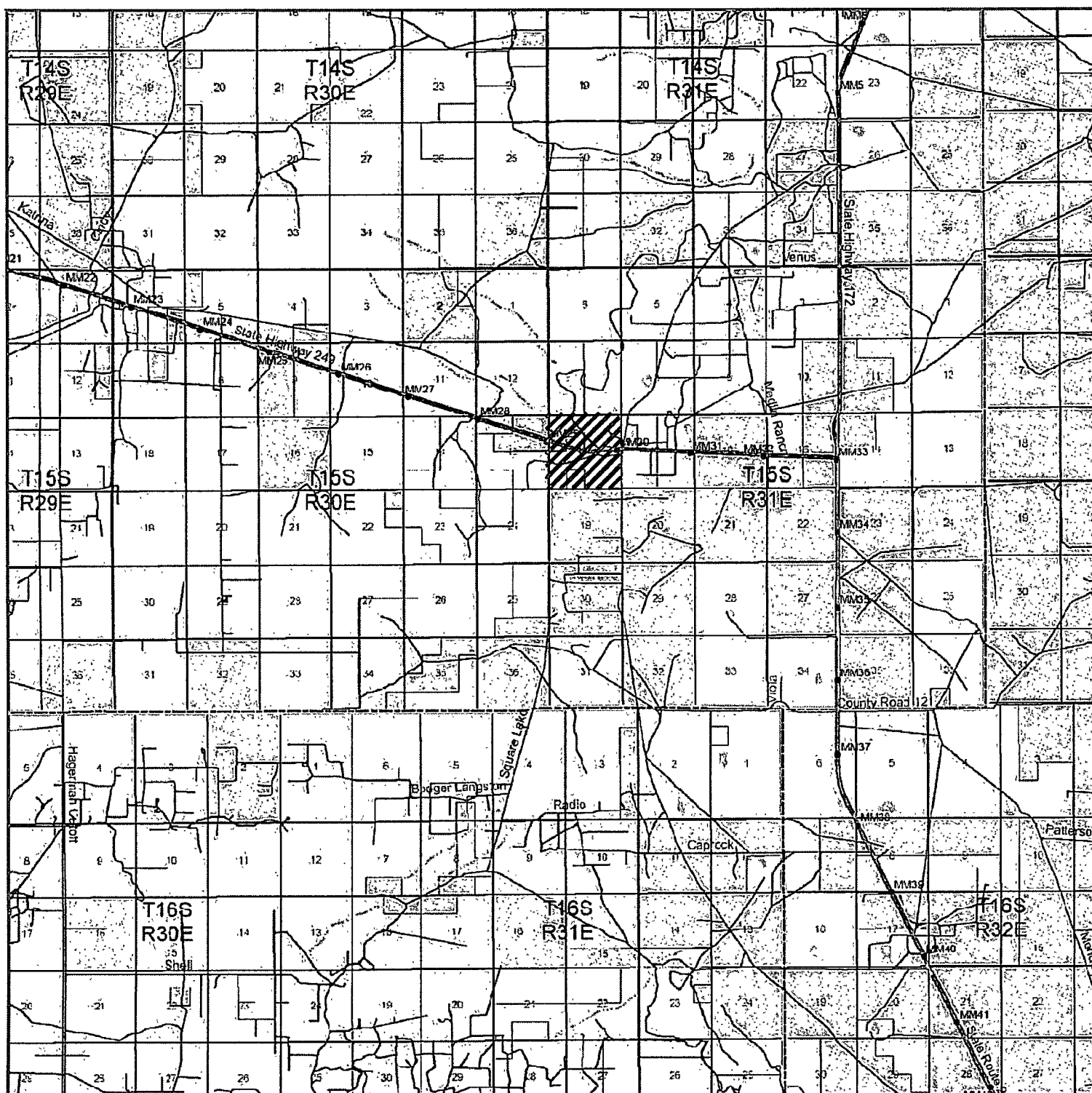
W.O. Number: JMS 21962

Survey Date: 11-16-2009

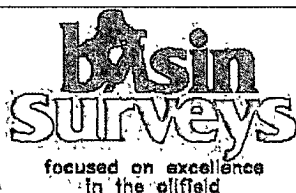
Scale: 1" = 2000'

Date: 11-17-2009

**CIMAREX  
ENERGY CO.  
OF COLORADO**



**FRANKLIN "18" FEDERAL COM #3**  
 Located 330' FNL and 2270' FEL  
 Section 18, Township 15 South, Range 31 East,  
 N.M.P.M., Chaves County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (575) 393-7318 - Office  
 (575) 392-2206 - Fax  
 basinsurveys.com

W.O. Number: JMS 21962

Survey Date: 11-16-2009

Scale: 1" = 2 Miles

Date: 11-17-2009

**CIMAREX**  
**ENERGY CO.**  
**OF COLORADO**

# Patriot Rig 4

Cimarex Energy Co. of Colorado

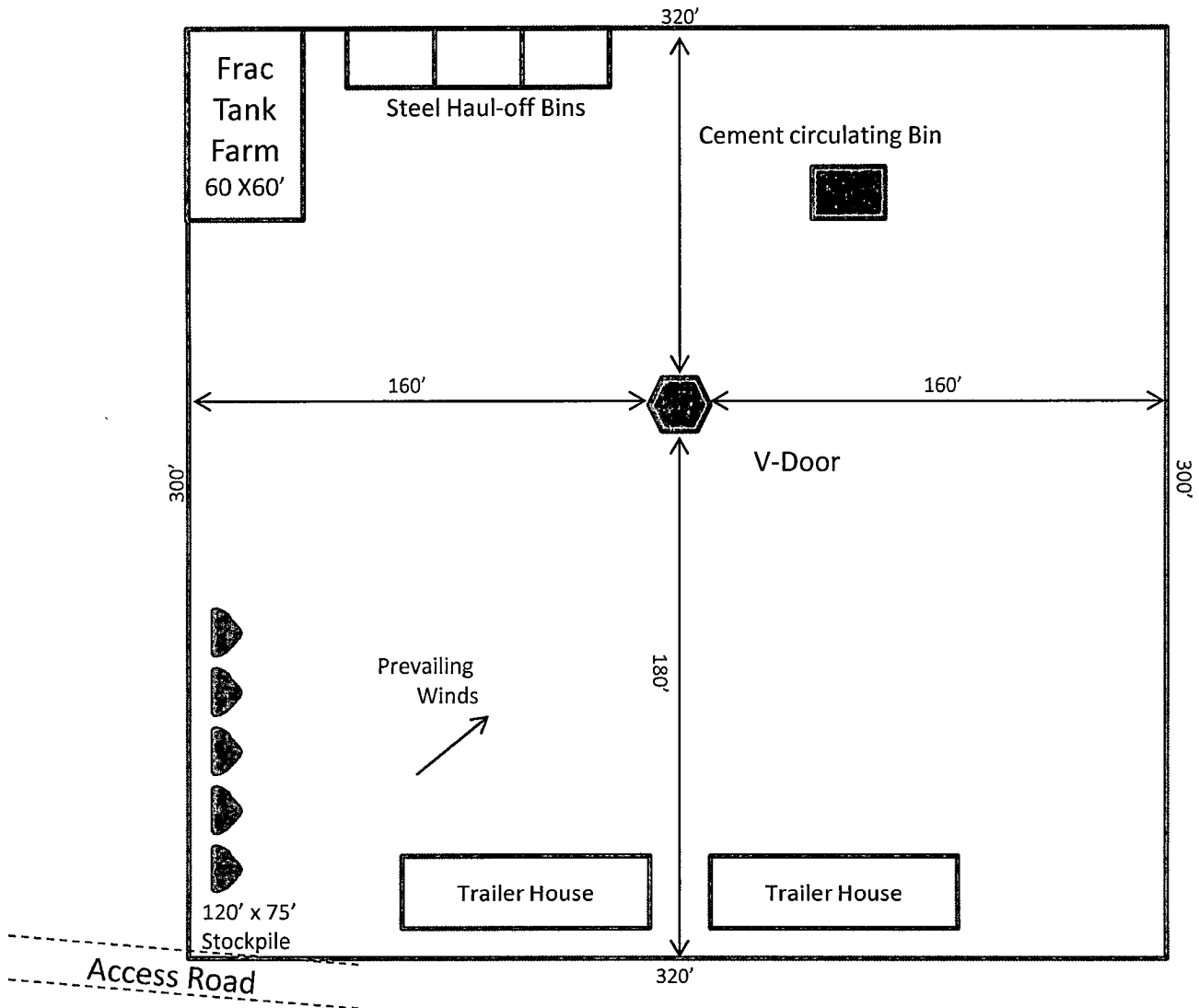
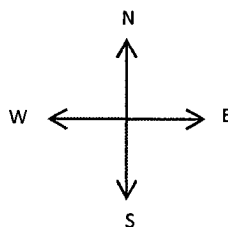


Exhibit D – Rig Layout  
**Franklin 18 Federal Com No. 3**  
Cimarex Energy Co. of Colorado  
18-15S-31E  
SHL 330 FNL & 2270 FEL  
BHL 330 FSL & 2270 FEL  
Chaves County, NM

Note: The flare line(s) discharge shall be located not less than 100 feet from the wellhead, having straight lines unless turns are targeted with running tees, and shall be positioned downwind from the prevailing wind direction and shall be anchored.



# SR & A

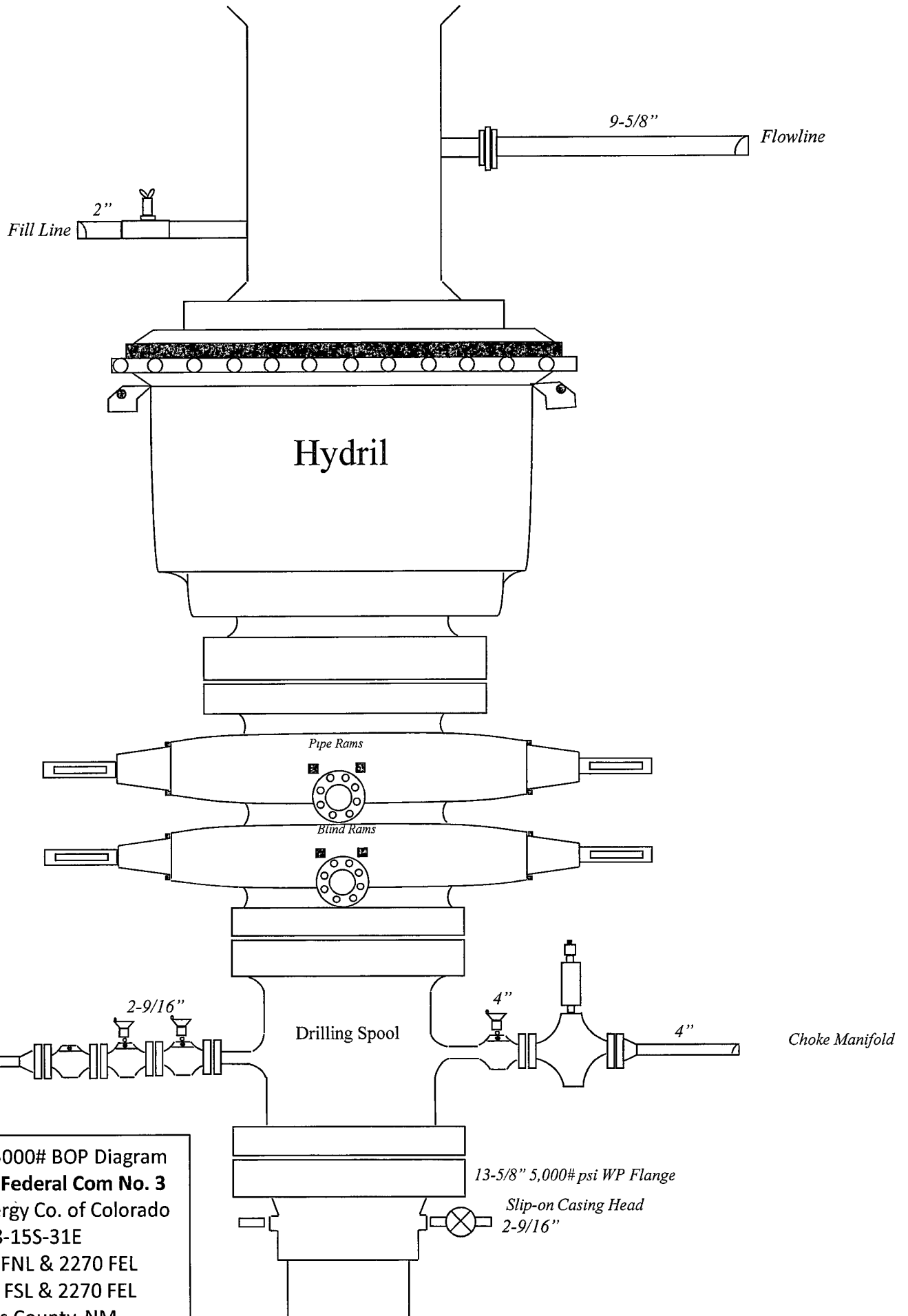


Exhibit E – 5000# BOP Diagram  
**Franklin 18 Federal Com No. 3**  
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 18-15S-31E  
 SHL 330 FNL & 2270 FEL  
 BHL 330 FSL & 2270 FEL  
 Chaves County, NM

**DRILLING OPERATIONS  
CHOKE MANIFOLD  
SM SERVICE**

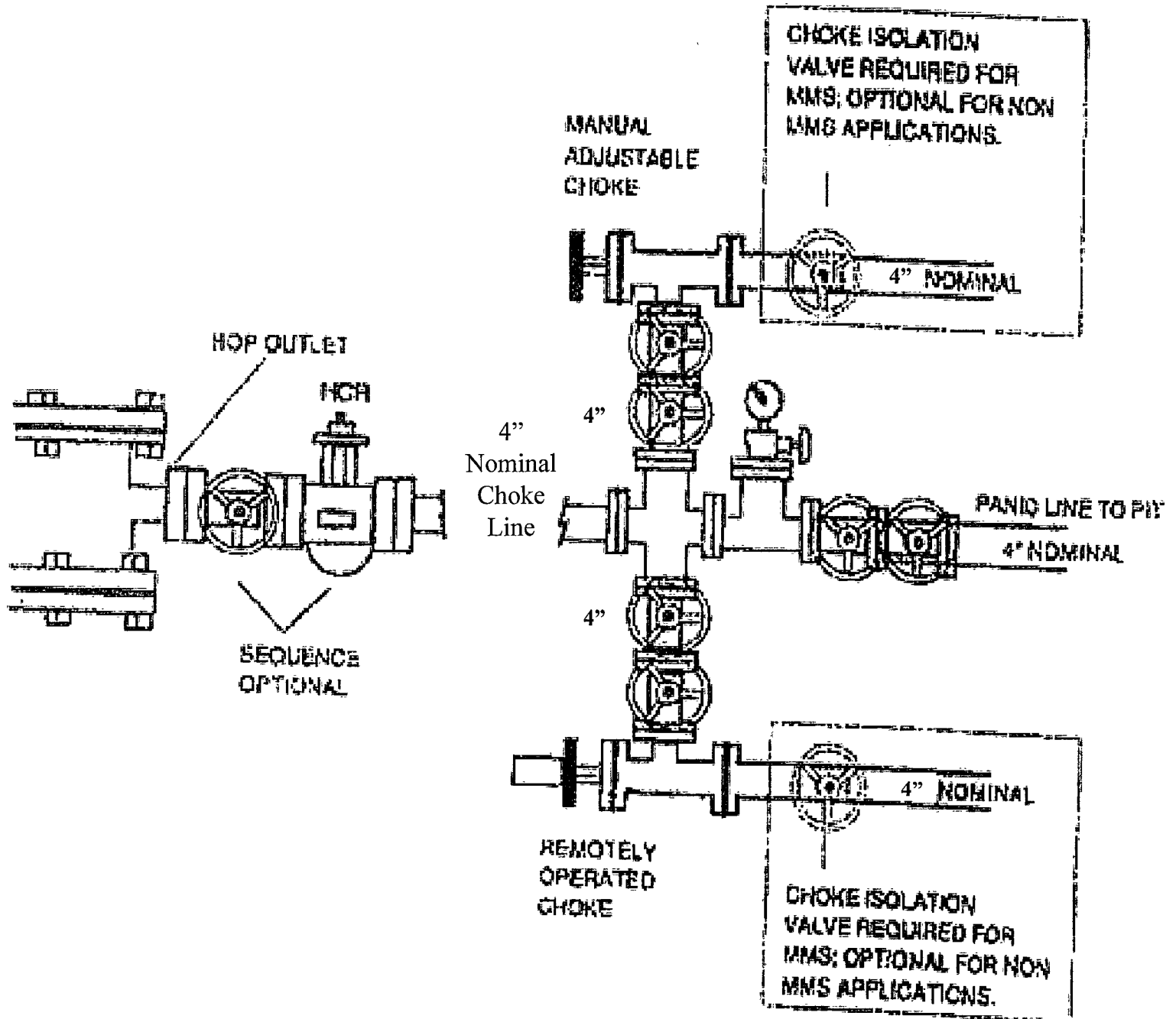


Exhibit E-1 – Choke Manifold Diagram  
**Franklin 18 Federal Com No. 3**  
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 18-15S-31E  
 SHL 330 FNL & 2270 FEL  
 BHL 330 FSL & 2270 FEL  
 Chaves County, NM