N. M. Oil Cons. Division
811 S. 1st St.
ARTESIA, NM 88210-2834

dsf

Form 3160-3
(August 1999)

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NM-14840

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
28088

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Empire Deep "29" Federal #1

2. Name of Operator
Southwestern Energy Production Company 148111

9. API Well No.
30-015-31312

3a. Address 2350 N. Sam Houston Pkwy. East Ste. 300 - Houston, TX 77032

3b. Phone No. (include area code) (281) 618-4733

10. Field and Pool, or Exploratory
~~Exploratory~~ Und Wildcat

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface 540' FNL, 370' FWL of Sec. 29
At proposed prod. zone Unit E

Subject to Like Approval By State

11. Sec., T., R., M., or Blk. and Survey or Area
Sec. 29, T17S, R29E

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
Eddy

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
370' FWL, 540' FNL	320	320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
	11,300'	ES0051
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3,623'	5/15/01	40 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): Cathy Rowan — Date: 4/26/01

Title: Sr. Engineering Tech.

Approved by (Signature): /S/ JOE G. LARA — Name (Printed/Typed): /S/ JOE G. LARA — Date: JUN 01 2001

Title: ACTING FIELD MANAGER — Office: CARLSBAD FIELD OFFICE

Application approval does not warrant or certify the 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.

APPROVAL FOR 1 YEAR

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 reverse)

RECEIVED
OCD - ARTESIA

RECEIVED
APR 27 2001
BLM
ROSWELL, NM

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

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

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised August 15, 2000
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	EMPIRE DEEP "29" FED.	1

OGRID No.	Operator Name	Elevation
148111	SOUTHWESTERN ENERGY PRODUCTION CO.	3623

Surface Location

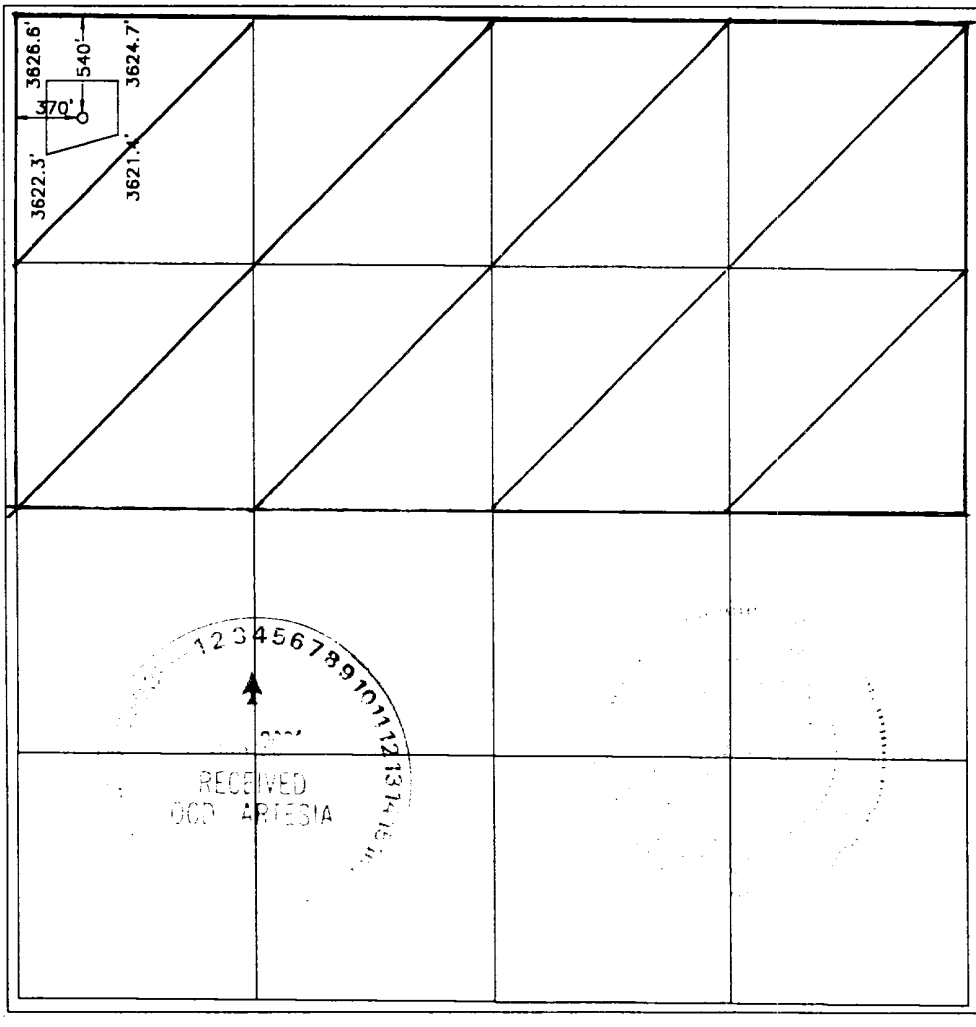
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	29	17 S	29 E		540	NORTH	370	WEST	EDDY

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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



OPERATOR CERTIFICATION

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

Signature

Cathy Rowan
Printed Name

Sr. Engineering Tech.
Title

April 26, 2001
Date

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.

APRIL 18, 2001
Date Surveyed

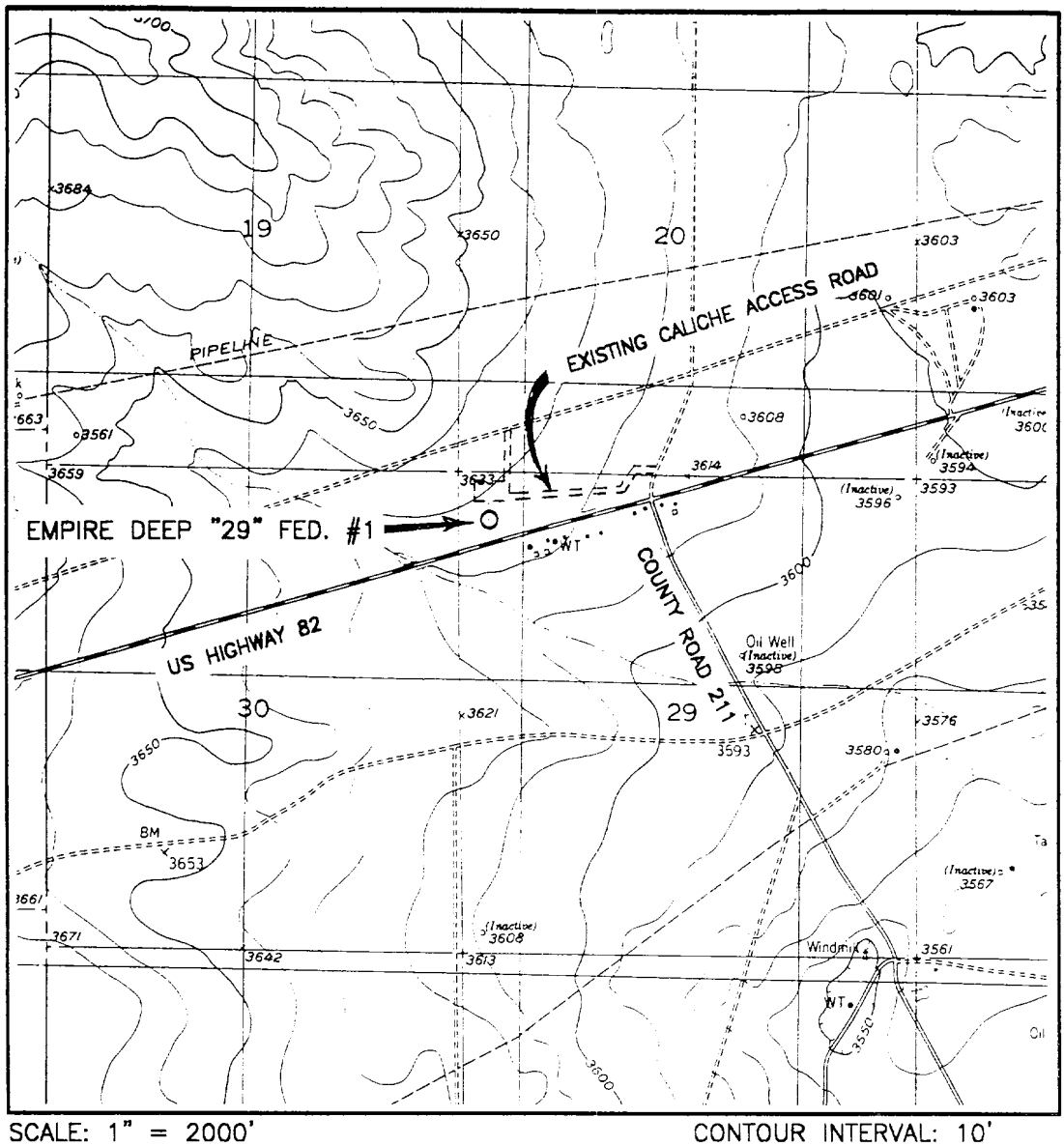
M2

Signature & Seal of Professional Surveyor

W.O. Num. 2001-0380-S

Certificate No. MACON McDONALD 12185

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'
RED LAKE, SE, NM

SEC. 29 TWP. 17-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 540' FNL & 370' FWL

ELEVATION 3623

OPERATOR SOUTHWESTERN ENERGY PRODUCTION CO.

LEASE EMPIRE DEEP "29" FED.

U.S.G.S. TOPOGRAPHIC MAP
RED LAKE, SE, NM

EXHIBIT A

Southwestern Energy Production Company
Empire Deep "29" Fed. #1
540' FNL & 370' FWL
Sec. 29, T17S-R29E

EXHIBIT B

Southwestern Energy Production Company
Drilling Rig Layout
Empire Deep "29" Fed. #1
540' FNL & 370' FWL
Sec. 29, T17S-R29E

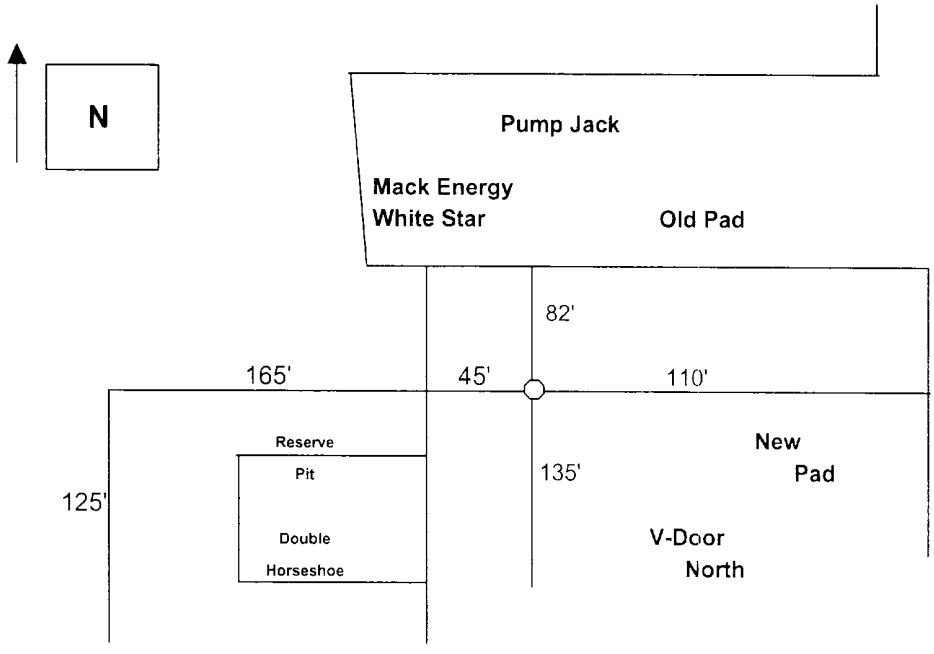


EXHIBIT F

Southwestern Energy Production Company
Empire Deep "29" Fed. #1
540' FNL & 370' FWL
Sec. 29, T17S-R29E

Drilling, Drill Stem Tests, Casing and Cementing Program

1. Drill 17-1/2" hole to ± 450'.

2. Cement 13-3/8", 54.5#, J-55 casing with 450 sx 15:85 Poz:Class C + 0.25 pps D29 + 2% S1 + 2% D20. Run Texas Pattern Guide Shoe, with an insert float valve in top of shoe joint.

3. Nipple up and install BOP's. Test casing to ~~600~~ psi after 18 hours and drill out cement.

4. Drill 11" hole to 3,000'. Anticipate possible lost circulation zone with possibility of dry drilling. This interval to be drilled with 9.9 – 10.0 ppg saturated brine.

5. Cement 8 – 5/8", 32#, J-55 casing with lead, 1100 sx 35:65 Poz:Class C + 6% D20 + 0.25 pps D29. Tail with 250 sx Class C + 2% S1 + 0.25 pps D29. Run guide shoe and insert float on bottom joint, and 3-6 centralizers. Weld first few joints of casing.

6. Nipple up and install BOP's. Test casing to ~~1500~~ psi for 30 minutes after WOC 18 hours and drill out cement after 24 hours.

7. Drill 7-7/8" hole to TD at 11,300'. A fresh water mud system will be used to +/- 8,500'. At that point the system will be mudded up to 9.3 – 9.6 ppg to obtain good samples. See attached Mud Program for details. Pit levelers and flowline sensors will be utilized on the pits. Drill stem tests are possible in the following zones: Cisco-Canyon – 8,780'; Atoka – 10,120'; Morrow – 10,700'. DST flow periods and shut-in time will be determined on location. A mud logging unit will be on location at 6,000' to assist in evaluating samples and shows for exact drill stem test intervals. Run Formation Density-Compensated Neutron – Gamma Ray log, Dual Induction-Laterlog, and Dipole Sonic Log.

8. Run 5-1/2", 17#, N-80 casing and cement with 1900 sx 50:50 Poz:Class H + 6% D44 + 2% D20 + 0.4% D59. Use guide shoe and float collar, and 12-15 centralizers where necessary. Use top and bottom rubber plugs, displace cement with clean, fresh water treated with 2% KCL.

9. Perforations, acid job, and additional stimulation to be determined after completion.

EXHIBIT G

Southwestern Energy Production Company
Empire Deep "29" Fed. #1
540' FNL & 370' FWL
Sec. 29, T17S-R29E

Surface: Spud with a conventional gel/lime "spud mud". Utilize native solids to maintain sufficient viscosity to clean the hole. Mix paper as needed to control seepage loss. Severe loss may require dry drilling to casing point.

Intermediate: Drill out below surface casing with brine. Circulate through the inside portion of the reserve pit for maximum gravitational solids removal. Use sweeps of paper as needed to control seepage loss and for additional hole cleaning. Maintain pH using lime.

Production: Drill out below intermediate casing with fresh water. Circulate through the remaining portion of the reserve pit for gravitational solids removal. Continue to maintain pH using lime and paper sweeps to control seepage loss and prevent excessive cuttings build-up.

Prior to the top of the Cisco, around 8.500', displace the hole with brine and use additions of fresh water to adjust weight as hole conditions dictate. (Wells in this vicinity have used mud weights from 8.9 – 9.7 ppg down to 10,800'.)

Confine circulation to the steel pits. Discontinue lime and begin using caustic soda to maintain pH. Mix XCD Polymer for viscosity and Starlose for filtration control. Add Xcide-102 to the system to preserve the XCD Polymer. Small quantities of S-10 (defoamer) may be needed while mixing through the hopper. Begin at mud-up with a filtrate of 10-12 cc and lower to 6-8 cc prior to penetrating the Morrow

DRILLING PROGNOSIS

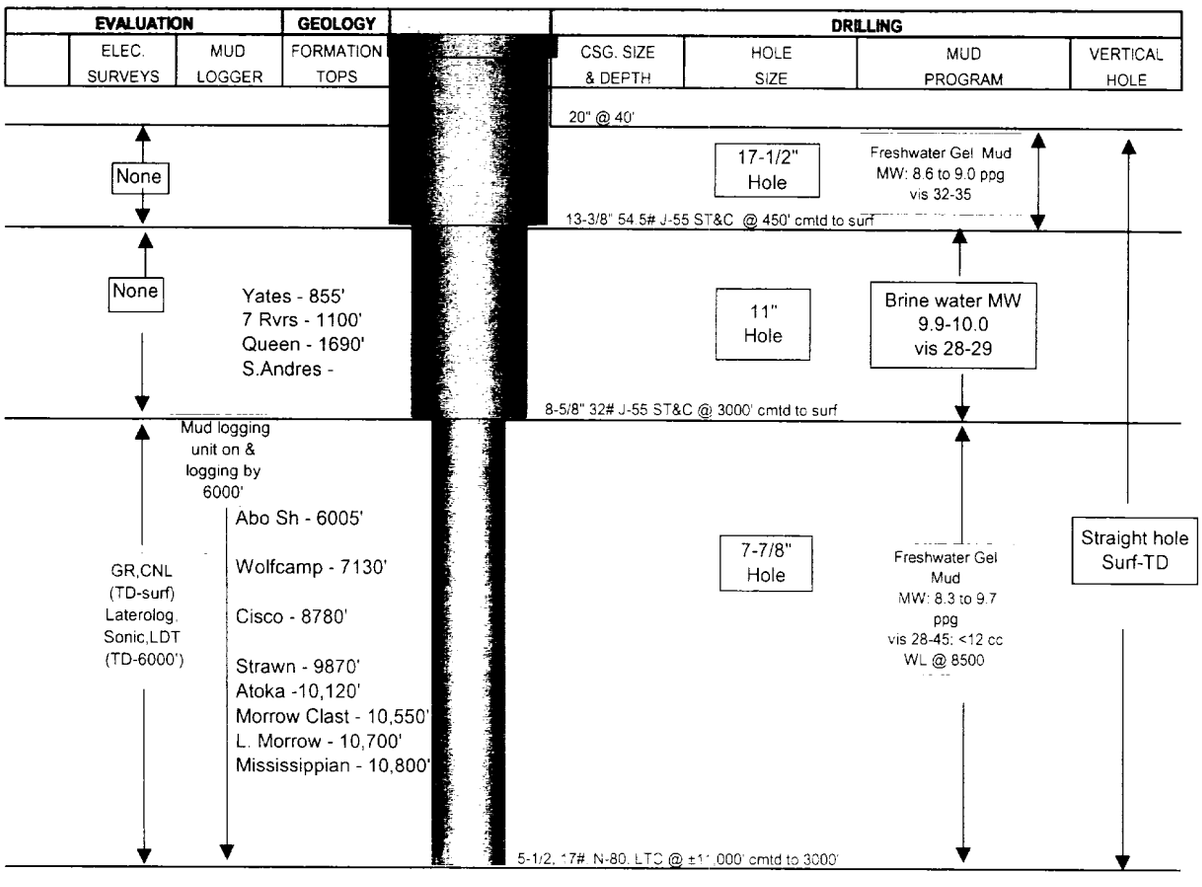
WELL NAME: Empire Deep "29" Fed. Com. #1

LOCATION: Section 29-17S-29E
540' FNL & 370' FWL
Eddy County, New Mexico

PROSPECT: Empire Deep

OBJECTIVE: Morrow

EST. ELEVATION: 3623' GL



UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Roswell Resource Area
P. O. Drawer 1857
Roswell, New Mexico 88202-1857

Statement Accepting Responsibility for Operations

Operator Name: Southwestern Energy Production Company
Street or Box : 2350 North Sam Houston Parkway East, Suite 300
City, State : Houston, TX
Zip Code : 77032

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

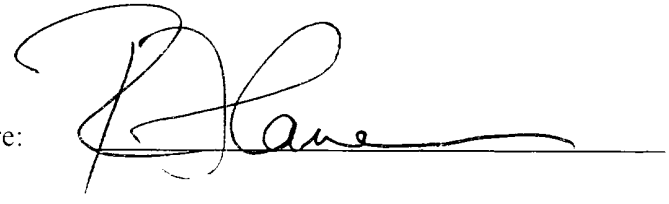
Lease No.: NM-14840

Legal Description of land: Sec. 29, T17S-R29E

Formation(s) (if applicable): Morrow

Bond Coverage: $150,000 Nationwide Surety Bond, individually bonded.

BLM Bond File No.: ES0051

Authorized Signature: 

Title: Sr. Vice President – Exploration and Production

Date: April 26, 2001

SURFACE USE PLAN

Southwestern Energy Production Company
Empire Deep "29" Fed. #1
540' FNL & 370' FWL
Sec. 29, T17S-R29E

1. EXISTING ROADS – Area map, Exhibit "A", is a reproduction of the U.S.G.S. New Mexico 15 minute quadrangle. Existing and proposed roads are shown on the exhibit. All roads shall be maintained in a condition equal that which existed prior to the start of construction.

   A. Exhibit "A" shows the proposed development well site as staked.

   B. From the intersection of Hwy. 285 & Hwy. 82 in Artesia, go east along Hwy. 82 for 17.6 miles to County Road 211. Turn left and go north for 0.05 mes to a caliche road to the left. Turn left and go westerly on said caliche road for approximately 0.4 miles to a point on the south edge of an existing well pad. From this point, the well location flag is visible to the south approximately 100 feet.

2. PLANNED ACCESS ROADS – No new access road is planned. Will use existing caliche road.

3. LOCATION OF EXISTING WELLS IN A ONE-MILE RADIUS

   A. Water wells -- None known.

   B. Disposal wells -- None known.

   C. Drilling wells -- None known.

   D. Producing wells -- As shown on Exhibit "C"

   E. Abandoned wells -- As shown on Exhibit "C"

4. If, upon completion, the well is a producer, Southwestern Energy Production Company, will furnish maps or plats showing On Well Pad facilities and Off Well Pad facilities (if needed) on a Sundry Notice before construction of these facilities starts.

5. LOCATION AND TYPE OF WATER SUPPLY

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

6. SOURCE OF CONSTRUCTION MATERIALS

   If needed, construction materials will be obtained from the drill site's excavations or from a local source. These materials will be transported over the access route as shown on Exhibit "A".

7. METHODS FOR HANDLING WASTE DISPOSAL

A. 1. Drill cuttings will be disposed of in the reserve pit.

2. Trash, waste paper, and garbage will either be contained in a fenced trash trailer or in a trash pit, fenced with mesh wire to prevent wind-scattering during storage. When the rig moves out, all trash and debris left at the site will be contained to prevent scattering and will be buried at least 36" deep within a reasonable period of time.

3. Salts remaining after completion of the well will be picked up by the supplier, including broken sacks.

4. Sewage from the trailer houses will drain into holes with minimum depth of 10' 00". These holes will be covered during drilling and backfilled upon completion. A "porta John" will be provided for the rig crews. This will be properly maintained during the drilling operations and removed upon completion of the well.

5. Chemicals remaining after completion of the well will be stored in the manufacturer's containers and picked up by the supplier.

B. Remaining drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry enough for backfilling. In the event drilling fluids will not evaporate in a reasonable period of time, they will be transported by tank truck to a State approved disposal site.

Water produced during testing of the well will be disposed of in the reserve pit. Oil produced during testing of the well will be stored in test tanks until sold and hauled from the site.

8. ANCILLARY FACILITIES

No camps or airstrips will be constructed.

9. WELL SITE LAYOUT

A. Exhibit "B" shows the proposed well site layout.

B. This exhibit indicates proposed location of reserve and trash pits and living facilities.

C. Mud pits in the active circulating system will be steel pits and the reserve pit is proposed to be unlined, unless subsurface condition encountered during pit construction indicate that lining is needed for lateral containment of fluids.

D. If needed, the reserve pit is to be lined with PVC or polyethylene liner. The pit liner will be 6 mils thick. Pit liner will extend a minimum, 2'-00" over the reserve pits dikes where the liner will be anchored down.

E. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and 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 and reserve pit 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.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. 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 recountered 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.

11. OTHER INFORMATION

A. The topography is of a rolling terrain with vegetation of sagebrush and native grass. The soils are clayey sand over caliche base.

B. The surface is used to mainly access producing wells in the area and minimal grazing for livestock. There is a federal Grazing Lease Allotment No. 7008 in effect to Williams & Son Cattle Company of Maljimar, NM.

C. An archeological study is being conducted for the location. The report will be submitted separately when completed.

D. There is no building of any kind in the area.

12. OPERATOR'S REPRESENTATIVE – Field representatives for contact regarding compliance with the Surface Use Plan are:

Before and during construction:
Dale Stafford
R. K. Ford & Associates
201 West Wall, Suite 600
Midland, TX 79701
(915) 682-0440

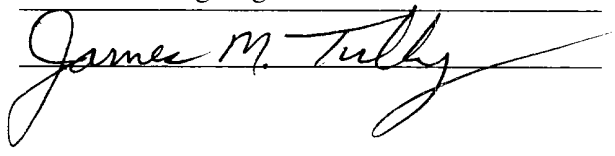
After construction:
Bruce Drummond
Diamond "M" Production Company
4459 S. FM 1606
Snyder, TX 79549
(915) 573-0725

13. CERTIFICATION – I hereby 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; and that the work associated with the operations proposed herein will be performed by Southwestern Energy Production Company and its contractors/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.

NAME: James M. Tully

DATE: April 26, 2001

TITLE: Staff Drilling Engineer

SIGNATURE: 

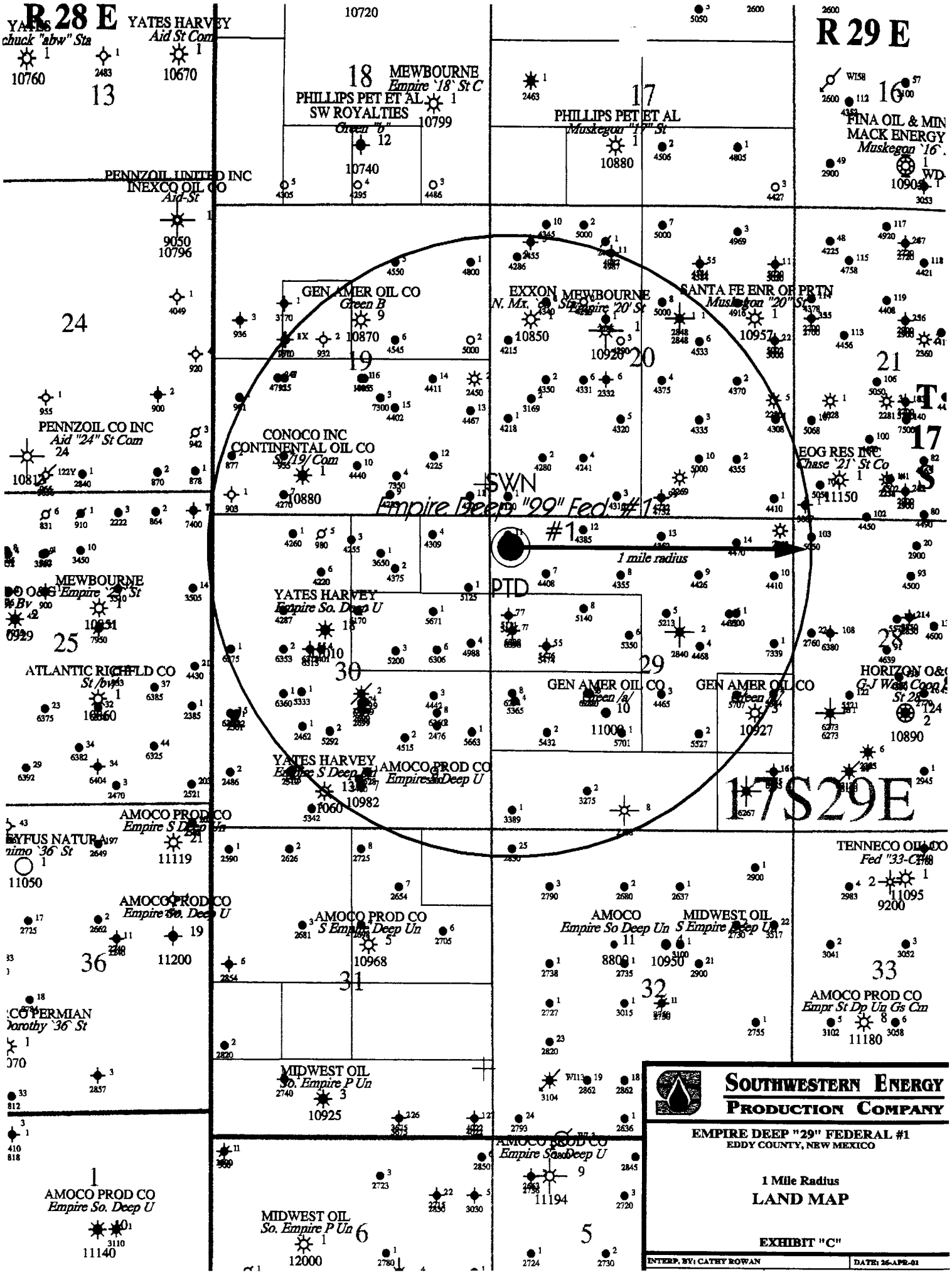
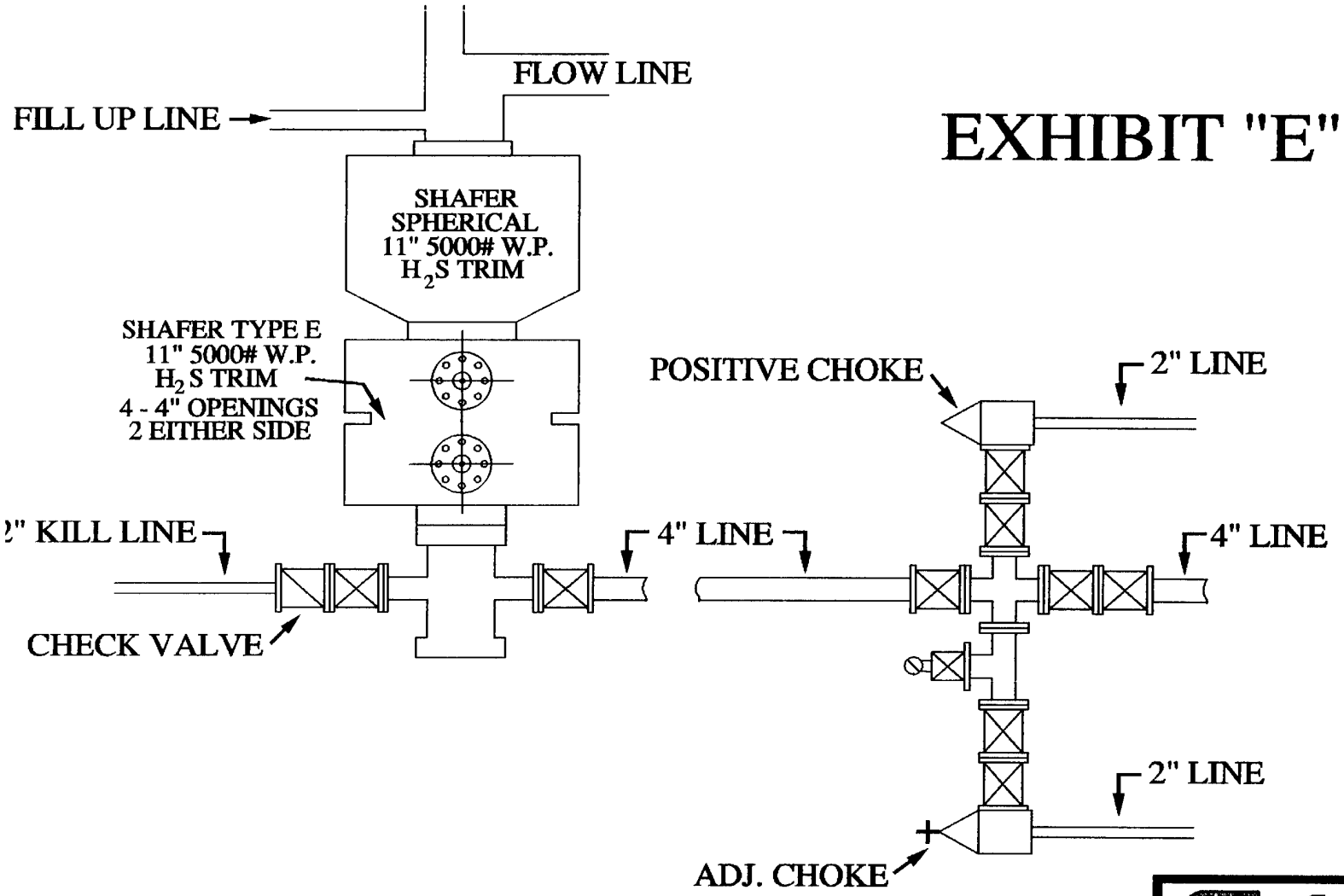

R 28 E
R 29 E
T 17 S
17S29E
YATES HARVEY
Aid St Com
PHILLIPS PET ET AL
SW ROYALTIES
Green "b"
MEWBOURNE
Empire '18' St C
PHILLIPS PET ET AL
Muskegon "17" St
FINA OIL & MIN
MACK ENERGY
Muskegon '16'
PENNZOIL UNITED INC
INEXCO OIL CO
Aid-St
GEN AMER OIL CO
Green B
EXXON MEWBOURNE
N. Mx. St Com
Empire '20' St
SANTA FE ENR OP PRTN
Muskegon "20" St
PENNZOIL CO INC
Aid "24" St Com
CONOCO INC
CONTINENTAL OIL CO
St 19 Com
EOG RES INC
Chase '21' St Co
SWN
Empire Deep "99" Fed #1
#1
1 mile radius
PTD
MEWBOURNE
Empire '__' St
YATES HARVEY
Empire So. Deep U
ATLANTIC RICHFLD CO
St /bv/
GEN AMER OIL CO
Green /a/
GEN AMER OIL CO
Green
HORIZON O&G
G-J West Coop
St 28
YATES HARVEY
Empire S Deep Un
AMOCO PROD CO
Empire Deep U
AMOCO PROD CO
Empire S Deep Un
TENNECO OIL CO
Fed "33-C"
AMOCO PROD CO
Empire So. Deep U
AMOCO PROD CO
S Empire Deep Un
AMOCO
Empire So Deep Un
MIDWEST OIL
S Empire Deep U
COPERMIAN
Dorothy '36' St
MIDWEST OIL
So. Empire P Un
AMOCO PROD CO
Empr St Dp Un Gs Cm
AMOCO PROD CO
Empire So. Deep U
MIDWEST OIL
So. Empire P Un
AMOCO PROD CO
Empire So Deep U
SOUTHWESTERN ENERGY
PRODUCTION COMPANY
EMPIRE DEEP "29" FEDERAL #1
EDDY COUNTY, NEW MEXICO
1 Mile Radius
LAND MAP
EXHIBIT "C"
INTERP. BY: CATHY ROWAN
DATE: 26-APR-01

EXHIBIT "E" 1 of 2



SOUTHWESTERN ENERGY PRODUCTION COMPANY

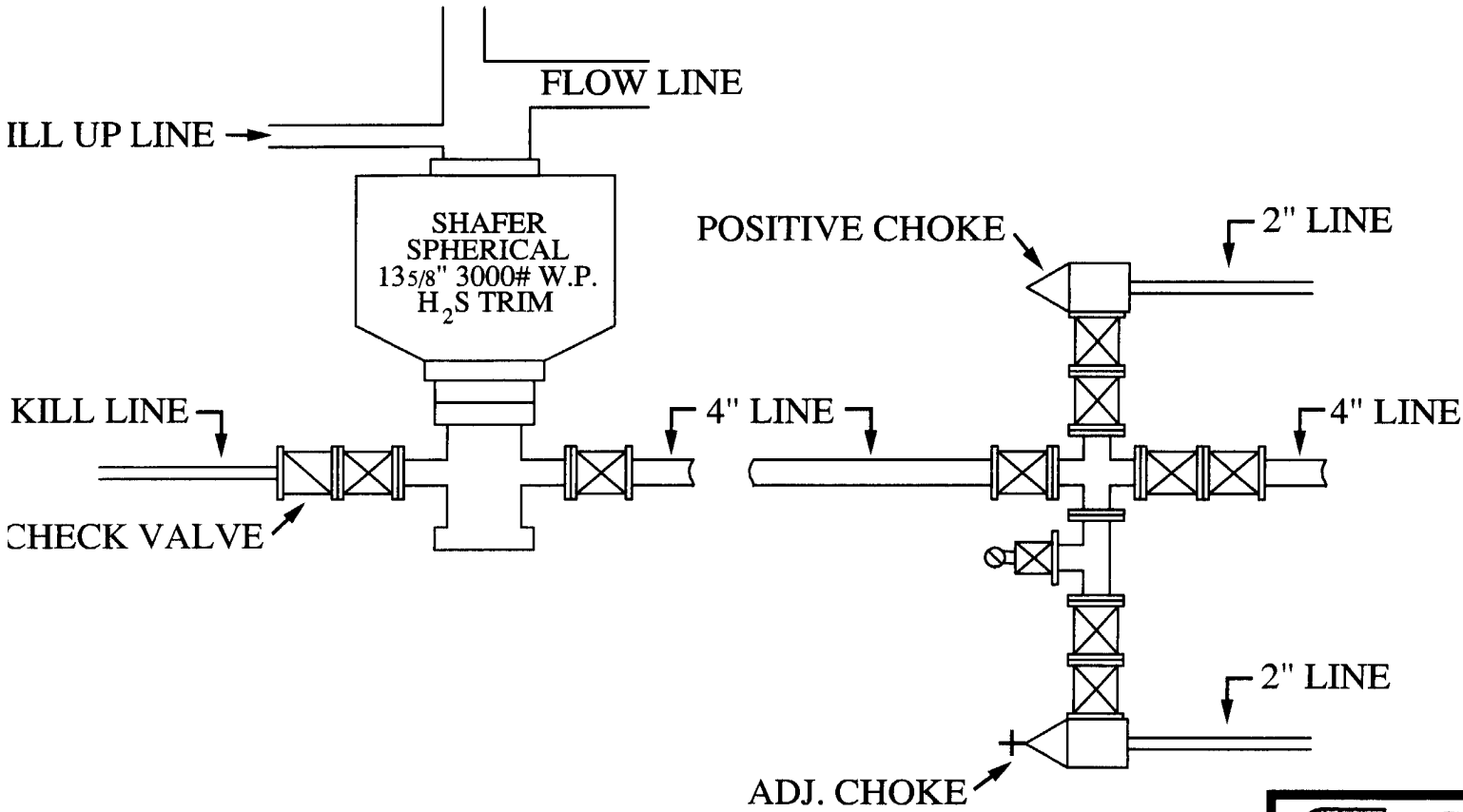
EMPIRE DEEP "29" FEDERAL #1
EDDY COUNTY, NEW MEXICO

7 7/8" Hole Section
3000' - 10,800'

EXHIBIT "E" 1 of 2

INTERP. BY: CATHY ROWAN	DATE: 26-APR-01
DRAFTED BY: S.D.P.	CADFILE: xtree_empire_1

EXHIBIT "E" 2 of 2



SOUTHWESTERN ENERGY PRODUCTION COMPANY

EMPIRE DEEP "29" FEDERAL #1
EDDY COUNTY, NEW MEXICO

11" Hole Section
450' - 3000'

EXHIBIT "E" 2 of 2

INTERP. BY: CATHY ROWAN	DATE: 26-APR-01
DRAFTED BY: S.D.P.	CADFILE: xtree_empire_2
LOC: f:\home\pattersa\cathy	SCALE: 1"=3000'