


ENERGY CORPORATION

20 North Broadway, Suite 1500 Telephone 405/235-3611
Oklahoma City, Oklahoma 73102-8260 FAX 405/552-4550

OIL CONSERVATION DIVISION
RECEIVED

March 10, 1994

Certified Mail No. P 105 481 606

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504-2088

RE: East Shugart Unit #49
Non-Standard Location Approval

Gentlemen:

Devon Energy Corporation was notified, by notations on our Form 3160-3 (approved for drilling), that our proposed East Shugart Unit #49, to be located 990' FNL and 1500' FEL of Section 35-T18S-R31E in Eddy County, is an unorthodox location. The location was moved due to the original location being too close to a pipeline. Enclosed is a plat of the East Shugart Unit showing the Unit's boundaries and the wells within; and copy of Form 3160-3 with attachments including copy of form C-102.

The East Shugart Unit is a federal unit (#14-08-0001-11572) and the proposed well is to be part of this active waterflood project. The wells offsetting the proposed location are owned and operated by Devon, therefore, no other notification is necessary.

East Shugart Unit #49
Non-Standard Location Approval
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If you have any questions, please contact the undersigned at (405) 235-3611, X4509.

Sincerely yours,

DEVON ENERGY CORPORATION (NEVADA)



Mr. E.L. Buttross, Jr.
District Engineer

/cg
Enclosures

cc: Oil Conservation Division - Artesia, NM
Bureau of Land Management - Carlsbad, NM

OPERATOR'S COPY

SPECIAL DRILLING STIPULATIONS

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN:

OPERATORS NAME: DEVON ENERGY CORPORATION (NEVADA) LEASE NO.: NM-10191
LOCATION: 990'/N & 1500'/E, SEC. 35-T18S-R31E COUNTY EDDY
WELL NAME & NO: NO. 49-EAST SHUGART UNIT

The special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Conditions of Approval. The permittee should be familiar with the Onshore Order No. 2, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE REVIEW OF THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3.

I. SPECIAL ENVIRONMENT REQUIREMENTS - Federal Surface

- Lesser Prairie Chicken (Stips attached) San Simon Swale (Stips attached)
 Floodplain (Stips attached) Other _____

II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

The BLM will monitor construction on this drill site. Notify the ^{Carlsbad} ~~Reserve~~ Resource Area Office, BLM at least 3 working days prior to commencing construction at (505) 887-6544.

The drill pad and access road for this well must be surfaced with 6 inches of compacted gravel/caliche.

All topsoil and vegetation encountered during the construction of the drill site areas shall be stockpiled and made available for resurfacing of the disturbed areas after completion of the drilling operations. Topsoil on the subject location is approximately _____ inches in depth. Approximately _____ cubic yards of topsoil material shall be stockpiled for reclamation.

Other -

WELL COMPLETION REQUIREMENTS

A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the Bureau of Land Management. The effective date of the agreement must be prior to any sales.

Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pads not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded with a drill equipped with a depth indicator (set at a depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Seed (PLS), per acre:

- | | |
|--|--|
| <input type="checkbox"/> A. Seed Mixture I (Loamy Sites) | <input type="checkbox"/> B. Seed Mixture II (Sandy Sites) |
| Lehmann's lovegrass (<i>Eragrostis lehmanniana</i>) 1.0 | Sand dropseed (<i>Sporobolus cryptandrus</i>) 1.0 |
| Sideoats grama (<i>Bouteloua curtipendula</i>) 5.0 | Sand lovegrass (<i>Eragrostis trichodes</i>) 1.0 |
| Sand dropseed (<i>Sporobolus cryptandrus</i>) 1.0 | Plains bristlegrass (<i>Setaria macrostachya</i>) 2.0 |
| <input type="checkbox"/> C. Seed Mixture III (Shallow Sites) | <input checked="" type="checkbox"/> Seed Mixture IV (Gypsum Sites) |
| Sideoats grama (<i>Bouteloua curtipendula</i>) 7.0 | Alkali Sacaton (<i>Sporobolus airoides</i>) 1.0 |
| Lehmann's lovegrass (<i>Eragrostis lehmanniana</i>) 1.0 | Four-Wing Saltbrush (<i>Atriplex canescens</i>) 5.0 |
| or Boar's Lovegrass (<i>E. Chloromaias</i>) | |

Seeding should be done either late in the fall (September 15 - November 15,) or early as possible the following spring to take advantage of available ground moisture.

Other - None

RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- 1) Lined as specified above and,
- 2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and is capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to proceed by BLM.

TRASH PIT STIPS

All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN:

OPERATOR'S NAME DEVON ENERGY CORP. (NEVADA) WELL NO. & NAME NO. 49-EAST SHUGART UNIT
 LOCATION 9907⁷ P N L & 15007⁷ P E L SEC. 35, T. 18S, R. 31E
 LEASE NO. NM-70191 - EDDY COUNTY NEW MEXICO

The special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.

DRILLING OPERATIONS REQUIREMENTS

Capitan Controlled Water Basin

The Bureau of Land Management office is to be notified at (505) 887-6544, in sufficient time for a representative to witness:

- () 1. Spudding () 2. Cement casing 8⁵/₈ inch 5¹/₂ inch ___ inch
 () 3. DOP tests () Other Whenever a casing string is cemented in the R-111-P potash area, cement shall be allowed to stand a minimum of twelve (12) hours under pressure and a total of twenty-four (24) hours before drilling the plug or initiating tests.

CASING

() 8⁵/₈ surface casing should be set AT ≈ 950' (below GROUNDWATER) and cement circulated to the surface. If cement does not circulate to the surface, this BLM office will be notified and a temperature survey or cement bond log will be run to verify the top of the cement. Remedial cementing will be done prior to drilling out of that string.

() Minimum required fill of cement behind the N/A intermediate casing is to

() Minimum required fill of cement behind the 5¹/₂ production casing is to TIE BACK TO ±200' INTO SURFACE CASING.

PRESSURE CONTROL

() Before drilling below the 8⁵/₈ casing, the blowout preventer assembly will consist of a minimum of:

- () One Annular Preventer, OR () Two RAM-Type Preventers () Other KELLY COCK / STABBING VALVE.

() After setting the 8⁵/₈ casing string, and before drilling into the YATES Formation, the blowout preventers and related control equipment shall be pressure-tested as described in General Requirements. Any equipment failing to test satisfactorily will be repaired or replaced.

- () The test will be conducted by an independent service company.
 () The results of the test will be reported to the appropriate BLM office.
 () The Bureau of Land Management office is to be notified in sufficient time for a representative to witness the test.

() Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, will be installed and operating before drilling into the _____ Formation, and will be used until production casing is run and cemented. Monitoring equipment will consist of the following:

- () 1. A recording pit level indicator to determine pit volume gains and losses.
 () 2. A mix-volume measuring device for accurately determining mix volume necessary to fill the hole on trips.
 () 3. A flow-sensor on the flow-line to warn of any abnormal mix returns from the well.

() A Hydrogen Sulfide Contingency Plan will be approved by this BLM office before drilling below the _____ Formation. A copy of the plan will be posted at the drilling site.

() Other Gamma-Ray/Neutron logs shall be run from the base of the Salado formation to the surface; cable speed not to exceed 30 feet per minute

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. NM 10191
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME NA
2. NAME OF OPERATOR Devon Energy Corporation (Nevada)		7. UNIT AGREEMENT NAME Shugart
3. ADDRESS AND TELEPHONE NO. 20 North Broadway Suite 1500 Oklahoma City, OK 73102 (405) 552-4511		8. FARM OR LEASE NAME WELL NO. East Shugart Unit #49
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.) At surface: 990' FNL & 1500' FEL UNORTHODOX LOCATION: Subject to State Approval At proposed prod. zone: same		9. API WELL NO.
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 15 1/2 miles southeast of Loco Hills, NM.		10. FIELD AND POOL, OR WILDCAT Shugart
15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any) 990'	16. NO. OF ACRES IN LEASE 440	11. SEC., T., R., N., OR E. AND SURVEY OR AREA Section 35-T18S-R31E
18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 500'	19. PROPOSED DEPTH 4500'	12. COUNTY OR PARISH Eddy
21. ELEVATIONS (Show whether DP, RT, GR, etc.) 3646.6' Canton Controlled Water Basin		13. STATE NM
22. APPROX. DATE WORK WILL START* March 30, 1994		

23. PROPOSED CASING AND CEMENTING PROGRAM *

SIZE OF HOLE	GRADE SIZE OF CEMENT	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	14"		40'	Cement with readi-mix to surface
12 1/4"	8 5/8", J-55	24 ppf	950'	280 sx LITE + 200 sx Class "C"
7 7/8"	5 1/2", J-55	15.5 ppf	4500'	550 sx LITE + 500 sx Class "C"

* We plan to circulate cement to surface on all casing strings.

Devon Energy proposes to drill to 4500' (+) to test the Queen sand formation for commercial quantities oil oil. If the Queen sand is deemed non-commercial, the wellbore will be plugged and abandoned per Federal regulations. Programs to adhere to onshore oil and gas regulations are outlined in the following exhibits and attachments.

Drilling Program

- Surface Use and Operating Plan
- Exhibits #1/#1-A = Blowout Prevention Equipment
- Exhibit #2 = Location & Elevation Plat
- Exhibit #3 = Planned Access Roads
- Exhibit #4 = Wells Within One Mile Radius
- Exhibit #5 = Production Facilities Plat
- Exhibit #6 = Rotary Rig Layout

- Exhibit #7 = Casing Design Program
- Evidence of Bond Coverage
- H₂S Operating Plan

Approved Subject to
General Requirements and
Special Conditions
Attaching

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED Randy Jackson TITLE District Engineer DATE December 28, 1993

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

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:

APPROVED BY Richard L. Mann TITLE AREA MANAGER DATE 2/22/94

*See Instructions On Reverse Side

DRILLING PROGRAM

Attached to Form 3160-3
Devon Energy Corporation
East Shugart Unit #49
990' FNL & 1500' FEL
Section 35-T18S-R31E
Eddy County, New Mexico

1. Geologic Name of Surface Formation:

Permian

2. Estimated Tops of Important Geologic Markers:

Yates	2,300'
Queen	3,300'
Grayburg	4,000'
San Andres	4,400'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas:

The estimated depths at which water, oil and gas will be encountered are as follows:

Water: Random fresh water from surface to approximately 300' and a water injection interval at 3,200'.

Oil: Yates at 2,300' and Queen at 3,200'.

Gas: None anticipated.

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 8 5/8" casing at 950' and circulating cement back to surface. The Yates and Queen intervals will be isolated by setting 5-1/2" casing to total depth and circulating cement to surface.

EAST SHUGART UNIT #49
DRILLING PROGRAM
PAGE 2

4. Casing Program:

<u>Hole Size</u>	<u>Interval</u>	<u>Casing OD</u>	<u>Weight, Grade, Type</u>
17 1/2"	0' - 40'	14"	Conductor, 0.30" wall
12 1/4"	0' - 950'	8 5/8"	24#, WC, ST&C, new R-3
7 7/8"	0' - TD (4500'±)	5 1/2"	15.5#, J-55, ST&C, new R-3

Cementing Program:

- 14" Conductor Casing: Cemented with ready-mix to surface.
- 8 5/8" Surface Casing: Cemented to surface with 280 sks LITE (35% Poz: 65% Class C) + 6% gel + 2% CaCl₂ + 1/4 lb/sk cellophane flakes
200 sks Class C + 2% CaCl₂ + 1/4 lb/sk cellophane flakes.
- 5-1/2" Production: Cemented to surface with 550 sks LITE (35% Poz: 65% Class C) + 6% gel + 1/4 lb/sk cellophane flakes
500 sks Class C + 4% gel + 1/4 lb/sk cellophane flakes.

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach surface.

5. Minimum Specifications for Pressure Control:

The blowout preventor equipment (BOP) shown in Exhibit #1 will consist of a (3M system) double ram type (3000 psi WP) preventor and a bag-type (Hydril) preventor (3000 psi WP). Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and 4-1/2" drill pipe rams on bottom. Both BOP's will be installed on the 8 5/8" surface casing and utilized continuously until total depth is reached. As per BLM Drilling Operations Order #2, prior to drilling out the 8-5/8" casing shoe, the BOP's and Hydril will be function tested.

Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a kelly cock, floor safety valve, choke lines and choke manifold having 3000 psi WP rating.

6. Types and Characteristics of the Proposed Mud System:

The well will be drilled to total depth using brine, cut brine and polymer mud systems. Depths of systems are as follows:

<u>Depth</u>	<u>Type</u>	<u>Weight</u> (ppg)	<u>Viscosity</u> (1/sec)	<u>Water Loss</u> (cc)
0' - 950'	Fresh Water	8.8	34-36	No control
950' - TD	Cut brine polymer	10.1	32-36	10-20

The necessary mud products for weight addition and fluid loss control will be on location at all times.

7. Auxiliary Well Control and Monitoring Equipment:

- A. A kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

8. Logging, Testing and Coring Program:

- A. No drill stem tests are planned.
- B. The open hole electrical logging program will be:

CNL/FDC/LDT/GR from T.D. to 2,300'
DLL/MSFL/GR from TD to surface

- C. No coring program is planned.
- D. Additional testing will be initiated subsequent to setting the 5-1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

9. Abnormal Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are foreseen. The anticipated bottom hole temperature at total depth is 104 degrees and maximum bottom hole pressure is 800 psig. Small quantities of hydrogen sulfide gas is associated with the Yates and Queen formations in this area. A hydrogen sulfide operations plan will be implemented prior to penetrating the Yates formation (see attached "Hydrogen Sulfide Operations Plan"). No major loss circulation intervals have been encountered in adjacent wells.

10. Anticipated Starting Date and Duration of Operations:

Notice of Staking (NOS) was sent to the Carlsbad, New Mexico BLM office on November 23, 1993. Barry Hunt of that office has reviewed the proposed pad site for the location. A Cultural Resources Examination has been completed by Pecos Archaeological Consultants and a copy forwarded to the Carlsbad, New Mexico BLM office.

Road and location preparation will not be undertaken until approval has been received from the BLM. The anticipated spud date is approximately March 30, 1994. The drilling operation should require approximately 10 days. If the well is deemed productive, completion operations will require, at minimum, an additional 30 days of testing to ascertain whether permanent production facilities will be constructed.

SURFACE USE AND OPERATING PLAN

Attachment to Form 3160-3
Devon Energy Corporation
East Shugart Unit #49
990' FNL & 1500' FEL
Section 35-T18S-R31E
Eddy County, New Mexico

1. Existing Roads:

- A. The well site and elevation plat for the proposed East Shugart Unit #49 is reflected on Exhibit #2. It was staked by John West Engineering of Hobbs, New Mexico.
- B. All roads into the location are depicted in Exhibit #3. County Road #249 will be used to access the location. No upgrades to roads other than the access into location from the lease road will be necessary.
- C. Directions to location: Turn right (south) off Highway 82 onto County Road 222 and go approximately 8.2 miles through the cattle guard to County Road 249. Turn left (east) and go approximately 2.0 miles east-northeast. Turn right (east) and 0.4 miles east-northeast. Turn left (north) and go 0.25 mile. Turn right (east) and go 800' (+) to location.

2. Proposed Access Road:

Exhibit #3 shows the new access road to be constructed from County Road #249. It will be constructed as follows:

- A. The maximum width of the road will be fifteen (15) feet.
- B. It will be crowned and made of 6 inches of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
- C. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location.
- D. The average grade will be approximately 1%.

EAST SHUGART UNIT #49
SURFACE USE AND OPERATING PLAN
PAGE 2

- E. No cattle guards, grates or fence cuts will be required.
- F. No turnouts are planned.

3. Location of Existing Wells:

Exhibit #4 shows all existing wells within a one-mile radius of the proposed East Shugart Unit #49. There are 41 oil wells, 1 gas well, 1 plugged and abandoned well and 6 injection wells (49 total).

4. Location of Existing and/or Proposed Facilities:

- A. Devon Energy Corporation operates one production facility in this unit in Section 35. It is as follows:
 - (3) Heater treaters & tank battery (NW SW)
 - Water injection plant and (2) water tanks
- B. In the event the well is found productive, it will be added to the central production facility (refer to Exhibit #5).
- C. The well will be operated by means of an electric motor.
- D. If the well is productive, rehabilitation plans are as follows:
 - 1. The reserve pit will be back-filled after the contents of the pit are dry (within 120 days after completion, weather permitting).
 - 2. Caliche from unused portions of the drill pad will be removed. The original topsoil from the well site will returned to the location. The drill site will then be contoured to the original natural state.

5. Location and Type of Water Supply:

The East Shugart Unit #49 will be drilled using a combination of brine and fresh water mud systems (outlined in Drilling Program). The water will be obtained from the existing water line presently supplying fresh water to the unit. Additionally, produced salt water from lease gathering tanks may be used. No water well will be drilled on the location.

6. Source of Construction Materials:

All caliche utilized for the drilling pad and proposed access road will be obtained from a existing BLM approved pit. All roads will be constructed of 6" rolled and compacted caliche.

7. Methods of Handling Water Disposal:

- A. Drill cuttings will be disposed into the reserve pit.
- B. Drilling fluids will be contained in earthen working pits and the reserve pit. The reserve pit will contain excess drilling fluid or fluid from the well during drilling, cementing, and completion operations. The reserve pit will be an earthen pit roughly 70' x 70' x 5', or smaller, in size.
- C. The working pits and reserve pit will be fenced on three sides throughout drilling operations and will be totally isolated upon removal of the rotary rig. The pit will be lined using a 5-7 mil plastic to minimize loss of drilling fluids.
- D. Water produced from the well during completion operations will be disposed into a steel tank or reserve pit, if volumes prove excessive. After placing the well on production through the production facilities, all water will be collected in tanks and injected into the water injection system. Produced oil will be separated into steel stock tanks until sold.
- E. A portable chemical toilet will be available on the location for human waste during the drilling operations.

EAST SHUGART UNIT #49
SURFACE USE AND OPERATING PLAN
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- F. Garbage, trash and waste paper produced during drilling operations will be collected in a contained trailer and disposed at a approved landfill. All waste material will be contained to prevent scattering by the wind. All water, fluids, salt or other chemicals will be disposed into the reserve pit. No toxic waste or hazardous chemicals will be generated by this operation.
- G. All waste material will be removed within 30 days after the well is either completed or abandoned. The reserve pit will be completely fenced until it has dried. At the point the reserve pit is found sufficiently dry, it will be backfilled and reclaimed as per BLM specifications. Only the portion of the drilling pad used by the production equipment (pumping unit) will remain in use. If the well is deemed non-commercial, only a dry hole marker will remain.

8. Ancillary Facilities:

No campsite or other facilities will be constructed as a result of this well.

9. Well Site Layout:

- A. The drill pad is shown on Exhibit #6. Approximate dimensions of the pad, pits and general location of the rig equipment is displayed. Top soil will be stored adjacent to the pad until reclamation efforts are undertaken. Only modest cuts will be necessary to build the pad which will be covered with 6" of compacted caliche.
- B. No permanent living facilities are planned, but temporary trailers for the tool pusher, drilling foreman and mud logger may be on location throughout drilling operations.
- C. The reserve pit will be lined using plastic sheeting of 5-7 mil thickness.

10. Plans for Restoration of Surface:

- A. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The reserve pit area will be broken out and leveled after drying to a condition where these efforts are feasible. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.
- B. The pit lining will be buried or hauled away in order to return the location and road to their pristine nature. All pits will be filled and location leveled, weather permitting, within 120 days after abandonment.
- C. The location and road will be rehabilitated as recommended by the BLM.
- D. The reserve pit will be fenced on three sides throughout drilling operations. After the rotary rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing will be in place until the pit is reclaimed.
- E. If the well is deemed commercially productive, the reserve pit will be restored as described in 10 (A) within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

11. Surface Ownership:

The well site is owned by the Bureau of Land Management.

12. Other Information:

- A. The area surrounding the well site is grassland. The top soil is very sandy in nature. The vegetation is moderately sparse with native prairie grass.
- B. There is permanent water (Laguna Plata) approximately 9.0 miles S/SE of the location.
- C. A Cultural Resources Examination has been completed by Pecos Archaeological Consultants and forwarded to the Carlsbad, New Mexico BLM office. The report references no cultural areas on either the access road or drilling pad.

13. Lessees's and Operator's Representative:

The Devon Energy Corporation representatives responsible for assuring compliance of the surface use plan are:

Randy Jackson
District Engineer

20 North Broadway
Suite 1500
Oklahoma City, OK 73102

(405) 552-4560 (office)
(405) 340-8939 (home)

Danny Hokett
Production Foreman

422 West Main
Suite F
Artesia, NM 88210

(505) 748-3371 (office)
(505) 748-9769 (home)

EAST SHUGART UNIT #49
SURFACE USE AND OPERATING PLAN
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Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road; that I am familiar with the conditions that presently 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 Devon Energy Corporation (Nevada) and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Date: December 28, 1993

Signed: 
Randy Jackson
District Engineer

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTORS
East Shugart Unit #49
Eddy County, New Mexico

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventor and all associated fittings will be in operable condition to withstand a minimum 3000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 3000 psi WP, with proper thread connections will be available on the rotary rig floor at all times.
6. All choke lines will be anchored to prevent movement.
7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
8. Will maintain a kelly cock attached to the kelly.
9. Hand wheels and wrenches will be properly installed and tested for safe operation.
10. Hydraulic floor control for blowout preventor will be located as near in proximity to driller's controls as possible.
11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

MINIMUM BLOWOUT PREVENTER REQUIREMENTS

3,000 psi Working Pressure

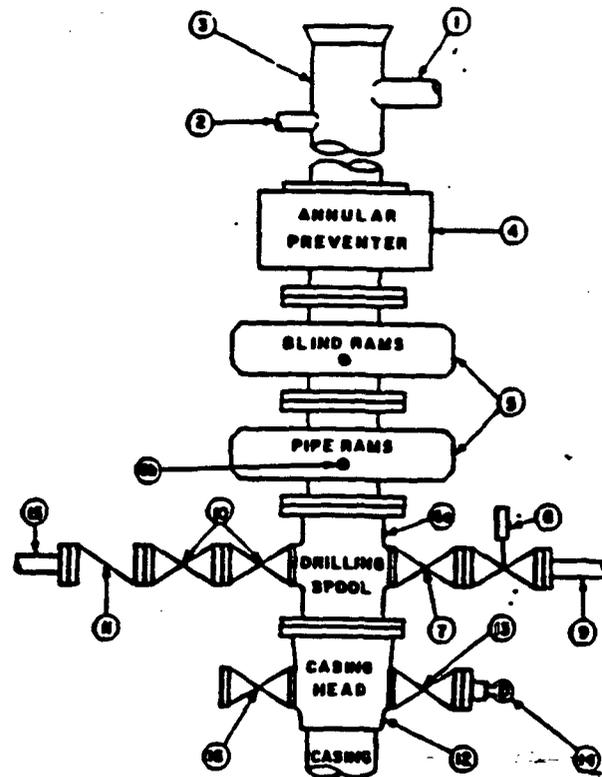
3 MWP

STACK REQUIREMENTS

No.	Item	Min. I.D.	Min. Nominal
1	Flowline		
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above.)		
7	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/>	3-1/8"	
8	Gate valve—power operated	3-1/8"	
9	Line to chokes manifold		3"
10	Valves Gate <input type="checkbox"/> Plug <input type="checkbox"/>	2-1/16"	
11	Check valve	2-1/16"	
12	Casing head		
13	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/>	1-13/16"	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

OPTIONAL			
16	Flanged valve	1-13/16"	

CONFIGURATION A



CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 3,000 psi, minimum.
2. Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

1. Bradenhead or casinghead and side valves.
2. Wear bushing, if required.

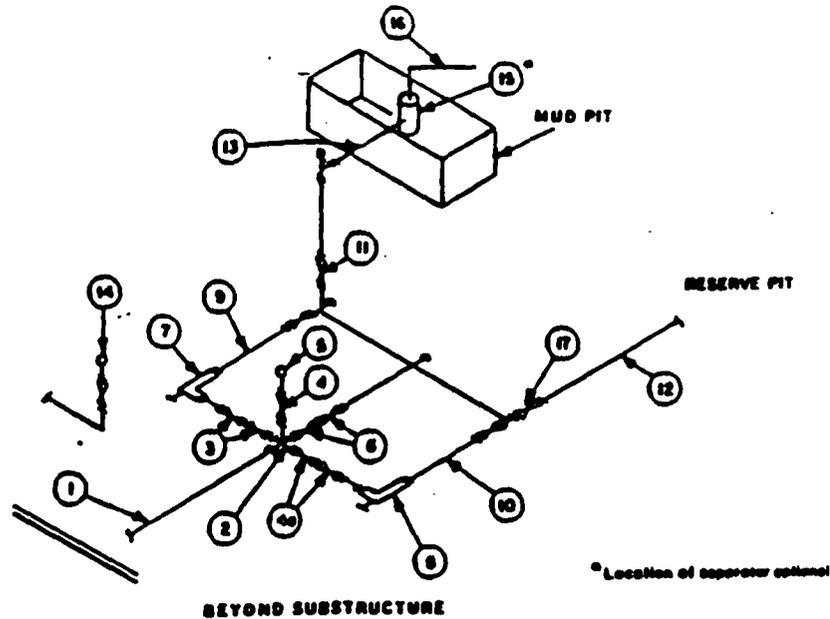
GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through chokes. Valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position.
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with handwheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.

7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (3000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Do not use kill line for routine fill-up operations.

MINIMUM CHOKE MANFOLD
3,000, 5,000 and 10,000 PSI Working Pressure

3 MWP - 5 MWP - 10 MWP



MINIMUM REQUIREMENTS

No.		3,000 MWP			5,000 MWP			10,000 MWP		
		I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING
1	Line from drilling spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
	Cross 3" x 3" x 3" x 3"									10,000
3	Valves(1) Gate <input type="checkbox"/> Plug <input type="checkbox"/> (2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
4	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/> (2)	1-13/16"		3,000	1-13/16"		5,000	1-13/16"		10,000
4a	Valves(1)	2-1/16"		3,000	2-1/16"		5,000	3-1/8"		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valves Gate <input type="checkbox"/> Plug <input type="checkbox"/> (2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
7	Adjustable Choke(3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		3"	10,000
11	Valves Gate <input type="checkbox"/> Plug <input type="checkbox"/> (2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
12	Lines		3"	1,000		3"	1,000		3"	2,000
13	Lines		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound standpipe pressure gauge			3,000			5,000			10,000
15	Gas Separator		2'x5'			2'x5'			2'x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valves Gate <input type="checkbox"/> Plug <input type="checkbox"/> (2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000

(1) Only one required in Class 3M.

(2) Gate valves only shall be used for Class 10M.

(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90° bends using bull plugged tees.
- Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

DISTRICT I
P.O. Box 1960, Hobbs, NM 88240

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

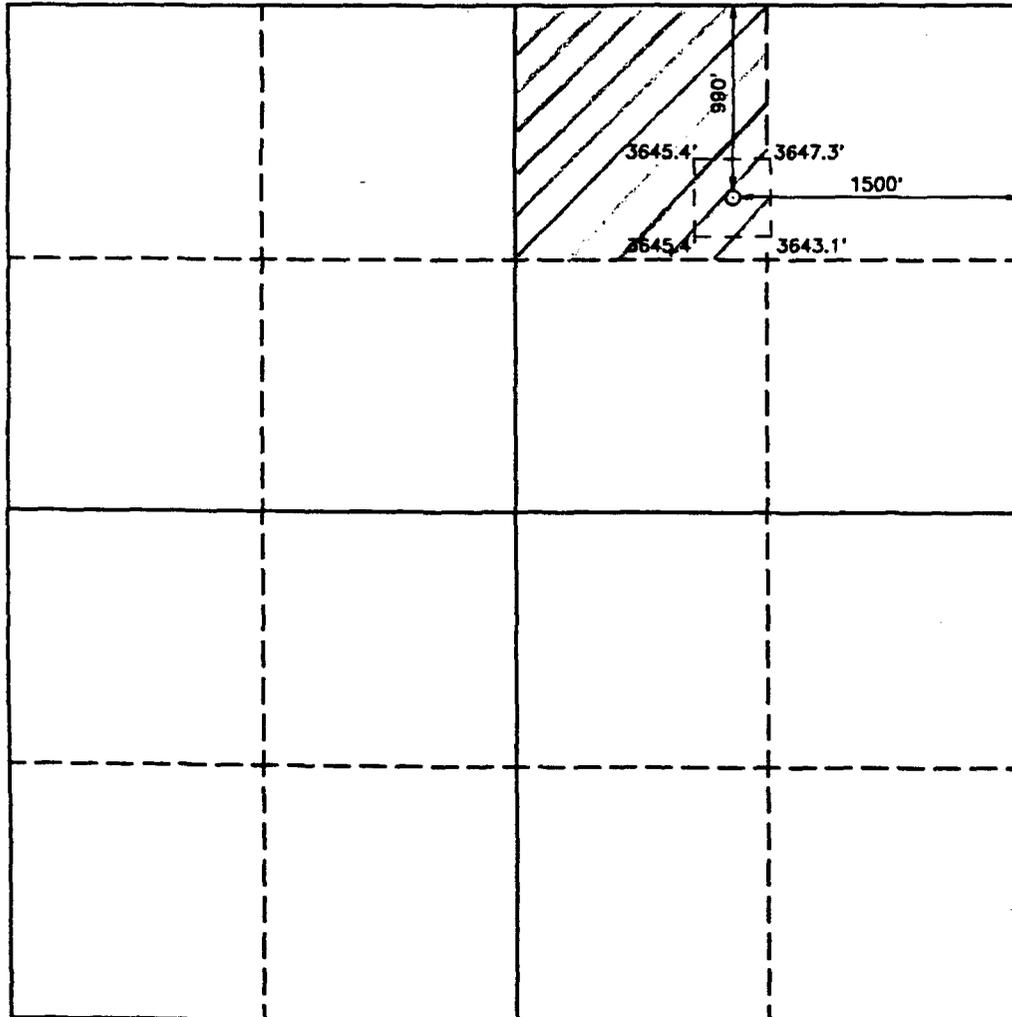
All Distances must be from the outer boundaries of the section

Operator DEVON ENERGY CORPORATION			Lease EAST SHUGART UNIT		Well No. 49
Unit Letter B	Section 35	Township 18 SOUTH	Range 31 EAST	County EDDY	
Actual Footage Location of Well: 990 feet from the NORTH line and 1500 feet from the EAST line					
Ground Level Elev. 3646.6'	Producing Formation Queen Sand		Pool Shugart (Y-SR-Q-G)		Dedicated Acreage: 40 Acres

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- 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.?
 Yes No If answer is "yes" type of consolidation _____

If answer is "no" list of owners and tract descriptions which have actually been consolidated. (Use reverse side of this form necessary.)

No allowable will be assigned to the well unit all interests have been consolidated (by communitization, unitization, forced-pooling, otherwise) or until a non-standard unit, eliminating such interest, 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
Randy Jackson

Printed Name
Randy Jackson

Position
District Engineer

Company
Devon Energy Corporation (Nevada)

Date
12/21/93

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 knowledge and belief.

Date Surveyed
NOVEMBER 18, 1993

Signature & Seal of Professional Surveyor
Randy Jackson

Professional Seal: **GARY L. JONES**, NEW MEXICO, 7977

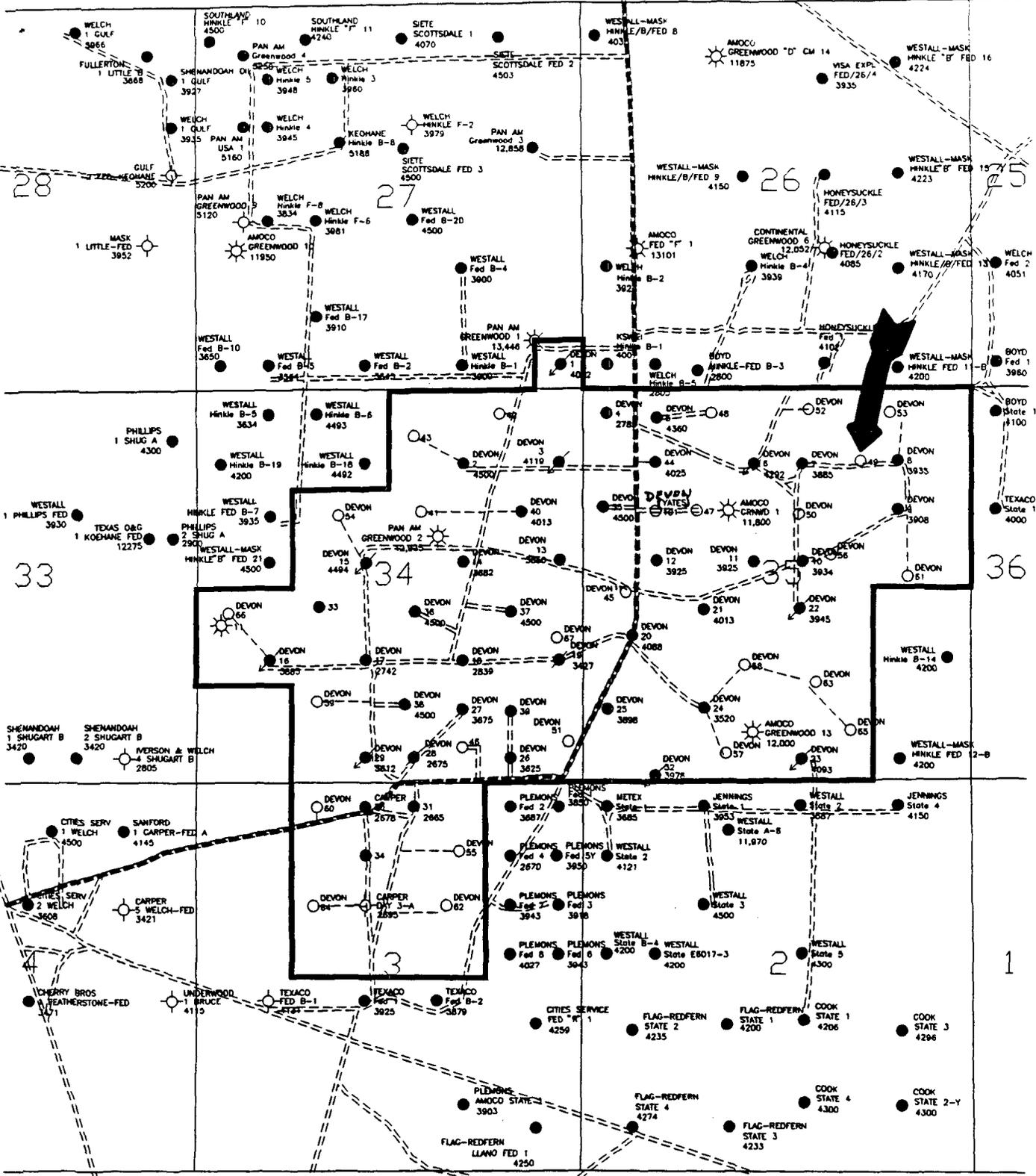
Certificate No. **JOHN W. WEST, 876**
RONALD A. THOMPSON, 2220
PROFESSIONAL SURVEYOR, GARY L. JONES, 7977



R 31 E

T 18 S

T 19 S



devon
Energy Services

EAST SHUGART UNIT
EDDY COUNTY, NEW MEXICO

EXHIBIT 3

Scale in Feet
1000 0 1000 2000 3000 4000

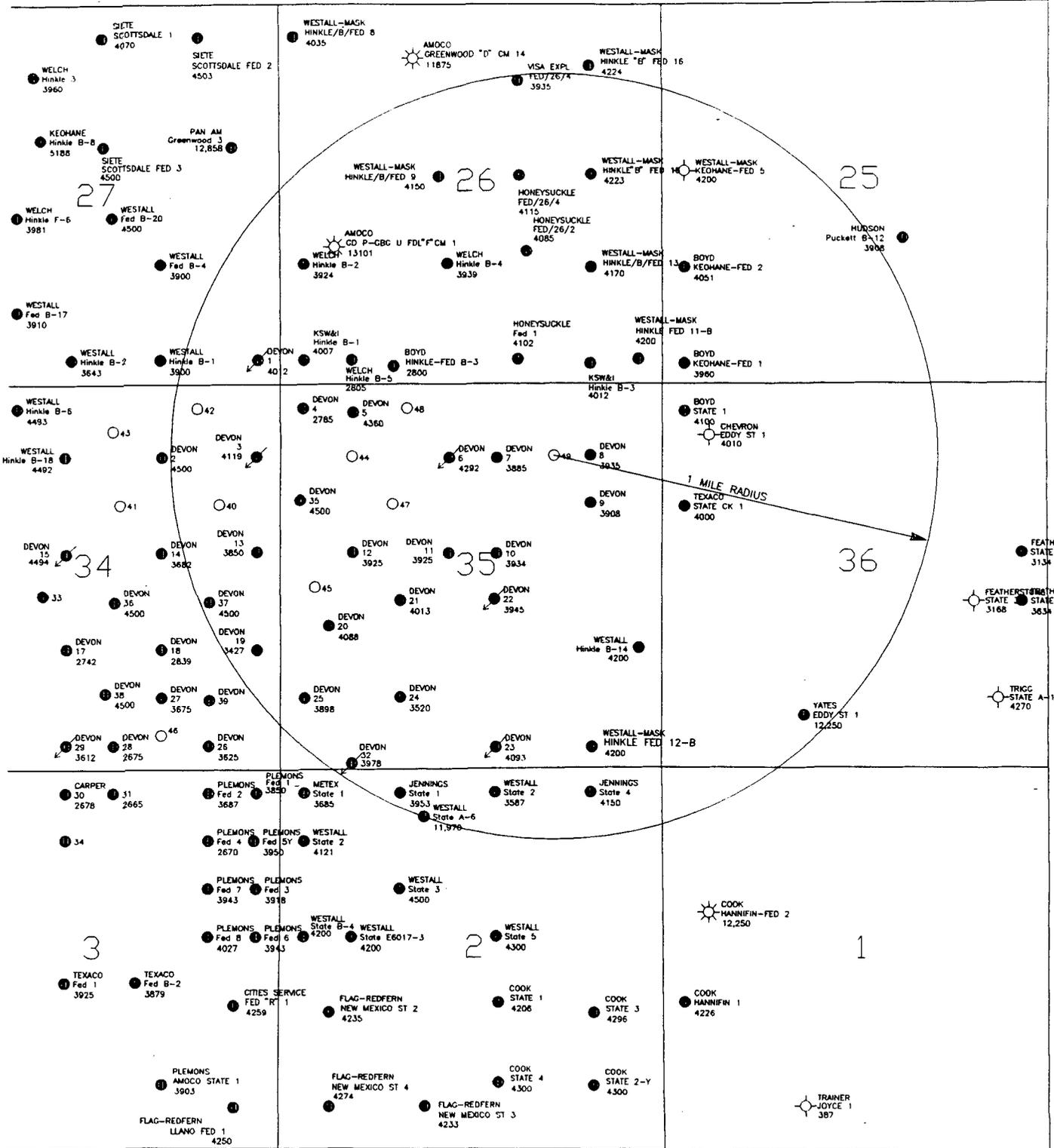
3/94



R 31 E

T
18
S

T
19
S



FILE: ES-49

devon
ENERGY CORPORATION

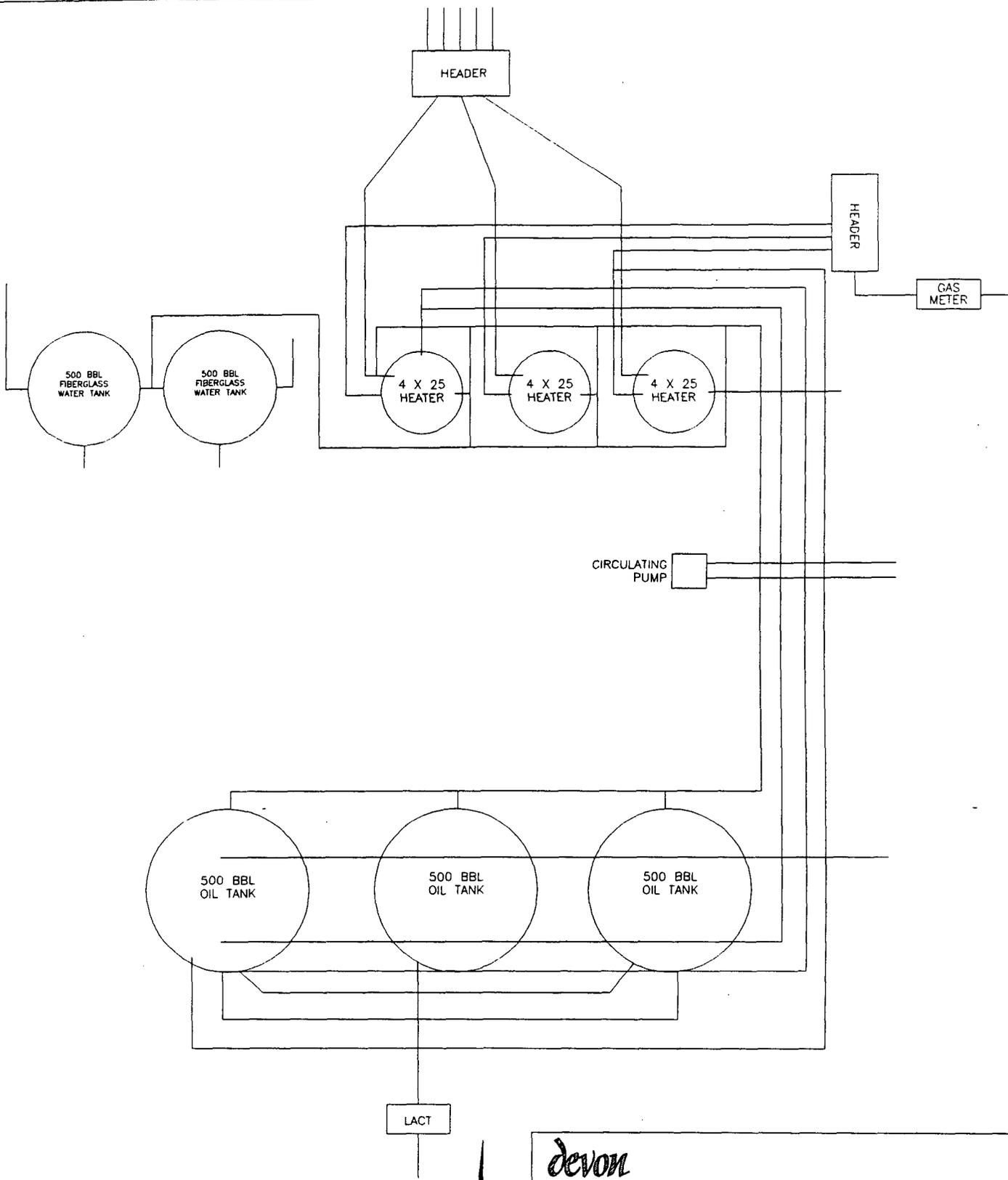
EAST SHUGART UNIT

EDDY COUNTY, NEW MEXICO

WELLS WITHIN A ONE MILE RADIUS
ESU #49

EXHIBIT 4

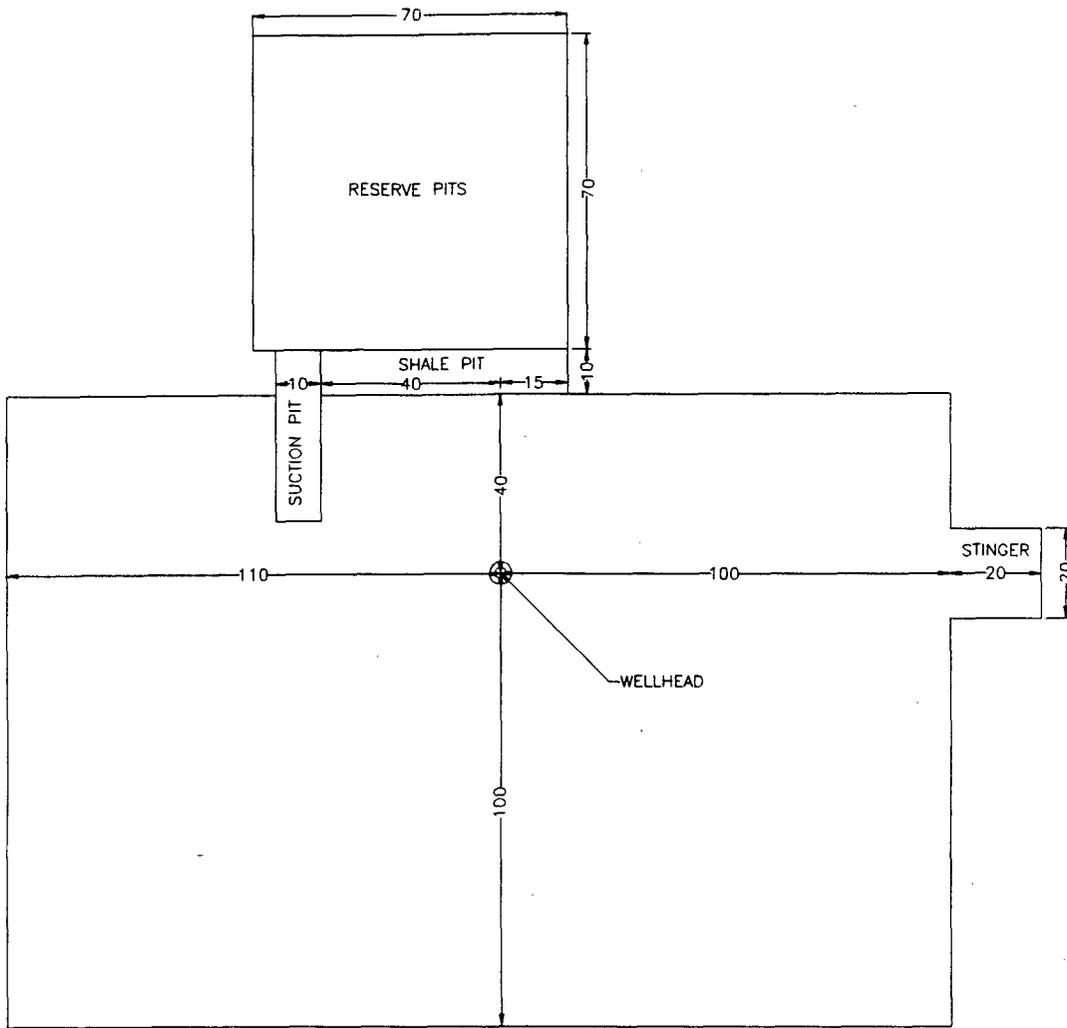
Scale in Feet
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devon
ENERGY CORPORATION

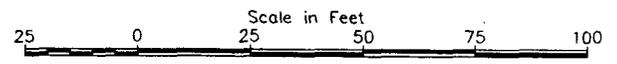
EAST SHUGART AREA
EDDY COUNTY, NEW MEXICO

EXHIBIT #5
EAST SHUGART TANK BATTERY
Sec 35 - T18S - R31E



EAST SHUGART AREA
EDDY COUNTY, NEW MEXICO

DRILLING PAD FOR
ESU #49
EXHIBIT 6



DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: EAST SHUGART UNIT
Project ID:	Location:

Design Parameters:

Mud weight (9.00 ppg) : 0.468 psi/ft
 Shut in surface pressure : 855 psi
 Internal gradient (burst) : 0.100 psi/ft
 Annular gradient (burst) : 0.000 psi/ft
 Tensile load is determined using air weight
 Service rating is "Sweet"

Design Factors:

Collapse : 1.125
 Burst : 1.00
 8 Round : 1.80 (J)
 Buttress : 1.60 (J)
 Body Yield : 1.50 (B)
 Overpull : 0 lbs.

Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost
1	950	8-5/8"	24.00	J-55	ST&C	950	7.972
	Collapse Load Strgth S.F. (psi) (psi)		Burst Load Strgth (psi) (psi)	Min Int Strgth (psi)	Yield S.F.	Tension Load Strgth S.F. (kips) (kips)	
1	444	1370	3.086	950	2950	3.11	22.80 244 10.70 J

Prepared by : , Oklahoma City, OK
 Date : 08-09-1993
 Remarks :

Minimum segment length for the 950 foot well is 900 feet.

Surface string:

Next string will set at 4,500 ft. with 10.10 ppg mud (pore pressure of 2,361 psi.) The frac gradient of 1.000 at the casing seat results in an injection pressure of 950 psi. Effective BHP (for burst) is 950 psi.

The minimum specified drift diameter is 7.972 in.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - Collapse (with evacuated casing), 1.0 - Burst, 1.8 - 8 Round Tension, 1.6 - Buttress Tension, and 1.5 - Body Yield. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kemler curve. Engineering responsibility for use of this design will be that of the purchaser. Costs for this design are based on a 1990 pricing model. (Version 1.0G)

DEVON
ENERGY
CORPORATION

1500 Mid-America Tower
20 North Broadway
Oklahoma City, Oklahoma 73102-8260

405/235-3611
TWX 910-831-3277

May 5, 1989

State of New Mexico
Oil & Gas Conservation Commission
State Capitol Building
Santa Fe, NM 87504

Re: Blanket Plugging Bond
State of New Mexico
No. 56-0130-11003-87

Gentlemen:

Devon Energy Corporation formerly Devon Corporation has changed its name to Devon Energy Corporation (Nevada). In this regard, enclosed is a Rider for the referenced bond to include both company names. Please amend your records.

Very truly yours,



Charlene Newkirk
Lease Records Supervisor

encls

cc: Carolyn Wilson
McEldowney McWilliams

R I D E R

To be attached to and become a part of Bond No. 56-0130-11003-87-1
issued by the United States Fidelity and Guaranty Company, on
behalf of Devon Energy Corporation
as Principal, and in favor of State of New Mexico
as Obligee, in the penalty of Fifty thousand and no/100 - - - - -
Dollars (\$ 50,000.00) for Blanket plugging bond

It is hereby understood and agreed that effective on the
February 10, 1989 the Principal in this
bond shall be Devon Energy Corporation (Nevada)

However, the liability of the Surety in the aggregate to the
Obligee for any and all defaults of the Principal, whether occurring
before or after or partly before and partly after this rider
become effective, shall in no event exceed the penalty stated
in the bond.

Signed, Sealed, and Dated this 3rd day of March 1989.

ATTEST:

Bruce Armstrong
Asst. Secretary

Devon Energy Corporation (Nevada)

Marvin C. Lunde, Jr.
By: MARVIN C. LUNDE, JR.
Vice President

UNITED STATES FIDELITY AND GUARANTY COMPANY

By: Marcia C. Brejda Attorney-in-fact

DEVON ENERGY CORPORATION

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

A. Hydrogen Sulfide Training

All rig crews and company personnel will receive training from a qualified instructor in the following areas prior to penetrating any hydrogen sulfide bearing formations during drilling operations:

1. The hazards and characteristics of hydrogen sulfide (H₂S).
2. The proper use and maintenance of the H₂S safety equipment and of personal protective equipment to be utilized at the location such as H₂S detection monitors, alarms and warning systems, and breathing equipment. Briefing areas and evacuation procedures will also be discussed and established.
3. Proper rescue techniques and procedures will be discussed and established.

In addition to the above, supervisory personnel will be trained in the prevention of oil and gas well blowouts in accordance with Minerals Management Service Standards Subpart - 0 - 250 - 212.

Prior to penetrating any known H₂S bearing formation, H₂S training will be provided at the rig sight for all rig crews and company personnel that have not previously received such training. This instruction will be provide by a qualified instructor with each individual being required to pass a 20 question test regarding H₂S safety procedures. All contract personnel employed on an unscheduled basis will be required to have received appropriate H₂S training.

This Hydrogen Sulfide Drilling And Operations Plan shall be available at the wellsite during drilling operations.

B. H₂S Safety Equipment And Systems

All H₂S safety equipment and systems will be installed, tested, and operational when drilling operations reaches a depth approximately 500' above any known or probable H₂S bearing formation. The safety systems to be utilized during drilling operations are as follows:

1. Well Control Equipment

- (a) Double ram BOP with a properly sized closing unit and pipe rams to accommodate all pipe sizes in use.
- (b) A choke manifold with a minimum of one remote choke.

Note: BOP's will be in place prior to drilling out surface casing.

2. H2S Detection And Monitoring Equipment

- (a) Three (3) H2S detection monitors will be placed in service at the location. One monitor will be placed near the bell nipple on the rig floor; one will be placed at the rig substructure; and, one will be at the working mud pits or shale shaker. This monitoring system will have warning lights and audible alarms that will alert personnel when H2S levels reach 20 ppm.
- (b) One (1) Sensidyne Pump with the appropriate detection tubes will also be available to perform spot checks for H2S concentrations in any remote or isolated areas.

3. Protective Equipment For Essential Personnel

Protective equipment will consist of the following:

- (a) Four (4) - five minute escape packs located at strategic points around the rig.
- (b) Four (4) - thirty minute rescue packs to be located at the designated briefing areas.
- (c) Breathing air cascade manifold system complete with 10 - 300 cubic feet air cylinders with four hose line work units.

4. Visual Warning System

Visual warning system will consist of the following:

- (a) Two wind direction indicators.
- (b) One condition / warning sign which will be posted on the road providing direct access to the location. The sign will contain lettering of sufficient size to be readable at a reasonable distance from the

immediate location. The sign will inform the public that a hydrogen sulfide gas environment could be encountered be at the location.

5. Mud Program

- (a) The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight and safe drilling practices (for example, keeping the hole filled during trips) will minimize hazards when drilling in H₂S bearing formations.

6. Metallurgy

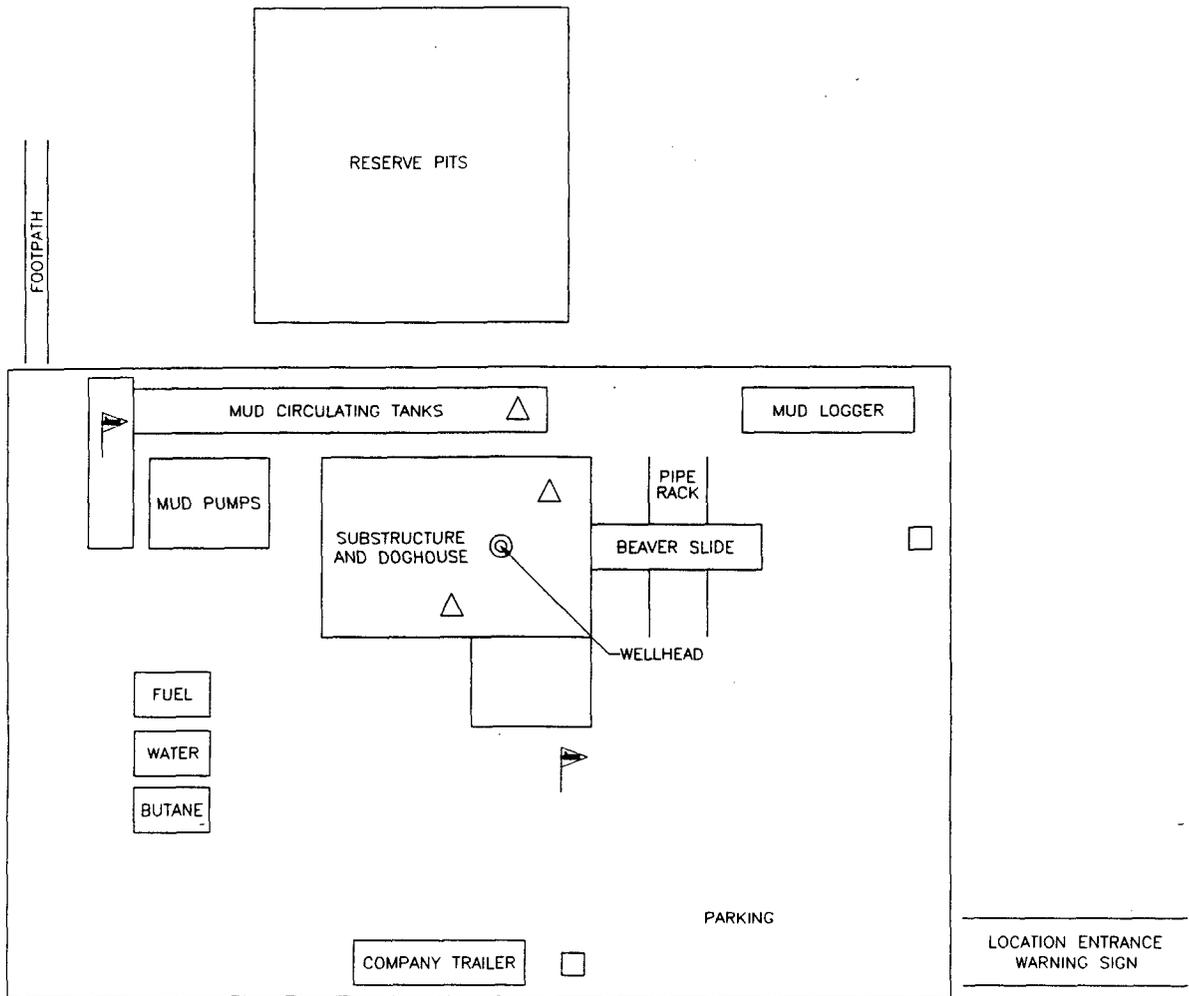
- (a) All drill strings, casings, tubing, wellhead, blowout preventers, drilling spools, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.

7. Communication

- (a) Two way radio and cellular telephone communication will be available in company vehicles.

C. Diagram Of Drilling Location

1. Attached is a diagram representing a typical location layout as well as the location of H₂S monitors, briefing areas, and wind direction indicators.



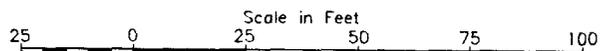
- △ H2S MONITORS WITH ALARMS AT THE BELL NIPPLE, SUBSTRUCTURE, AND SHALE SHAKER
- ▴ WIND DIRECTION INDICATORS
- SAFE BRIEFING AREAS WITH CAUTION SIGNS AND PROTECTIVE BREATHING EQUIPMENT



EAST SHUGART AREA

EDDY COUNTY, NEW MEXICO

ES - #49
H2S PLAN

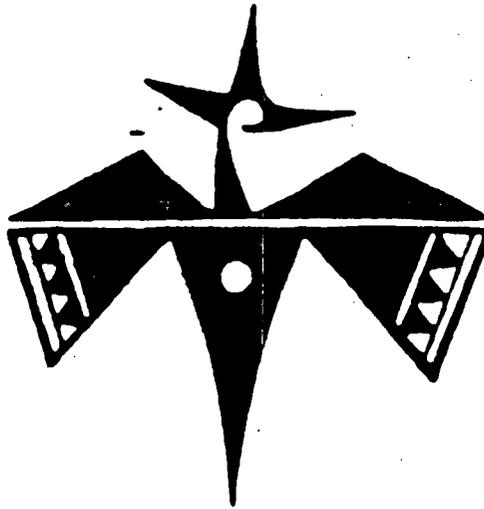


FILE: ES-49

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7/93

PECOS
ARCHEOLOGICAL
CONSULTANTS
P.O. BOX 1771
CARLSBAD, NM 88221



Archeological Inventory Report for
Devon Energy Corporation's
East Shugart Unit No.s 45, 46, 47, 48, 49, Todd "13C" # 3, Todd "13D"
4, Todd "13E" # 5, Todd "13F" # 6, Todd "13G" #7, Todd "13J" # 10,
Todd "13K" # 11, Todd "13N" # 14, Todd "27L" # 12 Drill Locations and
Attendant Access Roads and Section 26 Tank Battery Expansion
Situated on Public Lands in Eddy County, N.M.
Report No. 93236

Archeological Inventory Report for
Devon Energy Corporation's
East Shugart Unit No.s 45, 46, 47, 48, 49, Todd "13C" # 3, Todd "13D"
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Attendant Access Roads and Section 26 Tank Battery Expansion
Situated on Public Lands in Eddy County, N.M.
Report No. 93236

prepared by
James E. Hunt

submitted by
Pecos Archeological Consultants
P.O. Box 1771, Carlsbad, N.M., 88221
December 16, 1993
BLM Cultural Use Permit No. 6-2920-91-L
State Blanket Survey Permit No. 92-024

ABSTRACT

On December 1, 8, 1993, Pecos Archeological Consultants (BLM Cultural Use Permit No. 6-2920-91-L, State Blanket Survey Permit No. 92-024) undertook an archeological inventory for a tank battery expansion, 14 drill locations and access roads scheduled to be impacted by Devon Energy Corporation. This project will be situated on public lands in Eddy County, New Mexico. These lands occur in sections 34, 35, T18S, R31E, sections 13, 26, 27, T23S, R31E, NMPM, Eddy County, N.M. A total of 71.43 acres of federal surface ownership were investigated during this project, which was conducted in 16 man-hours by James E. Hunt and Robert J. Martin. No cultural resources were recorded during this project. Due to the limited nature of the cultural remains within the impact zone, Pecos Archeological Consultants recommending clearance for this project, as planned.

INTRODUCTION

On November 30, 1993, Pecos Archeological Consultants was requested by Ms. Debby O'Donnell, Devon Energy Corporation, to perform the archeological survey for a tank battery, 14 drill locations and access roads scheduled to be constructed on public land in Eddy County, New Mexico. This land is administered by the Bureau of Land Management and federal law stipulates that an intensive archeological inventory be performed to identify what cultural resources might be affected by such activity prior to granting clearance to the project. Therefore, Pecos Archeological Consultants undertook this survey on December 1 and 8, 1993. Fieldwork for this project was performed by James E. Hunt and Robert J. Martin. The following is a report of the field activities and findings resulting from the survey.

SURVEY METHODOLOGY

Pecos Archeological Consultants conducted this survey by physically examining the entire 400 X 400 ft impact zone which will result from the planned construction. Pedestrian inspection along parallel transects was accomplished across the staked drill location. These transects were spaced 15 meters apart; however, established transects were departed from to examine nearby areas of high site probability. All prominent deflations and denuded areas were given special attention. Additionally, all attendant easements (if any) were surveyed in two parallel transects spaced 15 meters apart. This project was conducted on one sunny day. Surface visibility in the region, which, due to floral cover, ranged between 15-35% of the ground under dry soil conditions, made this the most practical methodology for effectively sampling the impact zone which will result from this project as planned.

ENVIRONMENT

The project area will be located east of Carlsbad, N.M., on the Querecho Plains. This undulating landform is characterized by stabilized sand dunes which range from 1-2 meters in height. These dunes are interspersed with deflation basins which have been formed by aeolian action. Local soils in the region consist of loamy sands which belong to the Kermit-Berino association. These soils are drained internally. Elevation in the project area is between 3300 ft and 3800 ft above sea level.

These plains are part of an environmental zone called the Lower Sonoran Life Zone. The most common plant varieties in the region are shin oak (Quercus havardii), mesquite (Prosopis juliflora), plains yucca (Yucca glauca), broom snakeweed (Gutierrezia sarothrae) and various grasses. Some of the common faunal types in area are mule deer (Odocoileus hemionus), pronghorn antelope (Antilocapra americana), jackrabbit (Lepus sp.), cottontail rabbit (Silvilagus sp.), coyote (Canis latrans), as well as other small mammals, birds and reptiles. Bison (Bison bison) also ranged in the region prior to their near-extinction in the nineteenth century.

LOCATIONAL DATA

Devon Energy Corporation's drill location, designated the East Shugart Unit # 45, will measure 400 ft X 400 ft, or 3.6 acres. It will be situated 2250 ft from the south line and 580 ft from the west line, in the NW1/4 SW1/4, section 35, T18S, R31E, NMPM, Eddy Co., N.M.

The access road which will be constructed to this location will measure 100 ft X 200 ft or 0.45 acre. It will be situated in the:
NW1/4 SW1/4, section 35, T18S, R31E, NMPM, Eddy Co., N.M.

The East Shugart Unit # 46 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 330 ft from the south line and 1650 ft from the east line, in the: SW1/4 SE1/4, section 34, T18S, R31E, NMPM, Eddy Co., N.M.

The access road to this location will measure 100 ft X 200 ft or 0.45 acre. It will be situated in the:
SW1/4 SE1/4, section 34, T18S, R31E, NMPM, Eddy Co., N.M.

The East Shugart Unit # 47 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 1650 ft from the north line and 1650 ft from the west line, in the: SE1/4 NW1/4, section 35, T18S, R31E, NMPM, Eddy Co., N.M.

The access road that will be constructed to this location will measure 100 ft X 700 ft or 1.6 acres. It will be located in the:
SE1/4 NW1/4, section 35, T18S, R31E, NMPM, Eddy Co., N.M.
SW1/4 NW1/4, section 35, T18S, R31E, NMPM, Eddy Co., N.M.

The East Shugart Unit # 48 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 330 ft from the north line and 1750 from the west line, in the: NE1/4 NW1/4, section 35, T18S, R31E, NMPM, Eddy Co., N.M.

The access road to this location will measure 100 ft X 300 ft or 0.68 acre. It will be situated in the:
NE1/4 NW1/4, section 35, T18S, R31E, NMPM, Eddy Co., N.M.

The East Shugart Unit # 49 will measure 400 ft X 400 ft or 3.6 acres. It will be located 990 ft from the north line and 1650 ft from the east line, in the: NW1/4 NE1/4, section 35, T18S, R31E, NMPM, Eddy Co., N.M.

The Todd "13C" Federal No. 3 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 660 ft from the north line and 1980 ft from the west line, in the: NE1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The access road to this location will measure 100 ft X 900 ft or 2.06 acres. It will be situated in the:
NE1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.
SE1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The Todd "13D" Federal No. 4 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 660 ft from the north line and 660 ft from the west line, in the: NW1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The access road to this location will measure 100 ft X 900 ft or 2.06 acres. It will be situated in the:

NW1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.
NE1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The Todd "13E" Federal No. 5 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 1650 ft from the north line and 990 ft from the west line, in the: SW1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The access road to this well will measure 100 ft X 500 ft or 1.14 acres. It will be situated in the:

SW1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The Todd "13F" Federal No. 6 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 1980 ft from the north line and 1980 ft from the west line, in the: SE1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The access road which will be constructed to this location will measure 100 ft X 200 ft, or 0.45 acre. It will be situated in the: SE1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The Todd "13G" Federal No. 7 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 1980 ft from the north line and 1980 ft from the east line, in the:

SW1/4 NE1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The access road to this location will measure 100 ft X 200 ft or 0.45 acres. It will be situated in the:

SW1/4 NW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The Todd "13J" Federal No. 10 will measure 400 ft X 400 ft or 3.6 acres. It will be located 1980 ft from the south line and 1980 ft from the east line, in the: NW1/4 SE1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The access road to this location will measure 100 ft X 400 ft or 0.91 acre. It will be situated in the:

NW1/4 SE1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The Todd "13K" Federal No. 11 will measure 400 ft X 400 ft, or 3.6 acres. It will be situated 1920 ft from the south line and 2180 ft from the west line, in the: NE1/4 SW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The access road to this well will measure 100 ft X 400 ft or 0.91 acre. It will be situated in the:

NE1/4 SW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.
NW1/4 SE1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The Todd "13N" Federal No. 14 will measure 400 ft X 400 ft or 3.6 acres. It will be situated 1220 ft from the south line and 2450 ft from the west line, in the: SE1/4 SW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The access road to this well will measure 100 ft X 1600 ft or 3.67 acres. It will be situated in the:

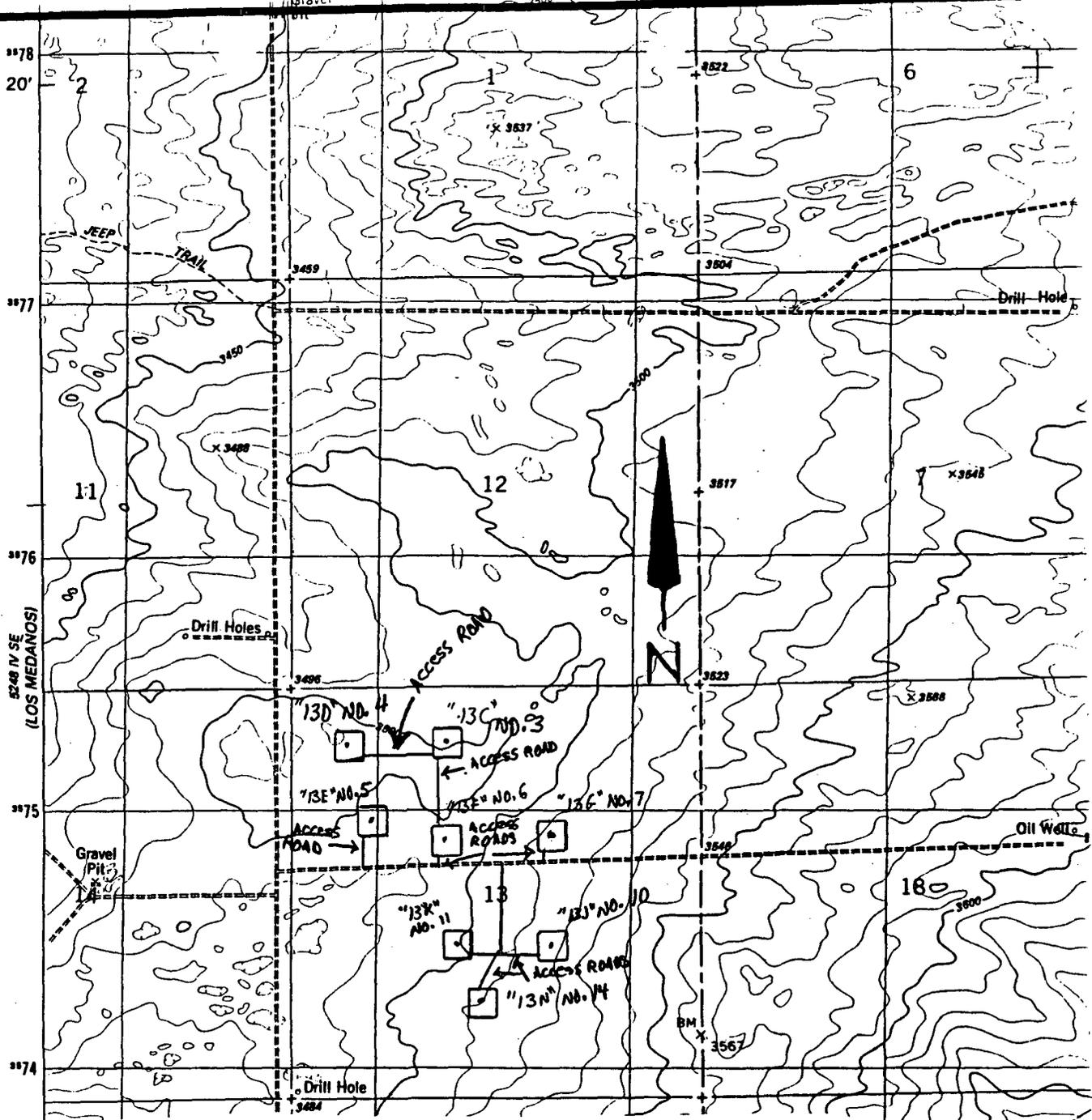
SE1/4 SW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.
NE1/4 SW1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.
NW1/4 SE1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.
SW1/4 NE1/4, section 13, T23S, R31E, NMPM, Eddy Co., N.M.

The Todd "27L" Federal No. 12 Will measure 400 ft X 400 ft or 3.6 acres. It will be situated 1980 ft from the south line and 510 ft from the west line, in the: NW1/4 SW1/4, section 27, T23S, R31E, NMPM, Eddy Co., N.M.

The access road to this well will measure 100 ft X 400 ft or 0.91 acre. it will be situated in the: NW1/4 SW1/4, section 27, T23S, R31E, NMPM, Eddy Co., N.M.

The section 26 Tank Battery will measure 355 ft X 550 ft or 5.19 acres. It will be situated in the: SW1/4 NE1/4, section 26, T23S, R31E, NMPM, Eddy Co., N.M.

Map Reference: USGS Los Medanos Quadrangle, 7.5 Minute Series, 1984.
USGS Bootleg Ridge Quadrangle, 7.5 Minute Series, 1984.
USGS Greenwood Lake Quadrangle, 7.5 Minute Series, 1985.

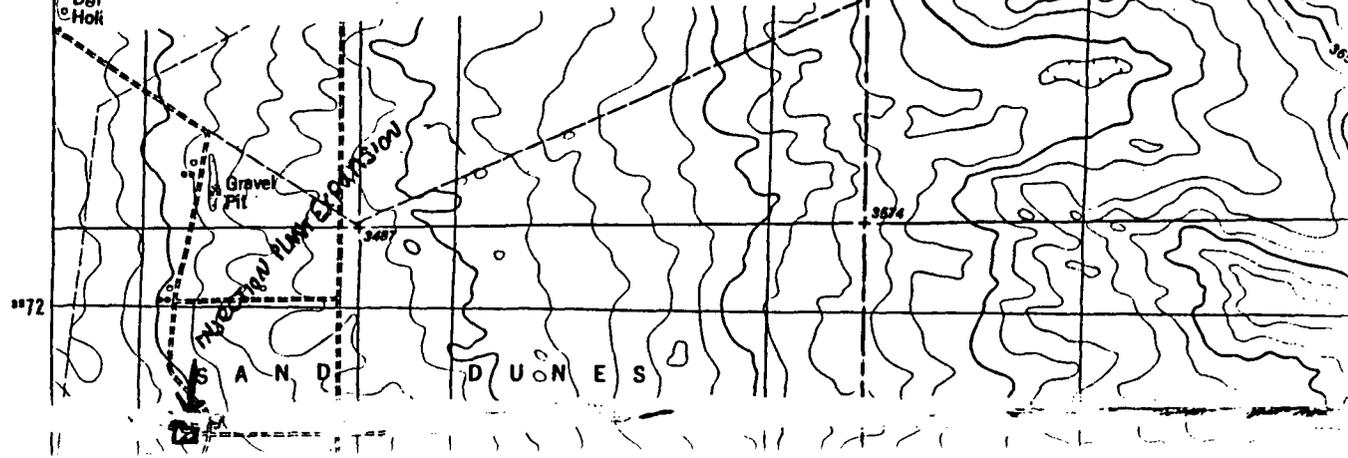


Devon Energy Corporation's
 Todd "13" Federal Wells and Section 26 Tank Battery
 Township 23 South, Range 31 East
 USGS Bootleg Ridge Quadrangle, 7.5 Minute Series, 1984.
 1:24,000 ft

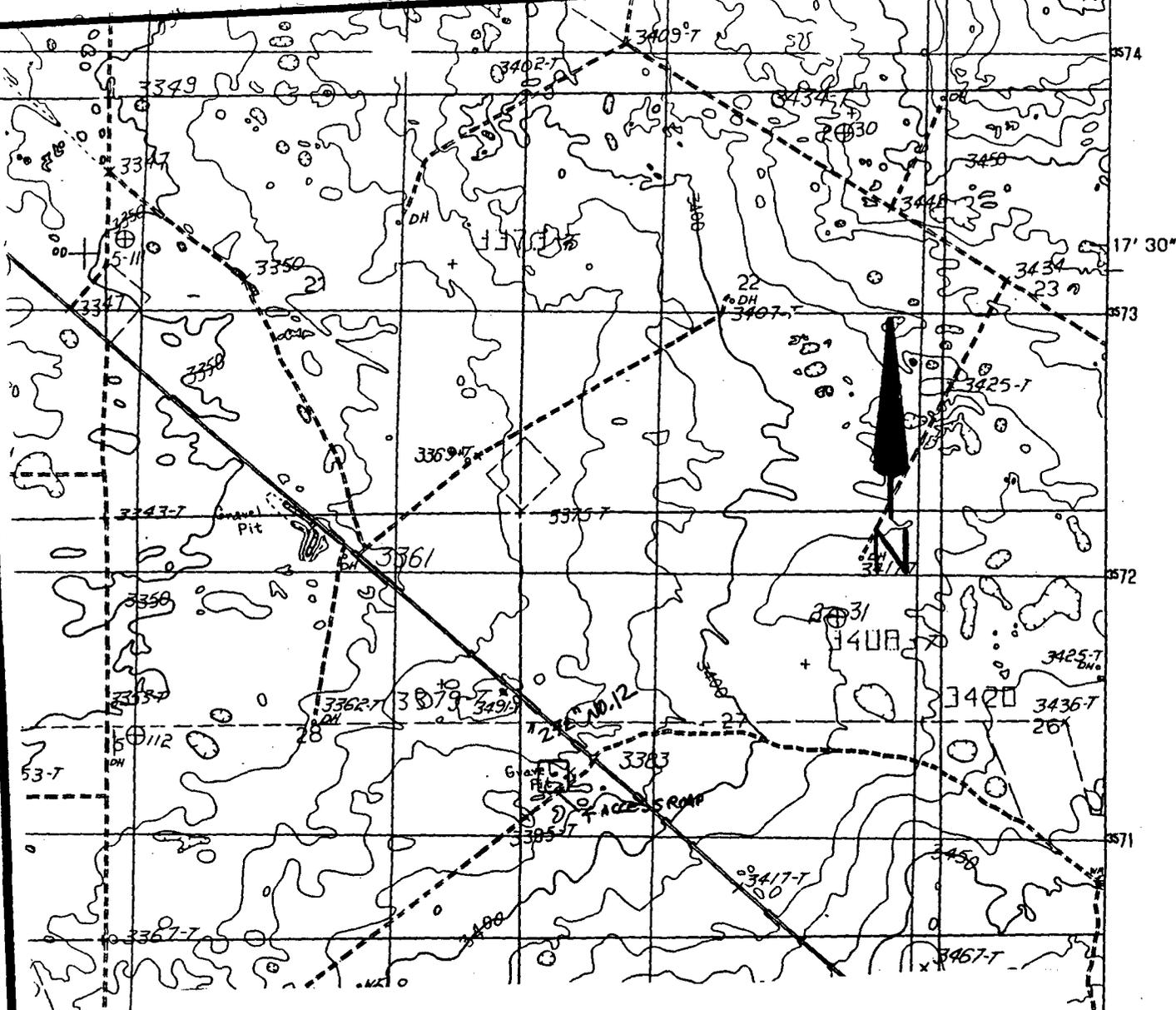
17°30'
 470 000

FEET

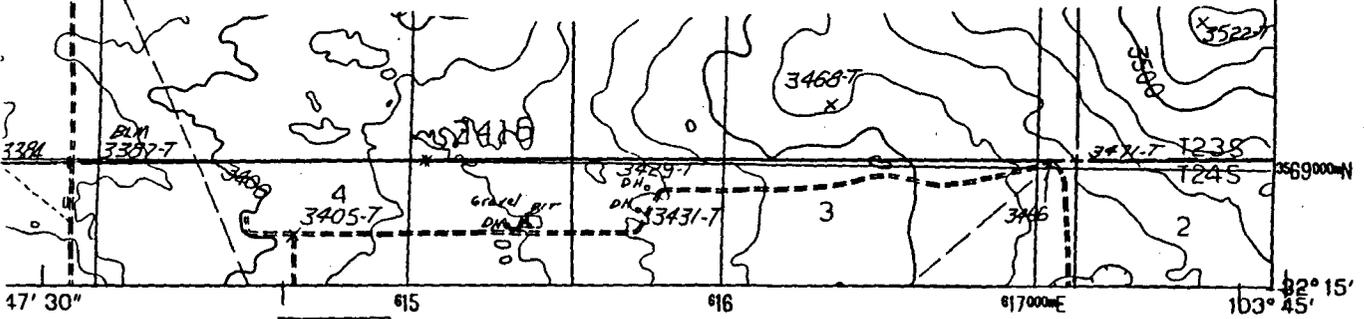
73



72



Devon Energy Corporation's
 Todd "27" Federal Well
 Township 23 South, Range 31 East
 USGS Los Medanos Quadrangle, 7.5 Minute Series, 1984.
 1:24,000 ft



QUADRANGLE LOCATION

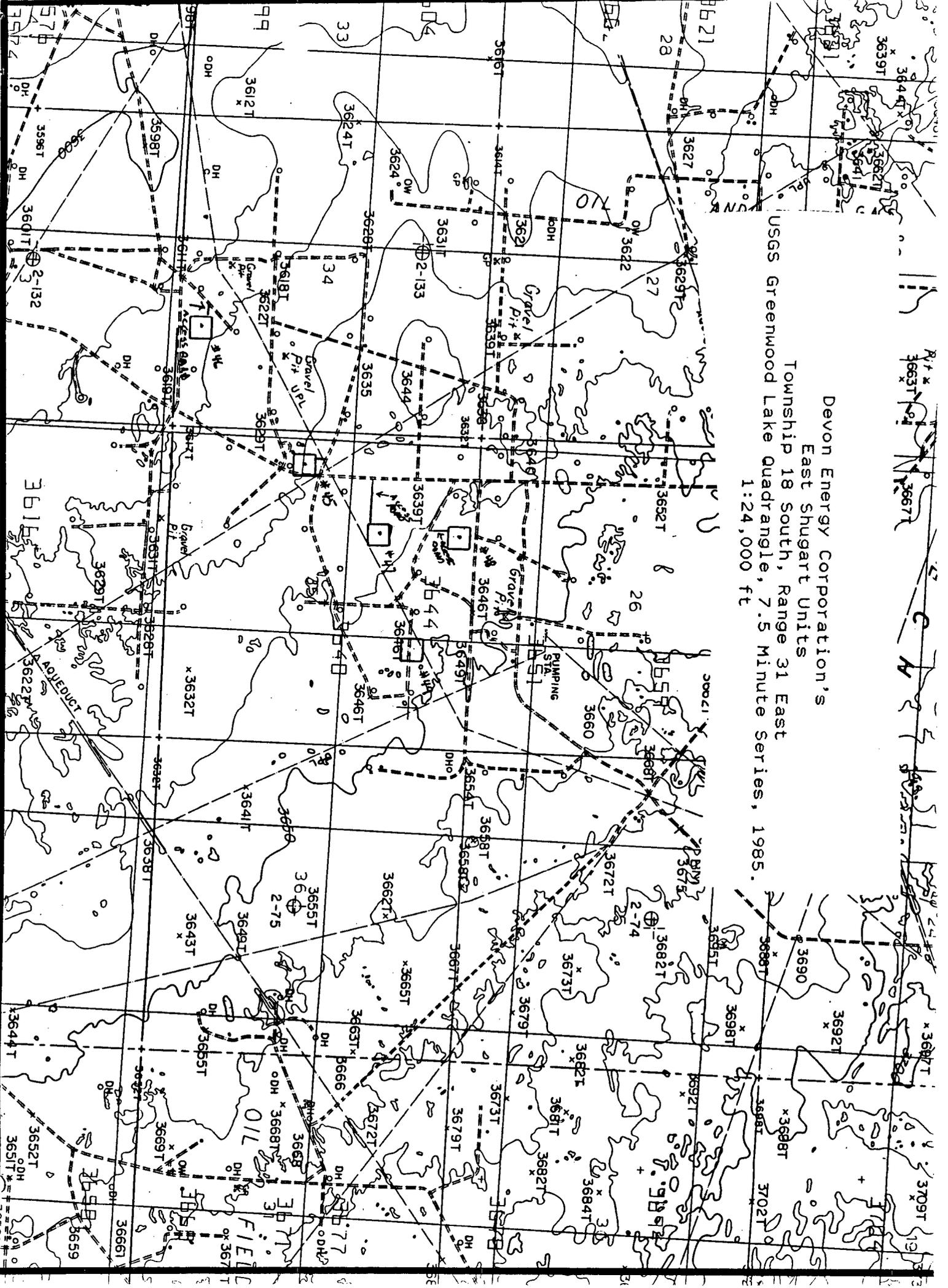
INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA-1988

ROAD LEGEND

- Improved Road
- Unimproved Road
- Trail
- Interstate Route U.S. Route State Route

1	2	3	1 Tower Hill South
			2 Livingston Ridge
			3 The Divide
			4 Remond Basin
			5 Pioneer Divide

Devon Energy Corporation's
 East Shugart Units
 Township 18 South, Range 31 East
 USGS Greenwood Lake Quadrangle, 7.5 Minute Series, 1985.
 1:24,000 ft



ARCHEOLOGICAL RESOURCES

On December 1, 1993, Pecos Archeological Consultants performed a literature search to determine if any archeological sites had already been recorded in the vicinity of the project area. Current BLM files and the National Register of Historic Places were consulted in this endeavor. Three previously-recorded sites were found to occur in the project area. These are:

Field Site No. PAC/Ed-298

LA 60927

NM-06-4950

None of these sites were encountered during this survey

Observed Archeological Manifestations:

No cultural resources were recorded during this cultural inventory.

RECOMMENDATIONS

Due to the limited nature of cultural resources in the project area, Pecos Archeological Consultants is recommending clearance for this project, as planned. This recommendation is based on a surface inspection of the proposed impact zone; should additional, subsurface remains be present in the project area, they would not be detected without extensive test excavation. Of course, final clearance for this project must be granted by the appropriate government agency.