

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

30-045-73486

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK  
 DRILL                       DEEPEN                       PLUG BACK

b. TYPE OF WELL  
 OIL WELL                       GAS WELL                       OTHER   
 SINGLE ZONE                       MULTIPLE ZONE

2. NAME OF OPERATOR  
 Tenneco Oil Company

3. ADDRESS OF OPERATOR  
 720 S. Colorado Blvd., Denver, Colorado 80222

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*  
 At surface 1060' FSL, 990' FWL  
 At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
 See Point 1B Surface Use Plan

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)

16. NO. OF ACRES IN LEASE

17. NO. OF ACRES ASSIGNED TO THIS WELL  
 w/ 320

18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.

19. PROPOSED DEPTH  
 7200

20. ROTARY OR CABLE TOOLS  
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
 5890' G.L.

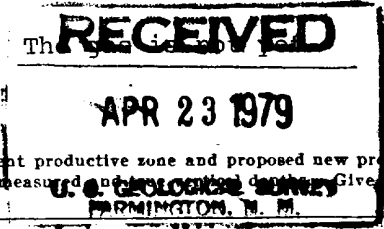
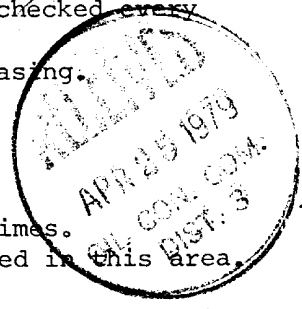
22. APPROX. DATE WORK WILL START\*  
 September 1, 1979

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
13 3/4"	9 5/8"	36#	250+	Suff. to circulate to surface
8 3/4"	7"	23#	3500	Suff. to circulate to surface
6 1/4"	4 1/2"	10.5#	6950	See 4 below
6 1/4"	4 1/2"	11.6#	7200	See 4 below

- The geological name of the surface formation is Tertiary San Jose.
- Estimated formation tops
 

Pictured Cliffs	2544	Lewis Shale	2719
Cliffhouse	4241	Menefee	4325
Point Lookout	4793	Mancos	4897
Gallup	5904	Greenhorn	6803
Dakota A	6906	Total Depth	7200
- Run 9 5/8" 36#, K-55 ST&C casing to 250+ and circulate cement to surface. Drill 8 3/4" hole to 3500' Run 7" 23#, K-55 ST & C casing to 3500. Cement with sufficient volume to circulate to surface. Drill out 7" with 6 1/4" bit using gas as a circulating fluid. Run 4 1/2" casing with casing liner to 7200 with top of liner at 3550. Run 250' of 4" 11.6# K-55 ST&C on bottom. Cement with sufficient volume to circulate cement to liner top at 3660.
- Blowout Preventors: Hydraulic, double ram, 10". One set of rams will be provided for each size drill pipe in the hole. One set of blind rams at all times. Fill line with 2". Kill line will be 2", choke relief line will be 2" with variable choke. BOPS will be installed, tested and in working order before drilling below surface casing and shall be maintained ready for use until drilling operations are completed. BOPS, drills and test will be recorded in the IADC Drilling Report. They shall be checked every 24 hours. All rig equipment will be tested to above BOE ratings.
- 0-250' Native solids with sufficient viscosity to clear hole and run casing.  
 250-3500' low solids. Gel chemical  
 3500' to T.D. Gas
- Auxiliary Equipment
  - Kelly cock will be in use at all times.
  - Stabbing valve to fit drill pipe will be present on floor at all times.
  - Mud monitoring will be visual, no abnormal pressures are anticipated in this area.
  - Floats at bits.
  - Drill string safety valve(s) to fit all pipe in the drill string will be maintained on the floor while drilling operations are in progress.
  - Rotating head will be used while drilling with gas.
- No cores or DST's anticipated. 10' samples will be taken from 3000 to 3500. GR/Induction from T.D. to intermediate casing. GR/FDC/Caliper from T.D. to base of Mesa Verde.
- No abnormal pressures or timperatures are anticipated. See point #5 for blowout prevention equipment.
- The drilling of this well will take approximately 10 days. The



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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 measurements. Give blowout preventer program, if any.

24. SIGNED J. M. [Signature] TITLE Div. Production Manager DATE 4-20-79

(This space for Federal or State office use)  
 PERMIT NO. ok Frank APPROVAL DATE NMOCC

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

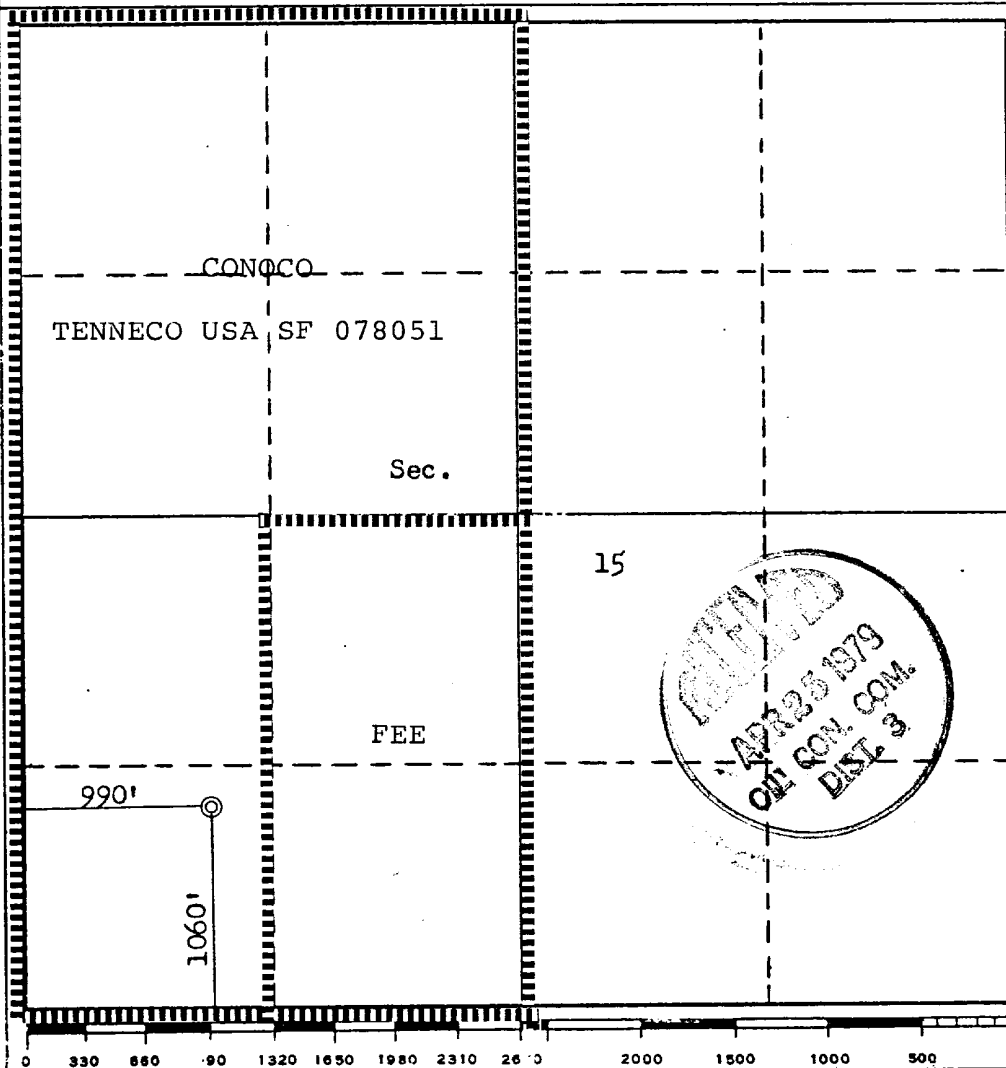
Operator TENNECO OIL COMPANY			Lease NEAL COM		Well No. 1
Unit Letter M	Section 15	Township 31N	Range 11W	County San Juan	
Actual Footage Location of Well: 1060 feet from the South line and 990 feet from the West line					
Ground Level Elev. 5890	Producing Formation Dakota	Pool Basin		Dedicated Acreage: 320 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc.?

Yes  No If answer is "yes," type of consolidation Communitization in progress.

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

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



**CERTIFICATION**

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

Name J.A. Rush

Position Environmental Coordinator

Company Tenneco Oil Company

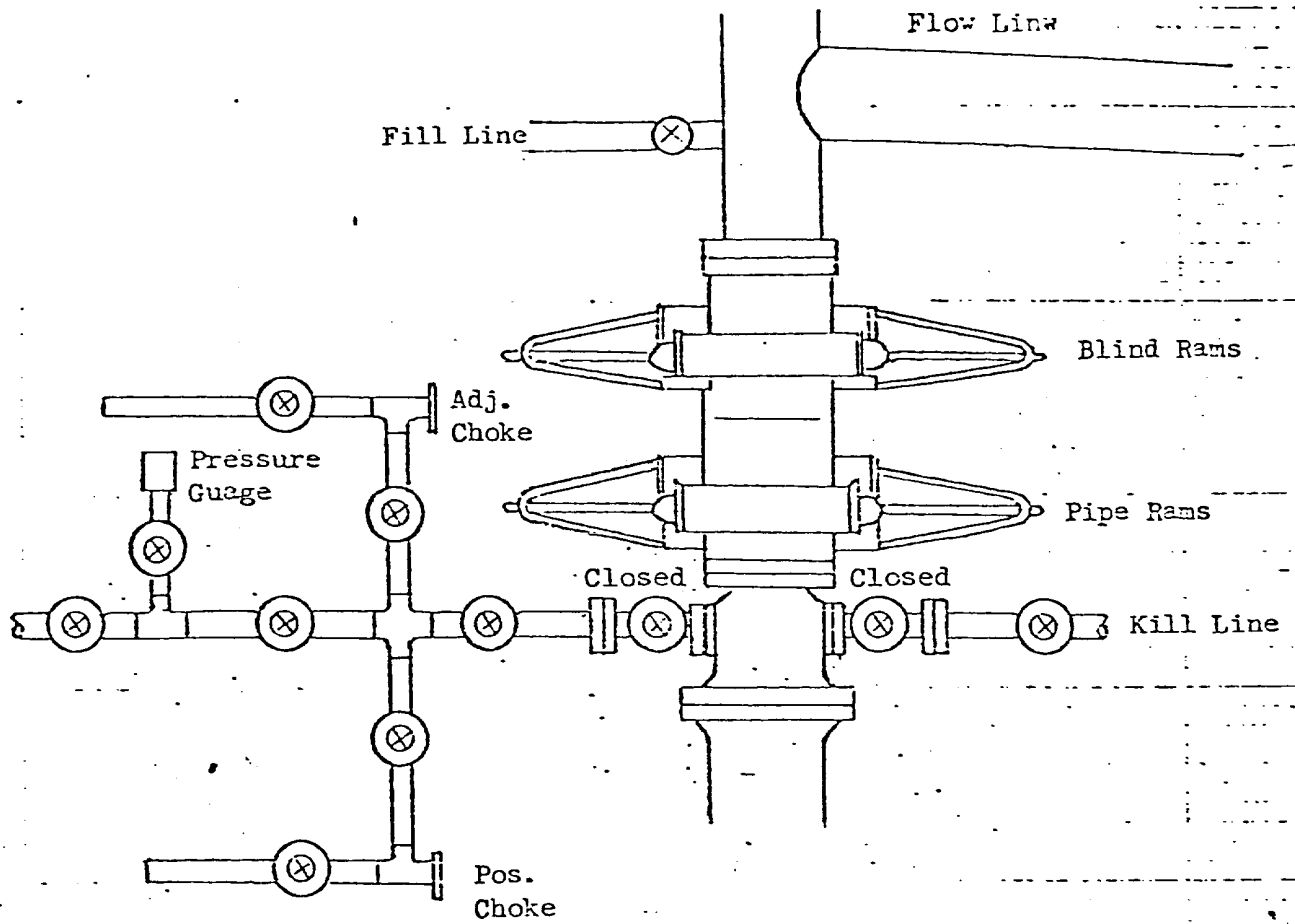
Date April 11, 1979

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 March 24, 1979

Registered Professional Engineer and/or Land Surveyor [Signature]

Certificate No. 3950



All valves 2"

All BOPs, flanges, spools, valves, & lines must be series 900 or 3000 psi working press.

Choke manifold must be at ground level and extended out from under substructure.

TENNECO OIL COMPANY

REQUIRED MINIMUM BLOWOUT PREVENTOR

HOOKUP

Denver, Colorado

## 1. Existing Roads

- A. **Proposed Well Site Location:** The proposed well site location was surveyed and staked by a registered land surveyor and is located 1060' from the south line and 990' from the west line, Section 15, T31N, R11W, San Juan County, New Mexico. (See Exhibit I, Surveyor's Plat.)
- B. **Planned Access Route:** The Planned Access Route begins in Aztec, New Mexico and goes North past the Aztec Ruins National Monument and continues in a NE direction for approximately 3½ miles. At the junction of a dirt road which goes to the NW, turn on this road and continue NW. (See Page 1-A attached and made a part hereof.)
- C. **Access Road Labelled:**  
 Color Code: Red - Improved Surface  
 Blue - New Access Road
- D. Not applicable - the proposed well is a development well.
- E. The proposed well is a development well. See Exhibit II for existing roads within a one mile radius.
- F. **Existing Road Maintenance or Improvement Plan:**  
 The existing roads will require minimal maintenance.

## 2. Planned Access Roads

(All roads are existing roads.)

- A. **Width:**  
 The average width of the road is twelve feet.
- B. **Maximum Grades:** Maximum Grades will be 6%.
- C. **Turnouts:**  
 There are no turnouts planned as sight distance is sufficient.
- D. **Drainage Design:**  
 The road is center crowned to allow drainage. The road is flat primarily.
- E. **Culverts Use Major Cuts and Fills:** No culverts or major cuts or fills will be required in building the road at this location.
- F. **Surfacing Material:**  
 Native soil has been wetted, bladed and compacted to make the road surface, which is existing.

NEAL COM 1

Page 1-A

1. Existing Roads

B. Planned Access Route:

for 1½ miles into the proposed well site location. (See Exhibit II.)

2. Planned Access Roads (Cont'd)

- G. Gates, Cattleguards, Fence Cuts:  
No gates, cattleguards or fences will be needed.
- H. New Roads Centerlined Flagged:  
Existing Roads.

3. Location of Existing Wells

The proposed well is a development well. Exhibit III shows existing wells within a one mile radius.

- A. Water Wells: None
- B. Abandoned Wells: None
- C. Temporarily Abandoned Wells: None
- D. Disposal Wells: None
- E. Drilling Wells: Exhibit III
- F. Producing Wells: See Exhibit III
- G. Shut-In Wells: None
- H. Injection Wells: None
- I. Monitoring or Observation Wells: None.

4. Location of Existing and/or Proposed Facilities

- A. Existing facilities within one mile owned or controlled by Lessee/Operator:

- (1) Tank batteries - N/A
- (2) Production facilities - Exhibit III
- (3) Oil Gathering Lines - N/A
- (4) Gas Gathering Lines - N/A
- (5) Injection Lines - N/A
- (6) Disposal Lines - N/A

- B. New facilities in the event of production:

- (1) New facilities will be within the dimensions of the drill pad.
- (2) Dimensions are shown in Exhibit IV.
- (3) Construction Materials/Methods:  
Construction materials will be native to the site.  
Facilities will consist of a well pad.
- (4) Protection of Wildlife/Livestock: Facilities will be fenced as needed.

4. Location of Existing and/or Proposed Facilities (Cont'd)

B. New facilities in the event of production: (cont'd)

(5) New facilities will consist of a wellhead, tank and production unit.

C. Rehabilitation of Disturbed Areas:

Following the completion of construction, those areas required for continued production will be graded to provide drainage and minimize erosion. Those areas unnecessary for use will be graded to blend with surrounding topography per BLM recommendations.

5. Location and Type of Water Supply

A. Location and type of water supply:

Water will be hauled from a private source.

B. Water Transportation System:

Water trucks will be used.

C. Water wells:

N/A.

6. Source of Construction Materials

A. Materials:

Construction materials will consist of soil native to the site. Any topsoil, if present, will be stripped and stockpiled as needed.

B. Land Ownership;

The planned site and access road is on federal land administered by the Bureau of Land Management.

C. Materials Foreign to the Site:

N/A.

D. Access Roads:

No additional roads will be required.

7. Methods for Handling Waste Disposal

A. Cuttings:

Cuttings will be contained in the reserve pit.

B. Drilling Fluids:

Drilling fluids will be retained in the reserve pit.

C. Produced Fluids:

Produced fluids, including produced water will be collected in the reserve pit. Any small amount of hydrocarbon that may be produced during testing will be retained in the reserve pit. Prior to clean up operations, the hydrocarbon material will be skimmed.

7. Methods for Handling Waste Disposal (Cont'd)

- D. Sewage:  
Sanitary facilities for sewage disposal will consist of at least one pit toilet, during the driller operations. The pit will be backfilled immediately following completion of the drilling operation.
- E. Garbage:  
There probably will not be much putrescible garbage to dispose of. However, it will be disposed of along with the refuse in a constructed burn pit, which will be fenced. The small amount of refuse will be burned and the pit will be covered with a minimum 36 inch cover upon completion.
- F. Clean-Up of Well Site:  
Upon the release of the drilling rig, the surface of the drilling pad will be prepared to accommodate a completion rig, if testing indicates potential productive zones. In either case, the "mouse hole" and "rat hole" will be covered to eliminate a potential hazard to livestock. The reserve pit will be fenced to prevent entry of livestock until the pit is backfilled. Reasonable clean up will be performed prior to final restoration of the site.

8. Ancillary Facilities

None required.

9. Well Site Layout

- A. See Exhibit IV.
- B. Location of pits, etc. See Exhibit IV
- C. Rig orientation etc. See Exhibit IV.
- D. Lining of pits:  
Pits will not be lined. They will be covered with a fine mesh netting, if necessary, for the protection of wildlife if fluids are found to be toxic.

10. Plans for Restoration of Surface

- A. Reserve pit clean up:  
The pit will be fenced prior to rig release and shall be maintained until clean up. Prior to backfilling any hydrocarbon material on the pit surface will be removed. The fluids and solids contained in the pit shall be backfilled with soil excavated from the site and with soil adjacent to the reserve pit. The restored surface of the reserve pit will be contoured as needed to minimize erosion. The reserve pit area will be seeded per BLM recommendations during the appropriate season following final restoration of the site.



10. Plans for Restoration of Surface (Cont'd)

- B. **Restoration Plans - Production Developed:**  
The reserve pit will be backfilled and restored as described under Item A. In addition, those disturbed areas not required for production will be graded to blend with the surrounding topography, and seeded, per BLM recommendations. The portion of the drill pad required for production and turning areas will be graded to minimize erosion and provide access to production facilities under inclement conditions. Following depletion and abandonment of the site, restoration procedures will be those under Item C. below.
- C. **Restoration Plan - No Production Developed:**  
The reserve pit will be restored as described above. With no production developed, the entire surface disturbed by construction of the drilling pad will be restored. The site will be contoured to blend with the surrounding topography. The site will be seeded according to BLM recommendations. If the new access road is not required for other development plans, it will be obliterated and restored and seeded per BLM recommendations.
- D. **Rehabilitation Time Table:**  
Upon completion of operations the initial clean up of the well site will be performed. Final restoration of the site will be performed as soon as possible according to procedural guidelines published by the USGS and BLM. Seeding of the disturbed areas which are no longer required will be performed during the appropriate season, following final restoration.

11. Other Information

- A. **Surface Description:** The surface description of the proposed well site location is relatively flat with sagebrush and cedar trees spread throughout.
- B. **Surface Use Activities:**  
The surface is federally owned and managed by the BLM. The predominant surface use is mineral exploration and production.
- C. **Proximity of Water, Dwellings and Historical Sites:**
1. **Water:**  
There are no reservoirs or streams in the immediate area.
  2. **Occupied Dwellings:**  
There are no occupied dwellings or buildings in the area.
  3. **Sites:**  
An archeological reconnaissance has been performed for this location and clearance has been granted.

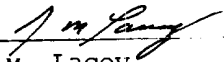
12. Operator's Field Representative

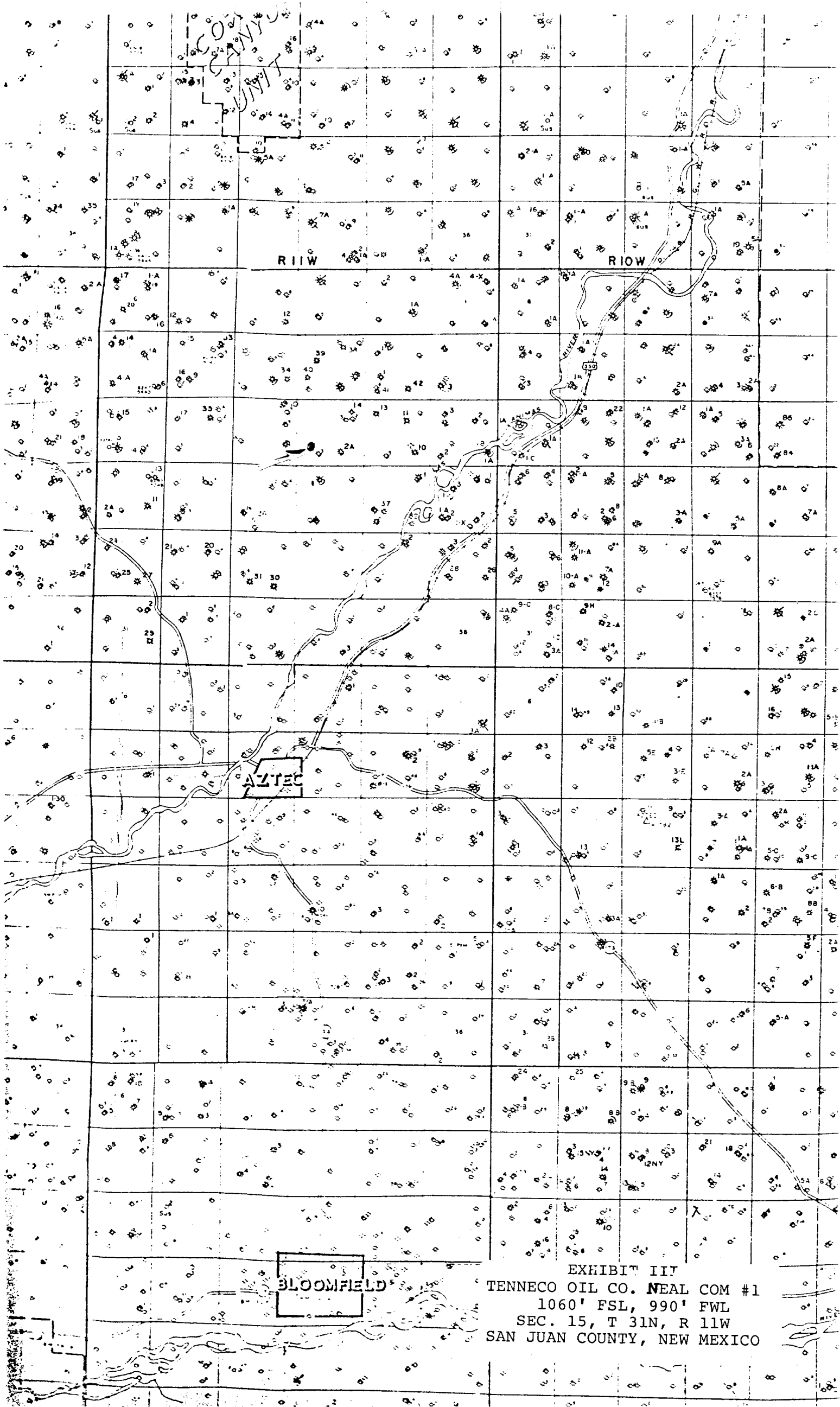
Donald S. Barnes  
Division Drilling Engineer  
Tenneco Oil Company  
720 South Colorado Blvd.  
Penthouse  
Denver, CO 80222  
(303) 758-7130 Ext. 212

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 as they actually exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the proposed work performed by Tenneco Oil Company and its contractors and subcontractors will conform to this plan.

Date: 4-20-79

  
\_\_\_\_\_  
J. M. Lacey  
Division Production Manager



COO UNIT

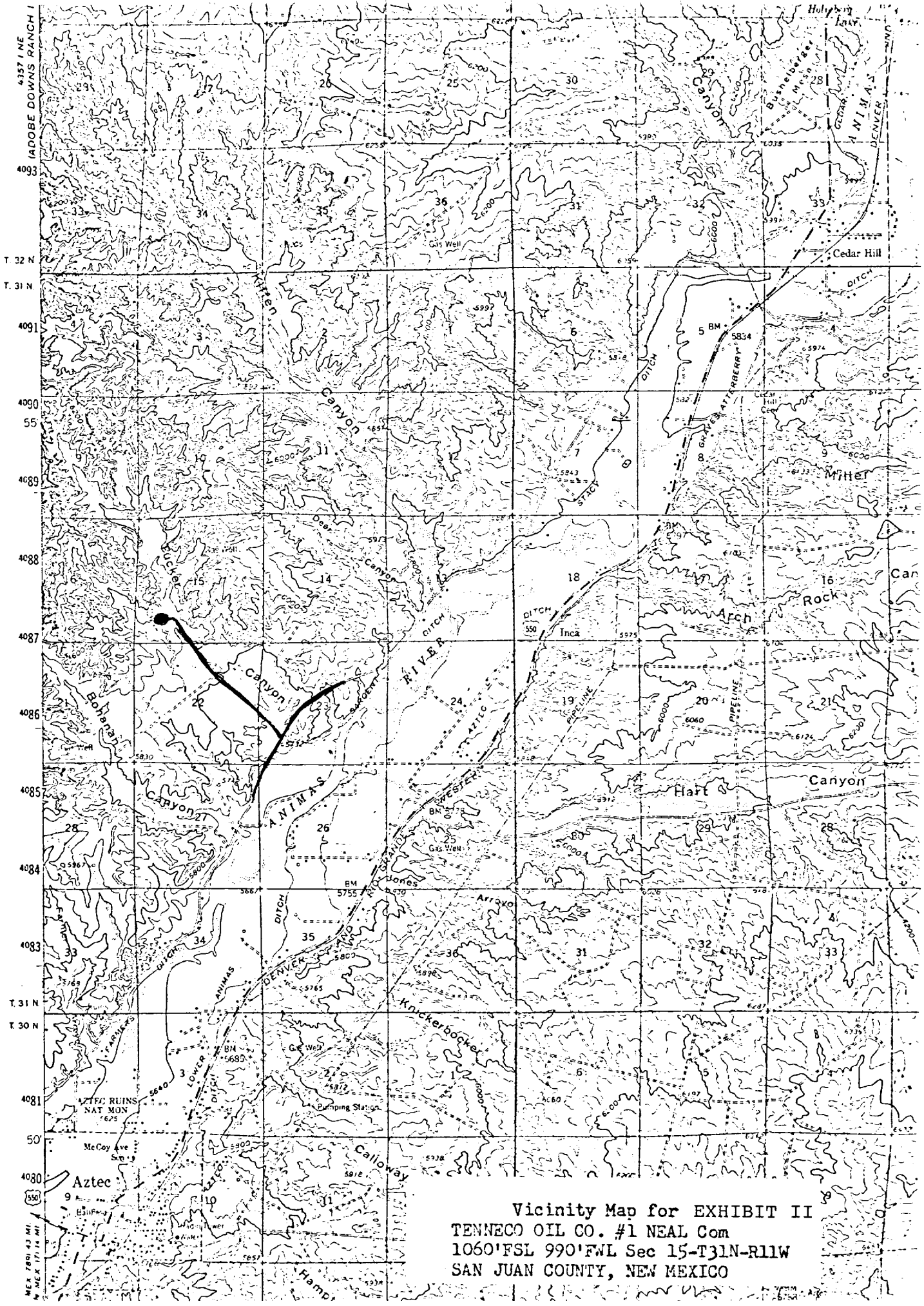
RIW

RIW

AZTEC

BLOOMFIELD

EXHIBIT II  
TENNECO OIL CO. NEAL COM #1  
1060' FSL, 990' FWL  
SEC. 15, T 31N, R 11W  
SAN JUAN COUNTY, NEW MEXICO



Vicinity Map for EXHIBIT II  
 TENNECO OIL CO. #1 NEAL Com  
 1060' FSL 990' FWL Sec 15-T31N-R11W  
 SAN JUAN COUNTY, NEW MEXICO

# TENNECO OIL COMPANY

## CALCULATION SHEET

EXHIBIT IV

COMPANY

SUBJECT DRILLING WELL SITE LAYOUT NEAL "COM" #1

LOCATION SEC. 15, T 31N, R 11W, 'SAN JUAN COUNTY, N. MEXICO DATE 4-79

