

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

## 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

P.O. Box 3249, Englewood, Colorado 80155

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

870 FNL, 1660 FWL

At proposed prod. zone

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

Approximately 2 miles SW of Carson Trading Post.

## 10. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drig. unit line, if any)

870'

## 16. NO. OF ACRES IN LEASE

160.48

## 17. NO. OF ACRES ASSIGNED

TO THIS WELL

W/320.48

## 18. DISTANCE FROM PROPOSED LOCATION\*

TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

## 19. PROPOSED DEPTH

±5915

## 20. ROTARY OR CABLE TOOLS

Rotary

## 21. ELEVATIONS (Show whether DF, RT, GR, etc.)

6320 GR

## 22. APPROX. DATE WORK WILL START\*

January 1981

## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	9 5/8" new	36#	±250	Circulate to surface
7 7/8"	4 1/2" new	11.6#, 10.5#	±5915	Cement in two stages

See attached.

The gas is dedicated.



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 measured and true vertical depths. Give blowout preventer program, if any.

## 24.

SIGNED

R. A. Mishler

TITLE

Sr. Production Analyst

DATE

December 10, 1980

(This space for Federal or State office use)

PERMIT NO.

APPROVED  
AS AMENDED

APPROVAL DATE

APPROVED BY

CONDITIONS OF APPROVAL

  
JAN 14 1981  
JAMES F. SIMS  
DISTRICT ENGINEER

TITLE

DATE

\*See Instructions On Reverse Side

## OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

Form C-107  
Revised 10-1-78

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

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

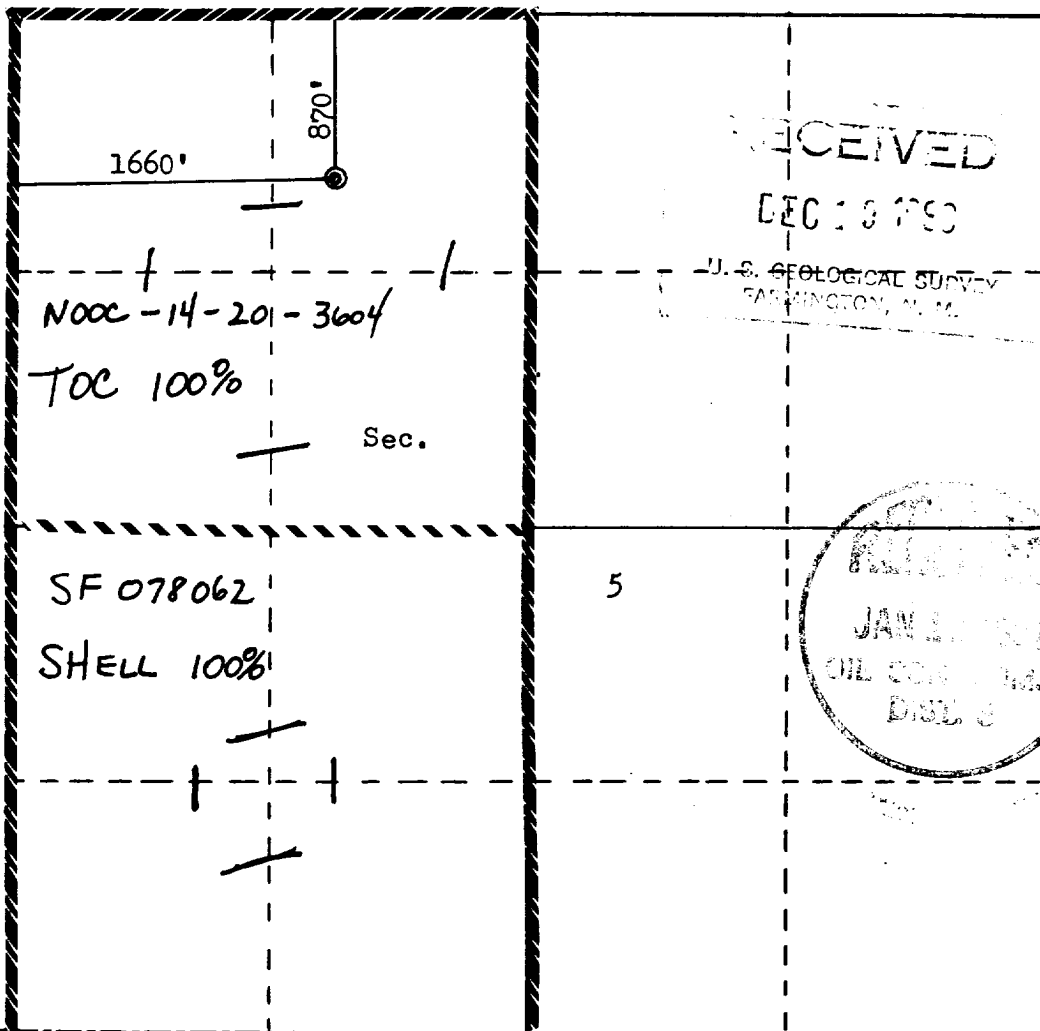
Operator TENNECO OIL COMPANY			Lease CANYON		Well No. 4E
Unit Letter C	Section 5	Township 25N	Range 11W	County San Juan	
Actual Footage Location of Well: 870 feet from the North line and 1660 feet from the West line					
Ground Level Elev. 6320	Producing Formation Dakota	Pool Basin Dakota		Dedicated Acreage: 320.48 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.

R. A. Mishler  
Name

R. A. Mishler

Position

Sr. Production Analyst

Company

Tenneco Oil Company

Date

December 10, 1980

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

October 20, 1980

Registered Professional Engineer  
and Land Surveyor

Fred B. Kern Jr.  
Fred B. Kern Jr.

Certificate No. 3950

IR.

TENNECO OIL COMPANY  
ROCKY MOUNTAIN DIVISION  
PENTHOUSE, 720 SOUTH COLORADO BOULEVARD  
DENVER, COLORADO 80222

DRILLING PROCEDURE

DATE: September 8, 1980

LEASE: Canyon

WELL NO.: 4E

LOCATION: 870 FNL, 1660 FWL  
Sec. **5**, T25N, R11W  
San Juan County, New Mexico

FIELD: Gallegos Canyon Area

ELEVATION: 6320 Est. G.L.

TOTAL DEPTH: 5915

PROJECTED HORIZON: Dakota B

SUBMITTED BY: Dale Kardash

DATE: September 8, 1980

APPROVED BY: DJ. Kardash

DATE: 10-21-80

CC: Administration  
DSB Well File  
Field File

ESTIMATED FORMATION TOPS

Ojo		
Fruitland	1320	(Water)
Pictured Cliffs	1385	(Gas)
Lewis		
Cliff House	2175	(Gas)
Menefee		
Point Lookout		
Mancos	4010	
Gallup	4880	
Greenhorn	5695	
Dakota A	5815	(Gas)
Dakota B	5830	(Gas)
TD	5915	

DRILLING, CASING AND CEMENTING PROGRAM

1. MIRURT
2. Drill a 12¼" Hole to  $\pm 250$  with Gel-Water Mud.
3. RU and run 9 5/8", 36#, K-55, ST&C casing to TD. Cement with Class B + 2%  $\text{CaCl}_2$  in sufficient quantity to circulate cement to surface. WOC 12 hours.
4. Screw on 9 5/8 8rd x 11-3000 casing head, NU BOPS. Pressure test casing, lines and blinds to 1000 PSI for 30 minutes. GIH with drill pipe and test pipe rams to 1000 PSI for 30 minutes. Record all tests on IADC Report.
5. Drill out using a 7 7/8" Bit to T.D. Log open hole as directed by G.E. Department.
6. Run 4½" 11.6 and 10.50# K-55 ST&C as designed.
7. Cement in two stages with sufficient volume to circulate cement to surface. Locate DV tool  $\pm 250'$  above Cliffhouse to prevent lost returns in Mesa Verde. Lead in first stage with light cement (pozmix, Halliburton lite, etc.). Tail in with sufficient volume of Class "B" cement to cover the Dakota. Circulate a minimum of four hours between stages. Lead in second stage with light cement.
8. MORT
9. Install tree and fence reserve pit.
10. If non-productive, P & A as required by the USGS.

Casing Program

<u>Interval</u>	<u>Length</u>	<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>Coupling</u>
0-250	250	9 5/8	36#	K-55	STC
0-5915	5915	4 1/2	10.5#	K-55	STC

## MUD PROGRAM

- 0-250 Native solids. Have sufficient viscosity to gel chemical to clean hole and run casing.
- 250-TD Low solids. Gel chemical. 32 viscosity and 10-15 water loss down through the Mancos. Before reaching Gallup, add 6% LCM and run viscosity at 38-40 seconds. After penetrating Gallup, let LCM drop.

## EVALUATION

Cores and DST's: None.

Deviation Surveys:

1. Survey surface hole at 100' intervals. Maximum allowable deviation at 500' is 1-1/2°.
2. From surface to total depth, deviation surveys must be taken every 500' or each trip, whichever is first. They may entail running the TOTCO on wireline. Record each survey on the IADC Drilling Report Sheet. Maximum allowable change in deviation is 1° per 100'. Maximum deviation allowable is 5°.

Samples: As requested by Wellsite Geological Engineer.

Logs: 1. GR/IND FDC-GR-Cal TD to MV

## BLOWOUT EQUIPMENT

11" - 3000 BOP with rotating head to comply with TOC requirements as shown in BOE arrangement, Figure C. Preventers must be checked for operation every 24 hours with each check recorded on the IADC Drilling Report Sheet.

## REPORTS

Drilling Reports for the past 24 hours will include depth, footage, time distribution, activity breakdown, mud properties, bit record, bottom hole assembly, daily and cumulative mud cost, deviation surveys, and other pertinent information to be called into Division Office by 7:30 A.M. Monday thru Friday.

TENNECO OIL COMPANY  
P.O. BOX 3249  
ENGLEWOOD, COLORADO 80155  
PHONE: 303-740-4800

### Office Directory

Don S. Barnes	740-4814
John W. Owen	740-4810
Tom Dunning	740-4813
Jack Magill	740-4802
Dale Kardash	740-4809

In case of emergency or after hours call the following in the preferred order.

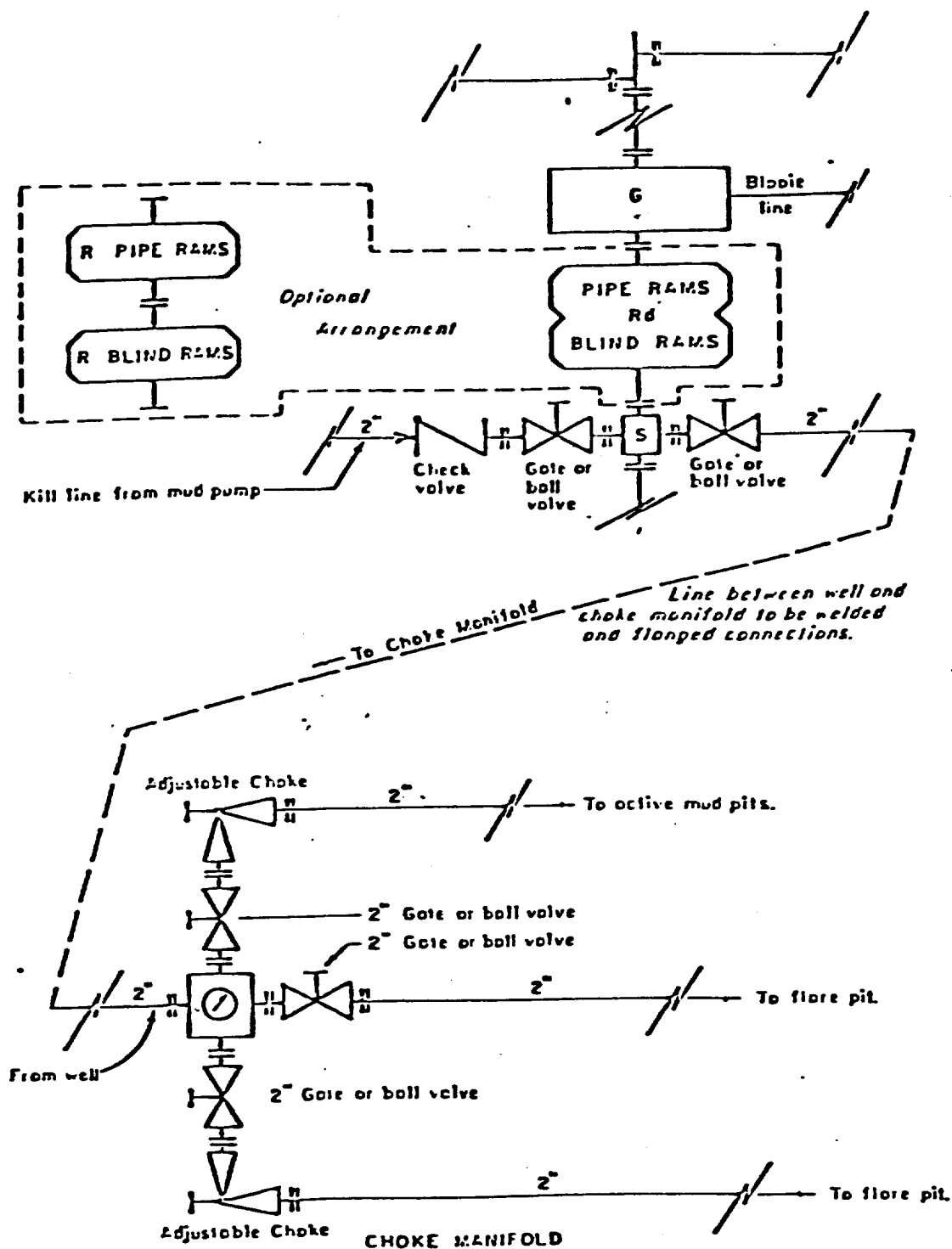
- |     |                             |          |        |
|-----|-----------------------------|----------|--------|
| (1) | Don S. Barnes               | 740-4814 | Office |
|     | Division Drilling Engineer  | 936-0704 | Home   |
| (2) | John W. Owen                | 740-4810 | Office |
|     | Project Drilling Engineer   | 795-0221 | Home   |
| (3) | Mike Lacey                  | 797-2651 | Home   |
|     | Division Production Manager |          |        |

TENNECO OIL COMPANY - 10 POINT PLAN

1. The geological name of the surface formation: *Nacimiento*
- 2 & 3. Estimated Formation Tops:  
  
(See Attached Drilling Procedure)
4. Proposed Casing Program:  
  
(See Attached Drilling Procedure)
5. Blowout Preventors:  
Hydraulic double ram. One set of rams will be provided each size drill pipe in the hole. One set of blind rams at all times. Fill line will be 2", kill line will be 2", choke relief line will be 2". BOP's, drills and tests will be recorded in the driller's log. BOP will be tested every 24 hours and recorded in IADC Log.
6. Mud Program: (Sufficient quantity of mud and weight material will be available on location).  
  
(See Attached Drilling Procedure.)
7. Auxiliary Equipment:
  - a. Kelly cock will be in use at all times.
  - b. Stabbing valve to fit drill pipe will be present on floor at all times.
  - c. Mud monitoring will be visual. No abnormal pressures are anticipated.
  - d. Floats at bits.
  - e. Drill string safety valve(s) to fit all pipe in drill string will be maintained on the rig floor while drilling operations are in progress.
8. Coring, Logging, and Testing Program:  
  
(See Attached Drilling Procedure)
9. No abnormal pressures, temperatures or potential hazards such as H<sub>2</sub>S are expected to be encountered.
10. The drilling of this well will start approximately *January 8th* and continue for 10 to 12 days.

Your office will be notified of spudding in sufficient time to witness cementing operations. Immediate notice will be given on blowouts, fires, spills, and accidents involving life threatening injuries or loss of life. Prior approval will be obtained before appreciably changing drilling program or commencing plugging operations, plug back work, casing repair work or corrective cementing operations.





All equipment to be 3,000 psi working pressure except as noted.

Rd Double ram type preventer with two sets of rams.

R Single ram type preventer with one set of rams.

S Drilling spool with side outlet connections for choke and kill lines.

G Rotating head 150 psi working pressure minimum


#### ARRANGEMENT C

TENNECO OIL COMPANY  
ROCKY MOUNTAIN DIVISION  
REQUIRED MINIMUM  
BLOWOUT PREVENTER AND  
CHOKE MANIFOLD

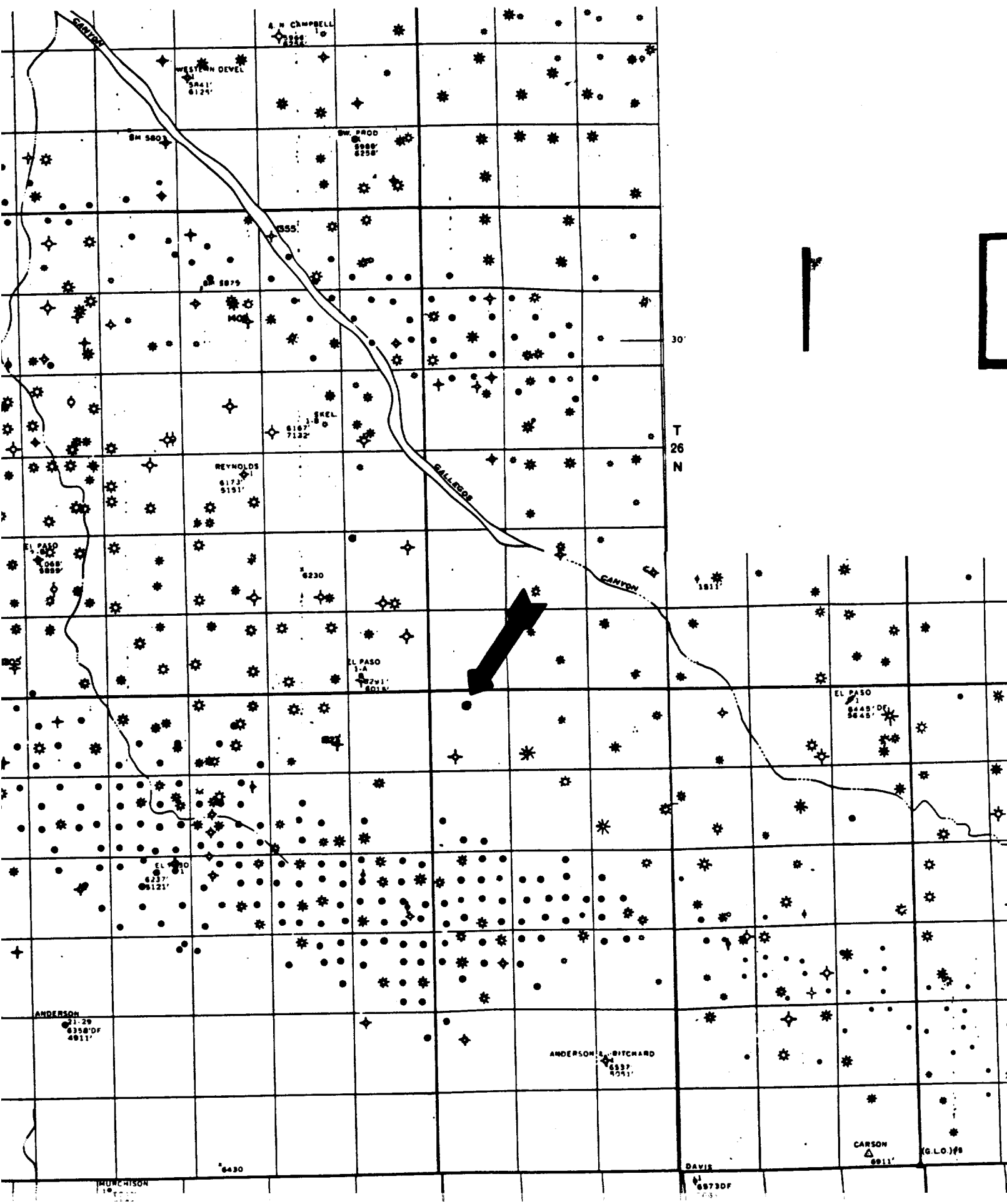
J. MAGILL 10-26-78 EVI

1. Existing Road - Please refer to Map No. 1 which shows the existing roads. New roads which will be required have been marked on this map. All existing and new roads will be properly maintained during the duration of this project.
2. Planned Access Roads - Please refer to Map No. 1. The grade of the access roads will be consistent with that of the local terrain. The road surface will not exceed twenty feet (20') in width. Upon completion of the project, the access road will be adequately drained to control soil erosion. Drainage facilities may include ditches, water bars, culverts or any other measure deemed necessary by trained Company personnel to insure proper drainage. Gates and/or cattleguards will be installed if necessary.
3. Location of Existing Wells - Please refer to Map No. 2.
4. Location of Tank Batteries, Production Facilities, and Production Gathering and Service Lines - Please refer to Maps No. 1 and No. 2. Map No. 2 shows the existing roads and new proposed access roads. All known production facilities are shown on these two maps.
5. Location and Type of Water Supply - Water for the proposed project will be obtained from a private source.
6. Source of Construction Materials - No additional materials will be required to build either the access road or the proposed location.
7. Methods of Handling Waste Materials - All garbage and trash materials will be put into a burn pit shown on the attached Location Plat No. 1. When clean-up operations are begun on the proposed project, the burn pit with its refuse will be buried to a depth of at least three feet (3'). A latrine, the location of which is also shown on Plat No. 1. will be provided for human waste. If large amounts of liquids are left in the reserve pit after completion of the project, the pit will be fenced until the liquids have had adequate time to dry. The location clean-up will not take place until such time as the reserve pit can be properly covered over to prevent run-off from carrying any of these materials into the watershed. No earthen pit will be located on natural drainage; all earthen pits will be so constructed as to prevent leakage from occurring.

8. Ancillary Facilities - No camps or airstrips will be associated with this project.
9. Wellsite Layout - Please refer to the attached Plat No. 1.
10. Plans for Restoration of the Surface - After completion of the proposed project the location will be cleaned and leveled. The location will be left in such a condition that will enable reseeded operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeded operation will be performed during the time period set forth by the regulatory body. The location production equipment will be painted as designated by the responsible government agency.
11. Other Information - Location is on gently rolling sage hills. Soil is sandy. Drainage is northwesterly. Vegetation includes sage, snakeweed, Indian ricegrass, alkalai socotone, and other native grasses.
12. Operator's Representative - See drilling prognosis.
13. Certification - I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which 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 Tenneco Oil Company and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

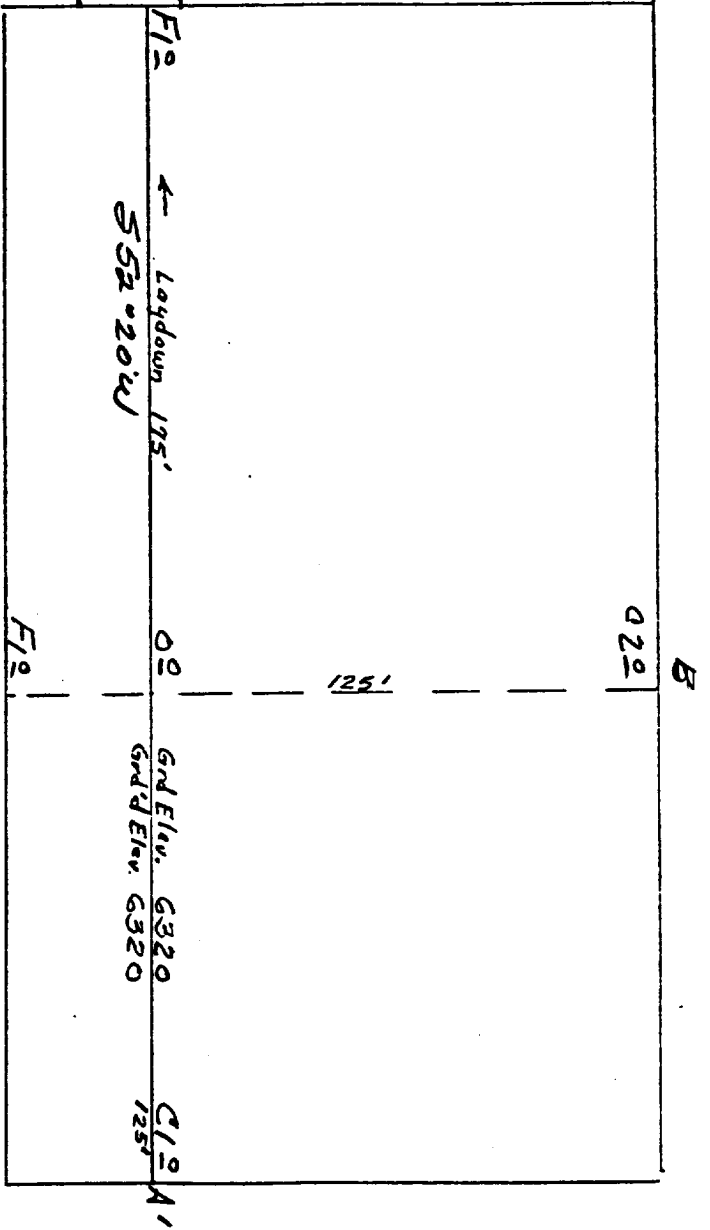
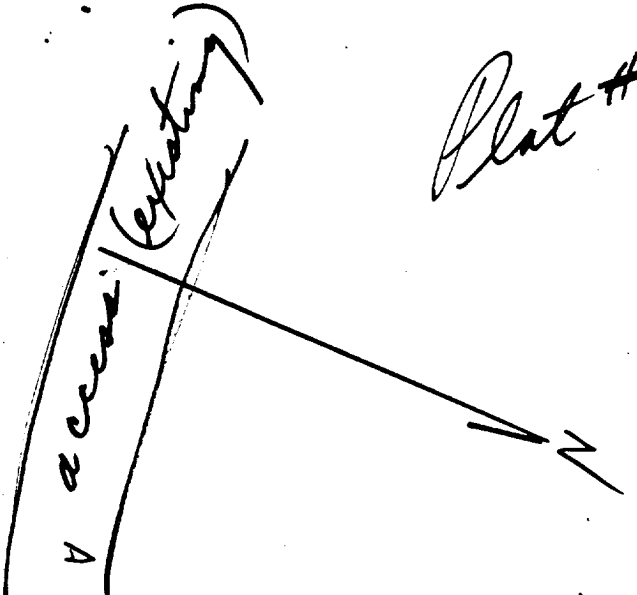
  
R. A. Mishler  
Sr. Production Analyst





Profile Map for  
 TENNECO OIL COMPANY #116 CANYON  
 870' FNL 1660' FNL Sec. 5-T25N-R11W  
 SAN JUAN COUNTY, NEW MEXICO

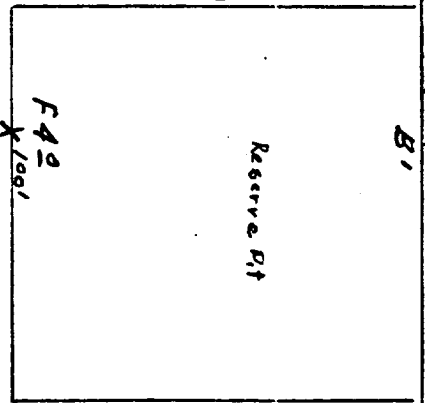
Plat # 1



Vert. 1"=40' Horiz. 1"=100'

6330					
6320					

6330					
6320					





Date 10/30/80