Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425

30-045-23633

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: SF-078387-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Kernaghan A

9. WELL NO.: #1

10. FIELD AND POOL, OR WILDCAT: Basin Dakota

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 30, T31N, R8W

12. COUNTY OR PARISH: San Juan

13. STATE: New Mexico

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] 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: 1510' FSL, 880' FEL
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: E/320.0

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

19. PROPOSED DEPTH: 7860

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 6423 G.L.

22. APPROX. DATE WORK WILL START*: December 15, 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
7 7/8"	4 1/2"	10.5# - 11.6#	7860	Suff. to circulate to surface

SEE ATTACHED.

- gas not dedicated

SEP 20 1979
OIL CON. COM.
DIST. 3

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 _____ TITLE Division Production Manager DATE _____

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

ok Frank

NMOCC

*See Instructions On Reverse Side

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-78

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

Operator	Lease	Well No.
TENNECO OIL COMPANY	KERNAGHAN "A"	1

Unit Letter	Section	Township	Range	County
I	30	31N	8W	San Juan

Actual Footage Location of Well:
1510 feet from the South line and 880 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6423	Dakota	Basin Dakota	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

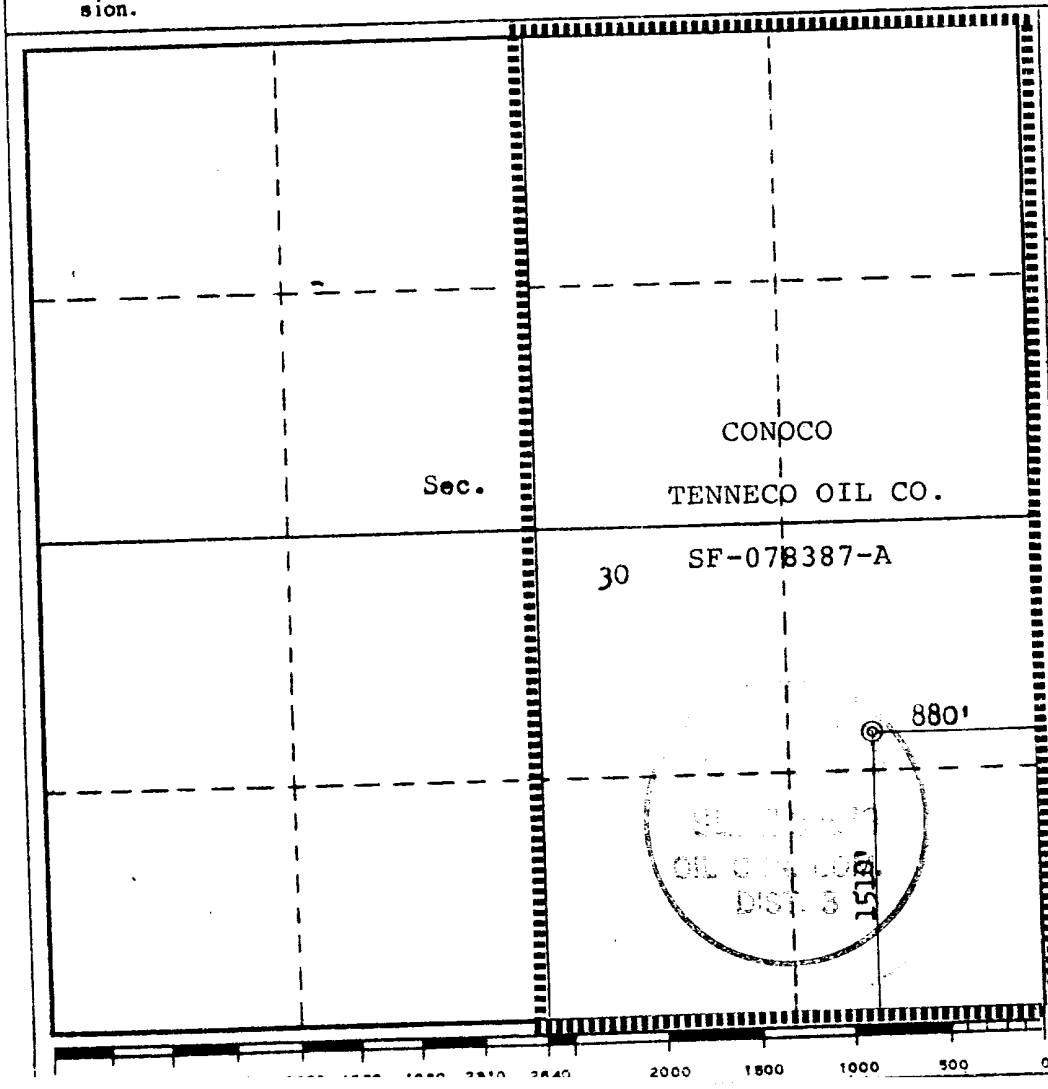
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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 _____

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: D. A. Rush

Position: Environmental Coordinato

Company: Tenneco Oil Company

Date: August 31, 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: July 18, 1979

Registered Professional Engineer and/or Land Surveyor No. 3950

Fred B. Kerr, Jr.

Certificate No. 3950

REGISTERED LAND SURVEYOR FRED B. KERR, JR.

1. The geological name of the surface formation is Tertiary San Jose

2&3. Estimated Formation Tops:

Ojo	1910'	Gallup	6738'
Pictured Cliffs	3160'	Greenhorn	7468'
Cliffhouse	5034'	Dakota A	7654'
Point Lookout	5428'	Total depth	7860'

4. Drill a 13 3/4" hole to 300±. Run 9 5/8", 36#, K-55 ST&C casing to 300± and circulate cement to surface using 2% $CaCl_2$ in cement. Drill out shoe and reduce hole to 8 3/4". Drill 8 3/4" hole to 3500±. Run 7", 23#, K-55 ST&C casing to 3500± and circulate cement to surface. Drill out of 7" with 6 1/4" bit using gas as circulating fluid. Drill to total depth. If productive, run 4 1/2" casing. Cement in one stage and bring cement to above Mesaverde Zone. If nonproductive, P&A as per U.S.G.S. requirements.

5. Blowout Preventors:
Hydraulic double ram, 10". 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.)

0-300±	Spud mud.
300-3500±	Low solids fresh water mud. No WL control.
3500-T.D.	Gas.

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:

   No cores will be taken. Samples will be taken as directed by wellsite geological engineer. GR/FDC/CNL caliper from T.D. to base of Mesaverde. GR/SP/SN induction from T.D. to surface casing.

9. No abnormal pressures or temperatures are anticipated.

10. The drilling of this well will take approximately 10 days.

11. Your office (telephone) 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.

KERNAGHAM A#1

1. Existing Roads

A. Proposed Well Site Location: The proposed wellsite location was surveyed and staked by a registered land surveyor and is located 1510' FSL and 880 FEL, Sec. 30 T31N-R8W, San Juan County, New Mexico. (See Exhibit I acreage dedication plan).

B. Planned Access Route: The planned access route begins in Blanco, New Mexico. Proceed north on blacktop road for approximately 2 miles. Turn east at junction on to blacktop road for 1 mile and 1/2 mile north. Proceed northeasterly for approximately 11 miles. Turn west on to dirt road and travel 2 miles. (see attached).

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 twenty feet.

B. Maximum Grades:

The 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.

F. Surfacing Material:
Native soil has been wetted, bladed and compacted to make the road surface, which is existing.

Planned Access Route Cont'd: At junction turn southeast for 1/2 mile and then travel 300' of newly constructed road into wellsite location.

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: See 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 - None
(2) Production facilities - See Exhibit III
(3) Oil Gathering Lines - None
(4) Gas Gathering Lines - None
(5) Injection Lines - None
(6) Disposal Lines - None

B. New facilities in the event of production:
(1) New facilities will be within the dimensions of the drill pad.
(2) Dimensions are shown on 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 to protect wildlife or livestock.

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

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

(5) New facilities 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 putriscible 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 intial 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 location of the proposed well-site location is located 1 mile east of Pump Canyon and 1 1/2 miles south of Long Blade Canyon. Terrain consists of sandy soil, juniper and pine trees.

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 reconnissance has been performed for this location and clearance has been granted.

12. Operator's Field Representative

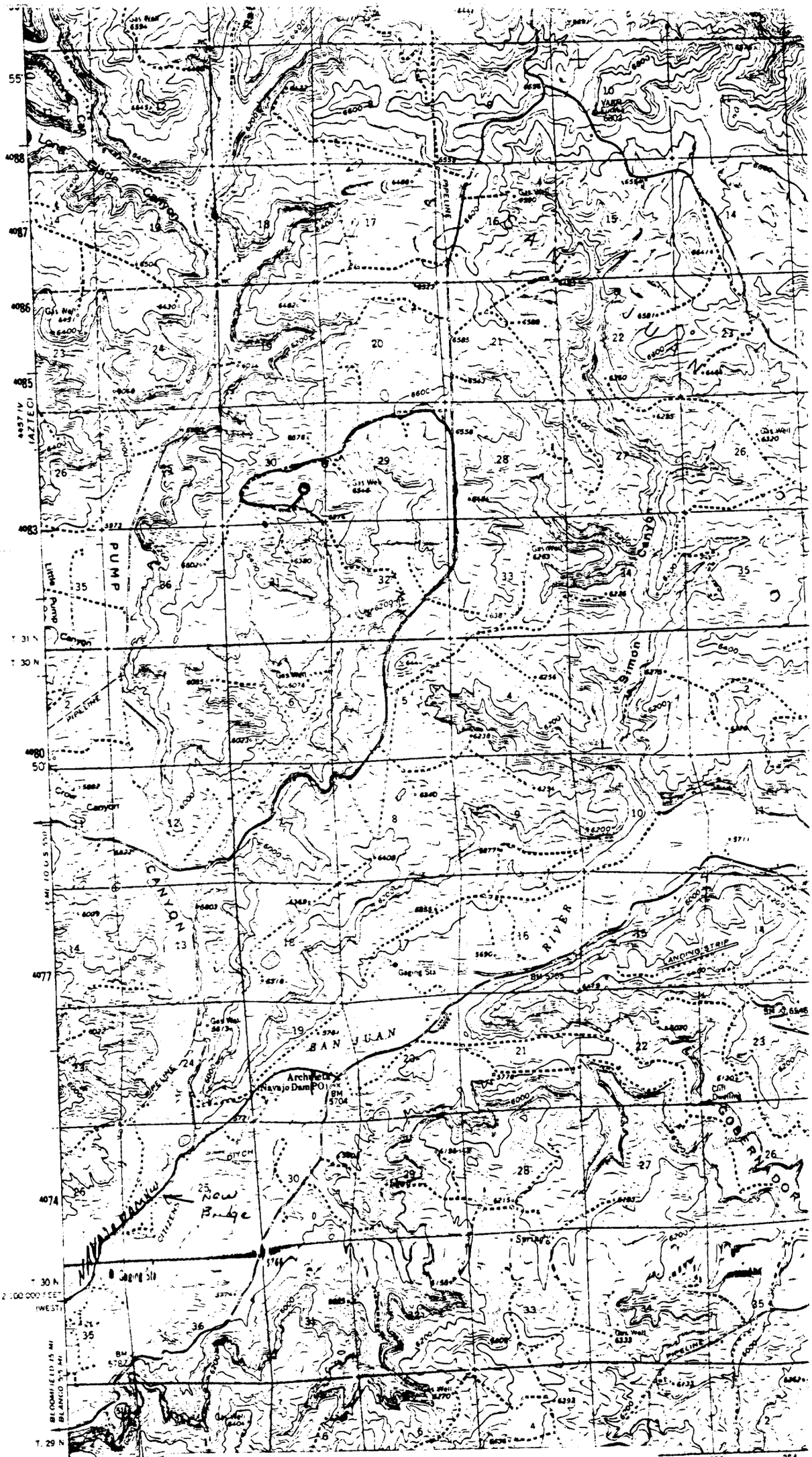
Donald S. Barnes
Division Drilling Engineer
Tenneco Oil Company
720 South Colorado Blvd.
Penthouse
Denver, CO 80222
(303) 758-7130 Ext. 212

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 subcontractos will conform to this plan.

Date: 9-9-79

J. M. Lacey
Division Production Manager



Vicinity Map for EXHIBIT II

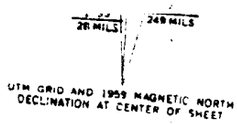
TENNECO OIL COMPANY #1 KERNAGHAM "A"

1510'FSL 880'FEL Sec 30-T31N-R8W

SAN JUAN COUNTY, NEW MEXICO

projection. 1927 North American datum
10 000-foot grid based on New Mexico coordinate system,
west and central zones

Transverse Mercator grid ticks



UTM GRID AND 1959 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

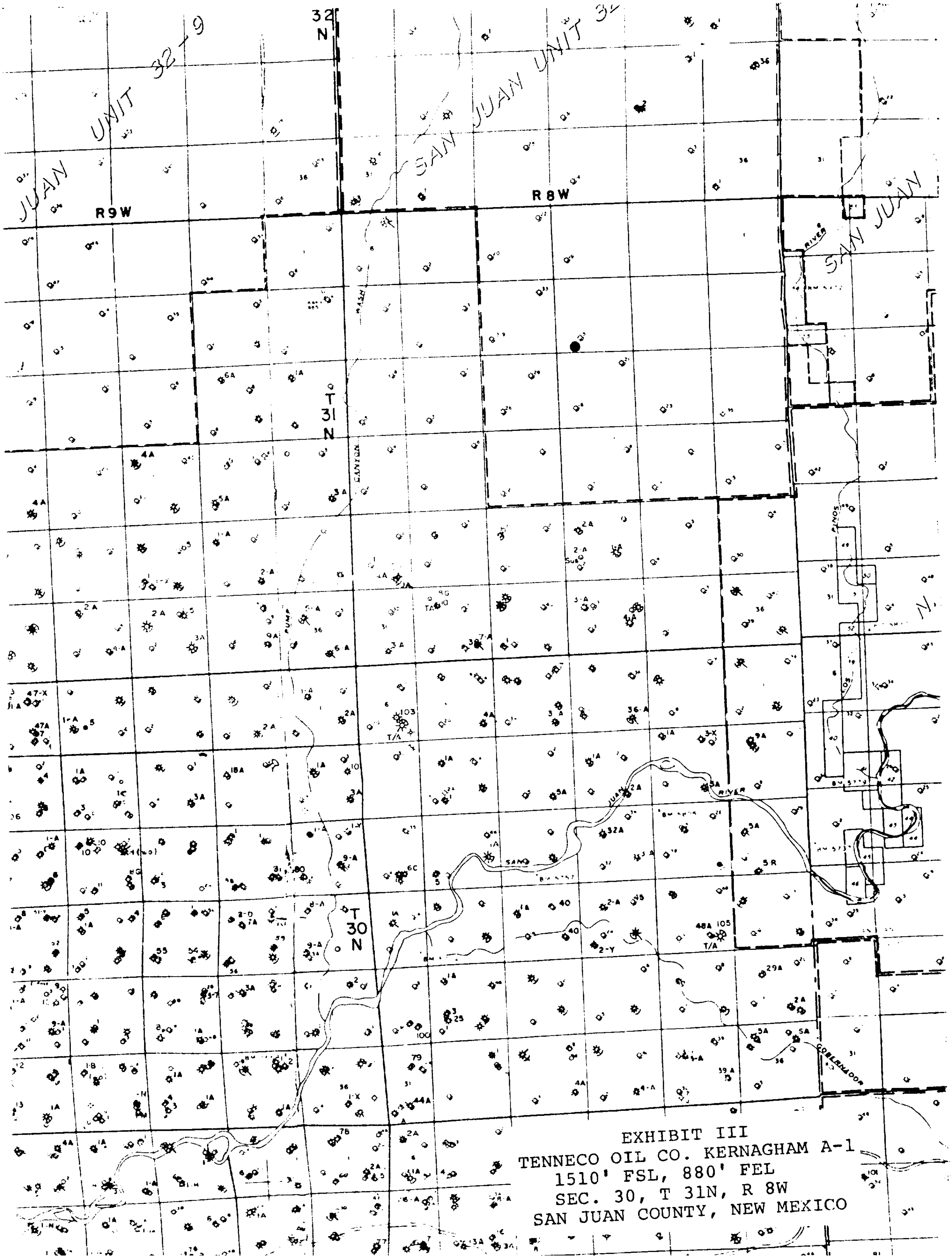


EXHIBIT III
TENNECO OIL CO. KERNAGHAM A-1
1510' FSL, 880' FEL
SEC. 30, T 31N, R 8W
SAN JUAN COUNTY, NEW MEXICO

TOC 851 - 7/61

TENNECO OIL COMPANY

CALCULATION SHEET

EXHIBIT IV

SUBJECT: DRILLING WELL SITE LAYOUT KERNAGHAM A-1

LOCATION: 1510' FSL, 880' FEL, SEC. 30, T 31N, R 8W — DATE: 8-79

SAN JUAN COUNTY, NEW MEXICO