Form 9-331 C
(May 1963)

Duplicate (Other instructions on reverse side)

Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: USA-SF-077092-B

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

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

7. UNIT AGREEMENT NAME:

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

8. FARM OR LEASE NAME: Houck

2. NAME OF OPERATOR: Tenneco Oil Company

9. WELL NO.: 2

3. ADDRESS OF OPERATOR: 720 So. Colorado Blvd., Denver, Colorado 80222

10. FIELD AND POOL, OR WILDCAT: Basin Dakota

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1760 FNL, 910 FWL
At proposed prod. zone:

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 11, T29N, R10W

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 2 miles NW of Blanco, N.M.

12. COUNTY OR PARISH: San Juan — 13. STATE: N.M.

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 910'

16. NO. OF ACRES IN LEASE: 479.14

17. NO. OF ACRES ASSIGNED TO THIS WELL: 316.80

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

19. PROPOSED DEPTH: ±6830'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 5774' GR

22. APPROX. DATE WORK WILL START*: Feb. 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
8 3/4"	7" new	23#	±2800'	Circulate to surface
6 1/4"	4 1/2" new	11.6#, 10.5#	±6830'	Circulate to liner top

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 — R.A. Mishler — TITLE Sr. Production Analyst — DATE Sept. 29, 1980

(This space for Federal or State office use)

PERMIT NO. — APPROVED AS AMENDED — APPROVAL DATE

APPROVED BY — TITLE — DATE

CONDITIONS OF APPROVAL, IF ANY:

DEC 02 1980
for JAMES F. SIMS
DISTRICT ENGINEER

*See Instructions On Reverse Side

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

USA SF 077092-B
Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
TENNECO OIL COMPANY	HOUCK	2

Unit Letter	Section	Township	Range	County
E	11	29N	10W	San Juan

Actual Footage Location of Well:
1760 feet from the North line and 910 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
5774	Dakota	Basin Dakota	316.80 Acres

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

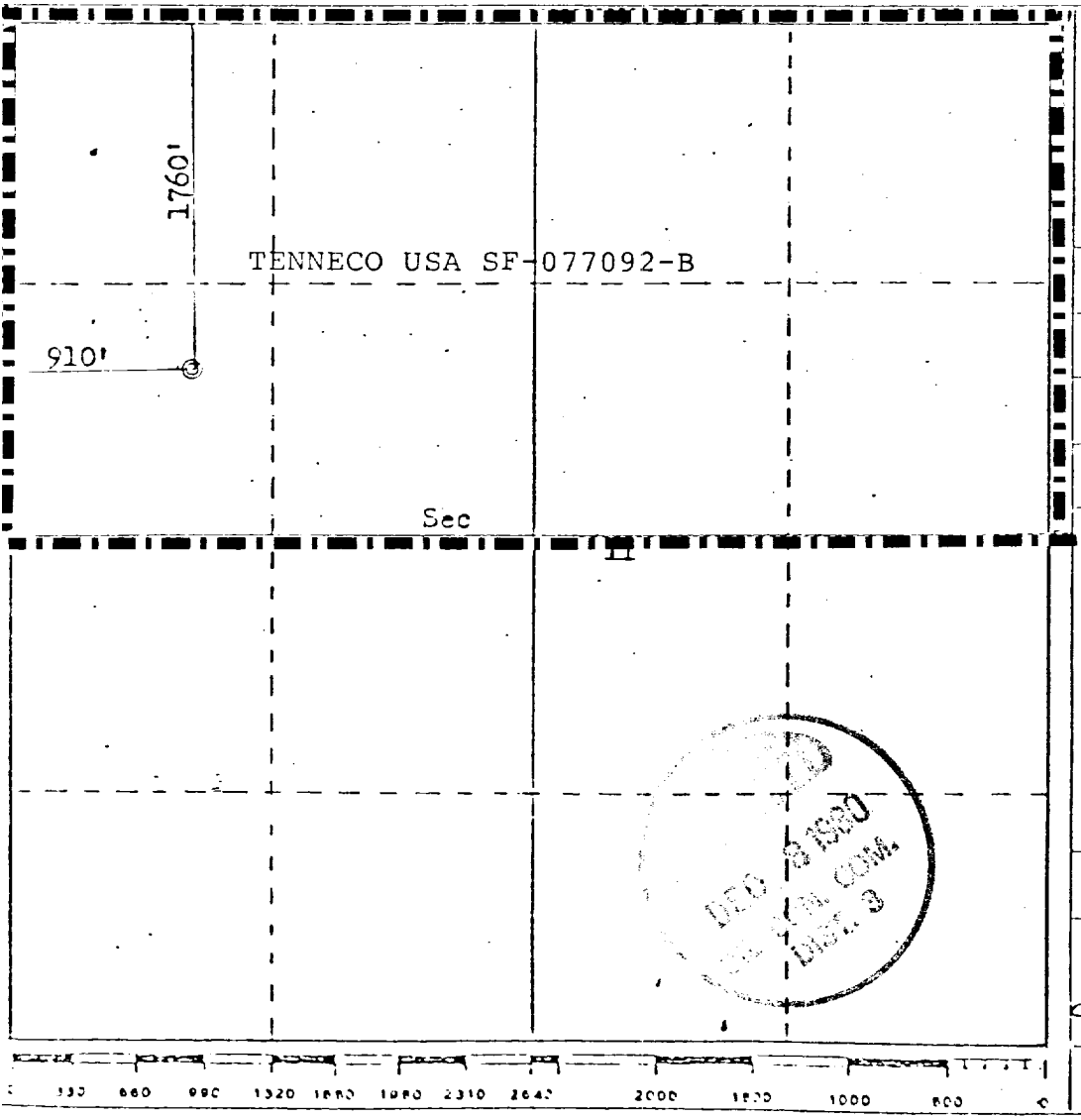
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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: R. A. Mishler

Position: Sr. Production Analyst

Company: Tenneco Oil Company

Date: September 29, 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: September 20, 1978

Registered Professional Engineer and/or Land Surveyor

Fred B. Kerr Jr.

Certificate No. 3950

REGISTERED LAND SURVEYOR
NEW MEXICO
FRED B. KERR JR.
3950

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

DRILLING PROCEDURE

DATE: September 5, 1980

LEASE: Houck

WELL NO.: 2

LOCATION: 1760 FNL, 910 FWL
Sec. 11, T27N, R10W
San Juan County, New Mexico

FIELD: Basin Dakota

ELEVATION: 5788', Est. G.L.

TOTAL DEPTH: 6830'

PROJECTED HORIZON: Dakota

SUBMITTED BY: Billy Harris DATE: September 5, 1980

APPROVED BY: [signature] DATE: 9/8/80

CC: Administration
DSB Well File
Field File

ESTIMATED FORMATION TOPS

Ojo		
Fruitland		Water
Pictured Cliffs	2220'	Gas
Lewis	2300'	Shale
Cliff House	3900'	Gas
Menefee	3850'	Gas
Point Lookout	4490'	Gas
Mancos	4600'	Shale
Gallup	5740'	Gas/Oil
Greenhorn	6470'	Limestone
Dakota	6590'	Gas
T.D.		

DRILLING, CASING AND CEMENTING PROGRAM.

1. MIRURT

2. Drill a 12¼" Hole to ± 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% $CaCl_2$ 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 an 8 3/4" Bit and clear water. Drill to 2800'. Mud up prior to reaching intd. TD.

6. RU and run 7" 23# K-55 ST&C casing to bottom. Cement with 50:50 Pozmix, 4% Gel; tailed with 150 sx Class B + 2% $CaCl_2$. Circulate cement to surface. WOC 18 hours.

7. Set slips and cut-off casing. GIH with 6¼" Bit and 3½" drilling assembly. Pressure test to 1000 PSI for 30 minutes. Record tests on IADC Report.

8. RU to Gas Drill. Drill to within 5' of shoe with water, unload hole with N_2. Drill a few feet of new formation and blow with gas until dusting.

9. Drill a 6¼ hole to TD with gas. Log open hole as directed by G.E. Department.

10. Run 4½" 11.6 and 10.50# K-55 ST&C as designed as a liner. Have 150' overlap inside the 7" casing. Cement with 50:50 Pozmix, 4% Gel; tailed by 100 sx of Class B. Use a fluid loss additive in the lead slurry and circ cement to liner top.

11. Circulate out excess cement, LDDP and MORT.

12. Install trash and fence reserve pit.

13. If non-productive, P & A as required by the USGS.

Casing Program

Interval	Length	Size	Weight	Grade	Coupling
0-250	250	9 5/8	36#	K-55	STC
0-2800	2800	7	23#	K-55	STC
2600-6830	4230	4 1/2	10.5#	K-55	STC

MUD PROGRAM

0-250 Spud mud.

250-2800 Low solid, fresh water mud. (Water and Penex.) Mud up prior to running casing.

2800-TD Gas.

EVALUATION

Cores and DST's: None.

Deviation Surveys:

1. Survey surface hole at 100' intervals. Maximum allowable deviation at 500' is $1-1/2^{0}$.

3. From surface to total depth, deviation surveys must be taken every 500' or each trip, whichever is first. This may entail running the TOTCO on wireline. Record each survey on the IADC Drilling Report Sheet. Maximum allowable change in deviation is 1^{0} per 100'. Maximum deviation allowable is 5^{0}.

Samples: As requested by Wellsite Geological Engineer.

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

BLOWOUT EQUIPMENT

11" - 3000 BOP with rotating head to comply with TOC requirements as shown in BOP 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 costs, plus any other pertinent information, will be called into Tennaco Oil Company, Denver, Colorado, between 7:30 a.m. and 8:00 a.m.

1. 303-758-7130 (Office) Don Barnes
   303-758-7287 (Office) Don Barnes' private line, Monday-Friday (before 7:45 a.m.)
   303-936-0704 (Home) Don Barnes, weekends and holidays.

2. John Owen (Home) 303-795-0221

The yellow sheet of the IADC Report is to be filled out completely. The original copy of the drilling time recorder, and copies of any invoices for this well, signed and received for Tennaco Oil Company, will be mailed daily to:

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

ATTENTION: Drilling Department

IN CASE OF EMERGENCY, NOTIFY THE FOLLOWING:

1. Mr. Don Barnes, Division Drilling Engineer.

2. Mr. John W. Owen, Project Drilling Engineer.

3. Mr. Mike Lacey, Division Production Manager (Home 303-979-0503).

TENNECO OIL COMPANY - 10 POINT PLAN

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

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.

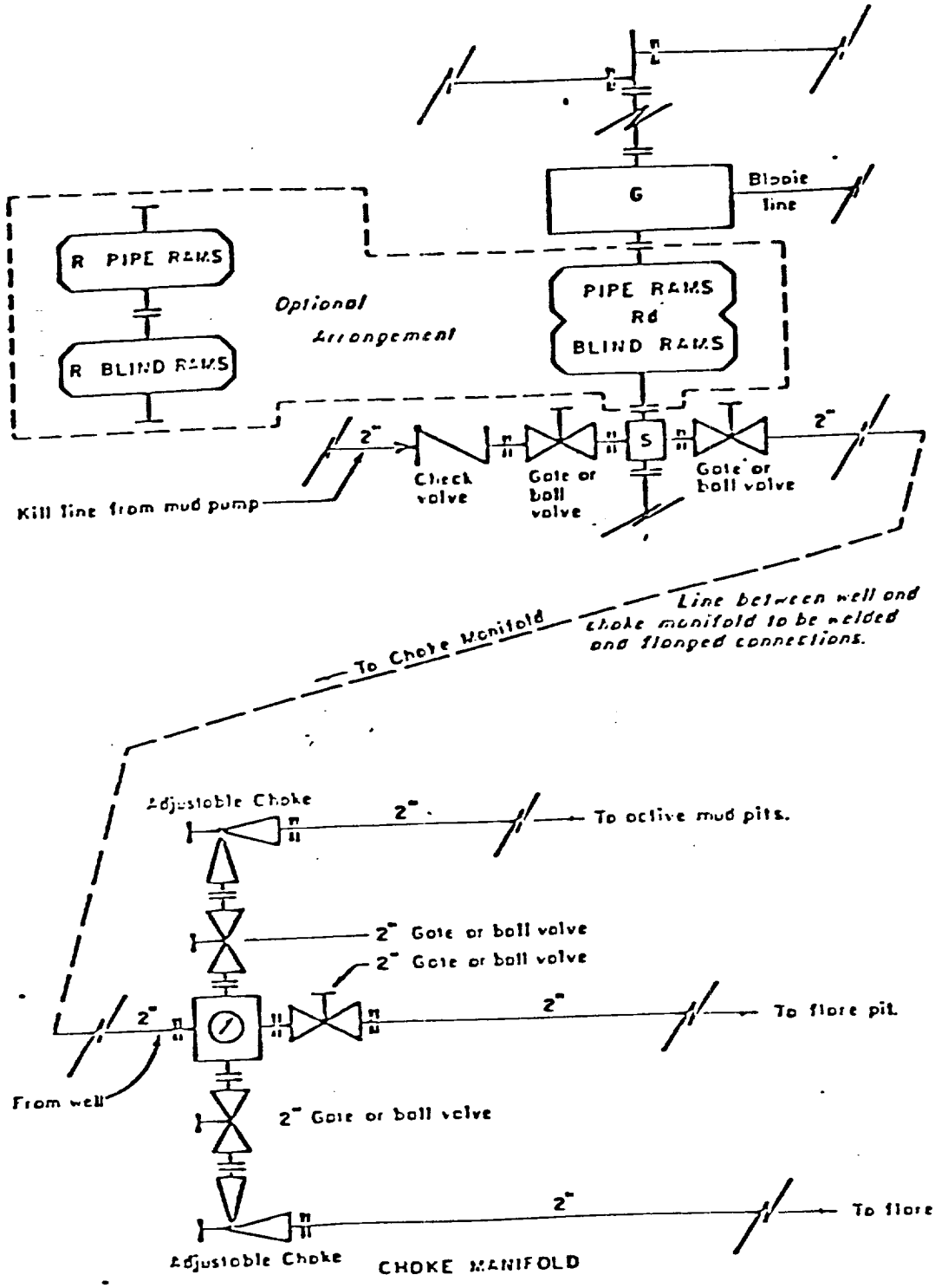
8. Coring, Logging, and Testing Program:

(See Attached Drilling Procedure)

9. No abnormal pressures, temperatures or potential hazards such as H_2S are expected to be encountered.

10. The drilling of this well will start approximately (Feb. 1981) 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 AN
CHOKE MANIFOLD

J. MAGILL 10-26-78 EVI

SURFACE USE PLAN

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 lease 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 b left in such a condition that will enable reseeding operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeding 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 - The proposed location lies in Wrights Canyon in a relatively flat area. The San Juan River is approximately 3 miles east of the proposed location.

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 mad 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

R. A. Mishler
Sr. Production Analyst

EXHIBIT I

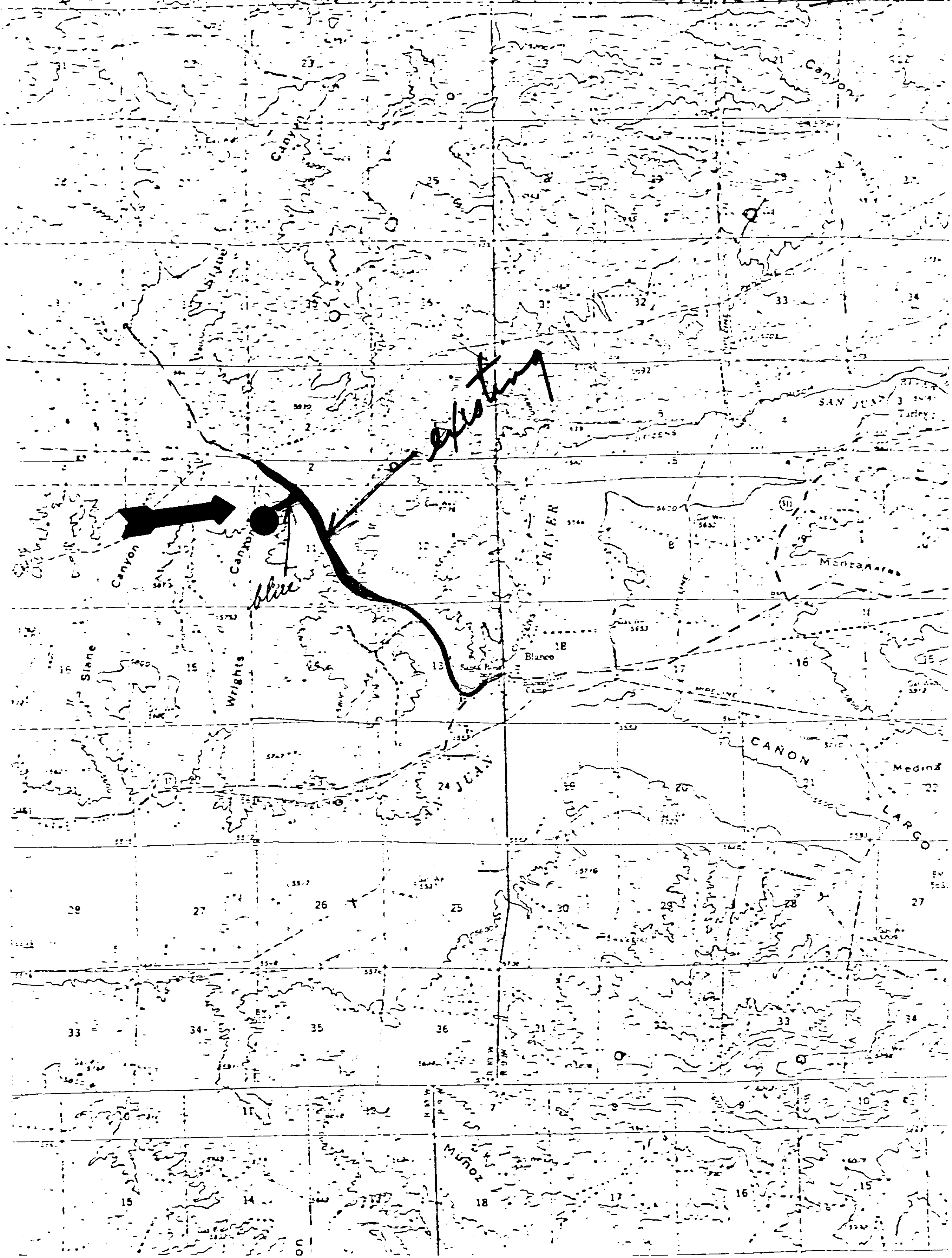
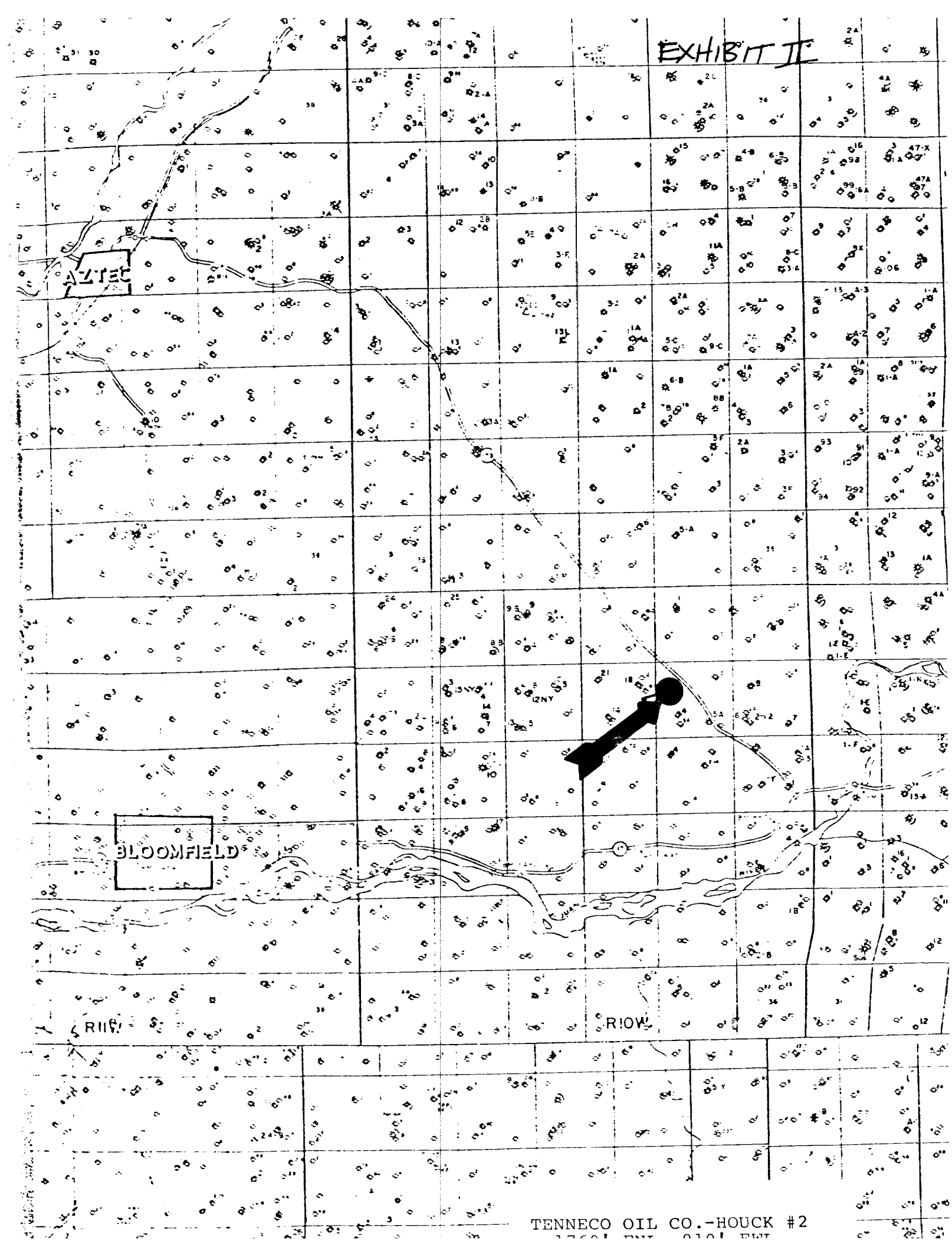

existing
blue
Canyon
Canyon
Wrights
Slane
SAN JUAN
Turley
RIVER
Blanco
JUAN
CAÑON
LARGO
Medina
Muñoz

EXHIBIT II



TENNECO OIL CO.-HOUCK #2

TOC 841 - 7/61

TENNECO OIL COMPANY

CALCULATION SHEET

EXHIBIT III

COMPANY

SUBJECT Drilling Well Site Layout HOUCK #2

LOCATION SW/NW Sec. 11, T 29N, R 10W, San Juan BY