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

DRILLING PROCEDURE

DATE: September 23, 1980

LEASE: Dawson Federal

WELL NO.: 1M

LOCATION: 790' FSL, 1520' FWL
Sec. 26, T27N, R8W
San Juan County, New Mexico

FIELD: Basin Dakota

ELEVATION: 6712 Estimated G.L.

TOTAL DEPTH: 7400'

PROJECTED HORIZON: Mesaverde/Dakota

SUBMITTED BY: David Holstein DATE: September 23, 1980

APPROVED BY: [signature] DATE: 9/25/80

CC: Administration
DSB Well File
Field File

ESTIMATED FORMATION TOPS

Ojo	2040'		Water
Fruitland			
Pictured Cliffs	2810'		Gas
Lewis	2850'		
Chacra	3705'		Gas
Cliff House	4465'		Gas
Menefee	4555'		Gas
Point Lookout	5075'		Gas
Mancos	5265'		
Gallup	6220'		
Greenhorn	7020'		
Dakota	7135'		Gas
T.D.	7400'		

DRILLING, CASING, AND CEMENTING PROGRAM

1. MIRURT.

2. Drill a 12 1/4" hole to ± 250' with Gel-water mud.

3. RU and run 9 5/8", 36#, K-55, STC casing.

4. Cement with sufficient volume to circ cement to surface using $CaCl_2$ as an accelerator.

5. WOC a minimum of 12 hours. Nipple up BOP's, manifold and lines. Pressure test blinds, lines and casing 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 Sheet. Drill out.

6. Drill an 8 3/4 hole to ± 5515' or 250' into the Mancos Shale. Treat mud system for possible lost circulation in the Mesaverde.

7. Log open hole as directed by GE Department.

8. RU and run 7", 23#, K-55, STC to TD, with DV tool at ±4200. Use cement baskets through out the MV.

9. Cement the first stage with "Lite" tailed by 150 sx Class B + 2% $CaCl_2$ in sufficient quantity to raise cement to stage tool. Circulate 4 hours through DV and WOC. Cement 2nd stage with "Lite" in sufficient volume to raise cement to surface.

10. WOC 18 hrs. Set slips and cut off casing. NU BOP's and pressure test. Record tests on IADC Report Sheet. PU 3 1/2 drilling assembly, 6 1/4 Bit.

11. Drill to within 5' of shoe. Displace water with nitrogen, nitrogen with gas. Drill a few feet of hole and blow hole until dusting. Drill with gas to TD.

12. Log open hole as GE Department directs.

13. If productive, run 4 1/2, 10.5#, and 11.6# casing as a liner to TD. Have 150' of overlap in the 7" casing. Make sure this doesn't interfere with the Mesaverde bottom perforations.

14. Cement with sufficient quantity to circulate cement to the liner top.

15. Circulate cut excess cement and LDDP.

16. Install tree and fence reserve pit.

17. If non-productive, P and A as USGS requires.

CASING PROGRAM

Interval	Footage	Size	Weight	Grade
0-250	250	9 5/8	36#	K-55 STC
0-5515	5515	7	23#	K-55 STC
5365-7000	1635	4 1/2	10.5#	K-55 STC
7000-7400	400	4 1/2	11.6#	K-55 STC

MUD PROGRAM

0-250	Spud Mud.
250-5515	Low solid, fresh water mud. (Water and Benex.) Mud up prior to running casing.
5515-7400	Gas

EVALUATION

Cores and DST's: None.

Deviation Surveys:

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

2. 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. IND/GR Intermediate TD to surface.
   FDC/CNL/GR Intermediate TD to 2000' above TD.

2. IND/GR TD to Intermediate casing.
   FDC/CNL/GR TD to 2000' above TD

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 costs, plus any other pertinent information, will be called into Tenneco 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 from this well, signed and received for Tenneco 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 303-979-0509).

TENNECO OIL COMPANY - 10 POINT PLAN

1. The geological name of the surface formation: 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.

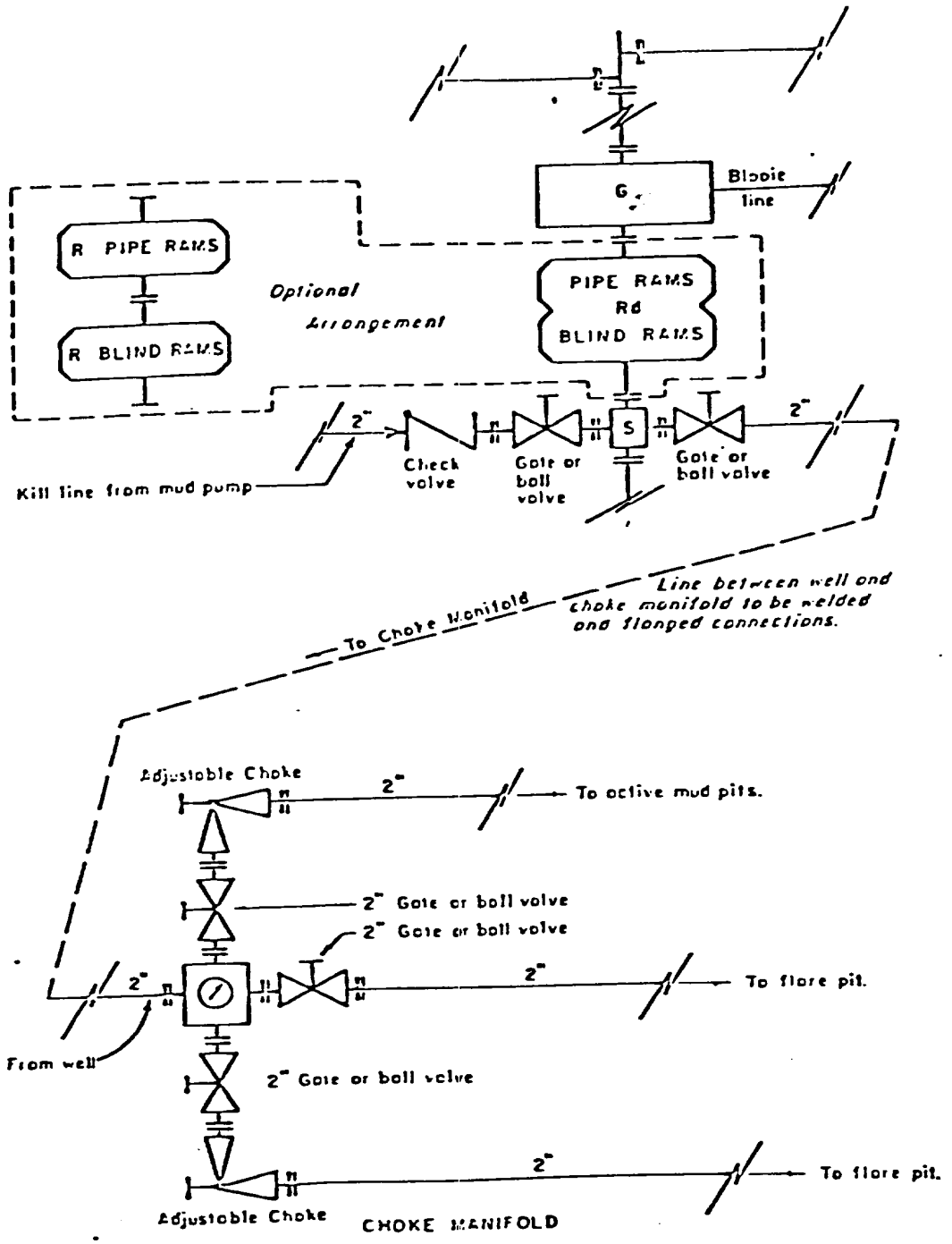
7. Auxiliary Equipment:
   a. Kelly cock will be in use at all times.
   b. Stabbing valve to fit drill pipe will be present on floor at all times.
   c. Mud monitoring will be visual. No abnormal pressures are anticipated.
   d. Floats at bits.
   e. Drill string safety valve(s) to fit all pipe in drill 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 (May '81) 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

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 be 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.

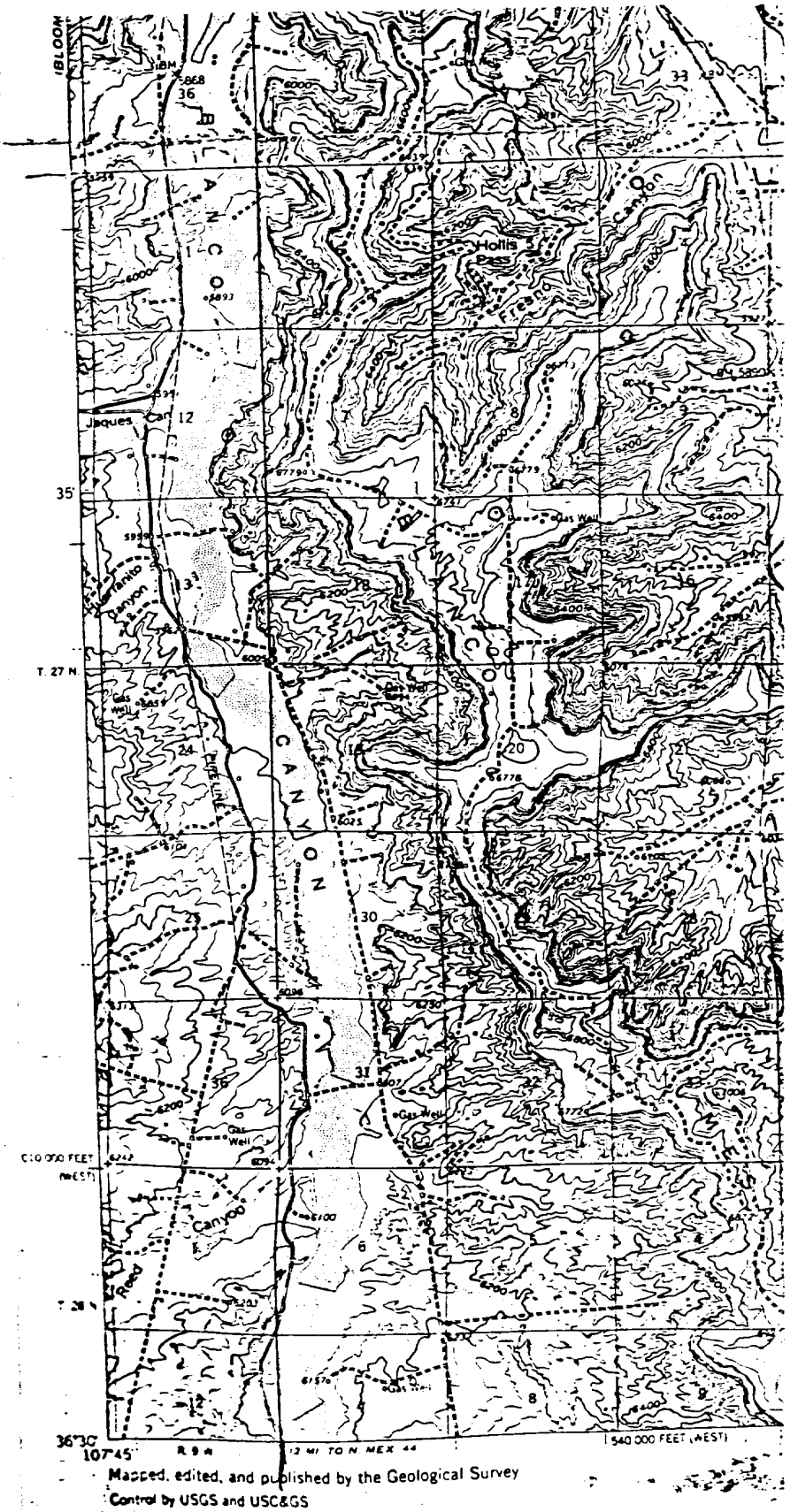
11. Other Information - Location is on mesa top. Drainage is northerly. Soil is sandy clay underlain by sandstone. Vegetation includes pinon & juniper, sage, mountain mahogany, bitterbrush, rabbitbrush, snakeweed, broadleaf yucca, ephedra, prickly pear, greasewood, galleta and other native grasses.

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 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



Mapped, edited, and published by the Geological Survey

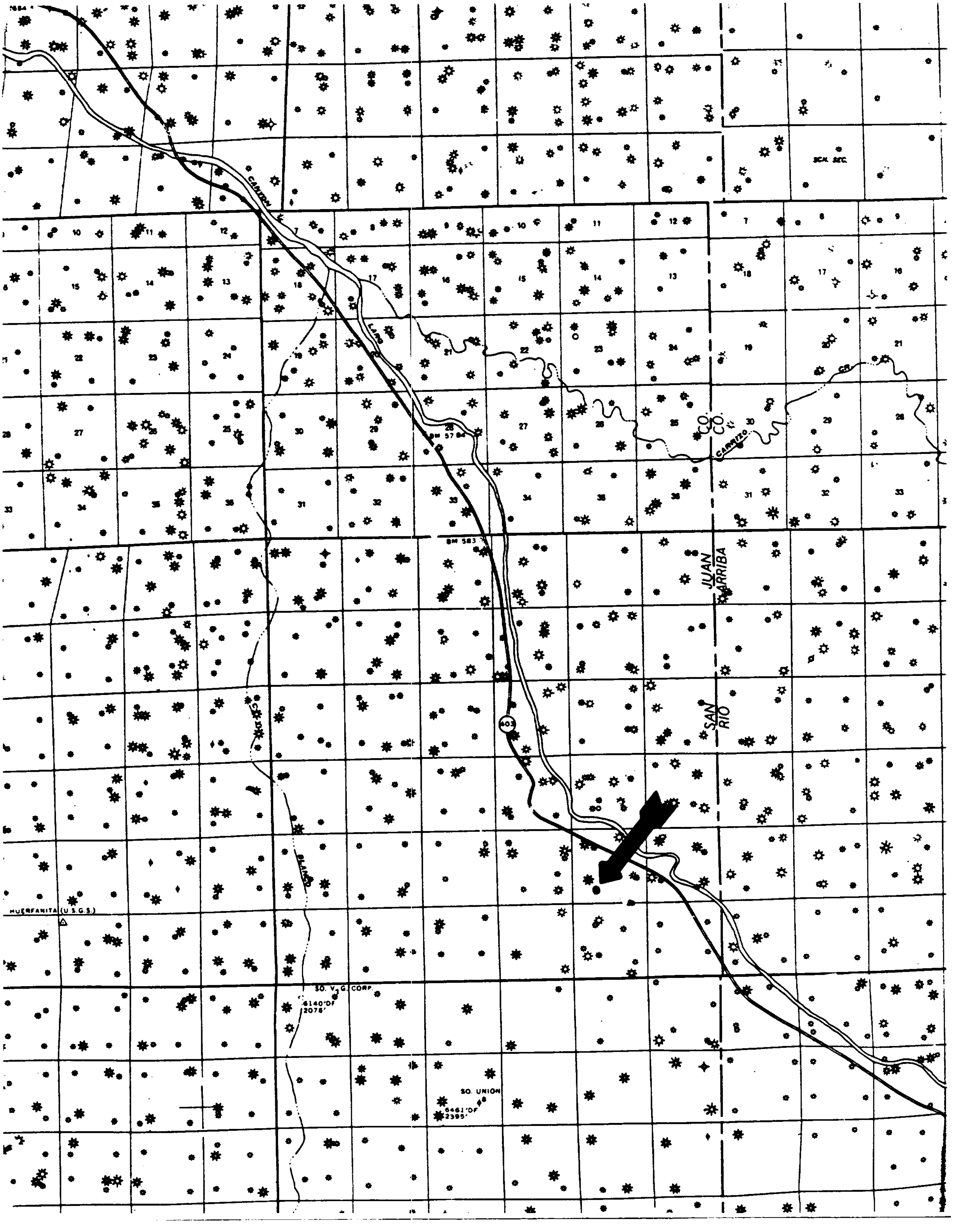
Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1955. Field checked 1959

Polyconic projection. 1927 North American da
10,000 foot grid based on New Mexico coordin
west and central zones
1000 meter Universal Transverse Mercator gri
zone 13 shown in blue

Vicinity Map for
TENNECO OIL CO. #1M DAWS
790'FSL 1520'FWL Sec. 26
SAN JUAN COUNTY, NEW MEXI

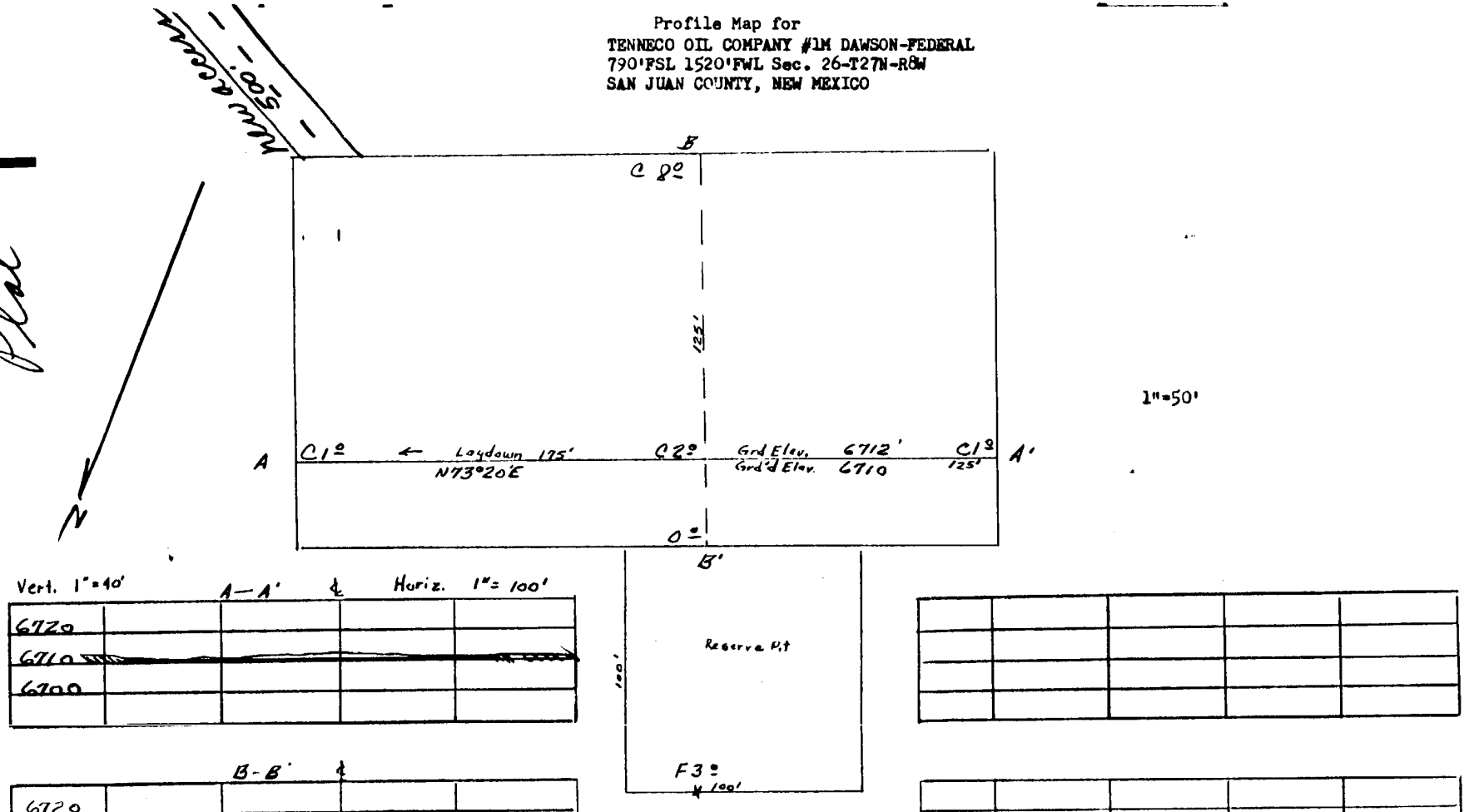
DECLINATION, 1959



CANYON
LARGO
CARRIZO
CR
CO.
CO.
SAN
JUAN
RIO
ARRIBA
BM 5784
BM 583
603
BLANCO
HUERFANITA (U.S.G.S.)
SO. V. G. CORP.
6140' DF
2076'
SO. UNION
8
6461' DF
2395'
SCH. SEC.

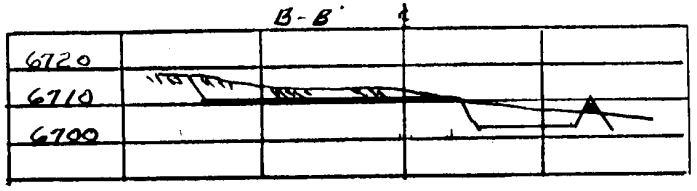
Profile Map for
TENNECO OIL COMPANY #1M DAWSON-FEDERAL
790'FSL 1520'FWL Sec. 26-T27N-R8W
SAN JUAN COUNTY, NEW MEXICO

Plat #1



1"=50'

Vert. 1"=40' A—A' & Horiz. 1"= 100'



Date 10/13/80

Kerr Land Surveying, Inc.