Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

30-039-21318

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

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

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

2. NAME OF OPERATOR
AMOCO PRODUCTION COMPANY

3. ADDRESS OF OPERATOR
501 Airport Drive, Farmington, New Mexico 87401

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface
1630' FNL & 1630' FEL, Section 10, T-26-N, R-4-W
At proposed prod. zone

5. LEASE DESIGNATION AND SERIAL NO.
Jicarilla Apache 102

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Jicarilla Apache

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Jicarilla Apache 102

9. WELL NO.
20

10. FIELD AND POOL, OR WILDCAT
Tapacito Pictured Cliffs

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
SW/4 NE/4 Section 10, T-26-N, R-4-W

12. COUNTY OR PARISH: Rio Arriba
13. STATE: New Mexico

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
20 miles SSE of Gobernador

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 1630'

16. NO. OF ACRES IN LEASE: 2567.94

17. NO. OF ACRES ASSIGNED TO THIS WELL: 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: 475'

19. PROPOSED DEPTH: 3700'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
6838' GL est.

22. APPROX. DATE WORK WILL START*
February 14, 1977

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	8-5/8"	24#	250'	175 sx
6-1/4"	4-1/2"	9.5#	3700'	450 sx

The above referenced well is being drilled to further develop the Tapacito Pictured Cliffs Field. The well will be drilled with a low solids non-dispersed mud system. Completion design will be based on open hole logs. The acreage is dedicated to the Gas Company of New Mexico. Attached is a Development Plan required by NTL-6.

JAN 19 1977
OIL CON. COM.
DIST. 3

JAN 17, 1977
U. S. GEOLOGICAL SURVEY

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 [signature] TITLE Area Engineer DATE January 14, 1977

(This space for Federal or State office use)

PERMIT NO. ______ APPROVAL DATE ______

APPROVED BY ______ TITLE ______ DATE ______
CONDITIONS OF APPROVAL, IF ANY:

Okeal

*See Instructions On Reverse Side

Instructions

General: This form is designed for submitting proposals to perform certain well operations, as indicated, on all types of lands and leases for appropriate action by either a Federal or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable State or Federal regulations concerning subsequent work proposals or reports on the well.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal or State agency offices.

Items 15 and 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective production zone.

Item 22: Consult applicable Federal or State regulations, or appropriate officials, concerning approval of the proposal before operations are started.

★ U.S. GOVERNMENT PRINTING OFFICE: 1974-781-025/VIII-239

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:	Lease	Well No.
Amoco Production Company	Jicarilla Apache 102	20

Unit Letter	Section	Township	Range	County
G	10	26N	4W	Rio Arriba

Actual Footage Location of Well:
1630 feet from the North line and 1630 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6838 est.	Pictured Cliffs	Tapacito Pictured Cliffs	160 Acres

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

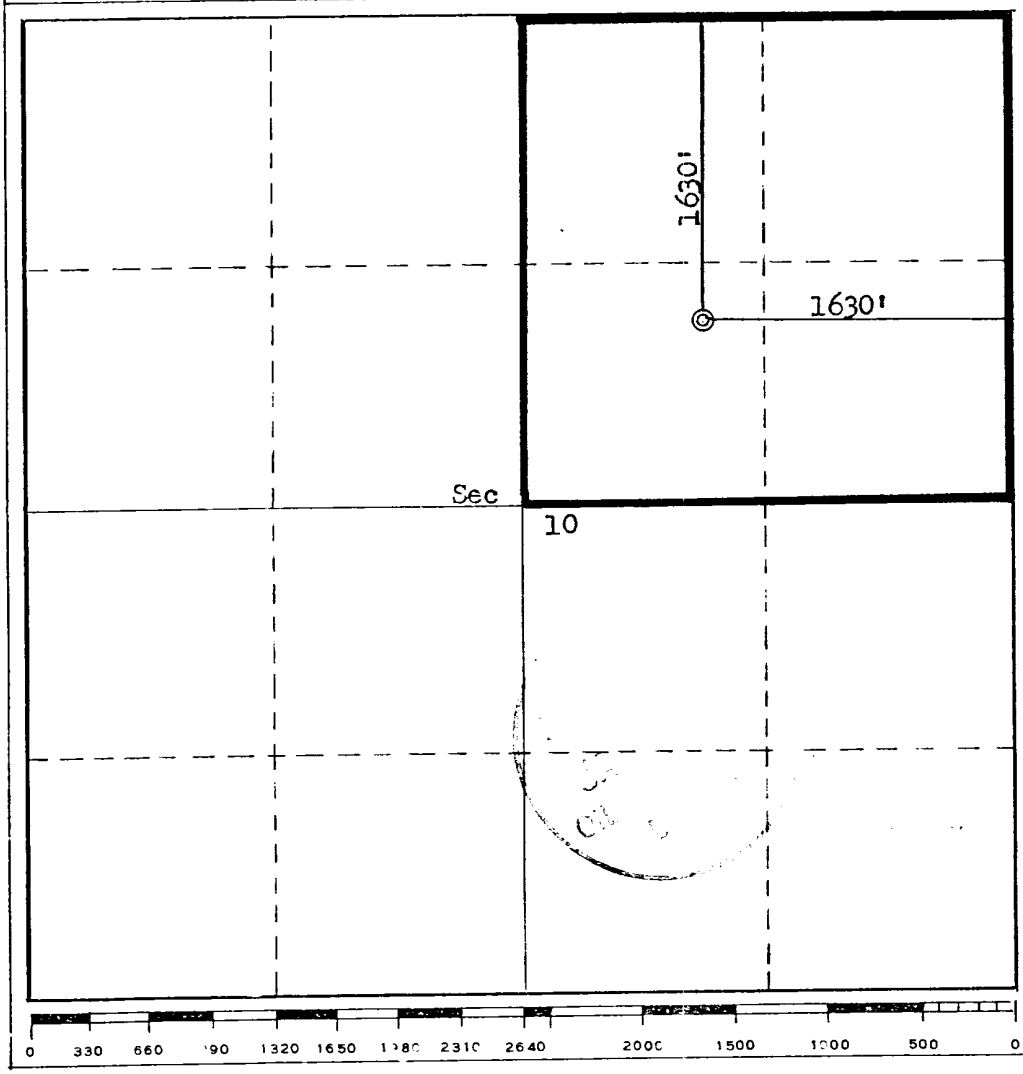
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.

H. D. Montgomery

Name: H. D. Montgomery

Position: Area Engineer

Company: AMOCO PRODUCTION COMPANY

Date: January 14, 1977

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: December 30, 1976

Registered Professional Engineer and/or Land Surveyor

Fred B. Kerr Jr.

Certificate No. 3950

JICARILLA APACHE 102 NO. 20
1630' FNL & 1630' FEL, SECTION 10, T-26N, R-4W
RIO ARRIBA COUNTY, NEW MEXICO

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 AMOCO PRODUCTION COMPANY and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

January 14, 1977
Date

L. D. Sharp - Area Supt.
Name and Title

DEVELOPMENT PLAN
JICARILLA APACHE 102 NO. 20
1630' FNL & 1630' FEL, SECTION 10, T-26N, R-4W
RIO ARRIBA COUNTY, NEW MEXICO

The new location will be built on an old undrilled location. The area has been graded and a reserve pit constructed. The proposed location has rabbitbrush, Russian thistle, big sagebrush and various grasses. The geological name of the surface formation is Paleozoic San Jose. No new road will be required. No construction materials will be used for building the location. Verbal approval of the drill site has been obtained from Mr. Harold Tecube, BIA; Mr. John Keller, USGS, and Mrs. Nancy S. Hewett, Archaeologist.

Arrangements are being made to haul water from Tapacito Wash or water hole approximately 5 miles. Drilling fluid to TD will be a low solids non-dispersed mud system. Upon completion the location will be cleaned up and leveled. Drilling mud and water will be hauled away and the reserve pit backfilled. Attached is the seeding plan to be followed for this well.

There are neither airstrips nor camps in the vicinity.

The estimated tops of important geological formations bearing hydrocarbons are:

Formation	Depth	Elevation
Fruitland	3145'	+3705'
Pictured Cliffs	3550'	+3300'

Estimated KB elevation: 6850'

Est. Depth	Csg. Size	Weight	Hole Size	Sacks Cement - Type
250'	8-5/8"	24#	12-1/4"	175 sx - Class "B", 2% $CaCl_2$
3700'	4-1/2"	9.5#	6-1/4"	400 sx - Class "B", 6% Gel, 2# Med. Tuf Plug/sx.
				50 sx - Class "B" Neat.

Amoco's standard blowout prevention will be employed, see attached drawing for blowout preventer design.

Amoco plans to run the following logs from TD to 250': Induction-Electric, Density-Gamma Ray. No cores or Drill Stem Tests will be taken.

In the past, drilling in this area has shown that no abnormal pressure, temperatures or hydrocarbon gas will be encountered.

Our proposed starting date is February 14, 1977, and a two-week operation is anticipated.

SEEDING PLAN

1. TIME:

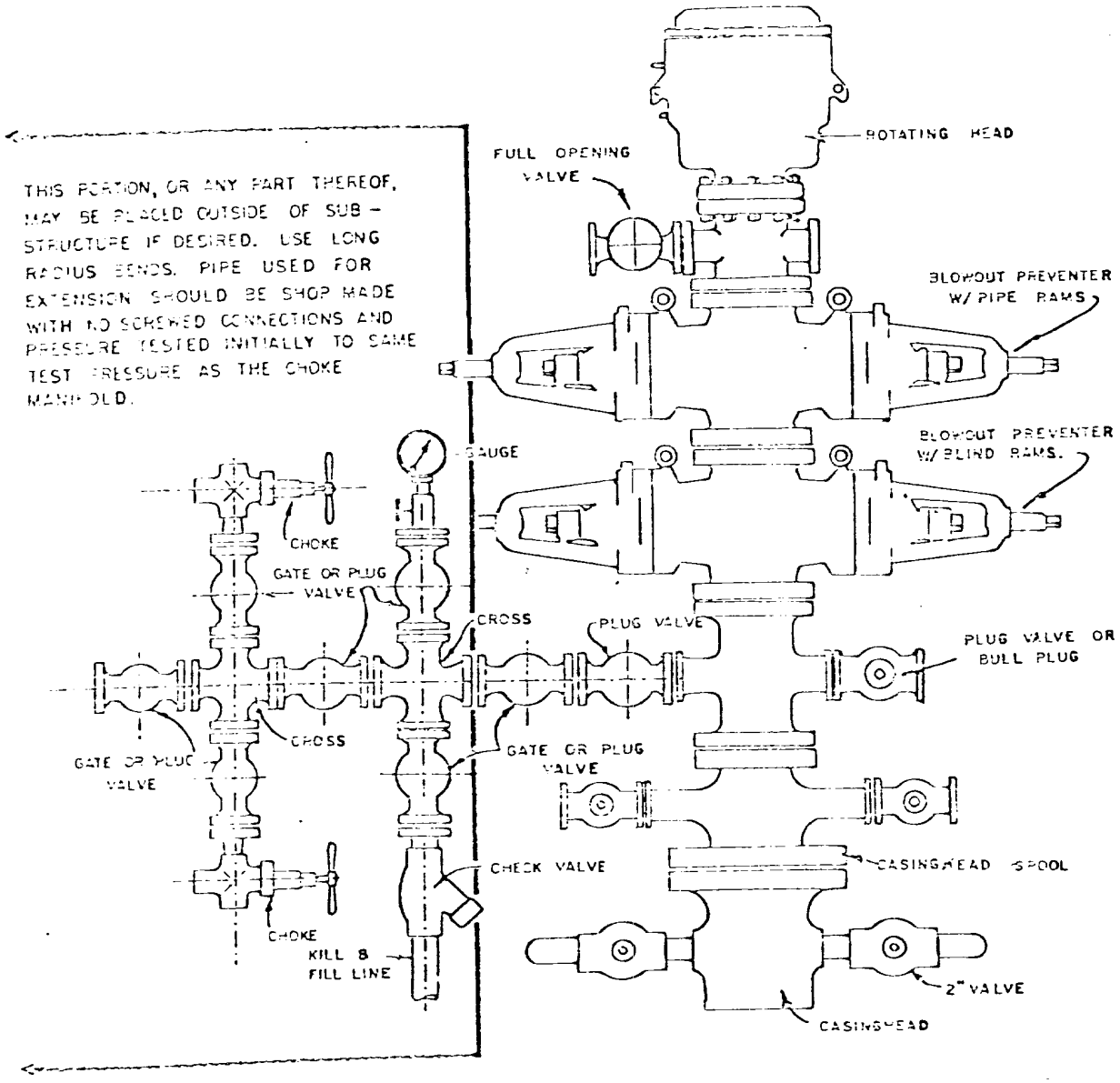
   All seeding will take place between July 1 and September 15.

2. EQUIPMENT:

   Seeding will be done with a disc-type drill with two boxes for various seed sizes. The drill rows will be eight to ten inches apart. The seed will be planted not less than one-half inch deep or more than one inch deep. The seeder will be followed with a drag, packer, or roller to insure uniform coverage of the seed, and adequate compaction. Drilling will be done on the contour where possible, not up and down the slope. Where slopes are too steep for contour drilling, a "cyclone" hand seeder or similar broadcast seeder will be used. Seed will then be covered to the depth described above by whatever means is practical.

3. SPECIES TO BE PLANTED IN POUNDS PURE-LIVE-SEED PER ACRE:

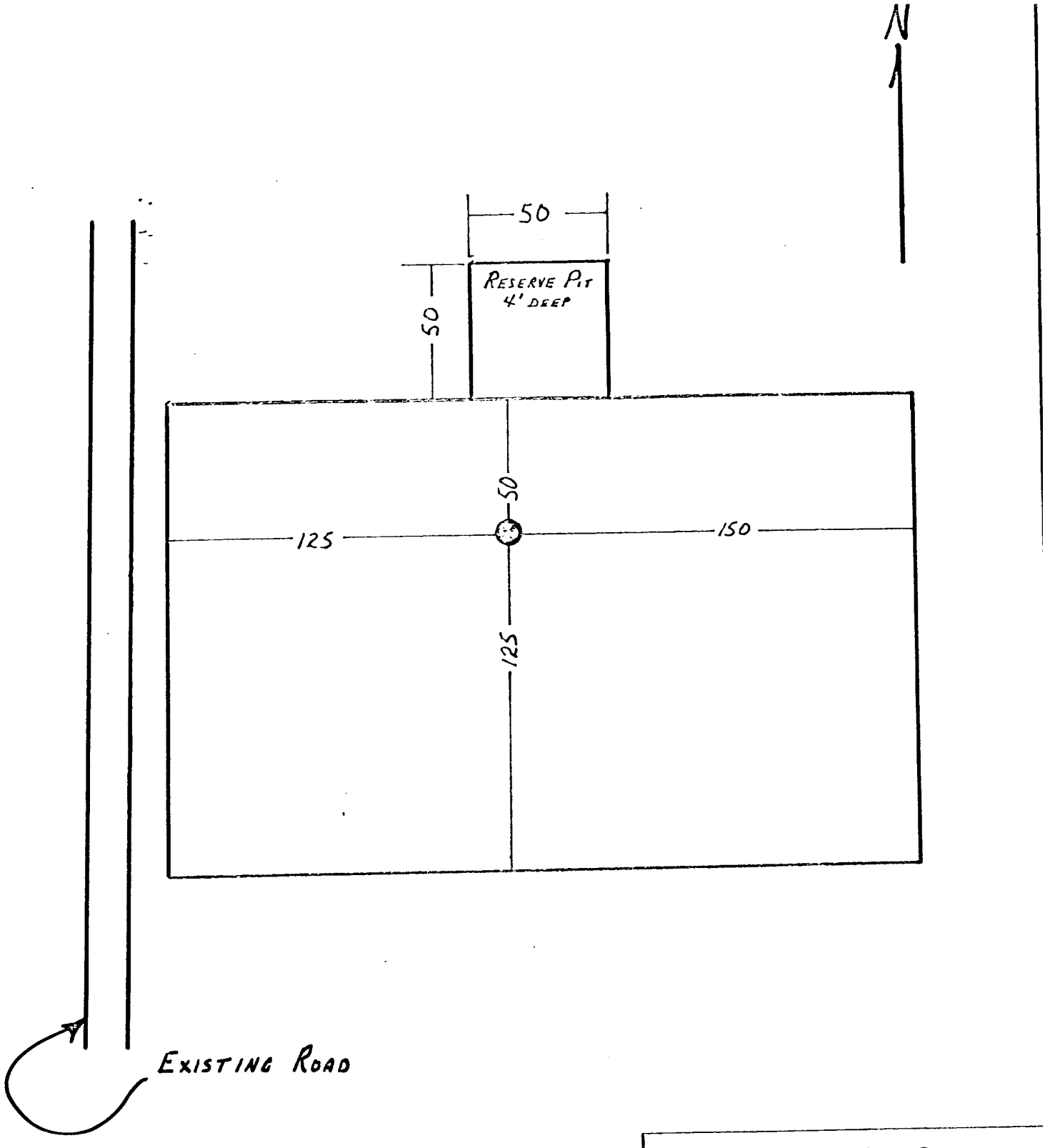
CRESTED WHEATGRASS	0.71 lbs.
RUSSIAN WILD RYE	0.86 lbs.
ORCHARD GRASS	0.298 lbs.
PERENNIAL RYE GRASS	0.57 lbs.
WESTERN WHEAT GRASS	1.43 lbs.
SMOOTH BROME	1.14 lbs.
INTERMEDIATE WHEAT	0.91 lbs.
PUBESCENT WHEAT GRASS	1.09 lbs.



BLOWOUT PREVENTER HOOKUP

EXHIBIT D-4

OCTOBER 16, 1969



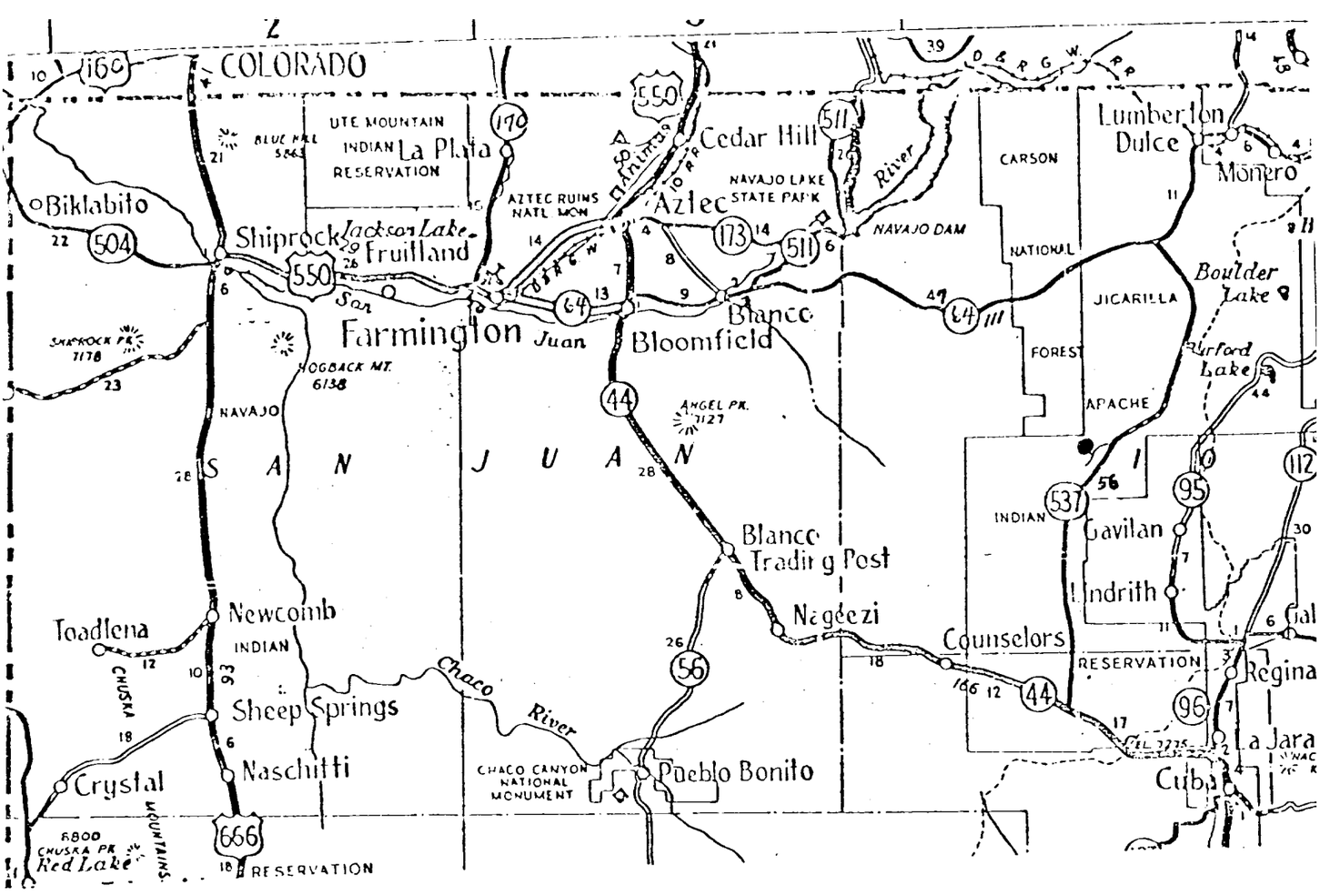
Amoco Production Company

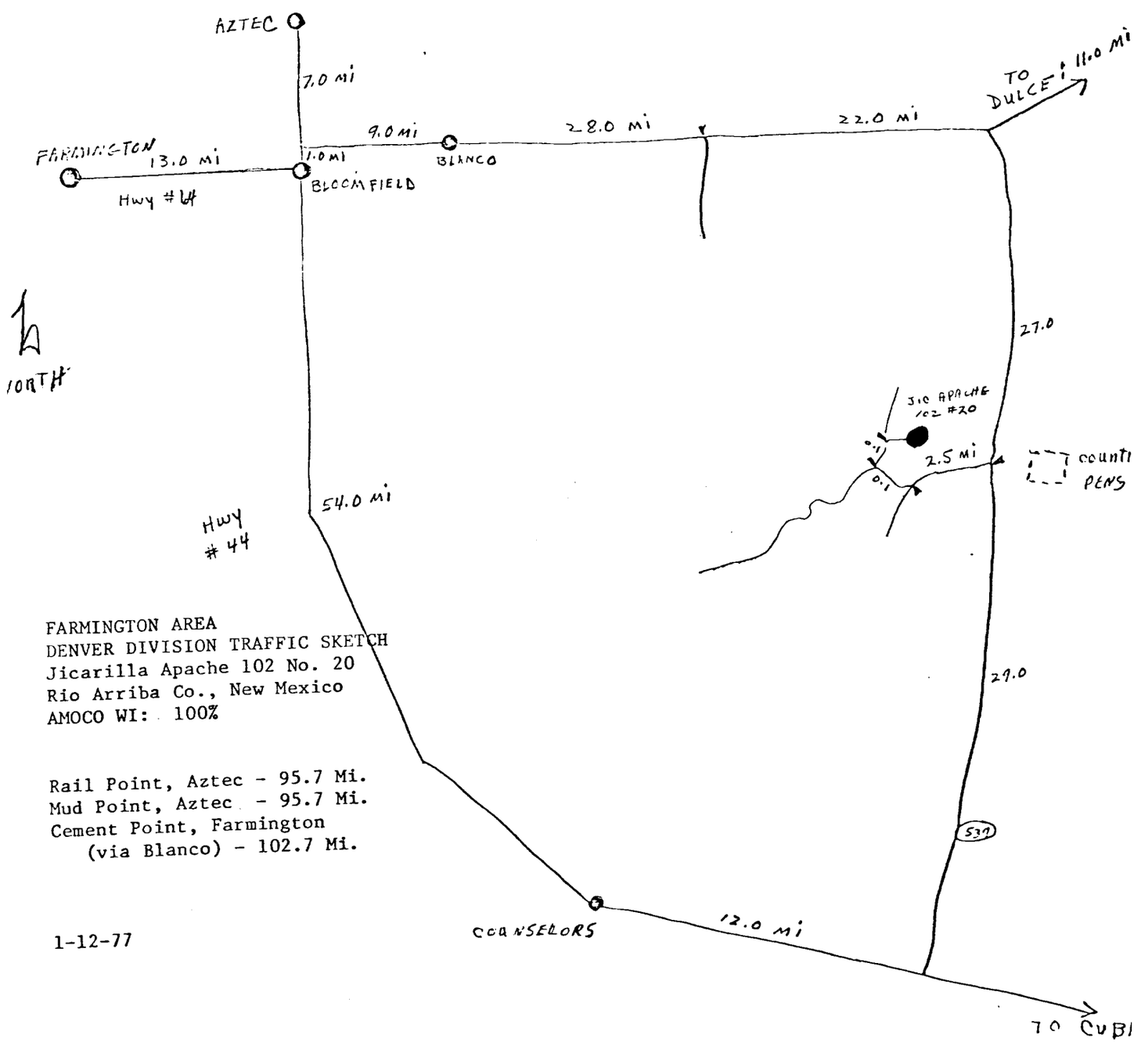
LOCATION DIAGRAM
JICARILLA APACHE 102 No. 20
1630 FNL, 1630 FEL, SEC 10
T-26-N, R-4-W

DR.	CK.	AP.	AP.	NO.

SCALE

DATE 1-13-77

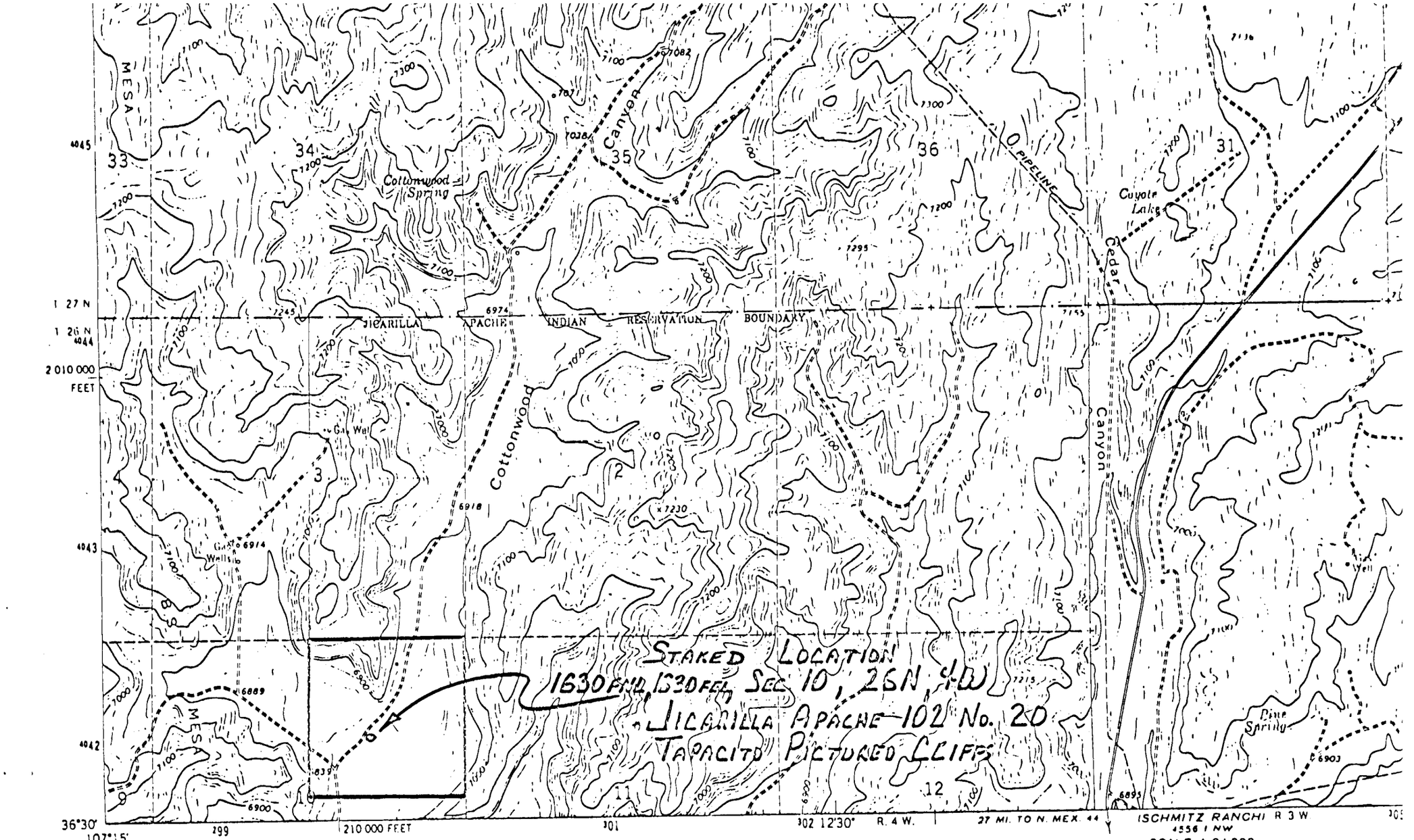




FARMINGTON AREA
DENVER DIVISION TRAFFIC SKETCH
Jicarilla Apache 102 No. 20
Rio Arriba Co., New Mexico
AMOCO WI: 100%

Rail Point, Aztec - 95.7 Mi.
Mud Point, Aztec - 95.7 Mi.
Cement Point, Farmington
(via Blanco) - 102.7 Mi.

1-12-77



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1958 and 1962. Field checked 1963

Polyconic projection. 1927 North American datum
10 000 foot grid based on New Mexico coordinate system, central zone

GN MN
1°18' / 23 MILS
13½° / 240 MILS

SCALE 1:24 000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 FEET
1 5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special			Test Date: 4-12-77	
Company: AMOCO PRODUCTION COMPANY	Connection: Gas Company of New Mexico			Unit
Pool: Tapacito	Formation: Pictured Cliffs			
Completion Date: 4-5-77	Total Depth: 3750	Plug Back TD: 3660	Elevation: 6838 est.	Farm or Lease Name: Jicarilla Apache 102
Csg. Size: 4.500 / Wt.: 10.5 / d: 4.052 / Set At: 3745		Perforations: From 3584 To 3616		Well No.: 20
Tbg. Size: 2.375 / Wt.: 4.7 / d: 1.995 / Set At: 3609		Perforations: From Open To Ended		Unit: G / Sec.: 10 / Twp.: 26 / Rge.: 4
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single		Packer Set At: None		County: Rio Arriba
Producing Thru: Tubing	Reservoir Temp. °F @	Mean Annual Temp. °F	Baro. Press. – P_a	State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.65						

FLOW DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA Press. p.s.i.g.	TUBING DATA Temp. °F	CASING DATA Press. p.s.i.g.	CASING DATA Temp. °F	Duration of Flow
SI	7 days						916		916		
1.	2.375"		.750				200		390	48°	3 Hrs.
2.											
3.											
4.											
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	12.365		212	1.0117	.9608	1.023	2607
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_t	Z
1				
2.				
3.				
4.				
5.				

RECEIVED
APR 21 1977
OIL CON. COM.
DIST. 3

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 928 P_c^2 861,184

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		402	161,604	699,580
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.2310$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.1932$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3111$

Absolute Open Flow 3111 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n .85

Remarks: _____

Approved By Commission: | Conducted By: T. M. Oliver | Calculated By: Oliver/K.T.Nelson | Checked By: H. D. Montgomery

Original Signed by