Submit to Appropriate
District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED
FEB - 9 1994
OIL CON. DIV.
DIST. 3

Form C-101
Revised 1-1-89

API NO. (assigned by OCD on New Wells) 30-045-29078

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. K1277

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work:
DRILL [X] RE-ENTER [ ] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well:
OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

7. Lease Name or Unit Agreement Name
Gallegos Canyon Unit 2038

2. Name of Operator
BHP Petroleum (~~American~~'s) Inc. 2217

8. Well No.
529

3. Address of Operator
P.O. Box 977 Farmington, NM 87499

9. Pool name or Wildcat 79680
West Kutz Pictured Cliffs

4. Well Location
Unit Letter J : 2119 Feet From The South Line and 1398 Feet From The East Line

Section 36 Township 29N Range 12W NMPM San Juan County

10. Proposed Depth	11. Formation	12. Rotary or C.T.
1560'	Pictured Cliffs	Rotary

13. Elevations (Show whether DF, RT, GR, etc.)	14. Kind & Status Plug. Bond	15. Drilling Contractor	16. Approx. Date Work will start
5390' GR	Blanket	Aztec	As soon as approved

17.
PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
8-3/4"	7"	20#K-55	330'	85	surface
6-1/4"	4 1/2"	10.5#K-55	1560'	198	surface

It is proposed to drill the subject well to ~~1545'~~ 1560' with the primary production anticipated in the Pictured Cliff Formation.

Estimated Formation Tops:

Ojo Alamo	120'
Kirtland	290'
Fruitland	1100'
Basal Fruitland Coal	1372'
Pictured Cliffs	1394'
TD	1560'

This Approval Expires 2-10-95 And Will Not Be Extended

B.O.P.E. will consist of a 2000# Reagan bladder type preventor, pipe rams and blind ram B.O.P.E.
This is an unorthodox location. BHP will apply to the NMOCD for administrative approval.

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. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Fred Lowery TITLE Operations Superintendent DATE 02/07/94

TYPE OR PRINT NAME Fred Lowery TELEPHONE NO. 327-1639

2-10-94

(This space for State Use)

APPROVED BY Susie Brown TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE FEB 10 1994

CONDITIONS OF APPROVAL, IF ANY:

Hold C-104 For NSL

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

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State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT
All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
BHP PETROLEUM (AMERICAS) INC.	GALLEGOS CANYON UNIT	529

Unit Letter	Section	Township	Range	County
J	36	29 N	12 W NMPM	San Juan

Actual Footage Location of Well:
2119 feet from the South line and 1398 feet from the East line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
5390	Pictured Cliffs	West Kutz Pictured Cliffs	160 Acres

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

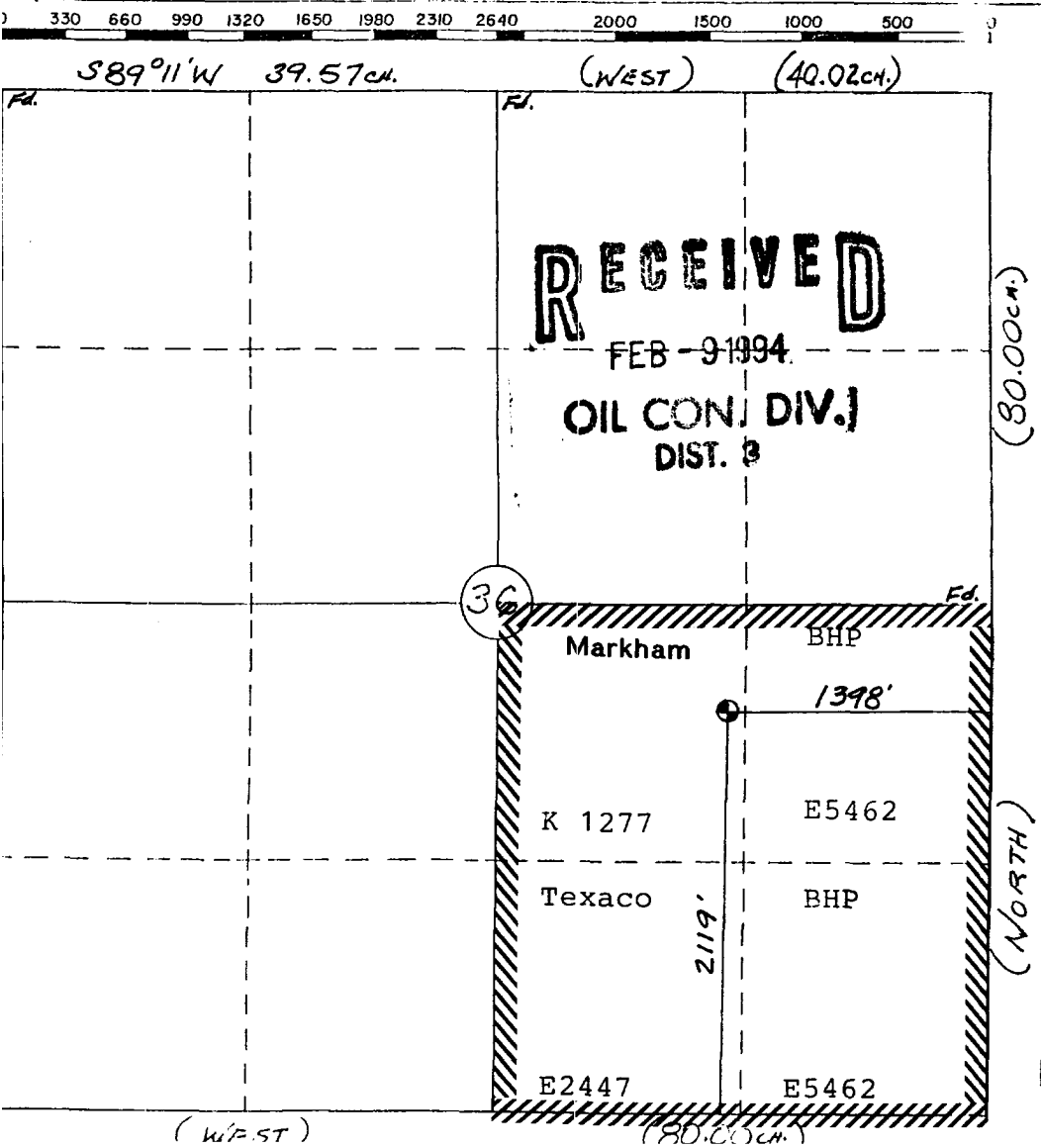
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

[X] Yes [ ] No If answer is "yes" type of consolidation Unitization

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if neccessary. _____

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 interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

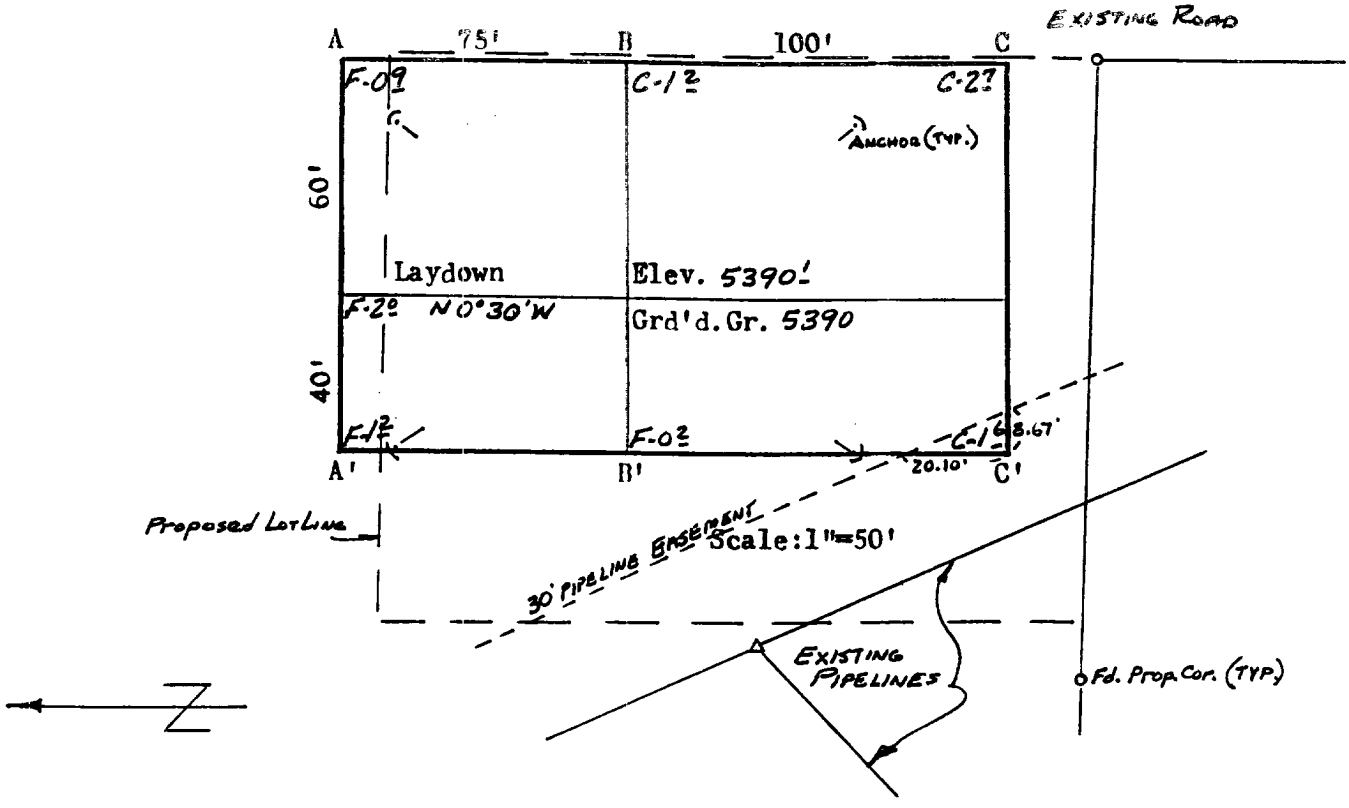
Signature: Fred Lowery
Printed Name: Fred Lowery
Position: Operations Supt.
Company: BHP Petroleum
Date: 02/02/94

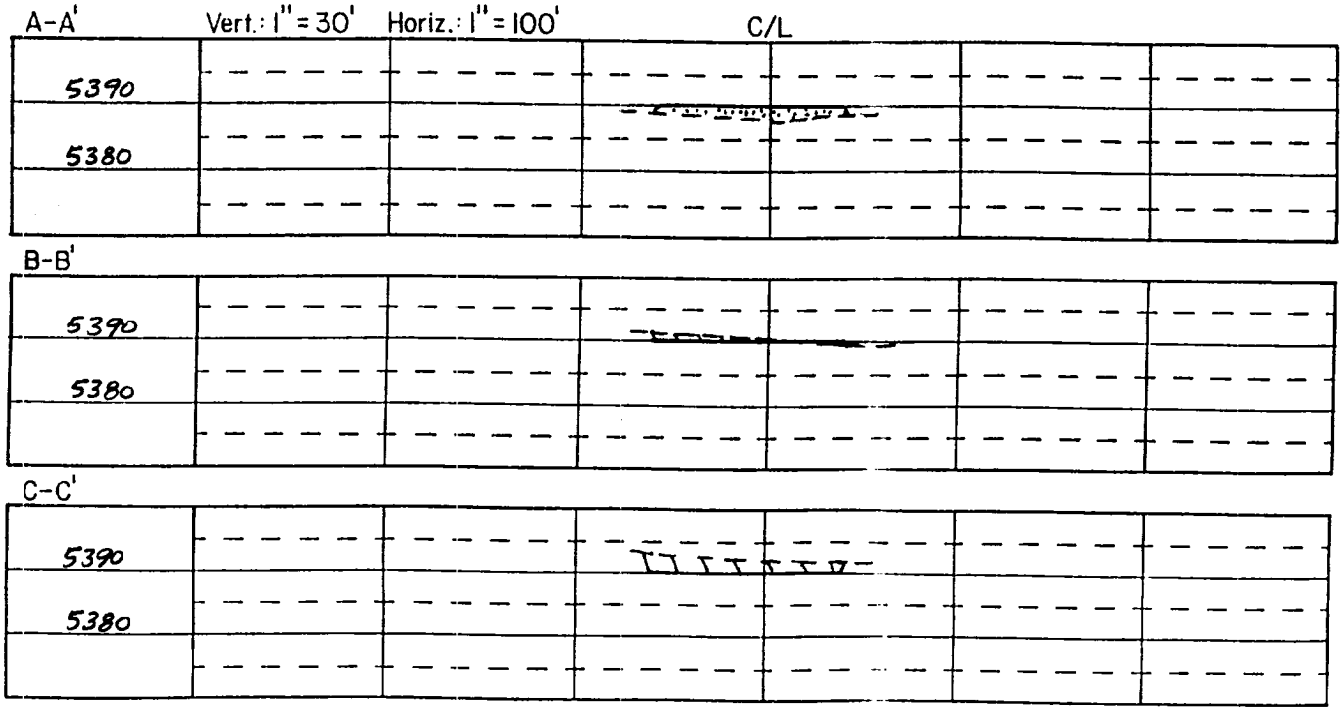
SURVEYOR CERTIFICATION

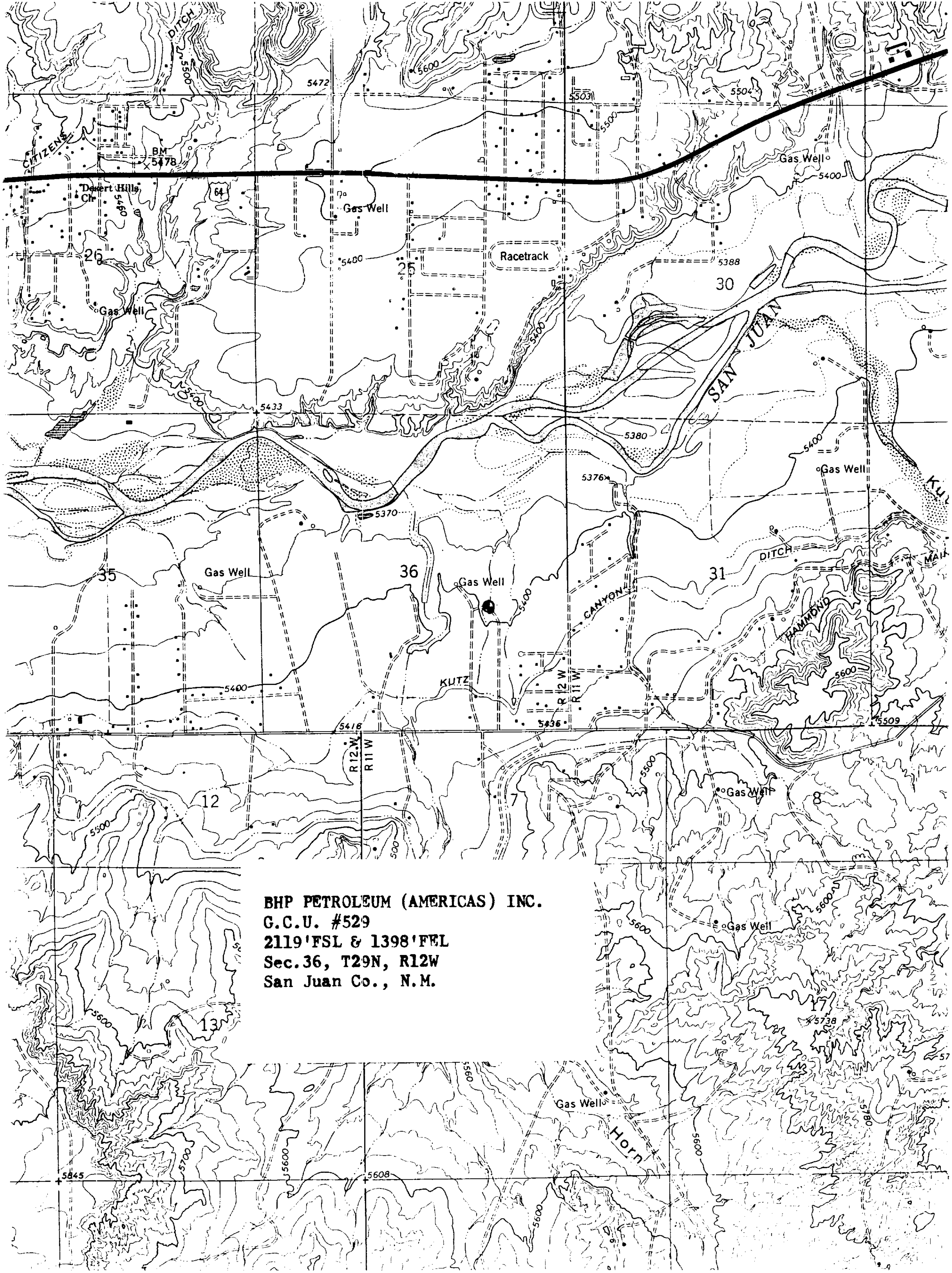
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

25 Jan.,1994
Date Surveyed
William E. Mahnke II
Signature & Seal of Professional Surveyor
WILLIAM E. MAHNKE II NEW MEXICO #8466
Certificate No. 8466

BHP PETROLEUM (AMERICAS) INC.
G.C.U. #529
2119'FSL & 1398'FEL
Sec.36, T29N, R12W
San Juan Co., N.M.







BHP PETROLEUM (AMERICAS) INC.
G.C.U. #529
2119'FSL & 1398'FEL
Sec.36, T29N, R12W
San Juan Co., N.M.

BHP PETROLEUM (AMERICAS) INC.
GALLEGOS CANYON UNIT #529
2119'FSL & 1398'FEL
Section 36 T29N R12W
SAN JUAN COUNTY, NEW MEXICO

TEN POINT PROGRAM

1. **Surface Formation:** NACIMIENTO

2. &

3. **Estimated Formation Tops:**

Formation	Top	Expected Production
Ojo Alamo	120'	
Kirtland	290'	
Fruitland	1100'	
Basal Fruitland Coal	1372'	GAS
Pictured Cliffs	1394'	GAS
TOTAL DEPTH	1560'	

4. **Casing and Cementing Program:** A string of 7" 20# K-55 ST&C casing will be set at ± 330' in an 8 3/4" hole and cemented to the surface in a single stage with 85 sx of Class "B" cement (yield=1.18 cf/sk) containing 3% $CaCl_2$ and 1/4 lb/sk celloflake. Slurry volume assumes 100% excess over calculated hole volume. If the cement job does not circulate to surface, cement will be topped off using 1" pipe down the 8-3/4" by 7" annulus. Centralizers will be run on the bottom four joints across the Ojo Alamo. If boulders are encountered while drilling the surface hole, no centralizers will be run. Minimum clearance between couplings and hole is 1.094". Prior to drilling out the shoe, casing and BOPE will be tested to a minimum of 2000 psig. Safety factors utilized in the design of this casing string were: burst=1.1; collapse=1.125; and tension=1.8 or 100,000 lb overpull, whichever is greater.

A production string of 4-1/2", 10.5# K-55 ST&C casing will be run from the surface to total depth in a 6-1/4" hole. This string will be cemented to the surface with a minimum of 148 sx of 50-50 pozmix containing 2% gel, 10% salt and 1/4 lb/sk celloflake (yield=1.26 cf/sk) followed by 50 sx of Class "B" cement containing fluid loss additive (yield=1.18 cf/sk). Slurry volume assumes a 50% excess over calculate hole volume. Cement volume is subject to change after review and recalculation of hole volume from the open hole calipers. If the primary cement job does not circulate to surface, the cement will be topped of using 1" pipe down the 6-1/4" by 4 1/2" annulus. Centralizers will be spaced such that a minimum of two are located above and two are located below the Basal Fruitland Coal. Minimum clearance between couplings and hole is 1.25"

Prior to perforating the casing for any attempted completion, the casing will be tested to a minimum of 2500 psig. Safety factors utilized in the design of this casing string were: burst=1.1; collapse=1.125; and tension=1.8 or 100,000 lb overpull, whichever is greater.

Following the completion of the cementing operations , a sundry notice detailing the cement volummes and densities for each job will be submitted.

5. **Pressure Control Equipment:** (See attached schematic diagram.) A minimum of a 2M psi BOP well control system will be utilized. BOP's and choke manifold will be installed and pressure tested before drilling out under surface casing and then will be checked daily as to mechanical operation condition. Ram type preventors will be tested to 2M psi. The annular preventor will be tested to 50% or its working pressure.

   A full opening internal blowout preventor or drill pipe safety valve will be on the drill floor at all times and will be capable of fitting all connections.

6. **Mud Program:** A fresh water low solids, non-dispersed mud system will be used to drill this well. Sufficient materials will be on location at all times to maintain mud propertied and to control any unforeseen lost circulation problems or abnormal pressures in the Farmington sands within the Kirtland formation. All drilling fluids will be contained in an earthen pit. At the completion of drilling, the drilling fluid will be hauled off to be used for another well. The remaining accumulation of solids in the pit will be allowed to dry and then covered.

   Mud program is as follows:

Interval (ft)	Mud Weight (ppg)	Viscosity (sec/qt)
0 - 330	9.0+	40 - 50
330 - 1000	8.4+	30 - 38
1000 - TD	9.3 or less	40 - 55

7. **Auxiliary Equipment:** An upper kelly cock with handle available will be utilized. At a minimum, a flow sensor will be installed in the system and the mud volume will be visually monitored constantly.

8. **Logging Program:** SP-DIL and GR-FDC-CNL logs will be run form TD to surface casing shoe depth.

   Coring Program: No cores are planned

Testing Program: No tests are planned.

Stimulation Program: Perforate the Pictured Cliffs with 4 JSPF and fracture stimulate with approximately 3000 lbs of frac sand per foot of perforated interval in either a 70 quality nitrogen foam system or a cross-linked gelled water system.

9. **Abnormal Pressure:** A possible water flow is expected in the Ojo Alamo. Although not expected, abnormal pressures are possible in the Farmington sand of the Kirtland formation.

Estimated Bottom Hole Pressure: 600 psig.

10. **Anticipated Starting Date:** As soon as all required approvals are received.

Duration of Operation: It is estimated that a total of 4 days will be required for drilling operations and 5 days for completion operations.