



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

February 8, 1991

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

Meridian Oil, Inc.
P.O. Box 4289
Farmington, NM 87499-4289

Attention: Peggy Bradfield

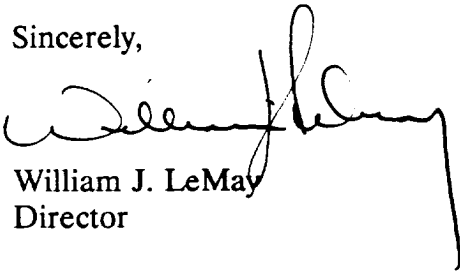
Administrative Order NSL-2987

Dear Ms. Bradfield:

Reference is made to your application dated January 16, 1991 for a non-standard coal gas well location for your San Juan 29-7 Unit Well No. 548 to be located 1860 feet from the South line and 1430 feet from the West line (Unit K) of Section 7, Township 29 North, Range 7 West, NMPM, Basin Fruitland Coal Gas Pool, Rio Arriba County, New Mexico. A previously approved 226.72-acre non-standard gas spacing and proration unit comprising Lots 5 through 8 and the E/2 W/2 (W/2 equivalent) of said Section 7 (Division Order No. R-9303, dated September 27, 1990) shall be dedicated to said well.

By the authority granted me under the provisions of Rule 8 of the Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool as promulgated by Division Order No. R-8768, the above-described unorthodox coal gas well location is hereby approved.

Sincerely,



William J. LeMay
Director

WJL/MES/ag

cc: Oil Conservation Division - Aztec
US Bureau of Land Management - Farmington

RECEIVED
FEB 14 1991
OIL CON. DIV.
DIST. 3



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 OLD HIAWAS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-0170

JEFF CAPRUTHERS
GOVERNOR

Date: 2-7-91

Atty: M. Segner

Oil Conservation Division
P.O. Box 2000
Santa Fe, NM 87504-2000

Re: Proposed HC _____
Proposed DHC _____
Proposed NSL X _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated 1-22-91
for the Mountain View S.T. 29-7 Unit #548
Operator Lease & Well No.

R-7-29N-7W and my recommendations are as follows:
Unit, S-T-R

Approve

Yours truly,

James Burch

MERIDIAN OIL
January 16, 1991

RECEIVED
JAN 22 1991

Mr. William LeMay
New Mexico Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87503

OIL CON. DIV.
DIST. 3

Re: San Juan 29-7 Unit #548
1860' FSL, 1430' FWL
Section 7, T-29-N, R-7-W, Rio Arriba County, NM

Gentlemen:

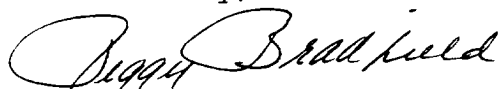
This is an application for administrative approval for non-standard location of the referenced well in the Fruitland Coal formation. This location is necessary due to archaeology and the configuration on this short section as shown on the attachments. Order R-9303 covers the 226.72 acres dedicated to this well.

The following are items for your consideration:

1. Application for Permit to Drill as filed with the Bureau of Land Management.
2. Completed C-102 showing well location, proration unit and leases within the unit.
3. Plat showing offset operators/owners.
4. 7.5 minute topographic map of well location, showing the orthodox windows for the west-half dedication; and enlargement of the map to define topographic features.
5. Archaeological report 90-DCI-101.
6. This well may be deemed economically unfeasible due to incremental directional drilling costs of \$ 82,275.
7. Affidavit of notification of offset operators/owners by certified mail.

Please let me know if you require further information.

Sincerely,



Peggy Bradfield
Regulatory Affairs

encs.

xc: Bureau of Land Management, Farmington District
New Mexico Oil Conservation Division, Aztec District

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL	5. LEASE NUMBER SF-078943-A
1b. TYPE OF WELL GAS	6. IF INDIAN, ALL. OR TRIBE NAME
2. OPERATOR EL PASO NATURAL GAS CO.	7. UNIT AGREEMENT NAME SAN JUAN 29-7 UNIT
3. ADDRESS & PHONE NO. OF OPERATOR P O BOX 4289 FARMINGTON, NM 87499	8. FARM OR LEASE NAME SAN JUAN 29-7 UNIT
4. LOCATION OF WELL 1860' FSL 1430' FWL	9. WELL NO. 548
10. FIELD, POOL, OR WILDCAT BASIN FRUITLAND COAL	11. SEC. T. R. M OR BLK. SEC. 7 T29N R07W NMPM
12. COUNTY RIO ARRIBA	13. STATE NM
14. DISTANCE IN MILES FROM NEAREST TOWN 1 MILE S OF NAVAJO CITY	15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE. 1430'
16. ACRES IN LEASE 226.72	17. ACRES ASSIGNED TO WELL
18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL DR. COMPL., OR APPLIED FOR ON THIS LEASE. 200'	19. PROPOSED DEPTH 3068'
20. ROTARY OR CABLE TOOLS ROTARY	21. ELEVATIONS (DF, FT, GR, ETC.) 6311' GL
22. APPROX. DATE WORK WILL START	23. PROPOSED CASING AND CEMENTING PROGRAM *SEE OPERATIONS PLAN
24. AUTHORIZED BY: <i>Sammy Boone</i> REG. DRILLING ENGR. JWC	RECEIVED JAN 22 1991 OIL CON. DIV. - 29-90 DIST. 3 DATE

PERMIT NO. _____ APPROVAL DATE _____
APPROVED BY _____ TITLE _____ DATE _____

NOTE: THIS FORMAT IS ISSUED IN LIEU OF US BLM FORM 3160-3.

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 4-1-89a

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

P.O. Drawer DD, Artesia, NM 88210

DISTRICT III

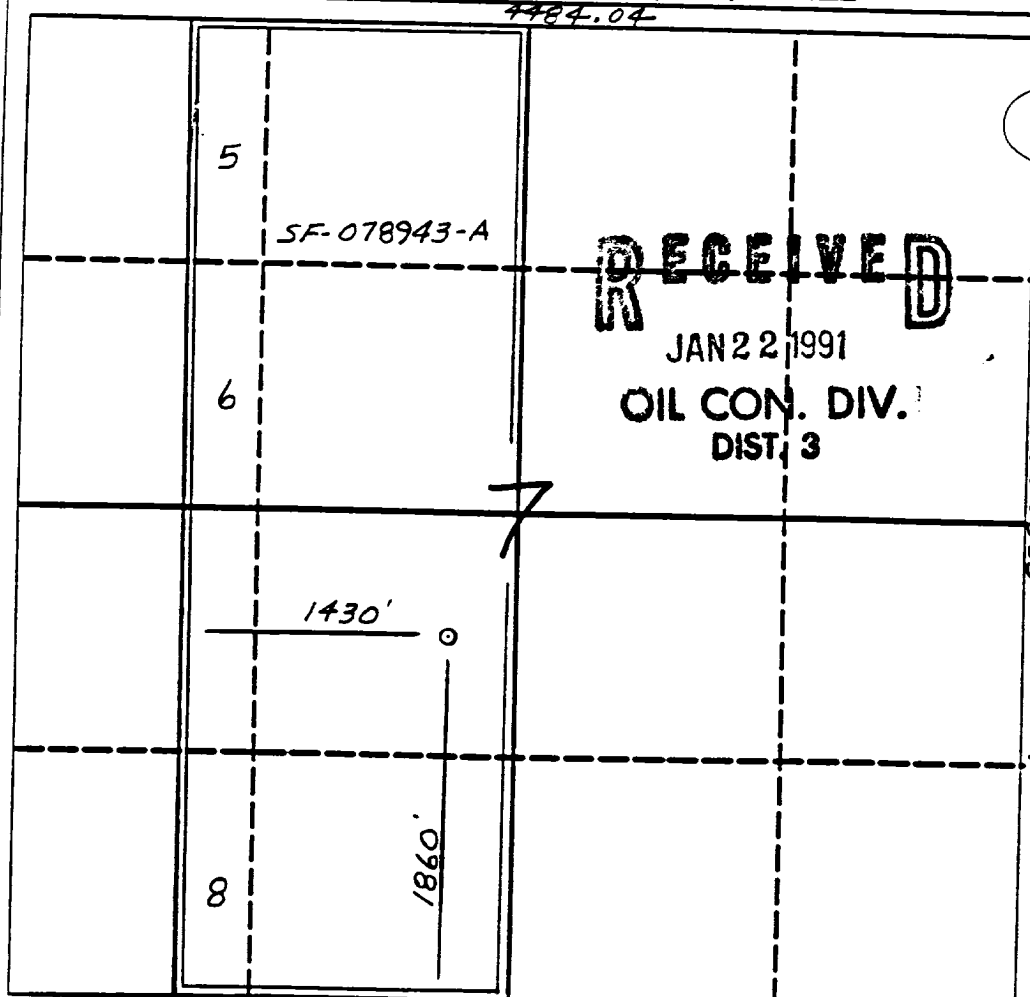
1000 Rio Bravos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator El Paso Natural Gas			Lease San Juan 29-7 Unit		Well No. 548
Unit Letter K	Section 7	Township 29 North	Range 7 West	County Rio Arriba	
Actual Footage Location of Well: 1860 feet from the South line and 1430 feet from the West line					
Ground level Elev. 6310'	Producing Formation Fruitland Coal		Pool Basin	Dedicated Acreage 226.72 Acres	

- Outline the acreage dedicated to the subject well by colored pencil or inkline marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, forced-pooling, etc.?
☒ 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 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 interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Signature

Peggy Bradfield

Printed Name

Regulatory Affairs

Position

El Paso Natural Gas

Company

10-30-90

Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes, actual surveys made by me or under my supervision, and that the same are correct to the best of my knowledge and belief. 9-18-90

Date Surveyed

Signature

Professional Seal
NEW MEXICO
6857
6857
REGISTERED LAND SURVEYOR

Carroll
Neale Edwards

Well Name: 548 SAN JUAN 29-7 UNIT
 Sec. 7 T29N R07W
 BASIN FRUITLAND COAL

1860'FSL 1430'FWL
 RIO ARRIBA NEW MEXICO
 Elevation 6310'GL

Formation tops: Surface- San Jose
 Ojo Alamo- 2050
 Kirtland- 2230
 Fruitland- 2735
 Fruitland Coal Top- 2837
 Fruitland Coal Base- 3067
 Pictured Cliffs- 3069

Total Depth- 3068

Logging Program: Mud logs from 2735 to total depth.

Mud Program:	Interval	Type	Weight	Visc.	Fl. Loss
	0 - 200	Spud	8.4 - 8.9	40-50	no contrc
	200 - 3068	Non-dispersed	8.4 - 9.5	30-60	no contrc

Casing Program:	Hole Size	Depth Interval	Csg. Size	Weight	Grade
	12 1/4"	0 - 200	8 5/8"	24.0#	K-40
	7 7/8"	0 - 3068	5 1/2"	15.5#	K-55
tubing Program:		0 - 3068	2 3/8"	4.7#	J-55

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

5 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 2230'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 5 1/2" x 2 3/8" x 11" 3000 psi xmas tree assemb

Cementing:

8 5/8" surface casing - cement with 211 sacks of class "B" cement with 1/4# flocele/sack and 3% calcium chloride (248 cu ft. of slurry, 200% excess to circulate to surface). WOC 12 hours. Test casing to 600 psi for 30 minutes.

5 1/2" production casing - lead with 493 sacks of 65/35 class "B" poz with 6% gel, 2% calcium chloride and 1/2 cu.ft. Perlite/sack (10.3 gallons of water/sack) tail with 100 sacks of class "B" with 2% calcium chloride. 1069 cu ft. of slurry, 100% excess to circulate to surface. If hole conditions permit, a 600 ft spacer will be run ahead of the cement slurry to avoid mud contamination of the cement. WOC 12 hours. If cement does not circulate to surface, a temperature log will be run after 8 hours to determine TOC.

BOP and Tests:

Surface to TD - 11" 2000 psi(minimum) double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600 psi for 30 minutes.

Completion - 6" 2000 psi(minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams to 3000 psi for 15 minutes.

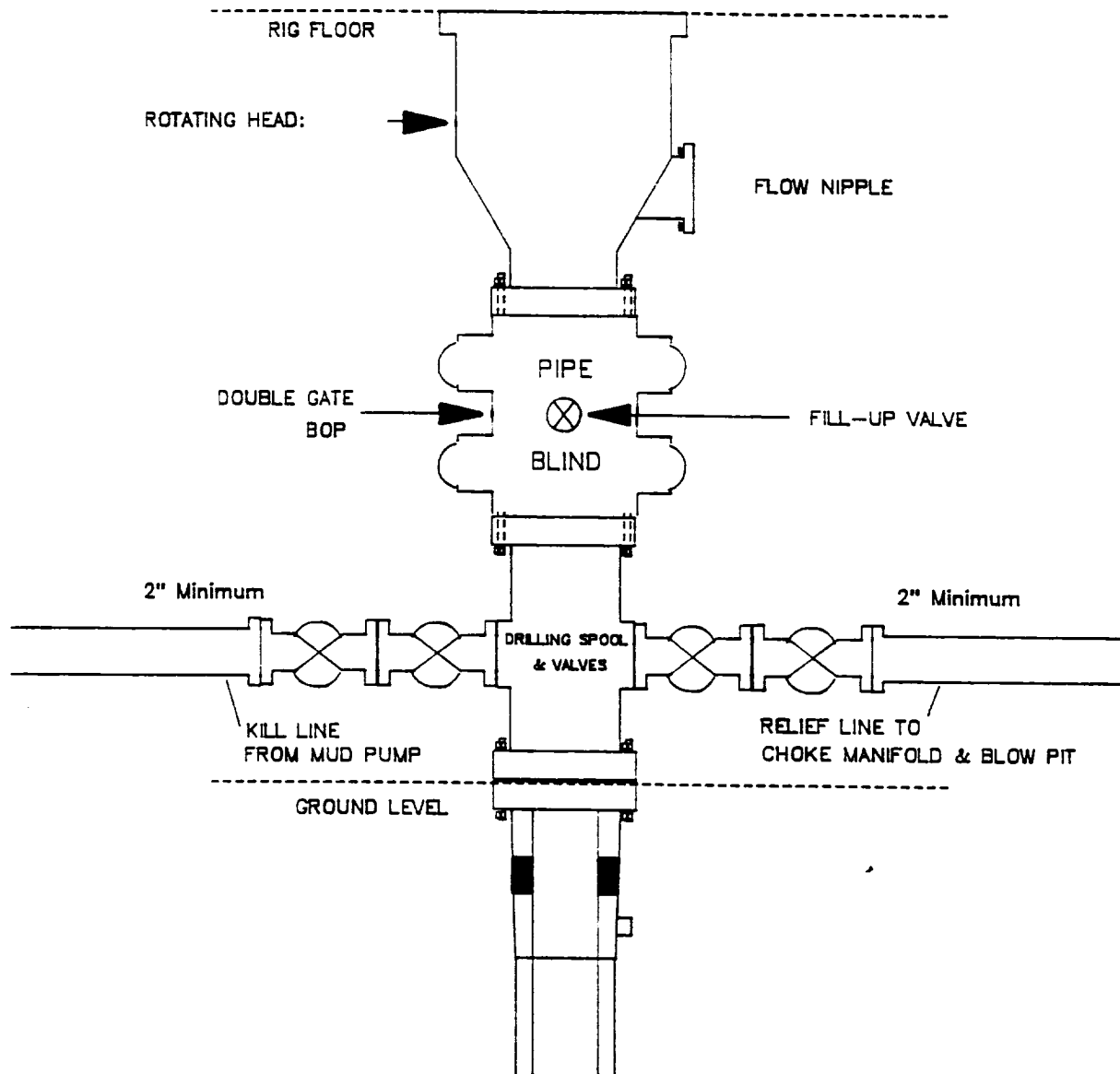
From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated at least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional Information:

- * The Fruitland coal formation will be completed.
- * Anticipated Fruitland pore pressure is 1189 psi.
- * This gas is dedicated.
- * The W/2 of Section 7 is dedicated to this well.
- * New casing will be utilized.
- * Cementing Contractor will provide the BLM with a chronological log including the pump rate and pressure, and the slurry density and volume for all cement jobs.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

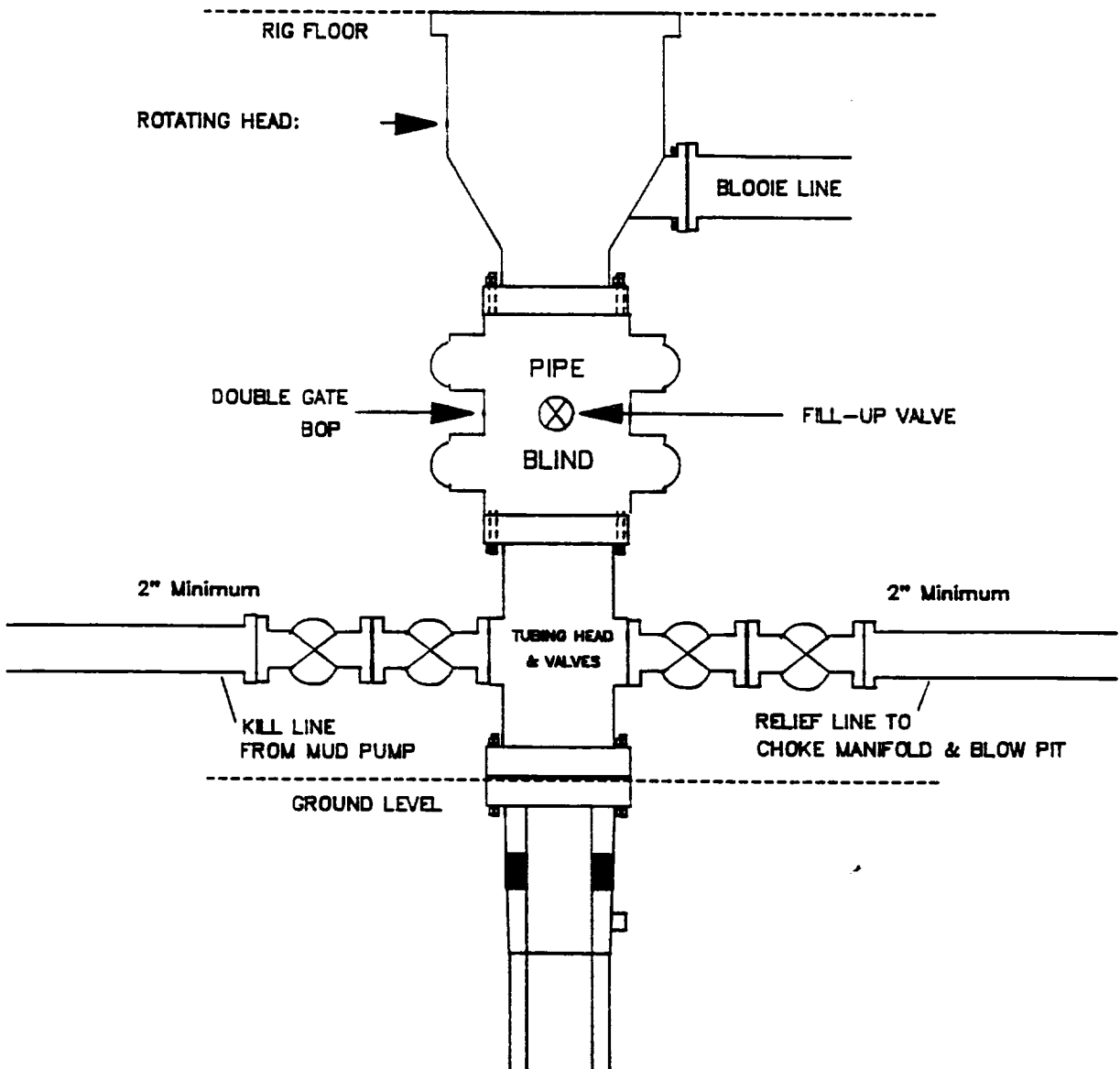
MERIDIAN OIL INC.
Drilling Rig
BOP Configuration



Minimum BOP installation for a typical Fruitland Coal well from surface to Total Depth. 11" Bore (10" Nominal), 2000psi minimum working pressure double gate BOP to be equipped with blind and pipe rams. A Schaffer Type 50 or equivalent rotating head to be installed on the top of BOP. All equipment is 2000psi working pressure/or greater.

Figure #1

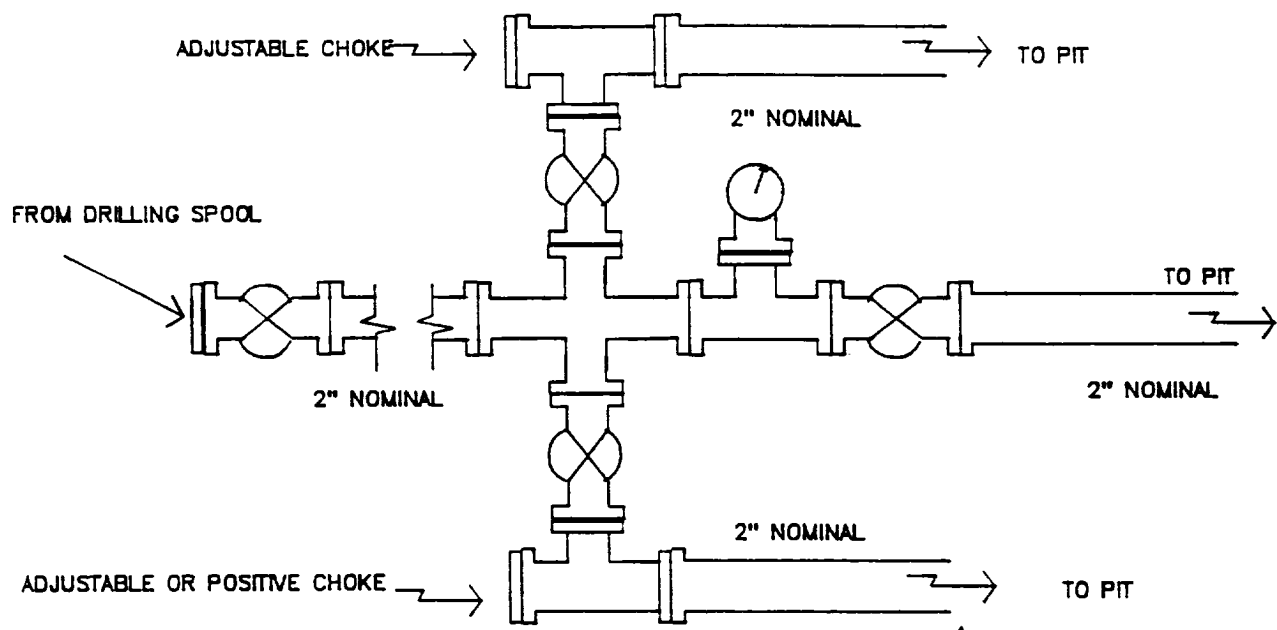
MERIDIAN OIL INC.
Completion Rig
BOP Configuration



Minimum BOP installation for Completion Operations. 7 1/16" Bore (6" Nominal), 2000psi minimum working pressure double gate BOP to be equipped with blind and pipe rams.

Figure #2

MERIDIAN OIL INC.
Typical Fruitland Coal Well
Choke Manifold Configuration



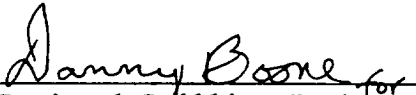
Minimum choke manifold installation for a typical Fruitland Coal well from surface to Total Depth. 2", 2000psi working pressure equipment with two chokes.

Figure #3

Multi-Point Surface Use Plan
El Paso Natural Gas Co.
San Juan 29-7 Unit #548

1. Existing Roads - Refer to Map No. 1. Existing roads used to access the proposed location will be properly maintained for the duration of the project. Bureau of Land Management right-of-way has been applied for as shown on Map No. 1.
2. Planned Access Road - Refer to Map No. 1. None required.
3. Location of Existing Wells - Refer to Map No. 1A.
4. Location of Existing and/or Proposed Facilities if Well is Productive -
 - a. On the Well Pad - Refer to Plat No. 1, anticipated production facilities plat.
 - b. Off the Well Pad - Anticipated facilities off the well pad will be applied for as required.
5. Location and Type of Water Supply - Water will be hauled by truck for the proposed project and will be obtained from San Juan 29-6 Water Well #1 located in SW/4 Section 28, T-29-N, R-06-W, New Mexico.
6. Source of Construction Materials - If construction materials are required for the proposed project, such materials will be obtained from a commercial quarry.
7. Methods of Handling Waste Materials - All garbage and trash materials will be removed from the site for proper disposal. A portable toilet will be provided for human waste and serviced in a proper manner. If 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 waste materials into the watershed. All earthen pits will be so constructed as to prevent leakage from occurring; no earthen pit will be located on natural drainage. Hazardous waste will be disposed of in accordance with Federal Regulations.
8. Ancillary Facilities - None anticipated.
9. Wellsite Layout - Refer to the location diagram (Plat No. 2) and to the wellsite cut and fill diagram (Plat No. 2A). The Blow Pit will be constructed with a 2'/160' grade to allow positive drainage to the Reserve Pit and prevent standing liquids in the Blow Pit.

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 reseeded operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeded operations will be performed during the time period set forth by the responsible government agency. The permanent location facilities will be painted as designated by the responsible government agency.
11. Surface Ownership - Bureau of Land Management.
12. Other Information - Environmental stipulations as outlined by the responsible government agency will be adhered to. Refer to the archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
13. Operator's Representative and Certification - Meridian Oil Regional Drilling Manager, Post Office Box 4289, Farmington, NM 87499, telephone (505) 326-9700. 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 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 El Paso Natural Gas Co. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.


Regional Drilling Engineer JWC

JWC/adw

Fee Lands

San Juan 29-7 Unit

SJ 29-7 #547

SJ 29-7 #548

Map 1

San Juan 29-7 Unit #548

T29N, R7W

No New Construction

3000' Existing BLM Roads

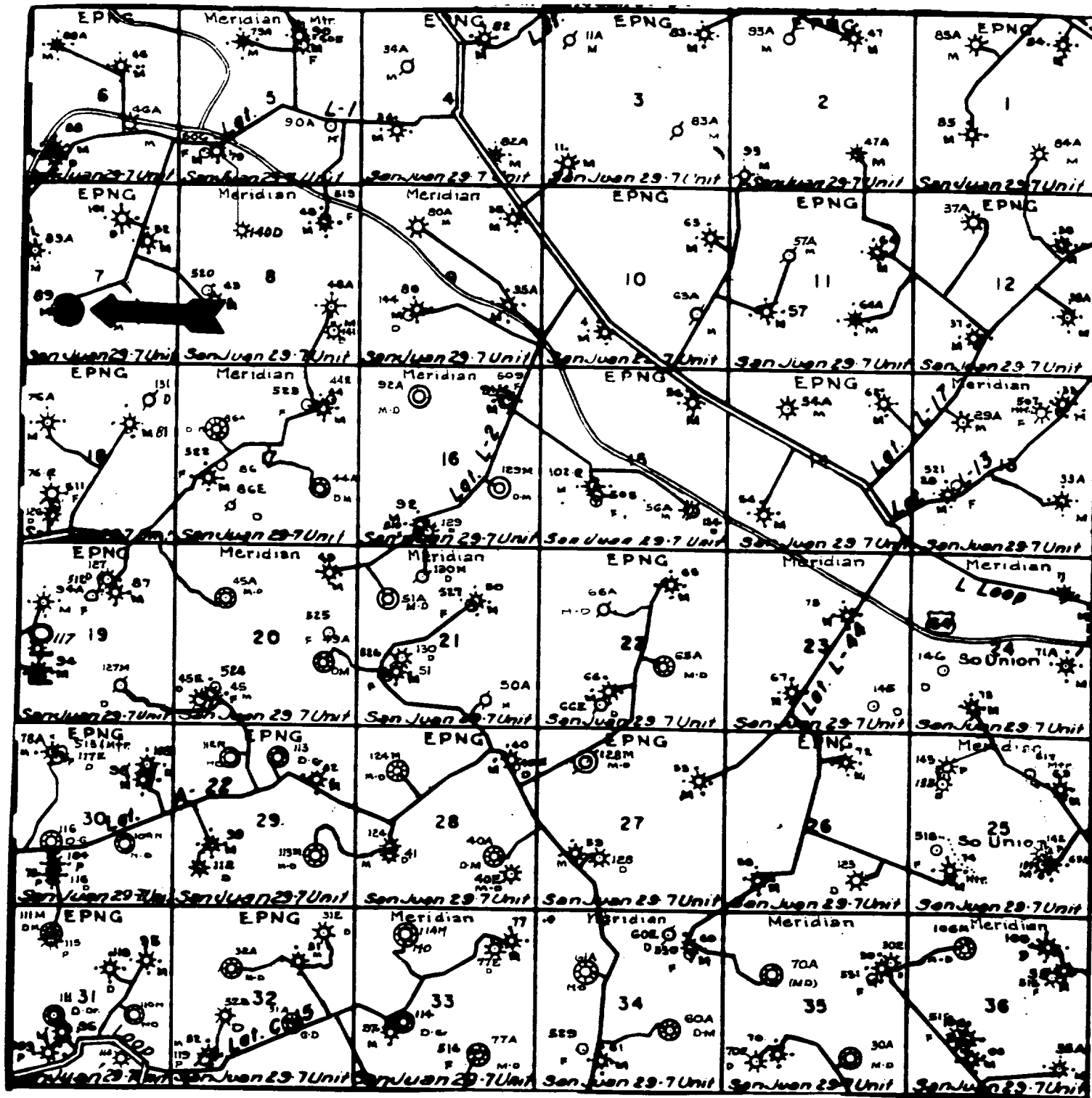
within Unit Boundaries

San Juan 29-7 Unit #548

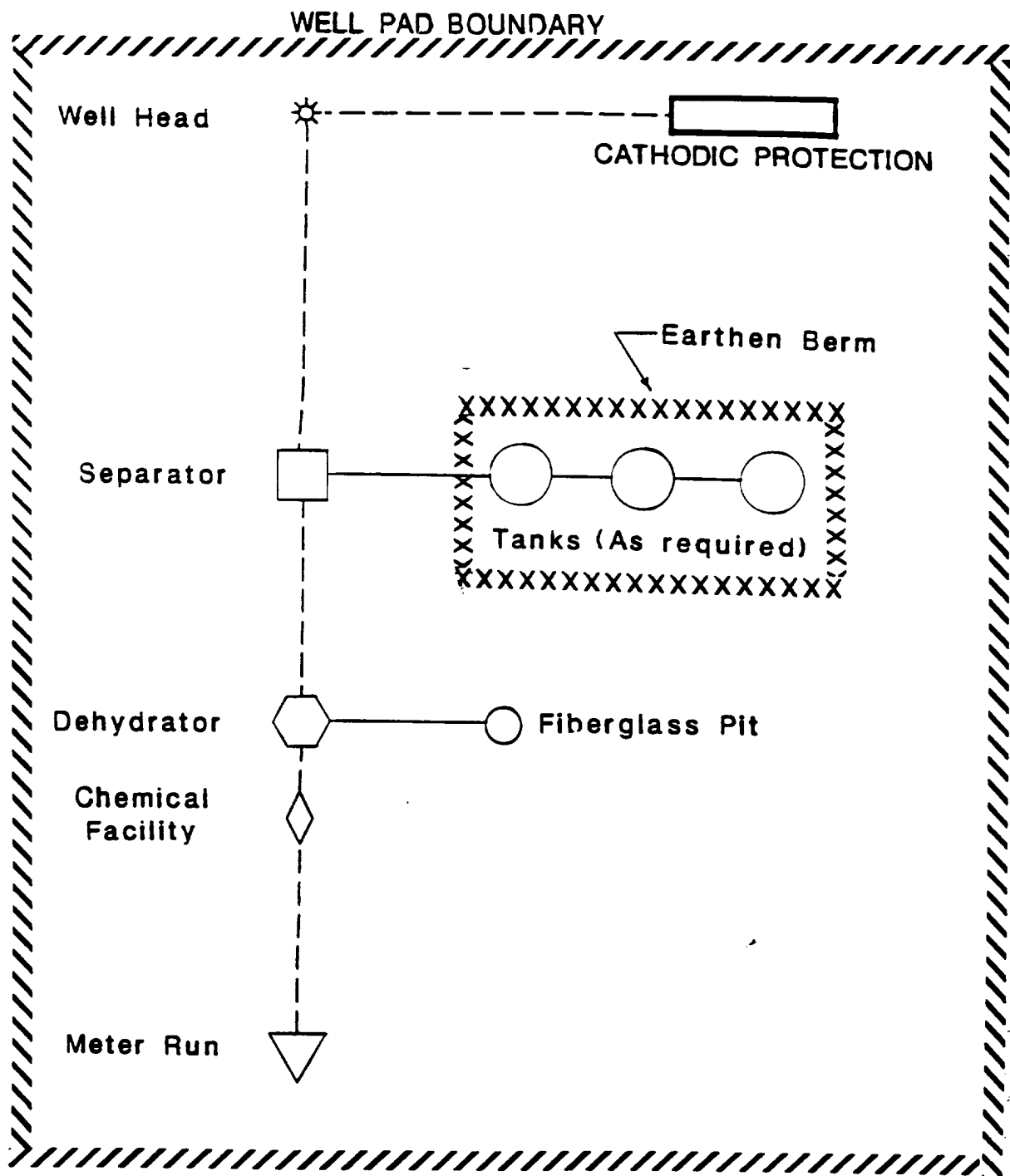
No New Construction

3000' Existing BLM Roads

within Unit Boundries



MERIDIAN OIL INC.
 Pipeline Map
 T-29-N, R-07-W
 Rio Arriba County, New Mexico
 Map 1A



PLAT #1

MERIDIAN OIL
ANTICIPATED
PRODUCTION FACILITIES
FOR A
FRUITLAND WELL

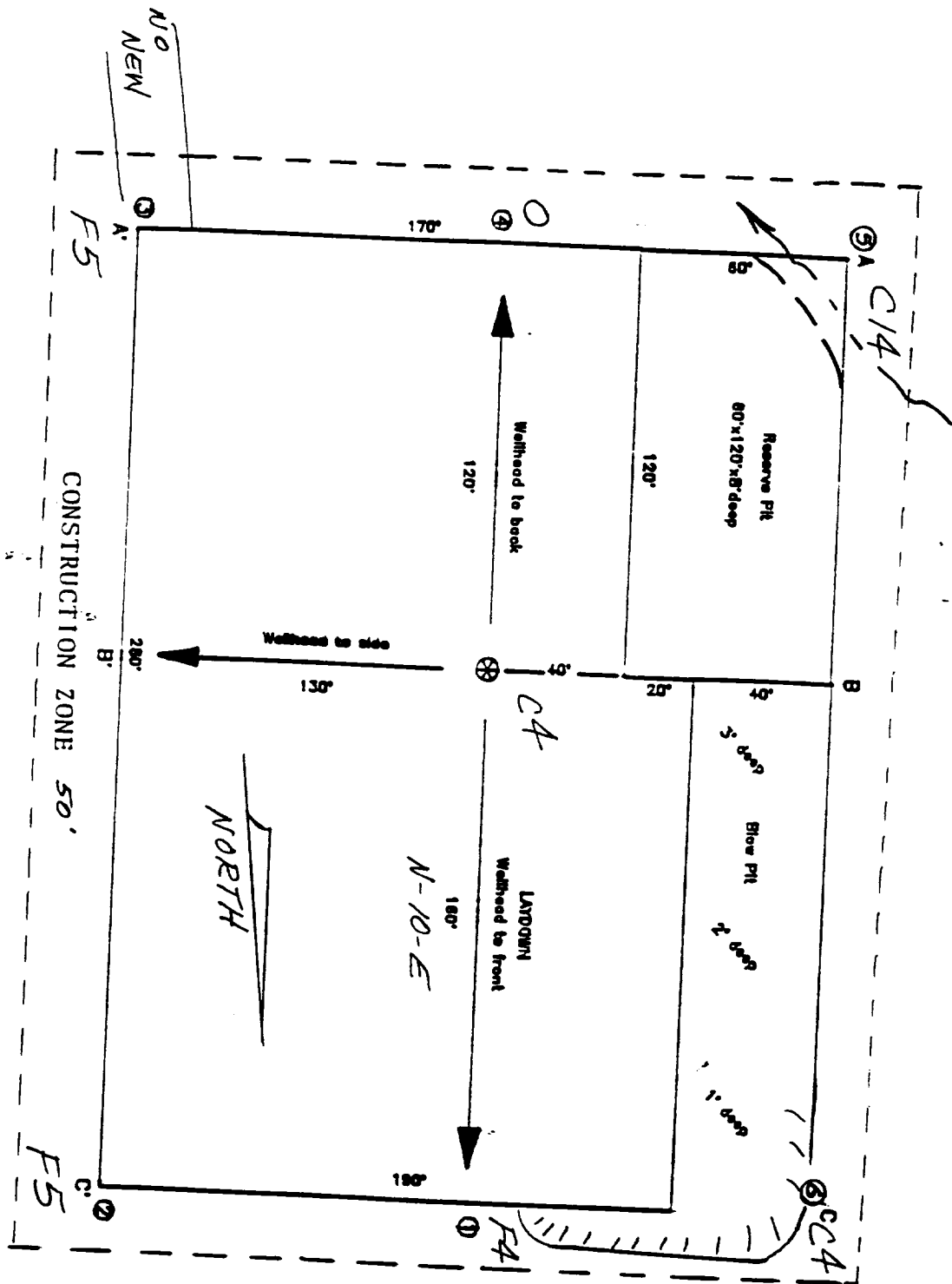


EXHIBIT: Plot 2

Name: EPNG San Juan 29-7 Unit #548

Footage: 1860' FSL, 1430' FWL,

Sec 7 T- 29 -N, R- 7 -W NMPPM

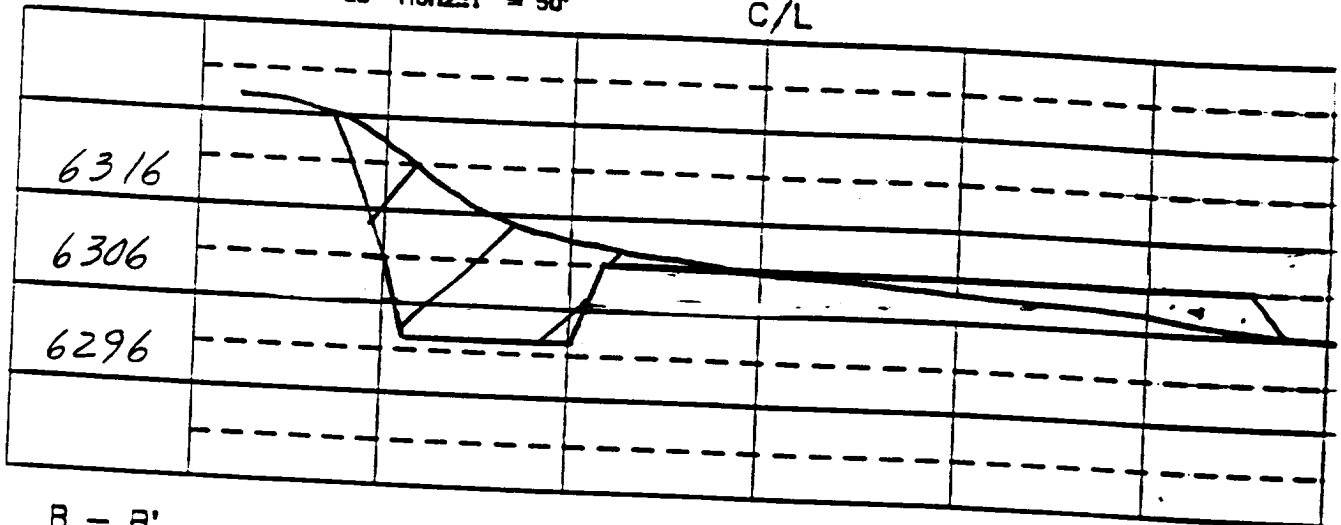
Co. Rio Arriba St. N.M.

Elevation: 6310' Date: 9-18-90

Plot 2
2/3/90

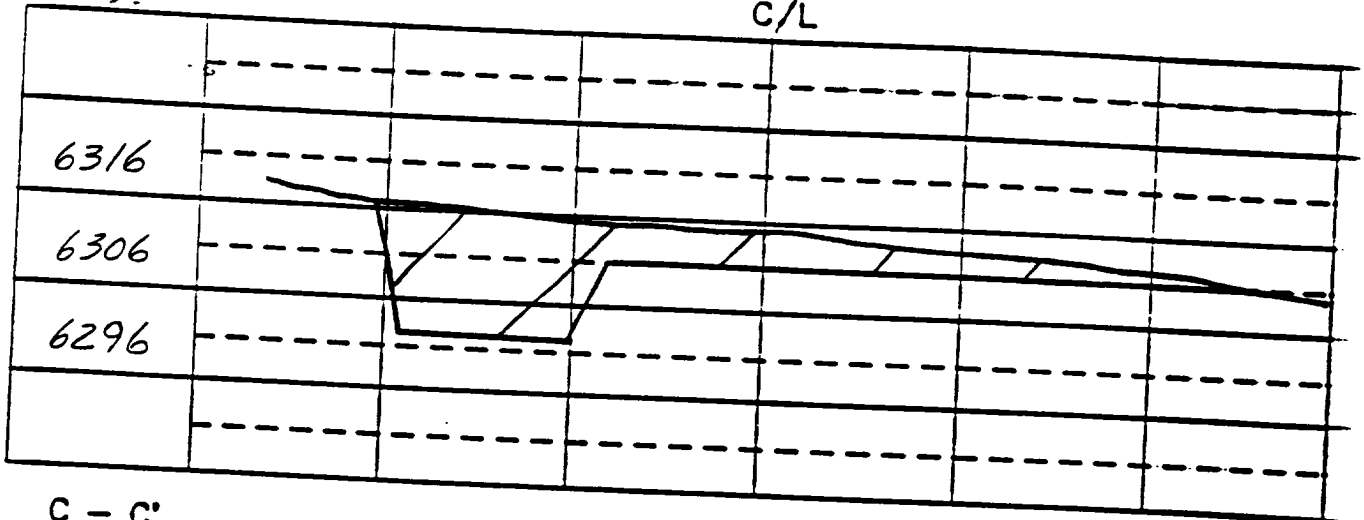
A - A' Vert: 1" = 20' Horiz: 1" = 50'

C/L



B - B'

C/L



C - C'

C/L

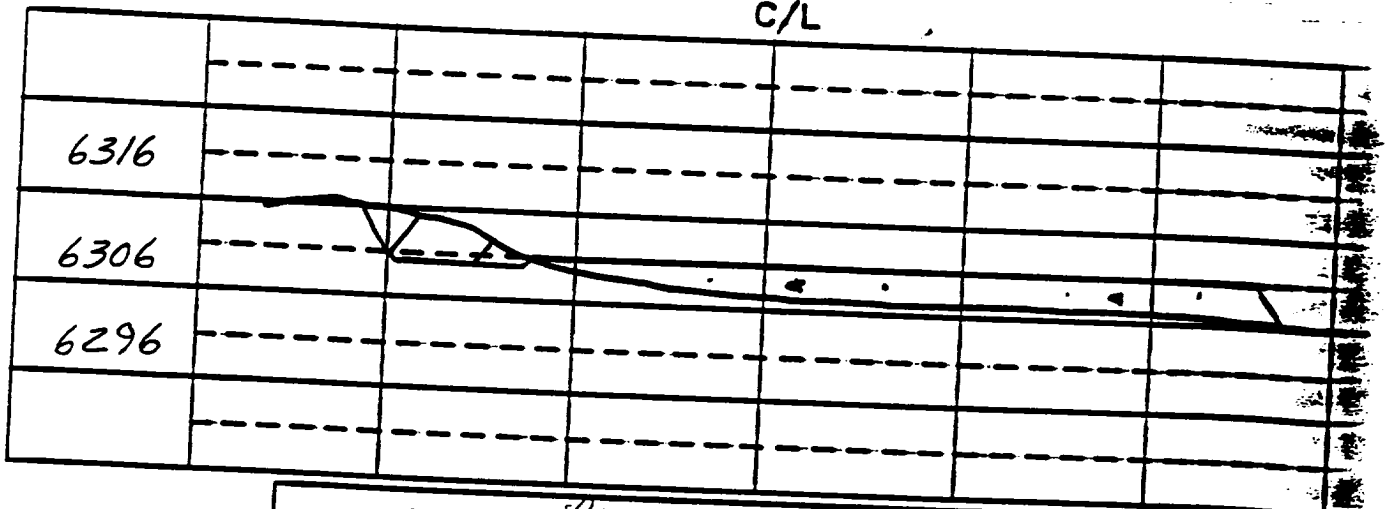


EXHIBIT: Plot 2A

Name: EPNG San Juan 29-7 Unit #548

Footage: 1860' FSL, 1430' FWL,

Sec 7 T-29 N.R-7 W-NMPM

Co. Rio Arriba St. N.M.

Elevation: 6310' Date: 9-18-90

Plot no.

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 4-1-89

OIL CONSERVATION DIVISION

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

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator El Paso Natural Gas			Lease San Juan 29-7 Unit		Well No. 548
Unit Letter K	Section 7	Township 29 North	Range 7 West	County Rio Arriba	
Actual Footage Location of Well:					
1860 feet from the South line and		1430 feet from the West line			
Ground level Elev. 6310'		Producing Formation Fruitland Coal		Pool Basin	
					Dedicated Acreage 226.72 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or machine 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 communication, unitization, force-pooling, etc.?
☒ 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 necessary.)
No allowable will be assigned to the well until all interests have been consolidated (by communication, unitization, force-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.

4484.04

5	SF-078943-A	Order R-9303 for NSP
6		
7	1430'	
8	1860'	

4536.84

OPERATOR CERTIFICATION

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

Signature
Peggy Bradfield

Printed Name
Peggy Bradfield

Position
Regulatory Affairs

Company
El Paso Natural Gas

Date
1-16-91

Date

SURVEYOR CERTIFICATION

I hereby certify that the well location on this plat was plotted from field notes actual surveys made by me or under my supervision, and that the same are correct to the best of my knowledge and belief. 9-18-90

Date Surveyed

Signature
Neale C. Edwards
Professional

6857
6857

Certified True and Correct

Neale C. Edwards

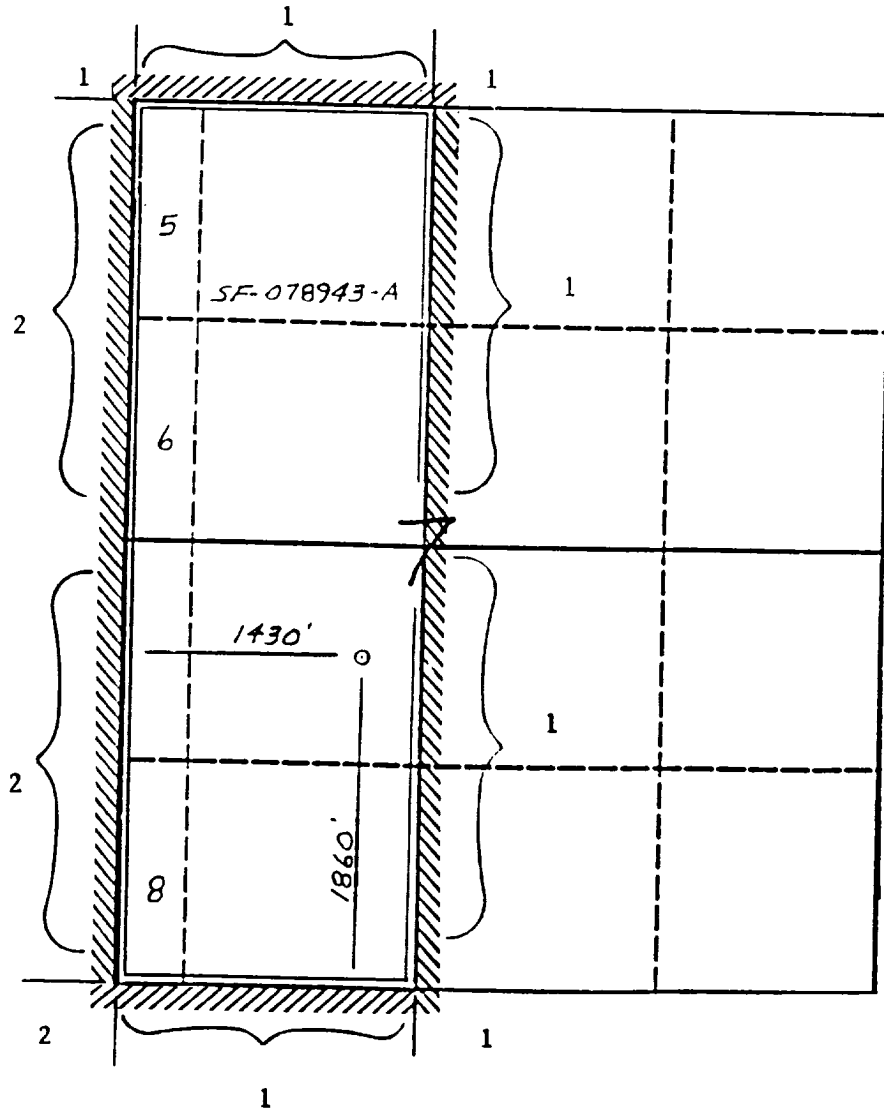
1
MERIDIAN OIL INC

Well Name San Juan 29-7 Unit # 548

Footage 1860' FSL; 1430' FWL

APPLICATION FOR NON-STANDARD LOCATION

County Rio Arriba State New Mexico Section 7 Township 29N Range 7 W



Remarks 1) Meridian Oil Inc.

2) Amoco Production Co.

This is a detailed topographic map of a region in New Mexico, centered on the Manzanares area. The map features a grid system with coordinates ranging from 107° 37' 30" W to 107° 26' 00" W and 36° 45' N to 36° 36' 00" N. A scale bar at the top indicates distances up to 570,000 feet. The map shows a 'STANDARD SECTION' and a 'MERIDIAN OIL' field. Key geographical features include the 'Manzanares River' and 'Manzanares Mesa'. The map is divided into sections by a dashed line labeled 'SAN JUAN CO' and 'RIO ARriba DO'. Various elevation points are marked, such as 6281, 6282, 6283, 6284, 6285, 6286, 6287, 6288, 6289, 6290, 6291, 6292, 6293, 6294, 6295, 6296, 6297, 6298, 6299, 6300, 6301, 6302, 6303, 6304, 6305, 6306, 6307, 6308, 6309, 6310, 6311, 6312, 6313, 6314, 6315, 6316, 6317, 6318, 6319, 6320, 6321, 6322, 6323, 6324, 6325, 6326, 6327, 6328, 6329, 6330, 6331, 6332, 6333, 6334, 6335, 6336, 6337, 6338, 6339, 6340, 6341, 6342, 6343, 6344, 6345, 6346, 6347, 6348, 6349, 6350, 6351, 6352, 6353, 6354, 6355, 6356, 6357, 6358, 6359, 6360, 6361, 6362, 6363, 6364, 6365, 6366, 6367, 6368, 6369, 6370, 6371, 6372, 6373, 6374, 6375, 6376, 6377, 6378, 6379, 6380, 6381, 6382, 6383, 6384, 6385, 6386, 6387, 6388, 6389, 6390, 6391, 6392, 6393, 6394, 6395, 6396, 6397, 6398, 6399, 6400, 6401, 6402, 6403, 6404, 6405, 6406, 6407, 6408, 6409, 6410, 6411, 6412, 6413, 6414, 6415, 6416, 6417, 6418, 6419, 6420, 6421, 6422, 6423, 6424, 6425, 6426, 6427, 6428, 6429, 6430, 6431, 6432, 6433, 6434, 6435, 6436, 6437, 6438, 6439, 6440, 6441, 6442, 6443, 6444, 6445, 6446, 6447, 6448, 6449, 6450, 6451, 6452, 6453, 6454, 6455, 6456, 6457, 6458, 6459, 6460, 6461, 6462, 6463, 6464, 6465, 6466, 6467, 6468, 6469, 6470, 6471, 6472, 6473, 6474, 6475, 6476, 6477, 6478, 6479, 6480, 6481, 6482, 6483, 6484, 6485, 6486, 6487, 6488, 6489, 6490, 6491, 6492, 6493, 6494, 6495, 6496, 6497, 6498, 6499, 6500, 6501, 6502, 6503, 6504, 6505, 6506, 6507, 6508, 6509, 6510, 6511, 6512, 6513, 6514, 6515, 6516, 6517, 6518, 6519, 6520, 6521, 6522, 6523, 6524, 6525, 6526, 6527, 6528, 6529, 6530, 6531, 6532, 6533, 6534, 6535, 6536, 6537, 6538, 6539, 6540, 6541, 6542, 6543, 6544, 6545, 6546, 6547, 6548, 6549, 6550, 6551, 6552, 6553, 6554, 6555, 6556, 6557, 6558, 6559, 6560, 6561, 6562, 6563, 6564, 6565, 6566, 6567, 6568, 6569, 6570, 6571, 6572, 6573, 6574, 6575, 6576, 6577, 6578, 6579, 6580, 6581, 6582, 6583, 6584, 6585, 6586, 6587, 6588, 6589, 6590, 6591, 6592, 6593, 6594, 6595, 6596, 6597, 6598, 6599, 6600, 6601, 6602, 6603, 6604, 6605, 6606, 6607, 6608, 6609, 6610, 6611, 6612, 6613, 6614, 6615, 6616, 6617, 6618, 6619, 6620, 6621, 6622, 6623, 6624, 6625, 6626, 6627, 6628, 6629, 6630, 6631, 6632, 6633, 6634, 6635, 6636, 6637, 6638, 6639, 6640, 6641, 6642, 6643, 6644, 6645, 6646, 6647, 6648, 6649, 6650, 6651, 6652, 6653, 6654, 6655, 6656, 6657, 6658, 6659, 6660, 6661, 6662, 6663, 6664, 6665, 6666, 6667, 6668, 6669, 6670, 6671, 6672, 6673, 6674, 6675, 6676, 6677, 6678, 6679, 6680, 6681, 6682, 6683, 6684, 6685, 6686, 6687, 6688, 6689, 6690, 6691, 6692, 6693, 6694, 6695, 6696, 6697, 6698, 6699, 6700, 6701, 6702, 6703, 6704, 6705, 6706, 6707, 6708, 6709, 6710, 6711, 6712, 6713, 6714, 6715, 6716, 6717, 6718, 6719, 6720, 6721, 6722, 6723, 6724, 6725, 6726, 6727, 6728, 6729, 6730, 6731, 6732, 6733, 6734, 6735, 6736, 6737, 6738, 6739, 6740, 6741, 6742, 6743, 6744, 6745, 6746, 6747, 6748, 6749, 6750, 6751, 6752, 6753, 6754, 6755, 6756, 6757, 6758, 6759, 6760, 6761, 6762, 6763, 6764, 6765, 6766, 6767, 6768, 6769, 6770, 6771, 6772, 6773, 6774, 6775, 6776, 6777, 6778, 6779, 6780, 6781, 6782, 6783, 6784, 6785, 6786, 6787, 6788, 6789, 6790, 6791, 6792, 6793, 6794, 6795, 6796, 6797, 6798, 6799, 6800, 6801, 6802, 6803, 6804, 6805, 6806, 6807, 6808, 6809, 6810, 6811, 6812, 6813, 6814, 6815, 6816, 6817, 6818, 6819, 6820, 6821, 6822, 6823, 6824, 6825, 6826, 6827, 6828, 6829, 6830, 6831, 6832, 6833, 6834, 6835, 6836, 6837, 6838, 6839, 6840, 6841, 6842, 6843, 6844, 6845, 6846, 6847, 6848, 6849, 6850, 6851, 6852, 6853, 6854, 6855, 6856, 6857, 6858, 6859, 6860, 6861, 6862, 6863, 6864, 6865, 6866, 6867, 6868, 6869, 6870, 6871, 6872, 6873, 6874, 6875, 6876, 6877, 6878, 6879, 6880, 6881, 6882, 6883, 6884, 6885, 6886, 6887, 6888, 6889, 6890, 6891, 6892, 6893, 6894, 6895, 6896, 6897, 6898, 6899, 6900, 6901, 6902, 6903, 6904, 6905, 6906, 6907, 6908, 6909, 6910, 6911, 6912, 6913, 6914, 6915, 6916, 6917, 6918, 6919, 6920, 6921, 6922, 6923, 6924, 6925, 6926, 6927, 6928, 6

Topographic map of the Manzanares area in New Mexico. The map shows Manzanares Peak and Manzanares Mesa. The Rio Arriba is visible, flowing through the area. The map is overlaid with a grid showing coordinates in feet and meters. Key features include:

- Manzanares Peak:** Located in the upper central part of the map, with a spot elevation of 6621.
- Manzanares Mesa:** Located in the lower right part of the map, with a spot elevation of 6703.
- Rio Arriba:** Flows through the center of the map, with a spot elevation of 6605.
- San Juan Co and Rio Arriba Co:** The map is divided into these two counties by a vertical line.
- GOVERNADOR:** A location labeled in the lower right corner, with a spot elevation of 6972.
- Contour Lines:** Various contour lines are shown, indicating elevation changes.
- Spot Elevations:** Numerous spot elevations are marked, such as 6621, 6605, 6685, 6723, 6703, 6972, 6958, 6907, 6913, 6835, 6802, 6776, 6736, 6716, 6686, 6666, 6644, 6622, 6602, 6585, 6565, 6545, 6525, 6505, 6485, 6465, 6445, 6425, 6405, 6385, 6365, 6345, 6325, 6305, 6285, 6265, 6245, 6225, 6205, 6185, 6165, 6145, 6125, 6105, 6085, 6065, 6045, 6025, 6005, 5985, 5965, 5945, 5925, 5905, 5885, 5865, 5845, 5825, 5805, 5785, 5765, 5745, 5725, 5705, 5685, 5665, 5645, 5625, 5605, 5585, 5565, 5545, 5525, 5505, 5485, 5465, 5445, 5425, 5405, 5385, 5365, 5345, 5325, 5305, 5285, 5265, 5245, 5225, 5205, 5185, 5165, 5145, 5125, 5105, 5085, 5065, 5045, 5025, 5005, 4985, 4965, 4945, 4925, 4905, 4885, 4865, 4845, 4825, 4805, 4785, 4765, 4745, 4725, 4705, 4685, 4665, 4645, 4625, 4605, 4585, 4565, 4545, 4525, 4505, 4485, 4465, 4445, 4425, 4405, 4385, 4365, 4345, 4325, 4305, 4285, 4265, 4245, 4225, 4205, 4185, 4165, 4145, 4125, 4105, 4085, 4065, 4045, 4025, 4005, 3985, 3965, 3945, 3925, 3905, 3885, 3865, 3845, 3825, 3805, 3785, 3765, 3745, 3725, 3705, 3685, 3665, 3645, 3625, 3605, 3585, 3565, 3545, 3525, 3505, 3485, 3465, 3445, 3425, 3405, 3385, 3365, 3345, 3325, 3305, 3285, 3265, 3245, 3225, 3205, 3185, 3165, 3145, 3125, 3105, 3085, 3065, 3045, 3025, 3005, 2985, 2965, 2945, 2925, 2905, 2885, 2865, 2845, 2825, 2805, 2785, 2765, 2745, 2725, 2705, 2685, 2665, 2645, 2625, 2605, 2585, 2565, 2545, 2525, 2505, 2485, 2465, 2445, 2425, 2405, 2385, 2365, 2345, 2325, 2305, 2285, 2265, 2245, 2225, 2205, 2185, 2165, 2145, 2125, 2105, 2085, 2065, 2045, 2025, 2005, 1985, 1965, 1945, 1925, 1905, 1885, 1865, 1845, 1825, 1805, 1785, 1765, 1745, 1725, 1705, 1685, 1665, 1645, 1625, 1605, 1585, 1565, 1545, 1525, 1505, 1485, 1465, 1445, 1425, 1405, 1385, 1365, 1345, 1325, 1305, 1285, 1265, 1245, 1225, 1205, 1185, 1165, 1145, 1125, 1105, 1085, 1065, 1045, 1025, 1005, 985, 965, 945, 925, 905, 885, 865, 845, 825, 805, 785, 765, 745, 725, 705, 685, 665, 645, 625, 605, 585, 565, 545, 525, 505, 485, 465, 445, 425, 405, 385, 365, 345, 325, 305, 285, 265, 245, 225, 205, 185, 165, 145, 125, 105, 85, 65, 45, 25, 5.

107° 37' 30" 266000mE
36° 45'

267

268 570000 FEET

4070000mN

2090000
FEET

40694

4068

40674

4066

A CULTURAL RESOURCES INVENTORY OF
THE SAN JUAN 29-7 UNIT NO. 548
WELL PAD AND PIPELINE
LOCATED AT THE BASE OF MAZANARES MESA,
RIO ARriba COUNTY, NEW MEXICO

SAN JUAN 29-7 UNIT NO. 548
1860' FSL, 1430' FWL, SECTION 7, T29N, R.7W

CONDUCTED FOR:
MERIDIAN OIL, INC.

PREPARED BY:
DOUGLAS D. DYKEMAN

MERIDIAN OIL

OCT 12 1990
FARMINGTON, NEW MEXICO
Construction Supervisor

SUBMITTED BY:
LARRY L. BAKER



DAGGETT & CHENAULT, INC
OIL & GAS PROPERTY MANAGEMENT
3539 E. 30th STREET, SUITE 7B
FARMINGTON, N.M. 87401



REPORT NO. 90-DCI-101
BUREAU OF LAND MANAGEMENT CULTURAL USE PERMIT NO. 91-2920-90-B

OCTOBER 10, 1990

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INTRODUCTION

On September 18, 1990, an archaeological survey of the proposed San Juan 29-7 No. 548 well pad and pipeline was conducted by personnel of Daggett and Chenault, Inc. Archaeological Services Department. The project area is located on lands within Rio Arriba County, New Mexico administered by the Farmington Resource Area of the Bureau of Land Management's Albuquerque District. A Class III cultural resources inventory of the proposed well pad and pipeline was completed under the authority of Bureau of Land Management Cultural Resource Use Permit No. 91-2920-90-B.

Greater awareness and public concern for the preservation of our cultural heritage has prompted legislation by federal, state, and tribal governments to protect historical, ethnographic, and archaeological cultural resources. Cultural resource management investigations are mandated and authorized by federal legislation and stipulations. These regulatory acts include: 1) the Federal Antiquities Act of 1906 (P.L. 59-209); 2) the National Historic Preservation Act of 1966 (P.L. 89-665); 3) the National Environmental Protection Act of 1969 (P.L., 91-190); 4) Executive Order 11593: "Protection and Enhancement of the Cultural Environment", 1971 (36 F.R. 8921); 5) the Archaeological Resources Protection Act of 1979 (P.L. 96-95); and 6) the American Indian Religious Freedom Act of 1979 (P.L. 95-341). Work conducted in conjunction with this project is intended to comply with the statutes contained in these laws.

The project was undertaken at the request of Charles Werner of Meridian Oil and Vicky Smith, who was acting as permit agent for Meridian Oil, Inc. The project was administered by Larry L. Baker, Director of Archaeological Services, Daggett and Chenault, Inc. The survey was conducted by Douglas D. Dykeman and Julie Burns, Staff Archaeologists. The project area was staked prior to the time of the survey and the archaeologists were accompanied in the field by representatives of Meridian Oil, Inc., Neil C. Edwards Surveying, Inc., and Daggett Surveying, Inc.

The well pad and pipeline project is located at the base of the north-facing slope of Manzanares Mesa. The proposed well pad measures 230 feet by 280 feet in size. The proposed pipeline measures 139 feet long with a 35-foot right-of-way. The pipeline is located within the proposed well pad area of effect. The total area inspected for the well pad and pipeline project was 8.28 acres. Figure 1 shows the location of the project area and Appendix A contains the well location and gas pipeline plats.

During the survey one archaeological site was documented. Archaeological clearance is recommended for the Alternate B location for the San Juan 27-9 Unit No. 548 well pad and pipeline with stipulations. Details of the project, survey, cultural resources, and recommendations are included later in this report.

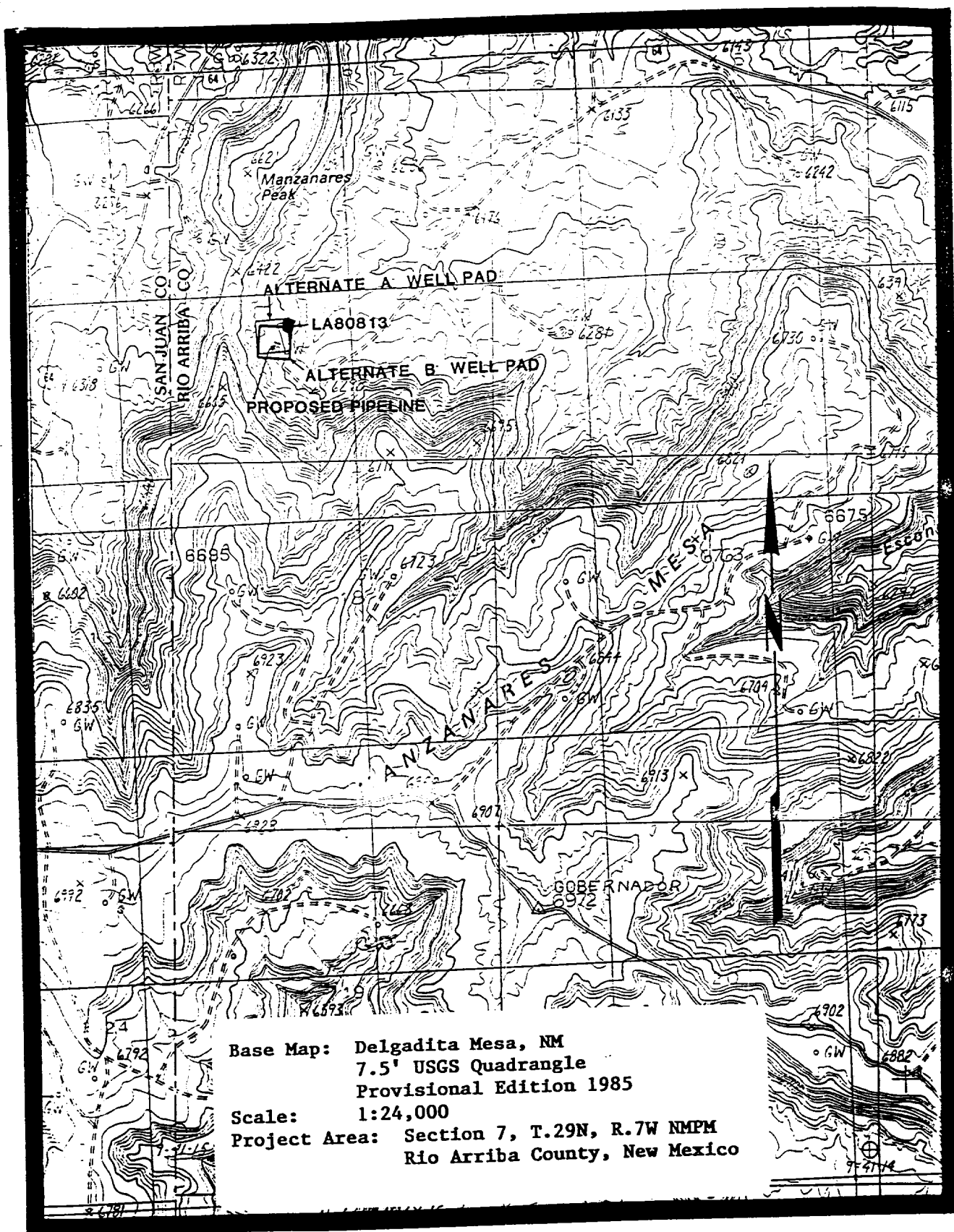


Figure 1. Vicinity map showing location of LA 80831 (DCI-0121) and the proposed well pad and pipeline. (90-DCI-101)

PREFIELD RECORDS SEARCH

Searching existing records is essential in any cultural resources management undertaking in order to determine what portions of an area have been previously inspected and what sites, if any, have been identified. On August 22, 1990, a records search of the Bureau of Land Management, Farmington Resource Area files was completed for the project. The file search was completed prior to initiating field work for the project. The locations of previously recorded sites are illustrated on the Nearby Sites Map in Appendix B and are included only with the Bureau of Land Management's copies of this report.

The results of the file search indicate that 13 previously documented archaeological sites occur within a 1-mile radius of the project area. A large Pueblo I habitation site (NM-01--33160) is located approximately 1,000 feet east of the project area. No previously documented sites are located within the project area.

PROJECT LOCATIONS AND DESCRIPTIONS

Alternate A San Juan 29-7 Unit No. 548 Well Pad

Legal Description:

Well Pad: NE 1/4, NE 1/4, SW 1/4, (1955' FSL, 1420' FWL)
Section 7, T.29 N., R.7 W., NMPM
Rio Arriba County, New Mexico

Access Road: No new access construction is planned.

Elevation: 6,311 feet

Map Reference: Delgadita Mesa, New Mexico 7.5' USGS
Quadrangle, 1985 (Provisional)

Land Jurisdiction: Bureau of Land Management,
Farmington Resource Area

Project Area (Area of Effect):

Well Pad: 230 ft. x 280 ft. (1.48 acres)
Well Pad and Construction Zone: 330 ft. x 380 ft.
(2.88 acres)
Total Area of Effect: 2.88 acres

Area Surveyed (Area of Effect and Cultural Buffer Zone):

Well Pad 530 ft. x 580 ft. (7.06 acres)
Total Area Surveyed: 7.06 acres

Alternate B San Juan 29-7 Unit No. 548 Well Pad and Pipeline

Legal Description:

Well Pad: SE 1/4, NE 1/4, SW 1/4, (1860' FSL, 1430' FWL)
Section 7, T.29 N., R.7 W., NMPM
Rio Arriba County, New Mexico

Access Road: No new access construction is planned.

Pipeline: SE 1/4, NE 1/4, SW 1/4,
Section 7, T.29 N., R.7 W., NMPM
Rio Arriba County, New Mexico

Elevation: 6,310 feet

Map Reference: Delgadita Mesa, New Mexico 7.5' USGS
Quadrangle, 1985 (Provisional)

Land Jurisdiction: Bureau of Land Management,
Farmington Resource Area

Project Area (Area of Effect):

Well Pad: 230 ft. x 280 ft. (1.48 acres)
Well Pad and Construction Zone: 330 ft. x 380 ft.
(2.88 acres)
Pipeline: 139 ft. x 35 ft. (0.11 acres)
Total Area of Effect: 2.99 acres

Area Surveyed (Area of Effect and Cultural Buffer Zone):

Well Pad: 100 ft. x 530 ft. (1.22 acres)
Pipeline: Included in well pad survey (Alternate A)
Total Area Surveyed: 1.22 acres

Grand Total Area Surveyed: 8.28 acres

Remarks:

The acreage surveyed for the Alternate B well pad represents surveyed area that was added to the previously surveyed Alternate A well pad (see Figure 1 for the spatial relationship between the two staked locations). The short pipeline was included, in its entirety, within the area surveyed for the well locations.

FIELD METHODOLOGY

The proposed well pad was staked in the field prior to the archaeological inspection. The well center was marked with a steel fence post and the four corners, rear end, and laydown marked with lath. The archaeological survey was conducted by walking a series of parallel, zig-zag transects that were oriented north/south, parallel to the long axis of the well pad.

The construction and buffer zones were inspected in this manner employing a transect interval of 50 feet. Weather conditions at the time of the field work were sunny and warm, facilitating the survey and field observations. The ground surface was clear and dry at the time of the survey and the vegetative cover was approximately 10 percent.

When artifacts were observed during survey, their distribution was delineated by marking artifact locations with pin flags. Archaeological sites and isolated occurrences, when encountered, were recorded on Museum of New Mexico, Laboratory of Anthropology, Archaeological Site Survey Forms and Isolated Occurrence Forms, respectively. Site and isolated occurrence definitions applied to cultural resources comply with standards set forth in the New Mexico Bureau of Land Management, Cultural Resource Use Permit, Special Conditions for Survey Permits (2920). Completed forms, documenting these cultural resources are included in Appendix C.

PHYSIOGRAPHY AND ENVIRONMENT

Natural Setting

The project area is located at an elevation of 6,310 feet at the base of the north-facing slope of Manzanares Mesa. The small bench on which the project area is situated is composed of exposed shale bedrock. Aeolian sands occur only in a small patch in the northeast corner of the project area. The vegetation association consists of a pinyon-juniper woodland with an understory of mountain mahogany, cliffrose, sagebrush, rabbitbrush, and grasses. The fauna of the project area include deer, coyote, rabbits, and lizards.

Potential Resources

Prehistorically, native flora and fauna observed during survey could have been used by aboriginal populations for food, clothing, and select types of tools. Non-food resources in the area include sandstone and cobbles for building material and stone implements, clay for ceramics and construction material, and trees for building materials and fuel.

Modern Cultural Setting

The area is presently used for a variety of activities. Oil and gas extraction has been and currently is active in the area. The construction of numerous roads for energy resources development has made the area readily accessible for hunting and camping. Stock grazing and woodcutting are also prevalent in the area.

CULTURAL RESOURCES

The archaeological survey of the proposed San Juan 29-7 Unit No. 548 resulted in the documentation of one site. The site is situated in the patch of aeolian sand. It consists of a Navajo habitation that probably dates from the Gobernador Phase.

LA 80813 (DCI-0121) (Figures 1 and 2)

Site LA 80813 (DCI-0121) is a Navajo Gobernador Phase habitation that consists of two possible structures with associated middens (Structure 1, Midden 1, Midden 2), an activity area with a hearth (Feature 1), and a scatter of artifacts. The site is situated in a patch of aeolian sand that is deposited on degraded shale bedrock. The cultural deposits occur in the upper 0.2 meters of the 0.3 meters of aeolian deposition that is present at the site. Erosion has displaced cultural material at the site, however, intact cultural deposits are indicated in the vicinity of Structure 1 and Midden 1.

ELIGIBILITY AND MANAGEMENT RECOMMENDATIONS

Eligibility Evaluations

Evaluation of eligibility to the National Register of Historic Places (36 CFR 60) is important for the current and future management of cultural resources. The eligibility status relates to cultural resource significance, which consequently provides guidance with respect to the treatment of properties relative to proposed actions. Thus appropriate recommendations can be made in consideration of both the resource and proposed action.

The evaluation of cultural resources for eligibility to the National Register is composed of three parts; 1) an assessment of integrity, 2) a consideration of eligibility criteria and exceptions, and 3) a consideration of the 50-year guideline. the assessment of integrity, according to Federal regulation (36 CFR 60.4), entails "objects that possess integrity of location, design, setting, materials, workmanship, feeling and association". The four criteria ordinarily applied in the evaluation of cultural resources are:

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

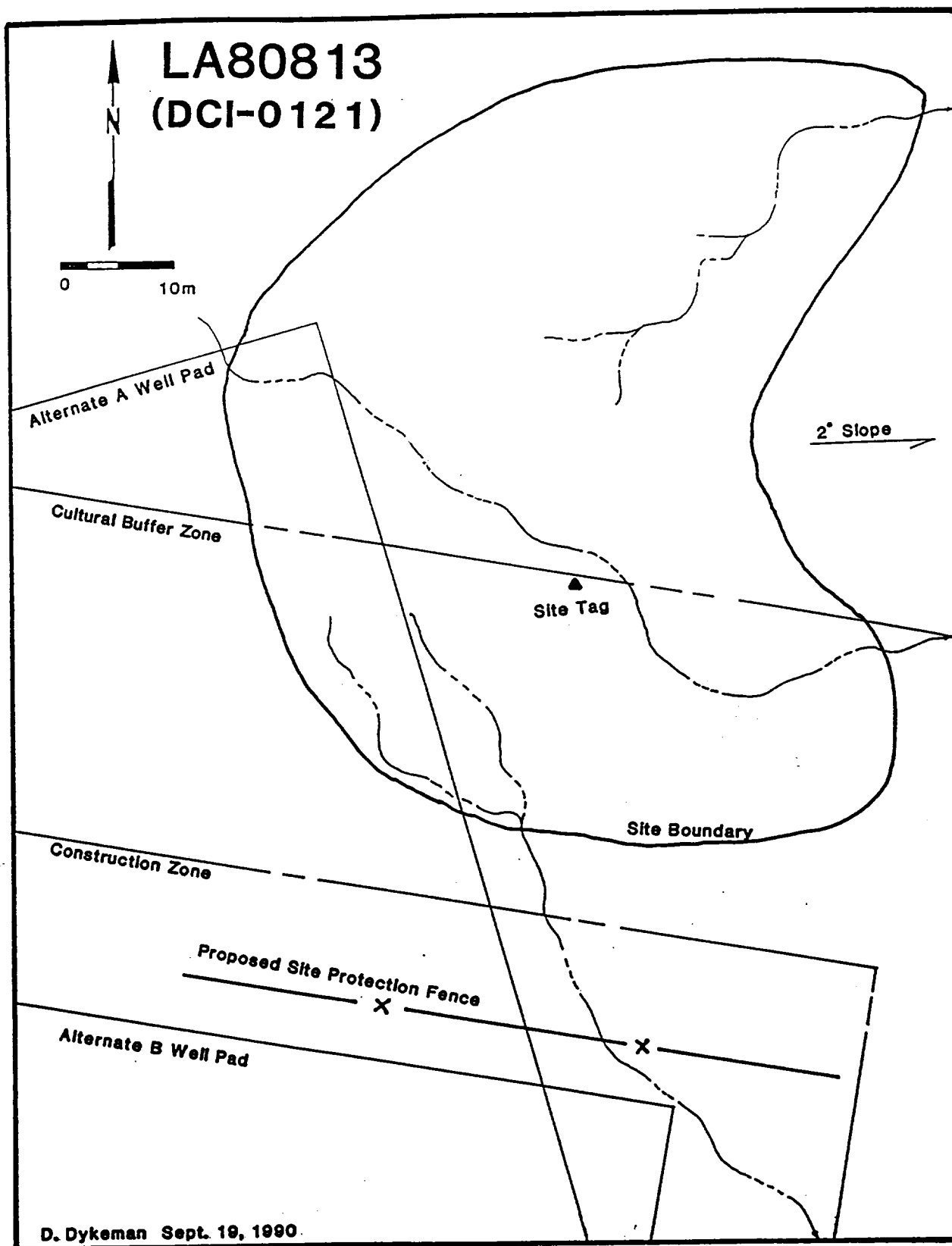


Figure 2 General plan map of LA80813 (DCI-0121). (90-DCI-101)

(d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4) The 50-year guideline is simply that sites less than 50 years in age are not considered eligible for the National Register (36 CFR 60.4). Seven exceptions to the above regulations may be applied, however, these rarely apply to prehistoric cultural resources and are not reproduced here.

Site LA 80813 (DCI-0121) satisfies the eligibility criteria for the National Register of Historic Places. The site merits protection by the regulations implemented under current federal legislation.

Recommendations

Site LA 80813 (DCI-0121) is located within the proposed Alternate A well location. Consequently archaeological clearance is not recommended for the Alternate A well pad.

Site LA 80813 (DCI-0121) is located approximately 75 feet north of the edge of the Alternate B well pad. In order to provide a minimum 50 foot buffer between the construction zone and the site, a protection fence should be erected along a portion of the north side of the well pad. The fence should be placed a maximum of 25 feet north of the well pad as shown in Figure 2. Provided that this stipulation is implemented, archaeological clearance is recommended for the San Juan 29-7 Unit No. 548 Alternate B well pad and pipeline as staked, 1860' FSL, 1430' FWL, Section 7, T.29 N., R.7 W.

APPENDIX A

**EXHIBIT 1 - WELL LOCATION AND ACREAGE DEDICATION PLAT
FOR THE ALTERNATE B LOCATION**

EXHIBIT 2 - WELL LAYOUT PLAT FOR THE ALTERNATE B LOCATION

EXHIBIT 3 - GAS PIPELINE PLAT

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

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

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

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

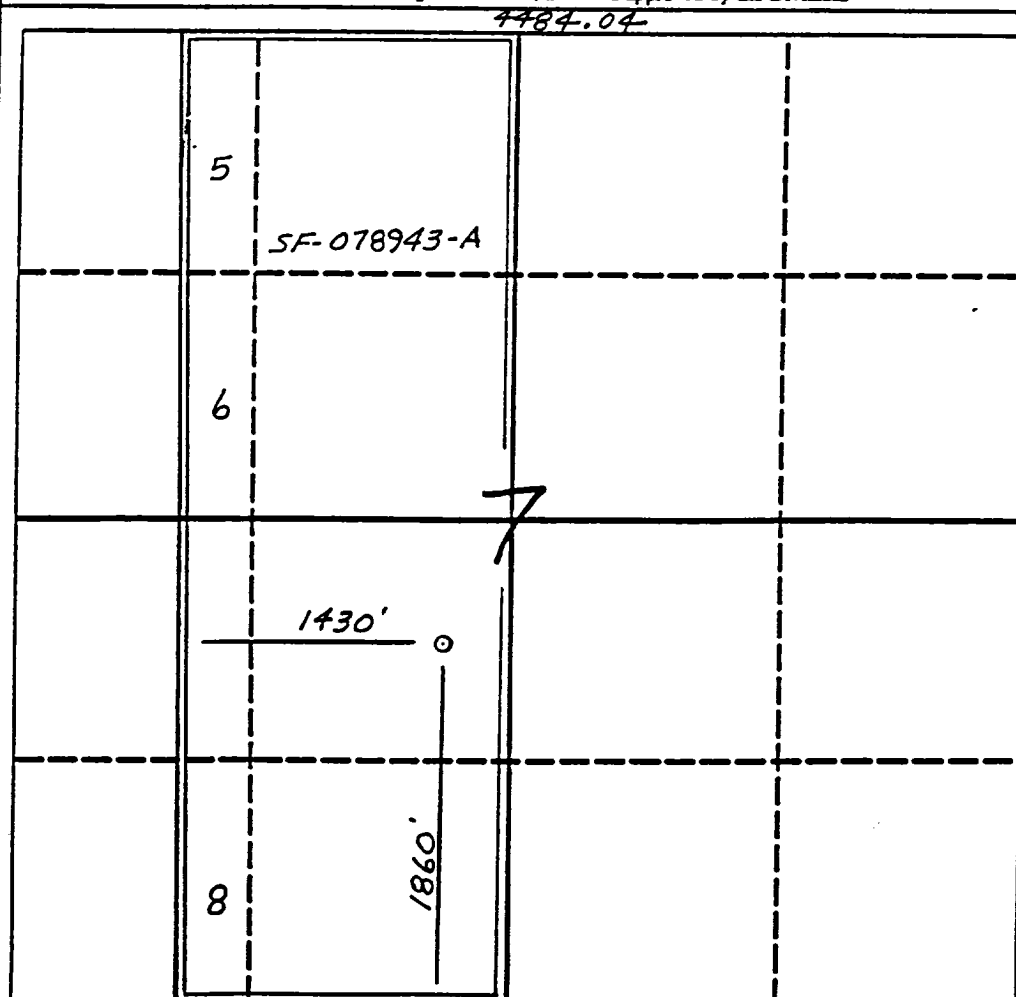
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator El Paso Natural Gas			Lease San Juan 29-7 Unit		Well No. 548
Unit Letter K	Section 7	Township 29 North	Range 7 West	County NMPM Rio Arriba	
Actual Footage Location of Well: 1860 feet from the South line and 1430 feet from the West line					
Ground level Elev. 6310'	Producing Formation		Pool	Dedicated Acreage: Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or backbone 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
unitization, force-pool
☐ Yes
If answer is "no" list the
this form if necessary.
- EXHIBIT 1
- 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 is true and complete to the best of my knowledge and belief.

Signature

Printed Name

Position

Company

Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes, actual surveys made by me or under my supervision, and that these measurements are correct to the best of my knowledge and belief. 9-18-90

Date Surveyed

Signature
Professional



Certification

Neale C. Edwards

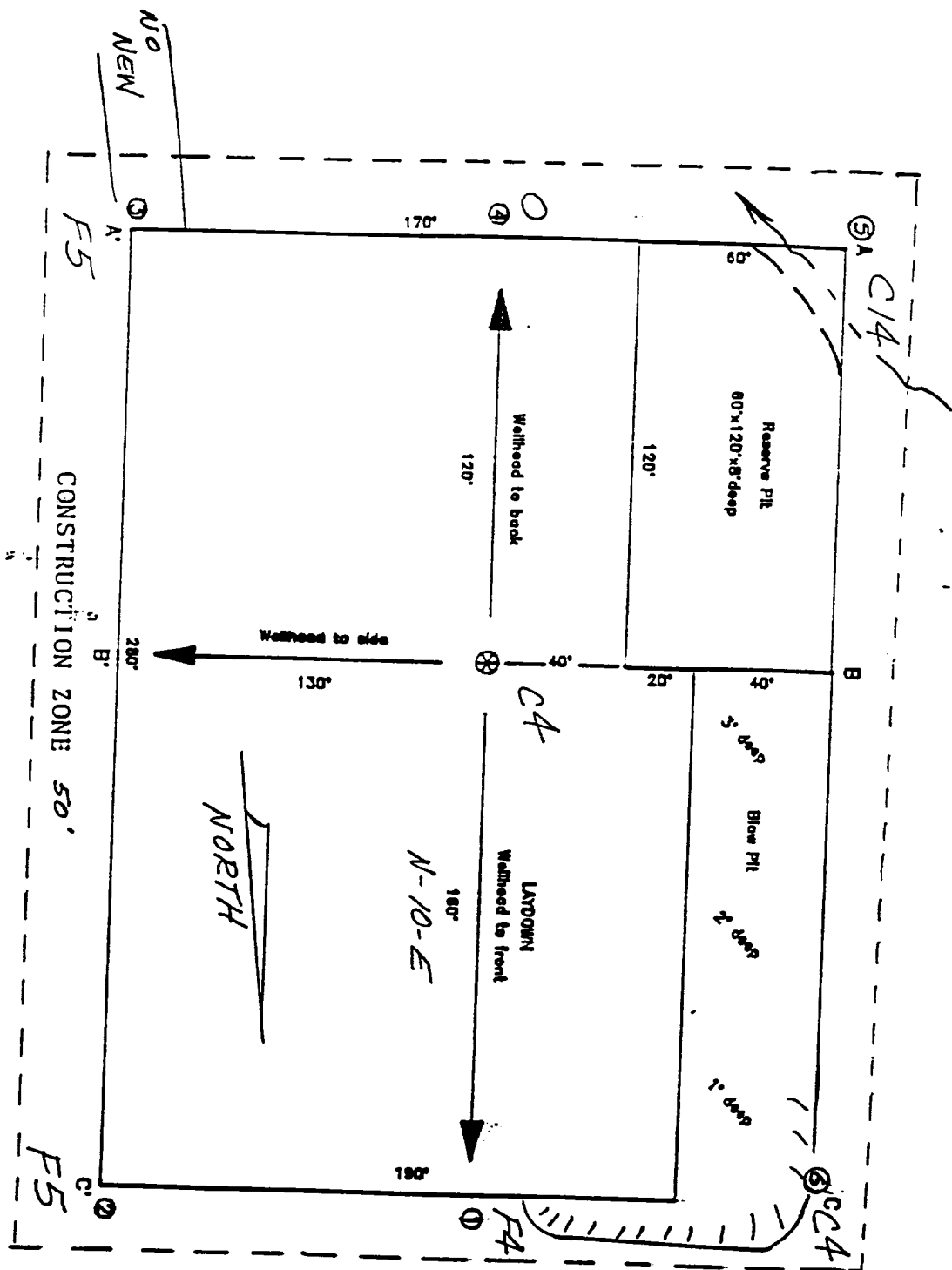


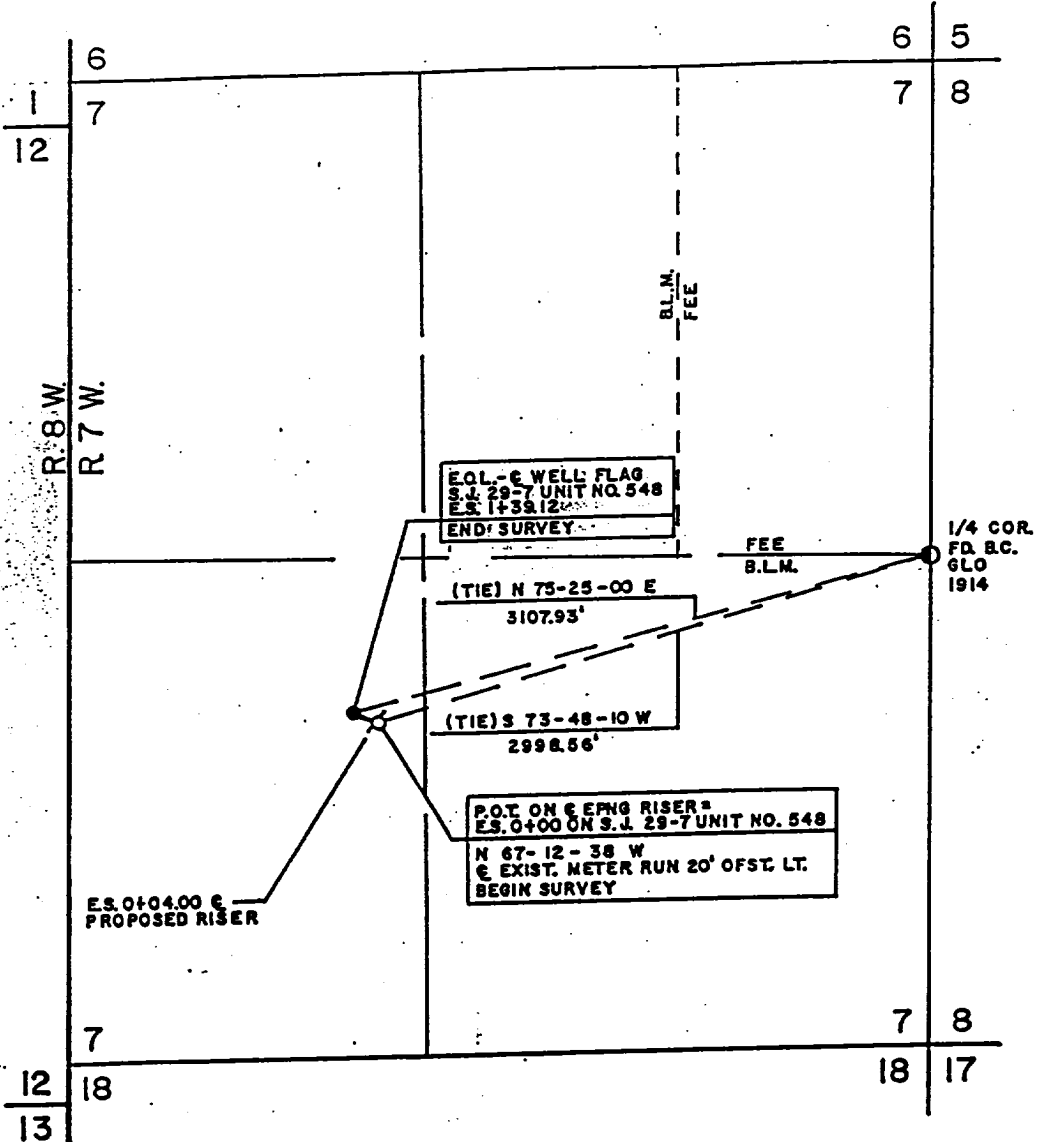
EXHIBIT 2

EXHIBIT:	
Name:	EPNG San Juan 29-7 Unit #548
Footage:	1860' FSL, 1430' FWL,
Sec	7 T- 29 -N, R- 7 -W NMPM
Co.	Rio Arriba St. N.M.
Elevation:	6310' Date: 9-18-90

Plot 2
2/3/90

**A SURVEY FOR
MERIDIAN OIL INC.
GAS PIPELINE
SAN JUAN 29-7 UNIT NO. 548
SW/4 SEC. 7, T. 29N., R. 7W, N.M.P.M.,
RIO ARriba COUNTY, NEW MEXICO**

EXHIBIT 3



NOTE:

- 1) BASIS OF BEARING: SOLAR OBSERVATION
- 2) O = CAPPED IRON PINS SET AT REFERENCE POINTS.

OWNER	STATION	FT./RODS
B.L.M.	0+00 to 1+39.12	139.12 / 8.43



R. Howard Daggett
I, R. HOWARD DAGGETT, A DULY QUALIFIED LAND SURVEYOR LICENSED UNDER THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT THIS SURVEY MEETS THE AMENDED MINIMUM STANDARDS FOR LAND SURVEYING IN NEW MEXICO.

DATE: 9/27/90

REVISION REV. BY DATE SCALE: 1"=1000'
DAGGETT SURVEYING, INC
P.O. BOX NO. 2789
FARMINGTON, NEW MEXICO 87499
(505) 326-1772
REGISTERED LAND SURVEYOR
R. HOWARD-DAGGETT N.MEX. NO. 967

DRAWN BY: G.W. M1029

MERIDIAN OIL

San Juan 29-7 Unit #548
1860'FSL, 1430'FWL Section 7, T-29-N, R-7-W
Rio Arriba County, New Mexico

I hereby certify that the following offset operators/owners have been mailed notification of our application for non-standard location to drill the subject well.

Amoco Production
Post Office Box 800
Denver, Colorado 80201


Peggy A. Bradfield

San Juan County
State of New Mexico

January 16, 1991

My commission expires August 17, 1992