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ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87504-2265

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CANDACE HAMANN CALLAHAN

JASON KELLAHIN  
OF COUNSEL

TELEPHONE (505) 982-4285  
TELEFAX (505) 982-2047

June 4, 1991

RECEIVED

JUN 04 1991

OIL CONSERVATION DIVISION

Mr. William J. LeMay  
Oil Conservation Division  
Post Office Box 2088  
Santa Fe, New Mexico 87504

HAND DELIVERED

Re: Howell "L" 5 Well  
Application of Meridian Oil Inc.  
for a Horizontal Directional  
Drilling Pilot Project, Special  
Operating Rules, Unorthodox  
Location, Non-Standard Spacing  
Unit, and Extension of the Navajo  
City-Chacra Gas Pool, San Juan County,  
New Mexico

Dear Mr. LeMay:

On behalf of Meridian Oil Inc., please find enclosed our Application for a Horizontal Directional Drilling Pilot Project and Special Operating Rules for a well to be drilled in the Navajo City-Chacra Gas Pool which we request be set for hearing on the next available Examiner's docket now scheduled for June 27, 1991.

By copy of this letter, with application enclosed, we are notifying all appropriate parties of their right to appear at the hearing either in support of or opposition to the application.

Very truly yours,

W. Thomas Kellahin

WTK/tic  
Enclosure

Mr. William J. LeMay  
June 4, 1991  
Page 2

cc: Mr. Alan Alexander  
Meridian Oil Inc.  
Post Office Box 4289  
Farmington, New Mexico 87499-4289

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

RECEIVED

JUN 04 1991

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

OIL CONSERVATION DIVISION

CASE:

APPLICATION OF MERIDIAN OIL INC.  
FOR A HORIZONTAL DIRECTIONAL  
DRILLING PILOT PROJECT, SPECIAL  
OPERATING RULES, UNORTHODOX  
LOCATION, NON-STANDARD SPACING  
UNIT, EXCEPTION TO ORDER R-5459  
AND EXTENSION OF THE NAVAJO  
CITY-CHACRA GAS POOL, SAN JUAN COUNTY,  
NEW MEXICO

A P P L I C A T I O N

Comes now Meridian Oil Inc., by and through its attorneys, Kellahin, Kellahin & Aubrey, and applies to the New Mexico Oil Conservation Division for approval for a Horizontal Directional Drilling Pilot Project including special operating rules for its Howell "L" 5 Well to be drilled at an unorthodox surface well location 2040 feet from the North line and 2030 feet from the East line in the SW/4NE/4, as an exception to Order R-5459 and a 320-acre non-standard spacing unit in the E/2 of Section 34,

T30N, R8W, in the Navajo City-Chacra Gas Pool, San Juan County, New Mexico and in support thereof states:

(1) Applicant is the only working interest owner for the E/2 of Section 34, T30N, R8W, N.M.P.M., San Juan County, New Mexico.

(2) Applicant proposes to drill a horizontal-directional well commencing at an unorthodox surface location in the SW/4NE/4 of Section 34 estimated to be 2040 feet FNL and 2030 feet FEL of said Section 34 and drilled vertically to approximately 3150 feet (+ or - 100 feet) in the Lewis Shale at which point the applicant will kickoff the well in a Southeasterly direction building approximately 90 degree angle in an assumed 500 foot radius turn and penetrate the Chacra formation of the Navajo City-Chacra Gas Pool at an estimated depth of approximately 3600 feet and thence drilling horizontally in a Southeasterly direction a distance of approximately 1600 feet. See Exhibit "A."

(3) Except as stated herein, Applicant proposes that this project be subject to the Navajo City-Chacra Gas Pool which was established by the Division Order R-5772 dated July 1, 1978.

(4) Applicant's project is adjacent to the Lively Exploration Company Lively 7-Y well, (Unit E), NW/4 of Section 35, T30N, R8W, which is completed in the Chacra interval and was excluded from the Blanco Mesaverde Pool by Division Order R-5512 entered effective August 1, 1977 and granted an exception to Order R-5459.

(5) Applicant, for similar reasons, seeks a similar exception for its Chacra interval in the E/2 of said Section 34 and proposes a non-standard spacing unit consisting of 320 acres being the E/2 of said Section 34 along with the corresponding unorthodox surface and subsurface locations to provide the necessary flexibility for this special project as shown on Exhibit "B," attached hereto.

(6) Applicant proposes that the Chacra formation underlying the E/2 of said Section 34 be deleted from the Blanco Mesaverde Pool, being an estimated vertical interval from -3600 to -3700 feet subsea.

(7) The Chacra interval of the Lewis Shale is the potential productive zone of the Navajo City-Chacra Gas Pool. The Chacra is characterized as a low intergranular permeability, naturally fractured sandstone/siltstone reservoir. This Chacra interval is not in communication

with the producing zones in the Blanco-Mesaverde Pool in this immediate area.

(8) Past experience in said pool has shown that unless a conventionally drilled (vertical) well intersects natural fractures, the chance of obtaining commercial production is severely curtailed.

(9) By drilling a horizontal deviated wellbore, the applicant is attempting to increase the probability of encountering these fractures, which may ultimately result in the recovery of a greater amount of gas thereby preventing waste.

(10) In as much as the exact distance and direction of the lateral portion of the wellbore is not known at this time, the Applicant seeks approval to be allowed to produce said lateral wellbore anywhere within an area described as being: not closer than 790 feet from any of the outer boundaries of the E/2 of Section 34.

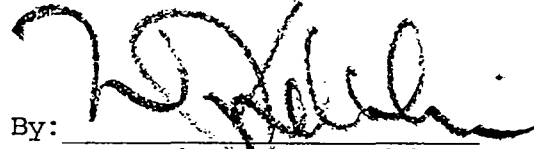
(11) All offset owners/operators are listed on Exhibit "C" and pursuant to Division Notice Rules have been provided with a copy of this application.

(12) The granting of this Application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

WHEREFORE, Applicant requests that this matter be set for hearing on June 27, 1991 before a duly appointed Examiner of the Oil Conservation Division and, after notice and hearing as required by law, the Division enter its Order granting this application.

Respectfully submitted,

KELLAHIN, KELLAHIN & AUBREY

A handwritten signature in dark ink, appearing to read 'W. Thomas Kellahin', written over a horizontal line.

By:

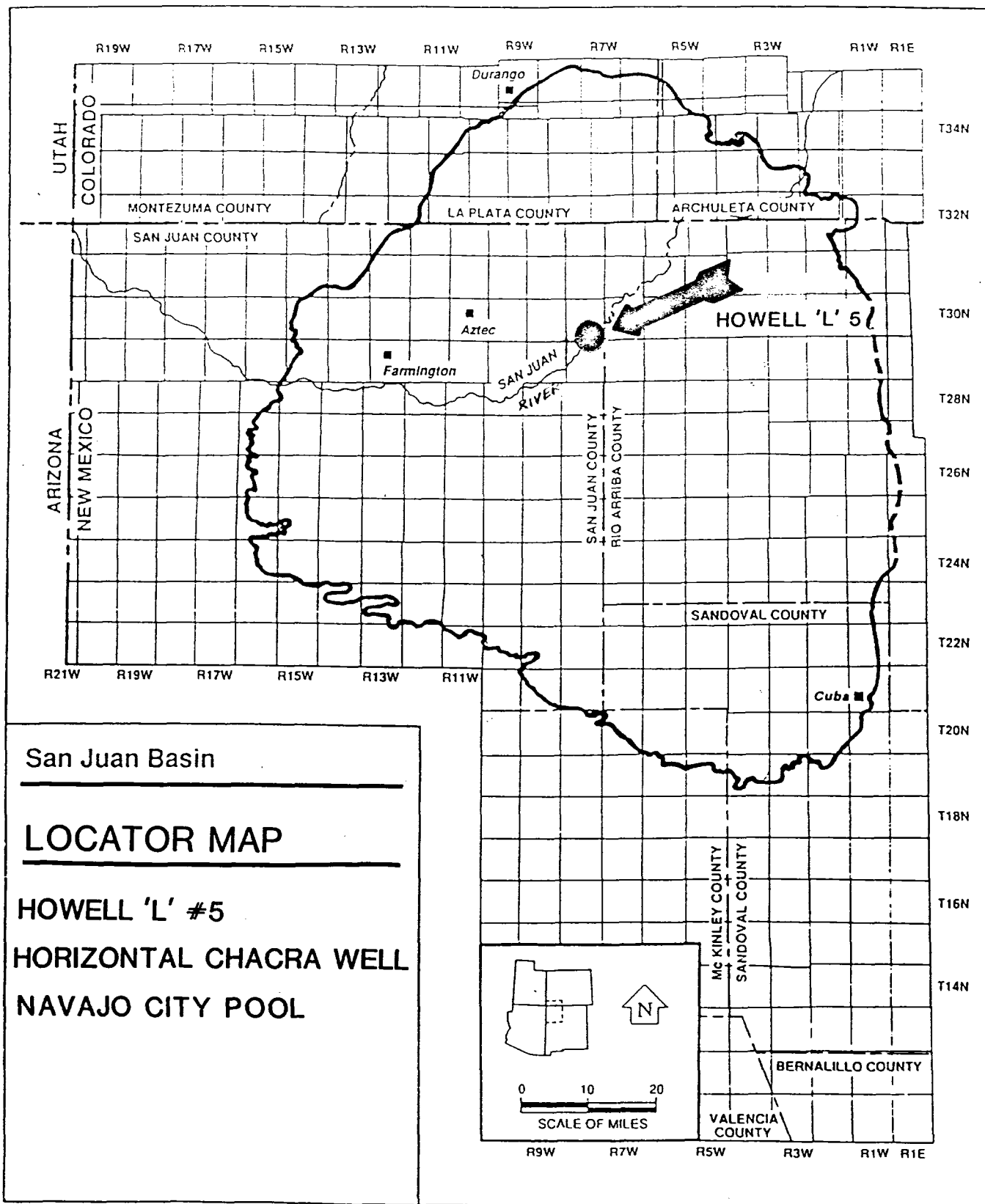
W. Thomas Kellahin

Post Office Box 2265

Santa Fe, New Mexico 87504

(505) 982-4285

Attorneys for Applicant





[illegible]

LEWIS SHALE

LEWIS - CLIFF HOUSE  
TRANSITION

MENEFEE	MASSIVE CLIFF HOUSE
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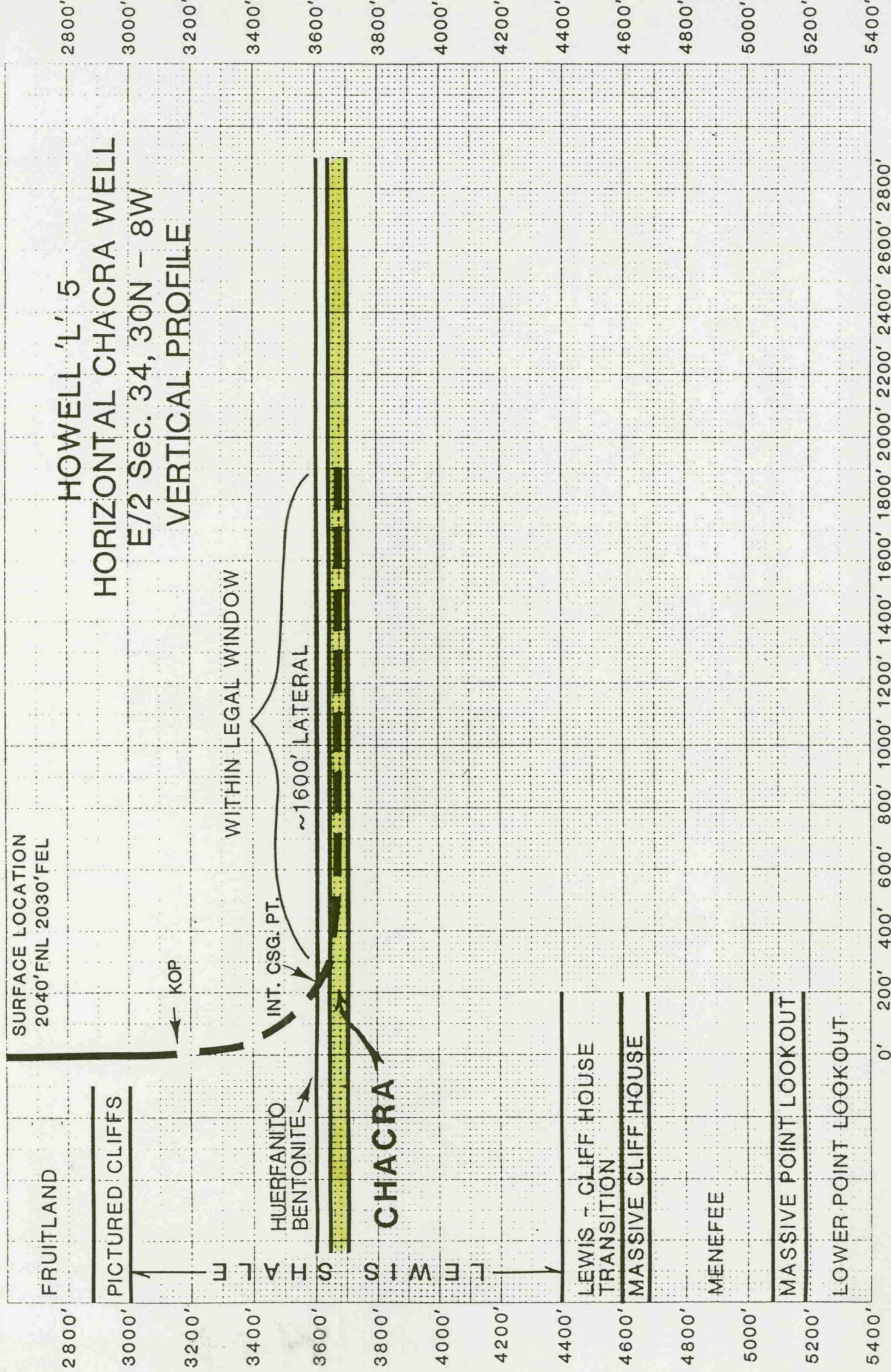
# MERIDIAN OIL

CASE NO. 10340  
HOWELL L #5  
2040' FNL, 2030' FEL  
Section 34, T-30-N, R-8-W  
San Juan County,  
New Mexico



TVD

TVD



DEPARTURE FROM VERTICAL



R 8 W



T 30 N

T 29 N

## PLAN VIEW - M.O.I. HOWELL 'L' 5 HORIZONTAL CHACRA WELL

SPECIFIC AZIMUTH & LATERAL EXTENT OF  
WELLBORE TO BE DETERMINED AFTER  
ANALYZING FRACTURE ORIENTATION LOG.

### WELL STATUS:

☆ Gas

● Oil

✦ Abn'd Loc.

### Formation Symbols-

△ Fruitland Coal

△ Fruitland Sand

☆ Pictured Cliffs

∩ Chacra

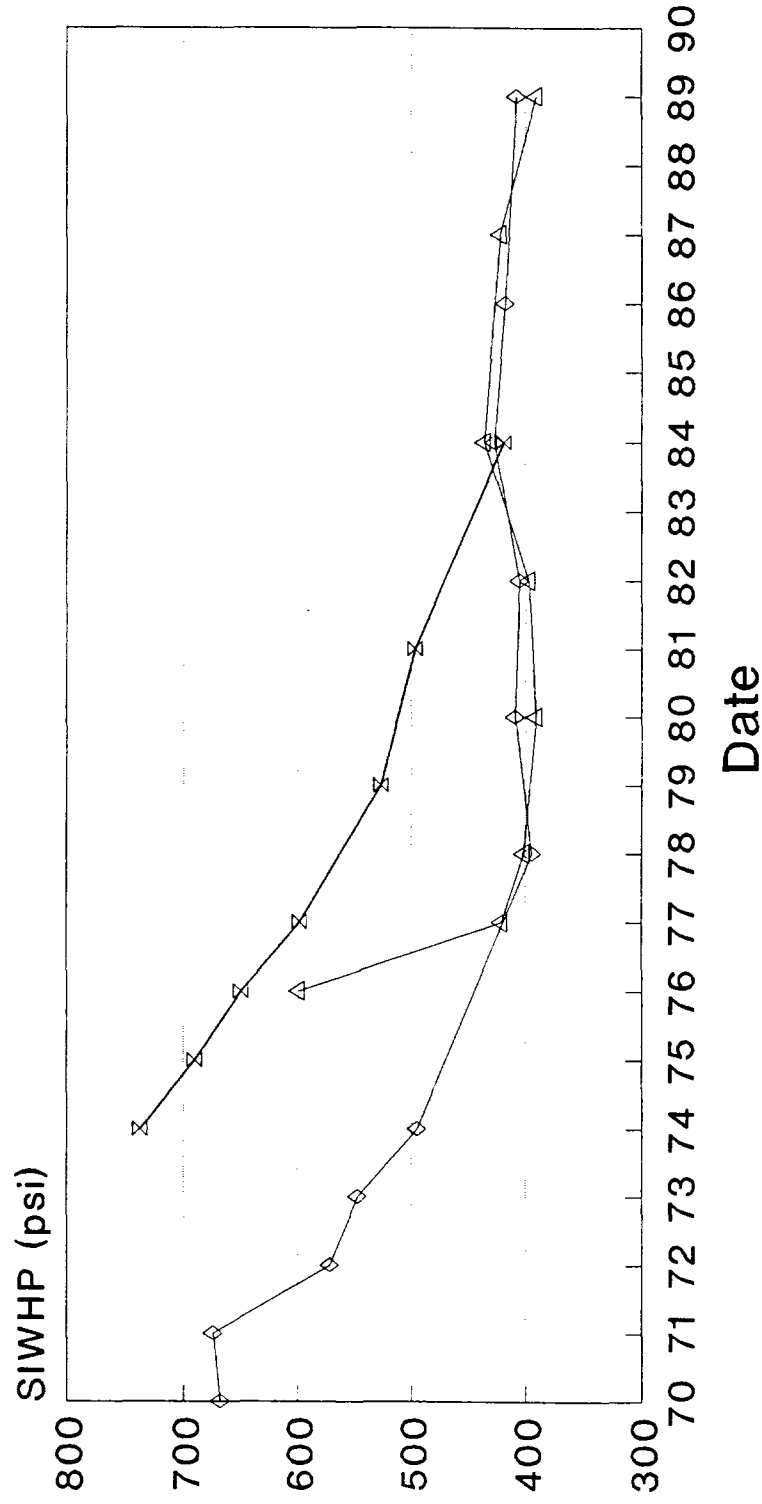
○ Mesaverde

◇ Gallup

□ Dakota

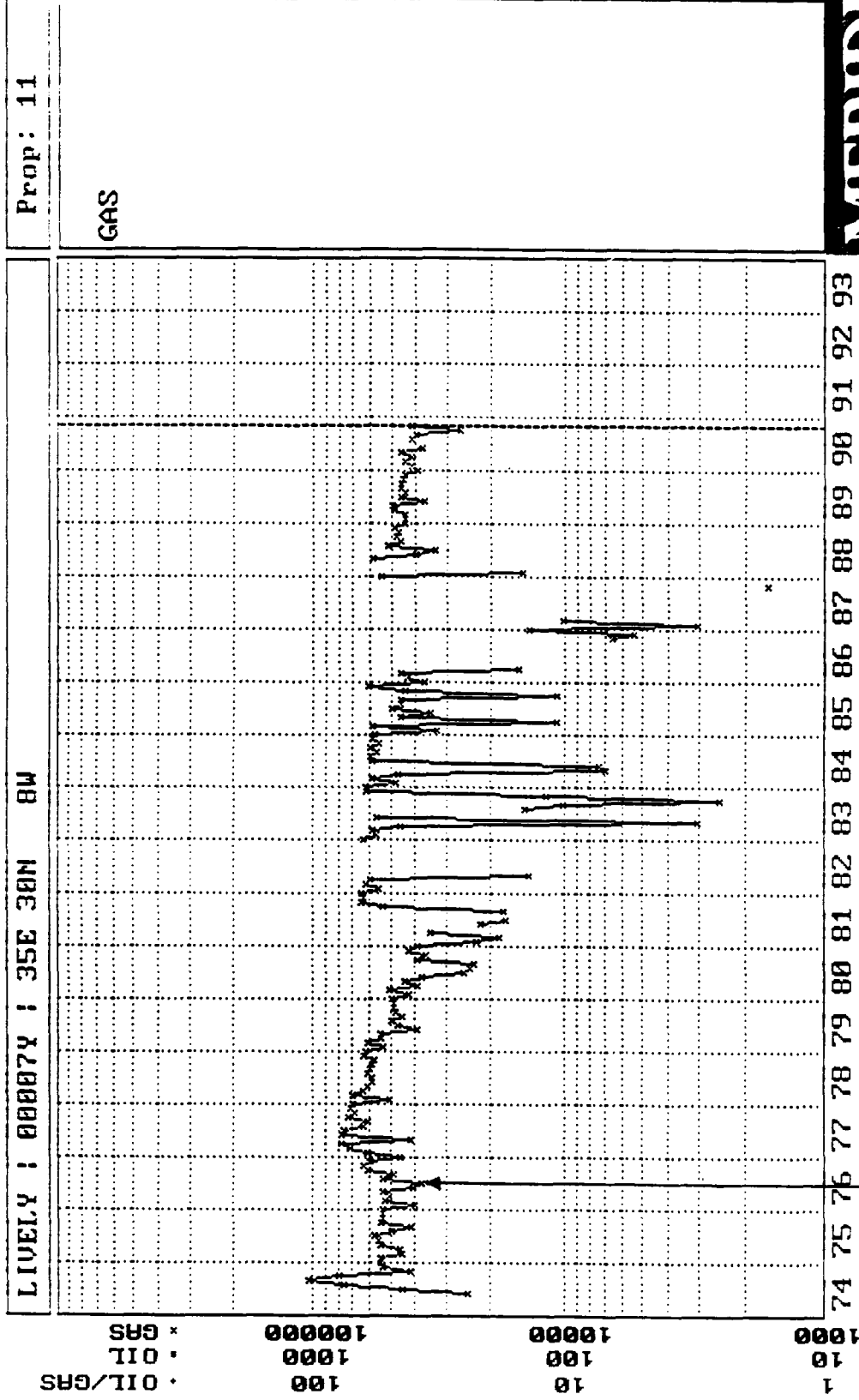
○ Pennsylvanian

# NAVAJO CITY CHACRA RESERVOIR ISOLATION DATA



**MERIDIAN**

CASE NO. 10340  
HOWELL L #5  
2040' FNL, 2030' FEL  
Section 34, T-30-N, R-8-W  
San Juan County,  
New Mexico



**MERIDIAN**

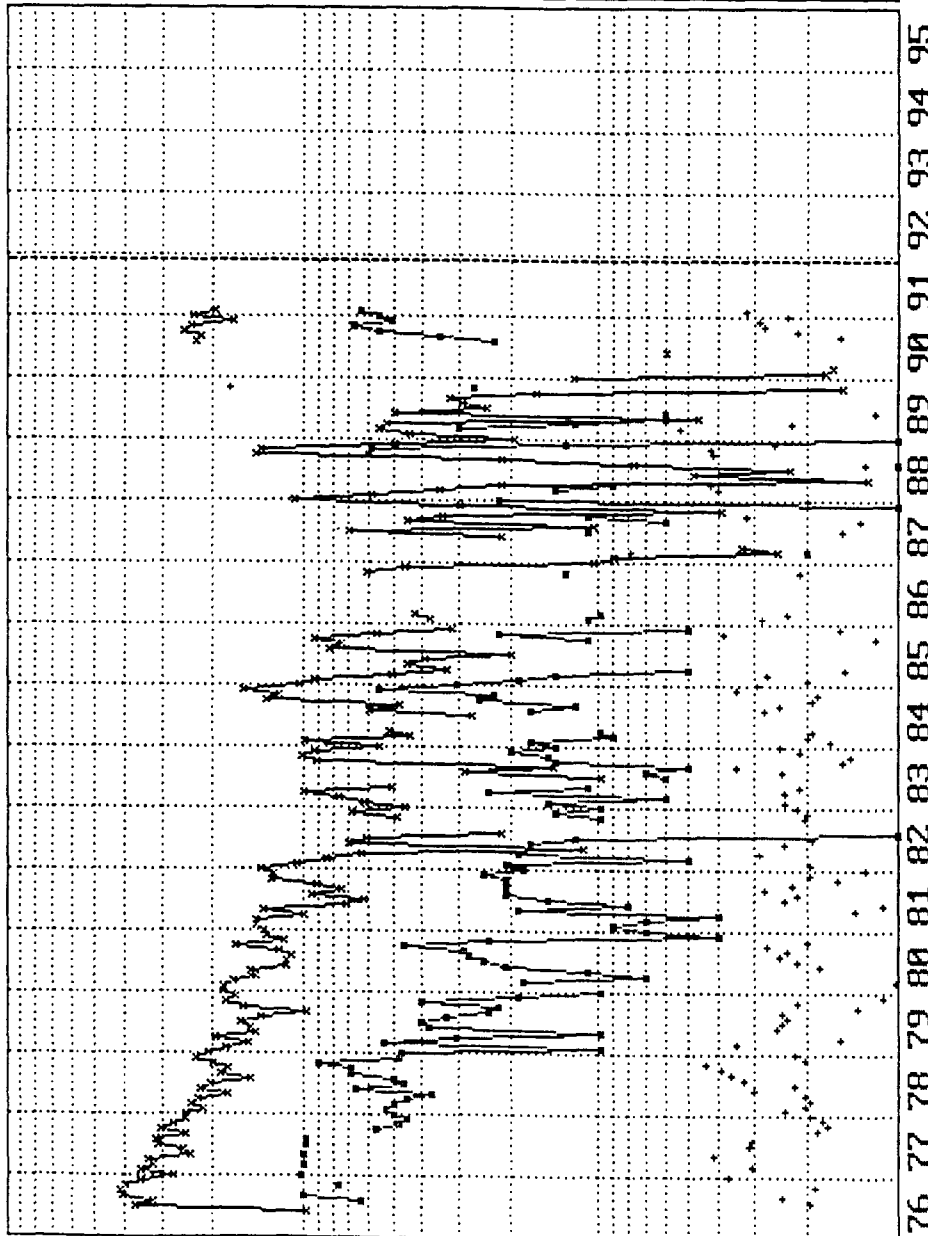
6/76 - Howell L#3A Mesaverde offset first delivered.  
No interference evident in Lively #7Y.

CASE NO. 10340  
HOWELL L #5  
2040' FNL, 2030' FEL  
Section 34, T-30-N, R-8-W  
San Juan County,  
New Mexico

HOWELL L : 3A : 030N008W35F

Prop: 177

\* OIL/GHS  
\* OIL  
\* GAS

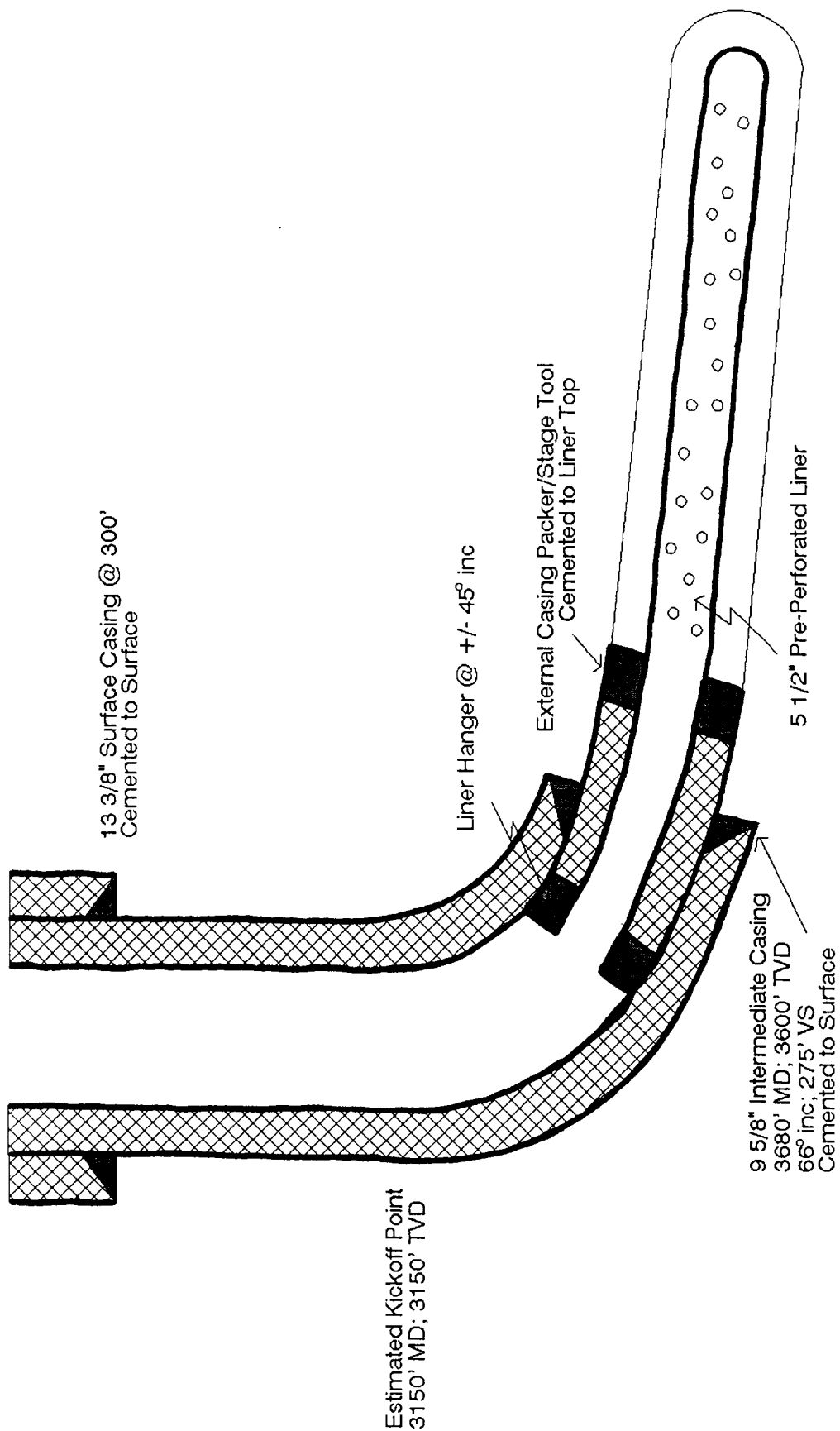


GAS






**MERIDIAN** 

CASE NO. 10340  
HOWELL L #5  
2040' FNL, 2030' FEL  
Section 34, T-30-N, R-8-W  
San Juan County,  
New Mexico

MERIDIAN OIL INC.  
HOWELL L #5  
Section 34-T30N-R08W  
San Juan County, New Mexico





-  LOCATION
-  FRUITLAND GAS WELL
-  PICTURED CLIFFS GAS WELL
-  MESAVERDE GAS WELL
-  DAKOTA GAS WELL

# MERIDIAN

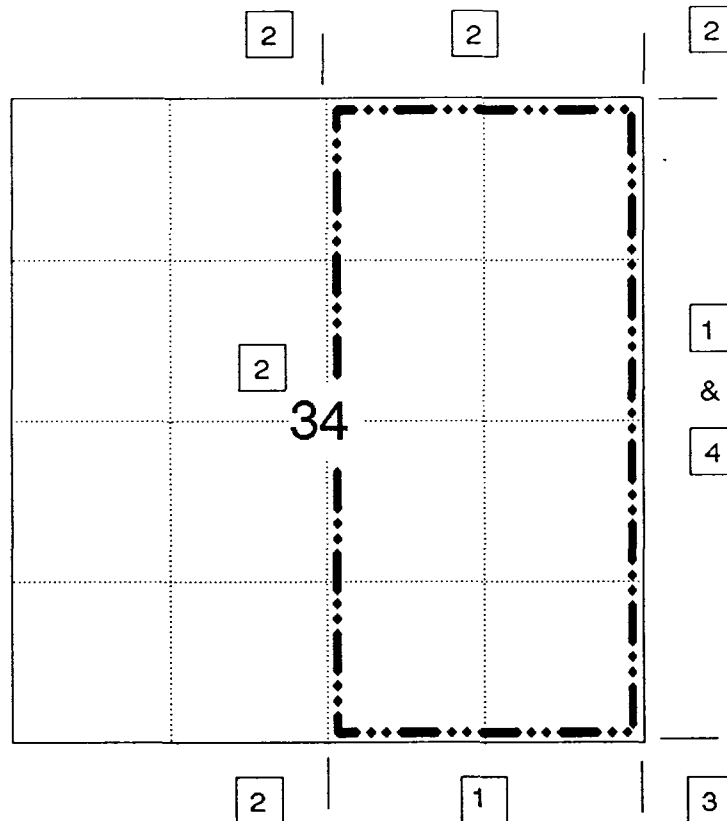
CASE NO. 10340  
 HOWELL L #5  
 2040' FNL, 2030' FEL  
 Section 34, T-30-N, R-8-W  
 San Juan County,  
 New Mexico



# OFFSET OPERATOR PLAT

## Howell L #5

Township 30 North, Range 08 West



1) Meridian Oil Inc.

2) Amoco Production Company

P.O. Box 800, Denver, CO 80201

3) Southland Royalty Company

4) Lively Explaoration Company

(Navajo City Chacra Formation)

1300 Post Oak Blvd, #1900

Houston, TX 77056

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised 1-1-89

OIL CONSERVATION DIVISION

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

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Meridian Oil Inc.			Lease Howell L		Well No. 5
Unit Letter G	Section 34	Township 30 North	Range 8 West	County San Juan	
Actual Footage Location of Well: 2040 feet from the North line and 2030 feet from the East line					
Ground level Elev. 6071'		Producing Formation Chacra	Pool Navajo City	Dedicated Acreage: 320 Non-Standard 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 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 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  
Meridian Oil Inc.  
Company

Date

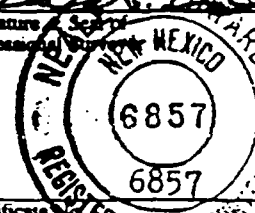
SURVEYOR CERTIFICATION

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 the same is true and correct to the best of my knowledge and belief.

5-31-91

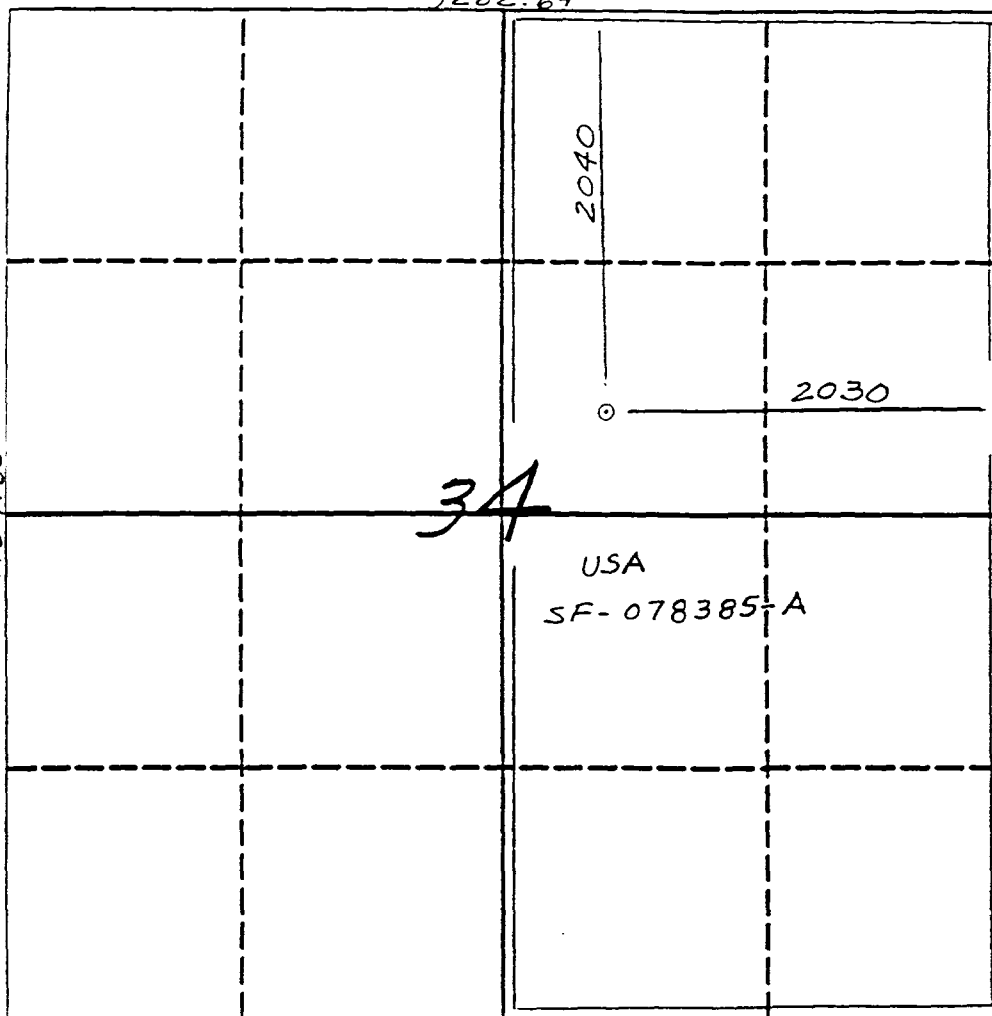
Date Surveyed

Signature  
Professional Surveyor



Certificate

Neale C. Edwards



0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500

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

IN THE MATTER OF THE APPLICATION OF  
MERIDIAN OIL INC. FOR A HORIZONTAL  
DIRECTIONAL DRILLING PILOT PROJECT,  
SPECIAL OPERATING RULES, UNORTHODOX  
LOCATION, NON-STANDARD SPACING UNIT,  
AND EXTENSION OF THE NAVAJO CITY-CHACRA  
GAS POOL, SAN JUAN COUNTY, NEW MEXICO

CASE NO. 10340

CERTIFICATE OF MAILING

AND

COMPLIANCE WITH ORDER R-8054

In accordance with Division Rule 1207 (Order R-8404)  
I hereby certify that on June 5, 1991, notice of the  
hearing and a copy of of the Application for the above  
referenced case was mailed by certified mail return-  
receipt, at least twenty days prior to the hearing set  
for June 27, 1991, to the interested parties.

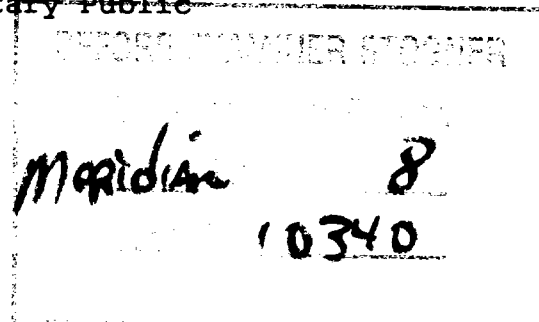
  
W. Thomas Kellahin

SUBSCRIBED AND SWORN to before me this 27 day of  
June, 1991.

  
Notary Public

My Commission Expires:

Oct 28, 1993



**SENDER:** Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. (Extra charge) 2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to: Amoco Production Co. PO Box 800 DENVER, CO 80201  Howell "L" Swell WTK	4. Article Number P 355 567 754
5. Signature - Address X	Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
6. Signature - Agent X	Always obtain signature of addressee or agent and <b>DATE DELIVERED</b> .
7. Date of Delivery 6/11/81	8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Mar. 1988 U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

**SENDER:** Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. (Extra charge) 2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to: Lively Exploration Co. 1300 Coast Oak Blvd 1900 Houston, TX 77056  Howell "L" Swell WTK	4. Article Number P 355 567 763
5. Signature - Address X	Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
6. Signature - Agent X Natalie Zee	Always obtain signature of addressee or agent and <b>DATE DELIVERED</b> .
7. Date of Delivery 6-14-91	8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Mar. 1988 U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT