

MERIDIAN OIL

CASE # 10724

APRIL 22, 1993

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

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

CASE NO. 10724


APPLICATION OF MERIDIAN OIL INC.
FOR AN UNORTHODOX GAS WELL
LOCATION AND DOWNHOLE COMMINGLING,
SAN JUAN COUNTY, NEW MEXICO.

CERTIFICATE OF MAILING


AND

COMPLIANCE WITH ORDER R-8054

W. THOMAS KELLAHIN, attorney in fact and authorized representative of Meridian Oil Inc., states that the notice provisions of Division Rule 1207 (Order R-8054) have been complied with, that Applicant has caused to be conducted a good faith diligent effort to find the correct addresses of all interested parties entitled to receive notice, that on March 30, 1993, I caused to be mailed by certified mail return-receipt requested notice of this hearing and a copy of the application for the above referenced case along with the cover letter, at least twenty days prior to the hearing set for April 22, 1993, to the parties shown in the application as evidenced by the attached copies of return receipt cards, and that pursuant to Division Rule 1207, notice has been given at the correct addresses provided by such rule.


W. Thomas Kellahin

SUBSCRIBED AND SWORN to before me this 21ST day of
APRIL, 1993.


Notary Public

My Commission Expires:

10/7/95

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Amoco Production Company
P.O. Box 800
Denver, Colorado 80202

4a. Article Number

P 355 568 576

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

8. Addressee's Address (Only if requested and fee is paid)

5. Signature (Addressee)

6. Signature (Agent)

PS Form 3811, December 1991

★U.S. GPO: 1992-323-402

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.



EXHIBIT 1



KELLAHIN AND KELLAHIN

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN*

*NEW MEXICO BOARD OF LEGAL SPECIALIZATION
RECOGNIZED SPECIALIST IN THE AREA OF
NATURAL RESOURCES-OIL AND GAS LAW

JASON KELLAHIN (RETIRED 1991)

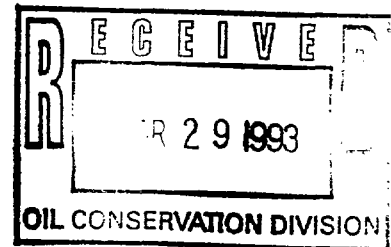
TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

March 29, 1993

Mr. William J. LeMay
Oil Conservation Division
State Land Office Building
310 Old Santa Fe Trail, Room 219
Santa Fe, New Mexico 87501

HAND DELIVERED

RE: Application of Meridian Oil, Inc.
for an Unorthodox Well Location
and Downhole Commingling,
San Juan County, New Mexico
Rhodes C #101 Well



Dear Mr. LeMay:

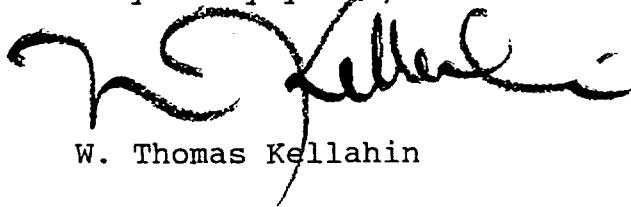
On behalf of Meridian Oil, Inc. please find enclosed our Application for an unorthodox well location and downhole commingling as referenced above, which we request be set for hearing on the next available Examiner's docket now scheduled for April 22, 1993.

By copy of this letter and application, sent certified mail-return receipt requested, we are notifying all interested parties offsetting the subject well and its proposed spacing and proration unit of their right to appear at the hearing and participate in this case, including the right to present evidence either in support of or in opposition to the application and that failure to appear at the hearing may preclude them from any involvement in this case at a later date. Also, all parties entitled to notice are hereby informed that pursuant to the Division Memorandum 2-90 all parties appearing in this case are requested to file a Pre-Hearing Statement with the Division no later than 4:00 p.m. on Friday, April 16, 1993.

Mr. William J. LeMay
March 29, 1993
Page 2

Also enclosed is our suggested advertisement for
this case.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'W. Thomas Kellahin', is written over the typed name. The signature is fluid and cursive, with a large initial 'W' and a long, sweeping tail.

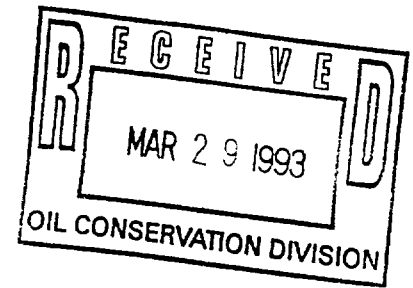
W. Thomas Kellahin

WTK/lam
Enclosures

cc: with Enclosures
Alan Alexander - Meridian Oil Inc.

By Certified Mail - Return Receipt
All Parties Listed on Exhibits B & C of
Application

ltr329c.330

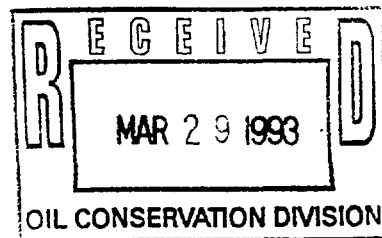


PROPOSED ADVERTISEMENT

Case _____: Application of Meridian Oil Inc. for an unorthodox gas well location and downhole commingling, San Juan County, New Mexico. Applicant seeks approval to downhole commingle West Kutz-Pictured Cliffs Gas Pool and the Basin-Fruitland Coal Gas Pool production within the wellbore of its proposed Rhodes C #101 Well to be drilled at an unorthodox gas well location for both the West Kutz-Pictured Cliffs Gas Pool and the Basin-Fruitland Coal Gas Pool, being 100 feet FSL and 2270 feet FWL, (Unit N) Section 30, T28N, R11W, NMPM, San Juan County, New Mexico. Said well is to be dedicated a standard 316.02 acre gas spacing unit for the Basin-Fruitland Coal Gas Pool being W/2 of Section 30 and to a standard 158.06 acre gas spacing unit for the West Kutz-Pictured Cliffs Gas Pool being the SW/4 of Section 30. The well is located approximately 7 miles south from Bloomfield, New Mexico.

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

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



APPLICATION OF MERIDIAN OIL INC.
FOR AN UNORTHODOX GAS WELL LOCATION
AND DOWNHOLE COMMINGLING
SAN JUAN COUNTY, NEW MEXICO.

CASE:

A P P L I C A T I O N

Comes now MERIDIAN OIL INC., ("Meridian") by and through its attorneys Kellahin and Kellahin, and applies to the New Mexico Oil Conservation Division for approval to downhole commingle West Kutz-Pictured Cliffs Gas Pool and the Basin-Fruitland Coal Gas Pool production within the wellbore of its proposed Rhodes C #101 Well to be drilled at an unorthodox gas well location for both the Basin Fruitland Coal Gas Pool and the West Kutz-Pictured Cliffs Gas Pool being 100 feet FSL and 2270 feet FWL, (Unit N) Section 30, T28N, R11W, NMPM, San Juan County, New Mexico. The W/2 of Section 30 is to be dedicated to the subject well forming a standard 316.02 acre gas spacing unit for the Basin-Fruitland Coal Gas Pool. The SW/4 of Section 30 is to be dedicated to the subject well forming a standard 158.06 acre gas spacing unit for the West Kutz-Pictured Cliffs Gas Pool.

In support of its application, Meridian states:

(1) Meridian is the operator for the proposed Rhodes C #101 Well to be drilled at an unorthodox gas well location 100 feet FSL and 2270 feet FWL (Unit N), Section 30, T28N, R11W, NMPM, San Juan County, New Mexico as shown on Exhibit "A" attached.

(2) Said location is an unorthodox gas well location for both the Basin-Fruitland Coal Gas Pool and the West Kutz-Pictured Cliffs Gas Pool being only 100 feet from the south line and 370 feet from the east side of its spacing unit rather than the required 790 feet from the outer boundaries of the spacing units for both pools.

(3) The T. L. Rhodes "C" Lease consists of all of Section 30 and the N/2 of Section 31, T28N, R11W, NMPM, with all of the interest owners (royalty, working and overriding riding royalty) being common.

(4) The proposed surface location is based in part upon topographical limitation imposed in the S/2 of said Section 30 by the "NAPI" irrigation project.

(5) While the proposed well location is unorthodox pursuant to Division rules, it only encroaches upon offsetting spacing units which have ownerships identical to the subject spacing unit and therefore correlative rights will not be impaired.

(6) The Well is to be drilled so that production from the Basin-Fruitland Coal Gas Pool and the West Kutz-Pictured Cliffs Gas Pool can be downhole commingled in the wellbore.

(7) The W/2 of Section 30 being 316.02 acres is to be dedicated to any production from the Basin-Fruitland Coal Gas Pool which is spaced on 320-acre gas spacing units.

(8) The SW/4 of Section 30 being 158.06 acres is to be dedicated to any production from the West Kutz-Pictured Cliffs Gas Pool which is spaced on 160-acre gas spacing units.

(9) The ownership is common between these two spacing units.

(10) In accordance with Division Rule 303-C-1.(b), the Applicant states and will demonstrate at hearing:

1. That drilling the Rhodes C #101 Well initially for downhole commingling in the wellbore is necessary because it is not otherwise economic to

attempt to drill and complete a separate well for either Fruitland Coal Gas or Pictured Cliffs Gas production nor is it economic to attempt to dually complete those formations in the proposed well.

2. That there will be no crossflow between the two zones commingled.

3. That the ownership in each of the two spacing units is common between the two pools and no impairment of correlative rights will occur.

4. It is expected that the bottom hole pressure of the lower pressure zone is not less than 50 percent of the bottom hole pressure of the higher pressure zone adjusted to a common datum.

5. That the value of the commingled production will not be less than the sum of the values of the individual production.

(11) That both the Fruitland Coal formation and the Pictured Cliffs formations in this area of the basin should be marginally productive and cannot be economically produced unless it is done so by downhole commingling that production.

(12) Meridian has selected to drill the proposed well in the SW/4 instead of the NW/4 of Section 30 because that location appears to have a greater opportunity for a successful although marginal Fruitland formation well.

(13) In addition, the SW/4 of Section 30 is a standard location for a Fruitland Coal Gas Well while the NW/4 is an unorthodox location.

(14) Due to the nature of the Basin-Fruitland Coal Gas production, straight allocation of gas volumes from both zones is not appropriate. Meridian therefore seeks the adoption of a monthly allocation formula to be presented at the time of the hearing.

(15) Applicant requests that this matter be docketed for hearing on the Division's Examiner docket now scheduled for April 22, 1993.

Application of Meridian Oil, Inc.
Page 4

(16) Copy of this application has been sent to all offsetting operators to the two spacing units as set forth on Exhibits B and C.

WHEREFORE Applicant requests that this matter be set for hearing on April 22, 1993 before a duly appointed Examiner of the Oil Conservation Division and that after notice and hearing as required by law, the Division enter its order granting this application.

Respectfully submitted

A handwritten signature in black ink, appearing to read 'W. Thomas Kellahin', with a stylized flourish at the end.

W. Thomas Kellahin
KELLAHIN and KELLAHIN
P. O. Box 2265
Santa Fe, New Mexico 87501
(505) 982-4285
Attorneys for Applicant

<p>Gallegos Canyon Unit</p>	<p>Gallegos Canyon Unit</p>	<p>MESA OPERATING (D) NM 882</p> <p>Rhodes(D) 20 AMOCO (D)</p> <p>T.L.Rhodes' B'(D) R & G (FrmP) ARCO (D)</p> <p>Krause(FrmP) Krause VN Federal (D)</p>
<p>Gallegos Canyon Unit</p>	<p>Gallegos Canyon Unit</p>	<p>Gallegos Canyon Unit</p>
<p>Gallegos Canyon Unit</p>	<p>Gallegos Canyon Unit</p>	<p>Gallegos Canyon Unit</p>

SPACING UNIT (PICTURED CLIFFS)

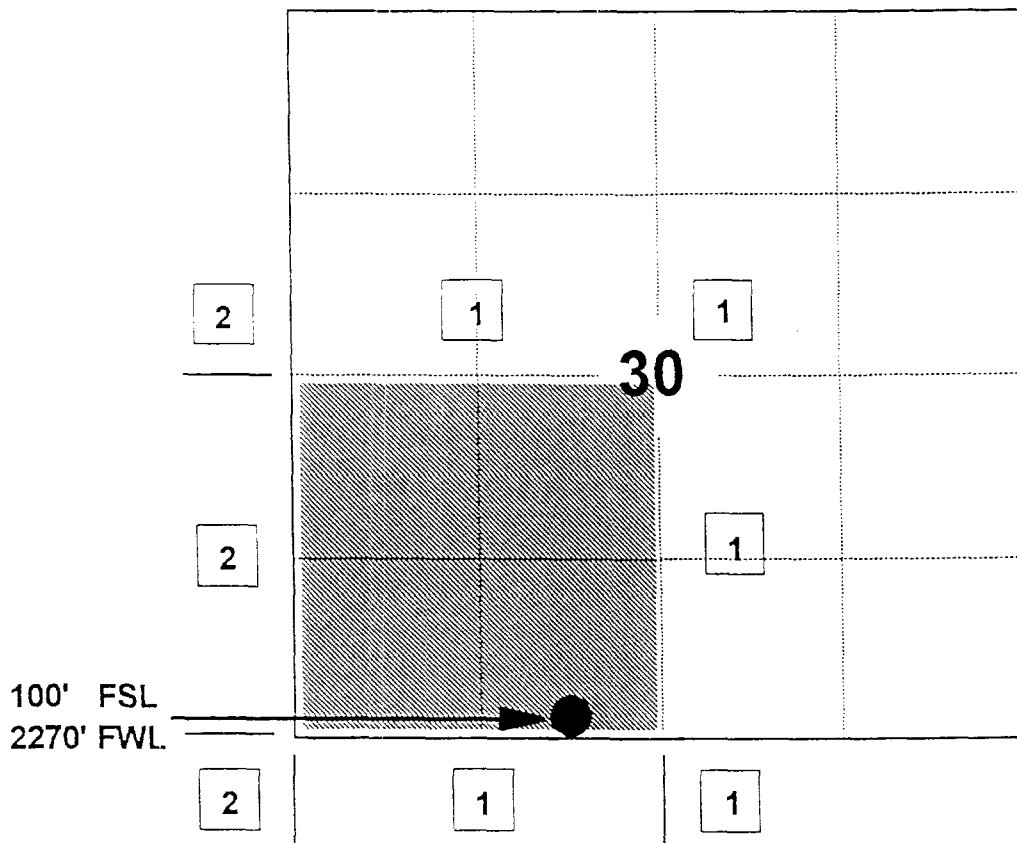
MERIDIAN OIL INC

OFFSET OPERATOR \ OWNER PLAT

RHODES C #101

Fruitland Coal \ Pictured Cliffs Formations Commingle

Township 28 North, Range 11 West



1) Merdian Oil Inc

2) Amoco Production Company

PO Box 800, Denver, CO 80202

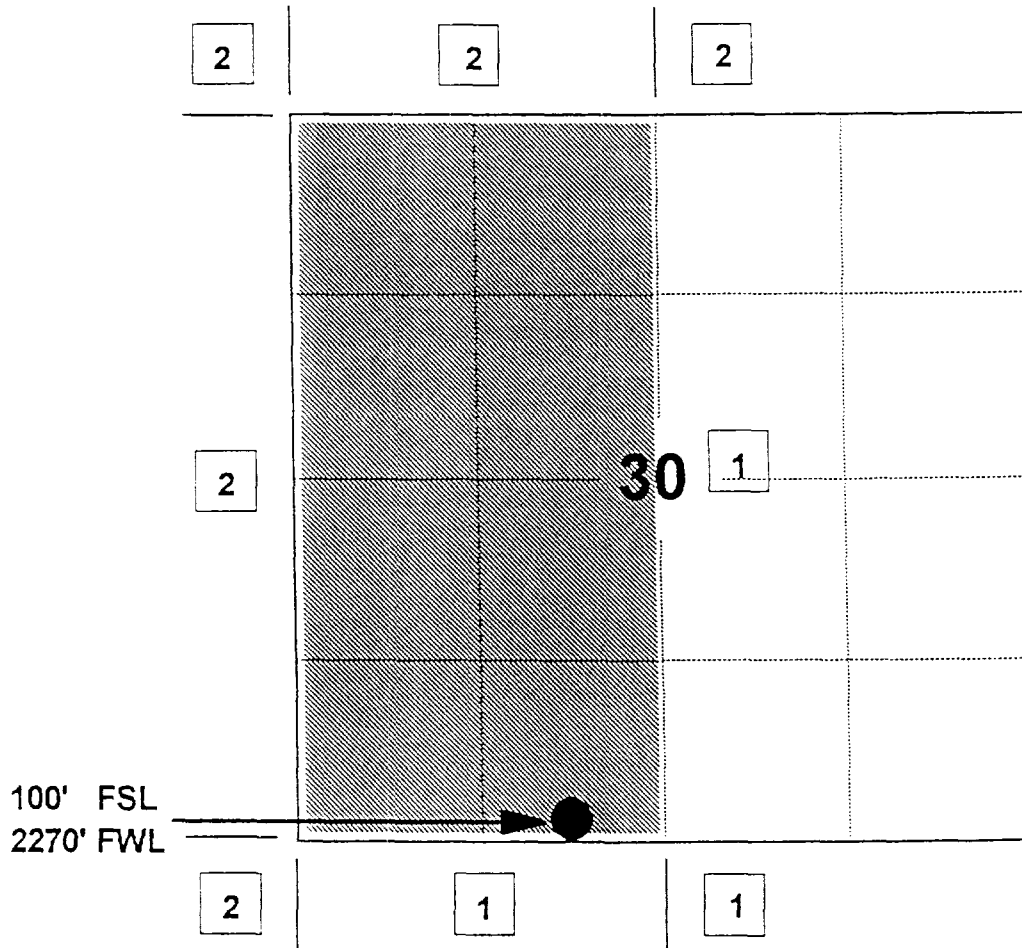
MERIDIAN OIL INC

OFFSET OPERATOR \ OWNER PLAT

RHODES C #101

Fruitland Coal \ Pictured Cliffs Formations Commingle

Township 28 North, Range 11 West



1) Merdian Oil Inc

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PO Box 800, Denver, CO 80202

EXHIBIT C

Fruitland Coal Formation

EXHIBIT 2

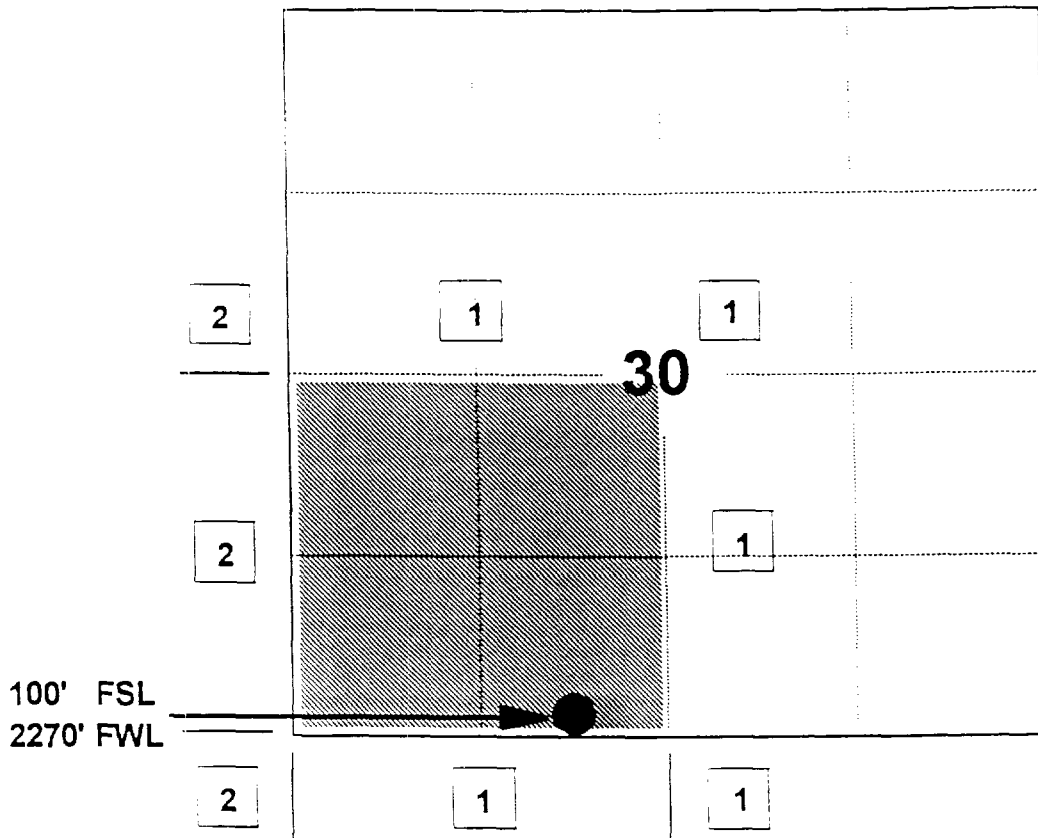
MERIDIAN OIL INC

OFFSET OPERATOR \ OWNER PLAT

RHODES C #101

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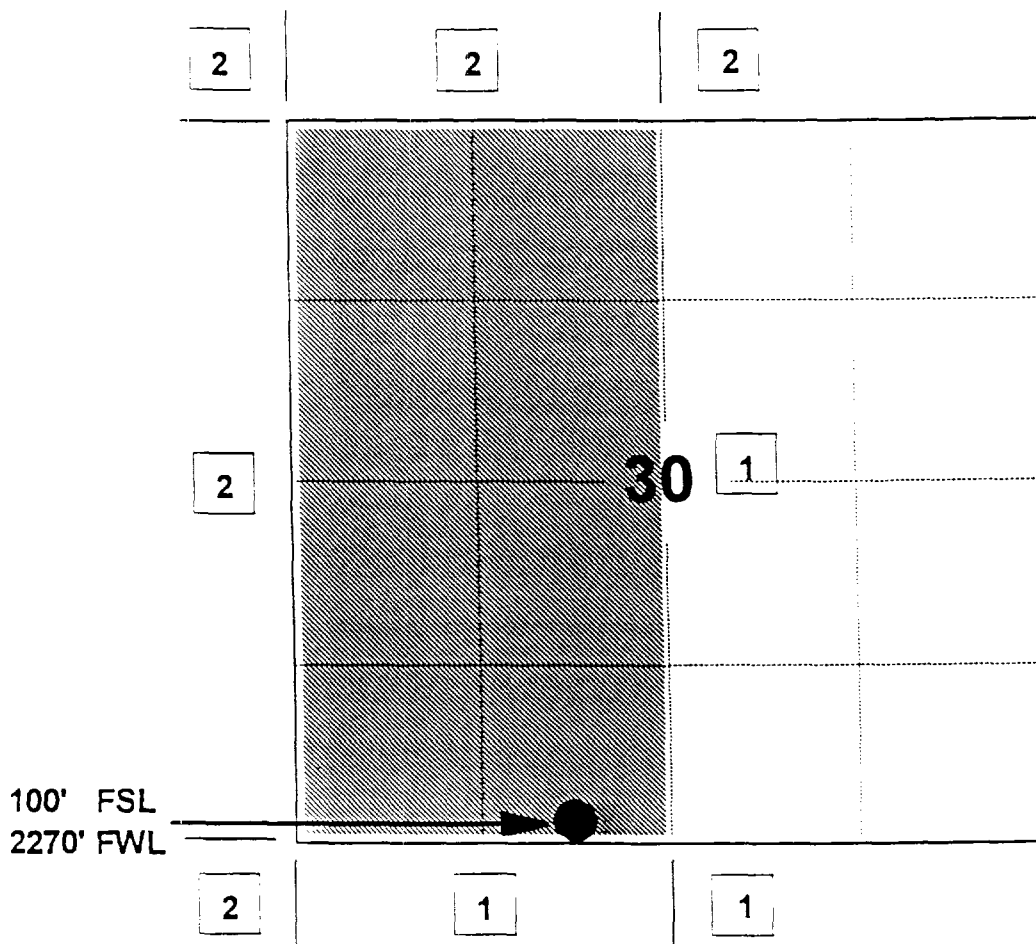
MERIDIAN OIL INC

OFFSET OPERATOR \ OWNER PLAT

RHODES C #101

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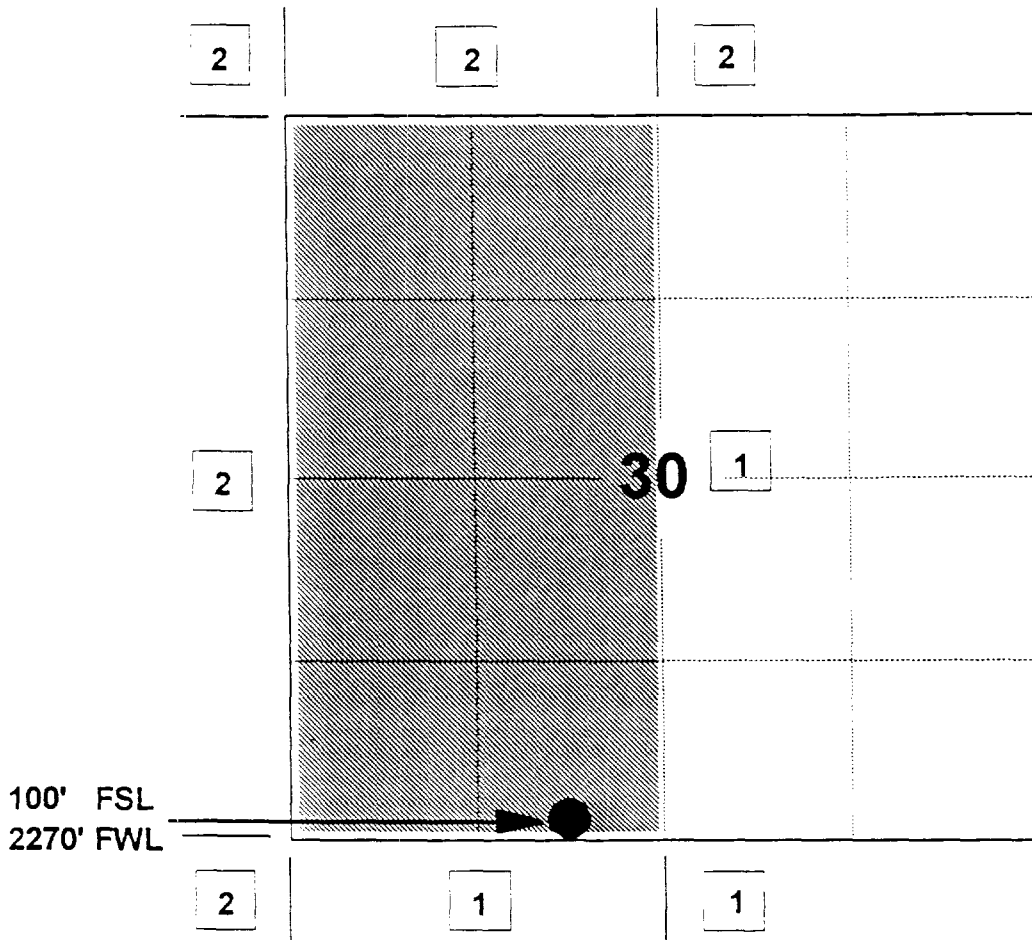
MERIDIAN OIL INC

OFFSET OPERATOR \ OWNER PLAT

RHODES C #101

Unorthodox Well Location

Township 28 North, Range 11 West



1) Merdian Oil Inc

2) Amoco Production Company

PO Box 800, Denver, CO 80202

EXHIBIT 3



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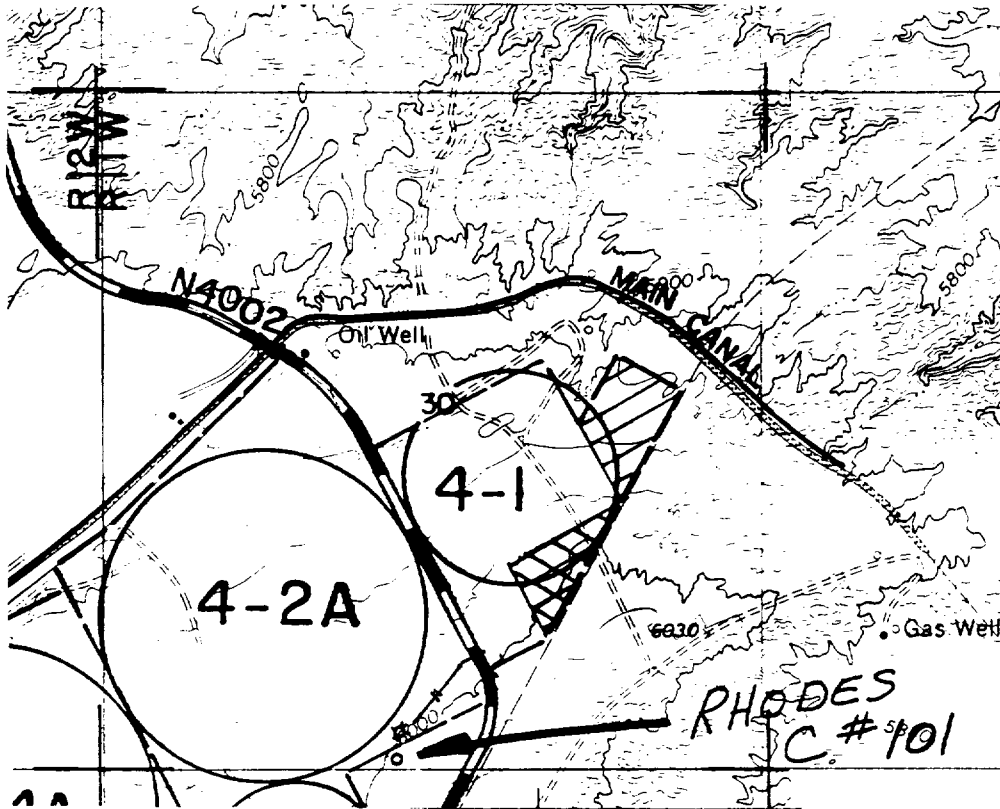
SPACING UNIT (PICTURED CLIFFS)

EXHIBIT 4



MERIDIAN OIL INC.

MOI RHODES C #101
100' FSL, 2270' FWL
SECTION 30, T28N, R11W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO



NOT TO SCALE

THIS LOCATION IS NON-STANDARD DUE TO PIVOT IRRIGATION UNITS, WATER LINES, ROADS, BURIED POWERLINES WHICH SUPPLY THE N.A.P.I. IRRIGATION PROJECT, AN EXISTING GAS WELL, AND GAS PIPELINES.

4-15-93

DATE

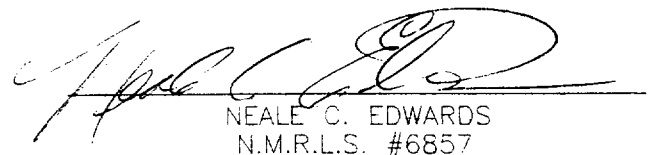

NEALE C. EDWARDS
N.M.R.L.S. #6857

EXHIBIT 5

RHODES C #101

MONTHLY GAS PRODUCTION ALLOCATION FORMULA

GENERAL EQUATION

$$Q = Q_{ftc} + Q_{pc}$$

WHERE: Q_t = TOTAL MONTHLY PRODUCTION (MCF/MONTH)

Q_{ftc} = FRUITLAND COAL (FTC) MONTHLY PRODUCTION

Q_{pc} = PICTURED CLIFFS (PC) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR Q_{ftc} :

$$Q_{ftc} = Q_t - Q_{pc}$$

ANY PRODUCTION RATE OVER WHAT IS CALCULATED FOR THE PICTURED CLIFFS (PC) USING THE APPLIED FORMULA IS FRUITLAND COAL (FTC) PRODUCTION.

ICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:

$$Q_{pc} = Q_{pci} * e^{-\{D_{pc}\}(t)}$$

WHERE: Q_{pci} = INITIAL PC MONTHLY FLOW RATE (CALCULATED FROM FLOW TEST

D_{pc} = PICTURED CLIFFS MONTHLY DECLINE RATE DETERMINED FROM:

MATERIAL BALANCE (FIELD ANALOGY):
VOLUMETRIC RESERVES (LOG ANALYSIS)
 $G f(P^*) = 1.05 \text{ MMCF/PSI} \times P^* \times R_f$

P^* = INITIAL RESERVOIR PRESSURE (7 DAY SIBHP)
 R_f = RECOVERY (FIELD ANALOGY): = 0.85

THUS: $Q_{ftc} = Q_t - Q_{pci} * e^{-\{D_{pc}\}(T)}$

WHERE: (t) IS IN MONTHS

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3.

RHODES C #101

DETERMINATION OF Q_{pci} : (INITIAL PICTURED CLIFFS MONTHLY PRODUCTION)

$$\underline{Q_{pci} = Q_t(1) * Q_{pc}(P) \setminus \{Q_{pc}(p) + Q_{ftc}(p)\}}$$

WHERE:

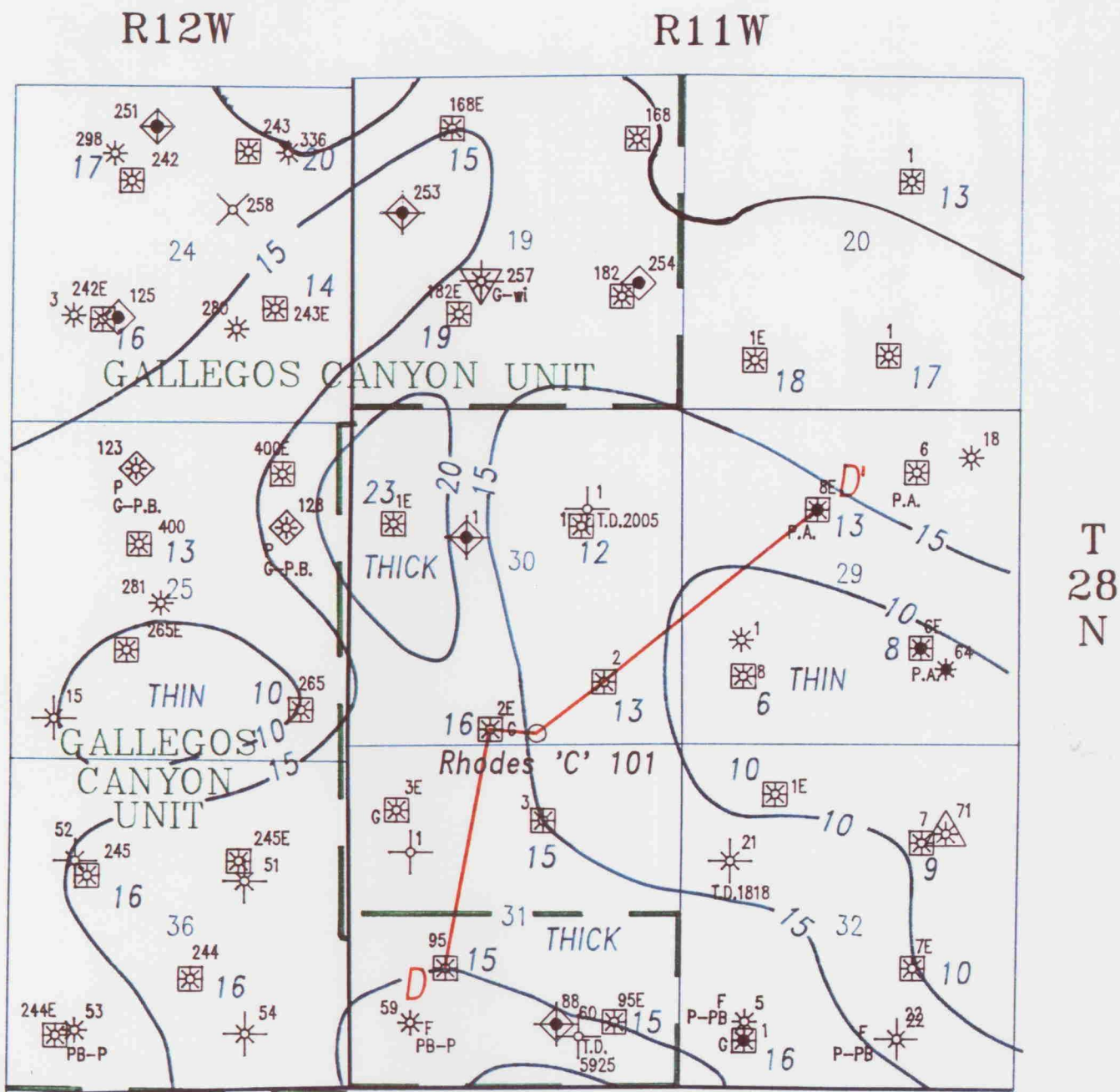
$Q_t(1)$ = FIRST MONTH TOTAL PRODUCTION (MCF)

$Q_{pc}(p)$ = FINAL PICTURED CLIFFS FLOW TEST (MCFPD)

$Q_{ftc}(p)$ = FINAL FRUITLAND COAL FLOW TEST (MCFPD)



EXHIBIT 6



Net Pay = $R_t > \text{Shale Baseline} \ \& \ Sp > (-10) \text{ mv Deflection}$

Scale 2" = 1 mile

NL no log

NLD not logged over Pictured Cliffs

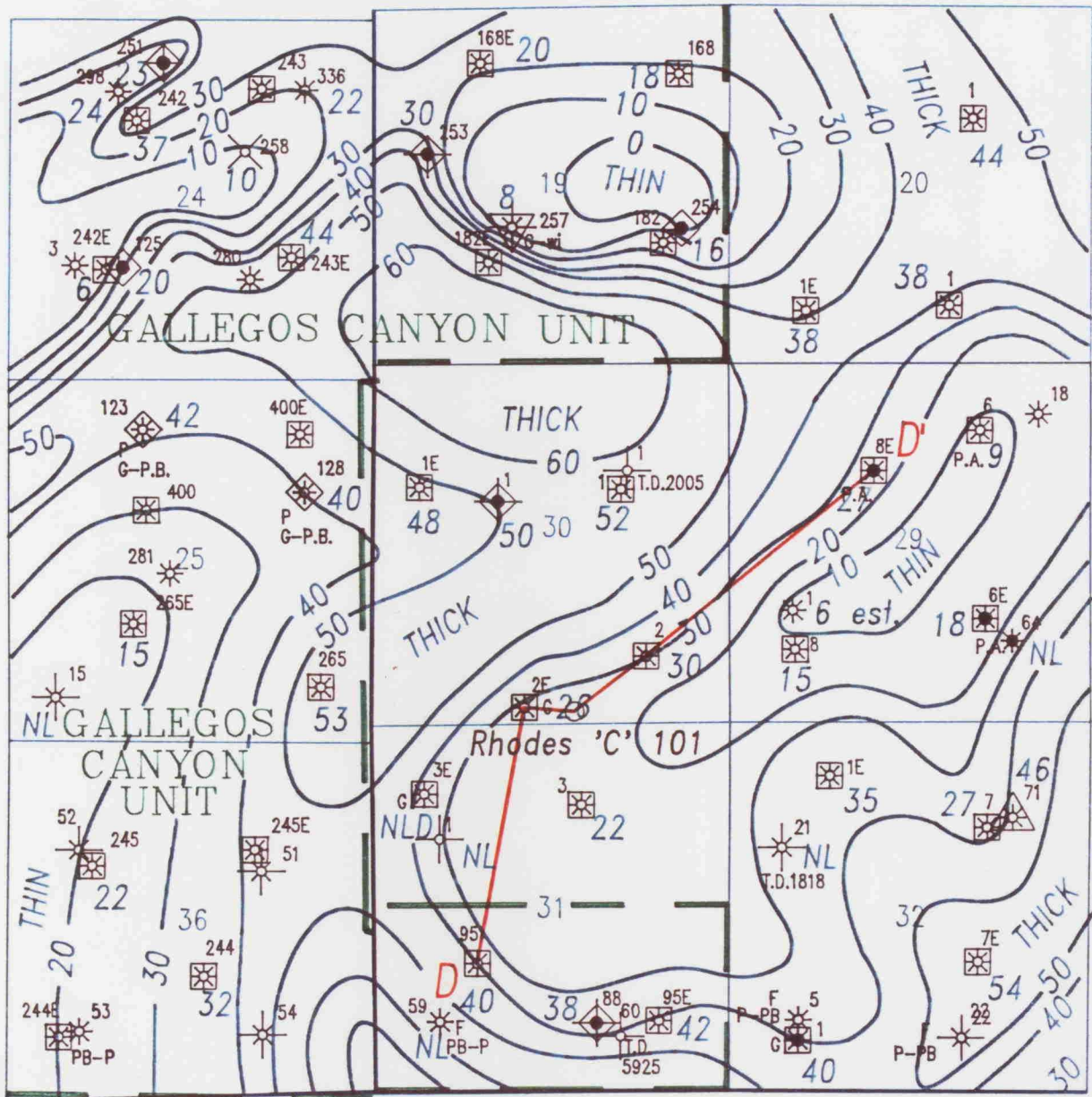
- FRUITLAND
- PICTURED CLIFFS
- MESA VERDE
- DAKOTA

Fruitland Coal Net Pay Isopach

C.I. = 5 FT.

San Juan Co., N.M.

R11W




Net Pay = R_t > Shale Baseline & S_p > (-10) mv Deflection

Scale $2'' = 1 \text{ mile}$

NL no log

NLD not logged over Pictured Cliffs

-  FRUITLAND
-  PICTURED CLIFFS
-  MESAVERDE
-  DAKOTA

Pictured Cliffs Net Pay Isopach

C.I. = 10 FT.

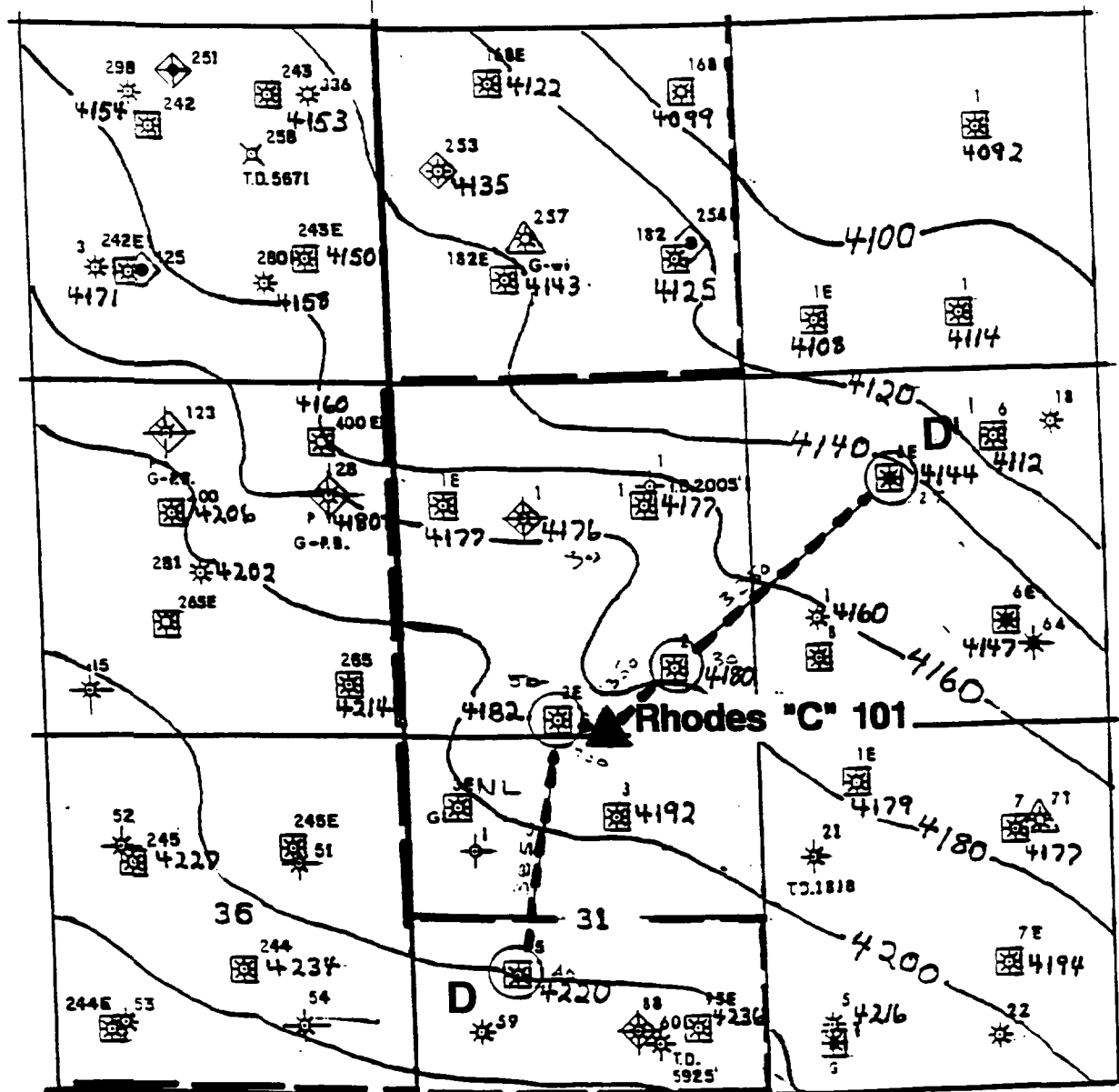
San Juan Co., N.M.



EXHIBIT 7



R 11 W



T
28
N

MERIDIAN OIL

Structure Base Fruitland Coal

San Juan County, New Mexico

C.I.: 20 ft. 2 in. : 1 mi.

C. 1.

SCALE

MAP NUMBER

EXHIBIT 8

Type Log for Rhodes "C" 101

T.L. Rhodes "C" 2E

se sw 30-28n-11w

