STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

August 19, 1993

HINKLE, COX, EATON,
COFFIELD & HENSLEY
Attorneys at Law
P. O. Box 2068
Santa Fe, New Mexico 87501

RE: CASE NO. 10731
ORDER NO. R-9940

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Sincerely,

Sally E. Leichtle
Administrative Secretary

cc: BLM - Carlsbad
Tom Kellahin
Ernest Carroll

LAW OFFICES

LOSEE, CARSON, HAAS & CARROLL, P. A.

ERNEST L. CARROLL
JOEL M. CARSON
JAMES E. HAAS
A. J. LOSEE
—
DEAN B. CROSS
MARY LYNN BOGLE

300 YATES PETROLEUM BUILDING
P. O. DRAWER 239
ARTESIA, NEW MEXICO 88211-0239

TELEPHONE
(505) 746-3505
TELECOPY
(505) 746-6316

July 9, 1993

VIA FACSIMILE AND FIRST CLASS MAIL

Mr. David Catanach
Hearing Examiner
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: In the matter of the Application of Nearburg Producing Company for an Unorthodox Oil Well Location, Eddy County, New Mexico; Case No. 10,731

Dear Mr. Catanach:

I am submitting herewith on behalf of Yates Petroleum Corporation a proposed Order for your consideration in the above-referenced matter.

If you have any questions or if I can provide you with anything further, please advise.

Yours truly,

LOSEE, CARSON, HAAS & CARROLL, P.A.

Ernest L. Carroll

ELC:kth
Encl.

xc w/encl: Kathy Porter
James G. Bruce, Esq.
Tom Kellahin, Esq.

KELLAHIN AND KELLAHIN
ATTORNEYS AT LAW
EL PATIO BUILDING
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POST OFFICE BOX 2265
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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

Transmittal Memo

DATE: July 12, 1993

TO: David R. Catanacch
Oil Conservation Division
310 Santa Fe Trail
Santa Fe, New Mexico 87503

RE: NMOCD Case No. 10731
Order No. R-____
Application of Nearburg Producing Company for an Unorthodox Oil Well Location, Eddy County, New Mexico

---

The following documents are enclosed:

Conoco's Proposed Order of the Division.

PLEASE:

__x__ For your information and review.

David -
Floppy
Disk
Also
Enclosed

Sincerely,

W. Thomas Kellahin

cc: James Bruce Esq.
Ernest Carroll Esq.
Jerry Hoover

WTK/mg
Enclosure

HINKLE, COX, EATON, COFFIELD & HENSLEY

ATTORNEYS AT LAW

218 MONTEZUMA

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OF COUNSEL
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WASHINGTON, D.C.
SPECIAL COUNSEL
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August 11, 1993

David Catanach
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87503

Re: Case No. 10,731, Application of Nearburg Producing Company for an Unorthodox Well Location, Eddy County, New Mexico.

Dear Mr. Catanach:

Nearburg Producing Company hereby requests that the above case be dismissed. Nearburg's acreage is being drained, and due to rig availability problems, Nearburg has decided to move the well to an orthodox location 660 feet FNL and 1,980 feet FWL of Section 31 - 19 South - 25 East.

Very truly yours,

HINKLE, COX, EATON, COFFIELD & HENSLEY

James Bruce

c: W. Thomas Kellahin, Esq.
Ernest L. Carroll, Esq.

VIA HAND DELIVERY

JGB5\93E70.c

LAW OFFICES

LOSEE, CARSON, HAAS & CARROLL, P. A.

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FAX TRANSMITTAL DATE: 6/11/93

PLEASE DELIVER THE FOLLOWING PAGE(S) TO:

NAME: Wm. J. LeMay, Director

FIRM: OCD

FAX NO. ( ) 827-5741 FIRM NO. _____

SENDER: Ernest Carroll

TOTAL NUMBER OF PAGES (INCLUDING THIS SHEET): 4

****

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(505) 746-3505 ASK FOR: Kandy

****

MESSAGE: _____

LAW OFFICES

LOSEE, CARSON, HAAS & CARROLL, P. A.

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June 11, 1993

VIA FACSIMILE AND FIRST CLASS MAIL

Mr. William J. LeMay, Director
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: In the Matter of the Application of Nearburg Producing Company for an Unorthodox Gas Well Location, Eddy County, New Mexico; Case No. 10731

Dear Mr. LeMay:

Enclosed please find for filing in the above-referenced case the Prehearing Statement of Yates Petroleum Corporation.

Very truly yours,

LOSEE, CARSON, HAAS & CARROLL, P.A.

Ernest L. Carroll

Ernest L. Carroll

ELC:kth
Enclosures

xc w/encl: Mr. James G. Bruce
Mr. Tom Kellahin
Ms. Kathy Porter, Yates Petroleum Corporation

BEFORE THE OIL CONSERVATION DIVISION

NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES

IN THE MATTER OF THE APPLICATION OF NEARBURG PRODUCING COMPANY FOR AN UNORTHODOX GAS WELL LOCATION, EDDY COUNTY, NEW MEXICO **CASE NO. 10731**

PRE-HEARING STATEMENT

This prehearing statement is submitted by YATES PETROLEUM CORPORATION, as required by the Oil Conservation Division.

APPEARANCES OF PARTIES

APPLICANT	ATTORNEY
Nearburg Producing Company	Jim Bruce, Hinkle, Cox, Eaton, Coffield & Hensley P. O. Box 2068 Santa Fe, NM 87504-2068 (505)982-4554
OPPOSITION OR OTHER PARTY	**ATTORNEY**
Yates Petroleum Corporation	Ernest L. Carroll Losee, Carson, Haas & Carroll, P.A. P. O. Drawer 239 Artesia, NM 88211-0239 (505)746-3505
Conoco, Inc.	W. Thomas Kellahin Kellahin & Kellahin P. O. Box 2265 Santa Fe, NM 87504-2265

STATEMENT OF CASE

APPLICANT

Applicant has requested approval to drill its Dagger Draw 31 Federal Well No. 5 in the North Dagger Draw-Upper Pennsylvanian Pool, at an unorthodox well location 330' FNL and 2460' FWL of Section 31, Township 19 South, Range 25 East, N.M.P.M., Eddy County, New Mexico, with the NW/4 of Section 31 to be dedicated to the well.

OPPOSITION OR OTHER PARTY

Yates Petroleum Corporation objects to the application.

PROPOSED EVIDENCE

YATES PETROLEUM CORPORATION

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
Kathy Porter, Landman	15 min.	2
D'Nese Fly, Geologist	15 min.	2
David Boneau, Engineer	30 min.	3

Respectfully submitted,

LOSEE, CARSON, HAAS & CARROLL, P.A.

By: Ernest L. Carroll

Ernest L. Carroll
P. O. Drawer 239
Artesia, New Mexico 88211-0239
(505)746-3505

Attorneys for Yates Petroleum Corp.

I hereby certify that I caused to be mailed a true and correct copy of the foregoing to all counsel of record this June 11, 1993.

Ernest L. Carroll

Ernest L. Carroll

HINKLE, COX, EATON, COFFIELD & HENSLEY

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June 15, 1993

W. Thomas Kellahin, Esq.
Kellahin & Kellahin
Post Office Box 2265
Santa Fe, New Mexico 87504-2265

Re: Nearburg/Conoco

Dear Tom:

Pursuant to my telephone call this morning, Nearburg requests copies of Conoco's exhibits. We need them today. In my discussions with the OCD, I was informed that the exhibits exchange would be mutual, and Nearburg has already turned over their exhibits.

Very truly yours,

HINKLE, COX, EATON, COFFIELD & HENSLEY

James Bruce

James Bruce

JB:frs
c: Robert Shelton
(Via Facsimile Transmission)
Robert G. Stovall, Esq.
(Via Facsimile Transmission)

VIA FACSIMILE TRANSMISSION

JGB5\93A86.c

HINKLE, COX, EATON, COFFIELD & HENSLEY

Attorneys at Law

218 Montezuma

Post Office Box 2068

Santa Fe, New Mexico 87504-2068

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FAX COVER SHEET

PLEASE DELIVER THE FOLLOWING PAGE(S) TO:

NAME: Robert Stovall

COMPANY & LOCATION: OCD

CITY/STATE: Santa Fe, NM

FAX NO.: 827-5741 / 2 / 5 / 2 / 6

FROM: James Bruce

TOTAL NUMBER OF PAGES 2 INCLUDING COVER SHEET.

DATE: June 15, 1993 TIME: _____

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HINKLE, COX, EATON, COFFIELD & HENSLEY

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June 15, 1993

Robert G. Stovall, Esq.
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87503

Re: Case No. 10.731

Dear Mr. Stovall:

Enclosed is a copy of a letter from Nearburg Producing Company to Conoco Inc., delivering copies of Nearburg's hearing exhibits.

Very truly yours,

HINKLE, COX, EATON, COFFIELD & HENSLEY

James Bruce

James Bruce

JB:frs
Enclosure

VIA HAND DELIVERY

JGB5\93A83.c

Nearburg Producing Company

Exploration and Production
1 Petroleum Center, Bldg. 8, Suite 100
3300 North "A" Street
Midland, Texas 79705
915/686-8235
Fax 915/686-7806

June 14, 1993

Mr. Jerry Hoover
Conoco, Inc.
10 Desta Drive
West Suite 100
Midland, Texas 79705

Re: Exhibits to Dagger Draw
Federal #5 Hearing
Dagger Draw South Prospect

Dear Jerry:

Pursuant to our attorney's instructions of this date, we understand that the Commission has ruled that Conoco and Nearburg must exchange exhibits prior to Nearburg's June 17, 1993 unorthodox hearing with regard to the captioned well.

Enclosed with this letter please find all of Nearburg's geologic, engineering and land exhibits prepared to date with regard to said hearing.

Please call me as soon as you receive these exhibits so a set of Conoco's exhibits can be delivered to Nearburg.

Thank you for your cooperation.

Yours very truly,

Bob Shelton
Consulting Landman

bob\conoco.ltr

Nearburg Producing Company

Exploration and Production
1 Petroleum Center, Bldg. 6, Suite 100
3300 North "A" Street
Midland, Texas 79705
915/686-8235
Fax 915/686-7806

OCD HEARING EXHIBITS

DAGGER DRAW FEDERAL #5 UNORTHODOX LOCATION

Received this date the OCD Hearing Exhibits for the Dagger Draw Federal #5 Unorthodox Location.

CONOCO, INC.

By: D Brown

Its: Rept

Date: 6-14-93

KELLAHIN AND KELLAHIN
ATTORNEYS AT LAW
EL PATIO BUILDING
117 NORTH GUADALUPE
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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

June 4, 1993

Mr. David R. Catanach
Hearing Examiner
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Robert G. Stovall, Esq.
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: **MOTION FOR CONTINUANCE**
NMOCD Case 10731
Application of Nearburg Producing Company
for an Unorthodox Well Location
Eddy County, New Mexico

Gentlemen:

On behalf of Conoco Inc, I hereby request that the evidentiary portion of the referenced case be continued from the June 17, 1993 Examiner's Hearing Docket for the following reasons:

(1) On May 7, 1993, I delivered a written request for document production to William F. Carr, attorney for Nearburg Producing Company;

(2) On May 25, 1993, I delivered another written request for document production to James Bruce, the current attorney for Nearburg Producing Company.

(3) By letter dated June 2, 1993, Mr. Bruce refused to produce the geological or engineering interpretations or opinions of Nearburg's expert witnesses.

(4) On June 4, 1993, I served on Mr. Bruce a Division issued subpoena requiring Nearburg Producing Company to produce the documents at the Examiner's Hearing set for June 17, 1993.

(5) Without the production of the requested documents, Conoco cannot adequately prepare its case.

THEREFORE, in order to have time to adequately prepare its opposition, Conoco Inc requests that the evidentiary portion of this case be continued and heard by the Division Examiner at a hearing set not soon than ten days after Nearburg Producing Company produces to Conoco Inc. the subpoenaed documents.

Respectfully submitted,

W. Thomas Kellahin

cc: Jerry Hoover (Conoco-Midland)
cc: James Bruce, Esq.(Nearburg Producing Company)
cc: Ernest Carroll, Esq. (Yates Petroleum Corporation)

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

May 7, 1993

RECEIVED
MAY - 7 1993
CAMPBELL, CARR, et. al.

HAND DELIVERED

William F. Carr, Esq.
Campbell, Carr, Berg & Sheridan
Attorneys at Law
110 North Guadalupe
Santa Fe, New Mexico 87501

Re: REQUEST FOR DOCUMENT PRODUCTION:

Application of Nearburg Producing Company for Approval of an Unorthodox Location for its Dagger Draw 31 Federal Well No 5, located 660 feet FNL and 2310 feet FWL (Unit C) Section 31, T19S, R25E, NMPM, Eddy County, New Mexico

Dear Mr. Carr:

I am appearing on behalf of Conoco Inc. in opposition to the referenced Nearburg case which I understand you have placed on the NMOCD docket set for hearing on May 20, 1993.

On behalf of Conoco Inc., and in lieu of a Division Subpoena, we hereby request that on or before noon, Thursday, May 13, 1993, Nearburg Producing Company deliver to me at my office the following documents:

(1) Any and all documents including but not limited to plats, maps and surveys involving any surface use limitations, easements, utility lines, pipelines, surface improvements, restrictions, stipulations or archeological surveys which show and/or describe the extent of the topographical conditions in Section 31, T19S, R25E;

EXHIBIT NO. A

(2) Any documents being used by the applicant as the basis for the requested unorthodox well location;

(3) Any petroleum engineering data being used by the applicant to justify its location;

(4) Any geologic data including geologic maps, structure maps, isopachs, cross-sections, and/or logs being used by the applicant to justify its location

(5) Copies of any and all exhibits which the applicant may or could use as hearing exhibits in this case.

Very truly yours,

W. Thomas Kellahin

cc: Jerry Hoover (Conoco-Midland)

HINKLE, COX, EATON, COFFIELD & HENSLEY

ATTORNEYS AT LAW
218 MONTEZUMA
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OF COUNSEL
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WASHINGTON, D.C.
SPECIAL COUNSEL
ALAN J. STATMAN*

June 2, 1993

Via Hand Delivery

W. Thomas Kellahin
117 North Guadalupe
Santa Fe, New Mexico

Re: Nearburg/Conoco

Dear Tom:

Enclosed are documents regarding Nearburg's proposed well location, produced pursuant to your May 7, 1993 letter request. The documents requested by paragraph (1) of your letter are produced in full. As to paragraphs (2), (3), and (4) of your letter, the raw engineering/geological data is being turned over. The documents pertain not only to the proposed location, but to wells within a mile or so of the proposed well. Pursuant to the ruling of the Commission in Case No. 10211 (Santa Fe/Hanley), Nearburg is not turning over geologic interpretations such as isopachs or cross-sections, or engineering interpretations such as reservoir or economic studies. Finally, regarding paragraph (5) of your letter, Nearburg has not finalized its exhibits, and furthermore does not believe it is required to turn them over before the hearing. I am willing to explore with you the possibility of exchanging exhibits with Conoco a day or two before the hearing.

Please call me if you have any questions.

Very truly yours,

EXHIBIT NO. B

HINKLE, COX, EATON,
COFFIELD & HENSLEY

James Bruce

020693.002

BEFORE THE OIL CONSERVATION DIVISION

RECEIVED
JAN 1991
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF SANTA FE ENERGY OPERATING PARTNERS, L.P. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

CASE NO. 10211

SUBPOENA DUCES TECUM

TO: Santa Fe Energy Operating Partners, L.P.
c/o James Bruce, Esq.
Hinkle, Cox, Eaton, Coffield & Hensley
500 Marquette, N.W.
Albuquerque, New Mexico 87102

Pursuant to the power vested in this Division, you are commanded to produce at 8:15 A.M., January 10, 1991, to the offices of the Oil Conservation Division, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico 87501 and make available for copying, all the following documents under the possession or control of Santa Fe Energy Operating Partners, L.P.:

EXHIBIT NO. C

For the following well:

Kachina "8" Federal Well No. 1 located in NE/4NW/4, Section 8, Township 18 South, Range 33 East, Lea County, New Mexico.

Produce the following data:

1. Any and all pressure data, including but not

limited to bottom hole pressure surveys;

2. Mechanical logs and mud logs, if any;

3. Any and all Gas Oil Ratio Tests;

4. Any and all specific gravity information on the liquids;

5. Any and all production information;

6. Any and all reserve calculations, including but not limited to volumetric calculations of reserves, including recoverable reserves;

7. Any and all reservoir studies;

8. Any and all economic studies including but not limited to estimates of payout and rates of return; and

9. Complete daily drilling and completion reports from inception to the latest available data for each well.

10. Geologic interpretations by which you justify the well and evaluate its risk.

INSTRUCTIONS

This Subpoena Duces Tecum seeks all information available to you or in your possession, custody or control from any source, wherever situated, including but not limited to information from any files, records,

documents, employees, former employees, counsel and former counsel. It is directed to each person to whom such information is a matter of personal knowledge.

When use herein, "you" or "your" refers to the person or entity to whom this Subpoena Duces Tecum is addressed to include all of his or its attorneys, officers, agent, employees, directors, representatives, officials, departments, divisions, subdivisions, subsidiaries, or predecessors.

NEW MEXICO OIL CONSERVATION DIVISION

WILLIAM J. LeMAY
Director

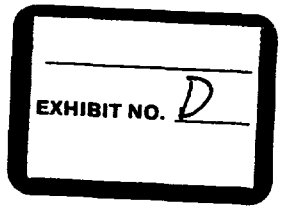
ISSUED THIS 31st day of January, 1991, at Santa Fe, New Mexico.

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

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

Case 10211

APPLICATION OF SANTA FE ENERGY OPERATING PARTNERS, L. P., FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO, BEING HEARD BY THE COMMISSION AS AN INTERLOCUTORY APPEAL FROM AN ORDER OF THE EXAMINER SUSTAINING CERTAIN PORTIONS OF A SUBPOENA DUCES TECUM.



RULING OF THE COMMISSION

BY THE COMMISSION:

This matter came before the Oil Conservation Commission of New Mexico hereinafter referred to as the "Commission" at 9:00 a.m. on January 17, 1991, at Santa Fe, New Mexico.

NOW, on this 15th day of February, 1991, the Commission, a quorum being present, having considered the argument of counsel and being fully advised in the premises,

FINDS THAT:

(1) The Commission has jurisdiction of this cause and the subject matter thereof, and no additional notice is required for this interlocutory-type hearing.

(2) Santa Fe Energy Operating Partners, L.P. ("Santa Fe") filed an application with the Division seeking to compulsory pool mineral interests, including those of Hanley Petroleum, Inc., in the W/2 NW/4 of Section 8, Township 18 South, Range 3 East, NMPM, Lea County, New Mexico; said proration unit to be dedicated to the Kachina "8" Federal No. 2 to be drilled at an orthodox location in a separate proration unit.

(3) On January 3, 1991, at the request of Hanley Petroleum, Inc. and pursuant to Division Rule 1211, the Director signed a Subpoena (attached hereto as Exhibit A) directing Santa Fe to produce certain documents, as identified in the separate paragraphs, relating to information on the Kachina "8" Federal Well No. 1, a tight hole, located in

the NE/4 NW/4 of Section 8, Township 18 South, Range 33 East, NMPM, Lea County, New Mexico.

(4) On January 9, 1991, Santa Fe Energy Operating Partners, L.P. filed a motion to quash the aforementioned Subpoena.

(5) On January 10, 1991, the Examiner heard argument of Counsel on the Motion to Quash the Subpoena in Case No. 10211 and ruled orally that Hanley was not entitled to receive those items requested in the Subpoena which were the result of Santa Fe's interpretation of data or information which was available from other sources, including Oil Conservation Division records. The Examiner therefore quashed the request for item no. 6 reserve calculations, item no. 7 reservoir studies, item no. 8 economic studies, and item no. 10 geologic interpretations. The Examiner further ruled that Hanley was entitled to receive and the Subpoena should stand with respect to requests for raw data which include item 1 pressure data, item 2 mechanical and mud logs, item 3 gas-oil ratio tests, item 4 specific gravity information, item 5 production information, and item 9 daily drilling and completion reports, as those items relate to the Kachina "8" Federal Well No. 1. The Examiner further ordered that these items be produced and made available to Hanley under an order of confidentiality and that Hanley be prohibited from disclosing this information to any other person.

(6) On January 14, 1991, Santa Fe requested from the Division, that the Commission consider an appeal of the Examiner's decision, reverse the Examiner and quash the Subpoena in toto. All parties involved concurred with the request for an appeal to the Commission to consider the matter.

(7) There are no expiring leases in Section 8 requiring a well to be drilled expeditiously.

(8) The Division recognizes that it has been industry practice to honor and to hold confidential information which a party has acquired by drilling a well and to allow that party spending their money to acquire that information the opportunity to use it for their competitive advantage.

(9) Rule 1212 of the Rules and Regulations of the Oil Conservation Division states that the rules of evidence normally applicable in court proceedings can be relaxed where the ends of justice can be better served, and the Commission has implemented this concept by limiting the discovery principal in its application to very explicit areas involving waste and correlative rights.

(10) Santa Fe argues that because it has offered to make the information requested available to Hanley if Hanley will commit beforehand to either farm-out or to join in the drilling of the well, that it should not

be required to disclose the information prior to Hanley making that commitment.

(11) Hanley was unwilling to commit its interest to the well in any manner without receiving the information from Santa Fe and Santa Fe therefore filed this forced pooling application pursuant to the Oil & Gas Act asking the Division to use the police powers of the State to force a private property interest to be committed to this drilling venture. As a result, Hanley is forced to decide between accepting Santa Fe's farm-out offer, joining in the drilling of the well by paying its proportionate share of costs in advance or being force pooled and allowing Santa Fe to recover out of production Hanley's proportionate share of drilling and completing and equipping the well, plus a risk penalty established by the Division, without having access to information about a direct offset well operated by Santa Fe which information is now available only to Santa Fe.

(12) When a party asks the Division to use the police power of the State to impose a burden upon a private property interest, minimum due process requires a departure from usual industry practice with respect to the disclosure of the information, and Hanley should be allowed access to the raw data information from the offsetting Kachina "8" Federal No. 1 well which is not otherwise available from public sources, but it should not be allowed to compel Santa Fe to produce Santa Fe's interpretations of this data, whether or not those interpretations are based on information from just this well or from all of the available information.

(13) Rule 1105 of the Rules and Regulations of the Oil Conservation Division requires the filing of Form C-105 which includes all special tests conducted on the well (item 1, 3, 4, and 5 of the Subpoena), one copy of all electrical and radio-activity logs run on the well (part of item 2 of the Subpoena), which information becomes of public record immediately, or if so requested by the operator of the well, after being held confidential for 90 days. Daily drilling and completion reports (item 9 of the Subpoena) could be public record if they contain testing information. Rule 1105 further provides that the data may be introduced in public hearing regardless of the request that it be held confidential.

(14) Santa Fe could keep all information on the Kachina "8" Federal No. 1 well confidential for 90 days from completion if it dismisses the pending application and does not seek to involve the police powers of the State to force pool Hanley.

(15) In order to comply with minimum due process requirements implicated by State action and to protect the correlative rights of Hanley, Santa Fe should be required to provide sufficient information for Hanley to make an informed decision as to which of the alternatives set forth above it elects to follow by having access to data which normally

accompanies Form C-105 but none of the interpretative information from the Kachina "8" Federal No. 1 well which is in the possession of Santa Fe and not normally a part of the public record. The information should be disclosed only to Hanley and subject to prohibition against Hanley revealing that information to any other person, provided however, that such data may be introduced at the hearing and become part of the public hearing record.

(16) The disclosure of information required by this order should only be available to parties to a case where property rights are immediately and directly affected by the imposition of police power on those rights.

IT IS THEREFORE ORDERED THAT:

(1) The order of the Examiner quashing the Subpoena with respect to items 6, 7, 8 and 10 is hereby upheld and the Subpoena is hereby quashed with respect to those items.

(2) The order of the Examiner holding the Subpoena and requiring the documents identified in paragraph (1), (3), (4) and (5) is upheld in its entirety.

(3) The order of the Examiner requiring the production with respect to items no. 2 and no. 9 is modified and Santa Fe must produce these documents requested in those paragraphs as follows:

(a) mechanical logs (all electrical and radio-activity logs); and

(b) any testing information contained in daily drilling and completion reports from inception to the latest available data.

(4) Santa Fe is hereby directed and required to produce to the Division within ten days from the date of this order for the use of Hanley Petroleum those documents identified in ordering paragraphs (2) and (3).

(5) This production and discovery shall be for the exclusive use of Hanley Petroleum, Inc. and Hanley shall not reveal any information produced in accordance with this order to any other person for any reason so long as such information is confidential pursuant to the Rules and Regulations of the Division.

(6) Done at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMI BAILEY, Member

WILLIAM W. WEISS, Member

WILLIAM J. LEMAY, Chairman

S E A L

dr/

HINKLE, COX, EATON, COFFIELD & HENSLEY

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WASHINGTON, D.C.
SPECIAL COUNSEL
ALAN J. STATMAN*

June 8, 1993

David R. Catanach
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87503

VIA HAND DELIVERY

Robert G. Stovall, Esq.
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87503

VIA HAND DELIVERY

Re: Case No. 10,731, The Application of Nearburg Producing Company for an Unorthodox Well Location, Eddy County, New Mexico.

Gentlemen:

This letter constitutes Nearburg's (1) Motion to Quash Subpoena, and (2) Response in Opposition to Conoco's Motion for Continuance.

I. BACKGROUND.

On May 7, 1993 Mr. Kellahin, on behalf of Conoco, delivered to Mr. Carr, Nearburg's attorney[1], a letter request for document production. A copy of the letter is attached hereto as Exhibit A. This letter was delivered to Nearburg by the undersigned in mid-May. Nearburg collected substantial amounts of data, and by letter dated June 2, 1993 (copy attached hereto as

[1]Due to scheduling conflicts Mr. Carr had to withdraw from representing Nearburg.

Exhibit B), Nearburg turned over (1) all data requested in paragraph (1) of Mr. Kellahin's letter, and (2) all raw data (logs, etc.) requested by paragraphs (2) - (4) of Mr. Kellahin's letter. Nearburg refused to turn over its geologic or engineering interpretations (isopachs, economic studies, etc.), and also refused to turn over its hearing exhibits (which have not yet been finalized). The data turned over by Nearburg included data not only from its proposed well unit, but data in its files for an area within approximately a mile of its proposed well. Nearburg refused to turn over the above data based upon guidelines developed by the Division and the Commission in Case Nos. 10,211 and 10,219.

II. MOTION TO QUASH SUBPOENA.

Nearburg hereby moves the Division to quash paragraphs I (2) - I (9) and II (1) - II (4) of Conoco's subpoena insofar as it requests reserve calculations, reservoir studies, economic studies, isopachs, structure maps, hearing exhibits and other geologic or engineering interpretations prepared by Nearburg. In support thereof, Nearburg states that such documents are outside the scope of documents which may be subpoenaed under Division and Commission guidelines.

The Division's subpoena guidelines in cases of this nature were outlined in Case No. 10,211 (Application of Santa Fe Energy Operating Partners, L.P. for compulsory pooling) and Case No. 10,219 (Application of Hanley Petroleum, Inc. for compulsory pooling). In Case No. 10,211, Santa Fe applied to pool an 80 acre unit for a Wolfcamp well. In Case No. 10,219, Hanley filed a counter-application to pool the same 80 acre unit, and requested approval of a well location different than that of Santa Fe's proposed well. Thus, there were two main issues in this case: (1) well operator; and (2) well location.

Hanley subpoenaed data from two of Santa Fe's offsetting wells, pursuant to the subpoena attached hereto as Exhibit C.[2] Santa Fe moved to quash Hanley's subpoena. The Division ordered all raw data described in paragraphs 1-5 and 9 of the subpoena to be produced. However, the Division refused to order production of Santa Fe's engineering and geologic interpretations and

[2]The original subpoena pertained only to one well. During the course of these cases Santa Fe completed another well, and data from that well was also requested by Hanley.

calculations. Upon appeal, the Commission upheld the Division's decision, although it was modified slightly. See Exhibit D attached hereto.

The Santa Fe/Hanley case is like Nearburg's present case because the main issue in each case is well location. Therefore, based on the foregoing, Nearburg is under no requirement to produce to Conoco its geologic and engineering calculations and interpretations, including hearing exhibits, and Nearburg requests that the subpoena be quashed.[3]

Nearburg also objects to producing the data requested by Conoco for the following reason: Recently Conoco contacted Nearburg regarding purchasing Nearburg's Dagger Draw interests. Although Nearburg was non-committal, it did inform Conoco that it would review any offer. Ordering a turnover of data at this time would give Conoco an unfair advantage in any purchase negotiations which may ensue. Again, the subpoena should be quashed.

III. RESPONSE IN OPPOSITION TO MOTION FOR CONTINUANCE.

Due to the foregoing, Nearburg has produced all data it is required to turn over to Conoco. Conoco has all the data Nearburg has[4], and two weeks is sufficient time to prepare for hearing. As a result, Nearburg requests that Conoco's motion for a continuance be denied.

Respectfully submitted,

HINKLE, COX, EATON, COFFIELD & HENSLEY

James Bruce

c: Bob Shelton
W. Thomas Kellahin, Esq.
(via Hand Delivery)
Ernest L. Carroll, Esq.
(via First Class Mail)

[3]As noted above, Nearburg has already turned over raw engineering and geologic data, together with all data requested by paragraph I (1) of the subpoena.

[4]Conoco operates wells offsetting Nearburg's proposed well, and was first notified that Nearburg would seek an unorthodox well location on April 29, 1993.

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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)

June 4, 1993

Mr. David R. Catanach
Hearing Examiner
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Robert G. Stovall, Esq.
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: **MOTION FOR CONTINUANCE**
NMOCD Case 10731
Application of Nearburg Producing Company
for an Unorthodox Well Location
Eddy County, New Mexico

Gentlemen:

On behalf of Conoco Inc, I hereby request that the evidentiary portion of the referenced case be continued from the June 17, 1993 Examiner's Hearing Docket for the following reasons:

(1) On May 7, 1993, I delivered a written request for document production to William F. Carr, attorney for Nearburg Producing Company;

(2) On May 25, 1993, I delivered another written request for document production to James Bruce, the current attorney for Nearburg Producing Company.

(3) By letter dated June 2, 1993, Mr. Bruce refused to produce the geological or engineering interpretations or opinions of Nearburg's expert witnesses.

(4) On June 4, 1993, I served on Mr. Bruce a Division issued subpoena requiring Nearburg Producing Company to produce the documents at the Examiner's Hearing set for June 17, 1993.

(5) Without the production of the requested documents, Conoco cannot adequately prepare its case.

THEREFORE, in order to have time to adequately prepare its opposition, Conoco Inc requests that the evidentiary portion of this case be continued and heard by the Division Examiner at a hearing set not soon than ten days after Nearburg Producing Company produces to Conoco Inc. the subpoenaed documents.

Respectfully submitted,

W. Thomas Kellahin

cc: Jerry Hoover (Conoco-Midland)
cc: James Bruce, Esq.(Nearburg Producing Company)
cc: Ernest Carroll, Esq. (Yates Petroleum Corporation)

HINKLE, COX, EATON, COFFIELD & HENSLEY

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BRADLEY W. HOWARD
CHARLES A. SUTTON
NORMAN D. EWART
DARREN T. GROCE*
MOLLY McINTOSH
MARCIA B. LINCOLN
SCOTT A. SHUART*
DARREN L. BROOKS
CHRISTINE E. LALE
PAUL G. NASON
DARLA M. SILVA

*NOT LICENSED IN NEW MEXICO

CLARENCE E. HINKLE (1901-1985)
W. E. BONDURANT, JR. (1913-1973)
ROY C. SNODGRASS, JR. (1914-1987)

OF COUNSEL
O. M. CALHOUN*
MACK EASLEY
JOE W. WOOD
RICHARD S. MORRIS

WASHINGTON, D.C.
SPECIAL COUNSEL
ALAN J. STATMAN*

June 2, 1993

Via Hand Delivery

W. Thomas Kellahin
117 North Guadalupe
Santa Fe, New Mexico

Re: Nearburg/Conoco

Dear Tom:

Enclosed are documents regarding Nearburg's proposed well location, produced pursuant to your May 7, 1993 letter request. The documents requested by paragraph (1) of your letter are produced in full. As to paragraphs (2), (3), and (4) of your letter, the raw engineering/geological data is being turned over. The documents pertain not only to the proposed location, but to wells within a mile or so of the proposed well. Pursuant to the ruling of the Commission in Case No. 10211 (Santa Fe/Hanley), Nearburg is not turning over geologic interpretations such as isopachs or cross-sections, or engineering interpretations such as reservoir or economic studies. Finally, regarding paragraph (5) of your letter, Nearburg has not finalized its exhibits, and furthermore does not believe it is required to turn them over before the hearing. I am willing to explore with you the possibility of exchanging exhibits with Conoco a day or two before the hearing.

Please call me if you have any questions.

Very truly yours,

EXHIBIT NO. B

HINKLE, COX, EATON,
COFFIELD & HENSLEY

James Bruce

020693.002

BEFORE THE OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF SANTA FE ENERGY OPERATING PARTNERS, L.P. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

CASE NO. 10211

SUBPOENA DUCES TECUM

TO: Santa Fe Energy Operating Partners, L.P.
c/o James Bruce, Esq.
Hinkle, Cox, Eaton, Coffield & Hensley
500 Marquette, N.W.
Albuquerque, New Mexico 87102

Pursuant to the power vested in this Division, you are commanded to produce at 8:15 A.M., January 10, 1991, to the offices of the Oil Conservation Division, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico 87501 and make available for copying, all the following documents under the possession or control of Santa Fe Energy Operating Partners, L.P.:

For the following well:

Kachina "8" Federal Well No. 1 located in NE/4NW/4, Section 8, Township 18 South, Range 33 East, Lea County, New Mexico.

Produce the following data:

1. Any and all pressure data, including but not

limited to bottom hole pressure surveys;

2. Mechanical logs and mud logs, if any;

3. Any and all Gas Oil Ratio Tests;

4. Any and all specific gravity information on the liquids;

5. Any and all production information;

6. Any and all reserve calculations, including but not limited to volumetric calculations of reserves, including recoverable reserves;

7. Any and all reservoir studies;

8. Any and all economic studies including but not limited to estimates of payout and rates of return; and

9. Complete daily drilling and completion reports from inception to the latest available data for each well.

10. Geologic interpretations by which you justify the well and evaluate its risk.

INSTRUCTIONS

This Subpoena Duces Tecum seeks all information available to you or in your possession, custody or control from any source, wherever situated, including but not limited to information from any files, records,

documents, employees, former employees, counsel and former counsel. It is directed to each person to whom such information is a matter of personal knowledge.

When use herein, "you" or "your" refers to the person or entity to whom this Subpoena Duces Tecum is addressed to include all of his or its attorneys, officers, agent, employees, directors, representatives, officials, departments, divisions, subdivisions, subsidiaries, or predecessors.

NEW MEXICO OIL CONSERVATION DIVISION

WILLIAM J. LeMAY
Director

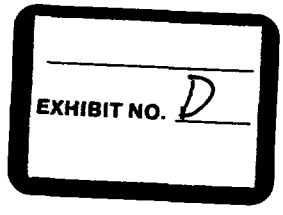
ISSUED THIS 3rd day of January, 1991, at Santa Fe, New Mexico.

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

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

Case 10211

APPLICATION OF SANTA FE ENERGY OPERATING PARTNERS, L. P., FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO, BEING HEARD BY THE COMMISSION AS AN INTERLOCUTORY APPEAL FROM AN ORDER OF THE EXAMINER SUSTAINING CERTAIN PORTIONS OF A SUBPOENA DUCES TECUM.



RULING OF THE COMMISSION

BY THE COMMISSION:

This matter came before the Oil Conservation Commission of New Mexico hereinafter referred to as the "Commission" at 9:00 a.m. on January 17, 1991, at Santa Fe, New Mexico.

NOW, on this 15th day of February, 1991, the Commission, a quorum being present, having considered the argument of counsel and being fully advised in the premises,

FINDS THAT:

(1) The Commission has jurisdiction of this cause and the subject matter thereof, and no additional notice is required for this interlocutory-type hearing.

(2) Santa Fe Energy Operating Partners, L.P. ("Santa Fe") filed an application with the Division seeking to compulsory pool mineral interests, including those of Hanley Petroleum, Inc., in the W/2 NW/4 of Section 8, Township 18 South, Range 3 East, NMPM, Lea County, New Mexico; said proration unit to be dedicated to the Kachina "8" Federal No. 2 to be drilled at an orthodox location in a separate proration unit.

(3) On January 3, 1991, at the request of Hanley Petroleum, Inc. and pursuant to Division Rule 1211, the Director signed a Subpoena (attached hereto as Exhibit A) directing Santa Fe to produce certain documents, as identified in the separate paragraphs, relating to information on the Kachina "8" Federal Well No. 1, a tight hole, located in

the NE/4 NW/4 of Section 8, Township 18 South, Range 33 East, NMPM, Lea County, New Mexico.

(4) On January 9, 1991, Santa Fe Energy Operating Partners, L.P. filed a motion to quash the aforementioned Subpoena.

(5) On January 10, 1991, the Examiner heard argument of Counsel on the Motion to Quash the Subpoena in Case No. 10211 and ruled orally that Hanley was not entitled to receive those items requested in the Subpoena which were the result of Santa Fe's interpretation of data or information which was available from other sources, including Oil Conservation Division records. The Examiner therefore quashed the request for item no. 6 reserve calculations, item no. 7 reservoir studies, item no. 8 economic studies, and item no. 10 geologic interpretations. The Examiner further ruled that Hanley was entitled to receive and the Subpoena should stand with respect to requests for raw data which include item 1 pressure data, item 2 mechanical and mud logs, item 3 gas-oil ratio tests, item 4 specific gravity information, item 5 production information, and item 9 daily drilling and completion reports, as those items relate to the Kachina "8" Federal Well No. 1. The Examiner further ordered that these items be produced and made available to Hanley under an order of confidentiality and that Hanley be prohibited from disclosing this information to any other person.

(6) On January 14, 1991, Santa Fe requested from the Division, that the Commission consider an appeal of the Examiner's decision, reverse the Examiner and quash the Subpoena in toto. All parties involved concurred with the request for an appeal to the Commission to consider the matter.

(7) There are no expiring leases in Section 8 requiring a well to be drilled expeditiously.

(8) The Division recognizes that it has been industry practice to honor and to hold confidential information which a party has acquired by drilling a well and to allow that party spending their money to acquire that information the opportunity to use it for their competitive advantage.

(9) Rule 1212 of the Rules and Regulations of the Oil Conservation Division states that the rules of evidence normally applicable in court proceedings can be relaxed where the ends of justice can be better served, and the Commission has implemented this concept by limiting the discovery principal in its application to very explicit areas involving waste and correlative rights.

(10) Santa Fe argues that because it has offered to make the information requested available to Hanley if Hanley will commit beforehand to either farm-out or to join in the drilling of the well, that it should not

be required to disclose the information prior to Hanley making that commitment.

(11) Hanley was unwilling to commit its interest to the well in any manner without receiving the information from Santa Fe and Santa Fe therefore filed this forced pooling application pursuant to the Oil & Gas Act asking the Division to use the police powers of the State to force a private property interest to be committed to this drilling venture. As a result, Hanley is forced to decide between accepting Santa Fe's farm-out offer, joining in the drilling of the well by paying its proportionate share of costs in advance or being force pooled and allowing Santa Fe to recover out of production Hanley's proportionate share of drilling and completing and equipping the well, plus a risk penalty established by the Division, without having access to information about a direct offset well operated by Santa Fe which information is now available only to Santa Fe.

(12) When a party asks the Division to use the police power of the State to impose a burden upon a private property interest, minimum due process requires a departure from usual industry practice with respect to the disclosure of the information, and Hanley should be allowed access to the raw data information from the offsetting Kachina "8" Federal No. 1 well which is not otherwise available from public sources, but it should not be allowed to compel Santa Fe to produce Santa Fe's interpretations of this data, whether or not those interpretations are based on information from just this well or from all of the available information.

(13) Rule 1105 of the Rules and Regulations of the Oil Conservation Division requires the filing of Form C-105 which includes all special tests conducted on the well (item 1, 3, 4, and 5 of the Subpoena), one copy of all electrical and radio-activity logs run on the well (part of item 2 of the Subpoena), which information becomes of public record immediately, or if so requested by the operator of the well, after being held confidential for 90 days. Daily drilling and completion reports (item 9 of the Subpoena) could be public record if they contain testing information. Rule 1105 further provides that the data may be introduced in public hearing regardless of the request that it be held confidential.

(14) Santa Fe could keep all information on the Kachina "8" Federal No. 1 well confidential for 90 days from completion if it dismisses the pending application and does not seek to involve the police powers of the State to force pool Hanley.

(15) In order to comply with minimum due process requirements implicated by State action and to protect the correlative rights of Hanley, Santa Fe should be required to provide sufficient information for Hanley to make an informed decision as to which of the alternatives set forth above it elects to follow by having access to data which normally

accompanies Form C-105 but none of the interpretative information from the Kachina "8" Federal No. 1 well which is in the possession of Santa Fe and not normally a part of the public record. The information should be disclosed only to Hanley and subject to prohibition against Hanley revealing that information to any other person, provided however, that such data may be introduced at the hearing and become part of the public hearing record.

(16) The disclosure of information required by this order should only be available to parties to a case where property rights are immediately and directly affected by the imposition of police power on those rights.

IT IS THEREFORE ORDERED THAT:

(1) The order of the Examiner quashing the Subpoena with respect to items 6, 7, 8 and 10 is hereby upheld and the Subpoena is hereby quashed with respect to those items.

(2) The order of the Examiner holding the Subpoena and requiring the documents identified in paragraph (1), (3), (4) and (5) is upheld in its entirety.

(3) The order of the Examiner requiring the production with respect to items no. 2 and no. 9 is modified and Santa Fe must produce these documents requested in those paragraphs as follows:

(a) mechanical logs (all electrical and radio-activity logs); and

(b) any testing information contained in daily drilling and completion reports from inception to the latest available data.

(4) Santa Fe is hereby directed and required to produce to the Division within ten days from the date of this order for the use of Hanley Petroleum those documents identified in ordering paragraphs (2) and (3).

(5) This production and discovery shall be for the exclusive use of Hanley Petroleum, Inc. and Hanley shall not reveal any information produced in accordance with this order to any other person for any reason so long as such information is confidential pursuant to the Rules and Regulations of the Division.

(6) Done at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMI BAILEY, Member

WILLIAM W. WEISS, Member

WILLIAM J. LEMAY, Chairman

S E A L

dr/

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date JUNE 17, 1993 Time: 8:15 A.M.

NAME	REPRESENTING	LOCATION
William F. Carr	Campbell, Carr, Berge & Sheridan	Santa Fe
M. Kellahin	Kellahin & Kellahin	Santa Fe
Michael LeMond	Hanley Petroleum Inc	Midland, TX
Greg Wilkes	Hanley Petroleum Inc.	Midland, TX
Maurice Trimmier	Byram Co.	SF
D. Tosch	Yates Pet. Corp.	Artesia, NM
John R Gray	Morfof Energy Corp	artesia nm or Midland
Jerry Hoover	Conoco	
Bob Shelton	NPC	Midland
Bruce Insalaco	Enron Oil and Gas	Midland
Gene Davis	Santa Fe Energy	Midland, Tx.
Daniel Robert	SANTA FE ENERGY	MIDLAND, TX
Jack Cancel	SANTA FE ENERGY	HOUSTON, TX.
Kathy Porter	Yates Petroleum Corp.	Artesia, NM
Scott Hall	Miller Law Firm	SF
Ernest R Carroll	Losee Law Firm Yates	Artesia

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date JUNE 17, 1993 Time: 8:15 A.M.

NAME	REPRESENTING	LOCATION
Barry Finz	Enron Oil & GGS	Midland, TX.
Randall CATE	Enron O&G	Midland, TX
PATRICK J. TOWER	"	"
DAVE BONEAU	YATES PETROLEUM	ARTESIA, NM
Brogd A, May	Yates Pet	Artesia
James Bruce	Hinkle Law Firm	Santa Fe
Gene Davis	Santa Fe	Midland
William Hardie	Conoco	Midland
[illegible]	[illegible]	SFe

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. 10731

APPLICATION OF NEARBURG PRODUCING COMPANY

REPORTER'S TRANSCRIPT OF PROCEEDINGS

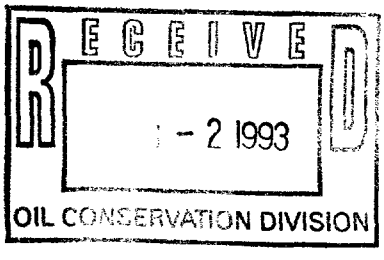
EXAMINER HEARING

BEFORE: David R. Catanach, Hearing Examiner

June 18, 1993

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on June 18, 1993, at the Oil Conservation Division Conference Room, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, RPR, Certified Court Reporter No. 63, for the State of New Mexico.



ORIGINAL

I N D E X

June 18, 1993
Examiner Hearing
CASE NO. 10731

E X H I B I T S

NEARBURG PRODUCING COMPANY'S EXHIBITS:

A P P E A R A N C E S

FOR THE DIVISION: ROBERT G. STOVALL, ESQ.
General Counsel
Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

FOR THE APPLICANT: HINKLE, COX, EATON, COFFIELD & HENSLEY
P.O. Box 2068
Santa Fe, New Mexico 87504
BY: JAMES G. BRUCE, ESQ.

FOR CONOCO, INC.: KELLAHIN AND KELLAHIN
117 N. Guadalupe
Santa Fe, New Mexico
BY: W. THOMAS KELLAHIN, ESQ.

FOR YATES PETROLEUM: LOSEE, CARSON, HAAS, & CARROLL
P.O. Box 239
Artesia, New Mexico 88210
BY: ERNEST L. CARROLL, ESQ.

EXAMINER CATANACH: Call the hearing back to order, and at this time we'll call Case 10731.

MR. STOVALL: Application of Nearburg Producing Company for an unorthodox oil well location, Eddy County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. BRUCE: Mr. Examiner, Jim Bruce from the Hinkle law firm, representing the applicant. I have three witnesses to be sworn.

EXAMINER CATANACH: Additional appearances?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing on behalf of Conoco, Inc. I have two witnesses to be sworn.

MR. CARROLL: Mr. Examiner, I'm Ernest Carroll of the Artesia law firm, Losee, Carson, Haas & Carroll, and I will be representing Yates Petroleum, and we have two witnesses to be sworn.

EXAMINER CATANACH: Any additional appearances?

Will the seven witnesses please stand and be sworn.

(Witnesses sworn.)

BOB SHELTON,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence for the record.

A. My name is Bob Shelton. I reside in Midland, Texas.

Q. Who are you employed by and in what capacity?

A. I'm employed by Nearburg Producing Company, as a landman.

Q. Have you previously testified before the Division as a landman and had your credentials accepted as a matter of record?

A. Yes, I have.

Q. And are you familiar with the land matters involved in this application?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Shelton as an expert petroleum landman.

EXAMINER CATANACH: Mr. Shelton is so qualified.

Q. (BY MR. BRUCE) Mr. Shelton, let's discuss

some of the nongeological and nonengineering reasons for this application, and we'll start with your Exhibit 1. Will you please refer to that and identify what that exhibit shows for the examiner.

A. Exhibit 1 is a land exhibit that shows ownership of the, and operating rights of the various tracts on which we will drill our well and offsetting it. The northwest quarter of Section 31, which is shaded and outlined in green, is owned by Nearburg Producing Company as the operator.

Nearburg owns two other -- operates two other tracts, the northeast quarter of 31 and the southwest quarter. Conoco owns two tracts which they operate, the southeast quarter of 30, and the southeast quarter of 36. And Yates Petroleum operates three tracts, the southwest quarter of 30, southeast quarter of 25, and northeast quarter of 36.

Also shown on the plat or as identified in yellow are the wells in the affected area which produce in the Dagger Draw North Field.

Q. Now, you show Nearburg as operating the northeast quarter of Section 31. Do any of the parties here today have interest in that well?

A. Yes, they do. Conoco and Yates own 50 percent of that well.

Q. And what is the name of that well that's marked in yellow in the northwest quarter of the northeast quarter?

A. That is the Dagger Draw Federal No. 2.

Q. Now, you were in charge of getting the surface location approved for Nearburg in this case, were you not?

A. That is correct.

Q. This land that we're dealing with, what type of land is it?

A. It's federal, BLM, minerals and surface.

Q. So as a result, you had to get the usual archeological survey done?

A. That is correct. We employed New Mexico Archeological Services, Dr. Haskell, to perform the archeological report.

Q. What is Exhibit 2?

A. Exhibit 2 is his archeological report that he prepared, which shows that the location -- it really kind of surveyed a pretty broad area in there and shows that there is three archeological sites that have been impacted in this area, and they're discussed in his report of being historic sites.

Q. After you got this report, did you have any further contact with Dr. Haskell?

A. Yes. We were very concerned because there was these three sites there, which are more than are normally found, I guess, in this area, we felt like. I went to Carlsbad and met personally with Dr. Haskell and the BLM to more clearly identify these sites and find out exactly where they were and to determine more precisely how our location was being affected.

Q. And what resulted from that visit? And I refer you to Exhibit 3.

A. Exhibit 3 is a map, hand drawn for me by Dr. Haskell at our meeting, which shows the location and approximate size of the three sites that have been found in the area.

You'll notice that to the north and to the west of Hanks old Kathy dry hole pad, there's archeological site LA 98855. There is an archeological site to the north and east of the Roger Hanks Well LA 98856, and there's a very large archeological site east and south of the Hanks location pad LA 98853.

Q. Now, before you go any further on this, what size drill site does Nearburg need for this well?

A. The normal drill site pad out here is 400 by 400, 200 feet each way from the wellbore. We have agreed, and as required by the archeological report

and as required by the BLM, that when building our pad at the location which is before the Commission today, that we will fence off a portion of the location to preserve the integrity of LA 98856.

Q. What was Dr. Haskell's -- what did he inform you that he was trying to do in approving a well site for you? Maybe I didn't make myself clear, but what type of impact was he looking at on these archeological sites?

A. Well, he is requiring that the archeological sites not be disturbed, and his feeling was that this particular location, if we fence off and stay out of this archeological site LA 98856, is the best location because it only impacts the one site. A location to the west of that, which would be due north of the Hanks location would impact two sites instead of just one. And of course one in any other direction would have a more significant impact on one or more of these sites.

Q. Now, there is the Roger Hanks well site. Will your engineer discuss that in a little more detail?

A. Yes, we'll go into some great detail on the Hanks well and its integrity.

Q. Now, were you also in contact with the BLM

regarding a drill site at this location or in this quarter-quarter section, I should say?

A. Yes, we have been in contact with them. I met personally with the BLM. Also, I discussed this location. They've been out on the ground. They've looked at this location. They concur that this is the best location, moving in this direction. And they have furnished us with a letter, Exhibit 4, so indicating that the location of 330 feet from the north line and 2460 is the only option other than a location south and west, which we'll discuss engineering and geologically.

Q. Do you have anything further you'd like to say with respect to your presentation at this time?

A. No.

Q. One final question, the location here is really not driven so much by topography as such, is it?

A. Well, to some degree it is because one of the archeological sites is a large mound, and it's an archeological site, can't be disturbed. It can't be cut into or removed. But mostly it's really the archeological sites in the fact that one of them is a large mound.

Q. Were Exhibits 1 through 4 prepared by you

or under your direction?

A. They were.

Q. Is Exhibit 5 just my Affidavit of Notice regarding the notice sent to Yates and Conoco?

A. Yes, sir, it is.

MR. BRUCE: Mr. Examiner, at this time I'd move the admission of Nearburg Exhibits 1 through 5.

EXAMINER CATANACH: Exhibits 1 through 5 will be admitted as evidence.

Mr. Kellahin?

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Shelton, this well is targeted for what pool?

A. For the Dagger Draw North Upper Pennsylvanian Pool.

Q. And what is the proposed proration unit for the well?

A. The northwest quarter of Section 31.

Q. Are there currently any pool wells in the northwest quarter of that section?

A. Yes, sir, there are. There's the Dagger Draw Federal No. 1 and the Dagger Draw Federal No. 4.

Q. Where is the No. 1 well in the spacing unit?

A. It's in the northwest quarter of the spacing unit.

Q. And that well name again, sir?

A. Dagger Draw No. 1.

Q. And the other well in the spacing unit was what again, sir?

A. The Dagger Draw No. 4.

Q. And the No. 4 is located where?

A. In the southwest quarter of the proration unit.

Q. In terms of the rules for the pool, you would have the opportunity to drill two more wells in that spacing unit?

A. Or wells sufficient to meet the allowable requirement.

Q. You do not have producing wells in the east half of the northwest quarter; is this correct?

A. We do not.

Q. Within the proration unit, the 160 acres, what is the setback required from the site boundaries of that proration unit to have a well at a standard location?

A. I believe it's 660.

Q. In terms of your request for well locations, what was the original well location

requested for the northwest quarter?

A. The first well --

Q. Apart from the No. 1 and the No. 4?

A. Okay.

Q. You're looking for your next well location in here?

A. Right.

Q. What was the first location for that well?

A. I believe the first -- we went out there and looked at several locations. We looked at a location, I believe 2310 from the west line. We looked at one --

Q. 2310 from the west line. What's the north-south dimension?

A. In the north-south dimension, we looked at 330 and 660. We looked at both of those.

Q. 2310 from the west, 330 from the north, and 2310 west, 660 north?

A. Um-hm. You know, we knew there was archeological problems there, and we went out there and we looked at several locations just to find what we could drill from an archeological standpoint.

Q. Other than the two you've just described, 330 north, 2310 west and 660 north, 2310 west, did you propose a well at any of the other locations available

to you in the northwest quarter?

A. Not to my remembrance, no.

Q. With regards to either one of those wells, did you formally submit an APD to the BLM for it?

A. We did. I believe, if I'm correct, an original BLM approval to drill was submitted at one of the 2310 or 2340 locations.

Q. Do you recall which one was the first one submitted?

A. I have it. I can find out. I have it in this file if you'd like for me to look.

Q. Did you submit formal requests in terms of an APD on each of those?

A. No. It was just one of them. Then later on we found out archaeologically we could not drill it; so we changed the location. And we have now refiled the APD with the location that's before the Commission today.

Q. Would you take a moment and look and see which one was filed?

A. Um-hm. 2310, 660.

Q. That's the first one filed. And that location then was disapproved because it was within or too close to an archeological site?

A. When the archeological site report came

out, it impacts an archeological site, that's correct, that's my understanding.

Q. The 660, 2310.

A. -- 2310.

Q. So then you moved to 330 north, 2310 west, and have looked at that location, and that location --

A. I don't know whether we looked at that location before or after this filing. It was looked at after this filing. The new location, which is the one before the Commission today, was the one that was refiled with the BLM.

Q. In terms of that location that's before the examiner today, what's the status of surface approvals with the BLM?

A. That location, pending compliance with Dr. Haskell's report, it's my understanding is to be approved. And, also, I don't know whether we've gotten it back from the BLM or not, it's been filed and we may have gotten it back approved. I don't know that.

Q. Have you ever been to the surface of this section to the northwest quarter with regards to the siting of this particular well?

A. I have been myself, yes, not with a survey crew. I've been out there on my own. I was not with

a crew or anybody else at the time.

Q. Other than these two specific locations that you've described for us, have you sought any other location for this well in the northwest quarter of the section?

A. No, we have not.

MR. KELLAHIN: Nothing further. Thank you.

EXAMINER CATANACH: Mr. Carroll?

EXAMINATION

BY MR. CARROLL:

Q. Mr. Shelton, with reference to your Exhibit No. 4, and this is the letter from the BLM, in particular Richard Manus, the area manager for the BLM out of the Carlsbad office, that letter does indicate that, at least from a surface situation, there would be other locations they would approve. They would be more or less south in the area of the old Kathy Eyre well, south of there; is that correct?

A. South and west of there, that is correct.

Q. And you will agree with me, then, at least from a surface standpoint alone, there are other locations that would be orthodox out there in that northwest quarter; is that correct?

A. That is correct.

Q. The original location that was filed upon, the 2310-660, would that have been unorthodox as to the --

A. Um-hm.

Q. It would have unorthodox?

A. It would have been unorthodox, also, because it would have been too far east.

Q. Too far east?

A. Right.

Q. To your knowledge, does Nearburg Producing, are they working on a fourth well for this northwest quarter at this time?

A. I'm not aware of one, and I don't believe that is the case.

MR. CARROLL: That's all I have.

MR. BRUCE: I have just one follow-up question, Mr. Examiner.

FURTHER EXAMINATION

BY MR. BRUCE:

Q. Referring to the BLM letter, Mr. Shelton, Exhibit 4, that doesn't state that a location, say 990 feet from the north line and say 1650 from the west line, will be approved. It says "possibly"; is that correct?

A. There's been no archeological surveying

done in that area. There's no way of knowing whether that would impact any additional archeological site. There is some more cited in the report. As you will note, there are two other sites in this immediate vicinity that are not impacted by what we did, but moving in that direction could impact other sites that have not cleared and, of course, that would start the process all over again. It would have to be determined whether they would impact additional sites.

Q. And your geologist will testify as to other reasons for your preferred location?

A. That is correct.

MR. BRUCE: Thank you.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Shelton, I just want to clarify the land status here.

A. Okay.

Q. The colors are a little hard to discern here. The south half of Section 30, is that common there?

A. No. The southwest quarter is operated by Yates Petroleum. The southeast quarter is operated by Conoco.

Q. Southeast of 25?

A. Is Yates.
Q. The northeast of 36?
A. Is Yates.
Q. The southeast of 36?
A. Is Conoco.
Q. The southwest of 31?
A. The southwest and northeast of 31 are Nearburg Producing Company.
Q. Southwest and northeast?
A. The northeast and southwest, that's correct, yes, sir.
Q. The same with the southeast?
A. The southeast is not a producing unit. It's -- some of the oil and gas leases in there are fee, some of them are federal, but it's not a producing unit. Nearburg and Yates own the leases there.
Q. The northeast of 31 is jointly owned by Nearburg, Conoco, and Yates?
A. That is correct.
Q. Nearburg, 50 percent; Conoco and Yates, 50 percent?
A. That is correct, yes, sir.
Q. Is that also the status of the southwest quarter?

A. No. The southwest quarter is owned 87-1/2 percent by Nearburg Producing Company and 12-1/2 percent by Yates Petroleum Corporation.

Q. And the northwest quarter is 100 percent Nearburg?

A. Yes, sir, that is correct.

Q. The original location that you've discussed, the 330 north and 2310 west -- is that correct?

A. That's correct.

Q. That's the original location that was filed?

A. That was the original location that was filed -- I'm sorry, 660 from the north, 2310.

Q. 660 north, 2310 from the west?

A. Right.

Q. That was unorthodox. Were there reasons at the time that you requested the unorthodox location -- were there any other reasons besides the topographical reasons?

A. At the time we surveyed that location, we were applying for an unorthodox location also, moving in that direction for geologic reasons and for topographic, archeological reasons. And also, as the engineer will give testimony, for the Hanks well also,

to be away from the Hanks Brajo.

Q. The current unorthodox location, is that based on geological considerations, also?

A. Geologic and archeological, that's correct.

EXAMINER CATANACH: That's all I have.

This witness may be excused.

JERRY ELGER,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name for the record.

A. Jerry Elger.

Q. And where do you reside?

A. Midland, Texas.

Q. Who do you work for and in what capacity?

A. Nearburg Producing Company as an exploration geologist.

Q. Have you previously testified before the Division as a geologist and had your credentials accepted as a matter of record?

A. Yes, I have.

Q. Are you the geologist at Nearburg in charge

of this Dagger Draw area?

A. Yes, I am.

Q. And you are familiar with the geology involved in this particular application?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I'd tender the witness as an expert petroleum geologist.

EXAMINER CATANACH: The witness is so qualified.

Q. (BY MR. BRUCE) Mr. Elger, if you would look at your Exhibits 6 and 7 together, would you please describe the geological basis for your preferred well location, and the reason -- I think at this time you could also go into the reason why you would not want to move to the south and west of your proposed location?

MR. KELLAHIN: Excuse me, Mr. Bruce. My copies are not marked. Which are which?

MR. BRUCE: Sorry, Mr. Kellahin. Exhibit 6 is the structure map on top of the Canyon Dolomite, and Exhibit 7 is the isopach.

MR. KELLAHIN: Thank you.

THE WITNESS: Exhibit No. 6 is a structure map on the top of the reservoir quality dolomite in this portion -- in the area that's being addressed

today.

What it shows is that there's a structural low that extends across Section 31, across the -- basically is oriented northwest-southeast across Section 31, a portion of southwest quarter of Section 30, and extends into the southeast portion of Section 25. The red dot at A' is the proposed location that's been arc cleared for this hearing.

Exhibit No. 7 is an isopach map of the total thickness of the Canyon Dolomite in the area. And what it shows is that there's a dolomite thin that extends across Section 31, northwest-southeast orientation across Section 31, the southwest portion of Section 30 and across the southeast quarter of Section 25.

Both of these maps -- basically what you have, if you look at the well control that documents the dolomite thin, you'll see that there's wells within excess of 300 feet of dolomite in the southeast portion of Section 32 and extending into the west half of Section 29.

There's also a dolomite thick in the west half of Section 31 that extends down into the northeast quarter of Section 1, in Township 20 South, 24 East.

Those wells, if you look at the well control between those two thick areas, you'll see that there's a dolomite thin in the southwest portion of Section 30, well with 130 feet of dolomite in the southwest quarter of Section 30, thickening to 200 feet to the northeast and in excess of 200 feet to the southwest.

You'll also see that the -- a well in the southeast quarter of Section 25 has 112 feet of dolomite. Wells on both sides and to the east of that well and to the south have thicknesses of 194 feet and 202 feet. So that there is very strong geological evidence and well control to support a dolomite thin with the orientation as previously described from the northwest to the southeast.

The structure map basically corresponds to the dolomite thin and is basically a consequence of the dolomite thin.

If I could refer to Exhibit 9, which is --

Q. Exhibit 9, is that your cross-section?

A. Which is the cross-section.

Q. Before we go into this, your structure map is on top of the Canyon Dolomite, not on top of the Canyon; is that correct?

A. That's correct. It's on top of the

reservoir quality dolomite.

Q. On Exhibit 9, would you kind of describe where the cross-section begins and ends, and then go into the details a little bit more?

A. Okay. It begins on the left at the Conoco Dagger Draw No. 11, in the southeast quarter of Section 30, at A. You'll notice that well has in excess of 300 feet of dolomite, and the perforations on each one of these well logs are marked in red in the depth column, and the reservoir quality dolomite in each of the wellbores has been shaded a purple color.

The cross-section extends from the Conoco Dagger Draw No. 11, which is --

Q. Southwest quarter-southeast quarter of Section 30; is that correct?

A. Correct -- to the Nearburg Dagger Draw Federal No. 2 in the northeast quarter of Section 31, which is a 40-acre offset. You'll notice the relationship between those two wells, that the reservoir quality dolomite is structurally low, and you're starting to see some limestone inner beds that are developing within the dolomite reservoir. Therefore, you see a dramatic thinning of the dolomite reservoir by at least 100 feet.

In other words, the Nearburg well has 200 feet of dolomite versus 300-plus for the Conoco well. So you see a dramatic thinning of the dolomite reservoir as you progress to the south.

Q. In just one well location?

A. In just one well location. The cross-section then extends to the Nearburg Foster 31 Fee No. 1 in the southeast quarter of Section 31. And you'll see the continuation of this limestone development in the top part of the canyon, such that the top of the dolomite, reservoir-quality dolomite, is now situated well beneath the actual top of the carbonate bank complex. And in fact this well was production tested to be water-bearing out of the perforations you see, opposite the purple dolomite reservoir.

The upper perforations and the middle perforations you see in that wellbore, at the top of the canyon and in the middle part of the canyon tested nonreservoir quality rock. In other words, there was very limited fluid entry; so you're in a nonreservoir quality rock environment in those two sets of perforations.

The top of the dolomite at this wellbore structurally is subsea is 4225, which is in excess of

100 feet low to the top of the dolomite in the Nearburg Dagger Draw 31 Federal No. 2. So we have entered into a subsea environment where we're below the water contact for the dolomite reservoir.

The cross-section then extends to the Monsanto Hondo well, which everybody has been referring to it as the Hanks well or Monsanto. It was actually operated by both operators, and the engineer will get into that. It was sidetracked at a later date. But that wellbore shows reservoir-quality dolomite at subsea 4090.

You'll notice that the drill stem test in the top part of the carbonate bank recovered only 30 feet of mud, which indicates nonreservoir rock in approximately the top 80 to 100 feet of the bank complex.

I've interpreted this well as the top of the reservoir-quality dolomite as being just below 7650, where you see again the purple shading picks up. There were some drill stem tests, a number of drill stem tests that were run in this well, one straddling that interval and then one farther down in the reservoir itself.

The total thickness of dolomite in this particular wellbore is approximately 258 feet. So

what we've done, what this cross-section shows is that you're in a thick environment in Section 30, a thick dolomite environment, the dolomite quality is dropping structurally to the south, and as it thins to the south, it drops off structurally to the south.

And of course the Monsanto -- the Nearburg Foster fee well in the southeast quarter is a dramatically thin dolomite section, it's dramatically low as a consequence, and that low is the one I addressed earlier that extends across the southeast quarter of Section 31 with a northwest-southeast orientation.

Q. Looking at your Exhibit 9, looking at the Monsanto Hanks well, this also shows moving southwest from the Conoco Dagger Draw No. 11 well, that there is a rapid buildup in the limestone; is that correct?

A. There's a rapid buildup in the limestone as you progress to the south. There's a basic change that occurs through here to the south.

Q. Because of what happened in your Foster Fee Well in the southeast quarter of Section 31, you don't want to repeat that, do you?

A. No.

Q. And looking at your Exhibits 6 and 7, for instance, the well in the southwest quarter-southwest

quarter of Section 30, that is structurally lower than the wells to the north and to the south; is that correct?

A. Yes.

Q. And you see that in other areas in this area of the pool, do you not?

A. Yes, you do.

Q. And concurrent with that, you get the thinning you've also discussed?

A. That's correct. You see a direct relationship between where the dolomite thin occurs and where the structural lows occur when you're mapping on the top of the dolomite reservoir.

Q. What conclusion do you draw from your exhibits, these exhibits in particular, regarding moving Nearburg's proposed well to the south and west of the proposed location?

A. You would be moving into an area where the dolomite is thinner and where it structurally is lower, as a consequence.

Q. Would you, as Nearburg's geologist, recommend to Nearburg's management drilling a well to the south and west of the proposed location?

A. No.

Q. Let's move on to your Exhibit No. 8, which

is the production map. And would you discuss what that shows for the examiner and identify the labels on it, et cetera?

A. Okay. Refer to the legend in the lower left-hand corner where you see a well symbol, the very top numbers in small print reflect daily rates of oil, gas, and water as averaged for the month of December for 1992. The date of first production is also recorded just above the well spots. And then the total cumulative oil production and total cumulative gas production are reported below the well spots.

What this map shows is that there appears to be a relationship between dolomite thins, dolomite lows, and productive histories. That relationship is probably the most dramatic in the well situated in the southwest quarter of Section 30 -- the southeast quarter of the southwest quarter of Section 30, which is the Yates Pincushion No. 3, which I believe is situated 660 from the south, 1980 from the west of Section 30.

That wellbore is structurally low, below subsea or minus 4100; it's below the subsea datum for the dolomite that's in the old Hanks well in Section 31. That low extends to the west and to the south of the Hanks well. And the production history from that

well, which initially began in November of '91, has been only 51,000 barrels of oil and a little over 100 million cubic feet of gas to date with daily productive rates which really indicate that the well is subeconomic.

Q. What about the two wells to the east and northeast of your location, the Conoco Dagger Draw No. 11 in the southeast quarter of Section 30 and the Nearburg Dagger Draw Fed No. 2, is it, in the northeast quarter of Section 31, could you discuss those wells a little bit more?

A. Those wells appear to be -- well, the Conoco Dagger Draw 11 has, I pointed out earlier on the cross-section, more dolomite interval, and structurally it's slightly high to the Monsanto Hanks well. And that well has cum'd to date 315,000 barrels of oil, a little over a third of a Bcf of gas, and continues to perform at a rate which is almost a full 160-acre spacing allowable, approximately 600 barrels a day and three-quarters of a million cubic feet of gas per day.

Nearburg Dagger Draw No. 2 is also an excellent performing well. It's producing at 478 barrels per day and a little less than a half million cubic feet of gas. Date of first production was

5-91. That well has cum'd to date slightly over 300,000 barrels of oil. And structurally that well is very close to the subsea datum of the Hanks well.

Q. Now, looking at this map, just to the north of the Conoco well, in the northwest quarter of the southeast quarter of Section 30, there is a well that's indicated that was completed March of '88 and it's shut in. What can you tell us about that well?

A. That well was initially drilled and completed for date of first production of 3 of '88. Do you see it predates the well, the south offset. That well was producing at excellent producing rates. I'm not sure whether it was capable of producing the full allowable for the 160-acre unit, but it was an excellent producer, cum'd 176,000 barrels. And then when the Dagger Draw -- Conoco drilled the south offset to it, which is the No. 11 well, and the date of first production you see of 8-91, that well was capable of producing a full allowable for the 160-acre spacing unit for the southeast quarter of Section 30. And as a consequence, Conoco shut the No. 8 well in at that time and has been producing the full allowable for that particular 160-acre unit from the No. 11 well ever since that date.

Q. One last question. In your opinion, is

Nearburg's proposed location, considering the restrictions put on the location by archeology, the best geological location?

A. Yes, it is.

Q. Were Exhibits 6 through 9 prepared by you or under your direction?

A. Yes, they were.

Q. In your opinion, is the granting of this application in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, it is.

MR. BRUCE: Mr. Examiner, at this time I move the admission of Nearburg Exhibits 6, 7, 8, and 9.

EXAMINER CATANACH: Exhibits 6, 7, 8 and 9 will be admitted as evidence.

Mr. Kellahin?

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Elger, your geologic argument is that there is a relationship between productivity and dolomite thickness in this reservoir?

A. Yes, it is. And I would qualify that by saying it's more -- the regional dip of this area is

to the east, and it's more pronounced as you move to the east because wells have the advantage to the west of being regionally updip, but --

Q. In terms of dolomite thickness, though, looking at the isopach, is the strategy you've used as a geologist is to look at the northwest quarter of Section 31 and to find the thickest point of the dolomite because, in your conclusion, that represents the best opportunity for the most productive well?

A. Yes.

Q. Separate and apart from dolomite thickness, is it also your geologic conclusion that the highest structural point in the northwest quarter of Section 31 represents the best opportunity for the well that will produce the most oil out of the pool?

A. Say that again. I didn't quite follow that.

Q. Yes, sir. I want to understand the significance of structure with regards to your geologic decision in the northwest quarter of 31.

A. Okay.

Q. I believe I understood you to say that it is of importance to you to be high structurally in the dolomite in the northwest quarter?

A. Yes.

Q. To what extent -- is there a ratio or a percentage you consign between thickness and structure in determining the optimum location in the northwest quarter?

A. We want to drill the well at the optimum -- obviously, the optimum thickness for that particular proration unit and optimum structural position. And the two are related.

Q. And I'm trying to find out what that relationship is, in your opinion.

A. The thinner the dolomite, the lower the structure. That's the relationship.

Q. What is the structural cutoff with regards to the structural contour line below which you cannot locate a well that will be commercial in this reservoir?

A. It obviously occurs somewhere between the Foster Fee Well in the southeast quarter and the Dagger Draw Federal 31-2, or the Monsanto Hondo well in the northwest quarter of Section 31, somewhere between those two. We know that the reservoir is completely wet in that Foster Fee Well.

Q. The Foster Fee Well, if we're looking at the structure map, is the center well shown on the cross-section, it's the dry hole symbol, it has minus

4225 on it?

A. That's correct.

Q. That's one of these older wells that was open hole completed?

A. No, sir.

Q. No?

A. It's a fairly new well that was drilled by Nearburg. We did attempt to open hole complete the well. We did set casing -- the history of this well, we did set casing in the very top of the carbonate bank complex. We reversed in -- did several production tests. We reversed in until we hit quality reservoir rock, attempted to open hole complete the well.

We were unsuccessful and went back to the well and deepened it and ran a liner and then perforated it. And the production tested through perforations the intervals you see in red.

Q. You perforated into the water of the reservoir?

A. We perforated -- well, the only reservoir rock exposed in this well is water-bearing.

Q. Can you use that wellbore and satisfy ourselves as to where the oil-water contact is in the reservoir?

A. Not really, because all we know is it occurs somewhere between the top of the reservoir in there and the bottom of other perforations in offset producing wells.

Q. On your structure map, can you show me where you interpret the oil-water contact to be?

A. I would say the oil-water contact -- it's a very hard thing to put an exact because even -- there is really not a definite oil-water contact that's common to this particular area. Even high wells produce water. All wells produce water in the field.

Q. I understand.

A. It's just the nature of the reservoir. And it's very hard to tell whether some sets of perforations are producing 100 percent water, what percentage of hydrocarbons are being contributed from what sets of perforations. So it's not a pinpoint-type number like a typical carbonate reservoir or whatever, where you can put a -- say this is the subsea datum where the oil-water contact occurs.

Q. If you look at the structure map and see the well in unit letter B of Section 31, I think that's a Dagger 31 No. 2 well?

A. Yes.

Q. It's at minus 4,094 well?

A. Yes.

Q. That is a highly successful, productive, economic well in the section, is it not?

A. That's correct.

Q. Can we correctly assume that that well structurally is at least at a point where it is going to be productive and economic in the reservoir?

A. Yes.

Q. Between that control point and the well that's wet at minus 4225, where are you comfortable, as a geologist, that we can stay high enough structurally to maximize the opportunity for a commercial well?

A. That's a very difficult question, again. I think your productivity will drop proportional to how low you are structurally. Obviously, the lower you are, the less economic -- the less reserves you're going to be exposed to.

One of the problems is the variation from the facies changes that occur from the dolomite to limestone reservoir can happen extremely rapidly, in the course of less than a 40-acre offset. And you work with the well control you have, and you develop the interpretations that you can come up with, and you

address those problems as they have to, but there's definite risk in drilling when you're moving towards a structural low into a dolomite thin.

Q. What is your opinion of the structural elevation of the well at its proposed nonstandard location?

A. It looks fine to me.

Q. No, sir, what is the depth?

A. Oh, the subsea?

Q. Yes, sir.

A. Estimated top? Roughly subsea minus 4090, 4094.

Q. And at the closest standard location in that spacing unit, what is the structural position?

A. The closest standard location unit?

Q. Yes, sir, to the unorthodox location. Are you with me?

A. No, not really.

Q. 660 out of the north and east boundaries of that spacing unit?

A. That's where the old wellbore is located.

Q. That's the Kathy Eyre No. 1 Well?

A. Right, minus 4090, that's correct.

Q. And so by moving to the unorthodox location, you're going to gain approximately four feet

of structure?

A. Probably. Maybe.

Q. Let's look at thickness. Is there, in your opinion, a direct relationship between reservoir thickness and productivity of the well?

A. Not as much as structure, but yes, there is, to some degree. Again, it's related to -- there's a relationship between the regional, overall regional dip of the entire area and productivity. And it's accented as you move to the east, towards your oil-water contact.

Q. Do you have your production map in your isopach?

A. Yes.

Q. I forgot the number of the production map. Is it 9 --

MR. BRUCE: Eight.

THE WITNESS: Eight.

Q. (BY MR. KELLAHIN) Eight, and the isopach is 7?

A. Um-hm.

Q. If you look in Section 6 and look in unit letter D, on the thickness map it's 177 feet?

A. Yes.

Q. On the production map, what does that well

tell you as its current cum?

A. 123,000 barrels.

Q. Do you know how long it took that well to accumulate that volume of oil production?

A. One year.

Q. At a thickness of 177 feet?

A. That's correct.

Q. When you look at the isopach and look at the Dagger Draw 31 No. 2, it's in Section 31 and unit letter B?

A. Yes.

Q. What's the thickness of that well on your display?

A. 204.

Q. And on the production map, what is the total cum on that well?

A. 305,000 barrels.

Q. When you move over to a thicker portion of the reservoir and look in Section 31 and look at unit letter D well, it has a thickness of 218 feet?

A. That's correct.

Q. What has been the productivity cumulative on that well?

A. 202,000 barrels.

Q. In that example, the thinner well has

substantially outperformed the thicker well, has it not?

A. Which one do you want to compare? Which two wells are you comparing?

Q. The Dagger 31-2 to the Dagger 31-1?

A. Yes.

Q. And in both instances, the Dagger 31-1 is both thinner and structurally lower to the other well, the Dagger 31-2, and yet the 31-2 substantially outperforms the other well?

A. That's correct.

Q. And your argument is thicker and higher is better?

A. It depends on what section of the canyon the thinning is occurring. The thinning can occur from both the top and the bottom of the reservoir rock. Therefore, it's not always the true case where that relationship exists.

Q. Mr. Elger, how long have you been working in the Dagger Draw reservoir?

A. Since 1990.

Q. And how many of these wells have you been the geologist on?

A. All of them that Nearburg has drilled out there.

Q. And how many is that?

A. Probably ten, eight or ten.

MR. KELLAHIN: No further questions.

EXAMINATION

BY MR. CARROLL:

Q. Mr. Elger, just to kind of follow up on the last question Mr. Kellahin asked, how many total wells does Nearburg operate out in the Dagger Draw area?

A. Approximately?

Q. Approximately.

A. Ten, twelve, something like that.

Q. Do you have any idea how many wells that Yates and Conoco operate?

A. A lot more than that.

Q. Considerably more?

A. That's correct.

Q. The -- I think you said it's the Foster Fee Well, it's one of the wells that's the dry hole here in the middle of your cross-section on Exhibit 9, was that well ever put on a pump and tested?

A. Yes, it was.

Q. Did placing it on a pump change the relationship with respect to oil and water?

A. It didn't appear to.

Q. Apparently, Nearburg is trying to stay away

from the Kathy Eyre dry hole, the Hanks well, the Monsanto well; we're talking about the same thing. Is there some reason why you have concluded that a location somewhere on that pad, within reasonable bounds, would not be a feasible location?

A. Our engineer that's present here will testify and address that.

Q. Is there a geological reason, to your knowledge?

A. No.

Q. You are aware that there has been some success in the Dagger Draw Field by moving 100, 200 feet off an old well and drilling a successful well?

A. That's correct.

Q. The well in the northeast quarter, Conoco-operated well, northeast quarter of Section 31, the one that your proposed location is getting close to there in Section 31 --

A. We operate that well. I think you said Conoco operated that?

Q. Excuse me. I may have. All right.

The well -- you operate the well, and Conoco and Yates have interest in it?

A. That's correct.

Q. Do you know what the interest that Nearburg

has in that well, what the working interest is?

A. I think -- I believe our landman addressed that. I think it's 25 Yates, 25 Conoco, and Nearburg is 50 percent.

Q. All right. Let's talk about that. And that's the -- what's the designation of that well?

A. Dagger Draw Federal 31 No. 2.

Q. Okay, that's the No. 2, 31 No. 2. Now, the well over in the northwest, far northwest corner that Nearburg operates, what is the name of that well?

A. That's the 31 Federal No. 1.

Q. Okay, that's the No. 1. Now, that particular well, the No. 2 well, as opposed to the No. 1 well, is some 75 foot lower, is it not?

A. That's correct.

Q. And the No. 1 well produces approximately on the average of 100 barrels, does it not?

A. The No. 1 well produces on the average 164, it averaged in December.

Q. Okay. It is a poorer well than the No. 2 well; is it not?

A. Yes.

Q. And it is structurally higher, probably 75 foot, roughly?

A. Yes.

Q. You were talking about -- you had an example of the -- I believe you used the Pincushion well --

A. Yes.

Q. -- as a good comparison or a good example of how the thins and lows have some relationship to production?

A. Yes.

Q. Now, the Pincushion well on your Exhibit No. 6, which shows your relative depths, it is the well that carries the subsurface, this datum of minus 4118, is it not?

A. That's correct.

Q. Down in Section 6, there in the northwest quarter, there is another Nearburg -- is that a Nearburg-operated well?

A. Where, now?

Q. Down in the northwest quarter of Section 6.

A. Yes, it is.

Q. All right. That particular well is a good well. It averages somewhere in the neighborhood of 200 barrels a day, and I think in February it was somewhere in the neighborhood of 300, was it not?

A. I don't know what it did in February.

December of '92, it made 276, average.

Q. That particular well is at least ten feet lower than the Pincushion well, is it not?

A. Yes, it is.

Q. Do you have an opinion as to what structural depth in this North Dagger Draw Field, at what structural depth that a well becomes uneconomic; do you have an opinion at what depth that is?

A. Well, there are local variations in the quality of the reservoir rock that could very easily explain the difference in the productive history of the Nearburg Covert No. 6, which is the well you referred to in the northwest quarter of Section 6, and the Yates Pincushion. Both wells, when you're mapping on reservoir quality dolomite, the quality of the dolomite itself and the nature of the vugs, which are the main porosity, may be better in that culvert well versus the Pincushion well and explain the difference in the productivity.

But locally, and I'm referring to just the northwest quarter of Section 31 and the little area around the northwest quarter of 31, southwest quarter of 30 north -- or southeast quarter of 25, locally it appears that there is a relationship between where you are structurally and how much dolomite you have

exposed above whatever the oil-water contact is in productivity.

Q. Mr. Elger, did you perform any kind of a study to determine the relative qualities of the reservoir rock with respect to the Pincushion in any other way?

A. It's too unpredictable.

Q. So are you saying that such a study wouldn't help you?

A. That's correct.

Q. The well that is being proposed to be drilled at this nonstandard location, that's a 100 percent well of Nearburg; is that correct?

A. I believe that's correct.

Q. When Mr. Bruce asked you about the correlative rights, protection of correlative rights, can you explain to me how the correlative rights of Yates and Conoco are being protected by the drilling of this well at this nonstandard location?

A. Both -- well, the wells that -- if Nearburg were not allowed to drill this location where the geology supports we have an economic location, where we're able to find a window in the archaeological surveys and all that, if we're unable to drill at this location and we would be forced to drill in an area

which is geologically in a very unadvantageous position for Nearburg, and that would affect Nearburg's correlative rights.

So I don't know -- our reservoir engineer can address drainage radiuses, and I'm sure that will be -- when he gets up to testify, he'll get into a lot of that testimony. And I can't swear that there will be any impairment of correlative rights for Yates or Conoco.

Q. If there is another location at a standard location that is possible to drill without any adverse effects on Nearburg, that kind of situation would have at least, would it not, in your opinion, have a less chance of affecting the correlative rights of Conoco and Yates?

A. Yes.

MR. CARROLL: That's all I have, Mr. Examiner.

MR. KELLAHIN: Can I clarify just one point?

EXAMINER CATANACH: Sure.

FURTHER EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Elger, on your isopach, Exhibit 7, I neglected to have you give me a number. The thickness

at the Kathy Eyre No. 1 Well is interpreted by you to be 258 feet?

A. Yes.

Q. What is the thickness at the proposed nonstandard location?

A. Probably equivalent, 258, 260, could be as much as 270.

MR. KELLAHIN: Thank you, sir.

MR. BRUCE: I'd like to do a few follow-up questions, Mr. Examiner.

EXAMINER CATANACH: All right.

FURTHER EXAMINATION

BY MR. BRUCE:

Q. Looking at your Exhibit 8, Mr. Elger, let us talk about, I believe it's the Dagger Draw No. 4, even though it has thicker dolomite, not being quite as good a producer as the No. 1 to the north with the thinner dolomite, but looking at your production map, it appears that that No. 4 well was drilled in 1991 substantially later than, say, the No. 1 well to the north; is that correct?

A. Yes.

Q. And it was drilled later than the -- I don't know what number well it is to the south --

A. It's the Foster Fee No. 2.

Q. -- Foster Fee No. 2, which is quite a good well, isn't it?

A. Yes.

Q. And it was drilled later than the well in the northeast quarter-northeast quarter of Section 36?

A. Yes.

Q. So just looking at it from that standpoint, because it was drilled later, there could be the effects of drainage from offsetting wells?

A. Exactly.

Q. So the reason it's a poorer producer might not be related to the thickness or thinness of the dolomite but to the effect of the offsetting wells?

A. Yes.

Q. Now then, your Exhibit 7, if you look at that and start off at your Foster Fee Well No. 2, which has 304 feet of dolomite --

A. Yes.

Q. -- now as you move directly to the north, there is a substantial thinning of the dolomite, isn't there?

A. Yes, there is.

Q. And as you move directly to the east, there is a substantial thinning of the dolomite?

A. Yes, there is.

Q. So chances are, moving to the northeast of that Foster Fee, just as you have interpreted, there is going to be a thinning of the dolomite in that general location?

A. That's correct.

Q. And that is one of the primary reasons why you do not want to move to the south of that Hanks well site?

A. That's correct.

Q. Similarly, if you look at Exhibit 6, from the Conoco Dagger Draw No. 11, moving down to your Foster Fee No. -- which number is that on your --

A. The Dagger 11 to the Dagger 2.

Q. And south of that?

A. The Foster Fee No. 1.

Q. Foster Fee No. 1. Once again, it dips substantially, doesn't it?

A. Yes, it does.

Q. And if you take either the Foster Fee No. 1, which is minus 4065 feet, or the second well in the southwest quarter of Section 31, which is at minus 4995 feet, move to the east or northeast, there's a substantial dropoff?

A. Yes, there is.

Q. So, once again, if you're moving in that

general direction to the northwest, your interpretation is it's going to be substantially lower than your proposed location?

A. Yes, it would.

Q. Now, Mr. Carroll asked you a question about how Conoco's and Yates' correlative rights would be protected certainly in the offsetting wells. Now, looking at the Nearburg Dagger Draw No. 2 and the Conoco Dagger Draw No. 11, those wells have already produced substantial reserves, haven't they?

A. Yes, they have.

Q. Although you're not an engineer, probably enough for those wells to pay out, plus?

A. Oh, many times.

Q. So the fact that they've already had darn good wells indicates that their correlative rights are protected?

A. I would agree.

MR. BRUCE: Thank you.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Elger, what is the status of the Monsanto well? That's permanently plugged and abandoned?

A. Yes.

Q. That did produce for some time?

A. Yes. To my knowledge, it was only produced with a beam-type pump, and it's one of the very early, early wells drilled out here, as were several other Roger Hanks wells in this entire Dagger Draw complex, where he encountered hydrocarbons in the bank but really did not take it to the submersible pump level where you draw down the bottom hole pressure and are able really to bring the oil and gas, hydrocarbons in the wellbore. He only tested with a beam pump.

Q. Do you know why that well was plugged?

A. It produced too much water. They didn't have a disposal set up or anything.

Q. In moving to your proposed location from the Monsanto location, is it my understanding you're only gaining four feet of structure and very little thickness in the reservoir?

A. That's correct.

Q. Do you think that's going to make a significant difference in the capability?

A. Over what, drilling where the old Hanks well was or the Monsanto well?

Q. Right.

A. No.

EXAMINER CATANACH: That's all I have.

MR. KELLAHIN: No, I guess not.

MR. BRUCE: Call Mr. MacDonald to the stand.

TIM MacDONALD,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name for the record.

A. Tim MacDonald.

Q. Where do you reside?

A. In Dallas, Texas.

Q. Who do you work for and in what capacity?

A. I work for Nearburg Producing Company as the engineering manager.

Q. Have you previously testified before the Division as an engineer?

A. Yes, I have.

Q. Are you familiar with engineering matters related to the application before us today?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. MacDonald as an expert engineer.

EXAMINER CATANACH: He is so qualified.

Q. (BY MR. BRUCE) First, Mr. MacDonald, let's discuss the Hanks well and why Nearburg is extremely reluctant to drill on that drill pad. Would you refer to Exhibit No. 10, which is a wellbore schematic, and discuss the Monsanto-Hanks -- it's got about three or four names -- that well?

A. That's the first thing we looked at was the possibility of reentering that wellbore, and we gathered all the data that was submitted to the OCD. There were some serious considerations we had to consider. First of all, when Hanks plugged the well, he cemented 19 joints of tubing in the well, from 1620 feet to 1190 feet.

And, you know, assuming that no wells are really straight holes, they're all drilled basically at a cork screw, to mill up that tubing would require a flat-bottom bit, and we'd probably make about 25 feet per bit or foot per hour. With that kind of milling operation, you could easily spend 20 days before you ever get that tubing milled out of there in the first place.

Second of all, the 9-5/8 inch casing that it's in was run in 1964. By the time you milled through there, like you have to to get that tubing milled out, the chances of damaging that casing or

even drilling outside that casing would be very great. And that was the main consideration of not wanting to reenter that wellbore.

Also, we'd have to drill out the 9-5/8 to its full -- basically, it's full ID, because to use current technology, running submersible pumps, we would want to run 7-inch casing in that well versus the 5-1/2 that was run in the other two completion attempts. And that could create problems with that 9-5/8 inch casing.

Q. What do you estimate the additional cost would be for those operations alone?

A. I estimate we could spend $160,000 and have the tubing milled out and have our 9-5/8's casing unusable at that point and have spent that much money.

Q. Okay. Please continue.

A. The other consideration with the 9-5/8's that bothers us is that basically there were two wells drilled through it, not just one. There was the original well, then the reentry sidetrack. That's caused more wear for the turning of the drill pipe. That's occurred twice in the two drillings of the well.

Q. Talk about the second reentry, and the kick-off.

A. When Hanks reentered it, it looks like they kicked off at about 5510 feet. The best I can recall, they kicked off about 5 degrees, and they wound up, bottom hole location was about 2 degrees.

I couldn't find any detailed directional surveys that were ever run on the well, just the inclination surveys that were run by the rig. So the concern is, I believe that the original wellbore was about 2 degrees at that point anyway. So if you add all those together in the worst case, you could be as much as 11 degrees at the bottom of the hole, which would calculate 480 feet or so in some unknown direction from the surface location.

Q. And so what could happen if you drilled on the old drill site?

A. You just don't know. You have two wellbores down there. The chances -- they say that it's unlikely that you would, but it certainly has happened before and the chances of getting into one of those two wellbores would certainly be a consideration.

Q. Obviously, if that happened, that would be a negative effect on the economics of this well?

A. Certainly.

Q. Would you move on to Exhibits 11 and 12 and

discuss what they are and why they are produced? And they're both, for the record, Authorities For Expenditure.

A. The other thing we tried to look at in order to drill a standard location was to directionally drill from an approved archeological location back into a standard location. So what I did was I looked at the incremental costs that I felt that would be. And basically to drill -- our AFE for a straight well would be about 700,000 versus approximately 861,000 for the directional well. It's about $160,000 difference, which could severely impact the economics of the well.

Q. Let's move on to Exhibit 13, and would you please discuss what, in Nearburg's opinion, is necessary for a break-even point on a well in this --

A. I ran economics based on the parameters that are shown at the bottom of this page. And basically to get your DPW 10 to a zero value, or 10 percent internal rate of return, the minimum amount of barrels that you'd have to recover would be about 78,000.

Q. And of course you don't want to drill for just a break-even point?

A. No, that would not be an acceptable return

to Nearburg.

Q. Before we move on, let's discuss a little bit about drainage and something that came up before, and I'll refer you to what has already been introduced as Exhibit No. 8. In your opinion, does Nearburg need to drill a well to protect itself from drainage of the offsetting Nearburg No. 2 and Conoco No. 11 wells?

A. That's my opinion, yes.

Q. Looking at that production map, in your opinion, have the two wells I've just mentioned had the opportunity to produce a fair share of the reservoir?

A. I think we'll show that later, yes.

Q. And there has been some discussion about why production from wells didn't exactly tract, say, the thickness of the dolomite. And looking at, I think it's the Nearburg No. 4 well in the southwest quarter-northwest quarter of Section 31, which, as Mr. Elger stated, is not as good of a well as a couple of the wells around it, could you state for the record what in your opinion might be affecting it?

A. Yes. One thing is that we originally had that well on submersible pump. It's one of the few wells out there that makes very little water. It makes maybe a 3:1 oil to water rather than the other

way, like some of them are.

So we had a submersible pump in there. And even running the smallest submersible pump, we were in danger of mechanically burning up that pump. So we elected to put it on beam pump. We've had a hard time pumping on beam pump. We've had lots of rod parts and just mechanical problems, that that well's been down a lot of the time, and that accounts for a lot of the lack of cum and also the recent production levels.

Q. And there were offsetting wells completed and started producing long before that well; is that correct?

A. That's true.

Q. Looking at the Nearburg No. 2 well -- which is an excellent well, isn't it?

A. That's true.

Q. Although it is competing with the Conoco well to the north, there's really nothing to the south and east of that well, even to the west of that well; is that correct?

A. That is correct.

Q. So even though it's got a thinner dolomite thickness, it has less competition?

A. That's true.

Q. Would you please move on to what's been

marked Exhibit 14, Nearburg Exhibit 14, which is simply a land plat with some circles drawn on it. Would you discuss the reason that's being introduced?

A. All that is, it's just a land map, like you said, with 40-acre drainage radiuses drawn on it, just on the assumption that somebody wants to make that assumption these wells drain 40 acres. It basically shows that the well that would be harmed the most would be the Dagger Draw 31 Federal No. 2. There really should be little effect on the Dagger Draw 11 and the Pincushion No. 3 Well.

Q. Why don't you move on to your Exhibits 14A and 14B? And for the other attorneys, 14A is entitled "Drainage Calculations," and 14B is a two-sheet exhibit, listing some data on the Conoco Dagger Draw No. 11.

Would you please state what these exhibits detail, and then could you discuss whether or not a penalty should be assessed against Nearburg, as well.

A. Basically, what I tried to do, the reservoir quality varies so much from wellbore to wellbore, it's a function of vugular porosity, of fractures of different areas. Even though you have a thick dolomite, you could have a thin dolomite with lots of vugs or a large fracture, and you may have

high productivity in that well.

So I didn't feel and don't feel like that you could just look at each wellbore, evaluate the logs, take your reservoir parameters off of that log, and calculate a drainage radius for that well. I think it varies out away from the wellbore too quickly and too dramatically.

So what I did was I took the six wells that are really in question in this hearing, in this general area of the reservoir, the Nearburg Dagger Draw 31 Federal No. 1, No. 2, No. 4, the Conoco Dagger Draw No. 11, and the Yates Pincushion HM No. 1 and No. 3 wells, and I went through and I calculated porosity feet off of each of the logs, basically.

Then I went through and I just took an average of what I felt like per feet of pay, what the porosity in the wellbores were, to come up with an average porosity for that section of the reservoir.

The other thing that I did do, I didn't read the porosities directly off the logs. I read the log porosities, and then based on an F.M.S., which is an imaging type, it's a resistivity-type imaging tool that we ran on our Dagger Draw No. 1, we saw on that log, as Conoco had testified in previous hearings in their imaging-type log, we saw vugs and even some

fractures in areas of the wellbore that showed no log porosity whatsoever.

So we felt, based on that, we just made the assumption that the porosity was probably at least twice as good as what it was that you read off the standard well logs. So we just took the actual porosity readings and doubled those to use in our calculations in this example.

We just divided the average feet of pay. I came up with 76. We used an average water saturation of 50 percent. We used that average log porosity of 12.8 percent. I calculated a formation volume factor of 1.52. And I used a recovery factor of 30 percent, which is certainly the high side recovery factor for this type of a reservoir.

I did that solely independently. And then going back and looking at some of the previous testimony that Conoco had given back in, I believe it was 1991--

Q. Regarding the Dagger Draw Field?

A. -- regarding the Dagger Draw Field, they came up with 75 feet of average pay. They used the same 50 percent water saturation. They had an average porosity of 12 percent. They used a formation volume factor of 2.0 and the 30 percent recovery factor. So

I felt like this area, it tied pretty well with the stays that they'd done north of here.

So based on those average reservoir parameters, we looked at what the cumulative production. As of 1-1-93 from the Conoco Dagger Draw 11, it was 315,849 barrels. If you use these average reservoir parameters, you calculate a drainage as of that time of approximately 42 acres that it drained as of that time.

We projected that well on to its economic limit, and we calculated the ultimate recovery would be 925,457 barrels of oil, with the wells that are drilled right now competing for the reserves, and that would be an estimated ultimate drainage of approximately 124 acres.

We also looked at the Nearburg Dagger Draw No. 2, which had cumulative production as of 1-1-93 of 305,047 barrels, and that estimated drainage as of 1-1-93 would be 41 acres. We projected our ultimate recovery for that well would be 553,313 barrels of oil, which would be an ultimate drainage of 74 acres.

Q. What, in your opinion, will occur if Nearburg is not allowed to drill a well in the east half northwest quarter of Section 31?

A. In my opinion, the Conoco well and the

Nearburg well will drain those reserves.

Q. In your opinion, will that adversely affect Nearburg's correlative rights in the northwest quarter of Section 31?

A. I believe it would.

Q. Were Exhibits 10 through 14B prepared by you or under your direction?

A. Yes, they were.

Q. In your opinion, should Nearburg's application be granted, granting the unorthodox location without a penalty?

A. I believe so.

Q. In your opinion, is the granting of this application in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes.

MR. BRUCE: Mr. Examiner, I move the admission of Nearburg Exhibits 10 through 14B.

EXAMINER CATANACH: Exhibits 10 through 14B will be admitted as evidence.

Mr. Kellahin?

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. MacDonald, on Exhibit 14B, the second

column from the right says "Adjusted (Two Times Porosity)"?

A. That's correct.

Q. What's that based on?

A. That's based on our F.M.S. log we ran on the Nearburg Dagger Draw 31 Federal No. 1, showing porosity in areas where conventional logs read no porosity.

Q. So what's the basis for two times?

A. That was just an assumption that I made, that I felt like it was probably two times greater. It also fit with some of the reasonable drainage calculations.

Q. So what you do is, the third column from the left, it says, "Log Porosity .055"?

A. Right.

Q. By the time we get to the adjusted porosity, what you're doing is doubling that?

A. That's correct.

Q. Why wasn't it three times as opposed to two times?

A. Because I felt two times, in my opinion, was a reasonable assumption to make.

Q. And why did you do two times?

A. Mainly, because the drainage radiuses that

I calculated came out somewhere between the 40 and 100 or so, and I used that number. That gave me some comfort level that it was much more reasonable. If you use the log porosities off the logs, you calculate huge drainage radiuses which aren't practical with the recovery that's been recovered from the reservoir.

Q. If you use log porosity, then using your volumetrics, you had a wider drainage pattern for these wells?

A. That's correct.

Q. And by doubling the thickness or the porosity value, that shrinks the drainage radius?

A. That's correct.

Q. And the basis for doubling to shrink the drainage radius was what, sir?

A. Was the fact that we see porosity on an imagining-type log where no porosity is seen on the conventional logs. Conventional logs often are not good indicators of fracture porosity, and even some vugular porosity.

Q. On the log porosity portion of the information, what are you using for a porosity cutoff?

A. I used anywhere where there was any porosity all over zero.

Q. So there wasn't a cutoff. You went all the

way down to zero on the log?

A. I went all the way to zero.

Q. Have you tried to make an engineering calculation to show what the drainage radius will be for a well at the proposed nonstandard location, if it's approved?

A. No, I have not.

Q. Have you made estimates of anticipated ultimate recovery from your well at the proposed nonstandard location?

A. No, I have not.

Q. Have you made any engineering calculations of what the ultimate recovery would be if you were at the closest standard location?

A. No, I have not.

Q. Do you know what the drainage radius would be for a well at the closest standard location?

A. It would be a function of drainage from the other wells, and until we drill the wells, see what the bottom hole pressures were at, I think that would be very difficult to determine.

Q. You're moving 50 percent closer to the north boundary of your spacing unit than would be standard?

A. That's correct.

Q. And yet you are not recommending a penalty for your well?

A. No. My calculations show me that the Conoco well and the Nearburg well have both basically drained their 40 acres already, and the Pincushion well is such a low quality, I think it will have little effect on that well.

Q. I understand your testimony about not attempting a reentry of the Kathy Eyre No. 1 well, but you propose to redrill, if you will, by stepping off 330 from that well, and replacing it with this new proposed well; yes?

A. That's correct.

Q. Okay. Excluding geologic reasons, what is the minimum engineering distance for which you want to step out away from the existing Kathy Eyre No. 1 well in order to attempt a replacement well?

A. It's hard to say. I calculated that the bottom hole location could be close to 500 feet away from the surface location, at the worst case. So I'd like -- you'd conceivably like to be at least that far.

Q. But you're not that distance at this point, are you?

A. I think we are because we're also moving

west and north.

Q. You're only 330 from the surface location of the Kathy Eyre well with this replacement well? Yes?

A. If you say so, that's probably correct.

Q. No, I'm asking you.

A. I don't know. I need a map.

Q. The Kathy Eyre Well is what location, sir?

A. It's 1980-660, I believe.

Q. To repeat myself, what is the engineering distance that you're comfortable with in drilling an offset to the Kathy Eyre well?

A. Optimally, I'd like to be 400 to 500 feet.

Q. Yeah. What's the minimum distance?

A. That's hard to say, at least a couple hundred feet.

Q. Can you give us an example of any nonstandard locations in this immediate vicinity that have been approved by the Division?

A. I'm not aware of any.

Q. These wells in this area are drilled at standard locations, aren't they?

A. To my knowledge.

MR. KELLAHIN: No further questions.

EXAMINATION

BY MR. CARROLL:

Q. How long have you been a practicing engineer, Mr. MacDonald?

A. Oh, 13 years.

Q. Thirteen years? How long have you been -- what's the length of time that you've had experience out here in the Dagger Draw in the southeastern New Mexico area?

A. Since we drilled our first well, which was -- well, we looked at it before, probably 1988 or so and some.

Q. About five years? You've been with Nearburg that long; is that correct?

A. Longer than that.

Q. But that's when you first got experience in this. Your experience in that area has been confined to drilling Nearburg wells; is that correct?

A. We've looked at all the wells in the area in our studies before we got into the play, but my hands-on experience has been with our wells.

Q. How long have you been performing reservoir engineering calculations?

A. All of my career.

Q. When you were talking -- and just to follow it up, and I got confused a little bit when you were

talking with Mr. Kellahin -- when you were saying that the possible area of influence where you might find the bottom of the Kathy Eyre, and you were talking throughout maybe 400 or 500 feet, you're talking about the circle with a radius or a diameter of 500 feet, are you not?

A. That's -- the radius would be that much.

Q. So you're saying a diameter of 1,000 feet, that you might inquire?

A. I believe that's correct.

Q. Your Exhibit 14, I believe you said it was your opinion that Nearburg needs to be allowed to drill this well at this late date at an unorthodox location to protect its acreage from drainage from the three wells that offset it to the north, the northeast, and then to the east; is that correct? And that's really kind of the import of these little circles that you drew on Exhibit 14?

A. More or less.

Q. All right. And the basic assumption with these circles is that these wells are going to have a drainage impact of approximately 40 acres; is that correct?

A. No. Really the purpose of that drawing was just to show if you made that 40-acre assumption, what

the drainage radiuses could be.

Q. With respect to the well to the north and east, you said it would only affect it just a little, there would just be a little drainage, and I guess you make that assumption because the circle that you drew around the proposed location just cuts the southwest quarter of that proration unit; is that correct?

A. That would be based on if that well drained 40 acres.

Q. Could you tell me how much is a little, what calculation, what number you put, what value you put on a little?

A. Not based on that exhibit, no.

Q. Have you done a calculation or any calculation such as that?

A. Using our average reservoir parameters calculation, I think I came up with a maximum that that well -- if you just used the parameters from the log off of that well, then it would ultimately drain about 47 acres. If you used the average reservoir parameters, they were too low. They ran in the 11 to 20-acre range, which was probably unrealistic, but it means that that reservoir probably improves away from the wellbore.

Q. Have you ever tried to calculate that into

barrels of oil or anything such as that?

A. No, I have not.

Q. Let me ask you a question, kind of breaking out of my train of thought here, but I see a note on my paper. Why have you designed the pad to be 400 by 400? That's a fairly large pad. Is there some reason for that, could you tell us?

A. That's the pad that the drilling contractor for those size rigs generally build, need to use.

Q. That's the only reason that you're building one that large?

A. That's correct.

Q. Do you know if it could be shrunk down?

A. It's possible that it could in certain -- yeah.

Q. Let me talk to you about the concept of correlative rights. The way I understand the import of your testimony is that when you were talking about the fact that these other wells would drain their sphere of influence, this 40 acres, are you saying or interpreting the concept of correlative rights is that, if someone waits for a year, two years, three years or later to drill a well, that they should, by virtue of the fact that they are drilling a well three or four years later, they should be allowed to drill

closer to the edge of their proration unit to offset the drainage of other earlier drilled wells? Is that your concept of correlative rights?

A. My concept, my understanding of correlative rights, is that it affords the owner the opportunity to drain the reserves under his proration unit, his acreage.

Q. Does your concept of correlative rights allow for some sort of penalizing of persons who go out and take the risk and prove up a field earlier, because that's -- I mean, Nearburg, or whoever owned that acreage, could have drilled a well up there in that corner at the same time any one of these other three wells were drilled?

A. No, it doesn't. But, in my opinion, it doesn't give somebody else the -- it doesn't give them the right to go in and drain somebody else's acreage either. It gives them the right to drain the reserves under their proration unit.

Q. But you will agree with me that whoever owned that acreage always had the right to go out there and drill a well up there in the area where you're proposing the location?

A. That's correct.

Q. They had the equal right at all times?

A. That's correct.

Q. Have you considered -- the two earlier wells that were drilled by Nearburg, do they drain any oil off of their proration unit?

A. Which wells?

Q. Well, the other ones up there in the northwest quarter. I think it was the No. 1, 31, No. 1. Will that well drain oil off of its proration unit?

A. I'm not sure. I've done those calculations, but I don't have them with me.

Q. If you're not sure that that well will drain oil off its proration unit, why are you so sure that the other three wells offsetting this proposed location are going to drain oil off of Nearburg?

A. I just remember that they are because I have just worked on those just recently, and I have the numbers in front of me.

Q. I see. Isn't it likely if those three wells would drain oil off of their proration unit, Nearburg's wells are going drain oil just like anybody else's wells?

A. It really depends on the thickness and the porosity that I just calculated from those wells.

Q. And I assume you've not ever calculated any

of that for Nearburg's wells?

A. Yes, we have. I just don't recall the numbers.

Q. But then you will agree with me that you have seen examples where Nearburg's wells are draining oil off of other proration units?

A. The Dagger Draw No. 2 is an example of that.

Q. Any other well?

A. That's the only one that I have the numbers in front of me.

Q. Has Nearburg considered drilling a directional well at this nonstandard location to bottom within the standard location?

A. That's what the two AFE's were for that we presented. I think they were Exhibits 11 and 12.

Q. To drill a directional well and bottom it back in at a standard location?

A. Um-hm.

Q. Why has Nearburg not chosen that route?

A. We felt like the cost -- it was $160,000, and we estimated more of cost to do that.

Q. And that's the only reason why, is just there was some additional cost?

A. That and the concern of getting into the

other two wellbores is also a concern.

Q. You will agree with me that there are standard locations outside of that sphere of radius that you have calculated for the old Kathy Eyre well, would you not?

A. Say that again.

Q. You will agree with me that there are some standard locations where you can bottom a directional well outside of that sphere of influence still left on your acreage?

A. That well is drilled at the standard location, is it not?

Q. But there are other -- there would be other locations that would be standard or would not call for an unorthodox exception from the OCD where you could put that well or bottom?

A. It would be less geologically favorable, but there are.

Q. Based on the testimony that Mr. Elger presented; is that right?

A. That's correct.

Q. Let me ask you when you were -- first of all, your your Exhibit -- and I'm not sure --

MR. BRUCE: 14A.

MR. CARROLL: 14A? Okay.

Q. If you would look at -- if you've got 14A before you, let's first talk about average water saturation. If the average water saturation were in fact actually higher, like 75 percent, the effect of your averaging it as low as 50, would that not have the ultimate effect on your drainage area -- it would be, by lowering the water saturation, you are in fact reducing the area of influence of drainage, are you not?

A. That's correct.

Q. And on average porosity, if you increase it -- let's say if the average porosity was actually like 7 or 8 percent, the fact that you have raised or used a higher average porosity, that would also likewise reduce the area of drainage, would it not?

A. That's correct.

Q. And on this recovery factor, if you use a 30 percent -- and as you said, it was on the high side -- if it were in fact much lower, by using the higher number, you again have reduced the area of drainage, have you not?

A. That's correct.

Q. Have you looked at -- when you were going out here and making these assumptions, did you look at any actual core data?

A. No. We didn't have any core data available to us.

Q. Did you ever try to obtain core data from any of the other operators that might have it?

A. No, we did not.

Q. You know core data exists out there, do you not?

A. I believe it does.

Q. And the use of core data to determine the actual porosities would be the better or more scientific way of calculating what the porosity is, wouldn't you agree?

A. That's correct.

Q. Now, you said that these numbers, these average numbers, the 76, 50 percent, 12.8, that they were actually calculated. Did you calculate each one of these things for every one of these six wells and then average it to come up with these numbers?

A. That's correct.

Q. Did you bring that data with you?

A. I did not.

MR. CARROLL: That's all I have, Mr. Examiner.

EXAMINER CATANACH: I don't have anything further for this witness.

MR. BRUCE: I just have a couple of follow-up questions.

FURTHER EXAMINATION

BY MR. BRUCE:

Q. Mr. MacDonald, getting to Mr. Carroll's question about, apparently about timely drilling, what has been the procedure in this pool as far as drilling wells? Has it been just to drill wells or to drill to meet allowable?

A. Generally -- it depends on the operator. We generally, a company our size, we drill to meet allowable.

Q. So if there's two wells on a unit that are capable of meeting allowable, there's really no need to drill a third, in your opinion?

A. That's correct.

Q. Now, in the northwest quarter, were the No. 1 and No. 4 Dagger Draw wells in the west half of the northwest quarter of Section 31 capable of meeting allowable for quite some time?

A. For a period of time, they were.

Q. So Nearburg just hasn't been sitting there, waiting for this to happen; it's just following good practice?

A. Not for the full period.

Q. As far as the distance away, the proposed distance -- the distance from the proposed well to the Hanks well, just moving from the Hanks to the proposed well, is 480 feet to the east; right?

A. Okay.

Q. Plus 330 feet from the north; is that correct?

A. Right.

Q. So it's somewhere in excess of 500 feet difference?

A. I haven't done the calculation, but I would think so.

Q. So there's no guarantee, but it does help to get away from that Hanks wellbore that you don't want to get near?

A. That's true.

Q. Now, as far as directional drilling, besides the fact, as you already mentioned, the additional cost, can't there also be additional cost involved or problems involved when you pump one of these wells?

A. Yes, sir, there can be, especially if you end up going to a rod pump or a beam pump, and you have to run rods in the well, at some point in time it depletes down to that point, you can have considerable

problems with it directionally.

Q. And that can add to not only the well cost but the well operating cost?

A. That's correct.

Q. Once again, adversely affecting the economics?

A. That's correct.

Q. And, finally, on your Exhibit 14B, where you were questioned about the adjusted porosity, is that inconsistent with what, say, Conoco used at its Dagger Draw hearing?

A. No, Conoco used 12 percent. So that was probably conservative. That was based on their energy type, their civil type log, which is a better tool than the FME; so it gets better coverage of the wellbore; so they can see more vugs and fractures.

Q. But that wouldn't be at all inconsistent with these numbers you put down for their No. 11 well, would it?

A. No, it wouldn't.

Q. Once again, that well, as well as the Nearburg No. 2 well, they've already paid out, haven't they?

A. Yes, they have.

Q. Several times over, perhaps?

A. I'm not sure how many times, but they've certainly paid out.

MR. BRUCE: Nothing further, Mr. Examiner.

EXAMINER CATANACH: This witness may be excused?

MR. BRUCE: I have no further direct testimony.

EXAMINER CATANACH: Tom and Ernie, how long do you think you're going to be?

MR. KELLAHIN: At least an hour.

EXAMINER CATANACH: Is that an hour Direct, Tom?

MR. KELLAHIN: Yes, sir.

MR. CARROLL: I propose to go after Tom because -- and we will try to limit ourselves to just filling in the chinks. I don't anticipate -- I anticipate maybe 10 to 15, closer to 10 on my geological witness, and I think Mr. Boneau can handle 15 to 20. So I'm going to be half, and I'll try to hold myself to that.

We don't propose to cover the same ground twice. We are very close in our interpretations, and we just want to stress that and why.

EXAMINER CATANACH: Let's go ahead and take a lunch. We'll meet back here at one o'clock.

(Thereupon, the noon recess was taken.)

EXAMINER CATANACH: At this time we'll call the hearing back to order and turn it over to Tom.

MR. KELLAHIN: Mr. Examiner, at this time I'd call Mr. Bill Hardie. Mr. Hardie is a petroleum geologist with Conoco, Inc.

BILL HARDIE,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. For the record, Mr. Hardie, would you please state your name and occupation.

A. My name is Bill Hardie. I'm a geologist with Conoco, Inc.

Q. On prior occasions have you testified as an expert petroleum geologist before the Division?

A. Yes, I have.

Q. Summarize for us what has been your personal experience with geologic studies and evaluations in the Dagger Draw area.

A. I started working Dagger Draw at about the same time I started working for Conoco, in 1990, and that's been my primary role since that time. I was doing reservoir evaluations and proposing drilling

locations together with a team of engineers.

Q. Estimate for us the number of wells that are under your control and supervision on behalf of your company in the North Dagger Draw and South Dagger Draw area.

A. It would be approximately 30 to date.

Q. For the last two and a half years, Dagger Draw has been your primary responsibility as a geologist?

A. That is correct.

Q. Have you made a specific study of the geology around the Nearburg application for the nonstandard location that's the topic of this case?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Hardie as an expert petroleum geologist.

EXAMINER CATANACH: Mr. Hardie is so qualified.

Q. (BY MR. KELLAHIN) Mr. Hardie, let me have you turn, sir, to what is marked as Conoco Exhibit No. 1. Identify and describe for us this display.

A. Exhibit 1 is a land plat that shows all of Section 31 and the proposed unorthodox location, as well as some of the adjacent acreage that is being affected by the proposed location.

The solid yellow shading on this map indicates that Conoco operates the acreage, and the solid yellow acreage lies to the northeast of the proposed location. Conoco has about a 61 percent working interest in that acreage.

The crosshatched yellow areas indicate that Conoco has a working interest but does not operate. Conoco has a 27-1/2 percent working interest in the acreage lying north of the proposed location and shares a 50 percent working interest with Yates Petroleum in the acreage lying to the east of the proposed unorthodox location.

Also shown is the proposed unorthodox location with the red circle, and then in the green shading I've shown the orthodox location window that is available to Nearburg to drill the nearest orthodox wells.

I would point out that the Kathy Eyre well lies in the northeastern corner of that orthodox location window.

Q. Based upon your studies, do you have a conclusion concerning whether or not there is available to Nearburg a standard location in the northwest quarter that will meet the topographic or archeological limitations within that spacing unit,

whereby Nearburg could drill a well at a standard location?

A. Yes. I've prepared several exhibits that will demonstrate that there are a number of available orthodox locations that could be drilled, that there are no topographic nor geologic constraints upon those locations.

Q. What is your ultimate conclusion and recommendation to the examiner about Nearburg's application in this case?

A. Conoco and myself feel that the application should be denied. Since there are no valid topographic nor geologic reasons for drilling unorthodox, and there are available orthodox locations which can be developed economically, we feel that we should recommend that the OCD deny the application for an unorthodox location.

Q. Are there any nonstandard locations for wells currently producing from the North Dagger Draw Pool that are shown on Exhibit No. 1?

A. There are none that I know of.

Q. Within the proration and spacing unit consisting of the northwest corner of 31, what is the current status of those producing wells?

A. There are -- of the producing wells?

Q. Yes, sir.

A. There are three wellbores in the northwest quarter. Two of those are productive, the Dagger 31 No. 1 and the Dagger 31 No. 4. The Kathy Eyre well -- I'm not sure on this plat it's shown as being plugged and abandoned, but it is a P & A'd well. It's not a dry hole. It was actually a producer for awhile.

Q. What are the mechanics of the allowable that's assigned to a spacing proration unit, consisting of 160 acres in the pool?

A. I'm sorry, could you repeat that?

Q. Yes, sir. What's the total allowable assigned to a 160-acre proration spacing unit in the pool?

A. Each 160-acre proration unit is allowed 700 barrels of oil per day, and that can be achieved with any number of wells. There are no restrictions on the number of wells that you can have with that proration unit.

Q. That allowable can be produced by a single well or in combination with any of the wells?

A. Exactly.

Q. Let's turn now, sir, to Exhibit No. 2 and have you identify and describe the purpose of this exhibit as part of your testimony.

A. Exhibit No. 2 is the first notification that Conoco received from Nearburg that they wanted to drill an unorthodox location, and it's essentially a waiver that they would have liked for us to sign regarding that location.

I would draw your attention to the first paragraph, the second sentence, where they are stating that due to topographical conditions, they are proposing to locate the well at its unorthodox location.

There's never a mention made of any geologic or engineering parameters that came into this decision. And based on that, they were asking us to sign a waiver. After having received this letter, I called Jerry Elger with Nearburg, the geologist who previously testified, and requested some documentation of the topographic constraints, and he was rather noncommittal about supplying them. So we requested through Tom Kellahin that Nearburg supply these documents, and they did arrive.

Q. Have you examined all the documentation that Nearburg has supplied to Conoco concerning limitations for the use of the surface?

A. Yes, I have.

Q. Let's turn to some of that information.

Identify and describe for us Exhibit 3.

A. Exhibit 3 is the -- was included in a package of data that was initially sent to Conoco, the first package of data that we received from Nearburg, and it includes on it, drafted onto a 7-1/2 minute topographic quadrangle, two archeological sites in the northwest quarter of Section 31.

Those archeological sites are shown on this drawing that they supplied by the sort of circular areas, and each one of them has a small cross within it. And those are labelled LA 98856 and LA 98853.

Also shown on their diagram was their proposed drilling pad for their Dagger Draw 31 No. 5 Well.

Q. In terms of the size of the drilling pad used by the operators in the pool, what is your understanding of the commonly utilized size?

A. I'm not that familiar with the commonly utilized size. I'm not an expert on that.

Q. Let's turn now to Exhibit No. 4. Identify and describe what this display is.

A. This was some additional data that was supplied by Nearburg. I think I received this copy approximately a week before this hearing. And it includes -- and you can compare this with the original

information supplied in Exhibit 3 -- it includes two of the archeological sites. They're shown on the right-hand side of Exhibit 4. And it includes an additional third site that is shown on the left-hand side. It's referred to as LA 98855.

So then now we've got a total of three archeological sites within the northwest quarter of Section 31 that they supplied us with information on.

Q. Have you taken all of the available information supplied to you by Nearburg, in terms of this issue, and plotted it on a display to determine whether or not, in your opinion, there was a standard location available for the drilling of this well in the northwest quarter of Section 31?

A. Yes. That would be Exhibit 5.

Q. Identify and describe for us what you've done.

A. I've taken, as a base to this exhibit, an aerial photograph of approximately the northern three quarters of Section 31. The first overlay that I've placed upon that is simply the 7-1/2 minute topographic quadrangle.

Q. What's the source of the photograph?

A. The source of the photograph was John West Engineering.

Q. Have you satisfied yourself that that photograph is true and accurate, to the best of your knowledge?

A. Yes, I have.

Q. It's accurate and reliable and used by you and others in the industry for this purpose?

A. I don't know how many others are using this particular photograph, but I have used it in the past. It was shot in '90; so it does not include some of the most recent wells but --

Q. Have you found it to be reliable?

A. Yes, I have.

Q. What did you then do?

A. I then -- the first overlay that I've placed upon that photograph is that of a 7-1/2 minute quadrangle. It shows the contours in red. It also shows the boundaries of the section with the heavy red lines so that you can compare that with the photograph.

On that topographic map, I've also included the orthodox location window, and I've shaded that in green.

On the second overlay, I've taken Exhibit No. 3 and enlarged that portion showing the archeological site, so that it matches the scale of

both the topographic map and the aerial photograph. On that, you can see the location of two of those sites, 98856 and 98853. They appear to be lying well to the east of the proposed orthodox location window.

The third site that was shown on Exhibit No. 4 unfortunately cannot be transferred onto the aerial photograph in this manner because that's a hand-drawn map, and it was not drafted onto a scaled base. However, you can, from the aerial photograph, determine where that site would lie.

It's approximately on an east-west line from the smaller arc site, 98856 arc site, so you would move due west of that arc site. And then it lies north of the lease road, which is shown on Exhibit 4 as the double dashed line. And you can see that same lease road on the aerial photograph, passing through the middle of the orthodox location window.

So it's clear by comparing these two that that third archeological site also lies well outside the boundaries of the orthodox location window. It lies to the north.

Q. Based upon your studies and the review of the Nearburg information, what is your conclusion about the availability to Nearburg of a standard location?

A. There are no topographic constraints on a standard location. The only possible constraint would be that they would want to back off a certain distance from the Kathy Eyre 1 well, which would be, as I mentioned before, in the northeastern corner of this orthodox window. But there's nothing to prevent them from drilling in any of the other three corners on that orthodox location window.

Q. Do you have experience and knowledge with regards to what Conoco and others in the pool have done in terms of twinning or replacing existing wells, and how far apart those wells might be, one from another?

A. Conoco has in the past twinned wells in Dagger Draw. One example is our Dee State 4 that was drilled approximately three months ago, in which we were 100 feet or less from a Yates well that was the State CO Com No. 1 well that they use as a water disposal well. And we successfully essentially twinned that well, although it was operated by a different company. We did a similar --

Q. How far apart were they?

A. I'm guessing that they are around 100 feet apart. They are very close. They share the same drilling pad.

We did a similar maneuver on our Barbara Federal No. 16, where we essentially twinned the old Hanks Barbara Federal No. 5 well farther north. And that was successful as well.

Q. Do you agree with the Nearburg engineer that you have to have 400 to 500 feet separation between wells in order to keep them from interfering with each other?

A. Not necessarily. Every well out there is deviated a certain amount, usually around 3 to 5 degrees is the typical deviation. However, wells deviate in the same direction. And we've run deviation surveys and documented these directions of deviations, and they tend to migrate in the same direction; so that if you were standing off from an old wellbore by a distance of 100 feet or so, you would expect that the two wellbores would deviate in a similar direction,. And it would be unlikely that they would ever intersect. That doesn't discount the risk of that happening, but I would say it's fairly minuscule.

Q. Independent of any of the geologic work that Nearburg has performed, and independent of any of the geologic work that Yates has performed, have you come to your own geologic evaluations and conclusions

about the northwest corner of 31?

A. Yes, I have.

Q. What is your conclusion about the availability, geologically, of the optimum place in which to place this third well in this spacing unit?

A. From a geological standpoint, this entire northwestern quarter of the section is lying along probably the best part of the field, and there are really very few constraints on where you might want to place a well. It would be based almost entirely on topography and surface constraints. You can't hardly go wrong in this part of the field.

Q. Mr. Elger defined for us a thickness in the dolomite of maybe four feet difference between the closest standard location and his proposed nonstandard location. In your opinion, as a geologist, is that a difference of significance?

A. It's certainly not, not within the realm of what we are capable of predicting. Four feet is insignificant.

Q. When you look at his structure map, he interpreted a difference between the closest standard location to an improvement in structure of anywhere from 4 to 10 to perhaps even 20 feet of structural difference. Do you have an opinion as to whether

that's a difference of importance?

A. I think it's not important, that small amount.

Q. Let's turn to your work. Identify and describe for us Exhibit 6.

A. Exhibit 6 is an isopach map of the Cisco Dolomite that has been netted so that it does not include limestones. It's simply a counting of the net feet of dolomite within the Cisco formation. It shows that the thickest part of the dolomite reservoir trends in a northeast-southwest direction, and it trends right through the northwest quarter of Section 31.

Typically, the thickness at this main access of the reservoir ranges between 250 to, depending on where you are, it can get up to 350 feet thick. And of course that thins outwardly toward the northwest and the southeast to a zero line that's shown at either corner of that map.

Also, I've shown on this map the proposed location, the unorthodox location that Nearburg is proposing in the northwest quarter of Section 31. You can see, according to my interpretation, that there would be very little difference whether that well were located somewhere adjacent to the Kathy Eyre, perhaps

to the southwest of the Kathy Eyre well, or if it were placed at its proposed unorthodox location.

Q. Do you have a geologic opinion of the optimum place in which to locate Nearburg's third well in order to achieve appropriate development of this portion of the pool?

A. If it were my choice, I would place it at the southwestern corner of that orthodox window.

Q. And why would you do so?

A. That would achieve one of the main goals, which of course would be to get away from the Kathy Eyre, and that would get you a maximum distance away from the Kathy Eyre. It would also get you a maximum distance away from the archeological sites that have been shown to be to the north and to the east of the Kathy Eyre.

Q. Where does that place you in terms of undeveloped acreage within the spacing unit?

A. It places you really in the heart of the reservoir. You couldn't ask for a better location.

Q. I see a line of cross-section that you've displayed on Exhibit No. 6. Is that a later exhibit?

A. Yes. It's Exhibit 8, I believe.

Q. Before we leave that point, give me your reasons why you've chosen this particular line of

wells in which to construct a cross-section.

A. The main reason is that it encompasses most of the wells that are operated by Nearburg in that section, and with that line of section, we can compare the proposed orthodox location with those various other wells and get a feeling for how that well may perform, just comparing them qualitatively.

Q. In terms of methodology, how does your line of cross-section compare to Mr. Elger's line of cross-section?

A. Mine is drawn just straight through along essentially the strike of the reservoir. I've tried to maintain some consistency. His, on the other hand, is more of a zigzag pattern, which includes the Foster 31 No. 1.

Q. Turn now with me to Exhibit No. 7. Identify and describe this display.

A. Exhibit No. 7 is of the same mapped area as Exhibit 6, only this time we're looking at a structural map on top of the Cisco Dolomite reservoir. Again, the proposed unorthodox location is shown with the open black circle in the northwest quarter of Section 31. And, again, I would point out that by moving either to the northeast or southwest of the Kathy Eyre well really changes very little in

terms of structure. There's no significant advantage to moving to an unorthodox location.

Q. Compare your structural interpretation to that of Mr. Elger's.

A. My interpretation, the main difference between the two is that I don't have nearly as prominent of a low trending through Section 31 as he does.

Q. And why not?

A. I suppose it's more of a difference in interpretation.

Q. Why have you chosen your interpretation?

A. I try to make mine based on the available well control that we have and make the contours fit that as closely as possible and include in that an understanding of depositional environments and such. And based on that, that's the way I've contoured this map.

Q. When you're looking for a well location for North Dagger Draw for this well or any other well, do you have a criteria as a geologist in terms of structural position in the reservoir?

A. Only that there be enough structure to get us above what I would consider to be the oil-water transition. And then that varies in different parts

of the field.

Q. Within this portion of the field, can you identify for us what structural position that transition may take and where it might be located?

A. The transition itself occurs throughout the entire reservoir, but there is a point at which you would expect to encounter absolutely no oil whatsoever, and that's typically what we use as a cutoff.

Q. Does that point occur at any portion of the reservoir located underneath the northwest quarter of 31?

A. Yes, it does, and I think it would be a little bit easier to point that out using the cross-section.

Q. Let's do that.

A. Exhibit 8 is the cross-section that I've prepared. And as Mr. Kellahin pointed out, the line of the cross-section is shown on both Exhibits 6 and 7.

This is made up of porosity logs across most of Nearburg's operations. On this cross-section, I've included cumulative production that's shown beside each well in red. That's from P.I., Petroleum Information's, database, and it's not terribly

updated, but I included it mainly just to give you an idea about the relative rates of production between water, oil, and gas so you can get an idea and compare that with the way the wells have been completed.

Also shown is a purple-shaded area which represents the dolomite reservoir in Dagger Draw.

On that line of section, I think you can determine where that oil-water contact or that lowest known oil contact may lie by comparing the completions on two of those wells. That would be the two wells on the right-hand side, or the northern end of the cross-section, the Nearburg No. 2, 31 Dagger Draw and the Conoco No. 1 in Dagger Draw.

Nearburg was the first to drill their well, and they initially completed the lower set of perforations that are shown in the dark areas in the depth column. They had a very high water cut with that set of perforations, and then they later added the remaining perforations.

Based on that completion, Conoco chose to avoid that lower zone, and when we completed our well we stayed above that. And the difference between the water cuts in those two wells is pretty tremendous. And I think based on that, you could derive a lowest known oil line. And that's what I've done with the

heavy blue line that I've placed at the bottom of their perforations.

Q. There is a slight drafting error in here?

A. Right.

Q. A little glitch in the coloring. Let's describe that so no one is confused.

A. There's one line that extends the entire length of the cross-section. That is the correct lowest known oil line. The one above that is a ghost in the machine. I'm not sure where that came from.

Q. And that line that continues in blue across the entire cross-section represents what?

A. It represents, at least in my mind, the lowest perforation that you would consider shooting in a well.

Q. Is that going to be an issue then for deciding whether or not you go with Nearburg's nonstandard location or move to the closest standard location in the Nearburg spacing unit?

A. What that tends to do is give you a better idea of how much pay you've got in each of the wells because when you lose dolomite, oftentimes it's at the bottom of the well in the water zone, and it's insignificant. So if you're just mapping up total dolomite and you see a thin, that may not be

representative of what's available in terms of oil column.

And based on that, you can look at this cross-section and see that virtually all of the wells along that line of section have a considerable amount of oil column available to them within the dolomite reservoir, including the orthodox Cisco location that I've shown here with the red stick.

It's very comparable to virtually all the other wells along that section. And virtually every well in this section is very economic with the exception of the Hanks No. 1 Kathy Eyre Well.

Q. Let's talk about why that well was not economic.

A. That well was actually the discovery well for Dagger Draw Field. It was drilled in 1965. And, unfortunately, at that time nobody really knew how to produce this reservoir. We hadn't figured that out until the late '80's when we learned that in order to minimize water cuts, you not only had to have a very effective initial completion, but you had to keep the wells pumped off with high volume electric submersible pumps. And that kind of technology was not available to Hanks at that time.

He attempted to produce the well with beam

pumps, and I strongly suspect that he had a fluid level in the well that ended up resulting in such a high water cut.

Q. How would that well be drilled now?

A. The well would be drilled in the same manner. It would be completed in a different manner. Namely, had we been drilling this well, we would have completed a lot more pay than Hanks originally shot, and of course we would have produced it with a high volume pump.

That was particularly an important aspect of developing the field in the early days when pressures were higher, and the only way to keep these wells pumped off in the early days was with E.S.P.'s. Nowadays the reservoir pressures are declining, and it is possible to pump wells off with beam pumps, but that was not the case in 1965.

Q. Let's go back and look at the structure map, Exhibit No. 7. Estimate for us, Mr. Hardie, what would be the structural position under your interpretation of the Nearburg well at its proposed nonstandard location versus its closest standard location.

A. The nonstandard location would probably encounter the top of the reservoir. I would give a

range of depths between probably minus 4080 and minus 4090, somewhere in that range.

Q. Where would you find it at the closest standard location?

A. At the closest standard location, the Kathy Eyre, it's actually mapped at 4092. If you were to move to the southeastern corner of that orthodox window, you would expect to find it at a very similar elevation to that, about minus 4090 would be my best guess.

Q. If you continued to move in a southwest direction within the interior of the spacing unit, what does that do to your structural position?

A. Well, you move to the highest well in that area. The Dagger Draw 31 No. 4 encountered the top of the reservoir at minus 4003 feet. So every bit that you move to the southwest, you might expect that you would increase in elevation, although I wouldn't bet my career on that.

Q. If Nearburg's geologic strategy is to take advantage of structure, under your interpretation, which way do they move in order to take that advantage?

A. Under my interpretation, really there's no benefit to moving in either direction. They're moving

pretty much along the strike. So any advantage in moving the location would be so minuscule that it would be meaningless in the realm of what we can predict as geologists.

Q. By staying at this nonstandard location, the advantage is simply an encroachment advantage as opposed to a structural advantage?

A. That's the only advantage that I see.

Q. Let's look at reservoir thickness. If you'll look at Exhibit 6, let's go through the same analysis in terms of what you as a geologist see in your interpretation as the difference in values and thickness as we go to the proposed nonstandard location to the standard location.

A. The difference in thickness, again, would be very small. The way I've got mine mapped up, their well, their proposed unorthodox well lies at the precise lowest point, but the difference is, again, very small. My interpretation shows that if they were to drill their well in the southeastern corner of the orthodox window, they might expect to find between 240 and 250 feet of reservoir, of dolomite.

Q. And if it's drilled at their proposed nonstandard location?

A. Somewhere less than 250 feet but --

Q. If Nearburg's geologic strategy is to optimize thickness within their spacing unit, under your interpretation, where do you put that well?

A. I would again put it in the southeast corner of the orthodox window. According to my interpretation, that's where you would encounter the thickest section. But, again, the difference is very small.

Q. Summarize for us your conclusions.

A. My conclusions are that there is no indication of geological advantage to moving this well to an unorthodox location, and, again, there are no limitations topographically. I see no reason why they could not drill an economic well at an orthodox location.

Q. And until Nearburg does that, what is your recommendation to the examiner?

A. I would recommend that the request for the unorthodox location be denied.

MR. KELLAHIN: That concludes my examination of Mr. Hardie.

We move the introduction of his Exhibits 1 through 8.

EXAMINER CATANACH: Exhibits 1 through 8 will be admitted as evidence.

Mr. Carroll?

MR. CARROLL: I don't have any questions.

EXAMINER CATANACH: Mr. Bruce?

EXAMINATION

BY MR. BRUCE:

Q. Mr. Hardie, let's take your exhibits from the top, your Exhibit 1. Do you have that?

A. Yes, I do.

Q. It's just your land plat.

A. Right.

Q. You indicate the Foster 31 No. 1 is a producing well; is that correct?

A. Yes, I do.

Q. Why is that?

A. The last information that I had, it was producing. That may be incorrect. It may have since been temporarily abandoned. I'm not positive about that.

Q. You were here this morning, weren't you?

A. Yes.

Q. Did you hear the Nearburg --

A. Yes, I did.

Q. -- witnesses testify that it's a dry hole?

A. I believe it did produce around 3,000 to 4,000 barrels of oil according to Petroleum

Information. I don't know how accurate that data is.

Q. Looking to the north in your Conoco-operated acreage, you have the Dagger Draw No. 8 Well. What is the current status of that well?

A. That well is shut in.

Q. Is it capable of producing?

A. Yes, it is.

Q. What was it producing at when it was shut in?

A. My best recollection would be somewhere between 200 and 300 barrels of oil per day. I'm not positive about the exact rate.

Q. Was it shut in because the Dagger Draw No. 11 was such a good well?

A. Yes. It's much cheaper with electric submersible pumps to operate one well versus two wells. And looking out for the best interest of ourselves and our joint interest owners, if we can produce 700 barrels a day and turn on one pump versus two, then we will do that, as would any prudent operator.

Q. When the Dagger Draw No. 11 starts declining, do you intend to put the other well back on production?

A. Yes, we do.

Q. What about the other well in the northeast quarter of the southeast quarter, has that one been plugged and abandoned?

A. Yes, it is. I believe that was plugged by Roger Hanks.

Q. So that's an old Hanks well?

A. Yes.

Q. Then moving on to your Exhibit 25, your aerial photo, I just want to verify some things. I believe you said that the Hanks Kathy Eyre well would be somewhere in the northeast portion of that green area?

A. That is correct.

Q. And you talked about twinning wells, and I forget which wells you said in particular that Conoco had done it with, but in any of the wells that you twinned, were they offsetting a sidetracked well?

A. I'm not sure about the State CO Com No. 1. It had been reentered several times and deepened repeatedly. It may or may not have been sidetracked, but, to my knowledge, it was not.

For your reference, I can show you where that lies, on, say, Exhibit No. 6.

Q. Sure, let's move on to Exhibit No. 6.

A. In Section 36 of Township 19 South, 24

East, that would be just -- I guess just southwest of the Section 31 where we've been discussing. You can see the Dee State No. 4 that lies in the southwest quarter of Section 36, and it lies and shares the same pad as the triangle symbol, which is the State CO Com No. 1, which is a saltwater disposal well.

Q. Staying on Exhibit 6, over in the south half of Section 25, you do show a thinning of the dolomite, a nose where the dolomite thins out substantially there, do you not?

A. Yes, I do.

Q. So that phenomenon does occur in this pool?

A. Yes, it does. The reservoir does thin here and there. My point would be that the overall thick, which trends northeast-southwest, runs right through the middle of 31. And certainly within that overall thick, it does thin slightly at the point that you just pointed out.

Q. And I don't know if you know why, but there are no Dagger Draw wells in the south half, south half of Section 25. Is that due to the substantial thinning there, or don't you know?

A. No, it's due to structure. At that point the reservoir itself enters the gas cap, and it's simply too high to make economically viable wells at

this point. They would be predominantly gas wells. Not only would they be gas wells, but they have the potential of prematurely depleting the reservoir anytime you complete in the gas cap. And I think there's been an effort on the part of Yates, who operates the acreage, to avoid doing that.

Q. Looking at that same map in the southeast quarter of Section 31, the Nearburg Foster 31 No. 1 well, you have an "LNA" above that. I presume that means "log not available"?

A. That is correct.

Q. Did you look at Nearburg's exhibits this morning?

A. Yes, I did.

Q. You put this well at, what, 270 feet, 225 -- excuse me -- feet of --

A. It would fall somewhere in that range.

Q. Nearburg shows only about 105 feet, didn't it?

A. Yes, it did.

Q. What's the difference?

A. The difference may very well be the availability of data. I did have access to their cross-section before the hearing, but the well on that cross-section is a cased hole neutron well, and you

cannot determine lithology from a cased hole neutron well, or at least you cannot determine the difference between limestone and dolomite, and this is a map of dolomite thickness.

Q. If this is indeed only 106 feet, there could be the potential of another nose in Section 31 where there is a substantial thinning of dolomite; is that correct?

A. I'm not sure I would agree with that comment. 100 feet of dolomite is very capable of producing an economic well.

Q. But it's a lot less than the 220 feet that you show?

A. That certainly is true.

Q. And there is -- although on your cross-section you show, going from your Dagger Draw 11 southwest, you show a minor amount of thinning actually going from northeast to southwest and increase in dolomite thickness, if you go from Conoco's Dagger Draw No. 11 to the south, there is a substantial thinning, isn't there?

A. There is a thinning.

Q. From 286 feet to 106 feet, which is what Nearburg measured at its well?

A. I'm not sure exactly. You're going between

the Dagger 11 --

Q. I'm going from your Dagger Draw No. 11.

A. To?

Q. South through the Dagger 31 No. 2, and then south to the Foster Fee No. 1.

A. Yeah, I cannot confirm their dolomite thickness. I don't have that data available to me, and they did not make it available. So I don't know what the dolomite thickness is in the Foster 31 No. 1 well.

However, I would point out the fact that the Foster 31 No. 1 well lies over three-quarters of a mile, or at least over half a mile away from the well site that we've been discussing. I would think that the closer well, such as the Dagger 31 No. 4, the 31 No. 1, the 31 No. 2, the Kathy Eyre, would be a lot more relevant in determining the elevation of the dolomite at that point.

Q. In looking at the Yates-operated wells, the Pincushion wells, do you have any opinion on why, say, the Pincushion -- is it the No. 3 well, which has 225 feet of dolomite on your map, why that is a poor producer?

A. As one of the Nearburg witnesses testified, there seems to be a degree of difficulty producing

these wells on beam pump, and I suspect that that may be the case with that well. I'm not very familiar with what all has been attempted on that well. I've got the original completions, but I'm not sure whether or not they've added pay, which may help to bring it around.

There are enigmas within this field. It's not risk-free development. However, within the confines of the northwest quarter of Section 31, that's about as close as you can get to risk-free development in this field, anytime you're drilling along the thickest part of the dolomite fairway.

Q. Providing you don't hit a nose thinning like you have over in Section 25?

A. I would say what's going on in Section 25 and the reason for the lack of development there is more related to the presence of the gas cap than the thinning. There are ample evidences of wells having been completed in this field with -- for example, our Conoco Com No. 1 is completed in 20 feet of dolomite. I don't believe that that actually shows up on this map, but that well currently produces about 125 barrels a day, and it has been producing that for about two years.

Q. But rapid thinning can occur?

A. Certainly. Not within the heart of the fairway, though. Not to zero. You will encounter some dolomite.

Q. I'm not saying zero.

A. Okay.

Q. Moving on to your Exhibit 7, once again your Foster 31 No. 1, it shows -- what top do you show for that?

A. I don't show a top. The Foster 31 No. 1, again, this is a map on the top of the Cisco Dolomite, and the only information available to me was the cased hole neutron, from which you cannot determine whether or not it's dolomite or limestone. You can make an educated guess, but I chose not to do it in this case.

Q. Once again, in Section 31 you show kind of a nosing there. Wouldn't it be much more pronounced if the top of the dolomite was much lower than what you show?

A. Not necessarily. You've got just as much evidence that there's a thick in the Dagger 31 No. 4, or a high, I'm sorry -- in the Dagger 31 No. 4, where you've got the highest well in the field, and that's considerably closer to the orthodox window than is the Foster 31 No. 1.

Q. And going from the Dagger 31 No. 2 or the

Eyre No. 1, heading south toward the Foster Fee, once again, though, there is a rapid drop-off?

A. Yes, but we're not proposing that a well be drilled next to the Foster 31 No. 1. That's not in consideration here.

Q. But there is a drop-off?

A. Certainly. As you move to the southeast, the fairway drops off. That's regional dip.

MR. BRUCE: That's all I have, Mr. Examiner.

EXAMINER CATANACH: Do you have anything further of this witness?

He may be excused.

MR. KELLAHIN: I'd like to call my engineering witness at this time, Mr. Mark Majcher.

MARK MAJCHER,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name and occupation.

A. My name is Mark Majcher. I'm a reservoir engineer with Conoco in Midland, Texas.

Q. Mr. Majcher, on prior occasions have you

testified as a petroleum reservoir engineer before the Division?

A. Yes, I have.

Q. Describe for us what your duties and responsibilities are for Conoco with regards to North Dagger Draw.

A. I'm assigned as a reservoir engineer to what we call the Carlsbad Operational Unit, which Dagger Draw is probably the most significant field in that optional unit.

Q. This is one of your primary responsibilities that you discharge every day, isn't it?

A. I spend about 99 percent of my time on Dagger Draw.

Q. How long have you been involved in doing engineering projects within this pool?

A. Within this pool?

Q. Yes, sir.

A. Two and a half years.

Q. Have you specifically made a reservoir study with regards to Nearburg's application?

A. Yes, sir.

MR. KELLAHIN: We tender Mr. Majcher as an expert reservoir engineer.

EXAMINER CATANACH: He is so qualified.

Q. (BY MR. KELLAHIN) From your perspective, what is your recommendation to the examiner concerning this case?

A. My recommendation would be that the application for unorthodox location be denied.

Q. Describe for us the kinds of engineering studies that you have performed in order to come to that recommendation.

A. Basically, I've looked into the volumetric drainage areas of the subject wells, and I've also looked into the economic viability of a well in this area, and also what may be the minimum reserve required for an economic well.

Q. Have you also studied the specifics of the Kathy Eyre No. 1 Well?

A. Yes.

Q. To determine why that was not an economic well?

A. Yes.

Q. Have you also given some thought into consideration about how to construct a penalty, should the Division approve this application?

A. I really have not, and I'll explain why.

Q. Okay.

A. Most penalties are applied to a proration unit allowable, and in this particular case, we would have three wells within that --

Q. Speak up just a little bit.

A. -- three wells within that proration unit. And, to my knowledge, there is no precedent for a penalty on a single well within a multi-well proration unit.

Also, an operator could conceivably maximize production from the subject penalized well, minimizing production from other wells in the proration unit, therefore negating any type of penalty.

And, third, oftentimes production from several wells within a proration unit is commingled through a single battery, and testing the subject well would be very difficult. It's usually tested only once a month or so. So it's really difficult to monitor a particular well unless it had its own test facility.

Q. Can you visualize any accurate way to monitor and cure the compliance with any penalty formula that should be looked at?

A. It would be difficult on a multi-well proration unit.

Q. The complexity of several wells within the proration unit and the allowable assigned to the proration unit is the predicate that makes the rule for a penalty too complicated?

A. I believe if it were just a single well in that proration unit, it would be a lot easier, provided no subsequent wells were drilled.

Q. Do you see any reasons for the Division examiner to have to address a penalty in order to balance the equities of the parties, so on one hand Conoco and Yates are not infringed upon, yet Nearburg has the opportunity to recover their share of the hydrocarbons in the reservoir?

A. I believe for that to happen, they would have to drill at an orthodox location.

Q. And is there one available to them?

A. Yes, there is.

Q. Describe for us what you've done.

A. Exhibit No. 9 is a bubble map which shows volumetric drainage areas for wells in the south quarter of Section 30 and in Section 31. The methodology used to construct this was similar to the Nearburg engineers. Estimated ultimate recoveries were determined from decline curve analysis, using available production data. That data is shown in

Exhibit 10.

The water saturations, porosities, and net pays were determined using log and core analysis and the formation volume factor from fluid analysis, which we have obtained. The drainage areas are shown on the map in circular, a simplistic display, which is standard.

Q. This represents drainage as to what point in time?

A. Right now, as far as I'm concerned.

Q. So you've used data up to a recent time, in order to make the calculation?

A. Well, in order to come up with an area of investigation, a drainage radius, I used the estimated ultimate recovery because these wells, particularly the Dagger 11 and the Dagger 31-2 have been producing for about two years. They've cum'd over 300 MBO. They've recovered about half of their estimated ultimate recovery. So, in my opinion, the drainage patterns are well established.

Q. These wells are all draining from well locations that are standard for pool rules?

A. That's correct.

Q. What does this show you?

A. Well, what this shows me is that if

Nearburg were to drill their proposed unorthodox location, they would be encroaching on the drainage patterns of the Dagger 11 and the Dagger 31-2. The net result would be an acceleration of reserves instead of a recovery of new reserves. And from a resource management point of view, that would be wasteful.

They would also encroach on the correlative rights of the interest owners in the Dagger 11 and Dagger 31-2. And ultimately their proposed well would have lower ultimate recovery than the orthodox location.

Q. Do they need to do that, in your opinion, in order to obtain their correlative share of the recoverable oil in the pool?

A. No, they don't.

Q. How can they best accomplish that objective?

A. If they were to drill at the orthodox location, they would essentially be drilling an undrained portion of this reservoir. They would access new reserves with no harm to the offset operators, and would probably have a higher EUR in that location than they would in the unorthodox location.

Q. Let's go now to the minimum economic reserve estimates.

A. Okay. This is an exercise that I had completed prior to --

Q. I'm sorry, Mark. Let me go back a moment and validate some exhibits. Just after Exhibit 9, we have a package of production curves?

A. Right.

Q. Exhibit 10. Let's do that for the record. What does this represent?

A. This is production data that our engineering aide pulled off of Dwight's Energy Data, Inc. And it's essentially oil, water, and gas rates versus time for the life of the subject wells.

Q. Is this part of the data that you use as an engineer in order to validate and verify the accuracy of the bubble map, Exhibit 9?

A. Yes, that's correct.

Q. And what was your conclusion about the bubble map and its accuracy?

A. That it's valid.

Q. The Exhibit 11 now, let's go to that, the minimum economic reserve estimates.

A. Like I said, this is an exercise that I completed about a month ago, and what we were trying

to come to grips with was what is the minimum economic reserves that it would take for a successful Dagger Draw Cisco development well.

And if you look at the economic parameters, we used $780,000 for a completed well cost, which includes purchasing and installing a beam pump, since it would be a low volume well; $1,500 a year operating cost, which is about Conoco average for low volume wells; average gas-oil ratio of 2100. Conoco uses an 18 percent rate of return as a hurdle for their return on investment. And I used the base case default pricing in our economic package.

Q. With what results?

A. The economic results showed that for minimum economic reserves at 18 percent rate of return, you would need just over 100 MBO. That's assuming a 25 percent decline rate from about 93 barrels of oil a day.

Q. What's your discounted pay-back period?

A. Four years.

Q. Have you examined the spacing unit in the northwest quarter of 31 to determine whether or not there is a standard location in which to place the Nearburg well in order to achieve the minimum economic reserve estimates that you have projected?

A. If they stay within the orthodox window, they will undoubtedly recover more than 100 MBO in reserves.

Q. How does 100,000 barrels of oil compare in this pool for recoveries per well?

A. In that area, it's pretty low. Outside of the Kathy Eyre and their Foster well, that would be the lowest.

Q. All the rest of the wells do substantially better than that, don't they?

A. Right.

Q. Mr. Hardie identified this portion of the pool, being the northwest quarter of 31, as the fairway or one of the hearts of the fairway, a sweet spot, if you would, in the pool?

A. Yes.

Q. What's your knowledge and opinion as to that issue?

A. I agree with him.

Q. Let's look at the average well economics.

A. Okay. What this demonstrates is, I looked at the wells in the south quarter of Section 30 and in Section 31, and I came up with an average reserve estimate for those wells, including the bad wells, the Kathy Eyre and the Foster 31 No. 1.

Q. Pincushion No. 3, was that one?

A. Pincushion 3 was included, Foster 31-1, those twin wells. And what you have is an average reserve number of 31 MBO, and 800 million cubic feet of gas. First year average rates are around 4-1/4 and 890 Mcf.

Again, I list my economic parameters. I will bring out a typo. The operating costs I had at 150, and it should be changed to 200, because it's a higher rate well. You did that? Okay.

One more thing I would like to point out is I ran this at low price case, just to be a little bit more conservative. And the net result, the economic results are very good. Rate of return over 200 percent, net present value of about 2.8 million, and less than a year payout.

What this tells me is that, based on the economic analysis and Mr. Hardie's statement that it's the heart of the reservoir, even if you were to drill a deviated well from an orthodox location, it would be a very economic well. So it's really -- unless something catastrophic occurs, you lose the wellbore, which is unlikely, it should be an economic project.

Q. Based upon your study of the reservoir, do you see any justification for approving the

nonstandard location?

A. I don't.

Q. How close would you recommend to twinning or offsetting the Kathy Eyre No. 1 well?

A. Well, I know that Conoco has drilled a well within 100 feet of another well, which was a pressurized S.W.D. well, and we fund the risk to be minimal of intersecting that wellbore.

Q. Let's talk about the Kathy Eyre No. 1 well. Why was that an uneconomic well?

A. Well, like Mr. Hardie had mentioned, the well was the discovery well for Dagger Draw. We did not have the technology that we have now, the acoustic imagining logs, the completion and chemical treatment knowledge that we have today, the high volume lift technology that we have today, plus there was pay that was overlooked in the Kathy Eyre. So a combination of all those factors resulted in it being an uneconomic well.

Q. The quality of the well is directly related to the completion of that well and is not characteristics of the quality of the reservoir?

A. That's correct, the completion and the ability to produce the well.

Q. Do you see any reason not to try again at a

standard location in the immediate vicinity of the Kathy Eyre well?

A. I don't see any reason not to. I think it would be a good well.

Q. Would you do that if you controlled that acreage?

A. I sure would.

Q. Would that best protect the correlative rights of all parties?

A. Yes, it would.

Q. And it would prevent waste?

A. It would.

MR. KELLAHIN: That concludes my examination of Mr. Majcher. We move the introduction of his exhibits, and I've lost track of the numbers. What are they, Mark?

THE WITNESS: 9, 10, 11 and 12.

MR. KELLAHIN: 9 through 12.

EXAMINER CATANACH: Exhibits 9 through 12 will be admitted as evidence.

EXAMINATION

BY MR. BRUCE:

Q. Mr. Majcher, looking at your Exhibit 9, you drew some circles on there. What parameters did you use, what volumetric parameters?

A. All the parameters that fit the volumetric equation, water saturation, porosity.

Q. I mean --

A. You want the actual numbers?

Q. I would like the numbers.

A. They vary from well to well, and I don't have the raw data available. It's in my database back in Midland.

Q. How are we supposed to know what this is based on then?

A. Well, like I said, the EUR's are based on decline curve analysis; porosity and water saturation from log and core data.

Q. But you can't tell us, for any of these particular wells where you've drilled a circle, what your volumetric parameters are?

A. I can tell you that the net result of those parameters resulted in these particular drainage areas.

Q. But you can't give us the figures?

A. Well, I could if I had them in front of me, but you're going to have to trust me on that.

Q. It's not an attorney's position to trust anyone.

A. Let me fly back and get those, and I'll be

glad to provide you with them.

Q. Why don't you?

Just looking at the Dagger Draw No. 11 and the Dagger 31 No. 2, what drainage area do you have?

A. The Dagger 11 is roughly 60 acres, and the Dagger 31-2, 65 acres. I have those for all those wells, if you want those. I have drainage areas and diameters for all those wells.

Q. I just want those two wells.

A. Okay.

Q. Thank you.

Now, you said 100,000 barrels of oil recovery for a well in this area is very low; right?

A. No, I said 100,000 barrels is the economic minimum that Conoco would drill for, and that -- well, you're right. I don't think that a well in the orthodox location, that I believe it would recover more than 100 MBO, provided the completion was good and whatnot.

Q. Of course, there's one offsetting well that has a low recovery, isn't there?

A. The Pincushion 3; is that the one you mean?

Q. Yes.

A. Yeah. The EUR is about 104, which would be

economic.

Q. It's economic, but it's a poor producer?

A. For Conoco it would be a marginal producer, that's right.

Q. Okay. And I think you said the average reserves -- and I don't know if you were using just your Exhibit 9 for these wells -- that your average reserves were 381,000 barrels of oil?

A. That's right.

Q. For these wells on your Exhibit 9?

A. That's right, which includes the Foster 31-1.

Q. Without the Foster 31-1, what would your average be?

A. It would be a little bit higher.

Q. Closer to 400,000?

A. Yes.

Q. And there is no doubt that, in your mind, that the Dagger 11 and the Dagger 31 No. 2 will recover 400,000 barrels?

A. There's no doubt, that's right.

Q. So they will recover the average just for the wells on this map, which includes, as you said, the Foster 31-1 and the Eyre?

A. That's correct.

Q. As Mr. Hardie already testified, Conoco's Dagger 8 well is currently shut in?

A. That's correct.

Q. If that well was producing, and the Dagger No. 11 was throttled back so that they would both together meet the allowable, would there be less effect on, say, the Yates offsetting acreage to the west or the offsetting acreage to the south?

A. What do you mean by "less effect"?

Q. Would the Dagger No. 11, would that drainage radius be smaller than what you show?

A. The drainage radius won't be smaller. It would just take longer to get those reserves, in my opinion.

Q. Okay. But in the meantime, just producing the Dagger 11 alone would -- it would produce the reserves quicker and would drain that particular area at a more rapid rate than throttling it back to produce both wells at the same time?

A. Well, based on pure economics, you would rather produce one well than two, and that's what we've chosen to do, since the 11 was the better well than the 8.

Q. And the answer to my question is?

A. Was it would recover those reserves faster

than if you throttled it back, that's correct.

Q. Do you have any figures on whether it's on Conoco-operated acreage or on poolwide Dagger Draw, what the average well produces?

A. The average well?

Q. Yes.

A. I really wouldn't want to speculate. I don't know. There's so many wells out there, I haven't figured it out.

MR. BRUCE: That's all, Mr. Examiner.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Majcher, is it your opinion that there is no method by which a penalty could be assessed against the well and enforced?

A. Well, I'm sure you could come up with a penalty, but to enforce that penalty would be very difficult and maybe not very meaningful.

Q. Is it your opinion also that a well drilled at the proposed location would result in some reserves being left in the ground under the northwest quarter of Section 31?

A. It would leave reserves left in the ground in and around the orthodox window, which -- yes.

Q. You don't have any kind of number on that?

A. If you were to drill a well in the orthodox window, my guess that on the low side the reserves would be 200 MBO, and on the high side, maybe 400 MBO, provided you get a successful completion at initial. Stimulation, then you can pump it off.

MR. STOVALL: I think the examiner's question, though, is, if you drill at the unorthodox location, how much oil will you leave in the ground that could be recovered by an orthodox location?

THE WITNESS: I really don't have a feel for that.

Q. (BY EXAMINER CATANACH) Is it your opinion that there will be some reserves left in the ground?

A. Yes.

EXAMINER CATANACH: Okay. I don't have anything further.

MR. KELLAHIN: That concludes our presentation.

EXAMINER CATANACH: Let's just take a short break at this point.

(Thereupon, a recess was taken.)

EXAMINER CATANACH: Call the hearing back to order and turn it over to Ernie.

D'NESE FLY,

the witness herein, after having been first duly sworn

upon her oath, was examined and testified as follows:

EXAMINATION

BY MR. CARROLL:

Q. Would you state your name and occupation for the record.

A. My name is D'Nese Fly, and I'm a geologist.

Q. By whom are you employed?

A. Yates Petroleum Corporation.

Q. Have you had occasion to previously testify as a petroleum geologist and have your credentials accepted by the Oil Conservation Division?

A. Yes, I have.

MR. CARROLL: I would tender Miss Fly as aN expert in the field of petroleum geology.

EXAMINER CATANACH: Miss Fly is so qualified.

Q. (BY MR. CARROLL) Miss Fly, as a matter to clarify and put on the record Yates Petroleum's position with respect to the pending application by Nearburg for an unorthodox location, would you please state on the record what Yates' position is.

A. We are in agreement with Conoco and feel that this application should be denied.

Q. You have prepared a few exhibits today. First, turning to Exhibit No. 1, could you explain

what it is and what it shows.

A. Yes. This is a land plat broken down in the, I guess four quarters surrounding the proposed location. In the southwest of Section 30, Yates is the operator. We have 42.8 percent. Conoco has 27.5 percent.

In the southeast of Section 30, Conoco is the operator. Yates has 9.3 percent. Conoco has 61 percent. Nearburg has 25 percent.

In the northeast of Section 31, Nearburg is the operator. Yates has 25 percent. Conoco, 25 percent, with Nearburg having 50 percent. And Nearburg has 100 percent of the northwest quarter of Section 31.

Q. The proposed location is shown by a small red dot, is it not?

A. Yes, it is. The original proposed location is shown there as a small black circle.

Q. All right. Open circle?

A. Yes.

MR. CARROLL: Mr. Examiner, our Exhibit No. 2 are several Polaroid photographs that were taken of this particular area. I will have Miss Fly identify each one, and then I will give them to you. I'm sorry we don't have but one set of these.

Q. If you would, Miss Fly, starting with the first photograph, which is marked Exhibit No. 2A, would you tell me, one, where the photographer was standing, and what direction one is looking?

A. Yes. These were taken by one of our regulatory agents on June 16. And this is standing on the pad of the plugged and abandoned well, Kathy Eyre well, and it's looking to the south-southwest, which is in the direction of an orthodox location.

Q. All right. 2B?

A. This is looking from the edge of the pad, southwest.

Q. And this would be the same pad, the Kathy Eyre?

A. Yes.

Q. And this would also be in the direction of the orthodox location?

A. Yes.

MR. STOVALL: Excuse me, Mr. Examiner.

Mr. Bruce, have you seen these photographs?

MR. BRUCE: Just briefly, but my witnesses would like to see them also.

MR. STOVALL: Why don't you pass them to them first?

MR. CARROLL: All right.

THE WITNESS: Okay.

Q. (BY MR. CARROLL) 2C?

A. 2C is looking due west from the pad, same pad. 2D is looking to the southwest again. I think he tried to take a semipanoramic view from the south to the southwest.

Q. Each one of these photographs does have the direction that we're talking about denoted on the bottom of the back.

2E?

A. This one is looking due south again.

Q. And 2F?

A. This one is looking due north of the location, off the pad of the Kathy Eyre.

This is looking south from the east side of the pad.

Q. From the east side of the pad near the road --

(Thereupon, a discussion was held off the record.)

MR. STOVALL: Wait a minute. If you're going to have discussion there, let's do it on the record and do it in some sort of way in which people can --

MR. BRUCE: We'd just like to know where the last photo showed.

Q. (BY MR. CARROLL) Which is 2G. This appears to be east of the road, looking south; is that correct?

A. It's from the east of the pad, looking south.

Q. Would you turn to Exhibit No. 3, Miss Fly? If you would describe what this is, and then explain what its significance is with respect to this case and Yates' position.

A. Okay. Well, first, I would just like to state that I've been up here for numerous cases, talking about the complexity of this Dagger Draw Pool and the diversities found within this reservoir, and they vary throughout the field. I cannot consider this Dagger Draw Pool to be the same from north to south. So what I am speaking about today is the nine consecutive sections surrounding our location here. And we can tend to localize and generalize in small areas for the Dagger Draw Pool.

My Exhibit No. 3 is my structure map. The proposed location is shown there, kind of like a bull's eye, and it's in 50-foot contours, along with the zero dolomite being shown in a thicker, darker

line.

As you can see, my map does differ a little bit structurally from the other two maps. I have a low, but just as my geological preference, I had drawn the low through the section line and made the nose more of the west half of Section 31.

If I could talk a little bit about my Exhibit No. 4 along with this, I think it would be better.

Q. Please do. Would you identify, though, Exhibit 4, what it is, for the record.

A. Exhibit 4 is an isopach map which I also net out the dolomite reservoir, trying to not include the limestone stringers that appear from well to well at different intervals. The same thing here. It's in 50-foot contours with the zero dolomite being shown by the darker line in the southeast corner of the map.

In this area here, looking through my experience and looking at the production, I can honestly say that structure is not -- does not play an important role here, unless we were down near the eastern edge of the dolomite itself, the southeastern edge there, but when I look at this 160, this northwest quarter, there are numerous legal locations in there that are fine geologically, structurally and

with the isopach.

The thickness in this area, as we know, does not always mean that you have a great well just because you maybe have 300 feet of dolomite. It depends where the water contact is in that well, and that varies from well to well out here.

I did not bring my, quote, "big water map," where I tried to map this. It has been on record numerous times, I think, and I did not feel like we needed to get into that here because the water here is in the lower part, and I'm not even sure how much of the pay interval you would have in this area, but you're in the heart of the oil leg, and you would have more than enough reservoir in any of these locations in this 160 to make a very good well.

I feel like that is my interpretation of this area here, and I agree with Conoco's geologist in his presentation. So I don't want to duplicate a lot. I've kind of made some notes here today while I've been listening, and I feel like the Nearburg geologist disproved himself. Basing the fact that structure and thickness here is the key importance, we proved that the Culvert No. 2, which is in Unit D of Section 6, 2025, sits lower, has less dolomite, and produces -- I have looked up in the February monthly,

and it averaged 310 a day in oil.

We also disproved it by showing that the Dagger Draw No. 1 in Unit D of Section 31-19-25 is 75 feet higher than the well in Unit B, the Dagger Draw No. 2 of Section 31-19-25; 25 feet higher, yet, I think it was the Dagger Draw No. 2, makes 400 barrels a day, and the Dagger Draw No. 1, which sits higher, makes 120 barrels a day.

So structure in this point and thickness is not a factor. I also feel like he stated something else in his testimony that I wanted to bring up, and that is that these wells vary from wellbore to wellbore, and you can encounter zones of very good vugular porosity, which will increase the production.

As of now, these vary from well to well, and they are not mapable, and I think from what I heard him say this morning, that these lenses of porosity are not continuous, and we cannot map them. So by their proposed location, it just appears to me that they're going towards the Pincushion, which possibly had not quite as much porosity as other wells in the area, when they could have an orthodox location going towards their Dagger Draw No. 4, that has a very good porosity development and is right on trend with the heart of the oil leg. So, that's kind of what I

had to say today.

Q. Miss Fly, do you have an opinion then as to whether or not it is necessary geologically to drill this well at an unorthodox location?

A. No. In my mind, it's not necessary at all.

Q. In your opinion, is there -- does there exist at least one or more sound, or let's say standard locations, which are both sound -- which are sound from a geologic standpoint?

A. Yes.

Q. Are these locations as good or better than the proposed location, at least looking at the geology that you have presented and Conoco has presented?

A. They're as good or better, from the way I feel about it.

Q. Would you agree then, Miss Fly, that the only advantage to drilling this well arises from its encroachment value as opposed to its geologic value?

A. Yes.

Q. With respect to the issue of correlative rights, do you feel it would be in the best interests of correlative rights for this Division, this examiner to deny -- or the Division to deny this application of Nearburg?

A. Yes, I do.

Q. Do you feel that such a denial would also prevent waste?

A. Yes.

Q. Let me ask you just -- and I overlooked this, I got ahead of myself, Exhibit 14A that was presented by Nearburg, they used a number of values such as average feet of pay, average water saturation, average porosity. Now, approximately how many wells does Yates Petroleum operate in the Dagger Draw Field?

A. Around 135, 140, somewhere in there.

Q. This is your main area of concentration, is it not?

A. Yes.

Q. And Yates Petroleum does have available to it actual core tests from this field, does it not?

A. Yes.

Q. And have you, in the past, had an occasion to study the actual cores to determine what the porosity is? And in that respect, do you have opinion as to whether or not those items contained on Exhibit 14A that I just mentioned, whether or not they are in fact valid numbers?

A. Well, every company has their own parameters that they use. And with my experience of drilling all those wells out there, the average

porosity is high, very high.

Q. Which average porosity is high, the one that Nearburg reported?

A. Yes, the Nearburg 12.8 average porosity over the reservoir -- over the pay interval, I think, is what they are saying.

I have seen many, many wells out there with much lower porosity than that. It is true that we feel like the density neutron porosity log does not read the true value of the formation porosity.

How we have tried to correct this is cross-plotting core porosity versus log porosity. And I have worked out a formula that I try to adjust my log porosity to fit my core porosity when I do my log analysis. It does not double my porosity in most cases.

Q. Do you have an opinion then as to whether or not just the broad-brush assumption of just doubling your porosity would be accurate out there?

A. That would not work. In the water saturation, I have tested R.W.'s every mile from North Dagger Draw to South Dagger Draw and have come out with an R.W. that I feel fairly comfortable with, which gives me water saturations much higher but feasible, but much higher than an average of 50

percent. I would say more on the order, an average in this area would probably be 60, 65 percent.

Q. Is there anything else that you would like to share with the examiner?

A. I think that's it.

MR. CARROLL: Pass the witness.

EXAMINER CATANACH: Mr. Kellahin?

MR. KELLAHIN: Yes, sir.

MR. STOVALL: Would you care to offer the exhibits, Mr. Carroll?

MR. CARROLL: Yes. Mr. Examiner, I'd move the admission of Yates Exhibits 1 through 4.

EXAMINER CATANACH: Before you do, Mr. Examiner, what's Exhibit 2 offered for?

MR. CARROLL: To give an actual show of the topography in this area. It's a very flat area. It does give some better meaning and definition to the aerial photo that Conoco -- I have forgotten what their exhibit was.

THE WITNESS: Four.

MR. CARROLL: But that area in that photograph is the area which is the green window, so to speak, that is depicted on that particular exhibit that Conoco introduced.

MR. STOVALL: It doesn't show any

archeological or cultural preservation?

MR. CARROLL: No, it doesn't. It is solely introduced to show the topography out there is very flat and give some better definition to that aerial photograph. And that's the sole purpose.

MR. STOVALL: Okay, thank you.

EXAMINER CATANACH: Exhibits 1 through 4 will be admitted as evidence.

EXAMINATION

BY MR. KELLAHIN:

Q. Miss Fly, I'd like to show you what was introduced as Conoco Exhibit No. 6, which was Mr. Hardie's isopach of the Cisco Dolomite?

A. Yes.

Q. And if you'll refer to your corresponding isopach, which is Yates Exhibit No. 4?

A. Yes.

Q. If you'll look at Section 31, will you make a comparison for me between your interpretation of the location of the 200-foot contour line in Section 31, as it compares to Mr. Hardie's depiction of that line?

A. It looks about the same.

Q. When you go to the 250-foot contour line, how do those two compare on each display?

A. About the same.

Q. Did you have any knowledge of, conversations with, or access to Mr. Hardie's work when you prepared your isopach?

A. No.

MR. KELLAHIN: No further questions.

EXAMINER CATANACH: Mr. Bruce?

MR. BRUCE: Just a couple, Mr. Examiner.

EXAMINATION

BY MR. BRUCE:

Q. Once again, you submitted some photos, and I think you've stated that they don't show anything with respect to archeological problems or archeological sites?

A. That is correct.

Q. And to the best of your knowledge, neither Yates nor Conoco has conducted an archeological study on any area, say, to the south and west of the Hanks Eyre well site?

A. I can speak for Yates Petroleum, that we have not. I do not know what Conoco has done.

Q. And your last point of questioning from Mr. Carroll was regarding volumetric parameters?

A. Um-hm.

Q. And I think you mentioned a difference -- you mentioned porosity values that Yates has and water

saturation values that Yates has. Would the effect of the value that you give be to increase the drainage radius?

A. I think Dr. Boneau will elaborate on that a little more. I think it -- I'll just leave it at that.

MR. BRUCE: Okay.

Nothing further, Mr. Examiner.

EXAMINER CATANACH: Just one, Miss Fly.

EXAMINATION

BY EXAMINER CATANACH:

Q. There seems to be a dispute between the companies on whether or not structure and thickness play an important role or are correlatable to producing capability. If structure and thickness are not critical, what do you think is the critical difference in these wells? What's causing the big differences?

A. It is very important, you're right. Our heart of our oil leg is in the thickness of the field of the dolomite reservoir. The reason I made that very first statement is because, as you move up to the northeast in this field, structure does become very important when you start dipping, and the entire reservoir starts dipping down into the, quote, "big

water" area, and the whole reservoir becomes wet.

But in this localized area, and especially to localize it down to this 160, you're going to have enough pay there above the big water to make a good well. That's obvious by the offsetting production.

Q. What other characteristics might you attribute differences in producing capabilities?

A. The porosity is a big one. Completion; you don't always have a successful completion. Sometimes even with all of our experience, we may accidentally perforate the big water, therefore not give up as much oil. There's numerous things that could happen.

EXAMINER CATANACH: That's all I have.

MR. BRUCE: Mr. Examiner?

EXAMINER CATANACH: Yes, sir.

MR. BRUCE: If I could follow up on a question you asked.

FURTHER EXAMINATION

BY MR. BRUCE:

Q. You said structure is important where you have the big water area?

A. (Witness nodded.)

Q. Looking at Nearburg's Foster Fee No. 1 in the southeast quarter of Section 31, is that well wet or dry?

A. I don't know. I would like to know. It's a Nearburg well. I would like to know that. I would like to know when it was put on a pump, was it in the open hole completion, and was it put on a submersible, and how much oil did it give up? That's been a mystery well.

Q. You have an interest in that well, don't you?

A. I think a small interest, but it's been very hard to get data. I know through the field hand, I'm not sure if he's with the company anymore, he tried to keep me pretty up-to-date on that, and then it got so confusing that data got lost.

Q. If that well was wet, wouldn't it be important to stay away from it?

A. Yes, but that northern 160 is not -- if you were possibly trying to drill way down, let's say, 2310, 2310 or however far you could go there in that northern 160 -- northwestern 160, it might become an issue, but I really don't think so. I think that that Foster well could have made an oil well, that Foster Fee Well No. 1. And that's my personal opinion.

MR. BRUCE: Thank you Mr. Examiner.

EXAMINER CATANACH: The witness may be excused.

MR. STOVALL: Once again, Dr. Boneau plays cleanup purposely.

DAVID F. BONEAU,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARROLL:

Q. Would you state your name, occupation, and by whom you're employed for the record.

A. My name is David Francis Boneau. I work as reservoir engineering supervisor for the Yates Petroleum Corporation in Artesia, New Mexico.

Q. Mr. Boneau, you have testified many times previously to this date and had your credentials accepted in the fields of petroleum engineering and reservoir analysis, have you not?

A. Yes, sir.

MR. CARROLL: Mr. Examiner, I would tender Mr. Boneau as an expert in the field of petroleum engineering and reservoir analysis.

EXAMINER CATANACH: Mr. Boneau is so qualified.

Q. (BY MR. CARROLL) Mr. Boneau, would you first, for the record, state Yates' position as you understand it with respect to this application by

Nearburg?

A. Yates' position is that we're asking the Commission to deny the Nearburg application. I've prepared some things to talk about penalty, but the conclusion is that the best course is to deny the application.

Q. All right. Now, you have prepared some five exhibits, have you not, to help in presenting your testimony to the Division?

A. Yes, sir.

Q. In order to just expedite matters, I would ask you to start with the first exhibit numbered No. 5, and if you would just, without me interfering with your discussion, please present your five exhibits, and as you come to each exhibit, please identify them by number, and if you don't, I'll catch you, but if you would, just present these exhibits to the examiner.

A. Okay. The examiner has heard a little bit about the problems with the penalty. The first exhibit is Exhibit No. 5. One of the things it shows is that Mr. Boneau can't spell "penalty" right all the time, but other than that, it addresses the three-part penalty formula that the Commission has considered in the past.

So I have a drawing of the proposed location with a 40-acre circle around it and also a location which is labeled "legal." It's the nearest orthodox location to the proposed location. There's also a 40-acre circle around that one.

The three-part formula that has been used sometimes in the past consists of a north-south offset, an east-west offset, and an acreage factor. And those numbers are listed at the bottom right-hand corner of the Exhibit 5.

In the north-south direction, the proposed location is 330 feet from the north line, and it should be 660, and that's a 50 percent contribution to a penalty factor.

In the east-west direction, the proposed location is approximately 225 feet off of the middle boundary of the section.

The northwest quarter is not exactly 160 acres. It's a little more than 160 acres. That factor is a 66 percent factor. The acreage factor is determined by taking the area colored in blue as a function of the 40-acre circles, and the 17 acres excess acreage outside of the legal circle is 43 percent of the 40-acre circle.

You average those three numbers together,

and you get a 53 percent penalty kind of factor. And that's the procedure that has been used in these type hearings more than once in the past.

I used a 40-acre circle because most of the wells in this area are in situations where there are four wells per 160, and that seemed a practical kind of circle to draw.

The only thing that makes any sense on a penalty to me is to apply it to the allowable of the spacing unit. I believe there's no way to penalize one well out of a three-well battery.

So the rest of these exhibits kind of talk about the practicality of applying this type of a penalty factor, either a 53 percent penalty or we could ask for a 66 percent penalty to the situation that we have in the northwest quarter of Section 31.

So Exhibit 6 -- well, what's going is you've got two other wells producing, and I tried to take what the penalty factor would do to the allowable for the 160 and then estimate how much the two present wells would be producing over the next couple of years, and come up with an estimate of how much the new well would be able to produce under that penalty and then decide whether that's a reasonable way to go. That's my road map of kind of what I was trying

to do.

So Exhibit 6 shows the oil production from Dagger Draw 31 Federal No. 1. And it's been declining, and I drew a line that is my estimate of how it will decline in the future.

Exhibit No. 7 is a similar picture for the other well that's producing, the 31 No. 4. And, again, its production has declined to about 140, 150 barrels a day. And I've drawn a line that's my estimate of how it will produce in the future.

The next important exhibit is Exhibit No. 8. And that's some calculations for the rest of '93, '94, '94, early '96 of how much the two present wells would produce and then how much would be left over under a 53 percent penalty and under a 66 percent penalty for this proposed well.

A 53 percent penalty results in an allowable of 329 barrels of oil per day. A 66 percent penalty would result in an allowable of 238 barrels of oil per day.

And you see in the first column some dates every six months into the future. The second column is what the 31-1 would be producing, and in July it would be about 120 barrels a day and then fall over those three years to about 50 barrels a day.

The third column is what the 31-4 would be producing, and it's about 125 barrels a day next month and falling to about 45 barrels a day in three years.

The fourth column then is just the total of those two. And at the current time, which I've called July '93, those two wells are making about 245 barrels a day. With a 53 percent penalty, that leaves 84 barrels in the fifth column presumably for this new well.

In the last column, the 66 percent penalty, there's nothing left over for a new well, 238 barrel a day allowable, and it's making 245; so even the present wells would be reduced a little.

You carry those figures down through time under the 53 percent penalty and the 66 percent penalty, and you see the numbers there going from 84 to 234 under 53 percent penalty. And my conclusion from that is that that really isn't much of a penalty. The well, by the time they get the well drilled and on, it's able to make 150 barrels and soon 200 barrels, and that's not enough penalty for the drainage that it's going to be doing to the offset acreage. The 66 percent penalty restricts production to 100 or 150 barrels a day and starts to be a real significant penalty.

So the conclusion to that point is that you'd have to penalize the whole 160. And a 53 percent penalty, in my opinion, is not enough. A 66 percent penalty starts to be in the right range to justify correlative rights.

Then Exhibit 9 kind of leads me to the conclusion that none of the penalties are going to work very well. Exhibit No. 9 is simply a page from the state's statistical for the month of March 1993. And I have marked in yellow two items at the bottom of the page where it talked about the production and the allowable for the Nearburg wells.

The fourth line from the bottom refers to the Dagger Draw 31 Federal No. 1 in Unit D, and this concerns me. I don't know how the system really works, but the state's statistical says that that well has allowable of 21,700 barrels, which is 700 barrels a day to that well. Two lines lower, we're talking about Dagger Draw No. 4 in Unit E, it also has an allowable of 700 barrels a day.

We know those are not right. The spacing unit has an allowable of 700 barrels a day. And just as a further worry about instituting and operating a penalty, it looks to me like the system probably wouldn't catch anything about a third well. It looks

to me like the system is given too high allowables to all the wells already. And this problem, if there is a problem, is not restricted to Nearburg. It's just that every one on Dagger Draw is given a 700 barrel a day allowable regardless of how many wells are in the spacing unit.

Q. Mr. Boneau, during the testimony by Conoco's engineer, Mr. Majcher, he listed, I think, three concerns from a practical standpoint of trying to keep track of the production out there for this unit and trying to trace it back to a single well. Do you concur in the problems that Mr. Majcher enumerated for the Commission?

A. Yes. Those are clearly problems, and I was simply trying to add an additional possible problem.

Q. And the testimony that you've presented through yours Exhibits of 5 through 9 carry what his concerns were one step further and show that even if you could determine a penalty and somehow keep track of it, because of the nature of the beast, the three wells and them all producing from this -- producing the allowable, it's just not effective?

A. Yeah. I said instead of just saying it's hard to do, let's try to do it and see what happens.

Q. Do you have an opinion then as to whether

or not that is a valid way of attacking this problem, using the penalty methodology?

A. The penalty methodology is a poor way of attacking this problem. We've listed some problems. An additional problem that may or may not have been brought up is simply the operator could assign the total allowable to this new well and produce 250 or 329 barrels of oil a day out of this new well and kind of defeat the idea of a penalty.

So there's the usual problems with a penalty, and it's compounded by the fact that there are these three wells on the spacing unit, and it looks to me like the state's computer system probably can't handle that either.

Q. Mr. Boneau, is it not true that the concept of invoking a penalty is the Commission's way of trying to protect correlative rights; is that --

A. That's my understanding, yes, sir.

Q. With respect to the opinion rendered by Nearburg's experts that allowing or the granting of this unorthodox location would protect correlative rights, do you have an opinion with respect to that issue?

A. Yes. I think that the person from Nearburg is confused about the concept of correlative rights,

at least as I understood what he said. Maybe I misunderstood what he said. I understood him to say that they were entitled to the oil that was originally under their spacing unit, and that is simply not true. If they don't drill a well, they're not entitled to anything. And when they do drill a well, they're entitled to their share of what's there at the time they drill a well. They're entitled to what's under their lease at the time they drill the well.

We had a large discussion yesterday about drainage areas of these Dagger Draw wells and a similar kind of discussion today. The wells drain more than 40 acres, and that's just fine, and some of the oil under this -- under the 40 acres that we're talking about here is being drained by the wells that already exist and offset, and that's just fine under correlative rights. And the owners of those wells would include Nearburg. They have every right to that oil. No need to beat the story any more.

Q. The key then is the opportunity to produce; is it not?

A. Yes. The key is the opportunity to produce, and the key in my mind is that -- is the oil that is there when they have -- when they actually drill their well and oil that has been taken from

under their lease legally by offset wells, they have no right to cry about, no right to complain, no right to want that oil back.

Q. Then, Mr. Boneau, do you have an opinion as to whether or not the granting of this application of Nearburg's, what effect that it has on correlative rights and the prevention of waste?

A. Well, if they're allowed to drill at their proposed location with no penalty, they will violate the correlative rights of the offset operators, and they will drain oil that they are not entitled to under correlative rights.

Q. Then, Mr. Boneau, is it your recommendation then based on these ideas that have been presented today that this application be denied?

A. That's my recommendation. The facts of the case are, they can -- they've got legal places to drill, and whether or not they'll admit or not is fine. If they're allowed to drill at their proposed location, there must be a significant penalty, 66 percent at least, and there must be a way to enforce that.

And to me the third factor of the case is that the best solution is to deny their application and give them an opportunity to drill a well which

attacks these undrained reserves to the south and southwest.

Q. Mr. Boneau, is there anything further that you'd like to express to the examiner?

A. One or two tiny things, maybe. There was a question back about the size of pad, somebody asked that, and I just happen to know the answer, since we asked an expert at Yates Petroleum on the telephone this morning. The normal pads out there are 250 by 300, which is about half as big as a 400 by 400 pad.

Denise laid something on me about drainage areas, I don't even remember, but if nobody asked, I'll forgot that. That's my testimony, please.

MR. CARROLL: All right. I would move, Mr. Examiner, the admission of Yates Exhibits 5 through 9.

EXAMINER CATANACH: Exhibits 5 through 9 will be admitted as evidence.

MR. CARROLL: I would pass the witness.

EXAMINER CATANACH: Mr. Kellahin?

MR. KELLAHIN: No, sir.

EXAMINER CATANACH: Mr. Bruce?

EXAMINATION

BY MR. BRUCE:

Q. Mr. Boneau, I think what Miss Fly -- I had asked her a question -- she had gone down the listing

of volumetric parameters that Nearburg had used, and she said that Yates core data and other data indicated that, say, the porosity value was --

A. 6 to 8 percent instead of 12.

Q. Instead of 12 percent? And the water saturation value was different?

A. She had a higher number, yes.

Q. Higher number? Would those values tend to increase the drainage radius which Nearburg calculated, using Yates' numbers?

A. Those changes would -- if Nearburg used our numbers instead of their numbers in those calculations, they would calculate larger drainage areas.

Q. Okay. Now, you referred to a hearing yesterday, it had to do with an area to the south of the Dagger Draw, and I believe you testified at that hearing, did you not, Dr. Boneau?

A. I believe so, yes, sir.

Q. A Yates case for pool rules?

A. I remember it, yes, sir.

Q. And at that hearing, I think you stated that, in your opinion, the Dagger Draw wells drained anywhere from 50 to 120 acres; is that an accurate comment of your testimony?

A. I believe I said that as a round number, average would be 80 acres, and that would vary in approximate to the range he said.

MR. STOVALL: Dr. Boneau was quoted yesterday as quoting something he said some time ago; so I think any numbers he says or with respect to what he said at another time is probably --

MR. BRUCE: I'm not asking him -- let me ask this.

Q. Is it your opinion, Dr. Boneau, that the Dagger Draw wells drain from 50 to 120 acres?

A. Yes, it's my opinion that there are Dagger Draw wells that drain from 50 to 100 acres. And it's my opinion that an average is somewhere around the 80.

Q. Have you performed any calculations on the Conoco No. 11 or the Nearburg No. 2 wells that seem to be most in issue today?

A. I have not sat down recently and done those calculations. I've heard enough about those calculations that I have an idea in my head how they would turn out if I did them.

Q. What is that idea?

A. It is that I would calculate numbers somewhat larger than the numbers that were presented today, and just it would be the changes in the

parameters that we talked about a few minutes ago.

Q. Larger than the Nearburg numbers?

A. Well, the Nearburg -- I've only got one page of this thing, but the Nearburg, you calculated drainage areas for No. 11 that were --

Q. I think approximately 120 or 124 acres. And for the No. 2, approximately 74 or 75 acres.

A. Okay. There it is. I would use porosity and recovery factor numbers that would tend to increase those drainage areas. I think that especially with the No. 11, I think that your estimate of projected ultimate recovery is high, and that would reduce the estimate such that I might not get a number that's too much different from the 124, but maybe 140 or something but not too much different from that.

The Conoco estimate for those were in the, whatever, 60, 65 acres. And making this same kind of corrections again, I'd get, whatever, 120, 135, 140.

Q. If you used Conoco's numbers but plugged in those different Yates' numbers, you'd get greater than --

A. I'd get greater than 80. You're talking about not an average well with the No. 11; you're talking about a great well with the No. 11.

Q. And the No. 11 well, in your opinion, are

the No. 11 and No. 2 wells better than average wells?

A. They are better than average wells. Somebody else was asked what is an average well, and Yates' average well out of the 140 we have is 202,000 barrels of oil and 1.05 Bcf of gas.

Q. How many barrels of oil?

A. 202,000 barrels of oil and 1.05 Bcf. And that gas number is probably higher than it would be for Nearburg because we have some wells in the gas cap. Maybe the oil number would be a little low because we have some wells in the gas cap. That's our average. And the two wells we talked about are clearly way better than that average.

Q. In your opinion, as of today, have the No. 11 and No. 2 wells drained the 40 acres?

A. Yes.

MR. BRUCE: Thank you, Dr. Boneau.

EXAMINATION

BY EXAMINER CATANACH:

Q. Just one question, Dr. Boneau, the 66 percent penalty that you recommended, how was it arrived at?

A. You've seen all the penalty numbers that I have there.

Q. I see.

A. The average is 53. In Exhibit 8, there are some corollaries from using that penalty, we'd say, and my judgment was that that's not a sufficient penalty. The highest number in the three-part formula is 66, and so I did the other -- the calculation for that highest of the three parts. And as I said, in my opinion, that starts to be a penalty that hurts.

EXAMINER CATANACH: I have nothing else.

MR. KELLAHIN: I think I misunderstood the question. That penalty is not your recommendation, is it, Dr. Boneau?

THE WITNESS: No. No. My recommendation was that the thing be denied because of the problems of implementing a penalty.

MR. KELLAHIN: All right, sir.

EXAMINER CATANACH: I understand.

MR. STOVALL: The question was just how he came up with that number, Mr. Kellahin.

EXAMINER CATANACH: Anything else of this witness? If not, he may be excused.

MR. CARROLL: Mr. Examiner, that concludes Yates' case.

MR. BRUCE: I hate to say this, Mr. Examiner, but I would like some brief rebuttal.

EXAMINER CATANACH: How long rebuttal?

MR. STOVALL: Why don't we take a break and let Mr. Bruce --

MR. BRUCE: I would say five minutes for me of Direct.

MR. STOVALL: Would a couple of minutes of break help you to formulate that and get it cleaned up?

MR. BRUCE: Sure. Let's do that.

(Thereupon, a recess was taken.)

EXAMINER CATANACH: Go ahead.

MR. BRUCE: Mr. Examiner, I brought Mr. Elger back to the stand who was previously qualified.

JERRY ELGER,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. BRUCE:

Q. Mr. Elger, you have before you your Exhibits 6 and 7, the isopach and the top structure, the Yates Exhibits 3 and 4, and the Conoco 6 and 7?

MR. STOVALL: Isopachs and structures; is that correct?

MR. BRUCE: That's correct, each party's isopachs and structures.

Q. Now, you've been here while Yates and

Conoco's geologists have testified; right, Mr. Elger?

A. Yes.

Q. And their figure on the top of structure and the dolomite thickness at the Foster Fee No. 1 and the southeast quarter of Section 31 varies considerably from your numbers; is that correct?

A. That is correct.

Q. Would you please tell how you arrived at that figure and how, in your opinion, that affects the validity of the Yates and Conoco structure and isopachs?

A. Okay. We production tested that well on several occasions, and as I testified earlier, the lower set of perforations on Exhibit 9, which is cross-section to A', shows basically where the dolomite reservoir rock starts, and of course when we drilled, we were in wet dolomite where production tested water.

We production tested several other zones above that, none of which were either water or hydrocarbon bearing. So the top of the reservoir dolomite in that well is at a subsea of minus 4225. Estimated dolomite thickness -- and again if you compare with the wells to the north and west, you'll see that what's happened to this well is that it's

drilled in an area where the upper part of the bank has not been dolotimized. Therefore, it's in a structurally low position, and it's in a dolomite thin position.

What I'd like to do very, very briefly is just compare the geology, Yates, Conoco, and Nearburg. I would refer to the isopach maps from each of the three respective companies. They show that a dolomite thin exists across the Section 25, the south portion of Section 25.

All three geological interpretations concur to that effect. However, on the other side, where you have -- if you honor your well data on the east side of the area of interest, you have to incorporate the information from the Nearburg Foster Fee well. The reason you have to incorporate it is because it's a clue as to what's occurring on the east side of this field. If I draw a line, just a straight edge line from the Nearburg Dagger Draw No. 2 well that's in the northeast quarter to the Nearburg Foster Federal No. 1, which is the location 1980 from the west, 660 from the south of Section 31 -- if I lay a straight edge on those two wells, they're structurally flat, but you'll notice that the Foster Fee Well almost falls on that line, and it's over 100 feet structurally low to both

of those wells.

That tells me something. That tells me that well is anomalous. I know by the log that it's anomalously thin, and that it puts it structurally low. And my contention is that a structural low and a dolomite thin connects with that that you see across -- that all three interpretations have mapped coming across the south half of Section 25.

And it occurs, that connection occurs south and west of the Kathy Eyre well, which is the well in contention, which both Conoco and Yates have testified to that if we just drill to the south or to the west of it, we would be structurally flat or have good reservoir rock. And I contend that there's a connection between this thin and low, and it occurs to the south and west of that Kathy Eyre well.

Therefore, we contend the optimum location would be to move to the north or west.

Q. North or --

A. North or east, I'm sorry.

Q. And, once again, you said that the Foster Fee in the southeast quarter of section of 31 is wet?

A. The reservoir rock was tested water-bearing.

Q. And you want to stay away from that?

A. Yes.

MR. BRUCE: That's all I have.

EXAMINER CATANACH: Any cross for this witness?

MR. KELLAHIN: None.

EXAMINER CATANACH: Mr. Carroll?

EXAMINATION

BY MR. CARROLL:

Q. One of the reasons that you're saying that there is a low that comes across the bottom part of Section 25 is because there aren't any wells drilled there; is that correct?

A. No. If you look at the well that's drilled at the legal location in the southwest quarter of 25 that's 1980 from the south and east lines, that well should be located regionally updip because updip is to the west out here regionally, and you can see that it's on the order of magnitude of 75 feet structurally low to the east offset, and it shouldn't be. So there's a low that occurs through there. And if you look at the thickness of the dolomite well, it's only 112 feet thick. The low is caused by the dolomite thin.

Q. And you will agree that there are wells that contradict your statement that a thin and a lower

position of the dolomite does not always dictate how good the well is?

A. It depends on where the thing occurs in the canyon. If it's occurring from the bottom up, it has no effect. If it's occurring from the top down, as it does in this area, it has a tremendous effect.

Q. Have you analyzed each of those wells to determine if that's how that occurred?

A. In the area of interest today, yes. I don't have the log on the Covert well with me, it may be on the Conoco cross-section -- it's my recollection that the dolomite in that well thinned from the bottom, and that doesn't affect the net fee of pay in that well because it's dolomite still in the top. Therefore, it appears as an anomalous well, a dolomite thin, but in reality it still has an equivalent section of dolomite above the oil-water transition area.

MR. CARROLL: That's all I have.

EXAMINER CATANACH: Anything else of this witness? The witness may be excused.

Anything else.

MR. KELLAHIN: We call Mr. Hardie.

Would you leave those displays for me there, please.

BILL HARDIE,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Hardie, Mr. Elger has found fault or weakness with your analysis and interpretation, as well as Mrs. Fly, because you did not have the benefit of what he says is critical information about the Foster well.

A. That is correct.

Q. Do you have any rebuttal?

A. I do. I'm not sure what he's basing his top of the dolomite and dolomite thickness on. From his previous testimony just a minute ago, he seemed to make it sound like he based it on a production test. And since they tested the upper part of the zone, and it tested tight, he assumed it was not dolomite.

And I don't know whether that's the case or not, but you certainly cannot pick the dolomite based on a cased-hole neutron log, which is what they presented in the testimony today. So what I've seen so far is not enough evidence to pick the top of the dolomite or to estimate a thickness.

They may have mud logs, they may have

drilling samples; I don't know about that. They may have based their top on that. I'll grant them that they may have more data than we do, but with what I've seen today, I don't think you could accurately pick a dolomite top.

The other point of contention that I might make has to do with the cross-section that was presented by Nearburg. It's -- I'm not sure, I don't have the exhibit number on it, but it was their only cross-section -- A-A', in which they show on there Foster 31 Fee No. 1 well, they show the completed interval, and it's clearly completed below the oil-water contact, as I established on my cross-section.

And based on that, the fact that they perforated what Yates calls the "big water" condemns this well immediately because we have seen in repeated cases that when you perforate the water zone, even though you may be opened up in the oil zone, you're going to produce water, period.

And much to my chagrin, I've done that myself. I know that it happens. So I would contest that they have accurately tested this well and determined that it is wet based on that.

Q. With the accuracy and the reliability of

the near well controls to the northwest quarter, is it of significance to you as a geologist the presence or absence of data about the Foster well?

A. Yes, it's very significant.

Q. To what significance do you attach any of your interpretation to the Foster information?

A. To me the significance that I attached with regards to the location that we've been talking about in the northwest quarter of Section 31, it has very little. I would apply a lot more significance on the nearby wells. I think they're a much better indicator of what you might expect to find at that location.

Q. I think I have confused you with my question. My question was, with regards to the nearby well information to the northwest quarter of 31, those around there, how important is that information to you in relation to the Foster information to the southeast?

A. That information is much more important than the Foster information.

Q. Does it matter to your interpretation whether or not there is more information or the accuracy of that information about the Foster well?

A. It would change nothing if I learned that there was no dolomite whatsoever in that well because

it's simply not close enough. The other wells are much more important indicators of what you might expect to find.

MR. KELLAHIN: No further questions.

EXAMINER CATANACH: Any cross?

MR. CARROLL: No.

MR. BRUCE: No, sir.

EXAMINER CATANACH: The witness may be excused.

MR. STOVALL: Are you going to put Miss Fly back up again, or are you going to leave it alone?

MR. CARROLL: I think we're going to leave it alone.

MR. STOVALL: A knowing smile when you talk about perforating the water, huh?

MS. FLY: We've all done that.

EXAMINER CATANACH: Would counsel like to give brief closing statements in this case or not?

MR. BRUCE: I would like to.

MR. KELLAHIN: All right, well, we'll give Mr. Bruce something to talk about then. I guess it's our obligation to go first and let the applicant go last. We scared away Mr. Stovall. At least we've accomplished something.

If you grant this application, Mr.

Examiner, I think you have seen one of the last wells drilled at a standard location in this pool. You're going to start an encroachment war, because to grant an exception here establishes the precedent for the further development of this reservoir. In fact, the exception becomes the rule.

Remember that in nonstandard locations, the predicate to justify the location by which we then balance equity with a penalty is the absolute obligation on Nearburg to demonstrate that they do not have a standard location in which to appropriately access that reservoir.

They have failed in that proof. It is their obligation to drill their standard locations. Their own geologic witness has demonstrated the reliability of that statement that in fact they have standard locations. It has been validated by Miss Fly and Mr. Hardie. It is a real treat to have both of those two individuals before you today with two of the companies that represent the majority of the wells that are drilled and developed in this pool. You can't get better experts before you on this topic than you received today from Conoco and Yates. We are entitled to credit and credibility for the experience and knowledge that those technical people bring with

them and present to you.

It is inappropriate application of correlative rights for Mr. Bruce to suggest that he needs a nonstandard location in order to now compete with wells that are withdrawing oil from the reservoir at standard locations. That is simply fatally flawed. It is not the law and not the rule. And if you grant the exception for that reason, then we're going to be doing nonstandard locations from now till Christmas, four days a week, because we're all going to be in here seeking to encroach upon each other, using the excuse that they're trying to make fly here. They ought to thank us for opposing them because they're about to make a critical mistake. We've demonstrated with our own knowledge and expertise that they're far better off at a standard location.

It's an unusual precedent to deny an application for a location, but this one begs to be denied, and we ought to do it.

EXAMINER CATANACH: Mr. Carroll?

MR. CARROLL: I think Mr. Kellahin has very adequately summed up the problem facing the Commission here. This case carries a far greater precedential value than the effect that it's going to have on the

parties with respect to this one particular location.

Not only is it going to overtax I think the capabilities and the resources of the Commission to try to referee the war that's going to happen, it's just not going -- there's no way that we can keep a lid on this situation. This whole application is one that is deviating from precedents, deviating from the reason for the creation of an unorthodox location, and I want to stress that it's Nearburg's obligation to prove that there were no other locations.

Even the letter from the BLM that they introduced as an exhibit said there were other possible locations. We never heard any evidence about that. There may be -- we can allude to the fact that maybe there's an archeological site, but that's not our job to disprove. It's their job to disprove they have no other location, and they just haven't carried that burden.

The other point is that it is seldom that you get parties who have the kind of expertise and the knowledge in a field like this to come in through separate parties, separate sources of information and reach the same conclusion. It just doesn't happen. I think that lends credibility, extreme credibility, to the geological presentation that's been presented here

with respect to the possible locations, standard locations.

With that, we'd ask that the application be denied.

EXAMINER CATANACH: Mr. Bruce?

MR. BRUCE: Mr. Examiner, I think Mr. Carroll's and Mr. Kellahin's fears are substantially overblown. Nearburg is before you seeking approval of a single unorthodox well location. Nearburg didn't choose this location on a whim, and it would normally drill at a standard location. You look at those plats, all of its other wells in this area are at standard locations, but this isn't possible. There are substantial archeological problems in the northwest quarter.

Second, there's the abandoned Hanks well to deal with.

Third, and finally, there's the poor geology to the south and west of its proposed location.

Now, there's been bantering around about correlative rights. As Mr. Boneau stated, it's the opportunity of each interest owner to produce his or her fair share of oil or gas in the pool. We believe that the two main offsetting wells, the Conoco Dagger

No. 11 and the Nearburg Dagger Draw No. 2, which have already produced over 300,000 barrels each, which, as Dr. Boneau has testified, is above the average for a Dagger Draw well, have produced their fair share.

I think the evidence by both Yates and Nearburg shows that these wells, if they are allowed to produce without any competition, will drain 80 to 120 acres each. Thus -- and they've already drained 40 acres each. So from this day forward, those two wells are going to drain Nearburg's acreage in the east half-northwest quarter, and that well adversely affects Nearburg's correlative rights.

Thus we believe an unorthodox location without a penalty is necessary to allow Nearburg to protect its rights. Conoco and Yates have discussed potential orthodox locations which they say are topographically and geographically proper somewhere to the south and west of the Hanks drill site. Nearburg disagrees, and the results of its Foster Fee 31 No. 1 well in the northwest quarter of the southeast quarter strongly support its position.

Furthermore, Nearburg has testified that it will not drill at the locations proposed by Conoco and Yates, which may -- and, once again, I emphasize "may" because there is no archeological study as of yet --

be the only other location available in this quarter-quarter section. If Nearburg can't drill a well at its proposed location, its acreage is going to be drained, period.

Nearburg is the one that's willing to spend its 700,000 bucks out here to drill this well, and it cannot and will not relate Yates or Conoco geology. I'd be shocked if Yates or Conoco relied on Nearburg's geology in placing their well locations. Since Nearburg is the one spending its money, and since it has all of the data on the offsetting wells, its geology should be relied on.

Once again, we urge that this be approved without a penalty. Yates proposed a penalty formula, one of which would require that Nearburg's current wells in the northwest quarter be throttled back. These just aren't fair. It really makes it impossible for Nearburg to compete adequately with the offsetting wells.

Under the OCD statutes, Section 70-2-12, the OCD has the authority to require wells to be produced in a manner so as not to injure neighboring leases. As I've stated, we believe the offsetting Conoco and Nearburg No. 2 wells will be draining the northwest quarter of Section 31, but we're not asking

for a penalty on those wells. They're free to go on producing, and they're producing at rates of 5 or 600 barrels a day. Even if a Nearburg well is drilled, they're going to produce substantially in excess of the average well in this pool. As Dr. Boneau said, they're great wells.

All we ask is for a fair opportunity for Nearburg to compete. Please grant the application.

EXAMINER CATANACH: Thank you, Mr. Bruce.

Gentlemen, I'd like rough draft orders in this case.

MR. KELLAHIN: Mine's going to be kind of smooth. Is that all right?

MR. CARROLL: What kind of time frame are you asking for? The reason I say, I'm going to be gone all next week.

MR. BRUCE: So am I. Three weeks.

EXAMINER CATANACH: Three weeks, yeah, three weeks will be fine.

There being nothing further in this case, Case 10731 will be taken advisement, and we'll adjourn this hearing.

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Deborah O'Bine, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that I caused my notes to be transcribed under my personal supervision, and that the foregoing transcript is a true and accurate record of the proceedings of said hearing.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL, July 15, 1993.

Deborah O'Bine

DEBORAH O'BINE
CCR No. 63

OFFICIAL SEAL
DEBORAH O'BINE
NOTARY PUBLIC-STATE OF NEW MEXICO
My Commission Expires Sept. 19, 1994

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10731.
heard by me on June 11 1993.

David R. Catanach, Examiner
Oil Conservation Division