

DATE _____

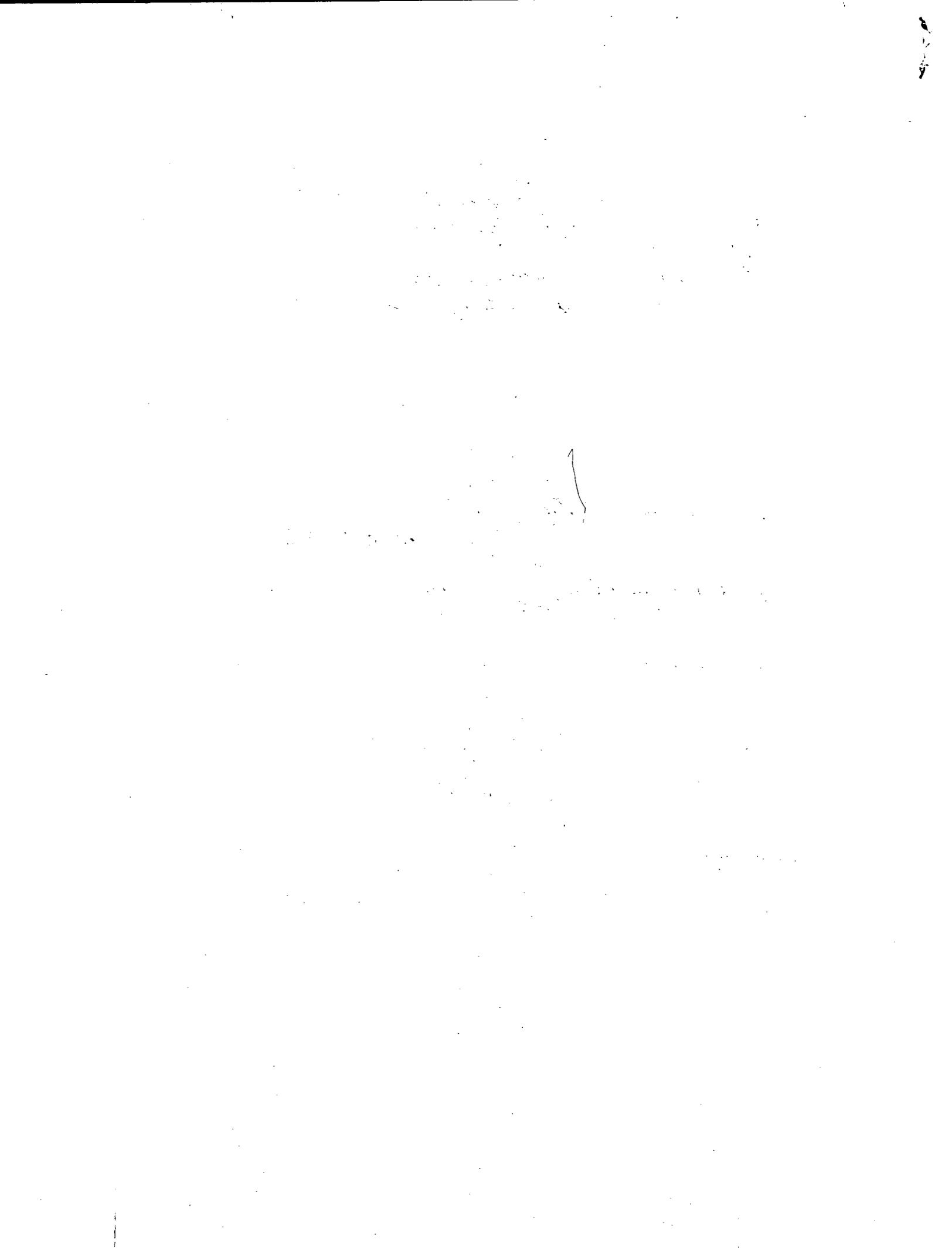
OPERATOR Nassau Resources, Inc.
40 Jerome P. Mellyugh & Associates
P.O. Box 809
Farmington, NM 87499-0809
ATTENTION: Gary J. Johnson

ADMINISTRATIVE ORDER DD- 35

Under the provisions of General Rule 111 (c), (d) and (e),
Nassau Resources, Inc. made application to the New Mexico
Oil Conservation Division on April 2, 1990, for
authorization to directionally drill its proposed
Carracas Unit Well No. 16, Pie Arriba County,
New Mexico. 15-A

The Division Director Finds That:

- (1) The application has been duly filed under the provisions of Rule 111 (d) and (e) of the Division General Rules and Regulations;
- (2) Satisfactory information has been provided that all offset operators have been duly notified;
- (3) The applicant has presented satisfactory evidence that all requirements prescribed in General Rule 111 will be met; and
- (4) No objections have been received within the waiting period prescribed by said rule.



IT IS THEREFORE ORDERED THAT:

(1) The applicant, Nassau Resources Inc., is hereby authorized to directionally drill its Carracas Unit 15-A Well No. 16, the surface location of which shall be 200 feet from the South line and 500 feet from the East line (Unit P) of Section 15, Township 32 North, Range 6 West, NMPM, Rio Arriba County, New Mexico, by kicking off from the vertical at a depth of approximately 590 feet, and drilling in such a manner as to bottom it in the

at a previously approved unorthodox coal gas well location (Division Order No. A-8844)

_____ (pool)(formation) at a standard location within the _____ of said Section _____ forming a standard _____-acre _____ spacing and proration unit for said pool.

Basin Fruitland Coal Gas Pool formation within 100 feet of a point 1320 feet from the South line and East feet from the _____ lines of Section 15, being a standard _____ well location for said formation.

PROVIDED HOWEVER THAT: prior to directional drilling, the operator shall determine the subsurface location of the kick-off point; and

PROVIDED FURTHER THAT: subsequent to the above-described directional drilling, should said well be a producer, a ~~continuous multi-shot~~ directional survey shall be made of the wellbore from total depth to the kick-off point with ~~shot points not more than 100 feet apart~~; the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe ^{both} Office ~~of the~~ Division, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, ^{OK} and the operator shall ^{also} notify the Division's Artesian District Office of the date and time said survey is to be commenced.

and to the Artesian District Office of the Division

(2) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth in addition to measured depths.



STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

OIL CONSERVATION DIVISION
RECEIVED

1100 THE HAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-0170

REY CARRUTHERS
GOVERNOR
'90 APR 11 AM 8 58

Date: 4-9-90

ATTN: ME STOGNER

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

- Re: Proposed MC _____
- Proposed DHC _____
- Proposed NSL _____
- Proposed SWD _____
- Proposed WFX _____
- Proposed PMX _____

Gentlemen: DD X

I have examined the application dated 4-2-90

for the NASSAU RESOURCES, INC. CARPACAS Unit 15A #16
Operator Lease & Well No.

P. 15-32N-5W and my recommendations are as follows:
Unit, S-T-R

Approved

Yours truly,

Ernie Bush

March 30, 1990

New Mexico Oil Conservation Division
Attn: Michael Stogner
P O Box 2088
Santa Fe, New Mexico 87504

RE: Application for Administrative Approval of
Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Stogner:

Nassau Resources, Inc., hereby requests administrative approval to directionally drill the subject well as follows:

Proposed Surface Location:	200' FSL and 500' FEL
Proposed Bottom Hole Location:	1320' FSL and 1320' FEL (within a 100' radius)
True Vertical Depth:	Approx. 4000'
Measured Depth:	Approx. 4308'

The well is at a previously approved unorthodox location, (OCD Order *R-8844), approximately 880' west of the NRI Carracas Unit 14 A #13. Due to archeological and topographic considerations the well cannot be located at a location more to the north and west, which will be a more desirable target, geologically.

This well is in Nassau's Carracas Unit. The E/2 of Section 16, T32N, R5W, is unleased federal minerals. Kindermac Partners and Jerome P. McHugh are operating affiliates with Nassau Resources, Inc. Amoco Production Co., a party to the unit, has also been notified.

Also attached are copies of the C-102 plat, a topographic map (showing both the surface and bottom hole locations) and a schematic of the well bore.

Please withdraw Nassau's pending application for horizontal drilling. Please contact me immediately if anything further is required to complete this application.

Thank you,


Gary J. Johnson

xc: Ernie Busch, NMOCD
Amoco Production Co.
Jerome P. McHugh and
Kindermac Partners

Attachments

Main Office
Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111

Distances must be from the outer boundaries of the section.

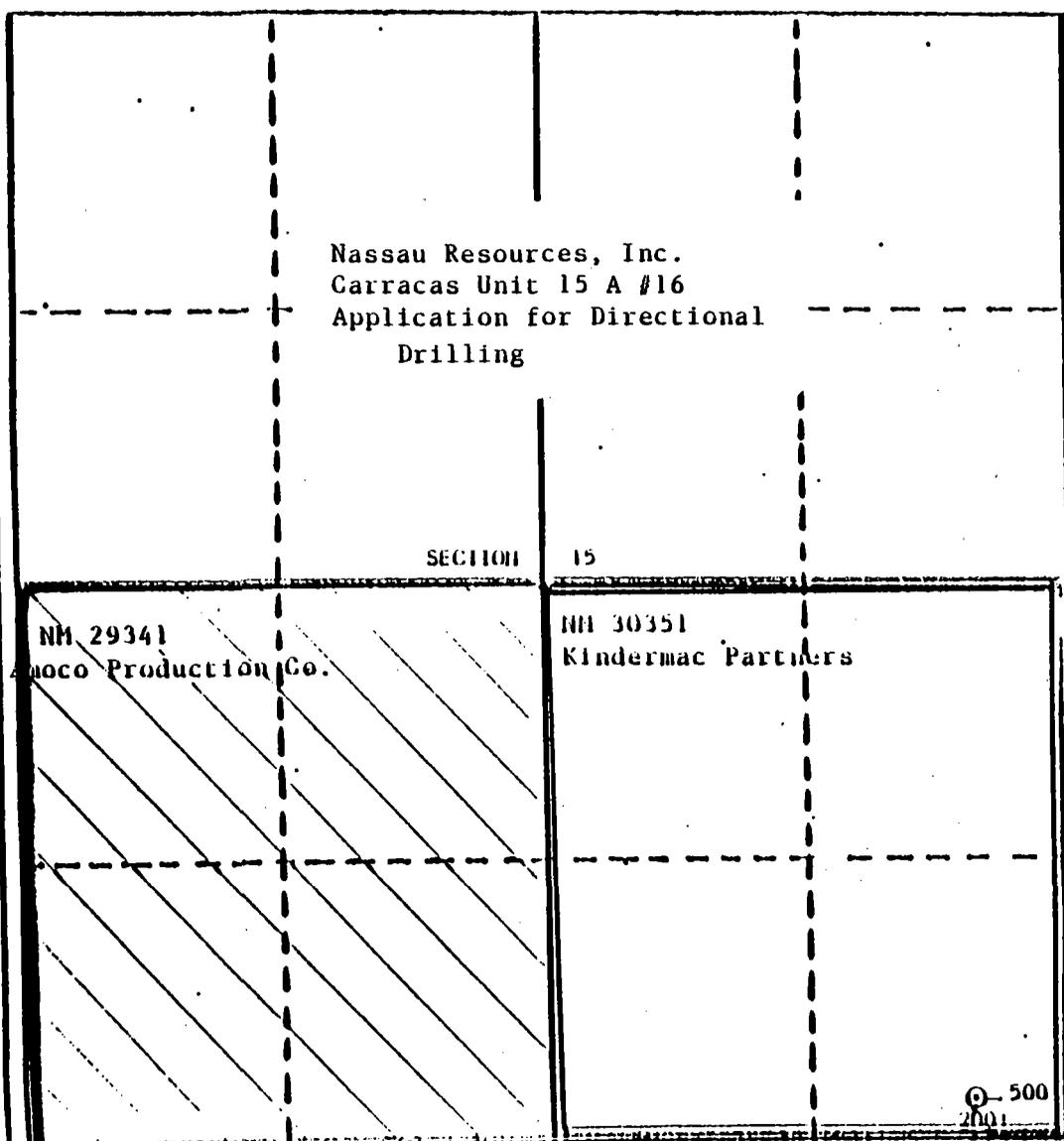
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Well Letter P	Section 15	Township 32 North	Range 5 West	County Rio Arriba	
Actual Footage Location of Well: 200 feet from the South line and 500 feet from the East line					
Ground Level Elev. 7220-7222	Producing Formation Fruitland	Pool Basin Fruitland Coal		Dedicated Acres 320	Acres

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

Yes No If answer is "yes," type of consolidation Carracas Unit - Unitization

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

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

Fran Perrin

Name
Fran Perrin

Position
Admin. Asst.

Company
Nassau Resources, Inc.

Date
12/8/88

I hereby certify that the information shown on this plat is true and correct to the best of my knowledge and belief, and that the same is true and correct to the best of my knowledge and belief.

CARL RISENBERG
REGISTERED LAND SURVEYOR

Date Surveyed
August 25, 1988

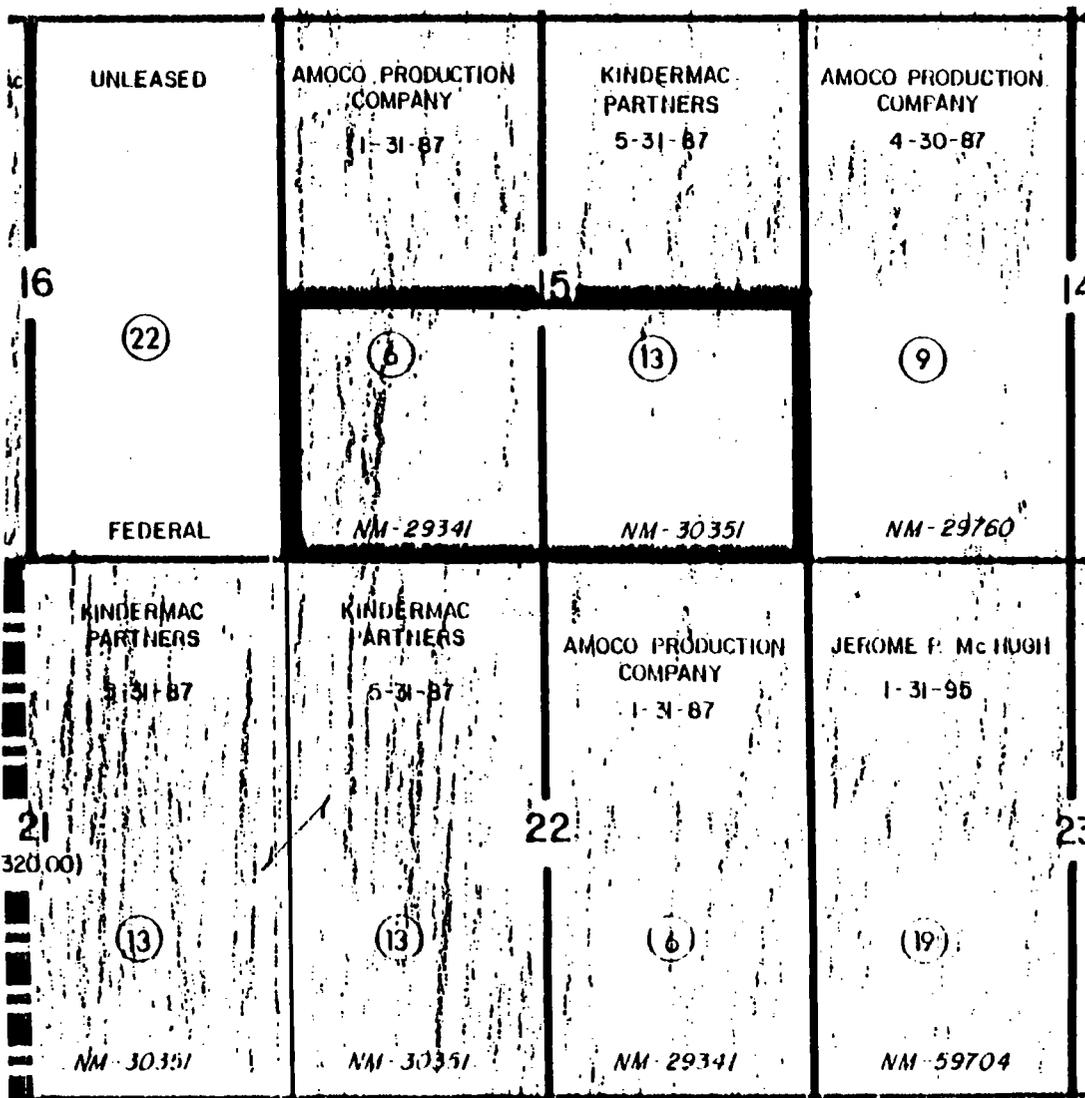
Registered Professional Engineer
and/or Land Surveyor

Carl Risenberg

Certificate No. 5979

LEASE PLAT

Township 32 North, Range 5 West, NMPM, Rio Arriba County, New Mexico



PARTY TO THE UNIT:
Amoco Production Co.

OPERATING AFFILIATES:
Jerome P. McHugh
Kindermac Partners

UNLEASED FEDERAL MINERALS:
T32N, R5W
Section 16: E/2

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling

0
500
1000
1500
1889
2000
2500
3000
3500
4000
4500

1200
1000
800
600
400
200

W: 1320
N: 1320

MD: 588. 0° 0' 494.97 SEC.

804 MD: 1938. 27° 0'

W: 684
N: 452

W: 58200
N: 200

SCALE 1" = 200FT.

27° 0'

TARGET
MD: 4308. 27° 0'

1867

V. SECTION PLANE
0 500 1000 1500
N45° 00' W

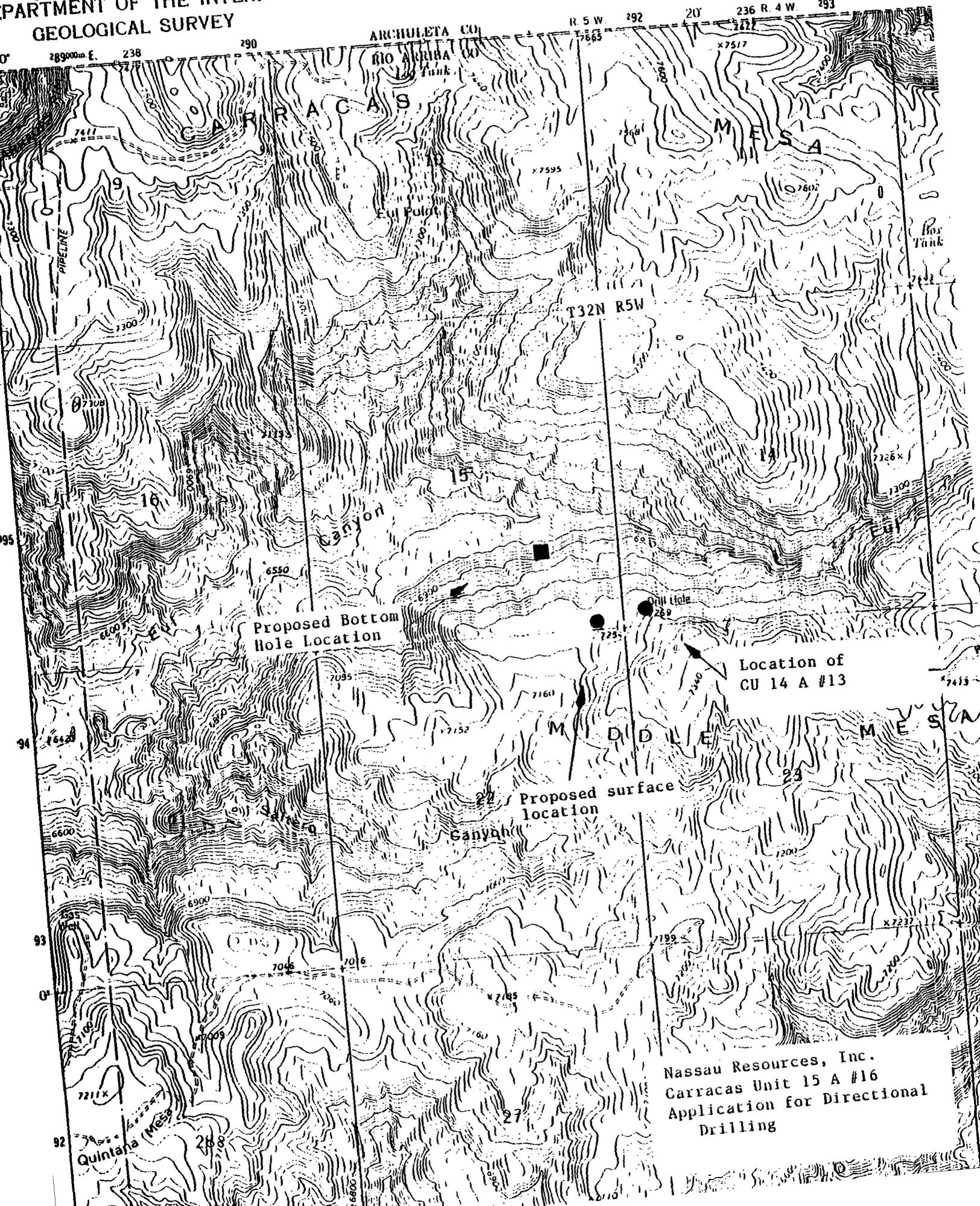
PROPOSAL: P00261.1N2

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling

NASSAU RESOURCES
RIO ARRIBA SLOT: 4
WELL: 15A - 16

SCALE 1" = 500FT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Proposed Bottom
Hole Location

Location of
CU 14 A #13

Proposed surface
location

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling

March 30, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Amoco Production Co.
Attn: J W Hawkins - Land Department, Proration Group
P O 800
Denver, CO 80201

RE: Application for Administrative Approval of
Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Hawkins:

Enclosed is a copy of the subject Application for Directional Drilling.

Although Amoco Production Co., is a party to the Nassau Resources, Inc., Carracas Unit, if Amoco has no objection to this application, we request that you notify the Oil Conservation Division as soon as possible. Please send a waiver to the attention of Michael Stogner, New Mexico Oil Conservation Division, P O Box 2088, Santa Fe, New Mexico, 87504.

An application for this same well was previously submitted, then withdrawn. Nassau is also withdrawing its application for horizontal drilling.

Please feel free to call if you have any questions.

Thank you,


Gary J. Johnson

Enclosure

xc: NMOCD, Santa Fe, NM

March 30, 1990

New Mexico Oil Conservation Division
Attn: Michael Stogner
P O Box 2088
Santa Fe, New Mexico 87504

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Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

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Also attached are copies of the C-102 plat, a topographic map (showing both the surface and bottom hole locations) and a schematic of the well bore.

Please withdraw Nassau's pending application for horizontal drilling. Please contact me immediately if anything further is required to complete this application.

Thank you,


Gary J. Johnson

xc: Ernie Busch, NMOCD
Amoco Production Co.
Jerome P. McHugh and
Kindermac Partners

Attachments

Main Office
Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111

Locations must be from the outer boundaries of the lease.

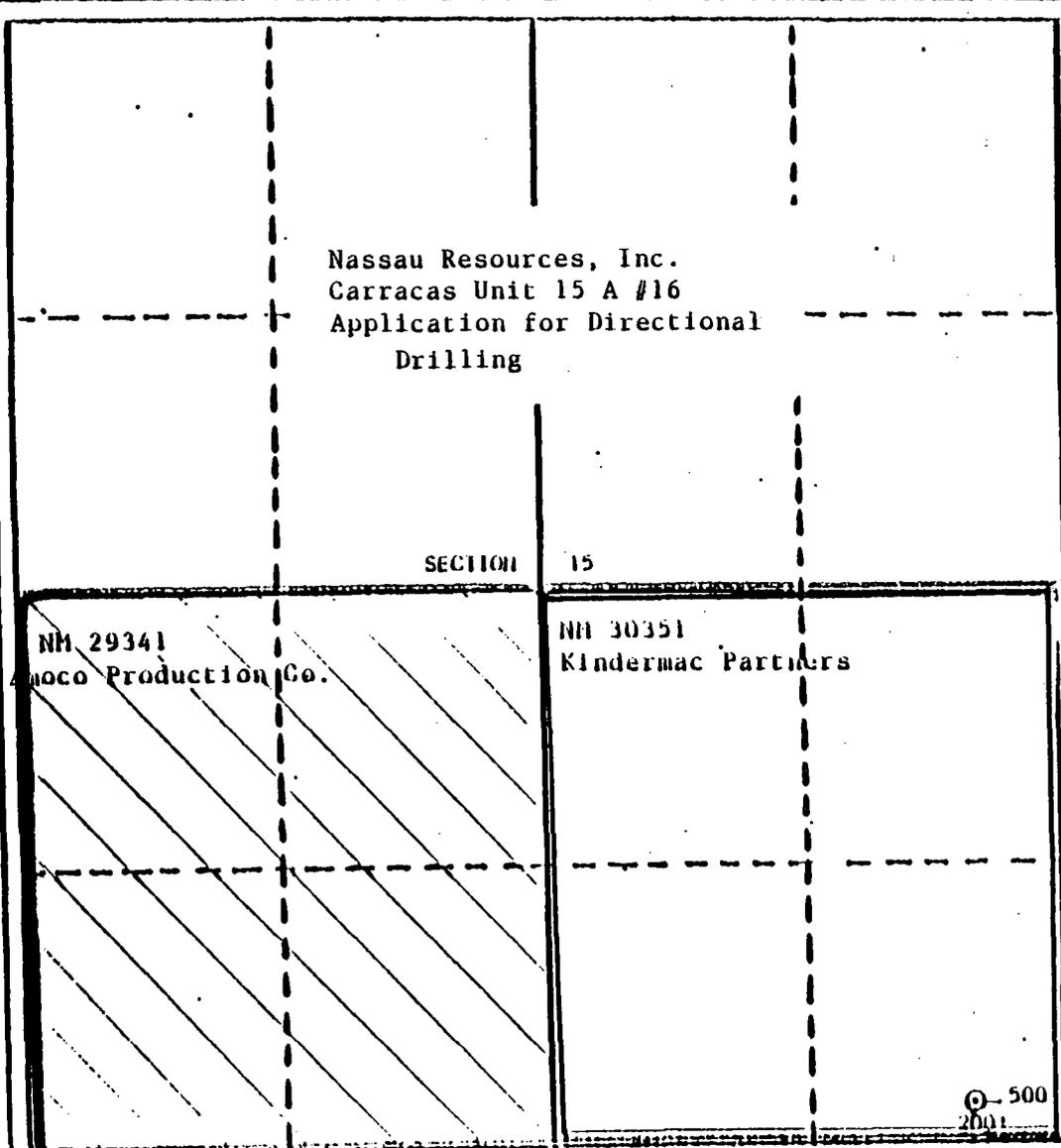
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Well Letter P	Section 15	Township 32 North	Range 5 West	County Rio Arriba	
Actual Footage Location of Well: 200 feet from the South line and 500 feet from the East line					
Ground Level Elev. 7220-7222	Producing Formation Fruitland		Pool Basin Fruitland Coal	Dedicated Acres 320 Acres	

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

Yes No If answer is "yes," type of consolidation Carracas Unit - Unitization

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

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

Fran Perrin

Name
Fran Perrin

Position
Admin. Asst.

Company
Nassau Resources, Inc.

Date
12/8/88

I hereby certify that the information shown on this plat is true and correct under my supervision and that the same is true and correct to the best of my knowledge and belief.

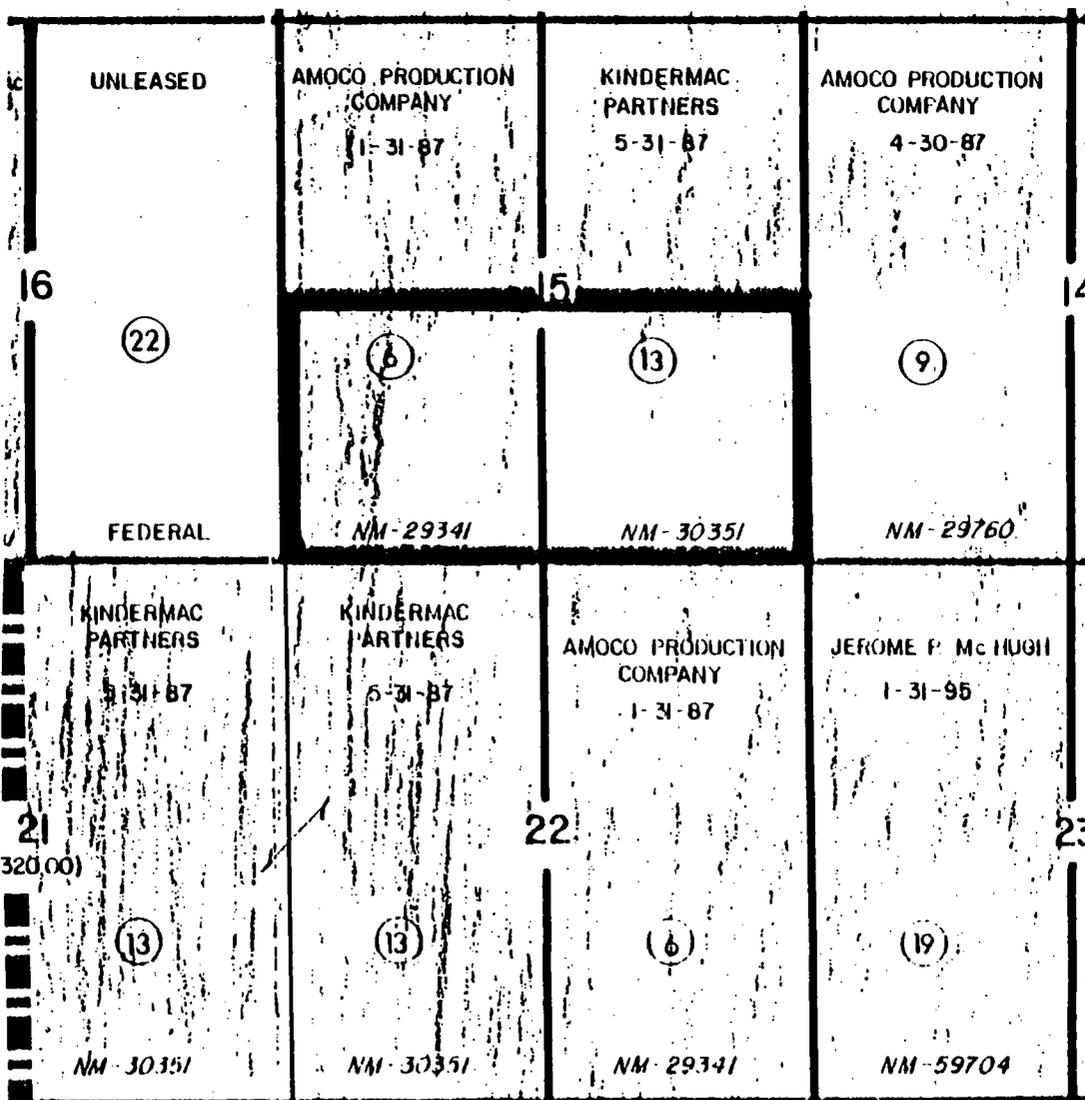
Date Surveyed
August 25, 1988

Registered Professional Engineer and/or Land Surveyor

Edwin L. Resnik
Certificate No. 5979

LEASE PLAT

Township 32 North, Range 5 West, NMPM, Rio Arriba County, New Mexico

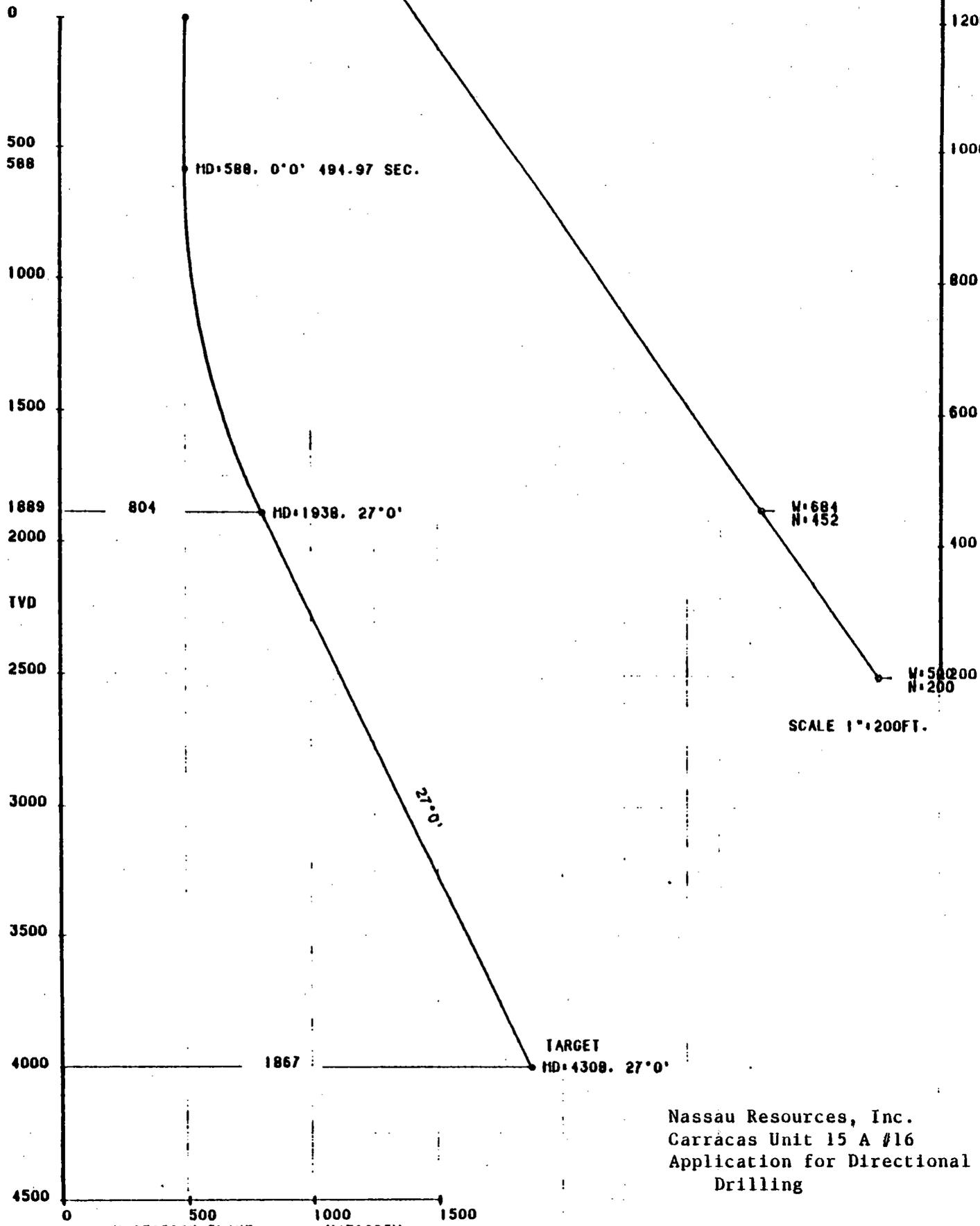


PARTY TO THE UNIT:
Amoco Production Co.

OPERATING AFFILIATES:
Jerome P. McHugh
Kindermac Partners

UNLEASED FEDERAL MINERALS:
T32N, R5W
Section 16: E/2

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling



SCALE 1" = 200FT.

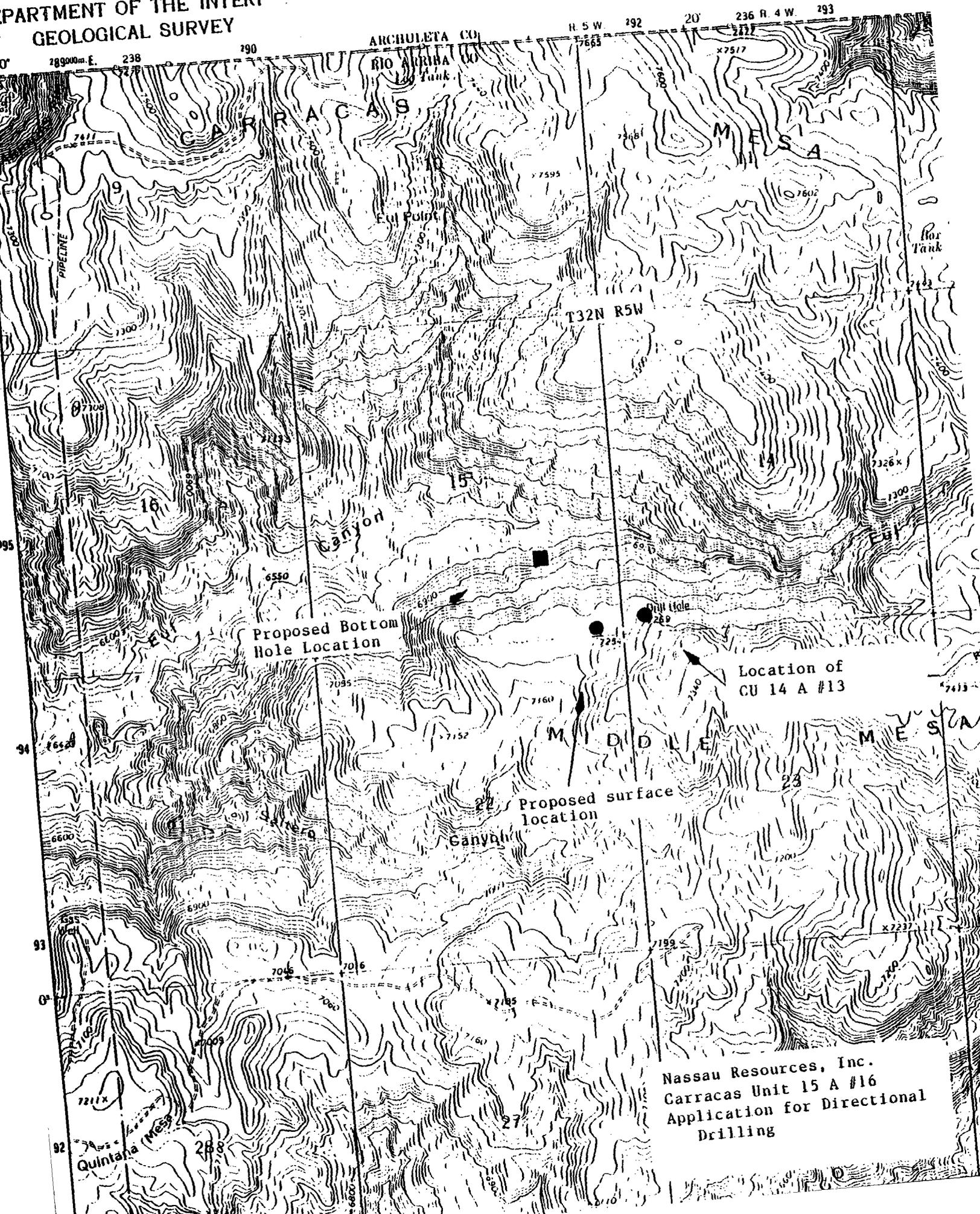
Nassau Resources, Inc.
 Carracas Unit 15 A #16
 Application for Directional
 Drilling

V. SECTION PLANE
 N45°00'W
 PROPOSAL P00261.1N2

NASSAU RESOURCES
 RIO ARRIBA SLOT 4
 WELL 15A - 16

SCALE 1" = 500FT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling

March 30, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Amoco Production Co.
Attn: J W Hawkins - Land Department, Proration Group
P O 800
Denver, CO 80201

RE: Application for Administrative Approval of
Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Hawkins:

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Please feel free to call if you have any questions.

Thank you,


Gary J. Johnson

Enclosure

xc: NMOCD, Santa Fe, NM

March 30, 1990

90 APR 2 AM 9 56

New Mexico Oil Conservation Division
Attn: Michael Stogner
P O Box 2088
Santa Fe, New Mexico 87504

RE: Application for Administrative Approval of
Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

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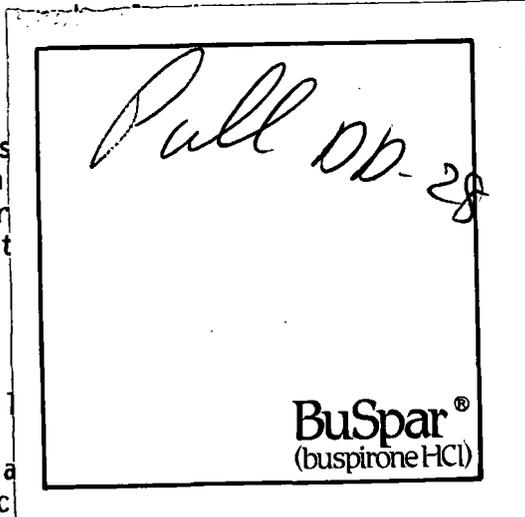
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The well is at a previously approved unorthodox location, (OCD
Order *R-8844), approximately 880' west of the NRI Carracas Unit
14 A #13. Due to geologic considerations
the well cannot be drilled to the north and
west, which will be geologically.

This well is in Nas
T32N, R5W, is unlea
Jerome P. McHugh an
Inc. Amoco Product
notified.

Also attached are
(showing both the
schematic of the well

Please withdraw Na
drilling. Please c
required to complete this application.



E/2 of Section 16,
Kermac Partners and
Nassau Resources,
Unit, has also been

a topographic map
(showing well locations) and a

on for horizontal
anything further is

Thank you,

Gary J. Johnson
Gary J. Johnson

xc: Ernie Busch, NMOCD
Amoco Production Co.
Jerome P. McHugh and
Kindermac Partners

Attachments

Main Office
Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111

Distances must be from the outer boundaries of the lease.

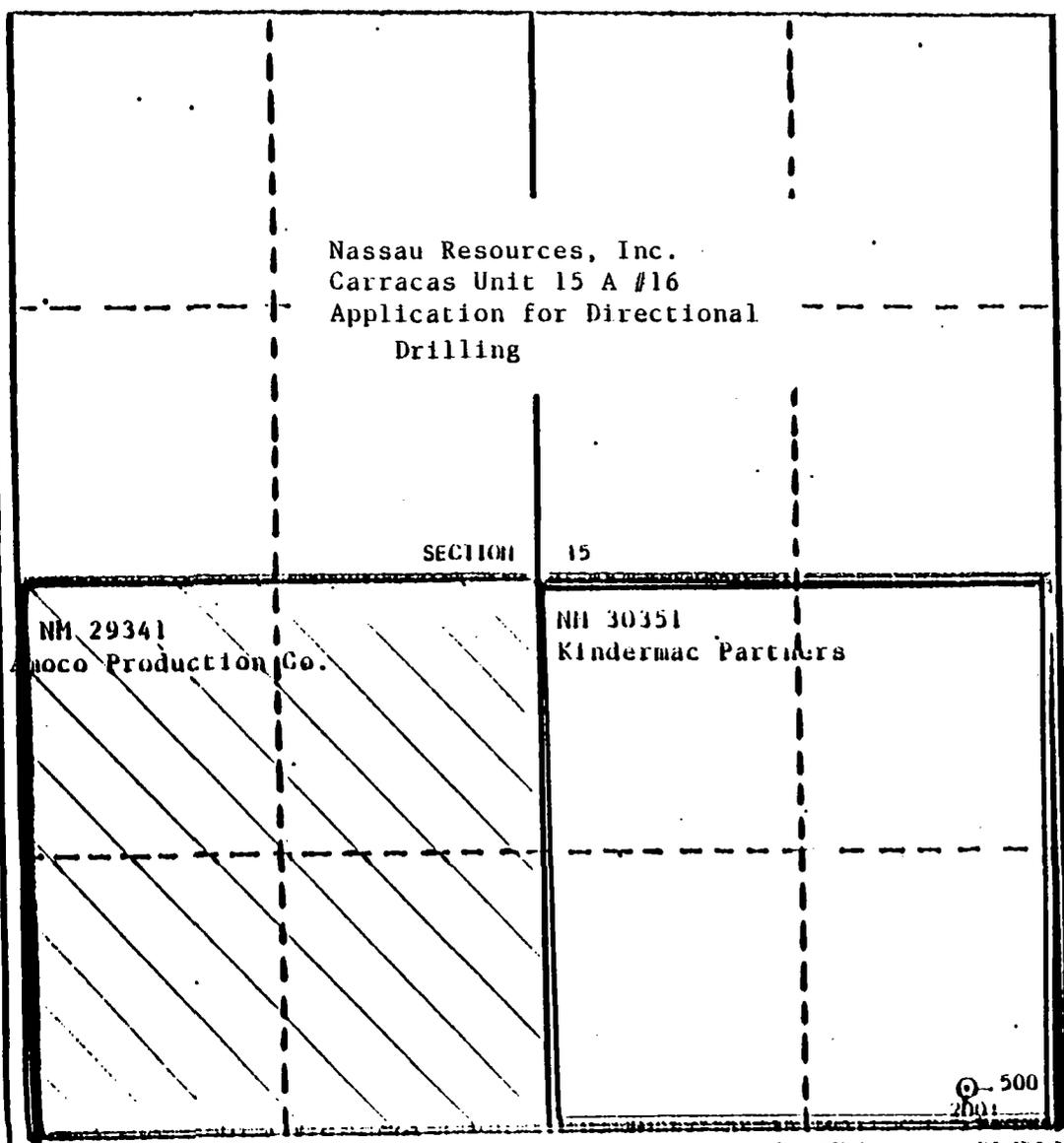
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Ground Level Elev. 7220-7222	Producing Formation Fruitland		Pool Basin Fruitland Coal	Dedicated Acres 320 Acres	

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Yes No If answer to "yes," type of consolidation Carracas Unit - Unitization

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CERTIFICATION

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

Fran Perrin

Name
Fran Perrin

Position
Admin. Asst.

Company
Nassau Resources, Inc.

Date
12/8/88

I hereby certify that the information shown on this plat is true and complete to the best of my knowledge and belief.

Date Surveyed
August 25, 1988

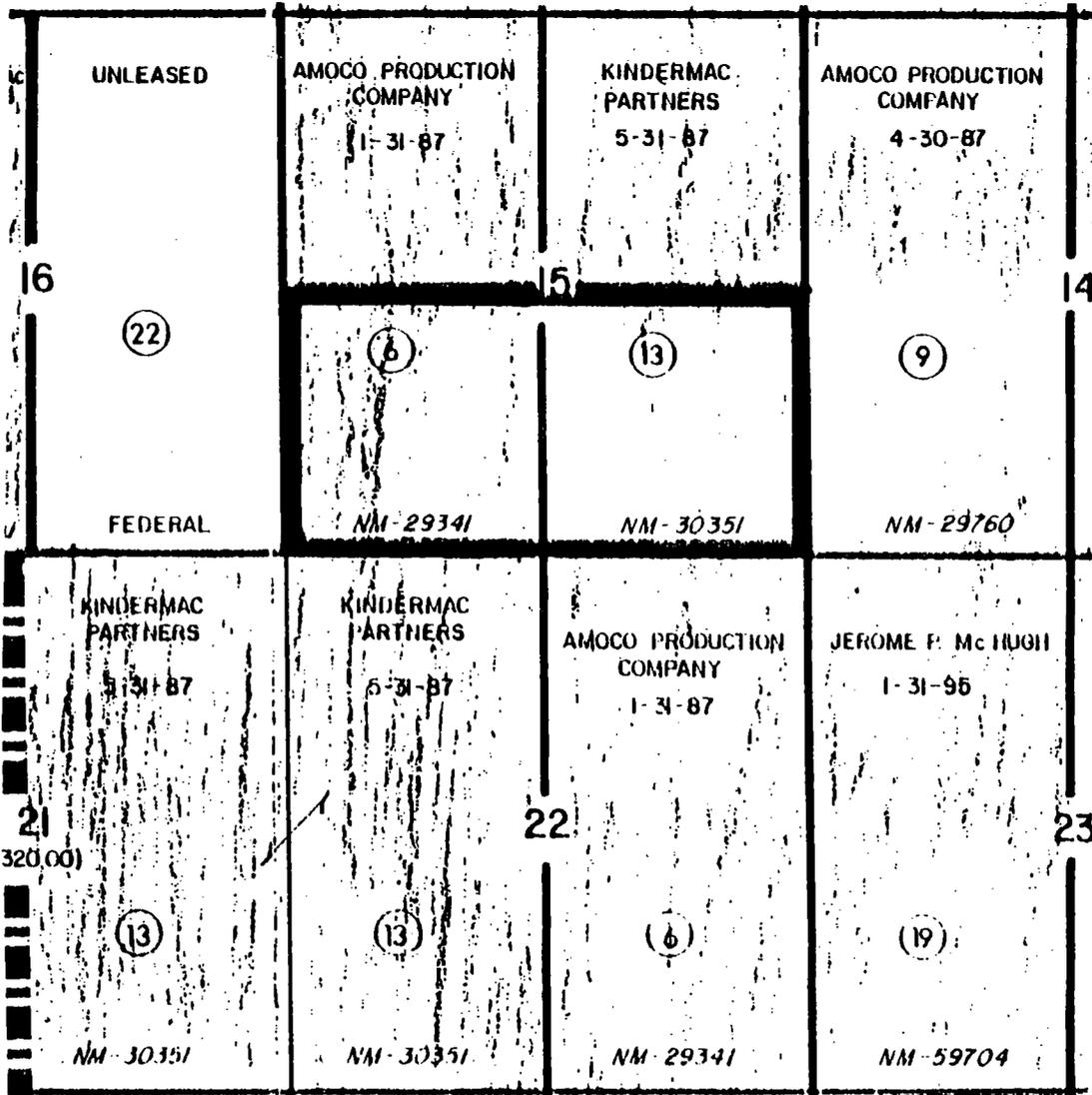
Registered Professional Engineer
and/or Land Surveyor

Edgar L. Resnicar

Certificate No. 5979

LEASE PLAT

Township 32 North, Range 5 West, NMPM, Rio Arriba County, New Mexico

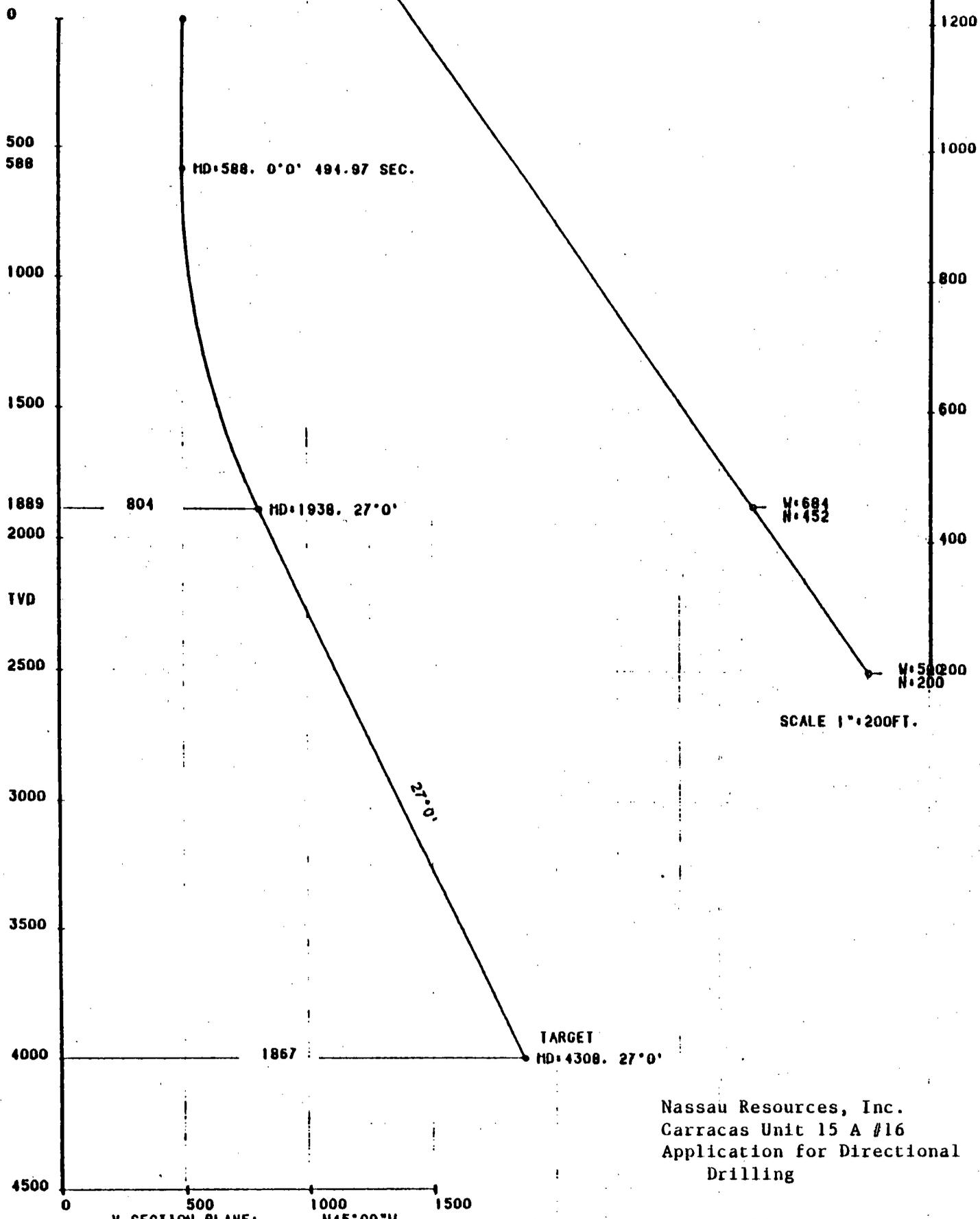


PARTY TO THE UNIT:
Amoco Production Co.

OPERATING AFFILIATES:
Jerome P. McHugh
Kindermac Partners

UNLEASED FEDERAL MINERALS:
T32N, R5W
Section 16: E/2

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling



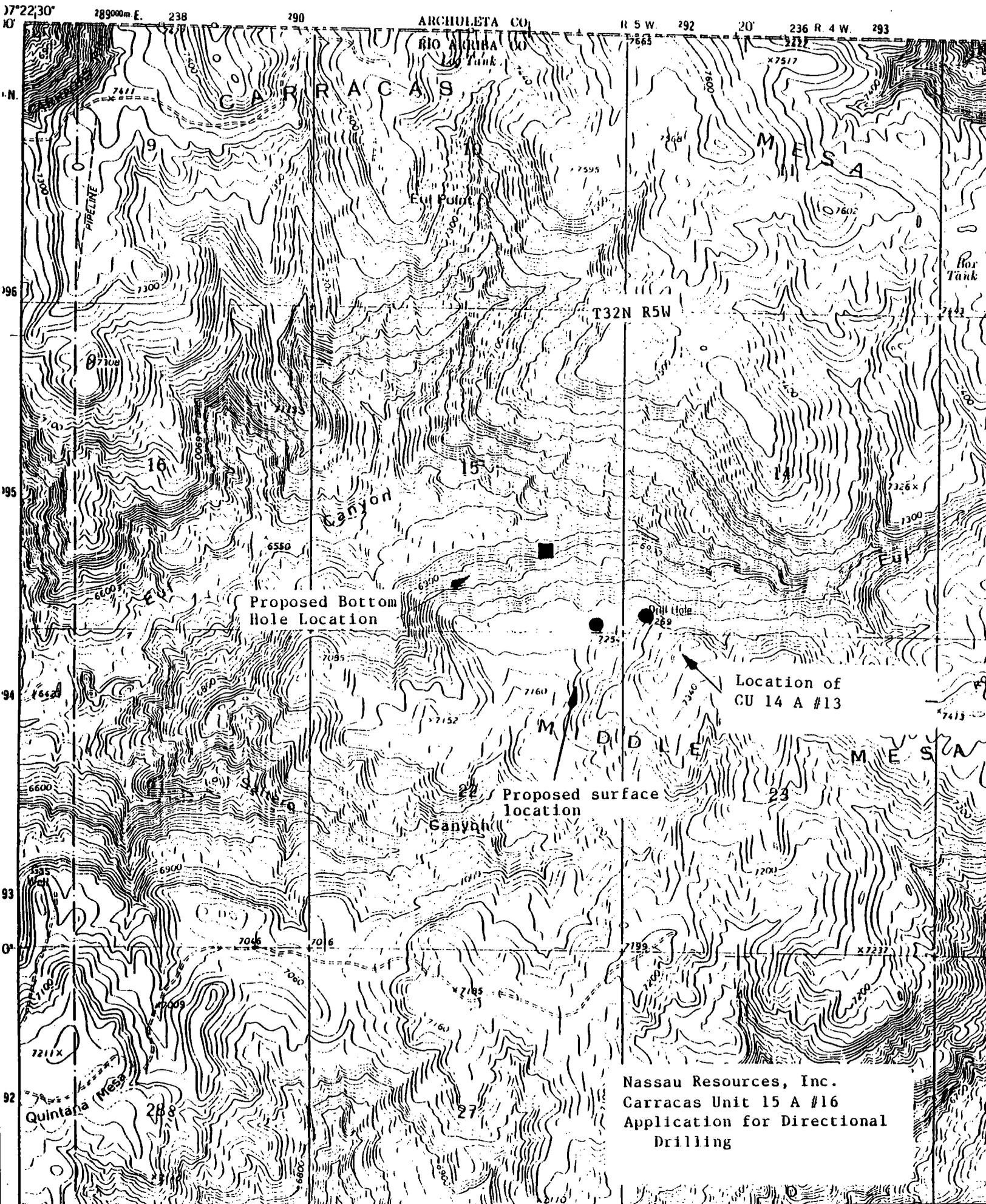
SCALE 1" = 500FT.

V. SECTION PLANE
 0 500 1000 1500
 N45°00'W
 PROPOSAL P00261.1N2

Nassau Resources, Inc.
 Carracas Unit 15 A #16
 Application for Directional
 Drilling

NASSAU RESOURCES		
WELL: 15A - 16	RIO ARRIBA	SLOT: 4

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling

March 30, 1990

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Attn: J W Hawkins - Land Department, Proration Group
P O 800
Denver, CO 80201

RE: Application for Administrative Approval of
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Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

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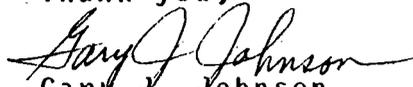
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Thank you,


Gary J. Johnson

Enclosure

xc: NMOCD, Santa Fe, NM

July 25, 1989

RECEIVED

New Mexico Oil Conservation Division
Attn: Michael Stogner
P O Box 2088
Santa Fe, New Mexico 87504

JUL 26 1989

OIL CONSERVATION DIV.
SANTA FE

RE: Application for Administrative Approval of
Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

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Thank you,

Fran Perrin
Fran Perrin

xc: Ernie Busch, NMOCD
Amoco Production Co.
Jerome P. McHugh and
Kindermac Partners

Attachments

Main Office
Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
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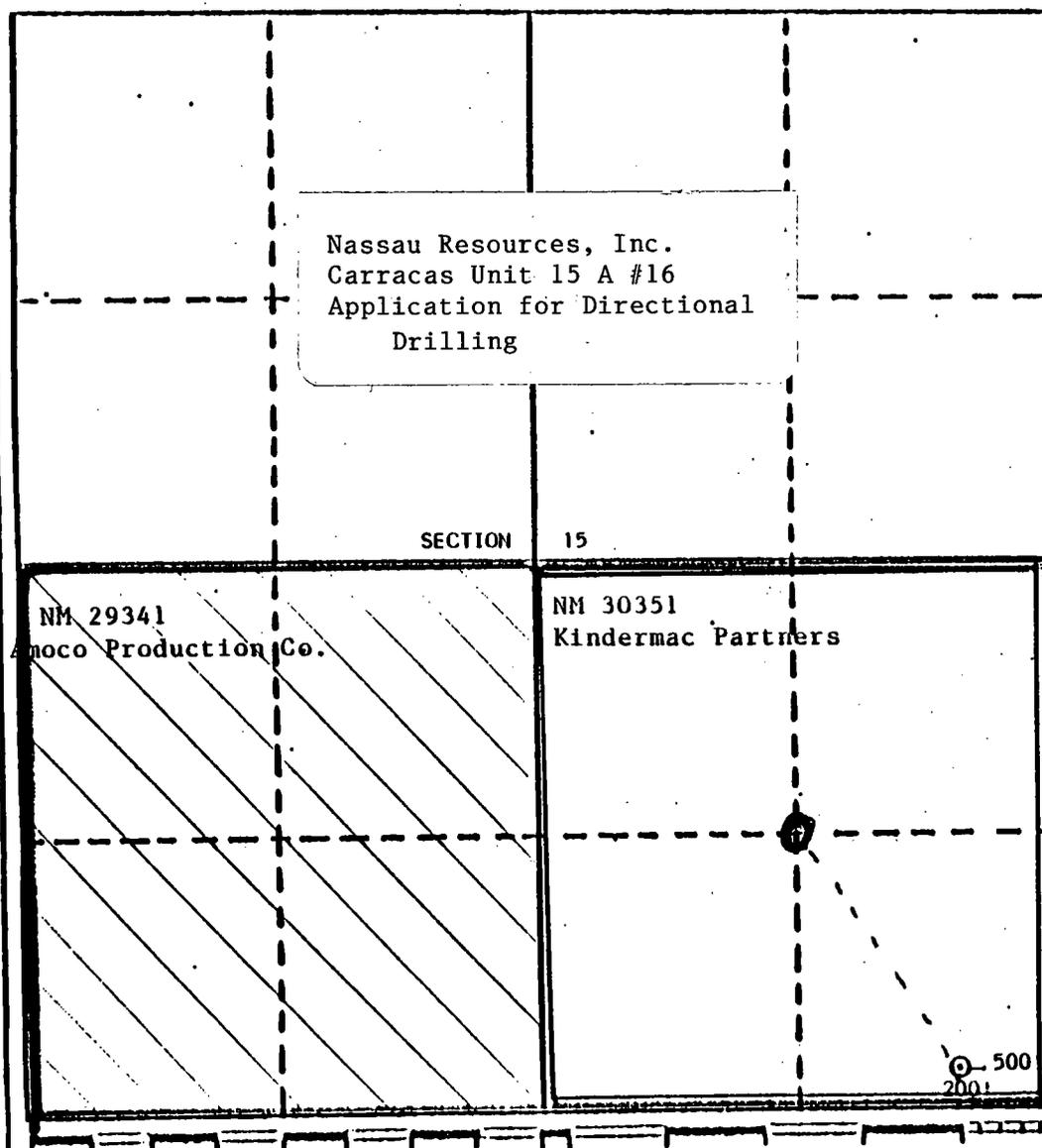
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CERTIFICATION

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Fran Perrin

Name
Fran Perrin

Position
Admin. Asst.

Company
Nassau Resources, Inc.

Date
12/8/88

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

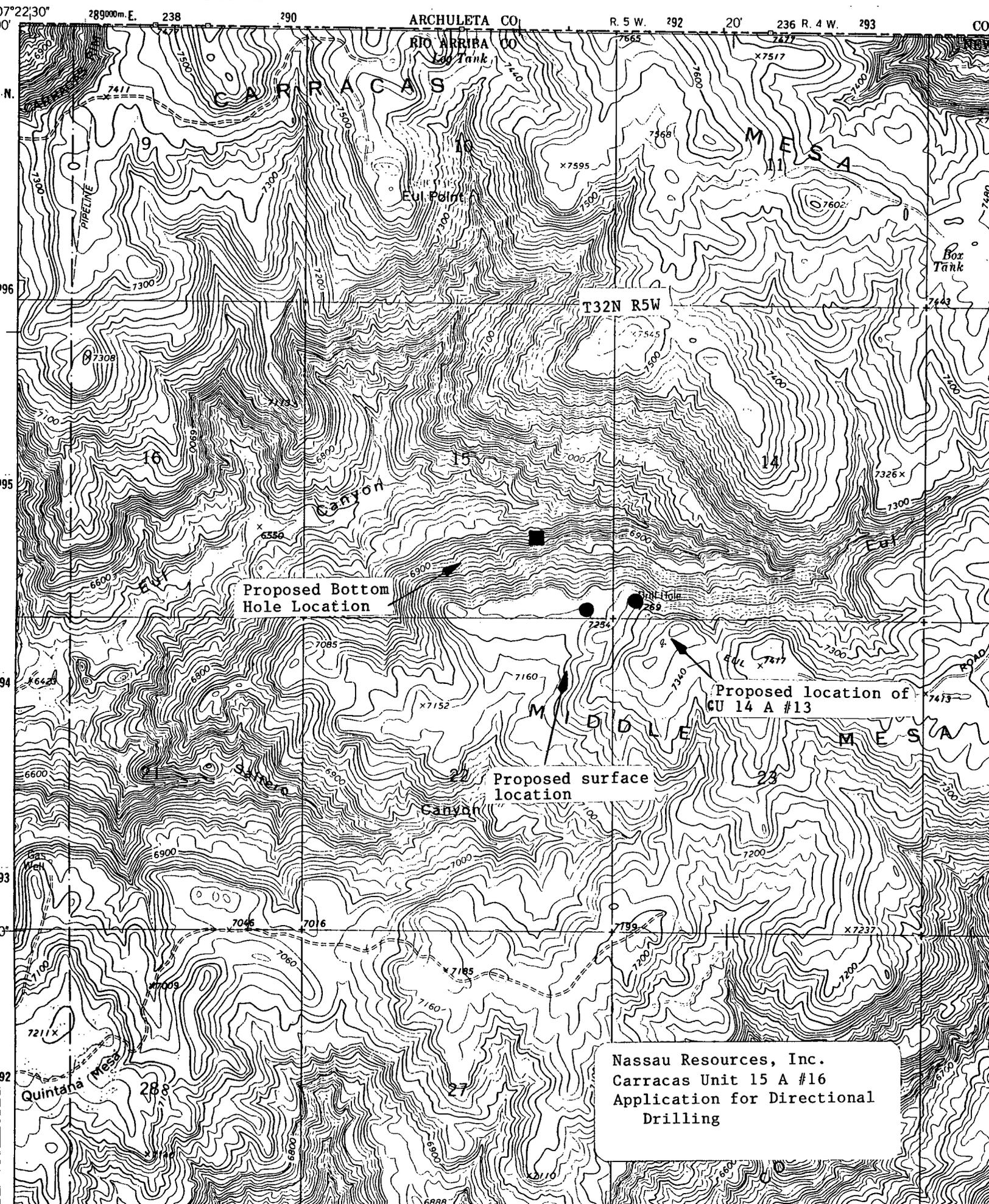


Date Surveyed
August 25, 1988

Registered Professional Engineer
and/or Land Surveyor

Edw. L. Risenhoover
Certificate No. 5979
Edw. L. Risenhoover, P.E.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

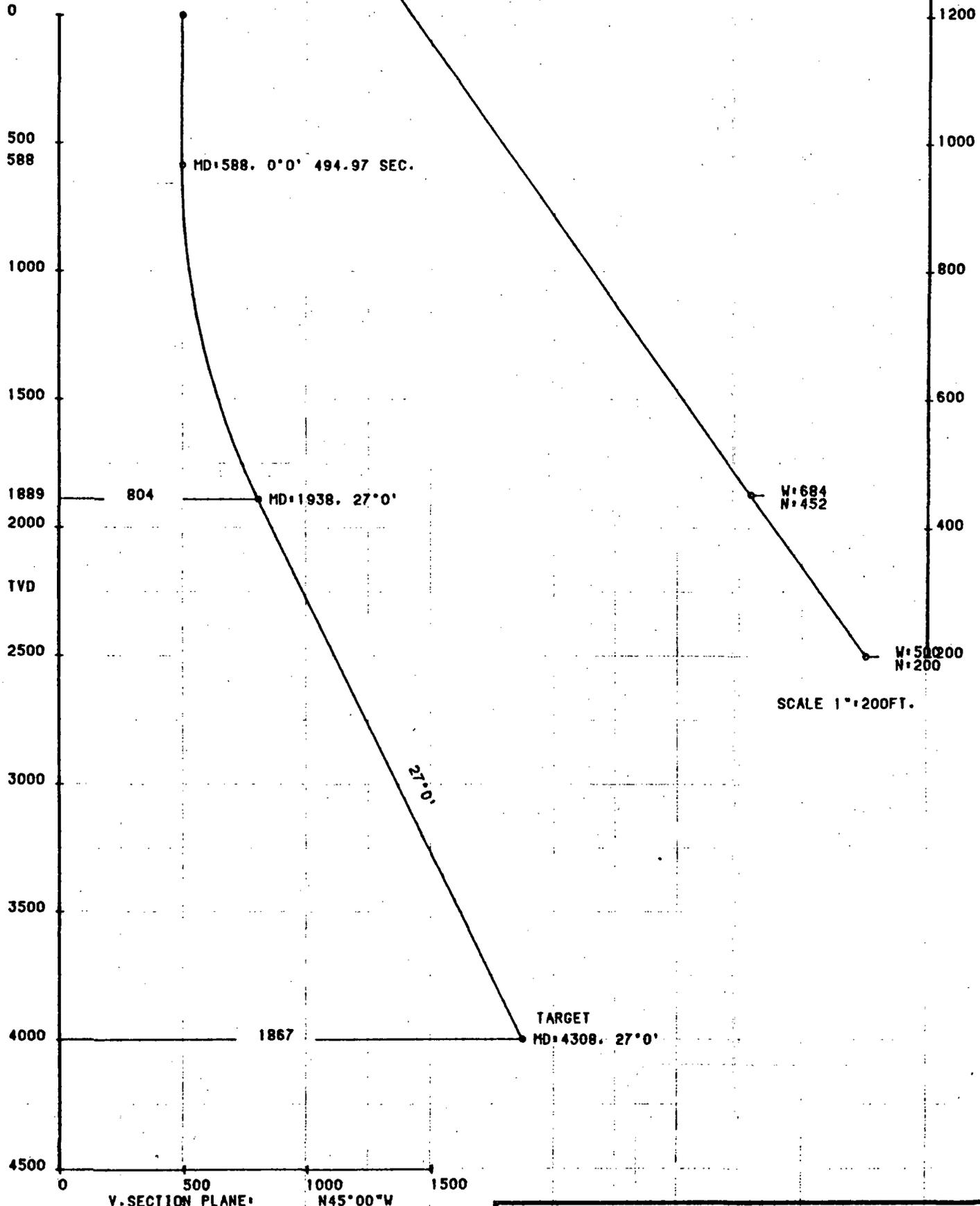


Proposed Bottom
Hole Location

Proposed location of
CU 14 A #13

Proposed surface
location

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling



SCALE 1"=500FT.

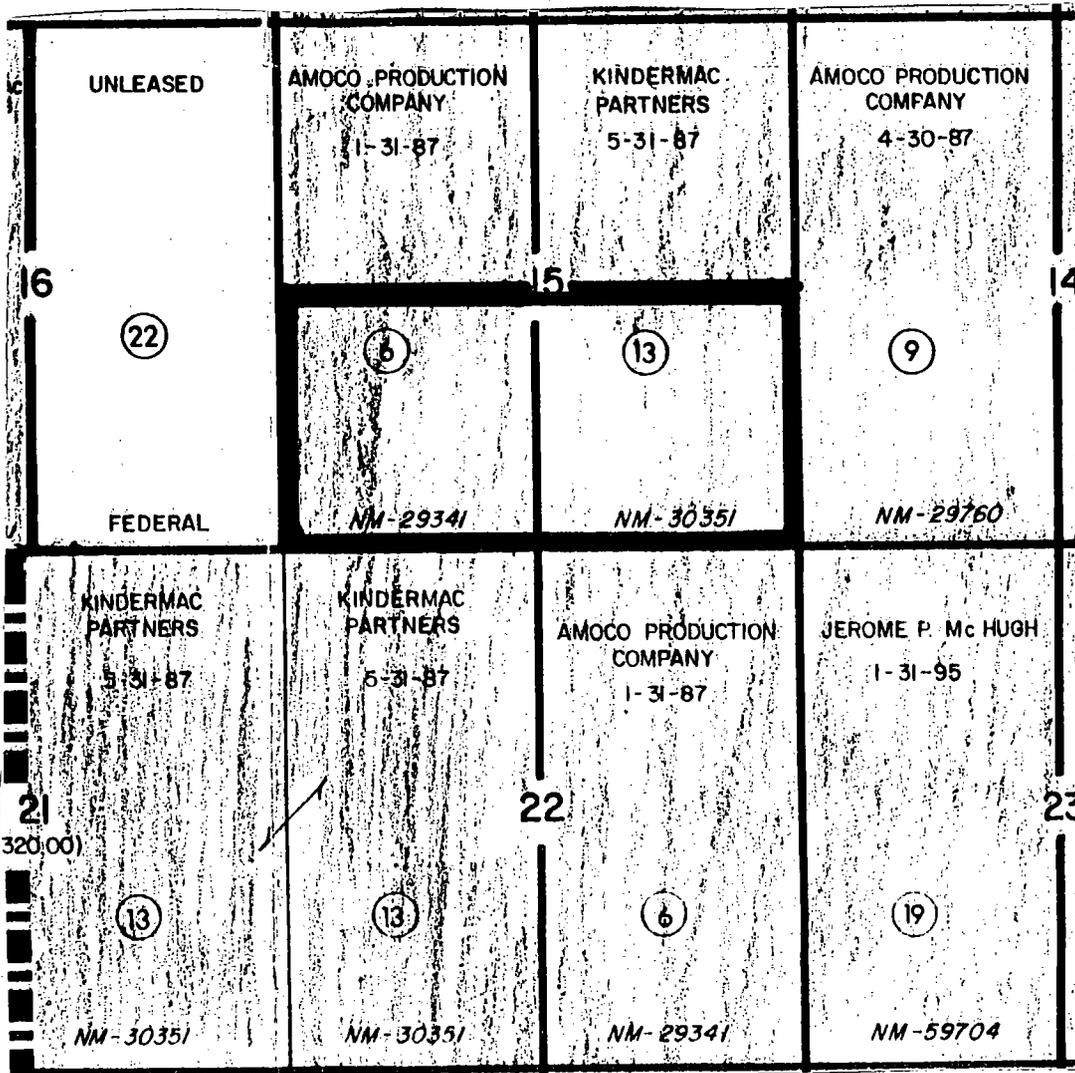
V. SECTION PLANE: N45°00"W

PROPOSAL P00261.1N2

NASSAU RESOURCES		
WELL: 15A - 16	RIO ARRIBA	SLOT: 4

LEASE PLAT

Township 32 North, Range 5 West, NMPM, Rio Arriba County, New Mexico



PARTY TO THE UNIT:
Amoco Production Co.

OPERATING AFFILIATES:
Jerome P. McHugh
Kindermac Partners

UNLEASED FEDERAL MINERALS:
T32N, R5W
Section 16: E/2

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling

July 25, 1989

New Mexico Oil Conservation Division
Attn: Michael Stogner
P O Box 2088
Santa Fe, New Mexico 87504

RE: Application for Administrative Approval of
Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Stogner:

Nassau Resources, Inc., hereby requests administrative approval to directionally drill the subject well as follows:

Proposed Surface Location:	200' FSL and 500' FEL
Proposed Bottom Hole Location:	1320' FSL and 1320' FEL (within a 50' radius)
True Vertical Depth:	Approx. 4000'
Measured Depth:	Approx. 4308'

The well is at a previously approved unorthodox location, (OCD Order R-8844), approximately 880' west of the NRI Carracas Unit 14 A #13. Due to archeological and topographic considerations the well cannot be located at a location more to the north and west, which will be a more desirable target, geologically.

This well is in Nassau's Carracas Unit. The E/2 of Section 16, T32N, R5W, is unleased federal minerals. Kindermac Partners and Jerome P. McHugh are operating affiliates with Nassau Resources, Inc. Although Amoco Production Co. is a party to the unit, they have also been notified.

Also attached are copies of the C-102 plat, a topographic map (showing both the surface and bottom hole locations) and a schematic of the well bore.

Please contact me immediately if anything further is required to complete this application.

Thank you,

Fran Perrin
Fran Perrin

xc: Ernie Busch, NMOCD
Amoco Production Co.
Jerome P. McHugh and
Kindermac Partners

Attachments

Main Office
Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111

All distances must be from the outer boundaries of the Section.

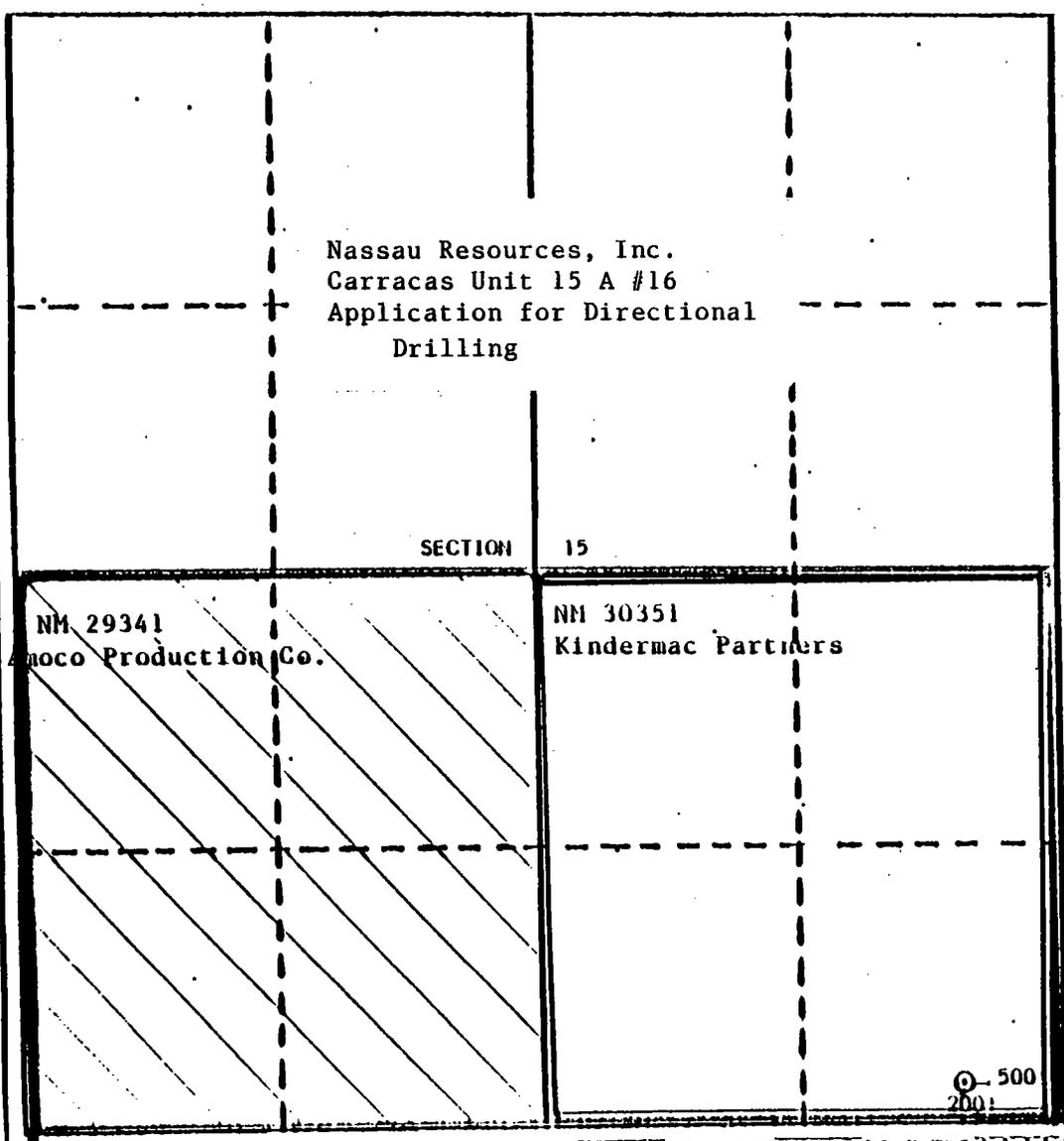
Operator Nassau Resources, Inc.		Lease Carracas Unit 15 A			Well No. 16
Unit Letter P	Section 15	Township 32 North	Range 5 West	County Rio Arriba	
Actual Footage Location of Well 200 feet from the South line and 500 feet from the East line					
Ground Level Elev. 7220	Producing Formation Fruitland		Pool Basin Fruitland Coal	Dedicated Acreage 320 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plot below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer is "yes," type of consolidation Carracas Unit - Unitization

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

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

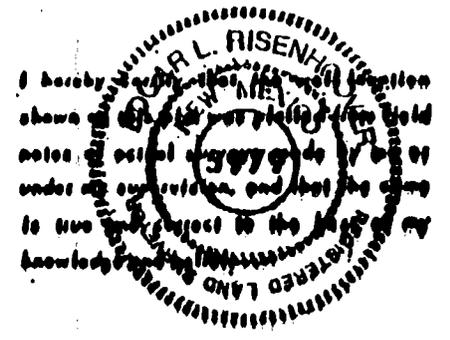
Fran Perrin

Name
Fran Perrin

Position
Admin. Asst.

Company
Nassau Resources, Inc.

Date
12/8/88



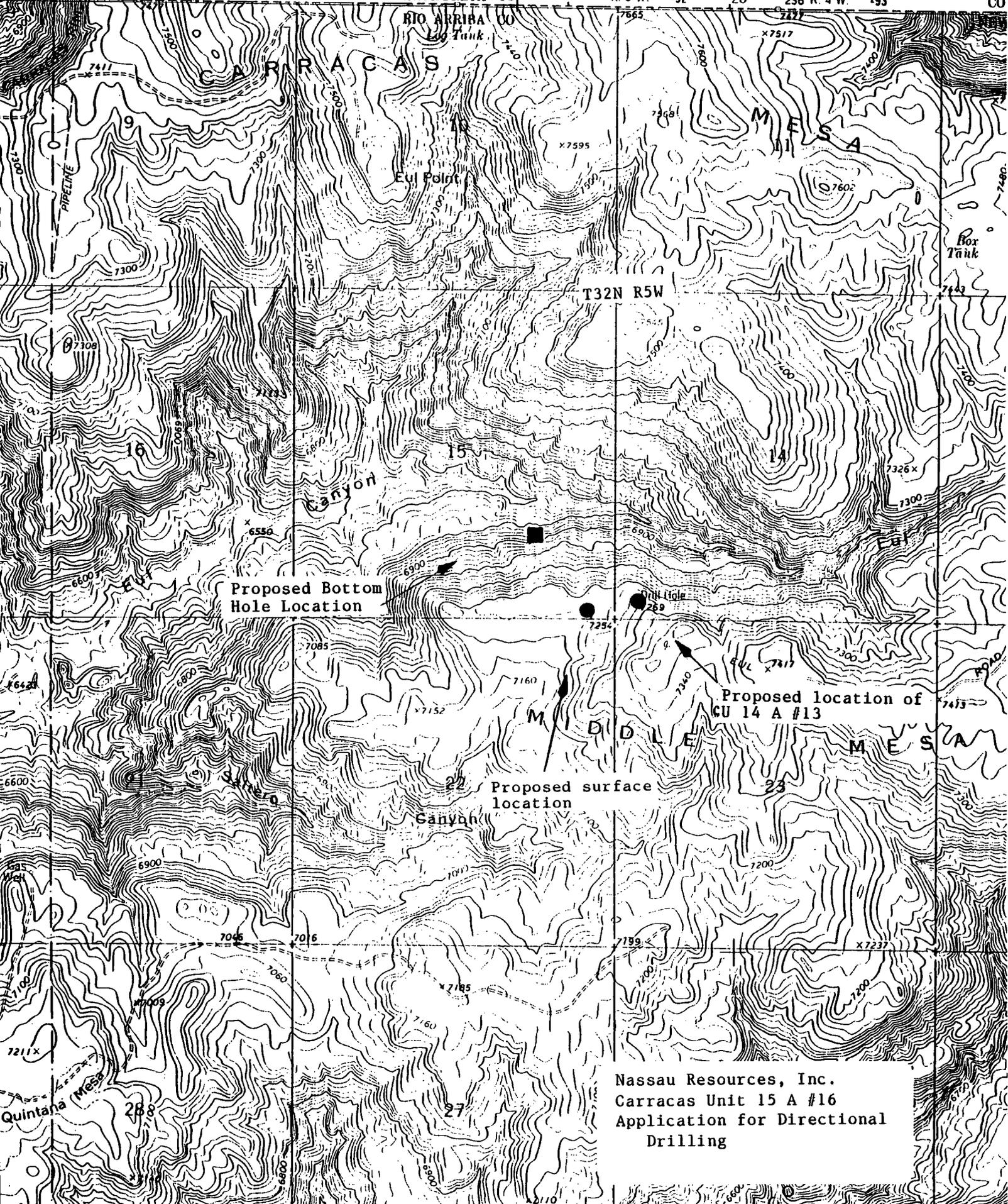
Date Suggested
August 25, 1988

Registered Professional Engineer
and/or Land Surveyor

Edgar L. Risenhoover
Certificate No. **5979**

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

230' 289000m E. 238 290 ARCHULETA CO R. 5 W. 292 20' 236 R. 4 W. 293 CO



Proposed Bottom Hole Location

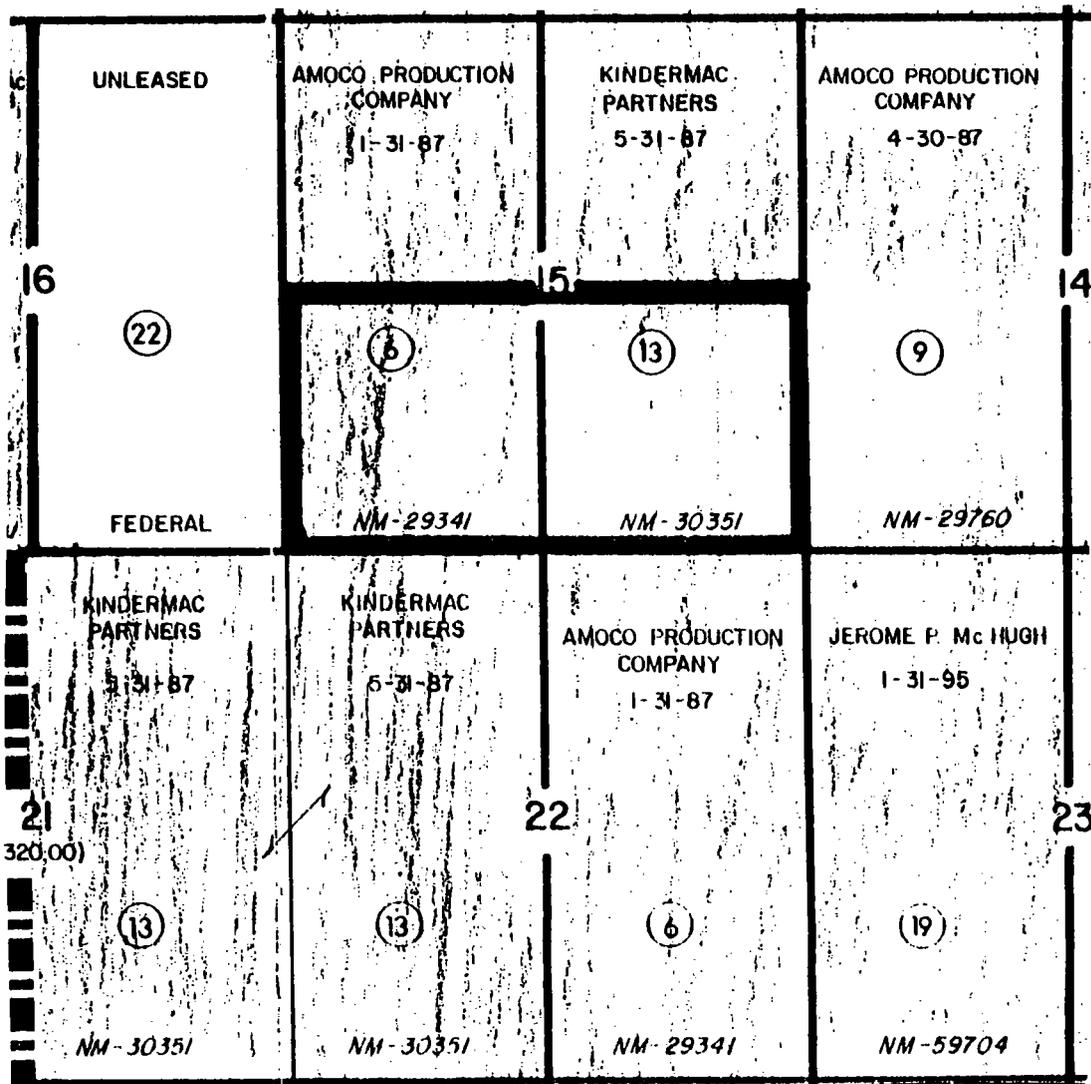
Proposed location of CU 14 A #13

Proposed surface location

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional Drilling

LEASE PLAT

Township 32 North, Range 5 West, NMPM, Rio Arriba County, New Mexico



PARTY TO THE UNIT:
Amoco Production Co.

OPERATING AFFILIATES:
Jerome P. McHugh
Kindermac Partners

UNLEASED FEDERAL MINERALS:
T32N, R5W
Section 16: E/2

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling

July 25, 1989

New Mexico Oil Conservation Division
Attn: Michael Stogner
P O Box 2088
Santa Fe, New Mexico 87504

RE: Application for Administrative Approval of
Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Stogner:

Nassau Resources, Inc., hereby requests administrative approval to directionally drill the subject well as follows:

Proposed Surface Location:	200' FSL and 500' FEL
Proposed Bottom Hole Location:	1320' FSL and 1320' FEL (within a 50' radius)
True Vertical Depth:	Approx. 4000'
Measured Depth:	Approx. 4308'

The well is at a previously approved unorthodox location, (OCD Order R-8844), approximately 880' west of the NRI Carracas Unit 14 A #13. Due to archeological and topographic considerations the well cannot be located at a location more to the north and west, which will be a more desirable target, geologically.

This well is in Nassau's Carracas Unit. The E/2 of Section 16, T32N, R5W, is unleased federal minerals. Kindermac Partners and Jerome P. McHugh are operating affiliates with Nassau Resources, Inc. Although Amoco Production Co. is a party to the unit, they have also been notified.

Also attached are copies of the C-102 plat, a topographic map (showing both the surface and bottom hole locations) and a schematic of the well bore.

Please contact me immediately if anything further is required to complete this application.

Thank you,

Fran Perrin
Fran Perrin

xc: Ernie Busch, NMOCD
Amoco Production Co.
Jerome P. McHugh and
Kindermac Partners

Attachments

Main Office
Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111

All distances must be from the outer boundaries of the Section.

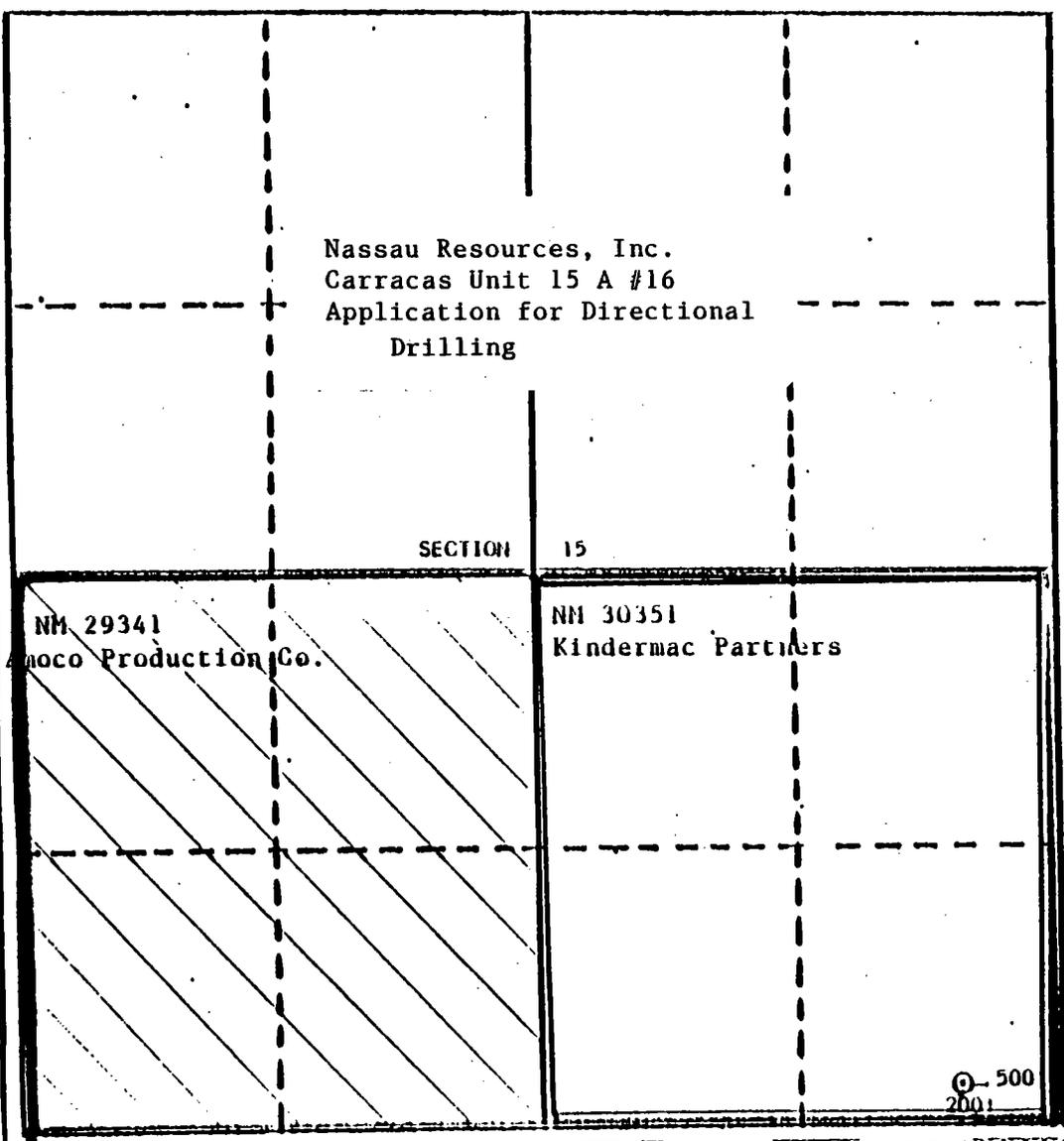
Operator Nassau Resources, Inc.		Lease Carracas Unit 15 A			Well No. 16
Well Letter P	Section 15	Township 32 North	Range 5 West	County Rio Arriba	
Actual Footage Location of Well: 200 feet from the South line and 500 feet from the East line					
Ground Level Elev. 7220	Producing Formation Fruitland	Pool Basin Fruitland Goal		Dedicated Acreage 320 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plot below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer to "yes," type of consolidation Carracas Unit - Unitization

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

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

Fran Perrin

Name: Fran Perrin
 Position: Admin. Asst.
 Company: Nassau Resources, Inc.
 Date: 12/8/88

I hereby certify that the information shown on this certificate is true and correct under my supervision, and that the same is true to the best of my knowledge and belief.

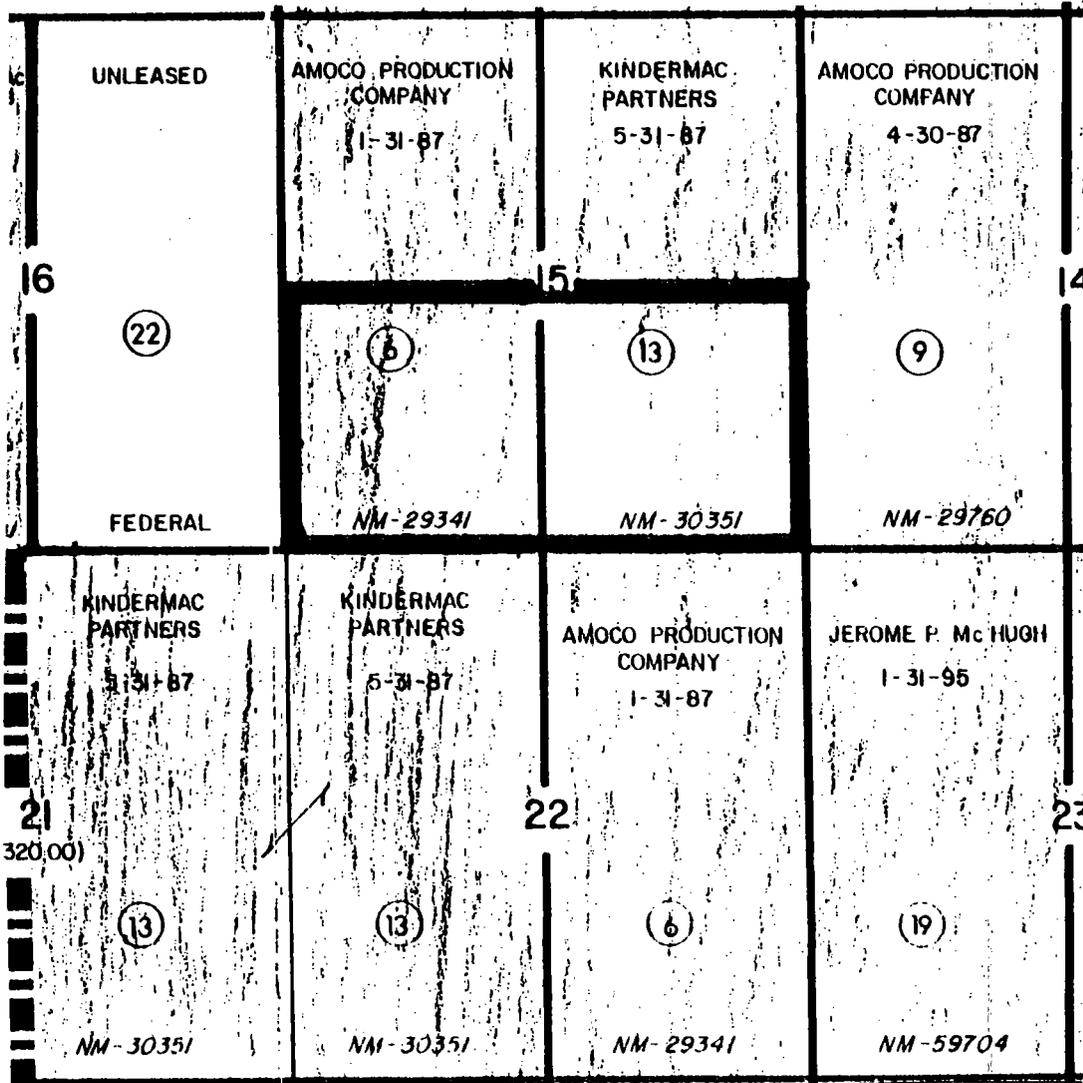
EDWARD L. RISENFELD
 REGISTERED LAND SURVEYOR

Date Suggested: August 25, 1988
 Registered Professional Engineer
 and/or Land Surveyor

Edward L. Risensfeld
 Certificate No. 5979

LEASE PLAT

Township 32 North, Range 5 West, NMPM, Rio Arriba County, New Mexico

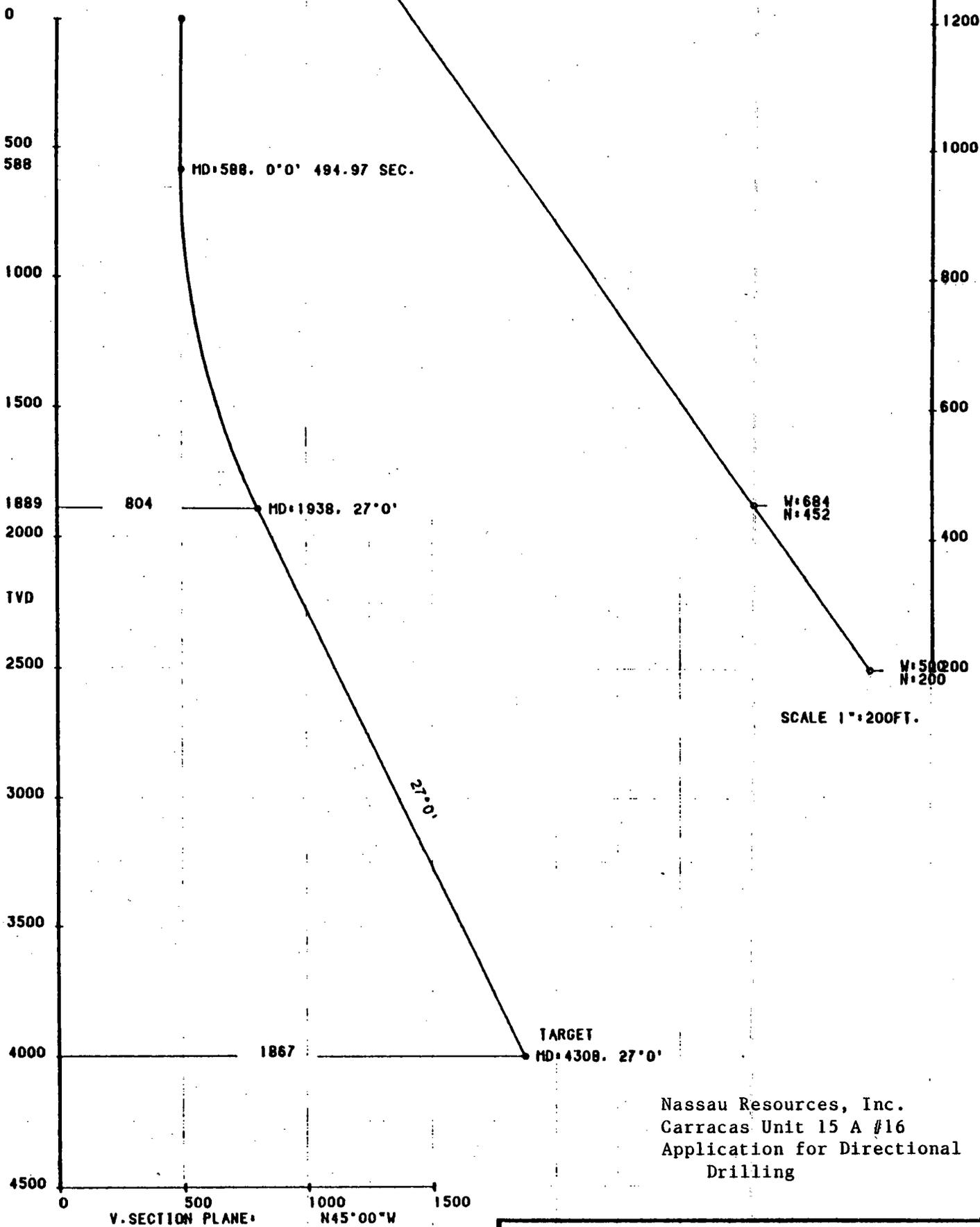


PARTY TO THE UNIT:
Amoco Production Co.

OPERATING AFFILIATES:
Jerome P. McHugh
Kindermac Partners

UNLEASED FEDERAL MINERALS:
T32N, R5W
Section 16: E/2

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling



Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Directional
Drilling

NASSAU RESOURCES		
RIO ARRIBA		
WELL: 15A - 16	SLOT: 4	

SCALE 1" = 500FT.

PROPOSAL: P00261.INZ

July 24, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Amoco Production Co.
Attn: J W Hawkins - Land Department, Proration Group
P O 800
Denver, CO 80201

RE: Application for Administrative Approval of
Directional Drilling
Nassau Resources, Inc., Carracas Unit 15 A #16
Section 15, T32N, R5W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Hawkins:

Enclosed is a copy of the subject Application for Directional Drilling.

Although Amoco Production Co. is a party to the Nassau Resources, Inc., Carracas Unit, if Amoco has no objection to this application, we request that you notify the Oil Conservation Division as soon as possible. Please send a waiver to the attention of Michael Stogner, New Mexico Oil Conservation Division, P O Box 2088, Santa Fe, New Mexico, 87504.

Please feel free to call if you have any questions.

Thank you,

Fran Perrin
Fran Perrin

Enclosure

xc: NMOCD, Santa Fe, NM

Facsimile Transmslslon

Addressee's Telecopier Phone
(505) 827-5741

Date 7/28

Page 1 of 2

To: Michael Stogner	Company: NMOC.D	Location: Santa Fe NM	Mail Code/Room
From: Bill Hawkins	Company: Amoco Prod. Co	Location: Denver CO	Mail Code/Room: 980
Initiated By	Approved By	<input type="checkbox"/> Call _____ for pickup. <input type="checkbox"/> Return to _____	

Route to Michael Stogner

157 8:16



Amoco Production Company

Denver Region
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303 300 8040

July 15, 1989

Ministry of Energy
New York, NY
Conservation Division
PO Box 119
Saratoga Springs, NY 12156

Phone: (518) 486-5111

Waiver of Objection to Mineral Resources, Inc. application to
discriminatorily drill Carracas Unit 15 "A" Well No. 16
Saratoga Springs, NY
Sic Arriba, Saratoga, NY

Amoco Production Company has no objection to the above
referenced application to discriminatorily drill Carracas Unit 15
discriminatorily drill Carracas Unit 15 Well No. 16 as
proposed.

Sincerely,

James D. McEugene, Vice President
PO Box 812
Paradise, NM 87439

J. G. Spittler - Bureaucrat



Amoco Production Company

Denver Region
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

July 28, 1989

RECEIVED

AUG 3 1989

Michael Stogner
New Mexico Oil Conservation Division
PO Box 2088
Santa Fe, NM 87504

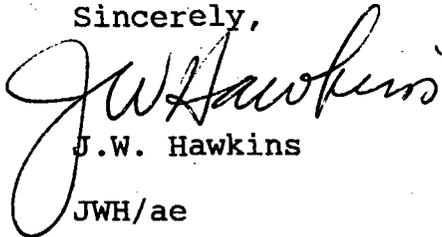
OIL CONSERVATION DIV.
SANTA FE

File: NWA-594-986.511

Waiver of Objection to Nassau Resources, Inc. application to
directionally drill Carracas Unit 15 "A" Well No. 16
Section 15-T32N-R5W
Rio Arriba County, New Mexico

Amoco Production Company has no objection to the above
referenced application by Nassau Resources, Inc. to
directionally drill the Carracas Unit 15 "A" Well No. 16 as
proposed.

Sincerely,



J.W. Hawkins

JWH/ae

cc: Fran Perrin
Jerome P. McHugh and Associates
PO Box 809
Farmington, NM 87499

J.L. Spitler - Building



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

GARREY CARRUTHERS
 GOVERNOR

1000 RIO BRAZOS ROAD
 AZTEC, NEW MEXICO 87410
 (505) 334-8178

Date: 8-1-89

Oil Conservation Division
 P.O. Box 2088
 Santa Fe, NM 87504-2088

RECEIVED

AUG 4 1989

OIL CONSERVATION DIV.
 SANTA FE

Re: Proposed MC _____
 Proposed DHC _____
 Proposed NSL _____
 Proposed SWD _____
 Proposed WFX _____
 Proposed PMX _____

Gentlemen:

I have examined the application dated 7-26-89
 for the Nissan Resources, Inc. Carracas Unit 15A#16
 Operator Lease & Well No.

R-15-32N-5W and my recommendations are as follows:
 Unit, S-T-R

Approve

Yours truly,

E. Busch



OIL CONSERVATION DIVISION
RECEIVED

'89 OCT 12 AM 8 30

Amoco Production Company

Denver Region
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

October 5, 1989

Michael Stogner
New Mexico Oil Conservation Division
PO Box 2088
Santa Fe, NM 87504

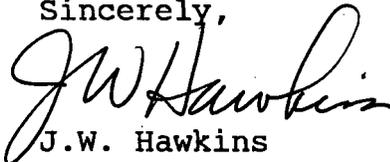
File: NWA-692-986.511

Dear Mr. Stogner:

Waiver of Objection to Nassau Resources, Inc.
Application for Horizontal Drilling
Carracas Unit 15A No. 16
Section 15-T32N-R5W
Rio Arriba County, New Mexico

Amoco Production Company has no objection to the above referenced application by Nassau Resources, Inc. for the Carracas Unit 15A No. 16 well as proposed.

Sincerely,


J.W. Hawkins

JWH/ae

cc: F. Perrin
Jerome P. McHugh and Associates
PO Box 809
Farmington, NM 87499

J.L. Spitler - Building



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

GARREY CARRUTHERS
 GOVERNOR

1000 RIO BRAZOS ROAD
 AZTEC, NEW MEXICO 87410
 (505) 334-6178

OIL CONSERVATION DIVISION
 RECEIVED
 89 OCT 18 AM 8 28

Date: 10-17-89

Oil Conservation Division
 P.O. Box 2088
 Santa Fe, NM 87504-2088

Re: Proposed MC _____
 Proposed DHC _____
 Proposed NSL _____
 Proposed SWD _____
 Proposed WFX _____
 Proposed PMX _____

Gentlemen: DD K

I have examined the application dated _____

for the TERENCE P. McHUGH CARRACIAS UNIT 15A #16
 Operator Lease & Well No.

P-15-32N-5W and my recommendations are as follows:
 Unit, S-T-R

Approve

Yours truly,

E. B. Bunch

MC HUGH

SEP 11 1989

OIL CONSERVATION DIV.
SANTA FE

(James Kazen) is submitting
additional
and amended
info.

Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111 FAX (303) 321-1563

7 September 1989

New Mexico Oil Conservation Division
Attn: Mr. Michael Stogner
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: Application for Administrative Approval of
Horizontal Drilling
Nassau Resources, Inc., Carracas Unit 15A-16
Section 15, T32N, R05W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Stogner:

Nassau Resources, Inc., hereby requests administrative approval to horizontally drill the subject well as follows:

Proposed surface location: 200' FSL, 500' FEL
Proposed bottomhole location: 1850' FSL, 2510' FEL
(see attached well plan)
True vertical depth: Approximately 4000'
Measured depth: Approximately 6191'
Completed interval will be within drilling window
as required by setback requirements of Rule 7.
(see attached well plan)

The surface location for Well 15A-16 is at a previously approved unorthodox and off pattern location per OCD Order R-8844. Due to archeological and topographic considerations, the well cannot be moved to a more geologically desirable surface location to the north and west.

Well 15A-16 will offset Nassau Resources, Inc. well 14A-13 by approximately 800' to the west. To increase well spacing, Nassau desires to complete the 15A-16 at a subsurface location northwest of the surface location. To evaluate the merit of a horizontal completion in the Fruitland Coal, Nassau requests approval to complete the 15A-16 as a horizontal well. The completed interval will be entirely within the drilling window allowed by normal spacing regulations, within the southeast quarter of Section 15. The well will be completed using slotted casing below an external casing packer which will allow the completion to be confined to the drilling window prescribed. The attached well schematic illustrates the proposed completion. The well will be drilled such that the horizontal section will be entirely within the drilling window.

Well 15A-16 is in Nassau's Carracas Unit. The south half of Section 16 is the well's spacing unit. The attached lease plat illustrates offset lease owners. All offset lease owners have been notified of this application. Kindermac Partners and Jerome P. McHugh are operating affiliates of Nassau Resources, Inc. Amoco Production Co. is a party to the Carracas Unit and have been notified of this application.

Copies of the C-120 Plat, a topographic map showing surface and subsurface locations and the required well plan and schematic are attached.

Please contact me immediately if any further data is necessary to complete this application.

Yours very truly,



Gary J. Johnson
Petroleum Engineer

xc w/ attachments:
Ernie Busch, NMOCD, Aztec
Amoco Production Co., Denver
Jerome P. McHugh
Kindermac Partners

MCHUGH

Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111 FAX (303) 321-1563

7 September 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Amoco Production Co.
P. O. Box 800
Denver, Colorado 80201

Attn: Mr. J. W. Hawkins - Land Dept., Proration Group

Re: Application for Administrative Approval of
Horizontal Drilling
Nassau Resources, Inc., Carracas Unit 15A-16
Section 15, T32N, R05W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Hawkins:

Per the attached Application, Nassau Resources, Inc. is requesting permission to drill and complete a horizontal well in Section 15, T32N, R05W, Rio Arriba County, New Mexico.

Amoco is a leaseholder of record in the area affected by this application. Amoco is also a party to the Carracas Unit.

If Amoco has no objection to this horizontal well, Nassau requests that Amoco notify the New Mexico Oil Conservation Division as soon as possible. Please send the waiver to the attention of Mr. Michael Stogner, New Mexico Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87504.

If you have any questions concerning this proposal, please contact this office.

Yours very truly,



Gary J. Johnson
Petroleum Engineer

Enclosure

xc: NMOCD, Santa Fe, NM
NMOCD, Aztec, NM

SMITH INTERNATIONAL

Division of Smith International, Inc.

Suite 1100-N
600 17th Street
Denver, Colorado 80202
Phone: (303) 623-8195 Rapicom: (303) 629-0909

August 8, 1989

NASSAU RESOURCES, INC.
650 South Cherry Street, Suite 1225
Denver, Colorado 80222

Attn: Gary Johnson

SMITH INTERNATIONAL appreciates the opportunity to present the following horizontal drilling proposal for your consideration. Included in this PRELIMINARY proposal is a well plan and plot, Bottom Hole Assembly recommendations, a torque/drag analysis, a hydraulic analysis, and a detailed cost estimate.

As indicated by the well plot, if a straight line is drawn from the surface to the northwest corner of the target that represents a total displacement of 2600 feet. However, only the last 1645 feet are within the legal target, or lease lines. For this reason we have gone from what would have been a medium radius well to what is now a long radius well. We recommend the well be kicked off at 3,045' TVD. Angle will be built at approximately 6 degs/100 feet to 90 degrees. The 1645 feet of horizontal extension is then carried to Total Measured Depth. By going with a long radius well design we have eliminated the need for a tangent section(s), and have eliminated a minimum of two trips.

Bottom Hole Assembly recommendations are outlined in Section II. A steerable assembly designed to get a minimum of 6 degs/100 feet in the sliding mode has been designed for the build section. Because of the inherent advantages of a steerable system which can be rotated, versus a medium-radius build motor which cannot, it is not necessary to design a tangent section into the well plan. A needed safety factor which allows for less than predicted build rates and unforeseen hole conditions is designed into the assembly, not the well plan. Also included is a steerable motor assembly designed to hold angle in the 90 degree horizontal section. These assemblies have been optimized by the DRILCO BHAP computer program. This computer model allows us to evaluate an assemblies response to changing: hole angle, dip angle, dip direction, hole gauge, weight-on-bit, stabilizer placement, stabilizer gauge, tool dimensions, etc... This flexibility translates into increased on-bottom drilling time with maximized penetration rates and fewer trips for BHA changes.

 **SMITH INTERNATIONAL, INC.**

NASSAU RESOURCES, INC.
August 8, 1989
Page 2.

Section III contains a worst case torque/drag analysis of the well at TD. Because of the shallow kickoff point, it will be necessary to run some drill collars in the vertical section of the hole. Slightly higher than expected coefficients of friction have been used for a safety margin. Our calculations do not include overpull at the bit. Your desired overpull should be added to the Maximum Pick-up Loads before examining the outputs. Torsional and Tensile Data Tables from the API RP7G Publication, "Recommended Practice for Drill Stem Design and Operating Limits" have been enclosed for your reference.

A hydraulics analysis is included in Section IV. We have selected the optimum volume parameters for our 6 1/2" motor. However, certain drilling conditions may be changed depending on your rig selection and its capacity. This hydraulic analysis, along with the torque/drag analysis, should assist you in selecting a rig capable of drilling your horizontal well.

SMITH INTERNATIONAL has the tools, experience, and engineering support required to drill your horizontal well as planned. Should you have any questions or need additional assistance, please contact us. We are looking forward to working with you on this project.

Sincerely,



Terry Kerr
Technical Sales Representative

TMK/tk

Enclosures

DATADRIL

NASSAU RESOURCES
WELL: 15A-13
SAN JUAN BASIN
HORIZONTAL PROSPECT

FILE NAME: NASSAUHOR1

***** RECORD OF PROPOSAL *****

RADIUS OF CURVATURE METHOD
PROPOSAL COMPUTED BY THE DATADRIL C.A.D.D.S. SYSTEM
VERTICAL SECTION PLANE: N 50.62 W

MEASURED DEPTH (FT)	COURSE LENGTH (FT)	INCL. ANGLE (DEG)	D R I F T DIRECTION (DEG)	TRUE VERTICAL DEPTH	T O T A L RECT COORDINATES (FT) (FT)		VERTICAL SECTION (FT)	DOGLEG SEVERITY (DEG/100')
0.00	0.00	0.00	N 50.62 W	0.00	0.00 N	0.00 E	0.00	0.00
START OF BUILD #1								
3045.07	3045.07	0.00	N 50.62 W	3045.07	0.00 N	0.00 E	0.00	0.00
3145.07	100.00	6.00	N 50.62 W	3144.89	3.32 N	4.04 W	5.23	6.00
3245.07	100.00	12.00	N 50.62 W	3243.61	13.24 N	16.13 W	20.87	6.00
3345.07	100.00	18.00	N 50.62 W	3340.16	29.65 N	36.12 W	46.74	6.00
3445.07	100.00	24.00	N 50.62 W	3433.47	52.38 N	63.81 W	82.56	6.00
3545.07	100.00	30.00	N 50.62 W	3522.53	81.17 N	98.89 W	127.94	6.00
3645.07	100.00	36.00	N 50.62 W	3606.36	115.72 N	140.96 W	182.38	6.00
3745.07	100.00	42.00	N 50.62 W	3684.04	155.63 N	189.58 W	245.28	6.00
3845.07	100.00	48.00	N 50.62 W	3754.72	200.47 N	244.21 W	315.96	6.00
3945.07	100.00	54.00	N 50.62 W	3817.62	249.76 N	304.25 W	393.64	6.00
4045.07	100.00	60.00	N 50.62 W	3872.06	302.95 N	369.05 W	477.46	6.00
4145.07	100.00	66.00	N 50.62 W	3917.44	359.46 N	437.88 W	566.52	6.00
4245.07	100.00	72.00	N 50.62 W	3953.26	418.66 N	510.01 W	659.84	6.00
4345.07	100.00	78.00	N 50.62 W	3979.13	479.92 N	584.63 W	756.39	6.00
4445.07	100.00	84.00	N 50.62 W	3994.77	542.56 N	660.94 W	855.11	6.00
END OF BUILD #1...START OF HOLD SECTION								
4545.07	100.00	90.00	N 50.62 W	4000.00	605.90 N	738.09 W	954.93	6.00
TARGET LOCATION: 4000 TVD								
6190.64	1645.57	90.00	N 50.62 W	4000.00	1650.00 N	2010.00 W	2600.50	0.00

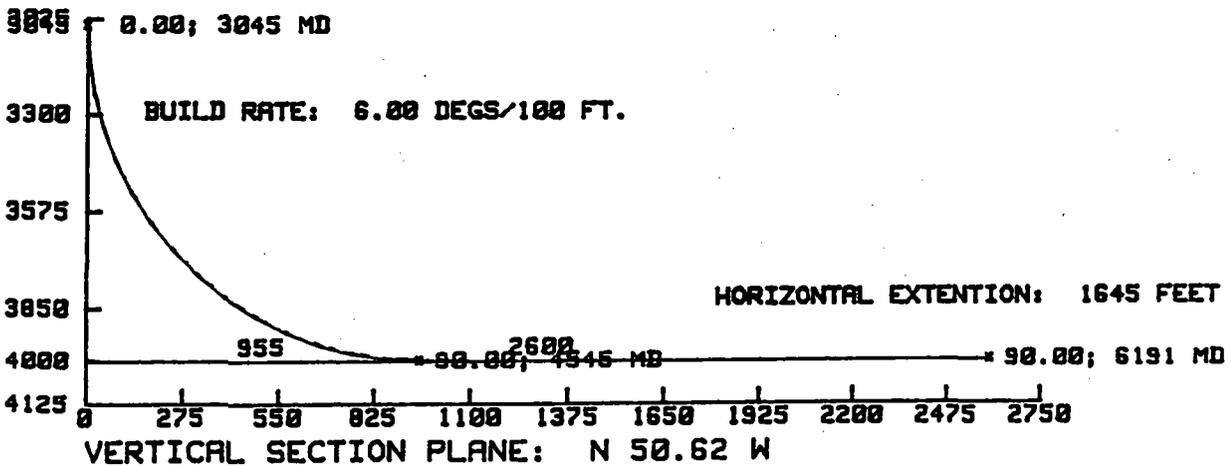
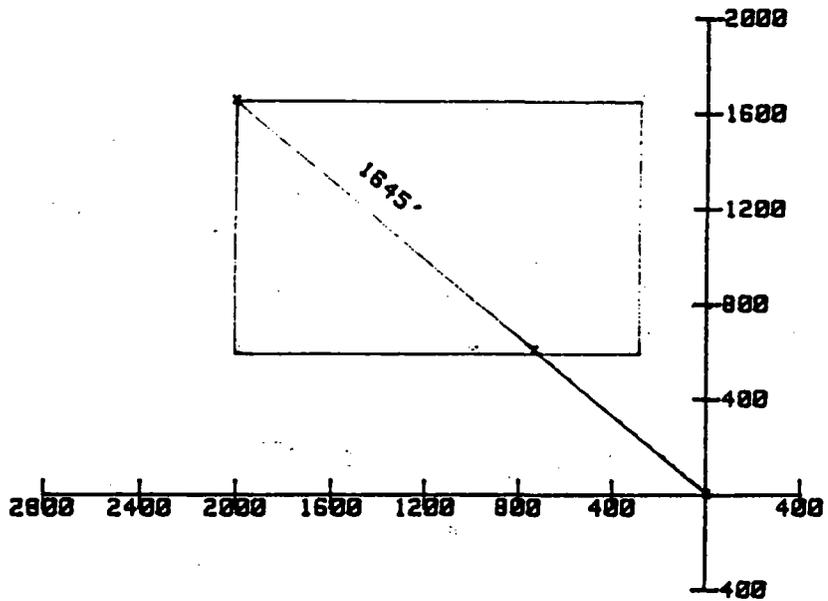
7 AUG 1989 @ 8:15

NASSAU RESOURCES
WELL: 15A-16
SAN JUAN BASIN
HORIZONTAL PROSPECT

DATA DRILL

VERTICAL PLAN
SCALE: 275 FEET/DIVISION

HORIZONTAL PLAN
SCALE: 400 FEET/DIVISION

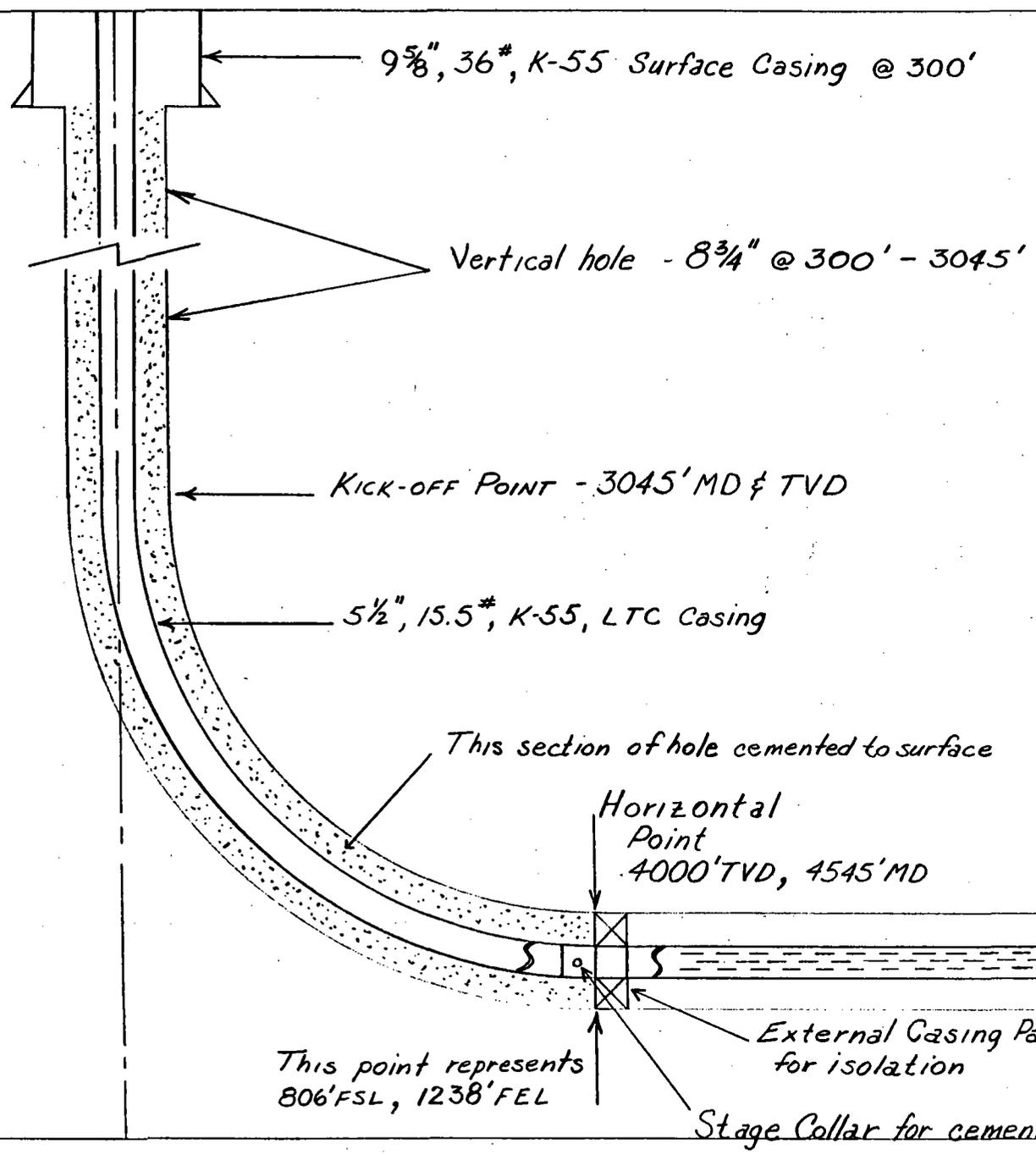


NASSAU RESOURCES, INC.

C.C.U. 15A-16

Horizontal Well Plan
 Schematic

— NOT TO SCALE —



9 5/8", 36#, K-55 Surface Casing @ 300'

Vertical hole - 8 3/4" @ 300' - 3045'

KICK-OFF POINT - 3045' MD & TVD

5 1/2", 15.5#, K-55, LTC Casing

This section of hole cemented to surface

Horizontal Point
 4000' TVD, 4545' MD

5 1/2", 15.5#, K-55, LTC
 Slotted Casing - to be
 centralized through this
 interval

Drillable
 Packoff
 Bushing

External Casing Packer
 for isolation

5 1/2" Guide
 Shoe

This point represents
 806' FSL, 1238' FEL

Stage Collar for cementing

NOTE: Tubing deleted from drawing
 for clarity. Well to be gas
 lifted from approximately
 3900' in curve section of
 well.

1 DE
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

1 file
SUBMIT IN TRIPLICATE*
(Other instructions
reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER		5. LEASE DESIGNATION AND SERIAL NO. NM 30351
2. NAME OF OPERATOR NASSAU RESOURCES, INC.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR P.O. Box 809, Farmington, N.M. 87499		7. UNIT AGREEMENT NAME Carracas Unit
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 200' FSL - 500' FEL		8. FARM OR LEASE NAME Carracas Unit 15 A
14. PERMIT NO.		9. WELL NO. #16
15. ELEVATIONS (Show whether DF, RT, GR, etc.) 7220' GL		10. FIELD AND POOL, OR WILDCAT Basin Fruitland Coal
		11. SEC., T., S., M., OR BLK. AND SURVEY OR AREA Sec. 15, T32N, R5W
		12. COUNTY OR PARISH Rio Arriba
		13. STATE NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) _____	
(Other) <u>Change dedicated acreage</u> <input checked="" type="checkbox"/>		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Per NMOCD Order #R-8768, the S/2 of Sec. 15, T32N, R5W, is hereby dedicated to this well.

A C-102 plat for the Fruitland Coal formation is attached.

18. I hereby certify that the foregoing is true and correct
SIGNED Fran Perrin TITLE Admin. Asst. DATE 12/8/88
Fran Perrin
(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

All distances must be from the outer boundaries of the Section.

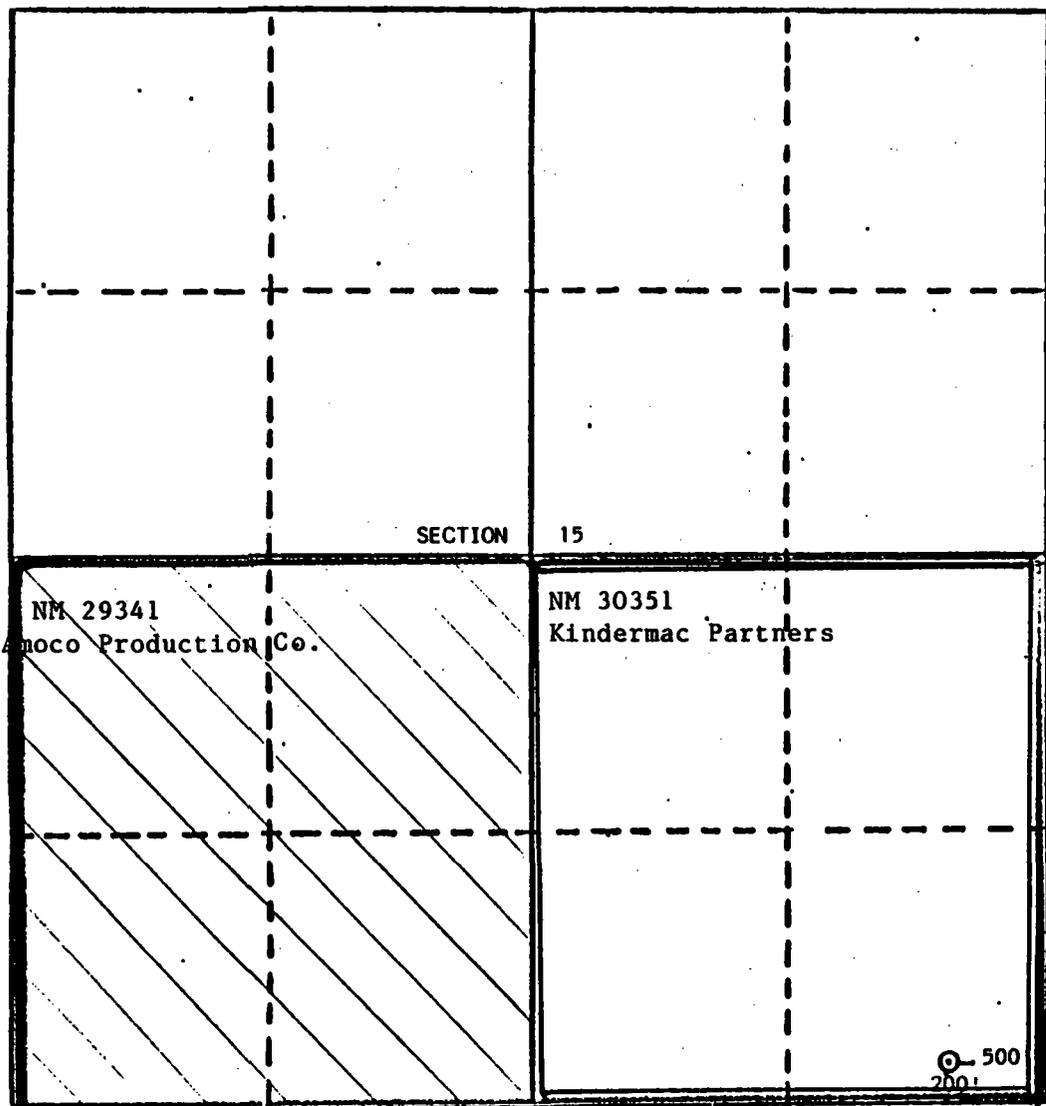
Operator Nassau Resources, Inc.		Lease Carracas Unit 15 A			Well No. 16
Unit Letter P	Section 15	Township 32 North	Range 5 West	County Rio Arriba	
Actual Footage Location of Well: 200 feet from the South line and 500 feet from the East line					
Ground Level Elev. 7220	Producing Formation Fruitland		Pool Basin Fruitland Coal		Dedicated Acreage 320 Acres

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

Yes No If answer is "yes," type of consolidation Carracas Unit - Unitization

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

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

Fran Perrin

Name
Fran Perrin

Position
Admin. Asst.

Company
Nassau Resources, Inc.

Date
12/8/88

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

Date Surveyed
August 25, 1988

Registered Professional Engineer
and/or Land Surveyor

Edgar L. Risenhoover

Certificate No. 5979



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

GARREY CARRUTHERS
 GOVERNOR

1000 RIO BRAZOS ROAD
 AZTEC, NEW MEXICO 87410
 (505) 334-6178

gom

RECEIVED
 JUN 1 - 1989

M-E-M-O-R-A-N-D-U-M (3-88-11)

TO: OPERATORS DRILLING FOR OIL AND GAS IN THE SAN JUAN BASIN OF NEW MEXICO

FROM: Frank T. Chavez, Supervisor District III

SUBJECT: Drill Cuttings Samples

DATE: May 26, 1988

The attached Application for Permit to Drill has been approved by this office.

As a condition of approval, you are required to submit 4 4" x 6" sample bags of drill cuttings from the Fruitland Coal formation and from the Menefee Coal interval if it is encountered and if drilling conditions permit. If a geolograph is used, a copy of that recording from 50 feet above to 50 feet below the coal intervals will be submitted. Include the following information:

- Operator name
- Well name and number
- Footage location, Section, Township and Range
- Date taken
- The name and address of the person in your company who is to receive a copy of the analysis.

Submit samples, information, and geolograph to the following address:

Mr. James Fassett
 U.S. Geological Survey
 P.O. Box 25046, MS 939 DFC
 Lakewood, CO 80225

Coal analyses gathered in the San Juan Basin will be added to a data base available from the USGS in periodic reports.

This information will be used to evaluate coals and coal gas potentials in the San Juan Basin.

Jercino P. McHugh
 Farmington, N.M.

dj

MAY 30 1989

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
MAY 22 1988

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL DEEPEN PLUG BACK
88 SEP 21 AM 8:49

b. TYPE OF WELL
OIL WELL GAS WELL OTHER

SINGLE MINOR RESOURCE AREA
FARMINGTON, NEW MEXICO

2. NAME OF OPERATOR
NASSAU RESOURCES, INC.

3. ADDRESS OF OPERATOR
P.O. Box 809, Farmington, N.M. 87499

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface
200' FSL - 500' FEL
At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE
± 33 miles N. of Gobernador, N.M.

18. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)
200'

16. NO. OF ACRES IN LEASE
1,280.0

17. NO. OF ACRES ASSIGNED TO THIS WELL
S/320 160.0

18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
850'

19. PROPOSED DEPTH
3990'

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
7220' GL; 7232' KB
DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED

22. APPROX. DATE WORK WILL START
10/15/88

23. "GENERAL REQUIREMENTS" PROPOSED CASING AND CEMENTING PROGRAM
procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3185.4.

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	9-5/8"	36#	250'	150 cu.ft. circ. to surface.
7-7/8"	5-1/2"	15.5#	3990'	869 cu.ft. circ. to surface.

Plan to drill with spud mud to set 250' of surface casing. Will then drill with water and gel-chem. mud to test the Fruitland coal zone at ± 3990'. Will run DIL-GR-SP and FDC-CNL-GR Caliper logs. If well appears productive, will set 5-1/2" casing at TD, cement in 1 stage, selectively perforate, frac, clean out after frac and complete with 2-7/8" tubing.

RECEIVED

MAY 22 1988

OIL CON. DIV
DIST. 3

GAS IS NOT DEDICATED.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

SIGNED [Signature] TITLE Field Supt. DATE 9/20/88
(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____
APPROVED BY _____ TITLE _____ DATE AS AMENDED
CONDITIONS OF APPROVAL, IF ANY:

R-8844 (25 L)
②

NMOCC

*See Instructions On Reverse Side

MAY 18 1989
[Signature]
AREA MANAGER



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

November 7, 1988

Nassau Resources, Inc.
c/o Jerome P. McHugh & Associates
P.O. Box 809
Farmington, NM 87499-0809

Attention: James S. Hazen,

Administrative Order NSL-2598

Dear Mr. Hazen:

Reference is made to your application of October 11, 1988 for a non-standard gas well location for your Carracas Unit 15-A Well No. 16 to be located 200 feet from the South line and 500 feet from the East line (Unit P) of Section 15, Township 32 North, Range 5 West, NMPM, to test the Fruitland (Sand) formation, Rio Arriba County, New Mexico. The SE/4 of said Section 15 shall be dedicated to the well forming a standard 160-acre gas spacing and proration unit.

By the authority granted me under the provisions of General Rule 104 F(I), the above-described unorthodox gas well location is hereby approved.

Sincerely,

William J. LeMay
Director

WJL/MES/ag

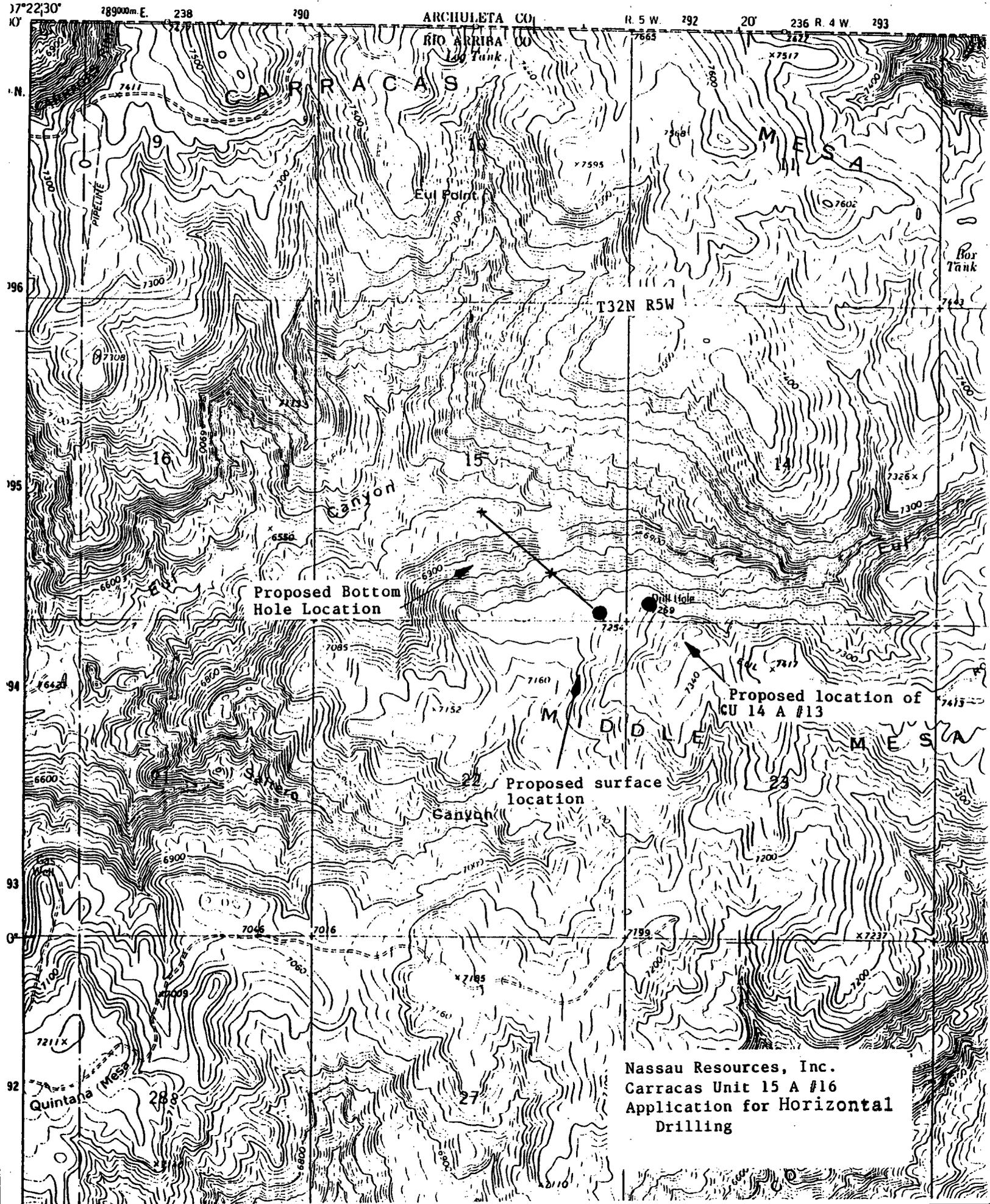
cc: Oil Conservation Division - Aztec
New Mexico Oil & Gas Engineering Committee - Hobbs
US Bureau of Land Management - Farmington

Jerome P. McHugh
Farmington, N.M.

NOV 13 1988

RECEIVED

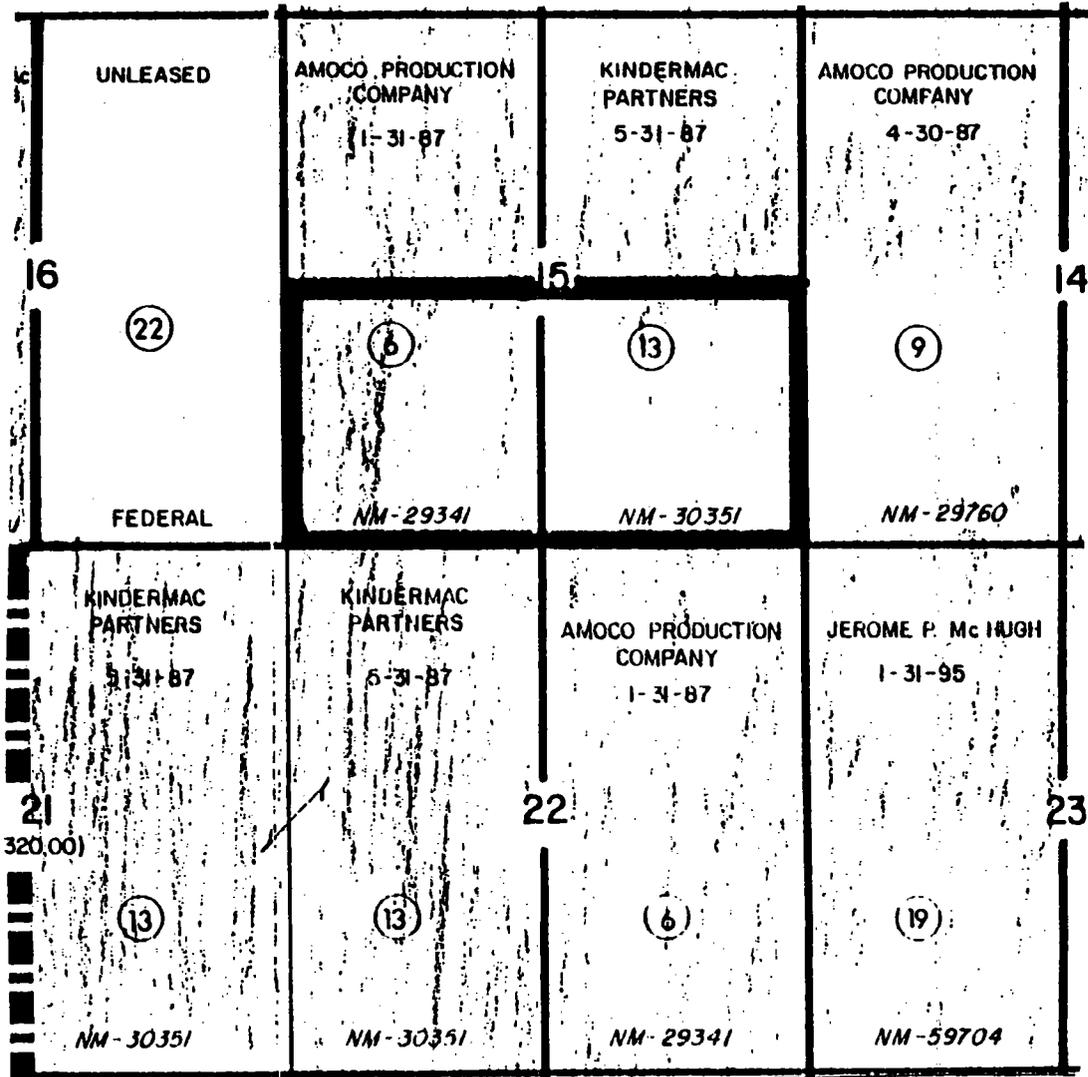
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Horizontal
Drilling

LEASE PLAT

Township 32 North, Range 5 West, NMPM, Rio Arriba County, New Mexico



PARTY TO THE UNIT:
Amoco Production Co.

OPERATING AFFILIATES:
Jerome P. McHugh
Kindermac Partners

UNLEASED FEDERAL MINERALS:
T32N, R5W
Section 16: E/2

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Horizontal
Drilling

MCHUGH

Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111 FAX (303) 321-1563

COPY

7 September 1989

New Mexico Oil Conservation Division
Attn: Mr. Michael Stogner
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: Application for Administrative Approval of
Horizontal Drilling
Nassau Resources, Inc., Carracas Unit 15A-16
Section 15, T32N, R05W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Stogner:

Nassau Resources, Inc., hereby requests administrative approval to horizontally drill the subject well as follows:

Proposed surface location: 200' FSL, 500' FEL
Proposed bottomhole location: 1850' FSL, 2510' FEL
(see attached well plan)
True vertical depth: Approximately 4000'
Measured depth: Approximately 6191'
Completed interval will be within drilling window
as required by setback requirements of Rule 7.
(see attached well plan)

The surface location for Well 15A-16 is at a previously approved unorthodox and off pattern location per OCD Order R-8844. Due to archeological and topographic considerations, the well cannot be moved to a more geologically desirable surface location to the north and west.

Well 15A-16 will offset Nassau Resources, Inc. well 14A-13 by approximately 800' to the west. To increase well spacing, Nassau desires to complete the 15A-16 at a subsurface location northwest of the surface location. To evaluate the merit of a horizontal completion in the Fruitland Coal, Nassau requests approval to complete the 15A-16 as a horizontal well. The completed interval will be entirely within the drilling window allowed by normal spacing regulations, within the southeast quarter of Section 15. The well will be completed using slotted casing below an external casing packer which will allow the completion to be confined to the drilling window prescribed. The attached well schematic illustrates the proposed completion. The well will be drilled such that the horizontal section will be entirely within the drilling window.

Well 15A-16 is in Nassau's Carracas Unit. The south half of Section 16 is the well's spacing unit. The attached lease plat illustrates offset lease owners. All offset lease owners have been notified of this application. Kindermac Partners and Jerome P. McHugh are operating affiliates of Nassau Resources, Inc. Amoco Production Co. is a party to the Carracas Unit and have been notified of this application.

Copies of the C-120 Plat, a topographic map showing surface and subsurface locations and the required well plan and schematic are attached.

Please contact me immediately if any further data is necessary to complete this application.

Yours very truly,



Gary J. Johnson
Petroleum Engineer

xc w/ attachments:
Ernie Busch, NMOCD, Aztec
Amoco Production Co., Denver
Jerome P. McHugh
Kindermac Partners

M^CHUGH

Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111 FAX (303) 321-1563

7 September 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Amoco Production Co.
P. O. Box 800
Denver, Colorado 80201
Attn: Mr. J. W. Hawkins - Land Dept., Proration Group

Re: Application for Administrative Approval of
Horizontal Drilling
Nassau Resources, Inc., Carracas Unit 15A-16
Section 15, T32N, R05W, NMPM
Rio Arriba County, New Mexico

Dear Mr. Hawkins:

Per the attached Application, Nassau Resources, Inc. is requesting permission to drill and complete a horizontal well in Section 15, T32N, R05W, Rio Arriba County, New Mexico.

Amoco is a leaseholder of record in the area affected by this application. Amoco is also a party to the Carracas Unit.

If Amoco has no objection to this horizontal well, Nassau requests that Amoco notify the New Mexico Oil Conservation Division as soon as possible. Please send the waiver to the attention of Mr. Michael Stogner, New Mexico Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87504.

If you have any questions concerning this proposal, please contact this office.

Yours very truly,



Gary J. Johnson
Petroleum Engineer

Enclosure

xc: NMOCD, Santa Fe, NM
NMOCD, Aztec, NM

SMITH INTERNATIONAL

Division of Smith International, Inc.

Suite 1100-N
600 17th Street
Denver, Colorado 80202
Phone: (303) 623-8195 Rapicom: (303) 629-0909

August 8, 1989

NASSAU RESOURCES, INC.
650 South Cherry Street, Suite 1225
Denver, Colorado 80222

Attn: Gary Johnson

SMITH INTERNATIONAL appreciates the opportunity to present the following horizontal drilling proposal for your consideration. Included in this PRELIMINARY proposal is a well plan and plot, Bottom Hole Assembly recommendations, a torque/drag analysis, a hydraulic analysis, and a detailed cost estimate.

As indicated by the well plot, if a straight line is drawn from the surface to the northwest corner of the target that represents a total displacement of 2600 feet. However, only the last 1645 feet are within the legal target, or lease lines. For this reason we have gone from what would have been a medium radius well to what is now a long radius well. We recommend the well be kicked off at 3,045' TVD. Angle will be built at approximately 6 degs/100 feet to 90 degrees. The 1645 feet of horizontal extension is then carried to Total Measured Depth. By going with a long radius well design we have eliminated the need for a tangent section(s), and have eliminated a minimum of two trips.

Bottom Hole Assembly recommendations are outlined in Section II. A steerable assembly designed to get a minimum of 6 degs/100 feet in the sliding mode has been designed for the build section. Because of the inherent advantages of a steerable system which can be rotated, versus a medium-radius build motor which cannot, it is not necessary to design a tangent section into the well plan. A needed safety factor which allows for less than predicted build rates and unforeseen hole conditions is designed into the assembly, not the well plan. Also included is a steerable motor assembly designed to hold angle in the 90 degree horizontal section. These assemblies have been optimized by the DRILCO BHAP computer program. This computer model allows us to evaluate an assemblies response to changing: hole angle, dip angle, dip direction, hole gauge, weight-on-bit, stabilizer placement, stabilizer gauge, tool dimensions, etc... This flexibility translates into increased on-bottom drilling time with maximized penetration rates and fewer trips for BHA changes.

 **SMITH INTERNATIONAL, INC.**

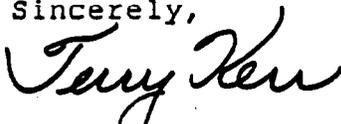
NASSAU RESOURCES, INC.
August 8, 1989
Page 2.

Section III contains a worst case torque/drag analysis of the well at TD. Because of the shallow kickoff point, it will be necessary to run some drill collars in the vertical section of the hole. Slightly higher than expected coefficients of friction have been used for a safety margin. Our calculations do not include overpull at the bit. Your desired overpull should be added to the Maximum Pick-up Loads before examining the outputs. Torsional and Tensile Data Tables from the API RP7G Publication, "Recommended Practice for Drill Stem Design and Operating Limits" have been enclosed for your reference.

A hydraulics analysis is included in Section IV. We have selected the optimum volume parameters for our 6 1/2" motor. However, certain drilling conditions may be changed depending on your rig selection and its capacity. This hydraulic analysis, along with the torque/drag analysis, should assist you in selecting a rig capable of drilling your horizontal well.

SMITH INTERNATIONAL has the tools, experience, and engineering support required to drill your horizontal well as planned. Should you have any questions or need additional assistance, please contact us. We are looking forward to working with you on this project.

Sincerely,



Terry Kerr
Technical Sales Representative

TMK/tk

Enclosures

DATADRIL

NASSAU RESOURCES
WELL: 15A-16
SAN JUAN BASIN
HORIZONTAL PROSPECT

FILE NAME: NASSAUHORI

***** RECORD OF PROPOSAL *****

RADIUS OF CURVATURE METHOD
PROPOSAL COMPUTED BY THE DATADRIL C.A.D.D.S. SYSTEM
VERTICAL SECTION PLANE: N 50.62 W

MEASURED DEPTH (FT)	COURSE LENGTH (FT)	INCL. ANGLE (DEG)	D R I F T DIRECTION (DEG)	TRUE VERTICAL DEPTH	T O T A L RECT COORDINATES (FT) (FT)		VERTICAL SECTION (FT)	DOGLES SEVERITY (DEG/100')
0.00	0.00	0.00	N 50.62 W	0.00	0.00 N	0.00 E	0.00	0.00
START OF BUILD #1								
3045.07	3045.07	0.00	N 50.62 W	3045.07	0.00 N	0.00 E	0.00	0.00
3145.07	100.00	6.00	N 50.62 W	3144.89	3.32 N	4.04 W	5.23	6.00
3245.07	100.00	12.00	N 50.62 W	3243.61	13.24 N	16.13 W	20.87	6.00
3345.07	100.00	18.00	N 50.62 W	3340.16	29.65 N	36.12 W	46.74	6.00
3445.07	100.00	24.00	N 50.62 W	3433.47	52.38 N	63.81 W	82.56	6.00
3545.07	100.00	30.00	N 50.62 W	3522.53	81.17 N	98.89 W	127.94	6.00
3645.07	100.00	36.00	N 50.62 W	3606.36	115.72 N	140.96 W	182.38	6.00
3745.07	100.00	42.00	N 50.62 W	3684.04	155.63 N	189.58 W	245.28	6.00
3845.07	100.00	48.00	N 50.62 W	3754.72	200.47 N	244.21 W	315.96	6.00
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4445.07	100.00	84.00	N 50.62 W	3994.77	542.56 N	660.94 W	855.11	6.00
END OF BUILD #1...START OF HOLD SECTION								
4545.07	100.00	90.00	N 50.62 W	4000.00	605.90 N	738.09 W	954.93	6.00
TARGET LOCATION: 4000 TVD								
6190.64	1645.57	90.00	N 50.62 W	4000.00	1650.00 N	2010.00 W	2600.50	0.00

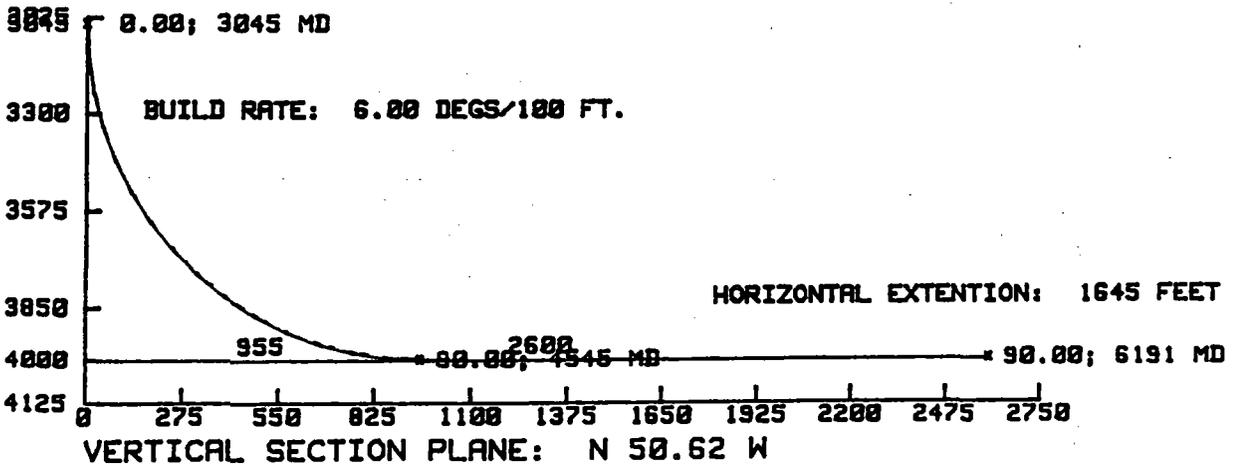
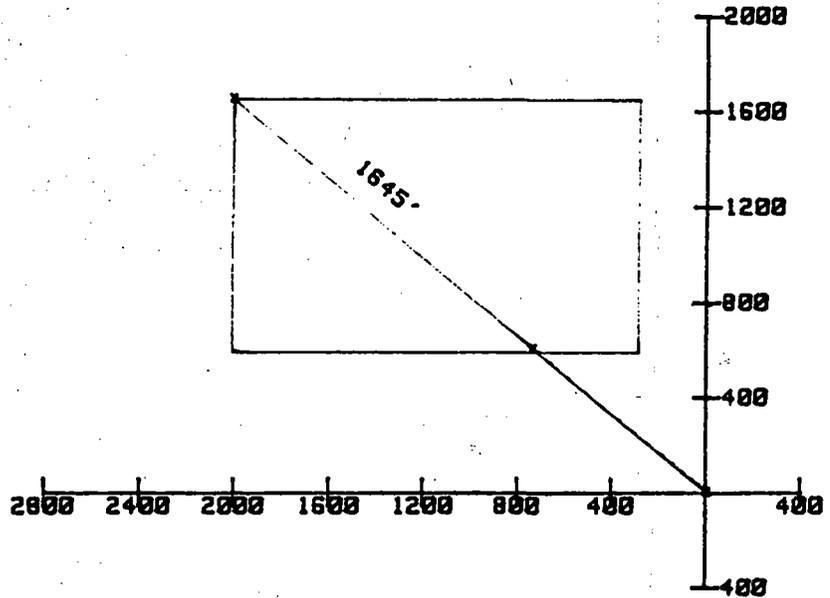
7 AUG 1989 @ 8:15

NASSAU RESOURCES
WELL: 15A-16
SAN JUAN BASIN
HORIZONTAL PROSPECT

DATADRIL

VERTICAL PLAN
SCALE: 275 FEET/DIVISION

HORIZONTAL PLAN
SCALE: 400 FEET/DIVISION



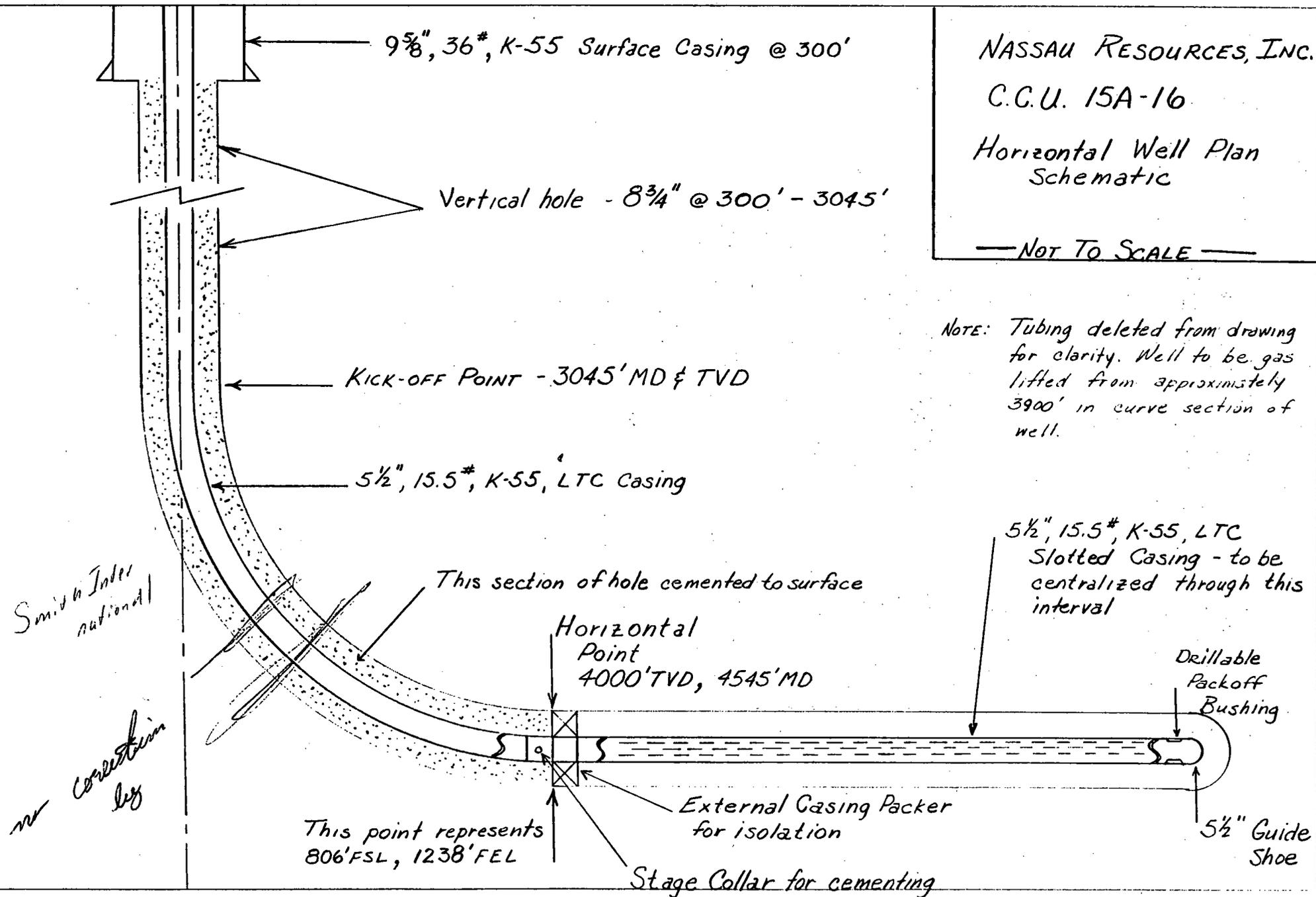


42.381 50 SHEETS 5 SQUARE
 42.382 100 SHEETS 5 SQUARE
 42.389 200 SHEETS 5 SQUARE

NASSAU RESOURCES, INC.
 C.G.U. 15A-16
 Horizontal Well Plan
 Schematic

— NOT TO SCALE —

NOTE: Tubing deleted from drawing for clarity. Well to be gas lifted from approximately 3900' in curve section of well.



9 5/8", 36#, K-55 Surface Casing @ 300'

Vertical hole - 8 3/4" @ 300' - 3045'

KICK-OFF POINT - 3045' MD & TVD

5 1/2", 15.5#, K-55, LTC Casing

Smith & Inter national

no correction by

This section of hole cemented to surface

Horizontal Point
 4000' TVD, 4545' MD

5 1/2", 15.5#, K-55, LTC Slotted Casing - to be centralized through this interval

Drillable Packoff Bushing

External Casing Packer for isolation

5 1/2" Guide Shoe

This point represents 806' FSL, 1238' FEL

Stage Collar for cementing

1 DE
 UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT

1 file
 SUBMIT IN TRIPLICATE*
 (Other instructions reverse side)

Form approved.
 Budget Bureau No. 1004-0135
 Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. NM 30351
2. NAME OF OPERATOR NASSAU RESOURCES, INC.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR P.O. Box 809, Farmington, N.M. 87499		7. UNIT AGREEMENT NAME Carracas Unit
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 200' FSL - 500' FEL		8. FARM OR LEASE NAME Carracas Unit 15 A
14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.) 7220' GL	9. WELL NO. #16
		10. FIELD AND POOL, OR WILDCAT Basin Fruitland Coal
		11. SEC., T., R., M., OR BLE. AND SURVEY OR AREA Sec. 15, T32N, R5W
		12. COUNTY OR PARISH Rio Arriba
		13. STATE NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PLUG OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <input type="checkbox"/>	
(Other) Change dedicated acreage <input checked="" type="checkbox"/>		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Per NMOCD Order #R-8768, the S/2 of Sec. 15, T32N, R5W, is hereby dedicated to this well.

A C-102 plat for the Fruitland Coal formation is attached.

18. I hereby certify that the foregoing is true and correct

SIGNED Fran Perrin TITLE Admin. Asst. DATE 12/8/88
 (This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
 CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

All distances must be from the outer boundaries of the Section.

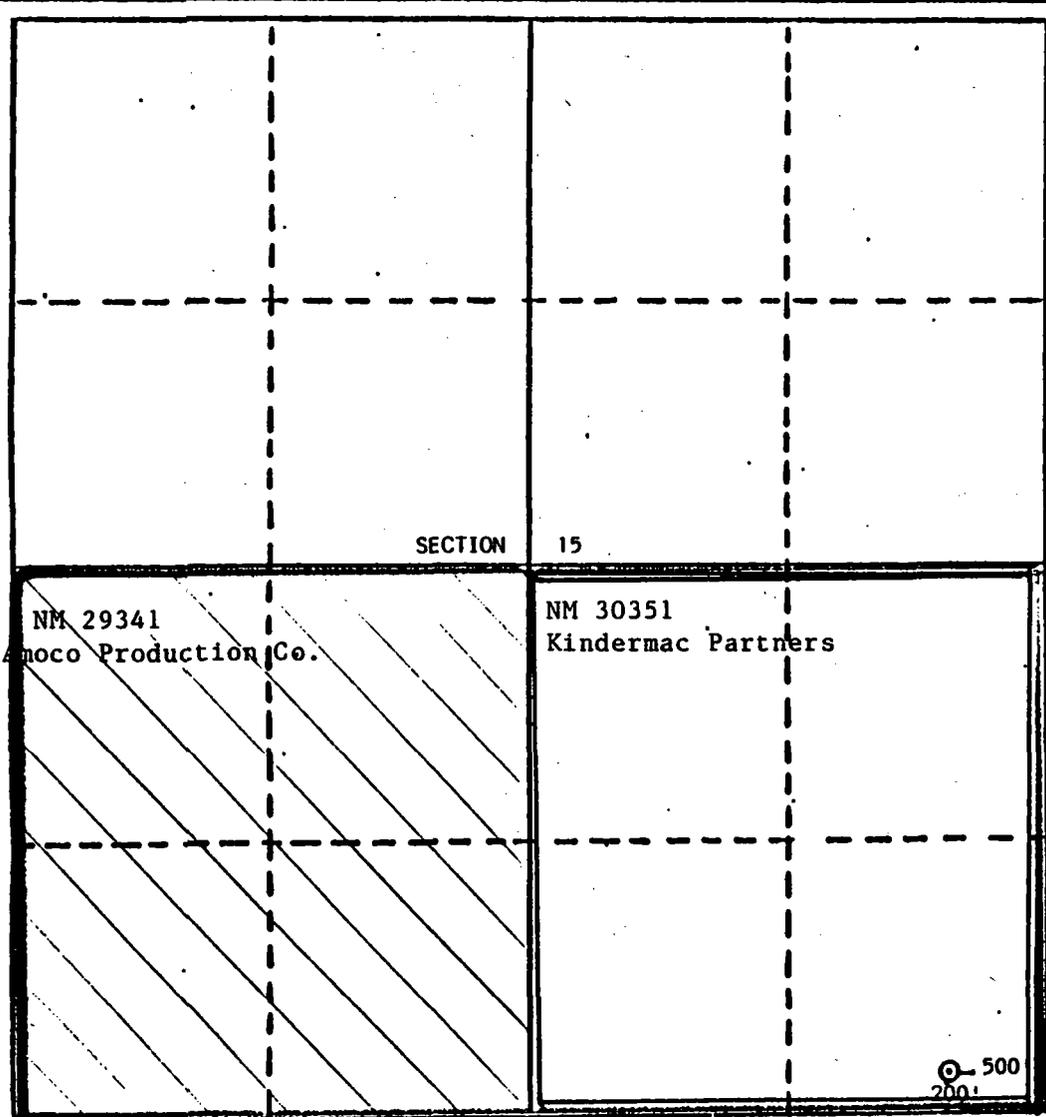
Operator Nassau Resources, Inc.		Lease Carracas Unit 15 A			Well No. 16
Unit Letter P	Section 15	Township 32 North	Range 5 West	County Rio Arriba	
Actual Footage Location of Well: 200 feet from the South line and 500 feet from the East line					
Ground Level Elev. 7220	Producing Formation Fruitland	Pool Basin Fruitland Coal		Dedicated Acreage 320 Acres	

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

Yes No If answer is "yes," type of consolidation Carracas Unit - Unitization

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

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

Fran Perrin

Name
Fran Perrin
Position
Admin. Asst.
Company
Nassau Resources, Inc.
Date
12/8/88

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

Date Surveyed
August 25, 1988
Registered Professional Engineer and/or Land Surveyor

Edgar L. Risenhoover
Certificate No. 5979
Edgar L. Risenhoover, P.E.



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

GARREY CARRUTHERS
 GOVERNOR

1000 RIO BRAZOS ROAD
 AZTEC, NEW MEXICO 87410
 (505) 334-6178

SDM

RECEIVED
 JUN 1 - 1989

M-E-M-O-R-A-N-D-U-M (3-88-11)

TO: OPERATORS DRILLING FOR OIL AND GAS IN THE SAN JUAN BASIN OF NEW MEXICO

FROM: Frank T. Chavez, Supervisor District III

SUBJECT: Drill Cuttings Samples

DATE: May 26, 1988

The attached Application for Permit to Drill has been approved by this office.

As a condition of approval, you are required to submit 4 4" x 6" sample bags of drill cuttings from the Fruitland Coal formation and from the Menefee Coal interval if it is encountered and if drilling conditions permit. If a geologist is used, a copy of that recording from 50 feet above to 50 feet below the coal intervals will be submitted. Include the following information:

- Operator name
- Well name and number
- Footage location, Section, Township and Range
- Date taken
- The name and address of the person in your company who is to receive a copy of the analysis.

Submit samples, information, and geologist to the following address:

Mr. James Fassett
 U.S. Geological Survey
 P.O. Box 25046, MS 939 DFC
 Lakewood, CO 80225

Coal analyses gathered in the San Juan Basin will be added to a data base available from the USGS in periodic reports.

This information will be used to evaluate coals and coal gas potentials in the San Juan Basin.

Jerome P. McHugh
 Farmington, N.M.

dj

MAY 30 1989

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL, DEEPEN; OR PLUG BACK

1a. TYPE OF WORK
DRILL DEEPEN 88 SEPPUG BACK AM 8:49

b. TYPE OF WELL
OIL WELL GAS WELL OTHER

SINGLE
EXEMPTED FROM RESOURCE AREA
FARMINGTON, NEW MEXICO

2. NAME OF OPERATOR
NASSAU RESOURCES, INC.

3. ADDRESS OF OPERATOR
P.O. Box 809, Farmington, N.M. 87499

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface
200' FSL - 500' FEL
At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE
± 33 miles N. of Gobernador, N.M.

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)
200'

16. NO. OF ACRES IN LEASE
1,280.0

17. NO. OF ACRES ASSIGNED TO THIS WELL
S/320 160.0

18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
850'

19. PROPOSED DEPTH
3990'

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
7220' GL; 7232' KB
DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED

22. APPROX. DATE WORK WILL START
10/15/88

23. "GENERAL REQUIREMENTS"
PROPOSED CASING AND CEMENTING PROGRAM
and appeal pursuant to 43 CFR 3165.3 and 43 CFR 3165.4.

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	9-5/8"	36#	250'	150 cu.ft. circ. to surface.
7-7/8"	5-1/2"	15.5#	3990'	869 cu.ft. circ. to surface.

Plan to drill with spud mud to set 250' of surface casing. Will then drill with water and gel-chem. mud to test the Fruitland coal zone at ± 3990'. Will run DIL-GR-SP and FDC-CNL-GR Caliper logs. If well appears productive, will set 5-1/2" casing at TD, cement in 1 stage, selectively perforate, frac, clean out after frac and complete with 2-7/8" tubing.

RECEIVED

MAY 22 1989

OIL CON. DIV
DIST. 3

GAS IS NOT DEDICATED.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED James A. Hoban TITLE Field Supt. DATE 9/20/88

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____ APPROVED

APPROVED BY _____ TITLE _____ DATE AS AMENDED

CONDITIONS OF APPROVAL, IF ANY:

R-8844 (U.S.L.)
②

NMOCC

*See Instructions On Reverse Side

MAY 18 1989
John Kelly
AREA MANAGER



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

November 7, 1988

Nassau Resources, Inc.
c/o Jerome P. McHugh & Associates
P.O. Box 809
Farmington, NM 87499-0809

Attention: James S. Hazen,

Administrative Order NSL-2598

Dear Mr. Hazen:

Reference is made to your application of October 11, 1988 for a non-standard gas well location for your Carracas Unit 15-A Well No. 16 to be located 200 feet from the South line and 500 feet from the East line (Unit P) of Section 15, Township 32 North, Range 5 West, NMPM, to test the Fruitland (Sand) formation, Rio Arriba County, New Mexico. The SE/4 of said Section 15 shall be dedicated to the well forming a standard 160-acre gas spacing and proration unit.

By the authority granted me under the provisions of General Rule 104 F(I), the above-described unorthodox gas well location is hereby approved.

Sincerely,

William J. LeMay
Director

WJL/MES/ag

cc: Oil Conservation Division - Aztec
New Mexico Oil & Gas Engineering Committee - Hobbs
US Bureau of Land Management - Farmington

Jerome P. McHugh
Farmington, N.M.

NOV 13 1988

RECEIVED

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

17°22'30"
10'

789000m E 238

ARCHULETA CO

RIO ARRIBA CO

R 5 W 292

236 R. 4 W 293

CARRACAS

MESA

Eul Point

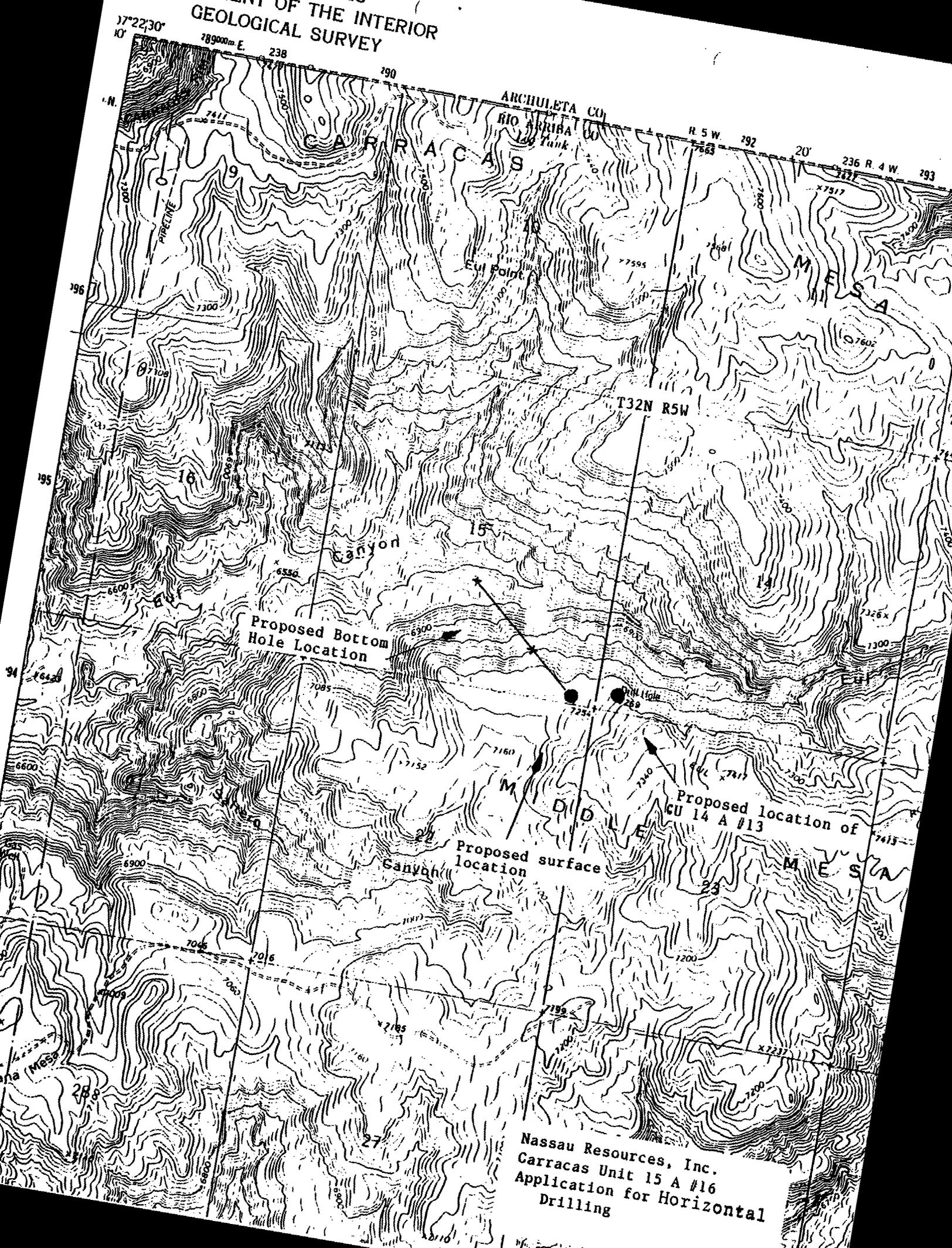
T32N R5W

Proposed Bottom
Hole Location

Proposed surface
location

Proposed location of
CU 14 A #13

Nassau Resources, Inc.
Carracas Unit 15 A #16
Application for Horizontal
Drilling



MCHUGHTELECOPY TRANSMITTALDATE: 10-3-89THE FOLLOWING 3 PAGE(S) ARE FOR MICHAEL STOGNERFIRM NAME New Mexico OCDCITY, STATE Santa Fe, NMTELECOPY NO. 1-505-827-5741FROM GARY JohnsonJEROME P. MCHUGH AND ASSOCIATES/NASSAU RESOURCES, INC.
FAX NUMBER (303) 321-1563

Main Office
Jerome P. McHugh & Associates
Operating Affiliate: Nassau Resources, Inc.
650 South Cherry, Suite 1225
Denver, Colorado 80222
(303) 321-2111

OCT 3, 1989 8:55 AM
 OPERATOR: NASSAU RESOURCES, INC.
 LSE WELLNO: CARRACAS UNIT HORIZONTAL WELL
 FIELD: CARRACAS UNIT
 COUNTY: RIO ARRIBA
 STATE: NM

NASSAU RESOURCES, INC.
 HORIZ COAL 100%
 BFIT 20 COLUMN REPORT
 CARRACAS UNIT COAL GAS PROJECT 1989
 Report Date: OCT 1989
 Discount Date: OCT 1989
 Evaluation Date: OCT 1989

SEC THP RG: VARIES
 LOCATION: VARIES
 FORMATION: FRUITLAND COAL
 RES CLASS: PROBABLE
 PARTNERSHP: N/A

PAGE 1

***** REPORT COMMENTARY *****
 ECONOMICS OF SINGLE WELL
 HORIZONTAL COMPLETION

***** DIVISION OF INTEREST *****
 INITIAL W.I. 100.000000 %
 INITIAL N.R.I. 75.000000 %
 FINAL W.I. 100.000000 %
 FINAL N.R.I. 75.000000 %

***** PROFIT AND PRODUCTION INDICATORS *****
 LIFE OF THE PROJECT 4 years 0 months
 PAYOUT TERM 2 years 4 months
 ROI - DISCOUNTED 181.02 %
 ROI - UNDISCOUNTED 227.06 %
 INTERP. IRR 38.99 %

END OF PERIOD (MO/YR)	GROSS PRODUCTION		NET PRODUCTION		EFFECTIVE PRICES		NET REVENUE			
	OIL & CND (MBSL)	GAS & CGS (MMCF)	OIL & CND (MBSL)	GAS & CGS (MMCF)	OIL & CND (\$/BBL)	GAS & CGS (\$/MCF)	OIL & CND (M\$)	GAS & CGS (M\$)	OTHER (M\$)	TOTAL (M\$)
12/89	0.000	28.389	0.000	21.292	N/A	1.50	0.000	31.938	0.000	31.938
12/90	0.000	340.667	0.000	255.500	N/A	1.50	0.000	383.250	0.000	383.250
12/91	0.000	628.611	0.000	471.458	N/A	1.50	0.000	707.188	0.000	707.188
12/92	0.000	727.542	0.000	545.656	N/A	1.50	0.000	818.484	0.000	818.484
12/93	0.000	474.853	0.000	356.140	N/A	1.50	0.000	534.209	0.000	534.209
SUB TOTAL	0.000	2200.062	0.000	1650.046			0.000	2475.069	0.000	2475.069
REMAINDER	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
TOTAL	0.000	2200.062	0.000	1650.046			0.000	2475.069	0.000	2475.069

END OF PERIOD (MO/YR)	NET EXPENSES (M\$)	NET PROD. TAXES (M\$)	NET W.P.T. (M\$)	TOTAL EXP+TAXES (M\$)	NET CASH OPER. INC. (M\$)	NET INVESTMENT (M\$)	NET RESALE (M\$)	NET OPERATING INCOME BFIT		
								UNDISC (M\$)	DISC @ 10.00% (M\$)	CUM DISC (M\$)
12/89	12.000	1.394	0.000	13.394	18.543	1000.000	0.000	-981.457	-973.631	-973.631
12/90	42.408	16.733	0.000	59.141	324.109	0.000	0.000	324.109	297.056	-676.575
12/91	14.784	30.876	0.000	45.660	661.528	0.000	0.000	661.528	551.647	-124.928
12/92	15.360	35.735	0.000	51.095	767.389	0.000	0.000	767.389	581.464	456.536
12/93	11.898	23.324	0.000	35.222	498.988	0.000	0.000	498.988	347.003	803.539
SUB TOTAL	96.450	108.062	0.000	204.512	2270.557	1000.000	0.000	1270.557	803.539	
REMAINDER	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
TOTAL	96.450	108.062	0.000	204.512	2270.557	1000.000	0.000	1270.557	803.539	

***** PRESENT WORTH PROFILE *****

1 - 10.00 %	803.540 M\$	3 - 22.50 %	378.212 M\$	5 - 27.50 %	245.098 M\$	7 - 35.00 %	76.182 M\$
2 - 20.00 %	451.897 M\$	4 - 25.00 %	309.394 M\$	6 - 30.00 %	184.994 M\$		

OCT 3, 1989 8:54 AM
 OPERATOR: NASSAU RESOURCES, INC.
 LSE WELLNO: CARRACAS UNIT AVERAGE WELL
 FIELD: CARRACAS UNIT
 COUNTY: RIO ARRIBA
 STATE: NM

NASSAU RESOURCES, INC.
 CDAL ECON 100%
 BFIT 20 COLUMN REPORT
 CARRACAS UNIT COAL GAS PROJECT 1989
 Report Date: OCT 1989
 Discount Date: OCT 1989
 Evaluation Date: OCT 1989

SEC TWP RG: VARIES
 LOCATION: VARIES
 FORMATION: FRUITLAND COAL
 RES CLASS: PROBABLE
 PARTNERSHP: N/A

----- REPORT COMMENTARY -----
 ECONOMICS OF SINGLE WELL

----- DIVISION OF INTEREST -----
 INITIAL W.I. 100.000000 %
 INITIAL N.R.I. 75.000000 %
 FINAL W.I. 100.000000 %
 FINAL N.R.I. 75.000000 %

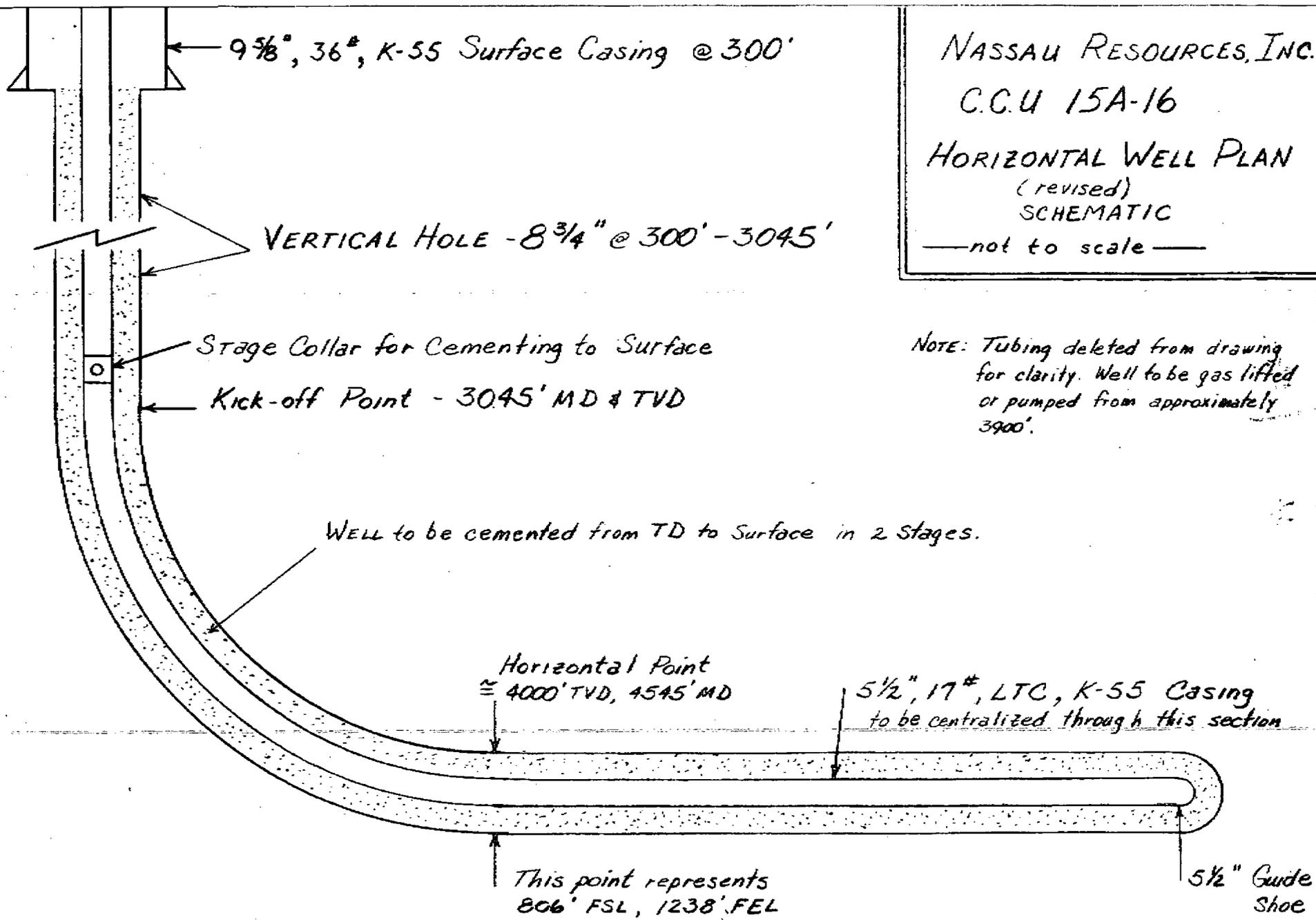
----- PROFIT AND PRODUCTION INDICATORS -----
 LIFE OF THE PROJECT 27 years 2 months
 PAYOUT TERM 3 years 9 months
 ROI - DISCOUNTED 182.56 %
 ROI - UNDISCOUNTED 329.17 %
 INTERP. IRR 24.19 %

END OF PERIOD (MO/YR)	GROSS PRODUCTION		NET PRODUCTION		EFFECTIVE PRICES		NET REVENUE			TOTAL
	OIL & COND --(MBSL)--	GAS & CGS --(MMCF)--	OIL & COND --(MBSL)--	GAS & CGS --(MMCF)--	OIL & COND --(\$/BBL)--	GAS & CGS --(\$/MCF)--	OIL & COND --(M\$)--	GAS & CGS --(M\$)--	OTHER --(M\$)--	
12/89	0.000	7.097	0.000	5.323	N/A	1.50	0.000	7.984	0.000	7.984
12/90	0.000	85.167	0.000	63.875	N/A	1.50	0.000	95.813	0.000	95.813
12/91	0.000	157.153	0.000	117.865	N/A	1.50	0.000	176.797	0.000	176.797
12/92	0.000	182.500	0.000	136.875	N/A	1.50	0.000	205.313	0.000	205.313
12/93	0.000	181.885	0.000	136.414	N/A	1.50	0.000	204.621	0.000	204.621
12/94	0.000	157.056	0.000	117.792	N/A	1.50	0.000	176.688	0.000	176.688
12/95	0.000	129.025	0.000	96.768	N/A	1.50	0.000	145.153	0.000	145.153
12/96	0.000	109.349	0.000	82.012	N/A	1.50	0.000	123.017	0.000	123.017
12/97	0.000	94.790	0.000	71.092	N/A	1.50	0.000	106.639	0.000	106.639
12/98	0.000	83.590	0.000	62.692	N/A	1.50	0.000	94.038	0.000	94.038
SUB TOTAL	0.000	1187.612	0.000	890.708			0.000	1336.063	0.000	1336.063
REMAINDER	0.000	768.739	0.000	576.554			0.000	864.831	0.000	864.831
TOTAL	0.000	1956.351	0.000	1467.262			0.000	2200.894	0.000	2200.894

END OF PERIOD (MO/YR)	NET EXPENSES	NET PROD. TAXES	NET W.P.T.	TOTAL EXP+TAXES	NET CASH OPER. INC.	NET INVESTMENT	NET RESALE	NET OPERATING INCOME		BFIT
	---(M\$)---	---(M\$)---	---(M\$)---	---(M\$)---	---(M\$)---	---(M\$)---	---(M\$)---	UNDISC	DISC @ 10.00%	CUM DISC
12/89	12.000	0.349	0.000	12.349	-4.364	450.000	0.000	-454.364	-450.607	-450.607
12/90	42.408	4.183	0.000	46.591	49.221	0.000	0.000	49.221	44.698	-405.909
12/91	14.784	7.719	0.000	22.503	154.294	0.000	0.000	154.294	128.635	-277.274
12/92	15.360	8.964	0.000	24.324	180.989	0.000	0.000	180.989	137.121	-140.153
12/93	15.936	8.934	0.000	24.870	179.751	0.000	0.000	179.751	123.294	-16.859
12/94	16.512	7.714	0.000	24.226	152.461	0.000	0.000	152.461	94.835	77.976
12/95	17.088	6.337	0.000	23.425	121.727	0.000	0.000	121.727	68.521	146.497
12/96	17.664	5.371	0.000	23.035	99.982	0.000	0.000	99.982	50.936	197.433
12/97	18.240	4.656	0.000	22.896	83.743	0.000	0.000	83.743	38.614	236.047
12/98	18.816	4.106	0.000	22.922	71.117	0.000	0.000	71.117	29.681	265.728
SUB TOTAL	188.808	58.333	0.000	247.141	1088.921	450.000	0.000	638.921	265.728	
REMAINDER	434.730	37.759	0.000	472.489	392.343	0.000	0.000	392.343	102.723	
TOTAL	623.538	96.092	0.000	719.630	1481.264	450.000	0.000	1031.264	368.451	

----- PRESENT WORTH PROFILE -----

1 - 10.00 %	368.452 M\$	3 - 22.50 %	26.988 M\$	5 - 27.50 %	-50.573 M\$	7 - 35.00 %	-134.844 M\$
2 - 20.00 %	74.911 M\$	4 - 25.00 %	-14.465 M\$	6 - 30.00 %	-82.225 M\$		



NASSAU RESOURCES, INC.
 C.C.U 15A-16
 HORIZONTAL WELL PLAN
 (revised)
 SCHEMATIC
 —not to scale—

NOTE: Tubing deleted from drawing for clarity. Well to be gas lifted or pumped from approximately 3900'.