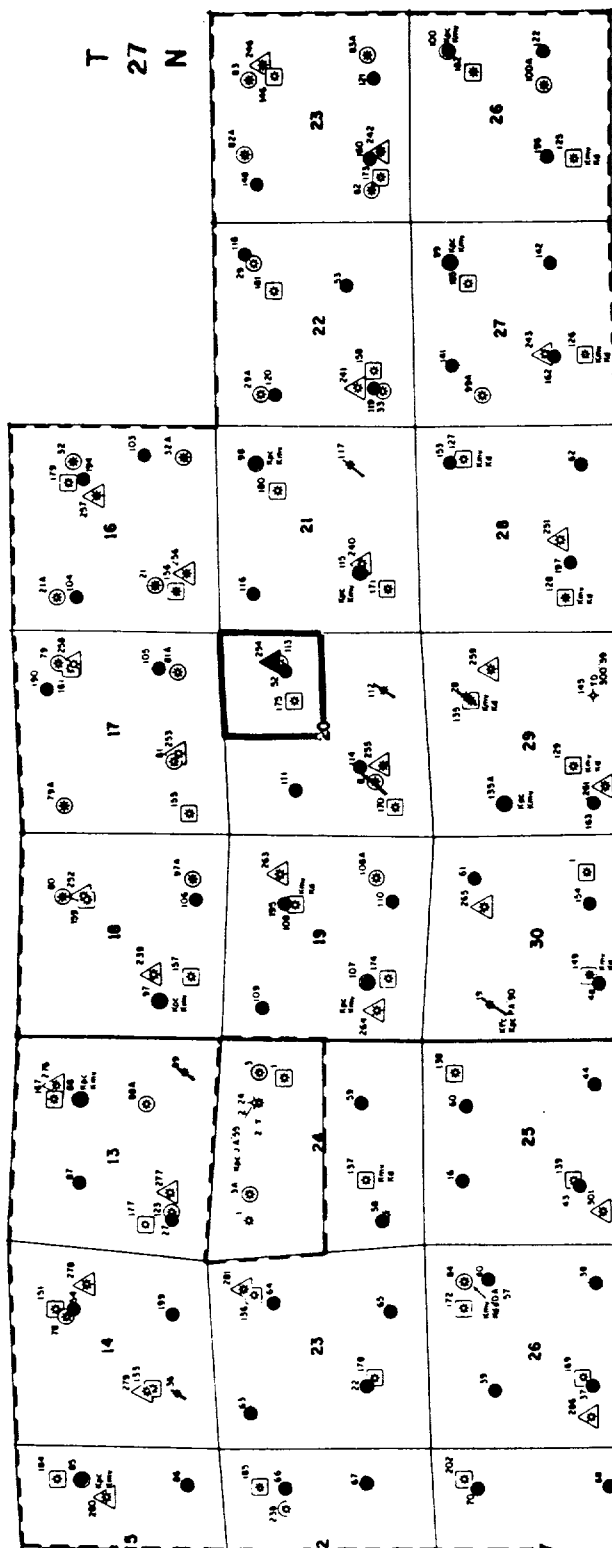


R-7-W

T 27 N



BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION

UNLOCAL EXHIBIT NO.:

CASE NO. 10375

UNOCAL 
NORTH AMERICAN OIL & GAS DIVISION

RINCON UNIT

RIO ARriba COUNTY, NEW MEXICO

● ACTIVE PICTURED CLIFFS

WELLS

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
DATE 01-11-2001 BY 60322 UCBAW

T 26 N

EXHIBIT NO.

Exhibits 1 through 13
Complete Set

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

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

"*AMENDED*
LOCATION"

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

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

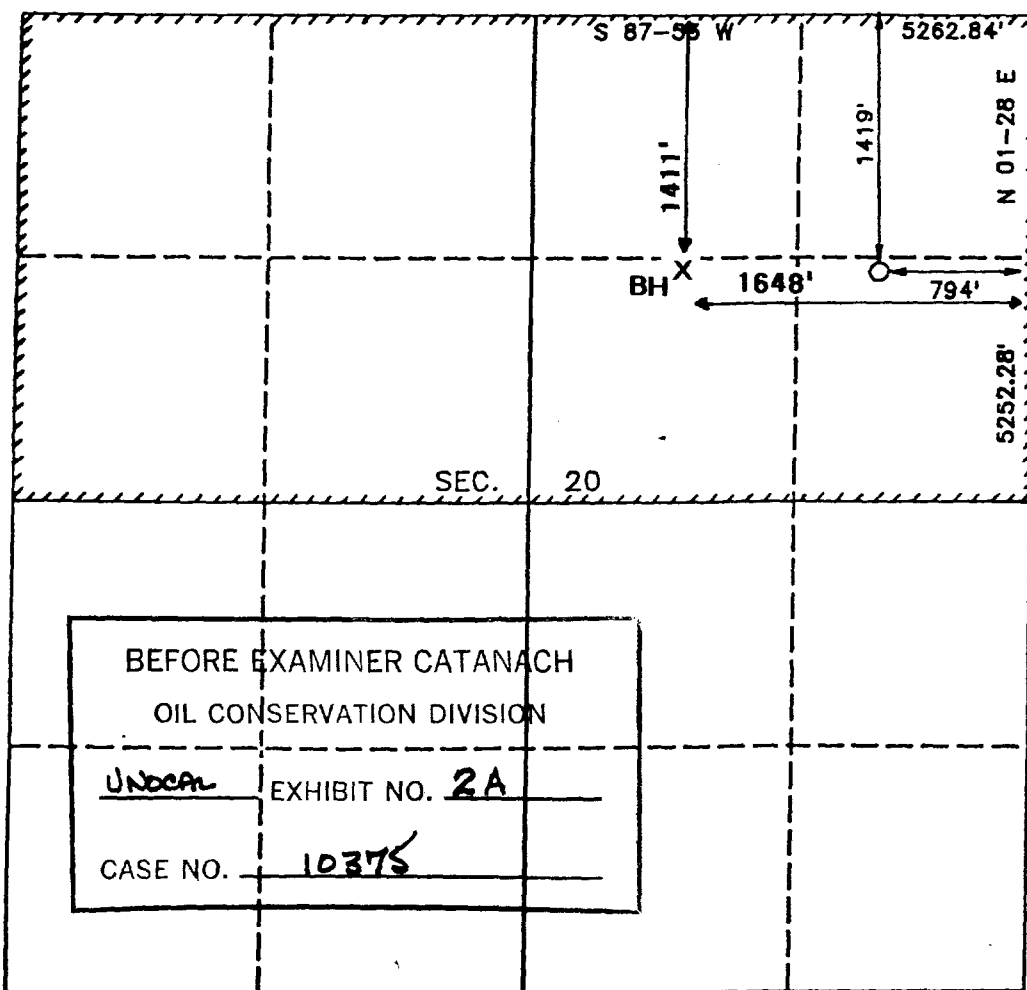
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator UNION OIL CO. OF CALIFORNIA		Lease RINCON UNIT		Well No. 254
Unit Letter H	Section 20	Township T.27 N.	Range R.6 W.	County RIO ARriba COUNTY
Actual Footage Location of Well: 1419 feet from the NORTH line and 794 feet from the EAST line				
Ground level Elev. 6579	Producing Formation FRUITLAND COAL	Pool BASIN FRUITLAND COAL	Dedicated Acreage: 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 interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
☐ Yes ☐ No If answer is "yes" type of consolidation _____
If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)
No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Signature
William Hering
Printed Name
WILLIAM HERING
Position
DISTRICT PETROLEUM ENGINEER
Company
UNION OIL COMPANY OF CALIFORNIA
Date
9-17-91

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of 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
APR 8 1990
Signature & Seal of Professional Surveyor
R. HOWARD DAGGE
R. Howard Dagge
Certificate No.
8679
Registered Professional Land Surveyor

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

P.O. Drawer DD, Artesia, NM 88210

DISTRICT III

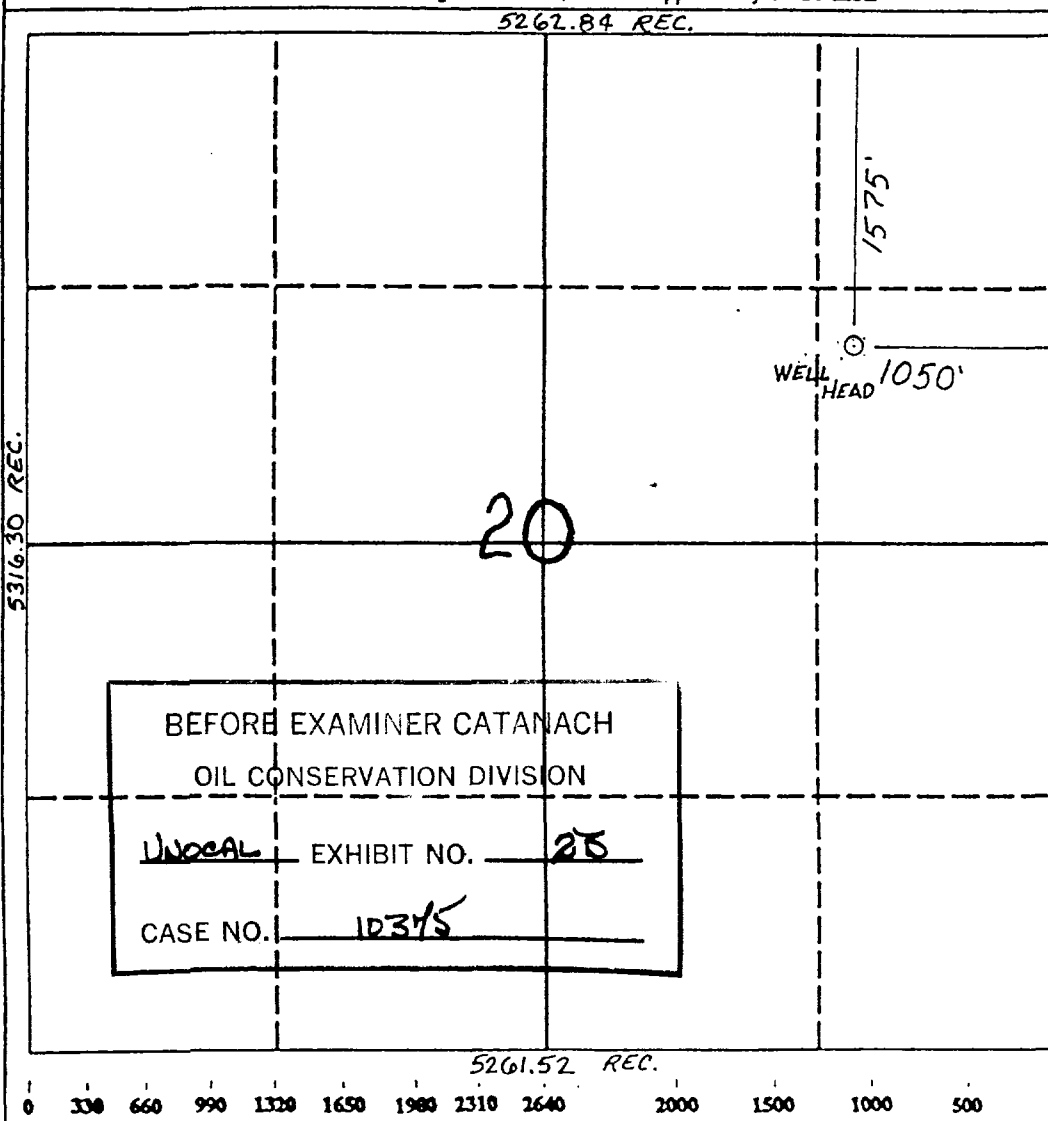
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator UNOCAL			Lease RINCON UNIT		Well No. 52
Unit Letter H	Section 20	Township 27 North	Range 6 West	County NMPM Rio Arriba	
Actual Footage Location of Well: 1575' feet from the North line and 1050' feet from the East line					
Ground level Elev. 6578'	Producing Formation		Pool		Dedicated Acreage: 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 interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
☐ Yes ☐ No If answer is "yes" type of consolidation _____
If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary).
No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Signature

William Hering

Printed Name

WILLIAM HERING

Position

DISTRICT PETROLEUM ENGINEER

Company

UNION OIL COMPANY OF CALIF

Date

9/17/91

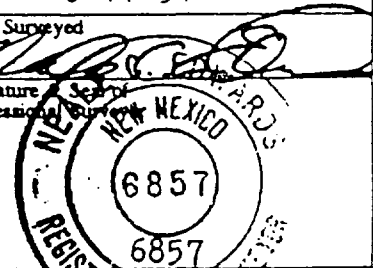
SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of 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.

6-11-91

Date Surveyed

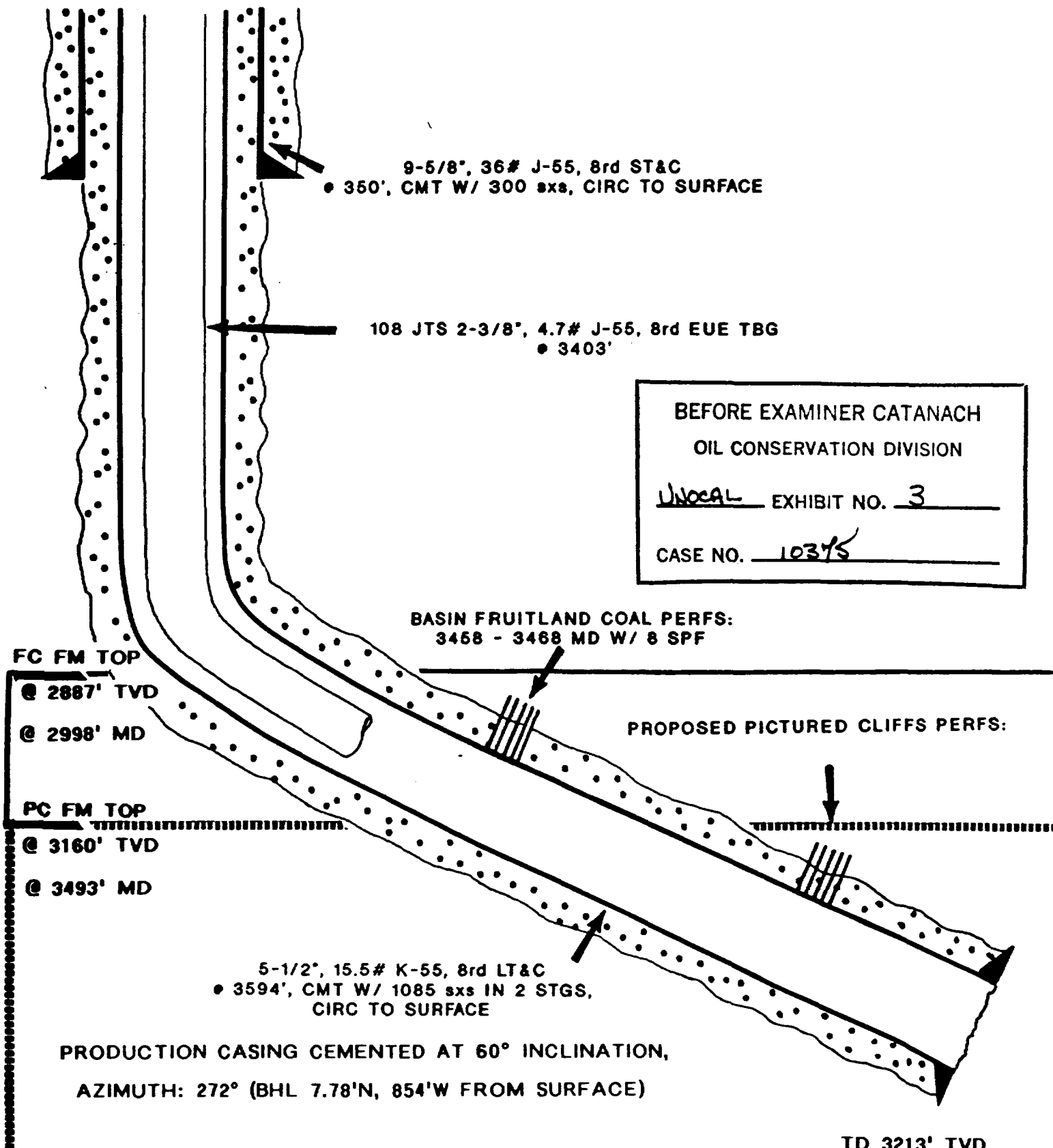
Signature of Registered Professional Surveyor



Certificate No.

Neale Edwards

**RINCON UNIT #254 BASIN FRUITLAND COAL
SEC. 20, T27N, R6W, RIO ARriba COUNTY, NM**



TD 3213' TVD
3595' MD
PBD 3586' MD



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

May 7, 1990

Union Oil Company of California
3300 North Butler Avenue
Suite 200
Farmington, NM 87401

BEFORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
<u>UNOCAL</u>	EXHIBIT NO. <u>4</u>
CASE NO. <u>10375</u>	

Attention: Paul T. West, District Production Manager

*Administrative Order DD-34(H)
(Highly Deviated Wellbore)
Basin-Fruitland Coal Gas Pool (R-8768)*

Dear Mr. West:

Under the provisions of Rule 9 of the Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool as promulgated by Division Order R-8768, Union Oil Company of California made application to the New Mexico Oil Conservation Division on April 20, 1990, for a highly deviated directional drilling pilot project in the N/2 of Section 20, Township 27 North, Range 6 West, NMPM, Rio Arriba County, New Mexico, forming a standard 320-acre gas spacing and proration unit in said pool for its Rincon Unit Well No. 254.

The Division Director Finds That:

- (1) The application has been duly filed under the provisions of Rule 9(B) of R-8768 for administrative authorization to intentionally deviate a well in the Basin-Fruitland Coal Gas Pool for the purpose of penetrating the coal bed seams by means of a wellbore drilled horizontally;
- (2) Although the proposed wellbore will only have a maximum angle off vertical of 60 degrees. The purpose of said well is to increase the surface area across the productive interval of the coal seam, thereby increasing the likelihood of obtaining commercial production.

EXHIBIT No. 4

- (3) This technique essentially mirrors the reason and purpose of horizontal wellbores in this type of productive interval and should therefore be treated the same.
- (4) The applicant has provided satisfactory technical information in support of this filing.
- (5) The N/2 of said Section 20 is within the applicant's Rincon Unit and therefore has no offset operators other than themselves.
- (6) The applicant has satisfactorily met all requirement prescribed in said Rule 9 of Order No. R-8768.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Union Oil Company of California, is hereby authorized to initiate a highly deviated directional drilling pilot project in the N/2 of Section 20, Township 27 North, Range 6 West, forming a standard 320-acre gas spacing and proration unit in the Basin-Fruitland Coal Gas Pool by commencing its Rincon Unit Well No. 254 at a standard surface location 1419 feet from the North line and 794 feet from the East line (Unit H) of said Section 20 and drilling to a true vertical depth of approximately 2362 feet and then commencing a medium radius curve in a westerly direction, building to an angle of 60 degrees and continue drilling at said angle as so to encounter the top of the Basin-Fruitland Coal Gas Pool at a true vertical depth of approximately 3040 feet and then to a total depth at a true vertical depth of approximately 3200 feet with a terminus at an bottomhole location in the SW/4 NW/4 of Section 20; however, no portion of said wellbore shall be no closer than 790 feet from the North, South and East lines of the NW/4 nor closer than 130 feet to the West line of said NW/ of said Section 20.

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, a survey shall be made of the wellbore from total depth to kick-off point the operator shall forward a copy of the survey report directly to the Santa Fe Office and to the Aztec District Office of the Division.

(2) The operator shall notify the Division's Aztec District Office of the date and time said survey is to be commenced.

Administrative Order DD-34(H)
Union Oil Company of California
May 7, 1990
Page No. 3

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

(4) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

William J. Lemay by *David Catanzano*
WILLIAM J. LEMAY
Director

S E A L

cc: Oil Conservation Division - Aztec
US Bureau of Land Management - Farmington
File: Case No. 9911
William F. Carr - Santa Fe

TELECO OILFIELD SERVICES
SURVEY CALCULATIONS

Company: UNOCAL
Well: RINCON UNIT #254
Location: BASIN FRUITLAND COAL FIELD
Rig: ARAPAHOE #6

TELECO Job # TRM300
Grid Correction: 0.0°
Magnetic Declination: 11.6°
Total grid correction: 11.6°
Proposed Direction: 270.0°

BEFORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
<u>Unocal</u>	EXHIBIT NO. <u>5</u>
CASE NO. <u>10375</u>	

MINIMUM CURVATURE CALCULATION

Meas Depth feet	Length feet	Course Incl deg	Azi deg	True Vert. feet	Dp. feet	Vertical Section feet	N/S feet	Coordinates E/W feet	Distance feet	Closure Angle deg	Dog Leg Severity deg/100°

Teleco Tie In Assumed Vertical

Teleco Surveys While Tripping in Hole

354	0	0.0	0.0	354.00	0.01	0.01N	0.01W	0.01	N 45.00W	0.00
506	152	0.2	330.5	506.00	0.14	0.25N	0.14W	0.29	N 28.96W	0.13
994	488	1.8	297.8	993.91	7.34	4.57N	7.34W	8.65	N 58.09W	0.34
1516	522	2.1	269.6	1515.62	24.16	8.33N	24.16W	25.55	N 70.98W	0.19
2008	492	1.8	290.7	2007.34	40.40	11.00N	40.40W	41.87	N 74.77W	0.16

Company: UNOCAL, well: RINCON UNIT #254, Location: BASIN FRUITLAND COAL FIELD, Rig: ARAPAHOE #6

Meas Depth Length Course Incl Azi True Vert. Dp. Vertical Section N/S Coordinates E/W Distance Closure Angle Dog Leg
feet feet deg deg deg feet feet feet feet feet feet deg deg/100

Teleco Behind Motor Build Assembly

2327	319	0.9	290.4	2326.25	47.43	13.64N	47.43W	49.36	N 73.96W	0.28
2358	31	1.6	267.2	2357.24	48.09	13.70N	48.09W	50.01	N 74.10W	2.74
2389	31	2.9	250.0	2388.22	49.26	13.41N	49.26W	51.06	N 74.77W	4.68
2420	31	5.8	254.2	2419.12	51.51	12.72N	51.51W	53.06	N 76.13W	9.41
2452	32	9.1	258.4	2450.85	55.54	11.77N	55.54W	56.78	N 78.04W	10.45
2483	31	12.2	260.2	2481.31	61.17	10.72N	61.17W	62.11	N 80.06W	10.06
2515	32	15.0	260.2	2512.41	68.59	9.44N	68.59W	69.23	N 82.16W	8.75
2546	31	18.2	259.1	2542.12	77.30	7.84N	77.30W	77.69	N 84.21W	10.37
2577	31	21.4	258.7	2571.28	87.60	5.82N	87.60W	87.79	N 86.20W	10.33
2607	30	24.2	259.5	2598.93	99.02	3.62N	99.02W	99.08	N 87.90W	9.39
2637	30	27.2	261.6	2625.96	111.85	1.50N	111.85W	111.86	N 89.23W	10.45
2668	31	29.9	264.7	2653.19	126.55	0.25S	126.55W	126.55	S 89.89W	9.93
2699	31	32.6	267.2	2679.69	142.59	1.37S	142.59W	142.60	S 89.45W	9.66
2730	31	35.5	267.2	2705.38	159.93	2.22S	159.93W	159.94	S 89.20W	9.36

Company: UNOCAL, Well: RINCON UNIT #254, Location: BASIN FRUITLAND COAL FIELD, Rig: ARAPAHOE #6

Meas Depth feet	Length feet	Course Incl deg	Azi deg	True Vert. feet	Dp. feet	Vertical Section feet	N/S feet	Coordinates E/W feet	Distance feet	Closure Angle deg	Dog Leg Severity deg/100'

2761	31	38.3	267.5	2730.16		178.52	3.08S	178.52W	178.54	S 89.01W	9.05
2792	31	41.0	267.5	2754.03		198.28	3.94S	198.28W	198.32	S 88.86W	8.71
2823	31	43.3	267.9	2777.01		219.06	4.77S	219.06W	219.12	S 88.75W	7.47
2854	31	45.9	267.2	2799.08		240.81	5.71S	240.81W	240.88	S 88.64W	8.54
2886	32	49.0	268.2	2820.72		264.36	6.65S	264.36W	264.44	S 88.56W	9.96
2917	31	52.1	269.6	2840.42		288.29	7.10S	288.29W	288.38	S 88.59W	10.59
Teleco Behind Steerable											
2949	32	54.9	270.0	2859.45		314.01	7.19S	314.01W	314.09	S 88.69W	8.81
2981	32	56.8	270.7	2877.41		340.49	7.03S	340.49W	340.56	S 88.82W	6.21
3011	30	55.4	270.7	2894.14		365.39	6.72S	365.39W	365.45	S 88.95W	4.67
3042	31	54.5	270.4	2911.95		390.76	6.48S	390.76W	390.82	S 89.05W	3.01
3074	32	54.6	270.4	2930.51		416.83	6.30S	416.83W	416.88	S 89.13W	0.32
3105	31	54.8	270.4	2948.42		442.13	6.12S	442.13W	442.17	S 89.21W	0.65
3136	31	56.2	271.1	2965.98		467.68	5.78S	467.68W	467.71	S 89.29W	4.88

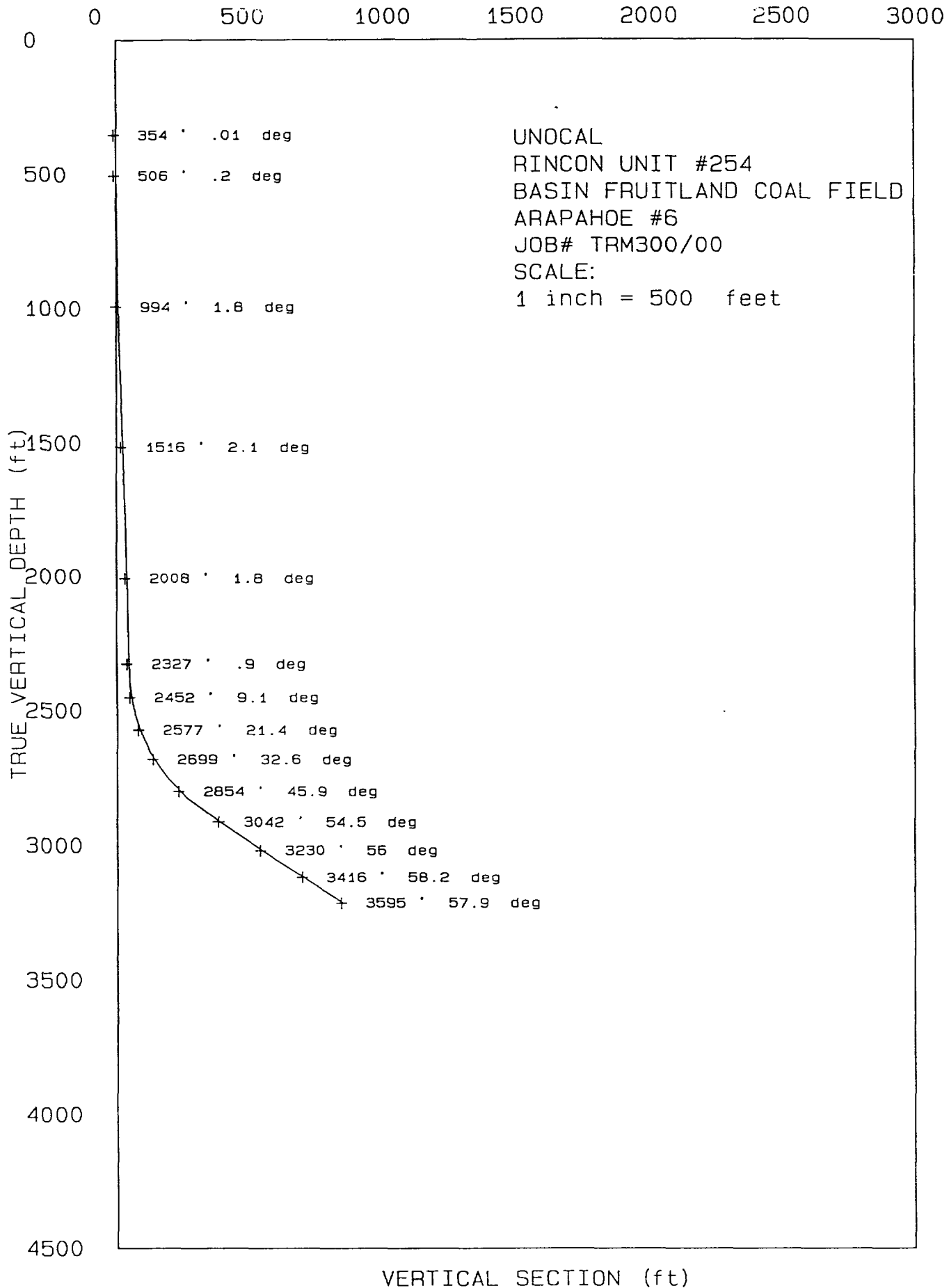
Company: UNOCAL, Well: RINCON UNIT #254, Location: BASIN FRUITLAND COAL FIELD, Rig: ARAPAHOE #6

Meas Depth feet	Length feet	Course Incl deg	Azi deg	True Vert. feet	Dp. feet	Vertical Section feet	Coordinates N/S feet	E/W feet	Distance feet	Closure Angle deg	Dog Leg Severity deg/100'
3167	31	56.5	271.1	2983.16		493.48	5.29S	493.48W	493.51	S 89.39W	0.97
3198	31	56.3	271.1	3000.31		519.29	4.79S	519.29W	519.31	S 89.47W	0.64
3230	32	56.0	271.1	3018.14		545.86	4.28S	545.86W	545.88	S 89.55W	0.94
3260	30	55.3	270.4	3035.06		570.63	3.96S	570.63W	570.64	S 89.60W	3.03
3292	32	57.2	271.4	3052.84		597.23	3.54S	597.23W	597.24	S 89.66W	6.48
3323	31	57.8	271.8	3069.50		623.37	2.81S	623.37W	623.37	S 89.74W	2.22
3354	31	58.6	272.1	3085.83		649.70	1.91S	649.70W	649.70	S 89.83W	2.71
3385	31	58.6	272.5	3101.98		676.14	0.85S	676.14W	676.14	S 89.93W	1.10
3416	31	58.2	272.8	3118.23		702.51	0.37N	702.51W	702.51	N 89.97W	1.53
3432	16	57.9	272.8	3126.69		716.07	1.04N	716.07W	716.07	N 89.92W	1.87
3595	163	57.9	272.8	3213.31		853.99	7.78N	853.99W	854.02	N 89.48W	0.00

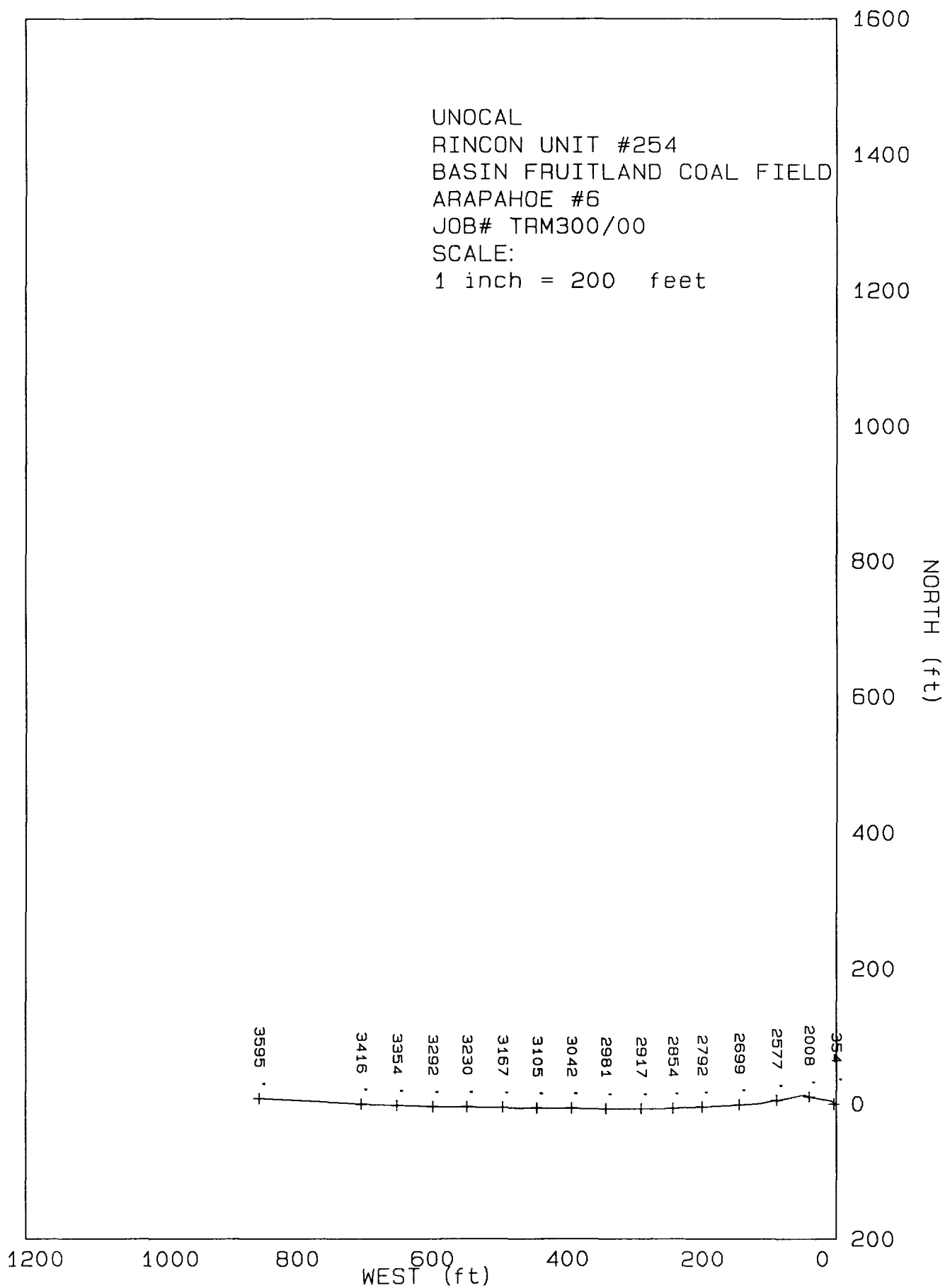
Projected Bottom Hole Location

TELECO Oilfield Services

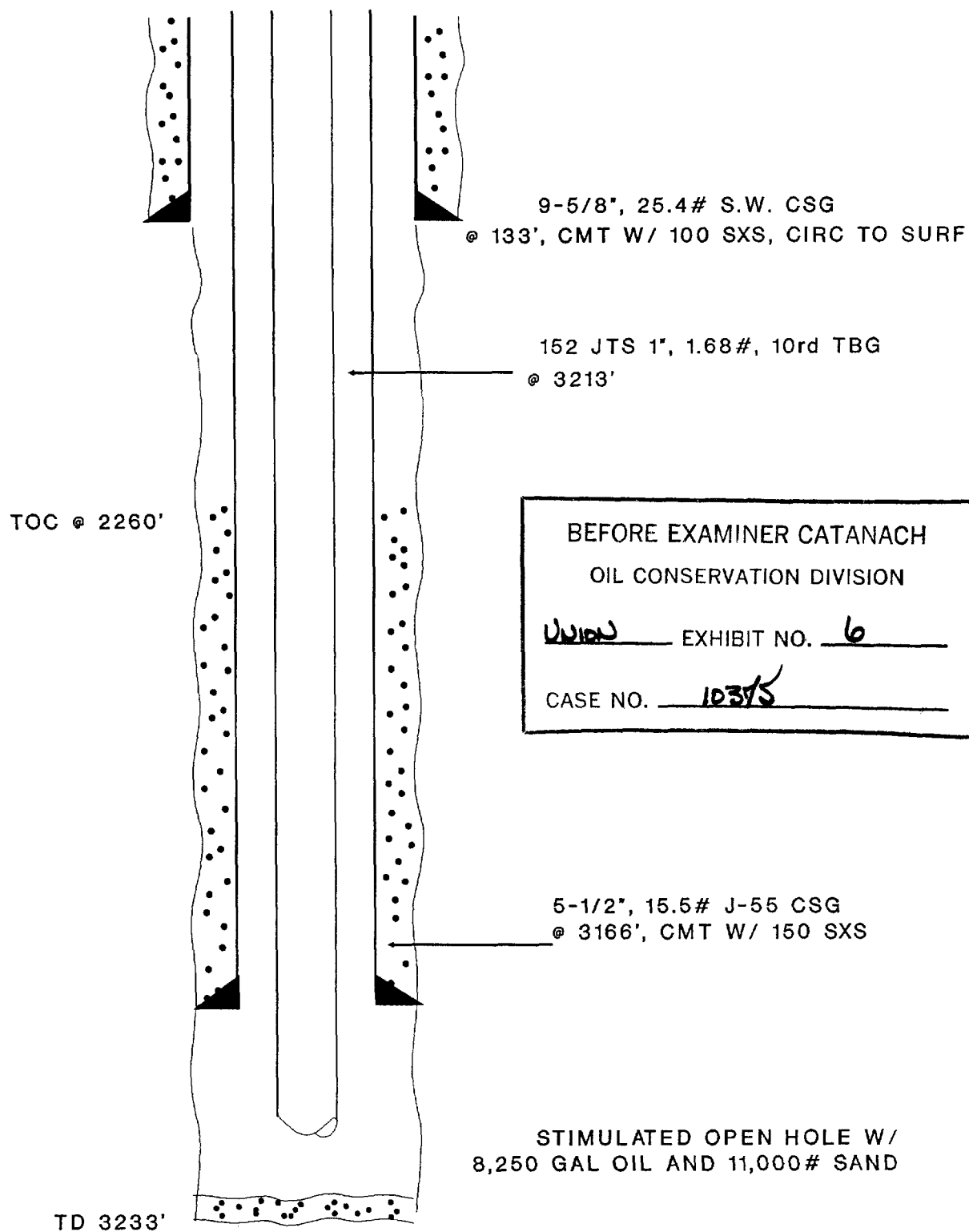
VERTICAL PROJECTION



TELECO Oilfield Services PLAN VIEW



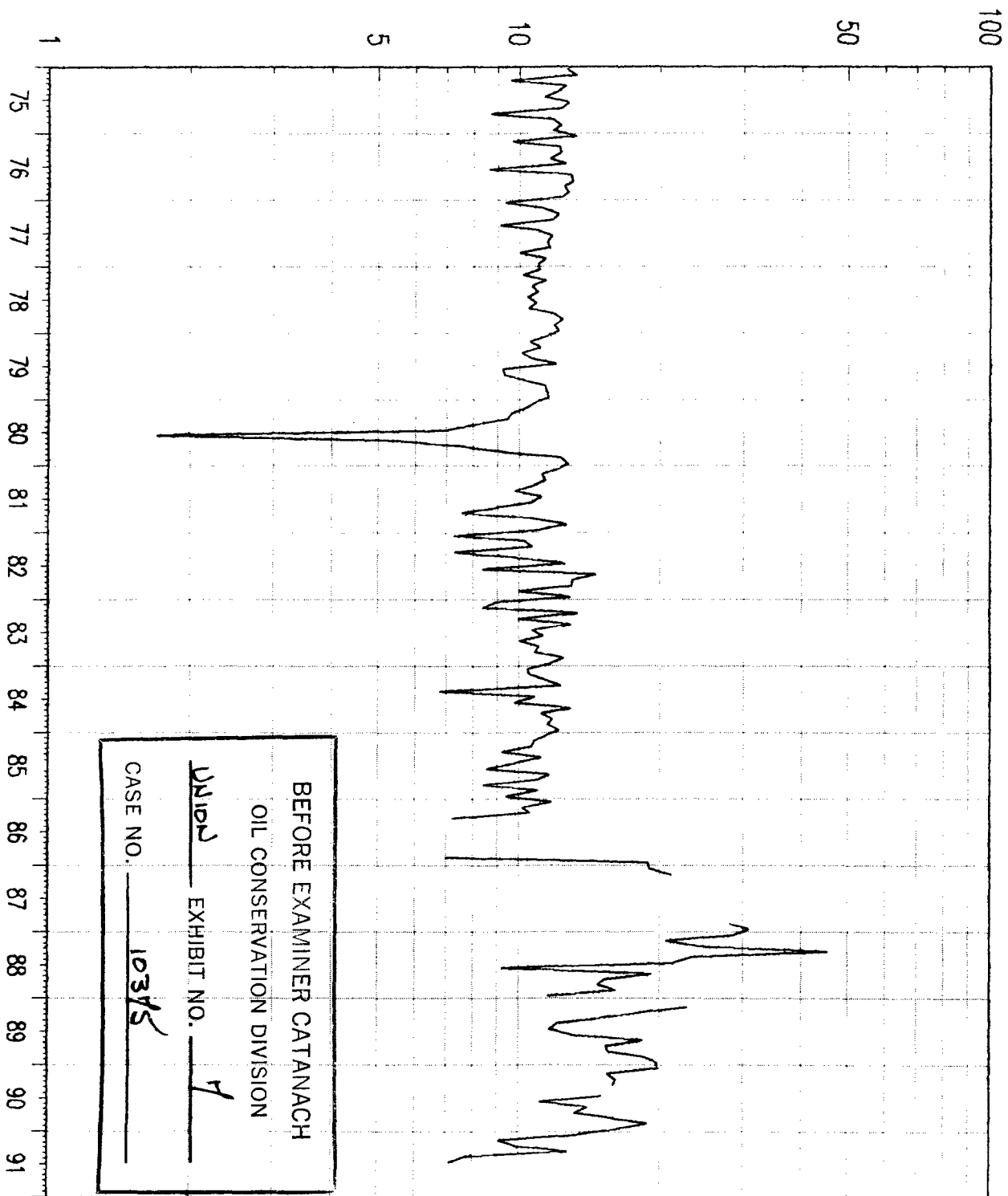
RINCON UNIT # 52 PICTURED CLIFFS
UNIT H, 20, 27N, 6W, RIO ARRIBA COUNTY, NM



RINCON UNIT 52
S BLANCO PC POOL

(MCFD)

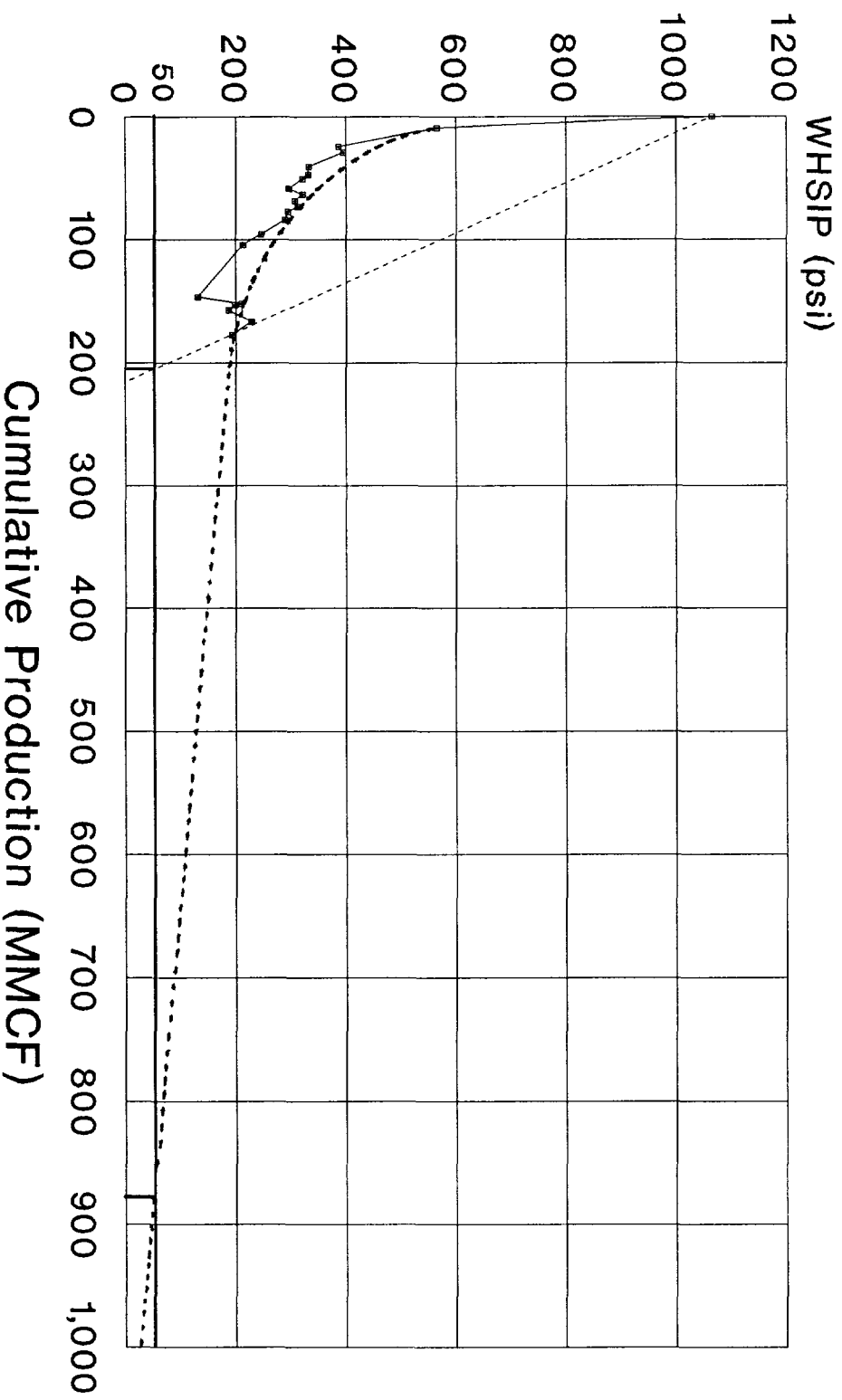
Gas Rate (PD) (Mscf)



RINCON 52

P/Z PLOT

BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION
Upocal EXHIBIT NO. 8
CASE NO. 10375



1st Del. Date: 11/55

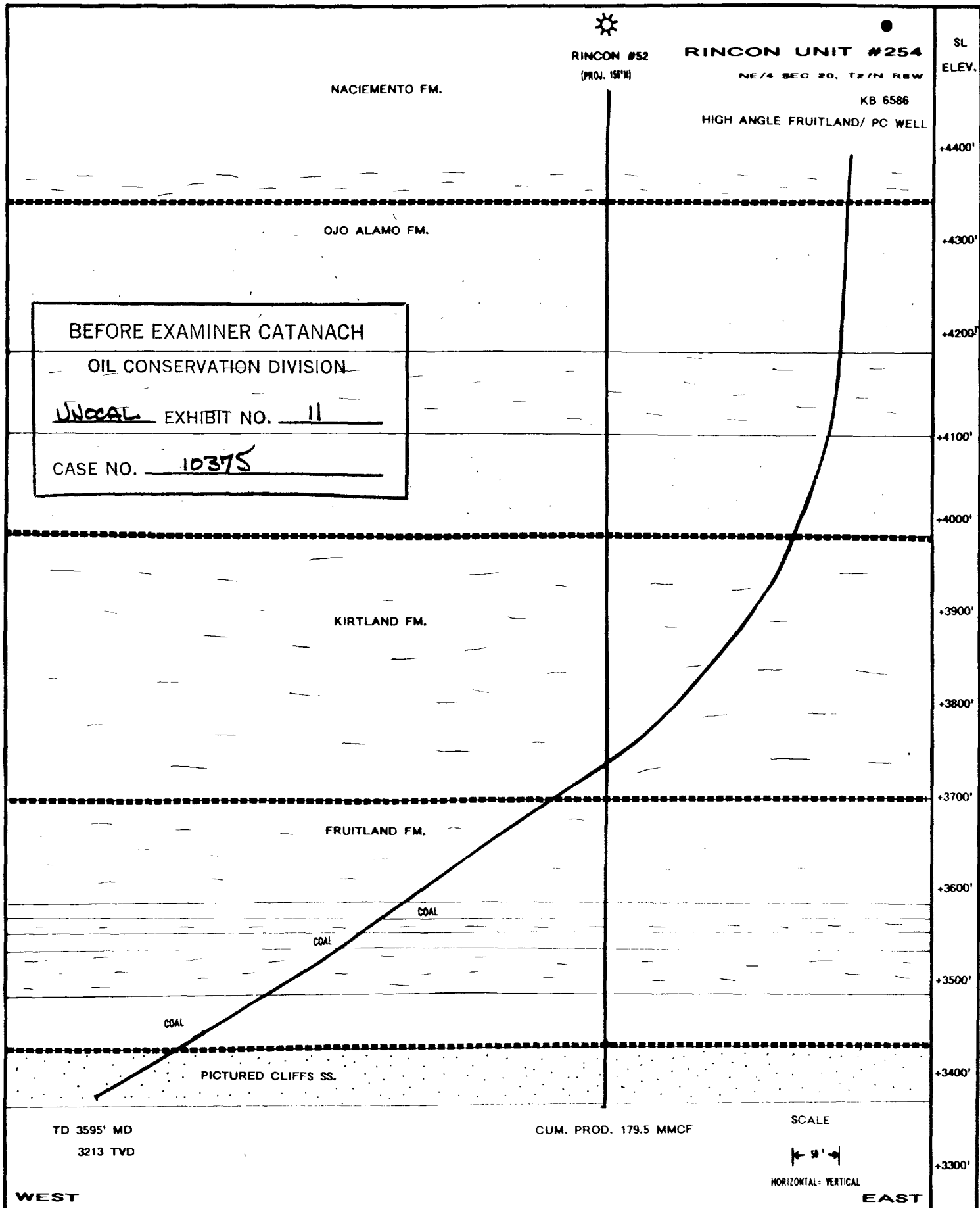
PICTURED CLIFFS RESERVES CALCULATION

NE/4 Section 20, T27N, R6W

Original Pressure	1000 psia
Reservoir Temperature	110 degrees F
Drainage Area	160 acres
Pay Thickness	42 feet
Average Porosity	10 %
Water Saturation	50 %
Initial Formation Vol Factor	63.3 SCF/cu ft
Abandonment FVF	3.1 SCF/cu ft
Volumetric Recoverable Reserves	881 MMCF
Cumulative Production	180 MMCF

EXHIBIT NO. 9

BEFORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
10228	EXHIBIT NO. 9
CASE NO. 10275	

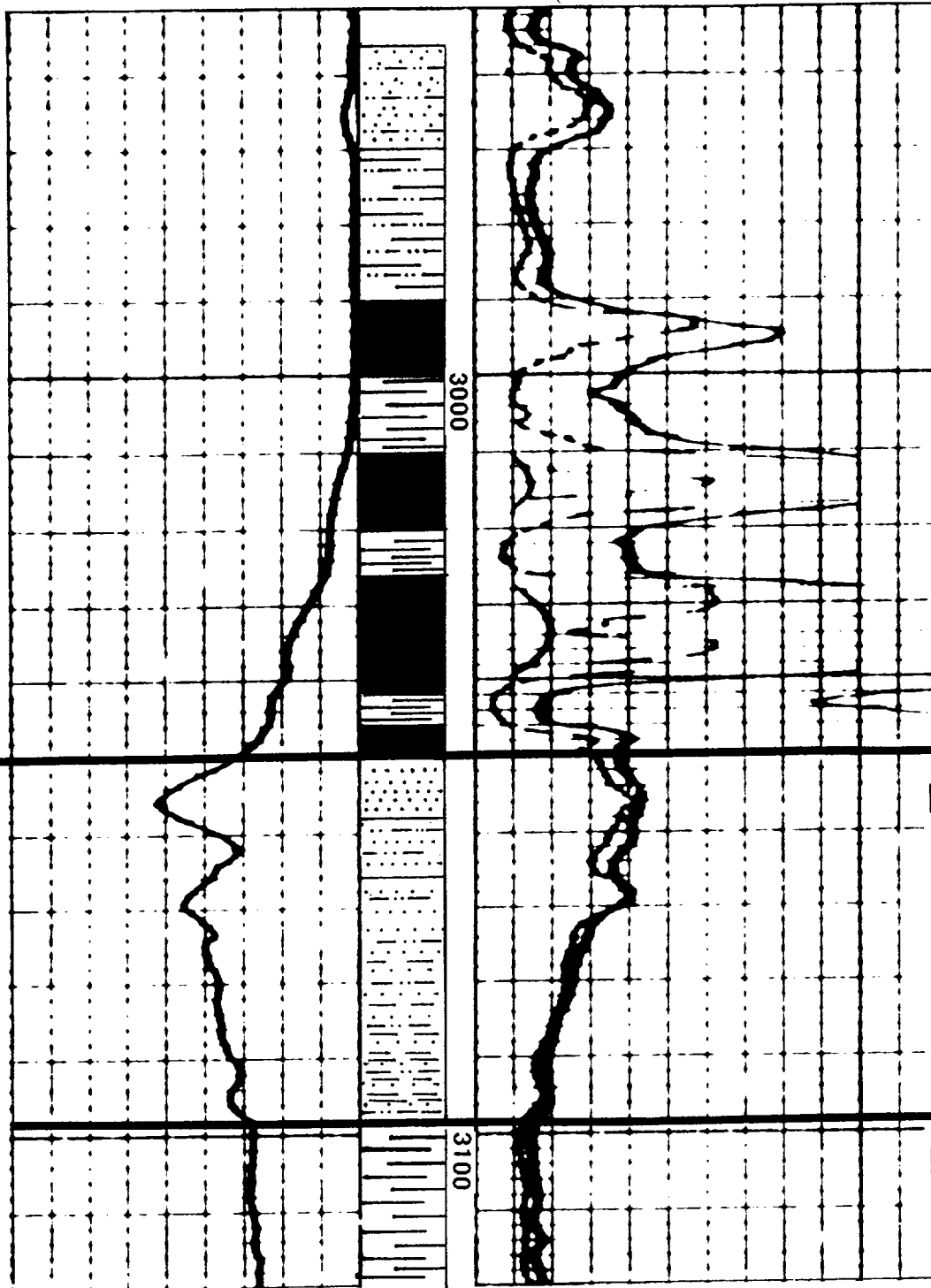


RINCON UNIT PICTURED CLIFFS TYPE LOG

Rincon Unit #175
Sec 20, T27N, R6W

FRUITLAND FM

PICTURED CLIFFS FM



BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION

1200A EXHIBIT NO. 12

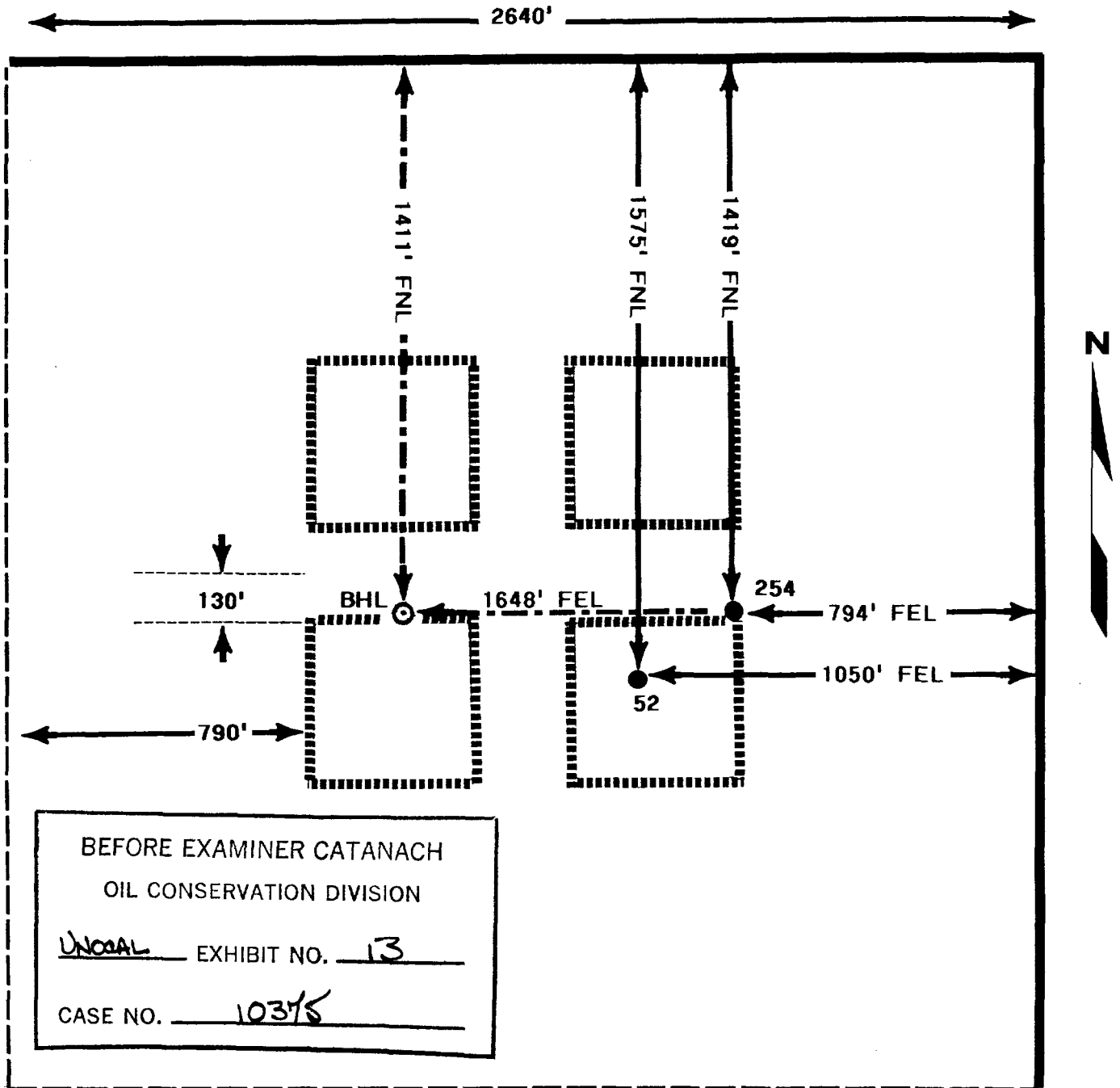
CASE NO. 10375

Continental
Coals, Silts and
Muds

Beach/Shoreface
Sands and Silts

Lower Shoreface
Mud

RINCON UNIT
T27N, R6W, NE/4 SECTION 20



..... S Blanco PC Orthodox Completion Windows