

DATE IN 10/7/02	DATE OUT 10/27/02	ENGINEER	LOGGED IN KV	TYPE NSL	APP NO. 228126737
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS
 WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION - Check Those Which Apply for [A]**

[A] Location - Spacing Unit - Simultaneous Dedication
☒ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] **NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply**

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☐ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Ken Tatarzyn
 Print or Type Name

Signature

IBAT Manager
 Title

10-3-02
 Date

KWTatarzyn@marathonoil.com
 e-mail Address



P.O. Box 552
Midland, TX 79702-0552
Telephone 915/682-1626

October 4, 2002

Mr. Michael Stogner
Oil Conservation Division
1220 S. St. Francis Dr.
Santa Fe, New Mexico 87504

**RE: *Indian Hills Unit Well No. 37 Unorthodox Location
1092' FNL & 1380' FEL, Sec. 20, Township 21 South, Range 24 East (SHL),
2646' FNL & 2538' FEL, Sec. 20, Township 21 South, Range 24 East (BHL)
Indian Basin Upper Pennsylvanian Associated Pool***

Dear Mr. Stogner,

Attached is Marathon Oil Company's application for administrative approval of an unorthodox bottom hole location for the proposed Indian Hills Unit Well No. 37.

If there is any additional information that you would like, please call me and I will have it faxed to you as soon as possible. A copy of this application has also been forwarded to Mr. Tom Kellahin, Legal Council for Marathon.

Thank you for taking the time to review our application,

Truly Yours,

A handwritten signature in black ink, appearing to read 'S. Millican'.

Steven F. Millican
Indian Basin Asset Team
Marathon Oil Company
(915) 687-8306 (direct)
(915) 559-4194 (mobile)
SFMillican@MarathonOil.com

Walter J. Dueease, Jr.
Regulatory Affairs
Southern Business Unit



Marathon Oil Company
P.O. Box 552
Midland, TX 79702
Telephone 915/687-8294
Cellular 915/528-4639
FAX 915/687-8287
Pager 915/560-8805
Email wjdueease@marathonoil.com

OCT-7 01:03:05



P.O. Box 552
Midland, TX 79702-0552
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October 4, 2002

Mr. Michael Stogner
Oil Conservation Division
1220 S. St. Francis Dr.
Santa Fe, New Mexico 87504

***RE: Indian Hills Unit Well No. 37 Unorthodox Location
1092' FNL & 1380' FEL, Sec. 20, Township 21 South, Range 24 East (SHL),
2646' FNL & 2538' FEL, Sec. 20, Township 21 South, Range 24 East (BHL)
Indian Basin Upper Pennsylvanian Associated Pool***

Dear Mr. Stogner,

By means of this application, Marathon Oil Company respectfully requests administrative approval for a non-standard location for the proposed Indian Hills Unit Well No. 37 with a surface location of 1092' FNL & 1380' FEL, Section 20, Township 21 South, Range 24 East, and a bottom hole location of 2646' FNL & 2552' FEL, Section 20, Township 21 South, Range 24 East, and to be dedicated to a standard 320 acre spacing unit consisting of the East half of Section 20. Marathon is proposing to drill this well to an unorthodox location in the Upper Pennsylvanian formation. This will be a directionally drilled well.

Marathon proposes to complete the Indian Hills Unit Well No. 37 in the "Indian Basin Upper Pennsylvanian Associated Pool" as promulgated by the New Mexico Oil Conservation Division Order Nos. R-9922, R-9922-A, R-9922-B, R-9922-C, R-9922-D and R-9922-E and the general rules for the Associated Gas Pools of Southeast New Mexico as promulgated by Division Order No. R-5533. These rules require wells to be located no closer than 660 feet to the outer boundary of the proration/spacing unit and no closer than 330 feet to the governmental quarter/quarter section line. Indian Hills Unit Well No. 37 location is unorthodox because the producing interval and the bottom hole location infringes upon the 660 foot setback from the western outer boundary of the 320 acre "stand-up" gas proration unit dedicated to the East half of Section 20 (please see Attachment #1A - Well Location and Acreage Dedication Plats, Attachment #1B - Section 20 Quarter Quarter Distance Map, Attachment #2 - Location Verification Map and Attachment #3 - Vicinity Map). Based on the proposed directional plan, it is expected that the top of the Upper Pennsylvanian formation will be penetrated at 2447' FNL & 2401' FEL in Section 20, (please see Attachment #4 - Directional Plat supplied by Baker Inteq, Marathon's proposed directional drilling company for the well).

Participating Area

The proposed well is located within the Indian Hills Unit Upper Pennsylvanian Participating Area (see Attachment #5). The Indian Hills Unit is operated by Marathon Oil Company. Indian Hills Unit Well No. 37 is proposed to be dedicated to a proration unit consisting of the East half of Section 20, Township 21 South, Range 24 East. The ownership of the East half 320 acre proration unit is identical to the West half of Section 20 which offsets the proposed unorthodox location in the Upper Pennsylvanian formation. Marathon Oil Company has a 99.54544% working interest while Nearburg Exploration has a 0.45456% working interest in both the West and East halves of Section 20.

Directional Wellbore:

The Indian Hills Unit Well No. 37 is proposed as a directionally drilled wellbore. Marathon's development of Sections 16, 17, 20, and 21, Township 21 South, Range 24 East, has relied heavily on directionally drilled wellbores due to the extreme topographical relief in the Seven Rivers Hills and Azotea Mesa plateaus (please see Attachment #6 – "East Indian Basin" Topographical Map). As a result, there are only a few wells on the Mesa that have been able to be drilled vertically to a standard target. Furthermore, the Bureau of Land Management (BLM) guidelines for location construction preclude drilling on slopes greater than 20%. An onsite inspection was performed by a BLM surface use specialist and all locations for a vertical wellbore in the SW/4 NE/4 (UL "G") in Section 20 were condemned due to topographical constraints and habitat destruction for access roads and rights of way.

Geologic Issues:

The Indian Basin Upper Pennsylvanian Associated Pool is predominantly composed of dolomite and limestone sequences. With current technology, only the dolomite sequences have proved productive and economic. The proposed location for the Indian Hills Unit Well No. 37 is expected to encounter minimal limestone because of dolomitic facies in all offsetting wells. Furthermore, the proposed penetration point at 2447' FNL & 2401' FEL in Section 20 is structurally equivalent to a vertical wellbore in the SW/4 NE/4 (UL "G"). Therefore, it is Marathon's opinion that the proposed unorthodox location is geologically similar to a standard location.

Reservoir Management Plan:

There are currently two (2) wells, the Indian Hills Unit Well Nos. 18 (API #30-015-30564) and 33 (API #30-015-31755), that produce from the Indian Basin Upper Pennsylvanian Associated Pool in the East half of Section 20. In addition, the Indian Hills Unit Well No. 25 (API #30-015-31194) will be recompleted to the Upper Pennsylvanian the week of October 14th, 2002, becoming the third producing well in that gas proration unit.

The West half of Section 20 currently has three (3) producing Upper Pennsylvanian wells, the Indian Hills Unit Well Nos. 6 (API #30-015-25827), 21 (API #30-015-30811) and 40 (API #30-015-32222). The Indian Hills Unit No. 30 (API #30-015-31655) is currently a Devonian salt water disposal well, but is planned to be recompleted and converted to the Upper Pennsylvanian for a total of four (4) wells within the West half proration unit. Our proposed Indian Hills Unit No. 37 will therefore be the final 80 acre spacing Upper Pennsylvanian well within Section 20.

Marathon is entering its final anticipated infill development phase of the Indian Basin Upper Pennsylvanian Associated Gas Pool. The objective of this program is to infill drill the oil column from the current ~160-acre well density to an ~80-acre well density. It is Marathon's belief that the oil zone should be developed on tighter spacing than the current ~160 acre development of the gas zone. The proposed ~80-acre infill program will improve oil recovery while minimizing both economic and reservoir waste.

Due to current pool rules allowing one well per 80 acres, only one (1) additional well can be drilled in the East half of Section 20. Based on an 80 acre drainage radius of the existing wells, the proposed location balances the distance between the BHL's of existing wells. Attachment 7 is a structure map showing 80 acre drainage areas around all of the current and future Upper Pennsylvanian producers. By placing the well at the proposed BHL, Marathon can maximize and adequately drain reserves from Section 20.

It is Marathon's belief that the proposed unorthodox location represents a superior location in regard to optimal reservoir drainage. The BHL of the Upper Pennsylvanian in the Indian Hills Unit Well No. 37 provides a well balanced and near equal inter-well spacing between the existing wells. This 'equal' inter-well spacing will minimize well-to-well interference and hence maximize reserve recovery.

Notifications:

It is Marathon's understanding that since the working interest and mineral ownership are the same in the gas proration unit for the proposed well and the affected offset gas proration unit, no waivers or notifications to offset owners are required.

Should you have any questions/comments/concerns, please contact me at (915) 687-8306.

Respectfully,

A handwritten signature in black ink, appearing to read 'SMillican', with a stylized, flowing script.

Steven F. Millican
Indian Basin Asset Team
Marathon Oil Company

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

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

DISTRICT IV
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

Attachment 1-A

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 33685	Pool Name Indian Basin Upper Penn. Assoc.
Property Code	Property Name INDIAN HILLS UNIT	Well Number 37
GRID No. 14021	Operator Name MARATHON OIL COMPANY	Elevation 4161.7'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	20	21-S	24-E		1092'	NORTH	1380'	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
"G"	20	21-S	24-E		2646'	NORTH	2552'	EAST	EDDY

Dedicated Acres 320 E/2	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>LOT 4</p> <p>Standard Producing Area</p> <p>38.99 AC</p> <p>LOT 5</p> <p>40.55 AC</p> <p>LOT 6</p> <p>Non-Standard Area</p> <p>IHU # 37 BHL</p> <p>IHU # 37 Penetration</p> <p>37.95 AC</p> <p>39.51 AC</p> <p>Project Area</p> <p>BHL X-Y's</p> <p>X-442414.6</p> <p>Y-532878.1</p>	<p>LOT 3</p> <p>LOT 2</p> <p>LOT 1</p> <p>4167.6'</p> <p>4115.8'</p> <p>1380'</p> <p>37.68 AC</p> <p>LOT 8</p> <p>4120.5'</p> <p>4141.2'</p> <p>IHU # 25 BHL</p> <p>38.34 AC</p> <p>39.39 AC</p> <p>GEODETIC COORDINATES</p> <p>NAD 27 N.M.E.</p> <p>Y=534340.1</p> <p>X=443439.5</p> <p>LAT.=32°28'07.96"N</p> <p>LONG.=104°31'00.22"W</p> <p>IHU # 33 BHL</p> <p>40</p> <p>40</p> <p>40</p> <p>660'</p> <p>IHU # 18</p> <p>660'</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Jerry Fletcher</i></p> <p>Signature</p> <p>Jerry Fletcher</p> <p>Printed Name</p> <p>Engineer Tech.</p> <p>Title</p> <p>10/04/02</p> <p>Date</p> <p>SURVEYOR CERTIFICATION</p> <p>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 belief.</p> <p>AUGUST 23, 2002</p> <p>Date Surveyed</p> <p>LA</p> <p>Signature & Seal of Professional Surveyor</p> <p>NEW MEXICO</p> <p>02.14.0574</p> <p>Certificate No. RONALD J. EIDSON 3239</p> <p>GARY EIDSON 12641</p>
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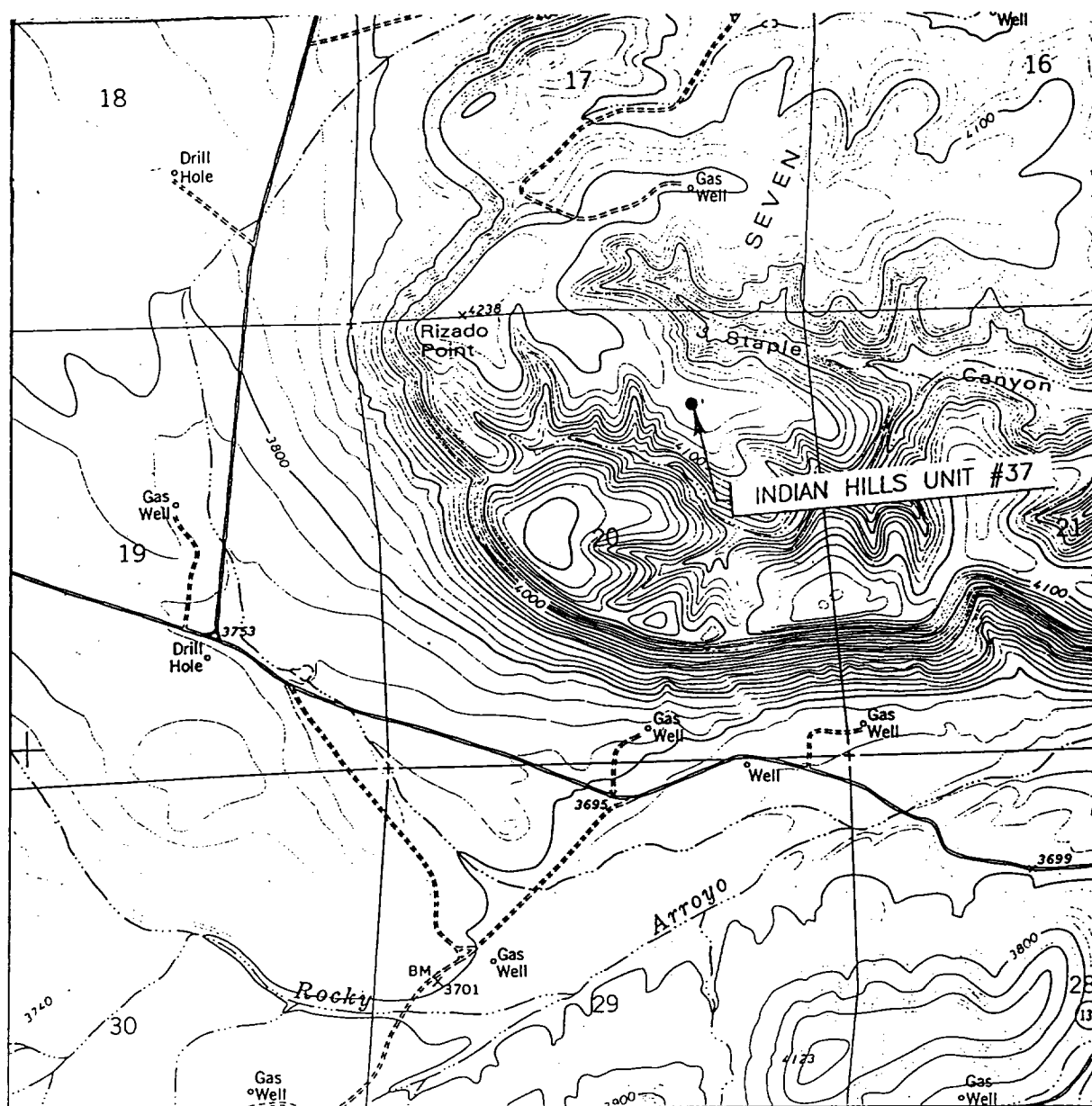
LOT 1, 2, 3, 4, 5, 6, 7, 8

314.34

Attachment 1-B



LOCATION VERIFICATION MAP

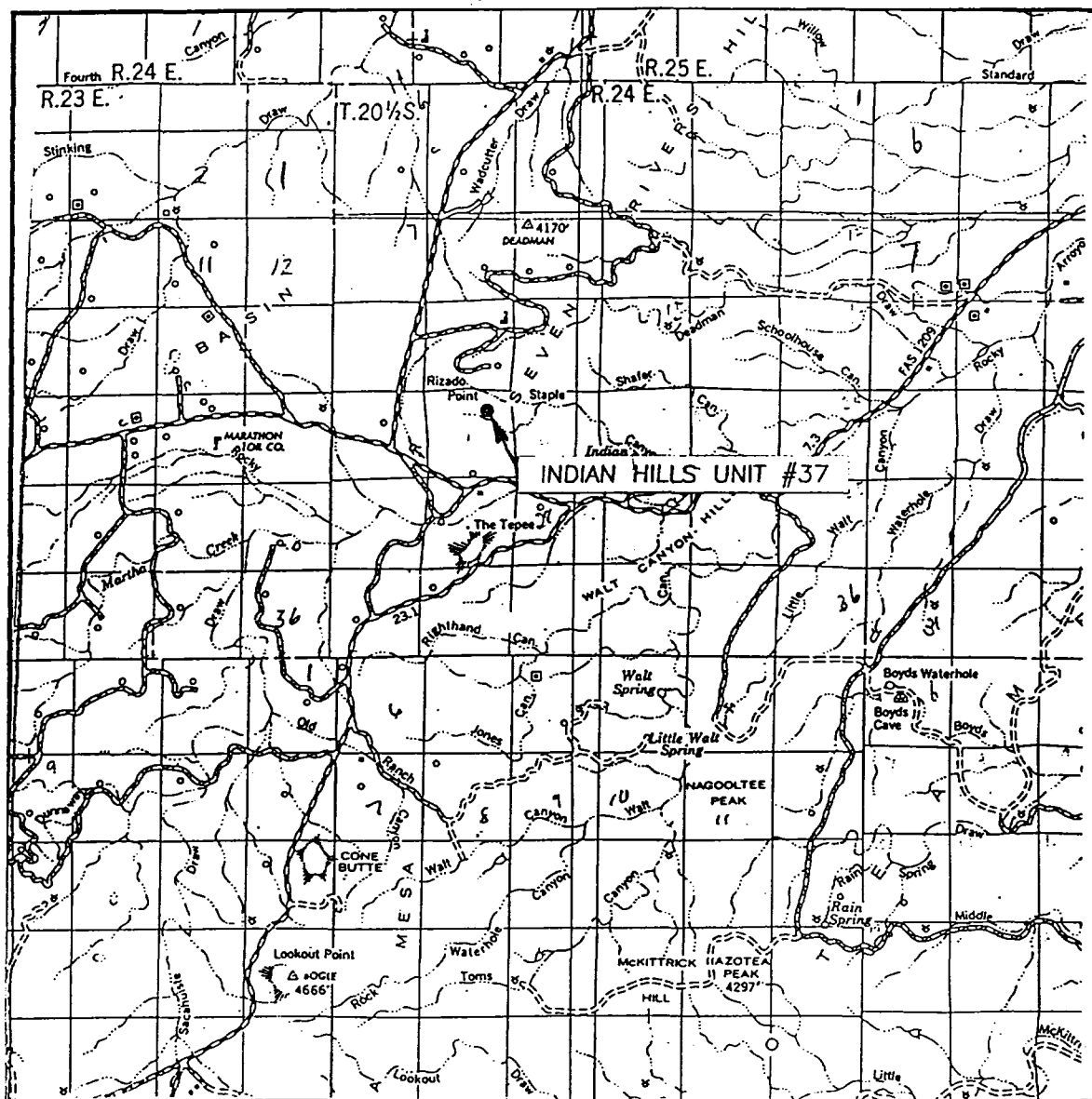


SCALE: 1" = 2000'

CONTOUR INTERVAL: 20'
MARTHA CREEK, N.M.SEC. 20 TWP. 21-S RGE. 24-ESURVEY N.M.P.M.COUNTY EDDYDESCRIPTION 1092' FNL & 1380' FELELEVATION 4161.7'OPERATOR MARATHON OIL COMPANYLEASE INDIAN HILLS UNITU.S.G.S. TOPOGRAPHIC MAP
MARTHA CREEK, N.M.

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505) 393-3117

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 20 TWP. 21-S RGE. 24-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1092' FNL & 1380' FEL

ELEVATION 4161.7'

OPERATOR MARATHON OIL COMPANY

LEASE INDIAN HILLS UNIT

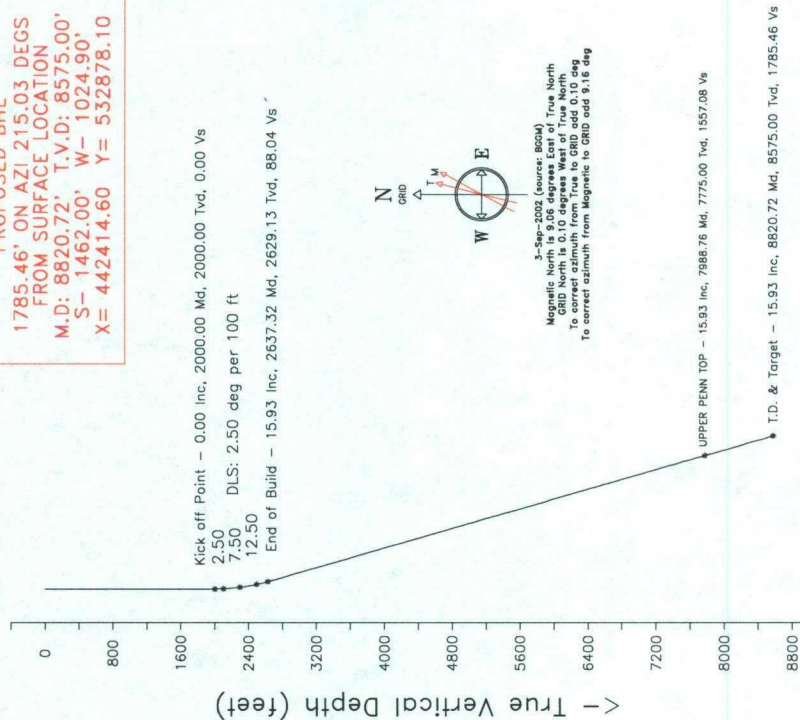
JOHN WEST SURVEYING
 HOBBS, NEW MEXICO
 (505) 393-3117

Marathon Oil Company

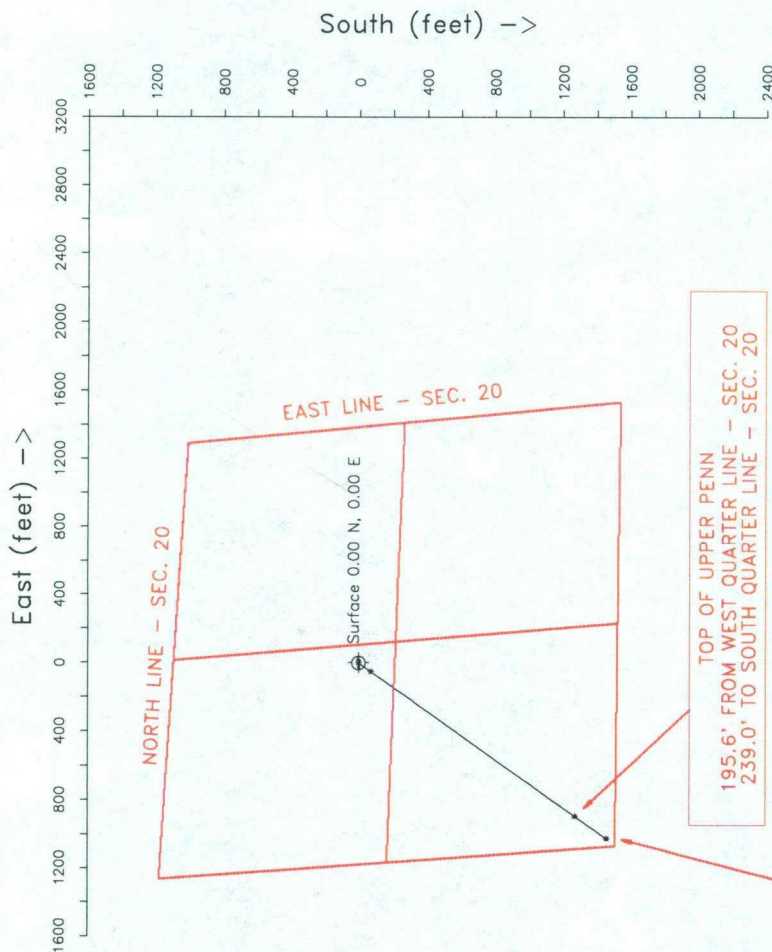
Structure : Indian Hills Unit #37 Slot : slot #1
Field : INDIAN BASIN Location : Eddy County New Mexico

WELL PROFILE DATA									
Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100	
Top of Build	0.00	0.00	215.03	0.00	0.00	0.00	0.00	0.00	
KOP	2000.00	0.00	215.03	2000.00	0.00	0.00	0.00	0.00	
End of Build	2637.32	15.93	215.03	2629.13	-72.09	-50.54	88.04	2.50	
T.D. & Target TD	8820.72	15.93	215.03	8575.00	-1462.00	-1024.90	1785.46	0.00	

PROPOSED BHL
1785.46' ON AZI 215.03 DEGS
FROM SURFACE LOCATION
M.D: 8820.72' T.V.D: 8575.00'
S- 1462.00' W- 1024.90'
X= 442414.60 Y= 532878.10



Vertical Section (feet) ->
Azimuth 215.03 with reference 0.00 N, 0.00 E from slot #1



INTEQ

APPROVAL
Operations:
Client:
Date:

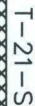
Created By: Kellym
Date Plotted: 3-Sep-2002
Plot Reference is PO 20J RH/SJ.
Coordinates are in feet reference slot #1.
True Vertical Depths are reference rotary table.
inhu37
--- Baker Hughes INTEQ ---



STRUCTURE SET-UP REFERENCE			
LAT :	32 28 7.965	N	
LONG :	104 31 0.224	W	
X=	443439.5	Y=	534340.1
PROJECTION: MERCATOR			
Mercator Zone:	New Mexico East		
Spheroid Used:	Clarke - 1866		
Data Source: BGM			
Dip Angle:	60.47	deg	
Field Strength:	49614.47	nT	

Attachment 5

T-21-S

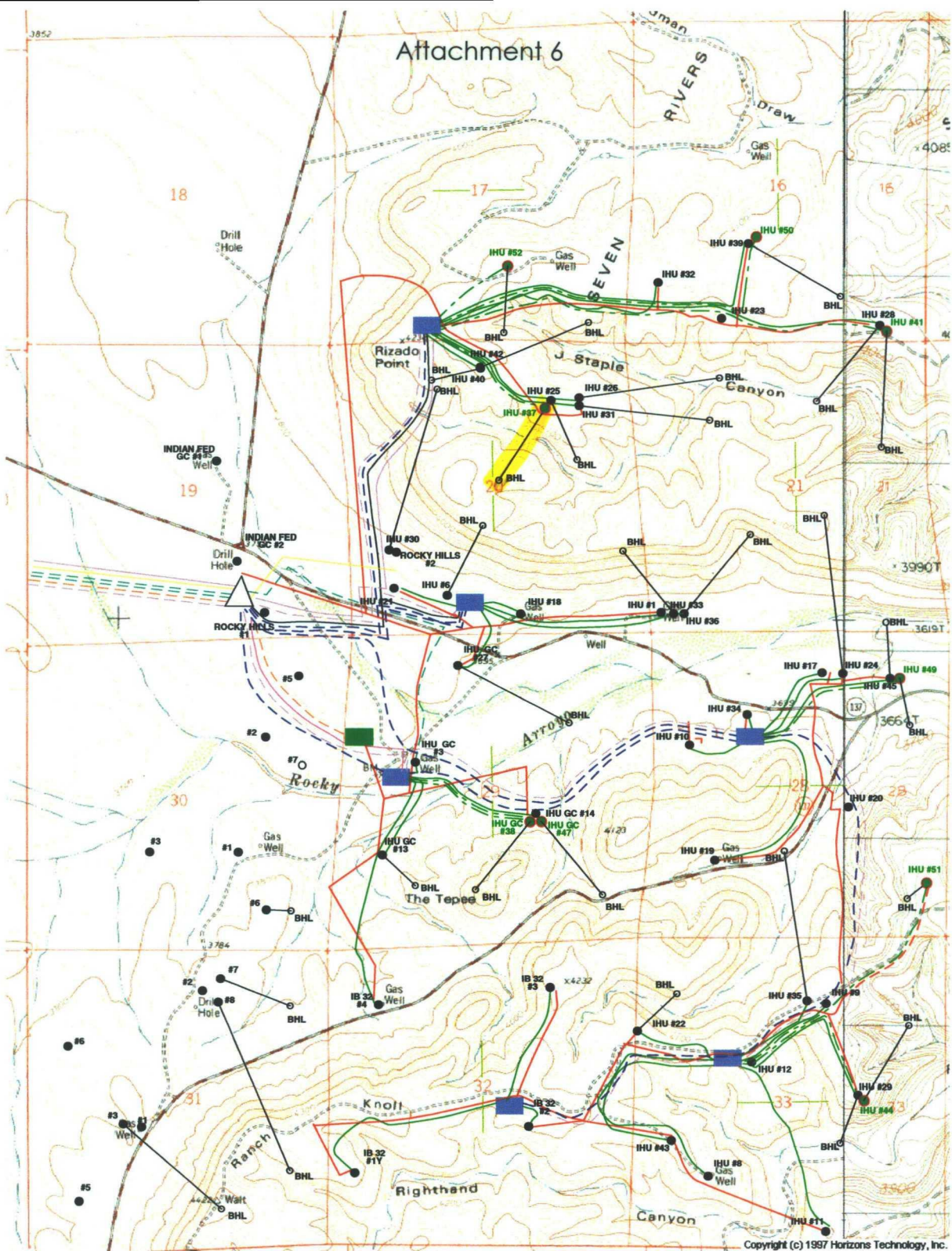


UPPER PENNSYLVANIAN PARTICIPATING AREA

R-24-E

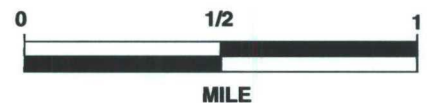
10/2/02
UPPENPA.DWG
BY: GINNY LARKE

Attachment 6



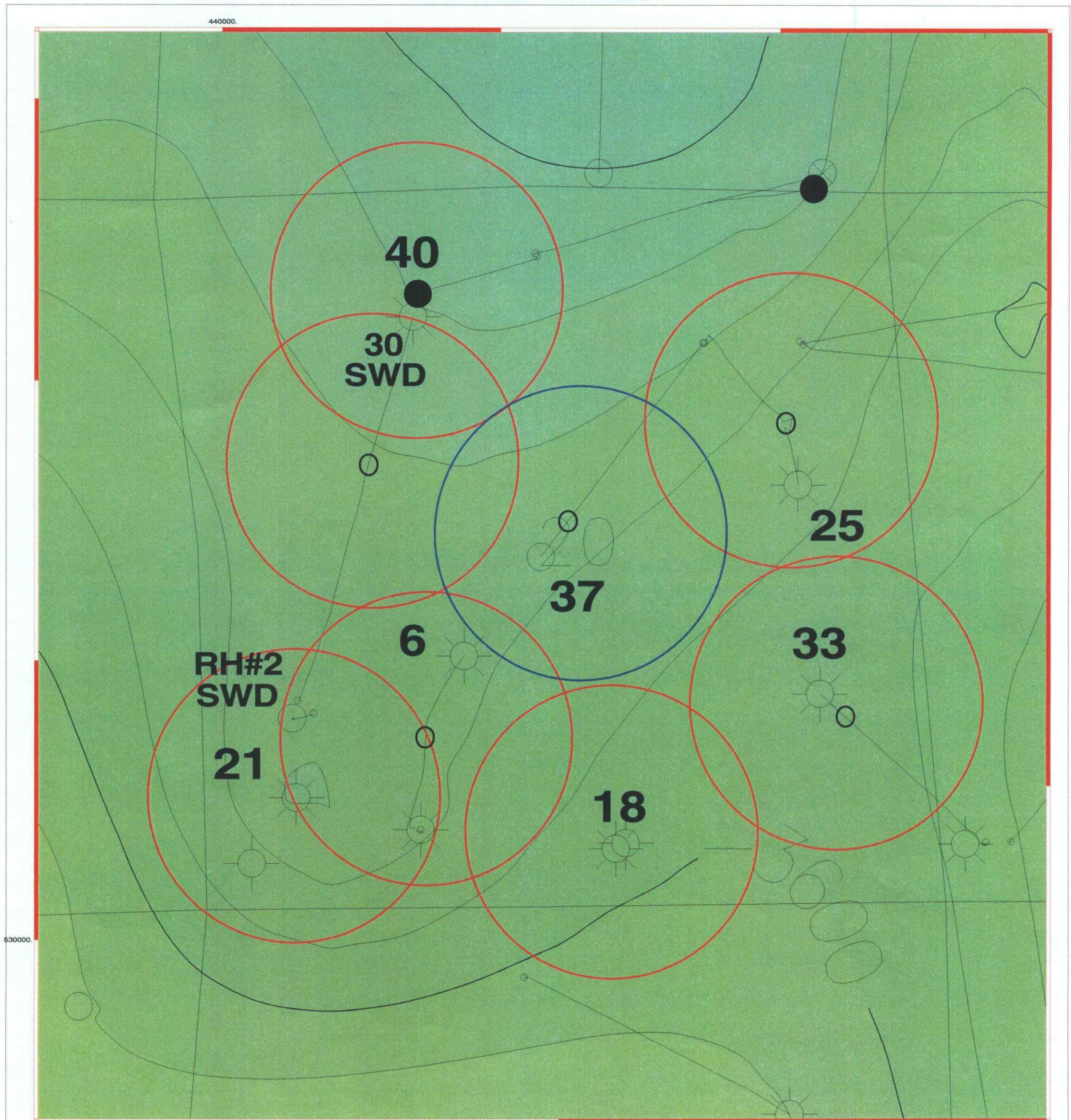
Copyright (c) 1997 Horizons Technology, Inc.

- PRODUCING WELLS
- POTENTIAL LOCATIONS
- EXISTING FLOWLINES
- - - PROPOSED FLOWLINES
- EXISTING ELECTRICAL LINES
- - - PROPOSED ELECTRIC LINES
- - - FLUID GATHERING SYSTEM
- OIL GATHERING SYSTEM
- PRORATION UNIT ORIENTATION
- LOW PRESSURE GAS GATHERING SYSTEM
- HIGH PRESSURE GAS GATHERING SYSTEM
- COMPRESSOR FUEL LINE
- COMPRESSOR DISCHARGE LINE
- PROPOSED MORROW GAS GATHERING SYSTEM
- SWD INJECTION LINE
- == ROADWAY
- △ CENTRAL FACILITY
- SATELLITE STATIONS
- COMPRESSOR STATION



MARATHON OIL COMPANY
SOUTHERN BUSINESS UNIT

EAST INDIAN BASIN
EDDY COUNTY, NEW MEXICO

**LEGEND**

- PRIMARILY OIL TARGETS
- 80 ACRE AREA
- O UPPER PENN INTERVAL

Marathon Oil Company

**INDIAN BASIN FIELD
PROPOSED WELLS - 2003**

Hedi Ben Tahar

1"=1000'

10/2/2002

Allen C. Brummert

Scale 1:12000.

80acre.cr.GPF