

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.

Print or Type Name

Signature

Title

Date

e-mail Address



**Marathon  
Oil Company**

P.O. Box 3487  
Houston, TX 77253-3487  
Telephone 713/629-6600

May 5, 2005

Mr. Richard Ezeanyim  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87504

Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

MAY 10 2005

**RECEIVED**

**RE: Indian Basin '32' State No. 9 Unorthodox Location  
1,958' FSL & 1,652' FEL, Sec. 32, Township 21 South, Range 24 East (SHL),  
900' FSL & 2,150' FWL, Sec. 32, Township 21 South, Range 24 East (BHL)  
Indian Basin Upper Pennsylvanian Associated Pool**

Dear Mr. Ezeanyim,

By means of this application, Marathon Oil Company respectfully requests administrative approval to drill the proposed Indian Basin '32' State Well No. 9 to a non-standard location in the Upper Pennsylvanian formation. The well is designed to be directionally drilled from a surface location of 1,958' FSL & 1,652' FEL, Section 32, Township 21 South, Range 24 East, to a bottom hole location of 900' FSL & 2,150' FWL, Section 32, Township 21 South, Range 24 East. The well will to be dedicated to the standard 320-acre spacing unit consisting of the west half of Section 32.

Marathon proposes to drill the Indian Basin '32' State Well No. 9 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-5353. 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 lines. The Indian Basin '32' State Well No. 9 location is unorthodox because the producing interval infringes upon the 660 foot setback from the eastern boundary of the 320 acre "stand-up" gas proration unit dedicated to the west half of Section 32 (please see Attachment #1 - Well Location and Acreage Dedication Plat). For your information and review, please see further identification of the physical location of the proposed well in Attachment #2 - Vicinity Map.

Based on the proposed directional plan, it is expected that the top of the Upper Pennsylvanian formation will be penetrated at 1,017' FSL & 2,309' FWL in Section 32, at approximate depths of -3,452' SSTVD, 7,943' MD and 7,680' TVD. Please see Attachment #3 - Directional Plat supplied by Baker Inteq, Marathon's directional drilling company for the well.

In summary, this application requests approval to produce from the non-standard location within the 660 foot setback from the eastern boundary of the western "stand-up" proration unit in Section 32. In support of this application, specific details will be provided. These details will include further discussion of the proration units affected by the proposed well (and the other wells that exist within these proration units), how the well fits into Marathon's reservoir management plan, and why the proposed location is geologically superior to a standard location in Section 32.

**Directional Wellbore:**

The Indian Basin '32' State Well No. 9 is proposed to be directionally drilled to the Upper Pennsylvanian reservoir. Due to the topographical constraints of the Seven Rivers Hills and the Azotea Mesa Plateaus, this drilling approach has been applied consistently with the other wells involved in Marathon's development of the East Indian Basin area (please see Attachment #4 – Location Verification Map). Surface topography and a failed attempt to target the same bottomhole location in the Indian Basin '32' State Well No. 8 well from the Indian Basin '32' State Well No. 1-Y location limits our surface location and directional drilling options. (The Indian Basin '32' State No. 8 well was spudded in March 2004, but was abandoned after drilling only ~800' and after sticking the drill pipe and leaving two fish in the hole). Therefore, the only available surface location to drill a development well in the southeast quarter of Section 32 is located on the Indian Basin '32' State No. 2 pad location.

**Proration Unit:**

The Indian Basin '32' State Well No. 9 is proposed to be dedicated to the proration unit consisting of the west half of Section 32, Township 21 South, Range 24 East. Currently, there are two (2) other wells that produce from this proration unit in the Upper Pennsylvanian formation. These wells are the Indian Basin '32' State Well No. 4 (API No. 30-015-30618) and the Indian Basin '32' State Well No. 1-Y (API No. 30-015-25133). The proposed Indian Basin '32' State Well No. 9 will develop the eastern 80 acre "stand-up" in the Upper Pennsylvanian formation (in the E/2 SW/4 of Section 32). Please see Attachment #5 – Indian Basin Map for a detailed area map showing the well paths and locations of each of the wells in Section 32.

The Indian Basin '32' State section is operated by Marathon Oil Company. Marathon has a 56.25% working interest and Occidental Petroleum Corporation has a 43.75% working interest. The ownership of this proration unit is identical to that of the eastern half of Section 32, and is the only proration unit to which the proposed well is non-standard.

**Geologic Issues:**

It is Marathon's belief that the proposed unorthodox location represents a superior location in regards to both reservoir drainage and geologic risk. The Indian Basin Upper Pennsylvanian Associated Pool is predominantly composed of dolomite and limestone sequences. Based on geologic interpretations, rock quality is predicted to be at least equivalent between the proposed location and a standard location. The proposed azimuth for the wellbore will maximize the distance between the existing wells thereby minimizing interference. Therefore, the geologic superiority of this well is found in the ability to increase reserves recovery, when compared to a standard location in the same area.

Marathon suspects that there may be oil bearing porosity developments within the dolomite sequences that are poorly connected to the existing vertical and deviated wellbores due to the discontinuous porosity and permeability in some areas of the Upper Pennsylvanian formation. A cross section between the Indian Basin '32' State Well No. 1-Y, the Indian Basin '32' State Well No. 2 (API No. 30-015-30097), and the Indian Basin '32' State Well No. 6 (API No. 30-015-33031) has been included to help illustrate some of the geologic variability that can exist between relatively closely spaced wells (please see Attachment #6).

**Reservoir Management Plan:**

With current technology, only the fractured, vuggy dolomite sequences have proven productive and economic. The proposed Indian Basin '32' State Well No. 9 is an attempt to further develop the eastern extent of these oil and gas bearing dolomite sequences within East Indian Basin.

Over the last three years, Marathon has focused on developing the oil potential of the Upper Pennsylvanian formation in this area primarily by infilling the well density to 80 acres in prospective oil areas. Even though recently completed directional wellbores have confirmed both strong and gas oil potential in this area, Marathon has carefully selected the proposed bottom hole location for this new well based primarily on balancing the inter-well spacing in order to minimize well-to-well interference and hence maximize reserve recovery.

**Notifications:**

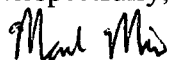
The mineral ownership of Section 32, Township 21 South, Range 24 East is the same for both the western and eastern 320-acre proration unit halves. As mentioned previously, the following is a breakdown of the working interest owners in this section:

Marathon Oil Company:	56.25%
Occidental Petroleum:	43.75%

The proposed location for the Indian Basin '32' State Well No. 9 in the west half of Section 32 only infringes on, and is unorthodox to, the east half of Section 32. It is Marathon's understanding that because the ownership of the gas spacing unit to which the proposed well would be unorthodox is identical to the proration unit in which the well will be located, no waivers or notifications are required.

Should you have any questions/comments/concerns, please do not hesitate to contact me at (713) 296-1921.

Respectfully,



Mark Mick  
Operations Engineer  
Indian Basin Asset Team  
Marathon Oil Company

## DISTRICT I

P.O. Box 1988, Hobbs, NM 88241-1988

## 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

## OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

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

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code <b>33685</b>	Pool Name <b>Indian Basin Upper Penn. Assoc</b>
Property Code <b>22575</b>	Property Name <b>INDIAN BASIN 32 STATE</b>	Well Number <b>9</b>
GRID No. <b>14021</b>	Operator Name <b>MARATHON OIL COMPANY</b>	Elevation <b>4220'</b>

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	32	21-S	24-E		1958'	SOUTH	1652'	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
N	32	21-S	24-E		900'	SOUTH	2150'	WEST	EDDY

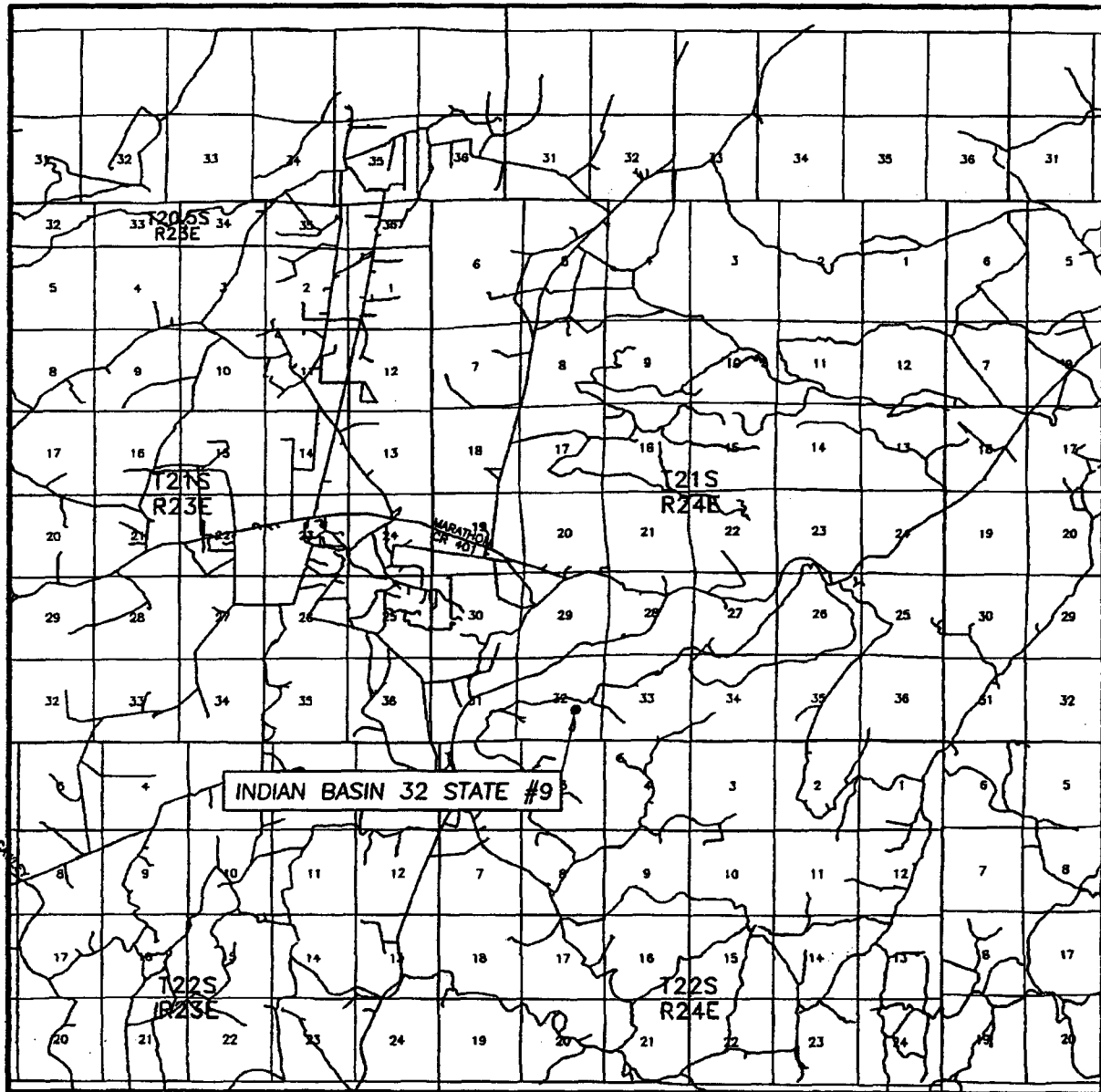
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
<b>320 W/2</b>			

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>IB 32 St.#4</p> <p>Standard Prod. Area</p> <p>GEODETIC COORDINATES NAD 27 NME Y = 521524.8 N X = 443197.7 E LAT. 32°26'01.14"N LONG. 104°51'02.79"W</p> <p>GRID AZ= 237°00'30" GRID DIST= 1926.0'</p> <p>IB 32 St.#1-Y</p> <p>BOTTOM HOLE Y = 520476 N X = 441582 E</p> <p>Surface Location</p> <p>Non-Standard Prod. Area</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p>Signature _____</p> <p>Printed Name _____</p> <p>Title _____</p> <p>Date _____</p> <p><b>SURVEYOR CERTIFICATION</b></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>March 22, 2004</p> <p>Date Surveyed _____</p> <p>Signature &amp; Seal of Professional Surveyor _____</p> <p>REV. 04/02/04</p> <p>04.11.0315</p> <p>Certificate No. GARY EDSON 12641</p>
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# VICINITY MAP

ATTACHMENT #2



SCALE: 1" = 2 MILES

SEC. 32 TWP. 21-S RGE. 24-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1958' FSL 1652' FEL

ELEVATION 4220'

OPERATOR MARATHON OIL COMPANY

LEASE INDIAN BASIN 32 STATE

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

# Marathon Oil Company

Structure : Indian Basin 32 State #9 Slot : slot #1

Field : INDIAN BASIN Location : Eddy County New Mexico

Created by: donf  
Date plotted : 5-Apr-2004  
Plot Reference is Pin 1.  
Coordinates are in feet reference slot #1.  
True Vertical Depths are reference rotary table.  
s19pp  
--- Baker Hughes INTEQ ---



## WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	0.00	0.00	237.01	0.00	0.00	0.00	0.00	0.00
KOP	1900.00	0.00	237.01	1899.92	0.00	0.00	0.00	0.00
End of Build/Turn	2607.13	17.68	237.01	2595.88	-58.93	-90.78	108.23	2.50
T.D. & Target BHL	8593.97	17.68	237.01	8300.00	-1048.80	-1615.70	1926.26	0.00

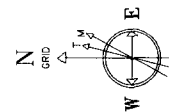
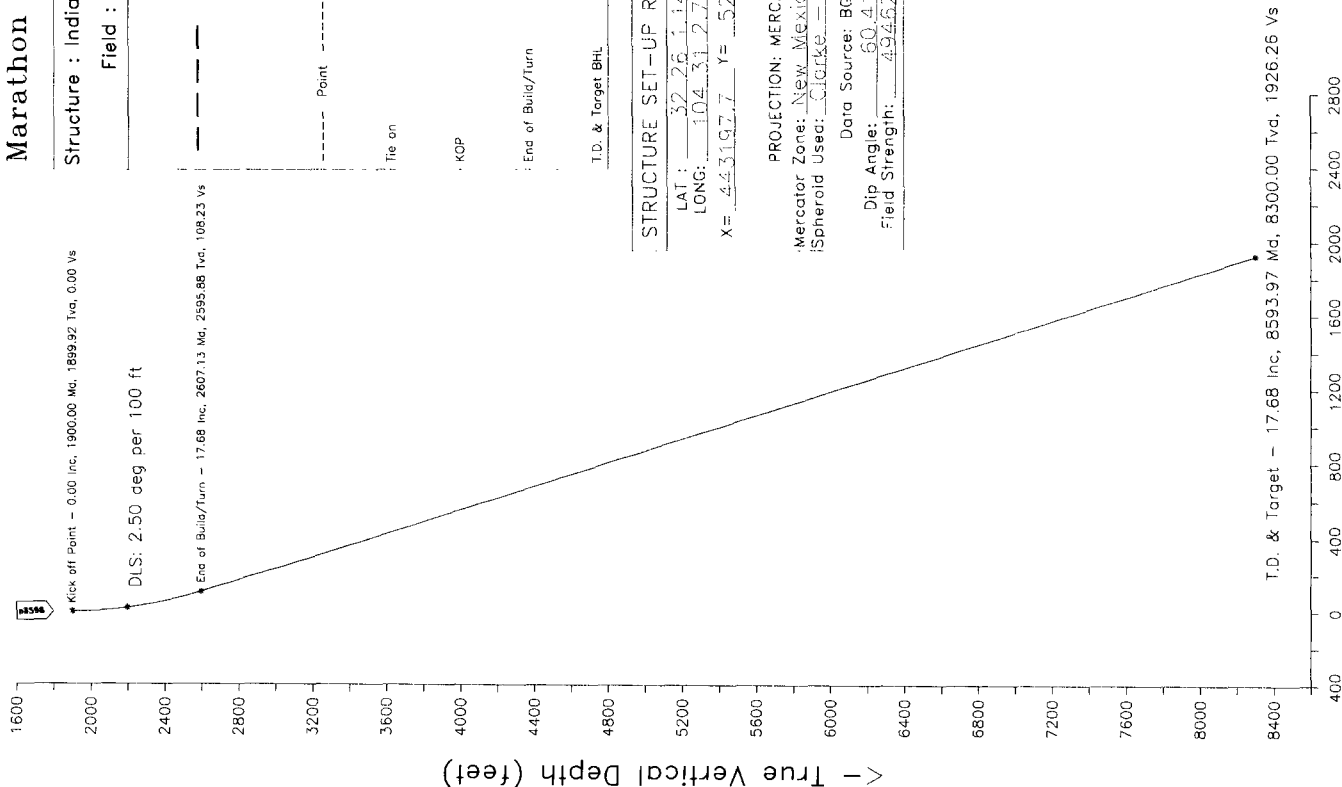
### STRUCTURE SET-UP REFERENCE

LAT: 32.261141 N  
LONG: 104.312789 W  
X= 443197.7 Y= 521527.3

### PROJECTION: MERCATOR

Mercator Zone: New Mexico East  
Spheroid Used: Clarke = 1880

Data Source: B6GM  
Dip Angle: 60.41 deg  
Field Strength: 49462.7 nT

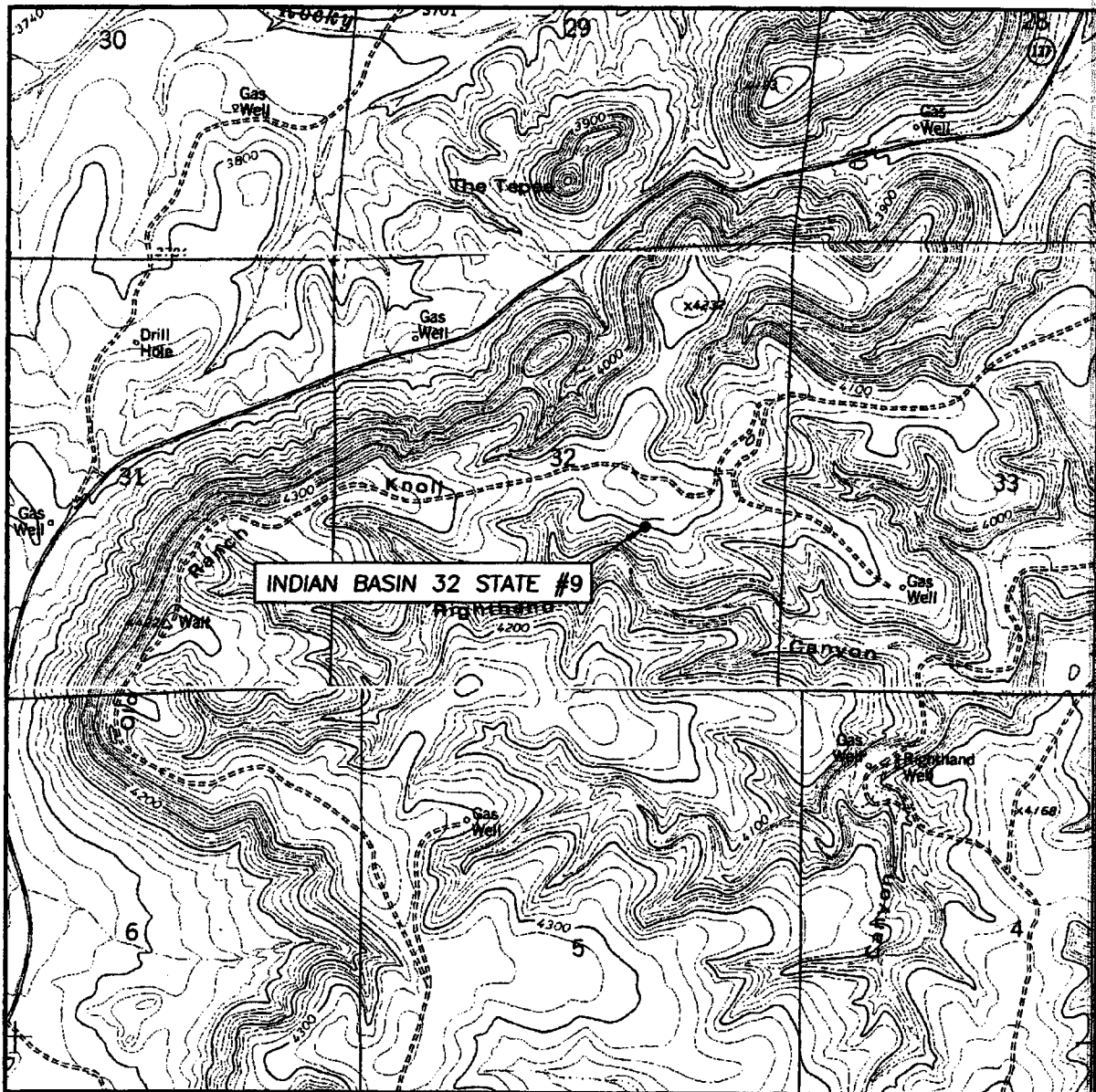


5-Apr-2004 (Source: B6GM 2003)  
Magnetic North is 8.86 degrees East of True North  
GRID North is 0.10 degrees West of True North  
To correct azimuth from True to GRID add 0.10 deg  
To correct azimuth from Magnetic to GRID add 8.96 deg

Vertical Section (feet) -->

Azimuth 237.01 with reference 0.00 N, 0.00 E from slot #1

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

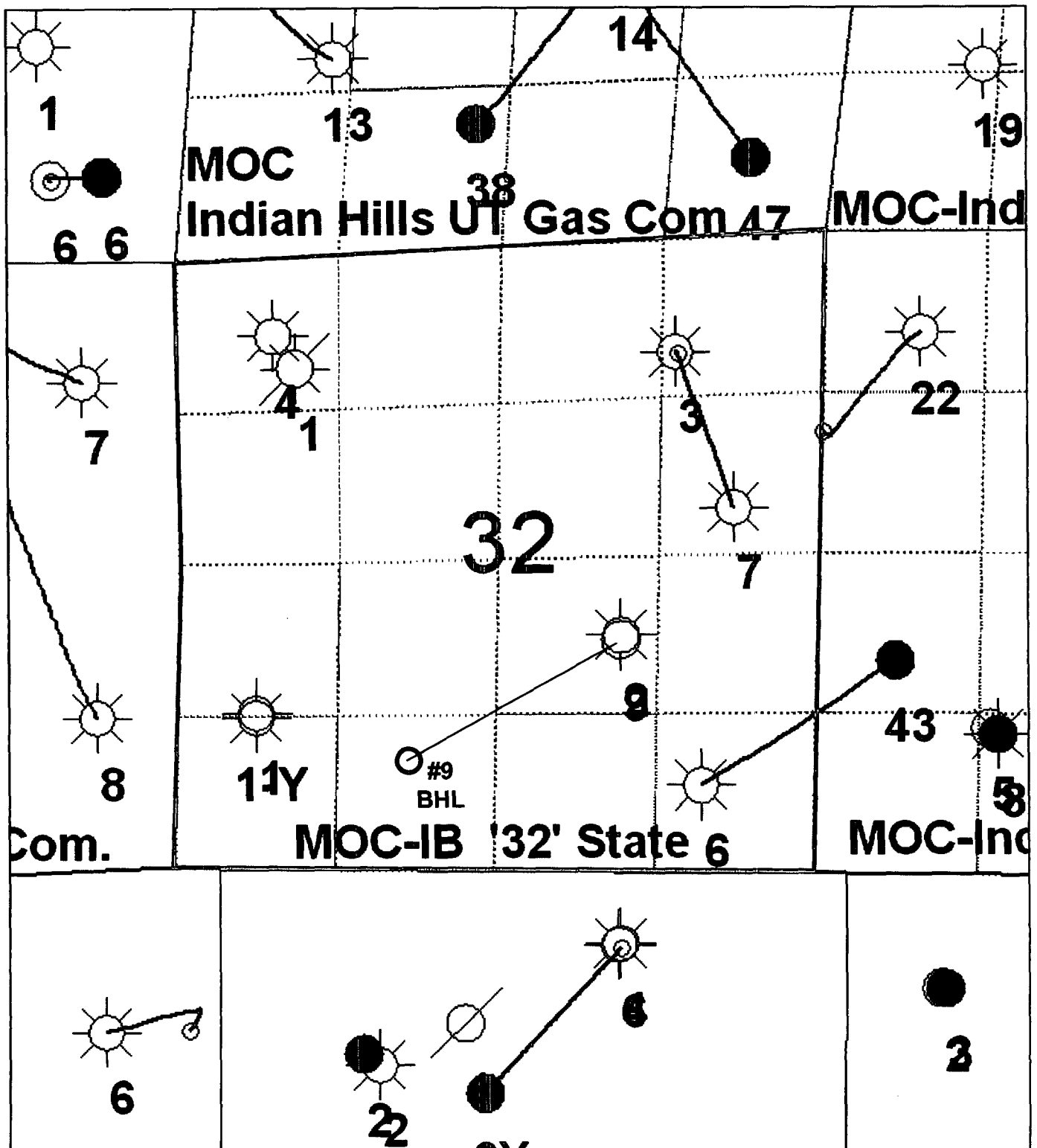
CONTOUR INTERVAL: 20'  
MARTHA CREEK, N.M.SEC. 32 TWP. 21-S RGE. 24-ESURVEY N.M.P.M.COUNTY EDDYDESCRIPTION 1958' FSL 1652' FELELEVATION 4220'OPERATOR MARATHON OIL COMPANYLEASE INDIAN BASIN 32 STATE

U.S.G.S. TOPOGRAPHIC MAP

MARTHA CREEK, N.M.

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





30015251310000  
TEXACO  
GETTY 1-B-32 STATE 1-V  
4131 R/B  
TD 18200

IB 32  
State #9

30015309970000  
MARATHON OIL COMPANY  
INDIAN BASIN 32 STATE 2  
4132 R/B  
TD 8455

30015338310000  
MARATHON OIL COMPANY  
INDIAN BASIN 32 STA 6  
4133 R/B  
TD 8700

ATTACHMENT #6

