Form 3160-3
(July 1992)

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0136
Expires: February 28, 1995

C15P

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO. NM 07260

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT NAME: Indian Hills Unit 6409

8. FARM OR LEASE NAME, WELL NO. # 33

9. API WELL NO. 30-015-31755

10. FIELD AND POOL, OR WILDCAT: Indain Basin Upper Penn. Assoc

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec.21, T-21-S, R-24-E

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Marathon Oil Company 14021

3. ADDRESS AND TELEPHONE NO.: P.O. Box 552 Midland, TX 79702 915-687-8357

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 429' FSL & 326' FWL
At proposed prod. zone: M

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 15- miles NW of Carlsbad

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 326'

16. NO. OF ACRES IN LEASE: 640

17. NO. OF ACRES ASSIGNED TO THIS WELL: 320

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: * 151'

19. PROPOSED DEPTH: 8800'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF,RT, GR, etc.): 3667' G.L.

22. APPROX. DATE WORK WILL START*: ASAP

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17.50"	13-3/8" K-55	54.50#	~~1200'~~ 1400	1250 sks. to surf.
12.25"	9-5/8" L-80	53.5#, 47.00#	8800'	3110
			SEE STIPS	

Marathon Oil Company is proposing to drill a directional Upper Penn. Assoc. well to a Standard BHL. See attached directional plan proposal.

This well is to be drilled on the existing well pad of our Indian Hills Unit # 1
This will minimize any unnecessary disturbances.
Reference Archaeology Report # 98-NM-067-345 ASC-98-009

* The proposed Indian Hills Unit # 33 well is 151' East of the Existing Indian Hills Unit # 1.

RECEIVED OCD ARTESIA

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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 [signature] TITLE Engineer Tech. DATE 2/21/01

(This space for Federal or State office use)

PERMIT NO. ________ APPROVAL DATE ________

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY /s/ LESLIE A. THEISS TITLE ________ DATE APR 30 2001

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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

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

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

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
		Indian Basin Upper Penn. Assoc.

Property Code	Property Name	Well Number
	INDIAN HILLS UNIT	33

OGRID No.	Operator Name	Elevation
14021	MARATHON OIL COMPANY	3667'

Surface Location

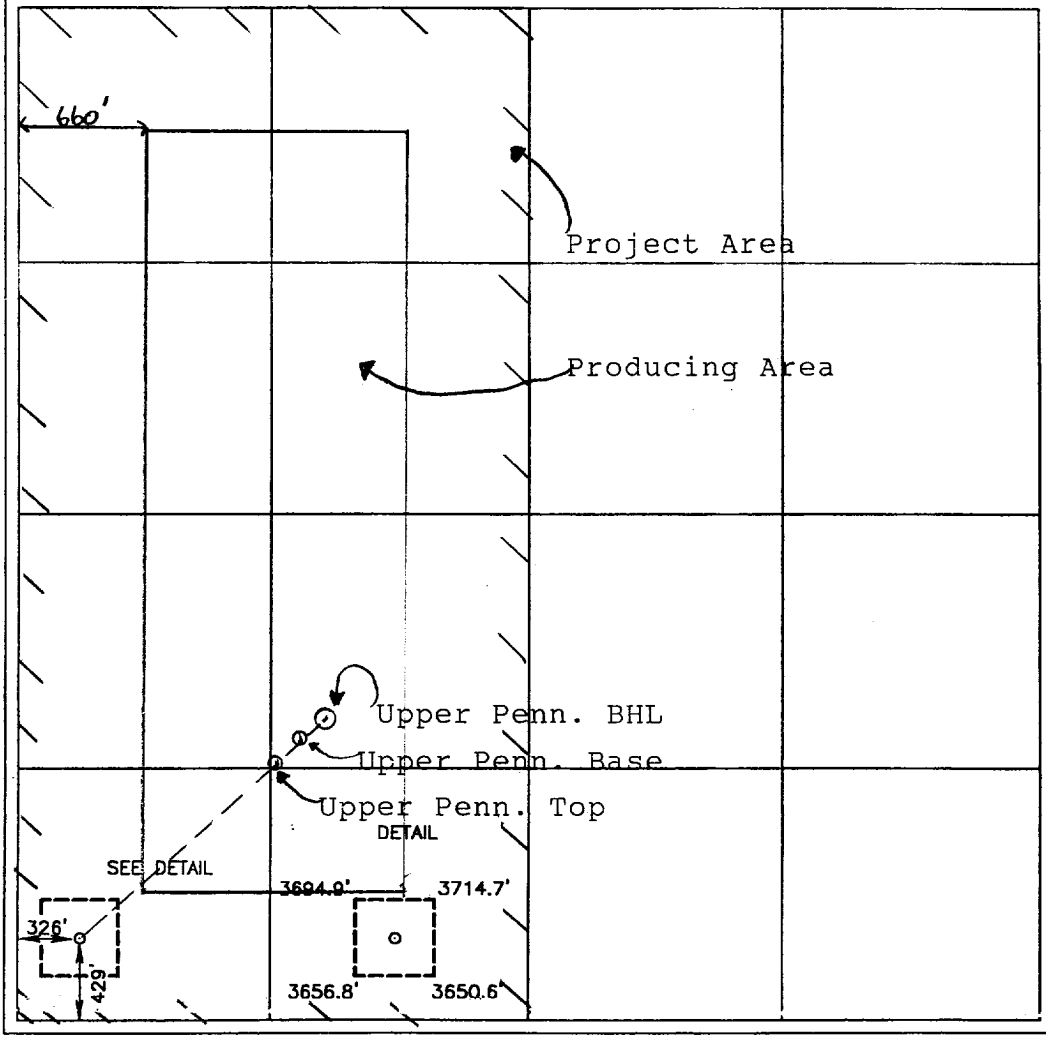
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	21	21-S	24-E		429	SOUTH	326	WEST	EDDY

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
K	21	21-S	24-E		1578	SOUTH	1603	WEST	Eddy

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

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



OPERATOR CERTIFICATION

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

Signature

Jerry Fletcher
Printed Name

Engineer Tech.
Title

2/21/01
Date

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 supervison, and that the same is true and correct to the best of my belief.

JANUARY 30, 2001

Date Surveyed AWB

Signature & Seal of Professional Surveyor

Ronald J. Eidson 02/08/01

01-11-0057

Certificate No. RONALD J. EIDSON 3239
GARY EIDSON 12641

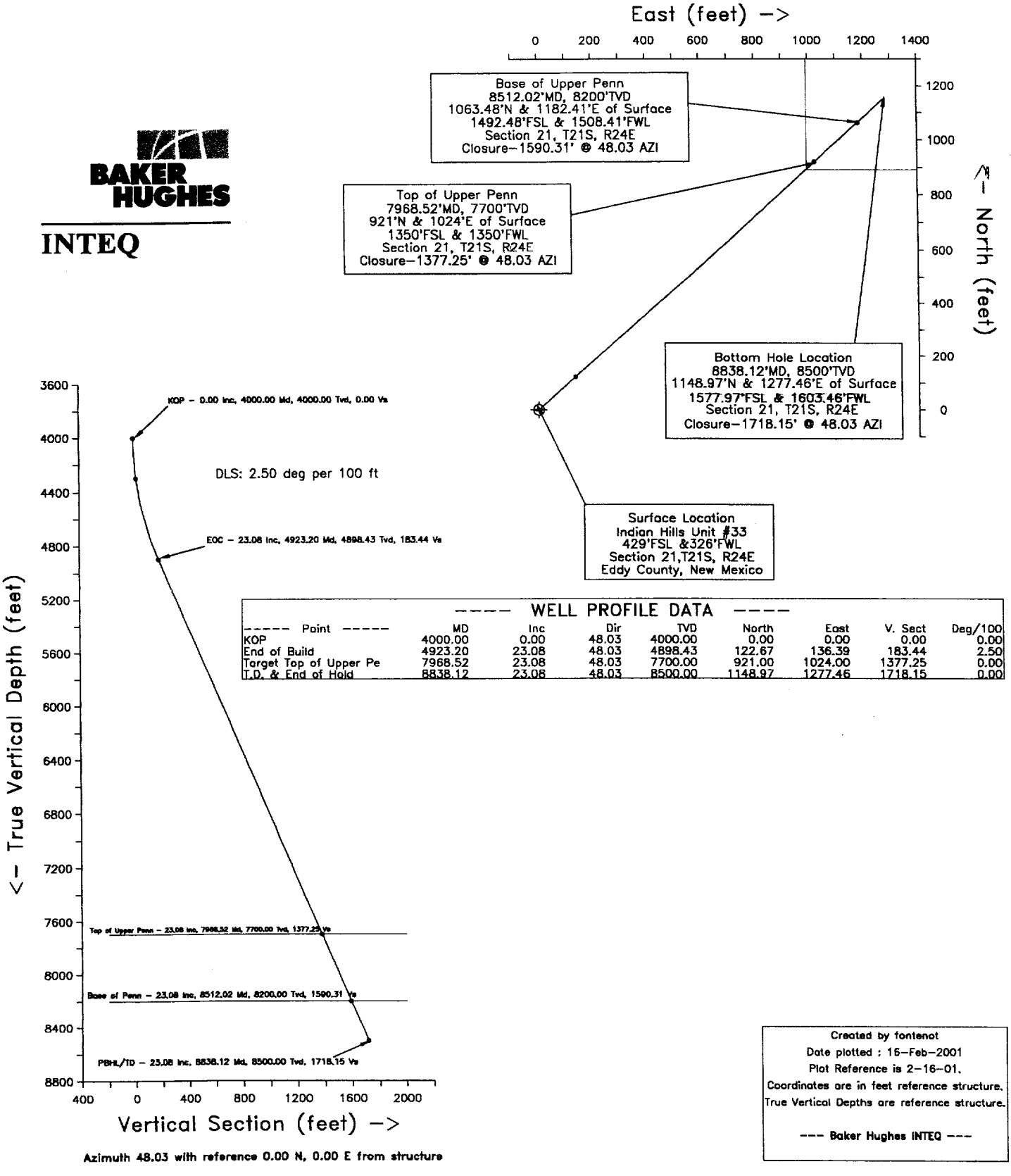
Marathon Oil Company

Structure : Indian Hills Unit #33 Slot : slot #1

Field : Indian Basin Location : EDDY COUNTY, NM.

BAKER HUGHES

INTEQ



---- WELL PROFILE DATA ----

----- Point -----	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
KOP	4000.00	0.00	48.03	4000.00	0.00	0.00	0.00	0.00
End of Build	4923.20	23.08	48.03	4898.43	122.67	136.39	183.44	2.50
Target Top of Upper Pe	7968.52	23.08	48.03	7700.00	921.00	1024.00	1377.25	0.00
T.D. & End of Hold	8838.12	23.08	48.03	8500.00	1148.97	1277.46	1718.15	0.00

Created by fontenot
Date plotted : 16-Feb-2001
Plot Reference is 2-16-01.
Coordinates are in feet reference structure.
True Vertical Depths are reference structure.

--- Baker Hughes INTEQ ---

Marathon Oil Company
Indian Hills Unit #33

slot #1
Indian Basin
EDDY COUNTY, NM.

P R O P O S A L L I S T I N G

by
Baker Hughes INTEQ

Your ref : 2-16-01
Our ref : prop2714
License :

Date printed : 16-Feb-2001
Date created : 16-Feb-2001
Last revised : 16-Feb-2001

Field is centred on n32 30 0.000,w104 30 0
Structure is centred on n32 30 0.000,w104 30 0

Slot location is n32 30 0.000,w104 30 0.000
Slot Grid coordinates are N 545652.918, E 448616.515
Slot local coordinates are 0.00 N 0.00 E

Projection type: mercator - New Mexico East (3001), Spheroid: Clarke - 1866

Reference North is Grid North

Marathon Oil Company
Indian Hills Unit #33,slot #1
Indian Basin,EDDY COUNTY, NM.

PROPOSAL LISTING Page 1
Your ref : 2-16-01
Last revised : 16-Feb-2001

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES	Dogleg Deg/100ft	Vert Sect	
4000.00	0.00	48.03	4000.00	0.00 N 0.00 E	0.00	0.00	KOP
4100.00	2.50	48.03	4099.97	1.46 N 1.62 E	2.50	2.18	
4200.00	5.00	48.03	4199.75	5.83 N 6.48 E	2.50	8.72	
4300.00	7.50	48.03	4299.14	13.11 N 14.58 E	2.50	19.61	
4400.00	10.00	48.03	4397.97	23.28 N 25.89 E	2.50	34.82	
4500.00	12.50	48.03	4496.04	36.33 N 40.39 E	2.50	54.33	
4600.00	15.00	48.03	4593.17	52.22 N 58.06 E	2.50	78.09	
4700.00	17.50	48.03	4689.17	70.93 N 78.87 E	2.50	106.07	
4800.00	20.00	48.03	4783.85	92.43 N 102.76 E	2.50	138.21	
4900.00	22.50	48.03	4877.05	116.66 N 129.71 E	2.50	174.46	
4923.20	23.08	48.03	4898.43	122.67 N 136.39 E	2.50	183.44	EOC
5000.00	23.08	48.03	4969.09	142.81 N 158.78 E	0.00	213.55	
5500.00	23.08	48.03	5429.07	273.88 N 304.51 E	0.00	409.56	
6000.00	23.08	48.03	5889.05	404.95 N 450.24 E	0.00	605.56	
6500.00	23.08	48.03	6349.03	536.03 N 595.98 E	0.00	801.57	
7000.00	23.08	48.03	6809.01	667.10 N 741.71 E	0.00	997.58	
7500.00	23.08	48.03	7268.98	798.18 N 887.44 E	0.00	1193.58	
7968.52	23.08	48.03	7700.00	921.00 N 1024.00 E	0.00	1377.25	Top of Upper Penn
8000.00	23.08	48.03	7728.96	929.25 N 1033.18 E	0.00	1389.59	
8500.00	23.08	48.03	8188.94	1060.33 N 1178.91 E	0.00	1585.60	
8512.02	23.08	48.03	8200.00	1063.48 N 1182.41 E	0.00	1590.31	Base of Penn
8838.12	23.08	48.03	8500.00	1148.97 N 1277.46 E	0.00	1718.15	PBHL/TD

All data is in feet unless otherwise stated.
Coordinates from structure and TVD from rotary table.
Bottom hole distance is 1718.15 on azimuth 48.03 degrees from wellhead.
Vertical section is from wellhead on azimuth 48.03 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

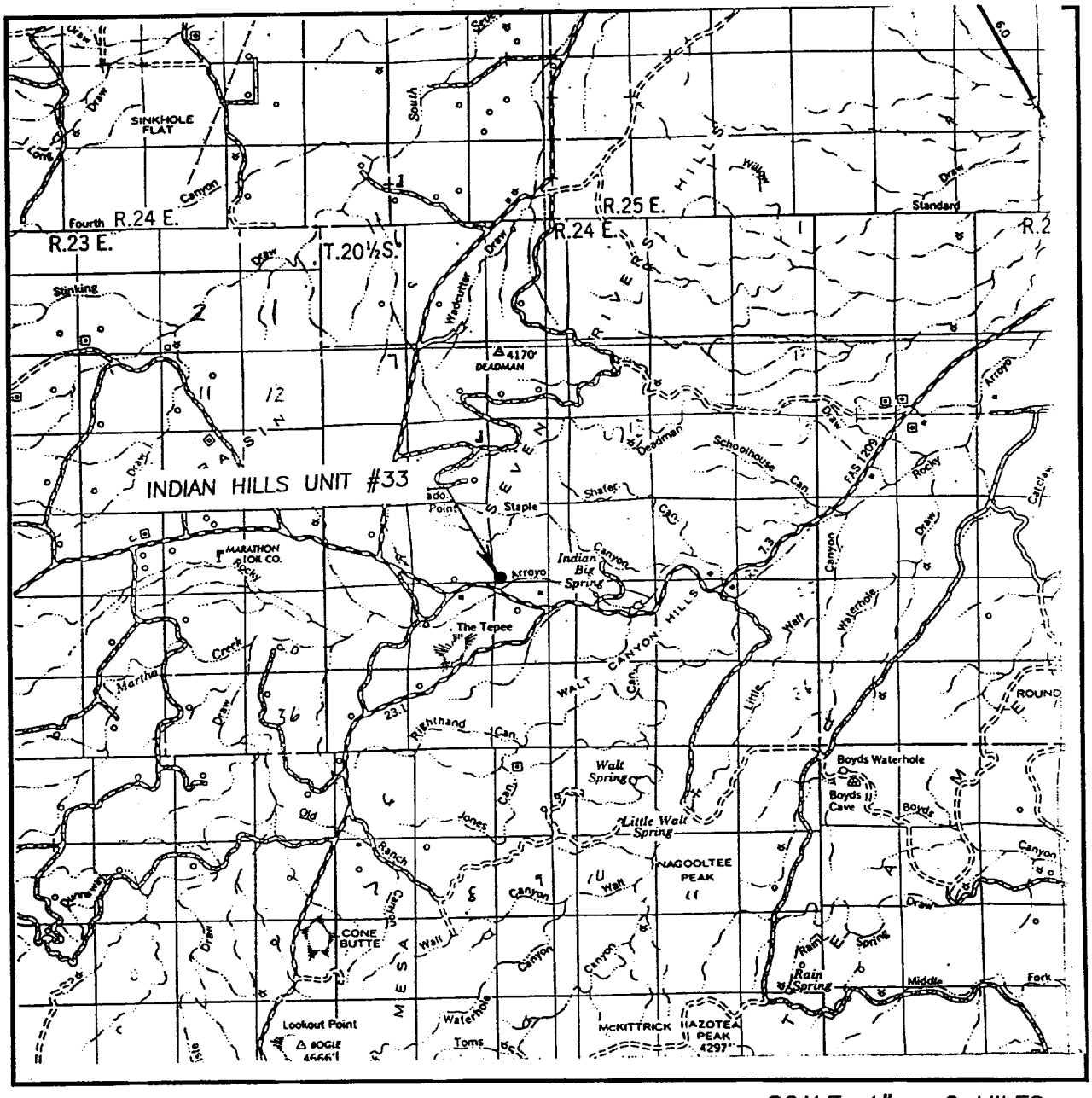
Comments in wellpath

MD	TVD	Rectangular Coords.	Comment
4000.00	4000.00	0.00 N 0.00 E	KOP
4923.20	4898.43	122.67 N 136.39 E	EOC
7968.52	7700.00	921.00 N 1024.00 E	Top of Upper Penn
8512.02	8200.00	1063.48 N 1182.41 E	Base of Penn
8838.12	8500.00	1148.97 N 1277.46 E	PBHL/TD

Targets associated with this wellpath

Target name	Geographic Location	T.V.D.	Rectangular Coordinates	Revised
Top of Upper Penn		7700.00	921.00N 1024.00E	15-Feb-2001

VICINITY MAP



SCALE: 1" = 2 MILES

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

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 429'FSL & 326'FWL

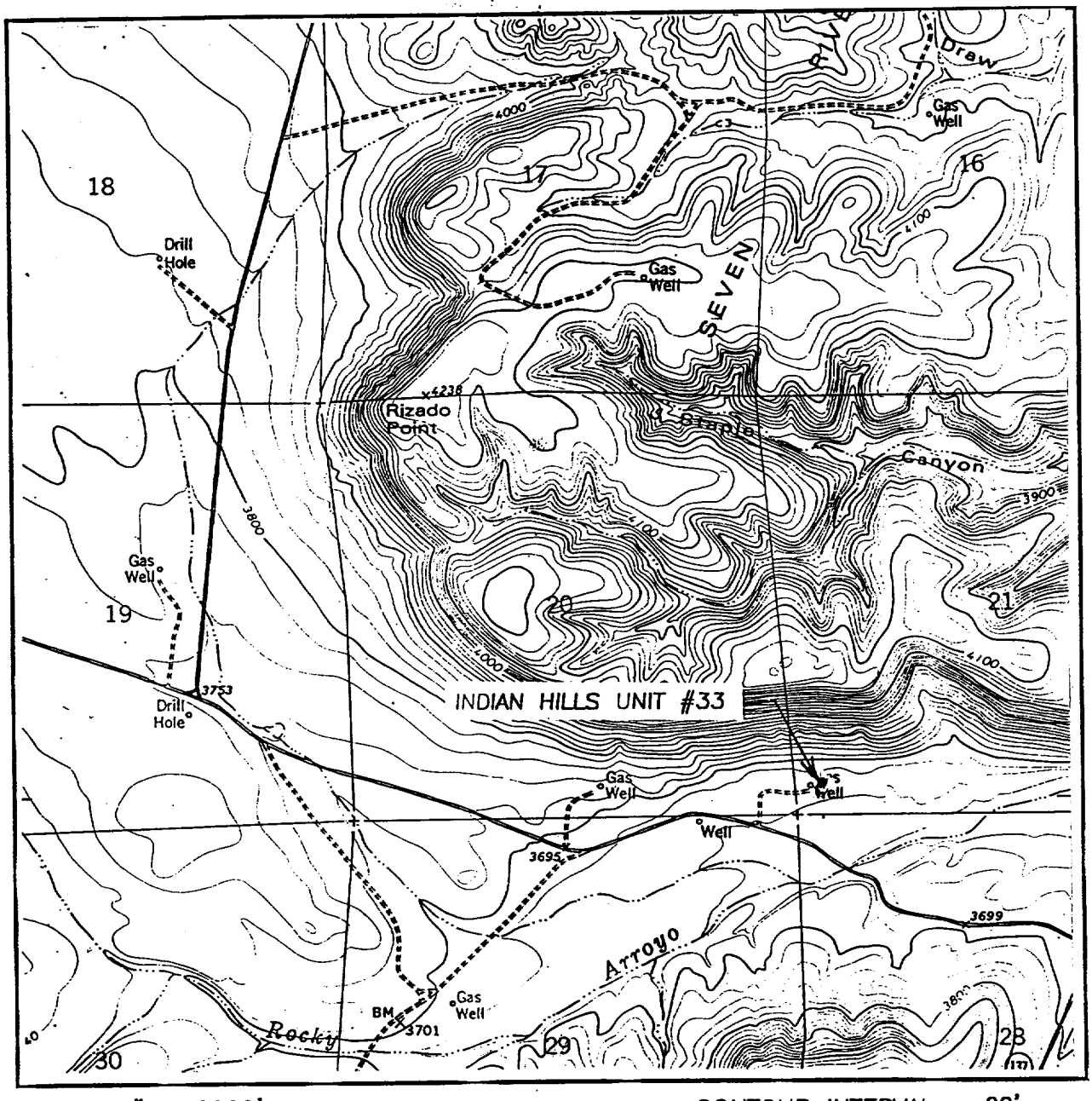
ELEVATION 3667'

OPERATOR MARATHON OIL COMPANY

LEASE INDIAN HILLS UNIT

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

LOCATION VERFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 20'

MARTHA CREEK N.M.

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

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 429'FSL & 326'FWL

ELEVATION 3667'

OPERATOR MARATHON OIL COMPANY

LEASE INDIAN HILLS UNIT

U.S.G.S. TOPOGRAPHIC MAP
MARTHA CREEK N.M.

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

Thirteen Point Surface Use Plan
MARATHON OIL COMPANY
INDIAN HILLS UNIT # 33
Sec. 21, T-21-S, R-24-E

1. Existing Roads: Refer to Vicinity Lease Map.

   a. The proposed wellsite is staked and the surveyor's plat is attached.

   b. To reach the location from Carlsbad, New Mexico: Follow Hwy. 285 North of Carlsbad 11 miles. Turn left on (NM)137. Go 6 miles west, Take right Y on Marathon road (401) travel 1.0 miles; turn north on lease road go .25 miles to location. Directly offsets IHU # 1 to the East.

   c. Existing roads within a one-mile radius (refer to Vicinity Lease Map).

   d. The existing road will be maintained as necessary to provide access during the drilling operation.

2. Planned Access Road: Refer to Vicinity Lease Map.

   Access will be by existing State roads and existing lease roads. Construction plans will require blading and rolling the road and pad. The access road enters the drilling pad on the Southwest corner. The drilling location will have a V-door facing East.

3. Location of Existing Wells: See Vicinity Lease Map.

4. Location of Existing and Proposed Production Facilities within a one-mile radius:

   a. Existing: There are seven oil and gas wells operated by Marathon within a one-mile radius of the proposed location. These locations have production facilities including separators, condensate, oil, water storage tanks. Marathon operates a variety of dehydrators, meter runs, and several gathering lines in the one-mile radius.

New Facilities: No new facilities will be needed. Using existing facility.

   c. Rehabilitation of disturbed areas no longer needed for operations will be accomplished by grading, leveling and seeding as recommended.

5. Location and Type of Water Supply:

   a. Source: Indian Basin Gas Plant, NE/4 Sec. 23, T-21-S, R-23-E.

   b. The water will be transported by a trucking contractor and via temporary lines laid along the existing row's and roads. No new construction will be required on/along the water route.

   c. No water well will be drilled on this location.

6. Source of Construction Materials:

   a. Construction materials may be obtained from the construction site.

   b. If production is obtained, native materials will be used on the location and for installation of production facilities.

   c. On-site inspection may dictate any changes in location construction.

7. Methods of Handling Waste Material Disposal:

   a. Cuttings - will be deposited in the reserve pit.

   b. Drilling fluids - contained in reserve pit and allowed to evaporate. Free water will be removed and transported to an approved disposal site to accelerate pit drying.

   c. Produced fluids - none anticipated.

   d. A portable chemical toilet will be provided.

   e. Garbage and other waste material - garbage and trash will be stored in a receptacle on location and periodically hauled to an approved sanitary landfill.

   f. After the rig moves out, all materials not necessary for operations will be removed. Pits will be backfilled and leveled. The location will be cleaned of all trash and debris.

8. Ancillary Facilities: Camp facilities will not be required. Portable trailers will be on location to house a company drilling foreman and contract toolpusher.

9. Wellsite Layout:

   a. The wellpad layout shows the drillsite layout as staked. Topsoil will be stockpiled per specifications.

   b. The reserve pit will be fenced on three sides before drilling begins. The fourth side will be fenced when the drilling rig leaves location.

   c. The reserve pit will be lined (8 mil material).

10. Plans for Restoration of the Surface:

   a. Backfilling, leveling, and contouring are planned as soon as all pits have dried. Waste disposal and spoiled materials will be hauled away immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible.

   b. The soil banked material will be spread over the area. Revegetation will be accomplished by planting mixed grasses as per formula provided by the BLM. Revegetation is recommended for road area, as well as around the drill pad.

   c. The reserve pit will be fenced during drilling operations. Fencing will be maintained until leveling and cleanup are accomplished.

   d. If any oil is in the pits and is not immediately removed after operations cease, the pit containing the oil or other adverse substances will be flagged overhead or covered with mesh.

e. The rehabilitation operations will begin after the completion rig is removed. Removal of oil or other adverse substances will begin immediately or area will be flagged and fenced. Other cleanup will be done as needed. Planting and revegetation will be done between July 15 and September 15.

f. All efforts will be made to minimize surface disturbances .

11. Other Information:

a. There are no significant archaeological or cultural sites visible in the area of disturbance. A cultural resource survey was performed by Archaeological Consultants Inc. of Roswell.

b. General topography: Shown on Vicinity Lease Map. The terrain at the wellsite is gently rolling hills. Vegetation is primarily sage brush and natural grasses.

c. Animal life: Prairie dogs, domestic livestock, rabbits and native rodents and predators.

d. Dwellings (nearest): Approximately 1 miles.

e. General location: Approximately 15 miles Northwest of Carlsbad, New Mexico.

f. Drainage: Internal

g. Surface Owner: The surface is owned by the Bureau of Land Management.

h. Due to proximity of the location and nearby drainage, Marathon will make every effort to minimize surface disturbance. Please see the location pad and reserve pit dimensions..

i. This well is intended to identify any potential development in the Northern portion of the Indian Hills Unit.

12. Operator Representatives:

R. J. Longmire
Drilling, Completion, & Workover Superintendent
P. O. Box 552
Midland, TX 79702
800/351-1417
915/682-1626

13. Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge and belief, true and correct; and that the work associated with the operations proposed herein will be performed by MARATHON OIL COMPANY and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

2/21/2001
Date

R. J. Longmire

DRILLING PROGRAM
MARATHON OIL COMPANY
INDIAN HILLS UNIT # 33

1. Estimated KB Elevation: 3693' KB

FORMATION	TOP MEASURED	TOP SUBSEA	BASE MEASURED	BASE SUBSEA	FLUID CONTENT
Queen	Surface	+3693'	650'	+3043'	water
San Andres	650'	+3043'	2250'	+1443'	water
Glorietta	2250'	+1443'	2355'	+393'	
Delaware	3300'	+393'	4300'	- 607'	
Bone Spring	4300'	-607'	5950'	-2257'	oil gas
Wolfcamp	5950'	-2257'	7520'	-3827'	oil gas
B/Permian Shale	7520'.	-3827'	7530'	-3837'	
U. Penn	7530'	-3837'	8800'	-5107'	gas, oil, water

FORMATION	EST SBHP PSIG	EST SBHP PPG EMW	EST DEG f	SBHT PPM	H2S	SIGNIFICANCE (obj, marker, etc.)
Bone Springs	1210	8.5		500		marker
Wolfcamp	1680	9.0				marker
B/Permian Shale	1810	9.0				objective pay
U. Penn	2050	9.0		5000		objective pay

2. See (1) above.
If any unexpected water or mineral bearing zones are encountered, they will be reported, evaluated, and protected as circumstances and regulations require.

3. **Pressure Control Equipment**:
4.

13-3/8" Surface: 13-5/8" 3M annular tested to 300#/3000#, 13-5/8" 3M dual rams, choke manifold and mud cross, tested to 300#/3000#.

Auxiliary Equipment:

Surface Hole: Annular or rotating head w/air rig.

Intermediate Hole: N/A

Production Hole: Flow indicator, PVT, H_2S Sensors, air packs, stroke counter, rotating head.

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and tested prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers and casing will be pressure tested before drilling casing cement plugs.

Upper and lower kelly cocks with valve handle and safety valve and subs to fit all drillstring connections in use will be available on rig floor.

Test Frequency

1. When installed.
2. Anytime a pressure seal is broken (test confined only to affected equipment).
3. At least every 20 days.
4. Blind and pipe rams shall be activated each trip but not more than once/day.

4. Casing and Cement Program:

---DEPTH--- FROM	TO	SECTION LENGTH	HOLE SIZE	CSG SIZE	WT. PPF	GRADE	THREADS COUPLINGS	NEW USED
0	~~1200'~~ 1400'	~~1200'~~	17.50"	13-3/8"	54.50#	K-55	8rd, STC	New
0	5500'	5500'	12.25"	9-5/8"	53.50#	L-80	8rd, LT&C	New
5500'	8800'	3300'	12.25"	9-5/8"	47.00#	L-80	8rd, LT&C	New

Casing String	DV Depth	Stg.	Lead Tail	Amt SXS	Type Cement	Yield CF/SX	Wt. PPG.	TOC	Additives
13-3/8"			L	100	"C"	7.15	9.5		Dia Seal
13-3/8"			L	100	Thixset	1.52	14.0		Thixset
13-3/8"			L	750	Lite	2.02	12.4	surface	2% cacl2,Flocele
13-3/8"			T	300	PremPlus	1.34	14.8		2% CACL2
9-5/8"	6400'	1	L	350	" "	2.18	9.2	6400'	N2
9-5/8"		1	T	1200	" "	1.44	13.0	7000'	N2
9-5/8"		2	L	1360	Interfill "C"	2.47	11.9	surface	Flocele
9-5/8"		2	T	200	PremPlus	1.32	14.8	62	Neat

A. P. D. (cont.)
Thirteen Point Surface Use Plan
Indian Hills Unit # 33

Each stage will be preceded by an appropriate mud flush. Actual production hole volumes will be based on the caliper volume plus 25% excess.

Centralizer Program:

13-3/8" Conventional centralizers , Bottom 3-joints and every 4th joint to surface.

9-5/8" Conventional centralizers middle of 1st joint, then every joint to 7500', and 1 cent. Every 4th joint thereafter to 1300'.

5. Mud Program

---DEPTH---			WEIGHT		WL		VISUAL
FROM	TO	MUD TYPE	(PPG)	VIS	CC	ADDITIVES	MONTR.
0	1200'	fresh water	8.3	28	N/A	Gel, Lime	Reserve
1200'	5000'	fresh	8.5	28-32	N/C	Gel, caustic, H_2S Scavenger	Reserve
5000'	7000'	fresh	8.9	32-36	N/C	Gel, caustic, H_2S Scavenger	Reserve
7000'	8800'	fresh	8.9	32-36	<20	Gel, caustic, H_2S Scavenger	Steel Pits

Sufficient quantities of additives will be on location to maintain above mud properties for any anticipated well conditions.

6. Logging, Testing & Coring Programs:

LOG/TEST/CORE/MUDLOG/OTHER	--INTERVAL- FROM	TO	REMARKS
DLL/MSFL/GR/CNL/LDT/CAL	TD	5000'	
LDT/CNL/GR/CAL	TD	surf casing	
MUD LOGGER	6000'	TD	ROP, Lithology, Gas Analysis, Chromatograph
NO CORES OR DST'S			

7. Abnormal Pressures, Temperatures or Potential Hazards:

None anticipated. Possible H_2S in Cisco & Upper Penn. See H_2S Drilling Operations Plan.

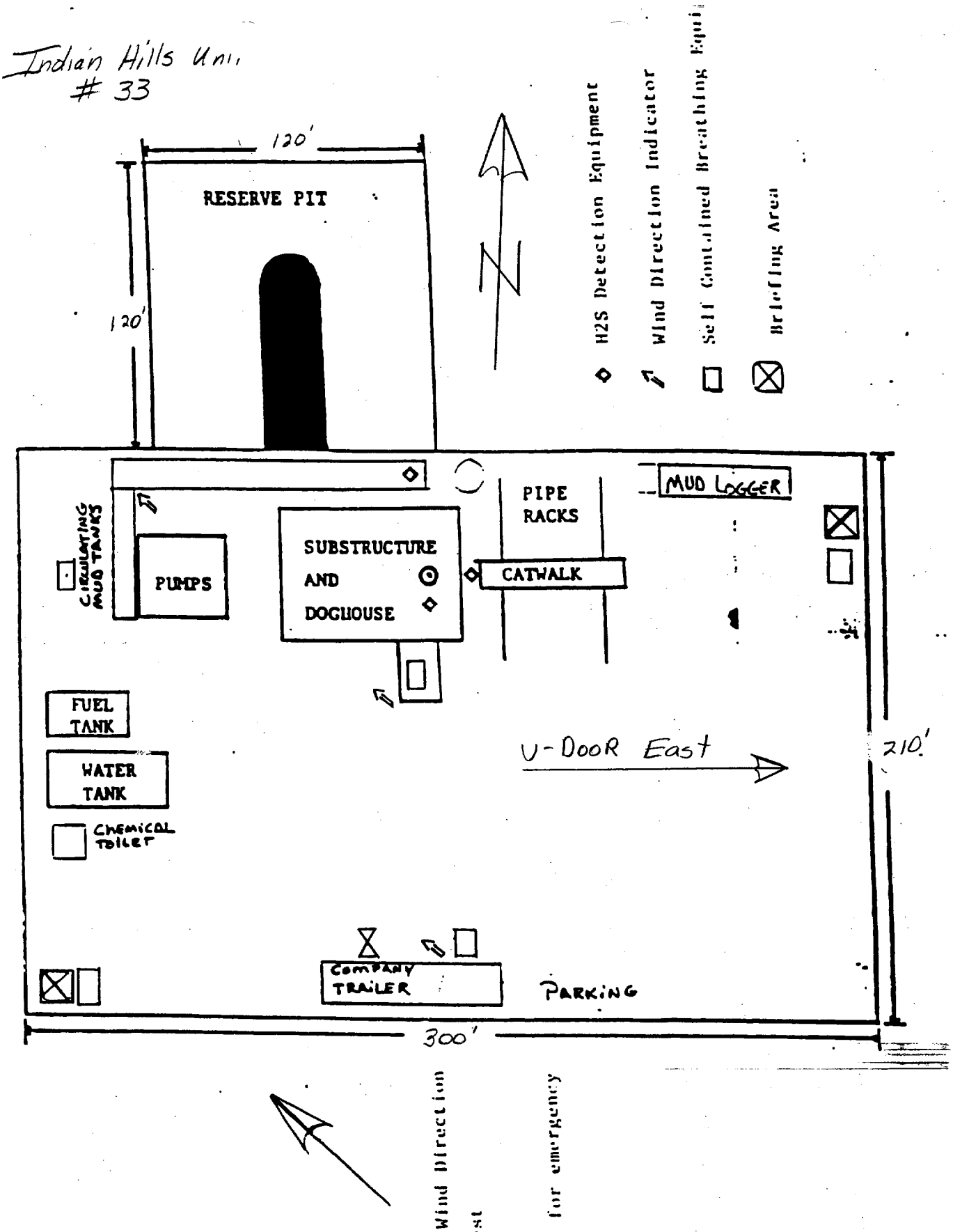
8. Other Information:

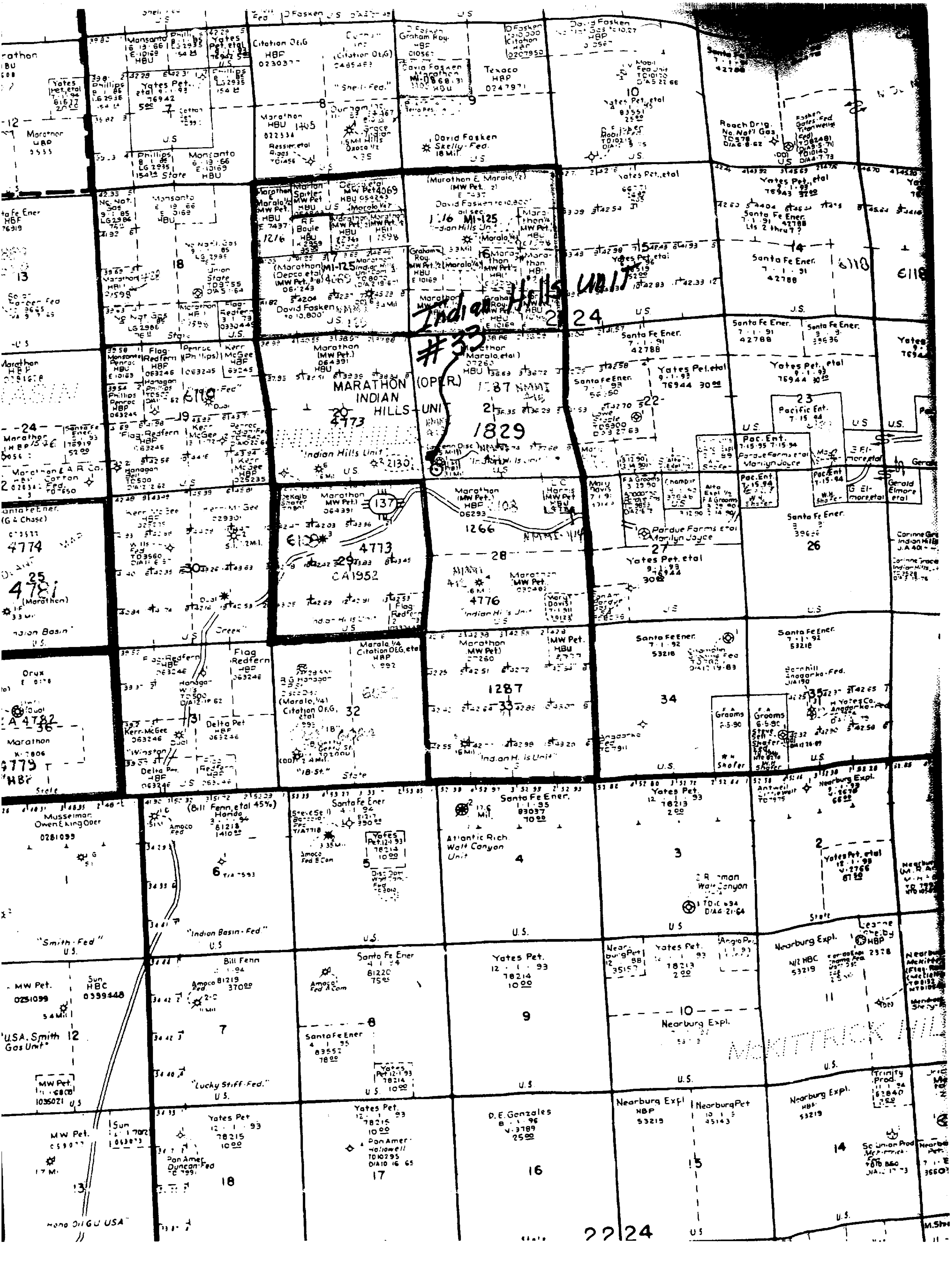
Anticipated Starting Date: As soon as possible.

Duration of Well: drilling - 25 days, completion - 10 days.

This well shall be directionally drilled to a standard BHL.

Indian Hills Unit
33





Indian Hills Unit
#33
MARATHON (OPER.)
INDIAN
HILLS UNIT
"Indian Hills Unit"
Marathon (MW Pet.)
David Fasken
Yates Pet. etal
Santa Fe Ener.
Texaco HBP
Citation O&G HBP
Monsanto
Phillips
Flag-Redfern
Kerr-McGee
Delta Pet
Atlantic Rich. Walt Canyon Unit
Nearburg Expl.
Pardue Farms etal Marilyn Joyce
Amoco
Bill Fenn
D.E. Gonzales
"Shell-Fed."
"Skelly-Fed."
"Indian Basin-Fed."
"Lucky Stiff-Fed."
"Smith-Fed"
U.S.A. Smith Gas Unit
McKITTRICK HILL
22 24

MARATHON OIL COMPANY

H2S DRILLING OPERATIONS PLAN

I. HYDROGEN SULFIDE TRAINING

All contractors and subcontractors employed by Marathon Oil Company will receive or have received training from a qualified instructor within the last twelve months in the following areas prior to commencing drilling operations on this well.

1. The hazards and characteristics of hydrogen sulfide (H2S)
2. Safety precautions
3. Operations of safety equipment and life support systems

In addition, contractor supervisory personnel will be trained or prepared in the following areas:

1. The effect of H2S on metal components in the system. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-down procedures when drilling or reworking a well, blowout prevention and well control procedures, if the nature of work performed involves these items.
3. The contents and requirements of the contingency plan when such plan is required.

All personnel will be required to carry documentation of the above training on their person.

II. H2S EQUIPMENT AND SYSTEMS

1. Safety Equipment

The following safety equipment will be on location.

A. Wind direction indicators as seen in attached diagram.

B. Automatic H2S detection alarm equipment (both audio and visual).

C. Clearly visible warning signs as seen on the attached diagram. Signs will use the words "POISON GAS' and "CAUTION" with a strong color contrast.

D. Protective breathing equipment will be located in the dog house and at briefing areas as seen in the attached diagram.

2. WELL CONTROL SYSTEMS

A. Blowout Prevention Equipment

Equipment includes but is not limited to:

a. pipe rams to accomodate all pipe sizes
b. blind rams
c. choke manifold
d. closing unit

Auxillary equipment added as appropriate includes:

a. annular preventor ✓
b. rotating head ✓
c. mud- gas separator ✓
d. flare line and means of ignition ✓
e. remote operated choke ✓

B. Communication

The rig contractor will be required to have two-way communication capability. Marathon Oil Company will have either land-line or mobile telephone capabilities.

C. Mud Program

The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers when appropriate will minimize hazards when penetrating H2S bearing zones.

D. Drill Stem Test intervals are as follows:

DST No. 1 _____ft. to _____ ft.
DST No. 2 _____ft. to _____ ft.
DST No. 3 _____ft. to _____ ft.

Drill Stem Testing Safety Rules are attached.

III. WELL SITE DIAGRAM

A complete well site diagram including the following information is attached.

1. Rig orientation
2. Terrain
3. Briefing areas
4. Ingress and egress
5. Pits and flare lines
6. Caution and danger signs
7. Wind indicators and prevailing wind direction

PRODUCTION STACK

13-5/8" 3000#