

Form 3160-3
(February 2005)FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

Split Estate

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM124655
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator COG Operating LLC (229137) Marathon Energy Corporation		7. If Unit or CA Agreement, Name and No.
3a. Address P.O. Box 227, Artesia, NM 88211-0227		8. Lease Name and Well No. Hambone Fee Com #1H
3b. Phone No. (include area code) 575-748-3303		9. API Well No. 30-019-38980
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 660' FSL & 330' FWL At proposed prod. zone BHL: 660' FSL & 330' FEL		10. Field and Pool, or Exploratory Brady Draw Bone Spring (52775)
11. Sec., T. R. M. or Blk. and Survey or Area Section 5, T26S - R29E		12. County or Parish Eddy County
13. State NM		14. Distance in miles and direction from nearest town or post office*
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'	16. No. of acres in lease 160	17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Pilot hole 10,200'	19. Proposed Depth 7250' - TVD 11,769' - MD	20. BLM/BIA Bond No. on file NMB000412
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2906' GL	22. Approximate date work will start* 08/13/2010	23. Estimated duration 35 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature <i>Nancy T. Agnew</i>	Name (Printed/Typed) Nancy T. Agnew	Date 09/01/2010
Title Land Department		

Approved by (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed)	Date DEC 17 2010
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

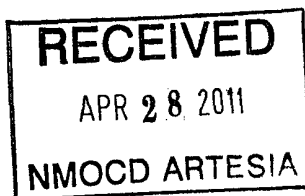
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

*(Instructions on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

MARBOB ENERGY CORPORATION
DRILLING AND OPERATIONS PROGRAM

Hambone Fee Com #1H
Surf: 660' FSL & 330' FWL
BHL: 660' FSL & 330' FEL
Section 5, T26S, R29E
Eddy County, New Mexico

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Marbob Energy Corporation submits the following ten items of pertinent information in accordance with BLM requirements.

1. Geological surface formation: Permian
2. The estimated tops of geologic markers & estimated depths at which anticipated water, oil or gas formations are expected to be encountered are as follows:

Top of Salt	500'	
Base of Salt	2700'	
Delaware	2850'	Oil
Bone Spring	6600'	Oil
TD (Pilot Hole)	10200'	
TVD	7250'	
TMD	11768'	

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 13 3/8" casing at 300' and circulating cement back to surface. All intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing.

3. Proposed Casing Program:

Hole Size	Interval	OD Casing	New or Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	0' – 300'	13 3/8"	New	48#	STC	H-40	1.125	1.125	1.6
12 1/4"	300' – 2775'	9 5/8"	New	36#	BUTT	J-55	1.125	1.125	1.6
7 7/8"	2775' – 11768'	5 1/2"	New	17#	LTC	N-80	1.125	1.125	1.6

Plan to drill 7 7/8" hole to 10200'. Run electric Logs then plug back by setting 100' plug on bottom then 100' plug @ 8200'. Then a kickoff plug from 6700'-6200' then drilling horizontal to new BHL @ TVD of 7250'.

5. Proposed Cement Program:

- a. 13 3/8" Surf Cement to surface with 350 sk "C" wt 14.8 ppg yield 1.34.
- b. 9 5/8" Int Cement to surface with 600 sk "C" Light wt 12.7 yield 1.91
Tail in with 100 sk "C" yield 1.34 wt 14.8
- c. 5 1/2" Prod Cement 1st stage with 450 sk "H" acid soluble wt 15.0 yield 2.6 2nd stage with 550 sk "H" light wt 12.7 yield 1.91 Tail in with 100 sk "H" wt 13.0 yield 1.64 DV @ 6700' TOC 2000'

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach approximately 200' above the 9 5/8" casing shoe. **All casing is new and API approved.**

6. Minimum Specifications for Pressure Control:

Nipple up on 13 3/8 with a 2m system tested to 2000# by independent tester, nipple up on 9 5/8 with 3m system tested to 3000# by independent tester

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A 2" kill line and a 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 3000 psi WP rating.

7. Estimated BHP: 3016 psi

8. Mud Program: The applicable depths and properties of this system are as follows:

Depth	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' – 300'	Fresh Water	8.4	29	N.C.
300' – 2775'	Brine	9.9 – 10.0	29	N.C.
2775' – 11768'	Cut Brine	8.8-8.9	29	N.C.

The necessary mud products for weight addition and fluid loss control will be on location at all times.

9. Auxiliary Well Control and Monitoring Equipment:

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

10. Testing, Logging and Coring Program:

- a. Drill stem tests will be based on geological sample shows.
- b. The open hole electrical logging program will be:
 - i. Total Depth to Intermediate Casing: Dual Laterolog-Micro Laterolog and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 - ii. Total Depth to Surface: Compensated Neutron with Gamma Ray
 - iii. No coring program is planned
 - iv. Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

11. Potential Hazards:

- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP: 3070.08 psi. No H₂S is anticipated to be encountered.

12. Anticipated starting date and Duration of Operations:

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.

MARBOB ENERGY CORPORATION
MULTI-POINT SURFACE USE AND OPERATIONS PLAN

Hambone Fee Com #1H
Surf: 660' FSL & 330' FWL
BHL: 660' FSL & 330' FEL
Section 5, T26S, R29E
Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

- a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. The well was staked by John West Surveying Company.
- b. Exhibit 2 is a portion of a topo map showing the well and roads in the vicinity of the proposed location. The proposed wellsite and the access route to the location are indicated in red on Exhibit 2. Right of way using this proposed route is being requested if necessary.
- c. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

DIRECTIONS:

From the intersection of U.S. Hwy. #285 (Pecos Hwy.) and Co. Rd. #725 (Whitehorn) go northeast then east-southeast on Co. Rd. #725 approx. 3.1 miles. Turn left on two track forad and go northeast approx 550 feet. The location stake is approx 80 feet west.

2. PLANNED ACCESS ROAD:

Marbob will be using an existing access road. See directions above.

3. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. In the event the well is found productive, the Hambone Fee Com #1H tank battery would be utilized and the necessary production equipment will be installed at the well site. A Site Facilities Diagram will be submitted upon completion of facility.

- B. All flowlines will adhere to API standards
- C. If electricity is needed, power will be obtained from Central Valley Electric. Central Valley Electric will apply for ROW for their power lines.
- D. If the well is productive, rehabilitation plans are as follows:
 - i. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

4. LOCATION AND TYPES OF WATER SUPPLY:

This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads shown in Exhibit #2. On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In these cases where a poly pipeline is used to transport water for drilling purposes, the existing and proposed road shown in Exhibit "2" will be utilized.

5. CONSTRUCTION MATERIALS:

All Caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by for roads, if available.

6. METHODS OF HANDLING WASTE MATERIAL:

- a. All trash, junk and other waste material will be removed from the wellsite within 30 days after finishing drilling and/or completion operations. All waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.
- b. The supplier, including broken sacks, will pick up slats remaining after completion of well.
- c. A porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- d. Disposal of fluids to be transported by an approved disposal company.

7. ANCILLARY FACILITIES:

No campsite or other facilities will be constructed as a result of this well.

8. WELLSITE LAYOUT:

- a. Exhibit 3 shows the proposed well site layout with dimensions of the pad layout.
- b. This exhibit indicates proposed location of fresh water sump pits if utilized and living facilities.

- c. Mud pits in the active circulating system will be steel pits and a closed loop system will be utilized.

9. PLANS FOR SURFACE RECLAMATION:

- a. After finishing drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the surface owner. The original top soil will again be returned to the pad and contoured, as close as possible, to the original state.
- b. The location and road will be rehabilitated as recommended by the surface owner.
- c. If the well is deemed commercially productive, the reserve pit will be restored as described in 10(A) within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

10. SURFACE OWNERSHIP:

The surface is owned by B. Brad Bennett. An agreement has been reached for surface damages.

11. OTHER INFORMATION:

- a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, some mesquite bushes and shinnery oak. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
- b. There is no permanent or live water in the general proximity of the location.
- c. There are no dwellings within 2 miles of location.
- d. A Cultural Resources Examination will be completed by Boone Archeological and forwarded to the BLM office in Carlsbad, New Mexico.

12. OPERATOR'S REPRESENTATIVE:

A. Through A.P.D. Approval:
Dean Chumbley, Landman
Marbob Energy Corporation
P. O. Box 227
Artesia, NM 88211-0227
Phone (575)748-3303
Cell (575) 748-5988

B. Through Drilling Operations
Sheryl Baker, Drilling Supervisor
Marbob Energy Corporation
P. O. Box 227
Artesia, NM 88211-0227
Phone (575)748-3303
Cell (575)748-5489

CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Marbob Energy Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

9/1/10

Date

Marbob Energy Corporation



William Miller

Land Department



Marbob

Eddy County

Hambone Fee Com

#1H

OH

Plan: Plan #1

Pathfinder X & Y Planning Report

09 July, 2010

PATHFINDER



Pathfinder

Pathfinder X & Y Planning Report



Company: Marbob
Project: Eddy County
Site: Hambone Fee Com
Well: #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 2924.00ft (18' KB Correction)
MD Reference: WELL @ 2924.00ft (18' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Project: Eddy County

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site: Hambone Fee Com

Site Position:	Northings:	387,901.100 ft	Latitude:	32° 3' 57.786 N
From: Map	Easting:	599,097.400 ft	Longitude:	104° 0' 48.348 W
Position Uncertainty: 0.00 ft	Slot Radius:	"	Grid Convergence:	0.17 °

Well: #1H

Well Position	+N/-S	0.00 ft	Northings:	387,901.100 ft	Latitude:	32° 3' 57.786 N
	+E/-W	0.00 ft	Easting:	599,097.400 ft	Longitude:	104° 0' 48.348 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	2,906.00 ft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/30/2010	7.84	60.00	48,571

Design: Plan #1

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	89.83

Survey Tool Program: Date 07/09/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,768.78	Plan #1 (OH)	MWD	MWD - Standard



Pathfinder

Pathfinder X & Y Planning Report



Company: Marbob
Project: Eddy County
Site: Hambone Fee Com
Well: #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 2924.00ft (18' KB Correction)
MD Reference: WELL @ 2924.00ft (18' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
0.00	0.00	0.00	0.00	-2,924.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
100.00	0.00	0.00	100.00	-2,824.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
200.00	0.00	0.00	200.00	-2,724.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
300.00	0.00	0.00	300.00	-2,624.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
400.00	0.00	0.00	400.00	-2,524.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
500.00	0.00	0.00	500.00	-2,424.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
600.00	0.00	0.00	600.00	-2,324.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
700.00	0.00	0.00	700.00	-2,224.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
800.00	0.00	0.00	800.00	-2,124.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
900.00	0.00	0.00	900.00	-2,024.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,000.00	0.00	0.00	1,000.00	-1,924.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,100.00	0.00	0.00	1,100.00	-1,824.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,200.00	0.00	0.00	1,200.00	-1,724.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,300.00	0.00	0.00	1,300.00	-1,624.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,400.00	0.00	0.00	1,400.00	-1,524.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,500.00	0.00	0.00	1,500.00	-1,424.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,600.00	0.00	0.00	1,600.00	-1,324.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,700.00	0.00	0.00	1,700.00	-1,224.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,800.00	0.00	0.00	1,800.00	-1,124.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
1,900.00	0.00	0.00	1,900.00	-1,024.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,000.00	0.00	0.00	2,000.00	-924.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,100.00	0.00	0.00	2,100.00	-824.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,200.00	0.00	0.00	2,200.00	-724.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,300.00	0.00	0.00	2,300.00	-624.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,400.00	0.00	0.00	2,400.00	-524.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,500.00	0.00	0.00	2,500.00	-424.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,600.00	0.00	0.00	2,600.00	-324.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40



Pathfinder

Pathfinder X & Y Planning Report



Company: Marbob
Project: Eddy County
Site: Hambone Fee Com
Well: #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1H
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Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,700.00	0.00	0.00	2,700.00	-224.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,800.00	0.00	0.00	2,800.00	-124.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
2,900.00	0.00	0.00	2,900.00	-24.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,000.00	0.00	0.00	3,000.00	76.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,100.00	0.00	0.00	3,100.00	176.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,200.00	0.00	0.00	3,200.00	276.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,300.00	0.00	0.00	3,300.00	376.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,400.00	0.00	0.00	3,400.00	476.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,500.00	0.00	0.00	3,500.00	576.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,600.00	0.00	0.00	3,600.00	676.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,700.00	0.00	0.00	3,700.00	776.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,800.00	0.00	0.00	3,800.00	876.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
3,900.00	0.00	0.00	3,900.00	976.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,000.00	0.00	0.00	4,000.00	1,076.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,100.00	0.00	0.00	4,100.00	1,176.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,200.00	0.00	0.00	4,200.00	1,276.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,300.00	0.00	0.00	4,300.00	1,376.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,400.00	0.00	0.00	4,400.00	1,476.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,500.00	0.00	0.00	4,500.00	1,576.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,600.00	0.00	0.00	4,600.00	1,676.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,700.00	0.00	0.00	4,700.00	1,776.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,800.00	0.00	0.00	4,800.00	1,876.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
4,900.00	0.00	0.00	4,900.00	1,976.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
5,000.00	0.00	0.00	5,000.00	2,076.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
5,100.00	0.00	0.00	5,100.00	2,176.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
5,200.00	0.00	0.00	5,200.00	2,276.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40
5,300.00	0.00	0.00	5,300.00	2,376.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40



Pathfinder

Pathfinder X & Y Planning Report



Company: Marbob
 Project: Eddy County
 Site: Hambone Fee Com
 Well: #1H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well #1H
 TVD Reference: WELL @ 2924.00ft (18' KB Correction)
 MD Reference: WELL @ 2924.00ft (18' KB Correction)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Midland Database

Planned Survey											
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5,400.00	0.00	0.00	5,400.00	2,476.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
5,500.00	0.00	0.00	5,500.00	2,576.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
5,600.00	0.00	0.00	5,600.00	2,676.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
5,700.00	0.00	0.00	5,700.00	2,776.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
5,800.00	0.00	0.00	5,800.00	2,876.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
5,900.00	0.00	0.00	5,900.00	2,976.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,000.00	0.00	0.00	6,000.00	3,076.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,100.00	0.00	0.00	6,100.00	3,176.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,200.00	0.00	0.00	6,200.00	3,276.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,300.00	0.00	0.00	6,300.00	3,376.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,400.00	0.00	0.00	6,400.00	3,476.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,500.00	0.00	0.00	6,500.00	3,576.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,600.00	0.00	0.00	6,600.00	3,676.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,700.00	0.00	0.00	6,700.00	3,776.00	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,772.50	0.00	0.00	6,772.50	3,848.50	0.00	0.00	0.00	0.00	387,901.10	599,097.40	
6,775.00	0.30	89.83	6,775.00	3,851.00	0.00	0.01	0.01	12.00	387,901.10	599,097.40	
6,800.00	3.30	89.83	6,799.98	3,875.98	0.00	0.79	0.79	12.00	387,901.10	599,098.19	
6,825.00	6.30	89.83	6,824.89	3,900.89	0.01	2.88	2.88	12.00	387,901.11	599,100.28	
6,850.00	9.30	89.83	6,849.66	3,925.66	0.02	6.28	6.28	12.00	387,901.12	599,103.68	
6,875.00	12.30	89.83	6,874.21	3,950.21	0.03	10.96	10.96	12.00	387,901.13	599,108.36	
6,900.00	15.30	89.83	6,898.49	3,974.49	0.05	16.92	16.92	12.00	387,901.15	599,114.32	
6,925.00	18.30	89.83	6,922.42	3,998.42	0.07	24.15	24.15	12.00	387,901.17	599,121.55	
6,950.00	21.30	89.83	6,945.94	4,021.94	0.10	32.61	32.61	12.00	387,901.20	599,130.01	
6,975.00	24.30	89.83	6,968.98	4,044.98	0.13	42.30	42.30	12.00	387,901.23	599,139.70	
7,000.00	27.30	89.83	6,991.49	4,067.49	0.16	53.18	53.18	12.00	387,901.26	599,150.58	
7,025.00	30.30	89.83	7,013.40	4,089.40	0.19	65.22	65.22	12.00	387,901.29	599,162.62	
7,050.00	33.30	89.83	7,034.64	4,110.64	0.23	78.39	78.39	12.00	387,901.33	599,175.79	



Pathfinder

Pathfinder X & Y Planning Report



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Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,075.00	36.30	89.83	7,055.17	4,131.17	0.27	92.66	92.66	12.00	387,901.37	599,190.1
7,100.00	39.30	89.83	7,074.92	4,150.92	0.32	107.98	107.98	12.00	387,901.42	599,205.38
7,125.00	42.30	89.83	7,093.84	4,169.84	0.37	124.31	124.31	12.00	387,901.47	599,221.71
7,150.00	45.30	89.83	7,111.89	4,187.89	0.42	141.61	141.61	12.00	387,901.52	599,239.01
7,175.00	48.30	89.83	7,129.00	4,205.00	0.47	159.83	159.83	12.00	387,901.57	599,257.23
7,200.00	51.30	89.83	7,145.14	4,221.14	0.53	178.92	178.92	12.00	387,901.63	599,276.32
7,225.00	54.30	89.83	7,160.25	4,236.25	0.59	198.83	198.83	12.00	387,901.69	599,296.23
7,250.00	57.30	89.83	7,174.30	4,250.30	0.65	219.50	219.51	12.00	387,901.75	599,316.90
7,275.00	60.30	89.83	7,187.25	4,263.25	0.71	240.89	240.89	12.00	387,901.81	599,338.29
7,300.00	63.30	89.83	7,199.07	4,275.07	0.78	262.91	262.92	12.00	387,901.88	599,360.31
7,325.00	66.30	89.83	7,209.71	4,285.71	0.85	285.53	285.53	12.00	387,901.95	599,382.93
7,350.00	69.29	89.83	7,219.16	4,295.16	0.92	308.67	308.68	12.00	387,902.02	599,406.07
7,375.00	72.29	89.83	7,227.38	4,303.38	0.99	332.28	332.28	12.00	387,902.09	599,429.68
7,400.00	75.29	89.83	7,234.36	4,310.36	1.06	356.28	356.29	12.00	387,902.16	599,453.68
7,425.00	78.29	89.83	7,240.07	4,316.07	1.13	380.62	380.62	12.00	387,902.23	599,478.07
7,450.00	81.29	89.83	7,244.50	4,320.50	1.20	405.22	405.22	12.00	387,902.30	599,502.67
7,475.00	84.29	89.83	7,247.63	4,323.63	1.28	430.02	430.02	12.00	387,902.38	599,527.42
7,500.00	87.29	89.83	7,249.47	4,325.47	1.35	454.95	454.95	12.00	387,902.45	599,552.35
7,522.56	90.00	89.83	7,250.00	4,326.00	1.42	477.50	477.50	12.00	387,902.52	599,574.90
7,600.00	90.00	89.83	7,250.00	4,326.00	1.65	554.94	554.94	0.00	387,902.75	599,652.34
7,700.00	90.00	89.83	7,250.00	4,326.00	1.94	654.94	654.94	0.00	387,903.04	599,752.34
7,800.00	90.00	89.83	7,250.00	4,326.00	2.24	754.94	754.94	0.00	387,903.34	599,852.34
7,900.00	90.00	89.83	7,250.00	4,326.00	2.54	854.94	854.94	0.00	387,903.64	599,952.34
8,000.00	90.00	89.83	7,250.00	4,326.00	2.83	954.94	954.94	0.00	387,903.93	600,052.34
8,100.00	90.00	89.83	7,250.00	4,326.00	3.13	1,054.94	1,054.94	0.00	387,904.23	600,152.34
8,200.00	90.00	89.83	7,250.00	4,326.00	3.43	1,154.94	1,154.94	0.00	387,904.53	600,252.34
8,300.00	90.00	89.83	7,250.00	4,326.00	3.72	1,254.94	1,254.94	0.00	387,904.82	600,352.34



Pathfinder

Pathfinder X & Y Planning Report



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MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
8,400.00	90.00	89.83	7,250.00	4,326.00	4.02	1,354.94	1,354.94	0.00	387,905.12	600,452.34
8,500.00	90.00	89.83	7,250.00	4,326.00	4.32	1,454.94	1,454.94	0.00	387,905.42	600,552.34
8,600.00	90.00	89.83	7,250.00	4,326.00	4.61	1,554.94	1,554.94	0.00	387,905.71	600,652.34
8,700.00	90.00	89.83	7,250.00	4,326.00	4.91	1,654.94	1,654.94	0.00	387,906.01	600,752.34
8,800.00	90.00	89.83	7,250.00	4,326.00	5.21	1,754.94	1,754.94	0.00	387,906.31	600,852.34
8,900.00	90.00	89.83	7,250.00	4,326.00	5.50	1,854.94	1,854.94	0.00	387,906.60	600,952.34
9,000.00	90.00	89.83	7,250.00	4,326.00	5.80	1,954.94	1,954.94	0.00	387,906.90	601,052.34
9,100.00	90.00	89.83	7,250.00	4,326.00	6.10	2,054.94	2,054.94	0.00	387,907.20	601,152.34
9,200.00	90.00	89.83	7,250.00	4,326.00	6.39	2,154.94	2,154.94	0.00	387,907.49	601,252.34
9,300.00	90.00	89.83	7,250.00	4,326.00	6.69	2,254.93	2,254.94	0.00	387,907.79	601,352.33
9,400.00	90.00	89.83	7,250.00	4,326.00	6.99	2,354.93	2,354.94	0.00	387,908.09	601,452.33
9,500.00	90.00	89.83	7,250.00	4,326.00	7.28	2,454.93	2,454.94	0.00	387,908.38	601,552.33
9,600.00	90.00	89.83	7,250.00	4,326.00	7.58	2,554.93	2,554.94	0.00	387,908.68	601,652.33
9,700.00	90.00	89.83	7,250.00	4,326.00	7.88	2,654.93	2,654.94	0.00	387,908.98	601,752.33
9,800.00	90.00	89.83	7,250.00	4,326.00	8.17	2,754.93	2,754.94	0.00	387,909.27	601,852.33
9,900.00	90.00	89.83	7,250.00	4,326.00	8.47	2,854.93	2,854.94	0.00	387,909.57	601,952.33
10,000.00	90.00	89.83	7,250.00	4,326.00	8.77	2,954.93	2,954.94	0.00	387,909.87	602,052.33
10,100.00	90.00	89.83	7,250.00	4,326.00	9.06	3,054.93	3,054.94	0.00	387,910.16	602,152.33
10,200.00	90.00	89.83	7,250.00	4,326.00	9.36	3,154.93	3,154.94	0.00	387,910.46	602,252.33
10,300.00	90.00	89.83	7,250.00	4,326.00	9.66	3,254.93	3,254.94	0.00	387,910.76	602,352.33
10,400.00	90.00	89.83	7,250.00	4,326.00	9.95	3,354.93	3,354.94	0.00	387,911.05	602,452.33
10,500.00	90.00	89.83	7,250.00	4,326.00	10.25	3,454.93	3,454.94	0.00	387,911.35	602,552.33
10,600.00	90.00	89.83	7,250.00	4,326.00	10.55	3,554.93	3,554.94	0.00	387,911.65	602,652.33
10,700.00	90.00	89.83	7,250.00	4,326.00	10.84	3,654.93	3,654.94	0.00	387,911.94	602,752.33
10,800.00	90.00	89.83	7,250.00	4,326.00	11.14	3,754.93	3,754.94	0.00	387,912.24	602,852.33
10,900.00	90.00	89.83	7,250.00	4,326.00	11.44	3,854.93	3,854.94	0.00	387,912.54	602,952.33
11,000.00	90.00	89.83	7,250.00	4,326.00	11.73	3,954.93	3,954.94	0.00	387,912.83	603,052.33



Pathfinder

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11,100.00	90.00	89.83	7,250.00	4,326.00	12.03	4,054.93	4,054.94	0.00	387,913.13	603,152.33
11,200.00	90.00	89.83	7,250.00	4,326.00	12.33	4,154.93	4,154.94	0.00	387,913.43	603,252.33
11,300.00	90.00	89.83	7,250.00	4,326.00	12.62	4,254.93	4,254.94	0.00	387,913.72	603,352.33
11,400.00	90.00	89.83	7,250.00	4,326.00	12.92	4,354.93	4,354.94	0.00	387,914.02	603,452.33
11,500.00	90.00	89.83	7,250.00	4,326.00	13.22	4,454.93	4,454.94	0.00	387,914.32	603,552.33
11,600.00	90.00	89.83	7,250.00	4,326.00	13.51	4,554.92	4,554.94	0.00	387,914.61	603,652.32
11,700.00	90.00	89.83	7,250.00	4,326.00	13.81	4,654.92	4,654.94	0.00	387,914.91	603,752.32
11,768.78	90.00	89.83	7,250.00	4,326.00	14.02	4,723.70	4,723.72	0.00	387,915.12	603,821.10
PBHL(HB#1H)										

Targets

Target Name:

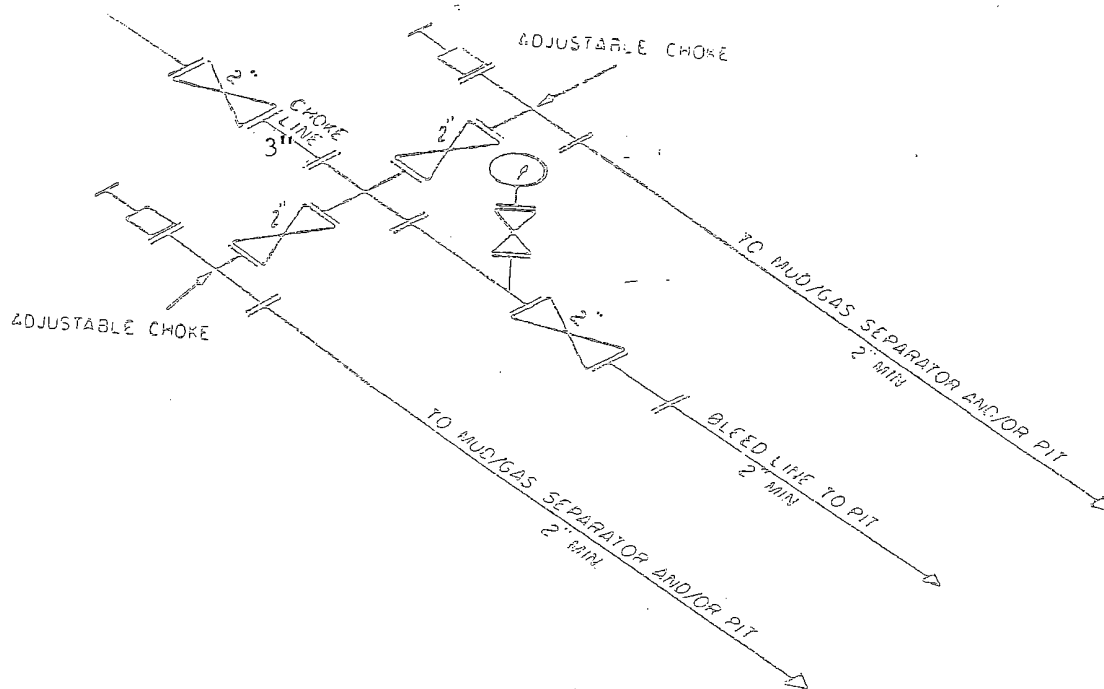
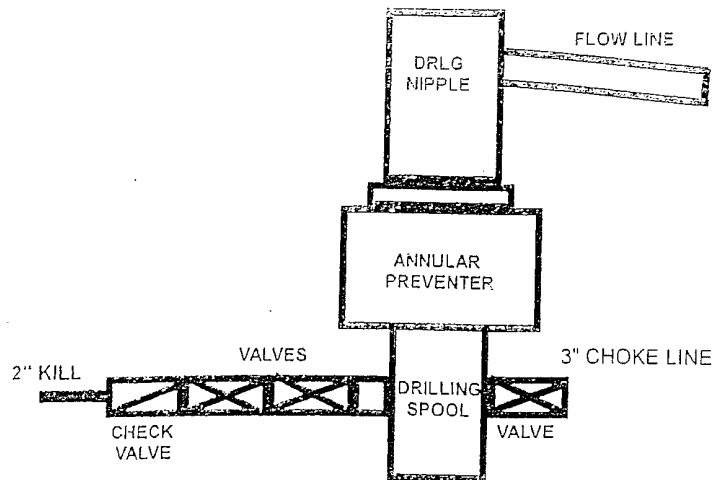
- hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL(HB#1H)	0.00	0.00	7,250.00	14.10	4,723.70	387,915.200	603,821.100	32° 3' 57.784 N	103° 59' 53.452 W
- plan hits target center									
- Point									

Checked By: _____ Approved By: _____ Date: _____

DETAILS

E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	
0.00	0.00	0.00	0.00	
77.50	12.00	89.83	477.50	
23.70	0.00	0.00	4723.72	PBHL(HB#1H)

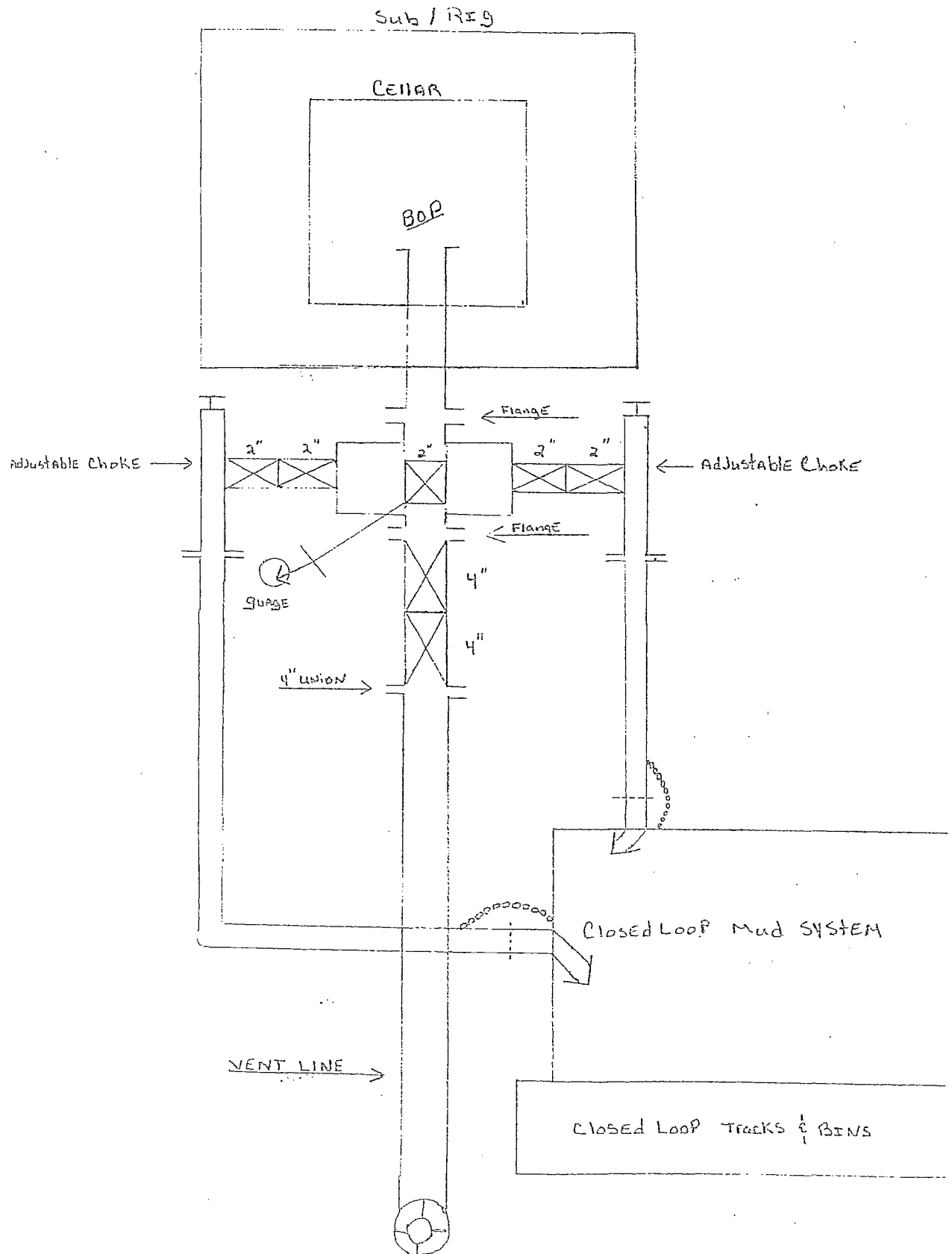
2M SYSTEM



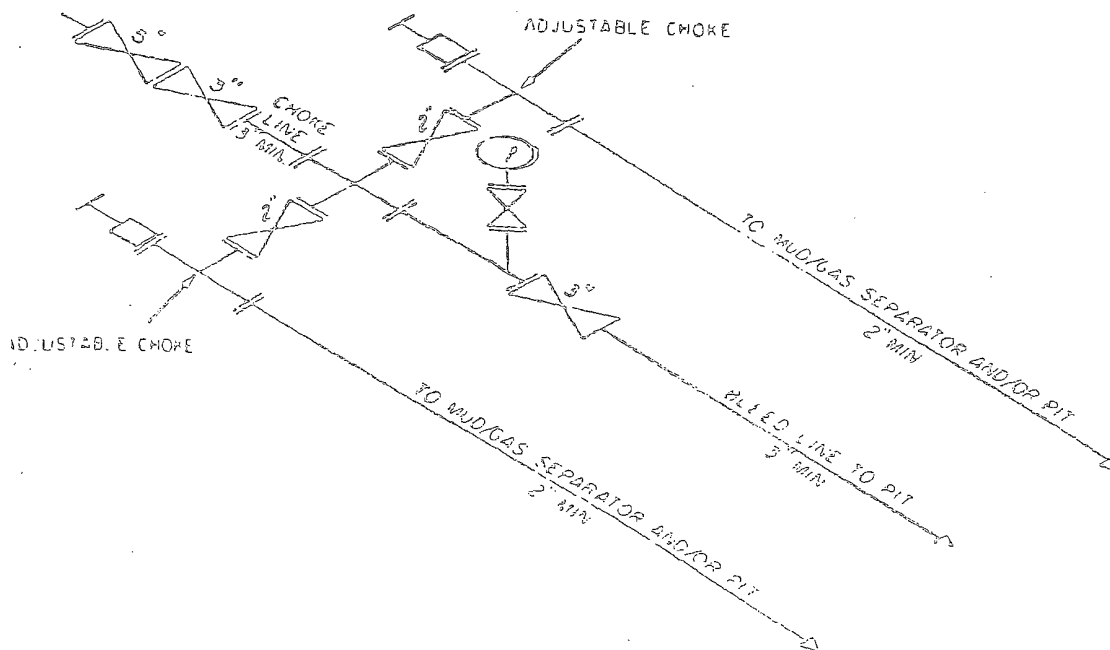
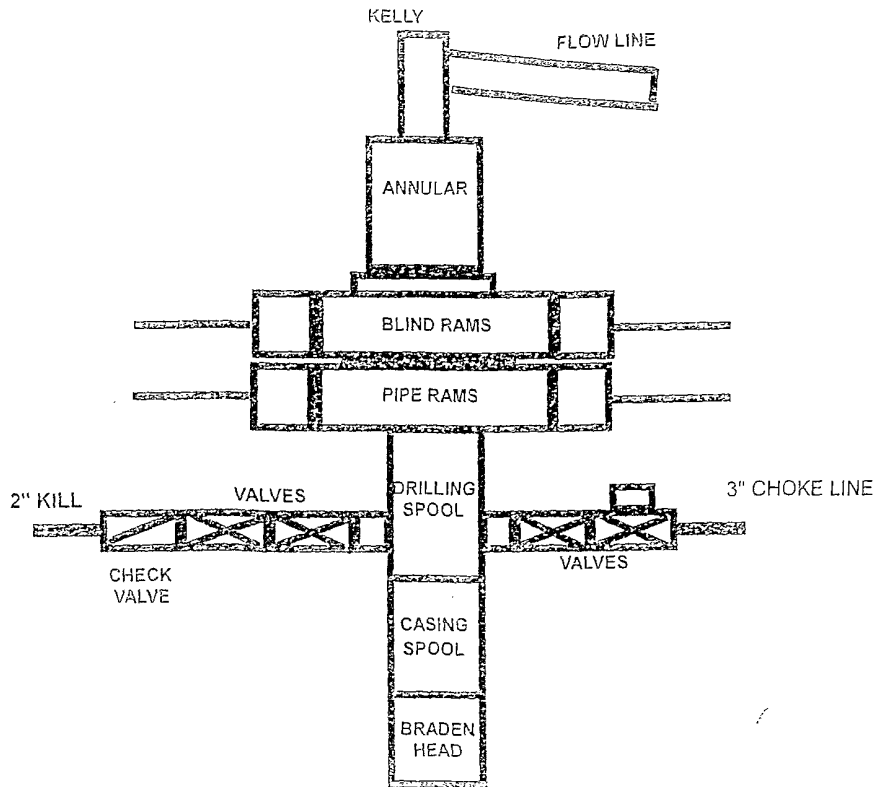
2M CHOKE MANIFOLD EQUIPMENT — CONFIGURATION OF CHOKES

MAY VARY

2M Choke Manifold Equipment



3M SYSTEM



3M CHOKE MANIFOLD EQUIPMENT — CONFIGURATION OF CHOKES
MAY VARY

3M Choke Manifold Equipment

