

HOBBS OCD

APR 22 2013

ATS-12-1012

Form 3160-3
(March 2012)

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. BHL-NM-26395 SHL-NM-881550C	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator XTO ENERGY, INC.		7. If Unit or CA Agreement, Name and No.	
3a. Address 200 N. LORAIN, SUITE 800 MIDLAND, TX. 79701		8. Lease Name and Well No. <39834> PERLA NEGRA FED COM 1H	
3b. Phone No. (include area code) 432-620-4323 (CHIP AMROCK)		9. API Well No. 30-025-41131	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 330 FSL & 400 FWL At proposed prod. zone 330 FNL & 400 FWL		10. Field and Pool, or Exploratory LEA BONE SPRING <37570>	
14. Distance in miles and direction from nearest town or post office* 18 MILES WEST SOUTHWEST OF HOBBS, NM		11. Sec., T. R. M. or Blk. and Survey or Area SECTION 24, T. 19 S., R. 34 E.	
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 480 800	17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. BHL= 3000' SHL= 660'	19. Proposed Depth TVD: 10,966' MD: 15,256'	20. BLM/BIA Bond No. on file UTB000138	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3779' GL	22. Approximate date work will start*	23. Estimated duration 30 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 Barry W. Hunt	Name (Printed/Typed) BARRY W. HUNT	Date 7/25/12
Title PERMIT AGENT FOR XTO ENERGY, INC.		
Approved by (Signature) /s/George MacDonell	Name (Printed/Typed) /s/George MacDonell	Date APR 19 2013
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.

(Continued on page 2)

Capital Controlled Water Basin

KZ 04/23/13

ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

APR 24 2013

XTO ENERGY, INC.
DRILLING PLAN

Perla Negra Fed Com 1H
SHL: 330 FSL & 400 FWL
Unit "M" Section 24, T. 19 S., R. 34 E.
BHL: 330 FNL & 400 FWL
Unit "D" Section 24, T. 19 S., R. 34 E.
Lea County, NM

1. The elevation of the unprepared ground is 3779 feet above sea level.
2. The geologic name of the surface formation is Quaternary - Alluvium.
3. A rotary rig will be utilized to drill the well to 15256' MD and run casing. This equipment will then be rigged down and the well will be completed with a workover rig.
4. Proposed total depth is MD: 15256'/TVD: 10,966'.
5. Estimated tops of important geologic markers:

Quaternary – Alluvium	Surface*
Rustler	1783'
Top of Salt	2081'
Base of Salt	3249'
Yates	3532'
Seven Rivers	4005'
Queen	4800'
Capitan	5316'
Cherry Canyon	5920'
Brushy Canyon	6563'
Bone Spring	8116'
1st Bone Spring Ss	9555'
2 nd Bone Spring Ss	10079'
3 rd Bone Spring Ss	10631'
TVD	10966' (150 degree F)

*Water at 180 ft.

6. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Cherry Canyon	Oil (2,604 psi)
Brushy Canyon	Oil (2,888 psi)
Bone Spring	Oil (3,571 psi)
TVD	Oil 4825 psi

7. CASING PROGRAM:

see COA

Hole Size	Depth	OD Csg.	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' - 1808' 1900'	13-3/8"	54.5#	STC	J-55	New	2.87	1.18	3.81
12-1/4"	0' - 3800'	9-5/8"	40#	LTC	HCL-80	New	2.59	1.90	4.01
8-3/4"	0' - 11600'	7"	26#	LTC	HCP-110	New	1.73	1.36	1.79
6-1/8"	10456' - 15256'	4-1/2"	11.6#	LTC	P-110	New	1.86	1.32	1.62

8. CEMENT PROGRAM: (Note yields and DV tool depths if multiple stages)

i. Surface Cement:

Lead Slurry: Lead with 1160 sks ExtendaCem - CZ (13.7 ppg, 1.68 cu ft/sk, 8.72 gal wtr/sk)

Tail Slurry: Tail-in with 440 sks HalCem - C, 2 % Calcium Chloride - Flake (Accelerator)
(14.8 ppg, 1.35 cu ft/sk, 6.39 gal wtr/sk)

100% excess. Cement to surface.

ii. Intermediate Cement:

Lead Slurry: Lead with 900 sks, EconoCem - HLC, 5 % Salt (Salt), 5 lbm/sk Kol-Seal (Lost Circulation Additive) (12.9 ppg, 1.88 ft³/sk, 9.61 gal wtr/sk)

Tail Slurry: Tail-in with 250 sks, HalCem - C (14.8 ppg, 1.33 cu ft/sk, 6.34 gal wtr/sk)

100% excess. Cement to surface.

iii. Production Cement:

1st stage: Lead Slurry: Lead with 395 sks, CorrosaCem - H, 0.4 % CFR-3 (Dispersant), 5 lbm/sk, Kol-Seal (Lost Circulation Additive), 0.25 lbm/sk D-AIR 5000 (Defoamer), 0.1 % H R-800 (Retarder) (14.4 ppg, 1.23 ft³/sk, 5.09 gal wtr/sk)

Tail Slurry: Tail-in with 265 sks, HalCem - H, 0.5 % LAP-1 (Low Fluid Loss Control), 0.25 % CFR-3 (Dispersant), 5 lbm/sk Kol-Seal (Lost Circulation Additive), 0.25 lbm/sk D-AIR 5000 (Defoamer), 0.1 % HR-800 (Retarder) (15.8 ppg, 1.18 ft³/sk, 4.8 gal/sx wtr)

1st DV tool - 9000'.

2nd Stage: Lead Slurry: 100 sks EconoCem - H, 0.1 % HR-601 (Retarder) (11.90 ppg, yield: 2.44 ft³/sk, 13.98 Gal/sk wtr)

Tail Slurry: Tail-in with 420 sks VersaCem - PBSH2 0.5 % Halad®-344 (Low Fluid Loss Control), 0.4 %, CFR-3 (Dispersant), 5 lbm/sk Kol-Seal (Lost Circulation Additive), 0.25 lbm/sk D-AIR 5000 (Defoamer), 0.1 % HR-800 (Retarder) (13.2 ppg, 1.62 ft³/sk, 8.02 gal/sx wtr)

2nd DV Tool 6000 ft.

3rd stage: Lead Slurry: Lead with 90 sks EconoCem – H (11.9 ppg, 2.43 ft³/sk, 13.96 gal/sx wtr)

Tail Slurry: Tail-in with 210 sks VersaCem - PBSH2, 0.5 % Halad®-344 (Low Fluid Loss Control), 0.4% CFR-3 (Dispersant, 5lbm/sk Kol-Seal (Lost Circulation Additive), 0.25 lbm/sk D-AIR 5000 (Defoamer) (13.2 ppg, 1.62 ft³/sk, 8.02 gal/sx wtr)

TOC 3500

50% excess, all volumes to be adjusted per caliper log.

iv. Liner Cement:

Halliburton swell packers will be installed on the 4-1/2" casing

9. PRESSURE CONTROL EQUIPMENT:

The blow out preventer equipment (BOP) diagram is attached to this Drilling Plan. The blowout preventer stack for the intermediate and production hole will consist of a double ram blowout preventer and annular preventer rated to 5000 psi working pressure. All BOP's and accessory equipment will be tested according to Onshore Order #2 before drilling out. A hydraulic closing unit will be a part of this equipment and will be function tested daily.

10. PROPOSED MUD CIRCULATION SYSTEM:

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 1808'	13-3/8"	FW/Native	8.5 – 8.8	35-40	NC
1800' to 3800'	12-1/4"	Brine/ Gel Sweeps	9.8 – 10.2	30-32	NC
3800' to 11600'	8-3/4"	FW/Polymer Sweeps	8.6-8.8	29-32	NC-20
11600-15256'	6-1/8"	FW/Polymer Sweeps	8.6-8.8	29-32	NC-20

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

Spud with fresh water/native mud. Drill out from under 13-3/8" surface casing with brine solution. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

11. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- i. A kelly cock will be in the drill string at all times.
- ii. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- iii. Hydrogen sulfide detection equipment and breathing equipment will be in operation from drilling out the 9-5/8" casing shoe until the 7" casing is cemented.

12. LOGGING, CORING AND TESTING PROGRAM:

See COF

- A. Potential drill stem tests will be based on geological sample shows.
- B. No coring is anticipated.
- C. Mudlogger unit will be on and working from 3800' to TD.
- D. Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from TD to intermediate casing, with Neutron/Gamma continuing to surface.

13. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

No abnormal pressures are anticipated. Max bottom hole pressure should not exceed 4880 psi. BHT of 150° F is anticipated. No H₂S is expected but monitors will be in place to detect any H₂S occurrences. An H₂S contingency plan has also been submitted with this application. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. Should any abnormal or hazardous circumstances be encountered personnel on location will take necessary steps to ensure safety of all personnel and environment. BHP=4825 BHT=150 degrees.

14. SPECIAL INSTRUCTIONS:

- A. Reports will be filled out on the XTO Drilling Report form, and the Casing/Cementing Detail Forms provided.
- B. Deviation:
Surface Hole: Maximum of 1° and not more than 1° change per 100'.
Production Hole: Maximum of 4° and not more than 1.5° change per 100'.
Note: Maximum distance between surveys is 500'.
- C. WOC a minimum of 18 hours or before cement gains compressive strength of 500 psi, whichever is greater, before drilling out shoe joint on surface casing string. Use minimal WOB and RPM until drill collars are below the shoe joints.
- D. Check BOP blind rams each trip and pipe rams each day. Strap out of hole for logging and/or casing jobs.
- E. A trash trailer will be provided on each location. Keep trash picked up and the location as clean as possible. All drilling line, oil filters, etc. should be hauled away at the Drilling Contractor's expense. At the conclusion of drilling operations, the contents of the trash trailer will be disposed of into a commercial sanitary landfill.



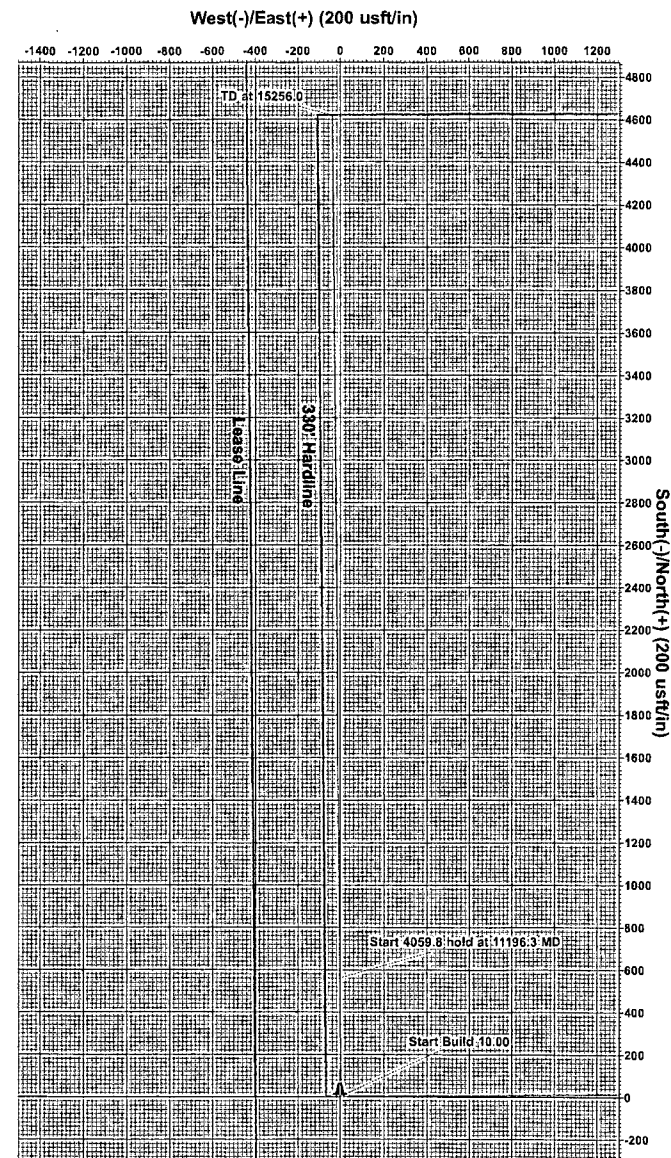
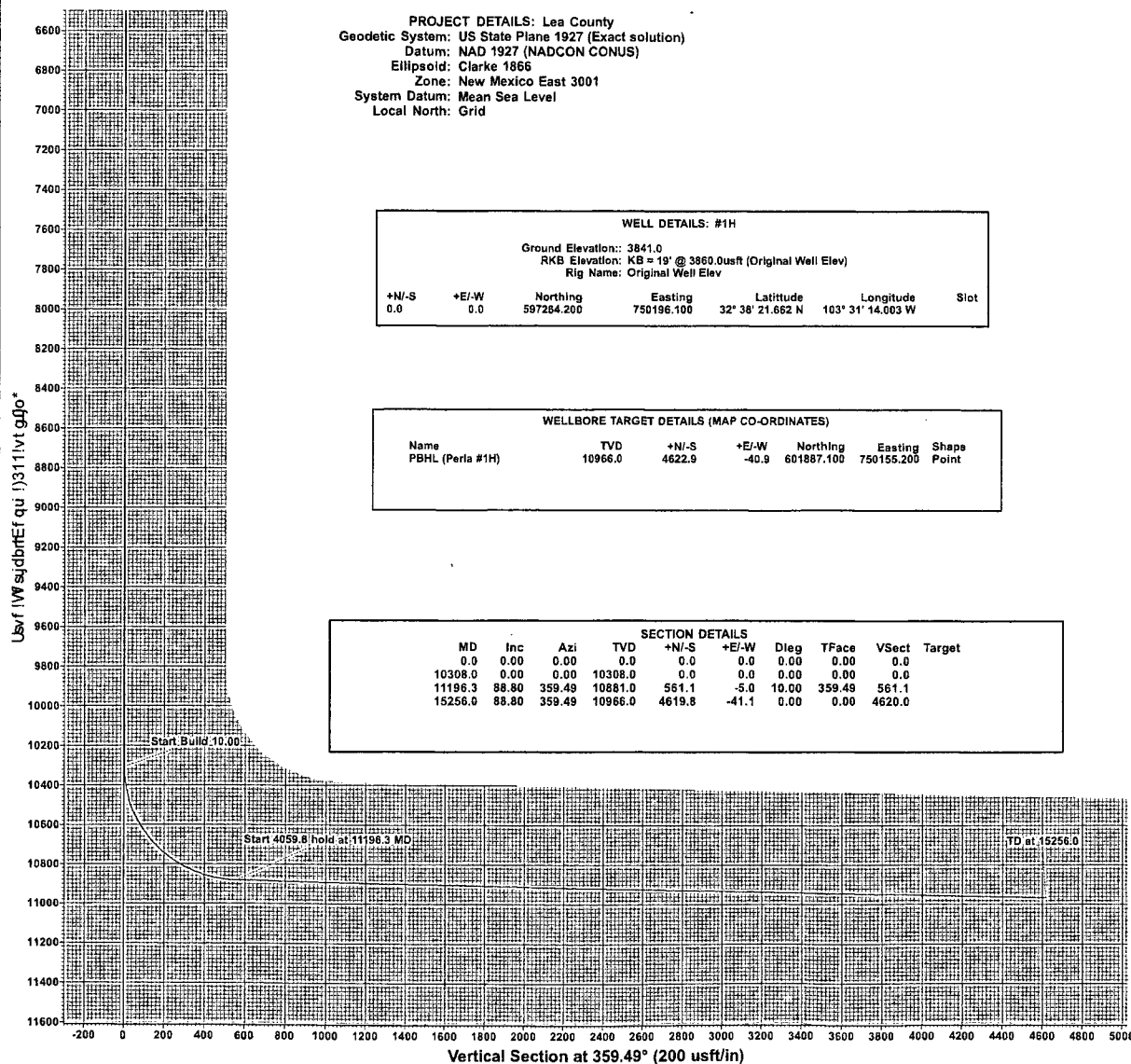
Project: Lea County
Site: Perla Negra
Well: #1H
Wellbore: OH
Plan: Plan #2 (#1H/OH)



Azimuths to Grid North
True North: -0.44°
Magnetic North: 7.02°

Magnetic Field
Strength: 48806.5snT
Dip Angle: 60.58°
Date: 6/20/2012
Model: IGRF200510

PATHFINDER®
A Schlumberger Company



Plan: Plan #2 (#1H/OH)
Created By: Michael Trout Date: 11:22, June 27 2012
Checked: _____ Date: _____

XTO Energy Co
Lea County
Perla Negra
#1H
Original Well Elev
OH
Plan #2



XTO Energy Co

Lea County

Perla Negra

#1H

OH

Plan: Plan #2

Pathfinder X&Y Report

27 June, 2012



A Schlumberger Company



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	KB = 19' @ 3860.0usft (Original Well Elev)
Site:	Perla Negra	MD Reference:	KB = 19' @ 3860.0usft (Original Well Elev)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Project	Lea County		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Perla Negra				
Site Position:		Northing:	5,972,647.200 usft	Latitude:	47° 23' 41.521 N
From:	Map	Easting:	750,196.100 usft	Longitude:	103° 19' 23.236 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.74 °

Well	#1H					
Well Position	+N/-S	0.0 usft	Northing:	597,264.200 usft	Latitude:	32° 38' 21.662 N
	+E/-W	0.0 usft	Easting:	750,196.100 usft	Longitude:	103° 31' 14.003 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,841.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/20/2012	7.46	60.58	48,806

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.49

Survey Tool Program		Date	6/27/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	15,256.0	Plan #2 (OH)			



Pathfinder Pathfinder X&Y Report



A Schlumberger Company

Company:	XTO Energy Co.	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	KB = 19' @ 3860.0usft (Original Well Elev)
Site:	Perla Negra	MD Reference:	KB = 19' @ 3860.0usft (Original Well Elev)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,860.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
100.0	0.00	0.00	100.0	-3,760.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
200.0	0.00	0.00	200.0	-3,660.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
300.0	0.00	0.00	300.0	-3,560.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
400.0	0.00	0.00	400.0	-3,460.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
500.0	0.00	0.00	500.0	-3,360.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
600.0	0.00	0.00	600.0	-3,260.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
700.0	0.00	0.00	700.0	-3,160.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
800.0	0.00	0.00	800.0	-3,060.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
900.0	0.00	0.00	900.0	-2,960.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,000.0	0.00	0.00	1,000.0	-2,860.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,100.0	0.00	0.00	1,100.0	-2,760.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,200.0	0.00	0.00	1,200.0	-2,660.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,300.0	0.00	0.00	1,300.0	-2,560.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,400.0	0.00	0.00	1,400.0	-2,460.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,500.0	0.00	0.00	1,500.0	-2,360.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,600.0	0.00	0.00	1,600.0	-2,260.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,700.0	0.00	0.00	1,700.0	-2,160.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,800.0	0.00	0.00	1,800.0	-2,060.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
1,900.0	0.00	0.00	1,900.0	-1,960.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
2,000.0	0.00	0.00	2,000.0	-1,860.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
2,100.0	0.00	0.00	2,100.0	-1,760.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
2,200.0	0.00	0.00	2,200.0	-1,660.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
2,300.0	0.00	0.00	2,300.0	-1,560.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
2,400.0	0.00	0.00	2,400.0	-1,460.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
2,500.0	0.00	0.00	2,500.0	-1,360.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	
2,600.0	0.00	0.00	2,600.0	-1,260.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10	



Pathfinder
Pathfinder X&Y Report



A Schlumberger Company

Company: XTO Energy Co
Project: Lea County
Site: Perla Negra
Well: #1H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well #1H
TVD Reference: KB = 19' @ 3860.0usft (Original Well Elev)
MD Reference: KB = 19' @ 3860.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,700.0	0.00	0.00	2,700.0	-1,160.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
2,800.0	0.00	0.00	2,800.0	-1,060.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
2,900.0	0.00	0.00	2,900.0	-960.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,000.0	0.00	0.00	3,000.0	-860.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,100.0	0.00	0.00	3,100.0	-760.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,200.0	0.00	0.00	3,200.0	-660.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,300.0	0.00	0.00	3,300.0	-560.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,400.0	0.00	0.00	3,400.0	-460.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,500.0	0.00	0.00	3,500.0	-360.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,600.0	0.00	0.00	3,600.0	-260.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,700.0	0.00	0.00	3,700.0	-160.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,800.0	0.00	0.00	3,800.0	-60.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
3,900.0	0.00	0.00	3,900.0	40.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,000.0	0.00	0.00	4,000.0	140.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,100.0	0.00	0.00	4,100.0	240.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,200.0	0.00	0.00	4,200.0	340.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,300.0	0.00	0.00	4,300.0	440.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,400.0	0.00	0.00	4,400.0	540.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,500.0	0.00	0.00	4,500.0	640.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,600.0	0.00	0.00	4,600.0	740.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,700.0	0.00	0.00	4,700.0	840.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,800.0	0.00	0.00	4,800.0	940.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
4,900.0	0.00	0.00	4,900.0	1,040.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,000.0	0.00	0.00	5,000.0	1,140.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,100.0	0.00	0.00	5,100.0	1,240.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,200.0	0.00	0.00	5,200.0	1,340.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,300.0	0.00	0.00	5,300.0	1,440.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	KB = 19' @ 3860.0usft (Original Well Elev)
Site:	Perla Negra	MD Reference:	KB = 19' @ 3860.0usft (Original Well Elev)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,400.0	0.00	0.00	5,400.0	1,540.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,500.0	0.00	0.00	5,500.0	1,640.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,600.0	0.00	0.00	5,600.0	1,740.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,700.0	0.00	0.00	5,700.0	1,840.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,800.0	0.00	0.00	5,800.0	1,940.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
5,900.0	0.00	0.00	5,900.0	2,040.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,000.0	0.00	0.00	6,000.0	2,140.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,100.0	0.00	0.00	6,100.0	2,240.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,200.0	0.00	0.00	6,200.0	2,340.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,300.0	0.00	0.00	6,300.0	2,440.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,400.0	0.00	0.00	6,400.0	2,540.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,500.0	0.00	0.00	6,500.0	2,640.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,600.0	0.00	0.00	6,600.0	2,740.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,700.0	0.00	0.00	6,700.0	2,840.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,800.0	0.00	0.00	6,800.0	2,940.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
6,900.0	0.00	0.00	6,900.0	3,040.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,000.0	0.00	0.00	7,000.0	3,140.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,100.0	0.00	0.00	7,100.0	3,240.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,200.0	0.00	0.00	7,200.0	3,340.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,300.0	0.00	0.00	7,300.0	3,440.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,400.0	0.00	0.00	7,400.0	3,540.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,500.0	0.00	0.00	7,500.0	3,640.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,600.0	0.00	0.00	7,600.0	3,740.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,700.0	0.00	0.00	7,700.0	3,840.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,800.0	0.00	0.00	7,800.0	3,940.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
7,900.0	0.00	0.00	7,900.0	4,040.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,000.0	0.00	0.00	8,000.0	4,140.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10



Pathfinder Pathfinder X&Y Report



A Schlumberger Company

Company: XTO Energy Co
Project: Lea County
Site: Perla Negra
Well: #1H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well #1H
TVD Reference: KB = 19' @ 3860.0usft (Original Well Elev)
MD Reference: KB = 19' @ 3860.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
8,100.0	0.00	0.00	8,100.0	4,240.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,200.0	0.00	0.00	8,200.0	4,340.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,300.0	0.00	0.00	8,300.0	4,440.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,400.0	0.00	0.00	8,400.0	4,540.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,500.0	0.00	0.00	8,500.0	4,640.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,600.0	0.00	0.00	8,600.0	4,740.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,700.0	0.00	0.00	8,700.0	4,840.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,800.0	0.00	0.00	8,800.0	4,940.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
8,900.0	0.00	0.00	8,900.0	5,040.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,000.0	0.00	0.00	9,000.0	5,140.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,100.0	0.00	0.00	9,100.0	5,240.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,200.0	0.00	0.00	9,200.0	5,340.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,300.0	0.00	0.00	9,300.0	5,440.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,400.0	0.00	0.00	9,400.0	5,540.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,500.0	0.00	0.00	9,500.0	5,640.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,600.0	0.00	0.00	9,600.0	5,740.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,700.0	0.00	0.00	9,700.0	5,840.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,800.0	0.00	0.00	9,800.0	5,940.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
9,900.0	0.00	0.00	9,900.0	6,040.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
10,000.0	0.00	0.00	10,000.0	6,140.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
10,100.0	0.00	0.00	10,100.0	6,240.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
10,200.0	0.00	0.00	10,200.0	6,340.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
10,308.0	0.00	0.00	10,308.0	6,448.0	0.0	0.0	0.0	0.00	597,264.20	750,196.10
10,350.0	4.20	359.49	10,350.0	6,490.0	1.5	0.0	1.5	10.00	597,265.74	750,196.09
10,400.0	9.20	359.49	10,399.6	6,539.6	7.4	-0.1	7.4	10.00	597,271.57	750,196.03
10,450.0	14.20	359.49	10,448.6	6,588.6	17.5	-0.2	17.5	10.00	597,281.70	750,195.94
10,500.0	19.19	359.49	10,496.4	6,636.4	31.9	-0.3	31.9	10.00	597,296.06	750,195.82



Pathfinder Pathfinder X&Y Report



A Schlumberger Company

Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	KB = 19' @ 3860.0usft (Original Well Elev)
Site:	Perla Negra	MD Reference:	KB = 19' @ 3860.0usft (Original Well Elev)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
10,550.0	24.19	359.49	10,542.9	6,682.9	50.3	-0.4	50.3	10.00	597,314.54	750,195.65	
10,600.0	29.19	359.49	10,587.5	6,727.5	72.8	-0.6	72.8	10.00	597,336.99	750,195.45	
10,650.0	34.19	359.49	10,630.1	6,770.1	99.0	-0.9	99.0	10.00	597,363.24	750,195.22	
10,700.0	39.19	359.49	10,670.1	6,810.1	128.9	-1.1	128.9	10.00	597,393.11	750,194.95	
10,750.0	44.19	359.49	10,707.5	6,847.5	162.1	-1.4	162.2	10.00	597,426.35	750,194.66	
10,800.0	49.19	359.49	10,741.8	6,881.8	198.5	-1.8	198.5	10.00	597,462.72	750,194.33	
10,850.0	54.18	359.49	10,772.7	6,912.7	237.7	-2.1	237.7	10.00	597,501.93	750,193.98	
10,900.0	59.18	359.49	10,800.2	6,940.2	279.5	-2.5	279.5	10.00	597,543.70	750,193.61	
10,950.0	64.18	359.49	10,823.9	6,963.9	323.5	-2.9	323.5	10.00	597,587.70	750,193.22	
11,000.0	69.18	359.49	10,843.7	6,983.7	369.4	-3.3	369.4	10.00	597,633.60	750,192.81	
11,050.0	74.18	359.49	10,859.4	6,999.4	416.8	-3.7	416.9	10.00	597,681.05	750,192.39	
11,100.0	79.18	359.49	10,870.9	7,010.9	465.5	-4.1	465.5	10.00	597,729.69	750,191.96	
11,150.0	84.18	359.49	10,878.2	7,018.2	514.9	-4.6	515.0	10.00	597,779.14	750,191.52	
11,196.3	88.80	359.49	10,881.0	7,021.0	561.1	-5.0	561.1	10.00	597,825.30	750,191.11	
11,200.0	88.80	359.49	10,881.1	7,021.1	564.8	-5.0	564.9	0.00	597,829.04	750,191.07	
11,300.0	88.80	359.49	10,883.2	7,023.2	664.8	-5.9	664.8	0.00	597,929.01	750,190.18	
11,400.0	88.80	359.49	10,885.3	7,025.3	764.8	-6.8	764.8	0.00	598,028.99	750,189.29	
11,500.0	88.80	359.49	10,887.4	7,027.4	864.8	-7.7	864.8	0.00	598,128.96	750,188.40	
11,600.0	88.80	359.49	10,889.5	7,029.5	964.7	-8.6	964.8	0.00	598,228.94	750,187.51	
11,700.0	88.80	359.49	10,891.5	7,031.5	1,064.7	-9.5	1,064.8	0.00	598,328.91	750,186.62	
11,800.0	88.80	359.49	10,893.6	7,033.6	1,164.7	-10.4	1,164.7	0.00	598,428.88	750,185.73	
11,900.0	88.80	359.49	10,895.7	7,035.7	1,264.7	-11.3	1,264.7	0.00	598,528.86	750,184.84	
12,000.0	88.80	359.49	10,897.8	7,037.8	1,364.6	-12.1	1,364.7	0.00	598,628.83	750,183.95	
12,100.0	88.80	359.49	10,899.9	7,039.9	1,464.6	-13.0	1,464.7	0.00	598,728.81	750,183.06	
12,200.0	88.80	359.49	10,902.0	7,042.0	1,564.6	-13.9	1,564.6	0.00	598,828.78	750,182.17	
12,300.0	88.80	359.49	10,904.1	7,044.1	1,664.6	-14.8	1,664.6	0.00	598,928.75	750,181.28	
12,400.0	88.80	359.49	10,906.2	7,046.2	1,764.5	-15.7	1,764.6	0.00	599,028.73	750,180.39	



Pathfinder
Pathfinder X&Y Report



A Schlumberger Company

Company: XTO Energy Co
Project: Lea County
Site: Perla Negra
Well: #1H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well #1H
TVD Reference: KB = 19' @ 3860.0usft (Original Well Elev)
MD Reference: KB = 19' @ 3860.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
12,500.0	88.80	359.49	10,908.3	7,048.3	1,864.5	-16.6	1,864.6	0.00	599,128.70	750,179.50
12,600.0	88.80	359.49	10,910.4	7,050.4	1,964.5	-17.5	1,964.6	0.00	599,228.68	750,178.61
12,700.0	88.80	359.49	10,912.5	7,052.5	2,064.5	-18.4	2,064.5	0.00	599,328.65	750,177.72
12,800.0	88.80	359.49	10,914.6	7,054.6	2,164.4	-19.3	2,164.5	0.00	599,428.63	750,176.83
12,900.0	88.80	359.49	10,916.7	7,056.7	2,264.4	-20.2	2,264.5	0.00	599,528.60	750,175.94
13,000.0	88.80	359.49	10,918.8	7,058.8	2,364.4	-21.0	2,364.5	0.00	599,628.57	750,175.05
13,100.0	88.80	359.49	10,920.9	7,060.9	2,464.3	-21.9	2,464.4	0.00	599,728.55	750,174.16
13,200.0	88.80	359.49	10,923.0	7,063.0	2,564.3	-22.8	2,564.4	0.00	599,828.52	750,173.27
13,300.0	88.80	359.49	10,925.1	7,065.1	2,664.3	-23.7	2,664.4	0.00	599,928.50	750,172.38
13,400.0	88.80	359.49	10,927.2	7,067.2	2,764.3	-24.6	2,764.4	0.00	600,028.47	750,171.49
13,500.0	88.80	359.49	10,929.2	7,069.2	2,864.2	-25.5	2,864.4	0.00	600,128.44	750,170.60
13,600.0	88.80	359.49	10,931.3	7,071.3	2,964.2	-26.4	2,964.3	0.00	600,228.42	750,169.71
13,700.0	88.80	359.49	10,933.4	7,073.4	3,064.2	-27.3	3,064.3	0.00	600,328.39	750,168.82
13,800.0	88.80	359.49	10,935.5	7,075.5	3,164.2	-28.2	3,164.3	0.00	600,428.37	750,167.93
13,900.0	88.80	359.49	10,937.6	7,077.6	3,264.1	-29.1	3,264.3	0.00	600,528.34	750,167.04
14,000.0	88.80	359.49	10,939.7	7,079.7	3,364.1	-29.9	3,364.2	0.00	600,628.31	750,166.15
14,100.0	88.80	359.49	10,941.8	7,081.8	3,464.1	-30.8	3,464.2	0.00	600,728.29	750,165.26
14,200.0	88.80	359.49	10,943.9	7,083.9	3,564.1	-31.7	3,564.2	0.00	600,828.26	750,164.37
14,300.0	88.80	359.49	10,946.0	7,086.0	3,664.0	-32.6	3,664.2	0.00	600,928.24	750,163.48
14,400.0	88.80	359.49	10,948.1	7,088.1	3,764.0	-33.5	3,764.2	0.00	601,028.21	750,162.59
14,500.0	88.80	359.49	10,950.2	7,090.2	3,864.0	-34.4	3,864.1	0.00	601,128.19	750,161.71
14,600.0	88.80	359.49	10,952.3	7,092.3	3,964.0	-35.3	3,964.1	0.00	601,228.16	750,160.82
14,700.0	88.80	359.49	10,954.4	7,094.4	4,063.9	-36.2	4,064.1	0.00	601,328.13	750,159.93
14,800.0	88.80	359.49	10,956.5	7,096.5	4,163.9	-37.1	4,164.1	0.00	601,428.11	750,159.04
14,900.0	88.80	359.49	10,958.6	7,098.6	4,263.9	-38.0	4,264.1	0.00	601,528.08	750,158.15
15,000.0	88.80	359.49	10,960.7	7,100.7	4,363.9	-38.8	4,364.0	0.00	601,628.06	750,157.26
15,100.0	88.80	359.49	10,962.8	7,102.8	4,463.8	-39.7	4,464.0	0.00	601,728.03	750,156.37



Pathfinder
Pathfinder X&Y Report



A Schlumberger Company

Company: XTO Energy Co
Project: Lea County
Site: Perla Negra
Well: #1H
Wellbore: OH
Design: Plan #2

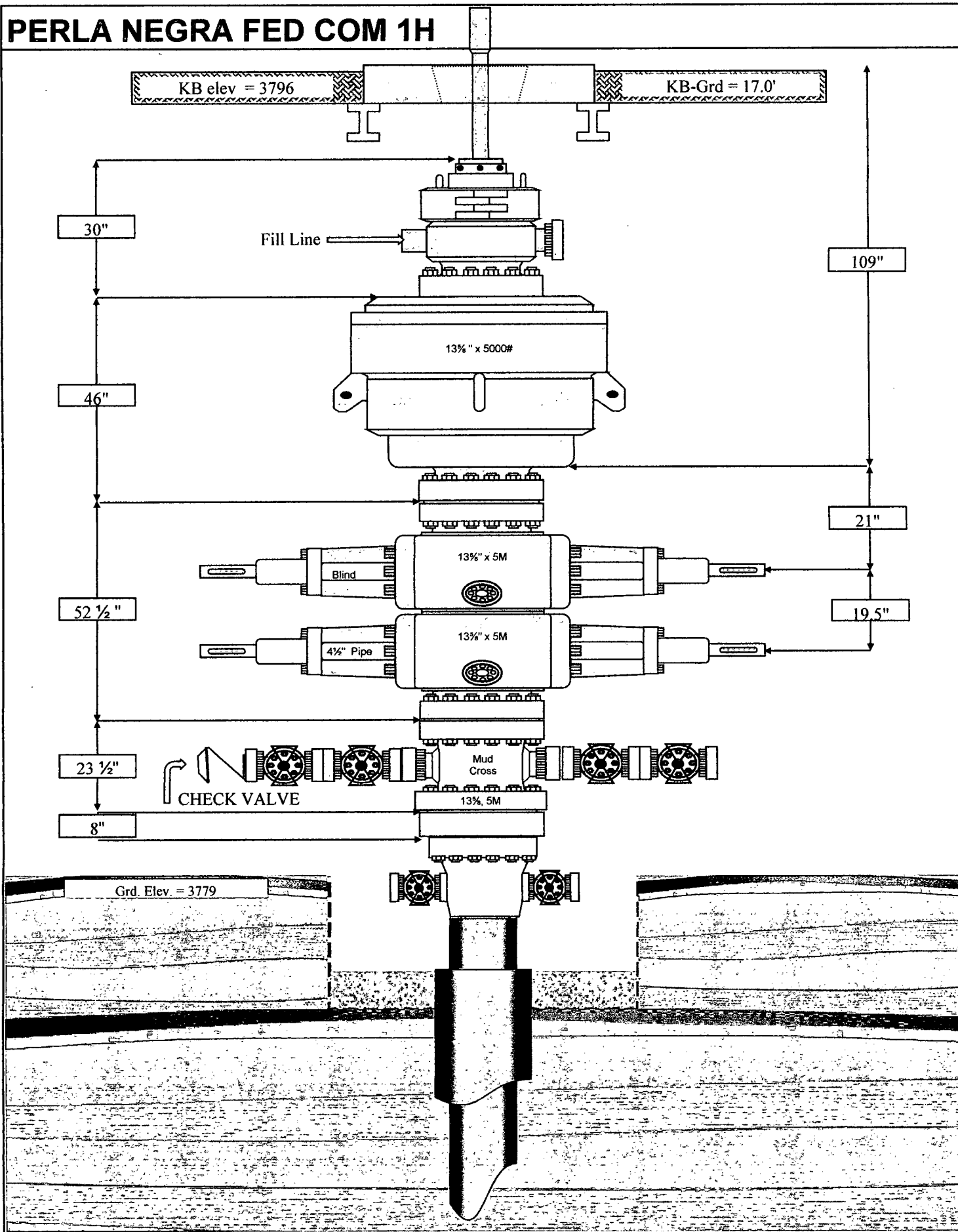
Local Co-ordinate Reference: Well #1H
TVD Reference: KB = 19' @ 3860.0usft (Original Well Elev)
MD Reference: KB = 19' @ 3860.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
15,200.0	88.80	359.49	10,964.8	7,104.8	4,563.8	-40.6	4,564.0	0.00	601,828.00	750,155.48
15,256.0	88.80	359.49	10,966.0	7,106.0	4,619.8	-41.1	4,620.0	0.00	601,884.02	750,154.98

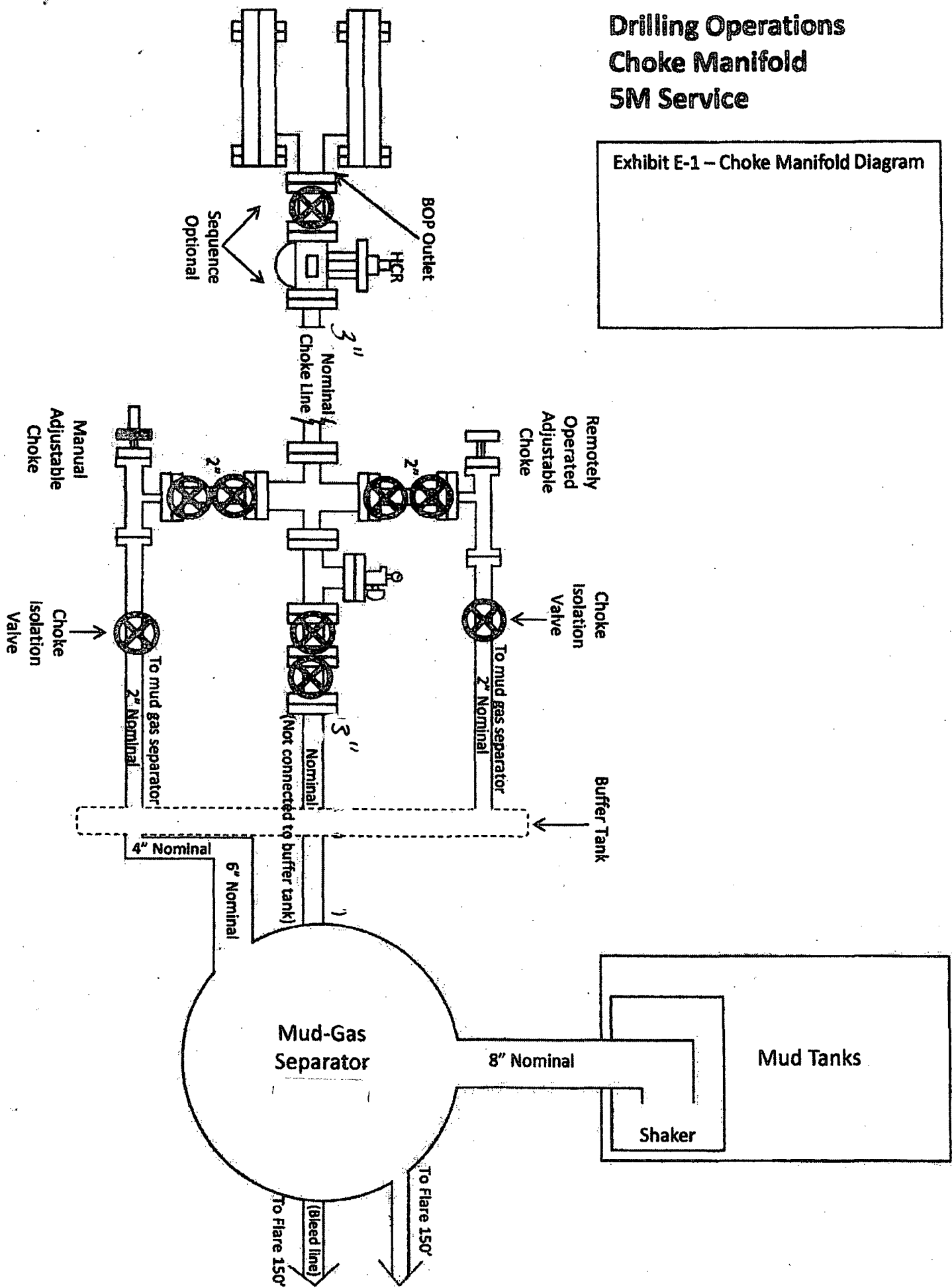
Checked By: _____ Approved By: _____ Date: _____

PERLA NEGRA FED COM 1H



Drilling Operations
Choke Manifold
5M Service

Exhibit E-1 – Choke Manifold Diagram



Plat for Closed Loop System

