

OCD Artesia

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

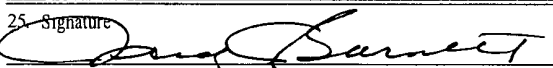
FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

1a Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No NM-000503
1b Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Devon Energy Production Company, LP		7. If Unit or CA Agreement, Name and No NMNM-070928-X
3a. Address 20 North Broadway Oklahoma City, Oklahoma City 73102-8260	3b. Phone No. (include area code) 405-228-8699	8. Lease Name and Well No Cotton Draw Unit 164H (300635)
4. Location of Well (Report location clearly and in accordance with any State requirements*) At surface NW/4 NE/4 330 FNL & 1980 FEL (UNIT B) At proposed prod zone SW/4 SE/4 330 FSL & 1980 FEL (UNIT O) PP:330 FNL & 1980 FEL		9. API Well No. 30-015-39326
14. Distance in miles and direction from nearest town or post office* Approximately 22 miles southeast of Loving, NM.		10. Field and Pool, or Exploratory Poker Lake East, Delaware DELAWARE SOUTH (96757)
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line, if any) 330'	16. No of acres in lease 2360.8 Acres	11. Sec., T. R. M. or Blk and Survey or Area SEC 11 T25S R31E
17. Spacing Unit dedicated to this well W/2 E/2 160 Acres	18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft See attached map.	12. County or Parish Eddy County
19. Proposed Depth 12,601 MD 8230' TVD	20. BLM/BIA Bond No on file CO-1104	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3433' GL	22. Approximate date work will start*	23. Estimated duration 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall 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 shall be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature 	Name (Printed/Typed) Judy A. Barnett	Date 05/13/2011
Title Regulatory Specialist		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date AUG 24 2011
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

KZ 09/01/11

Witness Surface &
Intermediate CasingSEE ATTACHED FOR
CONDITIONS OF APPROVALAPPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

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DRILLING PROGRAM

Devon Energy Production Company, LP

Cotton Draw Unit 164H

Surface Location: 330' FNL & 1980' FEL, Unit B, Sec 11 T25S R31E, Eddy, NM

Bottom Hole Location: 330' FSL & 1980' FEL, Unit O, Sec 11 T25S R31E, Eddy, NM .

1. Geologic Name of Surface Formation

a. Quaternary Alluvium

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

a. Depth to Fresh Water	300'	FW
b. Rustler	638'	Water
c. Top of Salt	1135'	
d. Base of Salt	4123'	
e. Delaware/Lamar	4348'	Oil
f. Bell Canyon	4378'	Oil
g. Cherry Canyon	5333'	Oil
h. Brushy Canyon	6648'	Oil
i. Total Depth	12,601'	

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 17 ½" casing at 750' and circulating cement back to surface. Fresh water sands will be protected by setting 9 5/8" casing at 4400' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 ½" casing to total depth and circulating cement above the base of the 9 5/8" casing.

Casing Program:

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17 ½"	0-750'	13 3/8"	0-750'	48#	STC	H-40
12 ¼"	750-4400' 4350	9 5/8"	0-4400'	40#	LTC	J-55
8 ¾"	4400-7550'	5 ½"	0-7550'	17#	LTC	N-80
8 ½"	7550-12,601'	5 ½"	7550-12,601'	17#	BTC	N-80

Design Parameter Factors:

<u>Casing Size</u>	<u>Collapse Design</u>	<u>Burst Design</u>	<u>Tension Design</u>
	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>
13 3/8"	1.90	4.43	8.9
9 5/8" 40#	1.20	1.72	2.56
5 1/2" 17#	1.67	2.06	3.44
5 1/2" 17#	1.58	1.94	2.06

NOTE REGARDING COLLAPSE DESIGN FACTOR FOR INTERMEDIATE CASING: The maximum possible collapse load that the intermediate casing will experience will result from evacuated casing with the pore pressure exerting a collapse load at TD. The pore pressure is estimated to be 9.3 ppg for this calculation. This results in a collapse design factor of 1.20 for the 9-5/8" 40# J-55 LTC casing at a depth of 4,400'. While running the intermediate casing, the casing string will never be completely evacuated. There is no potential for the intermediate casing to be used as a production string.

Cement Program: (Cement volumes based on at least 25% excess)

13 3/8"

Lead: 485 sx Cl C + 2% bwoc Calcium Chloride + 0.125#/sx CF + 4% bwoc Bentonite + 81 4% FW Yld: 1.75 cf/sx **TOC @ surface.**
 Tail: 250 sx Cl C + 2% bwoc Calcium Chloride + 0.125#/sx CF + 56 3% FW. Yld: 1.35 cf/sx

9 5/8" Intermediate

Lead: 1230 sx (35.65) Poz (Fly Ash) Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 6% bwoc Bentonite + 0.2% bwoc FL-52A + 0.2% bwoc Sodium Metasilicate + 107 9% FW Yld: 2.05 cf/sx. **TOC @ surface.**
 Tail: 300 sx (60-40) Poz (Fly Ash) Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 0.2% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 65.4% FW. Yld: 1.37 cf/sx

5 1/2" Production

1st Stage

Lead: 425 sc (35.65) Poz (Fly Ash) Cl H + 3% bwow Sodium Chloride + 0.12#/sx CF + 3#/sx LCM-1 + 6% bwoc Bentonite + 0.7% bwoc FL-52A + 102 5% FW ppg Yld: 2.01 cf/sx. **TOC @ 6,000'**
 Tail: 1170 sx (50-50) Poz (Fly Ash) Cl H + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 0.6% bwoc Sodium Metasilicate + 0.4% bwoc FL-52A + 57.3% FW. Yld: 1.28 DV
TOOL @ 6,000'

2nd Stage

Lead: 255 sx Cl C + 0.125#/sx CF + 3% bwoc Sodium Metasilicate + 1% bwoc R-3 + 157% FW Yld: 2.88 cf/sx. **TOC @ 3,500'**
 Tail: 150 sx (60-40) Poz (Fly Ash) Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 0.1% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 65.4% FW Yld: 1.37 cf/sx

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 500' above the 9 5/8" casing shoe. All casing is new and API approved.

Positive standoff centralizers will be utilized for the production string every other joint of casing from 100' MD above KOP or at the legal footage setback, whichever is the deeper MD, up to TOC.

Pressure Control Equipment BOP DESIGN:

The BOP system used to drill the intermediate hole will consist of a 13 5/8" 3M double Ram, and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the intermediate casing shoe.

Pipe rams will be operated and checked each 24 hour period and blind rams tested each time the drill pipe is out of the hole. These tests will be logged in the daily log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP. ~~Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns. See attached.~~

Proposed Mud Circulation System

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0- 750'	8.4-9.0	30-34	NC	FW
750- 4400' <i>4350</i>	9.8-10.0	28-32	NC	Brine
4400-12,601'	8.6-9.3	28-32	NC	FW

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

3. 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 20" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 20" shoe until total depth is reached.
4. Logging, Coring, and Testing Program: *See COA*
 - a. Drill stem tests will be based on geological sample shows.
 - b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.

- c. The open hole electrical logging program will be:
- i. Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP 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 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

5. 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 4405 psi and Estimated BHT 145°. No H₂S is anticipated to be encountered.

6. 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 soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Sub basin	Use	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02570	COM	ED		4	2	4	02	25S	31E	618704	3558489*	777	895		
C 02569	COM	ED		4	4	2	02	25S	31E	618699	3558891*	1115	1016		
C 02573	COM	ED		1	4	2	02	25S	31E	618499	3559091*	1236			
C 02568	COM	ED		4	3	1	01	25S	31E	619103	3558892*	1343	1025		
C 02571	COM	ED		4	1	2	02	25S	31E	618292	3559294*	1407	860		
C 02572	COM	ED		4	2	2	02	25S	31E	618695	3559294*	1486	852		
C 02574	COM	ED		1	1	2	02	25S	31E	618092	3559494*	1609			
C 02250	STK	ED		3	1	4	21	25S	31E	614912	3553620*	5393	400	390	10
L 01656 APPRO	PRO	LE		1	2	32	25S	32E	623137	3551405*	8144	331	290	41	
C 02440	C	PRO	ED	2	3	10	24S	31E	616103	3566599*	8960	350			
C 02090	DOM	ED		4	4	01	26S	31E	620329	3548533*	9593	350	335	15	
Average Depth to Water:													338 feet		
Minimum Depth:													290 feet		
Maximum Depth:													390 feet		

Record Count: 11

UTM NAD83 Radius Search (in meters):

Easting (X): 618209

Northing (Y): 3557889

Radius: 9656

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data

6/27/11 2:57 PM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



Weatherford[®]

Drilling Services

Proposal



devon

COTTON DRAW UNIT #164H

EDDY COUNTY, NM

WELL FILE: PLAN 1

APRIL 21, 2011

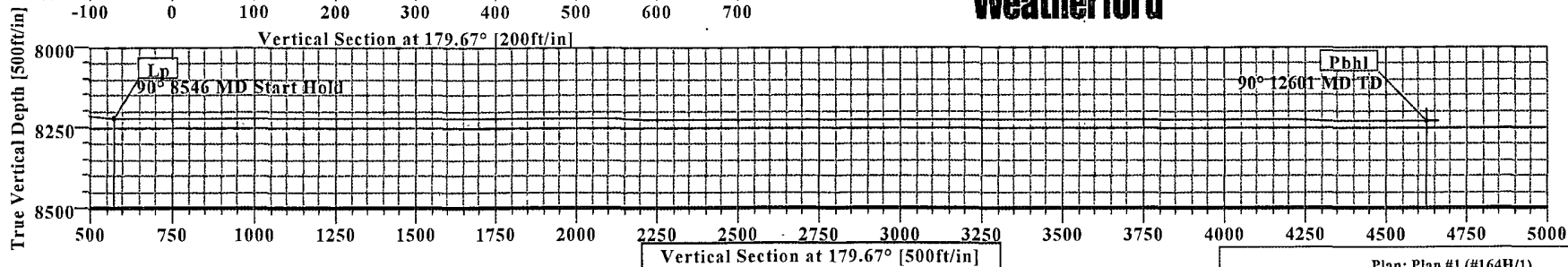
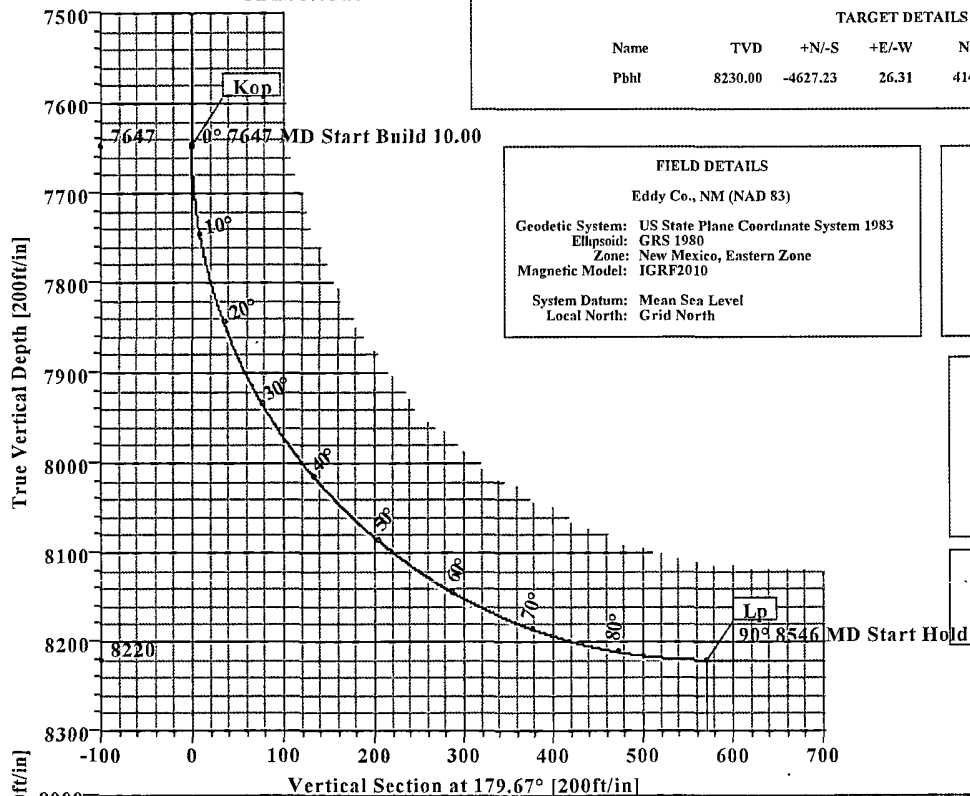
Weatherford International, Ltd.

P.O. Box 61028
Midland, TX 79711 USA
+1.432.561.8892 Main
+1.432.561.8895 Fax
www.weatherford.com



Cotton Draw #164H
Eddy Co., New Mexico

KB ELEV: 3458
GL ELEV: 3433



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	179.67	0.00	0.00	0.00	0.00	0.00	0.00	
2	7647.04	0.00	179.67	7647.04	0.00	0.00	0.00	0.00	0.00	
3	8545.63	89.86	179.67	8220.00	-571.54	3.25	10.00	179.67	571.54	
4	12601.40	89.86	179.67	8230.00	-4627.23	26.31	0.00	0.00	4627.30	Pbhl

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#164H	0.00	0.00	419194.51	722955.98	32°09'03.892N	103°44'47.362W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Pbhl	8230.00	-4627.23	26.31	414567.28	722982.29	Point

FIELD DETAILS

Eddy Co., NM (NAD 83)

Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010

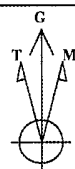
System Datum: Mean Sea Level
Local North: Grid North

SITE DETAILS

Cotton Draw Unit #164H

Site Centre Northing: 419194.51
Easting: 722955.98

Ground Level: 3433.00
Positional Uncertainty: 0.00
Convergence: 0.31



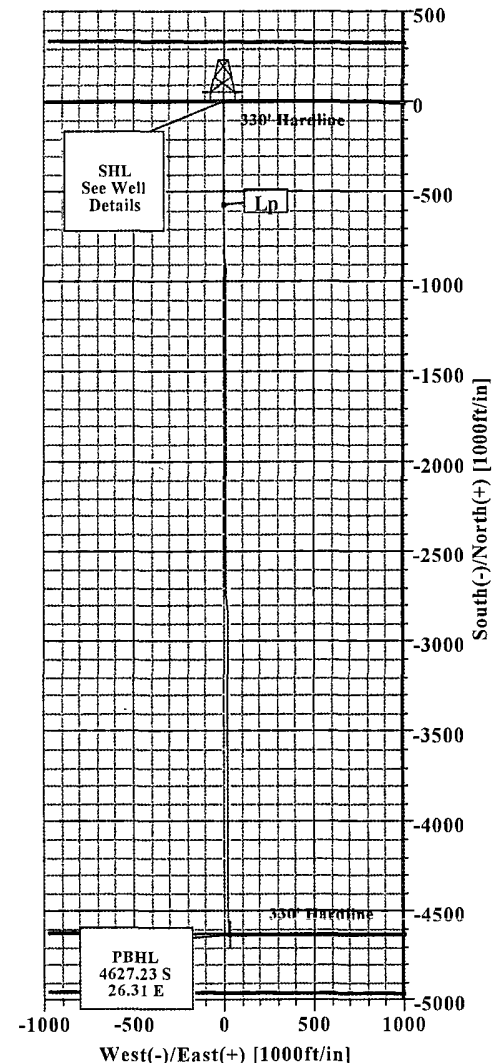
Azimuths to Grid North
True North: -0.31°
Magnetic North: 7.27°

Magnetic Field
Strength: 4851nT
Dip Angle: 60.07°
Date: 2/15/2012
Model: IGRF2010

Total Correction to Grid North: 7.27°

LEGEND

Plan #1



Plan: Plan #1 (#164H/1)

Created By: Russell W. Joyner

Date: 4/21/2011



Weatherford International Ltd.

WFT Plan Report - X & Y's

**Weatherford**

Company: Devon Energy	Date: 4/21/2011	Time: 07:26:56	Page: 1
Field: Eddy Co., NM (NAD 83)	Co-ordinate(NE) Reference: Well: #164H, Grid North		
Site: Cotton Draw Unit #164H	Vertical (TVD) Reference: SITE 3458.0		
Well: #164H	Section (VS) Reference: Well (0.00N,0.00E,179.67Azi)		
Wellpath: 1	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Plan: Plan #1	Date Composed: 4/21/2011
Principal: Yes	Version: 1
	Tied-to: From Surface

Field: Eddy Co., NM (NAD 83)	
Map System: US State Plane Coordinate System 1983	Map Zone: New Mexico, Eastern Zone
Geo Datum: GRS 1980	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010

Site: Cotton Draw Unit #164H		
Site Position:	Northing: 419194.51 ft	Latitude: 32 9 3.892 N
From: Map	Easting: 722955.98 ft	Longitude: 103 44 47.362 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 3433.00 ft		Grid Convergence: 0.31 deg

Well: #164H	Slot Name:
Well Position: +N-S 0.00 ft	Latitude: 32 9 3.892 N
+E-W 0.00 ft	Longitude: 103 44 47.362 W
Position Uncertainty: 0.00 ft	

Wellpath: 1	Drilled From: Surface
Current Datum: SITE	Tie-on Depth: 0.00 ft
Magnetic Data: 2/15/2012	Above System Datum: Mean Sea Level
Field Strength: 48511 nT	Declination: 7.58 deg
Vertical Section: Depth From (TVD)	Mag Dip Angle: 60.07 deg
ft	+E/-W Direction
	ft deg
8230.00	0.00 0.00 179.67

Plan Section Information										
MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	179.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7647.04	0.00	179.67	7647.04	0.00	0.00	0.00	0.00	0.00	0.00	
8545.63	89.86	179.67	8220.00	-571.54	3.25	10.00	10.00	0.00	179.67	
12601.40	89.86	179.67	8230.00	-4627.23	26.31	0.00	0.00	0.00	0.00	Pbhl

Survey										
MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
7600.00	0.00	179.67	7600.00	0.00	0.00	0.00	0.00	419194.51	722955.98	Kop
7647.04	0.00	179.67	7647.04	0.00	0.00	0.00	0.00	419194.51	722955.98	
7700.00	5.30	179.67	7699.92	-2.45	0.01	2.45	10.00	419192.06	722955.99	
7800.00	15.30	179.67	7798.19	-20.30	0.12	20.30	10.00	419174.21	722956.10	
7900.00	25.30	179.67	7891.86	-54.94	0.31	54.94	10.00	419139.57	722956.29	
8000.00	35.30	179.67	7978.10	-105.32	0.60	105.32	10.00	419089.19	722956.58	Lp
8100.00	45.30	179.67	8054.27	-169.91	0.97	169.91	10.00	419024.60	722956.95	
8200.00	55.30	179.67	8118.07	-246.75	1.40	246.75	10.00	418947.76	722957.38	
8300.00	65.30	179.67	8167.56	-333.50	1.90	333.50	10.00	418861.01	722957.88	
8400.00	75.30	179.67	8201.23	-427.52	2.43	427.53	10.00	418766.99	722958.41	
8500.00	85.30	179.67	8218.07	-525.96	2.99	525.97	10.00	418668.55	722958.97	
8545.63	89.86	179.67	8220.00	-571.54	3.25	571.54	10.00	418622.97	722959.23	
8600.00	89.86	179.67	8220.13	-625.91	3.56	625.92	0.00	418568.60	722959.54	
8700.00	89.86	179.67	8220.38	-725.91	4.13	725.92	0.00	418468.60	722960.11	
8800.00	89.86	179.67	8220.62	-825.90	4.70	825.92	0.00	418368.61	722960.68	
8900.00	89.86	179.67	8220.87	-925.90	5.26	925.92	0.00	418268.61	722961.24	
9000.00	89.86	179.67	8221.12	-1025.90	5.83	1025.92	0.00	418168.61	722961.81	

Company: Devon Energy	Date: 4/21/2011	Time: 07:26:56	Page: 2
Field: Eddy Co. NM (NAD 83)	Co-ordinate(NE) Reference:	Well: #164H, Grid North	
Site: Cotton Draw Unit #164H	Vertical (TVD) Reference:	SITE 3458.0	
Well: #164H	Section (VS) Reference:	Well (0.00N,0.00E,179.67Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
9100.00	89.86	179.67	8221.36	-1125.90	6.40	1125.92	0.00	418068.61	722962.38	
9200.00	89.86	179.67	8221.61	-1225.90	6.97	1225.92	0.00	417968.61	722962.95	
9300.00	89.86	179.67	8221.86	-1325.89	7.54	1325.92	0.00	417868.62	722963.52	
9400.00	89.86	179.67	8222.10	-1425.89	8.11	1425.92	0.00	417768.62	722964.09	
9500.00	89.86	179.67	8222.35	-1525.89	8.68	1525.91	0.00	417668.62	722964.66	
9600.00	89.86	179.67	8222.60	-1625.89	9.24	1625.91	0.00	417568.62	722965.22	
9700.00	89.86	179.67	8222.84	-1725.89	9.81	1725.91	0.00	417468.62	722965.79	
9800.00	89.86	179.67	8223.09	-1825.88	10.38	1825.91	0.00	417368.63	722966.36	
9900.00	89.86	179.67	8223.34	-1925.88	10.95	1925.91	0.00	417268.63	722966.93	
10000.00	89.86	179.67	8223.58	-2025.88	11.52	2025.91	0.00	417168.63	722967.50	
10100.00	89.86	179.67	8223.83	-2125.88	12.09	2125.91	0.00	417068.63	722968.07	
10200.00	89.86	179.67	8224.08	-2225.88	12.66	2225.91	0.00	416968.63	722968.64	
10300.00	89.86	179.67	8224.32	-2325.87	13.22	2325.91	0.00	416868.64	722969.20	
10400.00	89.86	179.67	8224.57	-2425.87	13.79	2425.91	0.00	416768.64	722969.77	
10500.00	89.86	179.67	8224.82	-2525.87	14.36	2525.91	0.00	416668.64	722970.34	
10600.00	89.86	179.67	8225.06	-2625.87	14.93	2625.91	0.00	416568.64	722970.91	
10700.00	89.86	179.67	8225.31	-2725.87	15.50	2725.91	0.00	416468.64	722971.48	
10800.00	89.86	179.67	8225.56	-2825.87	16.07	2825.91	0.00	416368.64	722972.05	
10900.00	89.86	179.67	8225.80	-2925.86	16.64	2925.91	0.00	416268.65	722972.62	
11000.00	89.86	179.67	8226.05	-3025.86	17.20	3025.91	0.00	416168.65	722973.18	
11100.00	89.86	179.67	8226.30	-3125.86	17.77	3125.91	0.00	416068.65	722973.75	
11200.00	89.86	179.67	8226.54	-3225.86	18.34	3225.91	0.00	415968.65	722974.32	
11300.00	89.86	179.67	8226.79	-3325.86	18.91	3325.91	0.00	415868.65	722974.89	
11400.00	89.86	179.67	8227.04	-3425.85	19.48	3425.91	0.00	415768.66	722975.46	
11500.00	89.86	179.67	8227.28	-3525.85	20.05	3525.91	0.00	415668.66	722976.03	
11600.00	89.86	179.67	8227.53	-3625.85	20.62	3625.91	0.00	415568.66	722976.60	
11700.00	89.86	179.67	8227.78	-3725.85	21.18	3725.91	0.00	415468.66	722977.16	
11800.00	89.86	179.67	8228.02	-3825.85	21.75	3825.91	0.00	415368.66	722977.73	
11900.00	89.86	179.67	8228.27	-3925.84	22.32	3925.91	0.00	415268.67	722978.30	
12000.00	89.86	179.67	8228.52	-4025.84	22.89	4025.91	0.00	415168.67	722978.87	
12100.00	89.86	179.67	8228.76	-4125.84	23.46	4125.91	0.00	415068.67	722979.44	
12200.00	89.86	179.67	8229.01	-4225.84	24.03	4225.91	0.00	414968.67	722980.01	
12300.00	89.86	179.67	8229.26	-4325.84	24.60	4325.91	0.00	414868.67	722980.58	
12400.00	89.86	179.67	8229.50	-4425.83	25.16	4425.91	0.00	414768.68	722981.14	
12500.00	89.86	179.67	8229.75	-4525.83	25.73	4525.91	0.00	414668.68	722981.71	
12600.00	89.86	179.67	8230.00	-4625.83	26.30	4625.91	0.00	414568.68	722982.28	
12601.40	89.86	179.67	8230.00	-4627.23	26.31	4627.30	0.00	414567.28	722982.29	Pbhl

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	Latitude Deg Min Sec	Longitude Deg Min Sec
Pbhl			8230.00	-4627.23	26.31	414567.28	722982.29	32 8 18.102 N	103 44 47.350 W

Casing Points

MD	TVD	Diameter	Hole Size	Name



Weatherford International Ltd.

WFT Plan Report - X & Y's



Company:	Devon Energy	Date:	4/21/2011	Time:	07:26:56	Page:	3
Field:	Eddy Co. NM (NAD 83)	Co-ordinate(NE) Reference:	Well: #164H, Grid North				
Site:	Cotton Draw Unit #164H	Vertical (TVD) Reference:	SITE 3458.0				
Well:	#164H	Section (VS) Reference:	Well (0.00N,0.00E,179.67Azi)				
Wellpath:	1	Survey Calculation Method:	Minimum Curvature Db: Sybase				

Annotation

MD ft	TVD ft	
7647.04	7647.04	Kop
8545.63	8220.00	Lp
12601.39	8230.00	Pbhl

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

Report Date: April 21, 2011
Job Number: _____
Customer: Devon Energy
Well Name: Cotton Draw Unit #164H
API Number: _____
Rig Name: _____
Location: Eddy Co., NM
Block: _____
Engineer: RWJ

US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 419194.510 USFT	Latitude 32.1510835 DEG
East/West 722955.980 USFT	Longitude -103.7464849 DEG
Grid Convergence: .31°	
Total Correction: +7.27°	

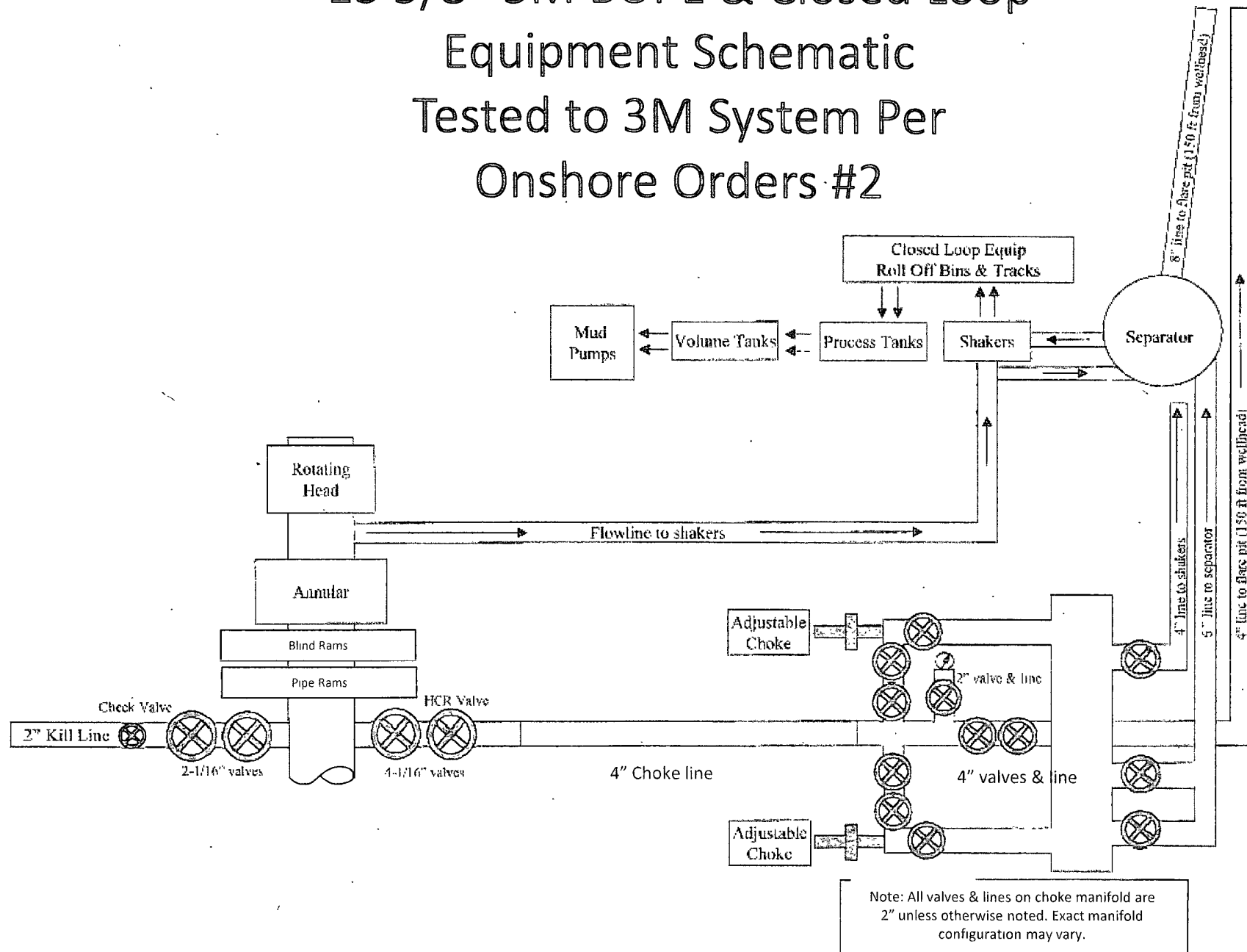
Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.15108° N	32° 9 min 3.901 sec
Longitude =	103.74648° W	103° 44 min 47.346 sec

Magnetic Declination =	7.58°	[True North Offset]
Local Gravity =	.9988 g	Checksum = 6603
Local Field Strength =	48507 nT	Magnetic Vector X = 23989 nT
Magnetic Dip =	60.07°	Magnetic Vector Y = 3192 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z = 42039 nT
Spud Date =	Feb 15, 2012	Magnetic Vector H = 24200 nT

Signed: _____

Date: _____

13 5/8" 5M BOPE & Closed Loop Equipment Schematic Tested to 3M System Per Onshore Orders #2



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, LP

Cotton Draw Unit 164H

Surface Location: 330' FNL & 1980' FEL, Unit B, Sec 11 T25S R31E, Eddy, NM

Bottom Hole Location: 330' FSL & 1980' FEL, Unit O, Sec 11 T25S R31E, Eddy, NM

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 3,000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 3,000 psi WP with proper thread connections will be available on the rotary rig floor at all times.
6. All choke lines will be anchored to prevent movement.
7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
8. Will maintain a kelly cock attached to the kelly.
9. Hand wheels and wrenches will be properly installed and tested for safe operation.
10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.