EA-12-1204

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SEP 12 2012

OCD Artesia

Form 3160-3 (February 2005)

NMOCD, ARTIE

OMB No 1004-0137 Expires March 31, 2007 Lease Senal No.

FORM APPROVED

DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

_	_L6523	& L2766	O	M	05	عا	02	٩Ù	
ς	If Indian	Allotee or	Tribe	Nan	ne .	_	70C		

APPLICATION FOR PERMIT TO	DRILL OR	REENTER			16/1	
la Type of work:  DRILL  REENTI	ER			7 If Unit or CA Agree BFDU 14-08-0	,	
lb Type of Well	<b>✓</b> Sit	igle ZoneMultip	ole Zone	8 Lease Name and V Burton Flat De		
2 Name of Operator Devon Energy Production Co., LP	<	6137		9 API Well No.	5-40681	
3a Address 333 W. Sheridan Avenue	3b Phone No	(include area code)		10 Field and Pool, or I	Exploratory	
OKC, OK 73102	(405)-2	28-4248		Burton Flat; B	one Spring HUAION	
4 Location of Well (Report location clearly and in accordance with an	ny State requirem	ents.*)		11 Sec., T R. M or B	lk. and Survey or Area	
At surface 3125' FNL & 50' FEL Lot 9, Sec 3 At proposed prod zone 2920' FNL & 330' FEL Lot 9, Sec	•			Sec 3-21S-27E	<i>23</i> ,	
14 Distance in miles and direction from nearest town or post office*				12 County or Parish	13. State	
Approximately 4.5 miles north of Carlsbad, NM.				Eddy	NM	
15 Distance from proposed* location to nearest property or lease line, ft	16 No. of a	cres in lease	•	g Unit dedicated to this v	well 21S-27E or 160 acres	
(Also to nearest drig unit line, if any)				BIA Bond No. on file		
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft  See attached map	19 Proposed PH: 68	ори 19' MD: 11357' 48'	20 DEWIN	CO-1104 & NMB-000801		
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approxi	nate date work will sta	rt*	23. Estimated duratio	n	
3202.4' GL				45 days		
To be pad drilled with BFDU 55H	24. Attac	hments				
The following, completed in accordance with the requirements of Onsho	ore Oil and Gas	Order No 1, must be a	ttached to th	is form.		
Well plat certified by a registered surveyor.     A Drilling Plan		4 Bond to cover t Item 20 above).	he operatio	ons unless covered by an	existing bond on file (see	
3 A Surface Use Plan (If the location is on National Forest System SUPO must be filed with the appropriate Forest Service Office)	Lands, the					
25 Signature Patti Riemers	1	(Printed/Typed) Patti Riechers			Date 07/31/2012	
Title Sr. Staff Operations Technician						

Office CARLSBAD FIELD OFFICE FIELD MANAGER 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

Name (Printed/Typed)

conduct operations thereon Conditions of approval, if any, are attached

Is/ Don Peterson

APPROVAL FOR TWO YEARS

/s/ Don Peterson

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)

Approved by (Signature)

Title

Capitan, Controlled Water Ansin

Approval Subject to General Requirements & Special Stipulations Attached

Date SEP 1 0 2012

SEE ATTACHED FOR CONDITIONS OF APPROVAL

#### **Operators Representative:**

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

James Allbee - Operations Engineer Advisor Devon Energy Production Company, L.P. 333 West Sheridan Oklahoma City, OK 73102-5010 (405) 228-8698 (office) (405) 820-8682 (Cellular) Don Mayberry - Superintendent Devon Energy Production Company, L.P. Post Office Box 250 Artesia, NM 88211-0250 (575) 748-3371 (office) (575) 746-4945 (home)

#### Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this 26th day of July, 2012.

Printed Name: Patti Riechers

Signed Name: Patti Richers
Position Title: Operations Technician

Address: 333 West Sheridan, OKC OK 73102

Telephone: (405)-228-8699

Field Representative (if not above signatory):

Address (if different from above): Telephone (if different from above):

1625 N. French Dr., Hobbs, NM 88240 Phone (575) 393-6161 Fax (375) 393-0720 District II 311 S. First St. Artesia, NM 88210 Phone (575) 748-1283 Fax (575) 748-9720

District\_III 1000 Rio Brazos Road, Artec. NM \$7410 Phone (505) 334-6178 Fax. (505) 334-6170 District IV

1220 S St Francis Dr. Santa Fe. NM 87505 Phone (505) 476-3460 Fax. (505) 476-3462

State of New Mexico

Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr.

Santa Fe, NM 87505

completion and C104 approvals.

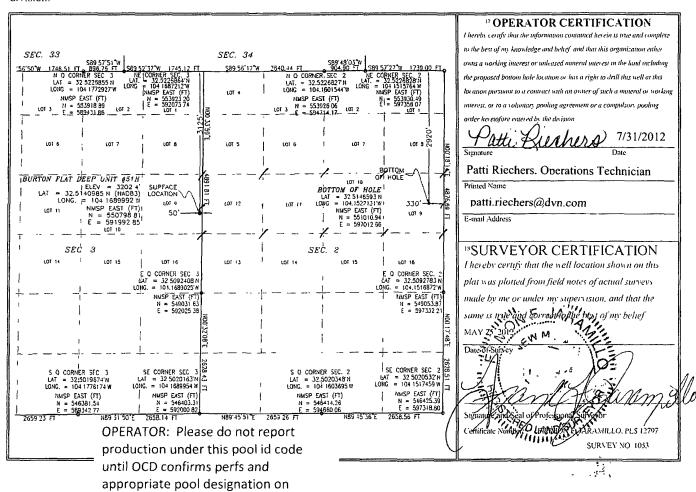
Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT AVALON

30-0	API Number	681	37	Pool Code	Bui	IVALON <del>rton Flat;</del> Bone Sp	oring, Pool Na			
<sup>†</sup> Property	Code				` Property	Name			<sup>6</sup> Well Number	
3022	クケー			BU	RTON FLAT	ON FLAT DEEP UNIT				
OGRID	No.				⁴ Operator	Name			<sup>9</sup> Elevation	
6137	,		DEV	ON ENEI	RGY PRODUC		3202.4			
	·'			· · · · · ·	<sup>10</sup> Surface	Location				
UL or lot no	Section	Fownship	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
9	3	21 S	27 E		3125	NORTH	50	EAST	EDDY	
	·	·I	11 Bc	ttom Ho	le Location I	f Different Froi	n Surface			
UL or lot no.	Section	Township	Range	Lot ldn	Feet from the	North/South line	Feet from the	East/West line	County	
9	2	21 S	27 E		2920	NORTH	330	EAST	EDDY	
12 Dedicated Acre	s Us Joint o	r Infill	onsolidation	Code 15 Or	rder No.		·		·····	
160	1									

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.



#### **DRILLING PROGRAM**

#### Devon Energy Production Company, LP Burton Flat Deep Unit #51H

Surface Location: 3125' FNL & 50' FEL, Lot 9, Sec 3 T21S R27E, Eddy, NM Bottom Hole Location: 2920' FNL & 330' FEL, Lot 9, Sec 2 T21S R27E, Eddy, NM

#### 1. Geologic Name of Surface Formation

a. Quaternary

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

a.	Fresh Water	15'		
b.	Rustler	surface		
c.	Salado	237'		Barren
d.	Base of Salt	427'		Barren
e.	Tansil	505'		Barren
f.	Yates	615'		Barren
g.	Seven Rivers	750'		Barren
h.	Capitan	865'		Water
i.	Capitan Base	2590'		Barren
j.	Delaware	2759'		Oil
k.	Bone Spring Lm	5237'		Oil
l.	1 <sup>st</sup> Bone Spring Ss	6445'		Oil
m.	1 <sup>st</sup> Bone Spring Ss Upper	6473'		Oil
n.	1 <sup>st</sup> Bone Spring Ss Mid	6517'		Oil
0.	1 <sup>st</sup> B one Spring Ss Mid B	6542'		Oil
p.	2 <sup>nd</sup> Bone Spring Lime	6698'		Oil
q.	Pilot Hole TD	6848'		Oil
To	etal Depth	6.709	- baya'	

3. Casing Program: All casing is new and API approved.

<u>Hole Size</u>	<u>Hole</u>	<u>OD</u>	<b>Casing</b>	Weight	<u>Collar</u>	<u>Grade</u>
	<u>Interval</u>	<u>Csg</u>	Interval	nPt		
26"	0'- 200'	20"	1nterval 0'-200' 500	94#	BT&C	J/K-55
17 1/2"	0' - 850'	13 3/8"	0'-850'	68#	BT&C	J/K-55
12 1/4"	850' – 2750'	9 5/8"	0-2750'	40#	LT&C	J-55
8 ¾"	2750' - 5800'	5 1/2"	0'-5800'	17#	LT&C	HCP110
8 ¾"	5800' - 11357'	5 1/2"	5800'-11357'	17#	LT&C	HCP110

An 8 3/4" Pilot Hole will be drilled to 6,848' and cemented back to KOP. The cement plug details and geometry are included below in the cementing program.

**Design Parameter Factors:** 

Casing Size	Collapse Design <u>Factor</u>	Burst Design Factor	Tension Design Factor
20"	5.55	22.5	7.46
13 3/8"	1.74	3.91	7.89
9 5/8"	2.00	3.07	4.73
5 ½"	2.75	3.92	2.30
5 ½"	2.38	3.39	6.01

Ce	olumes based on at least 25% excess)		
a.	20"	Surface	Lead w/ 510 Cl C cmt + 2% bwoc Calcium Chloride + 0.125#/sx
			CF + 56.3% FW. 14.8 ppg. Yield 1.35 cf/sx. TOC @ surface.
b.	13 3/8"	1st Intermediate	Lead w/ 415 sx Class C +2% bwow Calcium Chloride +0.125#/sx
			CF + 4% bwoc Bentonite + 81.4% FW, 13.5 ppg. Yield 1.75
			cf/sx. Tail w/ 335 sx Class C + 2% bwow Calcium Chloride +
			0.125#/sx CF + 56.3% FW, 14.8 ppg. Yield 1.35 cf/sx. <b>TOC</b> @
			surface.
c.	9 5/8"	2 <sup>nd</sup> Intermediate	Lead w/ 700 sacks (60:40) Poz (Fly Ash):Class C Cement +
			5% bwow Sodium Chloride + 0.125 lbs/sack CF + 3 lbs/sack
			LCM-1 + 1% bwoc Sodium Metasilicate + 89.7% FW. 12.6 ppg.
			Yield 1.73 cf/sx. Tail w/ 300 sx (60:40) Poz (Fly Ash):Cl C Cmt +
			5% bwow Sodium Chloride + 0.125 lbs/sack CF + 0.4% bwoc
			Sodium Metasilicate + 4% bwoc (MPA-5, to enhance compressive,
			tensile, flexural strength development and reduce permeability) +
			65.5% FW. 13.8 ppg. Yield 1.38 cf/sx. TOC @ surface.
d.	5 1/2"	Production	1 <sup>st</sup> Lead w/ 615 sx 50:50 POZ (Fly Ash) Class H + 0.5% bwoc
			FL-52 + 0.15% bwoc (ASA-301, to reduce free water and settling
			in cmt slurries) + 10% bwoc Bentonite + 0.3% bwoc (R-21,
			temperature retarder) + 130.5% FW, 11.8 ppg. Yield 2.30 cf/sx.
			2 <sup>nd</sup> lead w/415 sacks (35:65) Poz (Fly Ash):Cl H Cement + 3%
			bwow Sodium Chloride + 0.125 lbs/sack CF + 0.7% bwoc FL-52 +
			6% bwoc Bentonite + 105.4% FW. 12.5 ppg. Yield 2.00 cf/sx.
			<b>Tail</b> w/ 1430 sacks (50:50) Poz (Fly Ash):Class H Cement + 5%
			bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25
			+ 0.5% bwoc FL-52 + 0.5% bwoc Sodium Metasilicate + 57.3%
			FW, 14.2 ppg. Yield 1.28 cf/sx. TOC @ 800'.
8 3	%" Pilot Ho	ole	Drill to 6,848, cement w/300 sx Cl H, 15.6 ppg, 1.18 cf/sx.

The above cement volumes could be revised pending the caliper measurement from the open hole logs.

#### 5. Pressure Control Equipment

The BOP system used to drill the 17-1/2" hole will consist of a 20" 2M Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 2M system prior to drilling out the casing shoe.

The BOP system used to drill the 12-1/4" and 8-3/4" holes 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 casing shoe.

The pipe rams will be operated and checked as per Onshore Order No 2. 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 3,000 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.

#### 6. Proposed Mud Circulation System

Depth Sec	Mud Wt.	<b>Visc</b>	Fluid Loss	Type System
Depth 0' -200' coA 200'-850'	8.4-9.0	30-34	NC	FW
200'– 850'	9.8-10.0	28-32	NC	Brine
850'-2,750'	8.4-9.0	28-30	NC	FW
2.750'-11.357'	8.6-9.0	28-32	NC-12	FW

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

#### 7. 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.

#### 8. Logging, Coring, and Testing Program:

- 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.

#### 9. 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 3000 psi and Estimated BHT 130°. No H2S is anticipated to be encountered.

#### 10. 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.

Project: Eddy County, NM (NAD 83) Site: Burton Flat Deep Unit Well: Burton Flat Deep Unit 51H Wellbore: Wellbore #1 Plan: Plan #1

Rig: TBD

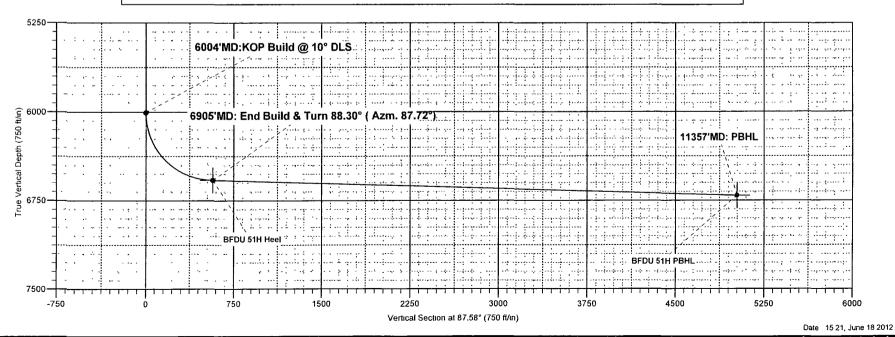


#### SURFACE LOCATION

US State Plane 1983 New Mexico Eastern Zone Elevation GL 3202 4 + 25'KB @ 3227,40ft (TBD) Northing Easting Latitude Longitude 550798 81 591992.85 32° 30' 50.755 N 104° 10' 8.397 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape				
BFDU 51H Heel	6577 00	34 92	573.37	550833.73	592566 22	Point				
BFDU 51H PBHL	6709 00	212.13	5019 81	551010 94	597012.66	Point				

SECTION DETAILS											
<b>MD</b> 0 00	Inc 0.00	<b>Azi</b> 0.00	TVD 0.00	+N/-S 0 00	+E/-W 0 00	DLeg 0.00	TFace 0.00	VSec 0.00	Annotation		
6004 00	0.00	0.00	6004 00	0 00	0.00	0.00	0.00	0.00	6004'MD KOP Build @ 10° DLS		
6892 09	88 84	86,50	6576.67	34 25	560 10	10.00	86.50	561.05	-		
6905 38	88 30	87.72	6577.00	34.92	573.37	10 00	113.75	574.33	6905'MD End Build & Turn 88.30° ( Azm 87 72°		
11357 31	88.30	87.72	6709 00	212 13	5019.81	0.00	0.00	5024.29	11357'MD PBHL		



# **Devon Energy Corporation**

#### **HALLIBURTON**

Sperry Drilling

Project: Eddy County, NM (NAD 83)
Site: Burton Flat Deep Unit
Well: Burton Flat Deep Unit 51H
Wellbore: Wellbore #1
Plan: Plan #1

Plan: Plan #1 Rig: TBD

#### SURFACE LOCATION

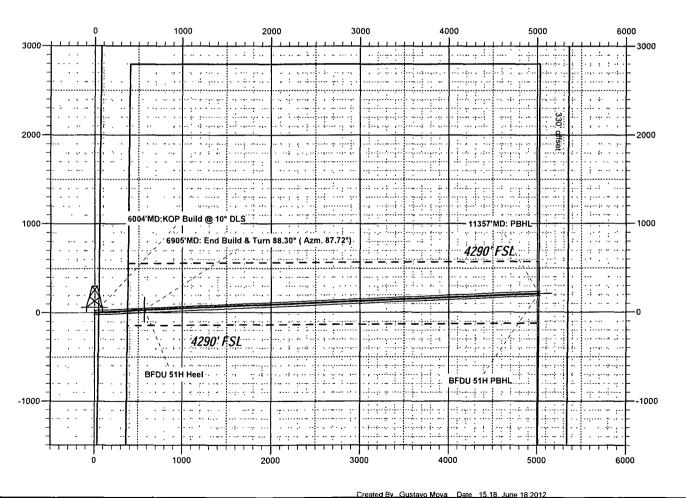
US State Plane 1983
New Mexico Eastern Zone
Elevation GL 3202.4 + 25'KB @ 3227.40ft (TBD)
g Easting Latitude Longitude

Northing Easting Latitude Longitude 550798 81 591992.85 32° 30′ 50.755 N 104° 10′ 8 397 W

To convert a Magnetic Direction to a Grid Direction, Add 7.76°

Magnetic Model BGGM2011 Date 18-Jun-12
Azimuths to Grid North





# **Devon Energy Corporation**

**Eddy County, NM (NAD 83) Burton Flat Deep Unit Burton Flat Deep Unit 51H** 

Wellbore #1

Plan: Plan #1

# Sperry Drilling Services **Proposal Report**

18 June, 2012

Well Coordinates 550,798.81 N, 591,992.85 E (32° 30' 50 75" N, 104° 10' 08 40" W) Ground Level. 3,202 40 ft

Local Coordinate Origin Centered on Well Burton Flat Deep Unit 51H Viewing Datum

GL 3202.4 + 25'KB @ 3227 40ft (TBD)

TVDs to System North Reference.

Grid

Unit System:

API - US Survey Feet

Version: 2003 16 Build: 431

HALLIBURTON

# **HALLIBURTON**

# Plan Report for Burton Flat Deep Unit 51H - Plan #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0 00	0.00	0.00	0.00	0.00	0 00	0.00	0 00	0 00	0.00	0 00
100.00	0 00	0 00	100.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00
200.00	0 00	0.00	200 00	0.00	0.00	0.00	0 00	0 00	0.00	0 00
300 00	0 00	0 00	300 00	0.00	0 00	0.00	0 00	0 00	0.00	0.00
400.00	0 00	0 00	400 00	0.00	0 00	0.00	0.00	0 00	0.00	0.00
500 00	0 00	0 00	500 00	0 00	0 00	0 00	0.00	0 00	0.00	0.00
600 00	0 00	0 00	600.00	0 00	0 00	0 00	0.00	0.00	0 00	0.00
700.00	0 00	0 00	700.00	0 00	0 00	0 00	0.00	0.00	0 00	0.00
800 00	0 00	0.00	800.00	0 00	0.00	0 00	0.00	0 00	0 00	0.00
900.00	0.00	0.00	900 00	0 00	0.00	0.00	0.00	0 00	0.00	0.00
1,000 00	0 00	0 00	1,000 00	0 00	0 00	0 00	0 00	0 00	0.00	0.00
1,100.00	0 00	0 00	1,100.00	0 00	0.00	0 00	0 00	0 00	0.00	0 00
1,200 00	0 00	0.00	1,200.00	0.00	0.00	0 00	0.00	0.00	0.00	0 00
1,300.00	0 00	0 00	1,300.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0 00	0.00	1,400.00	0 00	0 00	0 00	0 00	0 00	0.00	0 00
1,500 00	0 00	0.00	1,500.00	0 00	0.00	0 00	0.00	0 00	0.00	0 00
1,600.00	0.00	0 00	1,600.00	0 00	0.00	0 00	0.00	0.00	0 00	0.00
1,700.00	0.00	0 00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0 00	0.00	0 00	0.00	0 00	0.00	0.00
1,900 00	0.00	0.00	1,900.00	0 00	0.00	0.00	0.00	0.00	0.00	0 00
2,000.00	0.00	0 00	2,000 00	0.00	0.00	0.00	0.00	0.00	0 00	0.00
2,100 00	0 00	0 00	2,100 00	0.00	0 00	0.00	0.00	0.00	0 00	0.00
2,200 00	0 00	0.00	2,200.00	0 00	0.00	0.00	0.00	0 00	0.00	0.00
2,300.00	0 00	0.00	2,300 00	0.00	0.00	0.00	0.00	0 00	0.00	0.00
2,400.00	0.00	0 00	2,400 00	0 00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0 00	0.00	2,500 00	0.00	0 00	0 00	0.00	0.00	0 00	0.00
2,600.00	0 00	0 00	2,600.00	0.00	0.00	0.00	0 00	0 00	0.00	0.00
2,700 00	0.00	0.00	2,700 00	0 00	0.00	0.00	0 00	0 00	0.00	0.00
2,800 00	0.00	0 00	2,800.00	0 00	0 00	0 00	0.00	0.00	0 00	0.00
2,900 00	0.00	0.00	2,900 00	0 00	0.00	0 00	0.00	0.00	0 00	0.00
3,000 00	0 00	0.00	3,000 00	0 00	0 00	0.00	0.00	0.00	0 00	0 00
3,100 00	0.00	0 00	3,100 00	0 00	0 00	0.00	0 00	0 00	0 00	0.00
3,200 00	0 00	0 00	3,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0.00
3,300 00	0 00	0.00	3,300 00	0 00	0.00	0 00	0 00	0.00	0.00	0 00
3,400 00	0 00	0 00	3,400.00	0 00	0.00	0.00	0.00	0.00	0.00	0 00
3,500.00	0 00	0.00	3,500.00	0.00	0.00	0 00	0.00	0 00	0 00	0.00
3,600.00	0 00	0.00	3,600.00	0.00	0 00	0 00	0 00	0 00	0.00	0 00
3,700.00	0 00	0.00	3,700.00	0 00	0 00	0 00	0 00	0.00	0 00	0 00
3,800.00	0 00	0.00	3,800.00	0 00	0 00	0.00	0.00	0 00	0 00	0.00
3,900.00	0 00	0.00	3,900.00	0.00	0.00	0 00	0 00	0 00	0.00	0.00
4,000 00	0.00	0.00	4,000.00	0 00	0 00	0.00	0.00	0 00	0 00	0.00
4,100.00	0.00	0 00	4,100.00	0.00	0 00	0.00	0 00	0 00	0.00	0 00
4,200 00	0.00	0 00	4,200.00	0 00	0 00	0.00	0.00	0 00	0 00	0 00
4,300.00	0.00	0.00	4,300.00	0 00	0.00	0.00	0 00	0.00	0 00	0 00
4,400 00	0.00	0.00	4,400.00	0 00	0.00	0.00	0 00	0.00	0 00	0.00
4,500.00	0.00	0 00	4,500 00	0 00	0.00	0.00	0 00	0 00	0 00	0 00
4,600 00	0 00	0 00	4,600.00	0.00	0.00	0.00	0 00	0.00	0 00	0 00
4,700 00	0 00	0 00	4,700.00	0 00	0.00	0.00	0 00	0.00	0 00	0 00
4,800.00	0.00	0 00	4,800.00	0 00	0.00	0.00	0.00	0 00	0 00	0.00
4,900 00	0 00	0.00	4,900 00	0.00	0.00	0.00	0.00	0.00	0.00	0 00
5,000.00	0.00	0.00	5,000 00	0.00	0 00	0 00	0 00	0 00	0 00	0.00
5,100 00	0 00	0 00	5,100.00	0.00	0.00	0 00	0 00	0.00	0 00	0.00
5,200 00	0 00	0 00	5,200.00	0 00	0 00	0.00	0.00	0.00	0.00	0.00
5,300 00	0 00	0 00	5,300.00	0 00	0.00	0 00	0 00	0.00	0.00	0.00
5,400 00	0 00	0.00	5,400.00	0.00	0 00	0 00	0 00	0.00	0 00	0.00
5,500.00	0.00	0.00	5,500 00	0 00	0.00	0.00	0.00	0 00	0.00	0 00
5,600 00	0 00	0 00	5,600.00	0 00	0 00	0.00	0.00	0 00	0 00	0 00
5,700 00	0 00	0 00	5,700 00	0 00	0 00	0.00	0.00	0 00	0 00	0.00
5,800 00	0 00	0 00	5,800 00	0 00	0.00	0.00	0.00	0 00	0 00	0 00

# Plan Report for Burton Flat Deep Unit 51H - Plan #1

6,000.00	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
6,004.00 0.00 0.00 0.00 6,004.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	5,900 00	0 00	0 00	5,900.00	0.00	0 00	0.00	0 00	0.00	0 00	0.00
6.100 00 9.60 86.50 6,999.55 0.49 8.01 8.02 10.00 10.00 0.00 6.300.00 19.61 86.50 6,196.20 2.03 3315 3320 10.00 10.00 10.00 0.00 6.300.00 29.61 86.50 6,369.20 8.03 131.28 131.50 10.00 10.00 10.00 0.00 0.00 6.300.00 99.61 86.50 6,369.20 8.03 131.28 131.50 10.00 10.00 10.00 0.00 0.00 6.500.00 49.61 86.50 6,440.29 12.31 201.29 201.63 10.00 10.00 10.00 0.00 6.500.00 49.61 86.50 6,440.29 12.31 201.29 201.63 10.00 10.00 10.00 0.00 6.500.00 99.62 86.50 6,440.29 12.31 201.29 201.63 10.00 10.00 10.00 0.00 6.500.00 99.62 86.50 6,540.93 22.79 37.63 37.32 6 10.00 10.00 10.00 0.00 6.500.00 99.62 86.50 6,540.93 22.79 37.63 37.32 6 10.00 10.00 0.00 0.00 6.500.00 99.62 86.50 6,567.42 26.66 466.75 469.54 10.00 10.00 0.00 0.00 6.892.09 88.84 86.50 6,567.42 26.66 466.75 469.54 10.00 10.00 0.00 0.00 6.892.09 88.84 86.50 6,567.66 34.68 560.00 568.95 10.00 4.00 10.00 0.00 0.00 6.900.00 88.52 87.22 6,578.85 34.68 568.00 568.95 10.00 4.00 3.916 113 6905MD: End Build & Turn 83.00* (Azm. 87.72*) - BFDU 51H Heel 7.000.00 88.30 87.72 6,588.77 0.34 26 7.767.75 768.87 0.00 0.00 0.00 0.00 112 7.100.00 88.30 87.72 6,588.74 46.65 867.6 86.89 1 0.00 0.00 0.00 0.00 0.00 112 7.100.00 88.30 87.72 6,588.74 46.65 867.6 86.89 1 0.00 0.00 0.00 0.00 0.00 1.10 7.200.00 88.30 87.72 6,588.74 46.65 867.6 86.89 1 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	6,004 00	0.00	0.00								0 00 0 00
6,200 00		_		6 099 55	0.49	8.01	8 02	10.00	10.00	0.00	86.50
6,400,00 39,61 86,50 6,369,20 8.03 131,28 131,50 10.00 10.00 0.00 6,500 00 49,61 86,50 6,440,29 12,31 201,29 201,63 10.00 10.00 0.00 0.00 6,600 00 59,62 86,50 6,440,29 12,31 201,29 201,63 10.00 10.00 0.00 0.00 6,700.00 69,60 86,50 6,489,13 17,28 282,56 283,04 10.00 10.00 0.00 0.00 6,600 00 79,62 86,50 6,564,093 22,79 372,63 373,26 10.00 10.00 0.00 0.00 6,800 00 79,62 86,50 6,567,42 28,66 466,75 469,54 10.00 10.00 0.00 0.00 6,800 00 88,52 87,22 6,576,85 44,68 560 6,564,576 85 44,68 560 6,576 85 86,50 6,576 82 87,22 6,576,85 44,68 560 0,566,95 41 0.00 10.00 0.00 0.00 0.00 6,800 00 88,52 87,22 6,576,85 44,68 560 6,576 86,95 41 0.00 10.00 0.00 0.00 0.00 0.00 0.00									10 00	0 00	0.00
6,500 00 49 61 86.50 6,440,29 12 31 20129 20163 10.00 10.00 0.00 6,600 59 62 86.50 6,498.13 17 28 282,56 283 04 10.00 10.00 0.00 0 6,600 59 62 86.50 6,498.13 17 28 282,56 283 04 10.00 10.00 0.00 0 6,600 00 79 62 86.50 6,567 42 28 66 468.75 469.54 10.00 10.00 10.00 0.00 0 6,600 00 79 62 86.50 6,567 42 28 66 468.75 469.54 10.00 10.00 10.00 0.00 0 6,600 00 88.52 27 22 6,576 85 34 68 568 0.0 568 95 10.00 10.00 4.03 3.16 113 6,905.38 83 27 22 6,576 85 34 68 568 0.0 568 95 10.00 4.03 3.16 113 6,905.38 83 27 72 6,577 00 34 92 573 37 574.33 10.00 4.02 916 113 6,905.38 83.00 87.72 6,585 277 42 67 767.75 768 87 0.00 0.00 0.00 0.00 113 7,700 0.0 88.30 87.72 6,585 277 42 67 767.75 768 87 0.00 0.00 0.00 0.00 0.00 17,700 0.0 88.30 87.72 6,585 46 38 86 86 80 80 80 80 80 80 80 80 80 80 80 80 80	6,300.00	29.61	86 50	6,287 00	4.57	74 66	74 78	10.00	10.00	0 00	0 00
6,600 00 59 62 86 50 6,488,13 17 28 282.56 283 04 10 00 10.00 0 00 6,670 00 69 62 86 50 6,540 93 22 79 372.63 373.26 10.00 10.00 0 00 0 6,800 00 79 62 86 50 6,540 42 28 66 468 75 469,54 10 00 10 00 0 0.00 0 6,800 00 79 62 86 50 6,567 42 28 66 468 75 469,54 10 00 10.00 0 0.00 0 6,800 00 88 52 87 22 6,576 67 34.25 560.10 561.05 10.00 10.00 -4.03 9.16 113 6,905.38 88 30 87.72 6,577 00 34.92 573 37 574.33 10 00 -4.03 9.16 113 6,905.38 88 30 87.72 6,577 00 34.92 573 37 574.33 10 00 -4.02 9.16 113 6,905.38 88 30 87.72 6,579.81 38.69 667 87 668.91 0.00 0.00 0.00 0.00 113 7,100 00 88.30 87.72 6,579.81 38.69 667 87 668.91 0.00 0.00 0.00 0.00 113 7,100 00 88.30 87.72 6,588.70 50.83 967 50 988.76 0.00 0.00 0.00 0.00 0.00 7,300.00 88.30 87.72 6,588.70 50.83 967 50 988.76 0.00 0.00 0.00 0.00 0.00 7,300.00 88.30 87.72 6,588.70 54.63 386.50 0.00 0.00 0.00 0.00 0.00 0.00 0.00	6,400.00	39.61	86.50	6,369.20	8.03	131.28	131.50	10.00	10 00		0.00
6,700.00 69 62 86 50 6,540.93 22 79 372.63 373.26 10.00 10.00 0.00 0.00 6,680.00 79 62 86 50 6,567.42 28 66 468 75 469.54 10.00 10.00 0.00 0.00 6,6892.09 88 84 86 50 6,576 67 34.25 560.10 561.05 10.00 10.00 0.00 0.00 6,690.00 88 52 87 22 6,576 85 34 68 568 60 568.95 10.00 -4.03 91.6 113 6,690.38 83 30 87.72 6,577 00 34 92 573 37 574.33 10.00 -4.02 91.6 113 7,700.00 88 30 87.72 6,582.77 42.67 767.75 768 87 0.00 0.00 0.00 0.00 113 7,700.00 88 30 87.72 6,582.77 42.67 767.75 768 87 0.00 0.00 0.00 0.00 0.00 113 7,700.00 88 30 87.72 6,588.70 50.68 96.89 68.82 0.00 0.00 0.00 0.00 0.00 0.00 0.00											0.00
6,800 00 79 62 86 50 6,576 42 28 66 468 75 499,54 10 00 10 00 0.00 0.00 6,900 00 88 52 87 22 6,576 67 34.25 560.10 561.05 10.00 4.03 9.16 113 6,905.38 88 30 87.72 6,577 60 34 92 573 37 574.33 10 00 4.02 9.16 113 6,905.38 88 30 87.72 6,577 60 34 92 573 37 574.33 10 00 4.02 9.16 113 6,905.38 88 30 87.72 6,577 60 34 92 573 37 574.33 10 00 4.02 9.16 113 6,905.38 88 30 87.72 6,589.11 38.69 667 67 668.91 0.00 0.00 0.00 0.00 113 7,100 00 88 30 87.72 6,589.77 12 42 67 767.75 768 87 0.00 0.00 0.00 0.00 0.00 0.00 0.00											0.00 0.00
6,892.09 88 84 86 50 6,576 67 34.25 560.10 561.05 10.00 10.00 0.00 10.00 6,900.00 88.52 87.22 6,576.85 34.68 568.00 568.95 10.00 -4.02 9.16 113 6,905.81 8B 83 U BR 7.27 6,577.00 34.92 573.37 574.33 10.00 -4.02 9.16 113 6,905.81 8B 83 U BR 7.27 6,577.00 34.92 573.37 574.33 10.00 -4.02 9.16 113 6,905.81 8B 83 U BR 7.27 6,579.81 38.69 667.87 668.91 0.00 0.00 0.00 0.00 117 7,100.00 88.30 87.72 6,582.77 42.67 767.75 768.87 0.00 0.00 0.00 0.00 0.00 0.00 1.00 7,100.00 88.30 87.72 6,582.77 42.67 767.75 768.87 0.00 0.00 0.00 0.00 0.00 0.00 7,200.00 88.30 87.72 6,588.70 50.63 967.50 968.78 0.00 0.00 0.00 0.00 0.00 7,400.00 88.30 87.72 6,598.87 50.63 967.50 968.78 0.00 0.00 0.00 0.00 0.00 7,500.00 88.30 87.72 6,594.63 58.99 1.167.26 1.188.69 0.00 0.00 0.00 0.00 0.00 7,500.00 88.30 87.72 6,594.63 58.99 1.167.26 1.188.69 0.00 0.00 0.00 0.00 0.00 7,500.00 88.30 87.72 6,596.60 66.55 1.367.01 1.388.60 0.00 0.00 0.00 0.00 0.00 7,500.00 88.30 87.72 6,596.60 66.55 1.367.01 1.388.60 0.00 0.00 0.00 0.00 0.00 7,500.00 88.30 87.72 6,600.66 66.55 1.367.01 1.388.60 0.00 0.00 0.00 0.00 0.00 7,900.00 88.30 87.72 6,600.66 66.55 1.367.01 1.388.60 0.00 0.00 0.00 0.00 0.00 0.00 7,900.00 88.30 87.72 6,600.64 97 74.51 1,566.76 1.588.51 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0											0.00
6,900 00 88 52 87 22 6,576 85 34 68 568 00 568 95 10 00 40 2 916 113 6905*MD: End Build & Turn 88.30° (Azm. 87.72°) - BFDU 51H Heel  7,000 00 88.30 87.72 6,579.81 38.69 667 87 668.91 0.00 000 000 000 113 7,100 00 88.30 87.72 6,585 74 42.67 767.75 768 87 0.00 00 00 000 000 000 7,300.00 88.30 87.72 6,585 74 46.65 867 63 868 82 000 0.00 000 000 000 7,300.00 88.30 87.72 6,585 74 46.65 867 63 868 82 000 0.00 000 000 000 7,300.00 88.30 87.72 6,588 70 50.63 968.78 0.00 000 000 000 000 000 7,300.00 88.30 87.72 6,588 70 50.63 967.87 88 70 000 000 000 000 000 000 7,500.00 88.30 87.72 6,591.67 54.61 1,067.38 1,068 73 0.00 000 000 000 000 7,500.00 88.30 87.72 6,591.67 54.61 1,067.38 1,068 73 0.00 000 000 000 000 7,500.00 88.30 87.72 6,591.60 62 57 1,267 13 1,268.64 0.00 0.00 0.00 000 000 000 7,800.00 88.30 87.72 6,600.56 66.55 1,367.01 1,386.60 0.00 0.00 0.00 0.00 000 7,800.00 88.30 87.72 6,600.56 66.55 1,367.01 1,386.60 0.00 0.00 0.00 0.00 0.00 7,900.00 88.30 87.72 6,600.56 66.55 1,367.01 1,368.60 0.00 0.00 0.00 0.00 0.00 0.00 0.00				•							0.00
6.905.38 88 30 87.72 6.577.00 34 92 573 37 574.33 10 00 -4 02 9 16 113 6905MD: End Build & Turn 88.30° (Azm. 87.72°) - BFDU 51H Hee!  7.000 00 88.30 87.72 6.582 77 42 67 767.75 768 87 0.00 0.00 0.00 0.00 17.7100 00 88.30 87.72 6.582 77 42 67 767.75 768 87 0.00 0.00 0.00 0.00 0.00 0.00 0.00											113.75
7,000 00 88.30 87.72 6,582.77 42.67 767.75 768.87 0.00 0.00 0.00 112 7,100 00 88.30 87.72 6,582.77 42.67 767.75 768.87 0.00 0.00 0.00 0.00 7,200 00 88.30 87.72 6,585.74 46.65 867.63 868.82 0.00 0.00 0.00 0.00 7,300 00 88.30 87.72 6,588.70 50.63 967.50 968.78 0.00 0.00 0.00 0.00 7,400 00 88.30 87.72 6,591.67 54.61 1,067.38 1,0687.3 0.00 0.00 0.00 0.00 7,500 00 88.30 87.72 6,594.63 58.99 1,167.26 1,168.69 0.00 0.00 0.00 0.00 7,600 00 88.30 87.72 6,597.60 62.57 1,267.13 1,268.64 0.00 0.00 0.00 0.00 7,700 00 88.30 87.72 6,600.56 66.55 1,387.01 1,368.60 0.00 0.00 0.00 7,800 00 88.30 87.72 6,600.56 66.55 1,387.01 1,368.60 0.00 0.00 0.00 0,7,900 00 88.30 87.72 6,600.56 66.55 1,387.01 1,368.60 0.00 0.00 0.00 0,7,900 00 88.30 87.72 6,600.56 66.55 1,387.01 1,368.60 0.00 0.00 0.00 0,7,900 00 88.30 87.72 6,600.56 66.55 1,387.01 1,368.60 0.00 0.00 0.00 0.00 0,7,900 00 88.30 87.72 6,600.64 74.51 1,566.76 1,568.51 0.00 0.00 0.00 0.00 0,7,900 00 88.30 87.72 6,600.84 74.51 1,566.76 1,568.51 0.00 0.00 0.00 0.00 0,8,000 88.30 87.72 6,612.42 82.47 1,766.52 1,768.42 0.00 0.00 0.00 0.00 0,8,000 88.30 87.72 6,615.39 86.45 1,866.39 1,868.38 0.00 0.00 0.00 0.00 0.00 0,8,000 88.30 87.72 6,618.35 90.43 1,966.27 1,968.33 0.00 0.00 0.00 0.00 0.00 0,8,000 88.30 87.72 6,621.32 94.41 2,066.15 2,068.29 0.00 0.00 0.00 0.00 0.00 0,8,000 88.30 87.72 6,638.31 110.34 2,465.65 2,468.11 0.00 0.00 0.00 0.00 0.00 0,8,000 88.30 87.72 6,639.11 113.30 2,665.41 2,668.03 0.00 0.00 0.00 0.00 0.00 0.00 0,9,000 88.30 87.72 6,638.61 110.34 2,465.65 2,468.61 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0											113 74
7,100 00 88 30 87 72 6,582 77 42 67 767.75 768 87 0 00 0 00 0 00 0 00 7,200 00 88 30 87.72 6,585 74 46.65 867 63 868 82 0 00 0 0.00 0.00 0.00 7,400 00 88 30 87.72 6,586 76 50.63 967 50 968 78 0 00 0 00 0 0 0 0 0 0 0 0 0 0 0 0 0	6905'MD:	End Build & 1	Γurn 88.30° ( <i>i</i>	Azm. 87.72°) -	BFDU 51H H	eel					
7,200.00											113 72
7,300.00  88.30  87.72  6,588.70  50.83  98.75  98.878  0.00  0.00  0.00  0.00  0.00  7,400.00  88.30  87.72  6,594.63  58.59  1,167.26  1,168.69  0.00  0.00  0.00  0.00  0.00  7,500.00  88.30  87.72  6,594.63  58.59  1,167.26  1,168.69  0.00  0.00  0.00  0.00  0.00  7,500.00  88.30  87.72  6,694.63  58.59  1,167.26  1,168.69  0.00  0											0 00
7,400 00 88 30 87.72 6,591.67 54 61 1,067.38 1,068 73 0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0											0.00
7,500,00											0.00 0.00
7,600.00											0.00
7,800 00         88.30         87 72         6,603.53         70 53         1,466.89         1,468.56         0.00         0.00         0.00         0.00           7,900 00         88.30         87 72         6,606.49         74.51         1,568.76         1,568.51         0.00 <td></td> <td>0 00</td>											0 00
7,900 00 88.30 87 72 6,606 49 74.51 1,566.76 1,568.51 0.00 0.00 0.00 0.00 88.00 88.30 87.72 6,609 46 78.49 1,666 64 1,668.64 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	7,700 00	88 30	87 72	6,600.56	66 55	1,367.01	1,368 60	0 00	0 00	0 00	0 00
8,000.00	7,800 00			6,603.53	70 53	1,466.89	1,468 56				0 00
8,100 00											0 00
8,200.00											0 00 0.00
8,300 00 88.30 87.72 6,618.35 90 43 1,966 27 1,968.33 0 00 0.00 0.00 0 00 88.400 00 88.30 87.72 6,621.32 94.41 2,066 15 2,068 29 0.00 0.00 0.00 0.00 0.00 8.500 00 88.30 87.72 6,622 8 98.40 2,166 02 2,168.25 0 00 0.00 0.00 0.00 0.00 88.500 00 88.30 87.72 6,627 25 102 38 2,265 90 2,268 20 0.00 0.00 0.00 0.00 0.00 8.700 0 88.30 87.72 6,630 21 106 36 2,365.78 2,368.16 0.00 0.00 0.00 0.00 0.00 0.00 8.800 0 88.30 87.72 6,633 18 110.34 2,465 65 2,468.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00											
8,400 00       88.30       87.72       6,621.32       94.41       2,066 15       2,068 29       0.00											0 00 0 00
8,500 00       88 30       87 72       6,624 28       98 40       2,166 02       2,168 25       0 00       0.00											0 00
8,700 00       88 30       87 72       6,630 21       106 36       2,365.78       2,368.16       0 00       0.00       0 00											0.00
8,800 00	8,600.00	88 30	87.72	6,627 25	102 38	2,265 90	2,268 20	0.00	0.00	0 00	0 00
8,900 00											0 00
9,000 00											0 00
9,100 00 88 30 87 72 6,642.07 122 28 2,765.28 2,767.98 0.00 0 00 0 00 0 0 0 0 0 0 0 0 0 0 0 0											0 00 0 00
9,200 00				,							0 00
9,300.00 88.30 87.72 6,648.00 130.24 2,965.04 2,967.89 0.00 0.00 0.00 0.00 9,400.00 88.30 87.72 6,650.97 134.22 3,064.91 3,067.85 0.00 0.00 0.00 0.00 9,500.00 88.30 87.72 6,653.93 138.20 3,164.79 3,167.80 0.00 0.00 0.00 0.00 9,600.00 88.30 87.72 6,656.90 142.18 3,264.67 3,267.76 0.00 0.00 0.00 0.00 0.00 9,700.00 88.30 87.72 6,659.86 146.16 3,364.54 3,367.72 0.00 0.00 0.00 0.00 9,800.00 88.30 87.72 6,662.83 150.14 3,464.42 3,467.67 0.00 0.00 0.00 0.00 0.00 9,900.00 88.30 87.72 6,665.79 154.12 3,564.30 3,567.63 0.00 0.00 0.00 0.00 0.00 10,000.00 88.30 87.72 6,668.76 158.10 3,664.17 3,667.58 0.00 0.00 0.00 0.00 0.00 10,000.00 88.30 87.72 6,668.76 158.10 3,664.17 3,667.58 0.00 0.00 0.00 0.00 0.00 0.00 10,100.00 88.30 87.72 6,667.72 162.08 3,764.05 3,767.54 0.00 0.00 0.00 0.00 0.00 10,200.00 88.30 87.72 6,671.72 162.08 3,764.05 3,767.54 0.00 0.00 0.00 0.00 0.00 10,200.00 88.30 87.72 6,674.69 166.06 3,863.93 3,867.49 0.00 0.00 0.00 0.00 0.00 10,300.00 88.30 87.72 6,677.65 170.04 3,963.80 3,967.45 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	·										0.00
9,400.00       88.30       87 72       6,650.97       134 22       3,064.91       3,067 85       0 00       0 00       0.00							,				0.00
9,600.00       88 30       87.72       6,656.90       142.18       3,264.67       3,267 76       0 00       0.00       0 00						3,064.91					0.00
9,700 00       88 30       87.72       6,659 86       146 16       3,364 54       3,367.72       0 00       0 00       0.00       0         9,800 00       88 30       87.72       6,662 83       150 14       3,464.42       3,467.67       0.00       0 00       0 00       0       0       0       0       0       0 00       0 00       0       0       0       0       0       0 00       0	•										0 00
9,800 00       88.30       87.72       6,662 83       150 14       3,464.42       3,467.67       0.00       0 00	•			•		•					0 00
9,900.00       88 30       87.72       6,665 79       154 12       3,564 30       3,567.63       0 00       0.00       0 00											0.00
10,000.00     88 30     87 72     6,668.76     158 10     3,664.17     3,667 58     0 00     0.00     0.00     0.00       10,100 00     88.30     87.72     6,671 72     162 08     3,764 05     3,767.54     0 00     0 00     0 00     0 00       10,200.00     88 30     87 72     6,674.69     166 06     3,863 93     3,867.49     0 00     0 00     0 00     0 00       10,300.00     88 30     87 72     6,677 65     170 04     3,963 80     3,967.45     0 00     0.00     0 00     0 00											0 00 0 00
10,100 00     88.30     87.72     6,671 72     162 08     3,764 05     3,767.54     0 00     0 00     0 00     0 00       10,200.00     88 30     87 72     6,674.69     166 06     3,863 93     3,867.49     0 00     0 00     0 00     0 00       10,300.00     88 30     87 72     6,677 65     170 04     3,963 80     3,967.45     0 00     0.00     0 00											0 00
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## **HALLIBURTON**

## Plan Report for Burton Flat Deep Unit 51H - Plan #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
11,300 00 11,357.31	88.30 88 30	87.72 87.72	6,707.30 6,709 00	209.85 212.13	4,962.57 5,019.81	4,967.01 5,024.29	0 00 0.00	0 00 0.00	0.00 0 00	0.00 0 00
BFDU 51H	I PBHL									

#### Plan Annotations

Measured	Vertical	Local Coor	dinates	
Depth	Depth	+N/-S	+E/-W	Comment
(ft)	(ft)	(ft)	(ft)	
6,004 00	6,004 00	0 00	0 00	6004'MD:KOP Build @ 10° DLS
6,905 38	6,577 00	34 92	573 37	6905'MD End Build & Turn 88 30° ( Azm 87 72°)
11,357.31	6,709 00	212.13	5,019.81	11357'MD. PBHL

#### **Vertical Section Information**

Angle			Origin	Orig	gin	Start
Туре	Target	Azimuth (°)	Type	+N/_S (ft)	+E/-W (ft)	TVD (ft)
	No Target (Freehand)	87.58	Slot	0.00	0 00	0 00

# TD Survey tool program

From	To		Survey/Ptan	Survey Tool
( <b>ft)</b> 0 00	<b>(ft)</b> 11,357.31	Plan #1		MWD

#### Targets associated with this wellbore

	TVD	+N/-S	+E/-W	
Target Name	(ft)	(ft)	(ft)	Shape
BFDU 51H Heel	6,577 00	34 92	573.37	Point
BFDU 51H PBHL	6,709.00	212 13	5,019 81	Point

## **HALLIBURTON**

# North Reference Sheet for Burton Flat Deep Unit - Burton Flat Deep Unit 51H - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

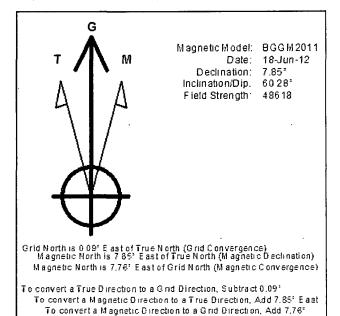
Vertical Depths are relative to GL 3202 4 + 25'KB @ 3227.40ft (TBD). Northing and Easting are relative to Burton Flat Deep Unit 51H Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger) Central Meridian is -104 33°, Longitude Origin.0° 0' 0.000 E°, Latitude Origin.0° 0' 0.000 N° False Easting: 541,337 50ft, False Northing 0.00ft, Scale Reduction 0.99991203

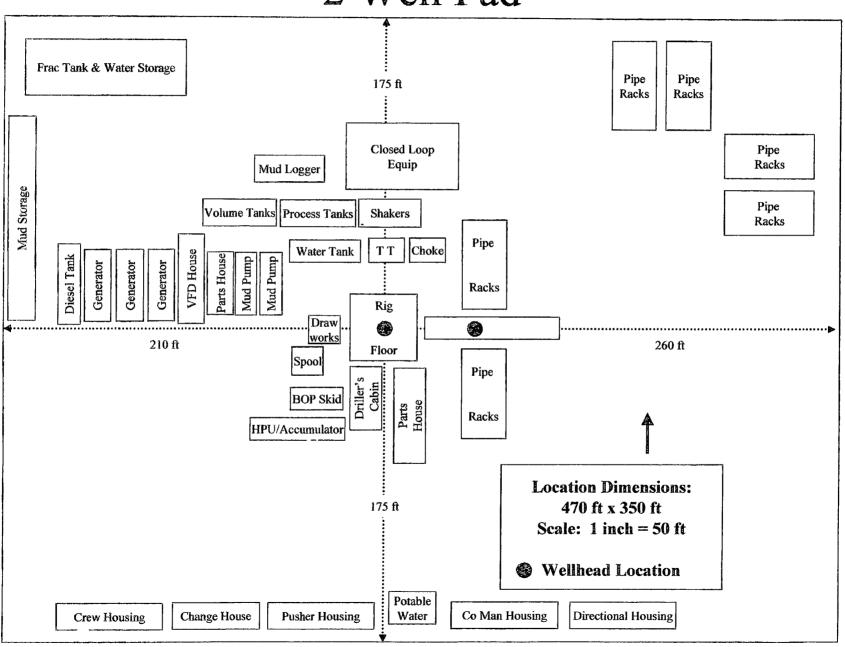
Grid Coordinates of Well. 550,798 81 ft N, 591,992 85 ft E Geographical Coordinates of Well 32° 30' 50 75" N, 104° 10' 08 40" W Grid Convergence at Surface is 0.09°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,357.31ft the Bottom Hole Displacement is 5,024 29ft in the Direction of 87.58° (Grid).

Magnetic Convergence at surface is. -7.76° (18 June 2012, , BGGM2011)



# H&P Flex Rig Location Layout 2 Well Pad



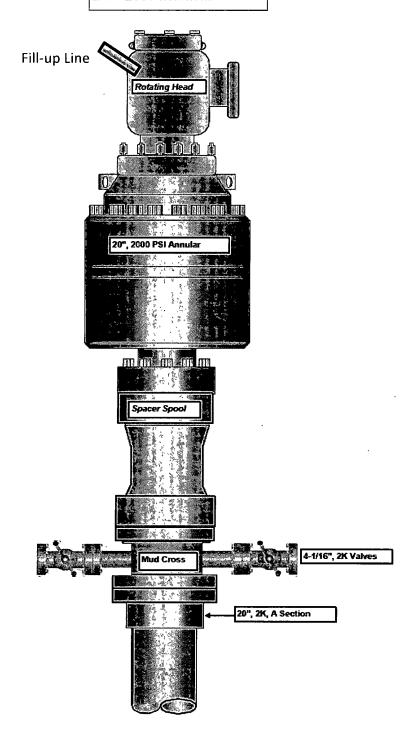
#### NOTES REGARDING BLOWOUT PREVENTERS

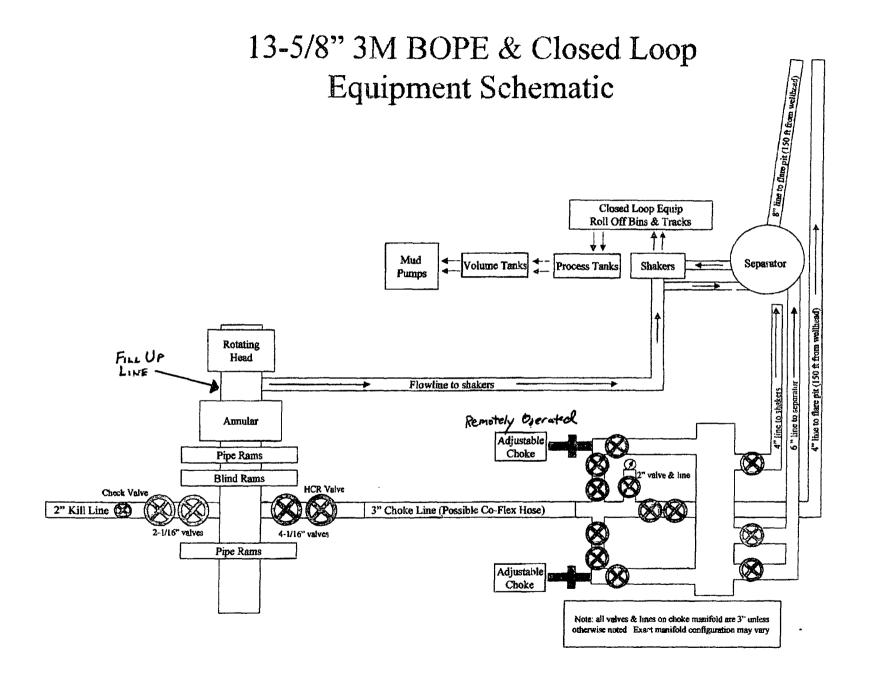
# Devon Energy Production Company, LP Burton Flat Deep Unit #51H

Surface Location: 3125' FNL & 50' FEL, Lot 9, Sec 3 T21S R27E, Eddy, NM Bottom Hole Location: 2920' FNL & 330' FEL, Lot 9, Sec 2 T21S R27E, 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 3000 psi working pressure.
- 4. All fittings will be flanged.
- 5. A full bore safety valve tested to a minimum 3000 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.

# 20" 2K Annular





# Attachment to Exhibit #1 NOTES REGARDING BLOWOUT PREVENTERS

## Devon Energy Production Company, LP

#### **Burton Flat Deep Unit 51H**

Surface Location: 3125' FNL & 50' FEL of 03-21S-27E Eddy, NM Bottom Hole Location: 2920' FNL & 330' FEL of 02-21S-27E, 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 3000 psi working pressure.
- 4. All fittings will be flanged.
- 5. A full bore safety valve tested to a minimum 3000 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.

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#### **PHOENIX RUBBER** OUALITY DOCUMENT PHOENIX RUBBER INDUSTRIAL LTD.

H-6728 Szeged, Budapesti út 10. Hungary • H-6701 Szeged, P. O. Box 152 Phone: (3662) 566-737 • Fax: (3662) 566-738

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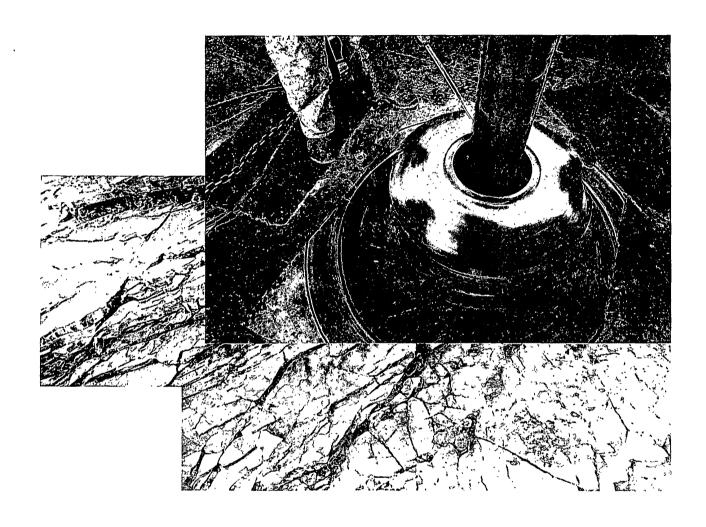
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Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems June 2010

#### I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

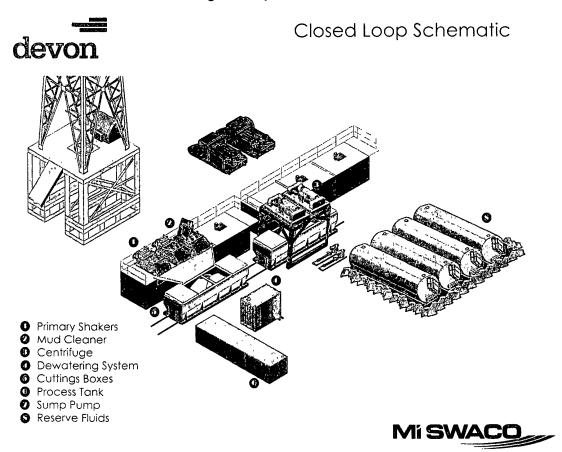
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

#### II. Operations and Maintenance Plan

*Primary Shakers*: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

*Process Tank*: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

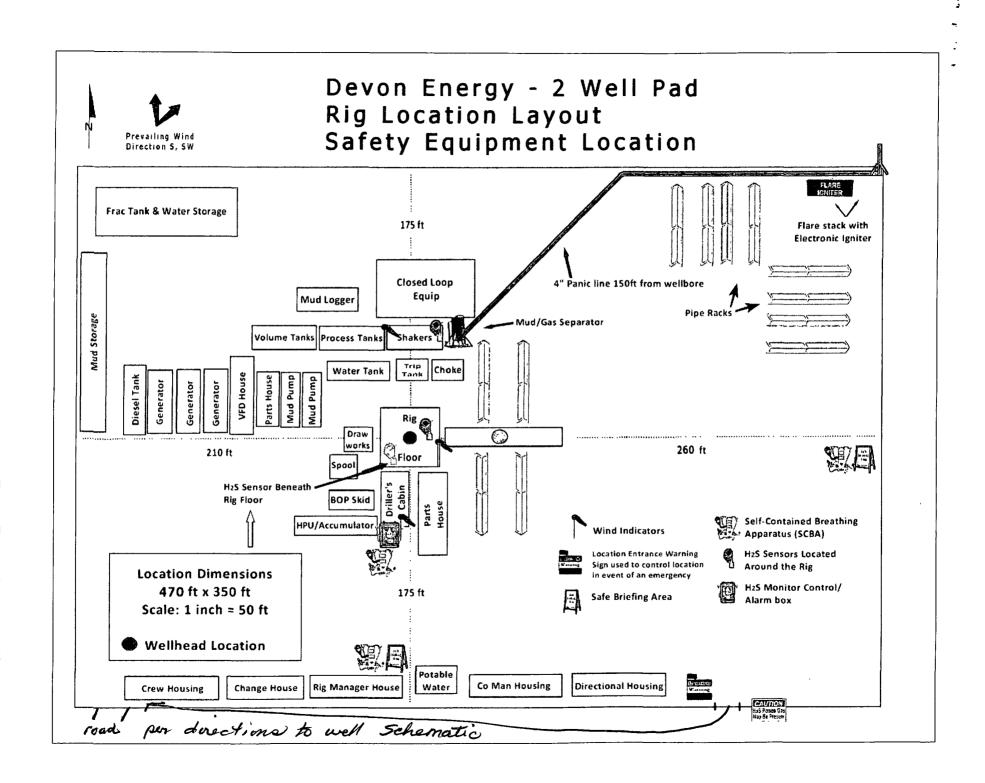
dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

#### III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.





# Devon Energy Corporation 20 North Broadway Oklahoma City, Oklahoma 73102-8260

# Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan

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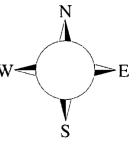
**Burton Flat Deep Unit 51H** 

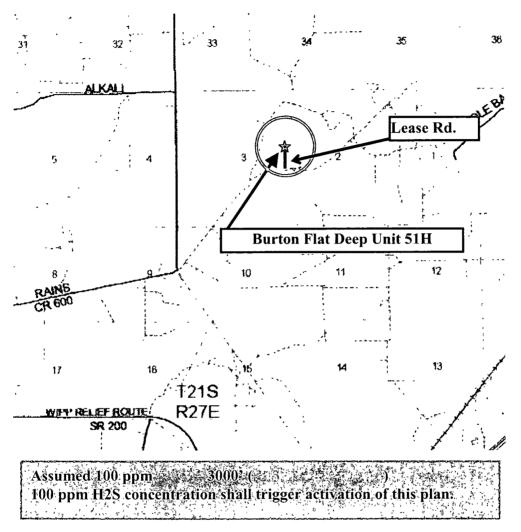
Sec-3, T-21S R-27E 3125' FNL & 50' FEL, LAT. = 32.5140985'N (NAD83) LONG = 104.1689992'W

**Eddy County NM** 

# **Burton Flat Deep Unit 51H**

This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H<sub>2</sub>S, including warning signs, wind indicators and H<sub>2</sub>S monitor.





#### Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road, South then Southwest or Northeast on primitive road. Crews should then block both directions of the road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'
100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

#### **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - Detection of H<sub>2</sub>S, and
  - Measures for protection against the gas,
  - o Equipment used for protection and emergency response.

#### **Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

#### Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm

#### **Contacting Authorities**

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

#### **Hydrogen Sulfide Drilling Operation Plan**

#### I. HYDROGEN SULFIDE (H<sub>2</sub>S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- 1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S)
- 2. The proper use and maintenance of personal protective equipment and life support systems.
- 3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- 4. The proper techniques for first aid and rescue procedures.

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

- 1. The effects of H<sub>2</sub>S metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
- 2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- 3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

#### II. HYDROGEN SULFIDE TRAINING

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H<sub>2</sub>S.

#### 1. Well Control Equipment

- A. Flare line
- B. Choke manifold
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

#### 2. Protective equipment for essential personnel:

A. 30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

#### 3. H<sub>2</sub>S detection and monitoring equipment:

A. Portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These unites have warning lights and audible sirens when H<sub>2</sub>S levels of 20 PPM are reached. These units are usually capable of detecting SO<sub>2</sub>, which is a byproduct of burning H<sub>2</sub>S.

#### 4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate..

#### 5. Mud program:

A. The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. Proper mud weight, safe drilling practices and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.

#### 6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H<sub>2</sub>S trim.
- B. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.

#### 7. Communication:

- A. Radio communications in company vehicles including cellular telephones and 2-way radio
- B. Land line (telephone) communications at Office

#### 8. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

# **Devon Energy Corp. Company Call List**

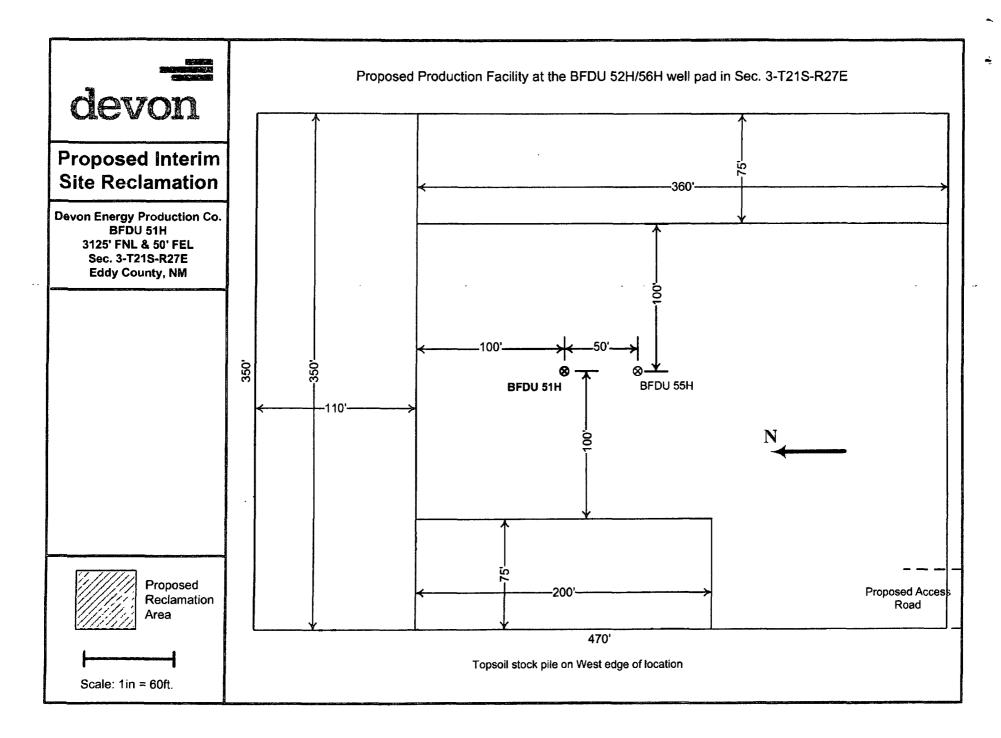
Artesia (575)	<u>Cellular</u>	Office	<u> Home</u>
Foreman – Robert Bell	748-7448	748-0178	746-2991
Asst. Foreman -Tommy Poll	y.748-5290	748-0165	748-2846
Don Mayberry	•		
Montral Walker	390-5182	748-0193	936-414-6246
Engineer – Marcos Ortiz	(405) 317-0666	(405) 552-8152.	(405) 381-4350

# **Agency Call List**

<u>Lea</u>	Hobbs	
<b>County</b>	State Police	392-5588
<u>(575)</u>	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	911
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
<b>Eddy</b>	Carlsbad	
County	State Police	885-3137
<u>(575)</u>	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	911
	Fire Department	885-2111
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	New Mexico Emergency Response Commission (Santa Fe).	(505)476-9600
	24 HR	` '
	National Emergency Response Center (Washington, DC)	,
	Emougonay Samilaa	
	Emergency Services	(00 (001) 001 0004
	Boots & Coots IWC1-800-256-96	
	Cudd Pressure Control	, ,
	Halliburton	
	B. J. Services(575) 746-35	09
Give	Flight For Life - Lubbock, TX	(806) 743-9911
GPS	Aerocare - Lubbock, TX	
position:	Med Flight Air Amb - Albuquerque, NM	
	Lifeguard Air Med Svc. Albuquerque, NM	(575) 272-3115

Prepared in conjunction with Wade Rohloff





# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME: Devon Energy Production Company LP
LEASE NO.: NM-0560290
WELL NAME & NO.: Burton Flat Deep Unit #51H
SURFACE HOLE FOOTAGE: 3125' FNL & 0050' FEL

BOTTOM HOLE FOOTAGE | 2920' FNL & 0330' FEL Sec. 2 LOCATION: | Section 3, T. 21 S., R 27 E., NMPM

COUNTY: Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

	<b>General Provisions</b>
	Permit Expiration
	Archaeology, Paleontology, and Historical Sites
	Noxious Weeds
$\boxtimes$	Special Requirements
_	Cave/Karst
	Construction
	Notification
	Topsoil
	Closed Loop System
	Federal Mineral Material Pits
	Well Pads
	Roads
	Road Section Diagram
$\overline{\boxtimes}$	Drilling
	High Cave/Karst
	Logging Requirements
	Mud logger / casing depth
	Waste Material and Fluids
	<b>Production (Post Drilling)</b>
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	Electric Lines – not requested
	Interim Reclamation
	Final Abandanment & Declaration