* <u>*</u>	Form 3160-3 (April 2004) UNITED STATES DEPARTMENT OF THE I BUREAU OF LAND MAN APPLICATION FOR PERMIT TO 1	AGEMENT RECEI	P <b>m 1</b> VED {GTON		PPROVED/ 1004-0137- arch 31-2007 or Tribe Name	T 8 9 10 77 APR 2008 APR 2008 ONST. 8 Const. 8 C
	la. Type of work: 🔽 DRILL 🗌 REENTE	ER		7 If Unit or CA Agree Northeast Blan		10.
	lb. Type of Well: Oil Well 🖌 Gas Well Other	Single Zone Multi	ple Zone	8. Lease Name and V NEBU 321N	Vell No.	
	2. Name of Operator Devon Energy Production Company, L.	.P.		9. API Well No 30-045	-3366	5
	3a. Address PO Box 6459 Farmington, NM 87419	3b. Phone No. (include area code) 505-632-0244		10. Field and Pool, or E Basin Dakota/I	Exploratory Blanco Mesavero	de
	4. Location of Well (Report location clearly and in accordance with an At surface 1,390' FSL & 780' FEL, Unit I, NE	SE		11. Sec., T. R. M. or Bl Sec. 18, T31N,	2	rea
	At proposed prod. zone 2,400' FSL & 700' FEL, Unit I, NE 14. Distance in miles and direction from nearest town or post office*	SE		12. County or Parish	13. State	
Af	Approximately 12.1 miles 15. Distance from proposed* location to nearest	16. No. of acres in lease	17. Spacin	San Juan Ig Unit dedicated to this w	L	<u>NM</u>
$\sim$	property or lease line, ft. (Also to nearest drig. unit line, if any) 780'	2,560	320 A			
	<ol> <li>Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.</li> </ol>	19. Proposed Depth 8,214' TMD	20. BLIV	BIA Bond No, on file		
	21. Elevations (Show whether DF, KDB, RT, GL, etc.) GR 6,385'	22 Approximate date work will st 06/17/2006	art*	23. Estimated duration Unknown	1	
		24. Attachments		· · ·		
	<ol> <li>The following, completed in accordance with the requirements of Onshor</li> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest System SUPO shall be filed with the appropriate Forest Service Office).</li> </ol>	4. Bond to cover Item 20 above). Lands, the 5. Operator certifi	the operatio	is form: ins unless covered by an formation and/or plans as	-	
	25. Signature M. S.	Name (Printed/Typed) Melisa Zimmerma	n		Date 3-17-0	6
	Title Senior Operations Technician			L		
	Approved by (Signatury)	Name (Printed/Typed)			Date // 5-	786
	Title AFM	Office FFO				
	Application approval does not warrant or certify that the applicant hold conduct operations thereon. Conditions of approval, if any, are attached.	Is legal or equitable title to those rig	hts in the sub	oject lease which would en	ntitle the applicant	to
	Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a cr States any false, fictitious or fraudulent statements or representations as t	rime for any person knowingly and to any matter within its jurisdiction.	willfully to r	nake to any department o	r agency of the Ur	nited
	*(Instructions on page 2)				·····	<u></u>
	This action is subject to technical and processural review pursuant to 43 CFR 3165. and appeal pursuant to 43 CFR 3165.4	SUBJECTIOU	OMPLIAN	AUTHORIZED ARE CE WITH ATTACHED ITS". A <u>Divec</u> tio	ina (Sur	vel
				imocd S-		

-

 $\checkmark$ 

~

, **)** 



(R) - GLO Record

Submit 3 Copies To Appropriate District State of New Mexic Office District I Energy, Minerals and Natural	Resources March 4, 2004
1625 N. French Dr., Hobbs, NM 88240	WELL API NO. 30-045-33665
District II 1301 W. Grand Ave., Artesia, NM 88210 OIL CONSERVATION D	5 Indicate Type of Lease
District III 1000 Rio Brazos Rd., Aztec, NM 87410 1000 Rio Brazos Rd., Aztec, NM 87410	S Dr. STATE FEE
District IV Santa Fe, NM Santa Fe, NM	5 6. State Oil & Gas Lease No. SF 078988
87505 SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG I	7. Lease Name or Unit Agreement Name
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR S	
PROPOSALS.) 1. Type of Well:	8. Well Number
Oil Well Gas Well Other	321N
2. Name of Operator	9. OGRID Number
Devon Energy Production Company, L.P.           3. Address of Operator	6137 10. Pool name or Wildcat
PO Box 6459, Navajo Dam, NM 87419	Basin Dakota/Blanco Mesaverde
4. Well Location	
Unit Letter I: 1,390' feet from the South line ar	nd780'feet from theEastline
Section 18 Township 31N Range 6W NN	MPM County - SAN JUAN
11. Elevation (Show whether DR, RF GR 6,385'	(B, RT, GR, etc.)
Pit or Below-grade Tank Application (For pit or below-grade tank closures, a form C-1	
Pit Location: UL_I_Sect_18_Twp_31N_Rng_6WPit typeDrilling_Depth to G	
Distance from nearest surface water 3000 Below-grade Tank Location UL	_SectTwpRng;
feet from theline andfeet from theline	
12. Check Appropriate Box to Indicate Natu NOTICE OF INTENTION TO:	THE OF NOTICE, REPORT OF OTHER DATA SUBSEQUENT REPORT OF: EMEDIAL WORK
TEMPORARILY ABANDON CHANGE PLANS C	OMMENCE DRILLING OPNS. PLUG AND
	ASING TEST AND
OTHER: CONSTRUCT DRILLING PIT	THER:
13. Describe proposed or completed operations. (Clearly state all pert	
of starting any proposed work). SEE RULE 1103. For Multiple C or recompletion. 14.	Completions: Attach wellbore diagram of proposed completion
Devon Energy will be constructing a lined drilling p	it. The closure of said pit will be in accordance
with the NMOCD regulations with the cutting of the	
I hereby certify that the information above is true and complete to the best grade tank has been/will be constructed or closed according to NMOCD guidelines 🛛, a	of my knowledge and belief. I further certify that any pit or below-
1154/-	
SIGNATURE TITLE _SL	Operations Technician DATE 3-17-06
Type or print name Melisa Zimmerman E-mail address: Melisa.zi	mmerman@dvn.com Telephone No. 405-552-7917
(This space for State use)	
APPPROVED BY	OIL & GAS INSPECTOR, DIST. DATE APR 0 7 2006
Conditions of approval, if any:	
/	

•



## NEBU 321N Unit I 18-31N-6W San Juan Co., NM

• . .

.

### DRILLING PLAN

## 1. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS & ANTICIPATED WATER, OIL, GAS OR MINERAL FORMATIONS:

Formation	TVD (ft)	TMD (ft)	Hydrocarbon/Water Bearing Zones
San Jose	Surface	Surface	
Ojo Alamo	2314	2514	Aquifer
Kirtland	2429	2636	
Fruitland	2861	3081	Gas
Pictured Cliffs Tongue	3212	3434	Gas
Pictured Cliffs Main	3328	3551	Gas
Lewis	3456	3679	Gas
Intermediate TD	3556	3779	
Huefanito Bentonite	4130	4353	Gas
Chacra / Otera	4538	4761	Gas
Cliff House	5324	5547	Gas
Menefee	5366	5589	Gas
Point Lookout	5618	5841	Gas
Mancos	5985	6208	Gas
Gallup	6993	7216	Gas
Greenhorn	7674	7897	
Graneros	7725	7948	Gas
Dakota	7836	8059	Gas
Paguate	7839	8062	
Cubero	7878	8101	
Oak Canyon	7930	8153	
Encinal Canyon	7956	8179	

Lower Encinal Canyon	7986	8209	
TD	7991	8214	

\*All shows of fresh water and minerals will be adequately protected and reported.

#### 2. PRESSURE CONTROL EQUIPMENT:

All well control equipment shall be in accordance with Onshore Order #2 for 2M systems.

The minimum specifications for pressure control equipment that will be provided are included on the attached schematic diagram, which shows the size, and pressure ratings.

• 2000# BOP With Pipe Rams and 2000# BOP With Blind Rams

Auxiliary equipment to be used:

• Upper kelly cock with handle available.

The manifold includes appropriate valves and adjustable chokes. The kill line will have one check valve. Ram type preventers will be pressure tested to full working pressure (utilizing a test plug) or 70% of the internal yield pressure (without a test plug) at:

- Initial installation
- Whenever any seal subject to test pressure is broken
- Following related repairs
- At 30 day intervals

Pipe and blind rams shall be activated each trip.

A BOPE pit level drill will be conducted weekly for each drilling crew. All tests and drills will be recorded in the drilling log.

The accumulator will have sufficient capacity to close all rams and retain 200 psi above precharge pressure without the use of closing unit pumps.

Master controls will be at the accumulator. Anticipated bottom hole pressure is 3400 psi.

#### 3. CASING & CEMENTING PROGRAM:

A. The proposed casing program will be as follows:

TVD	TMD	Hole Size	Size	Grade	Weight	Thread	Condition
0-285'	0-285'	12- 1/4"	9-5/8"	H-40	32#	STC	New
0-3556	0-3779	8-3/4"	7"	K-55	23#	LTC	New
0- TD	0- TD	6-1/4"	4-1/2"	J-55	11.6 #	LTC	New

The 9-5/8" surface pipe will be tested to 750 psi. All casing strings below the surface shoe shall be pressure tested to 0.22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% minimum internal yield.

<u>Surface</u>: The bottom three joints of the surface casing will have a minimum of one centralizer per joint and one centralizer every joint thereafter (Total 5 centralizers estimated)

**Intermediate**: The bottom three joints of the 7" casing will have a minimum of one centralizer per joint and one centralizer every fifth joint thereafter to above Ojo Alamo with turbolizers below and throughout the Ojo Alamo. (Total 12 centralizers, 3 turbolizers estimated).

**Production**: The bottom three joints will have a minimum of one centralizer per joint and one centralizer every fifth joint to 3500' (estimated 25 centralizers used). Centralizers will be open bow spring or basket bow spring type.

B. The proposed cementing program will be as follows:

Surface String: Cement will be circulated to surface. Lead: 200 sx Class "B" with 100% Standard Cement, 2.00% CaCl2, .25 #/sx Flocele. Density: 15.6 lb/gal; Yield: 1.18 cuft/sx; Water: 5.24 gal/sx \* Minor variations possible due to existing conditions Intermediate String: Cement will be circulated to surface. Lead: 500 sx 50/50 Poz, Yd-1.45, Water Gal/sx 6.8, Mixed @ 13ppg Foamed W/ N2 Down To 9.0# Additives 2% Gel. 0.2% Versaset, 0.1% Diacel Lwl. Tail: 75 sx 50/50 Poz, Yd-1.45, Water Gal/Sk 6.8, Additives 2% Gel, 0.2% Versaset, 0.1% Diacel Lwl. \* Minor variations possible due to existing conditions If hole conditions dictate, an alternate, cement design will be used: Lead: 575 sx 50/50 Poz with 50% Class B Cement, 50% San Juan Poz, .4% Halad-344, .1% CFR-3, 3% Bentonite, 5#/sx Gilsonite, .25#/sx Flocele. Density: 13.0 lb/gal; Yield: 1.46 cuft/sx; Water: 6.42 gal/sx Tail: 75 sx 50/50 Poz with 94#/sx Standard Cement, 0.3% Halad-344, .25 #/sx Flocele. Density: 15.6 lb/gal; Yield: 1.18 cuft/sx; Water: 5.23 gal/sx \* Minor variations possible due to existing conditions **Production String:** TOC designed to circulate 1000' into intermediate string, cement will tie into the intermediate casing as a minimum. Volumes may vary with actual well characteristics. Lead: 250 sx 50/50 Poz with 2% Gel, 0.2% Halad, 0.1% CFR-3, 5 #/sx Gilsonite, 0.25 #/sx Flocele. Mixed at 13 ppg. 1.47 ft 3/sx foamed to 9 ppg, 2.18 ft 3/sx.

**Tail:** 450 sx 50/50 Poz with 50% Standard Cement, 50% San Juan Poz, 3% Bentonite, 1.40% Halad-9, .10% CFR-3, .10% HR-5, 5 #/sx Gilsonite, 0.25 #/sx Flocele. Density: 13.0 lb/gal; Yield: 1.47 cuft/sx; Water: 6.35 gal/sx \*

\* Minor variations possible due to existing conditions

Actual volumes will be calculated and adjusted with caliper log prior to cementing.

#### 4. DRILLING FLUIDS PROGRAM:

TVD Interval	TMD Interval	Туре	Weight (ppg)	Viscosity	рН	Water Loss	Remarks
0-285'	0-285'	Spud- foam	8.4-9.0	29-70	8.0	NC	FW gel, LSND or stiff foam
285'-3,556'	285'-3,779'	Air				NC	
3,556' - TD	3,779' - TD	Air/N2 or Mud	8.5-9.0*	30-50	8.0-10.0	8-810cc @ TD	Low solids- non-dispersed. * min Wt. to control formation pressure

NC = no control

Sufficient quantities of mud material will be maintained on site or be readily accessible for the purpose of assuring well control. SPR will be recorded on daily drilling report after mudding up. Visual mud monitoring will be conducted during operations.

#### 5. EVALUATION PROGRAM:

Logs: Density Neutron Induction

In the event open hole logs are not run in the well, a cased hole evaluation log will Be run.

- **Survey:** Deviation surveys will be taken every 500' from 0-TD or first succeeding bit change. The hole will be air drilled from intermediate casing point to TD. The equipment used in this type of operation will not allow for single shot surveys without considerable operational delays. A survey will be taken at TD. Similar wells in this area have not shown significant deviation in this section of the hole.
- **Cores:** None anticipated.
- **DST's:** None anticipated.

#### Company: Devon Energy Lease/Well: NEBU 321 N Location: San Juan County State/Country: NM

• . •

.



100	<b>1</b>	1300
	KOP>350' N	/D/350' TVD Begin Build @ 3.009100' 1200 1100
300	- 550 MD,6.00°	1000
500 ·	-+ 750 MD,12.00°	900
700	950 MD,18.00°	800
900	1150 MD, 18:00	700
100	1 1250 MID 20	600
300		ID/1394' TVD Begin Hold @ 33.17°,4.53°Azm <sup>00</sup>
500	T N	2' MD/1760' TVD Begin Drop @ -2 009100'
700		3 MD,31.17°
900	21	93 MD,27.17° 200
100	832 2	2393 MD,23.17° 100 O IAM @ 2514' MD/2314' TVD
300	872	OJAM @ 2514' MD/2314' TVD 0 KRLD @ 2636' MD/2429' TVD -100
500	† \	2793 MD 15.17° 2993 MD 11.17° -600 -200 0 200 400 60
700	979	FRLD @ 3081' MD/2861' TVD -500 -300 -100 100 300 500
900		3093 MD,9.17° 3293 MD,5.17°
100	1015	PCCF TONGUE @ 3434' MD/3212' TVD
300	1017 1017 1017 1017	PCCF MAIN @ 3551' MD/3328' TVD Begin Hold @ .00°,4 .53° Azm LWIS @ 3679' MD/3456' TVD
500	1017	Casing Point @ 3779' MD/3556' TVD
700	+	
900	+	
100	+ 1017	HRFB @ 4353' MD/4130' TVD
300	+	
500	1017	CHCR @ 4761' MD/4538' TVD
700	+	
900		
100	+	CLFH @ 5547' MD/5324' TVD
300	- 1017	MENF @ 5589' MD/5366' TVD
500	+ 1017	PNLK @ 5841' MD/5618' TVD
<b>700</b>		
900	1017	MNCS @ 6208' MD/5985' TVD
100	+	
300	Ŧ	
500	ł	
700	+	
900	1017	GLLP @ 7216' MD/6993' TVD
100	+	-
300	+	GRHN @ 7897' MD/7674' TVD GRBS @ 7946' MD/7725' TVD DKOT @ 8059' MD/7835' TVD PGTE @ 8062' MD/7839' TVD CBRO @ 8101' MD/7878' TVD OKCN @ 8153' MD/7930' TVD
500	+	GRBS @ 7946; MB/7435; TVB PGTE @ 8062; MD/7839; TVD CBRO @ 8101; MD/7839; TVD OKCN @ 8153; MD/7930; TVD ENCN @ 8179; MD/7956; TVD ENCL @ 8209; MD/7956; TVD
	1917	OKCN @ 8153' MD/7930' TVD ENCN @ 8179' MD/7956' TVD
700 -	1 2827	I ENCL @ 8209' MD/7986' TVD
700 900	III	PBHL @ 8214' MD/7991' TVD

-200 0 200 600 1000 1400 1800 2200 2600 3000 3400 3800 4200 4600 5000 5400 5800 400 800 1200 1600 2000 2400 2800 3200 3600 4000 4400 4800 5200 5600 6000



# Well Control Equipment 2,000 psi Configuration

**1** •