Form 3160-3 (December 1990)

# UNITED STATES DEPARTMENT OF THE INTERIOR

SUBMIT IN
(See other instructions on reverse side)

Form approved.

•	BUREAU C	FLANDI	MANAGEMENT			ĺ	5.LEASE I	ESIGNATIO	N AND SERIAL	L NO.
ΔΡ	PLICATION FOR	PERMIT	TO DRILL OR	DEE	PEN	\		0405444A	EE OR TRIBE N	NAME
la TYPE OF WORK:	DRILL 🖂		EPEN				B7/4	IN, ALLOI IE	E OR IRIDE N	IAML
			N T. S	M	- <del></del> -	visio		REEMENT N	AME	
b. TYPE OF WELL:	GAS WELL Other		SINGLE TO	h S.	MULTIPLE		N/A	D I D C NA	NOT THE T NO	
2 NAME OF OPERAT			Α.,	Amiris	a Nivi	<del>0-283</del> 4		20" Feder	ME, WEIL NO	<b>.</b> .
	OR DEVON ENERGY C	ORPORAT	TION (NEVADA) (A)	(C)			9.API WEI			
3. ADDRESS AND TE	LEPHONE NO. 20 N. BROADWAY,					<del></del>	30-015		OR WILDCAT	<u>8</u>
4. LOCATION OF WEI	LL (Report location clearly							Wells (Dela		
At surface 660' F	SL & 1980' FEL, Unit O	, Section 2:				<i>(</i> 2\9 17 17 17 17 17 17 17 17 17 17 17 17 17				RVEY OR AREA
At top proposed prod.	zone (SAME)		N =		L-P-P0TA	219	Unit (	)	•	
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	DIRECTION FROM NEAREST	OWN UK PUS	OFFICE-					II UK PAKI	<b>3</b> 11	
35 miles WNW of Jal							Eddy			New Mexico
15.DISTANCE FROM PROPO LOCATION TO NEARES		1	NO. OF ACRES IN LEASE		HEC	EIVED			OF ACRES AS THIS WELL	SIGNED
PROPERTY OR LEASE L		12	240		NOV	<b>9</b> 2003		40		
(Also to nearest drig unit lin 18.DISTANCE FROM PROPO TO NEAREST WELL, DR	SED LOCATION*	19	PROPOSED DEPTH		000	DTES	^	20.RO	TARY OR CAB	LE TOOLS*
OR APPLIED FOR, ON T			8800'		OCD-A	ARTESI		Rotai		
21.ELEVATIONS (Show wheth	ner DF, RT, GR, etc.)			C	ARLSBAD		1		E WORK WIL	L START*
GL 3403'			CONTR	ROL	LED WATE	RBASIR	<b>√</b> fou	rth quarte	r, 1998	
23.		PRO	POSED CASING AN	D CEN	MENTING PROG	RAM	<u> </u>			·
SIZE OF HOLE	GRADE, SIZE OF CASIN	G	WEIGHT PER FOOT		SETTI	NG DEPTH	266	•	QUANTITY OF	CEMENT
17 1/2"	13 3/8" H-40	48#			920	-4-6-6				00 sx Class "C"
11"	8 5/8" J-55	32 <i>t</i>			4350'	WITH	:35			200 sx Class"C
7 7/8"	5 1/2" J-55	15.	5# & 17#		8800' DV Tool +/- 550	ın,		-	: 525 sx Silic ge 225 sx 35/	ca Lite Class"H
					DV 1001+7-330			-	ge 223 sx 33/ Class "H"	703102+
	ses to drill to approximatel									
and attachments.	ged and abandoned as per	rederal regu	lations. Programs to	adher	e to onshore oil ai	id gas regu	ations ar	e outlined i	n the follow	ing exhibits
	rface Use and Operating Pl	an								
	at Prevention Equipment				ersigned accepts			•		
Exhibit #2 = Location Exhibits #3 = Road N					rictions concerni thereof, as desci			icted on th	ie leased la	nd or
Exhibit #4 = Wells W			-		NM-NM040544		•			
Exhibits #5 = Produc			Le	gal De	scription: Secti	on 22-T23	S-R31E			
Exhibit #6 = Rotary I			D		N. A.	., APP	ROVA	L SUBJ	ECT TO	) .
Exhibit #7 = Casing I H <sub>2</sub> S Operating Plan	Design		BI.	na Co M Bo	verage: Nationv nd #: CO-1104	viae GEN	ERAL	REQUI	REMFN <sup>a</sup>	TS AND
Archaeological Surve	ey SCRIBE PROPOSED PRO				<b>10</b> // CO 1104	SPE	CIAL S	TIPIII	ATIONIC	ATTACILE
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PERMIT NO.		···			APPROVAL	DATE	r (y 184	<i>::::</i> 		
Application approval does	not warrant or certify that the	applicant hold	s legal or equitable title to	those	rights in the subject	lease which v	ould entitl	e the applica	int to conduct	operations
thereon. CONDITIONS OF APP			- <del>-</del>		•					•
CONDITIONS OF APP					_					
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See Instructions On Reverse Side

## **DRILLING PROGRAM**

Attached to Form 3160-3 Devon Energy Corporation (Nevada) TODD "220" FEDERAL #15 660' FSL & 1980' FEL Section 22-T23S-R31E, Unit O Eddy County, New Mexico

# 1. Geologic Name of Surface Formation

#### Permian

#### 2. Estimated Tops of Important Geologic Markers

800'
1100'
3900'
4400'
5600'
7000'
8300'
8800'

# 3. Estimated Depths of Possible Fresh Water-, Oil-, or Gas-Bearing Formations

Upper Permian Sands	above 800'	fresh water
Delaware (Bell Canyon)	4400'	oil
Delaware (Cherry Canyon)	6000'	oil
Delaware (Brushy Canyon)	8000'	oil

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 13 3/8" casing at 850' and circulating cement back to surface. The Potash and Salt intervals will be protected by setting 8 5/8" casing at 4350' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 8 5/8" casing.

## 4. Casing Program

<b>Hole Size</b>	Interval	<b>Casing OD</b>	Weight	Grade	Type
30"	0-40'	20"		Conductor	0.30" wall
17 1/2"	0-850'	13 3/8"	48#	H-40	ST&C, new R-3
11"	0-4350'	8 5/8"	32#	J-55	ST&C, new R-3
7 7/8"	0'-TD (8800'±)	5 1/2"	15.5# & 17#	J-55	LT&C, new R-3

#### Cementing Program

20" Conductor Casing	Cement with Ready-mix to surface.
13 3/8" Surface Casing	Cement to surface using 500 sx Poz (35% Poz, 65% Class C, 6% gel) with 2% CaCl <sub>2</sub> and 1/4 lb/sx Cellophane flakes + 200 sx Class C with 2% CaCl <sub>2</sub> and 1/4 lb/sx Cellophane flakes.
8 5/8" Intermediate Casing	Cement to surface using 1600 sx Poz (35% Poz, 65% Class C, 6% gel, 15% salt) with 1/4 lb/sx Cellophane flakes + 200 sx Class C with 2% CaCl <sub>2</sub> , 1/4 lb/sx Cellophane flakes
5 1/2" Production Casing	Cement 1st stage with 525 sx Silica Lite (Class H) with 3% salt, 0.6% FL additive, 1/4 lb/sx Cellophane flakes
with DV tool at ±5500'	Cement 2nd stage with 225 sx Poz (35% Poz, 65% Class H, 6% gel) with 1/4 lb/sx Cellophane flakes + 400 sx Class H with 4% gel, 5% salt, 1/4 lb/sx Cellophane flakes.

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach 450'± above the 8 5/8" casing seat at 4350'.

#### 5. <u>Minimum Specifications for Pressure Control</u>

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a (3M system) double ram type (2000 psi WP) preventer and a bag-type (Hydril) preventer (2000 psi WP). Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and 4 1/2" drill pipe rams on bottom. Both BOP's will be installed on the 13 3/8" surface casing and utilized continuously until total depth is reached. All BOP's and associated equipment will be tested to 1200 psi

before drilling out the 13 3/8" casing shoe (70% of 48# H-40 casing). Prior to drilling out the 8 5/8" casing shoe, the BOP's and Hydril will be function tested as per BLM drilling Operations Order #2.

Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a kelly cock, floor safety valve, choke lines and choke manifold having 3000 psi WP rating.

# 6. Types and Characteristics of the Proposed Mud System

The well will be drilled to total depth using brine, cut brine and polymer mud systems. Depths of systems are as follows.

		Weight	Viscosity	Water Loss
Depth	Туре	(ppg)	(1/sec)	(cc/30 mins)
0-850'	Fresh water	8.8	34-36	No control
850-4350'	Brine water	10.0	28	No control
4350'-TD	Fresh water polymer	8.8	32-36	10-20

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 (Compliance Package) will be in operation when drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented.

# 8. <u>Logging, Testing and Coring Program</u>

- A. Drill stem tests will be based on geological sample shows.
- B. The open hole wireline logging program will be as follows.

TD to intermediate casing: Induction / Gamma Ray / Neutron / Density Log.

TD to surface: Neutron with Gamma Ray.

- C. Rotary sidewall cores are planned.
- D. Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

## 9. Abnormal Pressures, Temperatures and Potential Hazards

No abnormal pressures or temperatures are foreseen. The anticipated bottom hole temperature at total depth is approximately 130 degrees and maximum bottom hole pressure is approximately 2900 psig. No hydrogen sulfide gas has been reported or is known to exist at these depths in this area. No major lost circulation intervals have been encountered in adjacent wells.

#### 10. Anticipated Starting Date and Duration of Operations

A Cultural Resources Examination will be completed by Don Clifton Archaeological Consultant, and submitted to the BLM. Road and location preparation will not be undertaken until approval has been received from the BLM. If approved, the anticipated spud date for the well will be in the fourth quarter, 1998. The drilling operation should require approximately 21 days. If the well is deemed productive, completion operations will require, at minimum, an additional 30 days of testing to ascertain whether permanent production facilities will be constructed.

#### SURFACE USE AND OPERATING PLAN

Attachment to Form 3160-3 Devon Energy Corporation (Nevada) TODD "220" FEDERAL #15 660' FSL & 1980' FEL Section 22-T23S-R31E, Unit O Eddy County, New Mexico

## 1. Existing Roads

- A. The well site and elevation plat for the proposed TODD "220" FEDERAL #15 are reflected on Exhibit #2. This well was staked by Topographic Land Surveyors of Midland, Texas.
- B. All roads into the location are depicted in Exhibit #3. New construction from the County road will be used to access the location. New construction will conform to the specifications outlined in item 2 below.
- C. Directions to location: Travel west-northwest from Jal, NM approximately 35 miles on State Highway #128 to County Road #798, just into Eddy County from Lea County. Turn north (right) on County Road #798 and travel approximately 2.0 miles. Then, turn left (west) onto existing lease road. Go approximately 0.35 mile to Todd "26B" Federal #4. Turn right (north) and go approximately 0.25 mile to Todd "23O" Federal #1. Turn left (west) and go approximately 1.10 miles to proposed TODD "22O" FEDERAL #15 location.

#### 2. Proposed Access Road

Access to this location will require the construction of approximately 5610' of new access road from the County road. All new road construction would adhere to the following specifications:

- A. The maximum width of the road will be fifteen (15) feet.
- B. It will be crowned and made of 6 inches of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
- C. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location.
- D. The average grade will be approximately 1%.

# TODD "220" FEDERAL #15 Surface Use and Operating Plan Page 2

- E. No cattle guards, grates or fence cuts will be required.
- F. No turnouts are planned.

#### 3. <u>Location of Existing Wells</u>

Exhibit #4 shows all existing wells within a one-mile radius of the proposed TODD "220" FEDERAL #15.

#### 4. Location of Existing and/or Proposed Facilities

- A. In the event the well is found productive, a tank battery would be constructed.
  - 1. Exhibit #5 shows the battery facility to be utilized by the TODD "220" FEDERAL #15.
  - 2. The tank battery, all connections and all lines will adhere to API standards.
  - 3. The well will be operated by means of an electric prime mover. Electric power poles will be set along side of the access road.
- C. If the well is productive, rehabilitation plans are as follows.
  - 1. The reserve pit will be back-filled after the contents of the pit are dry (within 120 days after completion, weather permitting).
  - 2. Caliche from unused portions of the drill pad will be removed. The original topsoil from the well site will be returned to the location. The drill site will then be contoured to the original natural state.

## 5. Location and Type of Water Supply

The TODD "220" FEDERAL #15 will be drilled using a combination of brine and fresh water mud systems (outlined in Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads shown in Exhibit #3. Additionally, produced salt water from lease gathering tanks may be utilized. No water well will be drilled on the location.

#### 6. Source of Construction Materials

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche.

#### 7. Methods of Handling Water Disposal

- A. Drill cuttings will be disposed into the reserve pit.
- B. Drilling fluids will be contained in steel mud tanks. The reserve pit will contain excess drilling fluid or fluid from the well during drilling, cementing and completion operations. The reserve pit will be an earthen pit roughly 125' x 125' x 6', or smaller, in size.
- C. The reserve pit will be fenced on three sides throughout drilling operations and will be totally isolated upon removal of the rotary rig. The pit will be lined using a 5-7 mil plastic to minimize loss of drilling fluids and saturation of the ground with brine water used to drill from 850' to 4350'.
- D. Water produced from the well during completion operations will be disposed into a steel tank or reserve pit, if volumes prove excessive. After placing the well on production through the production facilities, all water will be collected in tanks. Produced oil will be separated into steel stock tanks until sold.
- E. A portable chemical toilet will be available on the location for human waste during the drilling operations.
- F. Garbage, trash and waste paper produced during drilling operations will be collected in a contained trailer and disposed at an approved landfill. All waste

material will be contained to prevent scattering by the wind. All water, fluids, salt or other chemicals will be disposed into the reserve pit. No toxic waste or hazardous chemicals will be generated by this operation.

G. All waste material will be removed within 30 days after the well is either completed or abandoned. The reserve pit will be completely fenced until it has dried. At the point the reserve pit is found sufficiently dry, it will be backfilled and reclaimed as per BLM specifications. Only the portion of the drilling pad used by the production equipment (pumping unit and tank battery) will remain in use. If the well is deemed non-commercial, only a dry hole marker will remain.

#### 8. Ancillary Facilities

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

# 9. Well Site Layout

- A. The drill pad is shown on Exhibit #6. Approximate dimensions of the pad, pits and general location of the rig equipment are displayed. Top soil will be stored adjacent to the pad until reclamation efforts are undertaken. Only modest cuts will be necessary to build the pad which will be covered with 6" of compacted caliche.
- B. No permanent living facilities are planned, but temporary trailers for the tool pusher, drilling foreman and mud logger may be on location throughout drilling operations.
- C. The reserve pit will be lined using plastic sheeting of 5-7 mil thickness.

#### 10. Plans for Restoration of Surface

A. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The reserve pit area will be broken out and leveled after drying to a condition where these efforts are feasible. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.

- B. The pit lining will be buried or hauled away in order to return the location and road to their pristine nature. All pits will be filled and location leveled, weather permitting, within 120 days after abandonment.
- C. The location and road will be rehabilitated as recommended by the BLM.
- D. The reserve pit will be fenced on three sides throughout drilling operations. After the rotary rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing will be in place until the pit is reclaimed.
- E. If the well is deemed commercially productive, the reserve pit will be restored as described in 10 (A) within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

#### 11. Surface Ownership

The well site is owned by the Bureau of Land Management.

Road routes have been approved and the surface location will be restored as directed by the BLM.

#### 12. Other Information

- A. The area surrounding the well site is grassland. The top soil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sagebrush, yucca and miscellaneous weeds.
- B. There is no permanent or live water in the general proximity of the location.
- C. A Cultural Resources Examination will be completed by Don Clifton Archaeological Consultant, and forwarded to the BLM office in Carlsbad, New Mexico.

TODD "220" FEDERAL #15 Surface Use and Operating Plan Page 6

## 13. Lessee's and Operator's Representative

The Devon Energy Corporation (Nevada) representatives responsible for ensuring compliance of the surface use plan are:

Walter Frank District Engineer Daryl Lowder Superintendent

DEVON ENERGY CORPORATION 20 North Broadway, Suite 1500 Oklahoma City, OK 73102 DEVON ENERGY CORPORATION Post Office Box 250 Artesia, NM 88211-0250

(405) 552-4595 (office) (405) 364-3504 (home)

(505) 748-3371 (office) (505) 677-2103 (home)

#### **Certification**

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Devon Energy Corporation (Nevada) and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Signed:

Walter M. Frank

District Engineer

Date:

# 3,000 psi Working Pressure

#### 3 MWP

#### STACK REQUIREMENTS

No.	ltem		Min. I.D.	Min. Nominal
	Flowline			
2	Fill up line			2-
3	Orilling nipple			
4	Annular preventer			
5	Two single or one dual hy operated rams			
6a	Drilling spool with 2" min. 3" min choke line outlets	. kill line and		
6b	2" min. kill line and 3" mi outlets in ram. (Alternate			
7	Valve	3-1/8*		
8	Gate valve—power opera	ted	3-1/8"	
9	Line to choke manifold			3.
10	Vaives	Gate C Plug C	2-1/16"	
11	Check valve		2-1/16"	
12	Casing head			
13	Valve	Gate  Plug	1-13/16*	
14	Pressure gauge with need	die valve		
15	Kill line to rig mud pump r			5.

		<b>5</b>
	ANNULAR PREVENTER	
	BLIND RAMS	9
	PIPE RAMS  ORILLING SPOOL	
<b>1</b>	CASING	
	(6) CASING	<b>10 10</b>

CONFIGURATION

OPTIONAL						
16 Flanged valv	ve :	1-13/16"				
		,				

#### **CONTRACTOR'S OPTION TO FURNISH:**

- All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 3,000 psi, minimum.
- Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
- 3.BOP controls, to be located near drillers position.
- 4. Kelly equipped with Kelly cock.
- 5. Inside blowout prevventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
- Kelly saver-sub equipped with rubber casing protector at all times.
- 7.Plug type blowout preventer tester.
- Extra set pipe rams to fit drill pipe in use on location at all times.
- 9. Type RX ring gaskets in place of Type R.

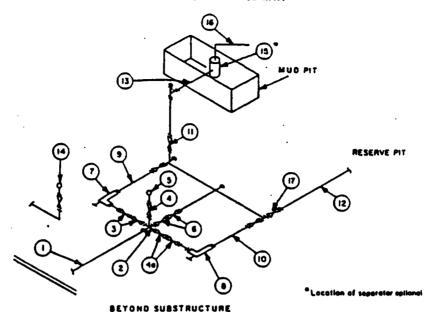
#### MEC TO FURNISH:

- Bradenhead or casinghead and side valves.
- 2. Wear bushing, if required.

#### **GENERAL NOTES:**

- Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
- 2.All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through chore. Valves must be full opening and suitable for high pressure mud service.
- Controls to be of standard design and each marked, showing opening and closing position.
- 4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for edjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
- All valves to be equipped with handwheels or handles ready for immediate use.
- 6. Choke lines must be suitably anchored.

- 7. Handwheels and extensions to be connected and ready for use.
- Valves adjacent to driffing spool to be kept open. Use outside valves except for emergency.
- All seamless steel control piping (3000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
- Casinghead connections shall not be used except in case of emergency.
- 11.Do not use kill line for routine fill-up operations.



			MINI	MUM REQL	KREMENTS	5				
			3.000 MWP			5.000 MWP		10,000 MWP		
No.		I.D.	NOMINAL	RATING	1.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING
1	Line from drilling spool		3-	3,000		3-	5,000		3.	10,000
	Cross 3"x3"x3"x2"			3,000			5,000			
-	Cross 3"x3"x3"x3"									10.000
3	Vaives(1) Gate □ Plug □(2)	3-1/8"		3,000	3-1/8"		5.000	3-1/8"		10,000
4	Valve Gate □ Plug □(2)	1-13/16*		3,000	1-13/16"		5,000	1-13/16"		10,000
4a	Valves(1)	2-1/16"		3,000	2-1/16"		5,000	3-1/8"		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valves Gate □ (Z)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
7	Adjustable Choke(3)	2"		3,000	5.		5,000	2-		10,000
8	Adjustable Choke	1.		3,000	1"		5,000	2-		10,000
9	Line		3-	3,000		3*	5,000		3-	10,000
10	Line		2"	3,000		2.	5,000		3-	10,000
11	Valves Gate □ Plug □(2)	3-1/8*		3,000	3-1/8"		5,000	3-1/8"		10,000
12	Lines		3*	1,000		3.	1,000		3-	2,000
13	Lines		3-	1,000		3-	1,000	· ·	3-	2.000
14	Remote reading compound standpipe pressure gauge	·		3.000			5,000	•		10.000
15	Gas Separator		2'x5'			2'x5'			2'x5'	
16	Line		4*	1,000		4*	1,000		4"	2,000
17	Valves Plug (2)	3-1/8*		3,000	3-1/8"		5,000	3-1/8*		10,000

- (1) Only one required in Class 3M.
- (2) Gate valves only shall be used for Class 10M.
- (3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

#### **EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS**

- 1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- 2. All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- 3. All lines shall be securely anchored.
- 4. Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- 5. Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90° bends using built plugged tees.
- 7. Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.

# Exhibit #1A NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Corporation (Nevada)
TODD "22O" FEDERAL #15
660' FSL & 1980' FEL
Section 22-T23S-R31E, Unit O
Eddy County, New Mexico

- 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.

DISTRICT I P. O. Box 1980 Hobbs, NM 88241-1980

State of New Mexico Energy, Minerals, and Natural Resources Department

Form C-102 Revised 02-10-94

Instructions on back

Submit to the Appropriate District Office State Lease — 4 copies Fee Lease — 3 copies

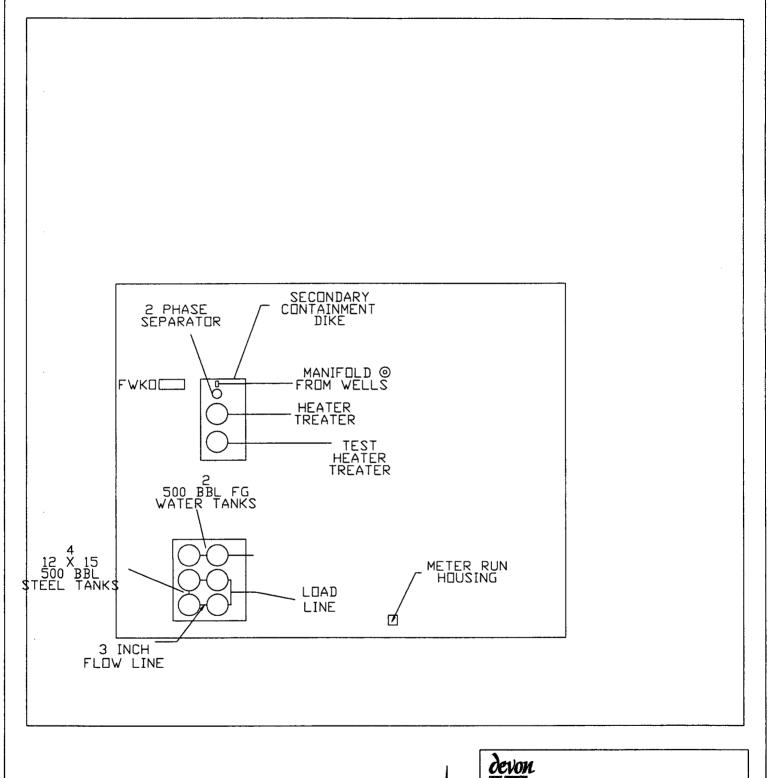
DISTRICT II
P. O. Drower DD
Artesia, NM 88211-0719

OIL CONSERVATION DIVISION
P. 0. Box 2088 DISTRICT III 1000 Rio Brazos Rd. Aztec, NM 87410 Santa Fe, New Mexico 87504-2088

AMENDED REPORT

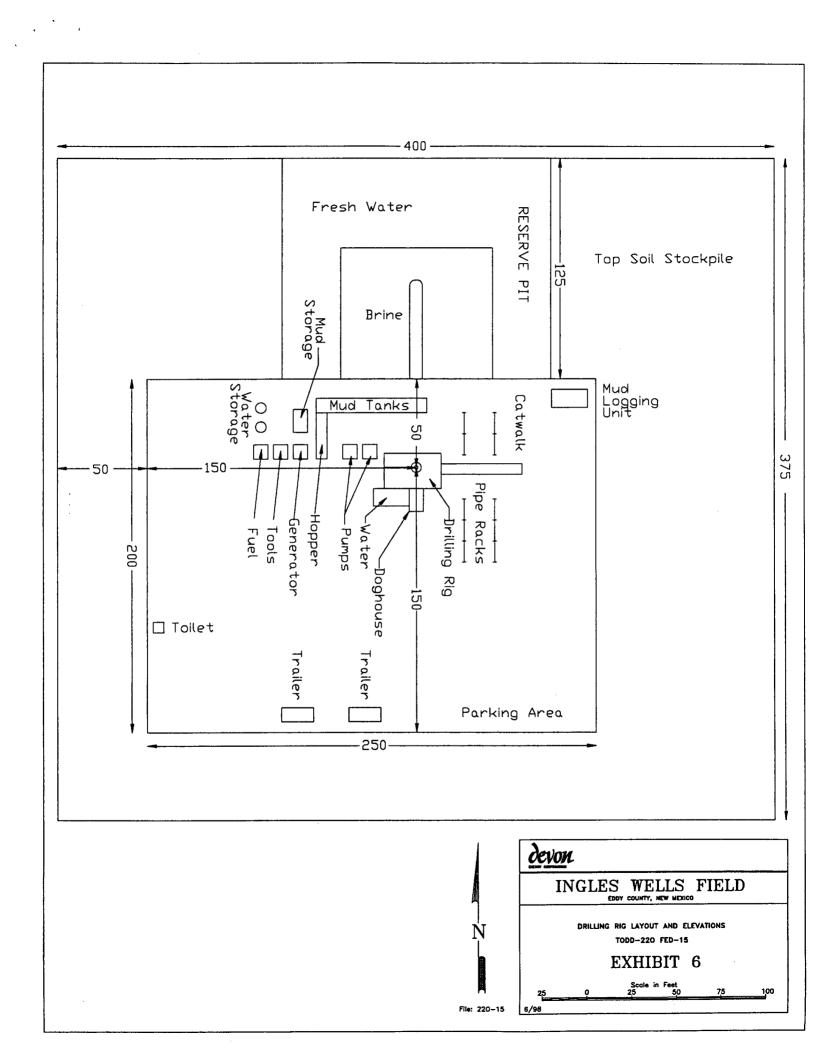
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P. O. Box 2088
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# PRODUCTION FACILITIES LAYOUT AT TODD-22G FED-7 FOR TODD-220 FED-15 EXHIBIT 5 Scale in Feet 50 75 100 6/98



#### DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: TODD FEDERAL AREA
Project ID:	Location: T235-R31E

Design Parameters:	Design Factors:	, l=				
Must weight ( 9.00 ppg) : 0.468 pmi/ft	Collapse	:	1.1	25		
Shut in surface pressure : 765 psi	Burst	:	1.0	0		
Internal gradient (burst) : 0.100 psi/ft	8 Round	:	1.8	3	(4)	
Annular gradient (burst) 2 0.000 pai/ft	. Buttress	:	1.50	3	(4)	
Tensile load is determined using air weight	Body Yield	=	1.50	3	<b>(B)</b>	
Service rating is "Sweat"	Overpull.	:		0	lbs.	
		_		_		=

	Length (feet)	Size (in.)	Weight (lb/ft		e Joi	et	Depth (feet)	Drift (in.)	Cost .
1	<b>8</b> 50	13-3/8	48.00	丑-4(	) STE		850	12.559	
	Load (psi)	Collapse Stryth (psi)	S.F.		Min Int Stryth (psi)	Yield S.F.	Load (kips		S.F.
1	397	740	1.864	<b>8</b> 50	1730	2.04	40.8	0 322	7.89 J

Prepared by : CHUCK HORSMAN, Oklahoma City, OK

Date 06-04-1993

Remarks

Minimum segment length for the 850 foot well is 800 feet.

Surface string:

Next string will set at 4,400 ft. with 10.00 ppg sud (pore pressure of 2,286 pai.) The frac gradient of 1.900 at the casing seat results in an injection pressure of \$50 pmi. Effective BMP (for burst) is \$50 pmi.

NOTE: The design fectors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - Collapse (with evecusted casing), 1.0 - Burst, 1.8 - 8 Round Tension, 1.6 - Buttress Tension, and 1.5 - Body Yield. Collapse strength under exial tension was calculated based on the Westcott, Dunlop and Kemier curve. Engineering responsibility for use of this design will be that of the purchaser. \_Costs for this design are based on a 1990 pricing model. (Version 1.06)

#### DEVON ENERGY

Operator: DEVON ENERGY CORP | Well Name: TODD FEDERAL AREA
Project ID: | Location: T23S-R31E

Design Parameters: Design Factors: Mud weight ( 9.80 ppg) : 0.509 psi/ft Col Lapse : 1.125 Shot in surface pressure : 3487 Berne : 1.00 Internal gradient (burst) : 0.100 psi/ft : 1.80 8 Round (J) Annular gradient (burst) : 0.000 mi/ft . Rettress : 9.89 Tensile load is determined using air weight Body Yield : 1.50 (8) Service rating is "Sweet" C the. Overputi

	Length (feet)	Size (in.)	Weight (lb/ft		e Joi	at	Depth (feet)	Drift (in.)	Cost .
1	4,400	8-5/8"	32.00	J-5	ST&C	2	4,400	7.875	
	Load (psi)	Collapse Stryth (psi)	S.F.	Burst Load (psi)	Min Int Stryth (psi)	Yield S.F.		Tension Stryth (kips)	S.F.
1	2240	2530	1.129	3527	3930	1.11	140.80	372	2.64 J

Prepared by : CHUCK HORSMAN, Oklahoma City, OK

Date :

06-04-1993

Remarks

Minimum segment length for the 4,400 foot well is 800 feet.

Surface/Intermediate string:

Next string will set at 8,400 ft. with 9.00 ppg mud (pore pressure of 3,927 pmi.) The frac gradient of 1.000 at the casing seat results in an injection pressure of 4,400 pmi. Effective BMP (for burst) is 3,527 pmi.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - Collapse (with evacuated casing), 1.0 - Burst, 1.8 - 8 Round Tension, 1.6 - Buttress Tension, and 1.5 - Body Yield. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kamler curve. Engineering responsibility for use of this design will be that of the purchaser. Costs for this design are based on a 1990 pricing model. (Version 1.06)

#### DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: TODD FEDERAL AREA
Project ID:	Location: T23S-R31E

Design Factors: Design Parameters: Callagee : 1.125 Med weight ( 9.00 ppg) : 0.468 pei/ft Shot in gurinos pressure : 3216 pei Burne : 1.00 Internal gradient (hurst) : 0.100 psi/fr 8 Bound : 1.80 (J) . . 9.89 (II) Ammiler gradient (burst) : 0.000 psi/ft Body Field : 1.50 **(B)** Tennile load is determined using air weight s lbs. Overbull Service rating is "Sweet" ere unitaries eee Design factor for joint strangth enceeded in design!

	Length (feet)	Size (in.)	Weight (lb/ft)		e Joir	_	Depth (feet)	Drift (in.)	Cost
1 2 3	1,200 6,200 1,350	5-1/2" 5-1/2" 5-1/2"	17.00 15.50 17.00	J-55 J-55 J-55	LTEC	:	7,400	4.767 4.825 4.767	-
	Load (psi)	Collapse Stryth (psi)	S.F.	Burst Load (psi)	Min Int Stryth (psi)	Yield S.F.	Load (kips)	Tension Strgth (kips)	S.F.
1 2 3	561 3460 4091	3897 3927 4910	6.947 1.135 1.200	3336 3956 4091	5320 4810 5320	1.59 1.22 1.30	139.45 119.05 22.95	217	1.77 J 1.82 J 10.76 J

Prepared by : TOM PEPPER, Oklahoma City, OK

Date : 07-10-1995

Remarks

Minimum segment length for the 8,750 foot well is \$00 feet.

The and gradient and hotton hole pressures (for butst) are 0.468 pai/ft and 4.091 pai, respectively.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - Collapse (with evacuated casing), 1.0 - Burst, 1.5 - 8 Round Tension, 1.6 - Buttress Tension, and 1.5 - Body Tield. Collapse strength under social tension was calculated based on the Westcott, Dunlop and Empley curve. Engineering responsibility for use of this design will be that of the purchaser. Costs for this design are based on a 1990 pricing model. (Version 1.66)

# **DEVON ENERGY CORPORATION**

#### HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

#### A. Hydrogen Sulfide Training

All rig crews and company personnel will receive training from a qualified instructor in the following areas prior to penetrating any hydrogen sulfide bearing formations during drilling operations:

- 1. The hazards and characteristics of hydrogen sulfide (H2S).
- 2. The proper use and maintenance of the H2S safety equipment and of personal protective equipment to be utilized at the location such as H2S detection monitors, alarms and warning systems, and breathing equipment. Briefing areas and evacuation procedures will also be discussed and established.
- 3. Proper rescue techniques and procedures will be discussed and established.

In addition to the above, supervisory personnel will be trained in the prevention of oil and gas well blowouts in accordance with Minerals Management Service Standards Subpart - 0 - 250 - 212.

Prior to penetrating any known H2S bearing formation, H2S training will be required at the rig sight for all rig crews and company personnel that have not previously received such training. This instruction will be provided by a qualified instructor with each individual being required to pass a 20 question test regarding H2S safety procedures. All contract personnel employed on an unscheduled basis will be required to have received appropriate H2S training.

This Hydrogen Sulfide Drilling And Operations Plan shall be available at the wellsite during drilling operations.

#### **B. H2S Safety Equipment And Systems**

All H2S safety equipment and systems will be installed, tested, and operational when drilling operations reach a depth approximately 500' above any known or probable H2S bearing formation. The safety systems to be utilized during drilling operations are as follows:

## 1. Well Control Equipment

- (a) Double ram BOP with a properly sized closing unit and pipe rams to accommodate all pipe sizes in use.
- (b) A choke manifold with a minimum of one remote choke.

## 2. H2S Detection And Monitoring Equipment

- (a) Three (3) H2S detection monitors will be placed in service at the location. One monitor will be placed near the bell nipple on the rig floor; one will be placed at the rig substructure; and, one will be at the working mud pits or shale shaker. This monitoring system will have warning lights and audible alarms that will alert personnel when H2S levels reach 10 ppm.
- (b) One (1) Sensidyne Pump with the appropriate detection tubes will also be available to perform spot checks for H2S concentrations in any remote or isolated areas.

#### 3. Protective Equipment For Essential Personnel

Protective equipment will consist of the following:

- (a) Four (4) five minute escape packs located at strategic points around the rig.
- (b) Two (2) thirty minute rescue packs to be located at the designated briefing areas.

#### 4. Visual Warning System

Visual warning system will consist of the following:

- (a) Two wind direction indicators.
- (b) One condition / warning sign which will be posted on the road providing direct access to the location. The sign will contain lettering of sufficient size to be readable at a reasonable distance from the immediate location. The sign will inform the public that a hydrogen sulfide gas environment could be encountered at the location.

Hydrogen Sulfide Drilling Operations Plan

#### 5. Mud Program

The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight and safe drilling practices (for example, keeping the hole filled during trips) will minimize hazards when drilling in H2S bearing formations.

## 6. Metallurgy

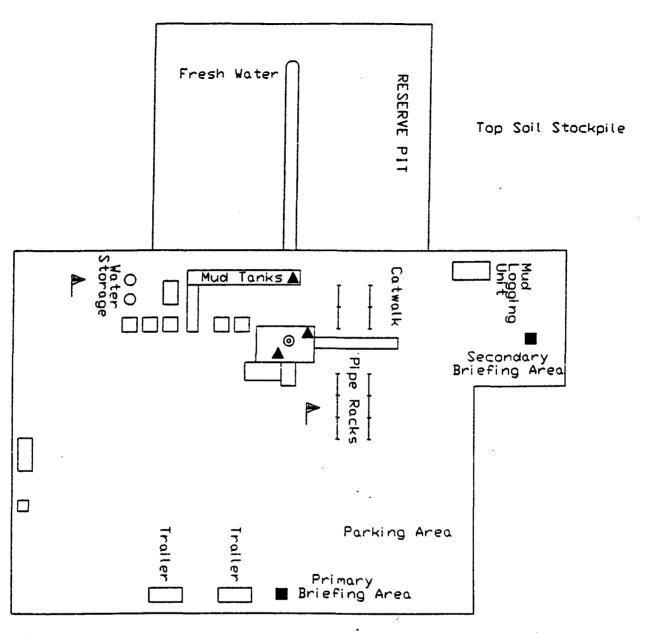
All drill strings, casings, tubing, wellhead, blowout preventers, drilling spools, kill lines, choke manifold and lines and valves shall be suitable for H2S service.

#### 7. Communication

Cellular telephone communication will be available in company vehicles.

#### C. Diagram of Drilling Location

Attached is a diagram representing a typical location layout as well as the location of H2S monitors, briefing areas and wind direction indicators.



- H2S MONITORS WITH ALARMS AT THE BELL NIPPLE, SUBSTRUCTURE, AND SHALE SHAKER WIND DIRECTION INDICATORS
- SAFE BRIEFING AREAS WITH CAUTION SIGNS AND PROTECTIVE BREATHING EQUIPMENT

