Form 3160-3 (November 1983 (formerly 9-331C)	UNITED DEPARTMENT ( BUREAU OF LAN		(Other in ERIOR reve	S TRIPLICATE structions on irse side)	Buc Exp 5. LEASE D	DESIGNATION AND DESIGNATION AND DESIGNATION AND D29389 (a)	. 1004-0136 , 1985 C	3 D. C. D.
	N FOR PERMIT TO			GRACK		N, ALLOTTEE OR	TRIBE NAME	
1a. TYPE OF WORK			PLUG BAC		7. UNIT A	GREEMENT NAME		<del>_</del>
2. NAME OF OPERAT	GAS OTHER		ZONE		Bais	R LEASE NAME		
ARCO OIL a	nd Gas Company, a	Division of Atl	antic Richfield C	0. V	9. WELLN #4	10.		
	610, Midland, Texas	79702			10. FIELD 7	ND POOL, OR WIL	DCAT	
	LL (Report clearly and in ac		State requirements.)		X North Shugart (Bone Springs)			
At surface	1980' FNL & 19	80' FEL		$\mathcal{C}_{\mathcal{A}}$	/	M. OR BLK.		
At proposed	Prod. zone Approxin		no ut.	5	AND S	URVEY OR AREA		
					Sec 9	9, T-18-S, R-3	81-E	
	ES AND DIRECTION FROM N		POST OFFICE		12. COUNT	Y	13. STATE	
	SE of Loco Hills, Nev				Edd	Y	NM	
15. DISTANCE FROM PROPERTY OR LE (Also to nearest			16. NO. OF ACRES 440	NLEASE		OF ACRES ASSIGN HIS WELL 40	NED	
	PROPOSED LOCATION TO NE	AREST WELL,	19. PROPOSED DEP	тн	20. ROT	TARY OR CABLE TO	OOLS	
DRILLING, COMP OR APPLIED FOR	, ON THIS LEASE, FT.	1320'	8800	,,		Rotary		
21. ELEVATIONS (She	w whether GR or KB)	1020			2	2. APPROX. DATE	WORK WILL S	START
	370	6' GL				Spud 11/8	39	
23.		PROPOSED CA	SING AND CEME	ITING PROGE	AM			
SIZE OF HOLE	E SIZE OF CAS	ING WE	GHT PER FOOT	SETTING D	ЕРТН	QUANTITY OF	CEMENT /	3
17-1/2"	13-3/8"	5	4.5#	680'		940 cuft	CIKCULA	14
		2165'		1100 cul	1			
7-7/8"	5-1/2"		7#	8800'		1900 cu	ft	

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Pursuant to the "Onshore Oil and Gas Order #1" attachments are as follows:

1. Certified Location Plat

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- 2. Drilling Plan with attachments
- 3. Surface Use Plan with attachments

APPROVAL SUBJECT TO GLINIDAL PEQUIREMENTS AND SPECIFIC STIPULATIONS ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. M. Z. Zll	TITLE Aceq	Drilling	Engineer	DATE 10/17/89
(This space for Federal or State Use)				······································
PERMIT NO	APPROVAL DATE			
APPROVED BY Sauer-it're Forenta	TITLE	**************************************		DATE 16 24.19

CONDITIONS OF APPROVAL, IF ANY:

#### \*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly to make to any department or agency of the United States any false, ficticious or fraudulent statements or representations as to any matter within its jurisdiction. Submit to Appropriate -District Office State Lease - 4 copies Fee Lease - 3 copies

DISTRICT I P.O. Box 1980, Hobbs, NM 88240

DISTRICT II P.O. Drawer DD, Artesia, NM 88210

State of New Mexico Energy, Minerals and Natural Resources Department

## **OIL CONSERVATION DIVISION**

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410

## WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator			Lease		Well No.
ARCO Oi	1 & Gas Com	pany	Baish Federal	L	4
Unit Letter	Section	Township	Range	County	
G	9	18 South	31 East	NMPM Ed.	dv
Actual Footage Los	cation of Well:	- ·· <b>I</b> ·· · <u></u>	I		
1980	feet from the	North lin	e and 1980	feet from the East	line
Ground level Elev.		ing Formation	Pool		Dedicated Acreage:
3706.	$\circ \mid B$	one Spring	North Shugart	-	40 Acres
1. Outlin			ored pencil or hachure marks on the plat		1 10 Acies
2. If mo	ere than one lease is d	edicated to the well outline e	ach and identify the ownership thereof	(both as to working interest and	mualty)
	ation, force-pooling,		d to the well, have the interest of all ov	vners been consolidated by corr	munitization,
			yes" type of consolidation		
If answe			ch have actually been consolidated. (U	se reverse side of	
	n if neccessary.				
No allow or until	a non-standard unit, o	d to the well until all interests eliminating such interest, has l	have been consolidated (by communiti been approved by the Division.	zation, unitization, forced-pooli	ng, or otherwise)
				OPERA	TOR CERTIFICATION
	l l				certify that the information
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## **DRILLING PLAN**

Attach to APD Form 3160-3

Operator:	ARCO Oil & Gas Company
Lease & Well No.:	Baish Federal #4
Location:	Unit Letter G Section 9, T18S, R31E Eddy County, New Mexico Development Well <u>XX</u> Exploratory Well
1 0 1	

- 1. See Acreage Dedication Plat Form C-102.
- 2. See Form 3160-3 for elevation above sea level of unprepared location.
- 3. The geological name of the surface formation is as follows: Querecho Plains Aeolian material wirth loose sandy loams and commonly harbor calcareous gravels.
- 4. The type of drilling tools and associated equipment to be utilized will be rotary.
- 5. The proposed drilling depth will be 8800'.
- 6. The estimated tops of important geological markers are as follows:

Top of Salt	690'
Base of Salt	2100'
Yates	2100'
Queen	3170'
Grayburg	3850'
San Andres	4200'
Bone Spring	5500'
Bone Spring 2nd Carbonate	7700'
Bone Spring 2nd Sand	7900'

7. The estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

Bone Spring 2nd Carbonate	7800-7900'
Bone Spring 2nd Sand	8280-8550'

- 8. The proposed casing program including the size, grade and weight/foot of each string has been indicated on form 3160-3.
- 9. See form 3160-3 for amount of cement.

10. A diagram of pressure control equipment is attached. Additional information about the pressure control equipment and testing/maintenance is as follows:

#### 13-3/8" casing :

Size:	13-5/8" 3000 psi WP double ram Hydraulic with annular and rotating head.
Pressure Rating:	3000 psi WP, 6000 psi test.
Testing procedure:	Pressure test against 13-3/8" casing to 1000 psi prior to drilling out casing.
Testing frequency:	Pressure test upon installation. Operational checks daily and on all trips. Kill lines to be flushed after cementing.

### 8-5/8" casing:

Size:	13-5/8" or 11" 3000 psi WP double ram Hydraulic with annular.
Pressure Rating:	3000 psi WP, 6000 psi test.
Testing procedure:	Pressure test all BOPE to rated WP using an independent testing company.
	Annular to be tested to 1500 psi.
Testing frequency:	Pressure test upon installation. Operational checks daily and on all trips.

11. The type and characteristics of the proposed drilling fluids are as follows:

Surf-680'	Fresh water Spud mud 8.6 ppg
680-2165'	Saturated Brine (NaCl) Water 10 ppg
2165-7000'	Fresh water 8.6 ppg
7000-PTD	Fresh water gel/polymer 8.6-9.3 ppg

12. The testing logging and coring program is as follows:

Drill Stem Test: None

OH Logs: GR-DLL-MSFL TD-2200' GR-CNL-LDT-Cal TD-2200'

Coring: None

- 13. There are no abnormal temperatures or pressures anticipated.
- 14. The anticipated starting date (Construction) will be November 20, 1989 pending all appropriate permits and ROW's. The estimated completion date is approximately January 19, 1990.
- 15. The auxiliary equipment to be used will consist of the following:
  - Kelly Cocks and sub to be on floor with full opening valve to be used when needed.
  - A mud logging unit is to be used from 7000' to PTD.
- 16. H2S detection and survival equipment to be rigged up prior to drilling out intermediate casing at 2165'.

## **Multi-Point Surface Use and Operations Plan**

Operator:	ARCO Oil & Gas Company
Lease & Well No.:	Baish Federal #4
Location:	Unit Letter G Section 9, T18S, R31E Eddy County, New Mexico Development Well <u>XX</u> Exploratory Well

#### 1. Existing Roads:

- a. Exhibit "A" is a portion of a map with highways showint the location of the proposed well as staked. Go West from Hobbs, New Mexico on Carlsbad Highway #180 to Highway#529. Turn right (West) on Highway #529 and procede to the intersection of Highway's #529 and #82. Turn left on Highway #82 and procede West for approximately 0.2 miles to Eddy County Road #222. Turn left on CR #222 & procede South 3.2 miles to highway intersection. Turn left & procede East Northeast 0.75 miles. Turn right & procede South 0.55 miles to location.
- b. Exhibit "A" also shows all existing roads within a three (3) mile radius of the wellsite and the planned access road.

#### 2. Planned Access Roads:

- a. 1062' of new road 12' wide will be required.
- b. Turnouts: None
- c. Culverts: None
- d. Cuts & fills: None
- e. Gates & Cattleguards: None

### 3. Location of Existing Wells:

a. Existing wells within a two mile radius are shown in exhibit "B".

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

a. The proposed surface facilities will consist of a pumping unit and flow line to the existing facilities located on the wellsite of the Baish Federal #2.

### 5. Location and Type of Water Supply:

a. Fresh and brine water will be purchased. The fresh water will be purchased from Double EAgle Pipeline and the City of Carlsbad, New Mexico. A fresh water line located near the lease will be tapped and piped to water tanks on the drill pad. The brine water will be purchased from an independent contractor in Loco Hills, New Mexico.

#### 6. Source of Construction Materials:

a. Road and well pad construction materials will be furnished by a contractor, and any caliche permits or royalties to be paid will be the responsibility of the contractor. The contractor is not selected as of this date. Caliche will be purchased from a federally approved caliche pit located in the NE/4 of the NW/4 of Sec 15, T18S, R31E, Eddy County, New Mexico. If the pit locatioon and ownership are changed, ARCO will notify the BLM by letter.

#### 7. Methods of Handling Waste Disposal:

- a. Drill cuttings will be disposed in the reserve pit.
- b. Drilling fluids will be disposed of by: Hauling the free liquids off of the reserve pit and disposing in a permitted SWD. Remaining fluids will be allowed to evaporate in the drilling pit until the pit is dry. Netting will be placed over the reserve pit during the evaporation period to prevent the entry of any birds.
- c. Water produced during tests will be disposed of in the drilling pit. Oil produced during tests will be stored in test tanks until sold.
- d. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- e. Trash, waste paper, garbage and junk will be contained in a covered dumpster to prevent scattering by the wind and hauled to a municipal sanitary landfill. The location of the dumpster is shown in exhibit "C".
- f. All trash and debris will be buried or removed from the wellsite within 30 days after the conclusion of drilling and/or completion operations.

#### 8. Ancillary Facilities:

a. None.

### 9. Wellsite Layout:

- a. Exhibit "C" shows the relative location and dimensions of the well pad, mud pits, reserve pit, trash pit and the location of major rig components.
- b. No significant cuts or fills will be required.
- c. The reserve pit will be plastic lined.
- d. The pad and pit areas have been staked and flagged.

#### 10. **Plans for Restoration of the Surface:**

- a. After completion of drilling and/or completin operations, all equipment and other material not needed for operations will be removed. Pits will be filled and the location cleaned of all trash and junk in order to leave the wellsite in an aesthetically pleasing condition as possible.
- b. Any unguarded pits containing fluids will be fenced until they are filled.

c. After abandonment of the well, surface restoration will be in accordance with BLM rules and requirements and will be accomplished as expediently as possible.

#### 11. Other Information:

- a. Topography: Stabilized sand dunes less than one meter high in the Querecho plains.
- b. Soil: Loose non-calcareous, sandy loams & loamy sands.
- c. Flora & Fauna: The vegatative cover is Mesquite, Shinnery Oak, Plains Yucca, Southwest Rabbit Brush, Broom Snakeweed, Russina Thistle, Desert Seep Weed. Grasses are Needle and Thread, Mesa Drop Seed, Sandy Muhly, Poverty Three-awn, Plains Bristle Grass, Sand Blue Stem and Plains Love Grass. The fauna consists of rabbits, coyotes, hawks, reptiles, quail, sond birds, rodents and snakes.
- d. Ponds & Streams: None.
- e. Residences & Structures: None.
- f. Land Use: Grazing and hunting in season, oil & gas production.
- g. Surface ownership: Wellsite is on the Bureau of Land Management surface with a grazing permit to:
  - Caviness Cattle Company East Star Route Maljamar, New Mexico 88264

#### 12. **Operators Representative:**

Address: Office Phone:

Home Phone:

The field representatives responsible for assuring compliance with the approved surface use operations plan is as follows:

Name:	J. E. Shields
Address:	P. O. Box 1610, Midland, TX, 79702
Office Phone:	915/688-5674
Home Phone:	915/381-0233
Name:	M. W. Gore

M. W. Gore P. O. Box 1610, Midland, TX, 79702 915/688-5678 915/699-6203

### 13. Certification:

I Hereby certify that I, or persons under my direct supervision have inspected the proposed drillsite and access route: That I am familiar with the conditions which presently exist and the statements made in this plan are to the best of my knowledge are true and correct: and that the work associated with the operations herein will be performed by ARCO Oil & Gas, a Division of The Atlantic Richfield Company and its contractors & subcontractors, in conformity with this plan and the terms and conditions under which it is approved.

M. E. Ellis Area Drilling Engineer

Date



# **Baish Federal #4**

13-5/8" or 11" 3000 psi WP stack On 8-5/8" casing to drill from 2165-8800'



## **Baish Federal #4**

**Choke Manifold** 

3000 psi WP (or greater) To be installed on 13-3/8" casing and 8-5/8" casing

Adjustable Choke





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