API = 30-025-32318

Form 3160-3
(November 1983)
(formerly 9-331C)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: ARCO Oil and Gas Company

3. ADDRESS OF OPERATOR: P.O. Box 1610. Midland, Texas 79702 Phone. 915-688-5672

4. LOCATION OF WELL (Report clearly and in accordance with any State requirements.)
At surface: 1500' FNL & 1550' FEL (Unit Letter G)
At proposed Prod. zone: Approximately the same

5. LEASE DESIGNATION AND SERIAL NO.: NM-4355

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: - - -

7. UNIT AGREEMENT NAME: South Justis Unit

8. FARM OR LEASE NAME: South Justis Unit 'C'

9. WELL NO.: 120

10. FIELD AND POOL, OR WILDCAT: Justis Blinebry Tubb Drinkard

11. SEC., T., M., OR BLK. AND SURVEY OR AREA: 11-T25S-R37E

13. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 4.0 miles east of Jal, New Mexico

12. COUNTY: Lea

13. STATE: NM

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. line, if any): 180'

16. NO. OF ACRES IN LEASE: 5360

17. NO. OF ACRES ASSIGNED TO THIS WELL: 40

18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: 1100'

19. PROPOSED DEPTH: 6,200'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether GR or KB): 3130' GR

22. APPROX. DATE WORK WILL START: Spud 3/94

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT ft^3
20"	13-3/8"	48.0#	40'	50 cu ft CIRCULATE
12-1/4"	8-5/8"	24.0#	1000'	825 cu ft
7-7/8"	4-1/2"	10.5#	6200'	3,200 cu ft

Subject well is planned as a 6200' MD (6200' TVD) straight well. 3M psi BOPE will be used from 1000' to TD. Attachments are as follows:

1. Certified Location Plat
2. Drilling Plan with Attachments 1-3
3. Surface Use Plan with Attachments 3-9

Previously submitted by AOGC to BLM:

1. Archaeological Survey of The South Justis Waterflood Project
2. Preliminary Project Report South Justis Unit
3. Unit Agreement South Justis Unit

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 preventor program, if any.

24.
SIGNED Johnny Sheets TITLE DRILLING TEAM LEADER DATE 10/12/93

(This space for Federal or State Use)

PERMIT NO _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY: UNORTHODOX LOCATION IS:

Approval Subject to ... requirements and ...

*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

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
ARCO OIL AND GAS COMPANY	South Justis Unit "C"	120

Unit Letter	Section	Township	Range	County
G	11	25 S	37 E NMPM	Lea

Actual Footage Location of Well:
1500 feet from the North line and 1550 feet from the East line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3130'	Blinebry-Tubb-Drinkard	Justis	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

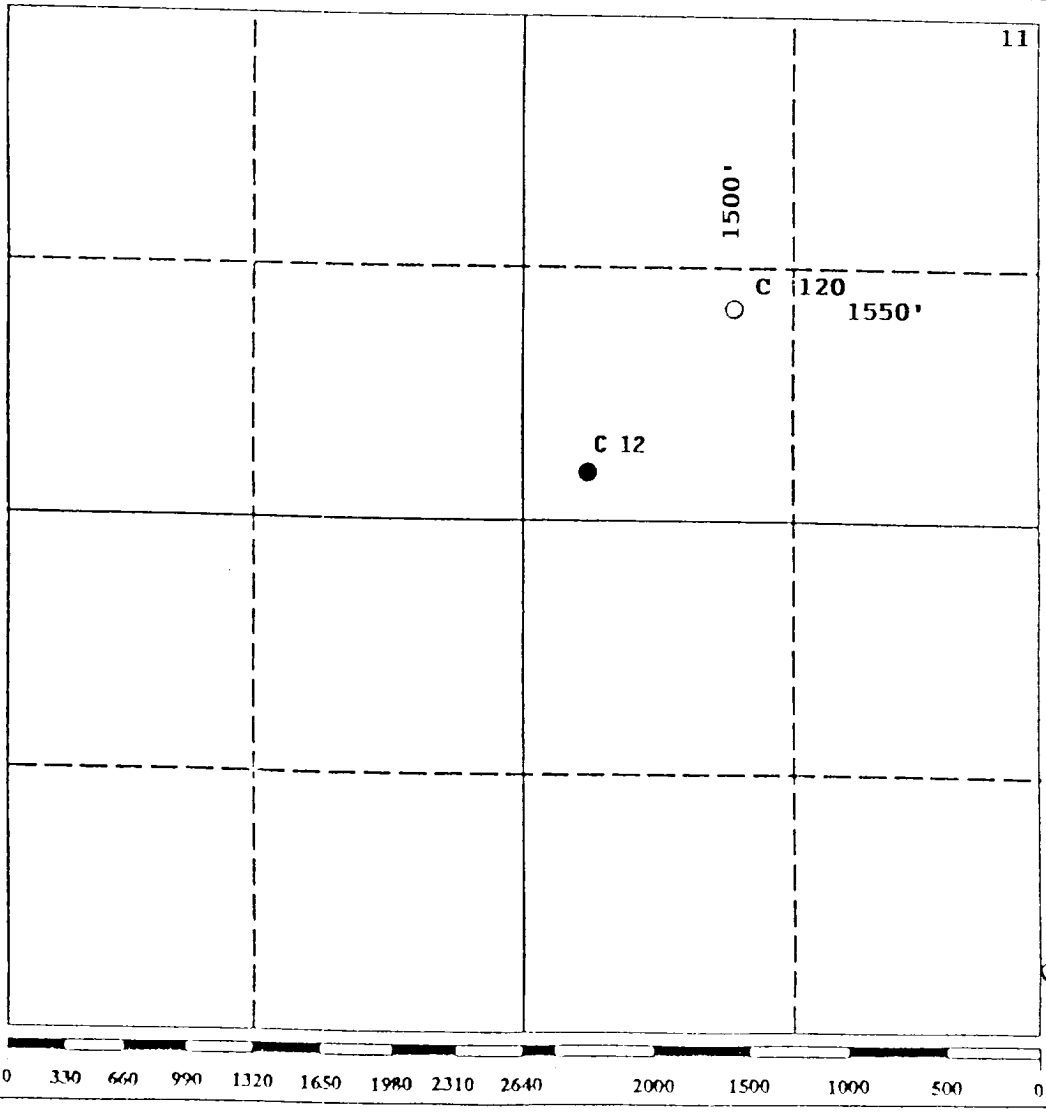
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature: Johnny Shields
Printed Name: Johnny Shields
Position: Drilling Team Leader
Company: ARCO Oil & Gas Company
Date: 10-13-93

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: Sept. 11, 1993
Signature & Seal of Professional Surveyor

Certificate No. 648

DRILLING PLAN

Attach to BLM Form 3160-3
ARCO Oil and Gas Company
Well: South Justis Unit C-120
1500' FNL & 1550' FEL
Section 11-T25S-R37E
Lea County, New Mexico

1. **Surface Geological Formation**

Ogallala Formation of late Tertiary age.

2. **Estimated Tops of Geological Markers**

Formation	TVD
Salt	1000'
Yates	2275'
Queen	2975'
Grayburg	3100'
San Andres	3550'
Glorietta	4625'
Blinebry	5000'
Tubb	5675'
Drinkard	5875'

3. **Estimated Tops of Possible Water, Oil, Gas or Minerals:**

Sands above 1000'	Water *
Yates	Gas**
Blinebry	Oil or Gas**
Tubb	Oil or Gas**
Drinkard	Oil or Gas**

* Groundwater will be protected by 8-5/8" surface casing cemented to surface.
** Productive horizons will be protected by 4-1/2" production casing cemented to surface.

4. **Pressure Control Equipment**

Interval, TVD	Pressure Control Equipment
0' - 1000'	No pressure control required
1000' - 6200'	11", 3M psi double ram preventer with 3M psi annular preventer.

Exhibits 1, 2, and 3 show the BOP stack arrangement, the choke manifold arrangements and the BOP specifications, respectively. The BOPE will be hydraulically tested per BLM requirements outlined by Onshore Oil and Gas Order No. 2. Pipe rams and blind rams will be functioned on each trip out of the hole. The annular preveneter will be functioned once a week. All BOPE checks and tests will be witnessed by ARCO's representative and will be noted on the IADC daily drilling report. Accessories to BOPE will include an upper kelly cock, lower kelly cock, and floor safety valve all with pressure rating equivalent to the BOP stack.

5. **H2S Contingency Plan**

Exhibit "10" shows the H2S Contingency Plan as a guideline for all company and contractor personnel in the field who may be exposured to H2S. It explains the emergency procedure, the equipment requirement (i.e. H2S detector, resque equipment, etc.) and the proper evacuation procedure.

6. **Proposed Casing and Cementing Program**

	Hole Size	Interval, MD	Casing Size	Weight & Grade
Conductor	20"	0 - 40'	13-3/8"	48.0# H-40
Surface	12-1/4"	0 - 1000'	8-5/8"	24.0# J-55
Production	7-7/8"	1000'-6200'	4-1/2"	10.5# J-55

Cement Program: (Actual volumes will be based on caliper log when available)

Conductor - Cement to surface with redimix.

Surface - Cemented to surface with total of ±825 cu ft as follows:
Lead Slurry - ±300 sks Pacesetter Lite 65/35/6 C/Poz/Gel + 2% CaCl2 + 1/4 pps Cello-Seal
Tail Slurry - ±200 sks Class "C" + 2% CaCl2 + 1/4 pps Cello-Seal

Production - Cement to surface with total of ±3200 cu ft as follows:
Option 1: If no loss circulation occurs or loss is controlled.
Lead Slurry - ±1175 sks Super C 44/20/20 C/Poz/CSE + 0.5% Thrifty Lite 1/4 pps Cello-Seal
Tail Slurry - ±300 sks Cl "C" + 12 pps CSE + 1 pps WL-1P + 0.3% CF-2 + 1/4 pps Cello-Seal + 3 pps Hi-Seal

Option 2: If loss circulation is severe then a DV Tool will be set at ±3250'
Stage 1 - Lead Slurry - ±400 sks Pacesetter Lite 65/35/6 C/Poz/Gel 3% salt
Tail Slurry - ±300 sks Cl "H" + 8 pps CSE + 0.6% CF-14 + 0.35% Thrifty Lite
Stage 2 - Lead Slurry - ±900 sks Pacesetter Lite 65/35/6 C/Poz/Gel + 3% salt
Tail Slurry - ±100 sks Cl "C" Neat

7. **Mud Program**

Depth	Mud Type	Weight ppg	Funnel Viscosity	Water Loss
0 - 1000'	Spud Mud	8.4 - 8.9	29-32	NC
1000' - 4850'	SBW	±10.0	29-32	NC
4850' - 6200'	SWG	±10.0	32-34	<15

8. **Auxiliary Equipment**

Upper Kelly Cock, Lower Kelly Cock, and Full Opening Stabbing Valve

9. **Testing, Coring and Logging Program**

A. Drill Stem Tests - None planned.

B. Coring - None planned.

C. Logging - No mud logging planned

D. Electric Logs

Open Hole

Interval: TD - 4500' with GR-CAL to surface casing on one run
GR-Spectralog/Compensated z-Densilog/Sidewall Epithermal Neutron/Caliper
GR/Dual Laterolog/Micro Laterolog/Caliper

Cased Hole

Temperature Survey (if cement not circulated on Production Csg)

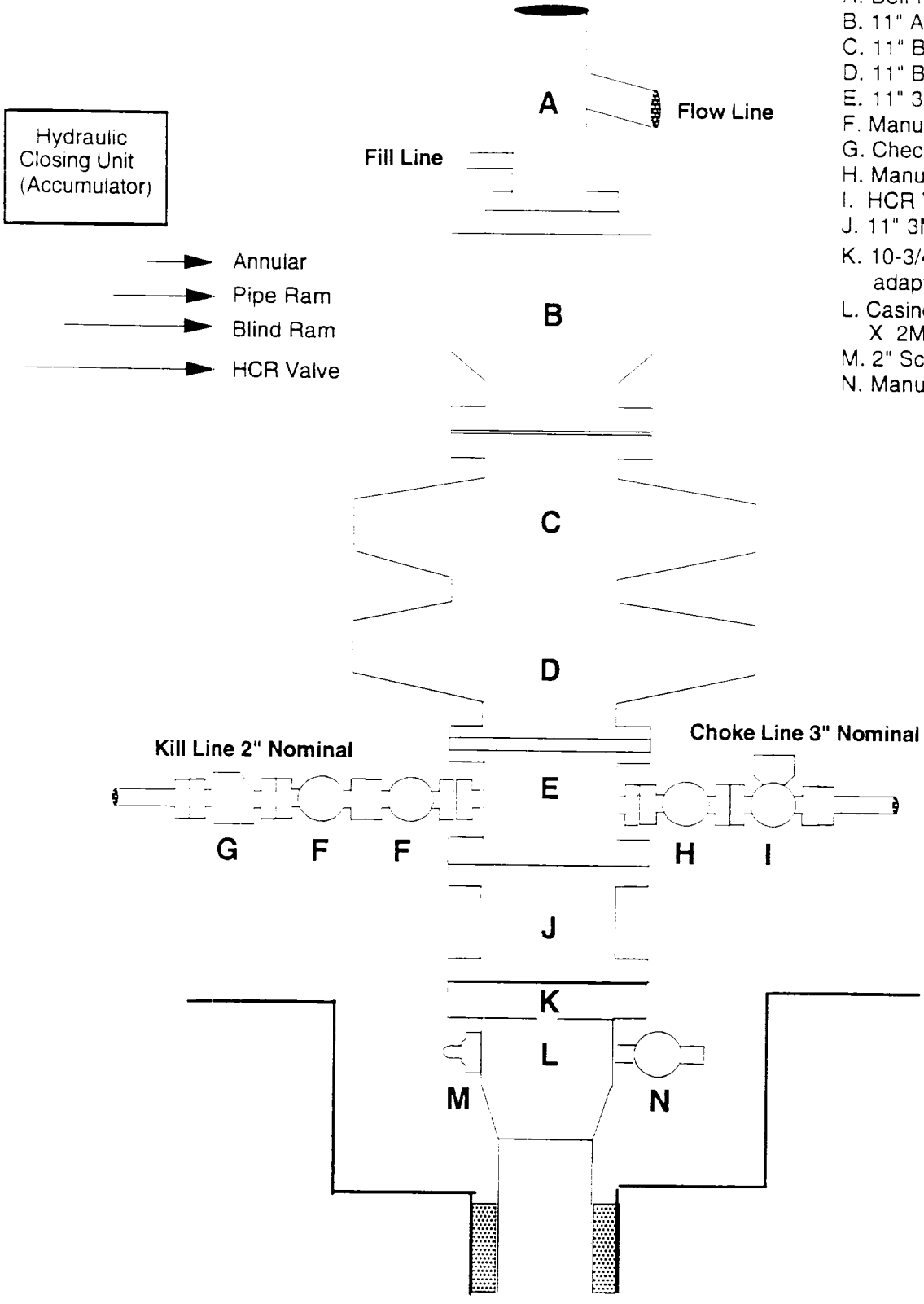
10. **Anticipated Abnormal Temperature, Pressure, or Hazards**

Possible lost circulation at ±975' in anhydrite section. Seepage and lost circulation is expected starting in the Queen Formation and continuing through the Glorietta (3000'-5000').

11. **Anticipated Starting Date and Duration of Operations**

Pending favorable weather and permit approval, construction work on this location is planned to begin in January, 1994. Construction work will require 4 days, move-in and rig up rotary tools, 1 day, drill and complete, 21 days. It is planned to spud the well in March, 1994.

EXHIBIT 1
BOP ARRANGEMENT
ARCO OIL & GAS CO.
SOUTH JUSTIS UNIT WELLS



A. Bell Nipple
B. 11" Annular Preventer, 3M psi
C. 11" BOP Pipe Rams, 3M psi
D. 11" BOP Blind Rams, 3M psi
E. 11" 3M psi Drilling Spool
F. Manual Gate Valve 2-1/16"
G. Check Valve 2-1/16"
H. Manual Gate Valve 3-1/16"
I. HCR Valve 3-1/16"
J. 11" 3M psi Spacer Spool
K. 10-3/4" Screw on X 11" 3M psi adaptor flange
L. Casing Head 8-5/8" SOW X 2M psi Larkin-Type
M. 2" Screw In Bull Plug
N. Manual Ball Valve 2-1/16" 2M