

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-104
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator Name and Address Devon Energy Corporation (Nevada) 20 N. Broadway, Suite 1500 Oklahoma City, Oklahoma 73102		² OGRID Number 6137
		³ Reason for Filing Code NW
⁴ API Number 30-015-29347	⁵ Pool Name GRAYBURG JACKSON SR-Q-G-SA	⁶ Pool Code 28509
⁷ Property Code	⁸ Property Name H. E. West "B"	⁹ Well Number 95

II. ¹⁰ Surface Location

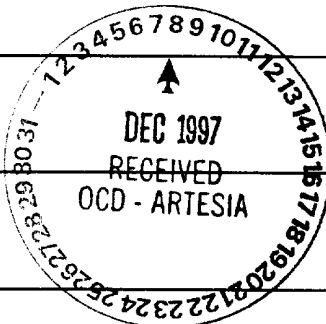
UI or lot no. F	Section 4	Township 17S	Range 31E	Lot.Idn	Feet from the 1780	North/South Line N	Feet from the 1980	East/West Line W	County EDDY CO., NM
--------------------	--------------	-----------------	--------------	---------	-----------------------	-----------------------	-----------------------	---------------------	------------------------

¹¹ Bottom Hole Location

UI or lot no.	Section	Township	Range	Lot.Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
¹² Lse Code F	¹³ Producing Method Code		¹⁴ Gas Connection Date		¹⁵ C-129 Permit Number		¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address WIW	²⁰ POD	²¹ O/G	²² POD ULSTR Location and Description Post FD-3 3-13-98 Post to WIW



IV. Produced Water

²³ POD	²⁴ FOD ULSTR Location and Description
-------------------	--

V. Well Completion Data

²⁵ Spud Date 10/14/97	²⁶ Ready Date 11/6/97	²⁷ TD 3980'	²⁸ PBSD 3943'	²⁹ Perforations 3146'-3922'
³⁰ Hole Size 12 1/4"	³¹ Casing & Tubing Size 8 5/8"	³² Depth Set 562'		³³ Sacks Cement 200 sx POZ "C" + 200 sx "C"
7 7/8"	5 1/2"	3979'		925 sx POZ "C" + 250 sx "H"
	2 3/8"	3108'		

VI. Well Test Data

³⁴ Date New Oil 11/19/97	³⁵ Gas Delivery Date	³⁶ Test Date	³⁷ Test Length	³⁸ Tbg. Pressure	³⁹ Csg. Pressure
⁴⁰ Choke Size	⁴¹ Oil	⁴² Water	⁴³ Gas	⁴⁴ AOF	⁴⁵ Test Method

"I hereby certify that the rules of the Oil Conservation division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: *Karen Byers*
Printed Name: Karen Byers
Title: Engineering Technician
Date: 12/5/97 Phone: (405) 552-4527

OIL CONSERVATION DIVISION

Approved by: *[Signature]*
Title: *[Signature]*
Approval Date: *12-18-97*

⁴⁶ If this is a change of operator fill in the OGRID number and name of the previous operator

Previous Operator Signature	Printed Name	Title	Date
-----------------------------	--------------	-------	------

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE*

FORM APPROVED

d51

(See other instructions on reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL:		OIL WELL <input type="checkbox"/>	GAS WELL <input type="checkbox"/>	DRY <input type="checkbox"/>	N.M. Oil Cons. Division		
b. TYPE OF COMPLETION:		NEW WELL <input checked="" type="checkbox"/>	WORK OVER <input type="checkbox"/>	DEEP-EN <input type="checkbox"/>	PLUG BACK <input type="checkbox"/>	DIFF. RESRV <input type="checkbox"/>	811 S 1st Street Al Other NM 85210-2834
2. NAME OF OPERATOR DEVON ENERGY CORPORATION (NEVADA)							
3. ADDRESS AND TELEPHONE NO. 20 N. BROADWAY, SUITE 1500, OKC, OK 73102-8260 (405) 235-3611							
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements) At surface 1780' FNL & 1980' FWL At top prod. interval reported below (SAME) At total depth (SAME)							
15. DATE SPUDDED 10/14/97		16. DATE T.D. REACHED 10/20/97		17. DATE COMPL. (Ready to prod.) 11/6/97		18. ELEVATIONS (DF, RKB, RT, GR, ETC.) 3932' GL	
20. TOTAL DEPTH, MD & TVD 3980'		21. PLUG, BACK T.D., MD & TVD 3943'		22. IF MULTIPLE COMPL., HOW MANY*		23. INTERVALS DRILLED BY →	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* Middle & Lower Jackson 3710'-3922'; Grayburg - Lovington 3146'-3605'						25. WAS DIRECTIONAL SURVEY MADE No	
26. TYPE ELECTRIC AND OTHER LOGS RUN Azimuthal Laterolog/MCFL/GR; Three Detector Density/CN/GR; CBL						27. WAS WELL CORED No	
28. CASING RECORD (Report all strings set in well)							
CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	BOLE SIZE	TOP OF CEMENT, CEMENTING RECORD		AMOUNT PULLED	
8 5/8" J-55	24	562'	12 1/4"	Surf, 200 sx "C" POZ + 200 sx		None	
				"C"			
5 1/2" J-55	15.5	3979'	7 7/8"	Surf, 925 sx "C" POZ + 250 sx H		None	
29. LINER RECORD							
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2 3/8"	3108'	3111'
31. PERFORATION RECORD (Interval, size and number) Middle & Lower Jackson 3710'-3922' (25 - 40" holes) Grayburg-Lovington 3146'-3605' (33 - 40" holes)				32. ACID SHOT, FRACTURE, CEMENT SQUEEZE, ETC.			
				DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED		
				3788'-3922'	Acidized w/1875 gals 15% HCl acid.		
				3710'-3733'	Acidized w/1250 gals 15% HCl acid.		
				3493'-3605'	Acidized w/1125 gals 15% HCl acid.		
				3146'-3446'	Acidized w/3125 gals 15% HCl acid.		
33.* PRODUCTION							
DATE FIRST PRODUCTION 11/19/97		PRODUCTIONS METHOD I (Flowing, gas lift, pumping—size and type of pump)					WELL STATUS (Producing or shut-in) Injecting
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N FOR TEST PERIOD	OIL-BBL.	GAS-MCF.	WATER-BBL.	GAS-OIL RATIO
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	→	OIL-BBL.	GAS-MCF.	WATER-BBL.	OIL GRAVITY-API (CORR.) 0
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)							
35. LIST OF ATTACHMENTS Deviation survey & logs							
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records							
SIGNED <u>Karen Byers</u>				TITLE <u>ENGINEERING TECHNICIAN</u> DATE <u>12/5/97</u>			

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes 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.

[illegible]

Deviation surveys taken on Devon Energy Operating Corporation's West B #95 well in Eddy County, New Mexico:

<u>Depth</u>	<u>Degree</u>
190	.50
382	1.00
563	1.00
1046	.25
1515	1.00
2014	.75
2511	.75
3011	1.75
3263	2.00
3545	2.00
3980	2.50

I hereby certify that I have personal knowledge of the facts placed on this sheet and that such information given above is true and complete.



Norton Drilling Company

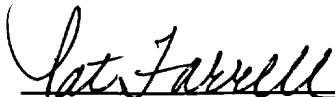
Before me, the undersigned authority, on this day personally appeared John W. Norton, known to me to be the person whose name is subscribed hereto, who, after being duly sworn, on oath states that he is the drilling contractor of the well identified in this instrument and that such well was not intentionally deviated from the vertical whatsoever.



John W. Norton

SWORN AND SUBSCRIBED TO before me this 27th day of October 1997.





Notary Public in and for
Lubbock County, Texas

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

1004-0135
10-2834M APPROVED
Expires March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
DEVON ENERGY CORPORATION (NEVADA)

3. Address and Telephone No.
20 NORTH BROADWAY, SUITE 1500, OKLAHOMA CITY, OKLAHOMA 73102 (405) 235-3611

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1780' FNL & 1980' FWL, Sec. 4-17S-31E

5. Lease Designation and Serial No. LC-029426-B
6. If Indian, Allottee or Tribe Name
7. If Unit or CA, Agreement Designation
8. Well Name and No. H. E. West "B" #95
9. API Well No. 30-015-29347
10. Field and Pool, or Exploratory Area Grayburg Jackson
11. County or Parish, State Eddy County, NM

CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other Spud, TD'd & set casing
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spud well @ 3:15 p.m. on 10/14/97.

Ran surface casing as follows: 13 jts of 8 5/8", 24#, J-55, STC, 8rd; set @ 562'.

Cemented casing as follows: Lead - 200 sx 35/65 "C" POZ w/6% gel, 2% CaCl₂ & 1/4 #/sk celloflake, (wt 12.7 ppg, yield 1.87 cft/sk). Tail - 200 sx "C" w/2% CaCl₂, (wt 14.8 ppg, yield 1.32 cft/sk). Circ'd cement to surface.

Reached TD of 3980'.

Ran production casing as follows: 89 jts of 5 1/2", 15.5#, J-55, LTC, 8rd; set @ 3979', float collar @ 3943'.

Cemented casing as follows: Lead - 925 sx 35/65 "C" POZ w/4% gel, 5% salt & 1/4 #/sk celloflake, (wt 13.0 ppg, yield 1.75 cft/sk). Tail - 250 sx "H" w/10% A10-B, 5% salt & 1/4 #/sk celloflake, (wt 14.5 ppg, yield 1.57 cft/sk). Circ'd cement to surface.

14. I hereby certify that the foregoing is true and correct

Signed Karen Byers
(This space for Federal or State office use)

Karen Byers

Title Engineering Technician

Date 10/21/97

Approved by _____
Conditions of approval, if any:

Title _____

ACCEPTED FOR RECORD
Date <u>NOV 05 1997</u>

Title 18 U.S.C. Section 1001, makes 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 matter within its jurisdiction.

*See Instruction on Reverse Side

RECEIVED

1991 OCT 23 A 4:42

BUREAU OF LAND MANAGEMENT
ROSOWELL OFFICE

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
N. M. Oil Cons. Division
8 H. E. West "B" 95
SUBMIT IN
(See other instructions)
134

Form approved.

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK: DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. LC 029426-B																
b. TYPE OF WELL: OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> Other <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME NA																
2. NAME OF OPERATOR DEVON ENERGY CORPORATION (NEVADA)		7. UNIT AGREEMENT NAME NA																
3. ADDRESS AND TELEPHONE NO. 20 N. BROADWAY, SUITE 1500, OKC, OK 73117 (405) 552-4560		8. FARM OR LEASE NAME, WELL NO. H. E. West "B" 95 20058																
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 1780' FNL & 1980' FWL At top proposed prod. zone (SAME)		9. API WELL NO. 30-015-29347																
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 5.5 miles East & 3.5 miles North of Loco Hills, N.M.		10. FIELD AND POOL, OR WILDCAT GRAYBURG-JACKSON TRUS-GN-26-3A 28509																
15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. 660' (Also to nearest drile unit line if any)		11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA SECTION 4-T17S-R31E																
16. NO. OF ACRES IN LEASE 1919.88		12. COUNTY OR PARISH EDDY																
17. NO. OF ACRES ASSIGNED TO THIS WELL 40		13. STATE NM																
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 200'		20. ROTARY OR CABLE TOOLS* Rotary																
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3932		22. APPROX. DATE WORK WILL START* February 15, 1996																
23. PROPOSED CASING AND CEMENTING DATA <table border="1"><thead><tr><th>SIZE OF HOLE</th><th>GRADE, SIZE OF CASING</th><th>WEIGHT PER FOOT</th><th>SETTING DEPTH</th><th>QUANTITY OF CEMENT</th></tr></thead><tbody><tr><td>12 1/4"</td><td>8 5/8" J-55</td><td>24.0#</td><td>600'</td><td>125 sk Class "C"</td></tr><tr><td>7 7/8"</td><td>5 1/2" J-55</td><td>15.5#</td><td>4400'</td><td>550 sk Lite cmt + 425 sk Class "B"</td></tr></tbody></table>				SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT	12 1/4"	8 5/8" J-55	24.0#	600'	125 sk Class "C"	7 7/8"	5 1/2" J-55	15.5#	4400'	550 sk Lite cmt + 425 sk Class "B"
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT														
12 1/4"	8 5/8" J-55	24.0#	600'	125 sk Class "C"														
7 7/8"	5 1/2" J-55	15.5#	4400'	550 sk Lite cmt + 425 sk Class "B"														

We plan to circulate cement to surface on all casing strings. Devon Energy Corporation (Nevada) proposes to drill to 4400' to test the Grayburg-Jackson formation for commercial quantities of oil. If the Grayburg-Jackson is deemed non-commercial, the wellbore will be plugged and abandoned per Federal Regulations. Programs to adhere to onshore oil and gas regulations are outlined in the following exhibits and attachments.

Drilling Program

Exhibits #1/1-A = Blowout Prevention Equipment
Exhibit #2 = Location and Elevation Plat
Exhibit #3/3-A = Road Map and Topo Map
Exhibit #4 = Wells Within 1 Mile Radius
Exhibit #5 = Production Facilities Plat
Exhibit #6 = Rotary Rig Layout
Exhibit #7 = Casing Design
H2S Operating Plan

The undersigned accepts all applicable terms, condition, stipulations and restrictions concerning operations conducted on the leased land or portions thereof, as described below:
Lease No. LC029426-B
Legal Description: Section 4-T17S-R31E
Bond Coverage: Nationwide
BLM Bond No.: CO1104

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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

SIGNED Randy JacksonTITLE RANDY JACKSON
DISTRICT ENGINEERDATE 12/18/96

*(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

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 conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY (ORIG. SGD.) TONY L. FERGUSON TITLE ADM, MINERALS DATE 1-23-97

See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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

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

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

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

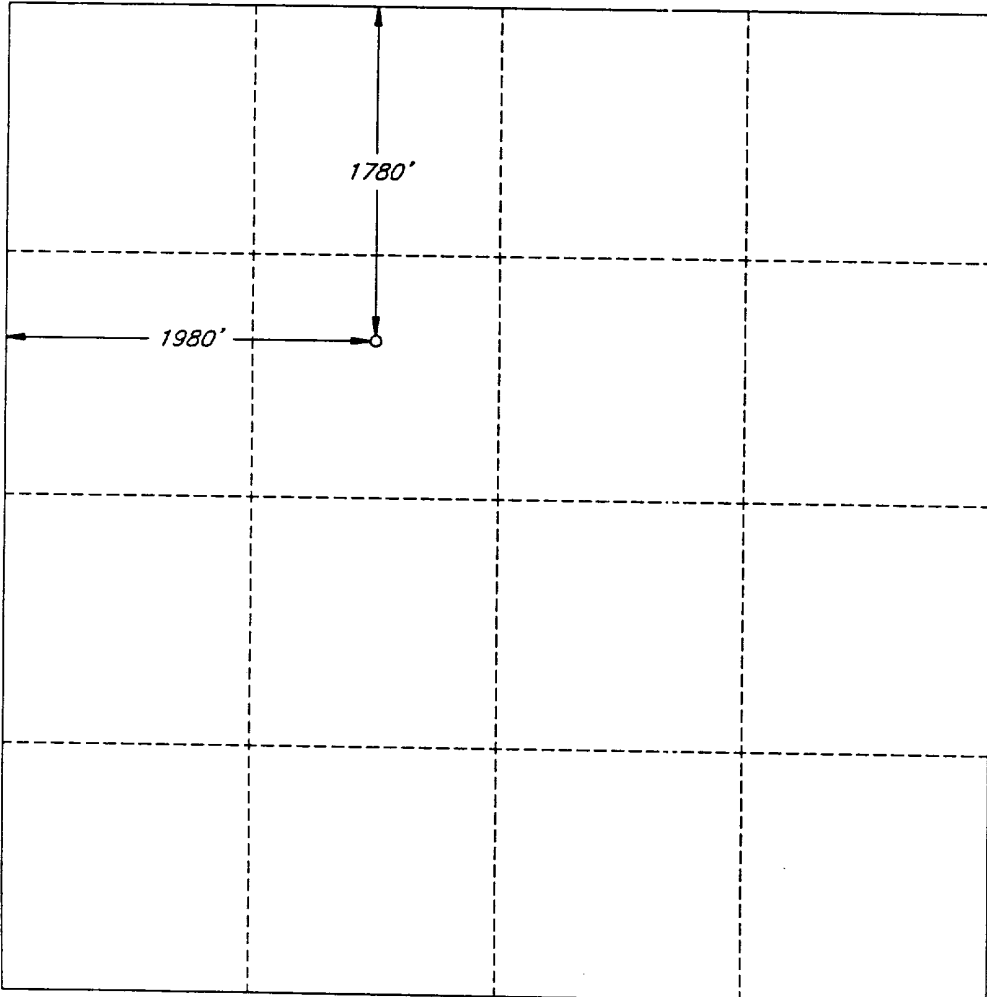
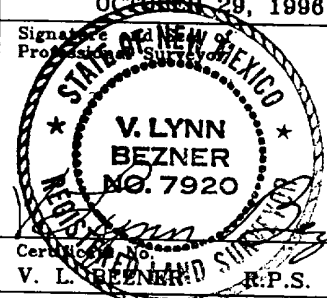
DISTRICT III
1000 Rio Brazos Rd.
Aztec, NM 87410

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

☐ AMENDED REPORT

DISTRICT IV
P. O. Box 2088
Santa Fe, NM 87507-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-29347		2 Pool Code 28509		3 Pool Name GRAYBURG JACKSON (QN, SR, GB, SA)					
4 Property Code 15972 20058		5 Property Name H. E. WEST 'B'					6 Well Number 95		
7 OGRID No. 6137		8 Operator Name DEVON ENERGY CORPORATION (NEVADA)					9 Elevation 3932'		
10 SURFACE LOCATION									
UL or lot no. F	Section 4	Township 17 SOUTH	Range 31 EAST, N.M.P.M.	Lot 1/4	Feet from the 1780'	North/South line NORTH	Feet from the 1980'	East/West line WEST	County EDDY
11 "BOTTOM HOLE LOCATION IF DIFFERENT FROM SURFACE									
UL or lot no.	Section	Township	Range	Lot 1/4	Feet from the	North/South line	Feet from the	East/West line	County
12 Dedicated Acres 40		13 Joint or Infill		14 Consolidation Code		15 Order No.			
NO ALLOWABLE WELL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION									
						OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.			
						Signature <i>Randy Jackson</i>			
						Printed Name Randy Jackson			
						Title District Engineer			
						Date 12/18/96			
						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 supervision, and that the same is true and correct to the best of my belief.			
						Date of Survey OCTOBER 29, 1996			
						Signature <i>V. Lynn Bezner</i>			
						Professional Seal 			
Certificate No. V. L. BEZNER						R.P.S. #7920			
JOB #48104-5 / 98 SE / V.H.B.									

MINIMUM BLOWOUT PREVENTER REQUIREMENTS

3,000 psi Working Pressure

3 MWP

EXHIBIT #1

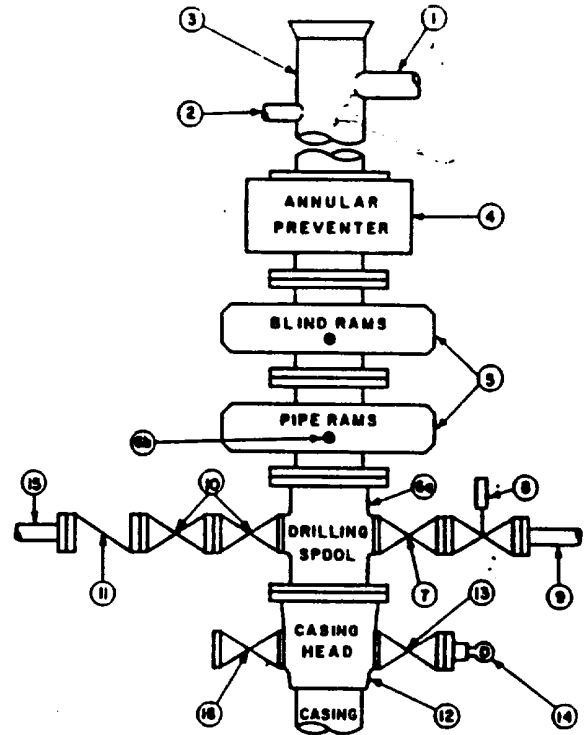
STACK REQUIREMENTS

No.	Item	Min. I.D.	Min. Nominal
1	Flowline		
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above.)		
7	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/>	3-1/8"	
8	Gate valve—power operated	3-1/8"	
9	Line to choke manifold		3"
10	Valves Gate <input type="checkbox"/> Plug <input type="checkbox"/>	2-1/16"	
11	Check valve	2-1/16"	
12	Casing head		
13	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/>	1-13/16"	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

OPTIONAL

16	Flanged valve	1-13/16"	
----	---------------	----------	--

CONFIGURATION A



CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 3,000 psi, minimum.
2. 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 preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. 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:

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

GENERAL NOTES:

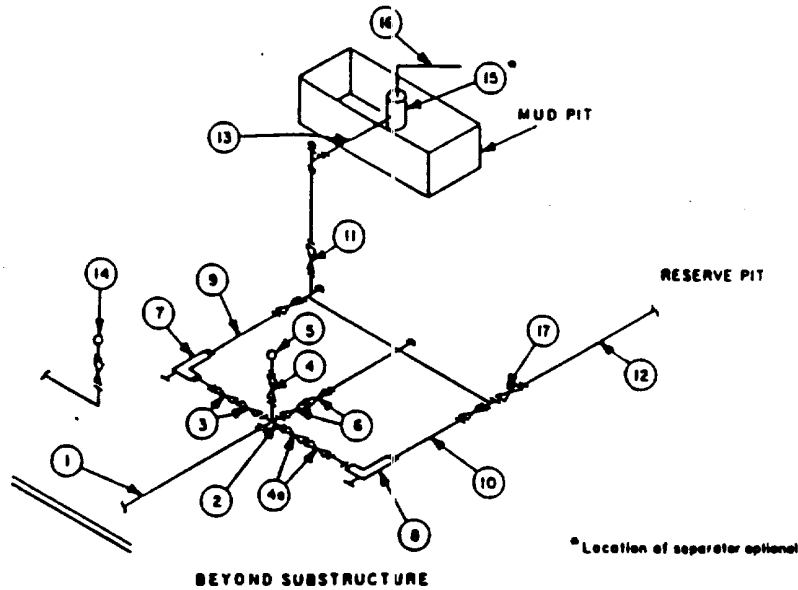
1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke. Valves must be full opening and suitable for high pressure mud service.
3. 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 adjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. 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.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (3000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Do not use kill line for routine fill-up operations.

MINIMUM CHOKE MANIFOLD
3,000, 5,000 and 10,000 PSI Working Pressure

EXHIBIT #1-A

3 MWP - 5 MWP - 10 MWP



MINIMUM REQUIREMENTS										
No.		3,000 MWP			5,000 MWP			10,000 MWP		
		I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING
1	Line from drilling spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3"x3"x3"x2"			3,000			5,000			
	Cross 3"x3"x3"x3"									10,000
3	Valves(1) Gate <input type="checkbox"/> Plug <input type="checkbox"/> (2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
4	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/> (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 <input type="checkbox"/> Plug <input type="checkbox"/> (2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
7	Adjustable Choke(3)	2"		3,000	2"		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 <input type="checkbox"/> Plug <input type="checkbox"/> (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 Gate <input type="checkbox"/> Plug <input type="checkbox"/> (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

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- 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 bull plugged tees.
- Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.