

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000 **DIST. 3**

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM-03566
1b. Type of Well: ☐ Oil Well ☒ Gas Well Gas ☐ Other ☐ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or tribe Name
2. Name of Operator BP AMERICA PRODUCTION COMPANY		7. If Unit or CA Agreement, Name and No
3a. Address P.O. BOX 3092 HOUSTON, TX 77079-2064	3b. Phone No. (include area code) 281-366-3866	8. Lease Name and Well No. Stewart LS 8N
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 2610' FSL & 995' FWL NWSW At proposed prod. Zone 2550' FSL & 700 FWL <i>Lot 12</i>		9. API Well No. 30-045-34040
14. Distance in miles and direction from nearest town or post office* 7 MILES SOUTHEAST FROM AZTEC, NM		10. Field and Pool, or Exploratory Basin Dakota & Blanco Mesaverde
15. Distance from proposed* Location to nearest Property or lease line, ft. (Also to nearest rig. Unit line, if any) 700'		11. Sec., T., R., M., or Blk. and survey or Area SECTION 28 T30N & R10W L
16. No. of Acres in lease 326.64		12. County or Parish SAN JUAN
17. Spacing Unit dedicated to this well 326.64 W/2		13. State NEW MEXICO
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.		19. Proposed Depth 7399' MD
20. BLM/BIA Bond No. on file WY2924		
21. Elevations (show whether DF, KDB., RT, GL, etc.) 6275' GL	22. Approximate date work will start* 04/07/07	23. Estimated duration 7 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see item 20 above).
- Operator certification.
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature <i>Cherry Hlava</i>	Name (Printed/typed) Cherry Hlava	Date 10/23/2006
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Title
Regulatory Analyst

Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFM	Date 12/18/06
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Title AFM	Office PFO
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Application approval does not warrant or certify 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, are attached.

Title 18 U.S.C. Section 1001 and title 43 U.S.C. Section 1212, make 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.

*(Instructions on reverse)

✓ HOLD C104 FOR directional survey

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

NMOCD B 12/22/06

This action is subject to technical and
procedural review pursuant to 43 CFR 3165.3
and 43 CFR 3165.4

RCVD DEC21'06
OIL CONS. DIV.

Form 103

District I
PO Box 1987, Santa Fe, NM 87504-1987
District II
PO Drawn KR, Artesia, NM 87211-0719
District III
PO Box 1987, Santa Fe, NM 87504-1987
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Bureau of Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Revised February 21, 1994

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

2003 OCT 25 PM 7 30

AMENDED REPORT

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number: **30-045-34040** Section: **71599** Township: **12319** Range: **BASIN DAKOTA** East/West line: **BLANCO** County: **MESAVERDE**

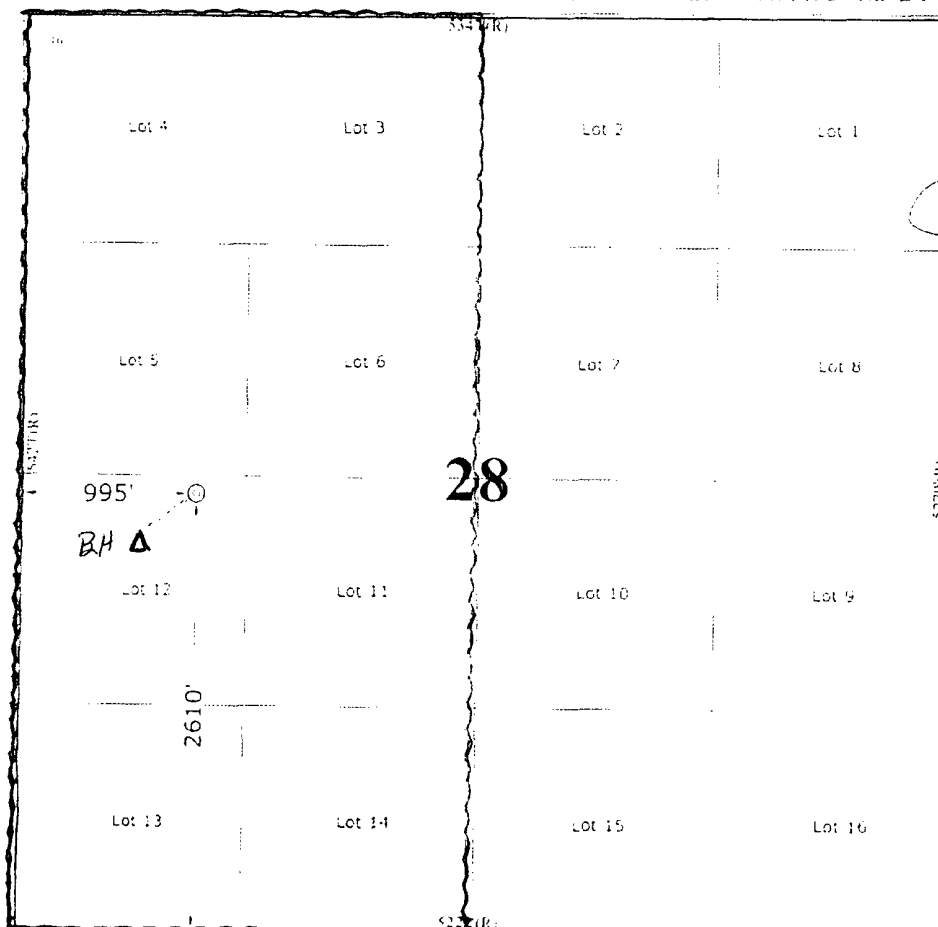
Operator Name: **Stewart LS** Elevation: **# 8N**
Operator Name: **BP AMERICA PRODUCTION COMPANY** Elevation: **6275**

Surface Location
Lot from the: **L** Section: **28** Township: **30 N** Range: **10 W** Feet from the: **2610** South/South line: **SOUTH** Feet from the: **995** East/West line: **WEST** County: **SAN JUAN**

Bottom Hole Location If Different From Surface
Lot from the: **L** Section: **28** Township: **30 N** Range: **10 W** Feet from the: **2550'** South/South line: **South** Feet from the: **700'** East/West line: **WEST** County: **San Juan**

Dedicated Acres: **326.64**

NO ALLOWABLE WILL 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: *Kristina Hurts*
Printed Name: **KRISTINA HURTS**
Title: **REGULATORY ANALYST**
Date: **10-12-06**

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from true 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: **June 15, 2006**
Signature and Seal of Professional Surveyor

GARY D. VANN
NEW MEXICO
10-6
7016
Certificate Number

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
May 27, 2004

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO. <u>30-045-34040</u> New Well
5. Indicate Type of Lease STATE ☐ FEE ☐
6. State Oil & Gas Lease No. <u>25 17 38</u>
7. Lease Name or Unit Agreement Name <u>Stewart LS</u>
8. Well Number <u>8N</u>
9. OGRID Number <u>000778</u>
10. Pool name or Wildcat <u>Basin Dakota & Blanco Mesaverde</u>

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6275'

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type DRILLING Depth to Groundwater >100' Distance from nearest fresh water well >1000' Distance from nearest surface water <1000'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume bbls; Construction Material

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

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

2. Name of Operator
BP AMERICA PRODUCTION COMPANY

3. Address of Operator
P.O. BOX 3092 HOUSTON, TX 77079-2064

4. Well Location
Unit Letter L : 2610 feet from the South line and 995 feet from the West line
Section 28 Township 30N Range 10W NMPM SAN JUAN County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6275'

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type DRILLING Depth to Groundwater >100' Distance from nearest fresh water well >1000' Distance from nearest surface water <1000'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
OTHER: <u>LINED DRILLING PIT</u> ☒		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Construct a lined drilling pit per BP America – San Juan Basin Drilling/ Workover Pit Construction Plan issued date of 11/17/2004. Pit will be closed according to closure plan on file.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

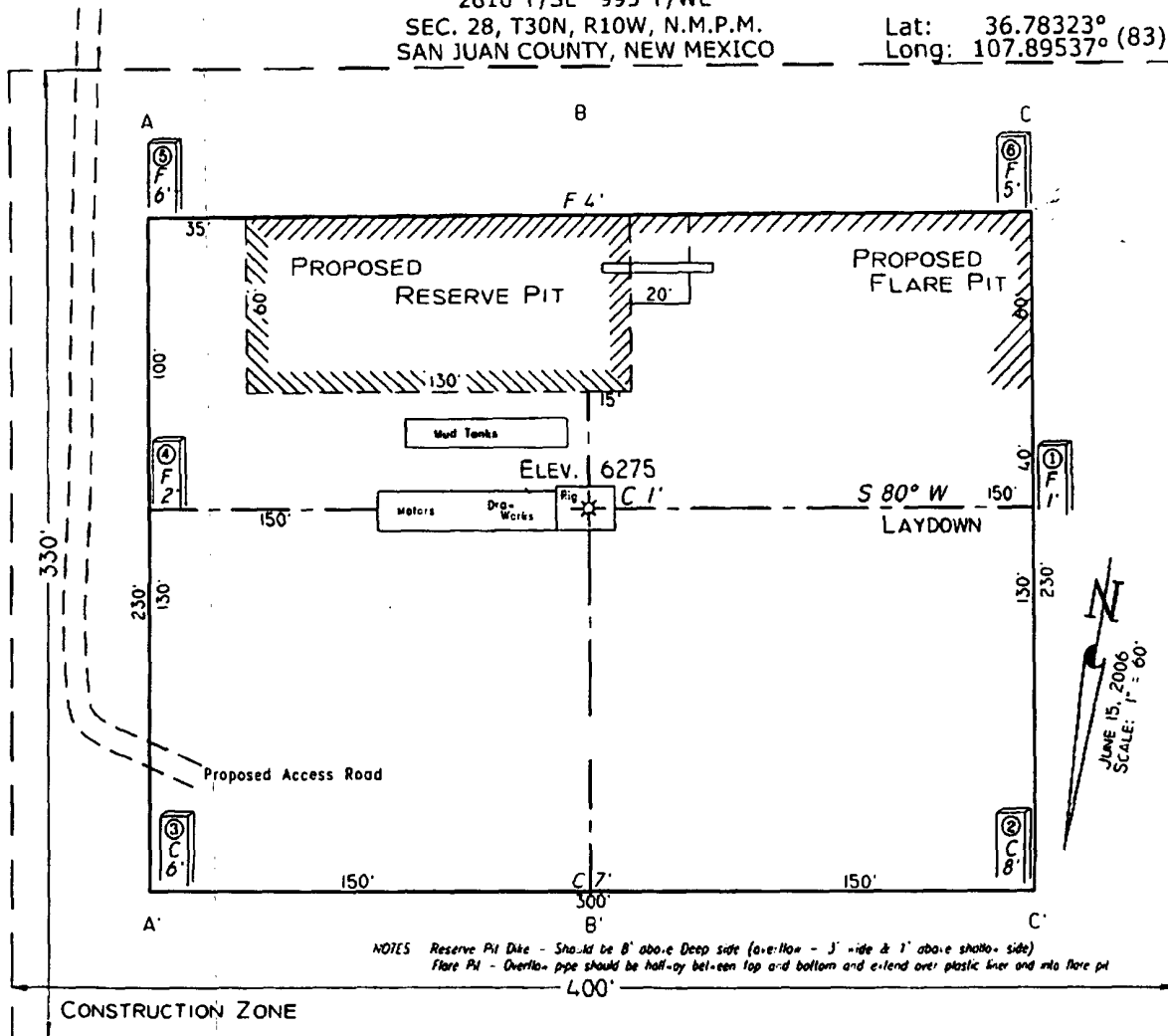
SIGNATURE Christina Hurts TITLE Regulatory Analyst DATE 10/12/06

Type or print name Kristina Hurts E-mail address: hurtk0@bp.com Telephone No. 281-366-3866
For State Use Only

APPROVED BY: [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 37 DATE DEC 22 2006
Conditions of Approval (if any):

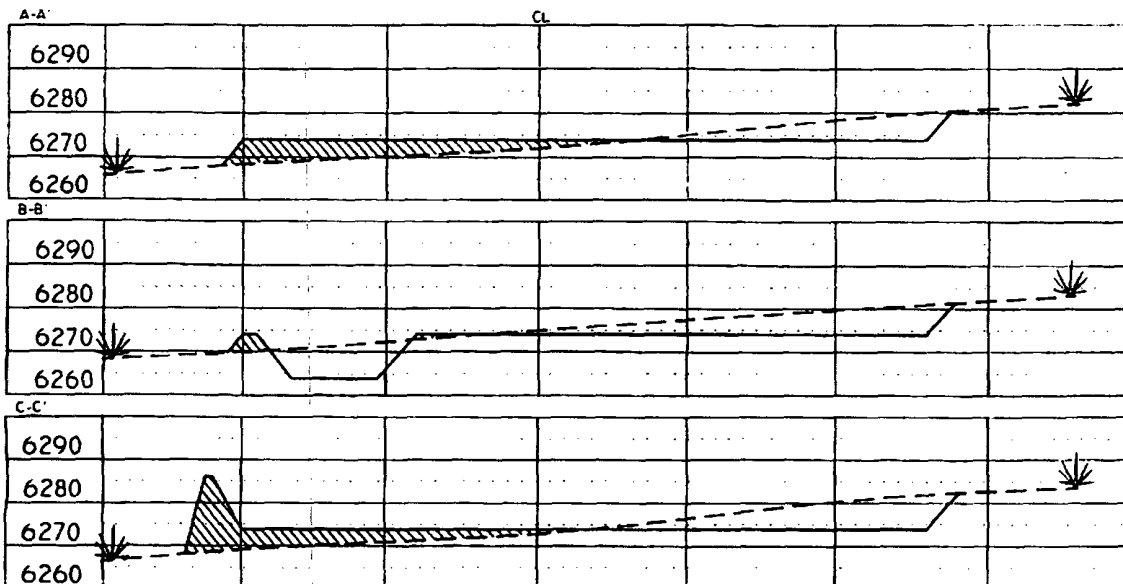
PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
 Stewart LS # 8N
 2610' F/SL 995' F/WL
 SEC. 28, T30N, R10W, N.M.P.M.
 SAN JUAN COUNTY, NEW MEXICO

Lat: 36.78323°
 Long: 107.89537° (83)



Area of Construction Zone - 330' x 400' or 3.03 acres, more or less

SCALE 1"=60' HORIZ.
 1"=40' VERT.



NOTE Contractor should call One-Call for location of any marked or unmarked buried pipelines or cables on well pad and/or access road at least two (2) working days prior to construction.

Cuts and fills shown are approximate - final finished elevation is to be adjusted so earthwork will balance. Corner stakes are approximate and do not include additional areas needed for side slopes and drainages. Final Pad Dimensions are to be verified by Contractor.

VANN SURVEYS
 P. O. Box 1306
 Farmington, NM

BP AMERICA PRODUCTION COMPANY									
DRILLING AND COMPLETION PROGRAM									
7/10/2006									
Lease:	Stewart LS	Well Name & No.	Stewart LS #8N			Field:	Blanco Mesaverde/Basin Dakota		
County:	San Juan, New Mexico	Surface Location:	28-30N-10W: 2610' FSL, 995' FWL						
Minerals:	State	Surface:	Lat: 36.7832641 deg; Long: -107.8949211 deg						
Rig:	Aztec 184	BH Location:	29-30N-10W: 2550' FSL, 700' FWL; Lat: 36.7831086; Long: -107.8959229						
OBJECTIVE:	Drill 240' below the top of the Two Wells Mbr, set 4-1/2" production casing, Stimulate DK, MF, and PL intervals.								
METHOD OF DRILLING					APPROXIMATE DEPTHS OF GEOLOGICAL MARKER				
TYPE OF TOOLS		DEPTH OF DRILLING			Actual GL:	6275	Estimated KB: 6,289.0'		
Rotary		0 - TD			Marker		SUBSEA	TVD	APPROX. MD
LOG PROGRAM					Ojo Alamo		4,894'	1,395'	1,395'
Type	Depth Interval				Kirtland		4,733'	1,556'	1,556'
Single Run					Fruitland	*	4,126'	2,163'	2,163'
					Fruitland Coal	*	3,883'	2,406'	2,406'
					Pictured Cliffs	*	3,554'	2,735'	2,735'
					Lewis	*	3,395'	2,894'	2,894'
					Cliff House	#	1,994'	4,295'	4,323'
Cased Hole					Menefee	#	1,738'	4,551'	4,581'
RST- CBL	TD to 7" shoe				Point Lookout	#	1,229'	5,060'	5,090'
Identify 4 1/2" cement top					Mancos		862'	5,427'	5,457'
REMARKS:					Greenhorn		-729'	7,018'	7,048'
					Graneros (bent,mkr)		-783'	7,072'	7,102'
					Two Wells	#	-840'	7,129'	7,159'
					Paguate	#	-916'	7,205'	7,235'
The recommended TD is intended to penetrate the ENCN (~30') in order to evaluate, and possibly produce it. Offsetting wells encountered no water flow at this depth. See attached cross-section.					Cubero	#	-970'	7,259'	7,289'
The intermediate casing should be set 100 ft. into the MENF to minimize the risks encountered drilling through the possibly water productive CLFH.					L. Cubero	#	-1,009'	7,298'	7,328'
					Encinal Cyn	#	-1,057'	7,346'	7,376'
					TOTAL DEPTH:		-1,080'	7,369'	7,399'
					# Probable completion interval				* Possible Pay
SPECIAL TESTS					DRILL CUTTING SAMPLES			DRILLING TIME	
TYPE					FREQUENCY	DEPTH		FREQUENCY	DEPTH
None					30'/10' intervals	4,681'	to TD	Geolograph	0 - TD
REMARKS:									
MUD PROGRAM:									
Interval	TypeMud	#/gal	Vis, sec/qt	/30 min	Other Specification				
200'	Spud	8.8 - 9.0	Sufficient to clean hole.						
4,681'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite				
7,399'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore				
CASING PROGRAM:									
CasingString	Depth	Size	Casing Size	Grade, Thread	Weight	Landing Point	Cement		
Surface/Conductor	200'	13 1/2"	9-5/8"	H-40 ST&C	32#		cmt to surface		
Intermediate	0' - 4000'	8-3/4"	7"	J/K-55 ST&C	20#				
Intermediate	4000' - 4681'	8 3/4"	7"	N-80 ST&C	23#	100' below MENF	cmt to surface		
Production	7,399'	6-1/4"	4-1/2"	P-110	11.6#	DKOT	150' inside Intermediate - TOC survey required		
CORING PROGRAM:									
None									
COMPLETION PROGRAM:									
Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead									
GENERAL REMARKS:									
Notify BLM/NMOCDD 24 hours prior to Spud, BOP testing, and Casing and Cementing.									
BOP Pressure Testing Requirements									
Formation	Depth	Anticipated bottom hole pressure				Max anticipated surface pressure**			
Cliffhouse	4,295'	500				0			
Point Lookout	5,060'	600				0			
Dakota	7,129'	2600				1031.62			
Requested BOP Pressure Test Exception = 1500 psi					** Note: Determined using the following formula: ABHP - (.22*TVDD) = ASP				
Form 46 Reviewed by:		Logging program reviewed by:							
PREPARED BY:		APPROVED:			DATE:	APPROVED:		DATE:	
HGJ JMP/GGZ					10-Jul-06				
Form 46 7-84bw		For Drilling Dept.			For Production Dept.				

Cementing Program

Intermediate:

Fresh Water	20 bbl	fresh water	
Lead		411 sx Class "G" Cement	1082 cuft
Slurry 1		+ 3% D79 extender	
TOC@Surface		+1/4 #/sk. Cellophane Flake	
		+ 5 lb/sk Gilsonite	
Tail		59 sx 50/50 Class "G"/Poz	75 cuft
Slurry 2		+ 2% gel (extender)	
500 ft fill		+1/4 #/sk. Cellophane Flake	0.1503 cuft/ft OH
		+ 2% CaCl2 (accelerator)	0.1746 cuft/ft csg ann
		+ 5 lb/sk Gilsonite	
Slurry Properties:	Density	Yield	Water
	(lb/gal)	(ft3/sk)	(gal/sk)
Slurry 1	11.4	2.63	15.8
Slurry 2	13.5	1.27	5.72
Casing Equipment:	7", 8R, ST&C		
	1 Float Shoe (autofill with minimal LCM in mud)		
	1 Float Collar (autofill with minimal LCM in mud)		
	1 Stop Ring		
	Centralizers as needed		
	1 Top Rubber Plug		
	1 Thread Lock Compound		

Production:

Fresh Water	10 bbl	CW100	
Lead		99 LiteCrete D961 / D124 / D154	249 cuft
Slurry 1		+ 0.03 gps D47 antifoam	
TOC, 400' above 7" shoe		+ 0.5% D112 fluid loss	
		+ 0.11% D65 TIC	
Tail		144 sx 50/50 Class "G"/Poz	207 cuft
Slurry 2		+ 5% D20 gel (extender)	
1442 ft fill		+ 0.1% D46 antifoam	
		+ 1/4 #/sk. Cellophane Flake	
		+ 0.25% D167 Fluid Loss	
		+ 5 lb/sk Gilsonite	
		+0.1% d800, retarder	
		+0.15% D65, dispersant	
			0.1026 cuft/ft OH
Slurry Properties:	Density	Yield	Water
	(lb/gal)	(ft3/sk)	(gal/sk)
Slurry 1	9.5	2.52	6.38
Slurry 2	13	1.44	6.5
			Top of Mancos
			5457
Casing Equipment:	4-1/2", 8R, ST&C		
	1 Float Shoe (autofill with minimal LCM in mud)		
	1 Float Collar (autofill with minimal LCM in mud)		
	1 Stop Ring		
	Centralizers, as needed		
	1 Top Rubber Plug		
	1 Thread Lock Compound		

Cementing Program

Intermediate:

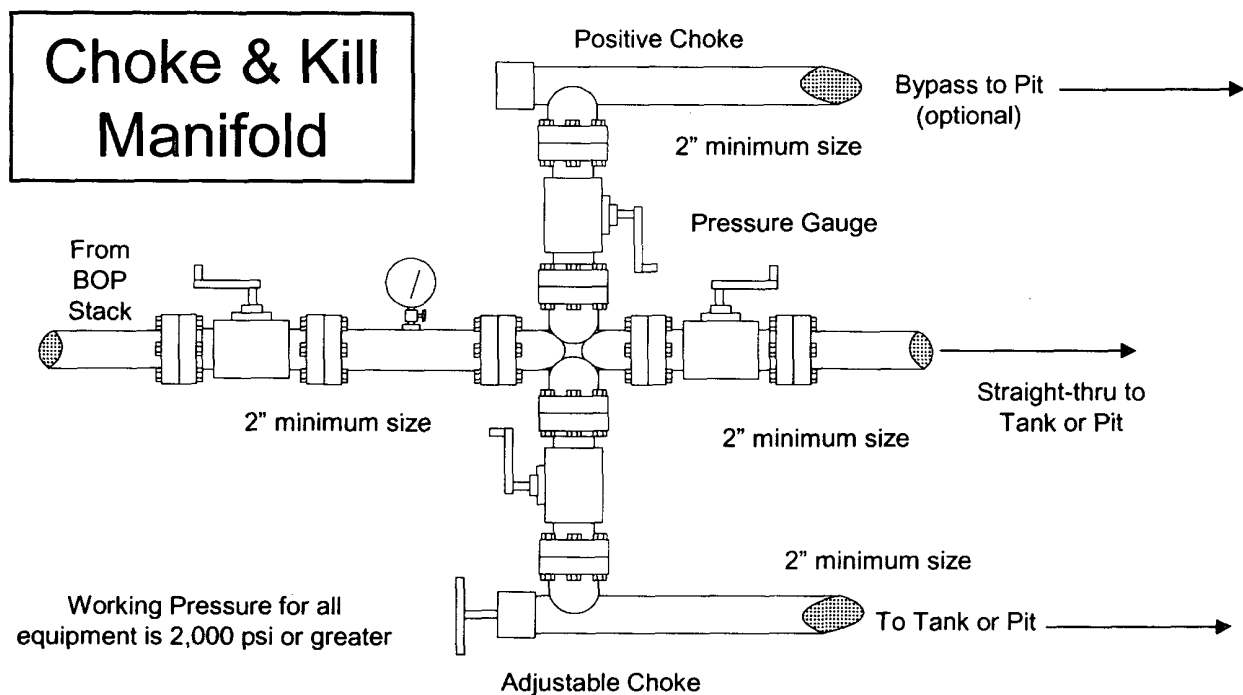
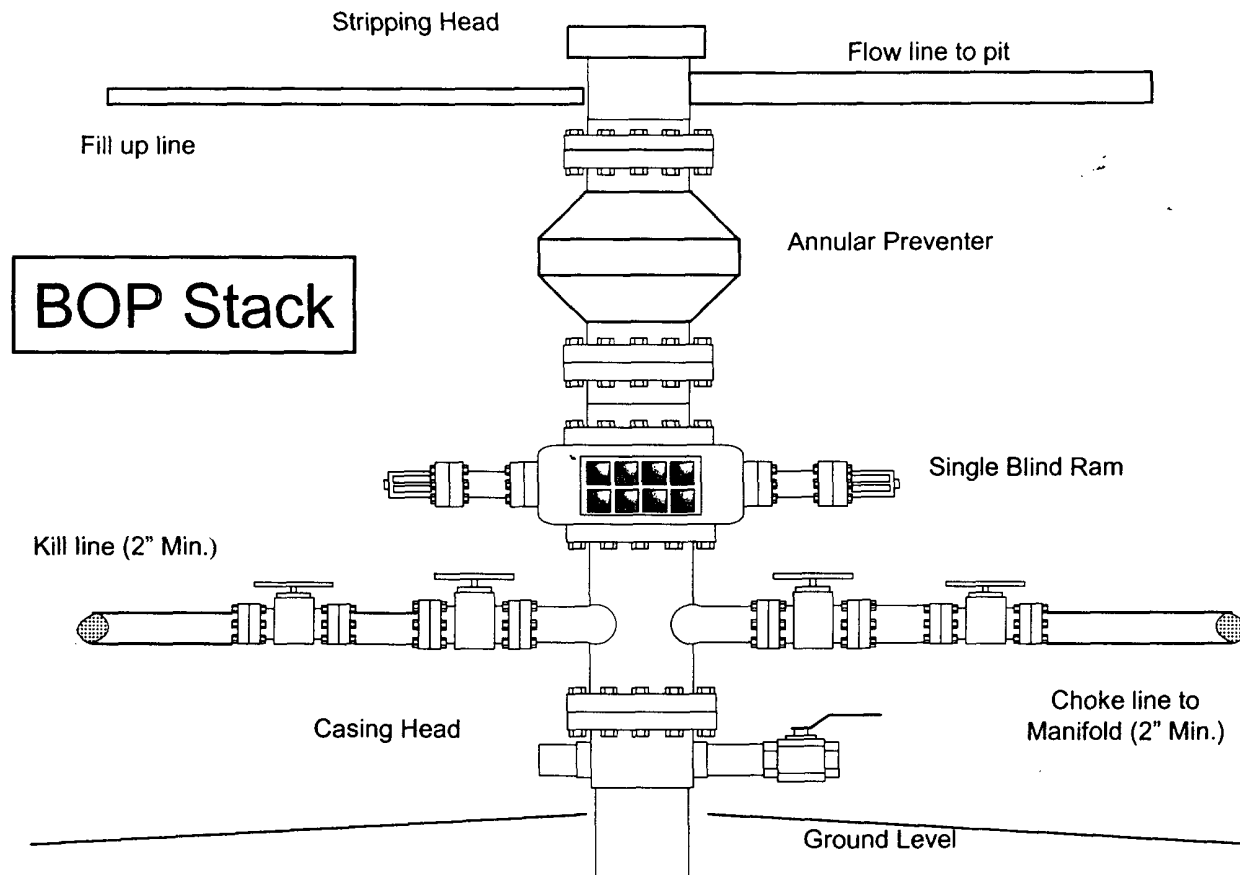
Fresh Water	20 bbl	fresh water	
Lead		411 sx Class "G" Cement	1082 cuft
Slurry 1		+ 3% D79 extender	
TOC@Surface		+1/4 #/sk. Cellophane Flake	
		+ 5 lb/sk Gilsonite	
Tail		59 sx 50/50 Class "G"/Poz	75 cuft
Slurry 2		+ 2% gel (extender)	
500 ft fill		+1/4 #/sk. Cellophane Flake	0.1503 cuft/ft OH
		+ 2% CaCl2 (accelerator)	0.1746 cuft/ft csg ann
		+ 5 lb/sk Gilsonite	
Slurry Properties:	Density	Yield	Water
	(lb/gal)	(ft3/sk)	(gal/sk)
Slurry 1	11.4	2.63	15.8
Slurry 2	13.5	1.27	5.72
Casing Equipment:	7", 8R, ST&C		
	1 Float Shoe (autofill with minimal LCM in mud)		
	1 Float Collar (autofill with minimal LCM in mud)		
	1 Stop Ring		
	Centralizers as needed		
	1 Top Rubber Plug		
	1 Thread Lock Compound		

Production:

Fresh Water	10 bbl	CW100	
Lead		99 LiteCrete D961 / D124 / D154	249 cuft
Slurry 1		+ 0.03 gps D47 antifoam	
TOC, 400' above 7" shoe		+ 0.5% D112 fluid loss	
		+ 0.11% D65 TIC	
Tail		144 sx 50/50 Class "G"/Poz	207 cuft
Slurry 2		+ 5% D20 gel (extender)	
1442 ft fill		+ 0.1% D46 antifoam	
		+ 1/4 #/sk. Cellophane Flake	
		+ 0.25% D167 Fluid Loss	
		+ 5 lb/sk Gilsonite	
		+0.1% d800, retarder	
		+0.15% D65, dispersant	
			0.1026 cuft/ft OH
Slurry Properties:	Density	Yield	Water
	(lb/gal)	(ft3/sk)	(gal/sk)
Slurry 1	9.5	2.52	6.38
Slurry 2	13	1.44	6.5
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			5457
Casing Equipment:	4-1/2", 8R, ST&C		
	1 Float Shoe (autofill with minimal LCM in mud)		
	1 Float Collar (autofill with minimal LCM in mud)		
	1 Stop Ring		
	Centralizers, as needed		
	1 Top Rubber Plug		
	1 Thread Lock Compound		

BP American Production Company

Well Control Equipment Schematic





Scientific Drilling

Project: Western - San Juan South
Site: SEC 28-T30N-R10W
Well: STEWART LS #8N
Wellbore: Wellbore #1
Plan: Plan #1



bp

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	2900.00	0.000	0.000	2900.00	0.00	0.00	0.00	0.00	0.00	
3	3327.80	12.834	258.503	3324.23	-9.51	-46.76	3.00	258.50	47.71	
4	4253.46	12.834	258.503	4226.77	-50.49	-248.24	0.00	0.00	253.33	
5	4681.26	0.000	0.000	4651.00	-60.00	-295.00	3.00	180.00	301.04	7" 8N
6	7399.26	0.000	0.000	7369.00	-60.00	-295.00	0.00	0.00	301.04	PBHL 8N

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
7" 8N	4651.00	-60.00	-295.00	2104373.367	2704761.643	36°46'59.156N	107°53'45.342W	Point
PBHL 8N	7369.00	-60.00	-295.00	2104373.367	2704761.643	36°46'59.156N	107°53'45.342W	Circle (Radius: 100.00)

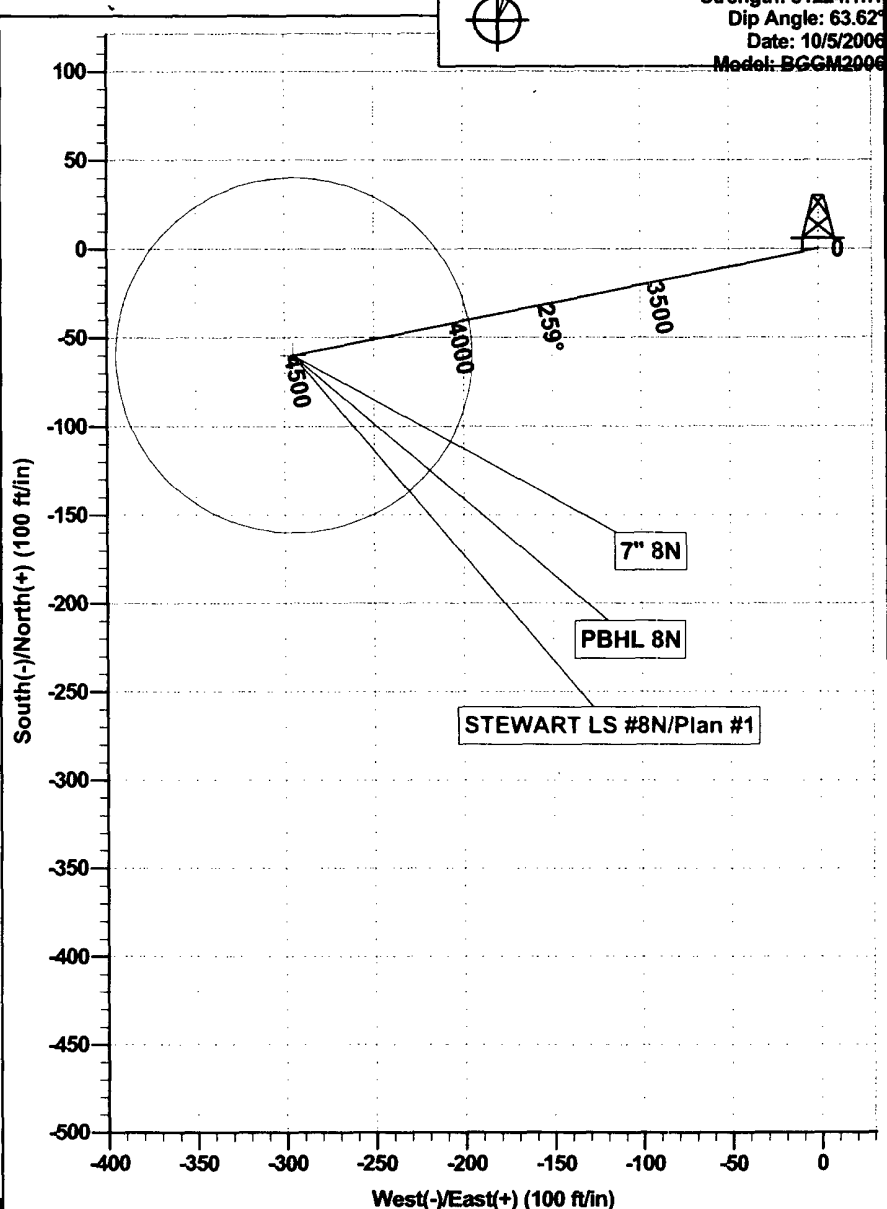
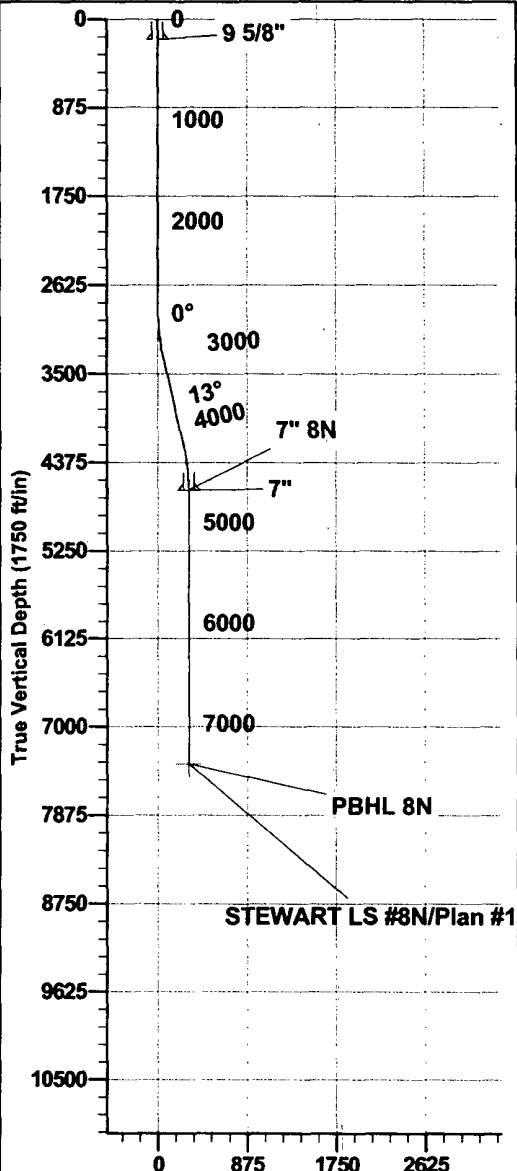
WELL DETAILS: STEWART LS #8N

Ground Level:	6250.00
Northing	2104433.362
Easting	2705056.619
Latitude	36°46'59.751N
Longitude	107°53'41.716W



Azimuths to Grid North
True North: 0.04°
Magnetic North: 10.61°

Magnetic Field
Strength: 51224.1nT
Dip Angle: 63.62°
Date: 10/5/2006
Model: BCGM2006



Database: EDM - Houston - Production
Company: North America - Onshore US - BP
Project: Western - San Juan South
Site: SEC 28-T30N-R10W
Well: STEWART LS #8N
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well STEWART LS #8N
TVD Reference: WELL @ 6289.00ft (Original Well Elev)
MD Reference: WELL @ 6289.00ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,395.00	1,395.00	OJO ALAMO		0.00	0.001
1,556.00	1,556.00	KIRTLAND		0.00	0.001
2,163.00	2,163.00	FRUITLAND		0.00	0.001
2,406.00	2,406.00	FRUITLAND COAL		0.00	0.001
2,735.00	2,735.00	PICTURED CLIFFS		0.00	0.001
2,894.00	2,894.00	LEWIS		0.00	0.001
4,323.17	4,295.00	CLIFF HOUSE		0.00	0.001
4,581.22	4,551.00	MENEFEE		0.00	0.001
5,090.26	5,060.00	POINT LOOKOUT		0.00	0.001
5,457.26	5,427.00	MANCOS		0.00	0.001
7,048.26	7,018.00	GREENHORN		0.00	0.001
7,102.26	7,072.00	GRANEROS		0.00	0.001
7,159.26	7,129.00	TWO WELLS		0.00	0.001
7,235.26	7,205.00	PAGUATE		0.00	0.001
7,289.26	7,259.00	CUBERO		0.00	0.001
7,328.26	7,298.00	L. CUBERO		0.00	0.001
7,376.26	7,346.00	ENCINAL CYN		0.00	0.001