

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS
*Do not use this form for proposals to drill or to re-enter an
Abandoned well. Use Form 3160-3 (APD) for such proposals.*

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

5. Lease Serial No.

SF - 078097

6. If Indian, Allottee or tribe Name

7. Unit of CA Agreement, Name, and/or No.

FARMINGTON NM

8. Well Name and No.

Zachary LS 1E

9. API Well No.

30-045-33021

10. Field and Pool, or Exploratory Area

BASIN DAKOTA & BLANCO MESAVERDE

11. County or Parish, State

SAN JUAN, NM

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well



Oil Well



Gas Well



Other

2. Name of Operator

BP AMERICA PRODUCTION COMPANY

3a. Address

PO BOX 3092 HOUSTON, TX 77253

3b. Phone No. (include area code)

281-366-4081

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1750' FSL & 2200' FWL; SEC 25 T31N R11W NESW Mer NMP

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OR NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION



Notice of Intent



Subsequent Report



Final Abandonment Notice

TYPE OF ACTION



Acidize



Deepen



Production (Start/Resume)



Water shut-Off



Alter Casing



Fracture Treat



Reclamation



Well Integrity



Casing Repair



New Construction



Recomplete



Other Chng BH Location



Change Plans



Plug and Abandon



Water Disposal



Convert to Injection



Plug Back

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

The original drilling permit was submitted on 04/04/05 and approved 07/12/05.

BP respectfully requests BLM approval to change the bottom hole location

From: 800' FSL & 2500' FWL

To: 840' FSL & 2070' FWL. The surface location remains the same.

Please see the attached C-102, Drilling Plan (form 46), cement report (very small chng to cement) & proposed direction survey.

14. I hereby certify that the foregoing is true and correct
Name (Printed/typed)

Cherry Hlava

281-366-4081

Title Regulatory Analyst

Signature

Cherry Hlava

Date 09/06/2005

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Andrea Brumley

Title

Pet. Eng

Date

9/13/05

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

FFO

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.

NMOC

District I
PO Box 1980, Hobbs NM 88241-1980
District II
PO Drawer KK, Artesia, NM 87211-0719
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-102
Revised February 21, 1994

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

2005 SEP 12 PM 1 49

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-33021	² Pool Code 71599, 72319	³ Pool Name Basin Dakota; Blanco Mesaverde
⁴ Property Code 01221	⁵ Property Name Zachary LS	⁶ Well Number # 1E
⁷ OGRID No. 778	⁸ Operator Name BP AMERICA PRODUCTION COMPANY	⁹ Elevation 5847

¹⁰ Surface Location

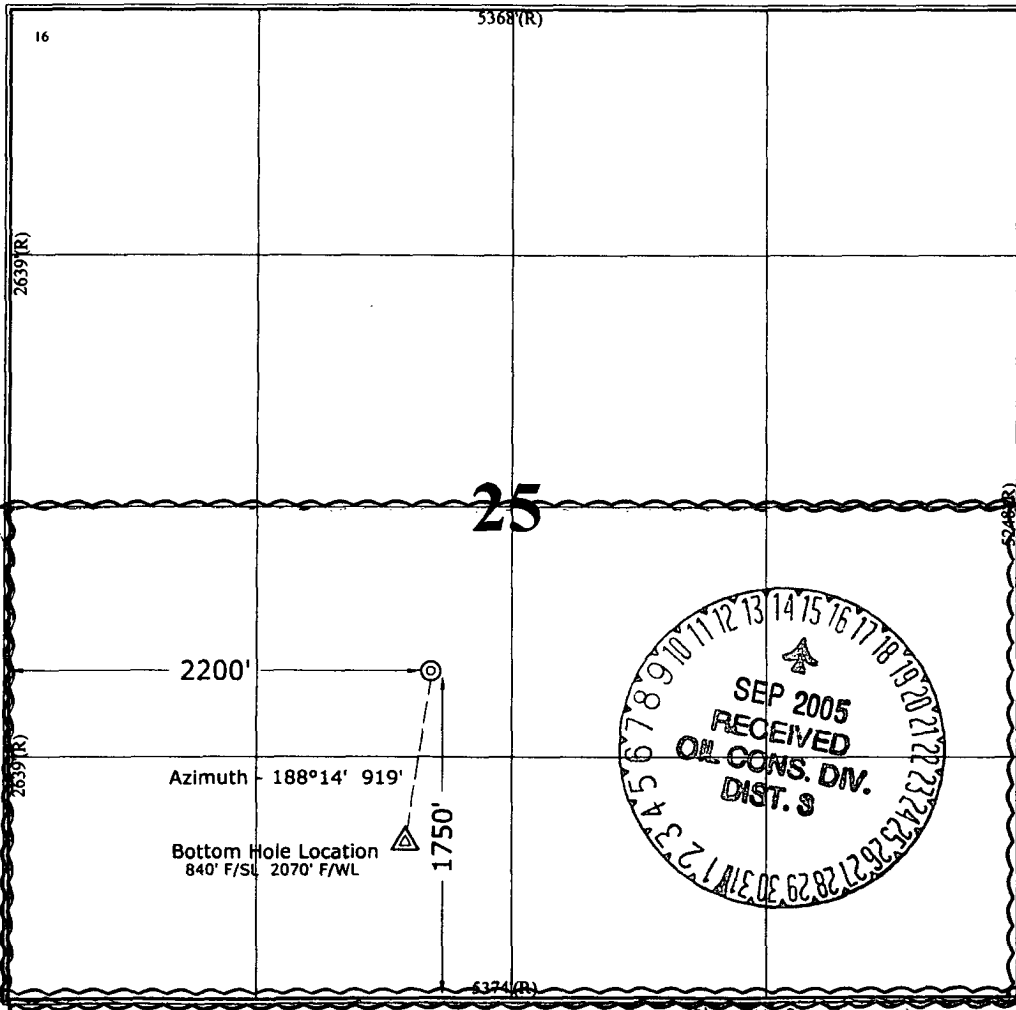
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	25	31 N	11 W		1750	SOUTH	2200	WEST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

⁷ UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	25	31 N	11 W		840	SOUTH	2070	WEST	SAN JUAN

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

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

¹⁶ 	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <i>Cherry Hlava</i> Signature Cherry Hlava Printed Name Regulatory Analyst Title 9-6-05 Date
	¹⁸ 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. Revised BHL August 11, 2005 January 26, 2005 Date of Survey Signature and Seal of Professional Surveyor GARY D. VANN NEW MEXICO REGISTERED PROFESSIONAL LAND SURVEYOR 7016 Certificate Number

BP AMERICA PRODUCTION COMPANY

DRILLING AND COMPLETION PROGRAM

3/23/2005 Revised 08/31/2005

Lease:	Zachary LS	Well Name & No.	Zachary LS #1E	Field:	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	Surface Location:	25-31N-11W: 1750' FSL, 2200' FWL		
Minerals:	State	Surface:	Lat: 36.8672017 deg; Long: -107.9432836 deg		
Rig :	Aztec 184	BH Location:	840 FSL, 2070 FWL: Lat: 36.8647112 deg; Long: -107.9437936 deg		
OBJECTIVE:	Drill 270' 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:	5847	Estimated KB:	5,861.0'
Rotary	0 - TD	Marker		SUBSEA	TVD
LOG PROGRAM					APPROX. MD
Type	Depth Interval	Ojo Alamo		4,818'	1,043'
Single Run		Kirtland		4,746'	1,115'
		Fruitland	*	3,963'	1,898'
		Fruitland Coal	*	3,718'	2,143'
		Pictured Cliffs	*	3,362'	2,499'
		Lewis	*	3,131'	2,730'
Cased Hole		Cliff House	#	1,852'	4,009'
TDT- CBL	TD to 7" shoe	Menefee	#	1,555'	4,306'
	Identify 4 1/2" cement top	Point Lookout	#	1,105'	4,756'

REMARKS:	
- Please report any flares (magnitude & duration).	
	Mancos
	Greenhorn
	Graneros (bent,mkr)
	Two Wells
	Paguate
	Cubero
	L. Cubero
	Encinal Cyn
	TOTAL DEPTH:
	# Probable completion interval
	* Possible Pay

SPECIAL TESTS	DRILL CUTTING SAMPLES	DRILLING TIME
TYPE	FREQUENCY	DEPTH
None	30'/10' intervals	2,980' to TD
REMARKS:		

MUD PROGRAM:					
Interval	TypeMud	#/gal	Vis, sec/qt	/30 min	Other Specification
200'	Spud	8.8 - 9.0	Sufficient to clean hole.		
2,980'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
7,300'	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 1	2,980'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	7,300'	6-1/4"	4-1/2"	J-55 P-110	11.6#	DKOT	150' inside Intermediate - TOC survey required

CORING PROGRAM:	
None	Calculation done using J-55, however P-110 can be used.

COMPLETION PROGRAM:	
Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead	

GENERAL REMARKS:	
Notify BLM/NMOCD 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	4,009'	500	0
Point Lookout	4,756'	600	0
Dakota	6,870'	2600	1088.6

Requested BOP Pressure Test Exception = 1500 psi		** Note: Determined using the following formula: ABHP – (.22”TVD) = ASP		
Form 46 Reviewed by:	Logging program reviewed by:			
PREPARED BY:	APPROVED:	DATE:	APPROVED:	DATE:
HGJ	JMP/GGZ	23/2005 Revised 08/31/2005		
Form 46 7-84bw	For Drilling Dept.		For Production Dept.	

Cementing Program

Revision 9/6/05

Well Name: Zachary LS #1E
 Location: 25-31N-11W: 1750' FSL, 2200' FWL
 County: San Juan
 State: New Mexico

Well Flac
 Formation: Blanco Mesaverde/Basin Dakota
 KB Elev (est) 5861
 GL Elev. (est) 5847

Casing Program:

Casing String	Est. Depth (ft.)	Hole Size (in.)	Casing Size (in.)	Thread	TOC (ft.)	Stage Tool Or TOL (ft.)	Cmt Cir. Out (bbl.)
Surface	200	13.5	9.625	ST&C	Surface	NA	
Intermediate	2980	8.75	7	LT&C	Surface	NA	
Production -	7300	6.25	4.5	ST&C	2880	NA	

Casing Properties:

(No Safety Factor Included)								
Casing String	Size (in.)	Weight (lb/ft)	Grade	Burst (psi.)	Collapse (psi.)	Joint St. (1000 lbs.)	Capacity (bbl/ft.)	Drift (in.)
Surface	9.625	32	H-40	2270	1400	254	0.0787	8.845
Intermediate	7	20	K-55	3740	2270	234	0.0405	6.456
Production -	4.5	11.6	J-55	5350	4960	154	0.0155	3.875

Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight	Recommended Mud Properties Prio Cementing:	
			PV	<20
			YP	<10
			Fluid Los: <15	
0 - SCP	Water/Spud	8.6-9.2		
SCP - ICP	Water/LSND	8.6-9.2		
ICP - ICP2	Gas/Air Mist	NA		
ICP2 - TD	LSND	8.6 - 9.2		

Cementing Program:

	Surface	Intermediate	Production
Excess %, Lead	100	75	40
Excess %, Tail	NA	0	40
BHST (est deg. F)	75	120	183
Special Instructions	1,6,7	1,6,8	2,4,6

1. Do not wash pumps and lines.
2. Wash pumps and lines.
3. Reverse out
4. Run Blend Test on Cement
5. Record Rate, Pressure, and Density on 3.5" disk
6. Confirm densitometer with pressurized mud scales
7. 1" cement to surface if cement is not circulated.
8. If cement is not circulated to surface, run temp. survey 10-12 hr. after landing plug.

Notes:

*Do not wash up on top of plug. Wash lines before displacing production cement job to minimize drillout.

Surface:

Preflush	20 bbl.	FreshWater	
Slurry 1	154 sx Class C Cement		195 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)		
			0.4887 cuft/ft OH

Slurry Properties:

	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	15.2	1.27	5.8

Casing Equipment:

- 9-5/8", 8R, ST&C
- 1 Guide Shoe
- 1 Top Wooden Plug
- 1 Autofill insert float valve
- Centralizers, as needed
- 1 Stop Ring
- 1 Thread Lock Compound

Cementing Program

Intermediate:

Fresh Water	20 bbl	fresh water	
Lead		241 sx Class "G" Cement	635 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% CaCl ₂ (accelerator)	0.1746 cuft/ft csg ann
		+ 5 lb/sk Gilsonite	

Slurry Properties:

	Density (lb/gal)	Yield (ft ³ /sk)	Water (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		188 LiteCrete D961 / D124 / D154	473 cuft
Slurry 1		+ 0.03 gps D47 antifoam	
TOC, 400' above 7" shoe		+ 0.5% D112 fluid loss	
		+ 0.11% D65 TIC	
Tail		148 sx 50/50 Class "G"/Poz	213 cuft
Slurry 2		+ 5% D20 gel (extender)	
1482 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 (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)	
Slurry 1	9.5	2.52	6.38	0.1169 cuft/ft csg ann
Slurry 2	13	1.44	6.5	Top of Mancos

5318

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

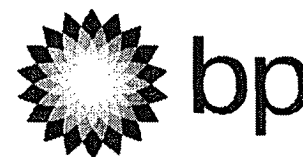
Centralizers, as needed

1 Top Rubber Plug

1 Thread Lock Compound



Field: SAN JUAN, New Mexico
 Site: SEC 25-T31N-R11W
 Well: Zachary LS #1E
 Wellpath: OH
 Plan: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1058.81	22.76	188.13	1039.00	-147.27	-21.04	3.00	188.13	148.77	
4	2256.07	22.76	188.13	2143.00	-605.88	-86.55	0.00	0.00	612.04	Fruitland Coal
5	2983.69	15.49	188.13	2830.00	-841.74	-120.25	1.00	180.00	850.28	casing point
6	3499.96	0.00	0.00	3340.00	-910.39	-130.05	3.00	180.00	919.63	
7	7299.96	0.00	0.00	7140.00	-910.39	-130.05	0.00	0.00	919.63	PBHL

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Fruitland Coal	2143.00	-605.80	-86.55	2134402.72	2690848.46	Point
casing point	2830.00	-841.70	-120.20	2134166.84	2690814.81	Point
PBHL	7140.00	-910.00	-130.00	2134098.54	2690805.01	Point

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Centre: Zachary LS #1E, Grid North
 Vertical (TVD) Reference: SITE 5861.00
 Section (VS) Reference: Slot - (0.00N,0.00E)
 Measured Depth Reference: SITE 5861.00
 Calculation Method: Minimum Curvature

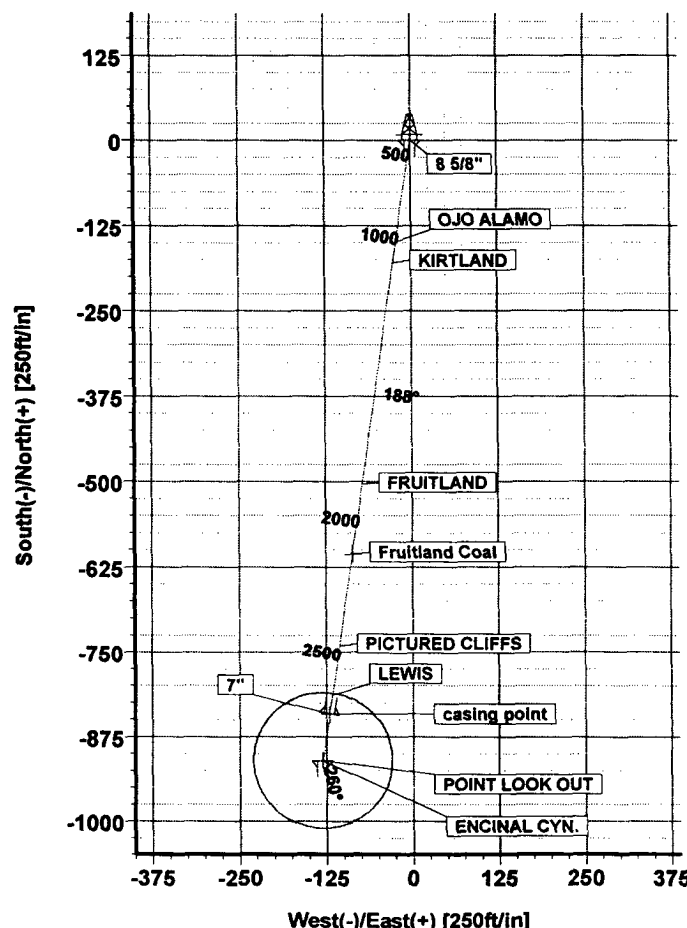
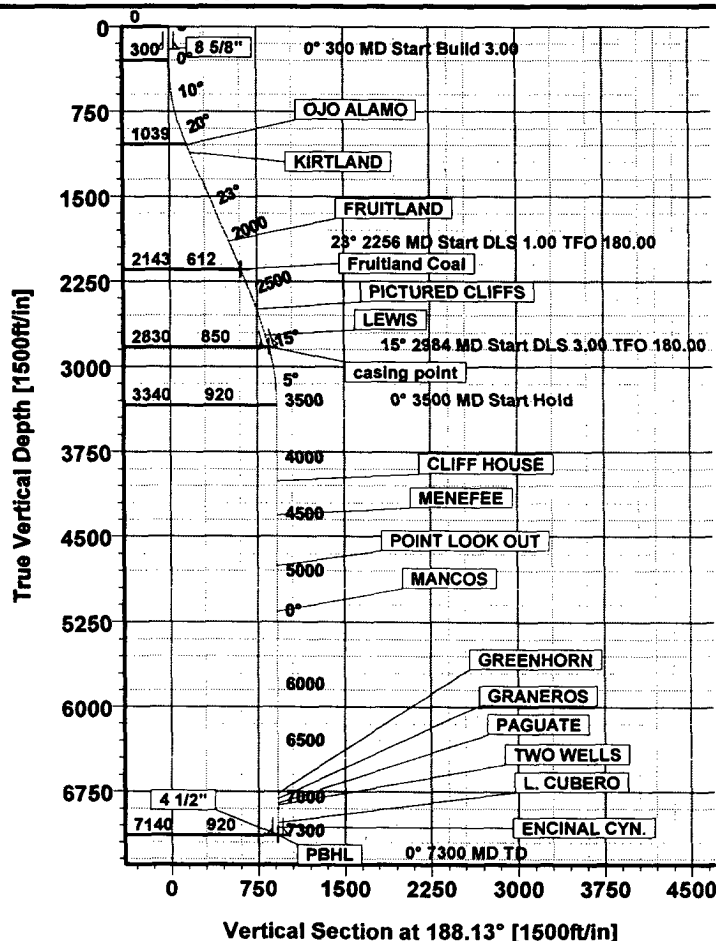


Azimuths to Grid North
 True North: 0.07°
 Magnetic North: 10.80°

Magnetic Field
 Strength: 51436nT
 Dip Angle: 63.71°
 Date: 8/4/2005
 Model: bggm2005

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Zachary LS #1E	0.00	0.00	2135008.47	2690935.00	36°52'01.926N	107°56'35.820W	N/A





Scientific Drilling Planning Report



Company: BP
Field: SAN JUAN, New Mexico
Site: SEC 25-T31N-R11W
Well: Zachary LS #1E
Wellpath: OH

Date: 8/4/2005
Co-ordinate(NE) Reference: Well: Zachary LS #1E, Grid North
Vertical (TVD) Reference: SITE 5861.0
Section (VS) Reference: Well (0.00N,0.00E,188.13Azi)
Plan: Plan #1

Time: 16:27:16
Page: 1

Field: SAN JUAN, New Mexico
SAN JUAN COUNTY, NEW MEXICO
USA
Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Western Zone
Coordinate System: Well Centre
Geomagnetic Model: bggm2005

Site: SEC 25-T31N-R11W

SAN JUAN NEW MEXICO

Site Position: Northing: 2135008.47 ft Latitude: 36 52 1.926 N
From: Geographic Easting: 2690935.00 ft Longitude: 107 56 35.820 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 5847.00 ft Grid Convergence: -0.07 deg

Well: Zachary LS #1E

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 2135008.47 ft Latitude: 36 52 1.926 N
+E/-W 0.00 ft Easting: 2690935.00 ft Longitude: 107 56 35.820 W
Position Uncertainty: 0.00 ft

Wellpath: OH

Current Datum: SITE Height 5861.00 ft
Magnetic Data: 8/4/2005
Field Strength: 51436 nT
Vertical Section: Depth From (TVD) +N/-S
ft ft
0.00 0.00 0.00 188.13

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 10.74 deg
Mag Dip Angle: 63.71 deg
+E/-W Direction
ft deg

Plan: Plan #1

Date Composed: 8/4/2005
Version: 6
Tied-to: From Surface

Principal: Yes

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1058.81	22.76	188.13	1039.00	-147.27	-21.04	3.00	3.00	0.00	188.13	
2256.07	22.76	188.13	2143.00	-605.88	-86.55	0.00	0.00	0.00	0.00	Fruitland Coal
2983.69	15.49	188.13	2830.00	-841.74	-120.25	1.00	-1.00	0.00	180.00	casing point
3499.96	0.00	0.00	3340.00	-910.39	-130.05	3.00	-3.00	33.29	180.00	
7299.96	0.00	0.00	7140.00	-910.39	-130.05	0.00	0.00	0.00	0.00	PBHL

Section 1 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Section 2 : Start Build 3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
400.00	3.00	188.13	399.95	-2.59	-0.37	2.62	3.00	3.00	0.00	0.00
500.00	6.00	188.13	499.63	-10.36	-1.48	10.46	3.00	3.00	0.00	0.00
600.00	9.00	188.13	598.77	-23.28	-3.33	23.51	3.00	3.00	0.00	0.00
700.00	12.00	188.13	697.08	-41.32	-5.90	41.74	3.00	3.00	0.00	0.00
800.00	15.00	188.13	794.31	-64.42	-9.20	65.08	3.00	3.00	0.00	0.00
900.00	18.00	188.13	890.18	-92.54	-13.22	93.48	3.00	3.00	0.00	0.00
1000.00	21.00	188.13	984.43	-125.58	-17.94	126.85	3.00	3.00	0.00	0.00
1058.81	22.76	188.13	1039.00	-147.27	-21.04	148.77	3.00	3.00	0.00	0.00



Scientific Drilling Planning Report



Company: BP
Field: SAN JUAN, New Mexico
Site: SEC 25-T31N-R11W
Well: Zachary LS #1E
Wellpath: OH

Date: 8/4/2005
Co-ordinate(NE) Reference: Well: Zachary LS #1E, Grid North
Vertical (TVD) Reference: SITE 5861.0
Section (VS) Reference: Well (0.00N,0.00E,188.13Azi)
Plan: Plan #1

Page: 2

Section 2 : Start Build 3.00

MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	TFO

Section 3 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1063.14	22.76	188.13	1043.00	-148.93	-21.28	150.45	0.00	0.00	0.00	0.00
1100.00	22.76	188.13	1076.98	-163.05	-23.29	164.71	0.00	0.00	0.00	0.00
1141.23	22.76	188.13	1115.00	-178.84	-25.55	180.66	0.00	0.00	0.00	0.00
1200.00	22.76	188.13	1169.20	-201.36	-28.76	203.40	0.00	0.00	0.00	0.00
1300.00	22.76	188.13	1261.41	-239.66	-34.24	242.10	0.00	0.00	0.00	0.00
1400.00	22.76	188.13	1353.62	-277.97	-39.71	280.79	0.00	0.00	0.00	0.00
1500.00	22.76	188.13	1445.83	-316.27	-45.18	319.48	0.00	0.00	0.00	0.00
1600.00	22.76	188.13	1538.04	-354.58	-50.65	358.18	0.00	0.00	0.00	0.00
1700.00	22.76	188.13	1630.25	-392.88	-56.13	396.87	0.00	0.00	0.00	0.00
1800.00	22.76	188.13	1722.46	-431.19	-61.60	435.57	0.00	0.00	0.00	0.00
1900.00	22.76	188.13	1814.67	-469.49	-67.07	474.26	0.00	0.00	0.00	0.00
1990.37	22.76	188.13	1898.00	-504.11	-72.01	509.23	0.00	0.00	0.00	0.00
2000.00	22.76	188.13	1906.88	-507.80	-72.54	512.95	0.00	0.00	0.00	0.00
2100.00	22.76	188.13	1999.09	-546.10	-78.01	551.65	0.00	0.00	0.00	0.00
2200.00	22.76	188.13	2091.30	-584.41	-83.49	590.34	0.00	0.00	0.00	0.00
2256.07	22.76	188.13	2143.00	-605.88	-86.55	612.04	0.00	0.00	0.00	0.00

Section 4 : Start DLS 1.00 TFO 180.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
2300.00	22.32	188.13	2183.58	-622.56	-88.94	628.88	1.00	-1.00	0.00	180.00
2400.00	21.32	188.13	2276.41	-659.36	-94.19	666.06	1.00	-1.00	0.00	180.00
2500.00	20.32	188.13	2369.87	-694.56	-99.22	701.61	1.00	-1.00	0.00	180.00
2600.00	19.32	188.13	2463.94	-728.13	-104.02	735.52	1.00	-1.00	0.00	180.00
2637.11	18.95	188.13	2499.00	-740.17	-105.74	747.69	1.00	-1.00	0.00	180.00
2700.00	18.32	188.13	2558.59	-760.07	-108.58	767.79	1.00	-1.00	0.00	180.00
2800.00	17.32	188.13	2653.79	-790.37	-112.91	798.40	1.00	-1.00	0.00	180.00
2879.66	16.53	188.13	2730.00	-813.33	-116.19	821.59	1.00	-1.00	0.00	180.00
2900.00	16.32	188.13	2749.51	-819.03	-117.00	827.34	1.00	-1.00	0.00	180.00
2983.69	15.49	188.13	2830.00	-841.74	-120.25	850.28	1.00	-1.00	0.00	180.00

Section 5 : Start DLS 3.00 TFO 180.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
3000.00	15.00	188.13	2845.73	-845.98	-120.85	854.57	3.00	-3.00	0.00	180.00
3100.00	12.00	188.13	2942.96	-869.08	-124.15	877.91	3.00	-3.00	0.00	180.00
3200.00	9.00	188.13	3041.27	-887.12	-126.73	896.13	3.00	-3.00	0.00	180.00
3300.00	6.00	188.13	3140.41	-900.04	-128.58	909.18	3.00	-3.00	0.00	180.00
3400.00	3.00	188.13	3240.09	-907.80	-129.68	917.02	3.00	-3.00	0.00	180.00
3499.96	0.00	0.00	3340.00	-910.39	-130.05	919.63	3.00	-3.00	171.94	180.00

Section 6 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
3600.00	0.00	0.00	3440.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
3700.00	0.00	0.00	3540.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
3800.00	0.00	0.00	3640.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
3900.00	0.00	0.00	3740.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4000.00	0.00	0.00	3840.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4100.00	0.00	0.00	3940.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4168.96	0.00	0.00	4009.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4200.00	0.00	0.00	4040.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4300.00	0.00	0.00	4140.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4400.00	0.00	0.00	4240.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4465.96	0.00	0.00	4306.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00



Scientific Drilling Planning Report



Company: BP
Field: SAN JUAN, New Mexico
Site: SEC 25-T31N-R11W
Well: Zachary LS #1E
Wellpath: OH

Date: 8/4/2005
Co-ordinate(NE) Reference: Well: Zachary LS #1E, Grid North
Vertical (TVD) Reference: SITE 5861.0
Section (VS) Reference: Well (0.00N,0.00E,188.13Azi)
Plan: Plan #1

Page: 3

Section 6 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
4500.00	0.00	0.00	4340.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4600.00	0.00	0.00	4440.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4700.00	0.00	0.00	4540.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4800.00	0.00	0.00	4640.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4900.00	0.00	0.00	4740.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
4915.96	0.00	0.00	4756.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5000.00	0.00	0.00	4840.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5100.00	0.00	0.00	4940.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5200.00	0.00	0.00	5040.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5300.00	0.00	0.00	5140.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5317.96	0.00	0.00	5158.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5400.00	0.00	0.00	5240.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5500.00	0.00	0.00	5340.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5600.00	0.00	0.00	5440.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5700.00	0.00	0.00	5540.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5800.00	0.00	0.00	5640.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
5900.00	0.00	0.00	5740.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6000.00	0.00	0.00	5840.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6100.00	0.00	0.00	5940.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6200.00	0.00	0.00	6040.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6300.00	0.00	0.00	6140.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6400.00	0.00	0.00	6240.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6500.00	0.00	0.00	6340.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6600.00	0.00	0.00	6440.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6700.00	0.00	0.00	6540.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6800.00	0.00	0.00	6640.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6900.00	0.00	0.00	6740.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6927.96	0.00	0.00	6768.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
6973.96	0.00	0.00	6814.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7000.00	0.00	0.00	6840.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7013.96	0.00	0.00	6854.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7029.96	0.00	0.00	6870.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7100.00	0.00	0.00	6940.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7153.96	0.00	0.00	6994.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7189.96	0.00	0.00	7030.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7200.00	0.00	0.00	7040.04	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7231.96	0.00	0.00	7072.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00
7299.96	0.00	0.00	7140.00	-910.39	-130.05	919.63	0.00	0.00	0.00	0.00

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD ISCWSA
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	8 5/8"
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD ISCWSA
400.00	3.00	188.13	399.95	-2.59	-0.37	2.62	3.00	3.00	0.00	MWD ISCWSA
500.00	6.00	188.13	499.63	-10.36	-1.48	10.46	3.00	3.00	0.00	MWD ISCWSA
600.00	9.00	188.13	598.77	-23.28	-3.33	23.51	3.00	3.00	0.00	MWD ISCWSA
700.00	12.00	188.13	697.08	-41.32	-5.90	41.74	3.00	3.00	0.00	MWD ISCWSA
800.00	15.00	188.13	794.31	-64.42	-9.20	65.08	3.00	3.00	0.00	MWD ISCWSA
900.00	18.00	188.13	890.18	-92.54	-13.22	93.48	3.00	3.00	0.00	MWD ISCWSA
1000.00	21.00	188.13	984.43	-125.58	-17.94	126.85	3.00	3.00	0.00	MWD ISCWSA
1058.81	22.76	188.13	1039.00	-147.27	-21.04	148.77	3.00	3.00	0.00	MWD ISCWSA
1063.14	22.76	188.13	1043.00	-148.93	-21.28	150.45	0.00	0.00	0.00	OJO ALAMO
1100.00	22.76	188.13	1076.98	-163.05	-23.29	164.71	0.00	0.00	0.00	MWD ISCWSA
1141.23	22.76	188.13	1115.00	-178.84	-25.55	180.66	0.00	0.00	0.00	KIRTLAND
1200.00	22.76	188.13	1169.20	-201.36	-28.76	203.40	0.00	0.00	0.00	MWD ISCWSA
1300.00	22.76	188.13	1261.41	-239.66	-34.24	242.10	0.00	0.00	0.00	MWD ISCWSA
1400.00	22.76	188.13	1353.62	-277.97	-39.71	280.79	0.00	0.00	0.00	MWD ISCWSA



Scientific Drilling Planning Report



Company: BP
Field: SAN JUAN, New Mexico
Site: SEC 25-T31N-R11W
Well: Zachary LS #1E
Wellpath: OH

Date: 8/4/2005
Co-ordinate(NE) Reference: Well: Zachary LS #1E, Grid North
Vertical (TVD) Reference: SITE 5861.0
Section (VS) Reference: Well (0.00N,0.00E,188.13Azi)
Plan: Plan #1

Time: 16:27:16

Page: 4

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1500.00	22.76	188.13	1445.83	-316.27	-45.18	319.48	0.00	0.00	0.00	MWD ISCWSA
1600.00	22.76	188.13	1538.04	-354.58	-50.65	358.18	0.00	0.00	0.00	MWD ISCWSA
1700.00	22.76	188.13	1630.25	-392.88	-56.13	396.87	0.00	0.00	0.00	MWD ISCWSA
1800.00	22.76	188.13	1722.46	-431.19	-61.60	435.57	0.00	0.00	0.00	MWD ISCWSA
1900.00	22.76	188.13	1814.67	-469.49	-67.07	474.26	0.00	0.00	0.00	MWD ISCWSA
1990.37	22.76	188.13	1898.00	-504.11	-72.01	509.23	0.00	0.00	0.00	FRUITLAND
2000.00	22.76	188.13	1906.88	-507.80	-72.54	512.95	0.00	0.00	0.00	MWD ISCWSA
2100.00	22.76	188.13	1999.09	-546.10	-78.01	551.65	0.00	0.00	0.00	MWD ISCWSA
2200.00	22.76	188.13	2091.30	-584.41	-83.49	590.34	0.00	0.00	0.00	MWD ISCWSA
2256.07	22.76	188.13	2143.00	-605.88	-86.55	612.04	0.00	0.00	0.00	Fruitland Coal
2300.00	22.32	188.13	2183.58	-622.56	-88.94	628.88	1.00	-1.00	0.00	MWD ISCWSA
2400.00	21.32	188.13	2276.41	-659.36	-94.19	666.06	1.00	-1.00	0.00	MWD ISCWSA
2500.00	20.32	188.13	2369.87	-694.56	-99.22	701.61	1.00	-1.00	0.00	MWD ISCWSA
2600.00	19.32	188.13	2463.94	-728.13	-104.02	735.52	1.00	-1.00	0.00	MWD ISCWSA
2637.11	18.95	188.13	2499.00	-740.17	-105.74	747.69	1.00	-1.00	0.00	PICTURED CLIFFS
2700.00	18.32	188.13	2558.59	-760.07	-108.58	767.79	1.00	-1.00	0.00	MWD ISCWSA
2800.00	17.32	188.13	2653.79	-790.37	-112.91	798.40	1.00	-1.00	0.00	MWD ISCWSA
2879.66	16.53	188.13	2730.00	-813.33	-116.19	821.59	1.00	-1.00	0.00	LEWIS
2900.00	16.32	188.13	2749.51	-819.03	-117.00	827.34	1.00	-1.00	0.00	MWD ISCWSA
2983.69	15.49	188.13	2830.00	-841.74	-120.25	850.28	1.00	-1.00	0.00	casing point
3000.00	15.00	188.13	2845.73	-845.98	-120.85	854.57	3.00	-3.00	0.00	MWD ISCWSA
3100.00	12.00	188.13	2942.96	-869.08	-124.15	877.91	3.00	-3.00	0.00	MWD ISCWSA
3200.00	9.00	188.13	3041.27	-887.12	-126.73	896.13	3.00	-3.00	0.00	MWD ISCWSA
3300.00	6.00	188.13	3140.41	-900.04	-128.58	909.18	3.00	-3.00	0.00	MWD ISCWSA
3400.00	3.00	188.13	3240.09	-907.80	-129.68	917.02	3.00	-3.00	0.00	MWD ISCWSA
3499.96	0.00	0.00	3340.00	-910.39	-130.05	919.63	3.00	-3.00	171.94	MWD ISCWSA
3600.00	0.00	0.00	3440.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
3700.00	0.00	0.00	3540.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
3800.00	0.00	0.00	3640.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
3900.00	0.00	0.00	3740.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4000.00	0.00	0.00	3840.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4100.00	0.00	0.00	3940.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4168.96	0.00	0.00	4009.00	-910.39	-130.05	919.63	0.00	0.00	0.00	CLIFF HOUSE
4200.00	0.00	0.00	4040.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4300.00	0.00	0.00	4140.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4400.00	0.00	0.00	4240.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4465.96	0.00	0.00	4306.00	-910.39	-130.05	919.63	0.00	0.00	0.00	MENELEE
4500.00	0.00	0.00	4340.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4600.00	0.00	0.00	4440.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4700.00	0.00	0.00	4540.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4800.00	0.00	0.00	4640.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4900.00	0.00	0.00	4740.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
4915.96	0.00	0.00	4756.00	-910.39	-130.05	919.63	0.00	0.00	0.00	POINT LOOK OUT
5000.00	0.00	0.00	4840.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
5100.00	0.00	0.00	4940.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
5200.00	0.00	0.00	5040.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
5300.00	0.00	0.00	5140.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
5317.96	0.00	0.00	5158.00	-910.39	-130.05	919.63	0.00	0.00	0.00	MANCOS
5400.00	0.00	0.00	5240.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
5500.00	0.00	0.00	5340.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
5600.00	0.00	0.00	5440.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
5700.00	0.00	0.00	5540.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
5800.00	0.00	0.00	5640.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA



Scientific Drilling Planning Report



Company: BP	Date: 8/4/2005	Time: 16:27:16	Page: 5
Field: SAN JUAN, New Mexico	Co-ordinate(NE) Reference: Well: Zachary LS #1E, Grid North		
Site: SEC 25-T31N-R11W	Vertical (TVD) Reference: SITE 5861.0		
Well: Zachary LS #1E	Section (VS) Reference: Well (0.00N,0.00E,188.13Azi)		
Wellpath: OH	Plan: Plan #1		

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
5900.00	0.00	0.00	5740.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6000.00	0.00	0.00	5840.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6100.00	0.00	0.00	5940.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6200.00	0.00	0.00	6040.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6300.00	0.00	0.00	6140.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6400.00	0.00	0.00	6240.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6500.00	0.00	0.00	6340.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6600.00	0.00	0.00	6440.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6700.00	0.00	0.00	6540.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6800.00	0.00	0.00	6640.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6900.00	0.00	0.00	6740.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
6927.96	0.00	0.00	6768.00	-910.39	-130.05	919.63	0.00	0.00	0.00	GREENHORN
6973.96	0.00	0.00	6814.00	-910.39	-130.05	919.63	0.00	0.00	0.00	GRANEROS
7000.00	0.00	0.00	6840.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
7013.96	0.00	0.00	6854.00	-910.39	-130.05	919.63	0.00	0.00	0.00	PAGUATE
7029.96	0.00	0.00	6870.00	-910.39	-130.05	919.63	0.00	0.00	0.00	TWO WELLS
7100.00	0.00	0.00	6940.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
7153.96	0.00	0.00	6994.00	-910.39	-130.05	919.63	0.00	0.00	0.00	CUBERO
7189.96	0.00	0.00	7030.00	-910.39	-130.05	919.63	0.00	0.00	0.00	L. CUBERO
7200.00	0.00	0.00	7040.04	-910.39	-130.05	919.63	0.00	0.00	0.00	MWD ISCWSA
7231.96	0.00	0.00	7072.00	-910.39	-130.05	919.63	0.00	0.00	0.00	ENCINAL CYN.
7299.96	0.00	0.00	7140.00	-910.39	-130.05	919.63	0.00	0.00	0.00	PBHL

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude → Deg Min Sec	← Longitude → Deg Min Sec
Fruitland Coal			2143.00	-605.80	-86.55	2134402.72	2690848.46	36 51 55.935 N	107 56 36.876 W
-Plan hit target									
casing point			2830.00	-841.70	-120.20	2134166.84	2690814.81	36 51 53.602 N	107 56 37.287 W
-Plan hit target									
PBHL			7140.00	-910.00	-130.00	2134098.54	2690805.01	36 51 52.927 N	107 56 37.407 W
-Circle (Radius: 100)									
-Plan hit target									

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
200.00	200.00	9.625	13.500	8 5/8"
2983.69	2830.00	7.000	8.750	7"
7299.96	7140.00	4.500	6.250	4 1/2"

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
1063.14	1043.00	OJO ALAMO		0.00	0.00
1141.23	1115.00	KIRTLAND		0.00	0.00
1990.37	1898.00	FRUITLAND		0.00	0.00
2256.07	2143.00	FRUITLAND COAL		0.00	0.00
2637.11	2499.00	PICTURED CLIFFS		0.00	0.00
2879.66	2730.00	LEWIS		0.00	0.00
4168.96	4009.00	CLIFF HOUSE		0.00	0.00
4465.96	4306.00	MENELEE		0.00	0.00
4915.96	4756.00	POINT LOOK OUT		0.00	0.00
5317.96	5158.00	MANCOS		0.00	0.00
6927.96	6768.00	GREENHORN		0.00	0.00
6973.96	6814.00	GRANEROS		0.00	0.00



Scientific Drilling Planning Report



Company: BP
Field: SAN JUAN, New Mexico
Site: SEC 25-T31N-R11W
Well: Zachary LS #1E
Wellpath: OH

Date: 8/4/2005
Co-ordinate(NE) Reference: Well: Zachary LS #1E, Grid North
Vertical (TVD) Reference: SITE 5861.0
Section (VS) Reference: Well (0.00N,0.00E,188.13Azi)
Plan: Plan #1

Time: 16:27:16
Page: 6

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
7029.96	6870.00	TWO WELLS		0.00	0.00
7013.96	6854.00	PAGUATE		0.00	0.00
7153.96	6994.00	CUBERO		0.00	0.00
7189.96	7030.00	L. CUBERO		0.00	0.00
7231.96	7072.00	ENCINAL CYN.		0.00	0.00