

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

MAY 03 2011

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

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.

SUBMIT IN TRIPLICATE – Other instructions on page 2.

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
Williams Production Company, LLC

3a. Address
PO Box 640 Aztec, NM 87410

3b. Phone No. (include area code)
505-634-4208

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1965' FNL & 660' FWL, section 32, T31N, R4W

5. Lease Serial No.

NMNM 23044

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
Schalk 32 #1A

9. API Well No.
30-039-30915

10. Field and Pool or Exploratory Area
Basin Fruitland Coal

11. Country or Parish, State
Rio Arriba

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other <u>Plug back/Sidetrack</u>
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplate 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 must 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 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Due to an error in the orientation of the whipstock, Williams Production plans to ~~plug~~ ^{plug} back and sidetrack this wellbore as per attached work plan. Commingle authorization for the Kirtland and Fruitland formations has been applied for with the NMOCD. Williams realizes we will be unable to produce this well until this commingle authorization is received. Verbal authorization was given to proceed by phone conversations between Brian Alleman (Williams), Jim Lovato (BLM) and Charlie Perrin (NMOCD).

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

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

Larry Higgins

Title Permit Supervisor

Signature

Date 5-4-11

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Troy L. Salvors

Title PE

Date 5/11/2011

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.

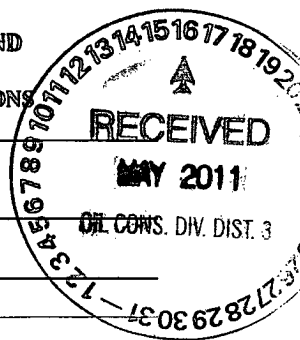
Office FFO

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.

(Instructions on page 2)

NMOCD

A





Schalk 32 #1A

Plug Back and Re-Sidetrack

API: 30-039-30915

SHL: SW/4 NW/4 Sec 32 T31N R4W

BHL: SW/4 NE/4 Sec 32 T31N R4W

Rio Arriba County, NM

Description:

The Schalk 32 #1A is a horizontal well being drilled into the Fruitland Coal. A 8-3/4" vertical pilot hole was drilled to 3,890'. Cores were cut across the coal interval, the interval was logged and 7" 23 ppf K-55 casing was set with the shoe at 3,875'. The casing was cemented to surface with 55 bbls of good cement circulated to the pit. A wireline set/tubing retrievable bride plug was set 3,488'. A bottom trip whipstock was then run and oriented via gyro. The directional plan for this well called for the azimuth of the hole to be 86.91°. Therefore, the whipstock was to be set with a magnetic toolface of approximately 90°. During the orientation of the whipstock, the wrong readings were being used and the whipstock was set with a magnetic toolface of 1.99°. This error was not discovered until after the casing exit window had been milled and 100' of new hole had been drilled. Because the curve was to be built with 19.00°/100' dogleg severity it is unlikely that the trajectory of the well can be corrected without seriously compromising the ability to reach TD. Therefore, Williams proposes the following operations to remedy this situation.

Operations:

1. Circulate hole clean and prepare for trip
2. POOH and LD directional tools
3. Make up Knight Fishing Services whipstock retrieving lug and jars
4. TIH
5. Latch into whipstock and jar loose
6. POOH
7. Make up bridge plug retrieving tool and jars

8. TIH and wash over top of retrievable bridge plug
9. Latch onto bridge plug and jar loose
10. POOH
11. RU wireline crew
12. Set cast iron bridge plug at approximately 3,485'
13. TIH with bent joint of 3-1/2" IF drill pipe on bottom
14. Hunt for window until end of drill pipe exits the window
15. TIH to TD
16. Break circulations and establish good returns
17. RU Halliburton
18. Pump balanced Class "G" cement plug with sufficient volume to return cement above top of window
19. Pull to above top of cement and reverse circulate two drill pipe volumes to ensure that string is clear of cement
20. POOH
21. RU wireline crew
22. Set wireline set/tubing retrievable bridge plug at 3,388'
23. TIH with bottom trip whipstock
24. Orient whipstock with wireline gyro tools
25. Set down and shear pins to set whipstock
26. Mill casing exit window and drill 8'-10' of rathole
27. POOH
28. PU and orient directional tools and TIH
29. Drill curve and lateral as described in new directional plan

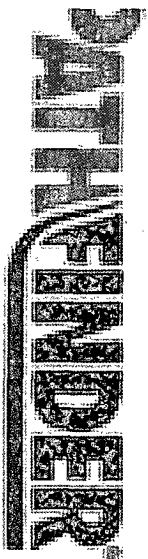
Notes:

Description of planned casing and completion operations, with regard to isolation of Kirtland from Fruitland per Charlie Perrin (NMOCD), to follow. **NOTE: WE HAVE FILED COMMINGLED AUTHORIZATION FOR THE KIRTLAND AND FRUITLAND FORMATIONS WITH THE NMOD. WELL WILL NOT BE PRODUCED UNTIL AUTHORIZATION IS RECEIVED.**

Attachments:

1. Schalk 32 #1A Directional Survey Report.pdf showing incorrect setting of original whipstock
2. Williams - Schalk 32 #1A ST01 Plan#4_RPT.pdf newly formulated directional plan report with higher KOP

Brian Alleman
Drilling Engineer II
Brian.alleman@williams.com
Office (918)573-2434
Cell (719)330-1052



Schlumberger Company

Job Number: 700002095-NM-NM
Company: Williams Production Company
Lease/Well: Schalk 32-1A
Location: Rio Arriba County
Rig Name: Aztec 781
RKB: 12'
G.L. or M.S.L.: 6978'

State/Country: New Mexico
Declination: 9.71
Grid: True North
File name: C:\WINSERVE\ACCESS\SCHALK.SVY
Date/Time: 29-Apr-11 / 11:39
Curve Name: Schalk 32-1A As Drilled

Pathfinder/Schlumberger

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 86.91
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Distance FT	CLOSURE Direction Deg	Dogleg Severity Deg/100
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Scientific Gyro

293.38	1.06	152.40	293.36	-2.40	1.25	1.12	2.71	152.49	.00
421.12	1.23	156.45	421.07	-4.70	2.35	2.09	5.26	153.50	.15
548.86	1.23	160.93	548.79	-7.26	3.34	2.94	7.99	155.28	.08
674.84	1.06	143.88	674.74	-9.48	4.47	3.95	10.48	154.75	.30
761.84	.97	147.57	761.73	-10.75	5.34	4.75	12.00	153.58	.13
1047.44	.79	146.78	1047.29	-14.43	7.71	6.92	16.37	151.88	.06
1233.67	.79	139.31	1233.51	-16.48	9.25	8.35	18.90	150.69	.06
1425.56	.88	140.54	1425.37	-18.62	11.05	10.03	21.66	149.31	.05
1618.63	1.23	155.30	1618.41	-21.65	12.86	11.68	25.18	149.29	.23
1809.58	.88	148.18	1809.33	-24.76	14.49	13.14	28.69	149.66	.20
2000.37	.53	140.71	2000.10	-26.69	15.82	14.36	31.02	149.34	.19

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Distance FT	CLOSURE Direction Deg	Dogleg Severity Deg/100
2192.93	.35	164.53	2192.66	-27.94	16.54	15.01	32.47	149.37	.13
2382.10	.18	122.96	2381.83	-28.66	16.95	15.38	33.30	149.41	.13
2573.31	.18	290.65	2573.04	-28.72	16.92	15.34	33.33	149.50	.19
2765.51	.26	314.21	2765.24	-28.31	16.32	14.77	32.68	150.03	.06
2956.74	.53	293.55	2956.46	-27.65	15.20	13.69	31.55	151.20	.16
3148.47	.62	295.14	3148.18	-26.86	13.45	11.98	30.04	153.40	.05
3339.10	.88	277.73	3338.79	-26.22	11.06	9.63	28.46	157.12	.18
3403.00	.88	263.20	3402.69	-26.21	10.09	8.66	28.09	158.95	.35
3435.00	.97	289.42	3434.68	-26.15	9.59	8.17	27.86	159.86	1.34
3467.00	3.34	19.86	3466.66	-25.19	9.65	8.28	26.97	159.03	10.89
Project to Bit									
3561.00	13.90	75.40	3559.57	-19.74	21.55	20.46	29.23	132.49	13.10



Williams Production

Rio Arriba County

Schalk 32

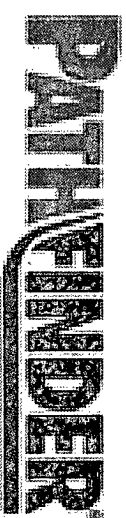
#1A

ST01

Plan: Plan #4

Pathfinder X&Y Planning Report

29 April, 2011



A Schlumberger Company



Smith International, Inc.
Pathfinder X&Y Planning Report



A Schlumberger Company

Company:	Williams Production	Local Co-ordinate Reference:	Well #1A
Project:	Rio Arriba County	TVD Reference:	RKB-12' @ 6990.00usft (Aztec 781)
Site:	Schaik 32	MD Reference:	RKB-12' @ 6990.00usft (Aztec 781)
Well:	#1A	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	Plan #4	Database:	EDM 5000.1 Single User Db
Project:	Rio Arriba County		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico Central 3002		

Site	Schaik 32		
Site Position:		Northing:	2,133,165.99 usft
From:	Lat/Long	Easting:	197,376.03 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	36° 51' 28.692 N
		Longitude:	107° 17' 3.876 W
		Grid Convergence:	-0.62 °

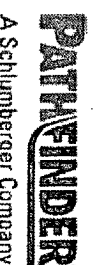
Well	#1A		
Well Position	+N-S	0.00 usft	2,133,165.99 usft
	+E-W	0.00 usft	197,376.03 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	36° 51' 28.692 N
		Longitude:	107° 17' 3.876 W
		Ground Level:	6,978.00 usft

Wellbore	ST01		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	04/01/11	(°)
		9.71	
		Dip Angle	Field Strength
		(°)	(nT)
		63.68	50,917

Design	Plan #4		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			3,388.50
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
		Direction	
		(°)	
		86.91	



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Company:	Williams Production	Local Co-ordinate Reference:	Well #1A
Project:	Rio Arriba County	MD Reference:	RKB-12' @ 6990.00usft (Aztec 781)
Site:	Schaik 32	North Reference:	RKB-12' @ 6990.00usft (Aztec 781)
Well:	#1A	Survey Calculation Method:	True
Wellbore:	ST01	Minimum Curvature	
Design:	Plan #4	EDM 5000.1 Single User Db	

Survey Tool Program		Date	04/29/11		
From (usft)	To (usft)	Survey (Wellbore)		Tool Name	Description
293.38	3,388.50	Scientific Gyro MWD (ST01)		MWD	MWD - Standard
3,388.50	6,723.44	Plan #4 (ST01)		MWD	MWD - Standard

Planned Survey	MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	NS (usft)	EW (usft)	V. Sec (usft)	Dleg (°/100usft)	Northing (usft)	Easting (usft)
	0.00	0.00	0.00	0.00	6,990.00	0.00	0.00	0.00	0.00	2,133,165.99	197,376.03
	293.38	1.06	152.40	293.36	6,696.64	-2.40	1.26	1.13	0.36	2,133,163.58	197,377.26
	421.12	1.23	156.45	421.08	6,568.92	-4.71	2.35	2.10	0.15	2,133,161.26	197,378.33
	548.86	1.23	160.93	548.79	6,441.21	-7.26	3.35	2.95	0.08	2,133,158.70	197,379.30
	674.84	1.06	143.88	674.74	6,315.26	-9.48	4.48	3.96	0.30	2,133,156.47	197,380.41
	761.84	0.97	147.57	761.73	6,228.27	-10.75	5.35	4.76	0.13	2,133,155.18	197,381.26
	1,047.44	0.79	146.78	1,047.30	5,942.70	-14.44	7.72	6.93	0.06	2,133,151.47	197,383.60
	1,233.67	0.79	139.31	1,233.51	5,756.49	-16.49	9.26	8.36	0.06	2,133,149.41	197,385.11
	1,425.56	0.88	140.54	1,425.38	5,564.62	-18.63	11.06	10.04	0.05	2,133,147.25	197,386.89
	1,618.63	1.23	155.30	1,618.42	5,371.58	-21.66	12.87	11.68	0.23	2,133,144.20	197,388.67
	1,809.58	0.88	148.18	1,809.33	5,180.67	-24.76	14.50	13.14	0.20	2,133,141.07	197,390.26
	2,000.37	0.53	140.71	2,000.11	4,989.89	-26.69	15.83	14.37	0.19	2,133,139.13	197,391.57
	2,192.83	0.35	164.53	2,192.56	4,797.44	-27.95	16.55	15.02	0.13	2,133,137.87	197,392.28
	2,382.10	0.18	122.96	2,381.83	4,608.17	-28.67	16.95	15.39	0.13	2,133,137.15	197,392.67
	2,573.31	0.18	290.65	2,573.04	4,416.96	-28.72	16.92	15.35	0.19	2,133,137.09	197,392.64
	2,765.51	0.26	314.21	2,765.24	4,224.76	-28.31	16.33	14.78	0.06	2,133,137.51	197,392.05
	2,956.74	0.53	293.55	2,956.46	4,033.54	-27.66	15.21	13.70	0.16	2,133,138.17	197,390.94
	3,148.47	0.62	295.14	3,148.18	3,841.82	-26.86	13.46	11.99	0.05	2,133,138.99	197,389.20
	3,339.10	0.88	277.73	3,338.80	3,651.20	-26.23	11.07	9.64	0.18	2,133,139.65	197,386.82
	3,388.50	0.88	266.51	3,388.19	3,601.81	-26.20	10.32	8.89	0.35	2,133,139.69	197,386.07

KOP @3388.50'MD,3388.19'TVD,8.89'VS



Smith International, Inc.
Pathfinder X&Y Planning Report



Company: Williams Production
Project: Rio Arriba County
Site: Schalk 32
Well: #1A
Wellbore: ST01
Design: Plan #4

Local Co-ordinate Reference:
TVD Reference: Well #1A
MD Reference: RKB-12' @ 6990.00usft (Aztec 781)
North Reference: RKB-12' @ 6990.00usft (Aztec 781)
Survey Calculation Method: True
Database: Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	NS (usft)	EW (usft)	V. Sec (usft)	Dleg (°/100usft)	Northing (usft)	Easting (usft)
3,400.00	0.79	86.33	3,399.69	3,590.31	-26.20	10.31	8.88	14.48	2,133,139.68	197,386.06
3,425.00	4.41	86.40	3,424.66	3,565.34	-26.13	11.44	10.02	14.48	2,133,139.74	197,387.19
3,450.00	8.03	86.41	3,449.51	3,540.49	-25.96	14.14	12.73	14.48	2,133,139.88	197,389.89
3,475.00	11.65	86.41	3,474.14	3,515.86	-25.69	18.41	17.00	14.48	2,133,140.11	197,394.16
3,500.00	15.27	86.42	3,498.45	3,491.55	-25.33	24.21	22.81	14.48	2,133,140.41	197,399.97
3,525.00	18.89	86.42	3,522.34	3,467.66	-24.87	31.54	30.15	14.48	2,133,140.79	197,407.30
3,550.00	22.51	86.42	3,545.73	3,444.27	-24.32	40.35	38.99	14.48	2,133,141.24	197,416.12
3,575.00	26.13	86.42	3,568.50	3,421.50	-23.67	50.63	49.28	14.48	2,133,141.77	197,426.40
3,600.00	29.74	86.42	3,590.59	3,399.41	-22.94	62.31	60.99	14.48	2,133,142.38	197,438.09
3,625.00	33.36	86.42	3,611.89	3,378.11	-22.12	75.37	74.07	14.48	2,133,143.06	197,451.16
3,650.00	36.98	86.42	3,632.32	3,357.68	-21.22	89.74	88.47	14.48	2,133,143.80	197,465.54
3,675.00	40.60	86.42	3,651.80	3,338.20	-20.25	105.37	104.13	14.48	2,133,144.61	197,481.18
3,695.48	43.57	86.42	3,667.00	3,323.00	-19.39	119.07	117.85	14.48	2,133,145.32	197,494.88
Fruitland										
3,700.00	44.22	86.42	3,670.26	3,319.74	-19.19	122.19	120.98	14.48	2,133,145.48	197,498.01
3,725.00	47.84	86.42	3,687.61	3,302.39	-18.07	140.15	138.97	14.48	2,133,146.41	197,515.98
3,750.00	51.46	86.42	3,703.79	3,286.21	-16.88	159.16	158.02	14.48	2,133,147.39	197,535.00
3,775.00	55.08	86.42	3,718.74	3,271.26	-15.63	179.16	178.05	14.48	2,133,148.43	197,555.01
3,800.00	58.70	86.42	3,732.40	3,257.60	-14.32	200.05	198.99	14.48	2,133,149.51	197,575.92
3,825.00	62.32	86.42	3,744.70	3,245.30	-12.96	221.77	220.75	14.48	2,133,150.63	197,597.64
3,850.00	65.94	86.42	3,755.61	3,234.39	-11.56	244.21	243.24	14.48	2,133,151.79	197,620.11
3,875.00	69.56	86.42	3,765.07	3,224.93	-10.11	267.30	266.37	14.48	2,133,152.99	197,643.21
3,900.00	73.18	86.42	3,773.06	3,216.94	-8.63	290.94	290.05	14.48	2,133,154.21	197,666.86
3,925.00	76.80	86.42	3,779.54	3,210.46	-7.13	315.04	314.20	14.48	2,133,155.46	197,690.97
3,936.50	78.46	86.42	3,782.00	3,208.00	-6.42	326.25	325.43	14.48	2,133,156.04	197,702.19
Top Coal										
3,950.00	80.41	86.42	3,784.47	3,205.53	-5.59	339.49	338.70	14.48	2,133,156.72	197,715.44



Smith International, Inc.
Pathfinder X&Y Planning Report



A Schlumberger Company

Company: Williams Production
Project: Rio Arriba County
Site: Schalk 32
Well: #1A
Wellbore: ST01
Design: Plan #4

Local Co-ordinate Reference:
TVD Reference: RKB-12 @ 6990.00usft (Aztec 781)
MD Reference: RKB-12 @ 6990.00usft (Aztec 781)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	Dleg (°/100usft)	Northing (usft)	Eastng (usft)
3,975.00	84.03	86.42	3,787.86	3,202.14	-4.05	364.21	363.46	14.48	2,133,158.00	197,740.18
4,000.00	87.65	86.42	3,789.67	3,200.33	-2.49	389.09	388.39	14.48	2,133,159.29	197,765.07
4,016.21	90.00	86.42	3,790.00	3,200.00	-1.48	405.26	404.60	14.48	2,133,160.12	197,781.26
LP @14.48°DLS,4016.21MD,3790.00°TVD,404.60°VS										
4,100.00	90.00	86.42	3,790.00	3,200.00	3.75	488.89	488.38	0.00	2,133,164.45	197,864.94
4,200.00	90.00	86.42	3,790.00	3,200.00	10.00	588.70	588.38	0.00	2,133,169.61	197,964.80
4,300.00	90.00	86.42	3,790.00	3,200.00	16.24	688.50	688.38	0.00	2,133,174.78	198,064.67
4,400.00	90.00	86.42	3,790.00	3,200.00	22.48	788.31	788.37	0.00	2,133,179.94	198,164.54
4,500.00	90.00	86.42	3,790.00	3,200.00	28.73	888.11	888.37	0.00	2,133,185.10	198,264.40
4,600.00	90.00	86.42	3,790.00	3,200.00	34.97	987.92	988.37	0.00	2,133,190.27	198,364.27
4,700.00	90.00	86.42	3,790.00	3,200.00	41.22	1,087.72	1,088.36	0.00	2,133,195.43	198,464.14
4,800.00	90.00	86.42	3,790.00	3,200.00	47.46	1,187.53	1,188.36	0.00	2,133,200.59	198,564.00
4,900.00	90.00	86.42	3,790.00	3,200.00	53.71	1,287.33	1,288.36	0.00	2,133,205.75	198,663.87
5,000.00	90.00	86.42	3,790.00	3,200.00	59.95	1,387.14	1,388.35	0.00	2,133,210.92	198,763.74
5,100.00	90.00	86.42	3,790.00	3,200.00	66.19	1,486.94	1,488.35	0.00	2,133,216.08	198,863.60
5,200.00	90.00	86.42	3,790.00	3,200.00	72.44	1,586.75	1,588.34	0.00	2,133,221.24	198,963.47
5,300.00	90.00	86.42	3,790.00	3,200.00	78.68	1,686.55	1,688.34	0.00	2,133,226.41	199,063.34
5,400.00	90.00	86.42	3,790.00	3,200.00	84.93	1,786.36	1,788.34	0.00	2,133,231.57	199,163.20
5,500.00	90.00	86.42	3,790.00	3,200.00	91.17	1,886.16	1,888.33	0.00	2,133,236.73	199,263.07
5,600.00	90.00	86.42	3,790.00	3,200.00	97.42	1,985.96	1,988.33	0.00	2,133,241.89	199,362.94
5,700.00	90.00	86.42	3,790.00	3,200.00	103.66	2,085.77	2,088.33	0.00	2,133,247.06	199,462.80
5,800.00	90.00	86.42	3,790.00	3,200.00	109.90	2,185.57	2,188.32	0.00	2,133,252.22	199,562.67
5,900.00	90.00	86.42	3,790.00	3,200.00	116.15	2,285.38	2,288.32	0.00	2,133,257.38	199,662.53
6,000.00	90.00	86.42	3,790.00	3,200.00	122.39	2,385.18	2,388.31	0.00	2,133,262.55	199,762.40
6,100.00	90.00	86.42	3,790.00	3,200.00	128.64	2,484.99	2,488.31	0.00	2,133,267.71	199,862.27
6,200.00	90.00	86.42	3,790.00	3,200.00	134.88	2,584.79	2,588.31	0.00	2,133,272.87	199,962.13
6,300.00	90.00	86.42	3,790.00	3,200.00	141.12	2,684.60	2,688.30	0.00	2,133,278.03	200,062.00



Smith International, Inc.
Pathfinder X&Y Planning Report



Company: Williams Production
Project: Rio Arriba County
Site: Schalk 32
Well: #1A
Wellbore: ST01
Design: Plan #4

Local Co-ordinate Reference:
TVD Reference: RKB-12 @ 6990.00usft (Aztec 781)
MD Reference: RKB-12 @ 6990.00usft (Aztec 781)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
6,400.00	90.00	86.42	3,790.00	3,200.00	147.37	2,784.40	2,788.30	0.00	2,133,283.20	200,161.87
6,500.00	90.00	86.42	3,790.00	3,200.00	153.61	2,884.21	2,888.30	0.00	2,133,288.36	200,261.73
6,600.00	90.00	86.42	3,790.00	3,200.00	159.86	2,984.01	2,988.29	0.00	2,133,293.52	200,361.60
6,700.00	90.00	86.42	3,790.00	3,200.00	166.10	3,083.82	3,088.29	0.00	2,133,298.69	200,461.47
6,723.44	90.00	86.42	3,790.00	3,200.00	167.57	3,107.21	3,111.73	0.00	2,133,299.90	200,484.88
TD @6723.44MD:3790.00TVD:3111.73VS										

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction
3,695.48	3,667.00	Fruitland		0.00	
3,936.50	3,782.00	Top Coal		0.00	
3,172.29	3,172.00	Ojo Alamo		0.00	
3,287.30	3,287.00	Kirtland		0.00	
1,942.26	1,942.00	Nacimiento		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
3,388.50	3,388.19	-26.20	10.32	KOP @3388.50MD:3388.19TVD:8.89VS
4,016.21	3,790.00	-1.48	405.26	LP @14.48°DLS:4016.21MD:3790.00TVD:404.60VS
6,723.44	3,790.00	167.57	3,107.21	TD @6723.44MD:3790.00TVD:3111.73VS

Checked By: _____ Approved By: _____ Date: _____