



**Southwestern Energy
Production Company**

A subsidiary of Southwestern Energy Company

2350 N. Sam Houston Parkway East
Suite 300
Houston, Texas 77032
(281) 618-4700 FAX: (281) 618-4757

November 16, 2004

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division-District 2
1301 W. Grand Avenue
Artesia, NM 88210

Re: Karlsbad Corral 2 #3H
Sec. 2, T25S-R29E
Eddy County, NM

API # 30-015-33722

Bryan Arrant:

Please find attachments for the above referenced well. APD submitted on line.

If you have any questions or need additional information, please feel free to contact me at 281-618-4739.

Sincerely,

Vonnie J. Bass
Production/Drilling Analyst

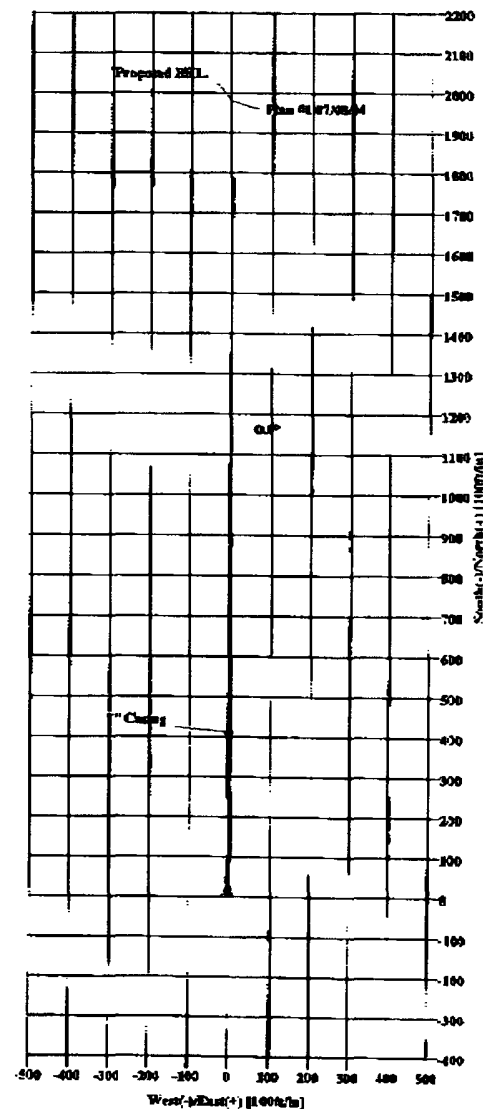
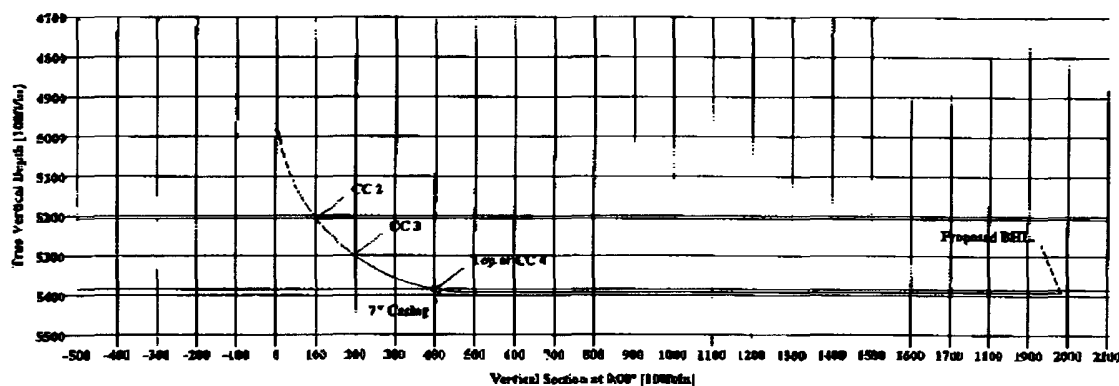
Attachments

**Southwestern Energy
Production Company
Karlsbad Corral "2" #3-H
Eddy County, New Mexico
Plan #1 07/08/04**

**PATHFINDER
ENERGY SERVICES**

SECTION DETAILS

Sec	MD	In	Asi	TVD	-N/S	-E/W	DLeg	TTSec	VSec	Target
1	3.00	0.00	0.00	9.00	0.00	0.00	3.00	0.00	0.00	
2	4913.42	0.00	0.00	4913.42	0.00	0.00	3.00	0.00	0.00	
3	5013.42	12.00	0.00	5012.69	10.43	0.00	12.00	0.00	10.43	
4	5113.42	24.00	0.00	5107.62	4.28	0.00	12.00	0.00	41.28	
5	5213.42	36.00	0.00	5194.07	91.19	0.00	12.00	0.00	91.19	
6	5229.61	37.94	0.30	5207.00	100.92	0.00	12.00	0.30	806.92	
7	5313.42	48.00	0.30	5265.25	157.95	0.00	12.00	0.30	157.96	
8	5363.94	54.06	0.00	5300.00	197.14	2.00	12.00	0.00	197.24	
9	5413.42	60.00	0.00	5326.92	218.73	0.00	12.00	0.00	238.73	
10	5513.42	72.00	0.00	5367.52	309.92	2.00	12.00	0.00	329.92	
11	5584.57	80.99	0.00	5385.00	402.73	0.00	12.00	0.00	402.75	
12	5584.42	81.00	0.00	5385.01	402.73	0.00	12.00	0.00	402.77	
13	5584.42	81.00	0.00	5386.57	412.65	0.00	0.00	0.00	412.65	
14	5584.42	90.30	0.00	5392.45	487.34	0.00	12.00	0.00	487.34	
15	5773.42	90.00	0.00	5392.45	587.34	0.00	0.30	0.00	587.34	
16	5873.42	90.00	0.00	5392.45	687.34	0.00	0.30	0.00	687.34	
17	5973.42	90.00	0.00	5392.45	787.34	0.00	0.30	0.00	787.34	
18	6073.42	90.00	0.00	5392.45	887.34	0.00	0.30	0.00	887.34	
19	6173.42	90.00	0.00	5392.45	987.34	0.00	0.30	0.00	987.34	
20	6273.42	90.00	0.00	5392.45	1087.34	0.00	0.30	0.00	1087.34	
21	6373.42	90.00	0.00	5392.45	1187.34	0.00	0.30	0.00	1187.34	
22	6473.42	90.00	0.00	5392.45	1287.34	0.00	0.30	0.00	1287.34	
23	6573.42	90.00	0.00	5392.45	1387.34	0.00	0.30	0.00	1387.34	
24	6673.42	90.00	0.00	5392.45	1487.34	0.00	0.30	0.00	1487.34	
25	6773.42	90.00	0.00	5392.45	1587.34	0.00	0.30	0.00	1587.34	
26	6873.42	90.00	0.00	5392.45	1687.34	0.00	0.30	0.00	1687.34	
27	6973.42	90.00	0.00	5392.45	1787.34	0.00	0.30	0.00	1787.34	
28	7073.42	90.00	0.00	5392.45	1887.34	0.00	0.30	0.00	1887.34	
29	7166.03	90.00	0.00	5392.45	1980.00	0.00	0.00	0.00	1980.00	



Dr. Paul R. Anderson and Co. (1000/ft) 1000
 North-South (ft) 1000
 East-West (ft) 1000
 Depth (ft) 1000
 Angle (°) 1000



PathFinder Planning Report

Company: SOUTHWESTERN ENERGY & PRODUCTS	Date: 7/8/2004	Time: 14:28:28	Page: 1
Field: Eddy County, New Mexico	Co-ordinate(N/E) Reference: Well: Karlsbad Corral 2 #2-H, True North		
Site: Karlsbad Corral 2 #2-H	Vertical (TVD) Reference: System: Mean Sea Level		
Well: Karlsbad Corral 2 #2-H	Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)		
Wellpath: Karlsbad Corral 2 #2-H	Plan:	Plan #1 07/08/04	

Field: Eddy County, New Mexico
Section 10 T-25-S & R28-E
USA

Map System: US State Plane Coordinate System 1927
Geo Datum: NAD27 (Clarke 1886)
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Well Centre
Geomagnetic Model: igr2000

Site: Karlsbad Corral 2 #2-H
Section 2, T25S, R20E
Eddy County, New Mexico

Site Position:	Northing:	ft	Latitude:	
From: Local Only	Easting:	ft	Longitude:	
Position Uncertainty:	0.00 ft		North Reference:	True
Ground Level:	0.00 ft		Grid Convergence:	deg

Well: Karlsbad Corral 2 #2-H

Slot Name:

Well Position:	+N/-S	0.00 ft	Northing:	ft
	+E/-W	0.00 ft	Easting:	ft
Position Uncertainty:		0.00 ft		

Wellpath: Karlsbad Corral 2 #2-H

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

Current Datum:	SITE	Height	0.00 ft	
Magnetic Data:	7/8/2004			
Field Strength:	0 mT			
Vertical Section:	Depth From (TVD)	+N/-S		
	ft	ft		
	0.00	0.00	0.00	0.00

Plan: Plan #1 07/08/04

Date Composed: 7/8/2004
Version: 1
Tied-In: 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	
4913.42	0.00	0.00	4913.42	0.00	0.00	0.00	0.00	0.00	0.00	
5013.42	12.00	0.00	5012.69	10.43	0.00	12.00	12.00	0.00	0.00	
5113.42	24.00	0.00	5110.82	41.28	0.00	12.00	12.00	0.00	0.00	
5213.42	36.00	0.00	5194.07	81.19	0.00	12.00	12.00	0.00	0.00	
5229.61	37.94	0.00	5207.00	100.92	0.00	12.00	12.00	0.00	0.00	
5313.42	48.00	0.00	5298.25	157.98	0.00	12.00	12.00	0.00	0.00	
5363.94	54.08	0.00	5300.00	197.24	0.00	12.00	12.00	0.00	0.00	
5413.42	60.00	0.00	5326.92	238.73	0.00	12.00	12.00	0.00	0.00	
5513.42	72.00	0.00	5367.52	329.92	0.00	12.00	12.00	0.00	0.00	
5588.37	80.99	0.00	5385.00	402.73	0.00	12.00	12.00	0.00	0.00	
5588.42	81.00	0.00	5385.01	402.77	0.00	12.03	12.03	0.00	0.00	
5598.42	81.00	0.00	5388.57	412.85	0.00	0.00	0.00	0.00	0.00	
5673.42	90.00	0.00	5392.45	487.34	0.00	12.00	12.00	0.00	0.00	
5773.42	90.00	0.00	5392.45	587.34	0.00	0.00	0.00	0.00	0.00	
5873.42	90.00	0.00	5392.45	687.34	0.00	0.00	0.00	0.00	0.00	
5973.42	90.00	0.00	5392.45	787.34	0.00	0.00	0.00	0.00	0.00	
6073.42	90.00	0.00	5392.45	887.34	0.00	0.00	0.00	0.00	0.00	
6173.42	90.00	0.00	5392.45	987.34	0.00	0.00	0.00	0.00	0.00	
6273.42	90.00	0.00	5392.45	1087.34	0.00	0.00	0.00	0.00	0.00	
6373.42	90.00	0.00	5392.45	1187.34	0.00	0.00	0.00	0.00	0.00	
6473.42	90.00	0.00	5392.45	1287.34	0.00	0.00	0.00	0.00	0.00	
6573.42	90.00	0.00	5392.45	1387.34	0.00	0.00	0.00	0.00	0.00	
6673.42	90.00	0.00	5392.45	1487.34	0.00	0.00	0.00	0.00	0.00	
6773.42	90.00	0.00	5392.45	1587.34	0.00	0.00	0.00	0.00	0.00	
6873.42	90.00	0.00	5392.45	1687.34	0.00	0.00	0.00	0.00	0.00	
6973.42	90.00	0.00	5392.45	1787.34	0.00	0.00	0.00	0.00	0.00	
7073.42	90.00	0.00	5392.45	1887.34	0.00	0.00	0.00	0.00	0.00	
7166.08	90.00	0.00	5392.45	1880.00	0.00	0.00	0.00	0.00	0.00	



PathFinder Planning Report

Company: SOUTHWESTERN ENERGY & PRODUCTS
 Field: Eddy County, New Mexico
 Site: Karlsbad Corral 2 #2-H
 Well: Karlsbad Corral 2 #2-H
 Wellpath: Karlsbad Corral 2 #2-H

Date: 7/8/2004 Time: 14:28:28 Page: 2
 Co-ordinate(NE) Reference: Well: Karlsbad Corral 2 #2-H, True North
 Vertical (TVD) Reference: System: Mean Sea Level
 Section (VS) Reference: Well (0.00N,0.00E,0.00Az)
 Plan: Plan #1 07/08/04

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
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4913.42	0.00	0.00	4913.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Section 2 : Start Build 12.00

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
4925.00	1.39	0.00	4925.00	0.14	0.00	0.14	12.00	12.00	0.00	0.00
4950.00	4.98	0.00	4949.88	1.40	0.00	1.40	12.00	12.00	0.00	0.00
4975.00	7.39	0.00	4974.83	3.97	0.00	3.97	12.00	12.00	0.00	0.00
5000.00	10.39	0.00	4999.53	7.83	0.00	7.83	12.00	12.00	0.00	0.00
5013.42	12.00	0.00	5012.89	10.43	0.00	10.43	12.00	12.00	0.00	0.00

Section 3 : Start Build 12.00

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
5025.00	13.39	0.00	5023.99	12.90	0.00	12.98	12.00	12.00	0.00	0.00
5050.00	16.39	0.00	5048.14	19.40	0.00	19.40	12.00	12.00	0.00	0.00
5075.00	19.39	0.00	5071.83	27.08	0.00	27.08	12.00	12.00	0.00	0.00
5100.00	22.39	0.00	5095.29	35.99	0.00	35.99	12.00	12.00	0.00	0.00
5113.42	24.00	0.00	5107.62	41.28	0.00	41.28	12.00	12.00	0.00	0.00

Section 4 : Start Build 12.00

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
5125.00	25.39	0.00	5118.14	46.12	0.00	46.12	12.00	12.00	0.00	0.00
5150.00	28.39	0.00	5140.44	57.42	0.00	57.42	12.00	12.00	0.00	0.00
5175.00	31.39	0.00	5162.11	69.88	0.00	69.88	12.00	12.00	0.00	0.00
5200.00	34.39	0.00	5183.10	83.45	0.00	83.45	12.00	12.00	0.00	0.00
5213.42	36.00	0.00	5194.07	91.19	0.00	91.19	12.00	12.00	0.00	0.00

Section 5 : Start Build 12.00

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
5225.00	37.39	0.00	5203.35	98.11	0.00	98.11	12.00	12.00	0.00	0.00
5229.61	37.94	0.00	5207.00	100.92	0.00	100.92	12.00	12.00	0.00	0.00

Section 6 : Start Build 12.00

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
5250.00	40.39	0.00	5222.81	113.80	0.00	113.80	12.00	12.00	0.00	0.00
5275.00	43.39	0.00	5241.42	130.18	0.00	130.49	12.00	12.00	0.00	0.00
5300.00	46.39	0.00	5259.13	148.13	0.00	148.13	12.00	12.00	0.00	0.00
5313.42	48.00	0.00	5268.25	157.98	0.00	157.98	12.00	12.00	0.00	0.00

Section 7 : Start Build 12.00

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
5325.00	49.39	0.00	5275.89	168.68	0.00	168.68	12.00	12.00	0.00	0.00
5350.00	52.39	0.00	5291.66	186.07	0.00	186.07	12.00	12.00	0.00	0.00
5363.94	54.08	0.00	5300.00	197.24	0.00	197.24	12.00	12.00	0.00	0.00

Section 8 : Start Build 12.00

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
5375.00	55.39	0.00	5308.39	208.27	0.00	208.27	12.00	12.00	0.00	0.00
5400.00	58.39	0.00	5320.04	227.21	0.00	227.21	12.00	12.00	0.00	0.00



Pathfinder Planning Report

Company: SOUTHWESTERN ENERGY & PRODUCTS
 Field: Eddy County, New Mexico
 Site: Karlsbad Corral 2 #2-H
 Well: Karlsbad Corral 2 #2-H
 Wellpath: Karlsbad Corral 2 #2-H

Date: 7/8/2004 Timer: 14:28:28 Page: 3
 Co-ordinate(N&E) Reference: Well: Karlsbad Corral 2 #2-H, True North
 Vertical (TVD) Reference: System: Mean Sea Level
 Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)
 Plan: Plan #1 07/08/04

Section 8 : Start Build 12.00

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
5413.42	80.00	0.00	5326.92	238.73	0.00	238.73	12.00	12.00	0.00	0.00

Section 9 : Start Build 12.00

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
5425.00	81.39	0.00	5332.58	248.83	0.00	248.83	12.00	12.00	0.00	0.00
5450.00	84.39	0.00	5343.98	271.08	0.00	271.08	12.00	12.00	0.00	0.00
5475.00	87.39	0.00	5354.19	293.80	0.00	293.80	12.00	12.00	0.00	0.00
5500.00	70.39	0.00	5363.19	317.22	0.00	317.22	12.00	12.00	0.00	0.00
5513.42	72.00	0.00	5367.52	329.92	0.00	329.92	12.00	12.00	0.00	0.00

Section 10 : Start Build 12.00

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
5525.00	73.39	0.00	5370.98	340.98	0.00	340.98	12.00	12.00	0.00	0.00
5550.00	78.39	0.00	5377.48	365.11	0.00	365.11	12.00	12.00	0.00	0.00
5575.00	79.39	0.00	5382.72	389.55	0.00	389.55	12.00	12.00	0.00	0.00
5588.37	80.99	0.00	5385.00	402.73	0.00	402.73	12.00	12.00	0.00	0.00

Section 11 : Start Build 12.03

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
5588.42	81.00	0.00	5385.01	402.77	0.00	402.77	12.03	12.03	0.00	0.00

Section 12 : 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
5588.42	81.00	0.00	5386.57	412.65	0.00	412.65	0.00	0.00	0.00	0.00

Section 13 : Start Build 12.00

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
5600.00	81.19	0.00	5386.82	414.21	0.00	414.21	12.00	12.00	0.00	0.00
5625.00	84.19	0.00	5390.00	439.00	0.00	439.00	12.00	12.00	0.00	0.00
5650.00	87.19	0.00	5391.87	463.03	0.00	463.93	12.00	12.00	0.00	0.00
5673.42	90.00	0.00	5392.45	487.34	0.00	487.34	12.00	12.00	0.00	0.00

Section 14 : 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
5700.00	80.00	0.00	5392.45	513.92	0.00	513.92	0.00	0.00	0.00	0.00
5773.42	90.00	0.00	5392.45	587.34	0.00	587.34	0.00	0.00	0.00	0.00

Section 15 : 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
5800.00	90.00	0.00	5392.45	613.92	0.00	613.92	0.00	0.00	0.00	0.00
5873.42	90.00	0.00	5392.45	687.34	0.00	687.34	0.00	0.00	0.00	0.00

Section 16 : 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
5900.00	90.00	0.00	5392.46	713.92	0.00	713.92	0.00	0.00	0.00	0.00
5973.42	90.00	0.00	5392.45	787.34	0.00	787.34	0.00	0.00	0.00	0.00



PathFinder Planning Report

Company: SOUTHWESTERN ENERGY & PRODUCTS
 Field: Eddy County, New Mexico
 Site: Karlsbad Corral 2 #2-H
 Well: Karlsbad Corral 2 #2-H
 Wellpath: Karlsbad Corral 2 #2-H

Date: 7/8/2004 Time: 14:28:28 Page: 4
 Co-ordinate(N/E) Reference: Well: Karlsbad Corral 2 #2-H, True North
 Vertical (TVD) Reference: System: Mean Sea Level
 Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)
 Plan: Plan #1 07/08/04

Section 17 : 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
6000.00	90.00	0.00	5392.45	813.92	0.00	813.92	0.00	0.00	0.00	0.00
6073.42	90.00	0.00	5392.45	887.34	0.00	887.34	0.00	0.00	0.00	0.00

Section 18 : 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
6100.00	90.00	0.00	5392.45	913.92	0.00	913.92	0.00	0.00	0.00	0.00
6173.42	90.00	0.00	5392.45	987.31	0.00	987.34	0.00	0.00	0.00	0.00

Section 19 : 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
6200.00	90.00	0.00	5392.45	1013.92	0.00	1013.92	0.00	0.00	0.00	0.00
6273.42	90.00	0.00	5392.45	1087.34	0.00	1087.34	0.00	0.00	0.00	0.00

Section 20 : 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
6300.00	90.00	0.00	5392.45	1113.92	0.00	1113.92	0.00	0.00	0.00	0.00
6373.42	90.00	0.00	5392.45	1187.34	0.00	1187.34	0.00	0.00	0.00	0.00

Section 21 : 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
6400.00	90.00	0.00	5392.45	1213.92	0.00	1213.92	0.00	0.00	0.00	0.00
6473.42	90.00	0.00	5392.45	1287.34	0.00	1287.34	0.00	0.00	0.00	0.00

Section 22 : 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
6500.00	90.00	0.00	5392.45	1313.92	0.00	1313.92	0.00	0.00	0.00	0.00
6573.42	90.00	0.00	5392.45	1387.34	0.00	1387.34	0.00	0.00	0.00	0.00

Section 23 : 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
6600.00	90.00	0.00	5392.45	1413.92	0.00	1413.92	0.00	0.00	0.00	0.00
6673.42	90.00	0.00	5392.45	1487.34	0.00	1487.34	0.00	0.00	0.00	0.00

Section 24 : 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
6700.00	90.00	0.00	5392.45	1513.92	0.00	1513.92	0.00	0.00	0.00	0.00
6773.42	90.00	0.00	5392.45	1587.34	0.00	1587.34	0.00	0.00	0.00	0.00

Section 25 : 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
6800.00	90.00	0.00	5392.45	1613.92	0.00	1613.92	0.00	0.00	0.00	0.00
6873.42	90.00	0.00	5392.45	1687.34	0.00	1687.34	0.00	0.00	0.00	0.00



PathFinder Planning Report

Company: SOUTHWESTERN ENERGY & PRODUCTS Field: Eddy County, New Mexico Site: Karlsbad Corral 2 #3-H Well: Karlsbad Corral 2 #3-H Wellpath: Karlsbad Corral 2 #3-H	Date: 7/8/2004 Co-ordinate(N/E) Reference: Well: Karlsbad Corral 2 #2-H, True North Vertical (TVD) Reference: System: Mean Sea Level Section (VS) Reference: Well (0.00N,0.00E,0.00Azi) Plan: Plan #1 07/08/04	Time: 14:28:28 Page: 5
--	---	---

Section 26 : 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
6900.00	90.00	0.00	5392.45	1713.92	0.00	1713.92	0.00	0.00	0.00	0.00
6973.42	90.00	0.00	5392.45	1787.34	0.00	1787.34	0.00	0.00	0.00	0.00

Section 27 : 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
7000.00	90.00	0.00	5392.45	1813.92	0.00	1813.92	0.00	0.00	0.00	0.00
7073.42	90.00	0.00	5392.45	1887.34	0.00	1887.34	0.00	0.00	0.00	0.00

Section 28 : 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
7100.00	90.00	0.00	5392.45	1913.92	0.00	1913.92	0.00	0.00	0.00	0.00
7166.08	90.00	0.00	5392.45	1980.00	0.00	1980.00	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
4800.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4913.42	0.00	0.00	4913.42	0.00	0.00	0.00	0.00	0.00	0.00	
4925.00	1.39	0.00	4925.00	0.14	0.00	0.14	12.00	12.00	0.00	
4950.00	4.39	0.00	4949.08	1.40	0.00	1.40	12.00	12.00	0.00	
4975.00	7.39	0.00	4974.83	3.97	0.00	3.97	12.00	12.00	0.00	
5000.00	10.39	0.00	4999.53	7.83	0.00	7.83	12.00	12.00	0.00	
5013.42	12.00	0.00	5012.69	10.43	0.00	10.43	12.00	12.00	0.00	
5025.00	13.39	0.00	5023.99	12.98	0.00	12.98	12.00	12.00	0.00	
5050.00	16.39	0.00	5048.14	19.40	0.00	19.40	12.00	12.00	0.00	
5075.00	19.39	0.00	5071.93	27.08	0.00	27.08	12.00	12.00	0.00	
5100.00	22.39	0.00	5096.20	35.99	0.00	35.99	12.00	12.00	0.00	
5113.42	24.00	0.00	5107.62	41.28	0.00	41.28	12.00	12.00	0.00	
5125.00	25.39	0.00	5118.14	46.12	0.00	46.12	12.00	12.00	0.00	
5150.00	28.39	0.00	5140.44	57.42	0.00	57.42	12.00	12.00	0.00	
5175.00	31.39	0.00	5162.11	69.88	0.00	69.88	12.00	12.00	0.00	
5200.00	34.39	0.00	5183.10	83.45	0.00	83.45	12.00	12.00	0.00	
5213.42	36.00	0.00	5194.07	91.19	0.00	91.19	12.00	12.00	0.00	
5225.00	37.39	0.00	5203.35	98.11	0.00	98.11	12.00	12.00	0.00	
5229.61	37.64	0.00	5207.00	100.92	0.00	100.92	12.00	12.00	0.00	
5250.00	40.39	0.00	5222.61	113.80	0.00	113.80	12.00	12.00	0.00	
5275.00	43.39	0.00	5241.42	130.40	0.00	130.40	12.00	12.00	0.00	
5300.00	46.39	0.00	5259.19	148.13	0.00	148.13	12.00	12.00	0.00	
5313.42	48.00	0.00	5268.25	157.98	0.00	157.98	12.00	12.00	0.00	
5325.00	49.39	0.00	5275.89	166.68	0.00	166.68	12.00	12.00	0.00	
5350.00	52.39	0.00	5291.66	186.07	0.00	186.07	12.00	12.00	0.00	
5363.94	54.06	0.00	5300.00	197.24	0.00	197.24	12.00	12.00	0.00	
5375.00	55.39	0.00	5306.39	206.27	0.00	206.27	12.00	12.00	0.00	
5400.00	58.39	0.00	5320.04	227.21	0.00	227.21	12.00	12.00	0.00	
5413.42	60.00	0.00	5329.92	238.73	0.00	238.73	12.00	12.00	0.00	
5425.00	61.39	0.00	5332.58	248.83	0.00	248.83	12.00	12.00	0.00	
5450.00	64.39	0.00	5343.98	271.08	0.00	271.08	12.00	12.00	0.00	
5475.00	67.39	0.00	5354.19	293.90	0.00	293.90	12.00	12.00	0.00	
5500.00	70.39	0.00	5363.19	317.22	0.00	317.22	12.00	12.00	0.00	
5513.42	72.00	0.00	5367.52	329.92	0.00	329.92	12.00	12.00	0.00	
5525.00	73.39	0.00	5370.98	340.88	0.00	340.88	12.00	12.00	0.00	
5550.00	70.39	0.00	5377.48	365.11	0.00	365.11	12.00	12.00	0.00	

Operator Name: Southwestern Energy Prod Co
Well Name: Karlsbad Corral 2 #3H
Job Description: 9 5/8" Surface Casing
Date: November 13, 2004



Proposal No: 180262576C

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
12.250 HOLE	850	850

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
9.625	8.877	38	850	850

Float Collar set @ 810 ft
Mud Density 8.40 ppg
Est. Static Temp. 87 ° F
Est. Circ. Temp. 80 ° F

VOLUME CALCULATIONS

649 ft x 0.3132 cf/ft with 300 % excess = 813.1 cf
201 ft x 0.3132 cf/ft with 300 % excess = 251.8 cf
40 ft x 0.4298 cf/ft with 0 % excess = 17.2 cf (inside pipe)
TOTAL SLURRY VOLUME = 1082.0 cf
= 193 bbls

Operator Name: Southwestern Energy Prod Co
 Well Name: Karlsbad Corral 2 #3H
 Job Description: 7" Production Casing
 Date: November 13, 2004



Proposal No: 180262576C

WELL DATA**ANNULAR GEOMETRY**

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
8.877 CASING	700	700
8.750 HOLE	5,549	5,341

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
7.000	6.094	32	5,549	5,341

Float Collar set @ 5,509 ft
 Mud Density 10.00 ppg
 Mud Type Brine Based
 Est. Static Temp. 123 ° F
 Est. Circ. Temp. 107 ° F

VOLUME CALCULATIONS

2,433 ft	x	0.1503 cf/ft	with	35 % excess	=	494.2 cf
616 ft	x	0.1503 cf/ft	with	35 % excess	=	125.0 cf
40 ft	x	0.2026 cf/ft	with	0 % excess	=	8.1 cf (inside pipe)
TOTAL SLURRY VOLUME					=	627.3 cf
					=	112 bbls

Operator Name: Southwestern Energy Prod Co
 Well Name: Karlsbad Corral 2 #3H
 Job Description: 9 5/8" Surface Casing
 Date: November 13, 2004



Proposal No: 180262576C

FLUID SPECIFICATIONS

Spacer				1,000.0 gals Fresh Water + 150 lbs GW-27 @ 8.34 ppg
FLUID	VOLUME CU-FT	VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT	
Lead Slurry	813	/ 1.88	= 435 sacks (35:65) Poz (Fly Ash):Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 6% bwoc Bentonite + 96.6% Fresh	
Tail Slurry	269	/ 1.34	= 200 sacks Class C Cement + 2% bwoc Calcium Chloride + 56.4% Fresh Water	
Displacement				62.0 bbls Displacement
CEMENT PROPERTIES				

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	12.70	14.80
Slurry Yield (cf/sack)	1.88	1.34
Amount of Mix Water (gps)	10.07	6.36
Estimated Pumping Time - 70 BC (HH:MM)	4:00	3:30

NOTE: PUMP GELLED WATER PREFLUSH IF YOU HAVE LOST CIRCULATION.

300% excess

Operator Name: Southwestern Energy Prod Co
 Well Name: Karlshad Corral 2 #3H
 Job Description: 7" Production Casing
 Date: November 13, 2004



Proposal No: 180262576C

FLUID SPECIFICATIONS

FLUID	VOLUME CU-FT	VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	494	/ 2.09	= 235 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwoc Sodium Chloride + 6% bwoc
Tail Slurry	133	/ 1.33	= 100 sacks Class C Cement + 0.3% bwoc CD-32 + 0.6% bwoc FL-62 + 0.2% bwoc Sodium Metasilicate + 55.7% Fresh Water
Displacement			198.7 bbls Displacement

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	12.40	14.80
Slurry Yield (cf/sack)	2.09	1.33
Amount of Mix Water (gps)	11.64	6.28
Estimated Pumping Time - 70 BC (HH:MM)	3:30	3:00
Fluid Loss (cc/30min) at 1000 psi and ° F	850.0	350.0
COMPRESSIVE STRENGTH		
24 hrs @ 125 ° F (psi)	700	2300
72 hrs @ 125 ° F (psi)	1200	2800

Est. TCC @ 2600'

35 % excess



DRILLING PROGNOSIS

Karlsbad Corral 2 #3H

Corral Fly Prospect

ESTIMATED FORMATION TOPS:

<u>Formation</u>	<u>TVD</u>	<u>SS</u>	<u>MD</u>
Delaware	3257'	173'	3257'
Bell Canyon	3257'	173'	3257'
Cherry Canyon	4066'	982'	4066'
CC-2 Sand	5203'	2119'	5232'
CC-3 San	5296'	2212'	5371'
CC-4 Sand	5381'	2297'	5603'
Base CC-4	5411'	2327'	
Total Depth	5411'	2327'	7143' TD (lateral)

DIRECTIONAL PROGRAM:

Drill 8-3/4" hole vertically to 4866' TVD/RKB KOP. Run gyro 100' above KOP. Build 11.0°/100' with 2.25° bent motor to 81° @ 5381' TVD, 5603' MD. Rotate assembly maintaining 81° to ± 5383' TVD, 5613' MD (Anticipated top of CC-4 @ 5385' TVD). **Penetration of the CC-4 will be determined by ROP and return cuttings analysis. If top of CC-4 is not encountered at this depth, rotate steerable assembly maintaining 81° until top of CC-4 is encountered (landing point for 7" casing —+10' TVD into CC-4).** Once the CC-4 is penetrated and casing is set, drill out with 6-1/8" rock bit. POH, PU PDC bit, directional BHA, slide and build angle to 90° and maintain to Total Depth of ± 7143' MD/ 5389' TVD. **Formation dip is relatively flat. Total planned displacement is ± 1979'. See attached directional plan.**

CASING PROGRAM:

<u>SIZE</u>	<u>WEIGHT</u>	<u>GRADE</u>	<u>COUPLING</u>	<u>DEPTH</u> <u>(MD-RKB)</u>	<u>TORQUE</u>
16"	Structural Pipe		LP	40'	
9-5/8"	36#	J-55	STC	850'	4530 ft-lbs
7"	23#	J-55	LTC	0' - 4600'	3130 ft-lbs
7"	23#	N-80	BTC	4600' - 5613'	to triangle

LOGGING PROGRAM:

Gamma Ray LWD tools will be run in the 8-3/4" build section. Gamma sensor is $\pm 41'$ above the bit in 8-3/4" hole and $\pm 51'$ above the bit (if run) in 6-1/8" hole.

MUD PROGRAM:

DEPTH	MW	Viscosity	WL	Synopsis
0'-850'	8.6-9.5	34-36	NC	NewGel/Lime Spud mud, NewGel & Paper as needed
850'-5613' MD	9.9-10.0	34-36	NC-20	Brine, Saltwater Gel, Lime, Fiber Plug, Fiber Seal, Starch, Super Sweep, HB-411
5613' -7143'	8.6-8.7	28-30	NC	Field Produced Saltwater, Dynazan, HB-411

See attached Newpark Drilling Fluids mud program for additional specifications.

MUD LOGGING:

The Mud logging unit is to be rigged up and logging below 9-5/8" csg. Collect 30' samples from 2000' to TD. From the top of the Cherry Canyon 4 Sand at $\pm 5385'$ TVD RKB, collect 10' samples to TD.