

PathFinder

Survey Report - Geographic

Company: EOG Resources	Date: 3/8/2006	Time: 08:13:06	Page: 1
Field: Danube	Co-ordinate(NE) Reference:	Site: Danube "14" Fed Com #2H	
Site: Danube "14" Fed Com #2H	Vertical (TVD) Reference:	System: Mean Sea Level	
Well: Danube "14" Fed Com #2-H	Section (VS) Reference:	Well (0.00N,0.00E,354.13Azi)	
Wellpath: Fed Com 2-H	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Field: Danube
Eddy County, New Mexico

Map System: US State Plane Coordinate System 1927
Geo Datum: NAD27 (Clarke 1866)
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Site Centre
Geomagnetic Model: igrf2005

Site: Danube "14" Fed Com #2H

Sec. 14, T17S, R24E, N.M.P.M.

Site Position:	Northing: 665350.00 ft	Latitude: 32 49 44.199 N
From: Map	Easting: 433053.00 ft	Longitude: 104 33 4.602 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 3733.00 ft		Grid Convergence: -0.12 deg

Well: Danube "14" Fed Com #2-H

Slot Name:

Well Position: +N/-S 0.00 ft	Northing: 665350.00 ft	Latitude: 32 49 44.199 N
+E/-W 0.00 ft	Easting: 433053.00 ft	Longitude: 104 33 4.602 W
Position Uncertainty: 0.00 ft		

Wellpath: Fed Com 2-H

Current Datum: Mean Sea Level	Height 0.00 ft	Drilled From: Surface
Magnetic Data: 2/10/2006		Tie-on Depth: 0.00 ft
Field Strength: 49443 nT		Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)	+N/-S	Declination: 8.70 deg
ft	ft	Mag Dip Angle: 60.70 deg
		+E/-W
		ft
		Direction
		deg
0.00	0.00	0.00 354.13

Survey: Pathfinder MWD Surveys

Start Date: 2/21/2006

Company: PathFinder Energy Services
Tool:

Engineer: Marty Schmidt
Tied-to: From: Definitive Path

Survey: Pathfinder MWD Surveys

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →		
								Deg	Min	Sec	Deg	Min	Sec
4500.00	0.25	333.02	4499.25	20.10	-63.45	665370.10	432989.55	32	49	44.396 N	104	33	5.346 W
4600.00	0.37	346.74	4599.24	20.68	-63.82	665370.68	432989.18	32	49	44.402 N	104	33	5.351 W
4646.00	1.29	320.31	4645.24	21.02	-63.97	665371.02	432989.03	32	49	44.405 N	104	33	5.352 W
4700.00	8.41	313.11	4699.06	23.87	-66.82	665373.87	432986.18	32	49	44.433 N	104	33	5.386 W
4800.00	30.29	310.83	4793.03	45.31	-91.05	665395.31	432961.95	32	49	44.645 N	104	33	5.670 W
4900.00	43.84	312.70	4871.38	86.37	-137.26	665436.37	432915.74	32	49	45.050 N	104	33	6.213 W
5000.00	54.94	316.43	4935.90	140.03	-191.34	665490.03	432861.66	32	49	45.580 N	104	33	6.848 W
5100.00	65.70	318.42	4985.66	203.94	-249.71	665553.94	432803.29	32	49	46.212 N	104	33	7.534 W
5126.46	68.31	319.65	4996.00	222.34	-265.68	665572.34	432787.32	32	49	46.393 N	104	33	7.721 W
5200.00	79.28	321.83	5017.38	276.90	-309.91	665626.90	432743.09	32	49	46.932 N	104	33	8.241 W
5249.00	87.28	321.22	5022.54	315.02	-340.19	665665.02	432712.81	32	49	47.309 N	104	33	8.597 W
5300.00	88.31	325.11	5023.96	355.44	-371.23	665705.44	432681.77	32	49	47.708 N	104	33	8.962 W
5400.00	87.50	333.71	5028.16	442.24	-420.51	665792.24	432632.49	32	49	48.566 N	104	33	9.541 W
5500.00	90.18	342.67	5030.20	535.09	-457.27	665885.09	432595.73	32	49	49.484 N	104	33	9.974 W
5600.00	91.19	350.23	5028.65	632.19	-480.83	665982.19	432572.17	32	49	50.445 N	104	33	10.253 W
5668.00	90.32	355.75	5027.22	699.63	-489.21	666049.63	432563.79	32	49	51.112 N	104	33	10.353 W
5700.00	90.11	359.65	5027.20	731.60	-490.57	666081.60	432562.43	32	49	51.428 N	104	33	10.369 W
5800.00	90.48	1.30	5026.11	831.52	-487.05	666181.52	432565.95	32	49	52.417 N	104	33	10.330 W
5900.00	90.25	359.06	5025.93	931.51	-487.73	666281.51	432565.27	32	49	53.406 N	104	33	10.341 W
6000.00	91.51	359.08	5022.98	1031.45	-489.42	666381.45	432563.58	32	49	54.395 N	104	33	10.363 W
6100.00	91.50	359.41	5021.09	1131.42	-490.73	666481.42	432562.27	32	49	55.384 N	104	33	10.381 W
6200.00	93.47	0.05	5016.47	1231.30	-491.11	666581.30	432561.89	32	49	56.373 N	104	33	10.388 W
6300.00	91.43	359.87	5012.07	1331.20	-491.42	666681.20	432561.58	32	49	57.361 N	104	33	10.394 W

PathFinder

Survey Report - Geographic

Company: EOG Resources	Date: 3/8/2006	Time: 08:13:06	Page: 2
Field: Danube	Co-ordinate(NE) Reference:	Site: Danube "14" Fed Com #2H	
Site: Danube "14" Fed Com #2H	Vertical (TVD) Reference:	System: Mean Sea Level	
Well: Danube "14" Fed Com #2-H	Section (VS) Reference:	Well: (0.00N,0.00E,354.13Azi)	
Wellpath: Fed Com 2-H	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: Pathfinder MWD Surveys

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude → Deg Min Sec			← Longitude → Deg Min Sec		
6400.00	91.28	359.61	5010.07	1431.18	-491.83	666781.18	432561.17	32	49	58.351 N	104	33	10.401 W
6500.00	92.43	0.27	5007.07	1531.13	-492.14	666881.13	432560.86	32	49	59.340 N	104	33	10.407 W
6600.00	91.70	0.61	5003.24	1631.05	-491.36	666981.05	432561.64	32	50	0.328 N	104	33	10.400 W
6700.00	92.57	0.48	5000.17	1731.00	-490.19	667081.00	432562.81	32	50	1.317 N	104	33	10.389 W
6800.00	93.13	0.93	4995.10	1830.86	-489.01	667180.86	432563.99	32	50	2.306 N	104	33	10.378 W
6900.00	93.41	0.80	4989.35	1930.68	-487.28	667280.68	432565.72	32	50	3.293 N	104	33	10.360 W
7000.00	91.60	359.69	4984.48	2030.56	-487.12	667380.56	432565.88	32	50	4.282 N	104	33	10.360 W
7100.00	90.95	359.80	4982.85	2130.54	-487.68	667480.54	432565.32	32	50	5.271 N	104	33	10.369 W
7200.00	90.71	359.62	4981.54	2230.53	-488.20	667580.53	432564.80	32	50	6.260 N	104	33	10.378 W
7300.00	90.68	0.25	4979.12	2330.50	-488.17	667680.50	432564.83	32	50	7.250 N	104	33	10.380 W
7400.00	89.04	359.85	4979.85	2430.49	-488.13	667780.49	432564.87	32	50	8.239 N	104	33	10.382 W
7500.00	89.65	0.34	4980.97	2530.48	-487.99	667880.48	432565.01	32	50	9.229 N	104	33	10.383 W
7600.00	91.25	1.01	4980.07	2630.47	-487.11	667980.47	432565.89	32	50	10.218 N	104	33	10.375 W
7700.00	91.76	1.88	4977.12	2730.40	-484.70	668080.40	432568.30	32	50	11.207 N	104	33	10.349 W
7800.00	91.42	1.83	4974.22	2830.29	-481.18	668180.29	432571.82	32	50	12.195 N	104	33	10.310 W
7900.00	90.93	2.19	4972.26	2930.20	-477.29	668280.20	432575.71	32	50	13.184 N	104	33	10.267 W

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		
PBHL Danube Fed Com #2-H		4996.00	4379.00	-440.00	669729.00	432613.00	32	50	27.521 N	104	33	9.865 W

Annotation

MD ft	TVD ft	
4646.00	4645.24	KOP @ 4646' MD W/ 2.38° Motor
5249.00	5022.54	End of Build Start of Turn @ 5249' MD 90° Inc
5668.00	5027.22	End of Turn @ 5668' MD 359.7° Azm
4600.00	4599.24	Gyro Tie-On @ 4600' MD



Danube "14" Fed Com #2H Section 14, T17-S, R 24-E, N.M.P.M. Eddy County, New Mexico Final PP 3-8-06

SITE DETAILS

Danube "14" Fed Com #2H
Sec. 14, T17S, R24E, N.M.P.M.

Site Centre Northing: 665350.00
Easting: 433053.00

Ground Level: 3733.00
Positional Uncertainty: 0.00
Convergence: -0.12

G

T
M

Azimuths to Grid North
True North: 0.12°
Magnetic North: 8.82°

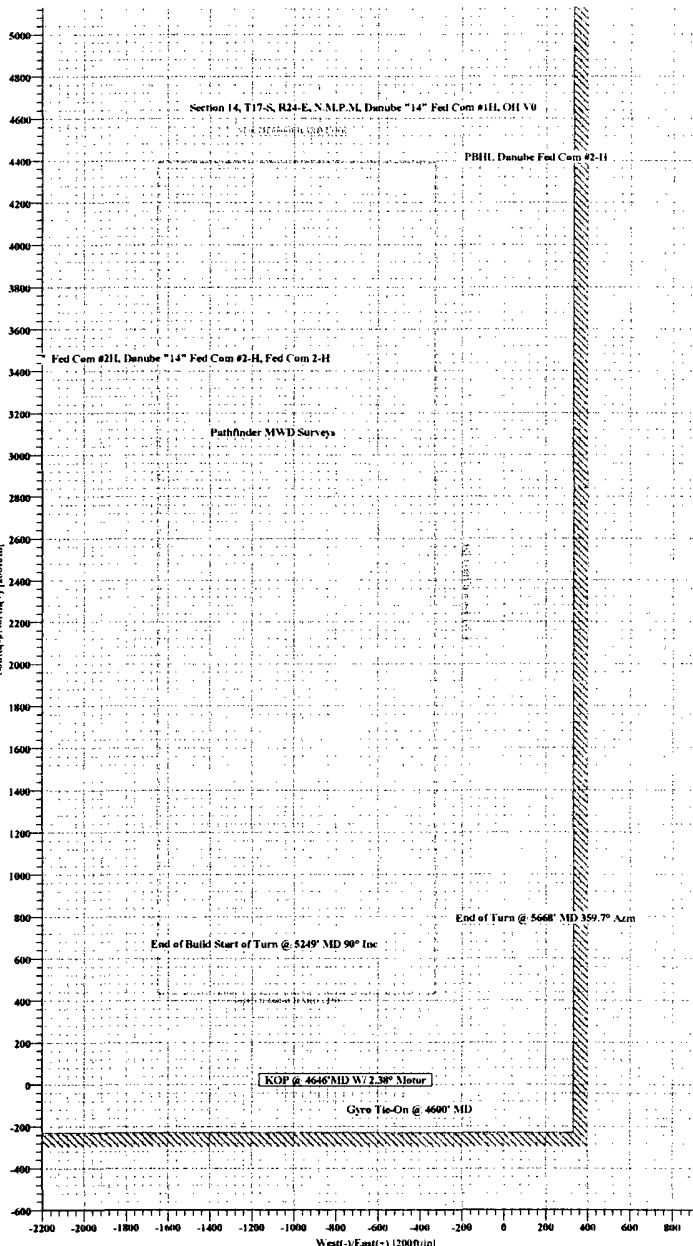
Magnetic Field
Strength: 49443nT
Dip Angle: 60.70°
Date: 2/10/2006
Model: igr2005

PATHFINDER

ENERGY SERVICES

LEGEND

Section 14, T17-S, R24-E, N.M.P.M., Danube "14" Fed Com #1H, OH V0
Danube "14" Fed Com #2H, Danube "14" Fed Com #2-H, Fed Com 2-H
Pathfinder MWD Surveys



Survey: Pathfinder MWD Surveys (Danube "14" Fed Com #2-H Fed Com 2-H)									
No.	MD	Inc	Az	TVD	N-S	E-W	DRAG	Trace	V.Sec
1	4500.00	0.25	333.02	4499.25	20.10	-63.45	0.00	0.00	26.49
2	4551.00	0.44	316.96	4556.25	20.37	-63.68	0.17	-35.16	26.78
3	4599.00	0.53	337.71	4598.24	20.60	-63.79	0.61	73.36	27.02
4	4628.00	0.18	43.89	4619.24	20.77	-63.41	1.57	169.20	27.19
5	4652.00	1.56	318.81	4651.24	21.14	-63.07	4.92	-91.62	27.58
6	4681.00	5.26	315.03	4682.18	22.47	-63.36	11.55	-5.36	29.63
7	4715.00	11.17	312.31	4713.84	22.60	-68.09	18.44	-3.13	32.49
8	4747.00	18.29	311.78	4744.76	31.04	-74.74	22.25	-1.34	38.52
9	4776.00	25.32	311.09	4774.66	38.99	-83.65	21.99	-2.45	47.24
10	4811.00	32.69	310.72	4802.40	49.07	-95.41	23.66	-1.48	58.57
11	4844.00	39.64	311.78	4829.99	61.85	-109.97	18.73	6.21	72.77
12	4876.00	46.80	311.69	4855.63	75.52	-125.29	5.59	-1.91	87.94
13	4907.00	44.85	313.01	4877.16	91.18	-141.56	12.96	12.96	104.16
14	4939.00	44.12	314.50	4898.32	105.80	-157.66	12.97	16.19	121.37
15	4971.00	52.25	315.47	4918.68	125.25	-175.12	11.21	12.44	140.52
16	5003.00	55.22	316.53	4937.62	141.51	-193.03	9.72	16.27	160.81
17	5035.00	58.30	317.53	4955.15	161.55	-211.32	9.80	10.96	182.11
18	5067.00	61.91	318.11	4971.10	181.86	-230.00	11.53	12.15	204.42
19	5099.00	65.60	318.37	4985.28	203.26	-249.11	11.55	1.67	227.67
20	5131.00	69.76	319.86	4997.66	225.56	-268.41	10.77	23.78	251.83
21	5162.00	72.28	321.01	5008.00	248.69	-287.02	11.88	17.31	276.14
22	5194.00	75.00	321.89	5016.29	272.27	-306.28	18.07	8.57	302.17
23	5227.00	85.00	321.54	5021.02	297.87	-326.49	21.33	-2.86	329.04
24	5264.00	88.81	321.01	5023.05	326.69	-346.60	10.32	-7.99	360.73
25	5296.00	88.87	324.61	5025.84	352.17	-368.93	11.33	97.01	388.06
26	5328.00	97.93	328.65	5029.87	375.88	-386.52	12.69	96.28	416.42
27	5361.00	87.14	332.43	5036.29	407.58	-405.73	11.69	101.80	446.63
28	5393.00	87.32	333.05	5042.84	435.99	-417.37	2.02	73.81	476.39
29	5424.00	88.11	335.05	5049.84	459.71	-430.71	9.69	74.81	503.56
30	5457.00	89.08	339.29	5059.89	494.44	-443.27	10.54	73.85	537.19
31	5488.00	89.76	341.75	5070.19	523.67	-453.60	8.25	74.13	567.31
32	5520.00	90.84	344.21	5080.82	554.26	-462.97	8.37	66.69	598.76
33	5553.00	91.30	346.41	5090.48	585.21	-471.18	6.92	83.24	630.32
34	5584.00	90.94	348.87	5098.84	616.46	-477.93	7.73	90.01	662.11
35	5616.00	91.54	351.59	5108.27	647.99	-483.36	8.78	73.54	694.02
36	5647.00	91.28	353.79	5117.51	678.72	-487.80	7.14	96.71	725.09
37	5678.00	89.47	356.09	5127.29	709.61	-489.87	10.40	115.91	755.99
38	5710.00	96.22	1.00	5127.17	741.60	-494.32	13.51	85.36	787.87
39	5742.00	90.44	2.44	5126.93	773.54	-499.43	6.07	71.57	819.54
40	5774.00	90.44	2.58	5126.41	805.34	-487.93	0.81	-90.00	851.21
41	5806.00	90.40	1.00	5126.06	837.22	-486.93	5.13	-105.55	882.93
42	5838.00	90.31	359.42	5125.86	869.52	-486.82	4.95	-93.26	914.74
43	5870.00	89.69	359.06	5125.99	901.51	-487.24	2.49	-153.11	946.62
44	5903.00	90.31	359.06	5125.92	934.31	-487.78	2.15	0.00	979.49
45	5935.00	92.42	358.98	5125.15	966.49	-488.33	6.80	-2.17	1011.37

Survey: Pathfinder MWD Surveys (Danube "14" Fed Com #2-H Fed Com 2-H)									
No.	MD	Inc	Az	TVD	N-S	E-W	DRAG	Trace	V.Sec
46	5965.00	91.89	359.06	5124.03	996.27	-489.84	1.79	171.42	1041.24
47	5998.00	91.54	359.06	5122.04	1029.45	-489.38	1.06	180.90	1074.10
48	6030.00	91.10	359.33	5122.30	1061.44	-489.53	1.61	149.47	1105.57
49	6062.00	90.66	359.15	5121.81	1093.44	-489.26	1.46	157.75	1137.84
50	6126.00	92.07	359.29	5120.28	1157.41	-490.96	2.31	17.52	1201.55
51	6190.00	93.65	0.12	5117.09	1221.32	-491.12	2.60	18.51	1265.15
52	6254.00	92.51	359.68	5113.65	1283.29	-491.23	1.91	-359.91	1328.75
53	6318.00	91.01	359.84	5111.60	1349.26	-491.45	2.38	170.17	1392.38
54	6383.00	91.19	359.56	5110.44	1414.18	-491.71	0.81	-62.78	1457.06
55	6448.00	91.54	359.66	5108.94	1477.17	-492.11	0.57	14.42	1519.75
56	6510.00	92.59	0.38	5106.63	1541.12	-492.08	1.97	33.66	1583.37
57	6573.00	91.98	0.47	5104.04	1606.07	-491.66	0.95	171.01	1647.92
58	6638.00	91.28	0.62	5102.25	1669.04	-490.89	1.24	153.44	1710.49
59	6700.00	92.59	0.47	5100.12	1732.00	-490.18	2.15	-14.84	1773.05
60	6765.00	93.03	0.73	4996.98	1795.92	-489.51	0.80	30.54	1836.56
61	6829.00	93.21	1.09	4993.50	1859.81	-488.50	0.63	63.39	1899.02
62	6893.00	93.47	0.91	4989.77	1923.69	-487.58	0.46	-34.64	1963.45
63	6957.00	92.93	359.86	4986.19	1987.56	-486.65	1.83	-116.35	2028.97
64	7022.00	90.75	359.59	4983.51	2057.55	-487.29	3.17	-173.00	2096.60
65	7123.00	91.01	359.86	4982.45	2153.54	-487.75	0.59	46.08	2192.13
66	7188.00	90.40	359.56	4981.65	2218.53	-488.11	1.09	-149.45	2266.82
67	7254.00	92.07	0.12	4980.27	2282.51	-488.52	2.78	20.36	2329.40
68	7316.00	90.22	0.29	4979.19	2346.50	-488.10	2.90	174.73	2384.11
69	7380.00	89.46	355.57	4979.46	2410.46	-488.06	2.22	-155.90	2447.77
70	7444.00	89.34	0.03	4980.47	2474.49	-488.17	0.80	34.58	2511.44
71	7508.00	89.69	0.38	4981.01	2538.46	-487.94	0.77	43.00	2575.08
72	7572.00	91.01	0.47	4980.62	2602.48	-487.47	2.07	-3.90	2638.69
73	7636.00	91.28	1.09	4979.08	2664.47	-487.03	2.11	66.46	2699.47
74	7696.00	91.89	1.17	4979.10	2726.45	-486.46	1.92	7.47	2762.21
75	7666.00	91.71	1.55	4978.09	2788.43	-485.65	1.20	116.57	2733.94
76	7732.00	91.80	2.23	4976.13	2852.36	-485.55	1.10	82.66	2797.33
77	7796.00	90.45	1.79	4974.52	2916.30	-485.31	0.88	-128.51	2860.76
78	7860.00	91.01	2.49	4972.94	2980.24	-479.92	1.29	122.13	2924.06
79	7924.00	90.92	2.14	4972.17	3046.19	-477.06	1.79	-104.42	2986.99
80	7990.00	90.92	-2.14	4971.46	3110.16	-475.82	0.00	180.00	3013.13

No.	TVD	MD	Annotation
1	4645.24	4646.00	KOP @ 4646° MD W/ 2.38° Motor
2	5249.00	5249.00	End of Build Start of Turn @ 5249° MD 90° Inc
3	5027.22	5668.00	End of Turn @ 5668° MD 359.7° Azm
4	4599.24	4600.00	Gyro Tie-On @ 4600° MD

Section 14, T17-S, R24-E, N.M.P.M., Danube "14" Fed Com #1H, OH V0

PBHL Danube Fed Com #2-H

Pathfinder MWD Surveys

Danube "14" Fed Com #2H, Danube "14" Fed Com #2-H, Fed Com 2-H

End of Turn @ 5668° MD 359.7° Azm

End of Build Start of Turn @ 5249° MD 90° Inc

KOP @ 4646° MD W/ 2.38° Motor

Gyro Tie-On @ 4600° MD

True Vertical Depth [200ft/in]

Vertical Section at 354.13° [200ft/in]

West (-) East (+) [200ft/in]