

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

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 8.70 deg
Mag Dip Angle: 60.70 deg
+E/-W Direction
 ft deg

Current Datum: Mean Sea Level **Height** 0.00 ft
Magnetic Data: 2/10/2006
Field Strength: 49443 nT
Vertical Section: Depth From (TVD) ft
 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
Field: Danube
Site: Danube "14" Fed Com #2H
Well: Danube "14" Fed Com #2-H
Wellpath: Fed Com 2-H

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

Survey: Pathfinder MWD Surveys

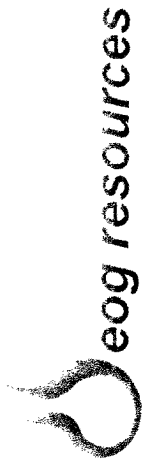
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude → Deg Min Sec			← Longitude → Deg Min Sec		
6400.00	91.28	359.61	5010.07	1431.18	-491.83	666781.18	432561.17	32	49	58.351 N	104	33	10.401 W
6500.00	92.43	0.27	5007.07	1531.13	-492.14	666881.13	432560.86	32	49	59.340 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, R24-E, N.M.P.M.

Eddy County, New Mexico

Final PP 3-8-06

SITE DETAILS

Danube "14" Fed Com #2H
Sec. 14, T17-S, R24-E, N.M.P.M.
Site Centre Northing: 463550.00
Easting: 433053.00
Ground Level: 3733.00
Positional Uncertainty: 0.00
Convergence: -0.12

Antennae to Grid North
True North 0.12°
Magnetic North 8.82°

Magnetic Field
Strength: 4944 nT
Dip Angle: 69.00°
Declination: 8.82°
Model: IGR2005

PATHFINDER

ENERGY SERVICES

LEGEND

Section 14, T17-S, R24-E, N.M.P.M. Danube "14" Fed Com #1H, OH V9
Section 14, T17-S, R24-E, N.M.P.M. Danube "14" Fed Com #2H, OH V9
Pathfinder MWD Surveys

Section 14, T17-S, R24-E, N.M.P.M. Danube "14" Fed Com #1H, OH V9

PHILL Danube Fed Com #2-H

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

Pathfinder MWD Surveys

End of Turn @ 5608' MD 359.7° Azm

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

KOP @ 4646' MD W 2.38° Motor

Cyrc Tie-On @ 4600' MD

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

Section 14, T17-S, R24-E, N.M.P.M. Danube "14" Fed Com #1H, OH V9

PHILL Danube Fed Com #2-H

Pathfinder MWD Surveys

End of Turn @ 5608' MD 359.7° Azm

Cyrc Tie-On @ 4600' MD

KOP @ 4646' MD W 2.38° Motor

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

Survey: Pathfinder MWD Surveys (Danube "14" Fed Com #2H, Fed Com 2-H)

No.	MD	Inc	TVD	Δz	ΔE-W	ΔN-S	ΔElev	Thick	ΔVasc
1	4340.00	0.25	331.02	4499.21	21.19	-63.45	0.07	119.18	26.86
2	4357.00	0.44	316.96	4506.21	21.37	-63.63	0.37	119.18	26.78
3	4374.00	0.68	291.89	4513.21	21.55	-63.81	0.67	119.18	26.70
4	4391.00	1.18	241.81	4520.21	21.74	-64.07	1.32	119.18	26.62
5	4408.00	1.38	211.81	4527.21	21.93	-64.33	1.62	119.18	26.54
6	4425.00	1.58	181.81	4534.21	22.12	-64.59	1.92	119.18	26.46
7	4442.00	1.78	151.81	4541.21	22.31	-64.85	2.22	119.18	26.38
8	4459.00	1.98	121.81	4548.21	22.50	-65.11	2.52	119.18	26.30
9	4476.00	2.18	91.81	4555.21	22.69	-65.37	2.82	119.18	26.22
10	4493.00	2.38	61.81	4562.21	22.88	-65.63	3.12	119.18	26.14
11	4510.00	2.58	31.81	4569.21	23.07	-65.89	3.42	119.18	26.06
12	4527.00	2.78	1.81	4576.21	23.26	-66.15	3.72	119.18	25.98
13	4544.00	2.98	-28.19	4583.21	23.45	-66.41	4.02	119.18	25.90
14	4561.00	3.18	-58.19	4590.21	23.64	-66.67	4.32	119.18	25.82
15	4578.00	3.38	-88.19	4597.21	23.83	-66.93	4.62	119.18	25.74
16	4595.00	3.58	-118.19	4604.21	24.02	-67.19	4.92	119.18	25.66
17	4612.00	3.78	-148.19	4611.21	24.21	-67.45	5.22	119.18	25.58
18	4629.00	3.98	-178.19	4618.21	24.40	-67.71	5.52	119.18	25.50
19	4646.00	4.18	-208.19	4625.21	24.59	-67.97	5.82	119.18	25.42
20	4663.00	4.38	-238.19	4632.21	24.78	-68.23	6.12	119.18	25.34
21	4680.00	4.58	-268.19	4639.21	24.97	-68.49	6.42	119.18	25.26
22	4697.00	4.78	-298.19	4646.21	25.16	-68.75	6.72	119.18	25.18
23	4714.00	4.98	-328.19	4653.21	25.35	-69.01	7.02	119.18	25.10
24	4731.00	5.18	-358.19	4660.21	25.54	-69.27	7.32	119.18	25.02
25	4748.00	5.38	-388.19	4667.21	25.73	-69.53	7.62	119.18	24.94
26	4765.00	5.58	-418.19	4674.21	25.92	-69.79	7.92	119.18	24.86
27	4782.00	5.78	-448.19	4681.21	26.11	-70.05	8.22	119.18	24.78
28	4799.00	5.98	-478.19	4688.21	26.30	-70.31	8.52	119.18	24.70
29	4816.00	6.18	-508.19	4695.21	26.49	-70.57	8.82	119.18	24.62
30	4833.00	6.38	-538.19	4702.21	26.68	-70.83	9.12	119.18	24.54
31	4850.00	6.58	-568.19	4709.21	26.87	-71.09	9.42	119.18	24.46
32	4867.00	6.78	-598.19	4716.21	27.06	-71.35	9.72	119.18	24.38
33	4884.00	6.98	-628.19	4723.21	27.25	-71.61	10.02	119.18	24.30
34	4901.00	7.18	-658.19	4730.21	27.44	-71.87	10.32	119.18	24.22
35	4918.00	7.38	-688.19	4737.21	27.63	-72.13	10.62	119.18	24.14
36	4935.00	7.58	-718.19	4744.21	27.82	-72.39	10.92	119.18	24.06
37	4952.00	7.78	-748.19	4751.21	28.01	-72.65	11.22	119.18	23.98
38	4969.00	7.98	-778.19	4758.21	28.20	-72.91	11.52	119.18	23.90
39	4986.00	8.18	-808.19	4765.21	28.39	-73.17	11.82	119.18	23.82
40	5003.00	8.38	-838.19	4772.21	28.58	-73.43	12.12	119.18	23.74
41	5020.00	8.58	-868.19	4779.21	28.77	-73.69	12.42	119.18	23.66
42	5037.00	8.78	-898.19	4786.21	28.96	-73.95	12.72	119.18	23.58
43	5054.00	8.98	-928.19	4793.21	29.15	-74.21	13.02	119.18	23.50
44	5071.00	9.18	-958.19	4800.21	29.34	-74.47	13.32	119.18	23.42
45	5088.00	9.38	-988.19	4807.21	29.53	-74.73	13.62	119.18	23.34
46	5105.00	9.58	-1018.19	4814.21	29.72	-74.99	13.92	119.18	23.26
47	5122.00	9.78	-1048.19	4821.21	29.91	-75.25	14.22	119.18	23.18
48	5139.00	9.98	-1078.19	4828.21	30.10	-75.51	14.52	119.18	23.10
49	5156.00	10.18	-1108.19	4835.21	30.29	-75.77	14.82	119.18	23.02
50	5173.00	10.38	-1138.19	4842.21	30.48	-76.03	15.12	119.18	22.94

ANNOTATIONS

- No. 1 4645.24 KOP @ 4646' MD W 2.38° Motor
- 2 5072.22 End of Turn @ 5608' MD 359.7° Azm
- 3 5072.22 End of Turn @ 5608' MD 359.7° Azm
- 4 4599.24 Cyrc Tie-On @ 4600' MD

Vertical Section at 354.13° (240ft in)

Vertical Section at 354.13° (240ft in)

Vertical Section at 354.13° (240ft in)

Vertical Section at 354.13° (240ft in)