



**Weatherford®**  
**Directional Services**

Job Number: TXLO0204D017

Company: Kinder Morgan

Lease/Well: YD #2

Location: Montezuma Co.

Rig Name: Pool 816

RKB: I

G.L. or M.S.L.: I

State/Country: Colorado

Declination: 13.66

Grid: I

File name: C:\WINSERVE\CLIENTS\KINDER-1\YD2.SVY

Date/Time: 10-May-04 / 11:57

Curve Name: YD #2 Steering Tool Surveys

WINSERVE SURVEY CALCULATIONS  
Minimum Curvature Method  
Vertical Section Plane 315.00  
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	CLOSURE Distance, Direction FT Deg	Dogleg Severity Deg/100	
Gyro Tie In									
7988.00	1.66	333.70	7985.68	52.34	15.81	25.83	54.68 16.81	.00	
Gyro Survey									
8022.00	2.01	317.00	8019.66	53.22	15.19	26.89	55.34 15.93	1.87	
8053.00	19.80	319.60	8049.98	57.65	11.38	32.72	58.76 11.17	57.39	
8085.00	40.60	322.80	8077.49	70.21	1.46	48.61	70.22 1.19	65.17	
8122.00	63.10	323.70	8100.20	93.39	-15.81	77.22	94.72 350.39	60.84	
8156.00	75.50	323.60	8112.19	118.96	-34.62	108.60	123.90 343.77	36.47	
8188.00	80.70	321.70	8118.79	143.84	-53.61	139.62	153.51 339.56	17.26	
8219.00	85.60	317.90	8122.49	167.33	-73.47	170.28	182.75 336.29	19.95	
8251.00	89.90	316.80	8123.74	190.84	-95.13	202.22	213.24 333.50	13.87	
8283.00	91.00	315.80	8123.49	213.98	-117.24	234.21	243.99 331.28	4.65	
8315.00	91.30	315.20	8122.85	236.80	-139.67	266.20	274.92 329.47	2.10	
8347.00	91.40	314.60	8122.09	259.38	-162.33	298.19	305.99 327.96	1.90	
8378.00	90.40	314.90	8121.61	281.20	-184.34	329.19	336.24 326.75	3.37	
8410.00	91.20	314.90	8121.16	303.79	-207.00	361.18	367.61 325.73	2.50	
8442.00	90.00	314.90	8120.83	326.37	-229.67	393.18	399.08 324.87	3.75	
8474.00	90.10	314.20	8120.80	348.82	-252.47	425.18	430.60 324.10	2.21	
8506.00	88.40	314.10	8121.22	371.11	-275.43	457.17	462.15 323.42	5.32	
8538.00	89.00	314.50	8121.94	393.45	-298.33	489.16	493.76 322.83	2.25	
8570.00	90.10	314.30	8122.19	415.84	-321.19	521.16	525.44 322.32	3.49	
8633.00	85.70	311.50	8124.50	458.68	-367.29	584.05	587.62 321.31	8.28	



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WINSERVE SURVEY CALCULATIONS  
*Minimum Curvature Method*  
*Vertical Section Plane 315.00*  
*Vertical Section Referenced to Wellhead*  
*Rectangular Coordinates Referenced to Wellhead*

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>C L O S U R E</i>		<i>Dogleg Severity Deg/100</i>
							<i>Distance, FT</i>	<i>Direction Deg</i>	
8789.00	89.20	312.80	8132.43	563.33	-482.62	739.59	741.79	319.41	1.10
8852.00	89.70	312.70	8133.04	606.09	-528.88	802.54	804.40	318.89	.81
8916.00	89.40	312.00	8133.54	649.20	-576.18	866.47	868.01	318.41	1.19
8980.00	90.60	311.40	8133.54	691.77	-623.96	930.36	931.60	317.95	2.10
9044.00	91.30	309.20	8132.48	733.16	-672.76	994.14	995.05	317.46	3.61
9107.00	88.10	310.60	8132.81	773.56	-721.08	1056.88	1057.53	317.01	5.54
9172.00	86.00	311.90	8136.16	816.36	-769.88	1121.65	1122.13	316.68	3.80
9236.00	88.00	312.90	8139.50	859.46	-817.08	1185.49	1185.87	316.45	3.49
9300.00	90.40	312.20	8140.40	902.73	-864.22	1249.42	1249.71	316.25	3.91
9363.00	91.90	311.60	8139.13	944.79	-911.10	1312.31	1312.53	316.04	2.56
9427.00	90.70	312.20	8137.68	987.52	-958.72	1376.20	1376.35	315.85	2.10
9490.00	89.60	311.70	8137.52	1029.63	-1005.57	1439.11	1439.21	315.68	1.92
9554.00	87.60	311.10	8139.08	1071.94	-1053.56	1502.96	1503.02	315.50	3.26
9618.00	88.00	310.40	8141.54	1113.69	-1102.01	1566.74	1566.76	315.30	1.26
9684.00	87.00	310.00	8144.42	1156.25	-1152.37	1632.44	1632.44	315.10	1.63
9745.00	87.60	309.80	8147.29	1195.33	-1199.12	1693.13	1693.13	314.91	1.04
9808.00	88.50	309.50	8149.43	1235.51	-1247.60	1755.82	1755.84	314.72	1.51
9872.00	90.30	310.00	8150.10	1276.43	-1296.80	1819.55	1819.60	314.55	2.92

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
8695.00	85.10	311.60	8129.48	499.67	-413.54	645.74	648.60	320.39	.98
8725.00	88.50	312.90	8131.15	519.81	-435.71	675.65	678.26	320.03	12.13
8789.00	89.20	312.80	8132.43	563.33	-482.62	739.59	741.79	319.41	1.10
8852.00	89.70	312.70	8133.04	606.09	-528.88	802.54	804.40	318.89	.81
8916.00	89.40	312.00	8133.54	649.20	-576.18	866.47	868.01	318.41	1.19
8980.00	90.60	311.40	8133.54	691.77	-623.96	930.36	931.60	317.95	2.10
9044.00	91.30	309.20	8132.48	733.16	-672.76	994.14	995.05	317.46	3.61
9107.00	88.10	310.60	8132.81	773.56	-721.08	1056.88	1057.53	317.01	5.54
9172.00	86.00	311.90	8136.16	816.36	-769.88	1121.65	1122.13	316.68	3.80
9236.00	88.00	312.90	8139.50	859.46	-817.08	1185.49	1185.87	316.45	3.49
9300.00	90.40	312.20	8140.40	902.73	-864.22	1249.42	1249.71	316.25	3.91
9363.00	91.90	311.60	8139.13	944.79	-911.10	1312.31	1312.53	316.04	2.56
9427.00	90.70	312.20	8137.68	987.52	-958.72	1376.20	1376.35	315.85	2.10
9490.00	89.60	311.70	8137.52	1029.63	-1005.57	1439.11	1439.21	315.68	1.92
9554.00	87.60	311.10	8139.08	1071.94	-1053.56	1502.96	1503.02	315.50	3.26
9618.00	88.00	310.40	8141.54	1113.69	-1102.01	1566.74	1566.76	315.30	1.26
9684.00	87.00	310.00	8144.42	1156.25	-1152.37	1632.44	1632.44	315.10	1.63
9745.00	87.60	309.80	8147.29	1195.33	-1199.12	1693.13	1693.13	314.91	1.04
9808.00	88.50	309.50	8149.43	1235.51	-1247.60	1755.82	1755.84	314.72	1.51
9872.00	90.30	310.00	8150.10	1276.43	-1296.80	1819.55	1819.60	314.55	2.92
9936.00	89.30	310.10	8150.33	1317.61	-1345.79	1883.31	1883.41	314.39	1.57
9999.00	89.00	310.00	8151.26	1358.14	-1394.01	1946.06	1946.23	314.25	.50
BIT PROJECTION									
10054.00	89.00	310.00	8152.22	1393.49	-1436.14	2000.85	2001.07	314.14	.00