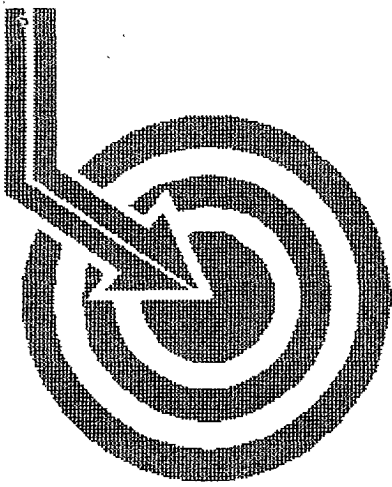
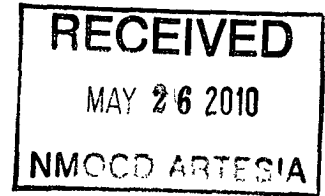


30 015 37280



Scientific Drilling



EOG

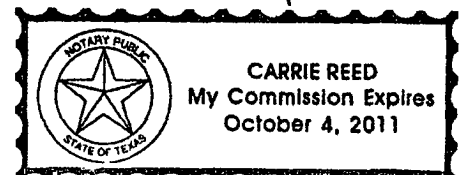
Field: Dog Canyon
Site: Eddy County, NM
Well: Lucky Wolf 31 Federal Com #1H
Wellpath: VH - Job #32K0310197
Survey: 03/19/10

This survey is correct to the best of my knowledge and is supported by actual field data.

Shastor
Company Representative

Notarized this date 15th of April, 2010.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific
Drilling

Scientific Drilling International, Inc.

Survey Report

Company: EOG
Field: Dog Canyon
Site: Eddy County, NM
Well: Lucky Wolf 31 Federal Com #1H
Wellpath: VH - Job #32K0310197

Date: 3/22/2010 Time: 20:44:33 Page: 1
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,265.52Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 03/19/10
KSRG 0'-6734'
Company: Scientific Drilling Internatio
Tool: Keeper, Keeper Surface Readout Gyro

Start Date: 3/19/2010
Engineer: Madrid/Rowe/Renteria
Tied-to: From Surface

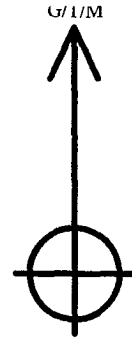
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.0	0.00	359.93	0.0	0.0	0.0	0.0	0.00	0.0	0.00
100.0	0.67	69.67	100.0	-0.6	0.2	0.5	0.67	0.6	69.67
200.0	0.68	7.28	200.0	-1.2	1.0	1.2	0.70	1.5	49.67
300.0	0.81	354.46	300.0	-1.4	2.3	1.2	0.21	2.6	27.27
400.0	0.85	352.42	400.0	-1.3	3.7	1.0	0.05	3.9	15.20
500.0	0.67	334.15	500.0	-1.0	5.0	0.7	0.30	5.0	7.54
600.0	0.68	1.18	600.0	-0.9	6.1	0.4	0.32	6.1	3.91
700.0	1.02	354.52	699.9	-0.9	7.6	0.3	0.35	7.6	2.60
800.0	0.94	341.29	799.9	-0.7	9.2	0.0	0.24	9.2	359.98
900.0	0.80	358.77	899.9	-0.6	10.7	-0.3	0.30	10.7	358.49
1000.0	0.83	0.45	999.9	-0.7	12.1	-0.3	0.04	12.1	358.63
1100.0	0.80	355.57	1099.9	-0.7	13.6	-0.3	0.08	13.6	358.57
1200.0	0.95	344.28	1199.9	-0.6	15.1	-0.6	0.23	15.1	357.65
1300.0	1.09	351.42	1299.9	-0.3	16.8	-1.0	0.19	16.8	356.65
1400.0	1.03	349.18	1399.9	-0.2	18.6	-1.3	0.07	18.7	356.02
1500.0	0.97	1.10	1499.8	-0.1	20.4	-1.4	0.22	20.4	355.93
1600.0	1.05	349.05	1599.8	-0.1	22.1	-1.6	0.23	22.2	355.84
1700.0	0.86	346.64	1699.8	0.1	23.7	-2.0	0.19	23.8	355.29
1800.0	0.92	355.33	1799.8	0.2	25.3	-2.2	0.15	25.4	355.04
1900.0	1.08	2.13	1899.8	0.1	27.0	-2.2	0.20	27.1	355.30
2000.0	1.04	343.12	1999.8	0.2	28.8	-2.5	0.35	28.9	355.14
2100.0	1.19	345.38	2099.7	0.6	30.7	-3.0	0.16	30.8	354.46
2200.0	1.15	351.88	2199.7	0.8	32.7	-3.4	0.14	32.9	354.10
2300.0	1.14	356.40	2299.7	0.9	34.7	-3.6	0.09	34.9	354.10
2400.0	1.28	340.71	2399.7	1.1	36.7	-4.0	0.36	36.9	353.76
2500.0	1.26	358.14	2499.7	1.4	38.9	-4.4	0.39	39.1	353.51
2600.0	1.24	358.94	2599.6	1.3	41.0	-4.5	0.03	41.3	353.78
2700.0	1.29	348.94	2699.6	1.3	43.2	-4.7	0.23	43.5	353.78
2800.0	1.36	3.56	2799.6	1.3	45.5	-4.9	0.34	45.8	353.91
2900.0	1.53	355.68	2899.6	1.1	48.0	-4.9	0.26	48.3	354.20
3000.0	1.70	11.26	2999.5	0.7	50.8	-4.7	0.47	51.0	354.73
3100.0	1.56	3.99	3099.5	0.1	53.6	-4.3	0.25	53.8	355.41
3200.0	1.74	9.02	3199.4	-0.5	56.5	-4.0	0.23	56.6	355.98
3300.0	1.76	1.01	3299.4	-1.0	59.5	-3.7	0.25	59.6	356.43
3400.0	1.56	3.35	3399.3	-1.3	62.4	-3.6	0.21	62.5	356.70
3500.0	1.67	357.28	3499.3	-1.5	65.2	-3.6	0.20	65.3	356.85
3600.0	1.80	1.09	3599.3	-1.7	68.3	-3.6	0.17	68.4	356.95
3700.0	1.46	358.99	3699.2	-1.9	71.1	-3.6	0.35	71.2	357.08
3800.0	1.45	357.11	3799.2	-2.1	73.6	-3.7	0.05	73.7	357.12
3900.0	1.66	351.48	3899.2	-2.0	76.3	-4.0	0.26	76.4	357.01
4000.0	1.42	348.28	3999.1	-1.7	79.0	-4.5	0.25	79.1	356.77
4100.0	1.41	356.67	4099.1	-1.6	81.4	-4.8	0.21	81.6	356.64
4200.0	1.34	347.70	4199.1	-1.5	83.8	-5.1	0.23	84.0	356.52
4300.0	1.20	348.85	4299.0	-1.2	86.0	-5.6	0.14	86.1	356.31
4400.0	1.21	344.40	4399.0	-0.9	88.0	-6.0	0.09	88.2	356.08
4500.0	1.20	352.90	4499.0	-0.6	90.1	-6.5	0.18	90.3	355.90
4600.0	1.18	356.67	4599.0	-0.6	92.1	-6.6	0.08	92.4	355.88
4700.0	1.15	348.32	4698.9	-0.5	94.1	-6.9	0.17	94.4	355.81
4800.0	1.02	340.03	4798.9	-0.1	96.0	-7.4	0.20	96.3	355.58



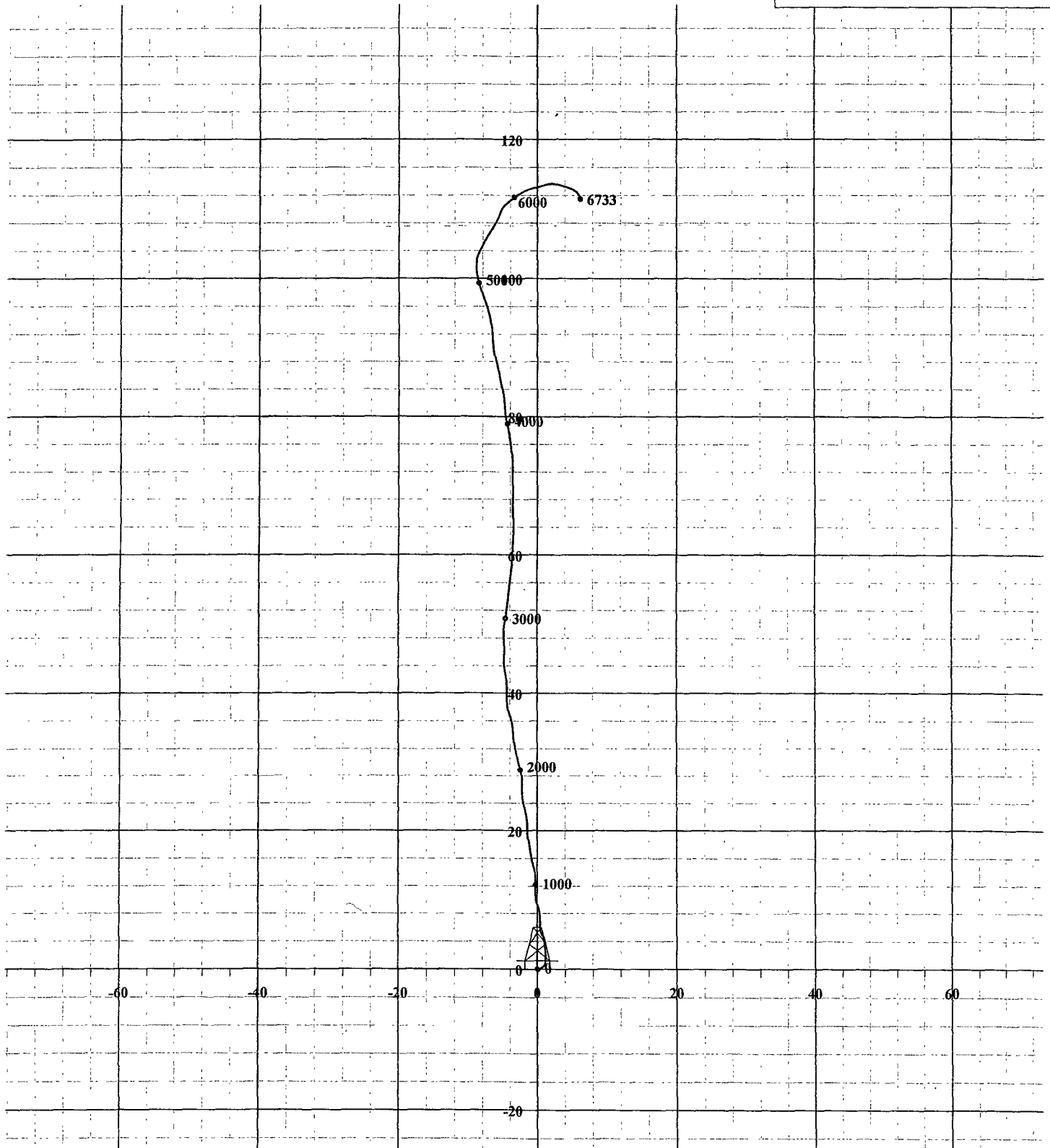
Scientific
Drilling

Field: Dog Canyon
Site: Eddy County, NM
Well: Lucky Wolf 31 Federal Com #1H
Survey: 03/19/10



Azimuths to Grid North
True North: 0.00°
Magnetic North: 0.00°
Magnetic Field
Dip Angle: 0.00°
Date: 3/22/2010
Model: igrf2000

South(-)/North(+) [20ft/in]



West(-)/East(+) [20ft/in]



Job Number: 10101003

Company: EOG RESOURCES

Lease/Well: LUCKY WOLF 31 FED COM # 1H

Location: EDDY CO. N.M.

Rig Name: MCVAY 4

RKB: 18

G.L. or M.S.L.: GL

State/Country: NEW MEXICO / USA

Declination: 7.93

Grid: NORTH

File name: C:\DOCUME~1\ADMINI~1\DESKTOP\WINSERVE\10003

Date/Time: 06-Apr-10 / 12:39

Curve Name: Lucky Wolf 31 Fed Com #1H / Sidetrack

Pathfinder Energy Services

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 265.52

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 FT	Direction Deg	Dogleg Severity Deg/100	BUILD RATE Deg/100
GYRO TIE IN										
5800.00	.80	20.05	5798.82	109.51	-5.42	-3.15	109.64	357.17	.00	.00
5840.00	4.84	232.36	5838.78	108.74	-6.66	-1.85	108.95	356.49	13.83	10.10
5872.00	8.18	232.83	5870.57	106.54	-9.55	1.19	106.97	354.88	10.44	10.44
5903.00	11.61	231.32	5901.10	103.26	-13.74	5.63	104.17	352.42	11.10	11.06
5935.00	14.95	233.99	5932.24	98.82	-19.59	11.81	100.74	348.78	10.61	10.44
5967.00	17.41	236.91	5962.97	93.78	-26.94	19.54	97.57	343.97	8.09	7.69
5999.00	19.96	237.81	5993.28	88.25	-35.58	28.58	95.15	338.04	8.02	7.97
6030.00	22.51	239.31	6022.18	82.40	-45.16	38.59	93.97	331.27	8.41	8.23
6062.00	25.06	241.37	6051.46	76.03	-56.38	50.27	94.65	323.44	8.38	7.97
6094.00	27.26	242.79	6080.18	69.43	-68.85	63.21	97.78	315.24	7.15	6.88
6126.00	29.55	242.62	6108.32	62.45	-82.37	77.24	103.37	307.17	7.16	7.16
6157.00	32.18	242.90	6134.93	55.17	-96.51	91.91	111.17	299.75	8.50	8.48
6189.00	34.29	243.51	6161.69	47.27	-112.17	108.13	121.72	292.85	6.68	6.59
6221.00	35.96	244.01	6187.87	39.13	-128.68	125.23	134.50	286.91	5.30	5.22
6252.00	38.43	243.53	6212.56	30.85	-145.49	142.64	148.72	281.97	8.02	7.97
6284.00	41.06	244.24	6237.16	21.84	-163.86	161.65	165.31	277.59	8.34	8.22
6316.00	42.84	245.10	6260.96	12.69	-183.20	181.64	183.64	273.96	5.85	5.56
6348.00	44.67	245.47	6284.07	3.44	-203.30	202.41	203.33	270.97	5.77	5.72
6380.00	47.66	245.90	6306.23	-6.06	-224.33	224.12	224.41	268.45	9.39	9.34
6411.00	50.74	245.59	6326.49	-15.70	-245.72	246.20	246.23	266.34	9.96	9.94
6443.00	52.32	245.71	6346.39	-26.03	-268.55	269.76	269.81	264.46	4.95	4.94
6475.00	54.69	245.21	6365.42	-36.71	-291.95	293.92	294.25	262.83	7.51	7.41
6507.00	57.51	244.24	6383.27	-48.06	-315.96	318.75	319.59	261.35	9.16	8.81
6538.00	59.26	243.82	6399.52	-59.62	-339.69	343.31	344.89	260.05	5.76	5.65

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100	BUILD RATE Deg/100
6570.00	61.73	244.35	6415.28	-71.78	-364.74	369.23	371.74	258.87	7.85	7.72
6602.00	64.81	244.86	6429.67	-84.04	-390.56	395.93	399.50	257.86	9.73	9.63
6634.00	68.91	245.24	6442.24	-96.45	-417.23	423.49	428.23	256.98	12.86	12.81
6673.00	72.19	243.82	6455.23	-112.26	-450.42	457.82	464.20	256.00	9.08	8.41
6704.00	75.45	243.91	6463.87	-125.38	-477.15	485.48	493.35	255.28	10.52	10.52
6736.00	80.37	243.73	6470.57	-139.18	-505.22	514.55	524.04	254.60	15.38	15.38
6768.00	83.98	243.82	6474.92	-153.18	-533.66	543.99	555.21	253.98	11.28	11.28
6833.00	85.03	244.17	6481.15	-181.55	-591.80	604.18	619.03	252.95	1.70	1.62
6863.00	85.56	244.79	6483.61	-194.43	-618.79	632.08	648.61	252.56	2.71	1.77
6895.00	87.05	244.96	6485.67	-207.99	-647.70	661.97	680.27	252.20	4.69	4.66
6958.00	89.43	245.27	6487.60	-234.49	-704.82	720.98	742.80	251.60	3.81	3.78
7021.00	90.31	246.94	6487.75	-260.00	-762.41	780.39	805.53	251.17	3.00	1.40
7085.00	92.24	248.71	6486.32	-284.15	-821.66	841.35	869.41	250.92	4.09	3.02
7116.00	92.77	251.73	6484.97	-294.63	-850.80	871.22	900.37	250.90	9.88	1.71
7148.00	94.53	253.45	6482.93	-304.19	-881.27	902.34	932.29	250.96	7.68	5.50
7211.00	97.17	255.43	6476.51	-321.00	-941.64	963.83	994.85	251.18	5.23	4.19
7275.00	97.96	257.88	6468.08	-335.64	-1003.36	1026.51	1058.01	251.50	3.99	1.23
7338.00	98.57	260.32	6459.02	-347.43	-1064.58	1088.46	1119.83	251.93	3.95	.97
7401.00	96.64	262.30	6450.69	-356.86	-1126.30	1150.73	1181.48	252.42	4.37	-3.06
7465.00	94.62	264.99	6444.41	-363.91	-1189.59	1214.38	1244.01	252.99	5.24	-3.16
7528.00	94.18	267.37	6439.57	-368.09	-1252.26	1277.19	1305.24	253.62	3.83	-.70
7592.00	94.26	267.67	6434.86	-370.85	-1316.03	1340.97	1367.28	254.26	.48	.12
7655.00	93.91	267.58	6430.38	-373.46	-1378.81	1403.77	1428.49	254.84	.57	-.56
7719.00	93.83	268.31	6426.06	-375.75	-1442.63	1467.57	1490.76	255.40	1.14	-.12
7782.00	92.59	269.27	6422.53	-377.08	-1505.51	1530.36	1552.01	255.94	2.49	-1.97
7845.00	91.63	270.21	6420.21	-377.36	-1568.47	1593.15	1613.22	256.47	2.13	-1.52
7909.00	91.80	270.22	6418.29	-377.12	-1632.44	1656.91	1675.43	256.99	.27	.27
7972.00	90.66	270.62	6416.94	-376.66	-1695.42	1719.66	1736.76	257.47	1.92	-1.81
8036.00	90.31	270.66	6416.40	-375.95	-1759.41	1783.40	1799.13	257.94	.55	-.55
8099.00	90.75	270.87	6415.82	-375.10	-1822.40	1846.14	1860.61	258.37	.77	.70
8163.00	91.01	271.71	6414.83	-373.66	-1886.38	1909.80	1923.03	258.80	1.37	.41
8226.00	91.45	272.28	6413.48	-371.47	-1949.33	1972.39	1984.41	259.21	1.14	.70
8290.00	91.54	272.27	6411.81	-368.93	-2013.25	2035.92	2046.78	259.62	.14	.14
8353.00	90.84	272.16	6410.50	-366.50	-2076.19	2098.48	2108.29	259.99	1.12	-1.11
8417.00	90.75	272.14	6409.61	-364.10	-2140.14	2162.04	2170.89	260.34	.14	-.14
8480.00	90.75	273.58	6408.79	-360.95	-2203.06	2224.52	2232.43	260.70	2.29	.00
8543.00	90.66	275.42	6408.01	-356.01	-2265.86	2286.74	2293.65	261.07	2.92	-.14
8607.00	90.84	276.08	6407.18	-349.60	-2329.53	2349.72	2355.61	261.47	1.07	.28
8670.00	91.28	276.51	6406.01	-342.69	-2392.14	2411.60	2416.56	261.85	.98	.70
8733.00	91.36	277.44	6404.56	-335.04	-2454.65	2473.32	2477.41	262.23	1.48	.13
8796.00	90.48	277.39	6403.55	-326.91	-2517.12	2534.96	2538.26	262.60	1.40	-1.40
8860.00	90.31	277.78	6403.11	-318.47	-2580.56	2597.55	2600.13	262.96	.66	-.27
8923.00	90.40	277.64	6402.72	-310.02	-2642.99	2659.13	2661.10	263.31	.26	.14
8987.00	90.57	278.06	6402.18	-301.27	-2706.38	2721.65	2723.10	263.65	.71	.27
9050.00	90.57	278.99	6401.55	-291.94	-2768.68	2783.03	2784.03	263.98	1.48	.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100	BUILD RATE Deg/100
9113.00	90.84	278.80	6400.77	-282.20	-2830.92	2844.31	2844.95	264.31	.52	.43
9177.00	89.69	277.77	6400.48	-272.97	-2894.25	2906.73	2907.09	264.61	2.41	-1.80
9240.00	89.52	277.92	6400.91	-264.37	-2956.66	2968.28	2968.46	264.89	.36	-.27
9303.00	89.87	278.30	6401.25	-255.49	-3019.03	3029.76	3029.82	265.16	.82	.56
9367.00	90.22	278.64	6401.20	-246.06	-3082.33	3092.13	3092.14	265.44	.76	.55
9430.00	90.22	277.94	6400.96	-236.98	-3144.67	3153.57	3153.59	265.69	1.11	.00
9494.00	90.57	278.16	6400.51	-228.02	-3208.04	3216.05	3216.13	265.93	.65	.55
9557.00	90.57	277.82	6399.89	-219.26	-3270.42	3277.56	3277.76	266.16	.54	.00
9621.00	90.92	276.62	6399.05	-211.22	-3333.91	3340.22	3340.59	266.37	1.95	.55
9684.00	90.57	276.76	6398.24	-203.88	-3396.47	3402.02	3402.59	266.56	.60	-.56
9748.00	90.57	276.99	6397.60	-196.22	-3460.01	3464.77	3465.57	266.75	.36	.00
9811.00	90.13	277.13	6397.21	-188.47	-3522.53	3526.49	3527.57	266.94	.73	-.70
9874.00	89.87	277.22	6397.21	-180.60	-3585.04	3588.19	3589.59	267.12	.44	-.41
9938.00	90.40	277.76	6397.06	-172.26	-3648.49	3650.80	3652.56	267.30	1.18	.83
10001.00	89.69	276.45	6397.01	-164.47	-3711.01	3712.52	3714.65	267.46	2.37	-1.13
10064.00	89.69	275.86	6397.35	-157.72	-3773.64	3774.43	3776.94	267.61	.94	.00
10128.00	90.40	276.58	6397.30	-150.78	-3837.26	3837.32	3840.23	267.75	1.58	1.11
10191.00	90.92	276.52	6396.58	-143.60	-3899.85	3899.15	3902.49	267.89	.83	.83
10255.00	90.75	276.47	6395.65	-136.36	-3963.43	3961.97	3965.78	268.03	.28	-.27
10318.00	89.78	276.42	6395.35	-129.29	-4026.03	4023.83	4028.11	268.16	1.54	-1.54
10381.00	92.42	277.32	6394.15	-121.75	-4088.56	4085.58	4090.37	268.29	4.43	4.19
10445.00	94.00	278.12	6390.56	-113.17	-4151.88	4148.03	4153.42	268.44	2.77	2.47
10508.00	94.26	278.01	6386.02	-104.35	-4214.09	4209.37	4215.39	268.58	.45	.41
10571.00	94.88	278.52	6381.00	-95.33	-4276.24	4270.62	4277.30	268.72	1.27	.98
10666.00	94.88	277.88	6372.92	-81.82	-4369.93	4362.97	4370.70	268.93	.67	.00
10761.00	95.32	278.37	6364.48	-68.45	-4463.60	4455.31	4464.13	269.12	.69	.46
10825.00	95.14	277.97	6358.64	-59.39	-4526.69	4517.50	4527.08	269.25	.68	-.28
Projection to Bit										
10885.00	95.14	277.97	6353.27	-51.11	-4585.87	4575.85	4586.16	269.36	.00	.00