

TELECO OILFIELD SERVICES
SURVEY CALCULATIONS

Date 12 MAR 1992

Company: GIANT EXPLORATION
Well: DEBRA GEIGER # 1 S/T 1
Location: SAN JUAN NEW MEXICO
Rig: ARAPAHOE # 7

We hereby certify that the
surveys conducted herein are to
the best of our knowledge a true
and accurate account of the well

TELECO Job # TRM-358
Grid Correction: 0.0°
Magnetic Declination: 12.0°
Total grid correction: 12.0°
Proposed Direction: 118.7°

MINIMUM CURVATURE CALCULATION

Joe Seng
FIELD SUPERVISOR
JOY E. SCONZA
JOY E. SCONZA - Notary Public
County Of _____ State Of _____
Narbonne Wyoming
My Commission Expires Feb. 20, 1994

INITIAL TIE IN COORDINATES

Meas	Course	True	Vertical	Coordinates	Closure	Dog Leg				
Depth	Length	Incl	Azi	Vert. Dp.	Section	N/S	E/W	Distance	Angle	Severity
feet	feet	deg	deg	feet	feet	feet	feet	feet	deg	deg/100°
5172	0	78.0	114.9	4745.70	1102.64	776.80S	831.90E	1138.19	S 46.96E	0.00

TELECO SURVEYS

5215	43	79.1	116.1	4754.24	1144.72	794.94S	869.94E	1178.44	S 47.58E	3.75
5264	49	83.1	114.3	4761.82	1193.02	815.55S	913.73E	1224.75	S 48.25E	8.93
5279	15	85.0	112.9	4763.37	1207.88	821.52S	927.40E	1238.94	S 48.46E	15.70
5295	16	87.1	111.8	4764.47	1223.75	827.59S	942.16E	1254.02	S 48.70E	14.81

Company: GIANT EXPLORATION, Well: DEBRA GEIGER # 1 S/T 1, Location: SAN JUAN NEW MEXICO, Rig: ARAPAHOE #

Meas Depth feet	Length feet	Course Incl deg	Azi deg	True Vert. feet	Dp. feet	Vertical Section feet	N/S feet	Coordinates E/W feet	Distance feet	Closure Angle deg	Dog Leg Severity deg/100'
5325	30	89.3	110.4	4765.42	1253.47	838.38S	970.14E	1282.20	S 49.17E	8.69	
5356	31	88.6	111.1	4765.98	1284.17	849.36S	999.12E	1311.36	S 49.63E	3.19	
5370	14	87.5	112.2	4766.46	1298.05	854.52S	1012.12E	1324.62	S 49.83E	11.11	
5388	18	86.7	112.5	4767.37	1315.92	861.36S	1028.75E	1341.74	S 50.06E	4.75	
5419	31	86.5	112.9	4769.21	1346.70	873.30S	1057.30E	1371.33	S 50.44E	1.44	
5452	33	86.1	112.9	4771.34	1379.46	886.12S	1087.63E	1402.91	S 50.83E	1.21	
5481	29	86.0	112.9	4773.34	1408.24	897.37S	1114.29E	1430.70	S 51.15E	0.36	
5511	30	85.6	112.9	4775.53	1438.01	909.02S	1141.85E	1459.49	S 51.48E	1.33	
5540	29	85.3	112.9	4777.83	1466.77	920.27S	1168.48E	1487.36	S 51.78E	1.03	
5572	32	84.8	112.9	4780.60	1498.49	932.67S	1197.84E	1518.13	S 52.09E	1.56	
5596	24	85.2	112.5	4782.69	1522.27	941.90S	1219.90E	1541.21	S 52.33E	2.35	
5603	7	85.3	112.9	4783.27	1529.21	944.59S	1226.34E	1547.95	S 52.39E	5.86	
5613	10	86.2	111.8	4784.01	1539.12	948.38S	1235.56E	1557.57	S 52.49E	14.19	
5621	8	86.8	111.8	4784.50	1547.05	951.35S	1242.97E	1565.26	S 52.57E	7.50	

Company: GIANT EXPLORATION, well: DEBRA GEIGER # 1 S/T 1, Location: SAN JUAN NEW MEXICO, Rig: ARAPAHOE #

Meas	Course	Length	Incl	Azi	True	Vertical	Coordinates	Closure	Dog Leg		
Depth	feet	feet	deg	deg	Vert.	Section	N/S	E/W	Distance	Angle	Severity
feet					feet	feet	feet	feet	feet	deg	deg/100°

5633	12	87.7	111.8	4785.07	1558.95	955.80S	1254.10E	1576.81	S 52.69E	7.50	
5643	10	88.2	111.8	4785.43	1568.87	959.51S	1263.38E	1586.44	S 52.78E	5.00	
5656	13	88.7	111.5	4785.78	1581.77	964.30S	1275.46E	1598.96	S 52.91E	4.48	
5664	8	88.6	111.5	4785.97	1589.70	967.24S	1282.90E	1606.67	S 52.99E	1.29	
5693	29	88.2	111.5	4786.78	1618.46	977.86S	1309.87E	1634.62	S 53.26E	1.38	
5725	32	88.0	111.8	4787.84	1650.20	989.66S	1339.60E	1665.52	S 53.54E	1.12	
5733	8	88.0	112.2	4788.12	1658.14	992.65S	1347.01E	1673.26	S 53.61E	5.00	
5755	22	88.1	112.2	4788.87	1679.99	1000.96S	1367.37E	1694.59	S 53.79E	0.47	
5768	13	88.1	112.2	4789.30	1692.90	1005.87S	1379.40E	1707.20	S 53.90E	0.00	
5786	18	88.2	112.5	4789.88	1710.78	1012.71S	1396.04E	1724.68	S 54.04E	1.75	
5817	31	88.6	112.9	4790.75	1741.60	1024.67S	1424.63E	1754.85	S 54.27E	1.83	
5846	29	88.7	112.9	4791.43	1770.45	1035.95S	1451.33E	1783.13	S 54.48E	0.36	
5877	31	89.9	113.6	4791.81	1801.30	1048.19S	1479.81E	1813.43	S 54.69E	4.48	

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Meas Depth feet Length feet Course Incl deg Azi deg True Vert. Dp. feet Vertical Section feet N/S Coordinates E/W feet Distance feet Closure Angle deg Dog Leg Severity deg/100

5900	23	91.6	113.6	4791.51	1824.21	1057.39S	1500.89E	1835.96	S	54.83E	7.39
5911	11	92.4	113.6	4791.12	1835.16	1061.80S	1510.96E	1846.73	S	54.90E	7.28
5923	12	93.3	113.6	4790.53	1847.10	1066.59S	1521.94E	1858.48	S	54.98E	7.50
5938	15	94.2	113.6	4789.55	1862.01	1072.59S	1535.66E	1873.15	S	55.07E	6.00
5953	15	94.8	113.6	4788.37	1876.90	1078.57S	1549.36E	1887.81	S	55.16E	4.00
5967	14	95.1	113.6	4787.16	1890.80	1084.16S	1562.14E	1901.50	S	55.24E	2.14
5971	4	95.4	112.9	4786.79	1894.76	1085.73S	1565.80E	1905.40	S	55.26E	18.97
6001	30	95.6	112.9	4783.92	1924.47	1097.35S	1593.31E	1934.64	S	55.44E	0.66
6031	30	93.1	112.2	4781.64	1954.21	1108.82S	1620.93E	1963.90	S	55.63E	8.65
6052	21	91.9	112.2	4780.73	1975.06	1116.75S	1640.36E	1984.42	S	55.75E	5.72
PROJECTED BOTTOM HOLE LOCATION											
6098	46	89.3	112.2	4780.26	2020.76	1134.13S	1682.94E	2029.42	S	56.02E	5.72