

# ELINE

# SURVEY CALCULATION PROGRAM

v1.00.02

|                                                                    |           |                                 |            |                      |               |            |            |                          |                 |                                  |                |                 |  |
|--------------------------------------------------------------------|-----------|---------------------------------|------------|----------------------|---------------|------------|------------|--------------------------|-----------------|----------------------------------|----------------|-----------------|--|
| <b>OPERATOR:</b>                                                   |           | <b>MEWBOURNE</b>                |            |                      |               |            |            | <b>Supervisors:</b>      |                 |                                  |                |                 |  |
| <b>WELL:</b>                                                       |           | <b>MALAGA 30 MP FED COM #1H</b> |            |                      |               |            |            | <b>CLAYTON THOMAS</b>    |                 |                                  |                |                 |  |
| <b>LOCATION:</b>                                                   |           | <b>EDDY COUNTY, NM</b>          |            |                      |               |            |            | <b>RANDALL SKIPWORTH</b> |                 |                                  |                |                 |  |
| <b>JOB NUMBER:</b>                                                 |           | <b>WL-13569</b>                 |            |                      | <b>API #:</b> |            |            | <b>30-015-41461</b>      |                 |                                  |                |                 |  |
| <b>COMMENTS:</b>                                                   |           |                                 |            |                      |               |            |            |                          |                 |                                  |                |                 |  |
| <b>DISPLACEMENT OF 206.93FT AT 196.43 DEGREES</b>                  |           |                                 |            |                      |               |            |            |                          |                 | <b>MAG DEC.(-/+)</b>             |                | <b>7.38E</b>    |  |
|                                                                    |           |                                 |            |                      |               |            |            |                          |                 | <b>GRID CORR.(-/+)</b>           |                |                 |  |
|                                                                    |           |                                 |            |                      |               |            |            |                          |                 | <b>TOTAL CORR.(-/+)</b>          |                | <b>7.38E</b>    |  |
| <b>DATE: 7-17-13</b>                                               |           |                                 |            | <b>TIME: 3:00 PM</b> |               |            |            |                          |                 |                                  |                |                 |  |
| <b>MINIMUM CURVATURE CALCULATIONS(SPE-3362) PROPOSED DIRECTION</b> |           |                                 |            |                      |               |            |            | <b>100.03</b>            |                 | <b>TARGET TRACKING TO CENTER</b> |                |                 |  |
| <b>SVY</b>                                                         |           | <b>TRUE</b>                     |            |                      |               |            |            | <b>DLS/</b>              |                 | <b>ABOVE(+)</b>                  |                | <b>RIGHT(+)</b> |  |
| <b>NUM</b>                                                         | <b>MD</b> | <b>INC</b>                      | <b>AZM</b> | <b>TVD</b>           | <b>SECT</b>   | <b>N-S</b> | <b>E-W</b> | <b>100</b>               | <b>BELOW(-)</b> |                                  | <b>LEFT(-)</b> |                 |  |

|     |      |      |        |         |        |         |        |     |         |       |
|-----|------|------|--------|---------|--------|---------|--------|-----|---------|-------|
| TIE |      |      |        |         |        |         |        |     |         |       |
| 1   | 100  | 0.42 | 335.12 | 100.00  | -0.21  | 0.33    | -0.15  | 0.4 | -100.0  | -0.3  |
| 2   | 200  | 0.76 | 243.96 | 200.00  | -0.96  | 0.37    | -0.90  | 0.9 | -200.0  | -0.2  |
| 3   | 300  | 2.67 | 183.07 | 299.95  | -1.21  | -2.24   | -1.63  | 2.4 | -300.0  | 2.5   |
| 4   | 400  | 2.74 | 186.93 | 399.84  | -0.80  | -6.94   | -2.04  | 0.2 | -399.8  | 7.2   |
| 5   | 500  | 2.85 | 192.13 | 499.72  | -0.76  | -11.75  | -2.85  | 0.3 | -499.7  | 12.1  |
| 6   | 600  | 3.01 | 195.14 | 599.59  | -1.08  | -16.71  | -4.06  | 0.2 | -599.6  | 17.2  |
| 7   | 700  | 2.96 | 196.70 | 699.45  | -1.62  | -21.72  | -5.48  | 0.1 | -699.5  | 22.3  |
| 8   | 800  | 3.03 | 203.67 | 799.32  | -2.54  | -26.61  | -7.29  | 0.4 | -799.3  | 27.5  |
| 9   | 900  | 3.03 | 205.74 | 899.18  | -3.88  | -31.41  | -9.50  | 0.1 | -899.2  | 32.6  |
| 10  | 1000 | 3.10 | 210.70 | 999.04  | -5.55  | -36.12  | -12.02 | 0.3 | -999.0  | 37.7  |
| 11  | 1100 | 3.25 | 212.30 | 1098.88 | -7.58  | -40.84  | -14.92 | 0.2 | -1098.9 | 42.8  |
| 12  | 1200 | 3.16 | 212.67 | 1198.73 | -9.71  | -45.56  | -17.92 | 0.1 | -1198.7 | 48.0  |
| 13  | 1300 | 3.22 | 208.45 | 1298.57 | -11.66 | -50.35  | -20.75 | 0.2 | -1298.6 | 53.2  |
| 14  | 1400 | 3.21 | 209.71 | 1398.41 | -13.49 | -55.25  | -23.47 | 0.1 | -1398.4 | 58.5  |
| 15  | 1500 | 2.95 | 210.54 | 1498.27 | -15.34 | -59.89  | -26.17 | 0.3 | -1498.3 | 63.5  |
| 16  | 1600 | 2.70 | 211.23 | 1598.15 | -17.09 | -64.12  | -28.70 | 0.3 | -1598.1 | 68.1  |
| 17  | 1700 | 2.60 | 211.96 | 1698.04 | -18.79 | -68.06  | -31.12 | 0.1 | -1698.0 | 72.4  |
| 18  | 1800 | 2.47 | 227.10 | 1797.94 | -20.94 | -71.45  | -33.90 | 0.7 | -1797.9 | 76.3  |
| 19  | 1900 | 2.37 | 213.87 | 1897.86 | -23.07 | -74.64  | -36.63 | 0.6 | -1897.9 | 79.9  |
| 20  | 2000 | 2.02 | 201.97 | 1997.78 | -24.27 | -77.99  | -38.44 | 0.6 | -1997.8 | 83.5  |
| 21  | 2100 | 2.26 | 191.28 | 2097.71 | -24.68 | -81.56  | -39.49 | 0.5 | -2097.7 | 87.2  |
| 22  | 2200 | 1.75 | 193.11 | 2197.65 | -24.80 | -84.98  | -40.22 | 0.5 | -2197.7 | 90.7  |
| 23  | 2300 | 2.10 | 161.80 | 2297.60 | -24.02 | -88.21  | -39.99 | 1.1 | -2297.6 | 93.8  |
| 24  | 2400 | 2.81 | 154.12 | 2397.51 | -21.71 | -92.15  | -38.35 | 0.8 | -2397.5 | 97.4  |
| 25  | 2500 | 3.27 | 151.53 | 2497.36 | -18.50 | -96.86  | -35.92 | 0.5 | -2497.4 | 101.6 |
| 26  | 2600 | 3.18 | 154.59 | 2597.21 | -15.12 | -101.88 | -33.37 | 0.2 | -2597.2 | 106.1 |
| 27  | 2700 | 2.71 | 155.42 | 2697.07 | -12.17 | -106.53 | -31.20 | 0.5 | -2697.1 | 110.3 |
| 28  | 2800 | 2.28 | 157.22 | 2796.98 | -9.75  | -110.52 | -29.44 | 0.4 | -2797.0 | 114.0 |
| 29  | 2900 | 1.89 | 155.43 | 2896.91 | -7.73  | -113.85 | -27.99 | 0.4 | -2896.9 | 117.0 |
| 30  | 3000 | 1.84 | 158.05 | 2996.86 | -5.95  | -116.84 | -26.70 | 0.1 | -2996.9 | 119.7 |
| 31  | 3100 | 1.53 | 156.54 | 3096.82 | -4.36  | -119.55 | -25.57 | 0.3 | -3096.8 | 122.2 |
| 32  | 3200 | 1.61 | 165.16 | 3196.78 | -3.03  | -122.13 | -24.68 | 0.2 | -3196.8 | 124.6 |
| 33  | 3300 | 0.92 | 180.26 | 3296.75 | -2.30  | -124.30 | -24.32 | 0.8 | -3296.8 | 126.6 |
| 34  | 3400 | 0.85 | 180.29 | 3396.74 | -2.04  | -125.84 | -24.33 | 0.1 | -3396.7 | 128.2 |
| 35  | 3500 | 1.19 | 159.04 | 3496.73 | -1.38  | -127.55 | -23.96 | 0.5 | -3496.7 | 129.8 |
| 36  | 3600 | 0.90 | 179.72 | 3596.71 | -0.71  | -129.31 | -23.59 | 0.5 | -3596.7 | 131.4 |
| 37  | 3700 | 0.55 | 202.50 | 3696.70 | -0.67  | -130.53 | -23.77 | 0.4 | -3696.7 | 132.7 |
| 38  | 3800 | 1.08 | 215.95 | 3796.69 | -1.19  | -131.74 | -24.50 | 0.6 | -3796.7 | 134.0 |
| 39  | 3900 | 0.66 | 196.04 | 3896.68 | -1.66  | -133.06 | -25.22 | 0.5 | -3896.7 | 135.4 |
| 40  | 4000 | 0.78 | 199.86 | 3996.67 | -1.83  | -134.25 | -25.61 | 0.1 | -3996.7 | 136.7 |

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# **SURVEY CALCULATION PROGRAM**

v1.00.02

|                                            |                          |               |                   |       |
|--------------------------------------------|--------------------------|---------------|-------------------|-------|
| OPERATOR:                                  | MEWBOURNE                |               | Supervisors:      |       |
| WELL:                                      | MALAGA 30 MP FED COM #1H |               | CLAYTON THOMAS    |       |
| LOCATION:                                  | EDDY COUNTY, NM          |               | RANDALL SKIPWORTH |       |
| JOB NUMBER:                                | WL-13569                 | API #:        | 30-015-41461      |       |
| COMMENTS:                                  |                          |               |                   |       |
| DISPLACEMENT OF 206.93FT AT 196.43 DEGREES |                          |               | MAG DEC. (-/+)    | 7.38E |
|                                            |                          |               | GRID CORR. (-/+)  |       |
|                                            |                          |               | TOTAL CORR. (-/+) | 7.38E |
| DATE: 7-17-13                              |                          | TIME: 3:00 PM |                   |       |

| MINIMUM CURVATURE CALCULATIONS(SPE-3362) |      |      |        |         |        |         |        |     | 100.03  | TARGET TRACKING TO CENTER |          |
|------------------------------------------|------|------|--------|---------|--------|---------|--------|-----|---------|---------------------------|----------|
| SVY                                      | MD   | INC  | TRUE   |         |        |         |        |     | DLS/    | ABOVE(+)                  | RIGHT(+) |
| NUM                                      |      |      | AZM    | TVD     | SECT   | N-S     | E-W    |     | 100     | BELOW(-)                  | LEFT(-)  |
| 41                                       | 4100 | 0.43 | 270.26 | 4096.67 | -2.32  | -134.89 | -26.21 | 0.8 | -4096.7 | 137.4                     |          |
| 42                                       | 4200 | 0.80 | 214.94 | 4196.66 | -2.98  | -135.46 | -26.99 | 0.7 | -4196.7 | 138.1                     |          |
| 43                                       | 4300 | 0.80 | 211.42 | 4296.65 | -3.53  | -136.63 | -27.75 | 0.0 | -4296.7 | 139.4                     |          |
| 44                                       | 4400 | 0.89 | 218.29 | 4396.64 | -4.15  | -137.83 | -28.60 | 0.1 | -4396.6 | 140.7                     |          |
| 45                                       | 4500 | 0.90 | 222.84 | 4496.63 | -4.95  | -139.02 | -29.61 | 0.1 | -4496.6 | 142.1                     |          |
| 46                                       | 4600 | 0.68 | 187.45 | 4596.62 | -5.35  | -140.18 | -30.22 | 0.5 | -4596.6 | 143.3                     |          |
| 47                                       | 4700 | 0.54 | 154.01 | 4696.62 | -5.04  | -141.20 | -30.09 | 0.4 | -4696.6 | 144.3                     |          |
| 48                                       | 4800 | 0.66 | 167.48 | 4796.61 | -4.55  | -142.18 | -29.76 | 0.2 | -4796.6 | 145.2                     |          |
| 49                                       | 4900 | 0.94 | 212.14 | 4896.60 | -4.63  | -143.44 | -30.07 | 0.7 | -4896.6 | 146.5                     |          |
| 50                                       | 5000 | 1.15 | 204.95 | 4996.58 | -5.20  | -145.04 | -30.93 | 0.2 | -4996.6 | 148.2                     |          |
| 51                                       | 5100 | 1.00 | 233.11 | 5096.57 | -6.05  | -146.48 | -32.06 | 0.5 | -5096.6 | 149.8                     |          |
| 52                                       | 5200 | 1.24 | 207.93 | 5196.55 | -6.98  | -147.96 | -33.26 | 0.5 | -5196.5 | 151.5                     |          |
| 53                                       | 5300 | 0.97 | 227.59 | 5296.53 | -7.83  | -149.48 | -34.39 | 0.5 | -5296.5 | 153.2                     |          |
| 54                                       | 5400 | 1.45 | 240.95 | 5396.51 | -9.33  | -150.67 | -36.12 | 0.6 | -5396.5 | 154.7                     |          |
| 55                                       | 5500 | 1.54 | 223.83 | 5496.47 | -11.06 | -152.25 | -38.16 | 0.5 | -5496.5 | 156.6                     |          |
| 56                                       | 5600 | 1.21 | 218.33 | 5596.45 | -12.31 | -154.05 | -39.74 | 0.4 | -5596.4 | 158.6                     |          |
| 57                                       | 5700 | 1.21 | 217.70 | 5696.42 | -13.30 | -155.71 | -41.05 | 0.0 | -5696.4 | 160.5                     |          |
| 58                                       | 5800 | 1.43 | 213.44 | 5796.40 | -14.28 | -157.59 | -42.38 | 0.2 | -5796.4 | 162.6                     |          |
| 59                                       | 5900 | 1.37 | 207.71 | 5896.37 | -15.14 | -159.69 | -43.62 | 0.2 | -5896.4 | 164.8                     |          |
| 60                                       | 6000 | 1.27 | 202.95 | 5996.34 | -15.75 | -161.77 | -44.61 | 0.1 | -5996.3 | 167.1                     |          |
| 61                                       | 6100 | 1.02 | 219.98 | 6096.32 | -16.45 | -163.47 | -45.61 | 0.4 | -6096.3 | 168.9                     |          |
| 62                                       | 6200 | 1.43 | 199.25 | 6196.30 | -17.09 | -165.33 | -46.60 | 0.6 | -6196.3 | 170.9                     |          |
| 63                                       | 6300 | 1.73 | 203.04 | 6296.26 | -17.63 | -167.90 | -47.60 | 0.3 | -6296.3 | 173.6                     |          |
| 64                                       | 6400 | 1.77 | 197.45 | 6396.2  | -18.2  | -170.8  | -48.7  | 0.2 | -6396.2 | 176.6                     |          |
| 65                                       | 6500 | 1.71 | 189.08 | 6496.2  | -18.3  | -173.7  | -49.4  | 0.3 | -6496.2 | 179.6                     |          |
| 66                                       | 6600 | 1.89 | 192.41 | 6596.1  | -18.4  | -176.8  | -49.9  | 0.2 | -6596.1 | 182.8                     |          |
| 67                                       | 6700 | 1.87 | 210.59 | 6696.1  | -19.0  | -179.8  | -51.1  | 0.6 | -6696.1 | 186.0                     |          |
| 68                                       | 6800 | 2.49 | 239.06 | 6796.0  | -21.2  | -182.3  | -53.8  | 1.2 | -6796.0 | 188.9                     |          |
| 69                                       | 6900 | 3.10 | 240.00 | 6895.9  | -25.0  | -184.8  | -58.0  | 0.6 | -6895.9 | 192.1                     |          |
| 70                                       | 7000 | 2.02 | 223.10 | 6995.8  | -28.0  | -187.4  | -61.6  | 1.3 | -6995.8 | 195.3                     |          |
| 71                                       | 7100 | 1.07 | 192.80 | 7095.7  | -29.0  | -189.6  | -63.0  | 1.2 | -7095.7 | 197.7                     |          |
| 72                                       | 7200 | 0.97 | 166.02 | 7195.7  | -28.7  | -191.4  | -63.0  | 0.5 | -7195.7 | 199.4                     |          |
| 73                                       | 7300 | 0.38 | 204.06 | 7295.7  | -28.4  | -192.5  | -62.9  | 0.7 | -7295.7 | 200.5                     |          |
| 74                                       | 7400 | 0.34 | 229.84 | 7395.7  | -28.7  | -193.0  | -63.3  | 0.2 | -7395.7 | 201.1                     |          |
| 75                                       | 7500 | 0.36 | 124.67 | 7495.7  | -28.6  | -193.4  | -63.2  | 0.6 | -7495.7 | 201.4                     |          |
| 76                                       | 7600 | 1.42 | 144.80 | 7595.7  | -27.4  | -194.5  | -62.3  | 1.1 | -7595.7 | 202.4                     |          |
| 77                                       | 7700 | 3.10 | 134.03 | 7695.6  | -24.3  | -197.4  | -59.6  | 1.7 | -7695.6 | 204.8                     |          |
| 78                                       | 7730 | 2.70 | 133.66 | 7725.6  | -23.1  | -198.5  | -58.5  | 1.3 | -7725.6 | 205.6                     |          |



# SURVEY CALCULATION PROGRAM

v1.00.02

|                                            |                          |               |                           |          |          |     |     |     |          |         |
|--------------------------------------------|--------------------------|---------------|---------------------------|----------|----------|-----|-----|-----|----------|---------|
| OPERATOR:                                  | MEWBOURNE                |               | Supervisors:              |          |          |     |     |     |          |         |
| WELL:                                      | MALAGA 30 MP FED COM #1H |               | CLAYTON THOMAS            |          |          |     |     |     |          |         |
| LOCATION:                                  | EDDY COUNTY, NM          |               | RANDALL SKIPWORTH         |          |          |     |     |     |          |         |
| JOB NUMBER:                                | WL-13569                 | API #:        | 30-015-41461              |          |          |     |     |     |          |         |
| COMMENTS:                                  |                          |               |                           |          |          |     |     |     |          |         |
| DISPLACEMENT OF 206.93FT AT 196.43 DEGREES |                          |               | MAG DEC.(-/+)             | 7.38E    |          |     |     |     |          |         |
|                                            |                          |               | GRID CORR.(-/+)           |          |          |     |     |     |          |         |
|                                            |                          |               | TOTAL CORR.(-/+)          | 7.38E    |          |     |     |     |          |         |
| DATE: 7-17-13                              |                          | TIME: 3:00 PM |                           |          |          |     |     |     |          |         |
| MINIMUM CURVATURE CALCULATIONS(SPE-3362)   |                          |               | PROPOSED DIRECTION        | 100.03   |          |     |     |     |          |         |
|                                            |                          |               | TARGET TRACKING TO CENTER |          |          |     |     |     |          |         |
| SVY                                        | TRUE                     |               | DLS/                      | ABOVE(+) | RIGHT(+) |     |     |     |          |         |
| NUM                                        | MD                       | INC           | AZM                       | TVD      | SECT     | N-S | E-W | 100 | BELOW(-) | LEFT(-) |