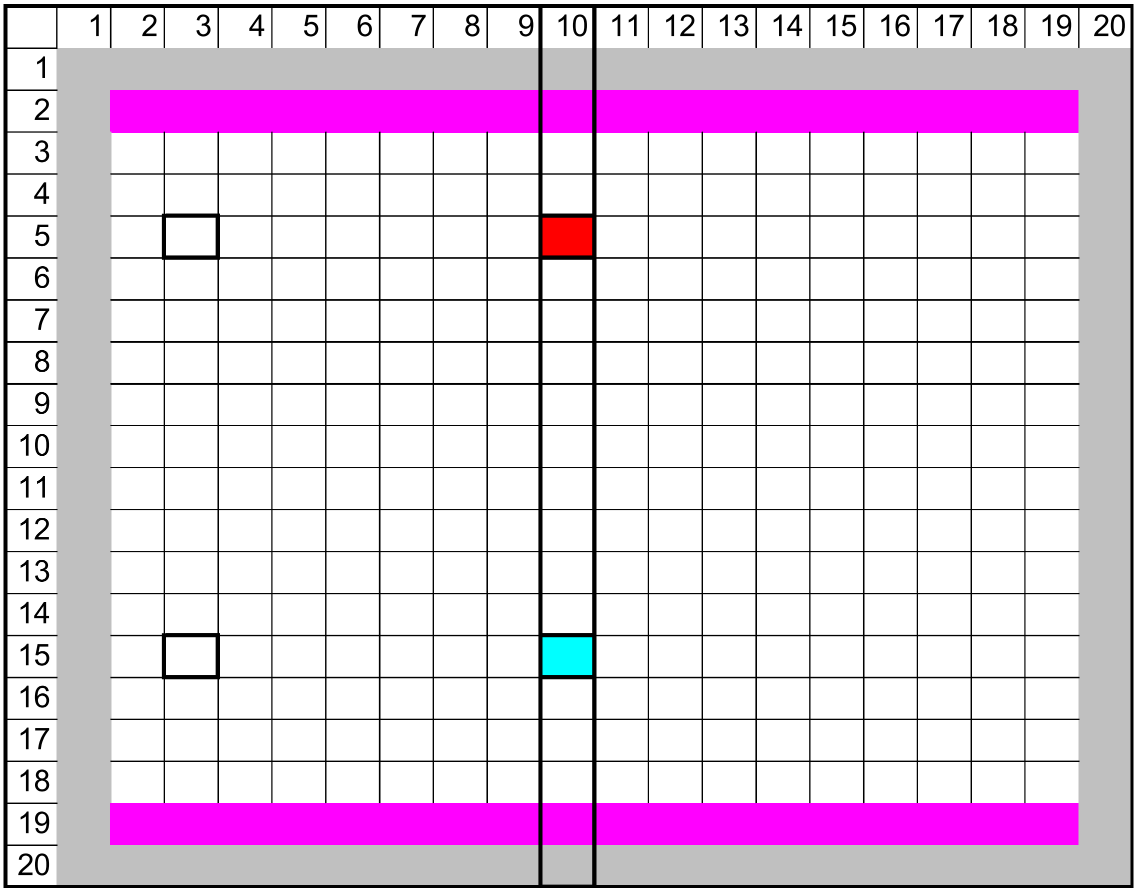
These six configurations can be studied to determine where the injection well should be located relative to the production well.

For this study we will use a 20 x 20 grid with: Δx = 500m(1640 ft); Δy = 200m (656 ft).;
K = 16.6 m/day (54.0 ft/day) ; a_L=50m (164.0 ft) ;
a_T=5m(16.4 ft); n=0.35; Q_{drink} = 2. 8 MGD (4.33 cu.ft./sec)



Casing Failure Simulation - Case 1; 20 x 20 Grid

```
10,1,20,20,3200,1,7,1,100,2,9,2,0,0,0,0,0,0
2.0,0.001,0.30,164.0,0.0,0.0,0.0,1640.0,1640.0,0.10,0.49,1.0
10,15                    Observation Well
10,15,4.3333,0.00          Pumping Well
10,5, -0.0000,1000.00        Injection Well (-0031 for breach)
```

```
1  1.9E-01              Transmissivity (ft^2/sec)
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

```
1  300.0              Thickness
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

```
1  1.0              Recharge
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
```

```
1  1.0      initial head
0  0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0
0 75  75  75  75  75  75  75  75  75  75  75  75  75  75  75  75  75  75
0
0 72  72  72  72  72  72  72  72  72  72  72  72  72  72  72  72  72  72
0
0 69  69  69  69  68  68  68  68  68  68  68  69  69  69  69  69  69  69
0
0 65  65  65  65  65  65  65  65  65  65  65  65  65  65  65  65  65  65
0
0 62  62  62  62  62  62  62  62  62  62  62  62  62  62  62  62  62  62
0
0 59  59  59  59  59  59  59  59  59  59  59  59  59  59  59  59  59  59
0
0 56  56  56  56  55  55  55  55  55  55  55  55  56  56  56  56  56  56
0
0 53  53  52  52  52  52  52  52  52  52  52  52  52  52  53  53  53  53
0
0 49  49  49  49  49  49  49  48  48  48  49  49  49  49  49  50  50  50
0
0 46  46  46  46  46  45  45  45  45  45  45  46  46  46  46  47  47  47
0
0 43  43  43  43  43  42  42  41  41  41  42  42  43  43  43  44  44  44
0
0 41  40  40  40  39  39  38  37  37  37  38  39  40  40  40  41  41  41
0
0 38  38  37  37  36  36  35  33  32  33  35  36  37  37  38  38  38  38
0
0 35  35  35  34  34  33  32  29  23  29  32  33  34  34  35  35  35  35
0
0 32  32  32  32  31  31  30  28  27  28  30  31  31  32  32  32  33  33
0
0 30  30  30  29  29  29  28  27  27  27  28  29  29  30  30  30  30  30
0
0 27  27  27  27  27  27  27  26  26  26  27  27  27  27  27  27  27  28
0
0 25  25  25  25  25  25  25  25  25  25  25  25  25  25  25  25  25  25
0
0  0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0
```

```
1  1.0                    Boundary and I/C array
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
0  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2
0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
1,1.00,0.00,0.00,0       Leakance terms at
special nodes
2,1.00,0.00,0.00,0
```

```
1  10000.0       initial concentration
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
2.65,0.0,0.0                    rho-s,Kd,lambda
```