Appendix A

Table 7A. Concrete Atom Densities

Isotope or Element	Atoms/b-cm
Pu-239	2.4441-05
H	4.90088-02
O	3.6418-02
Si	4.7003-03
Al	7.1166-04
Na	3.1321-04
Ca	8.6781-04
Fe	9.1988-05
L	2.0678-04
Mg	4.580-05
S	1.5761-06

A plutonium concentration of 0.0097 was used to calculate the plutonium atom densities.

Table 8A. Paraffin Atom Densities

Isotope or Element	Atoms/b-cm
Pu-239	2.8346-05
C	3.9699-02
H	8.2571-02

Conc1

```
ISG CSE Plutonium Concentration in Concrete 50 wt% H2o
   1  10  -1.4048   1 -2 -3 4 -5 6    $ Pu Concrete matrix
   2  0            (-1:2:3:-4:5:-6)  $ Outside World

   *1  pz 0
   *2  pz 100
   *3  px 50
   *4  px -50
   *5  py 50
   *6  py -50

mode n
imp:n 1 0
   m10    94239.55c 1.5874-5 1001.50c 4.9088-2 8016.50c 3.6418-2
          14000.50c 4.7003-3 13027.50c 7.1166-4 11023.50c 3.1321-4
          20000.50c 8.6781-4 26000.55c 9.1988-5 19000.50c 6.9495-4
          12000.50c 1.3974-4 16032.50c 5.2970-5
c
c
kcode 1000. 1.0 5 20
ksrc   10 10 10  20 20 20  30 30 30  40 40 40
      -10 -10 10  -20 -20 20  -30 -30 30  -40 -40 40
      10 10 30  20 20 30  30 30 30  40 40 30
      -10 -10 30  -20 -20 30  -30 -30 30  -40 -40 30
c     set time limit
c
ctme 9900
c
print
```

Conc

```
ISG CSE Plutonium Concentration in Concrete
   1  10  -1.6722   1 -2 -3 4 -5 6    $ Pu Concrete matrix
   2  0            (-1:2:3:-4:5:-6)  $ Outside World

   *1  pz 0
   *2  pz 100
   *3  px 50
   *4  px -50
   *5  py 50
   *6  py -50

mode n
imp:n 1 0
   m10     94239.55c 1.3102-5 1001.50c 3.7338-2 8016.50c 3.8484-2
           14000.50c 7.8439-3 13027.50c 1.1876-3 11023.50c 5.2268-4
           20000.50c 1.4482-3 26000.55c 1.5351-4 19000.50c 3.4508-4
           12000.50c 6.9389-5 16032.50c 2.6302-5
c
c
kcode 1000. 1.0 15 400
ksrc    10 10 10  20 20 20  30 30 30  40 40 40
       -10 -10 10  -20 -20 20  -30 -30 30  -40 -40 40
       10 10 30  20 20 30  30 30 30  40 40 30
       -10 -10 30  -20 -20 30  -30 -30 30  -40 -40 30
c      set time limit
c
ctme 9900
c
print
```

Conc2

```
ISG CSE Plutonium Concentration in Concrete 10 wt% H2o
   1  10  -2.0640   1 -2 -3 4 -5 6    $ Pu Concrete matrix
   2  0            (-1:2:3:-4:5:-6)  $ Outside World

   *1  pz 0
   *2  pz 100
   *3  px 50
   *4  px -50
   *5  py 50
   *6  py -50

mode n
imp:n 1 0
   m10     94239.55c 1.0079-5 1001.50c 1.9975-2 8016.50c 4.1470-2
          14000.50c 1.2463-2 13027.50c 1.8869-3 11023.50c 8.3045-4
          20000.50c 2.3009-3 26000.55c 2.4390-4 19000.50c 5.4827-4
          12000.50c 1.1025-4 16032.50c 4.1790-5
c
c
kcode 1000. 1.0 15 400
ksrc    10 10 10  20 20 20  30 30 30  40 40 40
       -10 -10 10  -20 -20 20  -30 -30 30  -40 -40 40
       10 10 30  20 20 30  30 30 30  40 40 30
       -10 -10 30  -20 -20 30  -30 -30 30  -40 -40 30
c      set time limit
c
ctme 9900
c
print
```

Drum1

```
ISG CSE 208 liter sphere Plutonium in Concrete reflected by concrete
   1  10  -1.4082   -1            $ Pu Concrete matrix
   2  0          2              $ Outside World
   3  20  -1.3985   -2 1          $ Concrete Reflection

   1  s  0 0 0 36.8
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10    94239.55c 2.4441-5 1001.50c 4.9088-2 8016.50c 3.6418-2
          14000.50c 4.7003-3 13027.50c 7.1166-4 11023.50c 3.1321-4
          20000.50c 8.6781-4 26000.55c 9.1988-5 19000.50c 2.0678-4
          12000.50c 4.1580-5 16032.50c 1.5761-5
   m20    1001.50c 4.9088-2 8016.50c 3.6418-2  14000.50c 4.7003-3
          13027.50c 7.1166-4 11023.50c 3.1321-4  20000.50c 8.6781-4
          26000.55c 9.1988-5 19000.50c 2.0678-4  12000.50c 4.1580-5
          16032.50c 1.5761-5
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
       20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
       -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
       0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
       20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
       -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

Drum

```
ISG CSE 208 liter sphere Plutonium in Concrete reflected by concrete
   1  10  -1.6767   -1              $ Pu Concrete matrix
   2  0           2              $ Outside World
   3  20  -1.667   -2 1            $ Concrete Reflection

   1  s  0 0 0 36.8
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10     94239.55c 2.4441-5 1001.50c 3.7338-2 8016.50c 3.8484-2
         14000.50c 7.8439-3 13027.50c 1.1876-3 11023.50c 5.2268-4
         20000.50c 1.4482-3 26000.55c 1.5351-4 19000.50c 3.4508-4
         12000.50c 6.9389-5 16032.50c 2.6302-5
   m20     1001.50c 3.7338-2 8016.50c 3.8484-2  14000.50c 7.8439-3
         13027.50c 1.1876-3 11023.50c 5.2268-4  20000.50c 1.4482-3
         26000.55c 1.5351-4 19000.50c 3.4508-4  12000.50c 6.9389-5
         16032.50c 2.6302-5
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
      20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
      -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
      0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
      20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
      -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

Drum2

```
ISG CSE 208 liter sphere Plutonium in Concrete reflected by concrete
   1  10  -2.0718   -1            $ Pu Concrete matrix
   2  0          2             $ Outside World
   3  20  -2.06   -2 1           $ Concrete Reflection

   1  s  0 0 0 36.8
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10     94239.55c 2.9732-5 1001.50c 1.9975-2 8016.50c 4.1470-2
         14000.50c 1.2463-2 13027.50c 1.8869-3 11023.50c 8.3045-4
         20000.50c 2.3009-3 26000.55c 2.4390-4 19000.50c 5.4827-4
         12000.50c 1.1025-4 16032.50c 4.1790-5
   m20     1001.50c 1.9975-2 8016.50c 4.1470-2  14000.50c 1.2463-2
         13027.50c 1.8869-3 11023.50c 8.3045-4  20000.50c 2.3009-3
         26000.55c 2.4390-4 19000.50c 5.4827-4  12000.50c 1.1025-4
         16032.50c 4.1790-5
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
      20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
      -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
      0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
      20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
      -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

```
Drum11
ISG CSE 208 liter sphere Plutonium in Concrete reflected by concrete
   1  10  -1.4106   -1            $ Pu Concrete matrix
   2  0          2            $ Outside World
   3  20  -1.3985   -2 1            $ Concrete Reflection

   1  s  0 0 0 29.18
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10    94239.55c 3.0488-5 1001.50c 4.9088-2 8016.50c 3.6418-2
          14000.50c 4.7003-3 13027.50c 7.1166-4 11023.50c 3.1321-4
          20000.50c 8.6781-4 26000.55c 9.1988-5 19000.50c 2.0678-4
          12000.50c 4.1580-5 16032.50c 1.5761-5
   m20    1001.50c 4.9088-2 8016.50c 3.6418-2  14000.50c 4.7003-3
          13027.50c 7.1166-4 11023.50c 3.1321-4  20000.50c 8.6781-4
          26000.55c 9.1988-5 19000.50c 2.0678-4  12000.50c 4.1580-5
          16032.50c 1.5761-5
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
       20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
       -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
       0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
       20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
       -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

```
Drum0
ISG CSE 208 liter sphere Plutonium in Concrete reflected by concrete
   1  10  -1.6801   -1            $ Pu Concrete matrix
   2  0          2             $ Outside World
   3  20  -1.667   -2 1          $ Concrete Reflection

   1  s  0 0 0 29.18
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10    94239.55c 3.3008-5 1001.50c 3.7338-2 8016.50c 3.8484-2
          14000.50c 7.8439-3 13027.50c 1.1876-3 11023.50c 5.2268-4
          20000.50c 1.4482-3 26000.55c 1.5351-4 19000.50c 3.4508-4
          12000.50c 6.9389-5 16032.50c 2.6302-5
   m20    1001.50c 3.7338-2 8016.50c 3.8484-2  14000.50c 7.8439-3
          13027.50c 1.1876-3 11023.50c 5.2268-4  20000.50c 1.4482-3
          26000.55c 1.5351-4 19000.50c 3.4508-4  12000.50c 6.9389-5
          16032.50c 2.6302-5
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
       20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
       -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
       0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
       20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
       -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

Drum22

```
ISG CSE 208 liter sphere Plutonium in Concrete reflected by concrete
   1  10  -2.0812   -1            $ Pu Concrete matrix
   2  0          2             $ Outside World
   3  20  -2.06   -2 1           $ Concrete Reflection

   1  s  0 0 0 29.18
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10    94239.55c 5.3417-5 1001.50c 1.9975-2 8016.50c 4.1470-2
          14000.50c 1.2463-2 13027.50c 1.8869-3 11023.50c 8.3045-4
          20000.50c 2.3009-3 26000.55c 2.4390-4 19000.50c 5.4827-4
          12000.50c 1.1025-4 16032.50c 4.1790-5
   m20    1001.50c 1.9975-2 8016.50c 4.1470-2  14000.50c 1.2463-2
          13027.50c 1.8869-3 11023.50c 8.3045-4  20000.50c 2.3009-3
          26000.55c 2.4390-4 19000.50c 5.4827-4  12000.50c 1.1025-4
          16032.50c 4.1790-5
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
       20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
       -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
       0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
       20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
       -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

Paraffwo

```
ISG CSE Plutonium Concentration in Paraffin Boron
   1  10  -0.9397    1 -2 -3 4 -5 6    $ Pu Paraffin matrix
   2  0             (-1:2:3:-4:5:-6)  $ Outside World

   *1  pz 0
   *2  pz 100
   *3  px 50
   *4  px -50
   *5  py 50
   *6  py -50

mode n
imp:n 1 0
   m10     94239.55c 2.4441-5 12000.50c 3.9699-2 1001.50c 8.2571-2
c
c
kcode 1000. 1.0 15 400
ksrc    10 10 10  20 20 20  30 30 30  40 40 40
       -10 -10 10  -20 -20 20  -30 -30 30  -40 -40 40
       10 10 30  20 20 30  30 30 30  40 40 30
       -10 -10 30  -20 -20 30  -30 -30 30  -40 -40 30
c      set time limit
c
ctme 9900
c
print
```

```
Paraff1%
ISG CSE Plutonium Concentration in Paraffin Boron
   1  10  -.940      1 -2 -3 4 -5 6    $ Pu Paraffin Boron matrix
   2  0             (-1:2:3:-4:5:-6)  $ Outside World

   *1  pz 0
   *2  pz 100
   *3  px 50
   *4  px -50
   *5  py 50
   *6  py -50

mode n
imp:n 1 0
   m10     94239.55c 2.4441-5 12000.50c 3.9699-2 1001.50c 8.2571-2
           5010.50c 5.5708-6
c
c
kcode 1000. 1.0 15 400
ksrc    10 10 10  20 20 20  30 30 30  40 40 40
       -10 -10 10  -20 -20 20  -30 -30 30  -40 -40 40
        10 10 30  20 20 30  30 30 30  40 40 30
       -10 -10 30  -20 -20 30  -30 -30 30  -40 -40 30
c      set time limit
c
ctme 9900
c
print
```

Drum3

```
ISG CSE 208 liter sphere Plutonium in Paraffin reflected by Paraffin
   1  10  -0.9413   -1              $ Pu Paraffin matrix
   2  0           2              $ Outside World
   3  20  -0.93   -2 1            $ Paraffin Reflection

   1  s  0 0 0 36.8
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10     94239.55c 2.8346-5  6000.50c 3.9699-2  1001.50c 8.2571-2
   m20     6000.50c 3.9699-2  1001.50c 8.2571-2
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
       20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
       -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
       0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
       20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
       -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

```
Drum4
ISG CSE 208 liter sphere Plutonium in Paraffin reflected by Paraffin
   1  10  -0.9414   -1              $ Pu Paraffin matrix
   2  0           2              $ Outside World
   3  20  -0.93     -2 1            $ Paraffin Reflection

   1  s  0 0 0 36.8
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10     94239.55c 2.8346-5  6000.50c 3.9699-2  1001.50c 8.2571-2
         5010.50c 5.5708-6
   m20     6000.50c 3.9699-2  1001.50c 8.2571-2
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
      20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
      -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
      0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
      20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
      -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

Drum33

```
ISG CSE 208 liter sphere Plutonium in Paraffin reflected by Paraffin
   1  10  -0.9428   -1            $ Pu Paraffin matrix
   2  0          2             $ Outside World
   3  20  -0.93   -2 1           $ Paraffin Reflection

   1  s  0 0 0 29.18
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10    94239.55c 3.2252-5  6000.50c 3.9699-2  1001.50c 8.2571-2
   m20    6000.50c 3.9699-2  1001.50c 8.2571-2
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
       20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
       -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
       0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
       20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
       -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

Drum44

```
ISG CSE 208 liter sphere Plutonium in Paraffin reflected by Paraffin
   1  10  -0.9429   -1              $ Pu Paraffin matrix
   2  0           2              $ Outside World
   3  20  -0.93     -2 1            $ Paraffin Reflection

   1  s  0 0 0 29.18
   2  s  0 0 0 100

mode n
imp:n 1 0 1
   m10     94239.55c 3.2252-5  6000.50c 3.9699-2  1001.50c 8.2571-2
         5010.50c 5.5708-6
   m20     6000.50c 3.9699-2  1001.50c 8.2571-2
c
c
kcode 1000. 1.0 15 400
ksrc   0 0 0  0 0 10  0 0 20  0 0 30  10 0 10  10 0 20  10 0 30  20 0 10
      20 0 20  20 0 30  30 0 10  30 0 20  30 0 30  -10 0 10  -10 0 20
      -10 0 30  -20 0 10  -20 0 20  -20 0 30  -30 0 10  -30 0 20  -30 0 30
      0 0 -10  0 0 -20  0 0 -30  10 0 -10  10 0 -20  10 0 -30  20 0 -10
      20 0 -20  20 0 -30  30 0 -10  30 0 -20  30 0 -30
      -10 -10 30  -20 -20 30  -30 -30 30
c
c     set time limit
c
ctme 9900
c
print
```

Appendix C

Table 9C. Infinite Concrete Parametric Study

50 % Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0083	1.1332 ± 0.0004
0.0073	1.0676 ± 0.0004
0.0063	0.9925 ± 0.0003
0.0053	0.9035 ± 0.0004
0.0043	0.7985 ± 0.0003
30% Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0072	1.1609 ± 0.004
0.0062	1.0849 ± 0.004
0.0052	0.9952 ± 0.0003
0.0042	0.8855 ± 0.0003
0.0032	0.7510 ± 0.0003
10% Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.006	1.2109 ± 0.0004
0.005	1.1213 ± 0.0004
0.004	1.0041 ± 0.0004
0.003	0.8626 ± 0.0004
0.002	0.6691 ± 0.0003

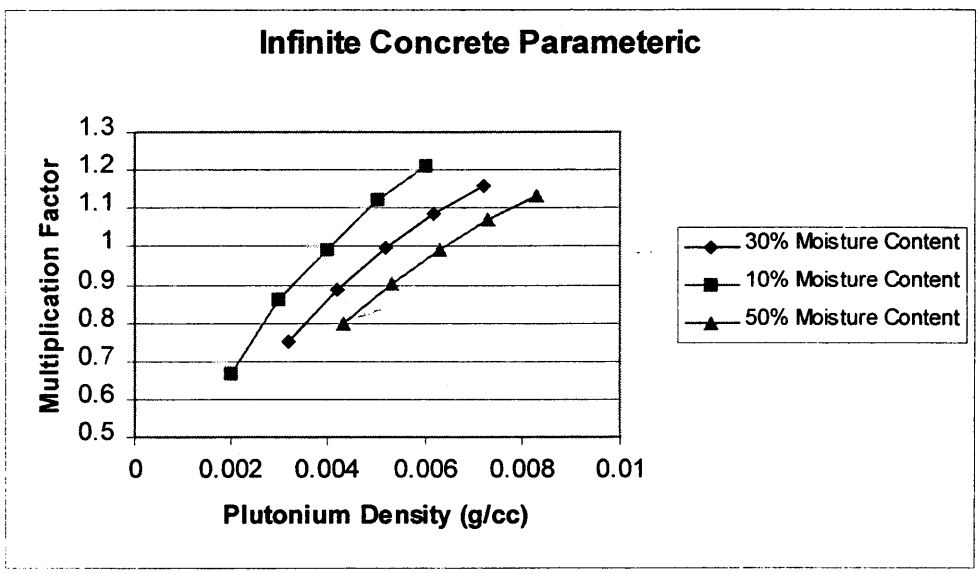

Figure 3C. Infinite Concrete Parametric Study.

Table 10C. Finite (208 Liter) Concrete Parameter Study.

50 % Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0117	1.0779 ± 0.0009
0.0107	1.0437 ± 0.0009
0.0097	1.0005 ± 0.0009
0.0087	0.9535 ± 0.0008
0.0077	0.9014 ± 0.0008
30% Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0117	1.0751 ± 0.0010
0.0107	1.0409 ± 0.0010
0.0097	1.0019 ± 0.0010
0.0087	0.9574 ± 0.0010
0.0077	0.9075 ± 0.0012
10% Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0138	1.0480 ± 0.0013
0.128	1.0275 ± 0.0012
0.118	1.0039 ± 0.0012
0.0108	0.9746 ± 0.0011
0.0098	0.9437 ± 0.0012

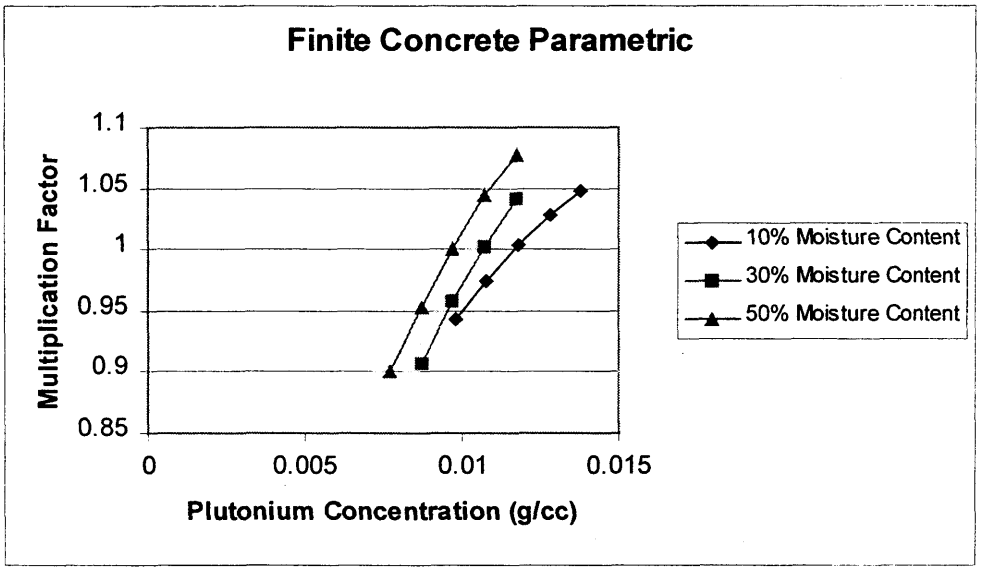

Figure 4C. Finite (208 Liter) Concrete Parametric Study.

Table 11C. Finite (104 Liter) Concrete Parametric Study.

50 % Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0141	1.0579 ± 0.0010
0.0131	1.0273 ± 0.0011
0.0121	1.0003 ± 0.0010
0.0111	0.9641 ± 0.0010
0.0101	0.9281 ± 0.0009
30% Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0151	1.0521 ± 0.0011
0.0141	1.0305 ± 0.0011
0.0131	1.0041 ± 0.0016
0.0121	0.9773 ± 0.0011
0.0111	0.9448 ± 0.0011
10% Moisture Content	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0232	1.0206 ± 0.0013
0.0222	1.0135 ± 0.0013
0.0212	1.0033 ± 0.0014
0.0202	0.9964 ± 0.0013
0.0192	0.9843 ± 0.0013

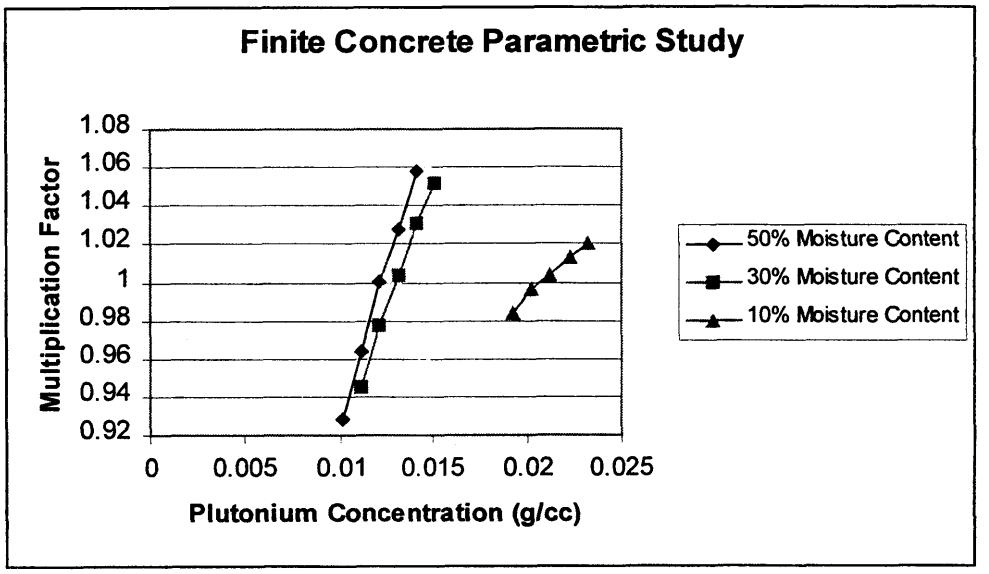

Figure 5C. Finite (104 Liter) Concrete Parametric Study.

Table 12C. Infinite Paraffin Parametric Study.

Paraffin Matrix	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0117	1.0971 ± 0.0003
0.0107	1.0509 ± 0.0003
0.0097	0.9998 ± 0.0003
0.0087	0.9430 ± 0.0003
0.0077	0.8811 ± 0.0003

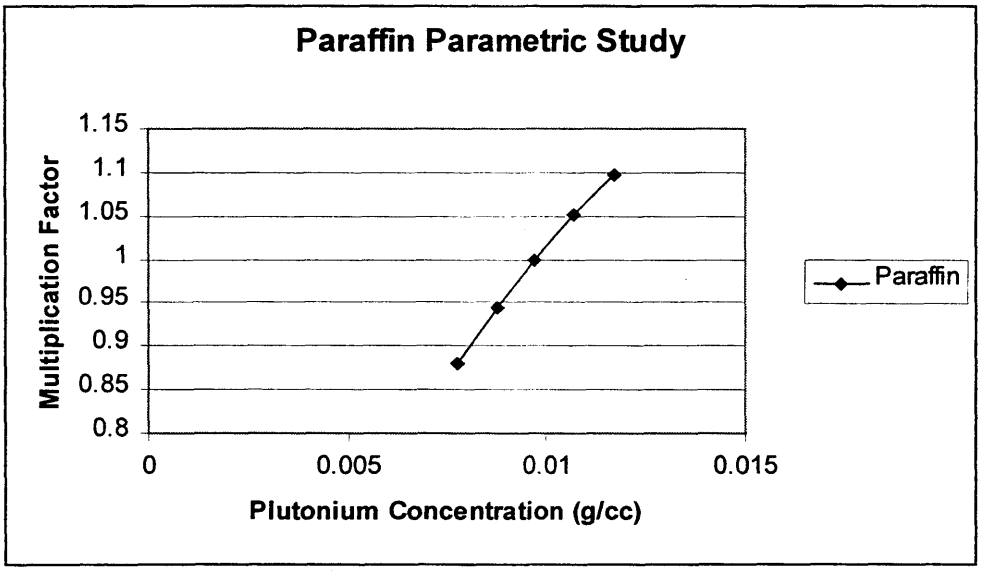

Figure 6C. Infinite Paraffin Parametric Study.

Table 13C. Finite (208 Liter)Paraffin Parametric Study.

Paraffin Matrix	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.01325	1.00719 ± 0.0007
0.01225	1.0355 ± 0.0007
0.01125	0.9976 ± 0.0006
0.01025	0.9525 ± 0.0007
0.00925	0.9025 ± 0.0007

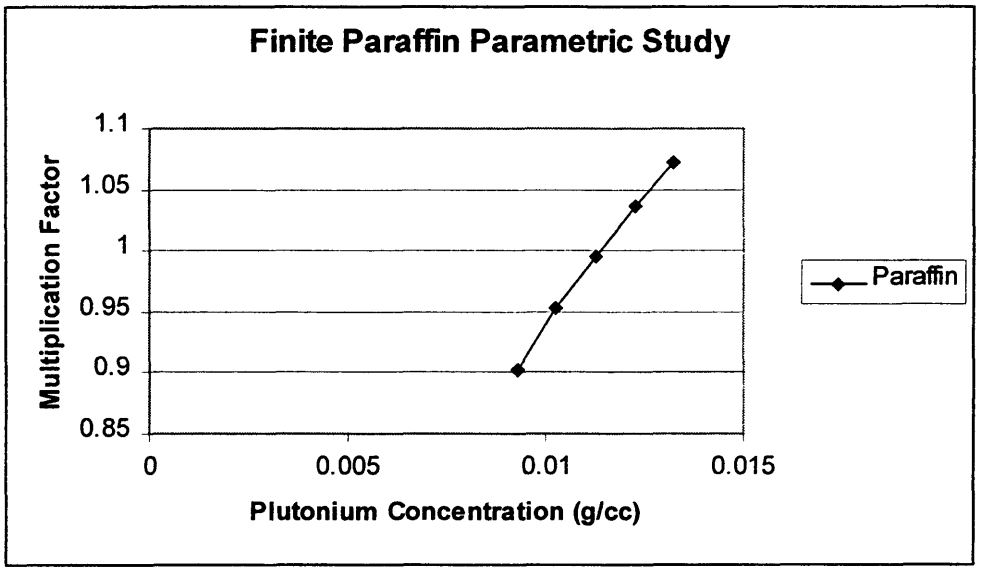

Figure 7C. Finite (208 Liter)Paraffin Parametric Study.

Table 14C. Finite (104 Liter) Paraffin Parametric Study.

Paraffin Matrix	
Pu Concentration in Concrete (g/cc)	$k_{eff} \pm \sigma$
0.0148	1.00648 ± 0.0008
0.0138	1.0334 ± 0.0008
0.0128	1.0005 ± 0.0008
0.0118	0.9635 ± 0.0008
0.0108	0.9213 ± 0.0007

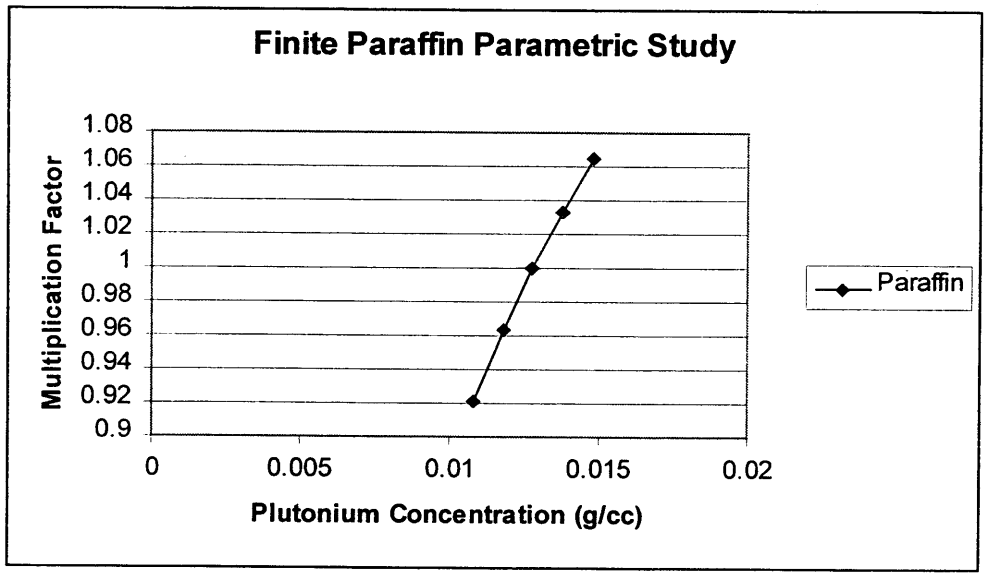

Figure 8C. Finite (104 Liter) Paraffin Parametric Study.