

**Appendix E**  
**Sensitivity Analysis**

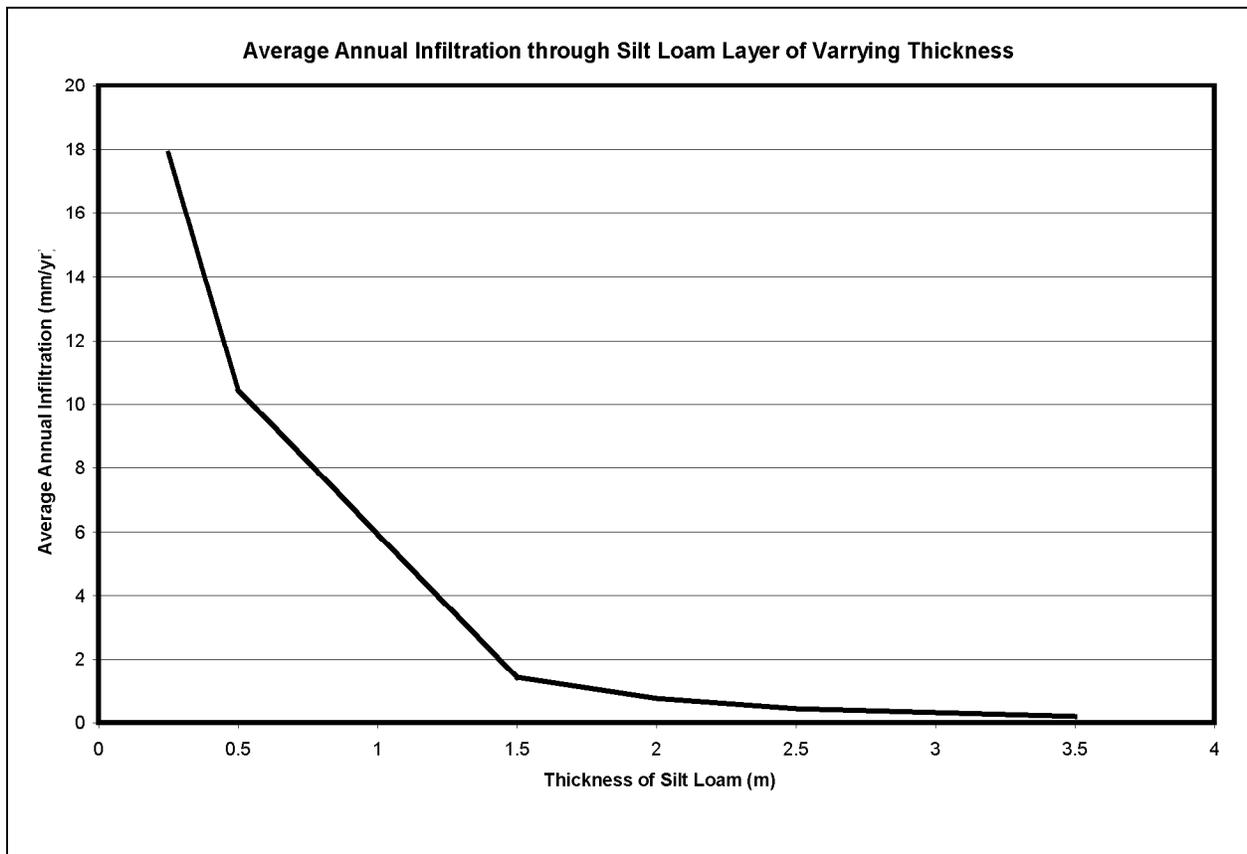
# APPENDIX E

## SENSITIVITY ANALYSIS

Sensitivity analyses were conducted to determine effects of changes in thickness of the silt loam layer and increased precipitation on the cover's performance. This section specifically addresses sensitivity of the cover to the variations mentioned above. Long-term cover performance issues to which these analyses also apply are addressed in other studies including the "Landfill Compaction/Subsidence Study," (DOE-ID 2001b) and the "Liner and Final Cover Long-Term Performance Evaluation and Final Cover Life Cycle Expectation" (DOE-ID 2001a).

### E.1 THICKNESS SENSITIVITY OF WATER STORAGE LAYER

Changes in thickness of the silt loam layer of the water storage section were evaluated using the average and extreme weather scenarios. Initial conditions for each cover thickness were developed by running the model to a quasi-steady state over the simulation period and using the ending suctions as the initial conditions for the final runs, as was done for the base simulation. The model was then run for the full simulation period and the final conditions from the average weather condition model were used as the initial conditions for the extreme weather condition models. The silt loam layer of the covers modeled ranged from 0.25 to 3.5 m. The results of these runs are shown in Figure E-1.



**Figure E-1.** Increase in infiltration resulting from 10% reduction in thickness of the clay barrier.

As shown in Figure E-1, increasing the thickness beyond 2 m results in minimal reduction in infiltration. From observation of Figure 2-5, the optimal water storage layer thickness is between 1.5 and 2 m. Insignificant changes in infiltration occur for the water storage layer thickness beyond 2 m. The minimum effective thickness of the silt loam layer is 2 m. The detailed computer model run summary sheets are provided at the end of this appendix.

## E.2 PRECIPITATION SENSITIVITY

The effect of increased precipitation on infiltration through the water storage layer of the cover was analyzed using an average year of weather and repeating that weather scenario until the soil profile reached a quasi-steady state. The year with total precipitation closest to average was 1975, which had 269 mm of precipitation including 51 mm of water equivalent snowfall. The average precipitation for the period of record is 218 mm per year including 37 mm of water equivalent snowfall. This weather set is included in the base case scenario and included in Appendix B.

The one-dimensional computer model was run using one, two, three, and four times the 1975 precipitation. Twenty years were modeled for each precipitation interval using two 10-year simulations. Initial conditions for the first simulation were the same as the final conditions from the base case scenario modeled previously. Final conditions from the first simulation were used as the initial conditions for the second simulation.

The quasi-steady state was determined by the change in the sum of the infiltration through the silt loam and the evapotranspiration at the end of each year modeled. When the annual change in this sum approximated the water balance error for the model, the system was determined to be in a quasi-steady state.

The results of the precipitation sensitivity analyses are given in Table E-2 and shown in Figure E-2. Run Summary sheets for these simulations are included at the end of this appendix.

**Table E-1.** Annual infiltration results from 1975 weather data.

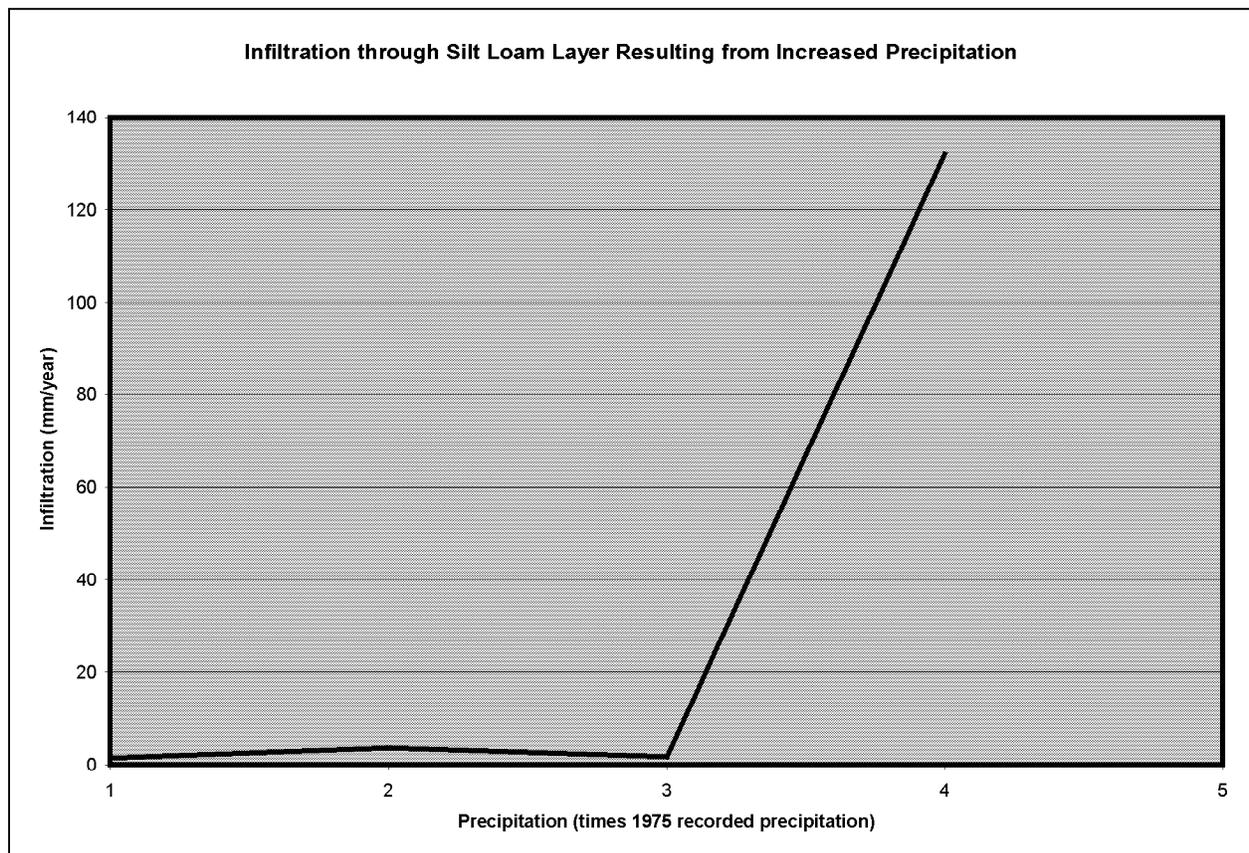
Year	1 Times Precipitation		2 Times Precipitation		3 Times Precipitation		4 Times Precipitation	
	% Change <sup>1</sup>	Infiltration (mm/year)	% Change	Infiltration (mm/year)	% Change	Infiltration (mm/year)	% Change	Infiltration (mm/year)
1	-	0.120	-	-0.638	-	-7.756	-	-10.239
2	-0.25	0.040	-4.78%	-6.086	-19.11	-4.519	-26.19	-101.254
3	-0.15	-0.047	-2.63	-2.899	-7.13	-2.126	-2.85	-109.747
4	-0.07	-0.122	-4.08	-1.578	-1.09	-1.03	-0.32	-112.842
5	-0.03	-0.137	-2.23	-0.975	-0.20	-0.518	-0.47	-135.531
6	-0.02	-0.145	-0.94	-0.644	-0.04	-0.288	0.43	-130.937
7	-0.01	-0.147	-0.35	-0.521	-0.01	-0.201	-0.02	-131.604
8	-0.01	-0.151	-0.13	-0.467	-0.01	-0.173	0.02	-131.723
9	-0.01	-0.153	-0.04	-0.417	0.00	-0.156	-0.01	-132.121
10	-0.01	-0.156	-0.01	-0.369	0.00	-0.146	0.02	-132.059
11	0.00	-0.155	0.00	-0.337	0.00	-0.149	0.01	-132.056
12	0.00	-0.154	0.00	-0.336	0.00	-0.136	0.00	-132.02
13	0.00	-0.154	0.00	-0.332	0.00	-0.148	0.00	-132.012

**Table E-1.** (continued).

Year	1 Times Precipitation		2 Times Precipitation		3 Times Precipitation		4 Times Precipitation	
	% Change <sup>1</sup>	Infiltration (mm/year)	% Change	Infiltration (mm/year)	% Change	Infiltration (mm/year)	% Change	Infiltration (mm/year)
14	-0.01	-0.153	-0.01	-0.328	0.00	-0.144	0.00	-132.015
15	0.00	-0.153	0.00	-0.325	0.00	-0.136	0.00	-132.028
16	0.00	-0.153	0.00	-0.322	0.00	-0.137	0.00	-132.038
17	0.00	-0.151	0.00	-0.321	0.00	-0.129	0.00	-132.04
18	-0.01	-0.150	0.00	-0.323	0.00	-0.136	0.00	-132.028
19	0.00	-0.150	0.00	-0.32	0.00	-0.124	0.00	-132.012
20	0.03	-0.149	0.00	-0.318	0.06	-0.135	0.04	-132.071

Notes:

1. Percent change is the sum of the infiltration and evapotranspiration divided by the sum from the previous year.
2. Negative values indicate upward flow.
3. Shaded cells indicated the year of quasi-steady state conditions.



**Figure E-2.** Infiltration through silt loam layer resulting from increased precipitation.

From observation of Figure E-2, the proposed cover remains effective to three times the average annual precipitation. Three times the precipitation, 810 mm, is roughly equivalent to the annual

precipitation in Detroit, Michigan, 828 mm. Four times the precipitation, 1,080 mm, is similar to the precipitation in New York, New York, 1,070 mm.

The infiltration at twice the recorded precipitation was 0.369 mm/year the infiltration dropped at three times recorded precipitation to 0.173 mm/year. This is the result of increased transpiration. At twice the recorded precipitation, transpiration removed 18.1% (97.4 mm) of the annual precipitation from the cover. At three times the recorded precipitation, transpiration removed 29.5% (238.6 mm) of the annual precipitation from the cover. This is a result of the vegetation properties. When the matric suction in the soil is between 100 and 1500 kPa, the vegetation reduces activity to conserve water and transpiration decreases. When the matric suction is less than 100 kPa (moisture content of the soil is higher), the vegetation is at full activity resulting in increased transpiration. At three times the recorded precipitation, the soil maintains a suction below 100 kPa for more of the growing season resulting in an increase in transpiration.



0.25 Meter Thick Silt Loam Layer with Extreme Case Weather Scenario

SoilCover 2000 Run Summary Page

1. **Project Name:**

_25MetExa
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 2. **Project Directory:**

d:\soilcov\
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3. **Run Parameters:**  
 a) Vegetation: 

Yes
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      b) Freeze/Thaw: 

Yes
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      c) Years: 

4
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4. **Mesh Information:**

a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
93	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-56
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-57
d) Last date of growing season:	01-Oct-57
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm):	1352.81
c) Net cumulative bottom flux (mm):	0.63
e) Net cumulative PE (mm):	-5532.37
g) Net cumulative PT (mm):	-1757.54
i) Net cumulative ET (mm):	-1354.78
k) Net cumulative drain node flux (m):	0

b) Net cumulative infiltration (mm):	120.97
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-1231.83
h) Net cumulative AT (mm):	-122.94
j) Net cum. user monitor flx (mm):	1.58
l) Net cum. user monitor flx (mm/yr):	0.4

User Node: 32  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

0.5 Meter Thick Silt Loam Layer with Base Case Weather Scenario

SoilCover 2000 Run Summary Page

1. Project Name: 

0_5metera
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 2. Project Directory: 

d:\soilcov\
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3. Run Parameters:  
 a) Vegetation: 

Yes
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      b) Freeze/Thaw: 

Yes
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      c) Years: 

10
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4. Mesh Information:

a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
89	4	2	0

5. Soil Property Summary:

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. Boundary Conditions

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. Vegetation Summary:

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. Run Output Summary:

a) Net cumulative precipitation (mm):	2370.09
c) Net cumulative bottom flux (mm):	-2.53
e) Net cumulative PE (mm):	-11702.18
g) Net cumulative PT (mm):	-3814.3
i) Net cumulative ET (mm):	-2368.56
k) Net cumulative drain node flux (m):	0

b) Net cumulative infiltration (mm):	125.68
d) Net cumulative runoff (mm):	1.49
f) Net cumulative AE (mm):	-2242.93
h) Net cumulative AT (mm):	-125.63
j) Net cum. user monitor flx (mm):	-1.73
l) Net cum. user monitor flx (mm/yr):	-0.17

User Node: 30  
 User Elev: 153.70 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

0.5 Meter Thick Silt Loam Layer with Extreme Case Weather Scenario

SoilCover 2000 Run Summary Page

1. **Project Name:**

0_5MetExa
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 2. **Project Directory:**

d:\soilcov\
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3. **Run Parameters:**  
 a) Vegetation: 

Yes
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      b) Freeze/Thaw: 

Yes
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      c) Years: 

4
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4. **Mesh Information:**

a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
89	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-56
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-57
d) Last date of growing season:	01-Oct-57
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm)	1352.81
c) Net cumulative bottom flux (mm):	-0.17
e) Net cumulative PE (mm):	-5532.87
g) Net cumulative PT (mm):	-1757.72
i) Net cumulative ET (mm):	-1357.86
k) Net cumulative drain node flux (m)	0

b) Net cumulative infiltration (mm):	118.5
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-1234.3
h) Net cumulative AT (mm):	-123.56
j) Net cum. user monitor flx (mm):	1.85
l) Net cum. user monitor flx (mm/yr):	0.46

User Node: 28  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

1.5 Meter Thick Silt Loam Layer with Base Case Weather Scenario

SoilCover 2000 Run Summary Page

1. Project Name:   
 2. Project Directory:

3. Run Parameters:  
 a) Vegetation:  b) Freeze/Thaw:  c) Years:

4. Mesh Information:

a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
93	4	2	0

5. Soil Property Summary:

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. Boundary Conditions

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. Vegetation Summary:

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. Run Output Summary:

a) Net cumulative precipitation (mm):	2370.09
c) Net cumulative bottom flux (mm):	-1.35
e) Net cumulative PE (mm):	-11701.94
g) Net cumulative PT (mm):	-3814.09
i) Net cumulative ET (mm):	-2348.18
k) Net cumulative drain node flux (m):	0

b) Net cumulative infiltration (mm):	130.87
d) Net cumulative runoff (mm):	11.34
f) Net cumulative AE (mm):	-2227.89
h) Net cumulative AT (mm):	-120.28
j) Net cum. user monitor flx (mm):	-4.85
l) Net cum. user monitor flx (mm/yr):	-0.49

User Node: 32  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

1.5 Meter Thick Silt Loam Layer with Extreme Case Weather Scenario

## SoilCover 2000 Run Summary Page

1. **Project Name:** 1\_5MetExa  
 2. **Project Directory:** d:\soilcov\

3. **Run Parameters:**  
 a) Vegetation: Yes      b) Freeze/Thaw: Yes      c) Years: 4

4. **Mesh Information:**

a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
93	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-56
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-57
d) Last date of growing season:	01-Oct-57
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm)	1352.81
c) Net cumulative bottom flux (mm):	-0.69
e) Net cumulative PE (mm):	-5533.12
g) Net cumulative PT (mm):	-1757.67
i) Net cumulative ET (mm):	-1346.66
k) Net cumulative drain node flux (m)	0

b) Net cumulative infiltration (mm):	123.41
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-1229.4
h) Net cumulative AT (mm):	-117.27
j) Net cum. user monitor flx (mm):	-2.32
l) Net cum. user monitor flx (mm/yr)	-0.58

User Node: 32  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

2.5 Meter Thick Silt Loam Layer with Base Case Weather Scenario

SoilCover 2000 Run Summary Page

1. **Project Name:**

2_5meter
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 2. **Project Directory:**

d:\soilcov\
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3. **Run Parameters:**  
 a) Vegetation: 

Yes
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      b) Freeze/Thaw: 

Yes
-----

      c) Years: 

10
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4. **Mesh Information:**  
 a) Convergence Criteria:  

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:  

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (seconds)	First Time Step (seconds)	Maximum Time Step (seconds)
5	5	1	1	3000

c) Soil Profile Data:  

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

5. **Soil Property Summary:**  

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**  

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**  

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**  

a) Net cumulative precipitation (mm)	2370.09
c) Net cumulative bottom flux (mm):	-0.84
e) Net cumulative PE (mm):	-11702.15
g) Net cumulative PT (mm):	-3814.24
i) Net cumulative ET (mm):	-2343.35
k) Net cumulative drain node flux (mm)	0

b) Net cumulative infiltration (mm):	130.75
d) Net cumulative runoff (mm):	15.89
f) Net cumulative AE (mm):	-2223.45
h) Net cumulative AT (mm):	-119.89
j) Net cum. user monitor flx (mm):	-2.7
l) Net cum. user monitor flx (mm/yr):	-0.27

User Node: 42  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

2.5 Meter Thick Silt Loam Layer with Extreme Case Weather Scenario

SoilCover 2000 Run Summary Page

1. Project Name: 

2_5MetExa
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 2. Project Directory: 

d:\soilcov\
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3. Run Parameters:  
 a) Vegetation: 

Yes
-----

      b) Freeze/Thaw: 

Yes
-----

      c) Years: 

4
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4. Mesh Information:  
 a) Convergence Criteria:  

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

  
 c) Soil Profile Data:  

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

b) Time Step Control:  

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (seconds)	First Time Step (seconds)	Maximum Time Step (seconds)
5	5	1	1	3000

5. Soil Property Summary:  

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. Boundary Conditions  
 a) First date of each year: 

01-Oct-56
-----------

  
 b) Total run days/year: 

365
-----

  
 c) Top temperature condition: 

Computed
----------

  
 d) Bottom temperature (C): 

4
---

  
 e) Day 1 top moisture condition: 

Precip.
---------

  
 f) Day 1 bot. moisture condition: 

-1
----

  
 g) Day 1 bottom moisture value: 

-1
----

7. Vegetation Summary:  
 a) Moisture limiting point (kPa): 

100
-----

  
 c) Moisture wilting point (kPa): 

1500
------

  
 e) Grass quality: 

Poor
------

b) First date of growing season: 

15-Apr-57
-----------

  
 d) Last date of growing season: 

01-Oct-57
-----------

  
 f) First day root depth (cm): 

1
---

8. Run Output Summary:  
 a) Net cumulative precipitation (mm): 

1352.81
---------

  
 c) Net cumulative bottom flux (mm): 

-0.66
-------

  
 e) Net cumulative PE (mm): 

-5532.9
---------

  
 g) Net cumulative PT (mm): 

-1757.64
----------

  
 i) Net cumulative ET (mm): 

-1348.37
----------

  
 k) Net cumulative drain node flux (m): 

0
---

b) Net cumulative infiltration (mm): 

118.54
--------

  
 d) Net cumulative runoff (mm): 

2.98
------

  
 f) Net cumulative AE (mm): 

-1231.29
----------

  
 h) Net cumulative AT (mm): 

-117.09
---------

  
 j) Net cum. user monitor flx (mm): 

-1.03
-------

  
 l) Net cum. user monitor flx (mm/yr): 

-0.26
-------

User Node: 42  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

3.5 Meter Thick Silt Loam Layer with Base Case Weather Scenario

SoilCover 2000 Run Summary Page

1. **Project Name:**

3_5metera
-----------

  
 2. **Project Directory:**

d:\soilcov\
-------------

3. **Run Parameters:**  
 a) Vegetation: 

Yes
-----

      b) Freeze/Thaw: 

Yes
-----

      c) Years: 

10
----

4. **Mesh Information:**

a) Convergence Criteria:

Max. Iterations	Max. Change Suction (%)	Max. Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max. Change Suction (%)	Max. Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
97	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm)	2370.09
c) Net cumulative bottom flux (mm):	-0.71
e) Net cumulative PE (mm):	-11702.4
g) Net cumulative PT (mm):	-3814.17
i) Net cumulative ET (mm):	-2343.3
k) Net cumulative drain node flux (mm)	0

b) Net cumulative infiltration (mm):	128.37
d) Net cumulative runoff (mm):	16.02
f) Net cumulative AE (mm):	-2225.7
h) Net cumulative AT (mm):	-117.59
j) Net cum. user monitor flx (mm):	-1.71
l) Net cum. user monitor flx (mm/yr):	-0.17

User Node: 58  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

3.5 Meter Thick Silt Loam Layer with Extreme Case Weather Scenario

SoilCover 2000 Run Summary Page

1. Project Name: 

3_5MetExa
-----------

  
 2. Project Directory: 

d:\soilcov\
-------------

3. Run Parameters:  
 a) Vegetation: 

Yes
-----

      b) Freeze/Thaw: 

Yes
-----

      c) Years: 

4
---

4. Mesh Information:  
 a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
97	4	2	0

5. Soil Property Summary:

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. Boundary Conditions

a) First date of each year:	01-Oct-56
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. Vegetation Summary:

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-57
d) Last date of growing season:	01-Oct-57
f) First day root depth (cm):	1

8. Run Output Summary:

a) Net cumulative precipitation (mm):	1352.81
c) Net cumulative bottom flux (mm):	-0.44
e) Net cumulative PE (mm):	-5532.9
g) Net cumulative PT (mm):	-1757.63
i) Net cumulative ET (mm):	-1348.12
k) Net cumulative drain node flux (mm):	0

b) Net cumulative infiltration (mm):	120.04
d) Net cumulative runoff (mm):	3.21
f) Net cumulative AE (mm):	-1229.55
h) Net cumulative AT (mm):	-118.57
j) Net cum. user monitor flx (mm):	-0.34
l) Net cum. user monitor flx (mm/yr):	-0.09

User Node: 58  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

## E.3.2 Precipitation Sensitivity Run Summary Sheets

1975 Weather Data – first ten-year run

### SoilCover 2000 Run Summary Page

**1. Project Name:** Precip1x3

**2. Project Directory:** d:\soilcov\

**3. Run Parameters:**

a) Vegetation: Yes      b) Freeze/Thaw: No      c) Years: 10

**4. Mesh Information:**

a) Convergence Criteria:

Max. Iterations	Max. Change Suction (%)	Max. Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max. Change Suction (%)	Max. Change Temperature (%)	Minimum Time Step (seconds)	First Time Step (seconds)	Maximum Time Step (seconds)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

**5. Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

**6. Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

**7. Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

**8. Run Output Summary:**

a) Net cumulative precipitation (mm)	2692.4
c) Net cumulative bottom flux (mm):	-1.3
e) Net cumulative PE (mm):	-11829.17
g) Net cumulative PT (mm):	-4290.15
i) Net cumulative ET (mm):	-2685.08
k) Net cumulative drain node flux (m)	0

b) Net cumulative infiltration (mm):	92.63
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-2599.77
h) Net cumulative AT (mm):	-85.31
j) Net cum. user monitor flx (mm):	-1.01
l) Net cum. user monitor flx (mm/yr):	-0.1

User Node: 38  
User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

## SoilCover 2000 Run Summary Page

1. **Project Name:** Precip1x3a  
 2. **Project Directory:** d:\soilcov\

3. **Run Parameters:**  
 a) Vegetation: Yes      b) Freeze/Thaw: No      c) Years: 10

4. **Mesh Information:**

a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm):	2692.4
c) Net cumulative bottom flux (mm):	-1.38
e) Net cumulative PE (mm):	-11828.72
g) Net cumulative PT (mm):	-4290.1
i) Net cumulative ET (mm):	-2687.93
k) Net cumulative drain node flux (mm):	0

b) Net cumulative infiltration (mm):	90.15
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-2602.25
h) Net cumulative AT (mm):	-85.68
j) Net cum. user monitor flx (mm):	-1.62
l) Net cum. user monitor flx (mm/yr):	-0.16

User Node: 38  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

## SoilCover 2000 Run Summary Page

1. **Project Name:** Precip2x3  
 2. **Project Directory:** d:\soilcov\

3. **Run Parameters:**  
 a) Vegetation: Yes      b) Freeze/Thaw: No      c) Years: 10

4. **Mesh Information:**

a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm):	5384.81
c) Net cumulative bottom flux (mm):	-1.59
e) Net cumulative PE (mm):	-11834.36
g) Net cumulative PT (mm):	-4293.69
i) Net cumulative ET (mm):	-5167.79
k) Net cumulative drain node flux (m):	0

b) Net cumulative infiltration (mm):	1081.91
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-4302.9
h) Net cumulative AT (mm):	-864.89
j) Net cum. user monitor flx (mm):	-14.57
l) Net cum. user monitor flx (mm/yr):	-1.46

User Node: 38  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

## SoilCover 2000 Run Summary Page

1. **Project Name:** Precip2x3a  
 2. **Project Directory:** d:\soilcov\

3. **Run Parameters:**  
 a) Vegetation: Yes      b) Freeze/Thaw: No      c) Years: 10

4. **Mesh Information:**

a) **Convergence Criteria:**

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) **Time Step Control:**

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) **Soil Profile Data:**

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm):	5384.81
c) Net cumulative bottom flux (mm):	-1.81
e) Net cumulative PE (mm):	-11834.73
g) Net cumulative PT (mm):	-4293.8
i) Net cumulative ET (mm):	-5378.37
k) Net cumulative drain node flux (mm):	0

b) Net cumulative infiltration (mm):	980.38
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-4404.43
h) Net cumulative AT (mm):	-973.94
j) Net cum. user monitor flx (mm):	-3.64
l) Net cum. user monitor flx (mm/yr):	-0.36

User Node: 38  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

## SoilCover 2000 Run Summary Page

1. **Project Name:**

Precip3x3
-----------

  
 2. **Project Directory:**

d:\soilcov\
-------------

3. **Run Parameters:**  
 a) Vegetation: 

Yes
-----

      b) Freeze/Thaw: 

No
----

      c) Years: 

10
----

4. **Mesh Information:**  
 a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm):	8077.19
c) Net cumulative bottom flux (mm):	-1.58
e) Net cumulative PE (mm):	-11847.67
g) Net cumulative PT (mm):	-4299.65
i) Net cumulative ET (mm):	-7790.27
k) Net cumulative drain node flux (mm):	0

b) Net cumulative infiltration (mm):	2522.21
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-5554.98
h) Net cumulative AT (mm):	-2235.29
j) Net cum. user monitor flx (mm):	-16.9
l) Net cum. user monitor flx (mm/yr):	-1.69
User Node:	38
User Elev:	155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

## SoilCover 2000 Run Summary Page

1. **Project Name:** Precip3x3a  
 2. **Project Directory:** d:\soilcov\

3. **Run Parameters:**  
 a) Vegetation: Yes      b) Freeze/Thaw: No      c) Years: 10

4. **Mesh Information:**

a) Convergence Criteria:

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) Time Step Control:

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) Soil Profile Data:

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm):	8077.19
c) Net cumulative bottom flux (mm):	-1.77
e) Net cumulative PE (mm):	-11849.15
g) Net cumulative PT (mm):	-4300.32
i) Net cumulative ET (mm):	-8066.78
k) Net cumulative drain node flux (mm):	0

b) Net cumulative infiltration (mm):	2395.73
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-5681.47
h) Net cumulative AT (mm):	-2385.31
j) Net cum. user monitor flx (mm):	-1.11
l) Net cum. user monitor flx (mm/yr):	-0.11

User Node: 38  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

## SoilCover 2000 Run Summary Page

1. **Project Name:**

Precip4x3
-----------

  
 2. **Project Directory:**

d:\soilcov\
-------------

3. **Run Parameters:**  
 a) Vegetation: 

Yes
-----

      b) Freeze/Thaw: 

No
----

      c) Years: 

10
----

4. **Mesh Information:**

a) **Convergence Criteria:**

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) **Time Step Control:**

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (secs)	First Time Step (secs)	Maximum Time Step (secs)
5	5	1	1	3000

c) **Soil Profile Data:**

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm):	10769.61
c) Net cumulative bottom flux (mm):	-1.68
e) Net cumulative PE (mm):	-11859.74
g) Net cumulative PT (mm):	-4305.54
i) Net cumulative ET (mm):	-9328.62
k) Net cumulative drain node flux (mm):	0

b) Net cumulative infiltration (mm):	4381.02
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-6388.6
h) Net cumulative AT (mm):	-2940.02
j) Net cum. user monitor flx (mm):	-1128.15
l) Net cum. user monitor flx (mm/yr):	-112.82

User Node: 38  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**

## SoilCover 2000 Run Summary Page

1. **Project Name:** Precip4x3a  
 2. **Project Directory:** d:\soilcov\

3. **Run Parameters:**  
 a) Vegetation: Yes      b) Freeze/Thaw: No      c) Years: 10

4. **Mesh Information:**  
 a) **Convergence Criteria:**

Max. Iterations	Max.Change Suction (%)	Max.Change Temperature (%)	Suction Dampening (%)	Temperature Dampening (%)
100	1	1	3	3

b) **Time Step Control:**

Max.Change Suction (%)	Max.Change Temperature (%)	Minimum Time Step (seconds)	First Time Step (seconds)	Maximum Time Step (seconds)
5	5	1	1	3000

c) **Soil Profile Data:**

Number of Nodes	Number of Layers	Drain Node	Drain Flux (mm/day)
99	4	2	0

5. **Soil Property Summary:**

Soil Name	Porosity	Spec. Grav.	Mv (1/kPa)	Ksat (cm/s)
Silty Loam	0.441	2.65	2.60E-03	5.00E-04
coarse sand	0.265	2.65	9.10E-06	1.00E-02
Fine Sand	0.387	2.63	9.10E-06	1.00E-03
cobble	0.265	2.65	9.10E-06	1.00E-01
name5				
name6				
name7				
name8				

6. **Boundary Conditions**

a) First date of run each year:	01-Oct-66
b) Total run days/year:	365
c) Top temperature condition:	Computed
d) Bottom temperature (C):	4
e) Day 1 top moisture condition:	Precip.
f) Day 1 bot. moisture condition:	-1
g) Day 1 bottom moisture value:	-1

7. **Vegetation Summary:**

a) Moisture limiting point (kPa):	100
c) Moisture wilting point (kPa):	1500
e) Grass quality:	Poor

b) First date of growing season:	15-Apr-67
d) Last date of growing season:	01-Oct-67
f) First day root depth (cm):	1

8. **Run Output Summary:**

a) Net cumulative precipitation (mm):	10769.61
c) Net cumulative bottom flux (mm):	-23.76
e) Net cumulative PE (mm):	-11858.91
g) Net cumulative PT (mm):	-4304.62
i) Net cumulative ET (mm):	-9418.75
k) Net cumulative drain node flux (mm):	0

b) Net cumulative infiltration (mm):	4331.84
d) Net cumulative runoff (mm):	0
f) Net cumulative AE (mm):	-6437.78
h) Net cumulative AT (mm):	-2980.97
j) Net cum. user monitor flx (mm):	-1320.36
l) Net cum. user monitor flx (mm/yr):	-132.04

User Node: 38  
 User Elev: 155.00 cm

**Note: Positive fluxes at interior nodes are UPWARDS. Negative fluxes at surface or base are LEAVING the mesh.**  
**Note: Net Cumulative Infiltration is at the surface and does NOT include root uptake (if any). You must add it accordingly if checking the surface water balance.**