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**130 ENVIRONMENTAL PARK
CALDWELL COUNTY, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 2383**

TYPE I PERMIT APPLICATION

VOLUME 3 OF 5

Prepared for

130 ENVIRONMENTAL PARK, LLC

August 2013
Revised February 2014
Revised June 2014

Revised August 2014



Prepared by

Biggs & Mathews, Inc.
Firm Registration No. F-834

BIGGS & MATHEWS ENVIRONMENTAL

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Biggs & Mathews, Inc.
Firm Registration No. F-834

K.D. Maroney
8/21/14

**130 ENVIRONMENTAL PARK
CALDWELL COUNTY, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 2383**

TYPE I PERMIT APPLICATION

PART III – FACILITY INVESTIGATION AND DESIGN

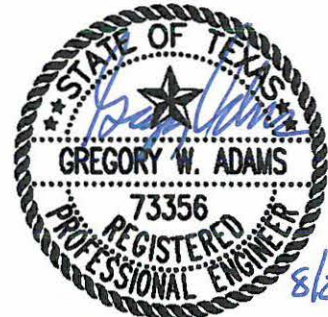
**ATTACHMENT D
WASTE MANAGEMENT UNIT DESIGN**

Prepared for

130 ENVIRONMENTAL PARK, LLC

February 2014
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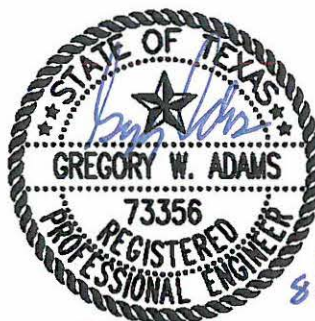
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Attachment D6 – Leachate and Contaminated Water Management Plan

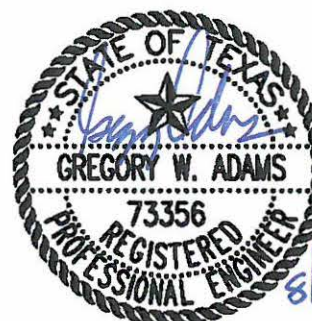
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TYPE I PERMIT APPLICATION

PART III – FACILITY INVESTIGATION AND DESIGN

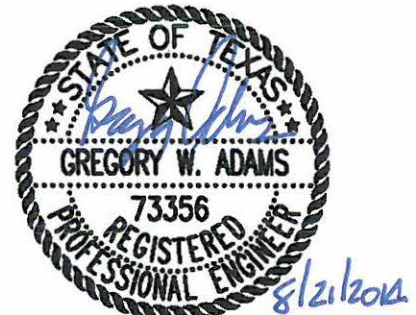
**ATTACHMENT D6
LEACHATE AND CONTAMINATED WATER MANAGEMENT PLAN**

Prepared for

130 ENVIRONMENTAL PARK, LLC

February 2014
Revised June 2014

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APPENDIX D6-A

Leachate Collection System Design Calculations

APPENDIX D6-B

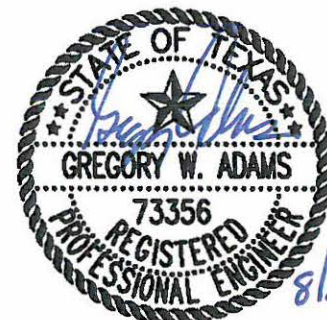
Leachate Generation Model

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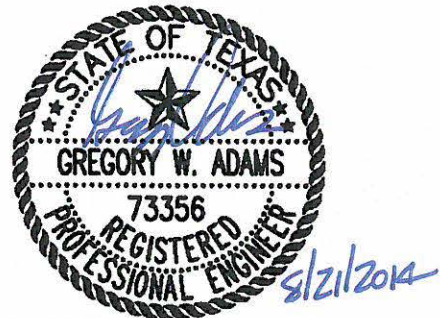
Secondary Containment Volume Calculations



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130 ENVIRONMENTAL PARK

APPENDIX D6-A
LEACHATE COLLECTION SYSTEM
DESIGN CALCULATIONS



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Includes pages D6-A-1 through D6-A-167

130 Environmental Park Leachate Collection System Flow Rates

Required: Determine the design flowrates for the following components of the leachate system.

- 1) Chimney, Collection Pipe, and Sump
- 2) Geotextile

References: 1) Appendix D6-B HELP Model Analyses.

Approach:

- 1) The leachate collection system will conservatively be sized for the largest cell, Cell 11.
- 2) The maximum flowrate for the geotextile, collection pipe, and sump will occur in Cell 11 due to its largest contributing area. The flowrates are calculated from the areas within Cell 11 that correspond to each case.

Solution: 1) Cell 11 - Geotextile, Collection Pipe, and Sump Flow Rate

Case 1, Daily cover over 54 feet of waste =	8.2 acres
Case 2, Active face with 18 feet of waste =	1.0 acres
Case 3, Intermediate cover over 149 feet of waste =	4.9 acres
Case 5, Intermediate cover over 193 feet of waste =	3.2 acres

Calculate the leachate generation rate for the critical configuration.

CONDITION	AREA acres	AVERAGE RATE cf/yr/ac	AVERAGE cfs	PEAK RATE cf/day/ac	PEAK cfs
Case 1	8.2	24,073	0.006	159	0.015
Case 2	1.0	15,752	0.000	130	0.002
Case 3	4.9	24,068	0.004	127	0.007
Case 5	3.2	24,069	0.002	127	0.005
TOTAL	17.3		0.013		0.028

130 Environmental Park Leachate Collection System Design

Required: Size the following elements of the leachate collection system:

- 1) Leachate Chimney
- 2) Leachate Collection Pipe
- 3) Leachate Sump

Assumptions:

- 1) The leachate chimney will extend the length of the collection trench.
- 2) Minimum leachate aggregate permeability shall be 0.01 cm/sec.
- 3) The leachate chimney should be sized to convey the peak flow rate to the sumps.
- 4) The collection pipe should be sized to convey the peak flow rate.
- 5) The leachate sump should be sized to store the average flow rate for 12 hours.

Solution:

1) *Leachate Chimney*

Use Darcy's Equation to determine the width of the leachate chimney.

$$Q = KiA$$

where: Q = design flowrate = 0.028 cfs
 K = hydraulic conductivity of aggregate = 0.01 cm/sec
 i = hydraulic gradient = Dh/L
for vertical flow $Dh = L$
 L = length of trench = 1,300 ft
 A = cross section area = $L \times W$
= 3.28E-04 fps
1 ft/ft

Substitute and solve for W = 0.1 ft

2) *Leachate Collection Pipe*

Use Manning's Equation to size the leachate collection pipe.

$$Q = (1.486/n)AR^{2/3}S^{1/2}$$

where: Q = design flowrate = 0.028 cfs
 n = Manning's number = 0.009
 A = cross section area of pipe = $\pi \text{dia}^2/4$ sf
 R = hydraulic radius of pipe = $\text{dia}/4$ ft
 S = slope of pipe = 0.01 ft/ft

**Substitute and solve for diameter = 0.14 ft
= 1.7 in**

130 Environmental Park Leachate Collection System Design

Determine the inflow capacity of the perforated leachate collection pipe using the following equation:

$$Q = Ca(2g \Delta h)^2$$

where:	C = coefficient of discharge =	0.61
	g = acceleration of gravity =	32.2 ft/sec ²
	Δh = maximum head on leachate pipe (ft) =	1.0 ft
	p = perforations per linear foot of pipe =	5 /ft
	d = diameter of perforations =	3/8 in
	a = orifice area ($p \times \pi (d/12)^2/4$) =	0.004 sf/ft
	q = inflow capacity per linear foot of pipe =	0.019 cfs/ft
	L = linear feet of collection pipe =	1,300 ft
	Q = design flowrate =	0.03 cfs
	Inflow capacity provided by perforated leachate pipe = q x L =	24.4 cfs

3) Leachate Collection Sump

Size a square 3-foot deep sump with 3:1 side slopes from the following equation.

$$V = 1/3(L_t^2 h_t) - 1/3(L_b^2 h_b)$$

	V = required sump volume (cf)	
where:	L_t = length of top side (ft)	
	L_b = length of bottom side (ft)	
	h_t = height of 3:1 pyramid with length L_t (ft)	
	h_b = height of 3:1 pyramid with length L_b (ft)	
	Q = average flowrate to the sump =	0.013 cfs
	P = porosity of aggregate =	0.350
	$V = Q \times 12 \text{ hr} / P =$	1,593 cf

Substitute and solve for L_t = 31.4 ft

130 Environmental Park Geotextile Design

Required: Determine the minimum properties for:
 1) Geotextile around leachate trench aggregate.
 2) Geotextile component of geocomposite.

References: 1) *Designing with Geosynthetics*, Fourth Edition; Robert M. Koerner.

Assumptions: 1) The protective cover will have at least 50% finer than the No. 200 sieve.
 2) The leachate aggregate will be subangular, open graded stone.

Solution: 1) **Leachate trench geotextile**
 Calculate the allowable permittivity from the equation:

$$\Psi_{all} = q / \Delta h A$$

where: Ψ_{all} = allowable permittivity
 q = peak inflow rate for leachate trench geotextile = 0.028 cfs
 Δh = maximum allowable head = 1.0 ft
 L = trench length = 440.0 ft
 W = trench width = 5.0 ft
 A = inflow area = 2200.0 sf

Substitute and solve for allowable permittivity = 1.3E-05 sec⁻¹

1a) Calculate the ultimate permittivity from Reference 1, Equation 2.25a.

$$\Psi_{all} = \Psi_{ult} (1 / RF_{SCB} \times RF_{CR} \times RF_{IN} \times RF_{CC} \times RF_{BC})$$

where: RF_{SCB} = soil clogging/binding reduction factor = 3.0 (Ref. 1, Table 2.12)
 RF_{CR} = creep reduction factor = 1.5 (Ref. 1, Table 2.12)
 RF_{IN} = intrusion reduction factor = 1.2 (Ref. 1, Table 2.12)
 RF_{CC} = chemical clogging reduction factor = 1.5 (Ref. 1, Table 2.12)
 RF_{BC} = biological clogging reduction factor = 3.0 (Ref. 1, Table 2.12)

Substitute and solve for ultimate permittivity = 3.1E-04 sec⁻¹

Determine the appropriate soil retention criteria from Reference 1, Figure 2.4.

The AOS must be less than 0.22 mm for fine-grained, non-dispersive soils.

Leachate trench geotextile: calculated minimum permittivity = 3.1E-04 sec⁻¹
 required permittivity = 0.10 sec⁻¹
 maximum AOS = 0.22 mm

130 Environmental Park Geotextile Design

2) **Geocomposite geotextile**

Calculate the allowable permittivity from the equation:

$$\Psi_{all} = q / \Delta h A$$

where: Ψ_{all} = allowable permittivity

q = peak inflow rate for critical condition =

0.028 cfs

Δh = maximum allowable head =

1.0 ft

A = area =

422,532 sf

Substitute and solve for allowable permittivity =

6.728E-08 sec⁻¹

Calculate the ultimate permittivity from Reference 1, Equation 2.25a.

$$\Psi_{all} = \Psi_{ult} (1 / RF_{SCB} \times RF_{CR} \times RF_{IN} \times RF_{CC} \times RF_{BC})$$

where: RF_{SCB} = soil clogging/binding reduction factor =

3.0 (Ref. 1, Table 2.12)

RF_{CR} = creep reduction factor =

1.5 (Ref. 1, Table 2.12)

RF_{IN} = intrusion reduction factor =

1.2 (Ref. 1, Table 2.12)

RF_{CC} = chemical clogging reduction factor =

1.5 (Ref. 1, Table 2.12)

RF_{BC} = biological clogging reduction factor =

3.0 (Ref. 1, Table 2.12)

Substitute and solve for ultimate permittivity =

1.6E-06 sec⁻¹

Determine the appropriate soil retention criteria from Reference 1, Figure 2.4.

The AOS must be less than 0.22 mm for fine-grained, non-dispersive soils.

Geocomposite geotextile: minimum permittivity =
 required permittivity =
 maximum AOS =

1.6E-06 sec⁻¹

0.10 sec⁻¹

0.22 mm

Table 2.1 Coefficient of Permeability of Various Soils

k (cm/sec)	Drainage	Soil Type	Determination of k			
10^2 10^1	Good Good	Clean gravels Clean gravels	Pumping tests. Reliable if properly conducted	Constant head permeameter-reliable	Falling-head permeameter	Computation from grain size
1.0 10^{-1} 10^{-2} 10^{-3} 10^{-4}	Good Good Good Good Good	Clean sands Clean sand and gravel mixtures				
10^{-5} 10^{-6}	Poor Poor	Very fine sands Organic and inorganic silts, mixtures of sand silt and clay, glacial till, stratified clay deposits.				
10^{-7} 10^{-8} 10^{-9}	Practically impervious	Impervious soils, for example, homogeneous clays below zone of weathering.				

After Casagrande and Fadum (1940).

Source: Peck, R.B., Hanson, W.E., Thornburn, T.H., *Foundation Engineering, Second Edition*, page 43; John Wiley & Sons

TABLE 5-1. TYPICAL RANGES OF PERMEABILITY FOR DIFFERENT SOIL TYPES

Soil Type	Relative Degree of Permeability	k , Coeff. of Permeability (cm/sec)	Drainage Properties
Clean gravel	High	1 to 10	Good
Clean sand, sand and gravel mixtures	Medium	1 to 10^{-3}	Good
Fine sands, silts	Low	10^{-3} to 10^{-5}	Fair through poor
Sand-silt-clay mixtures, glacial tills	Very low	10^{-4} to 10^{-7}	Poor through practically impervious
Homogeneous clays	Very low to practically impermeable	Less than 10^{-7}	Practically impervious

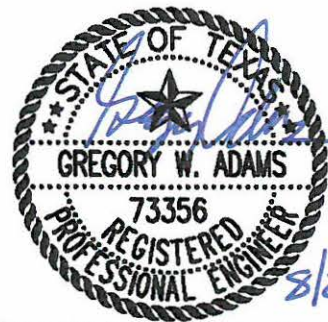
Note: To convert cm/sec to ft/min, multiply cm/sec by 2; i.e., 1 cm/sec = 2 ft/min; also ft/day = cm/sec $\times 3 \times 10^3$.

Source: McCarthy, D.F., *Essentials of Soil Mechanics and Foundations, Second Edition*, page 94; Reston Publishing Company, Inc.

130 ENVIRONMENTAL PARK

APPENDIX D6-B

LEACHATE GENERATION MODEL



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256

Includes pages D6-B-1 through D6-B-~~164~~166

flow. The bottom 2 feet of the waste column was designated as a lateral drainage layer to simulate a material that drains vertically primarily as unsaturated flow and laterally as saturated flow. This method allows the program to estimate the lateral flow that occurs through the bottom of the waste column above the protective cover and to the leachate chimney. The lateral drainage from the bottom of the waste column is added to the lateral drainage from the geocomposite layer to predict the total lateral drainage. These layer designations were selected to accurately simulate the moisture flow patterns that will occur in the waste column.

Protective Cover

The protective cover will consist of a 24-inch-thick layer of on-site soils. Geotechnical information provided in Attachment D5 – Geotechnical Design indicates that CH soils will be available for use as protective cover. Since the help model will not allow a vertical percolation layer to immediately underlie a lateral drainage layer, the top 0.08 feet (1 inch) of the protective cover layer was designated as a barrier soil layer to simulate a material that drains vertically as saturated flow. The remaining 1.92 ft (~~41~~23 inches) of the protective cover was designated as a vertical percolation layer to simulate a material the drains vertically primarily as unsaturated flow. These layer designations were selected to accurately simulate the moisture flow patterns that will occur in the waste column.

Highly plastic CH soils have a hydraulic conductivity of 10^{-7} cm/sec or less (see page D6-A-17). Since the protective cover will be placed in a two foot thick lift with minimal compactive effort, a hydraulic conductivity value of 10^{-6} cm/sec was selected for the entire protective cover layer.

Leachate Collection Layer

The leachate collection layer will consist of a drainage geocomposite. The thickness and hydraulic conductivity values are calculated in Appendix D6-A. The critical slope and drainage distance for the leachate collection system were determined from Attachment D3 – Construction Design Details, Drawing D33 – Leachate Collection System Plan.

Geomembrane

The geomembrane liner will consist of a 60-mil HDPE geomembrane. The liner will be installed and tested in accordance with the requirements of Attachment D7 – Liner Quality Control Plan; therefore, the liner was modeled for good installation quality, one defect per acre, and a pinhole density of one-half hole per acre.

Compacted Soil Liner

The compacted soil layer will consist of a 24-inch-thick layer of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec or less.

HELP MODEL OUTPUT

Output files for the HELP model are provided on pages D6-B-5 through D6-B-177. The output for each case is summarized on page D6-B-4.

130 Environmental Park HELP SUMMARY

Case No.	1	2	3	4	5	6
Cover	Intermediate	None	Intermediate	Final	Intermediate	Final
Top	Sideslope	Sideslope	Sideslope	Sideslope	Topslope	Topslope
Bottom	Sidewall	Floor	Floor	Floor	Floor	Floor
Waste Thickness (ft)	54	18	149	149	193	193
Years	10	5	10	30	10	30
Ground Cover	Good	Bare	Good	Good	Good	Good
Model Area (acre)	1	1	1	1	1	1
Runoff Area (%)	100	0	100	100	100	100
Maximum Leaf Area Index	4.5	0	4.5	4.5	4.5	4.5
Evaporative Zone Depth (in)	10	10	10	22	10	22
Erosion Layer						
Layer No.				1		1
Type				vertical percolation		vertical percolation
Thickness (ft)				2.0		2.0
Geomembrane						
Layer No.				2		2
Type				geomembrane		geomembrane
Thickness (in)				0.04		0.04
Defects per acre				1		1
Pinholes per acre				0.5		0.5
Infiltration Layer						
Layer No.				3		3
Type				barrier soil		barrier soil
Thickness (ft)				1.5		1.5
Intermediate/Daily Cover						
Layer No.	1		1	4	1	4
Type	vertical percolation		vertical percolation	vertical percolation	vertical percolation	vertical percolation
Thickness (ft)	1.0		1.0	1.0	1.0	1.0
Solid Waste						
Layer No.	2	1	2	5	2	5
Type	vertical percolation	vertical percolation	vertical percolation	vertical percolation	vertical percolation	vertical percolation
Thickness (ft)	54.0	18.0	149.0	149.0	193.0	193.0
Solid Waste						
Layer No.	3	2	3	6	3	6
Type	lateral drainage	lateral drainage	lateral drainage	lateral drainage	lateral drainage	lateral drainage
Thickness (ft)	2.0	2.0	2.0	2.0	2.0	2.0
Slope (%)	25.0	2.5	2.5	2.5	2.5	2.5
Flow Distance (ft)	247	246	246	246	246	246
Protective Cover						
Layer No.	4	3	4	7	4	7
Type	barrier soil	barrier soil	barrier soil	barrier soil	barrier soil	barrier soil
Thickness (ft)	0.08	0.08	0.08	0.08	0.08	0.08
Protective Cover						
Layer No.	5	4	5	8	5	8
Type	vertical percolation	vertical percolation	vertical percolation	vertical percolation	vertical percolation	vertical percolation
Thickness (ft)	1.92	1.92	1.92	1.92	1.92	1.92
LCS						
Layer No.	6	5	6	9	6	9
Type	lateral drainage	lateral drainage	lateral drainage	lateral drainage	lateral drainage	lateral drainage
Thickness (in)	0.250	0.265	0.211	0.209	0.193	0.190
Slope (%)	25	2.5	2.5	2.5	2.5	2.5
Flow Distance (ft)	247	246	246	246	246	246
Hydraulic Conductivity (cm/sec)	2.33	10.39	2.76	0.83	1.71	0.90
Geomembrane						
Layer No.	7	6	7	10	7	10
Type	geomembrane	geomembrane	geomembrane	geomembrane	geomembrane	geomembrane
Thickness (in)	0.06	0.06	0.06	0.06	0.06	0.06
Defects per acre	1	1	1	1	1	1
Pinholes per acre	0.5	0.5	0.5	0.5	0.5	0.5
Clay Liner						
Layer No.	8	7	8	11	8	11
Type	barrier soil	barrier soil	barrier soil	barrier soil	barrier soil	barrier soil
Thickness (ft)	2.0	2.0	2.0	2.0	2.0	2.0
Average Lateral Drainage (cf/yr)	24,073	15,752	24,068	10	24,069	10
Peak Lateral Drainage (cf/day)	159	130	127	3	127	3
Peak Daily Head on Liner (in)	0.005	0.011	0.043	0.003	0.069	0.003
Average Daily Head on Liner(in)	0.005	0.006	0.021	0.001	0.035	0.001

Case 1

```
*****
*****
**                                **
**                                **
**      HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE      **
**      HELP MODEL VERSION 3.07 (1 November 1997)          **
**      DEVELOPED BY ENVIRONMENTAL LABORATORY                **
**      USAE WATERWAYS EXPERIMENT STATION                   **
**      FOR USEPA RISK REDUCTION ENGINEERING LABORATORY      **
**                                **
**                                **
*****
```

PRECIPITATION DATA FILE: C:\WHI\UNSAT22\data\P922.VHP\weather1.dat
TEMPERATURE DATA FILE: C:\WHI\UNSAT22\data\P922.VHP\weather2.dat
SOLAR RADIATION DATA FILE: C:\WHI\UNSAT22\data\P922.VHP\weather3.dat
EVAPOTRANSPIRATION DATA: C:\WHI\UNSAT22\data\P922.VHP\weather4.dat
SOIL AND DESIGN DATA FILE: C:\WHI\UNSAT22\data\P922.VHP\387388.inp
OUTPUT DATA FILE: C:\WHI\UNSAT22\data\P922.VHP\O_387388.prt

TIME: 16:25 DATE: 8/6/2014

```
*****
TITLE: Case 1
*****
```

NOTE: INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.

LAYER 1

TYPE 1 - VERTICAL PERCOLATION LAYER

MATERIAL TEXTURE NUMBER 130

THICKNESS = 30.48 CM
POROSITY = 0.4570 VOL/VOL
FIELD CAPACITY = 0.1310 VOL/VOL
WILTING POINT = 0.0580 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.1508 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000000000E-02 CM/SEC

LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER

MATERIAL TEXTURE NUMBER 18

THICKNESS = 1645.92 CM
POROSITY = 0.6710 VOL/VOL
FIELD CAPACITY = 0.2920 VOL/VOL
WILTING POINT = 0.0770 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.2925 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000224000E-02 CM/SEC

LAYER 3

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 201

THICKNESS = 60.96 CM
POROSITY = 0.6710 VOL/VOL
FIELD CAPACITY = 0.2920 VOL/VOL
WILTING POINT = 0.0770 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.3061 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000000000E-02 CM/SEC
SLOPE = 25.00 PERCENT

Case 1

DRAINAGE LENGTH = 75.3 METERS

LAYER 4

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 16
THICKNESS = 2.44 CM
POROSITY = 0.4270 VOL/VOL
FIELD CAPACITY = 0.4180 VOL/VOL
WILTING POINT = 0.3670 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.4270 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000000000E-05 CM/SEC

LAYER 5

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 230
THICKNESS = 58.52 CM
POROSITY = 0.4270 VOL/VOL
FIELD CAPACITY = 0.4180 VOL/VOL
WILTING POINT = 0.3670 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.4267 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000000000E-05 CM/SEC

LAYER 6

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 221
THICKNESS = 0.63 CM
POROSITY = 0.8500 VOL/VOL
FIELD CAPACITY = 0.0100 VOL/VOL
WILTING POINT = 0.0050 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.0441 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 2.330000000000 CM/SEC
SLOPE = 25.00 PERCENT
DRAINAGE LENGTH = 75.3 METERS

LAYER 7

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 235
THICKNESS = 0.15 CM
POROSITY = 0.0000 VOL/VOL
FIELD CAPACITY = 0.0000 VOL/VOL
WILTING POINT = 0.0000 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.0000 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.200000000000E-12 CM/SEC
FML PINHOLE DENSITY = 1.24 HOLES/HECTARE
FML INSTALLATION DEFECTS = 2.47 HOLES/HECTARE
FML PLACEMENT QUALITY = 3 - GOOD

LAYER 8

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 15
THICKNESS = 60.96 CM
POROSITY = 0.4750 VOL/VOL
FIELD CAPACITY = 0.3780 VOL/VOL
WILTING POINT = 0.2650 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.4750 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000000000E-06 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

Case 1

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT
SOIL DATA BASE USING SOIL TEXTURE #** WITH A
GOOD STAND OF GRASS, A SURFACE SLOPE OF 30. %
AND A SLOPE LENGTH OF 30. METERS.

SCS RUNOFF CURVE NUMBER = 0.00
FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT
AREA PROJECTED ON HORIZONTAL PLANE = 0.4047 HECTARES
EVAPORATIVE ZONE DEPTH = 25.4 CM
INITIAL WATER IN EVAPORATIVE ZONE = 3.641 CM
UPPER LIMIT OF EVAPORATIVE STORAGE = 11.608 CM
LOWER LIMIT OF EVAPORATIVE STORAGE = 1.473 CM
INITIAL SNOW WATER = 0.000 CM
INITIAL WATER IN LAYER MATERIALS = 559.603 CM
TOTAL INITIAL WATER = 559.603 CM
TOTAL SUBSURFACE INFLOW = 0.00 MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
Austin TX

STATION LATITUDE = 30.31 DEGREES
MAXIMUM LEAF AREA INDEX = 4.50
START OF GROWING SEASON (JULIAN DATE) = 44
END OF GROWING SEASON (JULIAN DATE) = 346
EVAPORATIVE ZONE DEPTH = 10.0 INCHES
AVERAGE ANNUAL WIND SPEED = 9.30 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 66.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 70.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 66.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 67.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR Austin TX

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
1.60	2.49	1.68	3.11	4.19	3.06
1.89	2.24	3.60	3.38	2.20	2.06

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR Austin TX

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.10	53.20	60.50	68.70	74.90	81.60
84.70	84.50	79.20	69.80	58.70	52.10

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR Austin TX
AND STATION LATITUDE = 29.88 DEGREES

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 1

Case 1

JAN/JUL FEB/AUG MAR/SEP APR/OCT MAY/NOV JUN/DEC

PRECIPITATION	0.65	2.56	0.82	0.03	1.74	0.00
	0.45	4.41	2.37	5.47	0.62	3.40
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.771	1.435	2.192	0.029	1.736	0.003
	0.448	4.070	2.206	2.563	1.337	1.944
LATERAL DRAINAGE COLLECTED	0.0335	0.0000	0.0003	0.0000	0.0000	0.0000
FROM LAYER 3	0.0000	0.0007	0.0007	0.0009	0.0678	0.0072
PERCOLATION/LEAKAGE THROUGH	0.7130	0.0617	0.3137	0.0660	0.0191	0.0105
LAYER 4	0.0076	0.1827	0.1207	0.2835	1.3842	0.6064
LATERAL DRAINAGE COLLECTED	0.9417	0.1600	0.1912	0.1918	0.0954	0.0108
FROM LAYER 6	0.0076	0.0100	0.2032	0.0976	0.9073	0.9282
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.201	0.001	0.003	0.001	0.000	0.000
TOP OF LAYER 4	0.000	0.004	0.005	0.006	0.419	0.043
STD. DEVIATION OF DAILY	0.297	0.000	0.003	0.000	0.000	0.000
HEAD ON TOP OF LAYER 4	0.000	0.012	0.020	0.012	0.357	0.070
AVERAGE DAILY HEAD ON	0.005	0.002	0.001	0.002	0.001	0.000
TOP OF LAYER 7	0.000	0.000	0.002	0.001	0.004	0.004
STD. DEVIATION OF DAILY	0.001	0.000	0.001	0.000	0.000	0.000
HEAD ON TOP OF LAYER 7	0.000	0.000	0.001	0.000	0.001	0.001

ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	22.52	81745.818	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	18.735	68004.810	83.19
DRAINAGE COLLECTED FROM LAYER 3	0.1112	403.583	0.49
PERC./LEAKAGE THROUGH LAYER 4	3.769089	13681.495	16.74
AVG. HEAD ON TOP OF LAYER 4	0.0568		
DRAINAGE COLLECTED FROM LAYER 6	3.7446	13592.507	16.63
PERC./LEAKAGE THROUGH LAYER 8	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0019		
CHANGE IN WATER STORAGE	-0.070	-255.084	-0.31
SOIL WATER AT START OF YEAR	220.316	799730.674	
SOIL WATER AT END OF YEAR	220.246	799475.590	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

Case 1

ANNUAL WATER BUDGET BALANCE 0.0000 -0.001 0.00

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 2

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	0.00	6.11	2.35	3.42	3.62	2.33
	0.26	8.15	6.72	4.76	2.03	1.05
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.659	2.103	2.901	3.495	2.995	2.481
	0.226	4.227	2.601	2.757	1.019	1.140
LATERAL DRAINAGE COLLECTED FROM LAYER 3	0.0289	0.0036	0.0643	0.0970	0.0018	0.0023
	0.0000	0.0005	0.0833	0.1087	0.1980	0.2479
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.6599	0.4923	1.2825	1.4173	0.4209	0.1844
	0.0187	0.0752	1.4349	1.7679	2.3195	2.6811
LATERAL DRAINAGE COLLECTED FROM LAYER 6	0.9066	0.3571	0.7864	1.0205	1.0545	0.6439
	0.1228	0.0237	0.5714	1.0545	1.0205	1.0545
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 4	0.173	0.024	0.384	0.599	0.011	0.014
	0.000	0.003	0.514	0.649	1.222	1.481
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 4	0.275	0.029	0.394	0.537	0.020	0.043
	0.000	0.012	0.548	0.281	0.420	0.318
AVERAGE DAILY HEAD ON TOP OF LAYER 7	0.005	0.002	0.004	0.005	0.005	0.004
	0.001	0.000	0.003	0.005	0.005	0.005
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 7	0.001	0.001	0.002	0.000	0.000	0.001
	0.000	0.000	0.002	0.000	0.000	0.000

ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	40.80	148100.772	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	26.604	96571.321	65.21
DRAINAGE COLLECTED FROM LAYER 3	0.8364	3036.242	2.05
PERC./LEAKAGE THROUGH LAYER 4	12.754612	46298.231	31.26
AVG. HEAD ON TOP OF LAYER 4	0.4231		
DRAINAGE COLLECTED FROM LAYER 6	8.6162	31276.187	21.12

Case 1

PERC./LEAKAGE THROUGH LAYER 8	0.000001	0.005	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0037		
CHANGE IN WATER STORAGE	4.743	17217.019	11.63
SOIL WATER AT START OF YEAR	220.246	799475.590	
SOIL WATER AT END OF YEAR	224.989	816692.608	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.002	0.00

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
 DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
 LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
 HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
 DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
 LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 3

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	0.36	3.57	0.83	1.69	5.59	4.55
	1.68	2.44	0.38	1.03	0.61	3.14
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.693	1.572	1.104	1.968	2.982	4.773
	1.680	2.439	0.378	1.028	0.346	1.043
LATERAL DRAINAGE COLLECTED	0.0919	0.0011	0.0784	0.0000	0.0000	0.0626
FROM LAYER 3	0.0625	0.0000	0.0000	0.0000	0.0000	0.0065
PERCOLATION/LEAKAGE THROUGH	1.3270	0.2090	1.4447	0.0339	0.0125	1.3569
LAYER 4	0.8911	0.0150	0.0095	0.0075	0.0056	0.5483
LATERAL DRAINAGE COLLECTED	1.0545	0.9524	1.0545	1.0205	1.0545	1.0205
FROM LAYER 6	1.0545	1.0545	1.0205	0.5079	0.0884	0.1193
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.549	0.007	0.469	0.000	0.000	0.386
TOP OF LAYER 4	0.374	0.000	0.000	0.000	0.000	0.039
STD. DEVIATION OF DAILY	0.552	0.020	0.396	0.000	0.000	0.368
HEAD ON TOP OF LAYER 4	0.538	0.000	0.000	0.000	0.000	0.093
AVERAGE DAILY HEAD ON	0.005	0.005	0.005	0.005	0.005	0.005
TOP OF LAYER 7	0.005	0.005	0.005	0.003	0.001	0.001
STD. DEVIATION OF DAILY	0.000	0.000	0.000	0.000	0.000	0.000
HEAD ON TOP OF LAYER 7	0.000	0.000	0.000	0.002	0.000	0.001

Case 1

ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT	
PRECIPITATION	25.87	93906.053	100.00	
RUNOFF	0.000	0.000	0.00	
EVAPOTRANSPIRATION	20.006	72620.544	77.33	
DRAINAGE COLLECTED FROM LAYER 3		0.3030	1099.913	1.17
PERC./LEAKAGE THROUGH LAYER 4		5.860988	21274.923	22.66
AVG. HEAD ON TOP OF LAYER 4	0.1521			
DRAINAGE COLLECTED FROM LAYER 6		10.0017	36305.336	38.66
PERC./LEAKAGE THROUGH LAYER 8		0.000002	0.006	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0042			
CHANGE IN WATER STORAGE	-4.441	-16119.745	-17.17	
SOIL WATER AT START OF YEAR	224.989	816692.608		
SOIL WATER AT END OF YEAR	220.548	800572.864		
SNOW WATER AT START OF YEAR	0.000	0.000	0.00	
SNOW WATER AT END OF YEAR	0.000	0.000	0.00	
ANNUAL WATER BUDGET BALANCE	0.0000	-0.001	0.00	

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 4

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC	
PRECIPITATION	2.85	3.06	1.65	3.84	3.05	1.18	
	1.76	0.97	3.09	2.66	2.71	1.27	
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	0.000	
EVAPOTRANSPIRATION	2.057	1.968	2.312	2.868	4.206	1.177	
	1.761	0.726	2.764	1.824	0.906	0.900	
LATERAL DRAINAGE COLLECTED FROM LAYER 3	0.0133	0.0016	0.0462	0.0000	0.0001	0.0000	
	0.0000	0.0000	0.0052	0.0193	0.0075	0.0086	
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.9648	0.4315	1.1333	0.0543	0.1477	0.0246	
	0.0130	0.0089	0.5026	0.8176	0.6359	0.3527	
LATERAL DRAINAGE COLLECTED FROM LAYER 6	0.9544	0.6133	0.9235	0.4297	0.1367	0.1130	
	0.0274	0.0089	0.3145	0.5019	0.7097	0.6457	
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Case 1

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.080	0.011	0.276	0.000	0.001	0.000
TOP OF LAYER 4	0.000	0.000	0.033	0.115	0.046	0.052
STD. DEVIATION OF DAILY	0.079	0.019	0.296	0.000	0.002	0.000
HEAD ON TOP OF LAYER 4	0.000	0.000	0.070	0.155	0.084	0.128
AVERAGE DAILY HEAD ON	0.005	0.003	0.004	0.003	0.001	0.001
TOP OF LAYER 7	0.000	0.000	0.002	0.003	0.004	0.004
STD. DEVIATION OF DAILY	0.001	0.001	0.002	0.001	0.001	0.000
HEAD ON TOP OF LAYER 7	0.000	0.000	0.002	0.002	0.002	0.001

ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.09	101964.478	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	23.469	85190.002	83.55
DRAINAGE COLLECTED FROM LAYER 3	0.1018	369.518	0.36
PERC./LEAKAGE THROUGH LAYER 4	5.086798	18464.674	18.11
AVG. HEAD ON TOP OF LAYER 4	0.0513		
DRAINAGE COLLECTED FROM LAYER 6	5.3786	19523.857	19.15
PERC./LEAKAGE THROUGH LAYER 8	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0025		
CHANGE IN WATER STORAGE	-0.859	-3118.901	-3.06
SOIL WATER AT START OF YEAR	220.548	800572.864	
SOIL WATER AT END OF YEAR	219.689	797453.963	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.002	0.00

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
 DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
 LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
 HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
 DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
 LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.42	2.70	1.93	2.42	3.77	2.00
	0.84	1.25	3.04	1.13	1.04	0.78
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000

Case 1

EVAPOTRANSPIRATION	2.056	2.093	2.326	3.020	3.641	1.319
	1.351	1.420	2.889	0.983	0.977	0.595
LATERAL DRAINAGE COLLECTED	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000
FROM LAYER 3	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH	0.0831	0.0280	0.0274	0.0327	0.1039	0.0351
LAYER 4	0.0149	0.0094	0.0972	0.0322	0.0150	0.0098
LATERAL DRAINAGE COLLECTED	0.1478	0.0936	0.0316	0.0351	0.0265	0.1038
FROM LAYER 6	0.0236	0.0094	0.0274	0.1013	0.0155	0.0100
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.001	0.000	0.000	0.000	0.001	0.000
TOP OF LAYER 4	0.000	0.000	0.001	0.000	0.000	0.000
STD. DEVIATION OF DAILY	0.000	0.000	0.000	0.000	0.001	0.000
HEAD ON TOP OF LAYER 4	0.000	0.000	0.002	0.000	0.000	0.000
AVERAGE DAILY HEAD ON	0.001	0.001	0.000	0.000	0.000	0.001
TOP OF LAYER 7	0.000	0.000	0.000	0.001	0.000	0.000
STD. DEVIATION OF DAILY	0.000	0.000	0.000	0.000	0.000	0.000
HEAD ON TOP OF LAYER 7	0.000	0.000	0.000	0.000	0.000	0.000

ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	22.32	81019.834	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	22.668	82282.843	101.56
DRAINAGE COLLECTED FROM LAYER 3	0.0002	0.793	0.00
PERC./LEAKAGE THROUGH LAYER 4	0.488437	1772.987	2.19
AVG. HEAD ON TOP OF LAYER 4	0.0004		
DRAINAGE COLLECTED FROM LAYER 6	0.6257	2271.124	2.80
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.002	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0005		
CHANGE IN WATER STORAGE	-0.974	-3534.927	-4.36
SOIL WATER AT START OF YEAR	219.689	797453.963	
SOIL WATER AT END OF YEAR	218.715	793919.036	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.001	0.00

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)

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LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 6

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	2.84	3.09	4.52	0.95	5.99	3.95
	1.57	4.88	3.80	6.63	2.35	0.40
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.171	0.000	0.000
EVAPOTRANSPIRATION	1.442	2.018	3.139	2.059	3.697	4.667
	1.575	3.906	3.862	2.136	1.425	1.001
LATERAL DRAINAGE COLLECTED FROM LAYER 3	0.0018	0.0456	0.0295	0.0121	0.0011	0.0526
	0.0000	0.0011	0.0184	0.0226	0.1906	0.0165
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.4272	1.2519	0.6696	0.6532	0.2227	1.2984
	0.0230	0.2672	0.6080	0.7529	2.2709	0.7634
LATERAL DRAINAGE COLLECTED FROM LAYER 6	0.0381	0.9461	1.0545	0.7830	0.1626	0.8343
	0.6228	0.0979	0.7258	0.3675	1.0205	1.0545
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 4	0.011	0.302	0.176	0.075	0.007	0.325
	0.000	0.007	0.114	0.135	1.176	0.099
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 4	0.019	0.191	0.333	0.110	0.018	0.336
	0.000	0.013	0.189	0.187	0.357	0.118
AVERAGE DAILY HEAD ON TOP OF LAYER 7	0.000	0.005	0.005	0.004	0.001	0.004
	0.004	0.001	0.004	0.002	0.005	0.005
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 7	0.001	0.000	0.000	0.001	0.001	0.002
	0.002	0.000	0.002	0.002	0.000	0.000

ANNUAL TOTALS FOR YEAR 6

	INCHES	CU. FEET	PERCENT
PRECIPITATION	40.97	148717.858	100.00
RUNOFF	0.171	619.841	0.42
EVAPOTRANSPIRATION	30.927	112262.405	75.49
DRAINAGE COLLECTED FROM LAYER 3	0.3918	1422.029	0.96
PERC./LEAKAGE THROUGH LAYER 4	9.208274	33425.306	22.48
AVG. HEAD ON TOP OF LAYER 4	0.2022		
DRAINAGE COLLECTED FROM LAYER 6	7.7075	27977.551	18.81
PERC./LEAKAGE THROUGH LAYER 8	0.000001	0.005	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0034		
CHANGE IN WATER STORAGE	1.773	6436.030	4.33
SOIL WATER AT START OF YEAR	218.715	793919.036	
SOIL WATER AT END OF YEAR	220.488	800355.066	

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SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.002	0.00

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
MONTHLY TOTALS (IN INCHES) FOR YEAR 7

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.24	0.57	0.63	4.49	4.20	6.40
	0.64	4.20	4.71	6.58	0.00	3.56
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	1.121	0.622	1.157	2.875	4.601	4.100
	1.036	4.194	3.786	3.523	1.079	1.385
LATERAL DRAINAGE COLLECTED FROM LAYER 3	0.0001	0.0000	0.0000	0.0002	0.0238	0.0000
	0.0878	0.0243	0.0000	0.0018	0.0735	0.0498
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.1357	0.0409	0.0173	0.0947	0.8871	0.0236
	1.5113	0.4586	0.0352	0.3948	1.4355	1.2223
LATERAL DRAINAGE COLLECTED FROM LAYER 6	1.0545	0.5146	0.1162	0.0245	0.7048	0.2232
	0.6132	1.0545	0.3174	0.2765	0.7593	1.0545
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 4	0.001	0.000	0.000	0.001	0.142	0.000
	0.525	0.145	0.000	0.011	0.454	0.298
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 4	0.001	0.000	0.000	0.004	0.187	0.001
	0.523	0.305	0.000	0.018	0.418	0.451
AVERAGE DAILY HEAD ON TOP OF LAYER 7	0.005	0.003	0.001	0.000	0.003	0.002
	0.003	0.005	0.002	0.002	0.004	0.005
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 7	0.000	0.001	0.000	0.000	0.002	0.001
	0.002	0.000	0.001	0.002	0.002	0.000

ANNUAL TOTALS FOR YEAR 7

	INCHES	CU. FEET	PERCENT
PRECIPITATION	37.22	135105.655	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	29.479	107008.164	79.20
DRAINAGE COLLECTED FROM LAYER 3	0.2613	948.382	0.70
PERC./LEAKAGE THROUGH LAYER 4	6.257111	22712.816	16.81
AVG. HEAD ON TOP OF LAYER 4	0.1315		

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DRAINAGE COLLECTED FROM LAYER 6	6.7132	24368.350	18.04
PERC./LEAKAGE THROUGH LAYER 8	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0030		
CHANGE IN WATER STORAGE	0.766	2780.757	2.06
SOIL WATER AT START OF YEAR	220.488	800355.066	
SOIL WATER AT END OF YEAR	221.254	803135.823	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.002	0.00

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
 DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
 LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
 HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
 DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
 LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 8

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	0.45	4.17	0.68	2.95	7.17	2.71
	1.05	0.80	1.04	1.46	1.78	1.94
RUNOFF	0.000	0.000	0.000	0.000	0.419	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	1.419	1.397	1.966	1.521	4.471	2.220
	1.049	0.800	0.838	1.082	1.333	1.494
LATERAL DRAINAGE COLLECTED FROM LAYER 3	0.0018	0.0004	0.0657	0.0176	0.0163	0.2018
	0.0336	0.0000	0.0000	0.0000	0.0000	0.0001
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.4478	0.1293	1.3121	0.4243	0.9999	2.3444
	0.5840	0.0161	0.0097	0.0074	0.0055	0.1469
LATERAL DRAINAGE COLLECTED FROM LAYER 6	1.0545	0.4122	0.6508	1.0004	0.7845	1.0205
	1.0545	1.0543	0.2275	0.0605	0.0055	0.0064
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 4	0.012	0.003	0.392	0.109	0.098	1.246
	0.201	0.000	0.000	0.000	0.000	0.001
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 4	0.021	0.008	0.424	0.236	0.126	0.295
	0.368	0.000	0.000	0.000	0.000	0.002
AVERAGE DAILY HEAD ON TOP OF LAYER 7	0.005	0.003	0.003	0.005	0.004	0.005
	0.005	0.005	0.002	0.001	0.000	0.000
STD. DEVIATION OF DAILY	0.000	0.001	0.002	0.000	0.002	0.000

Case 1

HEAD ON TOP OF LAYER 7 0.000 0.000 0.001 0.000 0.000 0.000

ANNUAL TOTALS FOR YEAR 8

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.20	95103.927	100.00
RUNOFF	0.419	1519.388	1.60
EVAPOTRANSPIRATION	19.590	71108.926	74.77
DRAINAGE COLLECTED FROM LAYER 3	0.3373	1224.294	1.29
PERC./LEAKAGE THROUGH LAYER 4	6.427333	23330.712	24.53
AVG. HEAD ON TOP OF LAYER 4	0.1718		
DRAINAGE COLLECTED FROM LAYER 6	7.3315	26612.894	27.98
PERC./LEAKAGE THROUGH LAYER 8	0.000001	0.005	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0031		
CHANGE IN WATER STORAGE	-1.477	-5361.579	-5.64
SOIL WATER AT START OF YEAR	221.254	803135.823	
SOIL WATER AT END OF YEAR	219.777	797774.244	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.001	0.00

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
 DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
 LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
 HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
 DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
 LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 9

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	0.51	3.06	2.77	6.60	0.23	3.79
	0.13	7.61	2.81	3.80	0.40	2.03
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	1.235	1.621	2.951	3.437	0.348	2.326
	0.506	4.434	3.510	3.651	0.540	1.067
LATERAL DRAINAGE COLLECTED FROM LAYER 3	0.0002	0.0037	0.0401	0.0000	0.0947	0.1084
	0.0420	0.0000	0.0708	0.0693	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.2221	0.3916	0.8797	0.0369	1.6214	1.6175
	0.8942	0.0154	1.3545	0.9492	0.0154	0.0102
LATERAL DRAINAGE COLLECTED FROM LAYER 6	0.1968	0.1567	1.0453	0.2093	0.6713	1.0205
	1.0545	1.0545	0.9081	1.0545	0.6540	0.1165
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Case 1

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.002	0.025	0.240	0.000	0.566	0.669
TOP OF LAYER 4	0.251	0.000	0.437	0.414	0.000	0.000
STD. DEVIATION OF DAILY	0.001	0.042	0.306	0.000	0.527	0.681
HEAD ON TOP OF LAYER 4	0.319	0.000	0.429	0.583	0.000	0.000
AVERAGE DAILY HEAD ON	0.002	0.001	0.005	0.002	0.003	0.005
TOP OF LAYER 7	0.005	0.005	0.004	0.005	0.004	0.001
STD. DEVIATION OF DAILY	0.001	0.001	0.000	0.001	0.002	0.000
HEAD ON TOP OF LAYER 7	0.000	0.000	0.001	0.000	0.001	0.000

ANNUAL TOTALS FOR YEAR 9

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.74	122473.531	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	25.626	93018.954	75.95
DRAINAGE COLLECTED FROM LAYER 3	0.4293	1558.156	1.27
PERC./LEAKAGE THROUGH LAYER 4	8.008055	29068.607	23.73
AVG. HEAD ON TOP OF LAYER 4	0.2171		
DRAINAGE COLLECTED FROM LAYER 6	8.1417	29553.881	24.13
PERC./LEAKAGE THROUGH LAYER 8	0.000001	0.005	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0036		
CHANGE IN WATER STORAGE	-0.457	-1657.464	-1.35
SOIL WATER AT START OF YEAR	219.777	797774.244	
SOIL WATER AT END OF YEAR	219.321	796116.780	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.002	0.00

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 4
 DRAIN #1: LATERAL DRAINAGE FROM LAYER 3 (RECIRCULATION AND COLLECTION)
 LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 4
 HEAD #2: AVERAGE HEAD ON TOP OF LAYER 7
 DRAIN #2: LATERAL DRAINAGE FROM LAYER 6 (RECIRCULATION AND COLLECTION)
 LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 8

MONTHLY TOTALS (IN INCHES) FOR YEAR 10

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.69	3.20	1.58	2.60	3.46	2.01
	2.79	1.18	8.51	0.14	2.97	1.29
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	1.923	0.588	2.616	2.722	3.114	2.527
	2.729	1.238	5.501	0.656	0.902	0.983

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LATERAL DRAINAGE COLLECTED	0.0000	0.0001	0.0488	0.0404	0.0000	0.0000
FROM LAYER 3	0.0000	0.0000	0.0034	0.0825	0.0148	0.0132
PERCOLATION/LEAKAGE THROUGH	0.0362	0.1221	1.0990	0.6606	0.0186	0.0106
LAYER 4	0.0082	0.0065	0.5026	1.5765	0.6734	0.5575
LATERAL DRAINAGE COLLECTED	0.0205	0.0579	0.4751	1.0205	0.3070	0.0731
FROM LAYER 6	0.0083	0.0065	0.1928	0.9514	1.0205	0.9496
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.000	0.001	0.292	0.250	0.000	0.000
TOP OF LAYER 4	0.000	0.000	0.021	0.493	0.092	0.080
STD. DEVIATION OF DAILY	0.001	0.001	0.325	0.422	0.000	0.000
HEAD ON TOP OF LAYER 4	0.000	0.000	0.039	0.463	0.171	0.122
AVERAGE DAILY HEAD ON	0.000	0.001	0.002	0.005	0.002	0.001
TOP OF LAYER 7	0.000	0.000	0.001	0.005	0.005	0.005
STD. DEVIATION OF DAILY	0.000	0.000	0.002	0.000	0.001	0.000
HEAD ON TOP OF LAYER 7	0.000	0.000	0.001	0.001	0.000	0.001

ANNUAL TOTALS FOR YEAR 10

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.42	114052.114	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	25.499	92559.920	81.16
DRAINAGE COLLECTED FROM LAYER 3	0.2032	737.618	0.65
PERC./LEAKAGE THROUGH LAYER 4	5.271882	19136.514	16.78
AVG. HEAD ON TOP OF LAYER 4	0.1023		
DRAINAGE COLLECTED FROM LAYER 6	5.0830	18450.740	16.18
PERC./LEAKAGE THROUGH LAYER 8	0.000001	0.005	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0022		
CHANGE IN WATER STORAGE	0.635	2303.833	2.02
SOIL WATER AT START OF YEAR	219.321	796116.780	
SOIL WATER AT END OF YEAR	219.955	798420.613	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.002	0.00

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 10

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	1.20	3.21	1.78	2.90	3.88	2.89

Case 1

1.12 3.59 3.65 3.37 1.45 1.89

STD. DEVIATIONS 1.01 1.38 1.21 1.86 2.03 1.83
0.83 2.73 2.47 2.42 1.05 1.13

RUNOFF

TOTALS 0.000 0.000 0.000 0.000 0.042 0.000
0.000 0.000 0.000 0.017 0.000 0.000

STD. DEVIATIONS 0.000 0.000 0.000 0.000 0.132 0.000
0.000 0.000 0.000 0.054 0.000 0.000

EVAPOTRANSPIRATION

TOTALS 1.338 1.542 2.266 2.399 3.179 2.559
1.236 2.745 2.834 2.020 0.986 1.155

STD. DEVIATIONS 0.542 0.560 0.702 1.049 1.308 1.559
0.751 1.572 1.491 1.086 0.344 0.372

LATERAL DRAINAGE COLLECTED FROM LAYER 3

TOTALS 0.0172 0.0056 0.0373 0.0167 0.0138 0.0428
0.0226 0.0027 0.0182 0.0305 0.0552 0.0350

STD. DEVIATIONS 0.0292 0.0141 0.0292 0.0311 0.0296 0.0674
0.0323 0.0076 0.0317 0.0408 0.0784 0.0762

PERCOLATION/LEAKAGE THROUGH LAYER 4

TOTALS 0.5017 0.3158 0.8179 0.3474 0.4454 0.6906
0.3966 0.1055 0.4675 0.6589 0.8761 0.6899

STD. DEVIATIONS 0.4187 0.3702 0.5351 0.4552 0.5469 0.8760
0.5423 0.1529 0.5384 0.6362 0.9248 0.7910

LATERAL DRAINAGE COLLECTED FROM LAYER 6

TOTALS 0.6369 0.4264 0.6329 0.5735 0.4998 0.5064
0.4589 0.4374 0.4508 0.4974 0.6201 0.5939

STD. DEVIATIONS 0.4668 0.3308 0.4059 0.4366 0.3997 0.4409
0.4726 0.5317 0.3362 0.3944 0.4240 0.4734

PERCOLATION/LEAKAGE THROUGH LAYER 8

TOTALS 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

STD. DEVIATIONS 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 4

AVERAGES 0.1030 0.0375 0.2233 0.1036 0.0826 0.2641
0.1351 0.0160 0.1125 0.1824 0.3409 0.2092

STD. DEVIATIONS 0.1741 0.0934 0.1741 0.1919 0.1768 0.4159
0.1931 0.0455 0.1954 0.2438 0.4838 0.4553

DAILY AVERAGE HEAD ON TOP OF LAYER 7

AVERAGES 0.0032 0.0027 0.0032 0.0031 0.0027 0.0028
0.0024 0.0022 0.0025 0.0027 0.0032 0.0030

STD. DEVIATIONS 0.0021 0.0016 0.0018 0.0020 0.0017 0.0020
0.0022 0.0025 0.0015 0.0017 0.0020 0.0022

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 10

	INCHES	CU. FEET	PERCENT
PRECIPITATION	30.92 (7.046)	112219.0	100.00
RUNOFF	0.059 (0.1373)	213.92	0.191
EVAPOTRANSPIRATION	24.260 (4.1391)	88062.79	78.474
LATERAL DRAINAGE COLLECTED FROM LAYER 3	0.29754 (0.23331)	1080.053	0.96245
PERCOLATION/LEAKAGE THROUGH LAYER 4	6.31326 (3.26522)	22916.627	20.42134
AVERAGE HEAD ON TOP OF LAYER 4	0.151 (0.118)		
LATERAL DRAINAGE COLLECTED FROM LAYER 6	6.33436 (2.72278)	22993.243	20.48962
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.00000 (0.00000)	0.004	0.00000
AVERAGE HEAD ON TOP OF LAYER 7	0.003 (0.001)		
CHANGE IN WATER STORAGE	-0.036 (2.3669)	-131.01	-0.117

PEAK DAILY VALUES FOR YEARS 1 THROUGH 10 and their dates (DDDDYY)

	(INCHES)	(CU. FT.)
PRECIPITATION	5.09	18476.29728 1290008
RUNOFF	0.419	1519.38840 1290008
DRAINAGE COLLECTED FROM LAYER 3	0.00970	35.21570 3500002
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.097669	354.53178 3500002
AVERAGE HEAD ON TOP OF LAYER 4	1.796	
MAXIMUM HEAD ON TOP OF LAYER 4	3.518	
LOCATION OF MAXIMUM HEAD IN LAYER 3 (DISTANCE FROM DRAIN)	0.0 FEET	
DRAINAGE COLLECTED FROM LAYER 6	0.03402	123.47247 10001
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.000000	0.00003 2570002
AVERAGE HEAD ON TOP OF LAYER 7	0.005	
MAXIMUM HEAD ON TOP OF LAYER 7	0.005	
LOCATION OF MAXIMUM HEAD IN LAYER 6 (DISTANCE FROM DRAIN)	0.0 FEET	
SNOW WATER	1.95	7072.4948 3430003
MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4570	
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.0580	

*** Maximum heads are computed using McEnroe's equations. ***

Case 1

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

FINAL WATER STORAGE AT END OF YEAR 10

LAYER	(INCHES)	(VOL/VOL)
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1	2.2911	0.1909
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2	189.2160	0.2920
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3	7.0080	0.2920
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4	0.4099	0.4270
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5	9.6252	0.4178
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6	0.0051	0.0206
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7	0.0000	0.0000
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8	11.4000	0.4750
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SNOW WATER		0.000
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