

ATTACHMENT 1  
ENERGYSOLUTIONS  
CLASS A WEST (CAW) CELL  
HELP INFILTRATION MODEL  
OUTPUT FILES

Prepared for



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Prepared by

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*Document 4104K.110419*

April 19, 2011

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**
**          HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
**          HELP MODEL VERSION 3.06   (17 AUGUST 1996)
**          DEVELOPED BY ENVIRONMENTAL LABORATORY
**          USAE WATERWAYS EXPERIMENT STATION
**          FOR USEPA RISK REDUCTION ENGINEERING LABORATORY
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PRECIPITATION DATA FILE:  c:\projects\4101K\help3\caw2011\U100.D4
TEMPERATURE DATA FILE:   c:\projects\4101K\help3\caw2011\U100.D7
SOLAR RADIATION DATA FILE: c:\projects\4101K\help3\caw2011\U100.D13
EVAPOTRANSPIRATION DATA: c:\projects\4101K\help3\caw2011\U100.D11
SOIL AND DESIGN DATA FILE: c:\projects\4101K\help3\caw2011\MT6-3.D10
OUTPUT DATA FILE:        c:\projects\4101K\help3\caw2011\MT6-3.OUT
TIME:  9:58      DATE:  4/ 6/2011

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*****
TITLE:  CAW CELL - TOP SLOPE - 6"FILTER - 942L - RUN3
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NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
       WERE SPECIFIED BY THE USER.

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          LAYER 1
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 18.00  INCHES
POROSITY           =  0.1900 VOL/VOL
FIELD CAPACITY     =  0.0240 VOL/VOL
WILTING POINT     =  0.0070 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0146 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 42.0000000000  CM/SEC

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          LAYER 2
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          =  6.00  INCHES
POROSITY           =  0.1900 VOL/VOL
FIELD CAPACITY     =  0.0240 VOL/VOL
WILTING POINT     =  0.0070 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0240 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 42.0000000000  CM/SEC

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          LAYER 3
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 12.00  INCHES
POROSITY           =  0.3100 VOL/VOL
FIELD CAPACITY     =  0.2000 VOL/VOL
WILTING POINT     =  0.0250 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.1322 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.400000019000E-02 CM/SEC

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          LAYER 4
          -----
          TYPE 2 - LATERAL DRAINAGE LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          =  6.00  INCHES
POROSITY           =  0.2800 VOL/VOL
FIELD CAPACITY     =  0.0320 VOL/VOL
WILTING POINT     =  0.0130 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0320 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 3.500000000000  CM/SEC
SLOPE              =  4.00  PERCENT
DRAINAGE LENGTH    = 942.0  FEET

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          LAYER 5
          -----
          TYPE 3 - BARRIER SOIL LINER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 12.00  INCHES
POROSITY           =  0.4300 VOL/VOL
FIELD CAPACITY     =  0.3900 VOL/VOL
WILTING POINT     =  0.2800 VOL/VOL

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INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000006000E-07 CM/SEC

LAYER 6

TYPE 1 - VERTICAL PERCOLATION LAYER

MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 12.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.3900 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

LAYER 7

TYPE 1 - VERTICAL PERCOLATION LAYER

MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 100.00 INCHES  
 POROSITY = 0.4370 VOL/VOL  
 FIELD CAPACITY = 0.0620 VOL/VOL  
 WILTING POINT = 0.0240 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.1087 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000024000E-03 CM/SEC

LAYER 8

TYPE 3 - BARRIER SOIL LINER

MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 24.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #21 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 4.% AND A SLOPE LENGTH OF 942. FEET.  
 SCS RUNOFF CURVE NUMBER = 68.30  
 FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT  
 AREA PROJECTED ON HORIZONTAL PLANE = 2.163 ACRES  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 INITIAL WATER IN EVAPORATIVE ZONE = 0.263 INCHES  
 UPPER LIMIT OF EVAPORATIVE STORAGE = 3.420 INCHES  
 LOWER LIMIT OF EVAPORATIVE STORAGE = 0.126 INCHES  
 INITIAL SNOW WATER = 0.000 INCHES  
 INITIAL WATER IN LAYER MATERIALS = 33.215 INCHES  
 TOTAL INITIAL WATER = 33.215 INCHES  
 TOTAL SUBSURFACE INFLOW = 0.00 INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM SALT LAKE CITY UTAH  
 STATION LATITUDE = 40.69 DEGREES  
 MAXIMUM LEAF AREA INDEX = 0.00  
 START OF GROWING SEASON (JULIAN DATE) = 117  
 END OF GROWING SEASON (JULIAN DATE) = 289  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 AVERAGE ANNUAL WIND SPEED = 7.20 MPH  
 AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 50.50 %  
 AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 28.60 %  
 AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 22.70 %  
 AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 47.90 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
0.79	0.86	0.85	1.18	0.95	0.89
0.30	0.33	0.40	0.74	0.50	0.51

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
29.10	32.40	41.40	49.10	60.30	69.60
79.50	76.80	64.90	50.20	37.00	27.70

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH  
 AND STATION LATITUDE = 40.69 DEGREES

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 100

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-----						
PRECIPITATION						
-----						
TOTALS	0.73	0.91	0.90	1.10	0.94	1.02
	0.29	0.33	0.39	0.81	0.50	0.54
STD. DEVIATIONS	0.37	0.42	0.42	0.47	0.54	0.72
	0.24	0.26	0.32	0.57	0.28	0.22
RUNOFF						
-----						
TOTALS	0.004	0.022	0.009	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATIONS	0.014	0.061	0.033	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
-----						
TOTALS	0.476	0.563	0.606	0.658	0.534	0.561
	0.206	0.187	0.214	0.342	0.339	0.434
STD. DEVIATIONS	0.196	0.208	0.249	0.285	0.316	0.389
	0.127	0.123	0.175	0.241	0.153	0.164
LATERAL DRAINAGE COLLECTED FROM LAYER 4						
-----						
TOTALS	0.0431	0.2480	0.5822	0.4394	0.3780	0.4583
	0.1158	0.1227	0.1557	0.4502	0.1665	0.0314
STD. DEVIATIONS	0.1092	0.4215	0.3771	0.2284	0.2651	0.3484
	0.1328	0.1505	0.1635	0.3734	0.1812	0.0638
PERCOLATION/LEAKAGE THROUGH LAYER 5						
-----						
TOTALS	0.0011	0.0039	0.0114	0.0140	0.0117	0.0130
	0.0048	0.0060	0.0069	0.0110	0.0073	0.0027
STD. DEVIATIONS	0.0028	0.0052	0.0048	0.0050	0.0061	0.0065
	0.0041	0.0058	0.0055	0.0070	0.0060	0.0042
PERCOLATION/LEAKAGE THROUGH LAYER 8						
-----						
TOTALS	0.0116	0.0065	0.0089	0.0091	0.0084	0.0083
	0.0061	0.0068	0.0070	0.0079	0.0069	0.0061
STD. DEVIATIONS	0.0556	0.0020	0.0018	0.0018	0.0021	0.0021
	0.0020	0.0022	0.0018	0.0023	0.0021	0.0018

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 AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)  
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DAILY AVERAGE HEAD ON TOP OF LAYER 5						
-----						
AVERAGES	0.0017	0.0105	0.0224	0.0175	0.0145	0.0182
	0.0045	0.0047	0.0062	0.0173	0.0066	0.0012
STD. DEVIATIONS	0.0042	0.0177	0.0145	0.0090	0.0102	0.0138
	0.0051	0.0058	0.0065	0.0143	0.0072	0.0025
DAILY AVERAGE HEAD ON TOP OF LAYER 8						
-----						
AVERAGES	0.0039	0.0001	0.0001	0.0001	0.0001	0.0001
	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
STD. DEVIATIONS	0.0387	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 100

	INCHES	CU. FEET	PERCENT
-----			
PRECIPITATION	8.44 ( 1.520)	66273.8	100.00

RUNOFF	0.035	( 0.0825)	275.16	0.415
EVAPOTRANSPIRATION	5.121	( 0.8210)	40206.52	60.667
LATERAL DRAINAGE COLLECTED FROM LAYER 4	3.19126	( 0.84324)	25056.820	37.80805
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.09365	( 0.01661)	735.281	1.10946
AVERAGE HEAD ON TOP OF LAYER 5	0.010	( 0.003)		
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.09365	( 0.05277)	735.289	1.10947
AVERAGE HEAD ON TOP OF LAYER 8	0.000	( 0.003)		
CHANGE IN WATER STORAGE	0.000	( 0.1747)	-0.03	0.000

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 100		
	(INCHES)	(CU. FT.)
PRECIPITATION	1.15	9029.443
RUNOFF	0.202	1587.8480
DRAINAGE COLLECTED FROM LAYER 4	1.07455	8437.05273
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.001839	14.43946
AVERAGE HEAD ON TOP OF LAYER 5	1.277	
MAXIMUM HEAD ON TOP OF LAYER 5	2.494	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	21.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.036082	283.30496
AVERAGE HEAD ON TOP OF LAYER 8	1.458	
SNOW WATER	1.22	9606.3652
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.1073
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.0070

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

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FINAL WATER STORAGE AT END OF YEAR 100		
LAYER	(INCHES)	(VOL/VOL)
1	0.2622	0.0146
2	0.1440	0.0240
3	1.5868	0.1322
4	0.1920	0.0320
5	5.1600	0.4300
6	4.6800	0.3900
7	10.8699	0.1087
8	10.3200	0.4300
SNOW WATER	0.000	

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**
**          HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
**          HELP MODEL VERSION 3.06   (17 AUGUST 1996)
**          DEVELOPED BY ENVIRONMENTAL LABORATORY
**          USAE WATERWAYS EXPERIMENT STATION
**          FOR USEPA RISK REDUCTION ENGINEERING LABORATORY
**
**
*****
*****
PRECIPITATION DATA FILE:  c:\projects\4101K\help3\caw2011\U100.D4
TEMPERATURE DATA FILE:   c:\projects\4101K\help3\caw2011\U100.D7
SOLAR RADIATION DATA FILE: c:\projects\4101K\help3\caw2011\U100.D13
EVAPOTRANSPIRATION DATA: c:\projects\4101K\help3\caw2011\U100.D11
SOIL AND DESIGN DATA FILE: c:\projects\4101K\help3\caw2011\Ms6-2.D10
OUTPUT DATA FILE:        c:\projects\4101K\help3\caw2011\Ms6-2.OUT
TIME: 10: 9      DATE:  4/ 6/2011

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*****
TITLE:  CAW CELL - SIDE SLOPE 6"FILTER - 188L - NO RUN ON - RUN2
*****
NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
      WERE SPECIFIED BY THE USER.

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          LAYER 1
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 18.00  INCHES
POROSITY           =  0.1700 VOL/VOL
FIELD CAPACITY    =  0.0070 VOL/VOL
WILTING POINT     =  0.0030 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0115 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 80.0000000000  CM/SEC

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          LAYER 2
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          =  6.00  INCHES
POROSITY           =  0.1900 VOL/VOL
FIELD CAPACITY    =  0.0240 VOL/VOL
WILTING POINT     =  0.0070 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0240 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 42.0000000000  CM/SEC

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          LAYER 3
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 12.00  INCHES
POROSITY           =  0.3100 VOL/VOL
FIELD CAPACITY    =  0.2000 VOL/VOL
WILTING POINT     =  0.0250 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.1322 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.400000019000E-02 CM/SEC

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          LAYER 4
          -----
          TYPE 2 - LATERAL DRAINAGE LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          =  6.00  INCHES
POROSITY           =  0.2800 VOL/VOL
FIELD CAPACITY    =  0.0320 VOL/VOL
WILTING POINT     =  0.0130 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0320 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 3.500000000000  CM/SEC
SLOPE              = 20.00  PERCENT
DRAINAGE LENGTH    = 188.0  FEET

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          LAYER 5
          -----
          TYPE 3 - BARRIER SOIL LINER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 12.00  INCHES
POROSITY           =  0.4300 VOL/VOL
FIELD CAPACITY    =  0.3900 VOL/VOL
WILTING POINT     =  0.2800 VOL/VOL

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INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000006000E-07 CM/SEC

LAYER 6

-----  
 TYPE 1 - VERTICAL PERCOLATION LAYER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 12.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.3900 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

LAYER 7

-----  
 TYPE 1 - VERTICAL PERCOLATION LAYER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 100.00 INCHES  
 POROSITY = 0.4370 VOL/VOL  
 FIELD CAPACITY = 0.0620 VOL/VOL  
 WILTING POINT = 0.0240 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.1069 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000024000E-03 CM/SEC

LAYER 8

-----  
 TYPE 3 - BARRIER SOIL LINER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 24.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

-----  
 NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT  
 SOIL DATA BASE USING SOIL TEXTURE #21 WITH BARE  
 GROUND CONDITIONS, A SURFACE SLOPE OF 20.% AND  
 A SLOPE LENGTH OF 188. FEET.  
 SCS RUNOFF CURVE NUMBER = 72.70  
 FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT  
 AREA PROJECTED ON HORIZONTAL PLANE = 0.432 ACRES  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 INITIAL WATER IN EVAPORATIVE ZONE = 0.207 INCHES  
 UPPER LIMIT OF EVAPORATIVE STORAGE = 3.060 INCHES  
 LOWER LIMIT OF EVAPORATIVE STORAGE = 0.054 INCHES  
 INITIAL SNOW WATER = 0.000 INCHES  
 INITIAL WATER IN LAYER MATERIALS = 32.979 INCHES  
 TOTAL INITIAL WATER = 32.979 INCHES  
 TOTAL SUBSURFACE INFLOW = 0.00 INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

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 NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM  
 SALT LAKE CITY UTAH  
 STATION LATITUDE = 40.69 DEGREES  
 MAXIMUM LEAF AREA INDEX = 0.00  
 START OF GROWING SEASON (JULIAN DATE) = 117  
 END OF GROWING SEASON (JULIAN DATE) = 289  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 AVERAGE ANNUAL WIND SPEED = 7.20 MPH  
 AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 50.50 %  
 AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 28.60 %  
 AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 22.70 %  
 AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 47.90 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
0.79	0.86	0.85	1.18	0.95	0.89
0.30	0.33	0.40	0.74	0.50	0.51

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
29.10	32.40	41.40	49.10	60.30	69.60
79.50	76.80	64.90	50.20	37.00	27.70

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH  
 AND STATION LATITUDE = 40.69 DEGREES

\*\*\*\*\*  
 AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 100  
 -----

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.73	0.91	0.90	1.10	0.94	1.02
STD. DEVIATIONS	0.29	0.33	0.39	0.81	0.50	0.54
	0.37	0.42	0.42	0.47	0.54	0.72
	0.24	0.26	0.32	0.57	0.28	0.22
RUNOFF						
TOTALS	0.005	0.025	0.011	0.000	0.000	0.000
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.017	0.068	0.037	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.473	0.548	0.567	0.673	0.559	0.583
STD. DEVIATIONS	0.205	0.191	0.226	0.364	0.346	0.432
	0.192	0.204	0.255	0.291	0.334	0.398
	0.136	0.134	0.192	0.251	0.163	0.166
LATERAL DRAINAGE COLLECTED FROM LAYER 4						
TOTALS	0.0499	0.2871	0.6087	0.4339	0.3587	0.4411
STD. DEVIATIONS	0.0985	0.1191	0.1457	0.4393	0.1411	0.0300
	0.1282	0.4576	0.4131	0.2571	0.2874	0.3793
	0.1198	0.1397	0.1568	0.3875	0.1550	0.0523
PERCOLATION/LEAKAGE THROUGH LAYER 5						
TOTALS	0.0007	0.0016	0.0057	0.0096	0.0076	0.0084
STD. DEVIATIONS	0.0066	0.0091	0.0088	0.0090	0.0084	0.0042
	0.0019	0.0029	0.0035	0.0033	0.0036	0.0033
	0.0039	0.0048	0.0047	0.0044	0.0048	0.0041
PERCOLATION/LEAKAGE THROUGH LAYER 8						
TOTALS	0.0079	0.0034	0.0065	0.0084	0.0071	0.0072
STD. DEVIATIONS	0.0063	0.0077	0.0071	0.0072	0.0067	0.0041
	0.0537	0.0022	0.0020	0.0021	0.0023	0.0022
	0.0024	0.0030	0.0027	0.0028	0.0028	0.0027

-----  
 AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)  
 -----

DAILY AVERAGE HEAD ON TOP OF LAYER 5						
AVERAGES	0.0003	0.0017	0.0033	0.0024	0.0020	0.0025
STD. DEVIATIONS	0.0005	0.0007	0.0008	0.0024	0.0008	0.0002
	0.0007	0.0027	0.0022	0.0014	0.0016	0.0021
	0.0007	0.0008	0.0009	0.0021	0.0009	0.0003
DAILY AVERAGE HEAD ON TOP OF LAYER 8						
AVERAGES	0.0036	0.0000	0.0001	0.0001	0.0001	0.0001
STD. DEVIATIONS	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000
	0.0359	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

\*\*\*\*\*  
 AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 100  
 -----

	INCHES		CU. FEET	PERCENT
PRECIPITATION	8.44	( 1.520)	13224.1	100.00
RUNOFF	0.041	( 0.0932)	63.92	0.483



EVAPOTRANSPIRATION	5.167 ( 0.8575)	8095.20	61.215
LATERAL DRAINAGE COLLECTED FROM LAYER 4	3.15313 ( 0.85185)	4940.033	37.35625
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.07976 ( 0.01148)	124.955	0.94490
AVERAGE HEAD ON TOP OF LAYER 5	0.001 ( 0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.07974 ( 0.05308)	124.931	0.94472
AVERAGE HEAD ON TOP OF LAYER 8	0.000 ( 0.003)		
CHANGE IN WATER STORAGE	0.000 ( 0.1828)	0.03	0.000

\*\*\*\*\*  
\*\*\*\*\*

PEAK DAILY VALUES FOR YEARS 1 THROUGH 100

-----

	(INCHES)	(CU. FT.)
	-----	-----
PRECIPITATION	1.15	1801.714
RUNOFF	0.224	350.7012
DRAINAGE COLLECTED FROM LAYER 4	1.72615	2704.37036
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.001101	1.72422
AVERAGE HEAD ON TOP OF LAYER 5	0.290	
MAXIMUM HEAD ON TOP OF LAYER 5	0.172	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.036001	56.40230
AVERAGE HEAD ON TOP OF LAYER 8	1.401	
SNOW WATER	1.22	1916.8318
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.0996
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.0030

\*\*\* Maximum heads are computed using McEnroe's equations. \*\*\*  
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 100

-----

LAYER	(INCHES)	(VOL/VOL)
----	-----	-----
1	0.2073	0.0115
2	0.1440	0.0240
3	1.5868	0.1322
4	0.1920	0.0320
5	5.1600	0.4300
6	4.6800	0.3900
7	10.6915	0.1069
8	10.3200	0.4300
SNOW WATER	0.000	

\*\*\*\*\*

```

*****
*****
**
**
**          HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
**          HELP MODEL VERSION 3.06   (17 AUGUST 1996)
**          DEVELOPED BY ENVIRONMENTAL LABORATORY
**          USAE WATERWAYS EXPERIMENT STATION
**          FOR USEPA RISK REDUCTION ENGINEERING LABORATORY
**
**
*****

```

```

*****
*****
PRECIPITATION DATA FILE:  c:\projects\4101K\help3\caw2011\U100.D4
TEMPERATURE DATA FILE:   c:\projects\4101K\help3\caw2011\U100.D7
SOLAR RADIATION DATA FILE: c:\projects\4101K\help3\caw2011\U100.D13
EVAPOTRANSPIRATION DATA: c:\projects\4101K\help3\caw2011\U100.D11
SOIL AND DESIGN DATA FILE: c:\projects\4101K\help3\caw2011\Ms6-3r1.D10
OUTPUT DATA FILE:        c:\projects\4101K\help3\caw2011\Ms6-3r1.OUT
TIME:  10:24      DATE:  4/ 6/2011

```

```

*****
*****
TITLE:  CAW CELL - SIDE SLOPE 6"FILTER - 188L - RUN ON - RUN3
*****
NOTE:   INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
        WERE SPECIFIED BY THE USER.

```

```

                LAYER 1
                -----
                TYPE 1 - VERTICAL PERCOLATION LAYER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           = 18.00  INCHES
POROSITY            =  0.1700 VOL/VOL
FIELD CAPACITY     =  0.0070 VOL/VOL
WILTING POINT     =  0.0030 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0115 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 80.0000000000  CM/SEC

```

```

                LAYER 2
                -----
                TYPE 1 - VERTICAL PERCOLATION LAYER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           =  6.00  INCHES
POROSITY            =  0.1900 VOL/VOL
FIELD CAPACITY     =  0.0240 VOL/VOL
WILTING POINT     =  0.0070 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0240 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 42.0000000000  CM/SEC

```

```

                LAYER 3
                -----
                TYPE 1 - VERTICAL PERCOLATION LAYER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           = 12.00  INCHES
POROSITY            =  0.3100 VOL/VOL
FIELD CAPACITY     =  0.2000 VOL/VOL
WILTING POINT     =  0.0250 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.1322 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.400000019000E-02 CM/SEC

```

```

                LAYER 4
                -----
                TYPE 2 - LATERAL DRAINAGE LAYER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           =  6.00  INCHES
POROSITY            =  0.2800 VOL/VOL
FIELD CAPACITY     =  0.0320 VOL/VOL
WILTING POINT     =  0.0130 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0320 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 3.500000000000  CM/SEC
SLOPE              = 20.00  PERCENT
DRAINAGE LENGTH    = 1141.0  FEET

```

```

                LAYER 5
                -----
                TYPE 3 - BARRIER SOIL LINER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           = 12.00  INCHES
POROSITY            =  0.4300 VOL/VOL
FIELD CAPACITY     =  0.3900 VOL/VOL
WILTING POINT     =  0.2800 VOL/VOL

```

INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000006000E-07 CM/SEC

LAYER 6

-----  
 TYPE 1 - VERTICAL PERCOLATION LAYER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 12.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.3900 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

LAYER 7

-----  
 TYPE 1 - VERTICAL PERCOLATION LAYER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 100.00 INCHES  
 POROSITY = 0.4370 VOL/VOL  
 FIELD CAPACITY = 0.0620 VOL/VOL  
 WILTING POINT = 0.0240 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.1142 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000024000E-03 CM/SEC

LAYER 8

-----  
 TYPE 3 - BARRIER SOIL LINER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 24.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

-----  
 NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT  
 SOIL DATA BASE USING SOIL TEXTURE #21 WITH BARE  
 GROUND CONDITIONS, A SURFACE SLOPE OF 20.% AND  
 A SLOPE LENGTH OF 1141. FEET.  
 SCS RUNOFF CURVE NUMBER = 69.50  
 FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT  
 AREA PROJECTED ON HORIZONTAL PLANE = 0.432 ACRES  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 INITIAL WATER IN EVAPORATIVE ZONE = 0.207 INCHES  
 UPPER LIMIT OF EVAPORATIVE STORAGE = 3.060 INCHES  
 LOWER LIMIT OF EVAPORATIVE STORAGE = 0.054 INCHES  
 INITIAL SNOW WATER = 0.000 INCHES  
 INITIAL WATER IN LAYER MATERIALS = 33.709 INCHES  
 TOTAL INITIAL WATER = 33.709 INCHES  
 TOTAL SUBSURFACE INFLOW = 0.00 INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

-----  
 NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM  
 SALT LAKE CITY UTAH  
 STATION LATITUDE = 40.69 DEGREES  
 MAXIMUM LEAF AREA INDEX = 0.00  
 START OF GROWING SEASON (JULIAN DATE) = 117  
 END OF GROWING SEASON (JULIAN DATE) = 289  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 AVERAGE ANNUAL WIND SPEED = 7.20 MPH  
 AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 50.50 %  
 AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 28.60 %  
 AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 22.70 %  
 AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 47.90 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
0.79	0.86	0.85	1.18	0.95	0.89
0.30	0.33	0.40	0.74	0.50	0.51

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
29.10	32.40	41.40	49.10	60.30	69.60
79.50	76.80	64.90	50.20	37.00	27.70

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH  
 AND STATION LATITUDE = 40.69 DEGREES

\*\*\*\*\*  
 AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 100  
 -----

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.73	0.91	0.90	1.10	0.94	1.02
STD. DEVIATIONS	0.29	0.33	0.39	0.81	0.50	0.54
	0.37	0.42	0.42	0.47	0.54	0.72
	0.24	0.26	0.32	0.57	0.28	0.22
RUNOFF						
TOTALS	0.005	0.025	0.011	0.000	0.000	0.000
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.017	0.068	0.037	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.473	0.550	0.575	0.669	0.558	0.581
STD. DEVIATIONS	0.210	0.192	0.228	0.360	0.349	0.433
	0.193	0.204	0.253	0.284	0.324	0.390
	0.137	0.136	0.191	0.246	0.162	0.165
LATERAL DRAINAGE COLLECTED FROM LAYER 4						
TOTALS	0.0494	0.2828	0.5952	0.4270	0.3519	0.4347
STD. DEVIATIONS	0.0933	0.1097	0.1376	0.4344	0.1331	0.0260
	0.1269	0.4540	0.4077	0.2558	0.2859	0.3873
	0.1184	0.1388	0.1554	0.3906	0.1574	0.0520
PERCOLATION/LEAKAGE THROUGH LAYER 5						
TOTALS	0.0013	0.0036	0.0121	0.0187	0.0153	0.0162
STD. DEVIATIONS	0.0114	0.0148	0.0145	0.0171	0.0143	0.0068
	0.0032	0.0054	0.0063	0.0058	0.0063	0.0065
	0.0067	0.0088	0.0081	0.0083	0.0083	0.0067
PERCOLATION/LEAKAGE THROUGH LAYER 8						
TOTALS	0.0116	0.0077	0.0135	0.0157	0.0138	0.0134
STD. DEVIATIONS	0.0114	0.0137	0.0127	0.0131	0.0119	0.0075
	0.0624	0.0039	0.0034	0.0036	0.0038	0.0038
	0.0043	0.0053	0.0048	0.0051	0.0051	0.0046

-----  
 AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)  
 -----

DAILY AVERAGE HEAD ON TOP OF LAYER 5						
AVERAGES	0.0005	0.0030	0.0058	0.0043	0.0034	0.0044
STD. DEVIATIONS	0.0009	0.0011	0.0014	0.0042	0.0014	0.0003
	0.0012	0.0048	0.0039	0.0025	0.0028	0.0039
	0.0011	0.0013	0.0016	0.0038	0.0016	0.0005
DAILY AVERAGE HEAD ON TOP OF LAYER 8						
AVERAGES	0.0049	0.0001	0.0001	0.0002	0.0001	0.0001
STD. DEVIATIONS	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	0.0481	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0001	0.0001	0.0001	0.0001	0.0000

\*\*\*\*\*  
 AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 100  
 -----

	INCHES		CU. FEET	PERCENT
PRECIPITATION	8.44	( 1.520)	13224.1	100.00
RUNOFF	0.041	( 0.0931)	63.78	0.482
EVAPOTRANSPIRATION	5.179	( 0.8455)	8113.85	61.356

LATERAL DRAINAGE COLLECTED FROM LAYER 4	3.07503 ( 0.85305)	4817.667	36.43092
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.14605 ( 0.01960)	228.811	1.73025
AVERAGE HEAD ON TOP OF LAYER 5	0.003 ( 0.001)		
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.14603 ( 0.06062)	228.785	1.73006
AVERAGE HEAD ON TOP OF LAYER 8	0.001 ( 0.004)		
CHANGE IN WATER STORAGE	0.000 ( 0.1846)	0.03	0.000

\*\*\*\*\*  
\*\*\*\*\*

PEAK DAILY VALUES FOR YEARS 1 THROUGH 100		
	(INCHES)	(CU. FT.)
PRECIPITATION	1.15	1801.714
RUNOFF	0.224	350.1931
DRAINAGE COLLECTED FROM LAYER 4	1.66160	2603.23486
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.001731	2.71182
AVERAGE HEAD ON TOP OF LAYER 5	0.497	
MAXIMUM HEAD ON TOP OF LAYER 5 LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	1.046 0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.036331	56.92027
AVERAGE HEAD ON TOP OF LAYER 8	1.634	
SNOW WATER	1.22	1916.8318
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.0997
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.0030

\*\*\* Maximum heads are computed using McEnroe's equations. \*\*\*  
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 100		
LAYER	(INCHES)	(VOL/VOL)
1	0.2070	0.0115
2	0.1440	0.0240
3	1.5868	0.1322
4	0.1920	0.0320
5	5.1600	0.4300
6	4.6800	0.3900
7	11.4216	0.1142
8	10.3200	0.4300
SNOW WATER	0.000	

\*\*\*\*\*

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*****
*****
**
**
**          HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
**          HELP MODEL VERSION 3.06   (17 AUGUST 1996)
**          DEVELOPED BY ENVIRONMENTAL LABORATORY
**          USAE WATERWAYS EXPERIMENT STATION
**          FOR USEPA RISK REDUCTION ENGINEERING LABORATORY
**
**
*****

```

```

*****
*****
PRECIPITATION DATA FILE:  c:\projects\4101K\help3\caw2011\U100.D4
TEMPERATURE DATA FILE:   c:\projects\4101K\help3\caw2011\U100.D7
SOLAR RADIATION DATA FILE: c:\projects\4101K\help3\caw2011\U100.D13
EVAPOTRANSPIRATION DATA: c:\projects\4101K\help3\caw2011\U100.D11
SOIL AND DESIGN DATA FILE: c:\projects\4101K\help3\caw2011\Ms6-3r2.D10
OUTPUT DATA FILE:        c:\projects\4101K\help3\caw2011\Ms6-3r2.OUT
TIME:  10:34      DATE:  4/ 6/2011

```

```

*****
*****
TITLE:  CAW CELL - SIDE SLOPE 6"FILTER - 188L - RUN ON 2nd IT - RUN3
*****
NOTE:   INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
        WERE SPECIFIED BY THE USER.

```

```

                LAYER 1
                -----
                TYPE 1 - VERTICAL PERCOLATION LAYER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           = 18.00  INCHES
POROSITY            =  0.1700 VOL/VOL
FIELD CAPACITY     =  0.0070 VOL/VOL
WILTING POINT     =  0.0030 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0115 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 80.0000000000  CM/SEC

```

```

                LAYER 2
                -----
                TYPE 1 - VERTICAL PERCOLATION LAYER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           =  6.00  INCHES
POROSITY            =  0.1900 VOL/VOL
FIELD CAPACITY     =  0.0240 VOL/VOL
WILTING POINT     =  0.0070 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0240 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 42.0000000000  CM/SEC

```

```

                LAYER 3
                -----
                TYPE 1 - VERTICAL PERCOLATION LAYER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           = 12.00  INCHES
POROSITY            =  0.3100 VOL/VOL
FIELD CAPACITY     =  0.2000 VOL/VOL
WILTING POINT     =  0.0250 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.1322 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.400000019000E-02 CM/SEC

```

```

                LAYER 4
                -----
                TYPE 2 - LATERAL DRAINAGE LAYER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           =  6.00  INCHES
POROSITY            =  0.2800 VOL/VOL
FIELD CAPACITY     =  0.0320 VOL/VOL
WILTING POINT     =  0.0130 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0320 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 3.500000000000  CM/SEC
SLOPE               = 20.00  PERCENT
DRAINAGE LENGTH    = 1166.0  FEET

```

```

                LAYER 5
                -----
                TYPE 3 - BARRIER SOIL LINER
                MATERIAL TEXTURE NUMBER  0
THICKNESS           = 12.00  INCHES
POROSITY            =  0.4300 VOL/VOL
FIELD CAPACITY     =  0.3900 VOL/VOL
WILTING POINT     =  0.2800 VOL/VOL

```

INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000006000E-07 CM/SEC

LAYER 6

-----  
 TYPE 1 - VERTICAL PERCOLATION LAYER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 12.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.3900 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

LAYER 7

-----  
 TYPE 1 - VERTICAL PERCOLATION LAYER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 100.00 INCHES  
 POROSITY = 0.4370 VOL/VOL  
 FIELD CAPACITY = 0.0620 VOL/VOL  
 WILTING POINT = 0.0240 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.1131 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000024000E-03 CM/SEC

LAYER 8

-----  
 TYPE 3 - BARRIER SOIL LINER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 24.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

-----  
 NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT  
 SOIL DATA BASE USING SOIL TEXTURE #21 WITH BARE  
 GROUND CONDITIONS, A SURFACE SLOPE OF 20.% AND  
 A SLOPE LENGTH OF 1166. FEET.  
 SCS RUNOFF CURVE NUMBER = 69.40  
 FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT  
 AREA PROJECTED ON HORIZONTAL PLANE = 0.432 ACRES  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 INITIAL WATER IN EVAPORATIVE ZONE = 0.207 INCHES  
 UPPER LIMIT OF EVAPORATIVE STORAGE = 3.060 INCHES  
 LOWER LIMIT OF EVAPORATIVE STORAGE = 0.054 INCHES  
 INITIAL SNOW WATER = 0.000 INCHES  
 INITIAL WATER IN LAYER MATERIALS = 33.599 INCHES  
 TOTAL INITIAL WATER = 33.599 INCHES  
 TOTAL SUBSURFACE INFLOW = 0.00 INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

-----  
 NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM  
 SALT LAKE CITY UTAH  
 STATION LATITUDE = 40.69 DEGREES  
 MAXIMUM LEAF AREA INDEX = 0.00  
 START OF GROWING SEASON (JULIAN DATE) = 117  
 END OF GROWING SEASON (JULIAN DATE) = 289  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 AVERAGE ANNUAL WIND SPEED = 7.20 MPH  
 AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 50.50 %  
 AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 28.60 %  
 AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 22.70 %  
 AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 47.90 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
0.79	0.86	0.85	1.18	0.95	0.89
0.30	0.33	0.40	0.74	0.50	0.51

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
29.10	32.40	41.40	49.10	60.30	69.60
79.50	76.80	64.90	50.20	37.00	27.70

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH  
 AND STATION LATITUDE = 40.69 DEGREES

\*\*\*\*\*  
 AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 100  
 -----

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.73	0.91	0.90	1.10	0.94	1.02
STD. DEVIATIONS	0.29	0.33	0.39	0.81	0.50	0.54
	0.37	0.42	0.42	0.47	0.54	0.72
	0.24	0.26	0.32	0.57	0.28	0.22

RUNOFF						
TOTALS	0.005	0.025	0.011	0.000	0.000	0.000
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.017	0.068	0.037	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000

EVAPOTRANSPIRATION						
TOTALS	0.473	0.552	0.577	0.675	0.561	0.578
STD. DEVIATIONS	0.212	0.195	0.229	0.354	0.350	0.435
	0.193	0.205	0.256	0.282	0.329	0.387
	0.139	0.133	0.189	0.244	0.162	0.165

LATERAL DRAINAGE COLLECTED FROM LAYER 4						
TOTALS	0.0496	0.2820	0.5914	0.4274	0.3501	0.4399
STD. DEVIATIONS	0.0905	0.1095	0.1374	0.4413	0.1325	0.0255
	0.1272	0.4547	0.4100	0.2594	0.2904	0.3975
	0.1190	0.1411	0.1566	0.3978	0.1577	0.0517

PERCOLATION/LEAKAGE THROUGH LAYER 5						
TOTALS	0.0012	0.0032	0.0106	0.0172	0.0134	0.0148
STD. DEVIATIONS	0.0096	0.0131	0.0129	0.0162	0.0135	0.0063
	0.0030	0.0051	0.0061	0.0060	0.0061	0.0063
	0.0066	0.0090	0.0084	0.0080	0.0084	0.0065

PERCOLATION/LEAKAGE THROUGH LAYER 8						
TOTALS	0.0111	0.0069	0.0119	0.0141	0.0122	0.0120
STD. DEVIATIONS	0.0100	0.0121	0.0114	0.0122	0.0111	0.0070
	0.0611	0.0035	0.0031	0.0034	0.0036	0.0035
	0.0039	0.0051	0.0044	0.0045	0.0046	0.0042

-----  
 AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)  
 -----

DAILY AVERAGE HEAD ON TOP OF LAYER 5						
AVERAGES	0.0005	0.0031	0.0059	0.0044	0.0035	0.0045
STD. DEVIATIONS	0.0009	0.0011	0.0014	0.0044	0.0014	0.0003
	0.0013	0.0049	0.0040	0.0026	0.0029	0.0040
	0.0012	0.0014	0.0016	0.0039	0.0016	0.0005

DAILY AVERAGE HEAD ON TOP OF LAYER 8						
AVERAGES	0.0047	0.0001	0.0001	0.0002	0.0001	0.0001
STD. DEVIATIONS	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	0.0461	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0001	0.0000	0.0000	0.0001	0.0000

\*\*\*\*\*  
 AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 100  
 -----

	INCHES		CU. FEET	PERCENT
PRECIPITATION	8.44	( 1.520)	13224.1	100.00
RUNOFF	0.041	( 0.0931)	63.83	0.483
EVAPOTRANSPIRATION	5.191	( 0.8338)	8132.68	61.499



LATERAL DRAINAGE COLLECTED FROM LAYER 4	3.07706 ( 0.86837)	4820.856	36.45504
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.13195 ( 0.01946)	206.721	1.56321
AVERAGE HEAD ON TOP OF LAYER 5	0.003 ( 0.001)		
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.13197 ( 0.05934)	206.759	1.56350
AVERAGE HEAD ON TOP OF LAYER 8	0.000 ( 0.004)		
CHANGE IN WATER STORAGE	0.000 ( 0.1843)	-0.02	0.000

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 100		
	(INCHES)	(CU. FT.)
PRECIPITATION	1.15	1801.714
RUNOFF	0.224	350.2085
DRAINAGE COLLECTED FROM LAYER 4	1.70923	2677.86035
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.001730	2.71109
AVERAGE HEAD ON TOP OF LAYER 5	0.522	
MAXIMUM HEAD ON TOP OF LAYER 5	1.064	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.036281	56.84222
AVERAGE HEAD ON TOP OF LAYER 8	1.599	
SNOW WATER	1.22	1916.8318
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.0997
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.0030

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

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FINAL WATER STORAGE AT END OF YEAR 100		
LAYER	(INCHES)	(VOL/VOL)
1	0.2077	0.0115
2	0.1440	0.0240
3	1.5868	0.1322
4	0.1920	0.0320
5	5.1600	0.4300
6	4.6800	0.3900
7	11.3075	0.1131
8	10.3200	0.4300
SNOW WATER	0.000	

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**
**
**          HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
**          HELP MODEL VERSION 3.06   (17 AUGUST 1996)
**          DEVELOPED BY ENVIRONMENTAL LABORATORY
**          USAE WATERWAYS EXPERIMENT STATION
**          FOR USEPA RISK REDUCTION ENGINEERING LABORATORY
**
**
*****
*****
PRECIPITATION DATA FILE:  c:\projects\4101K\help3\caw2011\U100.D4
TEMPERATURE DATA FILE:   c:\projects\4101K\help3\caw2011\U100.D7
SOLAR RADIATION DATA FILE: c:\projects\4101K\help3\caw2011\U100.D13
EVAPOTRANSPIRATION DATA: c:\projects\4101K\help3\caw2011\U100.D11
SOIL AND DESIGN DATA FILE: c:\projects\4101K\help3\caw2011\Ms6-3r3.D10
OUTPUT DATA FILE:        c:\projects\4101K\help3\caw2011\Ms6-3r3.OUT
TIME:  10:43      DATE:  4/ 6/2011

```

```

*****
*****
TITLE:  CAW CELL - SIDE SLOPE 6"FILTER - 188L - RUN ON 3rd IT - RUN3
*****
NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
      WERE SPECIFIED BY THE USER.

```

```

          LAYER 1
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 18.00  INCHES
POROSITY           =  0.1700 VOL/VOL
FIELD CAPACITY    =  0.0070 VOL/VOL
WILTING POINT     =  0.0030 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0115 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 80.0000000000  CM/SEC

```

```

          LAYER 2
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          =  6.00  INCHES
POROSITY           =  0.1900 VOL/VOL
FIELD CAPACITY    =  0.0240 VOL/VOL
WILTING POINT     =  0.0070 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0240 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 42.0000000000  CM/SEC

```

```

          LAYER 3
          -----
          TYPE 1 - VERTICAL PERCOLATION LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 12.00  INCHES
POROSITY           =  0.3100 VOL/VOL
FIELD CAPACITY    =  0.2000 VOL/VOL
WILTING POINT     =  0.0250 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.1322 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.400000019000E-02 CM/SEC

```

```

          LAYER 4
          -----
          TYPE 2 - LATERAL DRAINAGE LAYER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          =  6.00  INCHES
POROSITY           =  0.2800 VOL/VOL
FIELD CAPACITY    =  0.0320 VOL/VOL
WILTING POINT     =  0.0130 VOL/VOL
INITIAL SOIL WATER CONTENT =  0.0320 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 3.500000000000  CM/SEC
SLOPE              = 20.00  PERCENT
DRAINAGE LENGTH    = 1165.0  FEET

```

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          LAYER 5
          -----
          TYPE 3 - BARRIER SOIL LINER
          MATERIAL TEXTURE NUMBER  0
THICKNESS          = 12.00  INCHES
POROSITY           =  0.4300 VOL/VOL
FIELD CAPACITY    =  0.3900 VOL/VOL
WILTING POINT     =  0.2800 VOL/VOL

```

INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000006000E-07 CM/SEC

LAYER 6

-----  
 TYPE 1 - VERTICAL PERCOLATION LAYER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 12.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.3900 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

LAYER 7

-----  
 TYPE 1 - VERTICAL PERCOLATION LAYER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 100.00 INCHES  
 POROSITY = 0.4370 VOL/VOL  
 FIELD CAPACITY = 0.0620 VOL/VOL  
 WILTING POINT = 0.0240 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.1131 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.50000024000E-03 CM/SEC

LAYER 8

-----  
 TYPE 3 - BARRIER SOIL LINER  
 MATERIAL TEXTURE NUMBER 0  
 THICKNESS = 24.00 INCHES  
 POROSITY = 0.4300 VOL/VOL  
 FIELD CAPACITY = 0.3900 VOL/VOL  
 WILTING POINT = 0.2800 VOL/VOL  
 INITIAL SOIL WATER CONTENT = 0.4300 VOL/VOL  
 EFFECTIVE SAT. HYD. COND. = 0.99999997000E-06 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

-----  
 NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT  
 SOIL DATA BASE USING SOIL TEXTURE #21 WITH BARE  
 GROUND CONDITIONS, A SURFACE SLOPE OF 20.% AND  
 A SLOPE LENGTH OF 1165. FEET.  
 SCS RUNOFF CURVE NUMBER = 69.40  
 FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT  
 AREA PROJECTED ON HORIZONTAL PLANE = 0.432 ACRES  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 INITIAL WATER IN EVAPORATIVE ZONE = 0.207 INCHES  
 UPPER LIMIT OF EVAPORATIVE STORAGE = 3.060 INCHES  
 LOWER LIMIT OF EVAPORATIVE STORAGE = 0.054 INCHES  
 INITIAL SNOW WATER = 0.000 INCHES  
 INITIAL WATER IN LAYER MATERIALS = 33.599 INCHES  
 TOTAL INITIAL WATER = 33.599 INCHES  
 TOTAL SUBSURFACE INFLOW = 0.00 INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

-----  
 NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM  
 SALT LAKE CITY UTAH  
 STATION LATITUDE = 40.69 DEGREES  
 MAXIMUM LEAF AREA INDEX = 0.00  
 START OF GROWING SEASON (JULIAN DATE) = 117  
 END OF GROWING SEASON (JULIAN DATE) = 289  
 EVAPORATIVE ZONE DEPTH = 18.0 INCHES  
 AVERAGE ANNUAL WIND SPEED = 7.20 MPH  
 AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 50.50 %  
 AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 28.60 %  
 AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 22.70 %  
 AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 47.90 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
0.79	0.86	0.85	1.18	0.95	0.89
0.30	0.33	0.40	0.74	0.50	0.51

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)					
JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
29.10	32.40	41.40	49.10	60.30	69.60
79.50	76.80	64.90	50.20	37.00	27.70

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING  
 COEFFICIENTS FOR SALT LAKE CITY UTAH  
 AND STATION LATITUDE = 40.69 DEGREES

\*\*\*\*\*  
 AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 100  
 -----

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.73	0.91	0.90	1.10	0.94	1.02
STD. DEVIATIONS	0.29	0.33	0.39	0.81	0.50	0.54
	0.37	0.42	0.42	0.47	0.54	0.72
	0.24	0.26	0.32	0.57	0.28	0.22
RUNOFF						
TOTALS	0.005	0.025	0.011	0.000	0.000	0.000
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.017	0.068	0.037	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.473	0.552	0.577	0.675	0.561	0.578
STD. DEVIATIONS	0.212	0.195	0.229	0.354	0.350	0.435
	0.193	0.205	0.256	0.282	0.329	0.387
	0.139	0.133	0.189	0.244	0.162	0.165
LATERAL DRAINAGE COLLECTED FROM LAYER 4						
TOTALS	0.0496	0.2820	0.5916	0.4273	0.3499	0.4397
STD. DEVIATIONS	0.0909	0.1095	0.1375	0.4412	0.1325	0.0255
	0.1272	0.4547	0.4102	0.2593	0.2903	0.3973
	0.1190	0.1411	0.1567	0.3977	0.1578	0.0517
PERCOLATION/LEAKAGE THROUGH LAYER 5						
TOTALS	0.0012	0.0032	0.0106	0.0171	0.0135	0.0147
STD. DEVIATIONS	0.0095	0.0131	0.0129	0.0163	0.0135	0.0063
	0.0031	0.0051	0.0060	0.0059	0.0061	0.0063
	0.0066	0.0091	0.0084	0.0080	0.0085	0.0065
PERCOLATION/LEAKAGE THROUGH LAYER 8						
TOTALS	0.0111	0.0069	0.0119	0.0141	0.0122	0.0120
STD. DEVIATIONS	0.0100	0.0121	0.0114	0.0122	0.0111	0.0070
	0.0611	0.0035	0.0030	0.0034	0.0036	0.0035
	0.0039	0.0051	0.0044	0.0045	0.0045	0.0042

-----  
 AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)  
 -----

DAILY AVERAGE HEAD ON TOP OF LAYER 5						
AVERAGES	0.0005	0.0031	0.0059	0.0044	0.0035	0.0045
STD. DEVIATIONS	0.0009	0.0011	0.0014	0.0044	0.0014	0.0003
	0.0013	0.0049	0.0040	0.0026	0.0029	0.0040
	0.0012	0.0014	0.0016	0.0039	0.0016	0.0005
DAILY AVERAGE HEAD ON TOP OF LAYER 8						
AVERAGES	0.0047	0.0001	0.0001	0.0002	0.0001	0.0001
STD. DEVIATIONS	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	0.0461	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0001	0.0000	0.0000	0.0001	0.0000

\*\*\*\*\*  
 AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 100  
 -----

	INCHES		CU. FEET	PERCENT
PRECIPITATION	8.44	( 1.520)	13224.1	100.00
RUNOFF	0.041	( 0.0931)	63.83	0.483
EVAPOTRANSPIRATION	5.191	( 0.8338)	8132.68	61.499

LATERAL DRAINAGE COLLECTED FROM LAYER 4	3.07711 ( 0.86854)	4820.934	36.45563
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.13190 ( 0.01947)	206.645	1.56264
AVERAGE HEAD ON TOP OF LAYER 5	0.003 ( 0.001)		
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.13193 ( 0.05935)	206.696	1.56302
AVERAGE HEAD ON TOP OF LAYER 8	0.000 ( 0.004)		
CHANGE IN WATER STORAGE	0.000 ( 0.1845)	-0.03	0.000

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 100		
	( INCHES )	( CU. FT. )
PRECIPITATION	1.15	1801.714
RUNOFF	0.224	350.2085
DRAINAGE COLLECTED FROM LAYER 4	1.70923	2677.86304
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.001731	2.71268
AVERAGE HEAD ON TOP OF LAYER 5	0.522	
MAXIMUM HEAD ON TOP OF LAYER 5	1.061	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.036281	56.84222
AVERAGE HEAD ON TOP OF LAYER 8	1.599	
SNOW WATER	1.22	1916.8318
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.0997
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.0030

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

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FINAL WATER STORAGE AT END OF YEAR 100		
LAYER	( INCHES )	( VOL/VOL )
1	0.2077	0.0115
2	0.1440	0.0240
3	1.5868	0.1322
4	0.1920	0.0320
5	5.1600	0.4300
6	4.6800	0.3900
7	11.3067	0.1131
8	10.3200	0.4300
SNOW WATER	0.000	

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