

SOP5- 01. OUT

THICKNESS	=	50.00	CM
POROSITY	=	0.3970	VOL/VOL
FIELD CAPACITY	=	0.0320	VOL/VOL
WILTING POINT	=	0.0130	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0411	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.550000012000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	55.0	METERS

LAYER 3

TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 4

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 34

THICKNESS	=	0.60	CM
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0100	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	33.0000000000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	55.0	METERS

LAYER 5

TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3 - GOOD	

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LAYER 6

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.60	CM
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.7500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 5 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 2. % AND A SLOPE LENGTH OF 55. METERS.

SCS RUNOFF CURVE NUMBER	=	83.90	
FRACTION OF AREA ALLOWING RUNOFF	=	0.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.0000	HECTARES
EVAPORATIVE ZONE DEPTH	=	20.0	CM
INITIAL WATER IN EVAPORATIVE ZONE	=	1.176	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	=	8.000	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.305	CM
INITIAL SNOW WATER	=	6.978	CM
INITIAL WATER IN LAYER MATERIALS	=	2.624	CM
TOTAL INITIAL WATER	=	9.602	CM
TOTAL SUBSURFACE INFLOW	=	0.00	MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM CARIBOU MAINE

STATION LATITUDE	=	45.80	DEGREES
MAXIMUM LEAF AREA INDEX	=	0.00	
START OF GROWING SEASON (JULIAN DATE)	=	144	
END OF GROWING SEASON (JULIAN DATE)	=	260	
EVAPORATIVE ZONE DEPTH	=	20.0	CM
AVERAGE ANNUAL WIND SPEED	=	17.00	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	70.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	69.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	76.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	78.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY PRECIPITATION (MM)

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JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
77.4	65.1	68.3	82.6	91.2	101.2
98.6	91.5	100.7	97.3	94.9	81.6

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES CELSIUS)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-11.8	-9.7	-3.6	4.6	12.3	17.3
19.8	18.5	13.2	6.8	0.1	-8.0

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARIBOU MAINE
AND STATION LATITUDE = 45.80 DEGREES

AVERAGE MONTHLY VALUES (MM) FOR YEARS 1 THROUGH 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	83.46 102.72	93.70 97.88	76.14 116.32	67.32 92.44	53.72 95.04	107.52 85.02
STD. DEVIATIONS	28.18 20.41	20.28 38.09	39.80 63.39	27.07 36.69	12.25 25.76	26.62 26.63
RUNOFF						
TOTALS	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000
STD. DEVIATIONS	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						
TOTALS	11.708 64.777	11.194 47.176	13.223 52.573	16.872 27.532	33.346 23.426	55.506 9.971
STD. DEVIATIONS	0.499 10.031	1.323 22.419	2.418 16.076	14.789 11.776	8.871 3.521	11.905 1.645
LATERAL DRAINAGE COLLECTED FROM LAYER 2						
TOTALS	0.0000 42.0879	0.0000 37.9231	83.6501 75.6888	243.2777 54.5036	44.9477 76.7002	43.2885 7.5696

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STD. DEVIATIONS	0.0000	0.0000	92.8606	151.0563	31.9233	17.2246
	20.6571	26.4107	51.2533	26.6267	23.9560	7.2412

PERCOLATION/LEAKAGE THROUGH LAYER 3

TOTALS	0.0000	0.0000	0.0000	0.0001	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

LATERAL DRAINAGE COLLECTED FROM LAYER 4

TOTALS	0.0000	0.0000	0.0000	0.0001	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

PERCOLATION/LEAKAGE THROUGH LAYER 6

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 (CM)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0000	0.0000	0.7811	2.3470	0.4197	0.4177
	0.3930	0.3541	0.7304	0.5090	0.7401	0.0707
STD. DEVIATIONS	0.0000	0.0000	0.8671	1.4567	0.2981	0.1662
	0.1929	0.2466	0.4946	0.2486	0.2312	0.0676

DAILY AVERAGE HEAD ON TOP OF LAYER 5

AVERAGES	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

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 5

	MM		CU. METERS		PERCENT
PRECIPITATION	1071.28	(86.542)	10712.8		100.00
RUNOFF	0.000	(0.0000)	0.00		0.000
EVAPOTRANSPIRATION	367.304	(18.2437)	3673.04		34.286

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LATERAL DRAINAGE COLLECTED FROM LAYER 2	709. 63702 (80. 47489)	7096. 370	66. 24198
PERCOLATION/LEAKAGE THROUGH LAYER 3	0. 00026 (0. 00003)	0. 003	0. 00002
AVERAGE HEAD ON TOP OF LAYER 3	5. 636 (0. 646)		
LATERAL DRAINAGE COLLECTED FROM LAYER 4	0. 00025 (0. 00003)	0. 003	0. 00002
PERCOLATION/LEAKAGE THROUGH LAYER 6	0. 00001 (0. 00000)	0. 000	0. 00000
AVERAGE HEAD ON TOP OF LAYER 5	0. 000 (0. 000)		
CHANGE IN WATER STORAGE	-5. 662 (1. 6644)	-56. 62	-0. 528

PEAK DAILY VALUES FOR YEARS	1 THROUGH 5	
	(MM)	(CU. METERS)
PRECIPITATION	47. 00	470. 000
RUNOFF	0. 000	0. 0000
DRAINAGE COLLECTED FROM LAYER 2	69. 57294	695. 72943
PERCOLATION/LEAKAGE THROUGH LAYER 3	0. 000023	0. 00023
AVERAGE HEAD ON TOP OF LAYER 3	201. 198	
MAXIMUM HEAD ON TOP OF LAYER 3	276. 757	
LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN)	17. 2 METERS	
DRAINAGE COLLECTED FROM LAYER 4	0. 00002	0. 00023
PERCOLATION/LEAKAGE THROUGH LAYER 6	0. 000000	0. 00000
AVERAGE HEAD ON TOP OF LAYER 5	0. 000	
MAXIMUM HEAD ON TOP OF LAYER 5	0. 347	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	0. 0 METERS	
SNOW WATER	423. 25	4232. 5391
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0. 4000
MINIMUM VEG. SOIL WATER (VOL/VOL)		0. 0153

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*** 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 5

LAYER	(CM)	(VOL/VOL)
1	0.1463	0.1463
2	2.1844	0.0437
3	0.0000	0.0000
4	0.0060	0.0100
5	0.0000	0.0000
6	0.4500	0.7500
SNOW WATER	3.985	

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THICKNESS	=	300.00	CM
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2350	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 3

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 0

THICKNESS	=	50.00	CM
POROSITY	=	0.3970	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.	=	0.550000012000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	55.0	METERS

LAYER 4

TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 5

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 34

THICKNESS	=	0.60	CM
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0100	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	33.0000000000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	55.0	METERS

LAYER 6

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TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3 -	GOOD

LAYER 7

TYPE 3 - BARRIER SOIL LINER

MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.60	CM
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.7500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 5 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 2. % AND A SLOPE LENGTH OF 250. METERS.

SCS RUNOFF CURVE NUMBER	=	82.60	
FRACTION OF AREA ALLOWING RUNOFF	=	10.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.0000	HECTARES
EVAPORATIVE ZONE DEPTH	=	20.0	CM
INITIAL WATER IN EVAPORATIVE ZONE	=	2.620	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	=	9.140	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.160	CM
INITIAL SNOW WATER	=	1.090	CM
INITIAL WATER IN LAYER MATERIALS	=	75.176	CM
TOTAL INITIAL WATER	=	76.266	CM
TOTAL SUBSURFACE INFLOW	=	0.00	MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM CARIBOU MAINE

STATION LATITUDE	=	45.80	DEGREES
MAXIMUM LEAF AREA INDEX	=	0.00	
START OF GROWING SEASON (JULIAN DATE)	=	144	

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END OF GROWING SEASON (JULIAN DATE) = 260
 EVAPORATIVE ZONE DEPTH = 20.0 CM
 AVERAGE ANNUAL WIND SPEED = 17.00 KPH
 AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 70.00 %
 AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 69.00 %
 AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 76.00 %
 AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 78.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
 COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY PRECIPITATION (MM)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
77.4	65.1	68.3	82.6	91.2	101.2
98.6	91.5	100.7	97.3	94.9	81.6

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
 COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES CELSIUS)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-11.8	-9.7	-3.6	4.6	12.3	17.3
19.8	18.5	13.2	6.8	0.1	-8.0

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
 COEFFICIENTS FOR CARIBOU MAINE
 AND STATION LATITUDE = 45.80 DEGREES

AVERAGE MONTHLY VALUES (MM) FOR YEARS 1 THROUGH 2

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	87.55 100.50	86.70 75.85	97.45 136.75	59.20 87.75	66.05 114.15	94.15 102.85
STD. DEVIATIONS	26.80 16.69	23.05 48.30	58.05 120.56	21.64 63.57	1.91 6.43	6.86 29.77
RUNOFF						
TOTALS	0.000 0.068	0.000 0.007	20.180 0.197	8.415 0.000	0.027 0.042	0.008 0.000
STD. DEVIATIONS	0.000	0.000	8.655	4.211	0.038	0.012

	0.096	SOP5- 02. OUT 0.010	0.278	0.000	0.059	0.000
EVAPOTRANSPIRATION						

TOTALS	11.596 85.785	10.582 49.989	11.264 70.493	35.317 43.216	67.165 24.453	77.431 9.455
STD. DEVIATIONS	0.763 3.307	0.659 38.062	2.283 15.764	35.593 2.339	5.723 6.208	12.844 1.114
LATERAL DRAINAGE COLLECTED FROM LAYER 3						

TOTALS	2.3807 12.7843	0.4974 11.4192	0.3181 29.1252	115.4360 52.6006	67.9056 41.6886	20.9254 84.2970
STD. DEVIATIONS	3.3668 9.4372	0.7034 14.4911	0.4498 21.7391	163.2511 64.1657	92.0329 20.7470	13.0601 18.5932
PERCOLATION/LEAKAGE THROUGH LAYER 4						

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	0.0001 0.0000	0.0000 0.0000	0.0000 0.0000
LATERAL DRAINAGE COLLECTED FROM LAYER 5						

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	0.0001 0.0000	0.0000 0.0000	0.0000 0.0000
PERCOLATION/LEAKAGE THROUGH LAYER 7						

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 (CM)						

DAILY AVERAGE HEAD ON TOP OF LAYER 4						

AVERAGES	0.0222 0.1194	0.0051 0.1066	0.0030 0.2810	1.1139 0.4912	0.6341 0.4023	0.2019 0.7872
STD. DEVIATIONS	0.0314 0.0881	0.0073 0.1353	0.0042 0.2098	1.5753 0.5992	0.8594 0.2002	0.1260 0.1736
DAILY AVERAGE HEAD ON TOP OF LAYER 6						

AVERAGES	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

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	AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS		1 THROUGH	2
	MM		CU. METERS	PERCENT
PRECIPITATION	1108.95	(139.937)	11089.5	100.00
RUNOFF	28.944	(13.0295)	289.44	2.610
EVAPOTRANSPIRATION	496.745	(13.1007)	4967.45	44.794
LATERAL DRAINAGE COLLECTED FROM LAYER 3	439.37820	(295.50064)	4393.782	39.62111
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.00017	(0.00011)	0.002	0.00002
AVERAGE HEAD ON TOP OF LAYER 4	3.473	(2.346)		
LATERAL DRAINAGE COLLECTED FROM LAYER 5	0.00016	(0.00010)	0.002	0.00001
PERCOLATION/LEAKAGE THROUGH LAYER 7	0.00001	(0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 6	0.000	(0.000)		
CHANGE IN WATER STORAGE	143.883	(6.1217)	1438.83	12.975

	PEAK DAILY VALUES FOR YEARS	
	1 THROUGH	2
	(MM)	(CU. METERS)
PRECIPITATION	37.60	376.000
RUNOFF	11.945	119.4464
DRAINAGE COLLECTED FROM LAYER 3	16.86902	168.69022
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.000006	0.00006
AVERAGE HEAD ON TOP OF LAYER 4	48.834	
MAXIMUM HEAD ON TOP OF LAYER 4	82.575	
LOCATION OF MAXIMUM HEAD IN LAYER 3 (DISTANCE FROM DRAIN)	8.5 METERS	
DRAINAGE COLLECTED FROM LAYER 5	0.00001	0.00006

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PERCOLATION/LEAKAGE THROUGH LAYER 7	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 6	0.000	
MAXIMUM HEAD ON TOP OF LAYER 6	0.171	
LOCATION OF MAXIMUM HEAD IN LAYER 5 (DISTANCE FROM DRAIN)	0.0 METERS	
SNOW WATER	317.08	3170.7783
MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4570	
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.0733	

*** 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 2

LAYER	(CM)	(VOL/VOL)
1	3.8314	0.1916
2	87.5999	0.2920
3	2.2519	0.0450
4	0.0000	0.0000
5	0.0060	0.0100
6	0.0000	0.0000
7	0.4500	0.7500
SNOW WATER	10.903	

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THICKNESS	=	1500.00	CM
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2350	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 3

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 0

THICKNESS	=	50.00	CM
POROSITY	=	0.3970	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.	=	0.550000012000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	55.0	METERS

LAYER 4

TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 5

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 34

THICKNESS	=	0.60	CM
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0100	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	33.0000000000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	55.0	METERS

LAYER 6

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TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3 -	GOOD

LAYER 7

TYPE 3 - BARRIER SOIL LINER

MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.60	CM
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.7500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 5 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 2. % AND A SLOPE LENGTH OF 250. METERS.

SCS RUNOFF CURVE NUMBER	=	82.60	
FRACTION OF AREA ALLOWING RUNOFF	=	30.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.0000	HECTARES
EVAPORATIVE ZONE DEPTH	=	20.0	CM
INITIAL WATER IN EVAPORATIVE ZONE	=	2.620	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	=	9.140	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.160	CM
INITIAL SNOW WATER	=	1.090	CM
INITIAL WATER IN LAYER MATERIALS	=	357.176	CM
TOTAL INITIAL WATER	=	358.266	CM
TOTAL SUBSURFACE INFLOW	=	0.00	MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM CARIBOU MAINE

STATION LATITUDE	=	45.80	DEGREES
MAXIMUM LEAF AREA INDEX	=	0.00	
START OF GROWING SEASON (JULIAN DATE)	=	144	

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END OF GROWING SEASON (JULIAN DATE)	=	260
EVAPORATIVE ZONE DEPTH	=	20.0 CM
AVERAGE ANNUAL WIND SPEED	=	17.00 KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	70.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	69.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	76.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	78.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY PRECIPITATION (MM)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
----- 59.9 102.4	----- 54.4 100.8	----- 62.0 89.4	----- 65.8 79.0	----- 73.2 81.8	----- 80.8 80.0

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES CELSIUS)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
----- -11.8 19.8	----- -9.7 18.5	----- -3.6 13.2	----- 4.6 6.8	----- 12.3 0.1	----- 17.3 -8.0

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARIBOU MAINE
AND STATION LATITUDE = 46.52 DEGREES

AVERAGE MONTHLY VALUES (MM) FOR YEARS 1 THROUGH 10

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
----- PRECIPITATION	-----	-----	-----	-----	-----	-----
TOTALS	71.47 99.14	76.10 93.45	59.83 92.11	50.97 81.06	51.30 87.32	76.62 80.90
STD. DEVIATIONS	22.71 26.25	19.49 39.41	32.81 45.16	17.14 25.42	14.53 26.75	27.62 28.97
----- RUNOFF	-----	-----	-----	-----	-----	-----
TOTALS	0.000 0.122	0.000 0.166	31.051 0.187	47.213 0.077	0.743 2.391	0.143 0.345
STD. DEVIATIONS	0.000	0.000	24.648	31.686	1.723	0.269

	0.179	SOP5-03.0UT 0.220	0.367	0.149	4.241	1.093
EVAPOTRANSPIRATION						

TOTALS	11.215 82.719	10.996 69.959	13.604 61.761	21.502 38.333	52.251 20.099	63.168 9.702
STD. DEVIATIONS	1.269 22.225	1.624 27.473	2.968 15.675	15.685 8.553	11.286 6.689	22.510 1.676
LATERAL DRAINAGE COLLECTED FROM LAYER 3						

TOTALS	5.1792 29.4887	0.6263 15.0978	1.6703 21.2233	20.2178 14.1307	55.9477 24.2770	59.1764 34.8416
STD. DEVIATIONS	6.9028 29.3721	0.4749 15.4574	2.8762 20.4385	22.1773 14.7287	31.6753 16.2647	31.5670 30.7107
PERCOLATION/LEAKAGE THROUGH LAYER 4						

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
LATERAL DRAINAGE COLLECTED FROM LAYER 5						

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
PERCOLATION/LEAKAGE THROUGH LAYER 7						

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 (CM)						

DAILY AVERAGE HEAD ON TOP OF LAYER 4						

AVERAGES	0.0484 0.2754	0.0064 0.1410	0.0156 0.2048	0.1951 0.1320	0.5225 0.2343	0.5710 0.3254
STD. DEVIATIONS	0.0645 0.2743	0.0049 0.1443	0.0269 0.1972	0.2140 0.1375	0.2958 0.1569	0.3046 0.2868
DAILY AVERAGE HEAD ON TOP OF LAYER 6						

AVERAGES	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

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS		1 THROUGH	10
	MM	CU. METERS	PERCENT
PRECIPITATION	920.27 (76.699)	9202.7	100.00
RUNOFF	82.439 (21.4960)	824.39	8.958
EVAPOTRANSPIRATION	455.311 (33.2416)	4553.11	49.476
LATERAL DRAINAGE COLLECTED FROM LAYER 3	281.87677 (155.99419)	2818.768	30.62979
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.00011 (0.00006)	0.001	0.00001
AVERAGE HEAD ON TOP OF LAYER 4	2.226 (1.232)		
LATERAL DRAINAGE COLLECTED FROM LAYER 5	0.00011 (0.00006)	0.001	0.00001
PERCOLATION/LEAKAGE THROUGH LAYER 7	0.00001 (0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 6	0.000 (0.000)		
CHANGE IN WATER STORAGE	100.643 (7.3231)	1006.43	10.936

PEAK DAILY VALUES FOR YEARS	1 THROUGH	10
	(MM)	(CU. METERS)
PRECIPITATION	47.30	473.000
RUNOFF	34.951	349.5102
DRAINAGE COLLECTED FROM LAYER 3	3.98910	39.89098
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.000001	0.00001
AVERAGE HEAD ON TOP OF LAYER 4	11.548	
MAXIMUM HEAD ON TOP OF LAYER 4	21.665	
LOCATION OF MAXIMUM HEAD IN LAYER 3 (DISTANCE FROM DRAIN)	3.4 METERS	
DRAINAGE COLLECTED FROM LAYER 5	0.00000	0.00001

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PERCOLATION/LEAKAGE THROUGH LAYER 7	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 6	0.000	
MAXIMUM HEAD ON TOP OF LAYER 6	0.082	
LOCATION OF MAXIMUM HEAD IN LAYER 5 (DISTANCE FROM DRAIN)	0.0 METERS	
SNOW WATER	359.95	3599.4553
MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4570	
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.0580	

*** 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 10

LAYER	(CM)	(VOL/VOL)
1	7.5683	0.3784
2	437.9998	0.2920
3	2.0339	0.0407
4	0.0000	0.0000
5	0.0060	0.0100
6	0.0000	0.0000
7	0.4500	0.7500
SNOW WATER	10.851	

SOP5-05.OUT
TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 5

THICKNESS = 45.00 CM
POROSITY = 0.4570 VOL/VOL
FIELD CAPACITY = 0.1310 VOL/VOL
WILTING POINT = 0.0580 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.4541 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000005000E-02 CM/SEC
SLOPE = 2.00 PERCENT
DRAINAGE LENGTH = 250.0 METERS

LAYER 3

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

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. = 0.199999996000E-12 CM/SEC
FML PINHOLE DENSITY = 2.00 HOLES/HECTARE
FML INSTALLATION DEFECTS = 2.00 HOLES/HECTARE
FML PLACEMENT QUALITY = 4 - POOR

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 5

THICKNESS = 30.00 CM
POROSITY = 0.4570 VOL/VOL
FIELD CAPACITY = 0.1310 VOL/VOL
WILTING POINT = 0.0580 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.1742 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000005000E-02 CM/SEC

LAYER 5

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS = 3000.00 CM
POROSITY = 0.6710 VOL/VOL
FIELD CAPACITY = 0.2920 VOL/VOL
WILTING POINT = 0.0770 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.2920 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000005000E-02 CM/SEC

LAYER 6

SOP5-05.OUT

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 0
THICKNESS = 50.00 CM
POROSITY = 0.3970 VOL/VOL
FIELD CAPACITY = 0.0320 VOL/VOL
WILTING POINT = 0.0130 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.0344 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.550000012000 CM/SEC
SLOPE = 2.00 PERCENT
DRAINAGE LENGTH = 55.0 METERS

LAYER 7

TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35
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. = 0.199999996000E-12 CM/SEC
FML PINHOLE DENSITY = 0.00 HOLES/HECTARE
FML INSTALLATION DEFECTS = 0.00 HOLES/HECTARE
FML PLACEMENT QUALITY = 3 - GOOD

LAYER 8

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 34
THICKNESS = 0.60 CM
POROSITY = 0.8500 VOL/VOL
FIELD CAPACITY = 0.0100 VOL/VOL
WILTING POINT = 0.0050 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.0100 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 33.0000000000 CM/SEC
SLOPE = 2.00 PERCENT
DRAINAGE LENGTH = 55.0 METERS

LAYER 9

TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35
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. = 0.199999996000E-12 CM/SEC
FML PINHOLE DENSITY = 0.00 HOLES/HECTARE
FML INSTALLATION DEFECTS = 0.00 HOLES/HECTARE
FML PLACEMENT QUALITY = 3 - GOOD

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LAYER 10

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.60	CM
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.7500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT
SOIL DATA BASE USING SOIL TEXTURE # 5 WITH A
GOOD STAND OF GRASS, A SURFACE SLOPE OF 2. %
AND A SLOPE LENGTH OF 150. METERS.

SCS RUNOFF CURVE NUMBER	=	53.30	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.0000	HECTARES
EVAPORATIVE ZONE DEPTH	=	45.0	CM
INITIAL WATER IN EVAPORATIVE ZONE	=	20.127	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	=	20.565	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.610	CM
INITIAL SNOW WATER	=	6.848	CM
INITIAL WATER IN LAYER MATERIALS	=	910.253	CM
TOTAL INITIAL WATER	=	917.101	CM
TOTAL SUBSURFACE INFLOW	=	0.00	MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
CARIBOU MAINE

STATION LATITUDE	=	45.80	DEGREES
MAXIMUM LEAF AREA INDEX	=	3.50	
START OF GROWING SEASON (JULIAN DATE)	=	144	
END OF GROWING SEASON (JULIAN DATE)	=	260	
EVAPORATIVE ZONE DEPTH	=	45.0	CM
AVERAGE ANNUAL WIND SPEED	=	17.00	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	70.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	69.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	76.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	78.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARIBOU MAINE

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NORMAL MEAN MONTHLY PRECIPITATION (MM)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
59.9	54.4	62.0	65.8	73.2	80.8
102.4	100.8	89.4	79.0	81.8	80.0

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES CELSIUS)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-11.8	-9.7	-3.6	4.6	12.3	17.3
19.8	18.5	13.2	6.8	0.1	-8.0

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARIBOU MAINE
AND STATION LATITUDE = 46.52 DEGREES

AVERAGE MONTHLY VALUES (MM) FOR YEARS 1 THROUGH 25

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	66.65	65.85	56.28	47.28	67.63	77.58
	104.41	91.64	87.29	78.46	80.32	75.08
STD. DEVIATIONS	18.44	25.08	32.04	17.34	25.25	32.14
	33.09	35.44	37.46	26.03	24.43	29.53
RUNOFF						
TOTALS	0.000	0.180	104.682	135.264	4.849	1.951
	0.100	0.000	0.763	2.957	15.835	3.146
STD. DEVIATIONS	0.000	0.889	85.214	84.686	11.271	6.386
	0.500	0.000	3.815	8.079	20.818	10.883
EVAPOTRANSPIRATION						
TOTALS	11.077	10.312	14.781	22.061	62.332	92.761
	156.953	112.185	49.396	29.929	16.405	9.844
STD. DEVIATIONS	1.473	1.516	3.163	12.283	17.605	21.696
	8.598	24.589	10.827	4.769	3.857	1.412

LATERAL DRAINAGE COLLECTED FROM LAYER 2

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TOTALS	0. 6053 1. 6834	0. 5312 1. 0197	0. 5618 1. 0522	1. 0946 1. 6283	3. 1147 2. 6698	2. 7850 1. 0371
STD. DEVIATIONS	0. 0093 0. 4416	0. 0111 0. 3851	0. 0088 0. 6437	0. 6804 1. 0564	0. 5031 1. 3999	0. 5113 0. 5721
PERCOLATION/LEAKAGE THROUGH LAYER 3						
TOTALS	1. 1854 2. 8152	1. 0459 1. 8630	1. 1121 1. 8179	1. 6036 2. 4764	3. 8285 3. 1903	3. 6581 1. 5833
STD. DEVIATIONS	0. 0157 0. 4702	0. 0204 0. 6072	0. 0148 0. 7258	0. 6630 1. 0119	0. 3485 1. 0678	0. 3066 0. 4681
LATERAL DRAINAGE COLLECTED FROM LAYER 6						
TOTALS	2. 8365 2. 8725	1. 9195 3. 6003	1. 7544 2. 8513	1. 6072 2. 2409	1. 1105 1. 8519	0. 6010 2. 7786
STD. DEVIATIONS	1. 0118 0. 6379	0. 5357 0. 3461	0. 2972 0. 2786	0. 1863 0. 4612	0. 4242 0. 7172	0. 5257 1. 3001
PERCOLATION/LEAKAGE THROUGH LAYER 7						
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
LATERAL DRAINAGE COLLECTED FROM 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
PERCOLATION/LEAKAGE THROUGH LAYER 10						
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 (CM)

DAILY AVERAGE HEAD ON TOP OF LAYER 3						
AVERAGES	14. 1303 36. 5236	13. 6140 23. 5078	13. 1153 23. 6743	20. 4597 31. 7718	49. 8885 42. 6174	49. 3177 19. 4850
STD. DEVIATIONS	0. 2178 6. 3135	0. 2110 8. 3290	0. 2042 10. 1977	9. 2437 13. 6457	4. 6162 14. 7084	4. 1552 6. 2585
DAILY AVERAGE HEAD ON TOP OF LAYER 7						
AVERAGES	0. 0265 0. 0268	0. 0197 0. 0336	0. 0164 0. 0275	0. 0155 0. 0209	0. 0104 0. 0179	0. 0058 0. 0259

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STD. DEVIATIONS	0.0094	0.0055	0.0028	0.0018	0.0040	0.0051
	0.0060	0.0032	0.0027	0.0043	0.0069	0.0121

DAILY AVERAGE HEAD ON TOP OF LAYER 9

AVERAGES	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

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 25

	MM		CU. METERS	PERCENT
PRECIPITATION	898.47	(93.160)	8984.7	100.00
RUNOFF	269.727	(73.1406)	2697.27	30.021
EVAPOTRANSPIRATION	588.037	(42.1714)	5880.37	65.449
LATERAL DRAINAGE COLLECTED FROM LAYER 2	17.78311	(4.03142)	177.831	1.97926
PERCOLATION/LEAKAGE THROUGH LAYER 3	26.17964	(3.84244)	261.796	2.91380
AVERAGE HEAD ON TOP OF LAYER 3	281.755	(43.787)		
LATERAL DRAINAGE COLLECTED FROM LAYER 6	26.02463	(3.61709)	260.246	2.89654
PERCOLATION/LEAKAGE THROUGH LAYER 7	0.00006	(0.00000)	0.001	0.00001
AVERAGE HEAD ON TOP OF LAYER 7	0.206	(0.029)		
LATERAL DRAINAGE COLLECTED FROM LAYER 8	0.00005	(0.00000)	0.001	0.00001
PERCOLATION/LEAKAGE THROUGH LAYER 10	0.00001	(0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 9	0.000	(0.000)		
CHANGE IN WATER STORAGE	-3.100	(1.9536)	-31.00	-0.345

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 25

	(MM)	(CU. METERS)
PRECIPITATION	62.20	622.000
RUNOFF	136.930	1369.3018
DRAINAGE COLLECTED FROM LAYER 2	0.15819	1.58186
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.149104	1.49104
AVERAGE HEAD ON TOP OF LAYER 3	599.995	
MAXIMUM HEAD ON TOP OF LAYER 3	888.933	
LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN)	64.7 METERS	
DRAINAGE COLLECTED FROM LAYER 6	0.20149	2.01490
PERCOLATION/LEAKAGE THROUGH LAYER 7	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 7	0.583	
MAXIMUM HEAD ON TOP OF LAYER 7	1.155	
LOCATION OF MAXIMUM HEAD IN LAYER 6 (DISTANCE FROM DRAIN)	0.5 METERS	
DRAINAGE COLLECTED FROM LAYER 8	0.00000	0.00000
PERCOLATION/LEAKAGE THROUGH LAYER 10	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 9	0.000	
MAXIMUM HEAD ON TOP OF LAYER 9	0.028	
LOCATION OF MAXIMUM HEAD IN LAYER 8 (DISTANCE FROM DRAIN)	0.0 METERS	
SNOW WATER	359.95	3599.4553
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.4570
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.0580

*** 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.

SOP5- 05. OUT

FINAL WATER STORAGE AT END OF YEAR 25

LAYER	(CM)	(VOL/VOL)
1	2. 7068	0. 1805
2	17. 6870	0. 3930
3	0. 0000	0. 0000
4	5. 2241	0. 1741
5	876. 0000	0. 2920
6	2. 1104	0. 0422
7	0. 0000	0. 0000
8	0. 0060	0. 0100
9	0. 0000	0. 0000
10	0. 4500	0. 7500
SNOW WATER	5. 167	

SOP5-07.OUT
TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS = 45.00 CM
POROSITY = 0.4510 VOL/VOL
FIELD CAPACITY = 0.4190 VOL/VOL
WILTING POINT = 0.3320 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.4510 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.49999999000E-06 CM/SEC

LAYER 3

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 5

THICKNESS = 30.00 CM
POROSITY = 0.4570 VOL/VOL
FIELD CAPACITY = 0.1310 VOL/VOL
WILTING POINT = 0.0580 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.2081 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000005000E-02 CM/SEC

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS = 3000.00 CM
POROSITY = 0.6710 VOL/VOL
FIELD CAPACITY = 0.2920 VOL/VOL
WILTING POINT = 0.0770 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.2920 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000005000E-02 CM/SEC

LAYER 5

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS = 50.00 CM
POROSITY = 0.3970 VOL/VOL
FIELD CAPACITY = 0.0320 VOL/VOL
WILTING POINT = 0.0130 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.0534 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.550000012000 CM/SEC
SLOPE = 2.00 PERCENT
DRAINAGE LENGTH = 55.0 METERS

LAYER 6

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

SOP5-07. OUT

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3	- GOOD

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 34

THICKNESS	=	0.60	CM
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0100	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	33.0000000000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	55.0	METERS

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3	- GOOD

LAYER 9

TYPE 3 - BARRIER SOIL LINER

MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.60	CM
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.7500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

SOP5-07. OUT
GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 5 WITH A GOOD STAND OF GRASS, A SURFACE SLOPE OF 2. % AND A SLOPE LENGTH OF 150. METERS.

SCS RUNOFF CURVE NUMBER	=	53.30	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.0000	HECTARES
EVAPORATIVE ZONE DEPTH	=	15.0	CM
INITIAL WATER IN EVAPORATIVE ZONE	=	5.769	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	=	6.855	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.870	CM
INITIAL SNOW WATER	=	6.848	CM
INITIAL WATER IN LAYER MATERIALS	=	911.433	CM
TOTAL INITIAL WATER	=	918.281	CM
TOTAL SUBSURFACE INFLOW	=	0.00	MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM CARIBOU MAINE

STATION LATITUDE	=	45.80	DEGREES
MAXIMUM LEAF AREA INDEX	=	3.50	
START OF GROWING SEASON (JULIAN DATE)	=	144	
END OF GROWING SEASON (JULIAN DATE)	=	260	
EVAPORATIVE ZONE DEPTH	=	15.0	CM
AVERAGE ANNUAL WIND SPEED	=	17.00	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	70.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	69.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	76.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	78.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY PRECIPITATION (MM)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-----	-----	-----	-----	-----	-----
59.9	54.4	62.0	65.8	73.2	80.8
102.4	100.8	89.4	79.0	81.8	80.0

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES CELSIUS)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-----	-----	-----	-----	-----	-----
-11.8	-9.7	-3.6	4.6	12.3	17.3
19.8	18.5	13.2	6.8	0.1	-8.0

SOP5- 07. OUT

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
 COEFFICIENTS FOR CARIBOU MAINE
 AND STATION LATITUDE = 46.52 DEGREES

AVERAGE MONTHLY VALUES (MM) FOR YEARS 1 THROUGH 25

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	66.65 104.41	65.85 91.64	56.28 87.29	47.28 78.46	67.63 80.32	77.58 75.08
STD. DEVIATIONS	18.44 33.09	25.08 35.44	32.04 37.46	17.34 26.03	25.25 24.43	32.14 29.53
RUNOFF						
TOTALS	0.000 1.531	0.231 1.001	107.719 7.832	132.198 12.399	4.186 32.889	1.101 2.618
STD. DEVIATIONS	0.000 7.655	1.129 3.655	79.606 19.469	83.057 18.692	10.230 23.021	4.224 9.782
EVAPOTRANSPIRATION						
TOTALS	11.077 92.224	10.312 82.653	14.765 53.938	21.996 34.156	62.058 17.703	82.970 9.840
STD. DEVIATIONS	1.473 22.714	1.516 28.539	3.172 12.225	12.522 5.457	18.333 4.375	26.003 1.410
PERCOLATION/LEAKAGE THROUGH LAYER 2						
TOTALS	0.0746 4.3467	0.0174 5.1961	4.4712 10.8573	10.7285 14.1089	15.1905 15.9397	11.8699 9.0350
STD. DEVIATIONS	0.3731 3.3431	0.0871 4.1935	2.3086 4.5769	2.9103 4.0273	0.5444 1.9063	2.7686 3.5455
LATERAL DRAINAGE COLLECTED FROM LAYER 5						
TOTALS	8.6997 11.2948	3.4528 6.1097	2.5106 5.3026	1.4980 10.2538	8.1014 14.0573	14.7146 16.0344
STD. DEVIATIONS	2.2975 2.5728	0.4892 2.1017	0.2921 3.0811	0.5233 5.0851	3.9451 4.1686	0.5508 2.6688
PERCOLATION/LEAKAGE THROUGH LAYER 6						
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

SOP5- 07. OUT
 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 7

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

PERCOLATION/LEAKAGE THROUGH LAYER 9

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 (CM)

DAILY AVERAGE HEAD ON TOP OF LAYER 2

AVERAGES	0.0017	0.0005	0.1638	2.0857	6.1618	3.6104
	1.2734	1.6718	5.0279	7.8075	11.1063	2.1840
STD. DEVIATIONS	0.0084	0.0027	0.1326	2.0053	1.6180	2.2019
	1.1353	2.2090	3.7563	4.4581	3.8635	2.0495

DAILY AVERAGE HEAD ON TOP OF LAYER 6

AVERAGES	0.0812	0.0354	0.0234	0.0145	0.0757	0.1420
	0.1055	0.0571	0.0512	0.0958	0.1356	0.1497
STD. DEVIATIONS	0.0215	0.0051	0.0027	0.0051	0.0368	0.0053
	0.0240	0.0196	0.0297	0.0475	0.0402	0.0249

DAILY AVERAGE HEAD ON TOP OF LAYER 8

AVERAGES	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

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 25

	MM		CU. METERS	PERCENT
PRECIPITATION	898.47	(93.160)	8984.7	100.00
RUNOFF	303.704	(69.7180)	3037.04	33.802
EVAPOTRANSPIRATION	493.691	(44.7988)	4936.91	54.948

	SOP5- 07. OUT			
PERCOLATION/LEAKAGE THROUGH LAYER 2	101.83585	(14.73756)	1018.358	11.33434
AVERAGE HEAD ON TOP OF LAYER 2	34.246	(10.701)		
LATERAL DRAINAGE COLLECTED FROM LAYER 5	102.02977	(13.44498)	1020.298	11.35592
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.00006	(0.00000)	0.001	0.00001
AVERAGE HEAD ON TOP OF LAYER 6	0.806	(0.106)		
LATERAL DRAINAGE COLLECTED FROM LAYER 7	0.00006	(0.00000)	0.001	0.00001
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.00001	(0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 8	0.000	(0.000)		
CHANGE IN WATER STORAGE	-0.953	(1.7795)	-9.53	-0.106

	PEAK DAILY VALUES FOR YEARS 1 THROUGH 25	
	(MM)	(CU. METERS)
PRECIPITATION	62.20	622.000
RUNOFF	135.852	1358.5154
PERCOLATION/LEAKAGE THROUGH LAYER 2	0.575992	5.75992
AVERAGE HEAD ON TOP OF LAYER 2	150.000	
DRAINAGE COLLECTED FROM LAYER 5	0.78955	7.89554
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 6	2.286	
MAXIMUM HEAD ON TOP OF LAYER 6	4.487	
LOCATION OF MAXIMUM HEAD IN LAYER 5 (DISTANCE FROM DRAIN)	1.0 METERS	
DRAINAGE COLLECTED FROM LAYER 7	0.00000	0.00000
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 8	0.000	
MAXIMUM HEAD ON TOP OF LAYER 8	0.035	

SOP5-07.OUT

LOCATION OF MAXIMUM HEAD IN LAYER 7
(DISTANCE FROM DRAIN) 0.0 METERS

SNOW WATER 359.95 3599.4553

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.4570

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.0580

*** 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 25

LAYER	(CM)	(VOL/VOL)
1	5.5522	0.3701
2	20.2950	0.4510
3	5.8774	0.1959
4	876.0000	0.2920
5	2.5512	0.0510
6	0.0000	0.0000
7	0.0060	0.0100
8	0.0000	0.0000
9	0.4500	0.7500
SNOW WATER	5.167	

SOP5-07.OUT
TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS = 45.00 CM
POROSITY = 0.4510 VOL/VOL
FIELD CAPACITY = 0.4190 VOL/VOL
WILTING POINT = 0.3320 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.4510 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.49999999000E-06 CM/SEC

LAYER 3

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 5

THICKNESS = 30.00 CM
POROSITY = 0.4570 VOL/VOL
FIELD CAPACITY = 0.1310 VOL/VOL
WILTING POINT = 0.0580 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.2081 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000005000E-02 CM/SEC

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS = 3000.00 CM
POROSITY = 0.6710 VOL/VOL
FIELD CAPACITY = 0.2920 VOL/VOL
WILTING POINT = 0.0770 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.2920 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.100000005000E-02 CM/SEC

LAYER 5

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS = 50.00 CM
POROSITY = 0.3970 VOL/VOL
FIELD CAPACITY = 0.0320 VOL/VOL
WILTING POINT = 0.0130 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.0534 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.550000012000 CM/SEC
SLOPE = 2.00 PERCENT
DRAINAGE LENGTH = 55.0 METERS

LAYER 6

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

SOP5-07. OUT

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3	- GOOD

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER

MATERIAL TEXTURE NUMBER 34

THICKNESS	=	0.60	CM
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0100	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	33.0000000000	CM/SEC
SLOPE	=	2.00	PERCENT
DRAINAGE LENGTH	=	55.0	METERS

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER

MATERIAL TEXTURE NUMBER 35

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.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	0.00	HOLES/HECTARE
FML INSTALLATION DEFECTS	=	0.00	HOLES/HECTARE
FML PLACEMENT QUALITY	=	3	- GOOD

LAYER 9

TYPE 3 - BARRIER SOIL LINER

MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.60	CM
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.7500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

SOP5-07. OUT
GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 5 WITH A GOOD STAND OF GRASS, A SURFACE SLOPE OF 2. % AND A SLOPE LENGTH OF 150. METERS.

SCS RUNOFF CURVE NUMBER	=	53.30	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.0000	HECTARES
EVAPORATIVE ZONE DEPTH	=	15.0	CM
INITIAL WATER IN EVAPORATIVE ZONE	=	5.769	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	=	6.855	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.870	CM
INITIAL SNOW WATER	=	6.848	CM
INITIAL WATER IN LAYER MATERIALS	=	911.433	CM
TOTAL INITIAL WATER	=	918.281	CM
TOTAL SUBSURFACE INFLOW	=	0.00	MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM CARIBOU MAINE

STATION LATITUDE	=	45.80	DEGREES
MAXIMUM LEAF AREA INDEX	=	3.50	
START OF GROWING SEASON (JULIAN DATE)	=	144	
END OF GROWING SEASON (JULIAN DATE)	=	260	
EVAPORATIVE ZONE DEPTH	=	15.0	CM
AVERAGE ANNUAL WIND SPEED	=	17.00	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	70.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	69.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	76.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	78.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY PRECIPITATION (MM)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-----	-----	-----	-----	-----	-----
59.9	54.4	62.0	65.8	73.2	80.8
102.4	100.8	89.4	79.0	81.8	80.0

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR CARIBOU MAINE

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES CELSIUS)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-----	-----	-----	-----	-----	-----
-11.8	-9.7	-3.6	4.6	12.3	17.3
19.8	18.5	13.2	6.8	0.1	-8.0

SOP5- 07. OUT

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
 COEFFICIENTS FOR CARIBOU MAINE
 AND STATION LATITUDE = 46.52 DEGREES

AVERAGE MONTHLY VALUES (MM) FOR YEARS 1 THROUGH 25

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	66.65 104.41	65.85 91.64	56.28 87.29	47.28 78.46	67.63 80.32	77.58 75.08
STD. DEVIATIONS	18.44 33.09	25.08 35.44	32.04 37.46	17.34 26.03	25.25 24.43	32.14 29.53
RUNOFF						
TOTALS	0.000 1.531	0.231 1.001	107.719 7.832	132.198 12.399	4.186 32.889	1.101 2.618
STD. DEVIATIONS	0.000 7.655	1.129 3.655	79.606 19.469	83.057 18.692	10.230 23.021	4.224 9.782
EVAPOTRANSPIRATION						
TOTALS	11.077 92.224	10.312 82.653	14.765 53.938	21.996 34.156	62.058 17.703	82.970 9.840
STD. DEVIATIONS	1.473 22.714	1.516 28.539	3.172 12.225	12.522 5.457	18.333 4.375	26.003 1.410
PERCOLATION/LEAKAGE THROUGH LAYER 2						
TOTALS	0.0746 4.3467	0.0174 5.1961	4.4712 10.8573	10.7285 14.1089	15.1905 15.9397	11.8699 9.0350
STD. DEVIATIONS	0.3731 3.3431	0.0871 4.1935	2.3086 4.5769	2.9103 4.0273	0.5444 1.9063	2.7686 3.5455
LATERAL DRAINAGE COLLECTED FROM LAYER 5						
TOTALS	8.6997 11.2948	3.4528 6.1097	2.5106 5.3026	1.4980 10.2538	8.1014 14.0573	14.7146 16.0344
STD. DEVIATIONS	2.2975 2.5728	0.4892 2.1017	0.2921 3.0811	0.5233 5.0851	3.9451 4.1686	0.5508 2.6688
PERCOLATION/LEAKAGE THROUGH LAYER 6						
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

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 0. 0000 0. 0000 0. 0000 0. 0000 0. 0000 0. 0000

LATERAL DRAINAGE COLLECTED FROM LAYER 7

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

PERCOLATION/LEAKAGE THROUGH LAYER 9

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 (CM)

DAILY AVERAGE HEAD ON TOP OF LAYER 2

AVERAGES	0. 0017	0. 0005	0. 1638	2. 0857	6. 1618	3. 6104
	1. 2734	1. 6718	5. 0279	7. 8075	11. 1063	2. 1840
STD. DEVIATIONS	0. 0084	0. 0027	0. 1326	2. 0053	1. 6180	2. 2019
	1. 1353	2. 2090	3. 7563	4. 4581	3. 8635	2. 0495

DAILY AVERAGE HEAD ON TOP OF LAYER 6

AVERAGES	0. 0812	0. 0354	0. 0234	0. 0145	0. 0757	0. 1420
	0. 1055	0. 0571	0. 0512	0. 0958	0. 1356	0. 1497
STD. DEVIATIONS	0. 0215	0. 0051	0. 0027	0. 0051	0. 0368	0. 0053
	0. 0240	0. 0196	0. 0297	0. 0475	0. 0402	0. 0249

DAILY AVERAGE HEAD ON TOP OF LAYER 8

AVERAGES	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

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 25

	MM	CU. METERS	PERCENT
PRECIPITATION	898. 47 (93. 160)	8984. 7	100. 00
RUNOFF	303. 704 (69. 7180)	3037. 04	33. 802
EVAPOTRANSPIRATION	493. 691 (44. 7988)	4936. 91	54. 948

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PERCOLATION/LEAKAGE THROUGH LAYER 2	101.83585	(14.73756)	1018.358	11.33434
AVERAGE HEAD ON TOP OF LAYER 2	34.246	(10.701)		
LATERAL DRAINAGE COLLECTED FROM LAYER 5	102.02977	(13.44498)	1020.298	11.35592
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.00006	(0.00000)	0.001	0.00001
AVERAGE HEAD ON TOP OF LAYER 6	0.806	(0.106)		
LATERAL DRAINAGE COLLECTED FROM LAYER 7	0.00006	(0.00000)	0.001	0.00001
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.00001	(0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 8	0.000	(0.000)		
CHANGE IN WATER STORAGE	-0.953	(1.7795)	-9.53	-0.106

	PEAK DAILY VALUES FOR YEARS 1 THROUGH 25	
	(MM)	(CU. METERS)
PRECIPITATION	62.20	622.000
RUNOFF	135.852	1358.5154
PERCOLATION/LEAKAGE THROUGH LAYER 2	0.575992	5.75992
AVERAGE HEAD ON TOP OF LAYER 2	150.000	
DRAINAGE COLLECTED FROM LAYER 5	0.78955	7.89554
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 6	2.286	
MAXIMUM HEAD ON TOP OF LAYER 6	4.487	
LOCATION OF MAXIMUM HEAD IN LAYER 5 (DISTANCE FROM DRAIN)	1.0 METERS	
DRAINAGE COLLECTED FROM LAYER 7	0.00000	0.00000
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 8	0.000	
MAXIMUM HEAD ON TOP OF LAYER 8	0.035	

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LOCATION OF MAXIMUM HEAD IN LAYER 7
(DISTANCE FROM DRAIN) 0.0 METERS

SNOW WATER 359.95 3599.4553

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.4570

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.0580

*** 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 25

LAYER	(CM)	(VOL/VOL)
1	5.5522	0.3701
2	20.2950	0.4510
3	5.8774	0.1959
4	876.0000	0.2920
5	2.5512	0.0510
6	0.0000	0.0000
7	0.0060	0.0100
8	0.0000	0.0000
9	0.4500	0.7500
SNOW WATER	5.167	

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 TYPE 3 - BARRIER SOIL LINER
 MATERIAL TEXTURE NUMBER 0

THICKNESS = 150.00 CM
 POROSITY = 0.4000 VOL/VOL
 FIELD CAPACITY = 0.3660 VOL/VOL
 WILTING POINT = 0.2880 VOL/VOL
 INITIAL SOIL WATER CONTENT = 0.4000 VOL/VOL
 EFFECTIVE SAT. HYD. COND. = 0.650000004000E-06 CM/SEC

LAYER 3

TYPE 1 - VERTICAL PERCOLATION LAYER
 MATERIAL TEXTURE NUMBER 5

THICKNESS = 30.00 CM
 POROSITY = 0.4570 VOL/VOL
 FIELD CAPACITY = 0.1310 VOL/VOL
 WILTING POINT = 0.0580 VOL/VOL
 INITIAL SOIL WATER CONTENT = 0.2035 VOL/VOL
 EFFECTIVE SAT. HYD. COND. = 0.100000005000E-02 CM/SEC

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
 MATERIAL TEXTURE NUMBER 0

THICKNESS = 1500.00 CM
 POROSITY = 0.6710 VOL/VOL
 FIELD CAPACITY = 0.2920 VOL/VOL
 WILTING POINT = 0.0770 VOL/VOL
 INITIAL SOIL WATER CONTENT = 0.2920 VOL/VOL
 EFFECTIVE SAT. HYD. COND. = 0.699999975000E-03 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT
 SOIL DATA BASE USING SOIL TEXTURE # 5 WITH A
 GOOD STAND OF GRASS, A SURFACE SLOPE OF 5. %
 AND A SLOPE LENGTH OF 150. METERS.

SCS RUNOFF CURVE NUMBER = 54.90
 FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT
 AREA PROJECTED ON HORIZONTAL PLANE = 1.0000 HECTARES
 EVAPORATIVE ZONE DEPTH = 15.0 CM
 INITIAL WATER IN EVAPORATIVE ZONE = 5.721 CM
 UPPER LIMIT OF EVAPORATIVE STORAGE = 6.855 CM
 LOWER LIMIT OF EVAPORATIVE STORAGE = 0.870 CM
 INITIAL SNOW WATER = 6.848 CM
 INITIAL WATER IN LAYER MATERIALS = 509.806 CM
 TOTAL INITIAL WATER = 516.654 CM
 TOTAL SUBSURFACE INFLOW = 0.00 MM/YR

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EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
CARI BOU MAINE

STATION LATITUDE = 45. 80 DEGREES
 MAXIMUM LEAF AREA INDEX = 3. 50
 START OF GROWING SEASON (JULIAN DATE) = 144
 END OF GROWING SEASON (JULIAN DATE) = 260
 EVAPORATIVE ZONE DEPTH = 15. 0 CM
 AVERAGE ANNUAL WIND SPEED = 17. 00 KPH
 AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 70. 00 %
 AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 69. 00 %
 AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 76. 00 %
 AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 78. 00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARI BOU MAINE

NORMAL MEAN MONTHLY PRECIPITATION (MM)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
59. 9	54. 4	62. 0	65. 8	73. 2	80. 8
102. 4	100. 8	89. 4	79. 0	81. 8	80. 0

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARI BOU MAINE

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES CELSIUS)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
- 11. 8	- 9. 7	- 3. 6	4. 6	12. 3	17. 3
19. 8	18. 5	13. 2	6. 8	0. 1	- 8. 0

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR CARI BOU MAINE
AND STATION LATITUDE = 46. 52 DEGREES

AVERAGE MONTHLY VALUES (MM) FOR YEARS 1 THROUGH 25

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	66. 65	65. 85	56. 28	47. 28	67. 63	77. 58

	104.41	SOP5-08. OUT 91.64	87.29	78.46	80.32	75.08
STD. DEVIATIONS	18.44 33.09	25.08 35.44	32.04 37.46	17.34 26.03	25.25 24.43	32.14 29.53

RUNOFF

TOTALS	0.000 1.512	0.223 0.940	106.954 7.359	131.753 10.613	3.991 30.676	0.793 2.478
STD. DEVIATIONS	0.000 7.562	1.088 3.395	79.394 18.996	82.801 18.071	10.151 22.353	3.301 9.371

EVAPOTRANSPIRATION

TOTALS	11.077 90.878	10.312 81.946	14.765 53.811	21.929 34.269	62.014 17.725	80.226 9.840
STD. DEVIATIONS	1.473 21.879	1.516 28.131	3.172 12.492	12.505 5.659	18.335 4.383	25.780 1.411

PERCOLATION/LEAKAGE THROUGH LAYER 2

TOTALS	0.0083 5.2033	0.0225 6.0848	4.9171 12.3160	11.6329 15.8305	17.8917 17.7779	12.5139 8.9459
STD. DEVIATIONS	0.0416 3.9441	0.1126 4.8766	2.5683 5.1551	3.4225 4.7004	0.5281 1.6381	4.2897 4.4123

PERCOLATION/LEAKAGE THROUGH LAYER 4

TOTALS	5.5603 8.9503	2.4323 6.2350	1.4440 7.5769	3.4729 13.3407	13.7745 16.6469	16.8546 16.9853
STD. DEVIATIONS	1.8508 3.6494	0.5729 3.2587	0.6629 5.1820	1.7469 5.8660	3.3232 3.9531	1.7563 2.7399

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (CM)

DAILY AVERAGE HEAD ON TOP OF LAYER 2

AVERAGES	0.0000 1.2171	0.0005 1.6066	0.1221 4.7510	1.9430 7.3051	5.5758 10.7695	2.7784 2.0066
STD. DEVIATIONS	0.0001 1.0714	0.0023 2.1778	0.1077 3.6688	1.9467 4.4323	1.7250 4.0989	2.2385 2.0280

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 25

	MM		CU. METERS		PERCENT
PRECIPITATION	898.47	(93.160)	8984.7		100.00
RUNOFF	297.295	(68.8620)	2972.95		33.089

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EVAPOTRANSPIRATION	488. 792 (44. 2107)	4887. 92	54. 403
PERCOLATION/LEAKAGE THROUGH LAYER 2	113. 14471 (17. 16717)	1131. 447	12. 59301
AVERAGE HEAD ON TOP OF LAYER 2	31. 730 (10. 390)		
PERCOLATION/LEAKAGE THROUGH LAYER 4	113. 27402 (15. 86935)	1132. 740	12. 60740
CHANGE IN WATER STORAGE	-0. 889 (1. 7769)	- 8. 89	- 0. 099

PEAK DAILY VALUES FOR YEARS 1 THROUGH 25

	(MM)	(CU. METERS)
PRECIPITATION	62. 20	622. 000
RUNOFF	135. 840	1358. 3987
PERCOLATION/LEAKAGE THROUGH LAYER 2	0. 617750	6. 17750
AVERAGE HEAD ON TOP OF LAYER 2	150. 000	
PERCOLATION/LEAKAGE THROUGH LAYER 4	1. 064530	10. 64530
SNOW WATER	359. 95	3599. 4553
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0. 4570
MINIMUM VEG. SOIL WATER (VOL/VOL)		0. 0580

FINAL WATER STORAGE AT END OF YEAR 25

LAYER	(CM)	(VOL/VOL)
1	5. 5034	0. 3669
2	60. 0000	0. 4000
3	5. 8012	0. 1934
4	437. 9605	0. 2920
SNOW WATER	5. 167	

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