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**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE               **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                **
**                  DEVELOPED BY ENVIRONMENTAL LABORATORY                   **
**                    USAE WATERWAYS EXPERIMENT STATION                     **
**             FOR USEPA RISK REDUCTION ENGINEERING LABORATORY              **
**                                                                          **
**                                                                          **
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PRECIPITATION DATA FILE:    C:\HELP3\input\KALISPEL.D4
TEMPERATURE DATA FILE:      C:\HELP3\input\KALISPEL.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\input\KALISPEL.D13
EVAPOTRANSPIRATION DATA:    C:\HELP3\input\KALSND.D11
SOIL AND DESIGN DATA FILE:  C:\HELP3\input\SAND3.D10
OUTPUT DATA FILE:           C:\HELP3\output\KALSND3.OUT



TIME:  10:58     DATE:   4/21/1999



******************************************************************************

     TITLE:  sand3

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



                                   LAYER  1
                                   --------

                     TYPE 1 - VERTICAL PERCOLATION LAYER
                         MATERIAL TEXTURE NUMBER   3
           THICKNESS                   =    150.00   CM
           POROSITY                    =      0.4570 VOL/VOL
           FIELD CAPACITY              =      0.0830 VOL/VOL
           WILTING POINT               =      0.0330 VOL/VOL
           INITIAL SOIL WATER CONTENT  =      0.1662 VOL/VOL
           EFFECTIVE SAT. HYD. COND.   =  0.310000009000E-02 CM/SEC
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GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 3 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 1.% AND A SLOPE LENGTH OF 30. METERS.

SCS RUNOFF CURVE NUMBER	=	81.30	
FRACTION OF AREA ALLOWING RUNOFF	=	95.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	0.0900	HECTARES
EVAPORATIVE ZONE DEPTH	=	15.0	CM
INITIAL WATER IN EVAPORATIVE ZONE	=	4.499	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	=	6.855	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.495	CM
INITIAL SNOW WATER	=	0.000	CM
INITIAL WATER IN LAYER MATERIALS	=	24.937	CM
TOTAL INITIAL WATER	=	24.937	CM
TOTAL SUBSURFACE INFLOW	=	0.00	MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM KALISPELL MONTANA

STATION LATITUDE	=	48.18	DEGREES
MAXIMUM LEAF AREA INDEX	=	0.00	
START OF GROWING SEASON (JULIAN DATE)	=	142	
END OF GROWING SEASON (JULIAN DATE)	=	260	
EVAPORATIVE ZONE DEPTH	=	15.0	CM
AVERAGE ANNUAL WIND SPEED	=	10.00	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	74.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	61.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	60.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	76.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR KALISPELL MONTANA

NORMAL MEAN MONTHLY PRECIPITATION (MM)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
41.1	26.9	21.3	26.9	44.7	56.9
23.9	36.6	28.2	24.9	32.8	40.4

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR KALISPELL MONTANA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES CELSIUS)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
-7.1	-3.2	-0.1	5.8	10.8	14.6
18.3	17.5	12.2	5.8	-0.6	-4.3

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR KALISPELL MONTANA
AND STATION LATITUDE = 48.18 DEGREES

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AVERAGE MONTHLY VALUES (MM) FOR YEARS 1 THROUGH 30

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	37.60	31.00	20.64	29.16	53.05	52.39
	27.18	30.33	24.99	29.03	31.46	38.23
STD. DEVIATIONS	13.07	14.99	10.91	13.28	23.26	29.95
	14.24	18.92	12.89	14.86	11.97	9.14
RUNOFF						
TOTALS	4.764	24.150	31.386	14.138	1.436	0.018
	0.003	0.000	0.000	0.000	1.183	3.160
STD. DEVIATIONS	7.183	20.384	31.749	10.273	4.604	0.099
	0.017	0.000	0.000	0.000	3.190	4.471
EVAPOTRANSPIRATION						
TOTALS	8.257	7.607	8.256	18.690	45.183	43.272
	25.074	25.498	21.680	17.389	13.248	8.453
STD. DEVIATIONS	1.351	1.523	4.023	10.394	16.985	23.349
	11.234	17.417	11.372	8.611	3.704	2.653
PERCOLATION/LEAKAGE THROUGH LAYER 1						
TOTALS	7.2976	5.6015	4.9093	3.9648	6.3922	12.5139
	11.1914	8.6942	6.4618	5.5037	4.8676	5.7251

STD. DEVIATIONS	3.7621	2.0737	1.3295	0.8219	4.8130	3.8095
	4.6487	3.4389	2.3035	2.2464	1.4859	4.1344

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 30

	MM		CU. METERS	PERCENT
PRECIPITATION	405.06	(56.787)	364.6	100.00
RUNOFF	80.237	(34.7011)	72.21	19.809
EVAPOTRANSPIRATION	242.606	(38.3029)	218.35	59.894
PERCOLATION/LEAKAGE THROUGH LAYER 1	83.12309	(17.20152)	74.811	20.52134
CHANGE IN WATER STORAGE	-0.910	(1.0080)	-0.82	-0.225

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                PEAK DAILY VALUES FOR YEARS    1 THROUGH   30
   ------------------------------------------------------------------------
                                                   (MM)       (CU. METERS)
                                                ----------    ------------
      PRECIPITATION                              34.60            31.140

      RUNOFF                                     34.798           31.3178

      PERCOLATION/LEAKAGE THROUGH LAYER  1        1.770753         1.59368

      SNOW WATER                                125.15           112.6389


      MAXIMUM VEG. SOIL WATER (VOL/VOL)                  0.4314

      MINIMUM VEG. SOIL WATER (VOL/VOL)                  0.0330

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                   FINAL WATER STORAGE AT END OF YEAR   30
    -------------------------------------------------------------------
                    LAYER          (CM)         (VOL/VOL)
                    -----         ------        ---------
                      1           22.1120         0.1474

                  SNOW WATER       0.095

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