ecology and environment, inc.

Final Technical Memorandum

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Subject: **Red Devil Mine Proposed Repository, Refined Hydrologic Analysis**

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1. INTRODUCTION

On behalf of the Bureau of Land Management (BLM), Ecology and Environment, Inc., (E & E) prepared a Feasibility Study (FS) for the Red Devil Mine Site (RDM), located in Red Devil, Alaska (E & E 2016). Remedial Alternatives 3a through 3d of the final FS include construction of an onsite repository to consolidate tailings/waste rock and contaminated soil that would be excavated from the Main Processing Area (MPA), the Red Devil Creek downstream alluvial area, and the exposed portions of the Red Devil Creek delta and Rice Sluice and Dolly Sluice areas (E & E 2016). All four versions of Alternative 3 include an impermeable geomembrane cover system for the repository. The repository under Alternatives 3a and 3c does not include a bottom liner system. Under Alternatives 3a and 3c, it is assumed that a bottom liner for the repository would not be necessary because the cover system would be designed to provide adequate protection from water infiltration. As part of the FS, a hydrologic analysis was performed in 2016 to evaluate the potential for infiltration and migration of leachate for a repository with no bottom liner. The hydrologic analysis was summarized in the Hydrologic Analysis, Red Devil Mine Site report, provided as Appendix A of the FS, and the results were incorporated into the final FS (E & E 2016).

The 2016 hydrologic analysis results indicated that concentrations of the primary contaminants of concern (COC)—antimony, arsenic, mercury—and diesel range organics (DRO) in leachate would be reduced to negligible levels at a depth in the vadose zone well above the water table (E & E 2016). Since the FS was finalized, the Alaska Department of Environmental Conservation (ADEC) and U.S. Environmental Protection Agency (EPA) have expressed general concern regarding the accuracy of modeling results and related concerns regarding whether an unlined repository would effectively protect against leachate impacts to groundwater.

Since the 2016 FS, the BLM has collected additional data focused on developing a more detailed understanding of the geologic and hydrogeologic conditions in the area of the proposed repository. The additional data serve to characterize subsurface conditions in the upper watershed more completely and provide a stronger empirical basis for a hydrologic analysis of the proposed repository.

On behalf of the BLM, E & E has performed a refined hydrologic analysis. The purpose of this technical memorandum is to briefly summarize the approach and results of the 2016 hydrologic analysis (Section 2) and present the approach (Section 3) and results (Section 4) of the refined analysis.

2. SUMMARY OF 2016 HYDROLOGIC ANALYSIS

The 2016 hydrologic analysis was based on a conceptual model reflective of the repository design, the current understanding of the chemical and physical properties of media to be consolidated in the repository, and the local geologic, hydrogeologic, and climatic conditions. The site-specific model input was based on data presented in the Remedial Investigation (RI; E & E 2014) and other sources of site-specific data. Literature values were used for those parameters that could not be estimated using site-specific data (E & E 2016, Appendix A).

The 2016 hydrologic analysis was performed using two numerical models—Hydrologic Evaluation of Landfill Performance (HELP) and Variably Saturated 2D Flow and Transport (VS2DT)—to simulate infiltration through the cover system, repository contents, and the vadose zone of the underlying geologic materials. The HELP results were used as input to VS2DT to simulate migration through the unsaturated zone within and beneath the repository. Natural attenuation processes were modeled in the VS2DT simulation to estimate the depth below ground surface at which the concentrations of antimony, arsenic, mercury, and DRO would be reduced to negligible levels. Details on the methods and results of the 2016 hydrologic analysis are described in Appendix A of E & E 2016.

Aspects of the 2016 conceptual model pertaining to the repository conceptual design were generally consistent with the conceptual repository design described under FS Alternatives 3a and 3c. However, some of the conceptual repository design elements described under FS Alternatives 3a and 3c were simplified for the purposes of developing the hydrologic analysis conceptual model. For example, the FS indicated that the repository side slopes would have a maximum slope of 2.5 horizontal to 1 vertical (2.5H:1V), or 40 percent, and the top deck of the repository would be graded at 3 percent (see FS, Section 3.2.3.1). For simplicity, the conceptual repository structure used in the hydrologic analysis assumed a single intermediate slope value of 20 percent to represent both the top deck and side slopes (E & E 2016; see Hydrologic Model report, Sections 2.5 and 3.2.1). In general, it is expected that steeper slopes promote runoff and reduce infiltration. As such, assuming a top slope value of 20 percent in the HELP model would be expected to underestimate infiltration within the top deck portion of the repository.

Other inputs used in the 2016 hydrologic analysis are comparatively conservative. For example, the assumed initial leachate concentrations used as input in the VS2DT model—532 milligrams per liter (mg/L) for antimony, 825 mg/L for arsenic, and 90 mg/L for mercury—are orders of magnitude higher than would be expected in actual leachate generated in the repository. These assumed initial leachate concentration values for antimony, arsenic, and mercury were conservatively set to be numerically equal to the average total metals concentrations in solid samples of tailings/waste rock and contaminated soil subject to excavation (E & E 2016; see Hydrologic Model report, Section 3.2.3). In contrast, results of site-specific leach testing of tailings/waste rock and contaminated soil indicate concentrations one or two orders of magnitude lower than the assumed initial leachate concentrations used as VS2DT input in the 2016 hydrologic analysis. During the RI, a total of 47 surface and subsurface samples of tailings/waste rock and contaminated soil subject to excavation under FS Alternatives 3 and 4 were analyzed for Synthetic Precipitation Leaching Procedure (SPLP) inorganic elements. All SPLP results are presented in RI report, Chapter 4, and RI SPLP results for antimony, arsenic, and mercury are summarized in RI report, Table 5-1 (E & E 2014). The maximum, minimum, and average SPLP concentrations are summarized in Table 2-1.

Table 2-1. SPLP Results for Tailings/Waste Rock and Contaminated Soil

	Antimony (mg/L)	Arsenic (mg/L)	Mercury (mg/L)
Maximum	75.3	6.00	0.356
Minimum	Non-detect (<0.02)	Non-detect (<0.02)	Non-detect (<0.0001)
Average	6.07	1.77	0.0245

Key:
mg/L = Milligrams per liter
SPLP = Synthetic Precipitation Leaching Procedure

Antimony, arsenic, and mercury concentrations in groundwater samples collected from wells installed in the MPA and Red Devil Creek downstream alluvial area that exhibit impacts from tailings/waste rock are similar in magnitude to the SPLP results described above (see RI, Chapter 4 and Section 5.4.3.1).

3. REFINED HYDROLOGIC ANALYSIS TECHNICAL APPROACH

On behalf of the BLM, E & E performed a refined hydrologic analysis as described in this section. The goal of the refined hydrologic analysis is to address general ADEC and EPA concerns regarding the 2016 analysis and to demonstrate whether an unlined repository is protective of human health and the environment.

As noted above, since the 2016 FS, the BLM has collected additional data to support developing a more detailed understanding of the geologic and hydrogeologic conditions in the area of the proposed repository. The present hydrologic analysis incorporates appropriate results of additional post-FS characterization and is based on assumptions and model input parameters believed to be representative of a reasonably plausible scenario. Results of the additional geologic/hydrogeologic characterization are summarized in Sections 3.1 and 3.2.

It is not the BLM's intent to complete the repository design at this time. However, for the purpose of the subject hydrologic analysis, the repository conceptual design was refined to: reflect data collected as part of the additional characterization activities (E & E 2019); incorporate stakeholder agency feedback on the 2016 hydrologic model; and inform the development of a refined conceptual model representative of a reasonably plausible scenario. Information regarding the refined repository conceptual design is presented in Section 3.3.

As with the 2016 hydrologic analysis, the refined hydrologic analysis was performed using HELP and VS2DT The approach to develop the refined hydrologic model and selection of model input is described in Section 3.4.

3.1 Additional Characterization of Repository Area

Since the 2016 FS, the BLM has collected and compiled additional data in the upper Red Devil Creek watershed where a proposed repository would be located to improve the understanding of geologic and hydrogeologic conditions at the site. An RI Supplement was conducted to address data gaps associated with groundwater as well as soil and Kuskokwim River sediments that were identified as part of the development of site-wide remedial alternatives during the preparation of the FS. RI Supplement groundwater characterization addressed data gaps associated with groundwater in the Surface Mined Area as well as the MPA and the Red Devil Creek downstream alluvial area. Results of the RI Supplement groundwater characterization are detailed in Chapter 3 of the *Final Soil, Groundwater, Surface Water, and Kuskokwim River Sediment Characterization, Supplement to Remedial Investigation, Red Devil Mine, Alaska* report (RI Supplement report; E & E 2018). In 2017, the BLM performed additional characterization of groundwater in the vicinity of the proposed repository to generate additional information that may be used to inform a more detailed hydrologic analysis of the repository as well as establishment of a groundwater detection monitoring network for the proposed repository. Results of the

2017 additional groundwater characterization and a synthesis of soil, bedrock, and groundwater data collected to date are presented in Chapters 2 and 3 of the *Final Red Devil Mine Groundwater and Surface Water Report, Red Devil Mine, Alaska* (Groundwater and Surface Water Report; E & E 2019). The report includes the following types of information pertinent to the proposed repository and hydrologic analysis:

- Groundwater occurrence, depths, and gradients (Sections 3.3 and 3.4);
- Groundwater chemical conditions (Section 3.5);
- Depths and thicknesses of soil and unsaturated fractured bedrock (Section 2.2.3.1);
- Lithological and mineralogical characteristics and concentrations of COCs in soil (Sections 2.2.3.1 through 2.2.3.3);
- Geotechnical soil characteristics that affect groundwater flow, including porosity, hydraulic conductivity, grain size distribution, and moisture content (Sections 2.2.3.4 and 3.8.1);
- Soil characteristics that affect sorption of contaminants, including total organic carbon (TOC) and grain size distribution (Sections 2.2.3.3 and 2.2.3.4);
- Bedrock hydraulic conductivity (Section 3.8.2); and
- Bedrock characteristics that may influence groundwater flow and migration of contaminants, including lithology; stratigraphy; structure, including joints, fractures, and faults; fracture fill mineralogy; weathering; and natural mineralization (Section 2.2.4).

Where the results of the additional characterization introduced above are used for the refined hydrologic analysis, the data and their use are described.

3.2 Updated Repository Volumes

Development of FS Alternatives 3 and 4 was based on estimated depths and volumes of tailings/waste rock and contaminated soil—defined as material containing total concentrations of one or more COCs greater than its respective remedial goal (RG)—located in the MPA, Red Devil Creek downstream alluvial area, and portions of the Red Devil Creek delta, Rice Sluice delta, and Dolly Sluice delta above 164 feet elevation (E & E 2016). The estimated excavation depths and volumes were based on RI data (E & E 2014). The total volume of tailings/waste rock and contaminated soil was estimated at the time of the FS to be 210,000 cubic yards (cy). This material includes tailings/waste rock from the post-1955 MPA known or expected to have arsenic toxicity characteristic leaching procedure (TCLP) concentrations greater than the Resource Conservation and Recovery Act (RCRA) limit (5 mg/L). FS Alternative 3 includes treatment of such materials by solidification using portland cement as a binding agent prior to consolidation into the proposed repository. RI data included limited arsenic TCLP data to delineate the lateral and vertical extents of such materials (E & E 2014). For the purposes of the FS, it was estimated that approximately 15 percent of the total volume of proposed repository contents (i.e., approximately 31,500 cy) would fail TCLP testing for arsenic. Because data collected as part of the RI regarding the extent of materials expected to fail TCLP testing for arsenic were not sufficient for designing the planned excavation, the BLM collected additional data as described below.

3.2.1 Additional Characterization of Tailings/Waste Rock

In 2017, additional characterization of tailings/waste rock was performed to address data gaps regarding the lateral and vertical extents of tailings/waste rock in the Post-1955 MPA expected to have TCLP concentrations greater than the RCRA limit for arsenic. The tailings/waste rock characterization addressed the lack of information on tailings/waste rock expected to fail TCLP testing for arsenic needed to design the planned excavation. Field activities were performed during the summer of 2017 and included installing 20 additional soil borings in the MPA and collecting soil samples for X-ray fluorescence spectroscopy (XRF) field screening for total inorganic elements, and laboratory analysis for

total arsenic and TCLP arsenic. The 2017 tailings/waste rock characterization field activities and sampling results are presented in Sections 2.1.2 and 2.2.2 of the Groundwater and Surface Water Report (E & E 2019).

3.2.2 Updated Estimates of Repository Volumes

Results of the 2017 additional tailings/waste rock characterization described in Section 3.2.1 above may be used, in conjunction with RI data, to refine the estimated volume of material with TCLP arsenic concentrations exceeding the RCRA limit and that would be subject to solidification under FS Alternative 3.

In addition, the results of the 2017 tailings/waste rock characterization may be used, in conjunction with the RI data and the further characterization of tailings/waste rock and soil performed as part of the RI Supplement (E & E 2018), to refine the estimated excavation depths and total volume of all tailings/waste rock and contaminated soil that would be excavated under FS Alternatives 3 and 4. The RI Supplement included installation of boreholes near Red Devil Creek in the MPA and Red Devil Creek downstream alluvial area to gather additional information on depth of soil with COC concentrations greater than RGs and depth to bedrock (E & E 2018; see Section 2.2.4 of the RI Supplement). As noted in Section 3.2.1, above, the 2017 additional tailings/waste rock characterization activities included installing 20 additional soil borings in the MPA and collecting continuous soil samples from the ground surface to depths a minimum of 2 feet into weathered bedrock below the tailings/waste rock or soil. In addition to delineating the extent of materials with TCLP arsenic concentrations exceeding the RCRA limit, the results may be used to estimate the depth of soil with COC concentrations greater than the soil RGs. Results of the 2017 additional characterization are presented in Section 2.2.2 of the Groundwater and Surface Water Report (E & E 2019).

The BLM is presently developing refined excavation depths and volume estimates as described above. A report summarizing the methods and results of the effort to refine the excavation depths and volumes of tailings/waste rock with TCLP arsenic concentrations exceeding the RCRA limit will be provided separately. For the purposes of advancing the refined hydrologic analysis described in this technical memorandum, preliminary refined volume estimates of tailings/waste rock and contaminated soil have been developed. The preliminary refined volume estimates are summarized in Table 3-1 (Table 3-1, items 1 through 4). The preliminary refined estimate of tailings/waste rock with TCLP concentrations greater than the RCRA limit for arsenic also is presented in Table 3-1 (item 2).

Table 3-1. Preliminary Refined Estimated Volumes of Repository Contents

Material	Estimated Volume (bcy)
(1) Material in MPA, Red Devil Creek downstream alluvial area, and Red Devil Creek Delta/Rice Sluice Delta above elevation 164 feet with total antimony, arsenic, and/or mercury concentration > soil RG, excluding material with arsenic TCLP concentration > RCRA limit (corresponding to Areas A through K in FS Figure 3-1)	199,300
(2) Material with total antimony, arsenic, and/or mercury concentration > soil RG and with arsenic TCLP concentration > RCRA Limit (corresponding to a subarea of Area A in FS Figure 3-1)	19,300
(3) Monofill #2 materials not included in (1) above (see FS Section 3.2.3.3)	940
(4) Material in Dolly Sluice Delta above elevation 164 feet with total antimony, arsenic, and/or mercury concentration > soil RG (corresponding to Areas L and M in FS Figure 3-1)	2,330
TOTAL	**221,870**

Key:
bcy = bank (i.e., in-place) cubic yards
FS = Feasibility Study
RCRA = Resource Conservation and Recovery Act
RG = remedial goal
TCLP = toxicity characteristic leaching procedure

3.2.3 Soils in the Area of the Proposed Repository

Native soils in the area of the proposed repository consist of loess and soils derived from weathering of Kuskokwim Group (KG) bedrock, referred to in this document as KG-derived soils. These soils have been characterized by MacKevett and Berg (1963) and through the RI (E & E 2014), RI Supplement (E & E 2018), and 2017 additional characterization activities (E & E 2019). As part of the 2017 additional characterization activities, 16 boreholes/monitoring wells were installed in the Surface Mined Area in the vicinity of the proposed repository. Results of the soil characterization that are pertinent to the refined hydrologic analysis are discussed below.

Loess deposits overlie the KG-derived soils throughout much of the RDM. The lateral distribution of loess deposits as mapped by MacKevett and Berg (1963) prior to the final stages of surface mining at the RDM is illustrated in Figure 1-7 of the RI report (E & E 2014) and Figure 2-20 of the Groundwater and Surface Water report (E & E 2019). Additional information regarding the distribution of loess in the area of the proposed repository is presented in Chapters 2 and 3 of the Groundwater and Surface Water report (E & E 2019).

MacKevett and Berg (1963) describe the loess as follows:

> Microscopic examination of the granular loess in immersion oils reveals that the loess consists chiefly of subangular grains between 0.01 and 0.05 mm in diameter with extremes in grain size of 0.003 and 1.0 mm. In order of decreasing abundance the constituents of the loess are: quartz, plagioclase, lithic fragments consisting largely of schist and slate, muscovite, biotite, chlorite, hornblende, hypersthene, and minor mounts of magnetite or ilmenite, zoisite, epidote, zircon, garnet, K-feldspar(?), hydrous iron oxides, and clay minerals.

Lithological characterization of the loess and KG-derived soils was performed as part of the 2017 additional characterization activities. Lithological descriptions of soils observed in the boreholes are presented in Table 2-5 of the Groundwater and Surface Water report (E & E 2019). Both loess and KG-derived soils typically are brown-colored (e.g., brown, reddish brown, grayish brown), interpreted to reflect the presence of iron oxide and oxyhydroxide minerals typically derived from weathering of iron-bearing minerals.

As part of the 2017 additional characterization (E & E 2019), selected samples of native soils from the boreholes in the proposed repository area were submitted for laboratory analysis for chemical and geotechnical parameters. Samples submitted for laboratory analysis consist of loess (samples 17SM78SB12, 17SM78SB17, 17SM79SB05, 17SM79SB08, 17SM79SB11, 17SM81SB03, 17SM81SB06, and 17SM82SB06), KG-derived soils (samples 17SM86SB1.5, 17SM86SB03, and 17SM86SB04), and soils consisting of mixed loess and KG-derived soil (samples 17SM78SB09, 17SM81SB07, and 17SM82SB09/17SM82SB8.5).

Samples were submitted for laboratory analysis for total metals and TOC (E & E 2019). Results of the laboratory chemical analyses are presented in Table 2-6 of the Groundwater and Surface Water report (E & E 2019). Concentrations of total metals, including aluminum, iron, and manganese, are generally similar for soil samples consisting of KG-derived soils, soils consisting of mixed loess and KG-derived soil, and soils consisting entirely of loess. The TOC content ranges from 2,000 mg/kg (milligrams per kilogram; 0.2 percent) to 9,800 mg/kg (0.98 percent) for loess and mixed loess and KG-derived soil, and is 15,000 mg/kg (1.5 percent) in the sample of KG-derived soil analyzed for TOC.

Soil samples also were submitted for laboratory geotechnical testing for moisture content, specific gravity, bulk density, grain size distribution, liquid limit, plastic limit, plasticity index, compaction characteristics, hydraulic conductivity, and porosity (derived from results of bulk density, grain density,

and moisture content), as described in Section 2.1.3.5 of the Groundwater and Surface Water report (E & E 2019). Geotechnical testing results are presented in Table 2-7 of the Groundwater and Surface Water report (E & E 2019). Laboratory results for geotechnical parameters are generally similar for soil samples consisting of mixed loess and KG-derived soil and soils consisting entirely of loess, but vary slightly for the sample consisting of only KG-derived soil (E & E 2019).

3.3 Refined Repository Conceptual Design

To perform the refined repository hydrologic analysis, the conceptual model was updated to incorporate new data generated as part of the additional characterization activities described in Sections 3.1 and 3.2, above. In addition, the conceptual model was refined to better represent expected site conditions and a reasonably plausible scenario for infiltration and leachate generation and migration. As part of the development of the technical approach for the refined hydrologic analysis, E & E performed a slope stability analysis of the repository based on the preliminarily updated repository conceptual design, as described below.

3.3.1 Slope Stability Analysis

E & E prepared a slope stability analysis of the repository as described briefly below.

3.3.1.1 Objective

The analysis is intended to provide the designers with an awareness of potential slope stability issues but is not intended as guidance for constructability or construction. Additionally, it is recommended that site-specific testing of material be conducted, as soil mechanic properties can be highly variable.

3.3.1.2 Criteria

Slope stability analyses are routinely performed to assess the safety and functional design of excavated, natural, or graded slopes. To apply slope stability principles properly for the safe and economic design of excavations, embankments, earth dams, landfills, and spoil heaps an understanding of geology, hydrology, and soil properties is necessary. Judgements regarding acceptable risk or safety factors must be made to assess the results of analyses (Abramson 2002). Analysis includes a factor of safety (FOS) within the criteria to evaluate the adequate performance of the conceptual slopes. Technically, the FOS represents the relationship between the average shear strength of the soil (Tf) and the average shear stress developed along potential failure surfaces (Td)(Das 2010):

$$FOS = \frac{\mathrm{Tf}}{\mathrm{Td}}$$

When the FOS is equal to 1 or less, the slope is in a state of impending failure. The *Slope Stability Engineer Manual* (USACE 2003) recommends using a minimum static FOS for embankments of 1.3 for end-of-construction and multistage loading and 1.5 for normal long-term loading conditions. A footnote in Table 3-1 of the manual (USACE 2003) suggests that for embankments over 50 feet high on soft foundations a higher minimum end-of-construction FOS may be appropriate. For the proposed RDM repository, a static FOS of 1.5 matching the FOS recommendation for normal long-term loading conditions has been chosen for evaluation of the preliminarily updated conceptual design.

An evaluation of the slope failure during a seismic event also was conducted. An FOS of 1.0 is generally acceptable under seismic conditions. The U.S. Army Corps of Engineers (2003) recommends a minimum seismic FOS of 1.1. For this evaluation, a minimum FOS of 1.15 for pseudo-static (seismic) conditions was chosen for evaluation of the preliminarily updated conceptual design. This is based on “Methods for assessing the stability of slopes during earthquakes—A retrospective” (Jibson 2011).

3.3.1.3 Method of Analysis

Elements of the refined repository conceptual design used for the slope stability analysis are described below. The conceptual repository was sized to hold an estimated 250,000 cy of tailings/waste rock and

contaminated soil. This is based on an estimated 221,870 bank cubic yards (bcy) of material as presented in Section 3.2.2, adding the anticipated volume of portland cement for solidification, and applying a swell factor to account for soil expansion following excavation. The repository was designed to lie generally in the area of the proposed repository footprint identified in the FS (E & E 2016) and to have a minimum top deck slope of 3 percent and maximum side slopes of 3H:1V (33 percent). Due to steep ground surface northwest, northeast, and southeast of the center of the originally proposed repository area, it was necessary to extend the footprint of the conceptual repository toward the southwest in order to hold the assumed volume of 250,000 cy of tailings/waste rock and contaminated soil. It also was necessary for the design to cut into the existing hillside toward the southwest in order to hold the assumed volume while maintaining maximum 3H:1V side slopes. Throughout the refined repository footprint, including the cut area, the repository was designed to maintain a minimum separation of 10 feet between the base of the repository contents and the highest groundwater elevations observed to date. Conceptual drawings were prepared using Autodesk Civil 3D® to develop the conceptual design and support the slope stability analysis. The approximate footprint of the preliminary refined repository design is illustrated in Figure A-1, included in Attachment A.

XSTABL© Version 5.2 by Interactive Software Designs, Inc. was used to develop the slope geometry and perform the slope analysis. The program allows for a search of the most critical surface and returns a corresponding FOS using two-dimensional limit equilibrium analysis by the simplified Bishop and Janbu methods. Stability analyses of earth slopes during earthquake shaking are analyzed using the pseudo-static method (e.g., Terzaghi 1950).

3.3.1.4 Background Information

Supporting information regarding geology, hydrogeology, and characteristics of tailings/waste rock and other mine waste was obtained from the RI report (E & E 2014).

3.3.1.5 Design Criteria and Assumptions

Design criteria and assumptions used in the slope stability analysis are briefly summarized below:

1) Slope stability was evaluated using native slope conditions, grade of the excavated base layer, and a 3H:1V grade for the face (side slopes) of the conceptual repository.
2) Maximum conceptual waste thickness: The assumed maximum height of the finished slope assumed in the analysis was estimated at approximately 70 feet above ground surface, with a maximum waste material thickness of approximately 65 feet. The total lengths of the repository side slopes to the north, east, and west slope were assumed to be approximately 195 feet. The top of the repository was estimated to extend approximately 340 feet to the southwest and tie into the existing grade.
3) Conceptual design grading plans maintain a minimum of 10 feet of separation between the highest measured level of groundwater and the bottom of the contaminated material.
4) It was assumed that seepage will not be present in the estimated potential failure zone because of the separation of the repository from the water table and interception of any potential surface water run-on or shallow perched groundwater uphill of the repository.
5) RI (E & E 2014) geotechnical testing results for tailings/waste rock, flotation tailings, and Red Devil Creek delta materials were used to identify Unified Soil Classification System (USCS) soil types. Soil friction angle and cohesion were assigned based on typical values found in literature resources and densities were assigned based on values from hydraulic conductivity and Proctor testing results obtained from Table 2-7 of the Groundwater and Surface Water report (E & E 2019). Geotechnical parameters used in the XSTABL© slope stability analysis are provided in Table 3-2. Borehole logging data are presented in Table 2-5 of the Groundwater and Surface

Water report (E & E 2019). Materials that are treated by solidification may exhibit differing geotechnical properties than originally tested and have not been included in the analysis.

6) Overburden in the Surface Mined Area includes silts and sandy silts with gravel based on borehole logging data (see Table 2-5 of the Groundwater and Surface Water report; E & E 2019) and geotechnical testing (see Table 2-7 of the Groundwater and Surface Water report; E & E 2019). The borehole logging data show the overburden layer within the Surface Mined Area ranges in thickness from approximately 1 to 20 feet. Borehole logging identified the overburden as a native loess and weathered bedrock/colluvium, and geotechnical testing results show that the overburden soils fall into USCS Group ML with Group Names silt and sandy silt with gravel. The soils are inorganic and exhibited no plasticity to low plasticity. Soil friction angle and cohesion were assigned based on typical values found in literature resources and densities were assigned based on values from hydraulic conductivity and Proctor testing. Geotechnical parameters used as inputs into the XSTABL© model are summarized in Table 3-2.

7) Weathering of Kuskokwim Group bedrock was observed in boreholes in the Surface Mined Area extending from the top of bedrock to depths greater than 20 feet below the top of bedrock (see Table 2-5 of the Groundwater and Surface Water report; E & E 2019). The most intensively weathered bedrock near the top of bedrock generally falls into USCS Group GM with Group Name silty gravel with sand. The soil is inorganic and exhibits no plasticity. Soil friction angle, cohesion, and densities were assigned based on typical values found in literature resources. Below the uppermost heavily weathered bedrock, the intensiveness of the weathering decreases and typically includes iron staining along fractures. Some less intensive weathering also occurs locally within deeper zones of relatively unweathered bedrock (see Table 2-5 of the Groundwater and Surface Water report; E & E 2019). Geotechnical parameters for weathered bedrock used as inputs into the XSTABL© model are summarized in Table 3-2.

8) Based on borehole logging observations, fractured Kuskokwim Group bedrock underlies the weathered bedrock zone (see Table 2-5 of the Groundwater and Surface Water report; E & E 2019). Soil friction angle, cohesion, and densities were assigned based on typical values found in literature resources. Geotechnical parameters used as inputs into the XSTABL© model are summarized in Table 3-2. Rather than modeling bedrock as a lower limiting barrier such as would be the case with a fully competent bedrock, the bedrock beneath the Surface Mined Area was input as an additional soil layer. This was done due to the weathering that occurs locally below zones of relatively unweathered bedrock described in item 7 above and to prevent errors in model runs due to the shallow bedrock depth.

9) Once waste material is consolidated and compacted within the repository site it will have an impermeable geomembrane cover system installed. The slope stability focuses on the stability of the repository waste material; therefore, the cover system has not been modeled in XSTABL©. It is anticipated that future designs will include cover system evaluations, including slope veneer stability calculations.

10) The value for peak horizontal acceleration (ah) obtained from seismic design maps utilized by the American Association of State Highway and Transportation Officials (USGS 2019), give a value of 0.12g for the 7 percent chance of exceedance in 75 years. Since k = ah/g; the value for k is 0.12.

Table 3-2. Input Parameters[1] for XSTABL© Simulation – Red Devil Mine

Soil Layers	Density$_{dry}$ lb/ft^3	Density$_{sat}$ lb/ft^3	Cohesion[2] lb/ft^2	Friction Angle
Bedrock[1]	140	145	0	45
Weathered Bedrock (GM)[1]	130	143	0	35
Loess (ML)	106	118	10	30
Tailings/Waste Rock (GM, SM)	126	134	0	35
Treated Tailings (GM)	130	137	0	35

Key:
lb/ft^3 = Pounds per cubic foot
lb/ft^2 = Pounds per square foot

Notes:

[1] Geotechnical parameters of bedrock and native base soil were estimated using a combination of values from geotechnical testing and http://www.geotechdata.info/parameter/parameter.html.

[2] It is common practice to include cohesion for impervious or semi-pervious fine-grained soils (USSD 2007).

3.3.1.6 Model Setup

Slope stability was modeled for various scenarios, including the following:

1) Scenario 1: Excavation required to fit the assumed 250,000 cy volume of repository contents may expose the native bedrock layer. For this reason, two modeling scenarios were run: a) slope 3H:1V, repository on cut bedrock, no seismic; and b) slope 3H:1V, repository on cut bedrock, seismic. A minimum of 10 feet of separation between the repository bottom and groundwater is maintained.
2) Scenario 2: To test other potential designs where a base layer separates the repository bottom from bedrock, additional models were constructed and run. The first of these scenarios utilizes 10 feet of the loess (USCS Group ML) to separate the repository from the top of bedrock. Two modeling scenarios were run: a) slope 3H:1V, repository on loess, no seismic; and b) slope 3H:1V, repository on loess, seismic. A minimum of 10 feet of separation between the repository bottom and groundwater is maintained.
3) Scenario 3: This scenario matches the rationale for Scenario 2 except that for this run the 10 feet of separation is provided by weathered bedrock material (treated as USCS Group GM). Two modeling scenarios were run: a) slope 3H:1V, repository on weathered bedrock, no seismic; and b) slope 3H:1V, repository on weathered bedrock, seismic.

3.3.1.7 Results

An initial evaluation of site conditions determined that the critical mode of failure for the site is a surface slide that would occur along the slope (translational failure) with small depth-to-length ratio. This is typical in cohesionless (granular) soils. The FOS results of the XSTABL© simulation for the conceptual design for both non-seismic and seismic conditions were evaluated under Bishop and Janbu methods. All slopes analyzed met the recommended criteria of a 1.5 FOS under static conditions and 1.15 FOS under seismic conditions for the modeled scenarios.

3.3.2 Repository Conceptual Design

A refined repository conceptual design was developed for use in the refined hydrologic analysis. The refined repository conceptual design incorporates design elements used for the slope stability analysis described in Section 3.3.1, as appropriate.

3.4 Hydrologic Analysis Model Approach and Input Parameters

To perform the refined hydrologic analysis, the BLM developed a refined repository conceptual model that incorporates additional post-FS characterization results (see Sections 3.1 and 3.2), design elements

from the refined repository conceptual design (see Section 3.3.2), and consideration of a reasonably plausible time period for construction of the repository. The refined conceptual model more closely reflects site conditions and a constructible repository structure. This refined conceptual model forms the basis for conducting a refined hydrologic analysis, which generally followed the approach used in the 2016 hydrologic analysis.

As with the 2016 hydrologic analysis, the refined hydrologic analysis was performed using HELP and VS2DT. The HELP model was used to estimate infiltration through the repository cover system and resulting leakage rate from the bottom of the repository. Selected HELP input parameters were varied to generate a range of infiltration values. The resulting infiltration values were used as input at the upper flow boundary in VS2DT to simulate transport and attenuation of antimony, arsenic, and mercury in the unsaturated zone beneath the repository. Attenuation by adsorption was modeled in the VS2DT simulation to estimate the depth below ground surface at which the concentrations of antimony, arsenic, and mercury would be reduced to concentrations below State of Alaska drinking water criteria (ADEC 2008) for antimony [(6 micrograms per liter ([µg/L]), arsenic (10 µg/L), and mercury (2 µg/L). The ways in which the refined hydrologic analysis technical approach differs from the technical approach used in the 2016 analysis are described below.

3.4.1 Conceptual Model

Based on the preliminary refined conceptual repository design (see Section 3.3), a constructed repository structure was developed for use in the HELP and VS2DT models, as described in Section 3.4.1.1. The conceptual repository design was used to develop a typical profile for use in the HELP and VS2DT models (see Table 3-3). The conceptual profile was modeled in HELP and VS2DT over a 50-year period. It was assumed in the FS (E & E 2016) that the repository would be constructed over a period of two years. To evaluate infiltration and transport of contaminants during the period of construction, a two-year-long construction period also was modeled. The results of the two-year construction period model were integrated with a 50-year post-construction period for a combined total 52-year duration model run. The conceptual model of the partially constructed repository used to model the construction period is described in Section 3.4.1.2.

3.4.1.1 Constructed Repository

As described in Section 3.3.1.3, the conceptual repository design has a top deck slope of 3 percent, maximum side slopes of 3H:1V, and extends generally toward the southwest of the originally proposed repository area shown in Figure 3-1 of the FS (E & E 2016). As further described in Section 3.3.1.3, due to steep ground surface northwest, northeast, and southeast of the center of the originally proposed repository area, it was necessary to extend the footprint of the conceptual repository toward the southwest to hold the assumed volume of 250,000 cy of tailings/waste rock and contaminated soil. It also was necessary for the conceptual design to cut into the existing hillside toward the southwest to hold the assumed volume while maintaining maximum 3H:1V side slopes and a 3 percent top deck slope. The approximate footprint of the preliminary refined repository design described above is illustrated in Figure A-1 (Attachment A).

As shown in Figure A-1, the proposed repository location is situated on a ridge, and the southeastern portion of the proposed repository lies within an area of near the mapped extent of underground mine workings. The topography and the draining effect of the underground mine workings influence groundwater depth/elevation and gradients in the area of the proposed repository (see Sections 3.3 and 3.4 of the Groundwater and Surface Water report; E & E 2019). Figure A-1 illustrates the groundwater potentiometric surface observed in May 2018. As shown in Figure A-1, the elevation of the groundwater potentiometric surface varies widely within the footprint of the refined conceptual repository footprint. The vertical distance between the repository bottom and the groundwater would vary accordingly. A minimum of 10 feet of separation between the bottom of the repository and the May 2018 groundwater potentiometric surface is maintained throughout the footprint of the repository in the conceptual

repository design. For the purposes of the model, the minimum distance of 10 feet between the bottom of the tailings/waste layer and the groundwater is assumed.

As described above, the proposed repository conceptual design maintains maximum 3H:1V side slopes and a 3 percent top deck slope. The thickness of tailings/waste rock within the repository would range from zero feet at the edges to a maximum thickness of 50 feet at some locations underlying the top deck. For the purposes of the model, the maximum thickness of 50 feet of tailings/waste rock is assumed.

A profile of the conceptual repository design used in the model is presented in Table 3-3. The table provides information on thicknesses of repository design components. The table also provides example elevations of the top surface of the various design components; the actual elevation of each of these components would vary based on location within the repository footprint. The sub-repository vadose zone of the conceptual design used for the model includes a 5-foot thick layer of native soil consisting of loess and/or loess mixed with KG-derived soils (referred to simply as loess, Table 3-3 component E) that would be placed on any potentially exposed cut surface (bedrock, Table 3-3 component F). Soil component E is critical for the adsorption of COCs from leachate that could migrate out of the bottom of the mixed waste layer D. The characteristics of soil component E are discussed in Section 3.4.3.2.

Table 3-3. Refined Repository Conceptual Design Profile (Constructed)

Conceptual Repository Design Component	Thickness (feet) of Repository Design Component	Example Profile Elevation (feet NAVD 88) of the Top of Repository Design Component
A) Topsoil (Cover)	1.5	480.5 (top of repository)
B) Geomembrane (Cover)	0.0033	479
C) Loess (Cover)	3	479
D) Mixed Waste (Tailings/Waste Rock/Contaminated Soil)	50	476
E) Loess	5	426
F) Unsaturated Bedrock	5	421
G) Water Table in Bedrock	N/A	416

Key:
N/A = not applicable
NAVD 88 = North American Vertical Datum 1988

3.4.1.2 Repository Construction Period

Construction of the repository was assumed in the FS (E & E 2016) to take place over a two-year period. Infiltration and transport of contaminants was modeled for the period of construction. The simulation was performed assuming a 10-foot layer of tailings/waste rock for one year (Construction Year 1) and a 50-foot layer of tailings/waste rock for the second year (Construction Year 2) of the construction period. To perform this evaluation, the partially constructed repository was conservatively modeled with no cover system in place over the entire two-year construction period.

3.4.2 HELP Model

The HELP model uses inputs from climate data (precipitation, solar radiation, temperature, and evapotranspiration parameters); soil and cover system physical properties (porosity, moisture content, hydraulic conductivity); and design elements (cover system properties, surface slopes, and drainage lengths) to simulate leakage rates through repository cover system layers. These inputs are discussed below.

3.4.2.1 Climate and Precipitation Data

The HELP model uses daily precipitation, temperature, solar radiation, and evaporation data to calculate infiltration through the repository profile. A synthetic weather generation subroutine included in the HELP model—Weather Generator (WGEN)—generates daily precipitation, temperature, and solar radiation data for use as an input to the HELP model. WGEN uses statistical characteristics of observed climate data to produce daily time-series data that match the statistical characteristics of observed data for a given weather station. For the refined modeling, representative daily precipitation, temperature and solar radiation data for the site were generated based on 78 years of historical data for Bethel, Alaska. The resulting climate scenarios 5 and 7 (see Table 3-4a) were modeled in the HELP model.

To evaluate the effects of climate change in the repository modeling, projected monthly precipitation values from the University of Alaska Fairbanks Scenarios Network for Alaska and Arctic Planning (SNAP 2019) were used with WGEN. Projected representative concentration pathway (RCP) 8.5 climate data for the year 2090 were used to develop climate scenarios 6 and 8 (see Table 3-4a) in the HELP model.

3.4.2.2 Repository Design and Construction Parameters

The refined modeling approach used the same cover system material properties as were used in the 2016 hydrologic analysis (E & E 2016), except as noted below.

In addition to modeling the post-construction repository design parameters, the refined hydrologic analysis considers a two-year construction period prior to completion of the repository cover system. A 10-foot thick layer of tailings/waste rock was modeled for Construction Year 1, and a 50-foot layer of tailings/waste rock was modeled for Construction Year 2. Modeling the construction period in HELP with no cover system in place for the entire construction period results in the highest possible infiltration rate during construction, and thus represents a conservative approach.

Post-construction repository design elements, consisting of slope values, drainage lengths, and numbers of holes per acre were varied to model a range of conditions affecting infiltration. The HELP input values that were varied for post-construction design elements are presented in Table 3-4b. Each post-construction design scenario shown in the table (design scenarios A through JJ) would result in an infiltration value that can be used as an input in the VS2DT model, with scenarios I and BB representing the maximum and minimum infiltration scenarios, respectively.

3.4.2.3 Material Properties

Material and hydraulic properties of the repository profile layers are used as inputs to the HELP model. A summary of the cover system properties is provided in Table 3-4b.

3.4.2.4 Infiltration during Repository Construction

To evaluate the effect of the infiltration during the construction period on leakage rates in the repository, the initial moisture content was varied during the pre- and post-construction modeling periods. For Construction Year 1, the initial soil moisture content was set to the anticipated tailings/waste rock moisture content at the time of consolidation and compaction. The Construction Year 2 initial soil moisture content for all tailings/waste rock was set to the final water storage content at the end of Construction Year 1 as estimated using the HELP model. The final water storage at the end of Construction Year 2 was used as the initial moisture content for post-construction modeling. Table 3-4c presents the soil moisture content input and output for construction and post-construction periods for combined climate and design scenarios 5 and 7I and 6 and 8I.

Table 3-4. HELP Model Input

Table 3-4a. HELP Model – Climate Scenarios and Construction/Post-Construction Phases

	Climate Scenario	
	Bethel Historical Climate Data	Bethel (RCP 8.5 2090)
Construction Phase	5	6
Post-Construction Phase	7	8

Key:
RCP = Representative concentration pathway

Table 3-4b. HELP Model - Post-Construction Design Scenarios

Repository Top Slope		Top Deck - 0% slope			Top Deck - 3% slope			Top Deck - 5% slope			Side Slope - 33% slope		
Drainage Length (feet)		5	50	500	5	50	500	5	50	500	5	50	500
Number of Holes Per Acre	0 (excellent installation)	A	D	G	J	M	P	S	V	Y	BB (minimum infiltration)	EE	HH
	3 (good installation)	B	E	H	K	N	Q	T	W	Z	CC	FF	II
	10 (poor installation)	C	F	I (maximum infiltration)	L	O	R	U	X	AA	DD	GG	JJ

Table 3-4c. HELP Model - Tailings/Waste Rock Soil Moisture Content for Selected Climate and Design Scenario Combinations

	Soil Moisture Content in Tailings/Waste Rock (volume/volume)					
Selected Climate and Design Scenario Combinations	**Construction Year 1**		**Construction Year 2**		**Post-Construction Years 3 through 52**	
	Initial	**Final**	**Initial**	**Final**	**Initial**	**Final**
Scenario 5 and 7I	0.1600	0.1945	0.1945	0.2026	0.2026	0.2095
Scenario 6 and 8I	0.1600	0.1988	0.1988	0.2080	0.2080	0.2099

3.4.3 VS2DT Model

VS2DT was used to model the transport of contaminants in leachate leaking from the bottom of the repository into the underlying vadose zone materials. VS2DT model inputs include parameters for flow and transport within the sub-repository vadose zone materials and the boundary conditions at the upper boundary of the sub-repository vadose zone materials. Methods used to estimate flow and transport parameters used in the VS2DT model are described in Sections 3.4.3.1 and 3.4.3.2, respectively. Methods used to estimate the boundary condition input parameters are described in Section 3.4.3.3.

3.4.3.1 VS2DT Flow Parameters

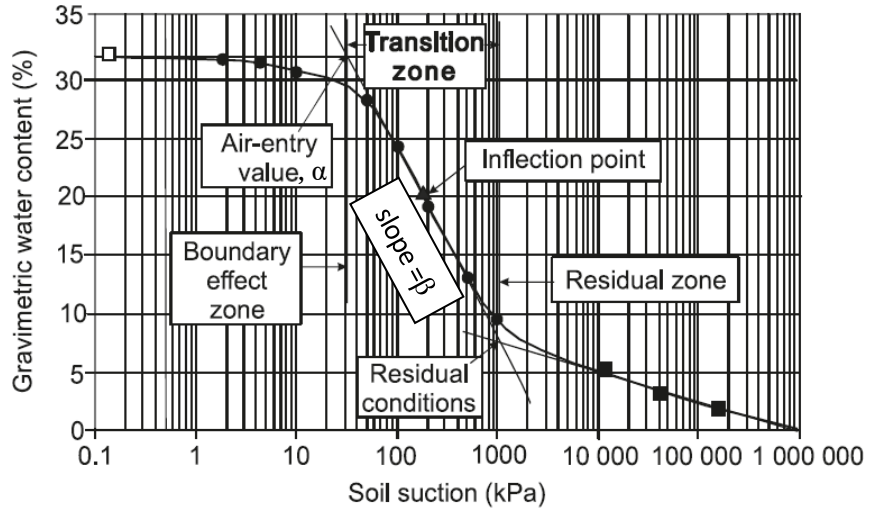
The approach for estimating VS2DT flow input parameters is described below.

Saturated hydraulic conductivity values for the repository materials and underlying geologic materials were based on empirical site-specific data, where available, or literature values.

Soil water retention is modeled in VS2DT using the Van Genuchten function. Van Genuchten function curve-fitting parameters, α (cm) and β (dimensionless) were selected based on representative soil textural class from a range of values included in the VS2DT model documentation (Lappala et al. 1987).

Residual moisture content (Qr) was calculated using soil water characteristic curve (SWCC) literature values for various soil types, including sands, silts, and clays. The SWCC represents the relationship between matric suction and water content. SWCC literature values are not available for gravels, since gravels do not retain moisture when subjected to suction. SWCCs are routinely used to estimate unsaturated soil property functions, including permeability functions, water storage functions, shear strength functions, and thermal property functions (Fredlund et al. 2011). This allows for the estimation of the hydraulic conductivity at different degrees of water content or saturation, which is important when used in VS2DT for estimating fluid flow in the soil layers of the repository and underlying soils. There are two changes in slope on a SWCC. The first point is termed the "air-entry value" of the soil, where the largest voids start to desaturate as suction is increased. The second point, termed "residual conditions," defines the point where the removal of water from the soil requires significantly more energy (Fredlund et al. 2011). A soil's residual moisture content is estimated by identifying the "residual conditions" point for a specific soil type. An example SWCC is shown in Figure 3-1.

Figure 3-1. Example Soil Water Characterization Curve



Source: Adapted from Fredlund et al. 2011.

The SWCC for a particular soil can be obtained in a laboratory using ASTM Method D6836-16 (ASTM 2016); however, due to the cost, time, and high variability in the results, empirical equations have been developed using multiple regression approaches on data sets consisting of a large number of measured SWCCs. It is common practice to estimate SWCCs either from grain-size distribution curves (Fredlund et al. 2002) or from average SWCCs compiled from a database.

In order to estimate residual water content values for use in VS2DT, median values for various soil types, including sand, silt, and clay, were obtained from Fredlund et al. (2011).

The residual conditions point was extrapolated from the median curves and estimated to be 7.5 percent, 12.5 percent, and 17.5 percent, respectively, for sand, silt, and clay. The residual conditions point extrapolations were used with the laboratory-derived grain size analysis from site soils to calculate

estimated residual water content (Q), by averaging the product of sand, silt, and clay with the value for the corresponding residual conditions point.

The residual conditions point extrapolations were compared to the wilting point values for the soils. The wilting point is defined as the minimal amount of water in the soil that a plant requires not to wilt. It becomes increasingly difficult to remove water from soil past its wilting point. The ranges of wilting point values of 5–10 percent for sand, 10–15 percent for silt, and 15–20 percent for clay were used. The wilting points were used with the laboratory-derived grain size analysis from site soils to calculate estimated residual water content (Q_r) by averaging the product of sand, silt, and clay with the value for the corresponding wilting point. The low end and high end of the wilting point range were used for calculations.

Using the calculated values from residual conditions point extrapolations and wilting points, an average value was obtained for residual water content. Using this method, the calculated residual water content corresponds closely to the class-average values used by the U.S. Department of Agriculture, Agricultural Research Service, based on texture class and the U.S. Army Corps of Engineers Engineer Research and Development Center for estimating SWCCs required for parameters used in numerical models, such as SEEP/W, to perform transient seepage analysis. The values also correlate with those shown in Brooks and Corey (1964), Haverkamp et al. (1977), and van Genuchten (1980) as reported in Lappala et al. (1987). The resulting calculated values are presented in Table 3-5.

Table 3-5. Calculated Residual Water Content

Soil Type/Area	Soil Grain Size, averages				Residual Water Content, averages			
	% Gravel	% Sand	%Silt	%Clay	WP_{LOW}	WP_{HIGH}	$LIT_{Extrapolation}$	Average
Weathered Bedrock	54.4	22.5	14.38	8.72	0.039	0.062	0.051	**0.05**
Surface Mined Area	4.1	12.2	73.4	10.3	0.095	0.143	0.120	**0.12**
Tailing/Waste Rock Mix	31.4	48.1	16.6	3.9	0.047	0.081	0.069	**0.07**

Key:
LIT = Literature Value (extrapolation of values from Lappala et al. (1987))
WP = Wilting Point

3.4.3.2 VS2DT Transport Parameters

Solute transport in VS2DT is based on a finite-difference approximation to the advection-dispersion equation for flow and transport. Transport processes modeled in this analysis include advection, dispersion, diffusion, and attenuation by adsorption onto soil surfaces. Contaminant attenuation due to ion exchange, decay, or biological processes were not modeled as a part of this analysis. Attenuation of solute transport by adsorption onto soil surfaces may be modeled in VS2DT using linear, Freundlich, or Langmuir sorption isotherms (e.g., Healy 1990). For this analysis, the Langmuir isotherm was selected to model adsorption because the Langmuir isotherm approach assumes a maximum adsorption capacity. Langmuir isotherm parameters were estimated as described below in this section.

Multiple factors control the adsorption of antimony, arsenic, and mercury in the aqueous environment. General and site-specific information on the fate and transport of these COCs at the RDM are discussed in the RI report (E & E 2014). Important factors include speciation of the contaminants and soil characteristics. Based on review of available information, it is assumed that aqueous species of antimony generated by leaching of repository contents would be predominantly in the Sb(V) valence state. It is similarly assumed that aqueous species of arsenic would be predominantly in the As(V) valence state and that mercury species would be predominantly in the Hg(II) valence state. The forms of antimony and arsenic in the leachate are assumed to consist of the oxyanions antimonate and arsenate, respectively.

In general, important soil characteristics pertinent to adsorption of antimony, arsenic, and mercury onto soil particles include grain size distribution and associated surface area, clay content and minerology, organic carbon and organic matter content, cation exchange capacity, and content of iron oxides and oxyhydroxides, aluminum oxides, and manganese oxides. Available information regarding characteristics of soils that would be used for the loess layer underlying the tailings/waste rock in the repository profile (layer E in Table 3-3; see Section 3.4.1.1) is summarized in Section 3.2.3.

A number of published studies have attempted to quantify adsorption of antimony, arsenic, and mercury onto various types of materials. The types of materials used in most studies are pure mineral phases, such as iron oxide/hydroxides minerals (e.g., Davis and Leckie 1980; Benjamin and Bloom 1981; Pierce and Moore 1980; Kolbe et al. 2011; and Xi et al. 2013); bentonite (e.g., Xi et al. 2011); kaolinite (e.g., Ilgen et al. 2011); and poorly crystalline phyllomanganate (e.g., Wang et al. 2018). Relatively few studies have attempted to quantify adsorption onto whole soils. Dias et al. (1997) studied the adsorption behavior of arsenic in 15 New Jersey soils. In a related study, Yin et al. (1997) studied the adsorption behavior of mercury in 15 New Jersey soils. Dias et al. (1997) developed Langmuir isotherms describing the adsorption behavior of arsenic for each New Jersey soil, and Yin et al. (1997) developed Langmuir isotherms describing the adsorption behavior of mercury for each New Jersey soil. For each soil type, a Langmuir Kl value (a constant related to binding strength) and an associated Langmuir ql value (representing adsorption capacity, a measure of the maximum amount of adsorbate that can be adsorbed onto a material by monolayer coverage) were experimentally derived.

The RDM soils assumed for repository layer E (i.e., loess, KG-derived soil, and mixed loess and KG-derived soils) were compared to the 15 New Jersey soils studied by Dias et al. (1997) and Yin et al. (1997). Based on comparison of available soil characteristics information, particularly grain size distribution, four of the New Jersey soils—Freehold Sandy Loam [subsurface], Penn silt loam, Sassafras sandy loam, and Washington Loam—were judged to be sufficiently similar to the assumed RDM repository layer E soils to use them as the basis to estimate Langmuir Kl and ql values for arsenic and mercury in the layer E soils. For the VS2DT model input, the Langmuir Kl and ql values for arsenic and mercury were set equal to the averages of the respective Kl and ql values for As(V) and Hg(II) for the four New Jersey soils identified above. The resulting Langmuir Kl values [27.25 milliliters per milligram (mL/mg) for As(V) and 1,660 mL/mg for Hg(II)] and ql values (0.0170 milligrams per milligram [mg/mg] for As(V) and 0.00495 mg/mg for Hg(II) are presented in Table 3-7.

Presently, there is a lack of publications addressing adsorption behavior of antimony for whole soils. The adsorption behavior of Sb(V) is widely considered to be similar in some respects to that of As(V). Like As(V), Sb(V) can be strongly bound in soils by adsorption. However, the relative strengths of binding and adsorption capacities of antimony and arsenic for various materials are not well understood. Wilson et al. (2010) present a review of existing information describing and comparing the adsorption behaviors in soils of antimony and arsenic. Wilson et al. (2010) note that in one study, sorption of antimony increased as the silt and clay fraction in whole soils increased. Wilson et al. (2010) further note that the association of antimony with silicate clays may be important in certain environments, and in many natural environments adsorption of antimony onto manganese and iron oxyhydroxides is responsible for adsorption of much of the total antimony bound by soil.

Wang et al. (2018) measured adsorption of As(V) and Sb(V) on a poorly crystalline phyllomanganate material. In that study, the Langmuir binding strength (Kl) and adsorption capacity (ql) values for Sb(V) were each approximately one-third lower than those for As(V) on a molar basis. Specifically, the Langmuir Kl value for antimonate [0.034 liters per micromole (L/μmol)] was approximately 69 percent of the Kl value for arsenate (0.049 L/μmol), and the corresponding antimonate ql value [140.8 micromoles per gram (μmol/g)] was approximately 66 percent of the ql value for arsenate (213.2 μmol/g).

The relationships between the experimentally derived Langmuir Kl and ql values for antimonate and arsenate in the Wang et al. (2018) study were used to develop estimates of Kl and ql values that could be used to simulate adsorption of antimonate in RDM loess in the VS2DT model. The approach entailed developing factors to represent the experimentally measured (Wang et al. 2018) differences between antimonate and arsenate in binding strength (Kl) and adsorption capacity (ql) as well as the general uncertainty regarding binding of antimony in whole soils. The approach was performed as described below.

To represent the difference in binding strength, a value of 69 percent was selected. This percentage reflects the percent value of the antimonate Kl value compared to the arsenate Kl value in the Wang et al. (2018) study. To address the uncertainty of antimonate binding strength in whole soils relative to that of arsenate, an additional factor of 50 percent was applied. A resulting overall factor of 35 percent—equal to 69 percent multiplied by 50 percent—was derived. This factor was multiplied by the Kl value that was selected for arsenate and RDM loess (0.00379 L/µmol on a molar basis, or 27.25 mL/mg on a weight basis) to derive a Kl value of 0.00131 L/µmol (molar basis) for antimonate in RDM loess. This derived value—7.07 mL/mg (on a weight basis)—was used as the Kl input value for antimonate in the VS2DT model (see Table 3-7). A similar approach was taken to derive an estimate of ql to estimate adsorption capacity of antimonate in RDM loess. A factor obtained by multiplying 66 percent—the percent value of the antimonate ql value compared to the arsenate ql value in the Wang et al. (2018) study—by 50 percent, or approximately 33 percent, was derived. This factor was multiplied by the ql value selected for arsenate and RDM loess (122 µmol/g on a molar basis, or 0.0170 mg/mg on a weight basis) to derive a ql value of 40.4 µmol/g (molar basis) for antimonate in RDM loess. This derived ql value—0.00750 mL/mg (on a weight basis)—was used as the ql input value for antimonate in the VS2DT model (see Table 3-7).

It should be noted that antimony, arsenic, and mercury may compete for some of the same sorption sites on the soil particles. Such potential competition for sorption sites is not directly quantified in available publications.

3.4.3.3 VS2DT Boundary Conditions

Boundary conditions required for running VS2DT include infiltration, or leakage rate, through the bottom of the repository and the concentrations of the contaminants in the leachate transported through the bottom of the repository. The leakage rate was estimated using the HELP model, as detailed in Section 3.4.3.3.1, below. The concentrations of antimony, arsenic, and mercury in the leachate transported through the bottom of the repository, referred to as the initial leachate concentrations, were developed as described in Section 3.4.3.3.2, below.

3.4.3.3.1 Leakage Rate

Infiltration, or leakage rate, through the repository for use in VS2DT was estimated using the HELP Model set up as described in Section 3.4.2, above. A maximum leakage rate corresponding to scenario I (Table 3-4) was used for the post-construction scenarios (see scenarios 7I and 8I in Table 3-6). Hydrologic analyses were performed using historical weather data for Bethel, Alaska (scenario 5/7I) and climate change scenarios (scenario 6/8I) were estimated based on University of Alaska Fairbanks monthly data for climate change scenarios (SNAP 2019). No cover was modeled during a two-year construction period followed by post-construction modeling utilizing the proposed impermeable geomembrane cover system through year 52. The model was set up using scenarios 5 and 6 minus a cover system to simulate the Construction Year 1 and Construction Year 2 periods, respectively. The infiltration, or leakage rate, obtained from the HELP Model is presented in Table 3-6. The HELP Model outputs are provided in Attachment B.

Table 3-6. HELP Model Infiltration through Repository Bottom

	Leakage Rate, in/yr			Leakage Rate, cm/day		
Scenario	**Construction Year 1**	**Construction Year 2**	**Years 3 through 52 (Post-Construction)**	**Construction Year 1**	**Construction Year 2**	**Years 3 through 52 (Post-Construction)**
Scenario 5/7I	1.21	0.25	1.80	0.0084	0.0017	0.0125
Scenario 6/8I	1.80	0.93	2.20	0.0125	0.0065	0.0153

Key:
in/yr = Inches per year
cm/day = Centimeters per day

3.4.3.3.2 Initial Leachate Concentration

VS2DT requires that an initial leachate concentration be provided by the user. As discussed in Section 2, above, during the RI a total of 47 surface and subsurface samples of tailings/waste rock and contaminated soil subject to excavation under FS Alternatives 3 and 4 were analyzed for both total and SPLP inorganic elements (see RI report Chapters 4 and 5). Paired total and SPLP concentrations for antimony, arsenic, and mercury were used as described below to develop estimates of initial leachate concentration values for use as a boundary condition in the VS2DT model.

Several publications provide information on the interpretation of SPLP results for assessing risk to groundwater from land-applied granular waste. Townsend et al. (2006) present various techniques for calculating leachate levels. Several of these techniques are utilized by regulatory agencies through developed guidance, including the New Jersey Department of Environmental Protection (NJDEP 2013). The method used in the present effort is based on the NJDEP Guidance document *Determining Site-Specific Impact to Ground Water Soil Remediation Standards Using the Synthetic Precipitation Leaching Procedure* (NJDEP 2013).

Following this method, paired total concentrations and SPLP concentrations for antimony, arsenic, and mercury from tailings/waste rock and contaminates soil (i.e., materials that would be consolidated in the repository) were used to calculate field leachate concentration (C_L) values as described in the equations below:

$$K_d = (C_T M_S - C_{SPLP} V_L)/M_S/C_{SPLP}$$

Where:

K_d = soil-water partition coefficient, L/Kg
C_T = total contaminant concentration, mg/Kg
M_S = total weight of sample used in analysis (default is 0.1 Kg)
C_{SPLP} = SPLP contaminant concentration, mg/L
V_L = volume of leachate used in analysis (default is 2 L)

$$C_L = C_T/(K_d + (\Phi_W + \Phi_a H')/\rho_b)$$

Where:

C_L = field leachate concentration, mg/L

C_T = total contaminant concentration, mg/Kg

K_d = soil-water partition coefficient, L/Kg

Φ_w = soil moisture content (default is 23%)

Φ_a = soil air content (default is 18%)

H' = Henry's law constant, dimensionless

ρ_b = bulk density of the soil (default is 1.5 kg/L)

The weight of the representative site soil sample and the total volume of leachate generated during SPLP analysis of the sample are used as inputs to the K_d equation. To calculate C_L, the bulk density of the soil, soil moisture content, soil air content, and Henry's law constant are used. Bulk density, soil moisture, soil air contents are based on sample volumes used in the SPLP analysis.

For each of the 47 RI (E & E 2014) samples of tailings/waste rock and contaminated soil analyzed for both total and SPLP metals (including antimony, arsenic, and mercury), a unique K_d and C_L value was calculated. The resulting C_L values ranged from 0.032 to 85.4 mg/L for antimony, from 0.020 to 6.12 mg/L for arsenic, and from 0.000 to 0.357 mg/L for mercury.

For the VS2DT modeling, the initial leachate concentrations are set equal to the C_L values calculated as described above. The ranges of initial leachate concentrations are summarized in Table 3-7.

As described above, the initial leachate concentration represents the COC concentration at the upper boundary of the modeled sub-repository vadose zone. It is likely that the COC concentrations in leachate that leak from the bottom of the repository would decrease over time. However, for simplicity, the initial leachate concentrations are fixed at the calculated initial leachate concentration values over the durations of the VS2DT model runs.

3.4.3.4 VS2DT Input Parameters

A set of model boundary and initial conditions, flow parameters, and transport parameters for use in the VS2DT model is presented in Table 3-7.

Table 3-7. VS2DT Model Input

	Parameter		Description	Material/Location	Value or Range of Values	Units
Boundary Conditions	Infiltration		Calculated from HELP model scenarios (see Section 3.4.3.3.1)	Upper flow boundary	0.25 - 1.80	in/yr
			Climate change scenarios: Estimated from UAF Monthly Data for climate change scenarios (see Section 3.4.3.3.1)	Upper flow boundary	1.80 - 2.20	in/yr
	Initial Leachate Concentration	Antimony	Calculated based on RI total metal and SPLP metal data (see Section 3.4.3.3.2)	Tailings/Waste Rock, Base of Repository (base of component D, Table 3-3)	0.032 - 85.4	mg/L
		Arsenic			0.020 - 6.12	
		Mercury			0.000 - 0.357	
Flow	Residual moisture content, Θ_r (see Table 3-5)		Estimated from literature values, based on soil textural class	Loess (components C and E, Table 3-3)	12	%
				Tailings/waste rock (component D, Table 3-3)	7	
				Weathered Bedrock (component F, Table 3-3)	5	
	Van Genuchten parameter, α			Loess (components C and E, Table 3-3)	-170	cm
				Tailings/waste rock (component D, Table 3-3)	-145	
				Weathered Bedrock (component F, Table 3-3)	-145	
	Van Genuchten parameter, β			Loess (components C and E, Table 3-3)	4	-- (dimensionless)
				Tailings/waste rock (component D, Table 3-3)	6	
				Weathered Bedrock (component F, Table 3-3)	6	
Transport	Langmuir adsorption coefficient, Kl	Antimony	Estimated based on literature values and comparison to RDM soil (see Section 3.4.3.2)	Loess (component E, Table 3-3)	7.07	mL/mg
		Arsenic			27.25	
		Mercury			1660	
	Langmuir absorption capacity, ql	Antimony			0.00750	mg/mg
		Arsenic			0.0170	
		Mercury			0.00495	

Key:
cm = Centimeter
in/yr = Inches per year
mg/L = Milligrams per liter
mg/mg = Milligrams per milligram
mL/mg = Milliliters per milligram

4. REFINED HYDROLOGIC MODEL RESULTS

The additional data collected at the RDM since 2016, as described in previous sections, has been used to develop a more detailed understanding of the geologic and hydrogeologic conditions in the area of the

proposed repository. The additional data serve to characterize subsurface conditions in the upper watershed more completely and provide a stronger empirical basis for a hydrologic analysis of the proposed repository than were available at the time of the 2016 hydrologic analysis (E & E 2016). This section presents model results from the refined hydrologic analysis performed as described in the sections above.

Natural attenuation by adsorption was modeled in the VS2DT simulation to estimate the depth below ground surface at which the concentrations of antimony, arsenic, and mercury in leachate would be reduced to concentrations below State of Alaska drinking water criteria for antimony, arsenic, and mercury (ADEC 2008). Selected combinations of leakage scenarios based on HELP results and VS2DT input parameters were used in the setup of 6 model runs for analysis. Leakage scenarios 5/7I and 6/8I (see Table 3-6) were selected. For each leakage scenario, one run was modeled for each COC (antimony, arsenic, and mercury).

For each of these model runs, the initial leachate concentrations were set at the maximum estimated initial leachate concentration for each COC (see Table 3-7). The simulations show that for all 3 COCs, the concentrations in leachate decrease from the initial leachate concentrations to levels below State of Alaska drinking water criteria (ADEC 2008) within the loess layer (repository component E) at depths of less than 4 feet below the base of the repository. The model input and output for each of these runs are shown in Table 4-1. Attachment C contains VS2DT model output, including graphical representations of leachate concentrations at the end of the model duration. As noted in Section 3.4.3.2, above, antimony, arsenic, and mercury may compete for some of the same sorption sites on the soil particles. Such potential competition for sorption sites is not well understood based on available information. For the results presented in this document, it is not expected that the depth of migration of any of the COCs would exceed the sum of the individual migration depths.

Table 4-1. Selected HELP/VS2DT Model Run Scenarios, Inputs, and Results

VS2DT Model Run ID	Infiltration Scenario (see Table 3-6)	COC	Selected Initial Leachate Concentration Value (mg/L) (maximum value; see Table 3-7)	ADEC Drinking Water Criteria (mg/L)	Modeled Depth of Migration of COC into Vadose Zone beneath Bottom of Repository (ft)
RDM18	Scenario 5 + 7I	Antimony	85.40	0.006	3.15
RDM19		Arsenic	6.118	0.010	0.65
RDM20		Mercury	0.357	0.002	0.05
RDM21	Scenario 6 + 8I	Antimony	85.40	0.006	3.55
RDM22		Arsenic	6.118	0.010	0.75
RDM23		Mercury	0.357	0.002	0.15

Key:
COC = Contaminant of concern
ft = Feet
mg/L = Milligrams per liter

Based on the results of the refined hydrologic analysis described in this technical memorandum, groundwater beneath the repository would not be impacted by migration of leachate from the repository during the modeled post-construction 50-year duration.

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Attachment A

Preliminary Refined Conceptual Repository Location and May 2018 Groundwater Potentiometric Surface


Underground Workings
Adits, Levels, and Crosscuts
Dolly Area Crosscuts
325 Adit
311 Adit
242 Sub-level
33 Level
73 Level
150 Level / 200 Level
300 Level
450 Level
550 Crosscut
Shafts, Raises, and Winzes
Shaft
Raise or Winze
Shaft going above and below level
Ore shaft
Stope ("V" points downward)
Other Workings
Bottom of Shaft
Foot of raise or winze
Head of raise or winze
Former Mine Openings
Adit Portal
Shaft Collar
Stope Surface Opening
Kuskokwim River
MW55 333.2
MW52 359.5
MW47 350.4
MW46 371.9
MW54 398.5
MW53 436.7
MW50 399.8
MW45 358.9
MW59 299.9
MW56 380.7
MW57 435.0
MW44 350.4
MW31 464.0
MW48 332.9
MW49 277.4
MW42 219.7
MW43 219.7
MW30 <223.1
MW33 175.5
MW26 214.8
MW24 208.6
MW25 210.3
MW23 190.1
MW32 179.4
MW28 218.8
MW20 209.5
MW22 199.5
MW04 219.9
MW21
MW17 221.2
MW16 222.7
MW19 227.7
MW18 223.2
MW01 239.9
MW09 255.1
MW12 261.2
MW13 257.6
MW11 252.2
MW08 319.7
2017 Monitoring Well
2015 Monitoring Well
RI Monitoring Well
Abandoned RI Monitoring Well
2015 2-foot Contour
2015 10-foot Contour
Post-NTCRA Stream Alignment
Red Devil Creek
Settling Pond
Monofill
Historical Structure
Approximate Location of Proposed Repository Footprint
Area of 2014 NTCRA Re-grading
Seep Location
10-foot groundwater contour Spring 2018
50-foot groundwater contour Spring 2018
Approximate Location of Preliminary Refined Repository Footprint
Digital 2015 topographic contours based on October 10, 2015 LiDAR Survey (Quantum Spatial 2015).
Aerial photograph taken on 9/21/2010 (AeroMetric 2012)
RED DEVIL MINE
Red Devil, Alaska
Figure A-1
Preliminary Refined Conceptual Repository Location and May 2018 Groundwater Potentiometric Surface
0 50 100 200 300 400
Feet
0 10 20 40 60 80 100
Meters
Scale 1:3,000

Attachment B

HELP Model

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


PRECIPITATION DATA FILE:    C:\RUNS\RDM3\DATA4.D4
TEMPERATURE DATA FILE:      C:\RUNS\RDM3\DATA7.D7
SOLAR RADIATION DATA FILE:  C:\RUNS\RDM3\DATA13.D13
EVAPOTRANSPIRATION DATA:    C:\RUNS\RDM3\DATA11.D11
SOIL AND DESIGN DATA FILE:  C:\RUNS\RDM3\DATA10.D10
OUTPUT DATA FILE:           C:\RUNS\RDM3\RDMOUT.OUT


TIME:   8: 0     DATE:   6/18/2019


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

            TITLE:  Construction Model Year 1 (RDM3-Scenario 5I)

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


     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                    =    120.00   INCHES
          POROSITY                     =      0.3000 VOL/VOL
          FIELD CAPACITY               =      0.2100 VOL/VOL
          WILTING POINT                =      0.0700 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.1600 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 # 1 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 0.% AND A SLOPE LENGTH OF 500. FEET.

SCS RUNOFF CURVE NUMBER	=	70.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	15.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	2.400	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	4.500	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.050	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	19.200	INCHES
TOTAL INITIAL WATER	=	19.200	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM BETHEL ALASKA

STATION LATITUDE	=	60.78	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.50	
START OF GROWING SEASON (JULIAN DATE)	=	184	
END OF GROWING SEASON (JULIAN DATE)	=	225	
EVAPORATIVE ZONE DEPTH	=	15.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	12.90	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	78.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	83.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	80.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR ANCHORAGE ALASKA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
0.72	0.47	0.30	0.41	0.39	3.07
2.68	2.30	1.74	2.88	1.02	1.79

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR BETHEL ALASKA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

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

4.90	5.70	10.70	23.40	40.30	50.60
54.70	52.80	45.00	29.70	17.50	4.80

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR BETHEL ALASKA
AND STATION LATITUDE = 60.78 DEGREES

LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 1

****

DAILY OUTPUT FOR YEAR 1

DAY	AIR	SOIL	RAIN IN.	RUNOFF IN.	ET IN.	E. ZONE WATER IN./IN.	HEAD #1 IN.	DRAIN #1 IN.	LEAK #1 IN.
1	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
2	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
3	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
4	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
5	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
6	*	*	0.07	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
7	*	*	0.07	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
8	*	*	0.00	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
9	*	*	0.00	0.000	0.016	0.1600	0.0000	.0000E+00	.0000E+00
10	*	*	0.13	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
11	*	*	0.00	0.000	0.014	0.1600	0.0000	.0000E+00	.0000E+00
12	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
13	*	*	0.02	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
14	*	*	0.16	0.000	0.010	0.1600	0.0000	.0000E+00	.0000E+00
15	*	*	0.00	0.000	0.009	0.1600	0.0000	.0000E+00	.0000E+00
16	*	*	0.00	0.000	0.010	0.1600	0.0000	.0000E+00	.0000E+00
17	*	*	0.00	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
18	*	*	0.00	0.000	0.014	0.1600	0.0000	.0000E+00	.0000E+00
19	*	*	0.00	0.000	0.022	0.1600	0.0000	.0000E+00	.0000E+00
20	*	*	0.00	0.000	0.023	0.1600	0.0000	.0000E+00	.0000E+00
21	*	*	0.00	0.000	0.028	0.1600	0.0000	.0000E+00	.0000E+00
22	*	*	0.00	0.000	0.022	0.1600	0.0000	.0000E+00	.0000E+00
23	*	*	0.00	0.000	0.027	0.1600	0.0000	.0000E+00	.0000E+00
24	*	*	0.00	0.000	0.029	0.1600	0.0000	.0000E+00	.0000E+00
25	*	*	0.00	0.000	0.020	0.1600	0.0000	.0000E+00	.0000E+00
26	*	*	0.28	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
27	*	*	0.08	0.000	0.020	0.1600	0.0000	.0000E+00	.0000E+00
28	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
29	*	*	0.00	0.000	0.017	0.1600	0.0000	.0000E+00	.0000E+00
30	*	*	0.00	0.000	0.021	0.1600	0.0000	.0000E+00	.0000E+00
31	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
32	*	*	0.00	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00

33	*	*	0.00	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
34	*	*	0.15	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
35	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
36	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
37	*	*	0.00	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00
38	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
39	*	*	0.00	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
40	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
41	*	*	0.00	0.000	0.022	0.1600	0.0000	.0000E+00	.0000E+00
42	*	*	0.01	0.000	0.021	0.1600	0.0000	.0000E+00	.0000E+00
43	*	*	0.09	0.000	0.021	0.1600	0.0000	.0000E+00	.0000E+00
44	*	*	0.00	0.000	0.024	0.1600	0.0000	.0000E+00	.0000E+00
45	*	*	0.01	0.000	0.021	0.1600	0.0000	.0000E+00	.0000E+00
46	*	*	0.03	0.000	0.020	0.1600	0.0000	.0000E+00	.0000E+00
47	*	*	0.15	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
48	*	*	0.29	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
49	*	*	0.04	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
50	*	*	0.41	0.000	0.017	0.1600	0.0000	.0000E+00	.0000E+00
51	*	*	0.17	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
52	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
53	*	*	0.00	0.000	0.014	0.1600	0.0000	.0000E+00	.0000E+00
54	*	*	0.00	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00
55	*	*	0.05	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
56	*	*	0.00	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00
57	*	*	0.00	0.000	0.014	0.1600	0.0000	.0000E+00	.0000E+00
58	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
59	*	*	0.03	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
60	*	*	0.00	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
61	*	*	0.01	0.000	0.009	0.1600	0.0000	.0000E+00	.0000E+00
62	*	*	0.03	0.000	0.008	0.1600	0.0000	.0000E+00	.0000E+00
63	*	*	0.21	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
64	*	*	0.01	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
65	*	*	0.00	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
66	*	*	0.29	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
67	*	*	0.05	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
68	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
69	*	*	0.00	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00
70	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
71	*	*	0.00	0.000	0.010	0.1600	0.0000	.0000E+00	.0000E+00
72	*	*	0.00	0.000	0.008	0.1600	0.0000	.0000E+00	.0000E+00
73	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
74	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
75	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
76	*	*	0.00	0.000	0.016	0.1600	0.0000	.0000E+00	.0000E+00
77	*	*	0.00	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
78	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
79	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
80	*	*	0.00	0.000	0.020	0.1600	0.0000	.0000E+00	.0000E+00
81	*	*	0.00	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
82	*	*	0.00	0.000	0.017	0.1600	0.0000	.0000E+00	.0000E+00
83	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
84	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
85	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
86	*	*	0.00	0.000	0.030	0.1600	0.0000	.0000E+00	.0000E+00
87	*	*	0.00	0.000	0.023	0.1600	0.0000	.0000E+00	.0000E+00
88	*	*	0.00	0.000	0.025	0.1600	0.0000	.0000E+00	.0000E+00
89	*	*	0.00	0.000	0.030	0.1600	0.0000	.0000E+00	.0000E+00
90	*	*	0.36	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
91	*	*	0.03	0.000	0.025	0.1600	0.0000	.0000E+00	.0000E+00
92		*	0.00	0.003	0.000	0.1795	0.0000	.0000E+00	.0000E+00

93		*	0.00	0.000	0.030	0.1797	0.0000	.0000E+00	.0000E+00
94	*	*	0.00	0.000	0.016	0.1797	0.0000	.0000E+00	.0000E+00
95	*	*	0.00	0.000	0.017	0.1797	0.0000	.0000E+00	.0000E+00
96	*	*	0.00	0.000	0.011	0.1797	0.0000	.0000E+00	.0000E+00
97	*	*	0.00	0.000	0.012	0.1797	0.0000	.0000E+00	.0000E+00
98	*	*	0.00	0.000	0.015	0.1797	0.0000	.0000E+00	.0000E+00
99	*	*	0.00	0.000	0.010	0.1797	0.0000	.0000E+00	.0000E+00
100	*	*	0.00	0.000	0.000	0.1797	0.0000	.0000E+00	.0000E+00
101	*	*	0.05	0.000	0.017	0.1797	0.0000	.0000E+00	.0000E+00
102	*	*	0.00	0.000	0.016	0.1797	0.0000	.0000E+00	.0000E+00
103	*	*	0.00	0.000	0.021	0.1797	0.0000	.0000E+00	.0000E+00
104	*	*	0.00	0.000	0.000	0.1797	0.0000	.0000E+00	.0000E+00
105	*	*	0.00	0.000	0.023	0.1797	0.0000	.0000E+00	.0000E+00
106	*	*	0.00	0.000	0.000	0.1797	0.0000	.0000E+00	.0000E+00
107		*	0.00	0.298	0.000	0.2125	0.0000	.0000E+00	.0000E+00
108		*	0.00	0.455	0.000	0.2337	0.0000	.0000E+00	.0000E+00
109		*	0.00	0.000	0.000	0.2337	0.0000	.0000E+00	.0000E+00
110		*	0.00	0.000	0.000	0.2337	0.0000	.0000E+00	.0000E+00
111		*	0.11	0.020	0.002	0.2396	0.0000	.0000E+00	.0000E+00
112	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
113	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
114	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
115	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
116	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
117	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
118	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
119	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
120	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
121	*	*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
122		*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
123		*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
124		*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
125		*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
126		*	0.00	0.000	0.000	0.2396	0.0000	.0000E+00	.0000E+00
127		*	0.05	0.002	0.002	0.2427	0.0000	.0000E+00	.0000E+00
128		*	0.00	0.000	0.000	0.2427	0.0000	.0000E+00	.0000E+00
129		*	0.00	0.000	0.000	0.2427	0.0000	.0000E+00	.0000E+00
130		*	0.00	0.000	0.000	0.2427	0.0000	.0000E+00	.0000E+00
131		*	0.00	0.000	0.000	0.2427	0.0000	.0000E+00	.0000E+00
132		*	0.00	0.000	0.000	0.2427	0.0000	.0000E+00	.0000E+00
133		*	0.00	0.000	0.000	0.2427	0.0000	.0000E+00	.0000E+00
134		*	0.00	0.000	0.000	0.2427	0.0000	.0000E+00	.0000E+00
135		*	0.09	0.017	0.002	0.2474	0.0000	.0000E+00	.0000E+00
136		*	0.11	0.033	0.002	0.2525	0.0000	.0000E+00	.0000E+00
137		*	0.00	0.000	0.000	0.2525	0.0000	.0000E+00	.0000E+00
138		*	0.03	0.001	0.001	0.2543	0.0000	.0000E+00	.0000E+00
139		*	0.00	0.000	0.000	0.2543	0.0000	.0000E+00	.0000E+00
140		*	0.00	0.000	0.000	0.2543	0.0000	.0000E+00	.0000E+00
141	*	*	0.00	0.000	0.000	0.2543	0.0000	.0000E+00	.0000E+00
142		*	0.00	0.000	0.000	0.2543	0.0000	.0000E+00	.0000E+00
143		*	0.00	0.000	0.000	0.2543	0.0000	.0000E+00	.0000E+00
144	*	*	0.08	0.000	0.070	0.2543	0.0000	.0000E+00	.0000E+00
145		*	0.00	0.000	0.010	0.2543	0.0000	.0000E+00	.0000E+00
146	*	*	0.00	0.000	0.000	0.2543	0.0000	.0000E+00	.0000E+00
147		*	0.18	0.100	0.001	0.2596	0.0000	.0000E+00	.0000E+00
148		*	0.07	0.020	0.001	0.2628	0.0000	.0000E+00	.0000E+00
149		*	0.01	0.000	0.001	0.2634	0.0000	.0000E+00	.0000E+00
150		*	0.00	0.000	0.000	0.2634	0.0000	.0000E+00	.0000E+00
151		*	0.00	0.000	0.000	0.2634	0.0000	.0000E+00	.0000E+00
152		*	0.00	0.000	0.000	0.2634	0.0000	.0000E+00	.0000E+00

153	*	0.00	0.000	0.000	0.2634	0.0000	.0000E+00	.0000E+00
154	*	0.02	0.000	0.001	0.2646	0.0000	.0000E+00	.0000E+00
155	*	0.08	0.032	0.001	0.2677	0.0000	.0000E+00	.0000E+00
156	*	0.00	0.000	0.000	0.2677	0.0000	.0000E+00	.0000E+00
157	*	0.00	0.000	0.000	0.2677	0.0000	.0000E+00	.0000E+00
158		0.19	0.012	0.112	0.1460	0.0000	.0000E+00	.1829E-01
159		0.00	0.000	0.143	0.1325	0.0000	.0000E+00	.3190E-01
160		0.00	0.000	0.131	0.1237	0.0000	.0000E+00	.0000E+00
161		0.00	0.000	0.116	0.1160	0.0000	.0000E+00	.0000E+00
162		0.00	0.000	0.123	0.1078	0.0000	.0000E+00	.0000E+00
163		0.00	0.000	0.145	0.0981	0.0000	.0000E+00	.0000E+00
164		0.00	0.000	0.134	0.0892	0.0000	.0000E+00	.0000E+00
165		0.00	0.000	0.119	0.0813	0.0000	.0000E+00	.0000E+00
166		0.00	0.000	0.130	0.0726	0.0000	.0000E+00	.0000E+00
167		0.00	0.000	0.039	0.0700	0.0000	.0000E+00	.0000E+00
168		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
169		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
170		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
171		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
172		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
173		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
174		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
175		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
176		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
177		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
178		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
179		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
180		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
181		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
182		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
183		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
184		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
185		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
186		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
187		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
188		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
189		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
190		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
191		0.09	0.000	0.003	0.0758	0.0000	.0000E+00	.0000E+00
192		0.05	0.000	0.010	0.0785	0.0000	.0000E+00	.0000E+00
193		0.00	0.000	0.011	0.0777	0.0000	.0000E+00	.0000E+00
194		0.03	0.000	0.015	0.0787	0.0000	.0000E+00	.0000E+00
195		0.00	0.000	0.014	0.0778	0.0000	.0000E+00	.0000E+00
196		0.00	0.000	0.014	0.0769	0.0000	.0000E+00	.0000E+00
197		0.00	0.000	0.013	0.0760	0.0000	.0000E+00	.0000E+00
198		0.00	0.000	0.013	0.0752	0.0000	.0000E+00	.0000E+00
199		0.00	0.000	0.013	0.0743	0.0000	.0000E+00	.0000E+00
200		0.00	0.000	0.012	0.0735	0.0000	.0000E+00	.0000E+00
201		0.00	0.000	0.012	0.0727	0.0000	.0000E+00	.0000E+00
202		0.00	0.000	0.012	0.0719	0.0000	.0000E+00	.0000E+00
203		0.00	0.000	0.012	0.0711	0.0000	.0000E+00	.0000E+00
204		0.17	0.000	0.015	0.0815	0.0000	.0000E+00	.0000E+00
205		0.00	0.000	0.014	0.0805	0.0000	.0000E+00	.0000E+00
206		0.00	0.000	0.014	0.0796	0.0000	.0000E+00	.0000E+00
207		0.00	0.000	0.012	0.0788	0.0000	.0000E+00	.0000E+00
208		0.00	0.000	0.012	0.0780	0.0000	.0000E+00	.0000E+00
209		0.02	0.000	0.013	0.0785	0.0000	.0000E+00	.0000E+00
210		0.04	0.000	0.014	0.0802	0.0000	.0000E+00	.0000E+00
211		0.06	0.000	0.015	0.0832	0.0000	.0000E+00	.0000E+00
212		0.04	0.000	0.016	0.0848	0.0000	.0000E+00	.0000E+00

213		0.00	0.000	0.014	0.0839	0.0000	.0000E+00	.0000E+00
214		0.31	0.000	0.013	0.1037	0.0000	.0000E+00	.0000E+00
215		0.00	0.000	0.013	0.1029	0.0000	.0000E+00	.0000E+00
216		0.36	0.000	0.014	0.1259	0.0000	.0000E+00	.0000E+00
217		0.27	0.000	0.015	0.1429	0.0000	.0000E+00	.0000E+00
218		0.38	0.000	0.088	0.1624	0.0000	.0000E+00	.0000E+00
219		0.00	0.000	0.081	0.1508	0.0000	.0000E+00	.0000E+00
220		0.00	0.000	0.085	0.1451	0.0000	.0000E+00	.0000E+00
221		0.00	0.000	0.070	0.1405	0.0000	.0000E+00	.0000E+00
222		0.04	0.000	0.102	0.1349	0.0000	.0000E+00	.0000E+00
223		0.49	0.000	0.070	0.1629	0.0000	.0000E+00	.0000E+00
224		0.36	0.000	0.076	0.1506	0.0000	.0000E+00	.0000E+00
225		0.00	0.000	0.062	0.1433	0.0000	.0000E+00	.3790E-01
226		0.00	0.000	0.057	0.1390	0.0000	.0000E+00	.0000E+00
227		0.00	0.000	0.085	0.1334	0.0000	.0000E+00	.0000E+00
228		0.00	0.000	0.070	0.1287	0.0000	.0000E+00	.0000E+00
229		0.00	0.000	0.099	0.1222	0.0000	.0000E+00	.0000E+00
230		0.00	0.000	0.119	0.1142	0.0000	.0000E+00	.0000E+00
231		0.02	0.000	0.084	0.1099	0.0000	.0000E+00	.0000E+00
232		0.07	0.000	0.074	0.1097	0.0000	.0000E+00	.0000E+00
233		0.05	0.000	0.099	0.1056	0.0000	.0000E+00	.0000E+00
234		0.00	0.000	0.076	0.1005	0.0000	.0000E+00	.0000E+00
235		0.00	0.000	0.094	0.0942	0.0000	.0000E+00	.0000E+00
236		0.04	0.000	0.095	0.0905	0.0000	.0000E+00	.0000E+00
237		0.38	0.000	0.081	0.1104	0.0000	.0000E+00	.0000E+00
238		0.02	0.000	0.098	0.1052	0.0000	.0000E+00	.0000E+00
239		0.00	0.000	0.079	0.0999	0.0000	.0000E+00	.0000E+00
240		0.52	0.000	0.058	0.1307	0.0000	.0000E+00	.0000E+00
241		0.09	0.000	0.081	0.1310	0.0000	.0000E+00	.0000E+00
242		0.00	0.000	0.073	0.1261	0.0000	.0000E+00	.0000E+00
243		0.00	0.000	0.061	0.1218	0.0000	.0000E+00	.0000E+00
244		0.00	0.000	0.062	0.1177	0.0000	.0000E+00	.0000E+00
245		0.00	0.000	0.070	0.1130	0.0000	.0000E+00	.0000E+00
246		0.00	0.000	0.069	0.1084	0.0000	.0000E+00	.0000E+00
247		0.00	0.000	0.082	0.1029	0.0000	.0000E+00	.0000E+00
248		0.00	0.000	0.053	0.0994	0.0000	.0000E+00	.0000E+00
249		0.00	0.000	0.049	0.0961	0.0000	.0000E+00	.0000E+00
250		0.00	0.000	0.046	0.0930	0.0000	.0000E+00	.0000E+00
251		0.00	0.000	0.047	0.0899	0.0000	.0000E+00	.0000E+00
252		0.00	0.000	0.049	0.0867	0.0000	.0000E+00	.0000E+00
253		0.00	0.000	0.053	0.0832	0.0000	.0000E+00	.0000E+00
254		0.00	0.000	0.047	0.0800	0.0000	.0000E+00	.0000E+00
255		0.00	0.000	0.043	0.0772	0.0000	.0000E+00	.0000E+00
256	*	0.00	0.000	0.039	0.0738	0.0000	.0000E+00	.0000E+00
257	*	0.00	0.000	0.037	0.0714	0.0000	.0000E+00	.0000E+00
258		0.00	0.000	0.021	0.0700	0.0000	.0000E+00	.0000E+00
259		0.04	0.000	0.004	0.0724	0.0000	.0000E+00	.0000E+00
260		0.27	0.000	0.014	0.0894	0.0000	.0000E+00	.0000E+00
261		0.13	0.000	0.021	0.0967	0.0000	.0000E+00	.0000E+00
262		0.00	0.000	0.023	0.0952	0.0000	.0000E+00	.0000E+00
263		0.08	0.000	0.025	0.0989	0.0000	.0000E+00	.0000E+00
264		0.11	0.000	0.025	0.1045	0.0000	.0000E+00	.0000E+00
265		0.05	0.000	0.047	0.1047	0.0000	.0000E+00	.0000E+00
266		0.02	0.000	0.041	0.1033	0.0000	.0000E+00	.0000E+00
267		0.12	0.000	0.049	0.1080	0.0000	.0000E+00	.0000E+00
268		0.11	0.000	0.051	0.1120	0.0000	.0000E+00	.0000E+00
269		0.00	0.000	0.044	0.1090	0.0000	.0000E+00	.0000E+00
270		0.00	0.000	0.053	0.1055	0.0000	.0000E+00	.0000E+00
271		0.09	0.000	0.043	0.1086	0.0000	.0000E+00	.0000E+00
272		0.00	0.000	0.050	0.1053	0.0000	.0000E+00	.0000E+00

273		0.00	0.000	0.043	0.1024	0.0000	.0000E+00	.0000E+00
274		0.04	0.000	0.034	0.1029	0.0000	.0000E+00	.0000E+00
275		0.69	0.000	0.033	0.1466	0.0000	.0000E+00	.0000E+00
276		0.00	0.000	0.033	0.1445	0.0000	.0000E+00	.0000E+00
277		0.00	0.000	0.047	0.1412	0.0000	.0000E+00	.0000E+00
278		0.00	0.000	0.033	0.1385	0.0000	.0000E+00	.0000E+00
279		0.43	0.000	0.044	0.1640	0.0000	.0000E+00	.0000E+00
280		0.02	0.000	0.048	0.1424	0.0000	.0000E+00	.0000E+00
281		0.00	0.000	0.038	0.1383	0.0000	.0000E+00	.0000E+00
282		0.34	0.000	0.045	0.1560	0.0000	.0000E+00	.0000E+00
283		0.53	0.000	0.045	0.1573	0.0000	.0000E+00	.1790
284		0.00	0.000	0.043	0.1531	0.0000	.0000E+00	.1266
285		0.00	0.000	0.043	0.1464	0.0000	.0000E+00	.0000E+00
286		0.00	0.000	0.032	0.1412	0.0000	.0000E+00	.0000E+00
287	*	0.00	0.000	0.028	0.1388	0.0000	.0000E+00	.0000E+00
288		0.19	0.000	0.034	0.1478	0.0000	.0000E+00	.0000E+00
289		0.75	0.000	0.034	0.1703	0.0000	.0000E+00	.1699
290	*	0.23	0.000	0.021	0.1542	0.0000	.0000E+00	.1057E-01
291	*	0.00	0.000	0.026	0.1523	0.0000	.0000E+00	.0000E+00
292	*	0.00	0.000	0.023	0.1493	0.0000	.0000E+00	.0000E+00
293	*	0.00	0.000	0.020	0.1465	0.0000	.0000E+00	.0000E+00
294	*	0.00	0.000	0.027	0.1444	0.0000	.0000E+00	.0000E+00
295	*	0.00	0.000	0.014	0.1444	0.0000	.0000E+00	.0000E+00
296	*	0.00	0.000	0.000	0.1444	0.0000	.0000E+00	.0000E+00
297	*	0.00	0.000	0.000	0.1444	0.0000	.0000E+00	.0000E+00
298	*	0.12	0.000	0.020	0.1430	0.0000	.0000E+00	.0000E+00
299		0.49	0.000	0.000	0.1555	0.0000	.0000E+00	.2816
300		0.15	0.000	0.034	0.1577	0.0000	.0000E+00	.5860E-01
301	*	0.02	0.000	0.031	0.1534	0.0000	.0000E+00	.0000E+00
302	*	0.00	0.000	0.030	0.1478	0.0000	.0000E+00	.0000E+00
303	*	0.00	0.000	0.028	0.1421	0.0000	.0000E+00	.0000E+00
304		0.49	0.000	0.034	0.1584	0.0000	.0000E+00	.0000E+00
305		0.00	0.000	0.036	0.1484	0.0000	.0000E+00	.2936
306	*	0.00	0.000	0.028	0.1466	0.0000	.0000E+00	.0000E+00
307	*	0.00	0.000	0.027	0.1447	0.0000	.0000E+00	.0000E+00
308		0.00	0.000	0.032	0.1426	0.0000	.0000E+00	.0000E+00
309	*	0.00	0.000	0.029	0.1407	0.0000	.0000E+00	.0000E+00
310		0.18	0.000	0.036	0.1503	0.0000	.0000E+00	.0000E+00
311		0.06	0.000	0.033	0.1507	0.0000	.0000E+00	.0000E+00
312		0.04	0.000	0.037	0.1474	0.0000	.0000E+00	.0000E+00
313		0.00	0.000	0.037	0.1431	0.0000	.0000E+00	.0000E+00
314		0.00	0.000	0.038	0.1392	0.0000	.0000E+00	.0000E+00
315		0.31	0.000	0.042	0.1571	0.0000	.0000E+00	.0000E+00
316		0.02	0.000	0.037	0.1550	0.0000	.0000E+00	.0000E+00
317		0.00	0.000	0.033	0.1517	0.0000	.0000E+00	.0000E+00
318	*	0.00	0.000	0.028	0.1499	0.0000	.0000E+00	.0000E+00
319		0.00	0.000	0.036	0.1475	0.0000	.0000E+00	.0000E+00
320		0.00	0.000	0.034	0.1452	0.0000	.0000E+00	.0000E+00
321	*	0.00	0.000	0.028	0.1433	0.0000	.0000E+00	.0000E+00
322	*	0.00	0.000	0.000	0.1433	0.0000	.0000E+00	.0000E+00
323	*	0.00	0.000	0.025	0.1416	0.0000	.0000E+00	.0000E+00
324	*	0.00	0.000	0.026	0.1399	0.0000	.0000E+00	.0000E+00
325	*	0.00	0.000	0.000	0.1399	0.0000	.0000E+00	.0000E+00
326	*	0.00	0.000	0.000	0.1399	0.0000	.0000E+00	.0000E+00
327	*	0.00	0.000	0.000	0.1399	0.0000	.0000E+00	.0000E+00
328	*	0.06	0.000	0.013	0.1412	0.0000	.0000E+00	.0000E+00
329	*	0.00	0.000	0.019	0.1418	0.0000	.0000E+00	.0000E+00
330	* *	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
331	* *	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
332	* *	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00

333	*	*	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
334	*	*	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
335	*	*	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
336	*	*	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
337	*	*	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
338	*	*	0.04	0.000	0.010	0.1418	0.0000	.0000E+00	.0000E+00
339	*	*	0.03	0.000	0.011	0.1418	0.0000	.0000E+00	.0000E+00
340	*	*	0.00	0.000	0.015	0.1418	0.0000	.0000E+00	.0000E+00
341	*	*	0.07	0.000	0.012	0.1418	0.0000	.0000E+00	.0000E+00
342	*	*	0.32	0.000	0.013	0.1418	0.0000	.0000E+00	.0000E+00
343	*	*	0.13	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
344	*	*	0.00	0.000	0.010	0.1418	0.0000	.0000E+00	.0000E+00
345	*	*	0.21	0.000	0.007	0.1418	0.0000	.0000E+00	.0000E+00
346	*	*	0.00	0.000	0.006	0.1418	0.0000	.0000E+00	.0000E+00
347	*	*	0.00	0.000	0.005	0.1418	0.0000	.0000E+00	.0000E+00
348	*	*	0.00	0.000	0.004	0.1418	0.0000	.0000E+00	.0000E+00
349	*	*	0.00	0.000	0.009	0.1418	0.0000	.0000E+00	.0000E+00
350	*	*	0.07	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
351	*	*	0.01	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
352	*	*	0.10	0.000	0.010	0.1418	0.0000	.0000E+00	.0000E+00
353	*	*	0.04	0.000	0.008	0.1418	0.0000	.0000E+00	.0000E+00
354	*	*	0.00	0.000	0.005	0.1418	0.0000	.0000E+00	.0000E+00
355	*	*	0.11	0.000	0.006	0.1418	0.0000	.0000E+00	.0000E+00
356	*	*	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
357	*	*	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
358	*	*	0.00	0.000	0.000	0.1418	0.0000	.0000E+00	.0000E+00
359	*	*	0.00	0.000	0.016	0.1418	0.0000	.0000E+00	.0000E+00
360	*	*	0.00	0.000	0.015	0.1418	0.0000	.0000E+00	.0000E+00
361	*	*	0.00	0.000	0.015	0.1418	0.0000	.0000E+00	.0000E+00
362	*	*	0.00	0.000	0.019	0.1418	0.0000	.0000E+00	.0000E+00
363	*	*	0.00	0.000	0.017	0.1418	0.0000	.0000E+00	.0000E+00
364	*	*	0.00	0.000	0.017	0.1418	0.0000	.0000E+00	.0000E+00
365	*	*	0.00	0.000	0.014	0.1418	0.0000	.0000E+00	.0000E+00

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	0.81	1.43	0.96	0.19	0.62	0.29
	0.50	3.40	1.02	4.49	0.67	1.13
RUNOFF	0.000	0.000	0.000	0.777	0.173	0.044
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.453	0.423	0.330	0.214	0.090	1.195
	0.278	2.187	1.300	0.922	0.652	0.247

```
 PERCOLATION/LEAKAGE THROUGH      0.0000  0.0000  0.0000  0.0000  0.0000
0.0502
   LAYER  1                       0.0000  0.0379  0.0000  0.8262  0.2936
0.0000
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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.51	56301.305	100.00
RUNOFF	0.994	3608.110	6.41
EVAPOTRANSPIRATION	8.290	30092.734	53.45
PERC./LEAKAGE THROUGH LAYER 1	1.207932	4384.792	7.79
CHANGE IN WATER STORAGE	5.018	18215.662	32.35
SOIL WATER AT START OF YEAR	19.200	69695.883	
SOIL WATER AT END OF YEAR	23.335	84705.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.883	3206.297	5.69
ANNUAL WATER BUDGET BALANCE	0.0000	0.006	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.81	1.43	0.96	0.19	0.62	0.29
	0.50	3.40	1.02	4.49	0.67	1.13

STD. DEVIATIONS	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00

RUNOFF

TOTALS	0.000	0.000	0.000	0.777	0.173	0.044
	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	0.453	0.423	0.330	0.214	0.090	1.195
	0.278	2.187	1.300	0.922	0.652	0.247
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

PERCOLATION/LEAKAGE THROUGH LAYER 1

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0502
	0.0000	0.0379	0.0000	0.8262	0.2936	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 1

	INCHES		CU. FEET	PERCENT
PRECIPITATION	15.51	(0.000)	56301.3	100.00
RUNOFF	0.994	(0.0000)	3608.11	6.409
EVAPOTRANSPIRATION	8.290	(0.0000)	30092.73	53.449
PERCOLATION/LEAKAGE THROUGH LAYER 1	1.20793	(0.00000)	4384.792	7.78808
CHANGE IN WATER STORAGE	5.018	(0.0000)	18215.66	32.354

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 1

	(INCHES)	(CU. FT.)
PRECIPITATION	0.75	2722.500
RUNOFF	0.455	1653.1699
PERCOLATION/LEAKAGE THROUGH LAYER 1	0.293597	1065.75635
SNOW WATER	2.02	7347.9204

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.2677

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.0700

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FINAL WATER STORAGE AT END OF YEAR 1

LAYER	(INCHES)	(VOL/VOL)
1	23.3348	0.1945
SNOW WATER	0.883	

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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:\RUNS\RDM4\DATA4.D4
TEMPERATURE DATA FILE: C:\RUNS\RDM4\DATA7.D7
SOLAR RADIATION DATA FILE: C:\RUNS\RDM4\DATA13.D13
EVAPOTRANSPIRATION DATA: C:\RUNS\RDM4\DATA11.D11
SOIL AND DESIGN DATA FILE: C:\RUNS\RDM4\DATA10.D10
OUTPUT DATA FILE: C:\RUNS\RDM4\RDMOUT.OUT

TIME: 8:17 DATE: 6/18/2019

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TITLE: Construction Model Year 2 (RDM4-Scenario 5I)

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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	=	600.00	INCHES
POROSITY	=	0.3000	VOL/VOL
FIELD CAPACITY	=	0.2100	VOL/VOL
WILTING POINT	=	0.0700	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1945	VOL/VOL

Layer 1 initial soil water content is equal to the final water storage at end of year 1 (Construction Model Year 1, RDM3–Scenario 5I)

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 # 1 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 0.% AND A SLOPE LENGTH OF 500. FEET.

SCS RUNOFF CURVE NUMBER	=	70.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	15.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	2.917	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	4.500	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.050	INCHES
INITIAL SNOW WATER	=	0.833	INCHES
INITIAL WATER IN LAYER MATERIALS	=	116.700	INCHES
TOTAL INITIAL WATER	=	117.533	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM BETHEL ALASKA

STATION LATITUDE	=	60.78 DEGREES
MAXIMUM LEAF AREA INDEX	=	2.50
START OF GROWING SEASON (JULIAN DATE)	=	184
END OF GROWING SEASON (JULIAN DATE)	=	225
EVAPORATIVE ZONE DEPTH	=	15.0 INCHES
AVERAGE ANNUAL WIND SPEED	=	12.90 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	78.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	83.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	80.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR ANCHORAGE ALASKA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
0.72	0.47	0.30	0.41	0.39	3.07
2.68	2.30	1.74	2.88	1.02	1.79

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR BETHEL ALASKA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
4.90	5.70	10.70	23.40	40.30	50.60
54.70	52.80	45.00	29.70	17.50	4.80

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR BETHEL ALASKA
AND STATION LATITUDE = 60.78 DEGREES

LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 1

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DAILY OUTPUT FOR YEAR 1

DAY	AIR	SOIL	RAIN IN.	RUNOFF IN.	ET IN.	E. ZONE WATER IN./IN.	HEAD #1 IN.	DRAIN #1 IN.	LEAK #1 IN.
1	*	*	0.00	0.000	0.014	0.1945	0.0000	.0000E+00	.0000E+00
2	*	*	0.00	0.000	0.013	0.1945	0.0000	.0000E+00	.0000E+00
3	*	*	0.00	0.000	0.013	0.1945	0.0000	.0000E+00	.0000E+00
4	*	*	0.00	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
5	*	*	0.00	0.000	0.013	0.1945	0.0000	.0000E+00	.0000E+00
6	*	*	0.07	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
7	*	*	0.07	0.000	0.015	0.1945	0.0000	.0000E+00	.0000E+00
8	*	*	0.00	0.000	0.015	0.1945	0.0000	.0000E+00	.0000E+00
9	*	*	0.00	0.000	0.016	0.1945	0.0000	.0000E+00	.0000E+00
10	*	*	0.13	0.000	0.012	0.1945	0.0000	.0000E+00	.0000E+00
11	*	*	0.00	0.000	0.014	0.1945	0.0000	.0000E+00	.0000E+00
12	*	*	0.00	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
13	*	*	0.02	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
14	*	*	0.16	0.000	0.010	0.1945	0.0000	.0000E+00	.0000E+00
15	*	*	0.00	0.000	0.009	0.1945	0.0000	.0000E+00	.0000E+00
16	*	*	0.00	0.000	0.010	0.1945	0.0000	.0000E+00	.0000E+00
17	*	*	0.00	0.000	0.012	0.1945	0.0000	.0000E+00	.0000E+00
18	*	*	0.00	0.000	0.014	0.1945	0.0000	.0000E+00	.0000E+00
19	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
20	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
21	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
22	*	*	0.00	0.000	0.022	0.1945	0.0000	.0000E+00	.0000E+00
23	*	*	0.00	0.000	0.027	0.1945	0.0000	.0000E+00	.0000E+00
24	*	*	0.00	0.000	0.029	0.1945	0.0000	.0000E+00	.0000E+00
25	*	*	0.00	0.000	0.020	0.1945	0.0000	.0000E+00	.0000E+00
26	*	*	0.28	0.000	0.019	0.1945	0.0000	.0000E+00	.0000E+00
27	*	*	0.08	0.000	0.020	0.1945	0.0000	.0000E+00	.0000E+00
28	*	*	0.00	0.000	0.018	0.1945	0.0000	.0000E+00	.0000E+00
29	*	*	0.00	0.000	0.017	0.1945	0.0000	.0000E+00	.0000E+00
30	*	*	0.00	0.000	0.021	0.1945	0.0000	.0000E+00	.0000E+00

31	*	*	0.00	0.000	0.018	0.1945	0.0000	.0000E+00	.0000E+00
32	*	*	0.00	0.000	0.013	0.1945	0.0000	.0000E+00	.0000E+00
33	*	*	0.00	0.000	0.012	0.1945	0.0000	.0000E+00	.0000E+00
34	*	*	0.15	0.000	0.015	0.1945	0.0000	.0000E+00	.0000E+00
35	*	*	0.00	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
36	*	*	0.00	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
37	*	*	0.00	0.000	0.013	0.1945	0.0000	.0000E+00	.0000E+00
38	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
39	*	*	0.00	0.000	0.019	0.1945	0.0000	.0000E+00	.0000E+00
40	*	*	0.00	0.000	0.018	0.1945	0.0000	.0000E+00	.0000E+00
41	*	*	0.00	0.000	0.022	0.1945	0.0000	.0000E+00	.0000E+00
42	*	*	0.01	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
43	*	*	0.09	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
44	*	*	0.00	0.000	0.024	0.1945	0.0000	.0000E+00	.0000E+00
45	*	*	0.01	0.000	0.021	0.1945	0.0000	.0000E+00	.0000E+00
46	*	*	0.03	0.000	0.020	0.1945	0.0000	.0000E+00	.0000E+00
47	*	*	0.15	0.000	0.019	0.1945	0.0000	.0000E+00	.0000E+00
48	*	*	0.29	0.000	0.019	0.1945	0.0000	.0000E+00	.0000E+00
49	*	*	0.04	0.000	0.019	0.1945	0.0000	.0000E+00	.0000E+00
50	*	*	0.41	0.000	0.017	0.1945	0.0000	.0000E+00	.0000E+00
51	*	*	0.17	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
52	*	*	0.00	0.000	0.018	0.1945	0.0000	.0000E+00	.0000E+00
53	*	*	0.00	0.000	0.014	0.1945	0.0000	.0000E+00	.0000E+00
54	*	*	0.00	0.000	0.013	0.1945	0.0000	.0000E+00	.0000E+00
55	*	*	0.05	0.000	0.015	0.1945	0.0000	.0000E+00	.0000E+00
56	*	*	0.00	0.000	0.013	0.1945	0.0000	.0000E+00	.0000E+00
57	*	*	0.00	0.000	0.014	0.1945	0.0000	.0000E+00	.0000E+00
58	*	*	0.00	0.000	0.018	0.1945	0.0000	.0000E+00	.0000E+00
59	*	*	0.03	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
60	*	*	0.00	0.000	0.015	0.1945	0.0000	.0000E+00	.0000E+00
61	*	*	0.01	0.000	0.009	0.1945	0.0000	.0000E+00	.0000E+00
62	*	*	0.03	0.000	0.008	0.1945	0.0000	.0000E+00	.0000E+00
63	*	*	0.21	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
64	*	*	0.01	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
65	*	*	0.00	0.000	0.012	0.1945	0.0000	.0000E+00	.0000E+00
66	*	*	0.29	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
67	*	*	0.05	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
68	*	*	0.00	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
69	*	*	0.00	0.000	0.013	0.1945	0.0000	.0000E+00	.0000E+00
70	*	*	0.00	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
71	*	*	0.00	0.000	0.010	0.1945	0.0000	.0000E+00	.0000E+00
72	*	*	0.00	0.000	0.008	0.1945	0.0000	.0000E+00	.0000E+00
73	*	*	0.00	0.000	0.011	0.1945	0.0000	.0000E+00	.0000E+00
74	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
75	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
76	*	*	0.00	0.000	0.016	0.1945	0.0000	.0000E+00	.0000E+00
77	*	*	0.00	0.000	0.012	0.1945	0.0000	.0000E+00	.0000E+00
78	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
79	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
80	*	*	0.00	0.000	0.020	0.1945	0.0000	.0000E+00	.0000E+00
81	*	*	0.00	0.000	0.019	0.1945	0.0000	.0000E+00	.0000E+00
82	*	*	0.00	0.000	0.017	0.1945	0.0000	.0000E+00	.0000E+00
83	*	*	0.00	0.000	0.018	0.1945	0.0000	.0000E+00	.0000E+00
84	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
85	*	*	0.00	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00
86	*	*	0.00	0.000	0.030	0.1945	0.0000	.0000E+00	.0000E+00
87	*	*	0.00	0.000	0.023	0.1945	0.0000	.0000E+00	.0000E+00
88	*	*	0.00	0.000	0.025	0.1945	0.0000	.0000E+00	.0000E+00
89	*	*	0.00	0.000	0.030	0.1945	0.0000	.0000E+00	.0000E+00
90	*	*	0.36	0.000	0.000	0.1945	0.0000	.0000E+00	.0000E+00

91	*	*	0.03	0.000	0.025	0.1945	0.0000	.0000E+00	.0000E+00
92		*	0.00	0.003	0.004	0.2089	0.0000	.0000E+00	.0000E+00
93		*	0.00	0.000	0.027	0.2101	0.0000	.0000E+00	.0000E+00
94	*	*	0.00	0.000	0.016	0.2101	0.0000	.0000E+00	.0000E+00
95	*	*	0.00	0.000	0.017	0.2101	0.0000	.0000E+00	.0000E+00
96	*	*	0.00	0.000	0.011	0.2101	0.0000	.0000E+00	.0000E+00
97	*	*	0.00	0.000	0.012	0.2101	0.0000	.0000E+00	.0000E+00
98	*	*	0.00	0.000	0.015	0.2101	0.0000	.0000E+00	.0000E+00
99	*	*	0.00	0.000	0.010	0.2101	0.0000	.0000E+00	.0000E+00
100	*	*	0.00	0.000	0.000	0.2101	0.0000	.0000E+00	.0000E+00
101	*	*	0.05	0.000	0.017	0.2101	0.0000	.0000E+00	.0000E+00
102	*	*	0.00	0.000	0.016	0.2101	0.0000	.0000E+00	.0000E+00
103	*	*	0.00	0.000	0.021	0.2101	0.0000	.0000E+00	.0000E+00
104	*	*	0.00	0.000	0.000	0.2101	0.0000	.0000E+00	.0000E+00
105	*	*	0.00	0.000	0.023	0.2101	0.0000	.0000E+00	.0000E+00
106	*	*	0.00	0.000	0.000	0.2101	0.0000	.0000E+00	.0000E+00
107		*	0.00	0.282	0.000	0.2357	0.0000	.0000E+00	.0000E+00
108		*	0.00	0.821	0.000	0.2534	0.0000	.0000E+00	.0000E+00
109		*	0.00	0.629	0.000	0.2629	0.0000	.0000E+00	.0000E+00
110		*	0.00	0.000	0.000	0.2629	0.0000	.0000E+00	.0000E+00
111		*	0.11	0.049	0.002	0.2669	0.0000	.0000E+00	.0000E+00
112	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
113	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
114	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
115	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
116	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
117	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
118	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
119	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
120	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
121	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
122		*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
123		*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
124		*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
125		*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
126		*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
127		*	0.05	0.012	0.001	0.2693	0.0000	.0000E+00	.0000E+00
128		*	0.00	0.000	0.000	0.2693	0.0000	.0000E+00	.0000E+00
129		*	0.00	0.000	0.000	0.2693	0.0000	.0000E+00	.0000E+00
130		*	0.00	0.000	0.000	0.2693	0.0000	.0000E+00	.0000E+00
131		*	0.00	0.000	0.000	0.2693	0.0000	.0000E+00	.0000E+00
132		*	0.00	0.000	0.000	0.2693	0.0000	.0000E+00	.0000E+00
133		*	0.00	0.000	0.000	0.2693	0.0000	.0000E+00	.0000E+00
134		*	0.00	0.000	0.000	0.2693	0.0000	.0000E+00	.0000E+00
135		*	0.09	0.042	0.001	0.2724	0.0000	.0000E+00	.0000E+00
136		*	0.11	0.063	0.001	0.2755	0.0000	.0000E+00	.0000E+00
137		*	0.00	0.000	0.000	0.2755	0.0000	.0000E+00	.0000E+00
138		*	0.03	0.006	0.001	0.2770	0.0000	.0000E+00	.0000E+00
139		*	0.00	0.000	0.000	0.2770	0.0000	.0000E+00	.0000E+00
140		*	0.00	0.000	0.000	0.2770	0.0000	.0000E+00	.0000E+00
141	*	*	0.00	0.000	0.000	0.2770	0.0000	.0000E+00	.0000E+00
142		*	0.00	0.000	0.000	0.2770	0.0000	.0000E+00	.0000E+00
143		*	0.00	0.000	0.000	0.2770	0.0000	.0000E+00	.0000E+00
144	*	*	0.08	0.000	0.070	0.2770	0.0000	.0000E+00	.0000E+00
145		*	0.00	0.000	0.010	0.2770	0.0000	.0000E+00	.0000E+00
146	*	*	0.00	0.000	0.000	0.2770	0.0000	.0000E+00	.0000E+00
147		*	0.18	0.137	0.001	0.2798	0.0000	.0000E+00	.0000E+00
148		*	0.07	0.039	0.001	0.2817	0.0000	.0000E+00	.0000E+00
149		*	0.01	0.000	0.001	0.2823	0.0000	.0000E+00	.0000E+00
150		*	0.00	0.000	0.000	0.2823	0.0000	.0000E+00	.0000E+00

151	*	0.00	0.000	0.000	0.2823	0.0000	.0000E+00	.0000E+00
152	*	0.00	0.000	0.000	0.2823	0.0000	.0000E+00	.0000E+00
153	*	0.00	0.000	0.000	0.2823	0.0000	.0000E+00	.0000E+00
154	*	0.02	0.005	0.001	0.2832	0.0000	.0000E+00	.0000E+00
155	*	0.08	0.054	0.001	0.2848	0.0000	.0000E+00	.0000E+00
156	*	0.00	0.000	0.000	0.2848	0.0000	.0000E+00	.0000E+00
157	*	0.00	0.000	0.000	0.2848	0.0000	.0000E+00	.0000E+00
158		0.19	0.062	0.113	0.1433	0.0000	.0000E+00	.2484
159		0.00	0.000	0.143	0.1256	0.0000	.0000E+00	.0000E+00
160		0.00	0.000	0.130	0.1162	0.0000	.0000E+00	.0000E+00
161		0.00	0.000	0.116	0.1085	0.0000	.0000E+00	.0000E+00
162		0.00	0.000	0.123	0.1003	0.0000	.0000E+00	.0000E+00
163		0.00	0.000	0.146	0.0906	0.0000	.0000E+00	.0000E+00
164		0.00	0.000	0.135	0.0816	0.0000	.0000E+00	.0000E+00
165		0.00	0.000	0.119	0.0737	0.0000	.0000E+00	.0000E+00
166		0.00	0.000	0.055	0.0700	0.0000	.0000E+00	.0000E+00
167		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
168		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
169		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
170		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
171		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
172		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
173		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
174		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
175		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
176		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
177		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
178		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
179		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
180		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
181		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
182		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
183		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
184		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
185		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
186		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
187		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
188		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
189		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
190		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
191		0.09	0.000	0.003	0.0758	0.0000	.0000E+00	.0000E+00
192		0.05	0.000	0.010	0.0785	0.0000	.0000E+00	.0000E+00
193		0.00	0.000	0.011	0.0777	0.0000	.0000E+00	.0000E+00
194		0.03	0.000	0.015	0.0787	0.0000	.0000E+00	.0000E+00
195		0.00	0.000	0.012	0.0780	0.0000	.0000E+00	.0000E+00
196		0.00	0.000	0.014	0.0770	0.0000	.0000E+00	.0000E+00
197		0.00	0.000	0.013	0.0762	0.0000	.0000E+00	.0000E+00
198		0.00	0.000	0.013	0.0753	0.0000	.0000E+00	.0000E+00
199		0.00	0.000	0.013	0.0745	0.0000	.0000E+00	.0000E+00
200		0.00	0.000	0.012	0.0737	0.0000	.0000E+00	.0000E+00
201		0.00	0.000	0.012	0.0729	0.0000	.0000E+00	.0000E+00
202		0.00	0.000	0.012	0.0721	0.0000	.0000E+00	.0000E+00
203		0.00	0.000	0.012	0.0713	0.0000	.0000E+00	.0000E+00
204		0.17	0.000	0.014	0.0817	0.0000	.0000E+00	.0000E+00
205		0.00	0.000	0.014	0.0807	0.0000	.0000E+00	.0000E+00
206		0.00	0.000	0.014	0.0798	0.0000	.0000E+00	.0000E+00
207		0.00	0.000	0.012	0.0790	0.0000	.0000E+00	.0000E+00
208		0.00	0.000	0.012	0.0782	0.0000	.0000E+00	.0000E+00
209		0.02	0.000	0.013	0.0787	0.0000	.0000E+00	.0000E+00
210		0.04	0.000	0.014	0.0804	0.0000	.0000E+00	.0000E+00

211		0.06	0.000	0.015	0.0834	0.0000	.0000E+00	.0000E+00
212		0.04	0.000	0.015	0.0850	0.0000	.0000E+00	.0000E+00
213		0.00	0.000	0.014	0.0841	0.0000	.0000E+00	.0000E+00
214		0.31	0.000	0.012	0.1039	0.0000	.0000E+00	.0000E+00
215		0.00	0.000	0.013	0.1031	0.0000	.0000E+00	.0000E+00
216		0.36	0.000	0.014	0.1262	0.0000	.0000E+00	.0000E+00
217		0.27	0.000	0.015	0.1432	0.0000	.0000E+00	.0000E+00
218		0.38	0.000	0.089	0.1621	0.0000	.0000E+00	.0000E+00
219		0.00	0.000	0.081	0.1505	0.0000	.0000E+00	.0000E+00
220		0.00	0.000	0.085	0.1411	0.0000	.0000E+00	.0000E+00
221		0.00	0.000	0.070	0.1337	0.0000	.0000E+00	.0000E+00
222		0.04	0.000	0.102	0.1292	0.0000	.0000E+00	.0000E+00
223		0.49	0.000	0.070	0.1572	0.0000	.0000E+00	.0000E+00
224		0.36	0.000	0.076	0.1542	0.0000	.0000E+00	.0000E+00
225		0.00	0.000	0.062	0.1472	0.0000	.0000E+00	.0000E+00
226		0.00	0.000	0.058	0.1434	0.0000	.0000E+00	.0000E+00
227		0.00	0.000	0.085	0.1377	0.0000	.0000E+00	.0000E+00
228		0.00	0.000	0.070	0.1330	0.0000	.0000E+00	.0000E+00
229		0.00	0.000	0.099	0.1265	0.0000	.0000E+00	.0000E+00
230		0.00	0.000	0.119	0.1185	0.0000	.0000E+00	.0000E+00
231		0.02	0.000	0.084	0.1142	0.0000	.0000E+00	.0000E+00
232		0.07	0.000	0.074	0.1139	0.0000	.0000E+00	.0000E+00
233		0.05	0.000	0.100	0.1094	0.0000	.0000E+00	.0000E+00
234		0.00	0.000	0.076	0.1044	0.0000	.0000E+00	.0000E+00
235		0.00	0.000	0.094	0.0967	0.0000	.0000E+00	.0000E+00
236		0.04	0.000	0.095	0.0926	0.0000	.0000E+00	.0000E+00
237		0.38	0.000	0.081	0.1126	0.0000	.0000E+00	.0000E+00
238		0.02	0.000	0.098	0.1073	0.0000	.0000E+00	.0000E+00
239		0.00	0.000	0.080	0.1020	0.0000	.0000E+00	.0000E+00
240		0.52	0.000	0.058	0.1328	0.0000	.0000E+00	.0000E+00
241		0.09	0.000	0.081	0.1330	0.0000	.0000E+00	.0000E+00
242		0.00	0.000	0.073	0.1281	0.0000	.0000E+00	.0000E+00
243		0.00	0.000	0.061	0.1240	0.0000	.0000E+00	.0000E+00
244		0.00	0.000	0.062	0.1199	0.0000	.0000E+00	.0000E+00
245		0.00	0.000	0.070	0.1152	0.0000	.0000E+00	.0000E+00
246		0.00	0.000	0.069	0.1106	0.0000	.0000E+00	.0000E+00
247		0.00	0.000	0.082	0.1049	0.0000	.0000E+00	.0000E+00
248		0.00	0.000	0.053	0.1010	0.0000	.0000E+00	.0000E+00
249		0.00	0.000	0.049	0.0976	0.0000	.0000E+00	.0000E+00
250		0.00	0.000	0.046	0.0944	0.0000	.0000E+00	.0000E+00
251		0.00	0.000	0.047	0.0912	0.0000	.0000E+00	.0000E+00
252		0.00	0.000	0.049	0.0880	0.0000	.0000E+00	.0000E+00
253		0.00	0.000	0.053	0.0845	0.0000	.0000E+00	.0000E+00
254		0.00	0.000	0.047	0.0813	0.0000	.0000E+00	.0000E+00
255		0.00	0.000	0.043	0.0785	0.0000	.0000E+00	.0000E+00
256	*	0.00	0.000	0.039	0.0758	0.0000	.0000E+00	.0000E+00
257	*	0.00	0.000	0.037	0.0734	0.0000	.0000E+00	.0000E+00
258		0.00	0.000	0.034	0.0711	0.0000	.0000E+00	.0000E+00
259		0.04	0.000	0.020	0.0724	0.0000	.0000E+00	.0000E+00
260		0.27	0.000	0.014	0.0895	0.0000	.0000E+00	.0000E+00
261		0.13	0.000	0.021	0.0967	0.0000	.0000E+00	.0000E+00
262		0.00	0.000	0.023	0.0952	0.0000	.0000E+00	.0000E+00
263		0.08	0.000	0.025	0.0989	0.0000	.0000E+00	.0000E+00
264		0.11	0.000	0.025	0.1046	0.0000	.0000E+00	.0000E+00
265		0.05	0.000	0.047	0.1048	0.0000	.0000E+00	.0000E+00
266		0.02	0.000	0.041	0.1034	0.0000	.0000E+00	.0000E+00
267		0.12	0.000	0.049	0.1081	0.0000	.0000E+00	.0000E+00
268		0.11	0.000	0.051	0.1120	0.0000	.0000E+00	.0000E+00
269		0.00	0.000	0.044	0.1091	0.0000	.0000E+00	.0000E+00
270		0.00	0.000	0.053	0.1055	0.0000	.0000E+00	.0000E+00

271			0.09	0.000	0.043	0.1087	0.0000	.0000E+00	.0000E+00
272			0.00	0.000	0.050	0.1053	0.0000	.0000E+00	.0000E+00
273			0.00	0.000	0.043	0.1025	0.0000	.0000E+00	.0000E+00
274			0.04	0.000	0.034	0.1028	0.0000	.0000E+00	.0000E+00
275			0.69	0.000	0.033	0.1466	0.0000	.0000E+00	.0000E+00
276			0.00	0.000	0.033	0.1444	0.0000	.0000E+00	.0000E+00
277			0.00	0.000	0.047	0.1412	0.0000	.0000E+00	.0000E+00
278			0.00	0.000	0.033	0.1384	0.0000	.0000E+00	.0000E+00
279			0.43	0.000	0.044	0.1632	0.0000	.0000E+00	.0000E+00
280			0.02	0.000	0.048	0.1435	0.0000	.0000E+00	.0000E+00
281			0.00	0.000	0.038	0.1386	0.0000	.0000E+00	.0000E+00
282			0.34	0.000	0.045	0.1578	0.0000	.0000E+00	.0000E+00
283			0.53	0.000	0.045	0.1623	0.0000	.0000E+00	.0000E+00
284			0.00	0.000	0.043	0.1544	0.0000	.0000E+00	.0000E+00
285			0.00	0.000	0.043	0.1467	0.0000	.0000E+00	.0000E+00
286			0.00	0.000	0.032	0.1402	0.0000	.0000E+00	.0000E+00
287	*		0.00	0.000	0.028	0.1365	0.0000	.0000E+00	.0000E+00
288			0.19	0.000	0.034	0.1458	0.0000	.0000E+00	.0000E+00
289			0.75	0.000	0.034	0.1698	0.0000	.0000E+00	.0000E+00
290	*		0.23	0.000	0.021	0.1556	0.0000	.0000E+00	.0000E+00
291	*		0.00	0.000	0.026	0.1526	0.0000	.0000E+00	.0000E+00
292	*		0.00	0.000	0.023	0.1493	0.0000	.0000E+00	.0000E+00
293	*		0.00	0.000	0.020	0.1465	0.0000	.0000E+00	.0000E+00
294	*		0.00	0.000	0.027	0.1444	0.0000	.0000E+00	.0000E+00
295	*		0.00	0.000	0.014	0.1444	0.0000	.0000E+00	.0000E+00
296	*		0.00	0.000	0.000	0.1444	0.0000	.0000E+00	.0000E+00
297	*		0.00	0.000	0.000	0.1444	0.0000	.0000E+00	.0000E+00
298	*		0.12	0.000	0.020	0.1430	0.0000	.0000E+00	.0000E+00
299			0.49	0.000	0.000	0.1555	0.0000	.0000E+00	.0000E+00
300			0.15	0.000	0.034	0.1577	0.0000	.0000E+00	.0000E+00
301	*		0.02	0.000	0.031	0.1534	0.0000	.0000E+00	.0000E+00
302	*		0.00	0.000	0.030	0.1478	0.0000	.0000E+00	.0000E+00
303	*		0.00	0.000	0.028	0.1420	0.0000	.0000E+00	.0000E+00
304			0.49	0.000	0.034	0.1584	0.0000	.0000E+00	.0000E+00
305			0.00	0.000	0.036	0.1484	0.0000	.0000E+00	.0000E+00
306	*		0.00	0.000	0.028	0.1465	0.0000	.0000E+00	.0000E+00
307	*		0.00	0.000	0.027	0.1447	0.0000	.0000E+00	.0000E+00
308			0.00	0.000	0.032	0.1425	0.0000	.0000E+00	.0000E+00
309	*		0.00	0.000	0.029	0.1406	0.0000	.0000E+00	.0000E+00
310			0.18	0.000	0.036	0.1502	0.0000	.0000E+00	.0000E+00
311			0.06	0.000	0.033	0.1507	0.0000	.0000E+00	.0000E+00
312			0.04	0.000	0.037	0.1473	0.0000	.0000E+00	.0000E+00
313			0.00	0.000	0.037	0.1431	0.0000	.0000E+00	.0000E+00
314			0.00	0.000	0.038	0.1377	0.0000	.0000E+00	.0000E+00
315			0.31	0.000	0.042	0.1544	0.0000	.0000E+00	.0000E+00
316			0.02	0.000	0.037	0.1533	0.0000	.0000E+00	.0000E+00
317			0.00	0.000	0.033	0.1450	0.0000	.0000E+00	.0000E+00
318	*		0.00	0.000	0.028	0.1420	0.0000	.0000E+00	.0000E+00
319			0.00	0.000	0.036	0.1396	0.0000	.0000E+00	.0000E+00
320			0.00	0.000	0.035	0.1373	0.0000	.0000E+00	.0000E+00
321	*		0.00	0.000	0.028	0.1354	0.0000	.0000E+00	.0000E+00
322	*		0.00	0.000	0.000	0.1354	0.0000	.0000E+00	.0000E+00
323	*		0.00	0.000	0.025	0.1337	0.0000	.0000E+00	.0000E+00
324	*		0.00	0.000	0.026	0.1319	0.0000	.0000E+00	.0000E+00
325	*		0.00	0.000	0.000	0.1319	0.0000	.0000E+00	.0000E+00
326	*		0.00	0.000	0.000	0.1319	0.0000	.0000E+00	.0000E+00
327	*		0.00	0.000	0.000	0.1319	0.0000	.0000E+00	.0000E+00
328	*		0.06	0.000	0.013	0.1333	0.0000	.0000E+00	.0000E+00
329	*		0.00	0.000	0.019	0.1339	0.0000	.0000E+00	.0000E+00
330	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00

331	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
332	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
333	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
334	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
335	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
336	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
337	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
338	*	*	0.04	0.000	0.010	0.1339	0.0000	.0000E+00	.0000E+00
339	*	*	0.03	0.000	0.011	0.1339	0.0000	.0000E+00	.0000E+00
340	*	*	0.00	0.000	0.015	0.1339	0.0000	.0000E+00	.0000E+00
341	*	*	0.07	0.000	0.012	0.1339	0.0000	.0000E+00	.0000E+00
342	*	*	0.32	0.000	0.013	0.1339	0.0000	.0000E+00	.0000E+00
343	*	*	0.13	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
344	*	*	0.00	0.000	0.010	0.1339	0.0000	.0000E+00	.0000E+00
345	*	*	0.21	0.000	0.007	0.1339	0.0000	.0000E+00	.0000E+00
346	*	*	0.00	0.000	0.006	0.1339	0.0000	.0000E+00	.0000E+00
347	*	*	0.00	0.000	0.005	0.1339	0.0000	.0000E+00	.0000E+00
348	*	*	0.00	0.000	0.004	0.1339	0.0000	.0000E+00	.0000E+00
349	*	*	0.00	0.000	0.009	0.1339	0.0000	.0000E+00	.0000E+00
350	*	*	0.07	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
351	*	*	0.01	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
352	*	*	0.10	0.000	0.010	0.1339	0.0000	.0000E+00	.0000E+00
353	*	*	0.04	0.000	0.008	0.1339	0.0000	.0000E+00	.0000E+00
354	*	*	0.00	0.000	0.005	0.1339	0.0000	.0000E+00	.0000E+00
355	*	*	0.11	0.000	0.006	0.1339	0.0000	.0000E+00	.0000E+00
356	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
357	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
358	*	*	0.00	0.000	0.000	0.1339	0.0000	.0000E+00	.0000E+00
359	*	*	0.00	0.000	0.016	0.1339	0.0000	.0000E+00	.0000E+00
360	*	*	0.00	0.000	0.015	0.1339	0.0000	.0000E+00	.0000E+00
361	*	*	0.00	0.000	0.015	0.1339	0.0000	.0000E+00	.0000E+00
362	*	*	0.00	0.000	0.019	0.1339	0.0000	.0000E+00	.0000E+00
363	*	*	0.00	0.000	0.017	0.1339	0.0000	.0000E+00	.0000E+00
364	*	*	0.00	0.000	0.017	0.1339	0.0000	.0000E+00	.0000E+00
365	*	*	0.00	0.000	0.014	0.1339	0.0000	.0000E+00	.0000E+00

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	0.81	1.43	0.96	0.19	0.62	0.29
	0.50	3.40	1.02	4.49	0.67	1.13
RUNOFF	0.000	0.000	0.000	1.784	0.300	0.121
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.426	0.381	0.330	0.215	0.089	1.082
	0.274	2.191	1.331	0.924	0.653	0.247

PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000
0.2484					
LAYER 1	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000					

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.51	56301.305	100.00
RUNOFF	2.206	8007.424	14.22
EVAPOTRANSPIRATION	8.143	29559.342	52.50
PERC./LEAKAGE THROUGH LAYER 1	0.248383	901.631	1.60
CHANGE IN WATER STORAGE	4.913	17832.867	31.67
SOIL WATER AT START OF YEAR	116.700	423620.875	
SOIL WATER AT END OF YEAR	121.562	441271.250	
SNOW WATER AT START OF YEAR	0.833	3023.790	5.37
SNOW WATER AT END OF YEAR	0.883	3206.297	5.69
ANNUAL WATER BUDGET BALANCE	0.0000	0.042	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.81	1.43	0.96	0.19	0.62	0.29
	0.50	3.40	1.02	4.49	0.67	1.13

STD. DEVIATIONS	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00

RUNOFF

TOTALS	0.000	0.000	0.000	1.784	0.300	0.121
	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	0.426	0.381	0.330	0.215	0.089	1.082
	0.274	2.191	1.331	0.924	0.653	0.247
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

PERCOLATION/LEAKAGE THROUGH LAYER 1

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.2484
	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 1

	INCHES		CU. FEET	PERCENT
PRECIPITATION	15.51	(0.000)	56301.3	100.00
RUNOFF	2.206	(0.0000)	8007.42	14.222
EVAPOTRANSPIRATION	8.143	(0.0000)	29559.34	52.502
PERCOLATION/LEAKAGE THROUGH LAYER 1	0.24838	(0.00000)	901.631	1.60144
CHANGE IN WATER STORAGE	4.913	(0.0000)	17832.87	31.674

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 1

	(INCHES)	(CU. FT.)
PRECIPITATION	0.75	2722.500
RUNOFF	0.821	2981.1455
PERCOLATION/LEAKAGE THROUGH LAYER 1	0.248383	901.63068
SNOW WATER	2.93	10620.5869

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.2848
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.0700

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FINAL WATER STORAGE AT END OF YEAR 1

LAYER	(INCHES)	(VOL/VOL)
1	121.5623	0.2026
SNOW WATER	0.883	

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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:\RUNS\RDM1\DATA4.D4
TEMPERATURE DATA FILE:      C:\RUNS\RDM1\DATA7.D7
SOLAR RADIATION DATA FILE:  C:\RUNS\RDM1\DATA13.D13
EVAPOTRANSPIRATION DATA:    C:\RUNS\RDM1\DATA11.D11
SOIL AND DESIGN DATA FILE:  C:\RUNS\RDM1\DATA10.D10
OUTPUT DATA FILE:           C:\RUNS\RDM1\RDMOUT.OUT


TIME:   8:16     DATE:   6/18/2019


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       TITLE:  Post Construction Model Years 3-80 (RDM1-Scenario 7I)

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
              WERE SPECIFIED BY THE USER.


                                LAYER  1
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                TYPE 1 - VERTICAL PERCOLATION LAYER
                    MATERIAL TEXTURE NUMBER   0
          THICKNESS                    =     18.00   INCHES
          POROSITY                     =      0.4500 VOL/VOL
          FIELD CAPACITY               =      0.2400 VOL/VOL
          WILTING POINT                =      0.1200 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.2000 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.499999987000E-04 CM/SEC
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LAYER 2

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	0.04 INCHES
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.	=	0.999999982000E-14 CM/SEC
FML PINHOLE DENSITY	=	0.00 HOLES/ACRE
FML INSTALLATION DEFECTS	=	10.00 HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD

LAYER 3

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	36.00 INCHES
POROSITY	=	0.4500 VOL/VOL
FIELD CAPACITY	=	0.2400 VOL/VOL
WILTING POINT	=	0.1200 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2000 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.499999987000E-04 CM/SEC

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	600.00 INCHES
POROSITY	=	0.3000 VOL/VOL
FIELD CAPACITY	=	0.2100 VOL/VOL
WILTING POINT	=	0.0700 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2026 VOL/VOL

Layer 4 initial soil water content is equal to the final water storage at end of year 2 (Construction Model Year 2, RDM4–Scenario 5I)

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 # 9 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 0.% AND A SLOPE LENGTH OF 500. FEET.

SCS RUNOFF CURVE NUMBER	=	80.40	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	15.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	3.000	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	6.750	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.800	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	132.360	INCHES
TOTAL INITIAL WATER	=	132.360	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
BETHEL ALASKA

STATION LATITUDE	=	60.78 DEGREES
MAXIMUM LEAF AREA INDEX	=	2.50
START OF GROWING SEASON (JULIAN DATE)	=	184
END OF GROWING SEASON (JULIAN DATE)	=	225
EVAPORATIVE ZONE DEPTH	=	15.0 INCHES
AVERAGE ANNUAL WIND SPEED	=	12.90 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	78.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	83.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	80.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR ANCHORAGE ALASKA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
0.72	0.47	0.30	0.41	0.39	3.07
2.68	2.30	1.74	2.88	1.02	1.79

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR BETHEL ALASKA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
4.90	5.70	10.70	23.40	40.30	50.60
54.70	52.80	45.00	29.70	17.50	4.80

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR BETHEL ALASKA

AND STATION LATITUDE = 60.78 DEGREES

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.51	56301.305	100.00
RUNOFF	1.310	4755.327	8.45
EVAPOTRANSPIRATION	8.503	30865.975	54.82
PERC./LEAKAGE THROUGH LAYER 2	0.830412	3014.395	5.35
AVG. HEAD ON TOP OF LAYER 2	2.1986		
PERC./LEAKAGE THROUGH LAYER 4	0.249712	906.456	1.61
CHANGE IN WATER STORAGE	5.447	19773.600	35.12
SOIL WATER AT START OF YEAR	132.960	482644.500	
SOIL WATER AT END OF YEAR	137.524	499211.781	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.883	3206.297	5.69
ANNUAL WATER BUDGET BALANCE	0.0000	-0.053	0.00

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ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.12	51255.613	100.00
RUNOFF	2.987	10844.483	21.16
EVAPOTRANSPIRATION	8.367	30373.971	59.26
PERC./LEAKAGE THROUGH LAYER 2	1.907281	6923.430	13.51
AVG. HEAD ON TOP OF LAYER 2	5.3296		

PERC./LEAKAGE THROUGH LAYER 4	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	2.765	10037.148	19.58
SOIL WATER AT START OF YEAR	137.524	499211.781	
SOIL WATER AT END OF YEAR	139.498	506376.187	
SNOW WATER AT START OF YEAR	0.883	3206.297	6.26
SNOW WATER AT END OF YEAR	1.675	6079.048	11.86
ANNUAL WATER BUDGET BALANCE	0.0000	0.010	0.00

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.54	56410.199	100.00
RUNOFF	4.232	15361.898	27.23
EVAPOTRANSPIRATION	9.693	35185.051	62.37
PERC./LEAKAGE THROUGH LAYER 2	2.213769	8035.981	14.25
AVG. HEAD ON TOP OF LAYER 2	6.3453		
PERC./LEAKAGE THROUGH LAYER 4	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.615	5863.249	10.39
SOIL WATER AT START OF YEAR	139.498	506376.187	
SOIL WATER AT END OF YEAR	141.945	515261.750	
SNOW WATER AT START OF YEAR	1.675	6079.048	10.78
SNOW WATER AT END OF YEAR	0.842	3056.729	5.42
ANNUAL WATER BUDGET BALANCE	0.0000	0.003	0.00

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ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.46	52489.809	100.00
RUNOFF	2.491	9044.110	17.23
EVAPOTRANSPIRATION	10.799	39200.086	74.68
PERC./LEAKAGE THROUGH LAYER 2	1.709286	6204.709	11.82
AVG. HEAD ON TOP OF LAYER 2	4.6010		
PERC./LEAKAGE THROUGH LAYER 4	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.170	4245.569	8.09
SOIL WATER AT START OF YEAR	141.945	515261.750	
SOIL WATER AT END OF YEAR	143.179	519738.219	
SNOW WATER AT START OF YEAR	0.842	3056.729	5.82
SNOW WATER AT END OF YEAR	0.778	2825.837	5.38
ANNUAL WATER BUDGET BALANCE	0.0000	0.046	0.00

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.89	64940.711	100.00
RUNOFF	6.467	23476.379	36.15
EVAPOTRANSPIRATION	9.696	35195.840	54.20
PERC./LEAKAGE THROUGH LAYER 2	2.069382	7511.858	11.57
AVG. HEAD ON TOP OF LAYER 2	5.8108		
PERC./LEAKAGE THROUGH LAYER 4	1.340747	4866.911	7.49
CHANGE IN WATER STORAGE	0.386	1401.593	2.16

SOIL WATER AT START OF YEAR	143.179	519738.219	
SOIL WATER AT END OF YEAR	144.343	523965.656	
SNOW WATER AT START OF YEAR	0.778	2825.837	4.35
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.011	0.00

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ANNUAL TOTALS FOR YEAR 6

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.27	66320.133	100.00
RUNOFF	5.421	19677.338	29.67
EVAPOTRANSPIRATION	9.463	34350.039	51.79
PERC./LEAKAGE THROUGH LAYER 2	2.020143	7333.119	11.06
AVG. HEAD ON TOP OF LAYER 2	5.6390		
PERC./LEAKAGE THROUGH LAYER 4	1.827518	6633.890	10.00
CHANGE IN WATER STORAGE	1.559	5658.834	8.53
SOIL WATER AT START OF YEAR	144.343	523965.656	
SOIL WATER AT END OF YEAR	144.558	524744.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	1.344	4880.502	7.36
ANNUAL WATER BUDGET BALANCE	0.0000	0.026	0.00

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ANNUAL TOTALS FOR YEAR 7

	INCHES	CU. FEET	PERCENT
PRECIPITATION	12.65	45919.504	100.00
RUNOFF	2.753	9992.275	21.76
EVAPOTRANSPIRATION	8.362	30354.812	66.10
PERC./LEAKAGE THROUGH LAYER 2	1.835082	6661.346	14.51
AVG. HEAD ON TOP OF LAYER 2	5.0010		
PERC./LEAKAGE THROUGH LAYER 4	1.830964	6646.399	14.47
CHANGE IN WATER STORAGE	-0.296	-1074.004	-2.34
SOIL WATER AT START OF YEAR	144.558	524744.000	
SOIL WATER AT END OF YEAR	144.599	524894.000	
SNOW WATER AT START OF YEAR	1.344	4880.502	10.63
SNOW WATER AT END OF YEAR	1.007	3656.503	7.96
ANNUAL WATER BUDGET BALANCE	0.0000	0.019	0.00

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ANNUAL TOTALS FOR YEAR 8

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.87	61238.102	100.00
RUNOFF	4.408	15999.939	26.13
EVAPOTRANSPIRATION	11.522	41824.465	68.30
PERC./LEAKAGE THROUGH LAYER 2	1.845109	6697.745	10.94
AVG. HEAD ON TOP OF LAYER 2	5.1012		
PERC./LEAKAGE THROUGH LAYER 4	1.829913	6642.584	10.85
CHANGE IN WATER STORAGE	-0.890	-3228.888	-5.27
SOIL WATER AT START OF YEAR	144.599	524894.000	
SOIL WATER AT END OF YEAR	142.895	518708.312	
SNOW WATER AT START OF YEAR	1.007	3656.503	5.97

SNOW WATER AT END OF YEAR	1.822	6613.282	10.80
ANNUAL WATER BUDGET BALANCE	0.0000	0.001	0.00

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ANNUAL TOTALS FOR YEAR 9

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.53	67263.922	100.00
RUNOFF	5.818	21119.838	31.40
EVAPOTRANSPIRATION	9.107	33057.777	49.15
PERC./LEAKAGE THROUGH LAYER 2	2.109875	7658.845	11.39
AVG. HEAD ON TOP OF LAYER 2	6.0130		
PERC./LEAKAGE THROUGH LAYER 4	1.829752	6642.000	9.87
CHANGE IN WATER STORAGE	1.775	6444.253	9.58
SOIL WATER AT START OF YEAR	142.895	518708.312	
SOIL WATER AT END OF YEAR	144.807	525648.687	
SNOW WATER AT START OF YEAR	1.822	6613.282	9.83
SNOW WATER AT END OF YEAR	1.685	6117.187	9.09
ANNUAL WATER BUDGET BALANCE	0.0000	0.055	0.00

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ANNUAL TOTALS FOR YEAR 10

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.82	64686.621	100.00
RUNOFF	4.231	15357.403	23.74

EVAPOTRANSPIRATION	10.260	37243.176	57.57
PERC./LEAKAGE THROUGH LAYER 2	2.344147	8509.254	13.15
AVG. HEAD ON TOP OF LAYER 2	6.7907		
PERC./LEAKAGE THROUGH LAYER 4	2.739258	9943.508	15.37
CHANGE IN WATER STORAGE	0.590	2142.518	3.31
SOIL WATER AT START OF YEAR	144.807	525648.687	
SOIL WATER AT END OF YEAR	144.490	524500.125	
SNOW WATER AT START OF YEAR	1.685	6117.187	9.46
SNOW WATER AT END OF YEAR	2.592	9408.260	14.54
ANNUAL WATER BUDGET BALANCE	0.0000	0.017	0.00

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ANNUAL TOTALS FOR YEAR 11

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.09	62036.707	100.00
RUNOFF	7.243	26292.982	42.38
EVAPOTRANSPIRATION	9.043	32827.715	52.92
PERC./LEAKAGE THROUGH LAYER 2	2.025752	7353.479	11.85
AVG. HEAD ON TOP OF LAYER 2	5.6346		
PERC./LEAKAGE THROUGH LAYER 4	1.830663	6645.307	10.71
CHANGE IN WATER STORAGE	-1.027	-3729.275	-6.01
SOIL WATER AT START OF YEAR	144.490	524500.125	
SOIL WATER AT END OF YEAR	144.606	524918.125	
SNOW WATER AT START OF YEAR	2.592	9408.260	15.17
SNOW WATER AT END OF YEAR	1.449	5260.961	8.48
ANNUAL WATER BUDGET BALANCE	0.0000	-0.021	0.00

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ANNUAL TOTALS FOR YEAR 12

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.48	56192.418	100.00
RUNOFF	4.933	17905.082	31.86
EVAPOTRANSPIRATION	9.509	34517.875	61.43
PERC./LEAKAGE THROUGH LAYER 2	1.579884	5734.979	10.21
AVG. HEAD ON TOP OF LAYER 2	4.0959		
PERC./LEAKAGE THROUGH LAYER 4	1.830404	6644.366	11.82
CHANGE IN WATER STORAGE	-0.792	-2874.904	-5.12
SOIL WATER AT START OF YEAR	144.606	524918.125	
SOIL WATER AT END OF YEAR	143.423	520625.781	
SNOW WATER AT START OF YEAR	1.449	5260.961	9.36
SNOW WATER AT END OF YEAR	1.840	6678.403	11.88
ANNUAL WATER BUDGET BALANCE	0.0000	0.002	0.00

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ANNUAL TOTALS FOR YEAR 13

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.82	53796.617	100.00
RUNOFF	3.944	14316.560	26.61
EVAPOTRANSPIRATION	8.983	32609.410	60.62
PERC./LEAKAGE THROUGH LAYER 2	1.570236	5699.958	10.60
AVG. HEAD ON TOP OF LAYER 2	4.0626		

PERC./LEAKAGE THROUGH LAYER 4	1.373172	4984.613	9.27
CHANGE IN WATER STORAGE	0.520	1885.994	3.51
SOIL WATER AT START OF YEAR	143.423	520625.781	
SOIL WATER AT END OF YEAR	144.283	523746.656	
SNOW WATER AT START OF YEAR	1.840	6678.403	12.41
SNOW WATER AT END OF YEAR	1.500	5443.537	10.12
ANNUAL WATER BUDGET BALANCE	0.0000	0.039	0.00

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ANNUAL TOTALS FOR YEAR 14

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.87	50348.105	100.00
RUNOFF	3.639	13208.215	26.23
EVAPOTRANSPIRATION	9.593	34821.406	69.16
PERC./LEAKAGE THROUGH LAYER 2	1.757387	6379.316	12.67
AVG. HEAD ON TOP OF LAYER 2	4.7865		
PERC./LEAKAGE THROUGH LAYER 4	1.831431	6648.093	13.20
CHANGE IN WATER STORAGE	-1.193	-4329.569	-8.60
SOIL WATER AT START OF YEAR	144.283	523746.656	
SOIL WATER AT END OF YEAR	143.248	519990.031	
SNOW WATER AT START OF YEAR	1.500	5443.537	10.81
SNOW WATER AT END OF YEAR	1.342	4870.588	9.67
ANNUAL WATER BUDGET BALANCE	0.0000	-0.040	0.00

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ANNUAL TOTALS FOR YEAR 15

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.38	59459.418	100.00
RUNOFF	4.442	16124.283	27.12
EVAPOTRANSPIRATION	10.190	36989.312	62.21
PERC./LEAKAGE THROUGH LAYER 2	1.525339	5536.980	9.31
AVG. HEAD ON TOP OF LAYER 2	3.9309		
PERC./LEAKAGE THROUGH LAYER 4	1.829337	6640.494	11.17
CHANGE IN WATER STORAGE	-0.081	-294.742	-0.50
SOIL WATER AT START OF YEAR	143.248	519990.031	
SOIL WATER AT END OF YEAR	142.839	518507.344	
SNOW WATER AT START OF YEAR	1.342	4870.588	8.19
SNOW WATER AT END OF YEAR	1.669	6058.510	10.19
ANNUAL WATER BUDGET BALANCE	0.0000	0.069	0.00

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ANNUAL TOTALS FOR YEAR 16

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.85	50275.508	100.00
RUNOFF	3.843	13951.378	27.75
EVAPOTRANSPIRATION	8.155	29604.262	58.88
PERC./LEAKAGE THROUGH LAYER 2	1.645363	5972.667	11.88
AVG. HEAD ON TOP OF LAYER 2	4.3368		
PERC./LEAKAGE THROUGH LAYER 4	1.373182	4984.652	9.91
CHANGE IN WATER STORAGE	0.478	1735.211	3.45
SOIL WATER AT START OF YEAR	142.839	518507.344	

SOIL WATER AT END OF YEAR	143.981	522651.000	
SNOW WATER AT START OF YEAR	1.669	6058.510	12.05
SNOW WATER AT END OF YEAR	1.006	3650.095	7.26
ANNUAL WATER BUDGET BALANCE	0.0000	0.005	0.00

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ANNUAL TOTALS FOR YEAR 17

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.01	65376.301	100.00
RUNOFF	5.546	20130.988	30.79
EVAPOTRANSPIRATION	9.565	34722.418	53.11
PERC./LEAKAGE THROUGH LAYER 2	2.062328	7486.251	11.45
AVG. HEAD ON TOP OF LAYER 2	5.8454		
PERC./LEAKAGE THROUGH LAYER 4	1.828418	6637.156	10.15
CHANGE IN WATER STORAGE	1.070	3885.733	5.94
SOIL WATER AT START OF YEAR	143.981	522651.000	
SOIL WATER AT END OF YEAR	144.471	524430.125	
SNOW WATER AT START OF YEAR	1.006	3650.095	5.58
SNOW WATER AT END OF YEAR	1.586	5756.665	8.81
ANNUAL WATER BUDGET BALANCE	0.0000	0.004	0.00

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ANNUAL TOTALS FOR YEAR 18

	INCHES	CU. FEET	PERCENT

PRECIPITATION	12.90	46827.023	100.00
RUNOFF	3.984	14463.217	30.89
EVAPOTRANSPIRATION	8.896	32291.535	68.96
PERC./LEAKAGE THROUGH LAYER 2	1.658264	6019.499	12.85
AVG. HEAD ON TOP OF LAYER 2	4.4090		
PERC./LEAKAGE THROUGH LAYER 4	1.829848	6642.349	14.18
CHANGE IN WATER STORAGE	-1.810	-6570.067	-14.03
SOIL WATER AT START OF YEAR	144.471	524430.125	
SOIL WATER AT END OF YEAR	143.102	519460.375	
SNOW WATER AT START OF YEAR	1.586	5756.665	12.29
SNOW WATER AT END OF YEAR	1.145	4156.356	8.88
ANNUAL WATER BUDGET BALANCE	0.0000	-0.010	0.00

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ANNUAL TOTALS FOR YEAR 19

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.12	65775.609	100.00
RUNOFF	3.816	13851.153	21.06
EVAPOTRANSPIRATION	10.290	37351.441	56.79
PERC./LEAKAGE THROUGH LAYER 2	1.816997	6595.698	10.03
AVG. HEAD ON TOP OF LAYER 2	4.9553		
PERC./LEAKAGE THROUGH LAYER 4	1.830270	6643.881	10.10
CHANGE IN WATER STORAGE	2.184	7929.158	12.05
SOIL WATER AT START OF YEAR	143.102	519460.375	
SOIL WATER AT END OF YEAR	144.270	523701.437	
SNOW WATER AT START OF YEAR	1.145	4156.356	6.32
SNOW WATER AT END OF YEAR	2.161	7844.458	11.93

ANNUAL WATER BUDGET BALANCE	0.0000	-0.021	0.00

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ANNUAL TOTALS FOR YEAR 20

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.92	72309.617	100.00
RUNOFF	8.270	30020.461	41.52
EVAPOTRANSPIRATION	11.003	39942.102	55.24
PERC./LEAKAGE THROUGH LAYER 2	2.470551	8968.101	12.40
AVG. HEAD ON TOP OF LAYER 2	7.2820		
PERC./LEAKAGE THROUGH LAYER 4	2.284051	8291.104	11.47
CHANGE IN WATER STORAGE	-1.637	-5944.112	-8.22
SOIL WATER AT START OF YEAR	144.270	523701.437	
SOIL WATER AT END OF YEAR	144.490	524497.312	
SNOW WATER AT START OF YEAR	2.161	7844.458	10.85
SNOW WATER AT END OF YEAR	0.304	1104.455	1.53
ANNUAL WATER BUDGET BALANCE	0.0000	0.057	0.00

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ANNUAL TOTALS FOR YEAR 21

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.41	55938.301	100.00
RUNOFF	4.173	15148.718	27.08
EVAPOTRANSPIRATION	9.115	33087.477	59.15

PERC./LEAKAGE THROUGH LAYER 2	1.835762	6663.815	11.91
AVG. HEAD ON TOP OF LAYER 2	5.1107		
PERC./LEAKAGE THROUGH LAYER 4	1.829912	6642.580	11.87
CHANGE IN WATER STORAGE	0.292	1059.550	1.89
SOIL WATER AT START OF YEAR	144.490	524497.312	
SOIL WATER AT END OF YEAR	143.981	522651.719	
SNOW WATER AT START OF YEAR	0.304	1104.455	1.97
SNOW WATER AT END OF YEAR	1.105	4009.636	7.17
ANNUAL WATER BUDGET BALANCE	0.0000	-0.026	0.00

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ANNUAL TOTALS FOR YEAR 22

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.78	57281.398	100.00
RUNOFF	2.812	10208.871	17.82
EVAPOTRANSPIRATION	8.529	30961.006	54.05
PERC./LEAKAGE THROUGH LAYER 2	1.789889	6497.298	11.34
AVG. HEAD ON TOP OF LAYER 2	4.8923		
PERC./LEAKAGE THROUGH LAYER 4	1.828479	6637.380	11.59
CHANGE IN WATER STORAGE	2.610	9474.110	16.54
SOIL WATER AT START OF YEAR	143.981	522651.719	
SOIL WATER AT END OF YEAR	144.596	524884.875	
SNOW WATER AT START OF YEAR	1.105	4009.636	7.00
SNOW WATER AT END OF YEAR	3.099	11250.557	19.64
ANNUAL WATER BUDGET BALANCE	0.0000	0.032	0.00

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ANNUAL TOTALS FOR YEAR 23

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.31	66465.336	100.00
RUNOFF	7.537	27360.172	41.16
EVAPOTRANSPIRATION	9.834	35698.031	53.71
PERC./LEAKAGE THROUGH LAYER 2	1.727646	6271.353	9.44
AVG. HEAD ON TOP OF LAYER 2	4.6888		
PERC./LEAKAGE THROUGH LAYER 4	1.830528	6644.817	10.00
CHANGE IN WATER STORAGE	-0.892	-3237.710	-4.87
SOIL WATER AT START OF YEAR	144.596	524884.875	
SOIL WATER AT END OF YEAR	143.516	520963.219	
SNOW WATER AT START OF YEAR	3.099	11250.557	16.93
SNOW WATER AT END OF YEAR	3.288	11934.527	17.96
ANNUAL WATER BUDGET BALANCE	0.0000	0.023	0.00

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ANNUAL TOTALS FOR YEAR 24

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.78	53651.414	100.00
RUNOFF	5.589	20288.770	37.82
EVAPOTRANSPIRATION	9.401	34125.102	63.61
PERC./LEAKAGE THROUGH LAYER 2	1.501284	5449.659	10.16
AVG. HEAD ON TOP OF LAYER 2	3.8071		
PERC./LEAKAGE THROUGH LAYER 4	1.831216	6647.312	12.39

CHANGE IN WATER STORAGE	-2.041	-7409.826	-13.81
SOIL WATER AT START OF YEAR	143.516	520963.219	
SOIL WATER AT END OF YEAR	143.936	522489.094	
SNOW WATER AT START OF YEAR	3.288	11934.527	22.24
SNOW WATER AT END OF YEAR	0.826	2998.834	5.59
ANNUAL WATER BUDGET BALANCE	0.0000	0.055	0.00

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ANNUAL TOTALS FOR YEAR 25

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.35	70240.516	100.00
RUNOFF	7.545	27387.457	38.99
EVAPOTRANSPIRATION	9.990	36262.691	51.63
PERC./LEAKAGE THROUGH LAYER 2	2.009685	7295.155	10.39
AVG. HEAD ON TOP OF LAYER 2	5.5649		
PERC./LEAKAGE THROUGH LAYER 4	1.828779	6638.468	9.45
CHANGE IN WATER STORAGE	-0.013	-48.093	-0.07
SOIL WATER AT START OF YEAR	143.936	522489.094	
SOIL WATER AT END OF YEAR	144.139	523224.656	
SNOW WATER AT START OF YEAR	0.826	2998.834	4.27
SNOW WATER AT END OF YEAR	0.610	2215.169	3.15
ANNUAL WATER BUDGET BALANCE	0.0000	-0.008	0.00

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ANNUAL TOTALS FOR YEAR 26

	INCHES	CU. FEET	PERCENT
PRECIPITATION	11.86	43051.816	100.00
RUNOFF	1.340	4864.262	11.30
EVAPOTRANSPIRATION	8.940	32450.945	75.38
PERC./LEAKAGE THROUGH LAYER 2	1.927471	6996.718	16.25
AVG. HEAD ON TOP OF LAYER 2	5.3599		
PERC./LEAKAGE THROUGH LAYER 4	1.828107	6636.030	15.41
CHANGE IN WATER STORAGE	-0.248	-899.414	-2.09
SOIL WATER AT START OF YEAR	144.139	523224.656	
SOIL WATER AT END OF YEAR	143.809	522026.187	
SNOW WATER AT START OF YEAR	0.610	2215.169	5.15
SNOW WATER AT END OF YEAR	0.693	2514.216	5.84
ANNUAL WATER BUDGET BALANCE	0.0000	-0.007	0.00

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ANNUAL TOTALS FOR YEAR 27

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.00	47190.012	100.00
RUNOFF	2.681	9732.341	20.62
EVAPOTRANSPIRATION	8.361	30349.088	64.31
PERC./LEAKAGE THROUGH LAYER 2	1.704136	6186.014	13.11
AVG. HEAD ON TOP OF LAYER 2	4.5900		
PERC./LEAKAGE THROUGH LAYER 4	1.830343	6644.144	14.08
CHANGE IN WATER STORAGE	0.128	464.443	0.98
SOIL WATER AT START OF YEAR	143.809	522026.187	
SOIL WATER AT END OF YEAR	143.981	522650.437	

SNOW WATER AT START OF YEAR	0.693	2514.216	5.33
SNOW WATER AT END OF YEAR	0.649	2354.420	4.99
ANNUAL WATER BUDGET BALANCE	0.0000	-0.003	0.00

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ANNUAL TOTALS FOR YEAR 28

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.67	64142.129	100.00
RUNOFF	5.728	20792.855	32.42
EVAPOTRANSPIRATION	9.222	33476.883	52.19
PERC./LEAKAGE THROUGH LAYER 2	1.592616	5781.197	9.01
AVG. HEAD ON TOP OF LAYER 2	4.0998		
PERC./LEAKAGE THROUGH LAYER 4	1.830723	6645.524	10.36
CHANGE IN WATER STORAGE	0.889	3226.835	5.03
SOIL WATER AT START OF YEAR	143.981	522650.437	
SOIL WATER AT END OF YEAR	143.133	519574.312	
SNOW WATER AT START OF YEAR	0.649	2354.420	3.67
SNOW WATER AT END OF YEAR	2.385	8657.361	13.50
ANNUAL WATER BUDGET BALANCE	0.0000	0.032	0.00

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ANNUAL TOTALS FOR YEAR 29

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.66	49585.805	100.00

RUNOFF	2.582	9372.787	18.90
EVAPOTRANSPIRATION	9.356	33961.199	68.49
PERC./LEAKAGE THROUGH LAYER 2	1.927056	6995.213	14.11
AVG. HEAD ON TOP OF LAYER 2	5.3325		
PERC./LEAKAGE THROUGH LAYER 4	1.371455	4978.383	10.04
CHANGE IN WATER STORAGE	0.351	1273.403	2.57
SOIL WATER AT START OF YEAR	143.133	519574.312	
SOIL WATER AT END OF YEAR	143.678	521551.187	
SNOW WATER AT START OF YEAR	2.385	8657.361	17.46
SNOW WATER AT END OF YEAR	2.191	7953.917	16.04
ANNUAL WATER BUDGET BALANCE	0.0000	0.033	0.00

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ANNUAL TOTALS FOR YEAR 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.85	64795.523	100.00
RUNOFF	5.321	19315.217	29.81
EVAPOTRANSPIRATION	11.886	43146.336	66.59
PERC./LEAKAGE THROUGH LAYER 2	2.003736	7273.562	11.23
AVG. HEAD ON TOP OF LAYER 2	5.6441		
PERC./LEAKAGE THROUGH LAYER 4	2.285890	8297.782	12.81
CHANGE IN WATER STORAGE	-1.643	-5963.831	-9.20
SOIL WATER AT START OF YEAR	143.678	521551.187	
SOIL WATER AT END OF YEAR	144.226	523541.250	
SNOW WATER AT START OF YEAR	2.191	7953.917	12.28
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.020	0.00

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ANNUAL TOTALS FOR YEAR 31

	INCHES	CU. FEET	PERCENT
PRECIPITATION	20.52	74487.633	100.00
RUNOFF	8.219	29833.658	40.05
EVAPOTRANSPIRATION	8.945	32468.971	43.59
PERC./LEAKAGE THROUGH LAYER 2	2.008225	7289.858	9.79
AVG. HEAD ON TOP OF LAYER 2	5.6164		
PERC./LEAKAGE THROUGH LAYER 4	1.827139	6632.515	8.90
CHANGE IN WATER STORAGE	1.530	5552.455	7.45
SOIL WATER AT START OF YEAR	144.226	523541.250	
SOIL WATER AT END OF YEAR	144.578	524817.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	1.178	4276.228	5.74
ANNUAL WATER BUDGET BALANCE	0.0000	0.031	0.00

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ANNUAL TOTALS FOR YEAR 32

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.31	62835.332	100.00
RUNOFF	5.207	18900.850	30.08
EVAPOTRANSPIRATION	9.279	33682.023	53.60
PERC./LEAKAGE THROUGH LAYER 2	1.776052	6447.070	10.26

AVG. HEAD ON TOP OF LAYER 2	4.7988		
PERC./LEAKAGE THROUGH LAYER 4	1.827871	6635.172	10.56
CHANGE IN WATER STORAGE	0.996	3617.289	5.76
SOIL WATER AT START OF YEAR	144.578	524817.500	
SOIL WATER AT END OF YEAR	144.509	524568.625	
SNOW WATER AT START OF YEAR	1.178	4276.228	6.81
SNOW WATER AT END OF YEAR	2.243	8142.381	12.96
ANNUAL WATER BUDGET BALANCE	0.0000	-0.001	0.00

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ANNUAL TOTALS FOR YEAR 33

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.97	57971.117	100.00
RUNOFF	5.170	18766.490	32.37
EVAPOTRANSPIRATION	9.361	33979.074	58.61
PERC./LEAKAGE THROUGH LAYER 2	1.845812	6700.298	11.56
AVG. HEAD ON TOP OF LAYER 2	5.1006		
PERC./LEAKAGE THROUGH LAYER 4	1.829196	6639.980	11.45
CHANGE IN WATER STORAGE	-0.390	-1414.458	-2.44
SOIL WATER AT START OF YEAR	144.509	524568.625	
SOIL WATER AT END OF YEAR	144.198	523440.344	
SNOW WATER AT START OF YEAR	2.243	8142.381	14.05
SNOW WATER AT END OF YEAR	2.164	7856.206	13.55
ANNUAL WATER BUDGET BALANCE	0.0000	0.033	0.00

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ANNUAL TOTALS FOR YEAR 34

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.78	68171.430	100.00
RUNOFF	5.482	19899.273	29.19
EVAPOTRANSPIRATION	9.708	35240.129	51.69
PERC./LEAKAGE THROUGH LAYER 2	1.972153	7158.915	10.50
AVG. HEAD ON TOP OF LAYER 2	5.4521		
PERC./LEAKAGE THROUGH LAYER 4	2.286896	8301.433	12.18
CHANGE IN WATER STORAGE	1.303	4730.570	6.94
SOIL WATER AT START OF YEAR	144.198	523440.344	
SOIL WATER AT END OF YEAR	144.284	523751.844	
SNOW WATER AT START OF YEAR	2.164	7856.206	11.52
SNOW WATER AT END OF YEAR	3.382	12275.266	18.01
ANNUAL WATER BUDGET BALANCE	0.0000	0.027	0.00

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ANNUAL TOTALS FOR YEAR 35

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.46	77899.812	100.00
RUNOFF	9.854	35771.031	45.92
EVAPOTRANSPIRATION	10.301	37393.574	48.00
PERC./LEAKAGE THROUGH LAYER 2	2.300436	8350.581	10.72
AVG. HEAD ON TOP OF LAYER 2	6.6666		
PERC./LEAKAGE THROUGH LAYER 4	1.826548	6630.370	8.51
CHANGE IN WATER STORAGE	-0.522	-1895.199	-2.43

SOIL WATER AT START OF YEAR	144.284	523751.844	
SOIL WATER AT END OF YEAR	144.745	525423.062	
SNOW WATER AT START OF YEAR	3.382	12275.266	15.76
SNOW WATER AT END OF YEAR	2.399	8708.857	11.18
ANNUAL WATER BUDGET BALANCE	0.0000	0.034	0.00

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ANNUAL TOTALS FOR YEAR 36

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.26	55393.809	100.00
RUNOFF	3.119	11320.932	20.44
EVAPOTRANSPIRATION	10.109	36696.406	66.25
PERC./LEAKAGE THROUGH LAYER 2	1.842360	6687.767	12.07
AVG. HEAD ON TOP OF LAYER 2	5.0370		
PERC./LEAKAGE THROUGH LAYER 4	2.286071	8298.437	14.98
CHANGE IN WATER STORAGE	-0.254	-921.986	-1.66
SOIL WATER AT START OF YEAR	144.745	525423.062	
SOIL WATER AT END OF YEAR	144.051	522906.562	
SNOW WATER AT START OF YEAR	2.399	8708.857	15.72
SNOW WATER AT END OF YEAR	2.838	10303.379	18.60
ANNUAL WATER BUDGET BALANCE	0.0000	0.022	0.00

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ANNUAL TOTALS FOR YEAR 37

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.42	59604.594	100.00
RUNOFF	6.131	22255.027	37.34
EVAPOTRANSPIRATION	10.240	37170.695	62.36
PERC./LEAKAGE THROUGH LAYER 2	2.112569	7668.626	12.87
AVG. HEAD ON TOP OF LAYER 2	6.0333		
PERC./LEAKAGE THROUGH LAYER 4	1.829403	6640.733	11.14
CHANGE IN WATER STORAGE	-1.780	-6461.866	-10.84
SOIL WATER AT START OF YEAR	144.051	522906.562	
SOIL WATER AT END OF YEAR	144.680	525189.875	
SNOW WATER AT START OF YEAR	2.838	10303.379	17.29
SNOW WATER AT END OF YEAR	0.429	1558.196	2.61
ANNUAL WATER BUDGET BALANCE	0.0000	0.006	0.00

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ANNUAL TOTALS FOR YEAR 38

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.93	50565.910	100.00
RUNOFF	1.649	5984.702	11.84
EVAPOTRANSPIRATION	9.364	33990.680	67.22
PERC./LEAKAGE THROUGH LAYER 2	1.671633	6068.026	12.00
AVG. HEAD ON TOP OF LAYER 2	4.4842		
PERC./LEAKAGE THROUGH LAYER 4	1.829205	6640.015	13.13
CHANGE IN WATER STORAGE	1.088	3950.527	7.81
SOIL WATER AT START OF YEAR	144.680	525189.875	
SOIL WATER AT END OF YEAR	143.569	521155.750	
SNOW WATER AT START OF YEAR	0.429	1558.196	3.08

SNOW WATER AT END OF YEAR	2.629	9542.844	18.87
ANNUAL WATER BUDGET BALANCE	0.0000	-0.013	0.00

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ANNUAL TOTALS FOR YEAR 39

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.66	60475.828	100.00
RUNOFF	5.100	18513.197	30.61
EVAPOTRANSPIRATION	8.533	30976.424	51.22
PERC./LEAKAGE THROUGH LAYER 2	1.825067	6624.992	10.95
AVG. HEAD ON TOP OF LAYER 2	4.9611		
PERC./LEAKAGE THROUGH LAYER 4	1.830164	6643.497	10.99
CHANGE IN WATER STORAGE	1.196	4342.665	7.18
SOIL WATER AT START OF YEAR	143.569	521155.750	
SOIL WATER AT END OF YEAR	144.491	524501.500	
SNOW WATER AT START OF YEAR	2.629	9542.844	15.78
SNOW WATER AT END OF YEAR	2.904	10539.768	17.43
ANNUAL WATER BUDGET BALANCE	0.0000	0.045	0.00

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ANNUAL TOTALS FOR YEAR 40

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.23	48024.902	100.00
RUNOFF	5.467	19844.420	41.32

EVAPOTRANSPIRATION	9.827	35673.125	74.28
PERC./LEAKAGE THROUGH LAYER 2	1.923774	6983.299	14.54
AVG. HEAD ON TOP OF LAYER 2	5.3738		
PERC./LEAKAGE THROUGH LAYER 4	1.828194	6636.344	13.82
CHANGE IN WATER STORAGE	-3.892	-14128.954	-29.42
SOIL WATER AT START OF YEAR	144.491	524501.500	
SOIL WATER AT END OF YEAR	143.336	520308.125	
SNOW WATER AT START OF YEAR	2.904	10539.768	21.95
SNOW WATER AT END OF YEAR	0.166	604.179	1.26
ANNUAL WATER BUDGET BALANCE	0.0000	-0.031	0.00

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ANNUAL TOTALS FOR YEAR 41

	INCHES	CU. FEET	PERCENT
PRECIPITATION	12.81	46500.312	100.00
RUNOFF	1.933	7018.508	15.09
EVAPOTRANSPIRATION	7.886	28625.441	61.56
PERC./LEAKAGE THROUGH LAYER 2	1.689769	6133.862	13.19
AVG. HEAD ON TOP OF LAYER 2	4.4880		
PERC./LEAKAGE THROUGH LAYER 4	1.828279	6636.653	14.27
CHANGE IN WATER STORAGE	1.162	4219.713	9.07
SOIL WATER AT START OF YEAR	143.336	520308.125	
SOIL WATER AT END OF YEAR	143.315	520232.469	
SNOW WATER AT START OF YEAR	0.166	604.179	1.30
SNOW WATER AT END OF YEAR	1.350	4899.554	10.54
ANNUAL WATER BUDGET BALANCE	0.0000	-0.003	0.00

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ANNUAL TOTALS FOR YEAR 42

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.36	52126.801	100.00
RUNOFF	2.569	9326.100	17.89
EVAPOTRANSPIRATION	9.261	33615.910	64.49
PERC./LEAKAGE THROUGH LAYER 2	1.866710	6776.156	13.00
AVG. HEAD ON TOP OF LAYER 2	5.1774		
PERC./LEAKAGE THROUGH LAYER 4	1.830398	6644.344	12.75
CHANGE IN WATER STORAGE	0.700	2540.476	4.87
SOIL WATER AT START OF YEAR	143.315	520232.469	
SOIL WATER AT END OF YEAR	143.748	521804.906	
SNOW WATER AT START OF YEAR	1.350	4899.554	9.40
SNOW WATER AT END OF YEAR	1.616	5867.580	11.26
ANNUAL WATER BUDGET BALANCE	0.0000	-0.026	0.00

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ANNUAL TOTALS FOR YEAR 43

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.82	53796.609	100.00
RUNOFF	2.658	9647.295	17.93
EVAPOTRANSPIRATION	10.081	36592.234	68.02
PERC./LEAKAGE THROUGH LAYER 2	1.975358	7170.549	13.33
AVG. HEAD ON TOP OF LAYER 2	5.5868		

PERC./LEAKAGE THROUGH LAYER 4	1.832018	6650.226	12.36
CHANGE IN WATER STORAGE	0.250	906.793	1.69
SOIL WATER AT START OF YEAR	143.748	521804.906	
SOIL WATER AT END OF YEAR	144.406	524193.344	
SNOW WATER AT START OF YEAR	1.616	5867.580	10.91
SNOW WATER AT END OF YEAR	1.208	4385.927	8.15
ANNUAL WATER BUDGET BALANCE	0.0000	0.061	0.00

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ANNUAL TOTALS FOR YEAR 44

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.40	52272.012	100.00
RUNOFF	3.362	12205.362	23.35
EVAPOTRANSPIRATION	9.083	32972.402	63.08
PERC./LEAKAGE THROUGH LAYER 2	2.127021	7721.086	14.77
AVG. HEAD ON TOP OF LAYER 2	6.0566		
PERC./LEAKAGE THROUGH LAYER 4	2.285526	8296.460	15.87
CHANGE IN WATER STORAGE	-0.331	-1202.180	-2.30
SOIL WATER AT START OF YEAR	144.406	524193.344	
SOIL WATER AT END OF YEAR	143.876	522269.562	
SNOW WATER AT START OF YEAR	1.208	4385.927	8.39
SNOW WATER AT END OF YEAR	1.407	5107.531	9.77
ANNUAL WATER BUDGET BALANCE	0.0000	-0.031	0.00

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ANNUAL TOTALS FOR YEAR 45

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.67	64142.113	100.00
RUNOFF	5.452	19788.947	30.85
EVAPOTRANSPIRATION	9.617	34910.789	54.43
PERC./LEAKAGE THROUGH LAYER 2	1.975725	7171.880	11.18
AVG. HEAD ON TOP OF LAYER 2	5.5252		
PERC./LEAKAGE THROUGH LAYER 4	1.827280	6633.027	10.34
CHANGE IN WATER STORAGE	0.774	2809.321	4.38
SOIL WATER AT START OF YEAR	143.876	522269.562	
SOIL WATER AT END OF YEAR	144.284	523751.781	
SNOW WATER AT START OF YEAR	1.407	5107.531	7.96
SNOW WATER AT END OF YEAR	1.773	6434.632	10.03
ANNUAL WATER BUDGET BALANCE	0.0000	0.029	0.00

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ANNUAL TOTALS FOR YEAR 46

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.49	48968.711	100.00
RUNOFF	2.519	9144.495	18.67
EVAPOTRANSPIRATION	9.218	33462.113	68.33
PERC./LEAKAGE THROUGH LAYER 2	1.806459	6557.445	13.39
AVG. HEAD ON TOP OF LAYER 2	4.9762		
PERC./LEAKAGE THROUGH LAYER 4	1.831285	6647.564	13.58
CHANGE IN WATER STORAGE	-0.079	-285.489	-0.58
SOIL WATER AT START OF YEAR	144.284	523751.781	

SOIL WATER AT END OF YEAR	143.820	522064.812	
SNOW WATER AT START OF YEAR	1.773	6434.632	13.14
SNOW WATER AT END OF YEAR	2.159	7836.138	16.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.025	0.00

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ANNUAL TOTALS FOR YEAR 47

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.88	57644.410	100.00
RUNOFF	5.423	19686.166	34.15
EVAPOTRANSPIRATION	9.658	35057.898	60.82
PERC./LEAKAGE THROUGH LAYER 2	2.195653	7970.220	13.83
AVG. HEAD ON TOP OF LAYER 2	6.3326		
PERC./LEAKAGE THROUGH LAYER 4	2.286410	8299.668	14.40
CHANGE IN WATER STORAGE	-1.487	-5399.288	-9.37
SOIL WATER AT START OF YEAR	143.820	522064.812	
SOIL WATER AT END OF YEAR	144.013	522768.406	
SNOW WATER AT START OF YEAR	2.159	7836.138	13.59
SNOW WATER AT END OF YEAR	0.477	1733.239	3.01
ANNUAL WATER BUDGET BALANCE	0.0000	-0.035	0.00

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ANNUAL TOTALS FOR YEAR 48

	INCHES	CU. FEET	PERCENT

PRECIPITATION	15.08	54740.410	100.00
RUNOFF	2.268	8232.889	15.04
EVAPOTRANSPIRATION	9.690	35174.113	64.26
PERC./LEAKAGE THROUGH LAYER 2	1.759693	6387.687	11.67
AVG. HEAD ON TOP OF LAYER 2	4.7731		
PERC./LEAKAGE THROUGH LAYER 4	1.829760	6642.029	12.13
CHANGE IN WATER STORAGE	1.292	4691.372	8.57
SOIL WATER AT START OF YEAR	144.013	522768.406	
SOIL WATER AT END OF YEAR	143.664	521499.219	
SNOW WATER AT START OF YEAR	0.477	1733.239	3.17
SNOW WATER AT END OF YEAR	2.120	7693.803	14.06
ANNUAL WATER BUDGET BALANCE	0.0000	0.006	0.00

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ANNUAL TOTALS FOR YEAR 49

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.02	50892.605	100.00
RUNOFF	3.626	13163.998	25.87
EVAPOTRANSPIRATION	8.716	31638.508	62.17
PERC./LEAKAGE THROUGH LAYER 2	1.602332	5816.465	11.43
AVG. HEAD ON TOP OF LAYER 2	4.2151		
PERC./LEAKAGE THROUGH LAYER 4	1.372517	4982.237	9.79
CHANGE IN WATER STORAGE	0.305	1107.859	2.18
SOIL WATER AT START OF YEAR	143.664	521499.219	
SOIL WATER AT END OF YEAR	143.739	521773.844	
SNOW WATER AT START OF YEAR	2.120	7693.803	15.12
SNOW WATER AT END OF YEAR	2.349	8527.041	16.75

ANNUAL WATER BUDGET BALANCE	0.0000	0.003	0.00

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ANNUAL TOTALS FOR YEAR 50

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.28	59096.410	100.00
RUNOFF	3.249	11794.507	19.96
EVAPOTRANSPIRATION	11.821	42909.066	72.61
PERC./LEAKAGE THROUGH LAYER 2	2.127800	7723.912	13.07
AVG. HEAD ON TOP OF LAYER 2	6.1130		
PERC./LEAKAGE THROUGH LAYER 4	2.287171	8302.430	14.05
CHANGE IN WATER STORAGE	-1.077	-3909.603	-6.62
SOIL WATER AT START OF YEAR	143.739	521773.844	
SOIL WATER AT END OF YEAR	144.077	523000.437	
SNOW WATER AT START OF YEAR	2.349	8527.041	14.43
SNOW WATER AT END OF YEAR	0.934	3390.840	5.74
ANNUAL WATER BUDGET BALANCE	0.0000	0.010	0.00

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ANNUAL TOTALS FOR YEAR 51

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.78	53651.414	100.00
RUNOFF	1.061	3850.193	7.18
EVAPOTRANSPIRATION	10.051	36486.633	68.01

PERC./LEAKAGE THROUGH LAYER 2	1.788334	6491.653	12.10
AVG. HEAD ON TOP OF LAYER 2	4.9012		
PERC./LEAKAGE THROUGH LAYER 4	1.829120	6639.707	12.38
CHANGE IN WATER STORAGE	1.839	6674.858	12.44
SOIL WATER AT START OF YEAR	144.077	523000.437	
SOIL WATER AT END OF YEAR	144.330	523916.344	
SNOW WATER AT START OF YEAR	0.934	3390.840	6.32
SNOW WATER AT END OF YEAR	2.521	9149.778	17.05
ANNUAL WATER BUDGET BALANCE	0.0000	0.021	0.00

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ANNUAL TOTALS FOR YEAR 52

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.82	61056.613	100.00
RUNOFF	5.337	19372.557	31.73
EVAPOTRANSPIRATION	10.618	38541.598	63.12
PERC./LEAKAGE THROUGH LAYER 2	2.064426	7493.867	12.27
AVG. HEAD ON TOP OF LAYER 2	5.8204		
PERC./LEAKAGE THROUGH LAYER 4	1.827671	6634.445	10.87
CHANGE IN WATER STORAGE	-0.962	-3492.015	-5.72
SOIL WATER AT START OF YEAR	144.330	523916.344	
SOIL WATER AT END OF YEAR	144.615	524951.250	
SNOW WATER AT START OF YEAR	2.521	9149.778	14.99
SNOW WATER AT END OF YEAR	1.274	4622.868	7.57
ANNUAL WATER BUDGET BALANCE	0.0000	0.028	0.00

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ANNUAL TOTALS FOR YEAR 53

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.98	50747.402	100.00
RUNOFF	3.176	11528.010	22.72
EVAPOTRANSPIRATION	10.069	36552.027	72.03
PERC./LEAKAGE THROUGH LAYER 2	1.892963	6871.457	13.54
AVG. HEAD ON TOP OF LAYER 2	5.2979		
PERC./LEAKAGE THROUGH LAYER 4	1.829555	6641.286	13.09
CHANGE IN WATER STORAGE	-1.095	-3973.952	-7.83
SOIL WATER AT START OF YEAR	144.615	524951.250	
SOIL WATER AT END OF YEAR	143.586	521216.469	
SNOW WATER AT START OF YEAR	1.274	4622.868	9.11
SNOW WATER AT END OF YEAR	1.208	4383.712	8.64
ANNUAL WATER BUDGET BALANCE	0.0000	0.030	0.00

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ANNUAL TOTALS FOR YEAR 54

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.35	66610.508	100.00
RUNOFF	5.605	20347.354	30.55
EVAPOTRANSPIRATION	10.326	37484.562	56.27
PERC./LEAKAGE THROUGH LAYER 2	2.012631	7305.851	10.97
AVG. HEAD ON TOP OF LAYER 2	5.6399		
PERC./LEAKAGE THROUGH LAYER 4	2.287234	8302.660	12.46

CHANGE IN WATER STORAGE	0.131	475.933	0.71
SOIL WATER AT START OF YEAR	143.586	521216.469	
SOIL WATER AT END OF YEAR	144.246	523612.219	
SNOW WATER AT START OF YEAR	1.208	4383.712	6.58
SNOW WATER AT END OF YEAR	0.679	2463.887	3.70
ANNUAL WATER BUDGET BALANCE	0.0000	0.000	0.00

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ANNUAL TOTALS FOR YEAR 55

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.97	61601.117	100.00
RUNOFF	7.025	25501.285	41.40
EVAPOTRANSPIRATION	8.381	30421.973	49.39
PERC./LEAKAGE THROUGH LAYER 2	1.860656	6754.181	10.96
AVG. HEAD ON TOP OF LAYER 2	5.0824		
PERC./LEAKAGE THROUGH LAYER 4	1.830009	6642.932	10.78
CHANGE IN WATER STORAGE	-0.266	-965.096	-1.57
SOIL WATER AT START OF YEAR	144.246	523612.219	
SOIL WATER AT END OF YEAR	144.433	524290.375	
SNOW WATER AT START OF YEAR	0.679	2463.887	4.00
SNOW WATER AT END OF YEAR	0.226	820.603	1.33
ANNUAL WATER BUDGET BALANCE	0.0000	0.025	0.00

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ANNUAL TOTALS FOR YEAR 56

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.72	60693.617	100.00
RUNOFF	4.366	15849.039	26.11
EVAPOTRANSPIRATION	9.922	36017.914	59.34
PERC./LEAKAGE THROUGH LAYER 2	1.943823	7056.079	11.63
AVG. HEAD ON TOP OF LAYER 2	5.4325		
PERC./LEAKAGE THROUGH LAYER 4	1.829817	6642.237	10.94
CHANGE IN WATER STORAGE	0.602	2184.446	3.60
SOIL WATER AT START OF YEAR	144.433	524290.375	
SOIL WATER AT END OF YEAR	144.524	524620.750	
SNOW WATER AT START OF YEAR	0.226	820.603	1.35
SNOW WATER AT END OF YEAR	0.737	2674.707	4.41
ANNUAL WATER BUDGET BALANCE	0.0000	-0.016	0.00

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ANNUAL TOTALS FOR YEAR 57

	INCHES	CU. FEET	PERCENT
PRECIPITATION	12.65	45919.504	100.00
RUNOFF	3.698	13423.524	29.23
EVAPOTRANSPIRATION	9.244	33554.801	73.07
PERC./LEAKAGE THROUGH LAYER 2	1.596440	5795.077	12.62
AVG. HEAD ON TOP OF LAYER 2	4.1824		
PERC./LEAKAGE THROUGH LAYER 4	1.828938	6639.045	14.46
CHANGE IN WATER STORAGE	-2.121	-7697.864	-16.76
SOIL WATER AT START OF YEAR	144.524	524620.750	
SOIL WATER AT END OF YEAR	142.036	515589.719	

SNOW WATER AT START OF YEAR	0.737	2674.707	5.82
SNOW WATER AT END OF YEAR	1.104	4007.864	8.73
ANNUAL WATER BUDGET BALANCE	0.0000	-0.004	0.00

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ANNUAL TOTALS FOR YEAR 58

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.38	52199.406	100.00
RUNOFF	2.918	10592.153	20.29
EVAPOTRANSPIRATION	9.155	33232.570	63.66
PERC./LEAKAGE THROUGH LAYER 2	1.561269	5667.407	10.86
AVG. HEAD ON TOP OF LAYER 2	4.0297		
PERC./LEAKAGE THROUGH LAYER 4	1.371933	4980.116	9.54
CHANGE IN WATER STORAGE	0.935	3394.579	6.50
SOIL WATER AT START OF YEAR	142.036	515589.719	
SOIL WATER AT END OF YEAR	143.240	519962.281	
SNOW WATER AT START OF YEAR	1.104	4007.864	7.68
SNOW WATER AT END OF YEAR	0.835	3029.894	5.80
ANNUAL WATER BUDGET BALANCE	0.0000	-0.011	0.00

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ANNUAL TOTALS FOR YEAR 59

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.63	56736.906	100.00

RUNOFF	2.380	8639.886	15.23
EVAPOTRANSPIRATION	8.502	30862.799	54.40
PERC./LEAKAGE THROUGH LAYER 2	1.400072	5082.262	8.96
AVG. HEAD ON TOP OF LAYER 2	3.3911		
PERC./LEAKAGE THROUGH LAYER 4	1.831014	6646.581	11.71
CHANGE IN WATER STORAGE	2.917	10587.604	18.66
SOIL WATER AT START OF YEAR	143.240	519962.281	
SOIL WATER AT END OF YEAR	143.336	520308.562	
SNOW WATER AT START OF YEAR	0.835	3029.894	5.34
SNOW WATER AT END OF YEAR	3.656	13271.202	23.39
ANNUAL WATER BUDGET BALANCE	0.0000	0.038	0.00

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ANNUAL TOTALS FOR YEAR 60

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.90	61347.027	100.00
RUNOFF	7.823	28397.205	46.29
EVAPOTRANSPIRATION	8.274	30034.254	48.96
PERC./LEAKAGE THROUGH LAYER 2	1.811683	6576.409	10.72
AVG. HEAD ON TOP OF LAYER 2	5.0014		
PERC./LEAKAGE THROUGH LAYER 4	1.372689	4982.861	8.12
CHANGE IN WATER STORAGE	-0.570	-2067.321	-3.37
SOIL WATER AT START OF YEAR	143.336	520308.562	
SOIL WATER AT END OF YEAR	143.740	521777.594	
SNOW WATER AT START OF YEAR	3.656	13271.202	21.63
SNOW WATER AT END OF YEAR	2.682	9734.844	15.87
ANNUAL WATER BUDGET BALANCE	0.0000	0.027	0.00

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ANNUAL TOTALS FOR YEAR 61

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.82	68316.641	100.00
RUNOFF	6.004	21794.078	31.90
EVAPOTRANSPIRATION	9.440	34267.230	50.16
PERC./LEAKAGE THROUGH LAYER 2	2.064188	7493.001	10.97
AVG. HEAD ON TOP OF LAYER 2	5.8122		
PERC./LEAKAGE THROUGH LAYER 4	2.286797	8301.072	12.15
CHANGE IN WATER STORAGE	1.089	3954.226	5.79
SOIL WATER AT START OF YEAR	143.740	521777.594	
SOIL WATER AT END OF YEAR	144.336	523940.406	
SNOW WATER AT START OF YEAR	2.682	9734.844	14.25
SNOW WATER AT END OF YEAR	3.175	11526.279	16.87
ANNUAL WATER BUDGET BALANCE	0.0000	0.035	0.00

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ANNUAL TOTALS FOR YEAR 62

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.27	59060.109	100.00
RUNOFF	6.256	22708.178	38.45
EVAPOTRANSPIRATION	8.885	32251.443	54.61
PERC./LEAKAGE THROUGH LAYER 2	1.949675	7077.320	11.98

AVG. HEAD ON TOP OF LAYER 2	5.4175		
PERC./LEAKAGE THROUGH LAYER 4	1.830147	6643.433	11.25
CHANGE IN WATER STORAGE	-0.701	-2542.952	-4.31
SOIL WATER AT START OF YEAR	144.336	523940.406	
SOIL WATER AT END OF YEAR	144.318	523874.594	
SNOW WATER AT START OF YEAR	3.175	11526.279	19.52
SNOW WATER AT END OF YEAR	2.493	9049.131	15.32
ANNUAL WATER BUDGET BALANCE	0.0000	0.007	0.00

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ANNUAL TOTALS FOR YEAR 63

	INCHES	CU. FEET	PERCENT
PRECIPITATION	12.81	46500.312	100.00
RUNOFF	4.302	15615.045	33.58
EVAPOTRANSPIRATION	8.501	30857.170	66.36
PERC./LEAKAGE THROUGH LAYER 2	2.040004	7405.215	15.93
AVG. HEAD ON TOP OF LAYER 2	5.7680		
PERC./LEAKAGE THROUGH LAYER 4	1.830575	6644.988	14.29
CHANGE IN WATER STORAGE	-1.823	-6616.921	-14.23
SOIL WATER AT START OF YEAR	144.318	523874.594	
SOIL WATER AT END OF YEAR	144.441	524319.875	
SNOW WATER AT START OF YEAR	2.493	9049.131	19.46
SNOW WATER AT END OF YEAR	0.547	1986.934	4.27
ANNUAL WATER BUDGET BALANCE	0.0000	0.029	0.00

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ANNUAL TOTALS FOR YEAR 64

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.00	54450.016	100.00
RUNOFF	3.654	13263.277	24.36
EVAPOTRANSPIRATION	8.658	31429.479	57.72
PERC./LEAKAGE THROUGH LAYER 2	1.949727	7077.509	13.00
AVG. HEAD ON TOP OF LAYER 2	5.4344		
PERC./LEAKAGE THROUGH LAYER 4	2.285450	8296.184	15.24
CHANGE IN WATER STORAGE	0.403	1461.085	2.68
SOIL WATER AT START OF YEAR	144.441	524319.875	
SOIL WATER AT END OF YEAR	143.923	522441.562	
SNOW WATER AT START OF YEAR	0.547	1986.934	3.65
SNOW WATER AT END OF YEAR	1.467	5326.329	9.78
ANNUAL WATER BUDGET BALANCE	0.0000	-0.010	0.00

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ANNUAL TOTALS FOR YEAR 65

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.82	53796.625	100.00
RUNOFF	3.129	11359.960	21.12
EVAPOTRANSPIRATION	9.996	36285.582	67.45
PERC./LEAKAGE THROUGH LAYER 2	2.103192	7634.585	14.19
AVG. HEAD ON TOP OF LAYER 2	5.9875		
PERC./LEAKAGE THROUGH LAYER 4	1.830388	6644.308	12.35
CHANGE IN WATER STORAGE	-0.136	-493.276	-0.92

SOIL WATER AT START OF YEAR	143.923	522441.562	
SOIL WATER AT END OF YEAR	144.661	525119.000	
SNOW WATER AT START OF YEAR	1.467	5326.329	9.90
SNOW WATER AT END OF YEAR	0.594	2155.585	4.01
ANNUAL WATER BUDGET BALANCE	0.0000	0.050	0.00

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ANNUAL TOTALS FOR YEAR 66

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.18	55103.406	100.00
RUNOFF	2.631	9550.687	17.33
EVAPOTRANSPIRATION	10.259	37241.336	67.58
PERC./LEAKAGE THROUGH LAYER 2	2.086385	7573.577	13.74
AVG. HEAD ON TOP OF LAYER 2	5.9620		
PERC./LEAKAGE THROUGH LAYER 4	2.286938	8301.584	15.07
CHANGE IN WATER STORAGE	0.003	9.769	0.02
SOIL WATER AT START OF YEAR	144.661	525119.000	
SOIL WATER AT END OF YEAR	143.574	521173.375	
SNOW WATER AT START OF YEAR	0.594	2155.585	3.91
SNOW WATER AT END OF YEAR	1.683	6111.018	11.09
ANNUAL WATER BUDGET BALANCE	0.0000	0.028	0.00

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ANNUAL TOTALS FOR YEAR 67

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.60	71148.023	100.00
RUNOFF	5.753	20884.191	29.35
EVAPOTRANSPIRATION	10.420	37825.969	53.17
PERC./LEAKAGE THROUGH LAYER 2	2.265373	8223.306	11.56
AVG. HEAD ON TOP OF LAYER 2	6.5295		
PERC./LEAKAGE THROUGH LAYER 4	1.828760	6638.397	9.33
CHANGE IN WATER STORAGE	1.598	5799.441	8.15
SOIL WATER AT START OF YEAR	143.574	521173.375	
SOIL WATER AT END OF YEAR	144.864	525857.312	
SNOW WATER AT START OF YEAR	1.683	6111.018	8.59
SNOW WATER AT END OF YEAR	1.991	7226.510	10.16
ANNUAL WATER BUDGET BALANCE	0.0000	0.026	0.00

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ANNUAL TOTALS FOR YEAR 68

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.96	50674.809	100.00
RUNOFF	4.605	16717.861	32.99
EVAPOTRANSPIRATION	8.170	29656.803	58.52
PERC./LEAKAGE THROUGH LAYER 2	1.760545	6390.780	12.61
AVG. HEAD ON TOP OF LAYER 2	4.8353		
PERC./LEAKAGE THROUGH LAYER 4	2.285361	8295.858	16.37
CHANGE IN WATER STORAGE	-1.101	-3995.733	-7.89
SOIL WATER AT START OF YEAR	144.864	525857.312	
SOIL WATER AT END OF YEAR	142.768	518249.187	
SNOW WATER AT START OF YEAR	1.991	7226.510	14.26

SNOW WATER AT END OF YEAR	2.986	10838.899	21.39
ANNUAL WATER BUDGET BALANCE	0.0000	0.020	0.00

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ANNUAL TOTALS FOR YEAR 69

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.58	49295.422	100.00
RUNOFF	4.801	17426.049	35.35
EVAPOTRANSPIRATION	8.898	32298.262	65.52
PERC./LEAKAGE THROUGH LAYER 2	1.680486	6100.164	12.37
AVG. HEAD ON TOP OF LAYER 2	4.5302		
PERC./LEAKAGE THROUGH LAYER 4	1.371731	4979.382	10.10
CHANGE IN WATER STORAGE	-1.490	-5408.297	-10.97
SOIL WATER AT START OF YEAR	142.768	518249.187	
SOIL WATER AT END OF YEAR	142.707	518027.625	
SNOW WATER AT START OF YEAR	2.986	10838.899	21.99
SNOW WATER AT END OF YEAR	1.557	5652.159	11.47
ANNUAL WATER BUDGET BALANCE	0.0000	0.026	0.00

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ANNUAL TOTALS FOR YEAR 70

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.29	55502.691	100.00
RUNOFF	3.284	11919.187	21.47

EVAPOTRANSPIRATION	8.015	29094.268	52.42
PERC./LEAKAGE THROUGH LAYER 2	1.554577	5643.114	10.17
AVG. HEAD ON TOP OF LAYER 2	3.9034		
PERC./LEAKAGE THROUGH LAYER 4	1.829824	6642.261	11.97
CHANGE IN WATER STORAGE	2.162	7846.989	14.14
SOIL WATER AT START OF YEAR	142.707	518027.625	
SOIL WATER AT END OF YEAR	144.344	523969.250	
SNOW WATER AT START OF YEAR	1.557	5652.159	10.18
SNOW WATER AT END OF YEAR	2.082	7557.527	13.62
ANNUAL WATER BUDGET BALANCE	0.0000	-0.013	0.00

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ANNUAL TOTALS FOR YEAR 71

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.63	63996.918	100.00
RUNOFF	6.075	22053.820	34.46
EVAPOTRANSPIRATION	10.005	36316.766	56.75
PERC./LEAKAGE THROUGH LAYER 2	2.093815	7600.550	11.88
AVG. HEAD ON TOP OF LAYER 2	5.9143		
PERC./LEAKAGE THROUGH LAYER 4	1.828684	6638.123	10.37
CHANGE IN WATER STORAGE	-0.279	-1011.804	-1.58
SOIL WATER AT START OF YEAR	144.344	523969.250	
SOIL WATER AT END OF YEAR	144.559	524750.062	
SNOW WATER AT START OF YEAR	2.082	7557.527	11.81
SNOW WATER AT END OF YEAR	1.588	5764.898	9.01
ANNUAL WATER BUDGET BALANCE	0.0000	0.013	0.00

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ANNUAL TOTALS FOR YEAR 72

	INCHES	CU. FEET	PERCENT
PRECIPITATION	12.77	46355.109	100.00
RUNOFF	4.364	15840.817	34.17
EVAPOTRANSPIRATION	8.515	30909.486	66.68
PERC./LEAKAGE THROUGH LAYER 2	2.027327	7359.196	15.88
AVG. HEAD ON TOP OF LAYER 2	5.7614		
PERC./LEAKAGE THROUGH LAYER 4	1.829525	6641.175	14.33
CHANGE IN WATER STORAGE	-1.938	-7036.347	-15.18
SOIL WATER AT START OF YEAR	144.559	524750.062	
SOIL WATER AT END OF YEAR	143.807	522020.219	
SNOW WATER AT START OF YEAR	1.588	5764.898	12.44
SNOW WATER AT END OF YEAR	0.402	1458.418	3.15
ANNUAL WATER BUDGET BALANCE	0.0000	-0.023	0.00

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ANNUAL TOTALS FOR YEAR 73

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.58	56555.406	100.00
RUNOFF	2.600	9439.422	16.69
EVAPOTRANSPIRATION	8.692	31551.934	55.79
PERC./LEAKAGE THROUGH LAYER 2	1.922058	6977.069	12.34
AVG. HEAD ON TOP OF LAYER 2	5.2982		

PERC./LEAKAGE THROUGH LAYER 4	2.286649	8300.537	14.68
CHANGE IN WATER STORAGE	2.001	7263.509	12.84
SOIL WATER AT START OF YEAR	143.807	522020.219	
SOIL WATER AT END OF YEAR	144.343	523965.875	
SNOW WATER AT START OF YEAR	0.402	1458.418	2.58
SNOW WATER AT END OF YEAR	1.867	6776.264	11.98
ANNUAL WATER BUDGET BALANCE	0.0000	0.004	0.00

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ANNUAL TOTALS FOR YEAR 74

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.94	50602.211	100.00
RUNOFF	2.261	8209.228	16.22
EVAPOTRANSPIRATION	10.936	39696.484	78.45
PERC./LEAKAGE THROUGH LAYER 2	2.073339	7526.221	14.87
AVG. HEAD ON TOP OF LAYER 2	5.8636		
PERC./LEAKAGE THROUGH LAYER 4	1.828839	6638.685	13.12
CHANGE IN WATER STORAGE	-1.086	-3942.202	-7.79
SOIL WATER AT START OF YEAR	144.343	523965.875	
SOIL WATER AT END OF YEAR	144.000	522721.437	
SNOW WATER AT START OF YEAR	1.867	6776.264	13.39
SNOW WATER AT END OF YEAR	1.124	4078.496	8.06
ANNUAL WATER BUDGET BALANCE	0.0000	0.017	0.00

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ANNUAL TOTALS FOR YEAR 75

	INCHES	CU. FEET	PERCENT
PRECIPITATION	13.25	48097.500	100.00
RUNOFF	2.889	10485.769	21.80
EVAPOTRANSPIRATION	7.428	26965.080	56.06
PERC./LEAKAGE THROUGH LAYER 2	1.859343	6749.414	14.03
AVG. HEAD ON TOP OF LAYER 2	5.1374		
PERC./LEAKAGE THROUGH LAYER 4	1.829140	6639.777	13.80
CHANGE IN WATER STORAGE	1.104	4006.842	8.33
SOIL WATER AT START OF YEAR	144.000	522721.437	
SOIL WATER AT END OF YEAR	143.578	521189.469	
SNOW WATER AT START OF YEAR	1.124	4078.496	8.48
SNOW WATER AT END OF YEAR	2.649	9617.298	20.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.032	0.00

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ANNUAL TOTALS FOR YEAR 76

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.60	67518.000	100.00
RUNOFF	5.893	21390.447	31.68
EVAPOTRANSPIRATION	11.363	41246.316	61.09
PERC./LEAKAGE THROUGH LAYER 2	2.292451	8321.596	12.33
AVG. HEAD ON TOP OF LAYER 2	6.6943		
PERC./LEAKAGE THROUGH LAYER 4	2.286687	8300.674	12.29
CHANGE IN WATER STORAGE	-0.942	-3419.415	-5.06
SOIL WATER AT START OF YEAR	143.578	521189.469	

SOIL WATER AT END OF YEAR	144.772	525520.687	
SNOW WATER AT START OF YEAR	2.649	9617.298	14.24
SNOW WATER AT END OF YEAR	0.514	1866.653	2.76
ANNUAL WATER BUDGET BALANCE	0.0000	-0.019	0.00

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ANNUAL TOTALS FOR YEAR 77

	INCHES	CU. FEET	PERCENT
PRECIPITATION	15.48	56192.395	100.00
RUNOFF	1.971	7155.906	12.73
EVAPOTRANSPIRATION	9.494	34464.559	61.33
PERC./LEAKAGE THROUGH LAYER 2	2.376808	8627.814	15.35
AVG. HEAD ON TOP OF LAYER 2	6.9965		
PERC./LEAKAGE THROUGH LAYER 4	2.284084	8291.225	14.76
CHANGE IN WATER STORAGE	1.730	6280.740	11.18
SOIL WATER AT START OF YEAR	144.772	525520.687	
SOIL WATER AT END OF YEAR	144.488	524491.625	
SNOW WATER AT START OF YEAR	0.514	1866.653	3.32
SNOW WATER AT END OF YEAR	2.528	9176.473	16.33
ANNUAL WATER BUDGET BALANCE	0.0000	-0.033	0.00

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ANNUAL TOTALS FOR YEAR 78

	INCHES	CU. FEET	PERCENT

PRECIPITATION	19.34	70204.211	100.00
RUNOFF	4.494	16312.375	23.24
EVAPOTRANSPIRATION	10.249	37203.211	52.99
PERC./LEAKAGE THROUGH LAYER 2	1.875112	6806.655	9.70
AVG. HEAD ON TOP OF LAYER 2	5.1301		
PERC./LEAKAGE THROUGH LAYER 4	2.288455	8307.092	11.83
CHANGE IN WATER STORAGE	2.309	8381.489	11.94
SOIL WATER AT START OF YEAR	144.488	524491.625	
SOIL WATER AT END OF YEAR	144.297	523797.500	
SNOW WATER AT START OF YEAR	2.528	9176.473	13.07
SNOW WATER AT END OF YEAR	5.028	18252.102	26.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.048	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 78

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.90	0.76	0.69	0.70	0.72	1.05
	1.78	2.59	2.46	1.97	1.26	0.97
STD. DEVIATIONS	0.54	0.44	0.51	0.46	0.41	0.59
	0.81	0.99	1.07	0.92	0.61	0.49
RUNOFF						
TOTALS	0.000	0.001	0.059	1.662	1.558	0.231
	0.011	0.053	0.279	0.319	0.208	0.001
STD. DEVIATIONS	0.000	0.012	0.169	1.303	1.551	0.303
	0.043	0.188	0.630	0.543	0.396	0.011
EVAPOTRANSPIRATION						
TOTALS	0.350	0.320	0.400	0.433	0.149	1.474

	1.551	1.966	1.509	0.701	0.357	0.260
STD. DEVIATIONS	0.062	0.053	0.085	0.140	0.133	0.400
	0.648	0.503	0.300	0.184	0.087	0.056

PERCOLATION/LEAKAGE THROUGH LAYER 2

TOTALS	0.0852	0.0713	0.0720	0.0641	0.0623	0.2240
	0.2503	0.2489	0.2782	0.3085	0.1299	0.0943
STD. DEVIATIONS	0.0101	0.0085	0.0085	0.0076	0.0103	0.0502
	0.0348	0.0537	0.0788	0.0891	0.0550	0.0028

PERCOLATION/LEAKAGE THROUGH LAYER 4

TOTALS	0.2552	0.1584	0.1522	0.1291	0.1291	0.1350
	0.0176	0.0436	0.0914	0.1231	0.2753	0.2870
STD. DEVIATIONS	0.2270	0.2191	0.2166	0.2073	0.2073	0.2101
	0.0886	0.1311	0.1811	0.2042	0.2250	0.2222

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 2

AVERAGES	1.8159	1.4440	1.1023	0.7784	0.5459	8.5580
	9.6826	9.5449	11.0979	11.8104	4.0878	2.2676
STD. DEVIATIONS	0.2474	0.2065	0.1702	0.1376	0.3524	2.3123
	1.4583	2.3091	3.3578	3.6901	2.4665	0.1467

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 78

	INCHES		CU. FEET	PERCENT
PRECIPITATION	15.86	(2.153)	57578.3	100.00
RUNOFF	4.383	(1.8226)	15911.41	27.634
EVAPOTRANSPIRATION	9.472	(0.9143)	34382.41	59.714
PERCOLATION/LEAKAGE THROUGH LAYER 2	1.88881	(0.25216)	6856.380	11.90792
AVERAGE HEAD ON TOP	5.228	(0.863)		

OF LAYER 2			
PERCOLATION/LEAKAGE THROUGH LAYER 4	1.79694 (0.48779)	6522.896	11.32873
CHANGE IN WATER STORAGE	0.210 (1.4661)	761.60	1.323

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 78

	(INCHES)	(CU. FT.)
PRECIPITATION	1.60	5808.000
RUNOFF	6.104	22157.5254
PERCOLATION/LEAKAGE THROUGH LAYER 2	0.014963	54.31509
AVERAGE HEAD ON TOP OF LAYER 2	18.000	
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.458190	1663.22913
SNOW WATER	6.98	25343.2578

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4500
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.2000

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FINAL WATER STORAGE AT END OF YEAR 78

LAYER	(INCHES)	(VOL/VOL)
1	7.7711	0.4317
2	0.0000	0.0000
3	10.2501	0.2847
4	125.6757	0.2095
SNOW WATER	5.028	

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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:\RUNS\RDM6\DATA4.D4
TEMPERATURE DATA FILE:      C:\RUNS\RDM6\DATA7.D7
SOLAR RADIATION DATA FILE:  C:\RUNS\RDM6\DATA13.D13
EVAPOTRANSPIRATION DATA:    C:\RUNS\RDM6\DATA11.D11
SOIL AND DESIGN DATA FILE:  C:\RUNS\RDM6\DATA10.D10
OUTPUT DATA FILE:           C:\RUNS\RDM6\RDMOUT.OUT

TIME:  13:55     DATE:   6/19/2019

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

      TITLE:  Construction Climate Change Model Year 1 (RDM6-Scenario 6I)

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     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                    =    120.00   INCHES
          POROSITY                     =      0.3000 VOL/VOL
          FIELD CAPACITY               =      0.2100 VOL/VOL
          WILTING POINT                =      0.0700 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.1600 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.699999975000E-03 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 # 1 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 0.% AND A SLOPE LENGTH OF 500. FEET.

SCS RUNOFF CURVE NUMBER	=	70.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	15.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	2.400	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	4.500	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.050	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	19.200	INCHES
TOTAL INITIAL WATER	=	19.200	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM BETHEL ALASKA

STATION LATITUDE	=	60.78	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.50	
START OF GROWING SEASON (JULIAN DATE)	=	184	
END OF GROWING SEASON (JULIAN DATE)	=	225	
EVAPORATIVE ZONE DEPTH	=	15.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	12.90	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	78.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	83.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	80.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR Red Devil (rcp8.5 2090) Alaska

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
1.14	0.83	0.83	0.87	1.14	2.05
2.48	4.88	3.31	1.97	1.50	1.50

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR BETHEL ALASKA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

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

4.90	5.70	10.70	23.40	40.30	50.60
54.70	52.80	45.00	29.70	17.50	4.80

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR BETHEL ALASKA
AND STATION LATITUDE = 60.78 DEGREES

LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 1

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DAILY OUTPUT FOR YEAR 1

DAY	AIR	SOIL	RAIN IN.	RUNOFF IN.	ET IN.	E. ZONE WATER IN./IN.	HEAD #1 IN.	DRAIN #1 IN.	LEAK #1 IN.
1	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
2	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
3	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
4	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
5	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
6	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
7	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
8	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
9	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
10	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
11	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
12	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
13	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
14	*	*	0.06	0.000	0.010	0.1600	0.0000	.0000E+00	.0000E+00
15	*	*	0.01	0.000	0.009	0.1600	0.0000	.0000E+00	.0000E+00
16	*	*	0.00	0.000	0.010	0.1600	0.0000	.0000E+00	.0000E+00
17	*	*	0.00	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
18	*	*	0.00	0.000	0.014	0.1600	0.0000	.0000E+00	.0000E+00
19	*	*	0.00	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
20	*	*	0.01	0.000	0.010	0.1600	0.0000	.0000E+00	.0000E+00
21	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
22	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
23	*	*	0.11	0.000	0.027	0.1600	0.0000	.0000E+00	.0000E+00
24	*	*	0.07	0.000	0.029	0.1600	0.0000	.0000E+00	.0000E+00
25	*	*	0.17	0.000	0.020	0.1600	0.0000	.0000E+00	.0000E+00
26	*	*	0.00	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
27	*	*	0.00	0.000	0.020	0.1600	0.0000	.0000E+00	.0000E+00
28	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
29	*	*	0.00	0.000	0.017	0.1600	0.0000	.0000E+00	.0000E+00
30	*	*	0.01	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
31	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
32	*	*	0.02	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00

33	*	*	0.00	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
34	*	*	0.00	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
35	*	*	0.05	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
36	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
37	*	*	0.00	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00
38	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
39	*	*	0.00	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
40	*	*	0.06	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
41	*	*	0.00	0.000	0.022	0.1600	0.0000	.0000E+00	.0000E+00
42	*	*	0.00	0.000	0.021	0.1600	0.0000	.0000E+00	.0000E+00
43	*	*	0.00	0.000	0.021	0.1600	0.0000	.0000E+00	.0000E+00
44	*	*	0.00	0.000	0.024	0.1600	0.0000	.0000E+00	.0000E+00
45	*	*	0.03	0.000	0.021	0.1600	0.0000	.0000E+00	.0000E+00
46	*	*	0.12	0.000	0.020	0.1600	0.0000	.0000E+00	.0000E+00
47	*	*	0.06	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
48	*	*	0.08	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
49	*	*	0.13	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
50	*	*	0.00	0.000	0.017	0.1600	0.0000	.0000E+00	.0000E+00
51	*	*	0.00	0.000	0.021	0.1600	0.0000	.0000E+00	.0000E+00
52	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
53	*	*	0.05	0.000	0.014	0.1600	0.0000	.0000E+00	.0000E+00
54	*	*	0.03	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00
55	*	*	0.34	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
56	*	*	0.01	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00
57	*	*	0.02	0.000	0.014	0.1600	0.0000	.0000E+00	.0000E+00
58	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
59	*	*	0.00	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
60	*	*	0.00	0.000	0.015	0.1600	0.0000	.0000E+00	.0000E+00
61	*	*	0.00	0.000	0.009	0.1600	0.0000	.0000E+00	.0000E+00
62	*	*	0.00	0.000	0.008	0.1600	0.0000	.0000E+00	.0000E+00
63	*	*	0.19	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
64	*	*	0.00	0.000	0.016	0.1600	0.0000	.0000E+00	.0000E+00
65	*	*	0.01	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
66	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
67	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
68	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
69	*	*	0.00	0.000	0.013	0.1600	0.0000	.0000E+00	.0000E+00
70	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
71	*	*	0.00	0.000	0.010	0.1600	0.0000	.0000E+00	.0000E+00
72	*	*	0.02	0.000	0.008	0.1600	0.0000	.0000E+00	.0000E+00
73	*	*	0.00	0.000	0.011	0.1600	0.0000	.0000E+00	.0000E+00
74	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
75	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
76	*	*	0.00	0.000	0.016	0.1600	0.0000	.0000E+00	.0000E+00
77	*	*	0.00	0.000	0.012	0.1600	0.0000	.0000E+00	.0000E+00
78	*	*	0.00	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
79	*	*	0.00	0.000	0.031	0.1600	0.0000	.0000E+00	.0000E+00
80	*	*	0.00	0.000	0.020	0.1600	0.0000	.0000E+00	.0000E+00
81	*	*	0.00	0.000	0.019	0.1600	0.0000	.0000E+00	.0000E+00
82	*	*	0.00	0.000	0.017	0.1600	0.0000	.0000E+00	.0000E+00
83	*	*	0.00	0.000	0.018	0.1600	0.0000	.0000E+00	.0000E+00
84	*	*	0.00	0.000	0.027	0.1600	0.0000	.0000E+00	.0000E+00
85	*	*	0.53	0.000	0.000	0.1600	0.0000	.0000E+00	.0000E+00
86	*	*	0.00	0.000	0.030	0.1600	0.0000	.0000E+00	.0000E+00
87	*	*	0.00	0.000	0.023	0.1600	0.0000	.0000E+00	.0000E+00
88	*	*	0.00	0.000	0.025	0.1600	0.0000	.0000E+00	.0000E+00
89	*	*	0.00	0.000	0.030	0.1600	0.0000	.0000E+00	.0000E+00
90	*	*	0.00	0.000	0.031	0.1600	0.0000	.0000E+00	.0000E+00
91	*	*	0.00	0.000	0.025	0.1600	0.0000	.0000E+00	.0000E+00
92		*	0.00	0.004	0.000	0.1799	0.0000	.0000E+00	.0000E+00

93		*	0.08	0.000	0.000	0.1863	0.0000	.0000E+00	.0000E+00
94	*	*	0.01	0.000	0.016	0.1863	0.0000	.0000E+00	.0000E+00
95	*	*	0.00	0.000	0.017	0.1863	0.0000	.0000E+00	.0000E+00
96	*	*	0.00	0.000	0.011	0.1863	0.0000	.0000E+00	.0000E+00
97	*	*	0.00	0.000	0.012	0.1863	0.0000	.0000E+00	.0000E+00
98	*	*	0.00	0.000	0.015	0.1863	0.0000	.0000E+00	.0000E+00
99	*	*	0.00	0.000	0.010	0.1863	0.0000	.0000E+00	.0000E+00
100	*	*	0.00	0.000	0.000	0.1863	0.0000	.0000E+00	.0000E+00
101	*	*	0.00	0.000	0.017	0.1863	0.0000	.0000E+00	.0000E+00
102	*	*	0.00	0.000	0.016	0.1863	0.0000	.0000E+00	.0000E+00
103	*	*	0.00	0.000	0.021	0.1863	0.0000	.0000E+00	.0000E+00
104	*	*	0.00	0.000	0.027	0.1863	0.0000	.0000E+00	.0000E+00
105	*	*	0.00	0.000	0.023	0.1863	0.0000	.0000E+00	.0000E+00
106	*	*	0.00	0.000	0.029	0.1863	0.0000	.0000E+00	.0000E+00
107		*	0.00	0.136	0.000	0.2103	0.0000	.0000E+00	.0000E+00
108		*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
109		*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
110		*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
111		*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
112	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
113	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
114	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
115	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
116	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
117	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
118	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
119	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
120	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
121	*	*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
122		*	0.00	0.000	0.000	0.2103	0.0000	.0000E+00	.0000E+00
123		*	0.08	0.000	0.001	0.2155	0.0000	.0000E+00	.0000E+00
124		*	0.00	0.000	0.000	0.2155	0.0000	.0000E+00	.0000E+00
125		*	0.00	0.000	0.000	0.2155	0.0000	.0000E+00	.0000E+00
126		*	0.00	0.000	0.000	0.2155	0.0000	.0000E+00	.0000E+00
127		*	0.00	0.000	0.000	0.2155	0.0000	.0000E+00	.0000E+00
128		*	0.00	0.000	0.000	0.2155	0.0000	.0000E+00	.0000E+00
129		*	0.00	0.000	0.000	0.2155	0.0000	.0000E+00	.0000E+00
130		*	0.01	0.000	0.001	0.2161	0.0000	.0000E+00	.0000E+00
131		*	0.00	0.000	0.000	0.2161	0.0000	.0000E+00	.0000E+00
132		*	0.00	0.000	0.000	0.2161	0.0000	.0000E+00	.0000E+00
133		*	0.00	0.000	0.000	0.2161	0.0000	.0000E+00	.0000E+00
134		*	0.00	0.000	0.000	0.2161	0.0000	.0000E+00	.0000E+00
135		*	0.00	0.000	0.000	0.2161	0.0000	.0000E+00	.0000E+00
136		*	0.00	0.000	0.000	0.2161	0.0000	.0000E+00	.0000E+00
137		*	0.00	0.000	0.000	0.2161	0.0000	.0000E+00	.0000E+00
138		*	0.15	0.020	0.001	0.2247	0.0000	.0000E+00	.0000E+00
139		*	0.04	0.000	0.001	0.2273	0.0000	.0000E+00	.0000E+00
140		*	0.00	0.000	0.000	0.2273	0.0000	.0000E+00	.0000E+00
141	*	*	0.00	0.000	0.000	0.2273	0.0000	.0000E+00	.0000E+00
142		*	0.17	0.044	0.001	0.2356	0.0000	.0000E+00	.0000E+00
143		*	0.02	0.000	0.001	0.2368	0.0000	.0000E+00	.0000E+00
144	*	*	0.04	0.000	0.040	0.2368	0.0000	.0000E+00	.0000E+00
145		*	0.23	0.103	0.001	0.2452	0.0000	.0000E+00	.0000E+00
146	*	*	0.00	0.000	0.000	0.2452	0.0000	.0000E+00	.0000E+00
147		*	0.00	0.000	0.000	0.2452	0.0000	.0000E+00	.0000E+00
148		*	0.00	0.000	0.000	0.2452	0.0000	.0000E+00	.0000E+00
149		*	0.00	0.000	0.000	0.2452	0.0000	.0000E+00	.0000E+00
150		*	0.00	0.000	0.000	0.2452	0.0000	.0000E+00	.0000E+00
151		*	0.00	0.000	0.000	0.2452	0.0000	.0000E+00	.0000E+00
152		*	0.00	0.000	0.000	0.2452	0.0000	.0000E+00	.0000E+00

153	*	0.19	0.088	0.001	0.2519	0.0000	.0000E+00	.0000E+00
154	*	0.00	0.000	0.000	0.2519	0.0000	.0000E+00	.0000E+00
155	*	0.00	0.000	0.000	0.2519	0.0000	.0000E+00	.0000E+00
156	*	0.00	0.000	0.000	0.2519	0.0000	.0000E+00	.0000E+00
157	*	0.00	0.000	0.000	0.2519	0.0000	.0000E+00	.0000E+00
158		0.00	0.000	0.110	0.1382	0.0000	.0000E+00	.2481E-01
159		0.00	0.000	0.143	0.1287	0.0000	.0000E+00	.2089E-01
160		0.00	0.000	0.132	0.1199	0.0000	.0000E+00	.0000E+00
161		0.00	0.000	0.116	0.1122	0.0000	.0000E+00	.0000E+00
162		0.48	0.000	0.124	0.1359	0.0000	.0000E+00	.0000E+00
163		0.17	0.000	0.147	0.1374	0.0000	.0000E+00	.0000E+00
164		0.00	0.000	0.134	0.1271	0.0000	.0000E+00	.0000E+00
165		0.00	0.000	0.119	0.1191	0.0000	.0000E+00	.0000E+00
166		0.00	0.000	0.116	0.1114	0.0000	.0000E+00	.0000E+00
167		0.00	0.000	0.123	0.1032	0.0000	.0000E+00	.0000E+00
168		0.00	0.000	0.148	0.0933	0.0000	.0000E+00	.0000E+00
169		0.00	0.000	0.110	0.0860	0.0000	.0000E+00	.0000E+00
170		0.00	0.000	0.102	0.0792	0.0000	.0000E+00	.0000E+00
171		0.00	0.000	0.091	0.0731	0.0000	.0000E+00	.0000E+00
172		0.00	0.000	0.047	0.0700	0.0000	.0000E+00	.0000E+00
173		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
174		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
175		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
176		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
177		0.04	0.000	0.005	0.0723	0.0000	.0000E+00	.0000E+00
178		0.00	0.000	0.008	0.0718	0.0000	.0000E+00	.0000E+00
179		0.30	0.000	0.018	0.0906	0.0000	.0000E+00	.0000E+00
180		0.11	0.000	0.026	0.0963	0.0000	.0000E+00	.0000E+00
181		0.00	0.000	0.023	0.0947	0.0000	.0000E+00	.0000E+00
182		0.00	0.000	0.027	0.0929	0.0000	.0000E+00	.0000E+00
183		0.30	0.000	0.027	0.1112	0.0000	.0000E+00	.0000E+00
184		0.10	0.000	0.078	0.1126	0.0000	.0000E+00	.0000E+00
185		0.02	0.000	0.116	0.1062	0.0000	.0000E+00	.0000E+00
186		0.32	0.000	0.107	0.1204	0.0000	.0000E+00	.0000E+00
187		0.00	0.000	0.144	0.1108	0.0000	.0000E+00	.0000E+00
188		0.00	0.000	0.130	0.1021	0.0000	.0000E+00	.0000E+00
189		0.00	0.000	0.121	0.0941	0.0000	.0000E+00	.0000E+00
190		0.00	0.000	0.081	0.0887	0.0000	.0000E+00	.0000E+00
191		0.06	0.000	0.064	0.0884	0.0000	.0000E+00	.0000E+00
192		0.04	0.000	0.054	0.0875	0.0000	.0000E+00	.0000E+00
193		0.21	0.000	0.048	0.0983	0.0000	.0000E+00	.0000E+00
194		0.14	0.000	0.044	0.1047	0.0000	.0000E+00	.0000E+00
195		0.16	0.000	0.041	0.1126	0.0000	.0000E+00	.0000E+00
196		0.00	0.000	0.128	0.1041	0.0000	.0000E+00	.0000E+00
197		0.16	0.000	0.040	0.1121	0.0000	.0000E+00	.0000E+00
198		0.35	0.000	0.127	0.1270	0.0000	.0000E+00	.0000E+00
199		0.09	0.000	0.113	0.1254	0.0000	.0000E+00	.0000E+00
200		0.25	0.000	0.100	0.1354	0.0000	.0000E+00	.0000E+00
201		0.14	0.000	0.116	0.1370	0.0000	.0000E+00	.0000E+00
202		0.06	0.000	0.117	0.1332	0.0000	.0000E+00	.0000E+00
203		0.01	0.000	0.147	0.1241	0.0000	.0000E+00	.0000E+00
204		0.11	0.000	0.133	0.1226	0.0000	.0000E+00	.0000E+00
205		0.00	0.000	0.129	0.1140	0.0000	.0000E+00	.0000E+00
206		0.01	0.000	0.141	0.1052	0.0000	.0000E+00	.0000E+00
207		0.05	0.000	0.129	0.0999	0.0000	.0000E+00	.0000E+00
208		0.00	0.000	0.086	0.0942	0.0000	.0000E+00	.0000E+00
209		0.09	0.000	0.069	0.0955	0.0000	.0000E+00	.0000E+00
210		0.00	0.000	0.057	0.0917	0.0000	.0000E+00	.0000E+00
211		0.07	0.000	0.052	0.0929	0.0000	.0000E+00	.0000E+00
212		0.12	0.000	0.047	0.0978	0.0000	.0000E+00	.0000E+00

213		0.19	0.000	0.044	0.1075	0.0000	.0000E+00	.0000E+00
214		0.08	0.000	0.116	0.1051	0.0000	.0000E+00	.0000E+00
215		0.19	0.000	0.040	0.1151	0.0000	.0000E+00	.0000E+00
216		0.04	0.000	0.104	0.1108	0.0000	.0000E+00	.0000E+00
217		0.49	0.000	0.097	0.1370	0.0000	.0000E+00	.0000E+00
218		0.00	0.000	0.090	0.1310	0.0000	.0000E+00	.0000E+00
219		0.15	0.000	0.082	0.1355	0.0000	.0000E+00	.0000E+00
220		0.00	0.000	0.084	0.1299	0.0000	.0000E+00	.0000E+00
221		0.01	0.000	0.071	0.1258	0.0000	.0000E+00	.0000E+00
222		0.21	0.000	0.102	0.1329	0.0000	.0000E+00	.0000E+00
223		0.00	0.000	0.068	0.1284	0.0000	.0000E+00	.0000E+00
224		0.07	0.000	0.076	0.1279	0.0000	.0000E+00	.0000E+00
225		0.00	0.000	0.062	0.1236	0.0000	.0000E+00	.0000E+00
226		0.04	0.000	0.059	0.1221	0.0000	.0000E+00	.0000E+00
227		1.80	0.000	0.086	0.1802	0.0000	.0000E+00	.0000E+00
228		0.20	0.000	0.071	0.1596	0.0000	.0000E+00	.4954E-01
229		0.19	0.000	0.100	0.1585	0.0000	.0000E+00	.0000E+00
230		0.00	0.000	0.119	0.1486	0.0000	.0000E+00	.0000E+00
231		0.00	0.000	0.083	0.1380	0.0000	.0000E+00	.0000E+00
232		0.00	0.000	0.073	0.1291	0.0000	.0000E+00	.0000E+00
233		0.00	0.000	0.100	0.1225	0.0000	.0000E+00	.0000E+00
234		0.00	0.000	0.076	0.1174	0.0000	.0000E+00	.0000E+00
235		0.50	0.000	0.098	0.1442	0.0000	.0000E+00	.0000E+00
236		0.06	0.000	0.096	0.1418	0.0000	.0000E+00	.0000E+00
237		0.19	0.000	0.081	0.1486	0.0000	.0000E+00	.0000E+00
238		0.33	0.000	0.098	0.1595	0.0000	.0000E+00	.0000E+00
239		0.85	0.000	0.081	0.1595	0.0000	.0000E+00	.2411
240		0.24	0.000	0.058	0.1643	0.0000	.0000E+00	.1898
241		0.00	0.000	0.080	0.1529	0.0000	.0000E+00	.4855E-01
242		0.00	0.000	0.073	0.1410	0.0000	.0000E+00	.0000E+00
243		0.13	0.000	0.062	0.1455	0.0000	.0000E+00	.0000E+00
244		0.14	0.000	0.063	0.1506	0.0000	.0000E+00	.0000E+00
245		0.04	0.000	0.071	0.1465	0.0000	.0000E+00	.0000E+00
246		0.00	0.000	0.069	0.1400	0.0000	.0000E+00	.0000E+00
247		0.00	0.000	0.082	0.1345	0.0000	.0000E+00	.0000E+00
248		0.03	0.000	0.054	0.1322	0.0000	.0000E+00	.0000E+00
249		0.20	0.000	0.050	0.1422	0.0000	.0000E+00	.0000E+00
250		0.00	0.000	0.046	0.1392	0.0000	.0000E+00	.0000E+00
251		0.00	0.000	0.047	0.1349	0.0000	.0000E+00	.0000E+00
252		0.00	0.000	0.049	0.1297	0.0000	.0000E+00	.0000E+00
253		0.00	0.000	0.052	0.1252	0.0000	.0000E+00	.0000E+00
254		0.00	0.000	0.052	0.1213	0.0000	.0000E+00	.0000E+00
255		0.00	0.000	0.054	0.1177	0.0000	.0000E+00	.0000E+00
256	*	0.73	0.000	0.019	0.1190	0.0000	.0000E+00	.0000E+00
257	*	0.06	0.000	0.022	0.1203	0.0000	.0000E+00	.0000E+00
258		0.13	0.000	0.000	0.1471	0.0000	.0000E+00	.0000E+00
259		0.52	0.000	0.000	0.1703	0.0000	.0000E+00	.2076
260		0.24	0.000	0.000	0.1675	0.0000	.0000E+00	.3974
261		0.00	0.000	0.050	0.1571	0.0000	.0000E+00	.0000E+00
262		0.00	0.000	0.058	0.1450	0.0000	.0000E+00	.0000E+00
263		0.00	0.000	0.052	0.1384	0.0000	.0000E+00	.0000E+00
264		0.17	0.000	0.052	0.1443	0.0000	.0000E+00	.2493
265		0.24	0.000	0.056	0.1566	0.0000	.0000E+00	.0000E+00
266		0.00	0.000	0.048	0.1529	0.0000	.0000E+00	.0000E+00
267		0.00	0.000	0.053	0.1427	0.0000	.0000E+00	.0000E+00
268		0.00	0.000	0.053	0.1350	0.0000	.0000E+00	.0000E+00
269		0.00	0.000	0.045	0.1290	0.0000	.0000E+00	.0000E+00
270		0.00	0.000	0.054	0.1236	0.0000	.0000E+00	.0000E+00
271		0.00	0.000	0.045	0.1206	0.0000	.0000E+00	.0000E+00
272		0.00	0.000	0.053	0.1170	0.0000	.0000E+00	.0000E+00

273			0.00	0.000	0.044	0.1141	0.0000	.0000E+00	.0000E+00
274			0.19	0.000	0.035	0.1244	0.0000	.0000E+00	.0000E+00
275			0.07	0.000	0.037	0.1266	0.0000	.0000E+00	.0000E+00
276			0.02	0.000	0.035	0.1256	0.0000	.0000E+00	.0000E+00
277			0.00	0.000	0.047	0.1225	0.0000	.0000E+00	.0000E+00
278			0.17	0.000	0.035	0.1315	0.0000	.0000E+00	.0000E+00
279			0.10	0.000	0.044	0.1353	0.0000	.0000E+00	.0000E+00
280			0.11	0.000	0.048	0.1394	0.0000	.0000E+00	.0000E+00
281			0.00	0.000	0.038	0.1369	0.0000	.0000E+00	.0000E+00
282			0.20	0.000	0.045	0.1469	0.0000	.0000E+00	.0000E+00
283			0.00	0.000	0.044	0.1432	0.0000	.0000E+00	.0000E+00
284			0.35	0.000	0.044	0.1628	0.0000	.0000E+00	.0000E+00
285			0.06	0.000	0.044	0.1492	0.0000	.0000E+00	.0000E+00
286			0.15	0.000	0.033	0.1543	0.0000	.0000E+00	.0000E+00
287	*		0.00	0.000	0.028	0.1506	0.0000	.0000E+00	.0000E+00
288			0.00	0.000	0.033	0.1454	0.0000	.0000E+00	.0000E+00
289			0.00	0.000	0.033	0.1397	0.0000	.0000E+00	.0000E+00
290	*		0.00	0.000	0.024	0.1347	0.0000	.0000E+00	.0000E+00
291	*		0.00	0.000	0.029	0.1302	0.0000	.0000E+00	.0000E+00
292	*		0.00	0.000	0.026	0.1264	0.0000	.0000E+00	.0000E+00
293	*		0.04	0.000	0.020	0.1277	0.0000	.0000E+00	.0000E+00
294	*		0.08	0.000	0.000	0.1290	0.0000	.0000E+00	.0000E+00
295	*		0.14	0.000	0.018	0.1303	0.0000	.0000E+00	.0000E+00
296	*		0.02	0.000	0.017	0.1316	0.0000	.0000E+00	.0000E+00
297	*		0.04	0.000	0.017	0.1329	0.0000	.0000E+00	.0000E+00
298	*		0.12	0.000	0.020	0.1338	0.0000	.0000E+00	.0000E+00
299			0.04	0.000	0.000	0.1440	0.0000	.0000E+00	.0000E+00
300			0.13	0.000	0.000	0.1600	0.0000	.0000E+00	.3750
301	*		0.00	0.000	0.030	0.1507	0.0000	.0000E+00	.0000E+00
302	*		0.00	0.000	0.030	0.1442	0.0000	.0000E+00	.0000E+00
303	*		0.00	0.000	0.028	0.1390	0.0000	.0000E+00	.0000E+00
304			0.00	0.000	0.033	0.1364	0.0000	.0000E+00	.0000E+00
305			0.00	0.000	0.036	0.1340	0.0000	.0000E+00	.0000E+00
306	*		0.00	0.000	0.028	0.1322	0.0000	.0000E+00	.0000E+00
307	*		0.00	0.000	0.027	0.1304	0.0000	.0000E+00	.0000E+00
308			0.23	0.000	0.033	0.1429	0.0000	.0000E+00	.0000E+00
309	*		0.00	0.000	0.029	0.1405	0.0000	.0000E+00	.0000E+00
310			0.00	0.000	0.034	0.1378	0.0000	.0000E+00	.0000E+00
311			0.00	0.000	0.032	0.1341	0.0000	.0000E+00	.0000E+00
312			0.00	0.000	0.036	0.1310	0.0000	.0000E+00	.0000E+00
313			0.00	0.000	0.037	0.1272	0.0000	.0000E+00	.0000E+00
314			0.00	0.000	0.038	0.1231	0.0000	.0000E+00	.0000E+00
315			0.26	0.000	0.042	0.1376	0.0000	.0000E+00	.0000E+00
316			0.00	0.000	0.036	0.1348	0.0000	.0000E+00	.0000E+00
317			0.00	0.000	0.033	0.1313	0.0000	.0000E+00	.0000E+00
318	*		0.00	0.000	0.028	0.1284	0.0000	.0000E+00	.0000E+00
319			0.00	0.000	0.036	0.1249	0.0000	.0000E+00	.0000E+00
320			0.00	0.000	0.034	0.1215	0.0000	.0000E+00	.0000E+00
321	*		0.31	0.000	0.025	0.1225	0.0000	.0000E+00	.0000E+00
322	*		0.17	0.000	0.017	0.1236	0.0000	.0000E+00	.0000E+00
323	*		0.00	0.000	0.022	0.1249	0.0000	.0000E+00	.0000E+00
324	*		0.24	0.000	0.023	0.1263	0.0000	.0000E+00	.0000E+00
325	*		0.00	0.000	0.015	0.1276	0.0000	.0000E+00	.0000E+00
326	*		0.00	0.000	0.014	0.1285	0.0000	.0000E+00	.0000E+00
327	*		0.00	0.000	0.012	0.1297	0.0000	.0000E+00	.0000E+00
328	*		0.00	0.000	0.013	0.1303	0.0000	.0000E+00	.0000E+00
329	*		0.19	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
330	*	*	0.00	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
331	*	*	0.13	0.000	0.014	0.1314	0.0000	.0000E+00	.0000E+00
332	*	*	0.15	0.000	0.015	0.1314	0.0000	.0000E+00	.0000E+00

333	*	*	0.01	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
334	*	*	0.00	0.000	0.015	0.1314	0.0000	.0000E+00	.0000E+00
335	*	*	0.00	0.000	0.016	0.1314	0.0000	.0000E+00	.0000E+00
336	*	*	0.00	0.000	0.012	0.1314	0.0000	.0000E+00	.0000E+00
337	*	*	0.19	0.000	0.014	0.1314	0.0000	.0000E+00	.0000E+00
338	*	*	0.31	0.000	0.010	0.1314	0.0000	.0000E+00	.0000E+00
339	*	*	0.04	0.000	0.011	0.1314	0.0000	.0000E+00	.0000E+00
340	*	*	0.45	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
341	*	*	0.00	0.000	0.012	0.1314	0.0000	.0000E+00	.0000E+00
342	*	*	0.00	0.000	0.013	0.1314	0.0000	.0000E+00	.0000E+00
343	*	*	0.00	0.000	0.016	0.1314	0.0000	.0000E+00	.0000E+00
344	*	*	0.00	0.000	0.010	0.1314	0.0000	.0000E+00	.0000E+00
345	*	*	0.00	0.000	0.007	0.1314	0.0000	.0000E+00	.0000E+00
346	*	*	0.00	0.000	0.006	0.1314	0.0000	.0000E+00	.0000E+00
347	*	*	0.00	0.000	0.005	0.1314	0.0000	.0000E+00	.0000E+00
348	*	*	0.01	0.000	0.004	0.1314	0.0000	.0000E+00	.0000E+00
349	*	*	0.36	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
350	*	*	0.00	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
351	*	*	0.00	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
352	*	*	0.00	0.000	0.010	0.1314	0.0000	.0000E+00	.0000E+00
353	*	*	0.00	0.000	0.008	0.1314	0.0000	.0000E+00	.0000E+00
354	*	*	0.07	0.000	0.005	0.1314	0.0000	.0000E+00	.0000E+00
355	*	*	0.00	0.000	0.006	0.1314	0.0000	.0000E+00	.0000E+00
356	*	*	0.00	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
357	*	*	0.00	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
358	*	*	0.00	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
359	*	*	0.05	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
360	*	*	0.13	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
361	*	*	0.05	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
362	*	*	0.00	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
363	*	*	0.38	0.000	0.000	0.1314	0.0000	.0000E+00	.0000E+00
364	*	*	0.00	0.000	0.017	0.1314	0.0000	.0000E+00	.0000E+00
365	*	*	0.00	0.000	0.014	0.1314	0.0000	.0000E+00	.0000E+00

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	0.44	1.00	0.75	0.09	0.74	1.29
	2.86	5.96	2.50	2.03	1.69	2.04
RUNOFF	0.000	0.000	0.000	0.141	0.167	0.088
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.249	0.463	0.434	0.239	0.050	1.842
	2.813	2.531	1.394	0.915	0.723	0.198

PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000
0.0457					
LAYER 1	0.0000	0.5290	0.8543	0.3750	0.0000
0.0000					

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.39	77645.703	100.00
RUNOFF	0.396	1437.343	1.85
EVAPOTRANSPIRATION	11.850	43015.937	55.40
PERC./LEAKAGE THROUGH LAYER 1	1.803979	6548.442	8.43
CHANGE IN WATER STORAGE	7.340	26643.990	34.31
SOIL WATER AT START OF YEAR	19.200	69695.883	
SOIL WATER AT END OF YEAR	23.859	86608.805	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	2.681	9731.069	12.53
ANNUAL WATER BUDGET BALANCE	0.0000	-0.007	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.44	1.00	0.75	0.09	0.74	1.29
	2.86	5.96	2.50	2.03	1.69	2.04

STD. DEVIATIONS	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00

RUNOFF

TOTALS	0.000	0.000	0.000	0.141	0.167	0.088
	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	0.249	0.463	0.434	0.239	0.050	1.842
	2.813	2.531	1.394	0.915	0.723	0.198
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

PERCOLATION/LEAKAGE THROUGH LAYER 1

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0457
	0.0000	0.5290	0.8543	0.3750	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 1

	INCHES		CU. FEET	PERCENT
PRECIPITATION	21.39	(0.000)	77645.7	100.00
RUNOFF	0.396	(0.0000)	1437.34	1.851
EVAPOTRANSPIRATION	11.850	(0.0000)	43015.94	55.400
PERCOLATION/LEAKAGE THROUGH LAYER 1	1.80398	(0.00000)	6548.442	8.43375
CHANGE IN WATER STORAGE	7.340	(0.0000)	26643.99	34.315

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 1

	(INCHES)	(CU. FT.)
PRECIPITATION	1.80	6534.000
RUNOFF	0.136	494.9666
PERCOLATION/LEAKAGE THROUGH LAYER 1	0.397410	1442.59668
SNOW WATER	2.71	9844.6240

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.2519

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.0700

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FINAL WATER STORAGE AT END OF YEAR 1

LAYER	(INCHES)	(VOL/VOL)
1	23.8592	0.1988
SNOW WATER	2.681	

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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:\RUNS\RDM7\DATA4.D4
TEMPERATURE DATA FILE:      C:\RUNS\RDM7\DATA7.D7
SOLAR RADIATION DATA FILE:  C:\RUNS\RDM7\DATA13.D13
EVAPOTRANSPIRATION DATA:    C:\RUNS\RDM7\DATA11.D11
SOIL AND DESIGN DATA FILE:  C:\RUNS\RDM7\DATA10.D10
OUTPUT DATA FILE:           C:\RUNS\RDM7\RDMOUT.OUT


TIME:  14: 4     DATE:   6/19/2019



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      TITLE:  Construction Climate Change Model Year 2 (RDM7-Scenario 6I)

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     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                     =    600.00   INCHES
          POROSITY                      =      0.3000 VOL/VOL
          FIELD CAPACITY                =      0.2100 VOL/VOL
          WILTING POINT                 =      0.0700 VOL/VOL
          INITIAL SOIL WATER CONTENT    =      0.1988 VOL/VOL
 Layer 1 initial soil water content is equal to the final water storage at end
    of year 1 (Construction Climate Change Model Year 1, RDM6–Scenario 6I)
          EFFECTIVE SAT. HYD. COND.     =  0.699999975000E-03 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 # 1 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 0.% AND A SLOPE LENGTH OF 500. FEET.

SCS RUNOFF CURVE NUMBER	=	70.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	15.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	2.982	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	4.500	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.050	INCHES
INITIAL SNOW WATER	=	2.681	INCHES
INITIAL WATER IN LAYER MATERIALS	=	119.280	INCHES
TOTAL INITIAL WATER	=	121.961	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM BETHEL ALASKA

STATION LATITUDE	=	60.78 DEGREES
MAXIMUM LEAF AREA INDEX	=	2.50
START OF GROWING SEASON (JULIAN DATE)	=	184
END OF GROWING SEASON (JULIAN DATE)	=	225
EVAPORATIVE ZONE DEPTH	=	15.0 INCHES
AVERAGE ANNUAL WIND SPEED	=	12.90 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	78.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	83.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	80.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR Red Devil (rcp8.5 2090)Alaska

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
1.14	0.83	0.83	0.87	1.14	2.05
2.48	4.88	3.31	1.97	1.50	1.50

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR BETHEL ALASKA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
4.90	5.70	10.70	23.40	40.30	50.60
54.70	52.80	45.00	29.70	17.50	4.80

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR BETHEL ALASKA
AND STATION LATITUDE = 60.78 DEGREES

LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 1

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DAILY OUTPUT FOR YEAR 1

DAY	AIR	SOIL	RAIN IN.	RUNOFF IN.	ET IN.	E. ZONE WATER IN./IN.	HEAD #1 IN.	DRAIN #1 IN.	LEAK #1 IN.
1	*	*	0.00	0.000	0.014	0.1988	0.0000	.0000E+00	.0000E+00
2	*	*	0.00	0.000	0.013	0.1988	0.0000	.0000E+00	.0000E+00
3	*	*	0.00	0.000	0.013	0.1988	0.0000	.0000E+00	.0000E+00
4	*	*	0.00	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
5	*	*	0.00	0.000	0.013	0.1988	0.0000	.0000E+00	.0000E+00
6	*	*	0.00	0.000	0.019	0.1988	0.0000	.0000E+00	.0000E+00
7	*	*	0.00	0.000	0.015	0.1988	0.0000	.0000E+00	.0000E+00
8	*	*	0.00	0.000	0.015	0.1988	0.0000	.0000E+00	.0000E+00
9	*	*	0.00	0.000	0.016	0.1988	0.0000	.0000E+00	.0000E+00
10	*	*	0.00	0.000	0.012	0.1988	0.0000	.0000E+00	.0000E+00
11	*	*	0.00	0.000	0.014	0.1988	0.0000	.0000E+00	.0000E+00
12	*	*	0.00	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
13	*	*	0.00	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
14	*	*	0.06	0.000	0.010	0.1988	0.0000	.0000E+00	.0000E+00
15	*	*	0.01	0.000	0.009	0.1988	0.0000	.0000E+00	.0000E+00
16	*	*	0.00	0.000	0.010	0.1988	0.0000	.0000E+00	.0000E+00
17	*	*	0.00	0.000	0.012	0.1988	0.0000	.0000E+00	.0000E+00
18	*	*	0.00	0.000	0.014	0.1988	0.0000	.0000E+00	.0000E+00
19	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
20	*	*	0.01	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
21	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
22	*	*	0.00	0.000	0.022	0.1988	0.0000	.0000E+00	.0000E+00
23	*	*	0.11	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
24	*	*	0.07	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
25	*	*	0.17	0.000	0.020	0.1988	0.0000	.0000E+00	.0000E+00
26	*	*	0.00	0.000	0.019	0.1988	0.0000	.0000E+00	.0000E+00
27	*	*	0.00	0.000	0.020	0.1988	0.0000	.0000E+00	.0000E+00
28	*	*	0.00	0.000	0.018	0.1988	0.0000	.0000E+00	.0000E+00
29	*	*	0.00	0.000	0.017	0.1988	0.0000	.0000E+00	.0000E+00
30	*	*	0.01	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00

31	*	*	0.00	0.000	0.018	0.1988	0.0000	.0000E+00	.0000E+00
32	*	*	0.02	0.000	0.013	0.1988	0.0000	.0000E+00	.0000E+00
33	*	*	0.00	0.000	0.012	0.1988	0.0000	.0000E+00	.0000E+00
34	*	*	0.00	0.000	0.015	0.1988	0.0000	.0000E+00	.0000E+00
35	*	*	0.05	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
36	*	*	0.00	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
37	*	*	0.00	0.000	0.013	0.1988	0.0000	.0000E+00	.0000E+00
38	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
39	*	*	0.00	0.000	0.019	0.1988	0.0000	.0000E+00	.0000E+00
40	*	*	0.06	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
41	*	*	0.00	0.000	0.022	0.1988	0.0000	.0000E+00	.0000E+00
42	*	*	0.00	0.000	0.021	0.1988	0.0000	.0000E+00	.0000E+00
43	*	*	0.00	0.000	0.021	0.1988	0.0000	.0000E+00	.0000E+00
44	*	*	0.00	0.000	0.024	0.1988	0.0000	.0000E+00	.0000E+00
45	*	*	0.03	0.000	0.021	0.1988	0.0000	.0000E+00	.0000E+00
46	*	*	0.12	0.000	0.020	0.1988	0.0000	.0000E+00	.0000E+00
47	*	*	0.06	0.000	0.019	0.1988	0.0000	.0000E+00	.0000E+00
48	*	*	0.08	0.000	0.019	0.1988	0.0000	.0000E+00	.0000E+00
49	*	*	0.13	0.000	0.019	0.1988	0.0000	.0000E+00	.0000E+00
50	*	*	0.00	0.000	0.017	0.1988	0.0000	.0000E+00	.0000E+00
51	*	*	0.00	0.000	0.021	0.1988	0.0000	.0000E+00	.0000E+00
52	*	*	0.00	0.000	0.018	0.1988	0.0000	.0000E+00	.0000E+00
53	*	*	0.05	0.000	0.014	0.1988	0.0000	.0000E+00	.0000E+00
54	*	*	0.03	0.000	0.013	0.1988	0.0000	.0000E+00	.0000E+00
55	*	*	0.34	0.000	0.015	0.1988	0.0000	.0000E+00	.0000E+00
56	*	*	0.01	0.000	0.013	0.1988	0.0000	.0000E+00	.0000E+00
57	*	*	0.02	0.000	0.014	0.1988	0.0000	.0000E+00	.0000E+00
58	*	*	0.00	0.000	0.018	0.1988	0.0000	.0000E+00	.0000E+00
59	*	*	0.00	0.000	0.019	0.1988	0.0000	.0000E+00	.0000E+00
60	*	*	0.00	0.000	0.015	0.1988	0.0000	.0000E+00	.0000E+00
61	*	*	0.00	0.000	0.009	0.1988	0.0000	.0000E+00	.0000E+00
62	*	*	0.00	0.000	0.008	0.1988	0.0000	.0000E+00	.0000E+00
63	*	*	0.19	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
64	*	*	0.00	0.000	0.016	0.1988	0.0000	.0000E+00	.0000E+00
65	*	*	0.01	0.000	0.012	0.1988	0.0000	.0000E+00	.0000E+00
66	*	*	0.00	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
67	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
68	*	*	0.00	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
69	*	*	0.00	0.000	0.013	0.1988	0.0000	.0000E+00	.0000E+00
70	*	*	0.00	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
71	*	*	0.00	0.000	0.010	0.1988	0.0000	.0000E+00	.0000E+00
72	*	*	0.02	0.000	0.008	0.1988	0.0000	.0000E+00	.0000E+00
73	*	*	0.00	0.000	0.011	0.1988	0.0000	.0000E+00	.0000E+00
74	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
75	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
76	*	*	0.00	0.000	0.016	0.1988	0.0000	.0000E+00	.0000E+00
77	*	*	0.00	0.000	0.012	0.1988	0.0000	.0000E+00	.0000E+00
78	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
79	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
80	*	*	0.00	0.000	0.020	0.1988	0.0000	.0000E+00	.0000E+00
81	*	*	0.00	0.000	0.019	0.1988	0.0000	.0000E+00	.0000E+00
82	*	*	0.00	0.000	0.017	0.1988	0.0000	.0000E+00	.0000E+00
83	*	*	0.00	0.000	0.018	0.1988	0.0000	.0000E+00	.0000E+00
84	*	*	0.00	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
85	*	*	0.53	0.000	0.000	0.1988	0.0000	.0000E+00	.0000E+00
86	*	*	0.00	0.000	0.030	0.1988	0.0000	.0000E+00	.0000E+00
87	*	*	0.00	0.000	0.023	0.1988	0.0000	.0000E+00	.0000E+00
88	*	*	0.00	0.000	0.025	0.1988	0.0000	.0000E+00	.0000E+00
89	*	*	0.00	0.000	0.030	0.1988	0.0000	.0000E+00	.0000E+00
90	*	*	0.00	0.000	0.031	0.1988	0.0000	.0000E+00	.0000E+00

91	*	*	0.00	0.000	0.025	0.1988	0.0000	.0000E+00	.0000E+00
92		*	0.00	0.005	0.002	0.2140	0.0000	.0000E+00	.0000E+00
93		*	0.08	0.000	0.000	0.2217	0.0000	.0000E+00	.0000E+00
94	*	*	0.01	0.000	0.015	0.2226	0.0000	.0000E+00	.0000E+00
95	*	*	0.00	0.000	0.017	0.2226	0.0000	.0000E+00	.0000E+00
96	*	*	0.00	0.000	0.011	0.2226	0.0000	.0000E+00	.0000E+00
97	*	*	0.00	0.000	0.012	0.2226	0.0000	.0000E+00	.0000E+00
98	*	*	0.00	0.000	0.015	0.2226	0.0000	.0000E+00	.0000E+00
99	*	*	0.00	0.000	0.010	0.2226	0.0000	.0000E+00	.0000E+00
100	*	*	0.00	0.000	0.000	0.2226	0.0000	.0000E+00	.0000E+00
101	*	*	0.00	0.000	0.017	0.2226	0.0000	.0000E+00	.0000E+00
102	*	*	0.00	0.000	0.016	0.2226	0.0000	.0000E+00	.0000E+00
103	*	*	0.00	0.000	0.021	0.2226	0.0000	.0000E+00	.0000E+00
104	*	*	0.00	0.000	0.000	0.2226	0.0000	.0000E+00	.0000E+00
105	*	*	0.00	0.000	0.023	0.2226	0.0000	.0000E+00	.0000E+00
106	*	*	0.00	0.000	0.000	0.2226	0.0000	.0000E+00	.0000E+00
107		*	0.00	0.338	0.000	0.2436	0.0000	.0000E+00	.0000E+00
108		*	0.00	0.866	0.000	0.2581	0.0000	.0000E+00	.0000E+00
109		*	0.00	1.358	0.000	0.2669	0.0000	.0000E+00	.0000E+00
110		*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
111		*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
112	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
113	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
114	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
115	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
116	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
117	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
118	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
119	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
120	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
121	*	*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
122		*	0.00	0.000	0.000	0.2669	0.0000	.0000E+00	.0000E+00
123		*	0.08	0.032	0.001	0.2701	0.0000	.0000E+00	.0000E+00
124		*	0.00	0.000	0.000	0.2701	0.0000	.0000E+00	.0000E+00
125		*	0.00	0.000	0.000	0.2701	0.0000	.0000E+00	.0000E+00
126		*	0.00	0.000	0.000	0.2701	0.0000	.0000E+00	.0000E+00
127		*	0.00	0.000	0.000	0.2701	0.0000	.0000E+00	.0000E+00
128		*	0.00	0.000	0.000	0.2701	0.0000	.0000E+00	.0000E+00
129		*	0.00	0.000	0.000	0.2701	0.0000	.0000E+00	.0000E+00
130		*	0.01	0.000	0.001	0.2707	0.0000	.0000E+00	.0000E+00
131		*	0.00	0.000	0.000	0.2707	0.0000	.0000E+00	.0000E+00
132		*	0.00	0.000	0.000	0.2707	0.0000	.0000E+00	.0000E+00
133		*	0.00	0.000	0.000	0.2707	0.0000	.0000E+00	.0000E+00
134		*	0.00	0.000	0.000	0.2707	0.0000	.0000E+00	.0000E+00
135		*	0.00	0.000	0.000	0.2707	0.0000	.0000E+00	.0000E+00
136		*	0.00	0.000	0.000	0.2707	0.0000	.0000E+00	.0000E+00
137		*	0.00	0.000	0.000	0.2707	0.0000	.0000E+00	.0000E+00
138		*	0.15	0.096	0.001	0.2742	0.0000	.0000E+00	.0000E+00
139		*	0.04	0.011	0.001	0.2761	0.0000	.0000E+00	.0000E+00
140		*	0.00	0.000	0.000	0.2761	0.0000	.0000E+00	.0000E+00
141	*	*	0.00	0.000	0.000	0.2761	0.0000	.0000E+00	.0000E+00
142		*	0.17	0.125	0.001	0.2791	0.0000	.0000E+00	.0000E+00
143		*	0.02	0.003	0.001	0.2801	0.0000	.0000E+00	.0000E+00
144	*	*	0.04	0.000	0.040	0.2801	0.0000	.0000E+00	.0000E+00
145		*	0.23	0.192	0.001	0.2826	0.0000	.0000E+00	.0000E+00
146	*	*	0.00	0.000	0.000	0.2826	0.0000	.0000E+00	.0000E+00
147		*	0.00	0.000	0.000	0.2826	0.0000	.0000E+00	.0000E+00
148		*	0.00	0.000	0.000	0.2826	0.0000	.0000E+00	.0000E+00
149		*	0.00	0.000	0.000	0.2826	0.0000	.0000E+00	.0000E+00
150		*	0.00	0.000	0.000	0.2826	0.0000	.0000E+00	.0000E+00

151	*	0.00	0.000	0.000	0.2826	0.0000	.0000E+00	.0000E+00
152	*	0.00	0.000	0.000	0.2826	0.0000	.0000E+00	.0000E+00
153	*	0.19	0.159	0.001	0.2846	0.0000	.0000E+00	.0000E+00
154	*	0.00	0.000	0.000	0.2846	0.0000	.0000E+00	.0000E+00
155	*	0.00	0.000	0.000	0.2846	0.0000	.0000E+00	.0000E+00
156	*	0.00	0.000	0.000	0.2846	0.0000	.0000E+00	.0000E+00
157	*	0.00	0.000	0.000	0.2846	0.0000	.0000E+00	.0000E+00
158		0.00	0.000	0.110	0.1371	0.0000	.0000E+00	.3344
159		0.00	0.000	0.144	0.1275	0.0000	.0000E+00	.0000E+00
160		0.00	0.000	0.132	0.1187	0.0000	.0000E+00	.0000E+00
161		0.00	0.000	0.117	0.1110	0.0000	.0000E+00	.0000E+00
162		0.48	0.000	0.125	0.1347	0.0000	.0000E+00	.0000E+00
163		0.17	0.000	0.147	0.1362	0.0000	.0000E+00	.0000E+00
164		0.00	0.000	0.135	0.1222	0.0000	.0000E+00	.0000E+00
165		0.00	0.000	0.120	0.1142	0.0000	.0000E+00	.0000E+00
166		0.00	0.000	0.117	0.1064	0.0000	.0000E+00	.0000E+00
167		0.00	0.000	0.124	0.0981	0.0000	.0000E+00	.0000E+00
168		0.00	0.000	0.149	0.0882	0.0000	.0000E+00	.0000E+00
169		0.00	0.000	0.090	0.0823	0.0000	.0000E+00	.0000E+00
170		0.00	0.000	0.103	0.0754	0.0000	.0000E+00	.0000E+00
171		0.00	0.000	0.081	0.0700	0.0000	.0000E+00	.0000E+00
172		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
173		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
174		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
175		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
176		0.00	0.000	0.000	0.0700	0.0000	.0000E+00	.0000E+00
177		0.04	0.000	0.005	0.0723	0.0000	.0000E+00	.0000E+00
178		0.00	0.000	0.008	0.0718	0.0000	.0000E+00	.0000E+00
179		0.30	0.000	0.017	0.0906	0.0000	.0000E+00	.0000E+00
180		0.11	0.000	0.026	0.0963	0.0000	.0000E+00	.0000E+00
181		0.00	0.000	0.023	0.0947	0.0000	.0000E+00	.0000E+00
182		0.00	0.000	0.027	0.0930	0.0000	.0000E+00	.0000E+00
183		0.30	0.000	0.026	0.1112	0.0000	.0000E+00	.0000E+00
184		0.10	0.000	0.078	0.1126	0.0000	.0000E+00	.0000E+00
185		0.02	0.000	0.116	0.1062	0.0000	.0000E+00	.0000E+00
186		0.32	0.000	0.107	0.1205	0.0000	.0000E+00	.0000E+00
187		0.00	0.000	0.145	0.1108	0.0000	.0000E+00	.0000E+00
188		0.00	0.000	0.131	0.1021	0.0000	.0000E+00	.0000E+00
189		0.00	0.000	0.121	0.0940	0.0000	.0000E+00	.0000E+00
190		0.00	0.000	0.081	0.0886	0.0000	.0000E+00	.0000E+00
191		0.06	0.000	0.063	0.0884	0.0000	.0000E+00	.0000E+00
192		0.04	0.000	0.054	0.0874	0.0000	.0000E+00	.0000E+00
193		0.21	0.000	0.048	0.0982	0.0000	.0000E+00	.0000E+00
194		0.14	0.000	0.044	0.1046	0.0000	.0000E+00	.0000E+00
195		0.16	0.000	0.041	0.1126	0.0000	.0000E+00	.0000E+00
196		0.00	0.000	0.128	0.1040	0.0000	.0000E+00	.0000E+00
197		0.16	0.000	0.040	0.1120	0.0000	.0000E+00	.0000E+00
198		0.35	0.000	0.127	0.1269	0.0000	.0000E+00	.0000E+00
199		0.09	0.000	0.113	0.1254	0.0000	.0000E+00	.0000E+00
200		0.25	0.000	0.100	0.1354	0.0000	.0000E+00	.0000E+00
201		0.14	0.000	0.117	0.1369	0.0000	.0000E+00	.0000E+00
202		0.06	0.000	0.117	0.1331	0.0000	.0000E+00	.0000E+00
203		0.01	0.000	0.147	0.1240	0.0000	.0000E+00	.0000E+00
204		0.11	0.000	0.133	0.1225	0.0000	.0000E+00	.0000E+00
205		0.00	0.000	0.129	0.1139	0.0000	.0000E+00	.0000E+00
206		0.01	0.000	0.141	0.1052	0.0000	.0000E+00	.0000E+00
207		0.05	0.000	0.130	0.0999	0.0000	.0000E+00	.0000E+00
208		0.00	0.000	0.086	0.0941	0.0000	.0000E+00	.0000E+00
209		0.09	0.000	0.069	0.0955	0.0000	.0000E+00	.0000E+00
210		0.00	0.000	0.057	0.0917	0.0000	.0000E+00	.0000E+00

211		0.07	0.000	0.052	0.0929	0.0000	.0000E+00	.0000E+00
212		0.12	0.000	0.047	0.0977	0.0000	.0000E+00	.0000E+00
213		0.19	0.000	0.044	0.1075	0.0000	.0000E+00	.0000E+00
214		0.08	0.000	0.040	0.1102	0.0000	.0000E+00	.0000E+00
215		0.19	0.000	0.112	0.1154	0.0000	.0000E+00	.0000E+00
216		0.04	0.000	0.104	0.1111	0.0000	.0000E+00	.0000E+00
217		0.49	0.000	0.097	0.1372	0.0000	.0000E+00	.0000E+00
218		0.00	0.000	0.090	0.1312	0.0000	.0000E+00	.0000E+00
219		0.15	0.000	0.083	0.1357	0.0000	.0000E+00	.0000E+00
220		0.00	0.000	0.085	0.1300	0.0000	.0000E+00	.0000E+00
221		0.01	0.000	0.072	0.1259	0.0000	.0000E+00	.0000E+00
222		0.21	0.000	0.102	0.1331	0.0000	.0000E+00	.0000E+00
223		0.00	0.000	0.068	0.1285	0.0000	.0000E+00	.0000E+00
224		0.07	0.000	0.076	0.1281	0.0000	.0000E+00	.0000E+00
225		0.00	0.000	0.062	0.1237	0.0000	.0000E+00	.0000E+00
226		0.04	0.000	0.059	0.1223	0.0000	.0000E+00	.0000E+00
227		1.80	0.000	0.086	0.1802	0.0000	.0000E+00	.0000E+00
228		0.20	0.000	0.071	0.1594	0.0000	.0000E+00	.0000E+00
229		0.19	0.000	0.100	0.1571	0.0000	.0000E+00	.0000E+00
230		0.00	0.000	0.119	0.1481	0.0000	.0000E+00	.0000E+00
231		0.00	0.000	0.083	0.1380	0.0000	.0000E+00	.0000E+00
232		0.00	0.000	0.073	0.1291	0.0000	.0000E+00	.0000E+00
233		0.00	0.000	0.100	0.1224	0.0000	.0000E+00	.0000E+00
234		0.00	0.000	0.076	0.1173	0.0000	.0000E+00	.0000E+00
235		0.50	0.000	0.098	0.1441	0.0000	.0000E+00	.0000E+00
236		0.06	0.000	0.096	0.1417	0.0000	.0000E+00	.0000E+00
237		0.19	0.000	0.081	0.1482	0.0000	.0000E+00	.0000E+00
238		0.33	0.000	0.098	0.1610	0.0000	.0000E+00	.0000E+00
239		0.85	0.000	0.081	0.1593	0.0000	.0000E+00	.0000E+00
240		0.24	0.000	0.058	0.1642	0.0000	.0000E+00	.0000E+00
241		0.00	0.000	0.080	0.1529	0.0000	.0000E+00	.0000E+00
242		0.00	0.000	0.073	0.1410	0.0000	.0000E+00	.0000E+00
243		0.13	0.000	0.062	0.1455	0.0000	.0000E+00	.0000E+00
244		0.14	0.000	0.063	0.1506	0.0000	.0000E+00	.0000E+00
245		0.04	0.000	0.071	0.1464	0.0000	.0000E+00	.0000E+00
246		0.00	0.000	0.069	0.1410	0.0000	.0000E+00	.0000E+00
247		0.00	0.000	0.082	0.1356	0.0000	.0000E+00	.0000E+00
248		0.03	0.000	0.054	0.1333	0.0000	.0000E+00	.0000E+00
249		0.20	0.000	0.050	0.1432	0.0000	.0000E+00	.0000E+00
250		0.00	0.000	0.046	0.1402	0.0000	.0000E+00	.0000E+00
251		0.00	0.000	0.047	0.1354	0.0000	.0000E+00	.0000E+00
252		0.00	0.000	0.049	0.1300	0.0000	.0000E+00	.0000E+00
253		0.00	0.000	0.053	0.1254	0.0000	.0000E+00	.0000E+00
254		0.00	0.000	0.052	0.1213	0.0000	.0000E+00	.0000E+00
255		0.00	0.000	0.054	0.1176	0.0000	.0000E+00	.0000E+00
256	*	0.73	0.000	0.019	0.1189	0.0000	.0000E+00	.0000E+00
257	*	0.06	0.000	0.022	0.1203	0.0000	.0000E+00	.0000E+00
258		0.13	0.000	0.000	0.1470	0.0000	.0000E+00	.0000E+00
259		0.52	0.000	0.000	0.1703	0.0000	.0000E+00	.0000E+00
260		0.24	0.000	0.000	0.1675	0.0000	.0000E+00	.0000E+00
261		0.00	0.000	0.050	0.1571	0.0000	.0000E+00	.0000E+00
262		0.00	0.000	0.059	0.1464	0.0000	.0000E+00	.0000E+00
263		0.00	0.000	0.052	0.1429	0.0000	.0000E+00	.0000E+00
264		0.17	0.000	0.052	0.1508	0.0000	.0000E+00	.0000E+00
265		0.24	0.000	0.056	0.1623	0.0000	.0000E+00	.0000E+00
266		0.00	0.000	0.049	0.1540	0.0000	.0000E+00	.0000E+00
267		0.00	0.000	0.053	0.1427	0.0000	.0000E+00	.0000E+00
268		0.00	0.000	0.053	0.1350	0.0000	.0000E+00	.0000E+00
269		0.00	0.000	0.046	0.1290	0.0000	.0000E+00	.0000E+00
270		0.00	0.000	0.054	0.1236	0.0000	.0000E+00	.0000E+00

271			0.00	0.000	0.045	0.1205	0.0000	.0000E+00	.0000E+00
272			0.00	0.000	0.053	0.1170	0.0000	.0000E+00	.0000E+00
273			0.00	0.000	0.044	0.1140	0.0000	.0000E+00	.0000E+00
274			0.19	0.000	0.035	0.1243	0.0000	.0000E+00	.0000E+00
275			0.07	0.000	0.037	0.1266	0.0000	.0000E+00	.0000E+00
276			0.02	0.000	0.035	0.1256	0.0000	.0000E+00	.0000E+00
277			0.00	0.000	0.047	0.1224	0.0000	.0000E+00	.0000E+00
278			0.17	0.000	0.035	0.1315	0.0000	.0000E+00	.0000E+00
279			0.10	0.000	0.044	0.1352	0.0000	.0000E+00	.0000E+00
280			0.11	0.000	0.048	0.1393	0.0000	.0000E+00	.0000E+00
281			0.00	0.000	0.038	0.1368	0.0000	.0000E+00	.0000E+00
282			0.20	0.000	0.045	0.1468	0.0000	.0000E+00	.0000E+00
283			0.00	0.000	0.044	0.1431	0.0000	.0000E+00	.0000E+00
284			0.35	0.000	0.044	0.1629	0.0000	.0000E+00	.0000E+00
285			0.06	0.000	0.044	0.1491	0.0000	.0000E+00	.5928
286			0.15	0.000	0.033	0.1541	0.0000	.0000E+00	.0000E+00
287	*		0.00	0.000	0.028	0.1506	0.0000	.0000E+00	.0000E+00
288			0.00	0.000	0.033	0.1454	0.0000	.0000E+00	.0000E+00
289			0.00	0.000	0.033	0.1397	0.0000	.0000E+00	.0000E+00
290	*		0.00	0.000	0.024	0.1347	0.0000	.0000E+00	.0000E+00
291	*		0.00	0.000	0.029	0.1302	0.0000	.0000E+00	.0000E+00
292	*		0.00	0.000	0.026	0.1263	0.0000	.0000E+00	.0000E+00
293	*		0.04	0.000	0.020	0.1277	0.0000	.0000E+00	.0000E+00
294	*		0.08	0.000	0.000	0.1290	0.0000	.0000E+00	.0000E+00
295	*		0.14	0.000	0.018	0.1303	0.0000	.0000E+00	.0000E+00
296	*		0.02	0.000	0.017	0.1316	0.0000	.0000E+00	.0000E+00
297	*		0.04	0.000	0.017	0.1329	0.0000	.0000E+00	.0000E+00
298	*		0.12	0.000	0.020	0.1338	0.0000	.0000E+00	.0000E+00
299			0.04	0.000	0.000	0.1440	0.0000	.0000E+00	.0000E+00
300			0.13	0.000	0.000	0.1599	0.0000	.0000E+00	.0000E+00
301	*		0.00	0.000	0.030	0.1507	0.0000	.0000E+00	.0000E+00
302	*		0.00	0.000	0.030	0.1442	0.0000	.0000E+00	.0000E+00
303	*		0.00	0.000	0.028	0.1404	0.0000	.0000E+00	.0000E+00
304			0.00	0.000	0.033	0.1382	0.0000	.0000E+00	.0000E+00
305			0.00	0.000	0.036	0.1358	0.0000	.0000E+00	.0000E+00
306	*		0.00	0.000	0.028	0.1339	0.0000	.0000E+00	.0000E+00
307	*		0.00	0.000	0.027	0.1321	0.0000	.0000E+00	.0000E+00
308			0.23	0.000	0.033	0.1452	0.0000	.0000E+00	.0000E+00
309	*		0.00	0.000	0.029	0.1427	0.0000	.0000E+00	.0000E+00
310			0.00	0.000	0.035	0.1389	0.0000	.0000E+00	.0000E+00
311			0.00	0.000	0.032	0.1356	0.0000	.0000E+00	.0000E+00
312			0.00	0.000	0.036	0.1319	0.0000	.0000E+00	.0000E+00
313			0.00	0.000	0.038	0.1275	0.0000	.0000E+00	.0000E+00
314			0.00	0.000	0.038	0.1232	0.0000	.0000E+00	.0000E+00
315			0.26	0.000	0.042	0.1377	0.0000	.0000E+00	.0000E+00
316			0.00	0.000	0.036	0.1353	0.0000	.0000E+00	.0000E+00
317			0.00	0.000	0.033	0.1316	0.0000	.0000E+00	.0000E+00
318	*		0.00	0.000	0.028	0.1287	0.0000	.0000E+00	.0000E+00
319			0.00	0.000	0.036	0.1251	0.0000	.0000E+00	.0000E+00
320			0.00	0.000	0.035	0.1218	0.0000	.0000E+00	.0000E+00
321	*		0.31	0.000	0.025	0.1226	0.0000	.0000E+00	.0000E+00
322	*		0.17	0.000	0.017	0.1232	0.0000	.0000E+00	.0000E+00
323	*		0.00	0.000	0.022	0.1240	0.0000	.0000E+00	.0000E+00
324	*		0.24	0.000	0.023	0.1252	0.0000	.0000E+00	.0000E+00
325	*		0.00	0.000	0.015	0.1265	0.0000	.0000E+00	.0000E+00
326	*		0.00	0.000	0.014	0.1275	0.0000	.0000E+00	.0000E+00
327	*		0.00	0.000	0.012	0.1288	0.0000	.0000E+00	.0000E+00
328	*		0.00	0.000	0.013	0.1295	0.0000	.0000E+00	.0000E+00
329	*		0.19	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
330	*	*	0.00	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00

331	*	*	0.13	0.000	0.014	0.1302	0.0000	.0000E+00	.0000E+00
332	*	*	0.15	0.000	0.015	0.1302	0.0000	.0000E+00	.0000E+00
333	*	*	0.01	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
334	*	*	0.00	0.000	0.015	0.1302	0.0000	.0000E+00	.0000E+00
335	*	*	0.00	0.000	0.016	0.1302	0.0000	.0000E+00	.0000E+00
336	*	*	0.00	0.000	0.012	0.1302	0.0000	.0000E+00	.0000E+00
337	*	*	0.19	0.000	0.014	0.1302	0.0000	.0000E+00	.0000E+00
338	*	*	0.31	0.000	0.010	0.1302	0.0000	.0000E+00	.0000E+00
339	*	*	0.04	0.000	0.011	0.1302	0.0000	.0000E+00	.0000E+00
340	*	*	0.45	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
341	*	*	0.00	0.000	0.012	0.1302	0.0000	.0000E+00	.0000E+00
342	*	*	0.00	0.000	0.013	0.1302	0.0000	.0000E+00	.0000E+00
343	*	*	0.00	0.000	0.016	0.1302	0.0000	.0000E+00	.0000E+00
344	*	*	0.00	0.000	0.010	0.1302	0.0000	.0000E+00	.0000E+00
345	*	*	0.00	0.000	0.007	0.1302	0.0000	.0000E+00	.0000E+00
346	*	*	0.00	0.000	0.006	0.1302	0.0000	.0000E+00	.0000E+00
347	*	*	0.00	0.000	0.005	0.1302	0.0000	.0000E+00	.0000E+00
348	*	*	0.01	0.000	0.004	0.1302	0.0000	.0000E+00	.0000E+00
349	*	*	0.36	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
350	*	*	0.00	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
351	*	*	0.00	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
352	*	*	0.00	0.000	0.010	0.1302	0.0000	.0000E+00	.0000E+00
353	*	*	0.00	0.000	0.008	0.1302	0.0000	.0000E+00	.0000E+00
354	*	*	0.07	0.000	0.005	0.1302	0.0000	.0000E+00	.0000E+00
355	*	*	0.00	0.000	0.006	0.1302	0.0000	.0000E+00	.0000E+00
356	*	*	0.00	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
357	*	*	0.00	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
358	*	*	0.00	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
359	*	*	0.05	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
360	*	*	0.13	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
361	*	*	0.05	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
362	*	*	0.00	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
363	*	*	0.38	0.000	0.000	0.1302	0.0000	.0000E+00	.0000E+00
364	*	*	0.00	0.000	0.017	0.1302	0.0000	.0000E+00	.0000E+00
365	*	*	0.00	0.000	0.014	0.1302	0.0000	.0000E+00	.0000E+00

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	0.44	1.00	0.75	0.09	0.74	1.29
	2.86	5.96	2.50	2.03	1.69	2.04
RUNOFF	0.000	0.000	0.000	2.567	0.458	0.159
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.368	0.445	0.376	0.183	0.048	1.771
	2.814	2.531	1.397	0.917	0.725	0.198

PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000
0.3344					
LAYER 1	0.0000	0.0000	0.0000	0.5928	0.0000
0.0000					

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.39	77645.703	100.00
RUNOFF	3.184	11557.426	14.88
EVAPOTRANSPIRATION	11.772	42734.004	55.04
PERC./LEAKAGE THROUGH LAYER 1	0.927166	3365.614	4.33
CHANGE IN WATER STORAGE	5.507	19988.660	25.74
SOIL WATER AT START OF YEAR	119.280	432986.250	
SOIL WATER AT END OF YEAR	124.787	452975.875	
SNOW WATER AT START OF YEAR	2.681	9732.030	12.53
SNOW WATER AT END OF YEAR	2.681	9731.069	12.53
ANNUAL WATER BUDGET BALANCE	0.0000	0.003	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	0.44	1.00	0.75	0.09	0.74	1.29
	2.86	5.96	2.50	2.03	1.69	2.04

STD. DEVIATIONS	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00

RUNOFF

TOTALS	0.000	0.000	0.000	2.567	0.458	0.159
	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	0.368	0.445	0.376	0.183	0.048	1.771
	2.814	2.531	1.397	0.917	0.725	0.198
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

PERCOLATION/LEAKAGE THROUGH LAYER 1

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.3344
	0.0000	0.0000	0.0000	0.5928	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 1

	INCHES		CU. FEET	PERCENT
PRECIPITATION	21.39	(0.000)	77645.7	100.00
RUNOFF	3.184	(0.0000)	11557.43	14.885
EVAPOTRANSPIRATION	11.772	(0.0000)	42734.00	55.037
PERCOLATION/LEAKAGE THROUGH LAYER 1	0.92717	(0.00000)	3365.614	4.33458
CHANGE IN WATER STORAGE	5.507	(0.0000)	19988.66	25.743

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 1

	(INCHES)	(CU. FT.)
PRECIPITATION	1.80	6534.000
RUNOFF	1.358	4928.8013
PERCOLATION/LEAKAGE THROUGH LAYER 1	0.592778	2151.78564
SNOW WATER	3.82	13872.2920

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.2846
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.0700

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FINAL WATER STORAGE AT END OF YEAR 1

LAYER	(INCHES)	(VOL/VOL)
1	124.7867	0.2080

SNOW WATER 2.681

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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:\RUNS\RDM5\DATA4.D4
 TEMPERATURE DATA FILE:      C:\RUNS\RDM5\DATA7.D7
 SOLAR RADIATION DATA FILE:  C:\RUNS\RDM5\DATA13.D13
 EVAPOTRANSPIRATION DATA:    C:\RUNS\RDM5\DATA11.D11
 SOIL AND DESIGN DATA FILE:  C:\RUNS\RDM5\DATA10.D10
 OUTPUT DATA FILE:           C:\RUNS\RDM5\RDMOUT.OUT


 TIME:  14:12     DATE:   6/19/2019


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

 TITLE:  Post Construction Climate Change Model Years 3-80 (RDM5-Scenario 8I)

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


      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                     =      0.4500 VOL/VOL
           FIELD CAPACITY               =      0.2400 VOL/VOL
           WILTING POINT                =      0.1200 VOL/VOL
           INITIAL SOIL WATER CONTENT   =      0.2000 VOL/VOL
           EFFECTIVE SAT. HYD. COND.    =  0.499999987000E-04 CM/SEC
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LAYER 2

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	0.04 INCHES
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.	=	0.999999982000E-14 CM/SEC
FML PINHOLE DENSITY	=	0.00 HOLES/ACRE
FML INSTALLATION DEFECTS	=	10.00 HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD

LAYER 3

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	36.00 INCHES
POROSITY	=	0.4500 VOL/VOL
FIELD CAPACITY	=	0.2400 VOL/VOL
WILTING POINT	=	0.1200 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2000 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.499999987000E-04 CM/SEC

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	600.00 INCHES
POROSITY	=	0.3000 VOL/VOL
FIELD CAPACITY	=	0.2100 VOL/VOL
WILTING POINT	=	0.0700 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2080 VOL/VOL

Layer 4 initial soil water content is equal to the final water storage at end of year 2 (Construction Climate Change Model Year 2, RDM7–Scenario 6I)

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 # 9 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 0.% AND A SLOPE LENGTH OF 500. FEET.

SCS RUNOFF CURVE NUMBER = 80.40

FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	15.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	3.000	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	6.750	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.800	INCHES
INITIAL SNOW WATER	=	2.681	INCHES
INITIAL WATER IN LAYER MATERIALS	=	135.600	INCHES
TOTAL INITIAL WATER	=	138.281	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
BETHEL ALASKA

STATION LATITUDE	=	60.78 DEGREES
MAXIMUM LEAF AREA INDEX	=	2.50
START OF GROWING SEASON (JULIAN DATE)	=	184
END OF GROWING SEASON (JULIAN DATE)	=	225
EVAPORATIVE ZONE DEPTH	=	15.0 INCHES
AVERAGE ANNUAL WIND SPEED	=	12.90 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	78.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	83.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	80.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR Red Devil (rcp8.5 2090)Alaska

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
1.14	0.83	0.83	0.87	1.14	2.05
2.48	4.88	3.31	1.97	1.50	1.50

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR BETHEL ALASKA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
4.90	5.70	10.70	23.40	40.30	50.60
54.70	52.80	45.00	29.70	17.50	4.80

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR BETHEL ALASKA
AND STATION LATITUDE = 60.78 DEGREES

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.39	77645.703	100.00
RUNOFF	4.085	14828.516	19.10
EVAPOTRANSPIRATION	11.846	43000.910	55.38
PERC./LEAKAGE THROUGH LAYER 2	1.466384	5322.974	6.86
AVG. HEAD ON TOP OF LAYER 2	4.4374		
PERC./LEAKAGE THROUGH LAYER 4	0.395156	1434.417	1.85
CHANGE IN WATER STORAGE	5.064	18381.842	23.67
SOIL WATER AT START OF YEAR	136.200	494405.719	
SOIL WATER AT END OF YEAR	141.264	512788.500	
SNOW WATER AT START OF YEAR	2.681	9732.030	12.53
SNOW WATER AT END OF YEAR	2.681	9731.069	12.53
ANNUAL WATER BUDGET BALANCE	0.0000	0.022	0.00

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ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.32	88281.625	100.00
RUNOFF	11.770	42725.539	48.40
EVAPOTRANSPIRATION	10.264	37256.996	42.20
PERC./LEAKAGE THROUGH LAYER 2	2.273080	8251.281	9.35
AVG. HEAD ON TOP OF LAYER 2	6.5249		

PERC./LEAKAGE THROUGH LAYER 4	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	2.286	8299.084	9.40
SOIL WATER AT START OF YEAR	141.264	512788.500	
SOIL WATER AT END OF YEAR	143.726	521723.875	
SNOW WATER AT START OF YEAR	2.681	9731.069	11.02
SNOW WATER AT END OF YEAR	2.505	9094.790	10.30
ANNUAL WATER BUDGET BALANCE	0.0000	0.007	0.00

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.33	88317.914	100.00
RUNOFF	11.404	41397.227	46.87
EVAPOTRANSPIRATION	11.716	42529.336	48.15
PERC./LEAKAGE THROUGH LAYER 2	2.402023	8719.342	9.87
AVG. HEAD ON TOP OF LAYER 2	6.9894		
PERC./LEAKAGE THROUGH LAYER 4	1.831683	6649.008	7.53
CHANGE IN WATER STORAGE	-0.622	-2257.660	-2.56
SOIL WATER AT START OF YEAR	143.726	521723.875	
SOIL WATER AT END OF YEAR	144.044	522878.250	
SNOW WATER AT START OF YEAR	2.505	9094.790	10.30
SNOW WATER AT END OF YEAR	1.565	5682.759	6.43
ANNUAL WATER BUDGET BALANCE	0.0000	0.004	0.00

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ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.27	77210.109	100.00
RUNOFF	7.302	26506.898	34.33
EVAPOTRANSPIRATION	11.903	43209.117	55.96
PERC./LEAKAGE THROUGH LAYER 2	2.182700	7923.202	10.26
AVG. HEAD ON TOP OF LAYER 2	6.2326		
PERC./LEAKAGE THROUGH LAYER 4	1.826683	6630.858	8.59
CHANGE IN WATER STORAGE	0.238	863.213	1.12
SOIL WATER AT START OF YEAR	144.044	522878.250	
SOIL WATER AT END OF YEAR	144.776	525537.125	
SNOW WATER AT START OF YEAR	1.565	5682.759	7.36
SNOW WATER AT END OF YEAR	1.071	3887.115	5.03
ANNUAL WATER BUDGET BALANCE	0.0000	0.020	0.00

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.98	94307.398	100.00
RUNOFF	13.651	49553.926	52.55
EVAPOTRANSPIRATION	8.635	31345.713	33.24
PERC./LEAKAGE THROUGH LAYER 2	2.183109	7924.687	8.40
AVG. HEAD ON TOP OF LAYER 2	6.1924		
PERC./LEAKAGE THROUGH LAYER 4	2.287156	8302.375	8.80
CHANGE IN WATER STORAGE	1.406	5105.407	5.41
SOIL WATER AT START OF YEAR	144.776	525537.125	

SOIL WATER AT END OF YEAR	144.609	524929.812	
SNOW WATER AT START OF YEAR	1.071	3887.115	4.12
SNOW WATER AT END OF YEAR	2.645	9599.812	10.18
ANNUAL WATER BUDGET BALANCE	0.0000	-0.023	0.00

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ANNUAL TOTALS FOR YEAR 6

	INCHES	CU. FEET	PERCENT
PRECIPITATION	22.30	80949.023	100.00
RUNOFF	10.003	36310.820	44.86
EVAPOTRANSPIRATION	10.949	39743.207	49.10
PERC./LEAKAGE THROUGH LAYER 2	2.290356	8313.992	10.27
AVG. HEAD ON TOP OF LAYER 2	6.5615		
PERC./LEAKAGE THROUGH LAYER 4	2.286339	8299.411	10.25
CHANGE IN WATER STORAGE	-0.938	-3404.421	-4.21
SOIL WATER AT START OF YEAR	144.609	524929.812	
SOIL WATER AT END OF YEAR	144.636	525027.625	
SNOW WATER AT START OF YEAR	2.645	9599.812	11.86
SNOW WATER AT END OF YEAR	1.680	6097.573	7.53
ANNUAL WATER BUDGET BALANCE	0.0000	0.006	0.00

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ANNUAL TOTALS FOR YEAR 7

	INCHES	CU. FEET	PERCENT

PRECIPITATION	19.89	72200.703	100.00
RUNOFF	6.900	25048.793	34.69
EVAPOTRANSPIRATION	8.643	31374.818	43.46
PERC./LEAKAGE THROUGH LAYER 2	2.233083	8106.089	11.23
AVG. HEAD ON TOP OF LAYER 2	6.3660		
PERC./LEAKAGE THROUGH LAYER 4	2.285898	8297.812	11.49
CHANGE IN WATER STORAGE	2.060	7479.262	10.36
SOIL WATER AT START OF YEAR	144.636	525027.625	
SOIL WATER AT END OF YEAR	144.620	524971.687	
SNOW WATER AT START OF YEAR	1.680	6097.573	8.45
SNOW WATER AT END OF YEAR	3.756	13632.777	18.88
ANNUAL WATER BUDGET BALANCE	0.0000	0.019	0.00

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ANNUAL TOTALS FOR YEAR 8

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.02	87192.617	100.00
RUNOFF	10.144	36821.895	42.23
EVAPOTRANSPIRATION	10.007	36326.969	41.66
PERC./LEAKAGE THROUGH LAYER 2	2.165111	7859.353	9.01
AVG. HEAD ON TOP OF LAYER 2	6.1736		
PERC./LEAKAGE THROUGH LAYER 4	2.282725	8286.292	9.50
CHANGE IN WATER STORAGE	1.586	5757.426	6.60
SOIL WATER AT START OF YEAR	144.620	524971.687	
SOIL WATER AT END OF YEAR	144.225	523536.594	
SNOW WATER AT START OF YEAR	3.756	13632.777	15.64
SNOW WATER AT END OF YEAR	5.737	20825.287	23.88

ANNUAL WATER BUDGET BALANCE	0.0000	0.037	0.00

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ANNUAL TOTALS FOR YEAR 9

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.46	88789.820	100.00
RUNOFF	14.138	51321.660	57.80
EVAPOTRANSPIRATION	12.644	45898.570	51.69
PERC./LEAKAGE THROUGH LAYER 2	2.520772	9150.400	10.31
AVG. HEAD ON TOP OF LAYER 2	7.4051		
PERC./LEAKAGE THROUGH LAYER 4	2.284709	8293.493	9.34
CHANGE IN WATER STORAGE	-4.607	-16723.939	-18.84
SOIL WATER AT START OF YEAR	144.225	523536.594	
SOIL WATER AT END OF YEAR	144.749	525437.812	
SNOW WATER AT START OF YEAR	5.737	20825.287	23.45
SNOW WATER AT END OF YEAR	0.606	2200.163	2.48
ANNUAL WATER BUDGET BALANCE	0.0000	0.034	0.00

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ANNUAL TOTALS FOR YEAR 10

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.01	76266.320	100.00
RUNOFF	5.610	20363.256	26.70
EVAPOTRANSPIRATION	11.222	40736.355	53.41

PERC./LEAKAGE THROUGH LAYER 2	2.084149	7565.459	9.92
AVG. HEAD ON TOP OF LAYER 2	5.9439		
PERC./LEAKAGE THROUGH LAYER 4	2.287695	8304.332	10.89
CHANGE IN WATER STORAGE	1.890	6862.360	9.00
SOIL WATER AT START OF YEAR	144.749	525437.812	
SOIL WATER AT END OF YEAR	144.265	523683.437	
SNOW WATER AT START OF YEAR	0.606	2200.163	2.88
SNOW WATER AT END OF YEAR	2.980	10816.871	14.18
ANNUAL WATER BUDGET BALANCE	0.0000	0.020	0.00

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ANNUAL TOTALS FOR YEAR 11

	INCHES	CU. FEET	PERCENT
PRECIPITATION	20.40	74052.016	100.00
RUNOFF	9.670	35103.359	47.40
EVAPOTRANSPIRATION	9.300	33758.187	45.59
PERC./LEAKAGE THROUGH LAYER 2	1.925763	6990.520	9.44
AVG. HEAD ON TOP OF LAYER 2	5.3065		
PERC./LEAKAGE THROUGH LAYER 4	1.829456	6640.927	8.97
CHANGE IN WATER STORAGE	-0.400	-1450.444	-1.96
SOIL WATER AT START OF YEAR	144.265	523683.437	
SOIL WATER AT END OF YEAR	144.492	524506.625	
SNOW WATER AT START OF YEAR	2.980	10816.871	14.61
SNOW WATER AT END OF YEAR	2.354	8543.229	11.54
ANNUAL WATER BUDGET BALANCE	0.0000	-0.011	0.00

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ANNUAL TOTALS FOR YEAR 12

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.72	67953.594	100.00
RUNOFF	6.044	21939.549	32.29
EVAPOTRANSPIRATION	10.627	38576.434	56.77
PERC./LEAKAGE THROUGH LAYER 2	2.006582	7283.895	10.72
AVG. HEAD ON TOP OF LAYER 2	5.5760		
PERC./LEAKAGE THROUGH LAYER 4	2.284221	8291.723	12.20
CHANGE IN WATER STORAGE	-0.235	-854.141	-1.26
SOIL WATER AT START OF YEAR	144.492	524506.625	
SOIL WATER AT END OF YEAR	144.281	523739.219	
SNOW WATER AT START OF YEAR	2.354	8543.229	12.57
SNOW WATER AT END OF YEAR	2.330	8456.509	12.44
ANNUAL WATER BUDGET BALANCE	0.0000	0.035	0.00

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ANNUAL TOTALS FOR YEAR 13

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.48	88862.430	100.00
RUNOFF	9.305	33776.777	38.01
EVAPOTRANSPIRATION	11.927	43293.707	48.72
PERC./LEAKAGE THROUGH LAYER 2	2.233555	8107.804	9.12
AVG. HEAD ON TOP OF LAYER 2	6.3716		
PERC./LEAKAGE THROUGH LAYER 4	1.829782	6642.108	7.47

CHANGE IN WATER STORAGE	1.419	5149.804	5.80
SOIL WATER AT START OF YEAR	144.281	523739.219	
SOIL WATER AT END OF YEAR	144.642	525049.312	
SNOW WATER AT START OF YEAR	2.330	8456.509	9.52
SNOW WATER AT END OF YEAR	3.387	12296.242	13.84
ANNUAL WATER BUDGET BALANCE	0.0000	0.028	0.00

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ANNUAL TOTALS FOR YEAR 14

	INCHES	CU. FEET	PERCENT
PRECIPITATION	20.19	73289.719	100.00
RUNOFF	9.439	34264.195	46.75
EVAPOTRANSPIRATION	10.011	36339.238	49.58
PERC./LEAKAGE THROUGH LAYER 2	2.265361	8223.259	11.22
AVG. HEAD ON TOP OF LAYER 2	6.4924		
PERC./LEAKAGE THROUGH LAYER 4	2.283091	8287.620	11.31
CHANGE IN WATER STORAGE	-1.543	-5601.334	-7.64
SOIL WATER AT START OF YEAR	144.642	525049.312	
SOIL WATER AT END OF YEAR	144.323	523892.875	
SNOW WATER AT START OF YEAR	3.387	12296.242	16.78
SNOW WATER AT END OF YEAR	2.163	7851.329	10.71
ANNUAL WATER BUDGET BALANCE	0.0000	-0.004	0.00

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ANNUAL TOTALS FOR YEAR 15

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.78	64541.422	100.00
RUNOFF	5.510	20000.145	30.99
EVAPOTRANSPIRATION	10.702	38848.586	60.19
PERC./LEAKAGE THROUGH LAYER 2	2.167841	7869.265	12.19
AVG. HEAD ON TOP OF LAYER 2	6.1930		
PERC./LEAKAGE THROUGH LAYER 4	2.285272	8295.539	12.85
CHANGE IN WATER STORAGE	-0.717	-2602.869	-4.03
SOIL WATER AT START OF YEAR	144.323	523892.875	
SOIL WATER AT END OF YEAR	144.494	524512.750	
SNOW WATER AT START OF YEAR	2.163	7851.329	12.16
SNOW WATER AT END OF YEAR	1.275	4628.597	7.17
ANNUAL WATER BUDGET BALANCE	0.0000	0.022	0.00

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ANNUAL TOTALS FOR YEAR 16

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.83	71982.906	100.00
RUNOFF	8.448	30665.121	42.60
EVAPOTRANSPIRATION	9.461	34344.324	47.71
PERC./LEAKAGE THROUGH LAYER 2	1.983042	7198.442	10.00
AVG. HEAD ON TOP OF LAYER 2	5.4926		
PERC./LEAKAGE THROUGH LAYER 4	2.284511	8292.774	11.52
CHANGE IN WATER STORAGE	-0.363	-1319.295	-1.83
SOIL WATER AT START OF YEAR	144.494	524512.750	
SOIL WATER AT END OF YEAR	144.281	523740.062	

SNOW WATER AT START OF YEAR	1.275	4628.597	6.43
SNOW WATER AT END OF YEAR	1.125	4081.984	5.67
ANNUAL WATER BUDGET BALANCE	0.0000	-0.020	0.00

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ANNUAL TOTALS FOR YEAR 17

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.50	92564.992	100.00
RUNOFF	10.399	37747.621	40.78
EVAPOTRANSPIRATION	12.320	44722.020	48.31
PERC./LEAKAGE THROUGH LAYER 2	2.461220	8934.229	9.65
AVG. HEAD ON TOP OF LAYER 2	7.1831		
PERC./LEAKAGE THROUGH LAYER 4	2.284114	8291.333	8.96
CHANGE IN WATER STORAGE	0.497	1804.023	1.95
SOIL WATER AT START OF YEAR	144.281	523740.062	
SOIL WATER AT END OF YEAR	144.519	524603.000	
SNOW WATER AT START OF YEAR	1.125	4081.984	4.41
SNOW WATER AT END OF YEAR	1.384	5023.040	5.43
ANNUAL WATER BUDGET BALANCE	0.0000	-0.003	0.00

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ANNUAL TOTALS FOR YEAR 18

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.17	58697.105	100.00

RUNOFF	5.453	19793.020	33.72
EVAPOTRANSPIRATION	9.382	34055.578	58.02
PERC./LEAKAGE THROUGH LAYER 2	1.882524	6833.561	11.64
AVG. HEAD ON TOP OF LAYER 2	5.2176		
PERC./LEAKAGE THROUGH LAYER 4	1.828638	6637.957	11.31
CHANGE IN WATER STORAGE	-0.493	-1789.465	-3.05
SOIL WATER AT START OF YEAR	144.519	524603.000	
SOIL WATER AT END OF YEAR	143.510	520942.281	
SNOW WATER AT START OF YEAR	1.384	5023.040	8.56
SNOW WATER AT END OF YEAR	1.899	6894.316	11.75
ANNUAL WATER BUDGET BALANCE	0.0000	0.020	0.00

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ANNUAL TOTALS FOR YEAR 19

	INCHES	CU. FEET	PERCENT
PRECIPITATION	27.00	98010.008	100.00
RUNOFF	11.363	41247.816	42.09
EVAPOTRANSPIRATION	12.207	44310.547	45.21
PERC./LEAKAGE THROUGH LAYER 2	2.229805	8094.192	8.26
AVG. HEAD ON TOP OF LAYER 2	6.3390		
PERC./LEAKAGE THROUGH LAYER 4	2.284862	8294.049	8.46
CHANGE IN WATER STORAGE	1.145	4157.583	4.24
SOIL WATER AT START OF YEAR	143.510	520942.281	
SOIL WATER AT END OF YEAR	144.404	524185.875	
SNOW WATER AT START OF YEAR	1.899	6894.316	7.03
SNOW WATER AT END OF YEAR	2.151	7808.295	7.97
ANNUAL WATER BUDGET BALANCE	0.0000	0.010	0.00

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ANNUAL TOTALS FOR YEAR 20

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.02	83562.641	100.00
RUNOFF	11.961	43416.820	51.96
EVAPOTRANSPIRATION	9.451	34306.895	41.06
PERC./LEAKAGE THROUGH LAYER 2	2.413888	8762.412	10.49
AVG. HEAD ON TOP OF LAYER 2	7.0918		
PERC./LEAKAGE THROUGH LAYER 4	2.286769	8300.971	9.93
CHANGE IN WATER STORAGE	-0.678	-2462.068	-2.95
SOIL WATER AT START OF YEAR	144.404	524185.875	
SOIL WATER AT END OF YEAR	144.472	524431.750	
SNOW WATER AT START OF YEAR	2.151	7808.295	9.34
SNOW WATER AT END OF YEAR	1.405	5100.354	6.10
ANNUAL WATER BUDGET BALANCE	0.0000	0.027	0.00

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ANNUAL TOTALS FOR YEAR 21

	INCHES	CU. FEET	PERCENT
PRECIPITATION	22.36	81166.797	100.00
RUNOFF	7.044	25570.002	31.50
EVAPOTRANSPIRATION	12.148	44097.738	54.33
PERC./LEAKAGE THROUGH LAYER 2	2.459859	8929.289	11.00

AVG. HEAD ON TOP OF LAYER 2	7.2148		
PERC./LEAKAGE THROUGH LAYER 4	2.285392	8295.972	10.22
CHANGE IN WATER STORAGE	0.882	3203.055	3.95
SOIL WATER AT START OF YEAR	144.472	524431.750	
SOIL WATER AT END OF YEAR	144.834	525747.875	
SNOW WATER AT START OF YEAR	1.405	5100.354	6.28
SNOW WATER AT END OF YEAR	1.925	6987.302	8.61
ANNUAL WATER BUDGET BALANCE	0.0000	0.029	0.00

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ANNUAL TOTALS FOR YEAR 22

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.33	70167.922	100.00
RUNOFF	6.841	24831.086	35.39
EVAPOTRANSPIRATION	9.130	33143.512	47.23
PERC./LEAKAGE THROUGH LAYER 2	2.139130	7765.043	11.07
AVG. HEAD ON TOP OF LAYER 2	6.0650		
PERC./LEAKAGE THROUGH LAYER 4	2.284820	8293.896	11.82
CHANGE IN WATER STORAGE	1.074	3899.417	5.56
SOIL WATER AT START OF YEAR	144.834	525747.875	
SOIL WATER AT END OF YEAR	144.641	525046.250	
SNOW WATER AT START OF YEAR	1.925	6987.302	9.96
SNOW WATER AT END OF YEAR	3.192	11588.337	16.52
ANNUAL WATER BUDGET BALANCE	0.0000	0.009	0.00

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ANNUAL TOTALS FOR YEAR 23

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.13	91221.898	100.00
RUNOFF	11.097	40280.621	44.16
EVAPOTRANSPIRATION	11.686	42420.641	46.50
PERC./LEAKAGE THROUGH LAYER 2	2.393110	8686.987	9.52
AVG. HEAD ON TOP OF LAYER 2	6.9368		
PERC./LEAKAGE THROUGH LAYER 4	2.286514	8300.045	9.10
CHANGE IN WATER STORAGE	0.061	220.618	0.24
SOIL WATER AT START OF YEAR	144.641	525046.250	
SOIL WATER AT END OF YEAR	144.765	525498.000	
SNOW WATER AT START OF YEAR	3.192	11588.337	12.70
SNOW WATER AT END OF YEAR	3.129	11357.198	12.45
ANNUAL WATER BUDGET BALANCE	0.0000	-0.028	0.00

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ANNUAL TOTALS FOR YEAR 24

	INCHES	CU. FEET	PERCENT
PRECIPITATION	27.28	99026.406	100.00
RUNOFF	13.803	50104.723	50.60
EVAPOTRANSPIRATION	11.550	41927.566	42.34
PERC./LEAKAGE THROUGH LAYER 2	2.115450	7679.083	7.75
AVG. HEAD ON TOP OF LAYER 2	5.9338		
PERC./LEAKAGE THROUGH LAYER 4	2.283359	8288.594	8.37
CHANGE IN WATER STORAGE	-0.357	-1294.466	-1.31

SOIL WATER AT START OF YEAR	144.765	525498.000	
SOIL WATER AT END OF YEAR	144.510	524572.562	
SNOW WATER AT START OF YEAR	3.129	11357.198	11.47
SNOW WATER AT END OF YEAR	3.027	10988.179	11.10
ANNUAL WATER BUDGET BALANCE	0.0000	-0.007	0.00

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ANNUAL TOTALS FOR YEAR 25

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.07	91004.141	100.00
RUNOFF	11.953	43388.062	47.68
EVAPOTRANSPIRATION	11.937	43332.758	47.62
PERC./LEAKAGE THROUGH LAYER 2	2.105201	7641.881	8.40
AVG. HEAD ON TOP OF LAYER 2	5.8935		
PERC./LEAKAGE THROUGH LAYER 4	2.286700	8300.721	9.12
CHANGE IN WATER STORAGE	-1.107	-4017.430	-4.41
SOIL WATER AT START OF YEAR	144.510	524572.562	
SOIL WATER AT END OF YEAR	144.291	523776.219	
SNOW WATER AT START OF YEAR	3.027	10988.179	12.07
SNOW WATER AT END OF YEAR	2.140	7767.082	8.53
ANNUAL WATER BUDGET BALANCE	0.0000	0.030	0.00

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ANNUAL TOTALS FOR YEAR 26

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.92	79569.617	100.00
RUNOFF	9.228	33498.391	42.10
EVAPOTRANSPIRATION	10.028	36400.910	45.75
PERC./LEAKAGE THROUGH LAYER 2	2.404834	8729.548	10.97
AVG. HEAD ON TOP OF LAYER 2	6.9670		
PERC./LEAKAGE THROUGH LAYER 4	2.283197	8288.007	10.42
CHANGE IN WATER STORAGE	0.381	1382.271	1.74
SOIL WATER AT START OF YEAR	144.291	523776.219	
SOIL WATER AT END OF YEAR	144.476	524446.437	
SNOW WATER AT START OF YEAR	2.140	7767.082	9.76
SNOW WATER AT END OF YEAR	2.336	8479.142	10.66
ANNUAL WATER BUDGET BALANCE	0.0000	0.044	0.00

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ANNUAL TOTALS FOR YEAR 27

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.33	88317.906	100.00
RUNOFF	11.223	40740.406	46.13
EVAPOTRANSPIRATION	11.809	42867.340	48.54
PERC./LEAKAGE THROUGH LAYER 2	2.109448	7657.297	8.67
AVG. HEAD ON TOP OF LAYER 2	5.9566		
PERC./LEAKAGE THROUGH LAYER 4	2.284533	8292.855	9.39
CHANGE IN WATER STORAGE	-0.987	-3582.677	-4.06
SOIL WATER AT START OF YEAR	144.476	524446.437	
SOIL WATER AT END OF YEAR	144.311	523848.906	
SNOW WATER AT START OF YEAR	2.336	8479.142	9.60

SNOW WATER AT END OF YEAR	1.513	5494.005	6.22
ANNUAL WATER BUDGET BALANCE	0.0000	-0.016	0.00

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ANNUAL TOTALS FOR YEAR 28

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.10	76593.016	100.00
RUNOFF	8.685	31525.510	41.16
EVAPOTRANSPIRATION	8.806	31967.537	41.74
PERC./LEAKAGE THROUGH LAYER 2	1.973595	7164.149	9.35
AVG. HEAD ON TOP OF LAYER 2	5.3978		
PERC./LEAKAGE THROUGH LAYER 4	1.830619	6645.147	8.68
CHANGE IN WATER STORAGE	1.778	6454.774	8.43
SOIL WATER AT START OF YEAR	144.311	523848.906	
SOIL WATER AT END OF YEAR	144.148	523256.125	
SNOW WATER AT START OF YEAR	1.513	5494.005	7.17
SNOW WATER AT END OF YEAR	3.455	12541.557	16.37
ANNUAL WATER BUDGET BALANCE	0.0000	0.047	0.00

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ANNUAL TOTALS FOR YEAR 29

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.27	77210.133	100.00
RUNOFF	8.433	30613.479	39.65

EVAPOTRANSPIRATION	10.382	37684.906	48.81
PERC./LEAKAGE THROUGH LAYER 2	2.075848	7535.328	9.76
AVG. HEAD ON TOP OF LAYER 2	5.8175		
PERC./LEAKAGE THROUGH LAYER 4	1.829595	6641.429	8.60
CHANGE IN WATER STORAGE	0.625	2270.297	2.94
SOIL WATER AT START OF YEAR	144.148	523256.125	
SOIL WATER AT END OF YEAR	144.579	524820.875	
SNOW WATER AT START OF YEAR	3.455	12541.557	16.24
SNOW WATER AT END OF YEAR	3.649	13247.103	17.16
ANNUAL WATER BUDGET BALANCE	0.0000	0.017	0.00

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ANNUAL TOTALS FOR YEAR 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.95	79678.500	100.00
RUNOFF	9.033	32789.191	41.15
EVAPOTRANSPIRATION	11.567	41989.293	52.70
PERC./LEAKAGE THROUGH LAYER 2	2.443795	8870.975	11.13
AVG. HEAD ON TOP OF LAYER 2	7.1020		
PERC./LEAKAGE THROUGH LAYER 4	2.741540	9951.790	12.49
CHANGE IN WATER STORAGE	-1.392	-5051.754	-6.34
SOIL WATER AT START OF YEAR	144.579	524820.875	
SOIL WATER AT END OF YEAR	144.354	524006.375	
SNOW WATER AT START OF YEAR	3.649	13247.103	16.63
SNOW WATER AT END OF YEAR	2.482	9009.850	11.31
ANNUAL WATER BUDGET BALANCE	0.0000	-0.016	0.00

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ANNUAL TOTALS FOR YEAR 31

	INCHES	CU. FEET	PERCENT
PRECIPITATION	16.35	59350.523	100.00
RUNOFF	6.311	22908.678	38.60
EVAPOTRANSPIRATION	7.899	28671.652	48.31
PERC./LEAKAGE THROUGH LAYER 2	2.156599	7828.454	13.19
AVG. HEAD ON TOP OF LAYER 2	6.1231		
PERC./LEAKAGE THROUGH LAYER 4	2.286972	8301.707	13.99
CHANGE IN WATER STORAGE	-0.146	-531.524	-0.90
SOIL WATER AT START OF YEAR	144.354	524006.375	
SOIL WATER AT END OF YEAR	144.202	523453.531	
SNOW WATER AT START OF YEAR	2.482	9009.850	15.18
SNOW WATER AT END OF YEAR	2.488	9031.168	15.22
ANNUAL WATER BUDGET BALANCE	0.0000	0.010	0.00

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ANNUAL TOTALS FOR YEAR 32

	INCHES	CU. FEET	PERCENT
PRECIPITATION	20.23	73434.914	100.00
RUNOFF	8.695	31564.053	42.98
EVAPOTRANSPIRATION	10.797	39193.508	53.37
PERC./LEAKAGE THROUGH LAYER 2	2.068720	7509.454	10.23
AVG. HEAD ON TOP OF LAYER 2	5.7920		

PERC./LEAKAGE THROUGH LAYER 4	1.827909	6635.312	9.04
CHANGE IN WATER STORAGE	-1.090	-3958.005	-5.39
SOIL WATER AT START OF YEAR	144.202	523453.531	
SOIL WATER AT END OF YEAR	144.511	524575.250	
SNOW WATER AT START OF YEAR	2.488	9031.168	12.30
SNOW WATER AT END OF YEAR	1.089	3951.417	5.38
ANNUAL WATER BUDGET BALANCE	0.0000	0.044	0.00

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ANNUAL TOTALS FOR YEAR 33

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.24	87991.227	100.00
RUNOFF	9.195	33377.707	37.93
EVAPOTRANSPIRATION	11.616	42165.344	47.92
PERC./LEAKAGE THROUGH LAYER 2	2.151187	7808.809	8.87
AVG. HEAD ON TOP OF LAYER 2	6.1231		
PERC./LEAKAGE THROUGH LAYER 4	2.285797	8297.442	9.43
CHANGE IN WATER STORAGE	1.143	4150.710	4.72
SOIL WATER AT START OF YEAR	144.511	524575.250	
SOIL WATER AT END OF YEAR	143.687	521585.562	
SNOW WATER AT START OF YEAR	1.089	3951.417	4.49
SNOW WATER AT END OF YEAR	3.056	11091.825	12.61
ANNUAL WATER BUDGET BALANCE	0.0000	0.024	0.00

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ANNUAL TOTALS FOR YEAR 34

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.64	96703.219	100.00
RUNOFF	13.928	50557.723	52.28
EVAPOTRANSPIRATION	10.154	36860.648	38.12
PERC./LEAKAGE THROUGH LAYER 2	2.139624	7766.835	8.03
AVG. HEAD ON TOP OF LAYER 2	6.0222		
PERC./LEAKAGE THROUGH LAYER 4	1.830990	6646.493	6.87
CHANGE IN WATER STORAGE	0.727	2638.370	2.73
SOIL WATER AT START OF YEAR	143.687	521585.562	
SOIL WATER AT END OF YEAR	144.551	524719.625	
SNOW WATER AT START OF YEAR	3.056	11091.825	11.47
SNOW WATER AT END OF YEAR	2.919	10596.151	10.96
ANNUAL WATER BUDGET BALANCE	0.0000	-0.013	0.00

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ANNUAL TOTALS FOR YEAR 35

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.55	92746.508	100.00
RUNOFF	10.457	37958.516	40.93
EVAPOTRANSPIRATION	13.120	47624.168	51.35
PERC./LEAKAGE THROUGH LAYER 2	2.588975	9397.980	10.13
AVG. HEAD ON TOP OF LAYER 2	7.6371		
PERC./LEAKAGE THROUGH LAYER 4	2.742964	9956.959	10.74
CHANGE IN WATER STORAGE	-0.769	-2793.186	-3.01
SOIL WATER AT START OF YEAR	144.551	524719.625	

SOIL WATER AT END OF YEAR	144.355	524007.187	
SNOW WATER AT START OF YEAR	2.919	10596.151	11.42
SNOW WATER AT END OF YEAR	2.346	8515.384	9.18
ANNUAL WATER BUDGET BALANCE	0.0000	0.058	0.00

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ANNUAL TOTALS FOR YEAR 36

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.01	61746.316	100.00
RUNOFF	5.095	18495.295	29.95
EVAPOTRANSPIRATION	10.619	38547.102	62.43
PERC./LEAKAGE THROUGH LAYER 2	2.000850	7263.084	11.76
AVG. HEAD ON TOP OF LAYER 2	5.5987		
PERC./LEAKAGE THROUGH LAYER 4	2.287520	8303.699	13.45
CHANGE IN WATER STORAGE	-0.992	-3599.761	-5.83
SOIL WATER AT START OF YEAR	144.355	524007.187	
SOIL WATER AT END OF YEAR	142.812	518408.937	
SNOW WATER AT START OF YEAR	2.346	8515.384	13.79
SNOW WATER AT END OF YEAR	2.896	10513.885	17.03
ANNUAL WATER BUDGET BALANCE	0.0000	-0.017	0.00

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ANNUAL TOTALS FOR YEAR 37

	INCHES	CU. FEET	PERCENT

PRECIPITATION	24.55	89116.516	100.00
RUNOFF	10.627	38577.062	43.29
EVAPOTRANSPIRATION	11.389	41341.684	46.39
PERC./LEAKAGE THROUGH LAYER 2	2.515826	9132.446	10.25
AVG. HEAD ON TOP OF LAYER 2	7.3970		
PERC./LEAKAGE THROUGH LAYER 4	2.282811	8286.605	9.30
CHANGE IN WATER STORAGE	0.251	911.142	1.02
SOIL WATER AT START OF YEAR	142.812	518408.937	
SOIL WATER AT END OF YEAR	144.531	524646.437	
SNOW WATER AT START OF YEAR	2.896	10513.885	11.80
SNOW WATER AT END OF YEAR	1.429	5187.516	5.82
ANNUAL WATER BUDGET BALANCE	0.0000	0.027	0.00

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ANNUAL TOTALS FOR YEAR 38

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.37	95723.117	100.00
RUNOFF	10.757	39047.547	40.79
EVAPOTRANSPIRATION	11.339	41158.812	43.00
PERC./LEAKAGE THROUGH LAYER 2	2.160533	7842.734	8.19
AVG. HEAD ON TOP OF LAYER 2	6.1458		
PERC./LEAKAGE THROUGH LAYER 4	2.284317	8292.070	8.66
CHANGE IN WATER STORAGE	1.990	7224.674	7.55
SOIL WATER AT START OF YEAR	144.531	524646.437	
SOIL WATER AT END OF YEAR	144.338	523948.594	
SNOW WATER AT START OF YEAR	1.429	5187.516	5.42
SNOW WATER AT END OF YEAR	3.612	13110.040	13.70

ANNUAL WATER BUDGET BALANCE	0.0000	0.012	0.00

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ANNUAL TOTALS FOR YEAR 39

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.26	69913.828	100.00
RUNOFF	9.482	34419.004	49.23
EVAPOTRANSPIRATION	9.454	34317.203	49.09
PERC./LEAKAGE THROUGH LAYER 2	2.173116	7888.410	11.28
AVG. HEAD ON TOP OF LAYER 2	6.1517		
PERC./LEAKAGE THROUGH LAYER 4	1.829064	6639.503	9.50
CHANGE IN WATER STORAGE	-1.505	-5461.898	-7.81
SOIL WATER AT START OF YEAR	144.338	523948.594	
SOIL WATER AT END OF YEAR	144.696	525247.750	
SNOW WATER AT START OF YEAR	3.612	13110.040	18.75
SNOW WATER AT END OF YEAR	1.749	6348.983	9.08
ANNUAL WATER BUDGET BALANCE	0.0000	0.016	0.00

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ANNUAL TOTALS FOR YEAR 40

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.71	71547.328	100.00
RUNOFF	6.584	23898.604	33.40
EVAPOTRANSPIRATION	9.923	36020.437	50.34

PERC./LEAKAGE THROUGH LAYER 2	2.298601	8343.921	11.66
AVG. HEAD ON TOP OF LAYER 2	6.6146		
PERC./LEAKAGE THROUGH LAYER 4	2.284735	8293.587	11.59
CHANGE IN WATER STORAGE	0.919	3334.650	4.66
SOIL WATER AT START OF YEAR	144.696	525247.750	
SOIL WATER AT END OF YEAR	144.780	525550.062	
SNOW WATER AT START OF YEAR	1.749	6348.983	8.87
SNOW WATER AT END OF YEAR	2.584	9381.318	13.11
ANNUAL WATER BUDGET BALANCE	0.0000	0.048	0.00

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ANNUAL TOTALS FOR YEAR 41

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.98	79787.406	100.00
RUNOFF	9.998	36291.598	45.49
EVAPOTRANSPIRATION	10.727	38940.242	48.81
PERC./LEAKAGE THROUGH LAYER 2	2.056664	7465.692	9.36
AVG. HEAD ON TOP OF LAYER 2	5.7178		
PERC./LEAKAGE THROUGH LAYER 4	2.286682	8300.654	10.40
CHANGE IN WATER STORAGE	-1.032	-3745.110	-4.69
SOIL WATER AT START OF YEAR	144.780	525550.062	
SOIL WATER AT END OF YEAR	143.083	519391.250	
SNOW WATER AT START OF YEAR	2.584	9381.318	11.76
SNOW WATER AT END OF YEAR	3.249	11795.011	14.78
ANNUAL WATER BUDGET BALANCE	0.0000	0.020	0.00

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ANNUAL TOTALS FOR YEAR 42

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.11	102039.289	100.00
RUNOFF	10.928	39667.750	38.87
EVAPOTRANSPIRATION	11.386	41331.676	40.51
PERC./LEAKAGE THROUGH LAYER 2	2.345149	8512.890	8.34
AVG. HEAD ON TOP OF LAYER 2	6.7536		
PERC./LEAKAGE THROUGH LAYER 4	2.284698	8293.452	8.13
CHANGE IN WATER STORAGE	3.511	12746.454	12.49
SOIL WATER AT START OF YEAR	143.083	519391.250	
SOIL WATER AT END OF YEAR	144.544	524695.812	
SNOW WATER AT START OF YEAR	3.249	11795.011	11.56
SNOW WATER AT END OF YEAR	5.299	19236.932	18.85
ANNUAL WATER BUDGET BALANCE	0.0000	-0.043	0.00

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ANNUAL TOTALS FOR YEAR 43

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.81	79170.320	100.00
RUNOFF	12.385	44957.918	56.79
EVAPOTRANSPIRATION	11.747	42641.324	53.86
PERC./LEAKAGE THROUGH LAYER 2	2.391582	8681.442	10.97
AVG. HEAD ON TOP OF LAYER 2	6.9975		
PERC./LEAKAGE THROUGH LAYER 4	2.283416	8288.801	10.47

CHANGE IN WATER STORAGE	-4.605	-16717.752	-21.12
SOIL WATER AT START OF YEAR	144.544	524695.812	
SOIL WATER AT END OF YEAR	144.620	524971.437	
SNOW WATER AT START OF YEAR	5.299	19236.932	24.30
SNOW WATER AT END OF YEAR	0.618	2243.564	2.83
ANNUAL WATER BUDGET BALANCE	0.0000	0.025	0.00

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ANNUAL TOTALS FOR YEAR 44

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.24	95251.227	100.00
RUNOFF	12.734	46225.109	48.53
EVAPOTRANSPIRATION	10.877	39482.625	41.45
PERC./LEAKAGE THROUGH LAYER 2	2.327217	8447.797	8.87
AVG. HEAD ON TOP OF LAYER 2	6.6994		
PERC./LEAKAGE THROUGH LAYER 4	2.283950	8290.739	8.70
CHANGE IN WATER STORAGE	0.345	1252.744	1.32
SOIL WATER AT START OF YEAR	144.620	524971.437	
SOIL WATER AT END OF YEAR	144.373	524075.437	
SNOW WATER AT START OF YEAR	0.618	2243.564	2.36
SNOW WATER AT END OF YEAR	1.210	4392.287	4.61
ANNUAL WATER BUDGET BALANCE	0.0000	0.008	0.00

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ANNUAL TOTALS FOR YEAR 45

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.75	71692.477	100.00
RUNOFF	6.132	22259.973	31.05
EVAPOTRANSPIRATION	11.257	40864.250	57.00
PERC./LEAKAGE THROUGH LAYER 2	2.012011	7303.600	10.19
AVG. HEAD ON TOP OF LAYER 2	5.6540		
PERC./LEAKAGE THROUGH LAYER 4	2.285413	8296.049	11.57
CHANGE IN WATER STORAGE	0.075	272.207	0.38
SOIL WATER AT START OF YEAR	144.373	524075.437	
SOIL WATER AT END OF YEAR	144.062	522944.781	
SNOW WATER AT START OF YEAR	1.210	4392.287	6.13
SNOW WATER AT END OF YEAR	1.596	5795.158	8.08
ANNUAL WATER BUDGET BALANCE	0.0000	0.002	0.00

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ANNUAL TOTALS FOR YEAR 46

	INCHES	CU. FEET	PERCENT
PRECIPITATION	22.99	83453.711	100.00
RUNOFF	6.943	25201.367	30.20
EVAPOTRANSPIRATION	12.238	44423.301	53.23
PERC./LEAKAGE THROUGH LAYER 2	2.205855	8007.255	9.59
AVG. HEAD ON TOP OF LAYER 2	6.3389		
PERC./LEAKAGE THROUGH LAYER 4	1.826615	6630.612	7.95
CHANGE IN WATER STORAGE	1.983	7198.439	8.63
SOIL WATER AT START OF YEAR	144.062	522944.781	
SOIL WATER AT END OF YEAR	144.478	524456.750	

SNOW WATER AT START OF YEAR	1.596	5795.158	6.94
SNOW WATER AT END OF YEAR	3.163	11481.633	13.76
ANNUAL WATER BUDGET BALANCE	0.0000	-0.005	0.00

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ANNUAL TOTALS FOR YEAR 47

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.38	88499.414	100.00
RUNOFF	12.858	46675.574	52.74
EVAPOTRANSPIRATION	11.681	42402.883	47.91
PERC./LEAKAGE THROUGH LAYER 2	2.449584	8891.989	10.05
AVG. HEAD ON TOP OF LAYER 2	7.1642		
PERC./LEAKAGE THROUGH LAYER 4	2.743119	9957.522	11.25
CHANGE IN WATER STORAGE	-2.903	-10536.528	-11.91
SOIL WATER AT START OF YEAR	144.478	524456.750	
SOIL WATER AT END OF YEAR	144.200	523447.656	
SNOW WATER AT START OF YEAR	3.163	11481.633	12.97
SNOW WATER AT END OF YEAR	0.538	1954.189	2.21
ANNUAL WATER BUDGET BALANCE	0.0000	-0.035	0.00

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ANNUAL TOTALS FOR YEAR 48

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.34	88354.242	100.00

RUNOFF	9.960	36155.754	40.92
EVAPOTRANSPIRATION	10.965	39802.230	45.05
PERC./LEAKAGE THROUGH LAYER 2	2.211381	8027.314	9.09
AVG. HEAD ON TOP OF LAYER 2	6.3116		
PERC./LEAKAGE THROUGH LAYER 4	2.286440	8299.777	9.39
CHANGE IN WATER STORAGE	1.128	4096.446	4.64
SOIL WATER AT START OF YEAR	144.200	523447.656	
SOIL WATER AT END OF YEAR	144.207	523472.531	
SNOW WATER AT START OF YEAR	0.538	1954.189	2.21
SNOW WATER AT END OF YEAR	1.660	6025.765	6.82
ANNUAL WATER BUDGET BALANCE	0.0000	0.035	0.00

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ANNUAL TOTALS FOR YEAR 49

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.97	87011.117	100.00
RUNOFF	8.899	32302.811	37.12
EVAPOTRANSPIRATION	11.640	42252.375	48.56
PERC./LEAKAGE THROUGH LAYER 2	2.361969	8573.948	9.85
AVG. HEAD ON TOP OF LAYER 2	6.8135		
PERC./LEAKAGE THROUGH LAYER 4	2.281827	8283.033	9.52
CHANGE IN WATER STORAGE	1.150	4172.851	4.80
SOIL WATER AT START OF YEAR	144.207	523472.531	
SOIL WATER AT END OF YEAR	144.535	524660.750	
SNOW WATER AT START OF YEAR	1.660	6025.765	6.93
SNOW WATER AT END OF YEAR	2.482	9010.403	10.36
ANNUAL WATER BUDGET BALANCE	0.0000	0.051	0.00

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ANNUAL TOTALS FOR YEAR 50

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.29	77282.711	100.00
RUNOFF	7.251	26321.723	34.06
EVAPOTRANSPIRATION	11.699	42467.164	54.95
PERC./LEAKAGE THROUGH LAYER 2	2.341372	8499.179	11.00
AVG. HEAD ON TOP OF LAYER 2	6.8439		
PERC./LEAKAGE THROUGH LAYER 4	2.286923	8301.531	10.74
CHANGE IN WATER STORAGE	0.053	192.263	0.25
SOIL WATER AT START OF YEAR	144.535	524660.750	
SOIL WATER AT END OF YEAR	144.391	524138.687	
SNOW WATER AT START OF YEAR	2.482	9010.403	11.66
SNOW WATER AT END OF YEAR	2.679	9724.711	12.58
ANNUAL WATER BUDGET BALANCE	0.0000	0.029	0.00

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ANNUAL TOTALS FOR YEAR 51

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.77	86285.109	100.00
RUNOFF	9.594	34826.059	40.36
EVAPOTRANSPIRATION	11.476	41658.941	48.28
PERC./LEAKAGE THROUGH LAYER 2	2.335099	8476.410	9.82

AVG. HEAD ON TOP OF LAYER 2	6.7608		
PERC./LEAKAGE THROUGH LAYER 4	2.287410	8303.299	9.62
CHANGE IN WATER STORAGE	0.412	1496.808	1.73
SOIL WATER AT START OF YEAR	144.391	524138.687	
SOIL WATER AT END OF YEAR	144.655	525096.187	
SNOW WATER AT START OF YEAR	2.679	9724.711	11.27
SNOW WATER AT END OF YEAR	2.828	10264.002	11.90
ANNUAL WATER BUDGET BALANCE	0.0000	0.003	0.00

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ANNUAL TOTALS FOR YEAR 52

	INCHES	CU. FEET	PERCENT
PRECIPITATION	20.88	75794.375	100.00
RUNOFF	9.052	32858.848	43.35
EVAPOTRANSPIRATION	10.233	37147.473	49.01
PERC./LEAKAGE THROUGH LAYER 2	2.250474	8169.222	10.78
AVG. HEAD ON TOP OF LAYER 2	6.4552		
PERC./LEAKAGE THROUGH LAYER 4	2.287640	8304.132	10.96
CHANGE IN WATER STORAGE	-0.693	-2516.067	-3.32
SOIL WATER AT START OF YEAR	144.655	525096.187	
SOIL WATER AT END OF YEAR	144.398	524165.562	
SNOW WATER AT START OF YEAR	2.828	10264.002	13.54
SNOW WATER AT END OF YEAR	2.391	8678.588	11.45
ANNUAL WATER BUDGET BALANCE	0.0000	-0.007	0.00

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ANNUAL TOTALS FOR YEAR 53

	INCHES	CU. FEET	PERCENT
PRECIPITATION	30.21	109662.320	100.00
RUNOFF	13.660	49587.508	45.22
EVAPOTRANSPIRATION	11.130	40401.254	36.84
PERC./LEAKAGE THROUGH LAYER 2	2.420844	8787.663	8.01
AVG. HEAD ON TOP OF LAYER 2	7.0689		
PERC./LEAKAGE THROUGH LAYER 4	2.286370	8299.523	7.57
CHANGE IN WATER STORAGE	3.133	11373.999	10.37
SOIL WATER AT START OF YEAR	144.398	524165.562	
SOIL WATER AT END OF YEAR	144.453	524365.000	
SNOW WATER AT START OF YEAR	2.391	8678.588	7.91
SNOW WATER AT END OF YEAR	5.469	19853.129	18.10
ANNUAL WATER BUDGET BALANCE	0.0000	0.036	0.00

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ANNUAL TOTALS FOR YEAR 54

	INCHES	CU. FEET	PERCENT
PRECIPITATION	14.78	53651.406	100.00
RUNOFF	7.744	28109.623	52.39
EVAPOTRANSPIRATION	9.354	33955.793	63.29
PERC./LEAKAGE THROUGH LAYER 2	2.028912	7364.949	13.73
AVG. HEAD ON TOP OF LAYER 2	5.6975		
PERC./LEAKAGE THROUGH LAYER 4	2.283971	8290.814	15.45
CHANGE IN WATER STORAGE	-4.602	-16704.840	-31.14

SOIL WATER AT START OF YEAR	144.453	524365.000	
SOIL WATER AT END OF YEAR	144.398	524163.281	
SNOW WATER AT START OF YEAR	5.469	19853.129	37.00
SNOW WATER AT END OF YEAR	0.923	3350.017	6.24
ANNUAL WATER BUDGET BALANCE	0.0000	0.017	0.00

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ANNUAL TOTALS FOR YEAR 55

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.01	83526.305	100.00
RUNOFF	8.521	30930.395	37.03
EVAPOTRANSPIRATION	11.604	42124.125	50.43
PERC./LEAKAGE THROUGH LAYER 2	2.140903	7771.479	9.30
AVG. HEAD ON TOP OF LAYER 2	6.0146		
PERC./LEAKAGE THROUGH LAYER 4	2.286683	8300.660	9.94
CHANGE IN WATER STORAGE	0.598	2171.093	2.60
SOIL WATER AT START OF YEAR	144.398	524163.281	
SOIL WATER AT END OF YEAR	144.278	523728.656	
SNOW WATER AT START OF YEAR	0.923	3350.017	4.01
SNOW WATER AT END OF YEAR	1.641	5955.750	7.13
ANNUAL WATER BUDGET BALANCE	0.0000	0.033	0.00

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ANNUAL TOTALS FOR YEAR 56

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.42	92274.617	100.00
RUNOFF	12.806	46485.531	50.38
EVAPOTRANSPIRATION	10.393	37728.250	40.89
PERC./LEAKAGE THROUGH LAYER 2	2.294058	8327.432	9.02
AVG. HEAD ON TOP OF LAYER 2	6.5789		
PERC./LEAKAGE THROUGH LAYER 4	1.829743	6641.966	7.20
CHANGE IN WATER STORAGE	0.391	1418.868	1.54
SOIL WATER AT START OF YEAR	144.278	523728.656	
SOIL WATER AT END OF YEAR	144.555	524733.562	
SNOW WATER AT START OF YEAR	1.641	5955.750	6.45
SNOW WATER AT END OF YEAR	1.755	6369.688	6.90
ANNUAL WATER BUDGET BALANCE	0.0000	0.000	0.00

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ANNUAL TOTALS FOR YEAR 57

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.86	86611.844	100.00
RUNOFF	10.153	36855.293	42.55
EVAPOTRANSPIRATION	10.772	39101.645	45.15
PERC./LEAKAGE THROUGH LAYER 2	2.270091	8240.432	9.51
AVG. HEAD ON TOP OF LAYER 2	6.5095		
PERC./LEAKAGE THROUGH LAYER 4	2.285973	8298.080	9.58
CHANGE IN WATER STORAGE	0.649	2356.803	2.72
SOIL WATER AT START OF YEAR	144.555	524733.562	
SOIL WATER AT END OF YEAR	144.651	525083.000	
SNOW WATER AT START OF YEAR	1.755	6369.688	7.35

SNOW WATER AT END OF YEAR	2.308	8377.039	9.67
ANNUAL WATER BUDGET BALANCE	0.0000	0.023	0.00

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ANNUAL TOTALS FOR YEAR 58

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.29	77282.719	100.00
RUNOFF	7.706	27972.721	36.20
EVAPOTRANSPIRATION	10.363	37617.879	48.68
PERC./LEAKAGE THROUGH LAYER 2	1.848015	6708.295	8.68
AVG. HEAD ON TOP OF LAYER 2	5.0366		
PERC./LEAKAGE THROUGH LAYER 4	2.286618	8300.422	10.74
CHANGE IN WATER STORAGE	0.934	3391.684	4.39
SOIL WATER AT START OF YEAR	144.651	525083.000	
SOIL WATER AT END OF YEAR	144.307	523833.562	
SNOW WATER AT START OF YEAR	2.308	8377.039	10.84
SNOW WATER AT END OF YEAR	3.586	13018.197	16.84
ANNUAL WATER BUDGET BALANCE	0.0000	0.011	0.00

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ANNUAL TOTALS FOR YEAR 59

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.11	94779.312	100.00
RUNOFF	14.789	53682.484	56.64

EVAPOTRANSPIRATION	9.939	36079.387	38.07
PERC./LEAKAGE THROUGH LAYER 2	2.021127	7336.690	7.74
AVG. HEAD ON TOP OF LAYER 2	5.5464		
PERC./LEAKAGE THROUGH LAYER 4	1.830257	6643.833	7.01
CHANGE IN WATER STORAGE	-0.448	-1626.446	-1.72
SOIL WATER AT START OF YEAR	144.307	523833.562	
SOIL WATER AT END OF YEAR	144.522	524614.812	
SNOW WATER AT START OF YEAR	3.586	13018.197	13.74
SNOW WATER AT END OF YEAR	2.923	10610.483	11.19
ANNUAL WATER BUDGET BALANCE	0.0000	0.058	0.00

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ANNUAL TOTALS FOR YEAR 60

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.35	84760.508	100.00
RUNOFF	12.524	45463.102	53.64
EVAPOTRANSPIRATION	10.078	36584.934	43.16
PERC./LEAKAGE THROUGH LAYER 2	2.400974	8715.535	10.28
AVG. HEAD ON TOP OF LAYER 2	6.9882		
PERC./LEAKAGE THROUGH LAYER 4	2.287349	8303.076	9.80
CHANGE IN WATER STORAGE	-1.540	-5590.584	-6.60
SOIL WATER AT START OF YEAR	144.522	524614.812	
SOIL WATER AT END OF YEAR	144.701	525263.875	
SNOW WATER AT START OF YEAR	2.923	10610.483	12.52
SNOW WATER AT END OF YEAR	1.204	4370.846	5.16
ANNUAL WATER BUDGET BALANCE	0.0000	-0.017	0.00

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ANNUAL TOTALS FOR YEAR 61

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.93	94125.937	100.00
RUNOFF	11.974	43467.195	46.18
EVAPOTRANSPIRATION	9.776	35486.465	37.70
PERC./LEAKAGE THROUGH LAYER 2	2.099795	7622.255	8.10
AVG. HEAD ON TOP OF LAYER 2	5.9349		
PERC./LEAKAGE THROUGH LAYER 4	2.288204	8306.182	8.82
CHANGE IN WATER STORAGE	1.891	6866.048	7.29
SOIL WATER AT START OF YEAR	144.701	525263.875	
SOIL WATER AT END OF YEAR	144.460	524388.875	
SNOW WATER AT START OF YEAR	1.204	4370.846	4.64
SNOW WATER AT END OF YEAR	3.337	12111.881	12.87
ANNUAL WATER BUDGET BALANCE	0.0000	0.047	0.00

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ANNUAL TOTALS FOR YEAR 62

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.20	102366.023	100.00
RUNOFF	14.059	51034.395	49.85
EVAPOTRANSPIRATION	11.555	41944.531	40.98
PERC./LEAKAGE THROUGH LAYER 2	2.275359	8259.552	8.07
AVG. HEAD ON TOP OF LAYER 2	6.4855		

PERC./LEAKAGE THROUGH LAYER 4	2.283644	8289.628	8.10
CHANGE IN WATER STORAGE	0.302	1097.446	1.07
SOIL WATER AT START OF YEAR	144.460	524388.875	
SOIL WATER AT END OF YEAR	144.396	524158.687	
SNOW WATER AT START OF YEAR	3.337	12111.881	11.83
SNOW WATER AT END OF YEAR	3.702	13439.525	13.13
ANNUAL WATER BUDGET BALANCE	0.0000	0.025	0.00

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ANNUAL TOTALS FOR YEAR 63

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.13	69441.914	100.00
RUNOFF	8.702	31587.074	45.49
EVAPOTRANSPIRATION	10.481	38044.727	54.79
PERC./LEAKAGE THROUGH LAYER 2	2.093629	7599.875	10.94
AVG. HEAD ON TOP OF LAYER 2	5.9655		
PERC./LEAKAGE THROUGH LAYER 4	1.831238	6647.393	9.57
CHANGE IN WATER STORAGE	-1.884	-6837.306	-9.85
SOIL WATER AT START OF YEAR	144.396	524158.687	
SOIL WATER AT END OF YEAR	144.043	522877.594	
SNOW WATER AT START OF YEAR	3.702	13439.525	19.35
SNOW WATER AT END OF YEAR	2.172	7883.320	11.35
ANNUAL WATER BUDGET BALANCE	0.0000	0.021	0.00

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ANNUAL TOTALS FOR YEAR 64

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.03	69078.914	100.00
RUNOFF	5.072	18413.000	26.66
EVAPOTRANSPIRATION	11.086	40243.074	58.26
PERC./LEAKAGE THROUGH LAYER 2	1.942153	7050.015	10.21
AVG. HEAD ON TOP OF LAYER 2	5.4093		
PERC./LEAKAGE THROUGH LAYER 4	2.285245	8295.440	12.01
CHANGE IN WATER STORAGE	0.586	2127.380	3.08
SOIL WATER AT START OF YEAR	144.043	522877.594	
SOIL WATER AT END OF YEAR	144.371	524065.844	
SNOW WATER AT START OF YEAR	2.172	7883.320	11.41
SNOW WATER AT END OF YEAR	2.430	8822.432	12.77
ANNUAL WATER BUDGET BALANCE	0.0000	0.023	0.00

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ANNUAL TOTALS FOR YEAR 65

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.49	103418.680	100.00
RUNOFF	16.532	60010.336	58.03
EVAPOTRANSPIRATION	11.393	41355.070	39.99
PERC./LEAKAGE THROUGH LAYER 2	2.561984	9300.003	8.99
AVG. HEAD ON TOP OF LAYER 2	7.5210		
PERC./LEAKAGE THROUGH LAYER 4	2.286170	8298.798	8.02
CHANGE IN WATER STORAGE	-1.721	-6245.552	-6.04
SOIL WATER AT START OF YEAR	144.371	524065.844	

SOIL WATER AT END OF YEAR	144.109	523116.750	
SNOW WATER AT START OF YEAR	2.430	8822.432	8.53
SNOW WATER AT END OF YEAR	0.971	3525.977	3.41
ANNUAL WATER BUDGET BALANCE	0.0000	0.029	0.00

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ANNUAL TOTALS FOR YEAR 66

	INCHES	CU. FEET	PERCENT
PRECIPITATION	21.91	79533.336	100.00
RUNOFF	6.664	24189.053	30.41
EVAPOTRANSPIRATION	11.825	42923.340	53.97
PERC./LEAKAGE THROUGH LAYER 2	2.427160	8810.592	11.08
AVG. HEAD ON TOP OF LAYER 2	7.0951		
PERC./LEAKAGE THROUGH LAYER 4	2.285547	8296.534	10.43
CHANGE IN WATER STORAGE	1.136	4124.366	5.19
SOIL WATER AT START OF YEAR	144.109	523116.750	
SOIL WATER AT END OF YEAR	144.784	525564.500	
SNOW WATER AT START OF YEAR	0.971	3525.977	4.43
SNOW WATER AT END OF YEAR	1.433	5202.574	6.54
ANNUAL WATER BUDGET BALANCE	0.0000	0.041	0.00

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ANNUAL TOTALS FOR YEAR 67

	INCHES	CU. FEET	PERCENT

PRECIPITATION	18.24	66211.211	100.00
RUNOFF	3.931	14268.474	21.55
EVAPOTRANSPIRATION	9.201	33400.574	50.45
PERC./LEAKAGE THROUGH LAYER 2	1.981889	7194.257	10.87
AVG. HEAD ON TOP OF LAYER 2	5.6168		
PERC./LEAKAGE THROUGH LAYER 4	2.282887	8286.878	12.52
CHANGE IN WATER STORAGE	2.825	10255.242	15.49
SOIL WATER AT START OF YEAR	144.784	525564.500	
SOIL WATER AT END OF YEAR	143.787	521946.594	
SNOW WATER AT START OF YEAR	1.433	5202.574	7.86
SNOW WATER AT END OF YEAR	5.255	19075.742	28.81
ANNUAL WATER BUDGET BALANCE	0.0000	0.045	0.00

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ANNUAL TOTALS FOR YEAR 68

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.11	69369.312	100.00
RUNOFF	9.044	32830.203	47.33
EVAPOTRANSPIRATION	11.225	40747.828	58.74
PERC./LEAKAGE THROUGH LAYER 2	2.242117	8138.886	11.73
AVG. HEAD ON TOP OF LAYER 2	6.4738		
PERC./LEAKAGE THROUGH LAYER 4	1.828291	6636.697	9.57
CHANGE IN WATER STORAGE	-2.988	-10845.401	-15.63
SOIL WATER AT START OF YEAR	143.787	521946.594	
SOIL WATER AT END OF YEAR	144.921	526062.125	
SNOW WATER AT START OF YEAR	5.255	19075.742	27.50
SNOW WATER AT END OF YEAR	1.134	4114.797	5.93

ANNUAL WATER BUDGET BALANCE	0.0000	-0.017	0.00

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ANNUAL TOTALS FOR YEAR 69

	INCHES	CU. FEET	PERCENT
PRECIPITATION	17.93	65085.914	100.00
RUNOFF	6.978	25330.818	38.92
EVAPOTRANSPIRATION	8.632	31332.533	48.14
PERC./LEAKAGE THROUGH LAYER 2	2.199461	7984.043	12.27
AVG. HEAD ON TOP OF LAYER 2	6.2933		
PERC./LEAKAGE THROUGH LAYER 4	2.742327	9954.646	15.29
CHANGE IN WATER STORAGE	-0.422	-1532.082	-2.35
SOIL WATER AT START OF YEAR	144.921	526062.125	
SOIL WATER AT END OF YEAR	144.035	522847.500	
SNOW WATER AT START OF YEAR	1.134	4114.797	6.32
SNOW WATER AT END OF YEAR	1.597	5797.350	8.91
ANNUAL WATER BUDGET BALANCE	0.0000	-0.002	0.00

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ANNUAL TOTALS FOR YEAR 70

	INCHES	CU. FEET	PERCENT
PRECIPITATION	20.60	74778.039	100.00
RUNOFF	7.141	25921.447	34.66
EVAPOTRANSPIRATION	9.615	34900.754	46.67

PERC./LEAKAGE THROUGH LAYER 2	2.061713	7484.020	10.01
AVG. HEAD ON TOP OF LAYER 2	5.7104		
PERC./LEAKAGE THROUGH LAYER 4	1.830707	6645.466	8.89
CHANGE IN WATER STORAGE	2.014	7310.294	9.78
SOIL WATER AT START OF YEAR	144.035	522847.500	
SOIL WATER AT END OF YEAR	144.560	524753.187	
SNOW WATER AT START OF YEAR	1.597	5797.350	7.75
SNOW WATER AT END OF YEAR	3.086	11201.972	14.98
ANNUAL WATER BUDGET BALANCE	0.0000	0.083	0.00

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ANNUAL TOTALS FOR YEAR 71

	INCHES	CU. FEET	PERCENT
PRECIPITATION	22.53	81783.930	100.00
RUNOFF	11.055	40129.293	49.07
EVAPOTRANSPIRATION	10.033	36419.430	44.53
PERC./LEAKAGE THROUGH LAYER 2	2.228525	8089.545	9.89
AVG. HEAD ON TOP OF LAYER 2	6.3587		
PERC./LEAKAGE THROUGH LAYER 4	2.282703	8286.212	10.13
CHANGE IN WATER STORAGE	-0.840	-3051.002	-3.73
SOIL WATER AT START OF YEAR	144.560	524753.187	
SOIL WATER AT END OF YEAR	144.491	524502.562	
SNOW WATER AT START OF YEAR	3.086	11201.972	13.70
SNOW WATER AT END OF YEAR	2.314	8401.606	10.27
ANNUAL WATER BUDGET BALANCE	0.0000	-0.003	0.00

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ANNUAL TOTALS FOR YEAR 72

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.32	88281.609	100.00
RUNOFF	10.046	36468.168	41.31
EVAPOTRANSPIRATION	12.411	45050.312	51.03
PERC./LEAKAGE THROUGH LAYER 2	2.350464	8532.184	9.66
AVG. HEAD ON TOP OF LAYER 2	6.8728		
PERC./LEAKAGE THROUGH LAYER 4	2.285619	8296.799	9.40
CHANGE IN WATER STORAGE	-0.423	-1533.676	-1.74
SOIL WATER AT START OF YEAR	144.491	524502.562	
SOIL WATER AT END OF YEAR	144.160	523300.437	
SNOW WATER AT START OF YEAR	2.314	8401.606	9.52
SNOW WATER AT END OF YEAR	2.223	8070.047	9.14
ANNUAL WATER BUDGET BALANCE	0.0000	0.003	0.00

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ANNUAL TOTALS FOR YEAR 73

	INCHES	CU. FEET	PERCENT
PRECIPITATION	30.43	110460.945	100.00
RUNOFF	16.861	61204.344	55.41
EVAPOTRANSPIRATION	10.505	38134.148	34.52
PERC./LEAKAGE THROUGH LAYER 2	2.329590	8456.411	7.66
AVG. HEAD ON TOP OF LAYER 2	6.6630		
PERC./LEAKAGE THROUGH LAYER 4	2.283732	8289.948	7.50

CHANGE IN WATER STORAGE	0.780	2832.431	2.56
SOIL WATER AT START OF YEAR	144.160	523300.437	
SOIL WATER AT END OF YEAR	144.658	525107.062	
SNOW WATER AT START OF YEAR	2.223	8070.047	7.31
SNOW WATER AT END OF YEAR	2.506	9095.842	8.23
ANNUAL WATER BUDGET BALANCE	0.0000	0.073	0.00

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ANNUAL TOTALS FOR YEAR 74

	INCHES	CU. FEET	PERCENT
PRECIPITATION	19.86	72091.805	100.00
RUNOFF	8.461	30712.240	42.60
EVAPOTRANSPIRATION	9.973	36202.680	50.22
PERC./LEAKAGE THROUGH LAYER 2	2.197279	7976.122	11.06
AVG. HEAD ON TOP OF LAYER 2	6.2554		
PERC./LEAKAGE THROUGH LAYER 4	2.285329	8295.745	11.51
CHANGE IN WATER STORAGE	-0.859	-3118.854	-4.33
SOIL WATER AT START OF YEAR	144.658	525107.062	
SOIL WATER AT END OF YEAR	144.088	523040.156	
SNOW WATER AT START OF YEAR	2.506	9095.842	12.62
SNOW WATER AT END OF YEAR	2.216	8043.898	11.16
ANNUAL WATER BUDGET BALANCE	0.0000	-0.010	0.00

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ANNUAL TOTALS FOR YEAR 75

	INCHES	CU. FEET	PERCENT
PRECIPITATION	18.20	66066.016	100.00
RUNOFF	5.136	18643.369	28.22
EVAPOTRANSPIRATION	11.723	42553.020	64.41
PERC./LEAKAGE THROUGH LAYER 2	1.668876	6058.019	9.17
AVG. HEAD ON TOP OF LAYER 2	4.4531		
PERC./LEAKAGE THROUGH LAYER 4	1.829860	6642.392	10.05
CHANGE IN WATER STORAGE	-0.488	-1772.811	-2.68
SOIL WATER AT START OF YEAR	144.088	523040.156	
SOIL WATER AT END OF YEAR	143.561	521128.219	
SNOW WATER AT START OF YEAR	2.216	8043.898	12.18
SNOW WATER AT END OF YEAR	2.254	8183.020	12.39
ANNUAL WATER BUDGET BALANCE	0.0000	0.046	0.00

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ANNUAL TOTALS FOR YEAR 76

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.33	95577.898	100.00
RUNOFF	12.914	46877.301	49.05
EVAPOTRANSPIRATION	10.903	39576.465	41.41
PERC./LEAKAGE THROUGH LAYER 2	2.513066	9122.428	9.54
AVG. HEAD ON TOP OF LAYER 2	7.4290		
PERC./LEAKAGE THROUGH LAYER 4	2.289244	8309.955	8.69
CHANGE IN WATER STORAGE	0.224	814.224	0.85
SOIL WATER AT START OF YEAR	143.561	521128.219	
SOIL WATER AT END OF YEAR	144.250	523629.281	

SNOW WATER AT START OF YEAR	2.254	8183.020	8.56
SNOW WATER AT END OF YEAR	1.790	6496.190	6.80
ANNUAL WATER BUDGET BALANCE	0.0000	-0.049	0.00

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ANNUAL TOTALS FOR YEAR 77

	INCHES	CU. FEET	PERCENT
PRECIPITATION	22.05	80041.523	100.00
RUNOFF	5.472	19862.037	24.81
EVAPOTRANSPIRATION	12.685	46047.270	57.53
PERC./LEAKAGE THROUGH LAYER 2	2.205733	8006.812	10.00
AVG. HEAD ON TOP OF LAYER 2	6.4197		
PERC./LEAKAGE THROUGH LAYER 4	2.286822	8301.162	10.37
CHANGE IN WATER STORAGE	1.606	5831.004	7.28
SOIL WATER AT START OF YEAR	144.250	523629.281	
SOIL WATER AT END OF YEAR	143.513	520953.062	
SNOW WATER AT START OF YEAR	1.790	6496.190	8.12
SNOW WATER AT END OF YEAR	4.133	15003.389	18.74
ANNUAL WATER BUDGET BALANCE	0.0000	0.055	0.00

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ANNUAL TOTALS FOR YEAR 78

	INCHES	CU. FEET	PERCENT
PRECIPITATION	22.61	82074.312	100.00

RUNOFF	9.787	35525.090	43.28
EVAPOTRANSPIRATION	10.391	37718.469	45.96
PERC./LEAKAGE THROUGH LAYER 2	1.974119	7166.054	8.73
AVG. HEAD ON TOP OF LAYER 2	5.4721		
PERC./LEAKAGE THROUGH LAYER 4	1.829792	6642.147	8.09
CHANGE IN WATER STORAGE	0.603	2188.673	2.67
SOIL WATER AT START OF YEAR	143.513	520953.062	
SOIL WATER AT END OF YEAR	144.505	524554.687	
SNOW WATER AT START OF YEAR	4.133	15003.389	18.28
SNOW WATER AT END OF YEAR	3.744	13590.477	16.56
ANNUAL WATER BUDGET BALANCE	0.0000	-0.067	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 78

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	1.13	0.77	0.75	0.89	1.14	2.15
	2.30	4.93	3.43	2.13	1.44	1.56
STD. DEVIATIONS	0.55	0.47	0.47	0.56	0.76	1.23
	1.09	2.06	1.16	0.85	0.70	0.63
RUNOFF						
TOTALS	0.000	0.000	0.113	2.464	2.619	0.698
	0.076	1.463	1.150	0.713	0.262	0.000
STD. DEVIATIONS	0.000	0.000	0.433	1.867	2.127	0.858
	0.270	1.542	0.967	0.780	0.363	0.002
EVAPOTRANSPIRATION						
TOTALS	0.359	0.321	0.408	0.438	0.167	1.840
	2.017	2.364	1.562	0.697	0.362	0.255

STD. DEVIATIONS	0.050	0.056	0.082	0.139	0.150	0.594
	0.724	0.470	0.225	0.195	0.084	0.053

PERCOLATION/LEAKAGE THROUGH LAYER 2

TOTALS	0.0851	0.0713	0.0720	0.0640	0.0623	0.2419
	0.2885	0.3370	0.3847	0.3687	0.1341	0.0942
STD. DEVIATIONS	0.0101	0.0085	0.0085	0.0076	0.0106	0.0517
	0.0480	0.0581	0.0478	0.0743	0.0560	0.0028

PERCOLATION/LEAKAGE THROUGH LAYER 4

TOTALS	0.2436	0.1893	0.1525	0.1583	0.1232	0.1349
	0.0411	0.0235	0.0745	0.2269	0.3866	0.3956
STD. DEVIATIONS	0.2276	0.2255	0.2170	0.2190	0.2043	0.2100
	0.1317	0.1016	0.1684	0.2264	0.1638	0.1699

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 2

AVERAGES	1.8143	1.4425	1.1009	0.7772	0.5491	9.3000
	11.2415	13.1313	15.5172	14.1951	4.2591	2.2658
STD. DEVIATIONS	0.2474	0.2065	0.1703	0.1377	0.3666	2.3696
	2.0498	2.3557	1.9255	3.1080	2.5134	0.1470

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 78

	INCHES		CU. FEET	PERCENT
PRECIPITATION	22.62	(3.293)	82100.8	100.00
RUNOFF	9.558	(2.9033)	34695.95	42.260
EVAPOTRANSPIRATION	10.789	(1.1078)	39164.07	47.702
PERCOLATION/LEAKAGE THROUGH LAYER 2	2.20398	(0.20027)	8000.464	9.74468
AVERAGE HEAD ON TOP OF LAYER 2	6.300	(0.674)		

PERCOLATION/LEAKAGE THROUGH LAYER 4	2.15008 (0.39386)	7804.806	9.50637
CHANGE IN WATER STORAGE	0.120 (1.6822)	435.99	0.531

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 78

	(INCHES)	(CU. FT.)
PRECIPITATION	2.58	9365.399
RUNOFF	6.670	24213.8789
PERCOLATION/LEAKAGE THROUGH LAYER 2	0.014963	54.31509
AVERAGE HEAD ON TOP OF LAYER 2	18.000	
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.458189	1663.22437
SNOW WATER	8.29	30097.4531

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4500
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.2000

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FINAL WATER STORAGE AT END OF YEAR 78

LAYER	(INCHES)	(VOL/VOL)
1	7.7012	0.4278
2	0.0000	0.0000
3	10.2545	0.2848
4	125.9498	0.2099
SNOW WATER	3.744	

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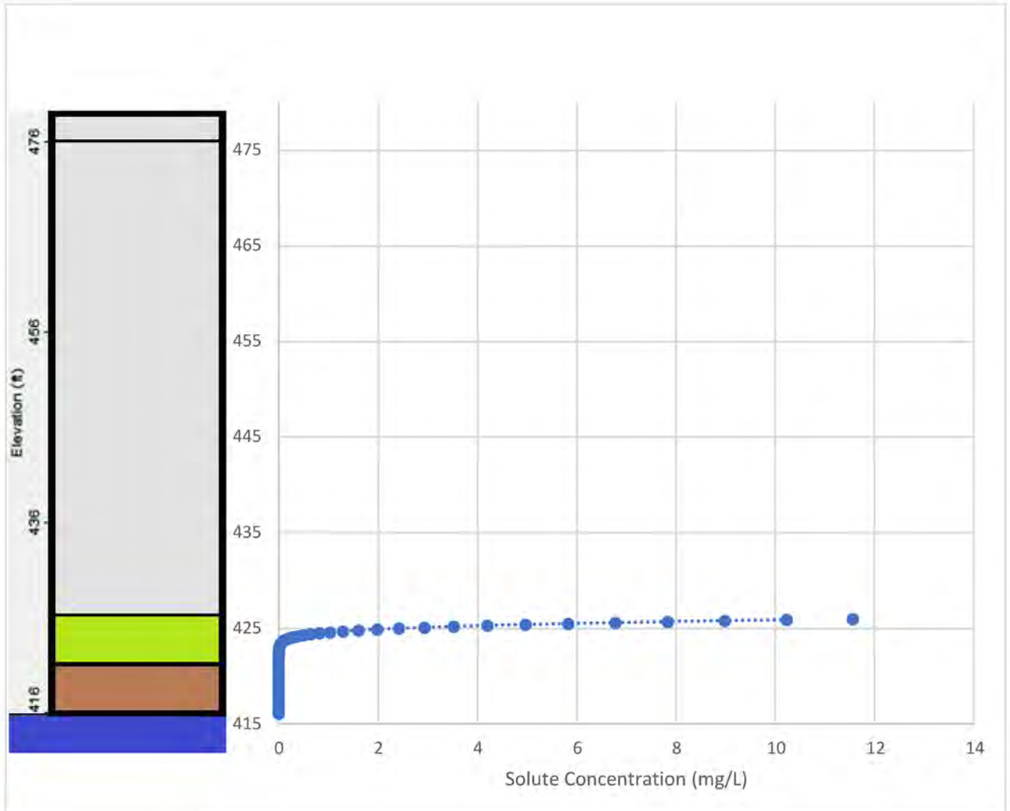
Attachment C

VS2DT Model

DEPTH_CM	CONC_MG_ML	DEPTH_FT	CONC_MG_L	ELEVATION
1.524	0.01156	0.05	11.56	425.95
4.572	0.01023	0.15	10.23	425.85
7.62	0.008982	0.25	8.982	425.75
10.668	0.007834	0.35	7.834	425.65
13.716	0.006781	0.45	6.781	425.55
16.764	0.005826	0.55	5.826	425.45
19.812	0.004966	0.65	4.966	425.35
22.86	0.0042	0.75	4.2	425.25
25.908	0.003524	0.85	3.524	425.15
28.956	0.002932	0.95	2.932	425.05
32.004	0.002419	1.05	2.419	424.95
35.052	0.00198	1.15	1.98	424.85
38.1	0.001606	1.25	1.606	424.75
41.148	0.001292	1.35	1.292	424.65
44.196	0.00103	1.45	1.03	424.55
47.244	0.0008146	1.55	0.8146	424.45
50.292	0.0006384	1.65	0.6384	424.35
53.34	0.0004959	1.75	0.4959	424.25
56.388	0.0003819	1.85	0.3819	424.15
59.436	0.0002914	1.95	0.2914	424.05
62.484	0.0002204	2.05	0.2204	423.95
65.532	0.0001652	2.15	0.1652	423.85
68.58	0.0001228	2.25	0.1228	423.75
71.628	0.00009038	2.35	0.09038	423.65
74.676	0.00006595	2.45	0.06595	423.55
77.724	0.00004768	2.55	0.04768	423.45
80.772	0.00003416	2.65	0.03416	423.35
83.82	0.00002425	2.75	0.02425	423.25
86.868	0.00001706	2.85	0.01706	423.15
89.916	0.0000119	2.95	0.0119	423.05
92.964	0.000008218	3.05	0.008218	422.95
96.012	0.000005625	3.15	0.005625	422.85
99.06	0.000003816	3.25	0.003816	422.75
102.108	0.000002565	3.35	0.002565	422.65
105.156	0.000001708	3.45	0.001708	422.55
108.204	0.000001127	3.55	0.001127	422.45
111.252	7.373E-07	3.65	0.0007373	422.35
114.3	4.779E-07	3.75	0.0004779	422.25
117.348	0.000000307	3.85	0.000307	422.15
120.396	1.954E-07	3.95	0.0001954	422.05
123.444	1.233E-07	4.05	0.0001233	421.95

Textural class	Ratio of Saturated Hydraulic Conductivity	Saturated Hydraulic Conductivity in the Vertical (x) direction	Specific Storage	Porosity	Alpha Parameter (Van Genuchten)	Theta – Residual Moisture (Van Genuchten)	Beta Parameter (Van Genuchten)	Longitudinal Dispersivity	Transverse Dispersivity	Coefficient of Molecular Diffusivity	Decay Coefficient	Bulk Density	Langmuir Coefficient (Kl)	Adsorptive Capacity,q
	-	cm/day	1/cm	vol/vol	cm	vol/vol	-	cm	cm	cm2/day	1/day	mg/cm3	cm3/mg	mg/mg
Loess	1	4.800192	0.00864	0.45	0.005882353	0.12	4	30.48	0.1	0.34	0	1449.2	7.07	0.0075
WBR	1	11.19	0.00864	0.3	0.006896552	0.05	6	152.4	0.864	0.47	0	1400	7.07	0.0075

RDM18 Scenario 5 + 7I Antimony, 52 years (cL=0.0854mg/ml, K=7.07mL/mg, q=0.0075mg/mg)



```
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+                                VS2DT                               +
+                             VERSION 3.3                            +
+              SIMULATION OF 2-DIMENSIONAL VARIABLY                  +
+               SATURATED FLOW AND SOLUTE TRANSPORT                  +
+                      THROUGH POROUS MEDIA.                         +
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

```
*******************************************************************************************
    RDM18 - Scenario 5 + 7I Antimony (cL=0.0854mg/ml, K=7.07mL/mg, q=0.00750mg/mg)
*******************************************************************************************

         SPACE AND TIME CONSTANTS
         ------------------------
    MAXIMUM SIMULATION TIME =   0.189800E+05 day
    STARTING TIME =     0.0000
    NUMBER OF RECHARGE PERIODS =         3
    MAXIMUM NUMBER OF TIME STEPS =      10000
    NUMBER OF ROWS =    102
    NUMBER OF COLUMNS =      3
    AXES TILTED BY ANGLE =     0.00
         SOLUTION OPTIONS
         ----------------
    WRITE ALL PRESSURE HEADS TO FILE 8 AT OBSERVATION TIMES? T
    STOP SOLUTION IF MAXIMUM NO. OF ITERATIONS EXCEEDED IN ANY TIME STEP? F
    WRITE BOUNDARY FLUXES TO FILE 7? F
    WRITE RESULTS AT SELECTED OBSERVATION POINTS TO FILE 11? F
    WRITE MASS BALANCE RATES TO FILE 9? T
    WRITE MASS BALANCE RATES TO FILE 6? F
    WRITE MOISTURE CONTENTS TO FILE 6? F
    WRITE SATURATIONS TO FILE 6? F
    WRITE PRESSURE HEADS TO FILE 6? F
    WRITE TOTAL HEADS TO FILE 6? F
    WRITE VELOCITIES TO FILE 6? F
```

GRID SPACING IN VERTICAL DIRECTION, IN cm

3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048	3.048
3.048	3.048								

GRID SPACING IN HORIZONTAL OR RADIAL DIRECTION, IN cm

80.000 80.000 80.000

TIMES AT WHICH H WILL BE WRITTEN TO FILE 08

0.18980E+05

MASS BALANCE COMPONENTS WRITTEN TO FILE 9

16 17 18 55 56 57

COORDINATE SYSTEM IS RECTANGULAR

TRANSPORT TO BE SIMULATED

BACKWARD DIFFERENCING IN SPACE USED FOR TRANSPORT EQUATION

CENTRAL DIFFERENCING IN TIME USED FOR TRANSPORT EQUATION

NONLINEAR SORPTION TO BE SIMULATED

MATRIX EQUATIONS TO BE SOLVED BY SIP

INITIAL MOISTURE PARAMETERS

CONVERGENCE CRITERION FOR SIP FOR FLOW (EPS) = 3.280E-03 cm

CONVERGENCE CRITERION FOR SIP FOR TRANSPORT (EPS1) = 1.000E-02

DAMPING FACTOR, HMAX = 9.000E-01

ARITHEMTIC MEAN USED FOR INTERCELL CONDUCTIVITY

NUMBER OF SOIL TEXTURAL CLASSES = 3

NUMBER OF SOIL PARAMETERS FOR EACH CLASS = 6

NUMBER OF TRANSPORT PARAMETERS FOR EACH CLASS = 7

MINIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 2

MAXIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 80

CONSTANTS FOR SOIL TEXTURAL CLASSES

	ANISOTROPY		KSAT	SPECIFIC STORAGE	POROSITY		
	ALPHAL		ALPHAT	DM	LAMBDA	B	DENSITY
CLASS # 1							
	1.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
CLASS # 2							
	1.000D+00	4.800D+00	8.640D-03	4.500D-01	5.882D-03	1.200D-01	4.000D+00
	3.048D+01	1.000D-01	3.400D-01	0.000D+00	1.449D+03	7.070D+00	7.500D-03
CLASS # 3							
	1.000D+00	1.119D+01	8.640D-03	3.000D-01	6.897D-03	5.000D-02	6.000D+00
	1.524D+02	8.640D-01	4.700D-01	0.000D+00	1.400D+03	7.070D+00	7.500D-03

TEXTURAL CLASS INDEX MAP

TEXTURAL CLASS TO BE READ IN FOR EACH ROW

1	111
2 through 51	131
52 through 101	121
102	111

EQUILLIBRIUM PROFILE USED TO INITIALIZE PRESSURE HEADS ABOVE WATER TABLE AT 303.84 cm BELOW ORIGIN

EQUILLIBRIUM PROFILE ONLY USED UNTIL PRESSURE HEADS EQUAL -152.40 cm

PRESSURE HEADS BELOW 303.84 cm ARE HYDROSTATIC

INITIAL CONCENTRATION SET TO A CONSTANT VALUE OF 0.000E+00

RDM18 - Scenario 5 + 7I Antimony(cL=0.0854mg/ml, K=9.08mL/mg, q=0.00566mg/mg)

TOTAL ELAPSED TIME = 0.000000E+00 day

TIME STEP 0

CONCENTRATION Not Shown

```
 DATA FOR RECHARGE PERIOD         1

     LENGTH OF THIS PERIOD =   3.65000E+02 day
     LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
     MULTIPLIER FOR TIME STEP =  1.200E+00
     MAXIMUM TIME STEP SIZE =    2.00000E+01 day
     MINIMUM TIME STEP SIZE =    1.00000E-02 day
     TIME STEP REDUCTION FACTOR =  4.000E-01
          MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
          STEADY-STATE CLOSURE CRITERION =  3.280E-03
          MAXIMUM DEPTH OF PONDING =  5.000E+01
          PRINT SOLUTION AFTER EVERY TIME STEP? F              SIMULATE EVAPORATION? F
          SIMULATE EVAPOTRANSPIRATION? F                       SIMULATE SEEPAGE FACES? F

               ---------- MASS BALANCE SUMMARY FOR TIME STEP       43 ----------
                   RECHARGE PERIOD NUMBER         1
                   TOTAL ELAPSED SIMULATION TIME =   3.650000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.89265E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.19610E+03	-2.98505E+01	-1.58258E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.45973E+02	1.27110E+01	6.73898E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.64899E+02	1.27110E+01	6.73898E-01
TOTAL FLUX OUT OF DOMAIN --	-3.19610E+03	-2.98505E+01	-1.58258E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	7.31141E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-2.93105E+03	-1.71325E+01	-9.08312E-01
FLUID VOLUME BALANCE --	-1.50234E-01	-6.98774E-03	-3.70468E-04
SOLUTE MASS BALANCE	**mg**	**mg**	**mg /day**
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.10061E+01	1.08552E+00	5.75509E-02
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.10061E+01	1.08552E+00	5.75509E-02
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.82338E+01	-8.78346E-01	-4.65672E-02
SOLUTE FROM BOUNDARY CHANGE --	2.31653-291	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.28584E-02	7.52747E-04	3.99083E-05
SOLUTE MASS BALANCE --	2.75943E+00	2.06419E-01	1.09437E-02

```
 DATA FOR RECHARGE PERIOD         2

     LENGTH OF THIS PERIOD =   3.65000E+02 day
     LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
     MULTIPLIER FOR TIME STEP =  1.200E+00
     MAXIMUM TIME STEP SIZE =    2.00000E+01 day
     MINIMUM TIME STEP SIZE =    1.00000E-02 day
     TIME STEP REDUCTION FACTOR =  4.000E-01
          MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
          STEADY-STATE CLOSURE CRITERION =  3.280E-03
          MAXIMUM DEPTH OF PONDING =  5.000E+01
          PRINT SOLUTION AFTER EVERY TIME STEP? F              SIMULATE EVAPORATION? F
          SIMULATE EVAPOTRANSPIRATION? F                       SIMULATE SEEPAGE FACES? F

               ---------- MASS BALANCE SUMMARY FOR TIME STEP       85 ----------
                   RECHARGE PERIOD NUMBER         2
                   TOTAL ELAPSED SIMULATION TIME =   7.300000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.89265E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.54390E+03	-4.14969E+00	-6.00374E-01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.96551E+02	9.57785E-01	1.38572E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.15478E+02	9.57785E-01	1.38572E-01
TOTAL FLUX OUT OF DOMAIN --	-3.54390E+03	-4.14969E+00	-6.00374E-01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	7.31141E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-3.22815E+03	-3.18015E+00	-4.60102E-01
FLUID VOLUME BALANCE --	-2.77843E-01	-1.17564E-02	-1.70091E-03
SOLUTE MASS BALANCE	**mg**	**mg**	**mg /day**
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.84928E-90	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.53255E+01	8.17948E-02	1.18340E-02
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.53255E+01	8.17948E-02	1.18340E-02
TOTAL FLUX OUT OF DOMAIN --	-3.84928E-90	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-2.19429E+01	-7.36263E-02	-1.06522E-02
SOLUTE FROM BOUNDARY CHANGE --	2.59255E-94	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	3.37105E-03	-2.04721E-05	-2.96189E-06
SOLUTE MASS BALANCE --	3.37922E+00	8.18902E-03	1.18478E-03

```
 DATA FOR RECHARGE PERIOD         3

     LENGTH OF THIS PERIOD =   1.82500E+04 day
     LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
     MULTIPLIER FOR TIME STEP =  1.200E+00
     MAXIMUM TIME STEP SIZE =    2.00000E+01 day
     MINIMUM TIME STEP SIZE =    1.00000E-02 day
     TIME STEP REDUCTION FACTOR =  4.000E-01
          MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
          STEADY-STATE CLOSURE CRITERION =  3.280E-03
          MAXIMUM DEPTH OF PONDING =  5.000E+01
          PRINT SOLUTION AFTER EVERY TIME STEP? F              SIMULATE EVAPORATION? F
          SIMULATE EVAPOTRANSPIRATION? F                       SIMULATE SEEPAGE FACES? F

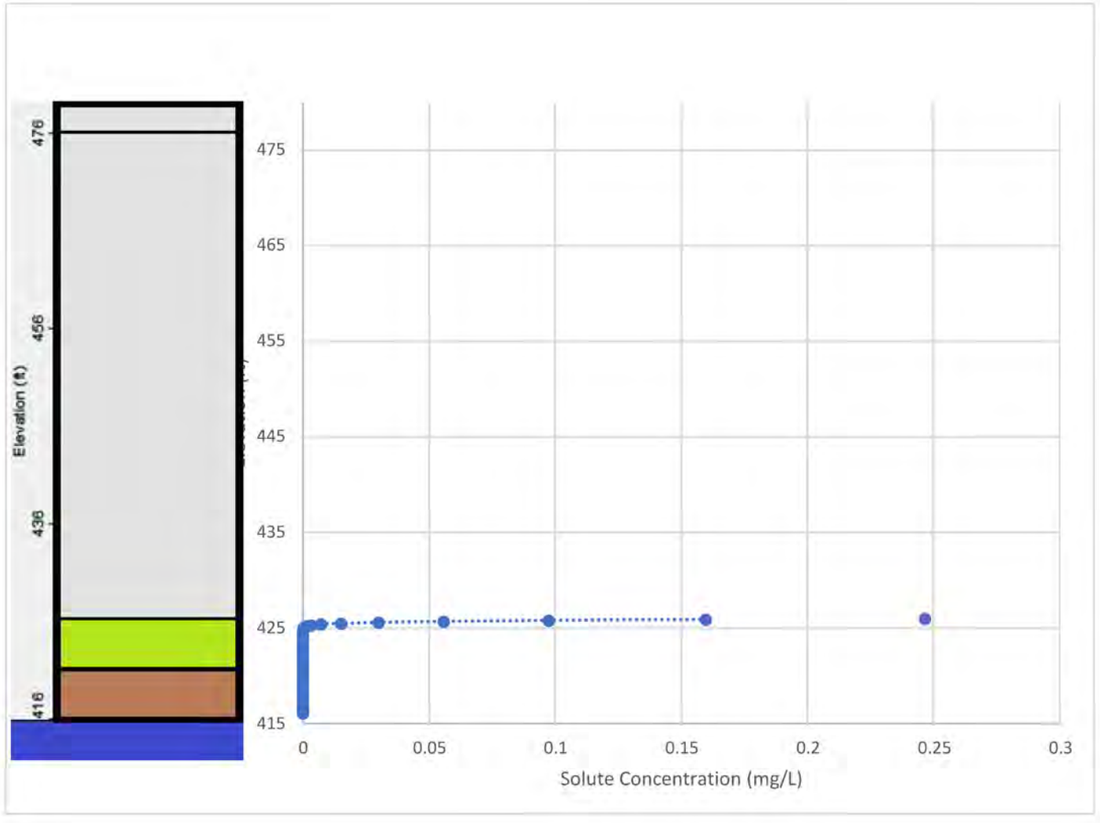
               ---------- MASS BALANCE SUMMARY FOR TIME STEP     1021 ----------
                   RECHARGE PERIOD NUMBER         3
                   TOTAL ELAPSED SIMULATION TIME =   1.898000E+04 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.89265E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-2.14974E+04	-1.18967E+01	-9.98729E-01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.85922E+04	1.19417E+01	1.00250E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.86112E+04	1.19417E+01	1.00250E+00
TOTAL FLUX OUT OF DOMAIN --	-2.14974E+04	-1.18967E+01	-9.98729E-01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	7.31141E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-2.95056E+03	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	6.43486E+01	4.49553E-02	3.77400E-03
SOLUTE MASS BALANCE	**mg**	**mg**	**mg /day**
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.51417E-40	-1.42286E-41	-1.19449E-42
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.58778E+03	1.01982E+00	8.56138E-02
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.58778E+03	1.01982E+00	8.56138E-02
TOTAL FLUX OUT OF DOMAIN --	-3.51417E-40	-1.42286E-41	-1.19449E-42
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.35768E+03	-9.16788E-01	-7.69644E-02
SOLUTE FROM BOUNDARY CHANGE --	3.37705E-93	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.48742E+00	1.02904E-03	8.63883E-05
SOLUTE MASS BALANCE --	2.28614E+02	1.02000E-01	8.56293E-03

DEPTH_CM	CONC_MG_ML	DEPTH_FT	CONC_MG_L	ELEVATION
1.524	0.0002467	0.05	0.2467	425.95
4.572	0.0001598	0.15	0.1598	425.85
7.62	0.00009744	0.25	0.09744	425.75
10.668	0.00005581	0.35	0.05581	425.65
13.716	0.00002999	0.45	0.02999	425.55
16.764	0.00001512	0.55	0.01512	425.45
19.812	0.000007147	0.65	0.007147	425.35
22.86	0.000003173	0.75	0.003173	425.25
25.908	0.000001325	0.85	0.001325	425.15
28.956	0.000000521	0.95	0.000521	425.05
32.004	1.932E-07	1.05	0.0001932	424.95
35.052	6.775E-08	1.15	0.00006775	424.85
38.1	2.249E-08	1.25	0.00002249	424.75
41.148	7.085E-09	1.35	0.000007085	424.65
44.196	2.121E-09	1.45	0.000002121	424.55
47.244	6.046E-10	1.55	6.046E-07	424.45
50.292	1.644E-10	1.65	1.644E-07	424.35
53.34	4.271E-11	1.75	4.271E-08	424.25
56.388	1.062E-11	1.85	1.062E-08	424.15
59.436	2.53E-12	1.95	2.53E-09	424.05
62.484	5.787E-13	2.05	5.787E-10	423.95
65.532	1.272E-13	2.15	1.272E-10	423.85
68.58	2.692E-14	2.25	2.692E-11	423.75
71.628	5.488E-15	2.35	5.488E-12	423.65
74.676	1.08E-15	2.45	1.08E-12	423.55
77.724	2.052E-16	2.55	2.052E-13	423.45
80.772	3.769E-17	2.65	3.769E-14	423.35
83.82	6.704E-18	2.75	6.704E-15	423.25
86.868	1.155E-18	2.85	1.155E-15	423.15
89.916	1.93E-19	2.95	1.93E-16	423.05
92.964	3.131E-20	3.05	3.131E-17	422.95
96.012	4.934E-21	3.15	4.934E-18	422.85
99.06	7.56E-22	3.25	7.56E-19	422.75
102.108	1.127E-22	3.35	1.127E-19	422.65
105.156	1.637E-23	3.45	1.637E-20	422.55
108.204	2.316E-24	3.55	2.316E-21	422.45
111.252	3.195E-25	3.65	3.195E-22	422.35
114.3	4.303E-26	3.75	4.303E-23	422.25
117.348	5.658E-27	3.85	5.658E-24	422.15
120.396	7.27E-28	3.95	7.27E-25	422.05
123.444	9.132E-29	4.05	9.132E-26	421.95

Textural class	Ratio of Saturated Hydraulic Conductivity	Saturated Hydraulic Conductivity in the Vertical (x) direction	Specific Storage	Porosity	Alpha Parameter (Van Genuchten)	Theta - Residual Moisture (Van Genuchten)	Beta Parameter (Van Genuchten)	Longitudinal Dispersivity	Transverse Dispersivity	Coefficient of Molecular Diffusivity	Decay Coefficient	Bulk Density	Langmuir Coefficient (Kl)	Adsorptive Capacity (Langmuir Only)
	-	cm/day	1/cm	vol/vol	cm	vol/vol	-	cm	cm	cm2/day	1/day	mg/cm3	cm3/mg	mg/mg
Loess	1	4.800192	0.00864	0.45	0.005882353	0.12	4	30.48	0.1	0.34	0	1449.2	27.25	0.017
WBR	1	11.19	0.00864	0.3	0.006896552	0.05	6	152.4	0.864	0.47	0	1400	27.25	0.017

RDM19 **Scenario 5 + 7I Arsenic, 52 years (cL=0.006118mg/ml, K=27.25mL/mg, q=0.017mg/mg)**



```
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    +                          VS2DT                         +
                    +                       VERSION 3.3                      +
                    +          SIMULATION OF 2-DIMENSIONAL VARIABLY          +
                    +           SATURATED FLOW AND SOLUTE TRANSPORT          +
                    +                 THROUGH POROUS MEDIA.                  +
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

*******************************************************************************************
    RDM19 - Scenario 5 + 7I Arsenic (cL=0.006118mg/ml, K=27.25mL/mg, q=0.017mg/mg)
*******************************************************************************************

         SPACE AND TIME CONSTANTS
         ------------------------
    MAXIMUM SIMULATION TIME =   0.189800E+05 day
    STARTING TIME =     0.0000
    NUMBER OF RECHARGE PERIODS =         3
    MAXIMUM NUMBER OF TIME STEPS =      10000
    NUMBER OF ROWS =    852
    NUMBER OF COLUMNS =      3
    AXES TILTED BY ANGLE =     0.00
         SOLUTION OPTIONS
         ----------------
    WRITE ALL PRESSURE HEADS TO FILE 8 AT OBSERVATION TIMES? T
    STOP SOLUTION IF MAXIMUM NO. OF ITERATIONS EXCEEDED IN ANY TIME STEP? F
    WRITE BOUNDARY FLUXES TO FILE 7? F
    WRITE RESULTS AT SELECTED OBSERVATION POINTS TO FILE 11? F
    WRITE MASS BALANCE RATES TO FILE 9? T
    WRITE MASS BALANCE RATES TO FILE 6? F
    WRITE MOISTURE CONTENTS TO FILE 6? F
    WRITE SATURATIONS TO FILE 6? F
    WRITE PRESSURE HEADS TO FILE 6? F
    WRITE TOTAL HEADS TO FILE 6? F
    WRITE VELOCITIES TO FILE 6? F
                                            GRID SPACING IN VERTICAL DIRECTION, IN cm
    2.318     2.318     2.258     2.258     2.258     2.258     2.258     2.258     2.258     2.258
    Rows 2-85 not shown
    2.764     2.764
```

GRID SPACING IN HORIZONTAL OR RADIAL DIRECTION, IN cm

80.000 80.000 80.000

TIMES AT WHICH H WILL BE WRITTEN TO FILE 08

0.00000E+00 0.36500E+03 0.73000E+03 0.10950E+04 0.18250E+05

MASS BALANCE COMPONENTS WRITTEN TO FILE 9

16 17 18 55 56 57

COORDINATE SYSTEM IS RECTANGULAR

TRANSPORT TO BE SIMULATED

BACKWARD DIFFERENCING IN SPACE USED FOR TRANSPORT EQUATION

CENTRAL DIFFERENCING IN TIME USED FOR TRANSPORT EQUATION

NONLINEAR SORPTION TO BE SIMULATED

MATRIX EQUATIONS TO BE SOLVED BY SIP

INITIAL MOISTURE PARAMETERS

CONVERGENCE CRITERION FOR SIP FOR FLOW (EPS) = 3.280E-03 cm

CONVERGENCE CRITERION FOR SIP FOR TRANSPORT (EPS1) = 1.000E-02

DAMPING FACTOR, HMAX = 9.000E-01

ARITHEMTIC MEAN USED FOR INTERCELL CONDUCTIVITY

NUMBER OF SOIL TEXTURAL CLASSES = 3

NUMBER OF SOIL PARAMETERS FOR EACH CLASS = 6

NUMBER OF TRANSPORT PARAMETERS FOR EACH CLASS = 7

MINIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 2

MAXIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 80

CONSTANTS FOR SOIL TEXTURAL CLASSES

	ANISOTROPY	KSAT	SPECIFIC STORAGE	POROSITY			
	ALPHAL	ALPHAT	DM	LAMBDA	B	DENSITY	
CLASS # 1							
	1.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
CLASS # 2							
	1.000D+00	4.800D+00	8.640D-03	4.500D-01	5.882D-03	1.200D-01	4.000D+00
	3.048D+01	1.000D-01	3.400D-01	0.000D+00	1.449D+03	2.725D+01	1.700D-02
CLASS # 3							
	1.000D+00	1.119D+01	8.640D-03	3.000D-01	6.897D-03	5.000D-02	6.000D+00
	1.524D+02	8.640D-01	4.700D-01	0.000D+00	1.400D+03	2.725D+01	1.700D-02

TEXTURAL CLASS INDEX MAP

```
TEXTURAL CLASS TO BE READ IN FOR EACH ROW
     1 through 581     111
   582 through 716     131
   717 through 851     121
   852                 111

EQUILLIBRIUM PROFILE USED TO INITIALIZE PRESSURE HEADS ABOVE WATER TABLE AT   1919.28 cm   BELOW ORIGIN
EQUILLIBRIUM PROFILE ONLY USED UNTIL PRESSURE HEADS EQUAL   -152.40 cm
PRESSURE HEADS BELOW   1919.28 cm   ARE HYDROSTATIC
INITIAL CONCENTRATION SET TO A CONSTANT VALUE OF    0.000E+00
 RDM18 - Scenario 5 + 7I Arsenic (cL=0.006118mg/ml, K=27.25mL/mg, q=0.017mg/mg)
TOTAL ELAPSED TIME =  0.000000E+00 day
TIME STEP         0


                                                CONCENTRATION Not Shown
```

```
   DATA FOR RECHARGE PERIOD         1
       LENGTH OF THIS PERIOD =   3.65000E+02 day
       LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
       MULTIPLIER FOR TIME STEP =  1.200E+00
       MAXIMUM TIME STEP SIZE =    2.00000E+01 day
       MINIMUM TIME STEP SIZE =    1.00000E-02 day
       TIME STEP REDUCTION FACTOR =  4.000E-01
            MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
            STEADY-STATE CLOSURE CRITERION =  3.280E-03
            MAXIMUM DEPTH OF PONDING =  5.000E+01
            PRINT SOLUTION AFTER EVERY TIME STEP? F
            SIMULATE EVAPORATION? F
            SIMULATE EVAPOTRANSPIRATION? F
            SIMULATE SEEPAGE FACES? F
                  ---------- MASS BALANCE SUMMARY FOR TIME STEP       50 ----------
                      RECHARGE PERIOD NUMBER         1
                      TOTAL ELAPSED SIMULATION TIME =   3.650000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.11516E+04	-2.02168E+02	-1.09245E+01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.44377E+02	1.23902E+01	6.69527E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.58283E+02	1.23902E+01	6.69527E-01
TOTAL FLUX OUT OF DOMAIN --	-1.11516E+04	-2.02168E+02	-1.09245E+01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.08933E+04	-1.89778E+02	-1.02549E+01
FLUID VOLUME BALANCE --	-1.20067E-02	-2.77796E-04	-1.50111E-05

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.49510E+00	7.58035E-02	4.09616E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.49510E+00	7.58035E-02	4.09616E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.31606E+00	-6.82154E-02	-3.68613E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.08441E-04	6.81136E-06	3.68063E-07
SOLUTE MASS BALANCE --	1.78935E-01	7.58131E-03	4.09668E-04

```
    DATA FOR RECHARGE PERIOD         2
        LENGTH OF THIS PERIOD =   3.65000E+02 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP       92 ----------
                       RECHARGE PERIOD NUMBER         2
                       TOTAL ELAPSED SIMULATION TIME =   7.300000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.33221E+04	-2.44090E+01	-3.53147E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.94628E+02	9.51572E-01	1.37673E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.08533E+02	9.51572E-01	1.37673E-01
TOTAL FLUX OUT OF DOMAIN --	-1.33221E+04	-2.44090E+01	-3.53147E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.30132E+04	-2.34502E+01	-3.39275E+00
FLUID VOLUME BALANCE --	-3.49227E-01	-7.22228E-03	-1.04491E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.80253E+00	5.82172E-03	8.42282E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.80253E+00	5.82172E-03	8.42282E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.58681E+00	-5.23964E-03	-7.58067E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	2.89563E-05	-1.69024E-07	-2.44543E-08
SOLUTE MASS BALANCE --	2.15694E-01	5.82247E-04	8.42390E-05

```
 DATA FOR RECHARGE PERIOD         3
     LENGTH OF THIS PERIOD =   1.82500E+04 day
     LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
     MULTIPLIER FOR TIME STEP =  1.200E+00
     MAXIMUM TIME STEP SIZE =    2.00000E+01 day
     MINIMUM TIME STEP SIZE =    1.00000E-02 day
     TIME STEP REDUCTION FACTOR =  4.000E-01
          MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
          STEADY-STATE CLOSURE CRITERION =  3.280E-03
          MAXIMUM DEPTH OF PONDING =  5.000E+01
          PRINT SOLUTION AFTER EVERY TIME STEP? F
          SIMULATE EVAPORATION? F
          SIMULATE EVAPOTRANSPIRATION? F
          SIMULATE SEEPAGE FACES? F

               ---------- MASS BALANCE SUMMARY FOR TIME STEP      134 ----------
                   RECHARGE PERIOD NUMBER         3
                   TOTAL ELAPSED SIMULATION TIME =   1.095000E+03 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.42473E+04	-1.31593E+01	-1.90388E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	6.58168E+02	6.88420E+00	9.96001E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	6.72074E+02	6.88420E+00	9.96001E-01
TOTAL FLUX OUT OF DOMAIN --	-1.42473E+04	-1.31593E+01	-1.90388E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.35748E+04	-6.27077E+00	-9.07250E-01
FLUID VOLUME BALANCE --	-3.94352E-01	-4.33281E-03	-6.26867E-04

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	4.02667E+00	4.21175E-02	6.09353E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	4.02667E+00	4.21175E-02	6.09353E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-3.58634E+00	-3.79006E-02	-5.48343E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	4.41481E-04	4.99553E-06	7.22750E-07
SOLUTE MASS BALANCE --	4.39888E-01	4.21190E-03	6.09375E-04

---------- MASS BALANCE SUMMARY FOR TIME STEP 994 ----------
RECHARGE PERIOD NUMBER 3
TOTAL ELAPSED SIMULATION TIME = 1.825000E+04 day

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.12503E+04	-1.31408E+01	-9.89685E-01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.77446E+04	1.32247E+01	9.96001E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.77585E+04	1.32247E+01	9.96001E-01
TOTAL FLUX OUT OF DOMAIN --	-3.12503E+04	-1.31408E+01	-9.89685E-01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.35828E+04	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	9.09073E+01	8.38531E-02	6.31529E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.08561E+02	8.09087E-02	6.09353E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.08561E+02	8.09087E-02	6.09353E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-9.32579E+01	-7.28089E-02	-5.48351E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.11577E-02	8.70779E-06	6.55816E-07
SOLUTE MASS BALANCE --	1.52921E+01	8.09103E-03	6.09365E-04

---------- MASS BALANCE SUMMARY FOR TIME STEP 1031 ----------
RECHARGE PERIOD NUMBER 3
TOTAL ELAPSED SIMULATION TIME = 1.898000E+04 day

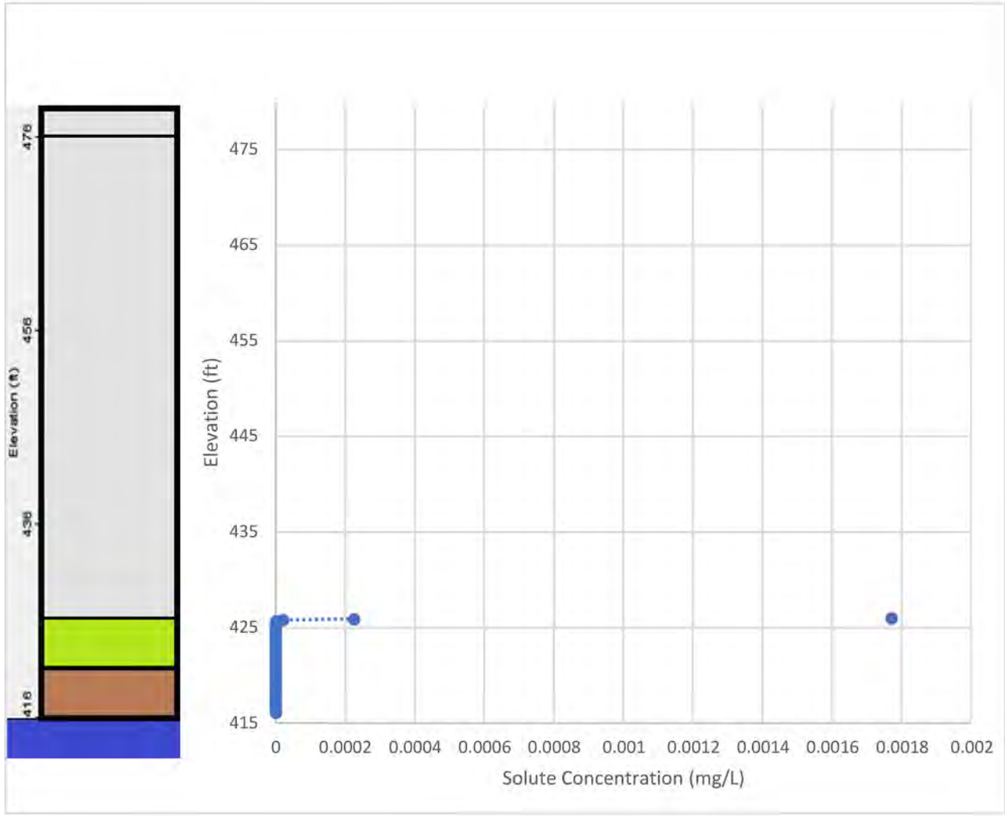
VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.19728E+04	-1.47925E+01	-9.89685E-01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.84716E+04	1.48868E+01	9.96001E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.84855E+04	1.48868E+01	9.96001E-01
TOTAL FLUX OUT OF DOMAIN --	-3.19728E+04	-1.47925E+01	-9.89685E-01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.35828E+04	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	9.55175E+01	9.43923E-02	6.31529E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.13009E+02	9.10777E-02	6.09353E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.13009E+02	9.10777E-02	6.09353E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-9.70575E+01	-7.37640E-02	-4.93516E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.16121E-02	8.82317E-06	5.90312E-07
SOLUTE MASS BALANCE --	1.59404E+01	1.73049E-02	1.15778E-03

DEPTH_CM	CONC_MG_ML	DEPTH_FT	CONC_MG_L	ELEVATION
1.524	0.000001772	0.05	0.001772	425.95
4.572	2.256E-07	0.15	0.0002256	425.85
7.62	2.046E-08	0.25	0.00002046	425.75
10.668	1.433E-09	0.35	0.000001433	425.65
13.716	8.148E-11	0.45	8.148E-08	425.55
16.764	3.896E-12	0.55	3.896E-09	425.45
19.812	1.606E-13	0.65	1.606E-10	425.35
22.86	5.813E-15	0.75	5.813E-12	425.25
25.908	1.876E-16	0.85	1.876E-13	425.15
28.956	5.459E-18	0.95	5.459E-15	425.05
32.004	1.447E-19	1.05	1.447E-16	424.95
35.052	3.518E-21	1.15	3.518E-18	424.85
38.1	7.906E-23	1.25	7.906E-20	424.75
41.148	1.651E-24	1.35	1.651E-21	424.65
44.196	3.221E-26	1.45	3.221E-23	424.55
47.244	5.894E-28	1.55	5.894E-25	424.45
50.292	1.016E-29	1.65	1.016E-26	424.35
53.34	1.654E-31	1.75	1.654E-28	424.25
56.388	2.552E-33	1.85	2.552E-30	424.15
59.436	3.742E-35	1.95	3.742E-32	424.05
62.484	5.229E-37	2.05	5.229E-34	423.95
65.532	6.977E-39	2.15	6.977E-36	423.85
68.58	8.908E-41	2.25	8.908E-38	423.75
71.628	1.09E-42	2.35	1.09E-39	423.65
74.676	1.282E-44	2.45	1.282E-41	423.55
77.724	1.449E-46	2.55	1.449E-43	423.45
80.772	1.579E-48	2.65	1.579E-45	423.35
83.82	1.659E-50	2.75	1.659E-47	423.25
86.868	1.684E-52	2.85	1.684E-49	423.15
89.916	1.653E-54	2.95	1.653E-51	423.05
92.964	1.571E-56	3.05	1.571E-53	422.95
96.012	1.448E-58	3.15	1.448E-55	422.85
99.06	1.295E-60	3.25	1.295E-57	422.75
102.108	1.124E-62	3.35	1.124E-59	422.65
105.156	9.492E-65	3.45	9.492E-62	422.55
108.204	7.798E-67	3.55	7.798E-64	422.45
111.252	6.238E-69	3.65	6.238E-66	422.35
114.3	4.864E-71	3.75	4.864E-68	422.25
117.348	3.699E-73	3.85	3.699E-70	422.15
120.396	2.745E-75	3.95	2.745E-72	422.05
123.444	1.99E-77	4.05	1.99E-74	421.95

Textural class	Ratio of Saturated Hydraulic Conductivity	Saturated Hydraulic Conductivity in the Vertical (x) direction	Specific Storage	Porosity	Alpha Parameter (Van Genuchten)	Theta - Residual Moisture (Van Genuchten)	Beta Parameter (Van Genuchten)	Longitudinal Dispersivity	Transverse Dispersivity	Coefficient of Molecular Diffusivity	Decay Coefficient	Bulk Density	Langmuir Coefficient (Kl)	Adsorptive Capacity (Langmuir Only)
	-	cm/day	1/cm	vol/vol	cm	vol/vol	-	cm	cm	cm2/day	1/day	mg/cm3	cm3/mg	mg/mg
Loess	1	4.800192	0.00864	0.45	0.005882353	0.12	4	30.48	0.1	0.34	0	1449.2	1660	0.00495
WBR	1	11.19	0.00864	0.3	0.006896552	0.05	6	152.4	0.864	0.47	0	1400	1660	0.00495

RDM20 Scenario 5 + 7l Mercury, 52 years (cL=0.000357mg/ml, K=1660mL/mg, q=0.00495mg/mg)



```
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    +                          VS2DT                         +
                    +                       VERSION 3.3                      +
                    +          SIMULATION OF 2-DIMENSIONAL VARIABLY          +
                    +           SATURATED FLOW AND SOLUTE TRANSPORT          +
                    +                 THROUGH POROUS MEDIA.                  +
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

*******************************************************************************************
    RDM20 - Scenario 5 + 7I Mercury (cL=0.000357mg/ml, K=1660mL/mg, q=0.00495mg/mg)
*******************************************************************************************

         SPACE AND TIME CONSTANTS
         ------------------------
    MAXIMUM SIMULATION TIME =   0.189800E+05 day
    STARTING TIME =     0.0000
    NUMBER OF RECHARGE PERIODS =         3
    MAXIMUM NUMBER OF TIME STEPS =      10000
    NUMBER OF ROWS =    852
    NUMBER OF COLUMNS =      3
    AXES TILTED BY ANGLE =     0.00
         SOLUTION OPTIONS
         ----------------
    WRITE ALL PRESSURE HEADS TO FILE 8 AT OBSERVATION TIMES? T
    STOP SOLUTION IF MAXIMUM NO. OF ITERATIONS EXCEEDED IN ANY TIME STEP? F
    WRITE BOUNDARY FLUXES TO FILE 7? F
    WRITE RESULTS AT SELECTED OBSERVATION POINTS TO FILE 11? F
    WRITE MASS BALANCE RATES TO FILE 9? T
    WRITE MASS BALANCE RATES TO FILE 6? F
    WRITE MOISTURE CONTENTS TO FILE 6? F
    WRITE SATURATIONS TO FILE 6? F
    WRITE PRESSURE HEADS TO FILE 6? F
    WRITE TOTAL HEADS TO FILE 6? F
    WRITE VELOCITIES TO FILE 6? F
                                            GRID SPACING IN VERTICAL DIRECTION, IN cm
    2.318     2.318     2.258     2.258     2.258     2.258     2.258     2.258     2.258     2.258
    Rows 2-85 not shown
    2.764     2.764
```

GRID SPACING IN HORIZONTAL OR RADIAL DIRECTION, IN cm

80.000 80.000 80.000

TIMES AT WHICH H WILL BE WRITTEN TO FILE 08

0.00000E+00 0.36500E+03 0.73000E+03 0.10950E+04 0.18250E+05

MASS BALANCE COMPONENTS WRITTEN TO FILE 9

16 17 18 55 56 57

COORDINATE SYSTEM IS RECTANGULAR

TRANSPORT TO BE SIMULATED

BACKWARD DIFFERENCING IN SPACE USED FOR TRANSPORT EQUATION

CENTRAL DIFFERENCING IN TIME USED FOR TRANSPORT EQUATION

NONLINEAR SORPTION TO BE SIMULATED

MATRIX EQUATIONS TO BE SOLVED BY SIP

INITIAL MOISTURE PARAMETERS

CONVERGENCE CRITERION FOR SIP FOR FLOW (EPS) = 3.280E-03 cm

CONVERGENCE CRITERION FOR SIP FOR TRANSPORT (EPS1) = 1.000E-02

DAMPING FACTOR, HMAX = 9.000E-01

ARITHEMTIC MEAN USED FOR INTERCELL CONDUCTIVITY

NUMBER OF SOIL TEXTURAL CLASSES = 3

NUMBER OF SOIL PARAMETERS FOR EACH CLASS = 6

NUMBER OF TRANSPORT PARAMETERS FOR EACH CLASS = 7

MINIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 2

MAXIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 80

CONSTANTS FOR SOIL TEXTURAL CLASSES

	ANISOTROPY	KSAT	SPECIFIC STORAGE	POROSITY			
	ALPHAL	ALPHAT	DM	LAMBDA	B	DENSITY	
CLASS # 1							
	1.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
CLASS # 2							
	1.000D+00	4.800D+00	8.640D-03	4.500D-01	5.882D-03	1.200D-01	4.000D+00
	3.048D+01	1.000D-01	3.400D-01	0.000D+00	1.449D+03	1.660D+03	4.950D-03
CLASS # 3							
	1.000D+00	1.119D+01	8.640D-03	3.000D-01	6.897D-03	5.000D-02	6.000D+00
	1.524D+02	8.640D-01	4.700D-01	0.000D+00	1.400D+03	1.660D+03	4.950D-03

TEXTURAL CLASS INDEX MAP

```
TEXTURAL CLASS TO BE READ IN FOR EACH ROW
     1 through 581     111
   582 through 716     131
   717 through 851     121
   852                 111
EQUILLIBRIUM PROFILE USED TO INITIALIZE PRESSURE HEADS ABOVE WATER TABLE AT   1919.28 cm   BELOW ORIGIN
EQUILLIBRIUM PROFILE ONLY USED UNTIL PRESSURE HEADS EQUAL   -152.40 cm
PRESSURE HEADS BELOW   1919.28 cm   ARE HYDROSTATIC
INITIAL CONCENTRATION SET TO A CONSTANT VALUE OF    0.000E+00
 RDM18 - Scenario 5 + 7I Mercury (cL=0.000357mg/ml, K=1660mL/mg, q=0.00495mg/mg)
TOTAL ELAPSED TIME =  0.000000E+00 day
TIME STEP         0


                                                CONCENTRATION Not Shown
```

```
    DATA FOR RECHARGE PERIOD         1
        LENGTH OF THIS PERIOD =   3.65000E+02 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP       50 ----------
                       RECHARGE PERIOD NUMBER         1
                       TOTAL ELAPSED SIMULATION TIME =   3.650000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.11516E+04	-2.02168E+02	-1.09245E+01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.44377E+02	1.23902E+01	6.69527E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.58283E+02	1.23902E+01	6.69527E-01
TOTAL FLUX OUT OF DOMAIN --	-1.11516E+04	-2.02168E+02	-1.09245E+01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.08933E+04	-1.89778E+02	-1.02549E+01
FLUID VOLUME BALANCE --	-1.20067E-02	-2.77796E-04	-1.50111E-05

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	8.72427E-02	4.42332E-03	2.39021E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	8.72427E-02	4.42332E-03	2.39021E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-7.68020E-02	-3.98095E-03	-2.15117E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	3.56958E-07	2.24209E-08	1.21155E-09
SOLUTE MASS BALANCE --	1.04403E-02	4.42344E-04	2.39028E-05

```
    DATA FOR RECHARGE PERIOD         2
        LENGTH OF THIS PERIOD =   3.65000E+02 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP       92 ----------
                       RECHARGE PERIOD NUMBER         2
                       TOTAL ELAPSED SIMULATION TIME =   7.300000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.33221E+04	-2.44090E+01	-3.53147E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.94628E+02	9.51572E-01	1.37673E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.08533E+02	9.51572E-01	1.37673E-01
TOTAL FLUX OUT OF DOMAIN --	-1.33221E+04	-2.44090E+01	-3.53147E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.30132E+04	-2.34502E+01	-3.39275E+00
FLUID VOLUME BALANCE --	-3.49227E-01	-7.22228E-03	-1.04491E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.05182E-01	3.39711E-04	4.91492E-05
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.05182E-01	3.39711E-04	4.91492E-05
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-9.25974E-02	-3.05740E-04	-4.42343E-05
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	9.50629E-08	-5.43784E-10	-7.86742E-11
SOLUTE MASS BALANCE --	1.25846E-02	3.39714E-05	4.91496E-06

```
    DATA FOR RECHARGE PERIOD         3
        LENGTH OF THIS PERIOD =   1.82500E+04 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP      134 ----------
                       RECHARGE PERIOD NUMBER         3
                       TOTAL ELAPSED SIMULATION TIME =   1.095000E+03 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.42473E+04	-1.31593E+01	-1.90388E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	6.58168E+02	6.88420E+00	9.96001E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	6.72074E+02	6.88420E+00	9.96001E-01
TOTAL FLUX OUT OF DOMAIN --	-1.42473E+04	-1.31593E+01	-1.90388E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.35748E+04	-6.27077E+00	-9.07250E-01
FLUID VOLUME BALANCE --	-3.94352E-01	-4.33281E-03	-6.26867E-04

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.34966E-01	2.45766E-03	3.55572E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.34966E-01	2.45766E-03	3.55572E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-2.09298E-01	-2.21187E-03	-3.20012E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.45121E-06	1.63910E-08	2.37144E-09
SOLUTE MASS BALANCE --	2.56667E-02	2.45770E-04	3.55577E-05

---------- MASS BALANCE SUMMARY FOR TIME STEP 994 ----------
RECHARGE PERIOD NUMBER 3
TOTAL ELAPSED SIMULATION TIME = 1.825000E+04 day

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.12503E+04	-1.31408E+01	-9.89685E-01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.77446E+04	1.32247E+01	9.96001E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.77585E+04	1.32247E+01	9.96001E-01
TOTAL FLUX OUT OF DOMAIN --	-3.12503E+04	-1.31408E+01	-9.89685E-01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.35828E+04	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	9.09073E+01	8.38531E-02	6.31529E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	6.33481E+00	4.72121E-03	3.55572E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	6.33481E+00	4.72121E-03	3.55572E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-5.44245E+00	-4.24906E-03	-3.20012E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	3.66569E-05	2.86068E-08	2.15448E-09
SOLUTE MASS BALANCE --	8.92320E-01	4.72129E-04	3.55578E-05

---------- MASS BALANCE SUMMARY FOR TIME STEP 1031 ----------
RECHARGE PERIOD NUMBER 3
TOTAL ELAPSED SIMULATION TIME = 1.898000E+04 day

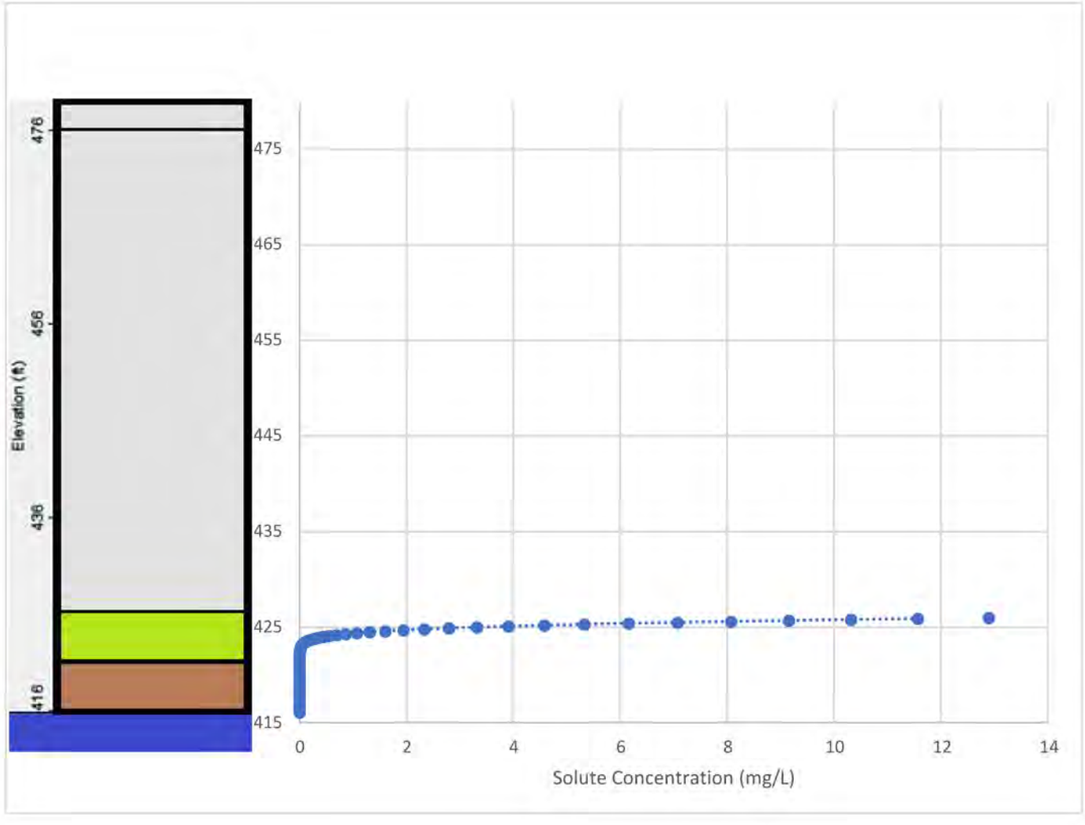
VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39056E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.19728E+04	-1.47925E+01	-9.89685E-01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.84716E+04	1.48868E+01	9.96001E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.84855E+04	1.48868E+01	9.96001E-01
TOTAL FLUX OUT OF DOMAIN --	-3.19728E+04	-1.47925E+01	-9.89685E-01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.35828E+04	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	9.55175E+01	9.43923E-02	6.31529E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	6.59437E+00	5.31460E-03	3.55572E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	6.59437E+00	5.31460E-03	3.55572E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-5.66419E+00	-4.30479E-03	-2.88011E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	3.81499E-05	2.89857E-08	1.93928E-09
SOLUTE MASS BALANCE --	9.30146E-01	1.00978E-03	6.75592E-05

DEPTH_CM	CONC_MG_ML	DEPTH_FT	CONC_MG_L	ELEVATION
1.524	0.0129	0.05	12.9	425.95
4.572	0.01157	0.15	11.57	425.85
7.62	0.01032	0.25	10.32	425.75
10.668	0.009157	0.35	9.157	425.65
13.716	0.008073	0.45	8.073	425.55
16.764	0.007074	0.55	7.074	425.45
19.812	0.00616	0.65	6.16	425.35
22.86	0.005329	0.75	5.329	425.25
25.908	0.00458	0.85	4.58	425.15
28.956	0.003911	0.95	3.911	425.05
32.004	0.003317	1.05	3.317	424.95
35.052	0.002794	1.15	2.794	424.85
38.1	0.002337	1.25	2.337	424.75
41.148	0.001942	1.35	1.942	424.65
44.196	0.001602	1.45	1.602	424.55
47.244	0.001312	1.55	1.312	424.45
50.292	0.001067	1.65	1.067	424.35
53.34	0.0008621	1.75	0.8621	424.25
56.388	0.0006912	1.85	0.6912	424.15
59.436	0.0005502	1.95	0.5502	424.05
62.484	0.0004348	2.05	0.4348	423.95
65.532	0.0003412	2.15	0.3412	423.85
68.58	0.0002657	2.25	0.2657	423.75
71.628	0.0002054	2.35	0.2054	423.65
74.676	0.0001577	2.45	0.1577	423.55
77.724	0.0001201	2.55	0.1201	423.45
80.772	0.00009084	2.65	0.09084	423.35
83.82	0.00006819	2.75	0.06819	423.25
86.868	0.0000508	2.85	0.0508	423.15
89.916	0.00003757	2.95	0.03757	423.05
92.964	0.00002758	3.05	0.02758	422.95
96.012	0.00002009	3.15	0.02009	422.85
99.06	0.00001453	3.25	0.01453	422.75
102.108	0.00001043	3.35	0.01043	422.65
105.156	0.000007428	3.45	0.007428	422.55
108.204	0.000005252	3.55	0.005252	422.45
111.252	0.000003685	3.65	0.003685	422.35
114.3	0.000002567	3.75	0.002567	422.25
117.348	0.000001775	3.85	0.001775	422.15
120.396	0.000001218	3.95	0.001218	422.05
123.444	8.294E-07	4.05	0.0008294	421.95

Textural class	Ratio of Saturated Hydraulic Conductivity	Saturated Hydraulic Conductivity in the Vertical (x) direction	Specific Storage	Porosity	Alpha Parameter (Van Genuchten)	Theta - Residual Moisture (Van Genuchten)	Beta Parameter (Van Genuchten)	Longitudinal Dispersivity	Transverse Dispersivity	Coefficient of Molecular Diffusivity	Decay Coeffici ent	Bulk Density	Langmuir Coefficient (Kl)	Adsorptive Capacity,q
	-	cm/day	1/cm	vol/vol	cm	vol/vol	-	cm	cm	cm2/day	1/day	mg/cm3	cm3/mg	mg/mg
Loess	1	4.80019	0.00864	0.45	0.01	0.12	4	30.48	0.1	0.34	0	1449.2	7.07	0.01
WBR	1	11.19	0.00864	0.3	0.01	0.05	6	152.4	0.864	0.47	0	1400	7.07	0.01

RDM21 **Scenario 6 + 8I Antimony, 52 years (cL=0.0854mg/ml, K=7.07mL/mg, q=0.0075mg/mg)**



```
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    +                          VS2DT                       +
                    +                       VERSION 3.3                    +
                    +          SIMULATION OF 2-DIMENSIONAL VARIABLY        +
                    +           SATURATED FLOW AND SOLUTE TRANSPORT        +
                    +                 THROUGH POROUS MEDIA.                +
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++

********************************************************************************************************
    RDM21   Scenario 6 + 8I Antimony(cL=0.0854mg/ml, K=7.07mL/mg, q=0.00750mg/mg)
********************************************************************************************************

         SPACE AND TIME CONSTANTS
         ------------------------
    MAXIMUM SIMULATION TIME =   0.189800E+05 day
    STARTING TIME =     0.0000
    NUMBER OF RECHARGE PERIODS =         3
    MAXIMUM NUMBER OF TIME STEPS =      10000
    NUMBER OF ROWS =    102
    NUMBER OF COLUMNS =      3
    AXES TILTED BY ANGLE =     0.00
         SOLUTION OPTIONS
         ----------------
    WRITE ALL PRESSURE HEADS TO FILE 8 AT OBSERVATION TIMES? T
    STOP SOLUTION IF MAXIMUM NO. OF ITERATIONS EXCEEDED IN ANY TIME STEP? F
    WRITE BOUNDARY FLUXES TO FILE 7? F
    WRITE RESULTS AT SELECTED OBSERVATION POINTS TO FILE 11? F
    WRITE MASS BALANCE RATES TO FILE 9? T
    WRITE MASS BALANCE RATES TO FILE 6? F
    WRITE MOISTURE CONTENTS TO FILE 6? F
    WRITE SATURATIONS TO FILE 6? F
    WRITE PRESSURE HEADS TO FILE 6? F
    WRITE TOTAL HEADS TO FILE 6? F
    WRITE VELOCITIES TO FILE 6? F
```

```
                                                  GRID SPACING IN VERTICAL DIRECTION, IN cm
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048     3.048
     3.048     3.048
                                                  GRID SPACING IN HORIZONTAL OR RADIAL DIRECTION, IN
cm
    80.000    80.000    80.000
     TIMES AT WHICH H WILL BE WRITTEN TO FILE 08
      0.18980E+05
     MASS BALANCE COMPONENTS WRITTEN TO FILE 9
       16  17  18  55  56  57
     COORDINATE SYSTEM IS RECTANGULAR
     TRANSPORT TO BE SIMULATED
     BACKWARD DIFFERENCING IN SPACE USED FOR TRANSPORT EQUATION
     CENTRAL DIFFERENCING IN TIME USED FOR TRANSPORT EQUATION
     NONLINEAR SORPTION TO BE SIMULATED
     MATRIX EQUATIONS TO BE SOLVED BY SIP
          INITIAL MOISTURE PARAMETERS
          ___________________________

     CONVERGENCE CRITERION FOR SIP FOR FLOW (EPS) =   3.280E-03 cm
     CONVERGENCE CRITERION FOR SIP FOR TRANSPORT (EPS1) =   1.000E-02
     DAMPING FACTOR, HMAX =    9.000E-01
     ARITHEMTIC MEAN USED FOR INTERCELL CONDUCTIVITY
     NUMBER OF SOIL TEXTURAL CLASSES =          3
     NUMBER OF SOIL PARAMETERS FOR EACH CLASS =          6
     NUMBER OF TRANSPORT PARAMETERS FOR EACH CLASS =          7
     MINIMUM PERMITTED NO. OF ITERATIONS/TIME STEP =         2
     MAXIMUM PERMITTED NO. OF ITERATIONS/TIME STEP =        80
```

CONSTANTS FOR SOIL TEXTURAL CLASSES

	ANISOTROPY		KSAT	SPECIFIC STORAGE	POROSITY		
	ALPHAL		ALPHAT	DM	LAMBDA	B	DENSITY
CLASS # 1							
	1.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
CLASS # 2							
	1.000D+00	4.800D+00	8.640D-03	4.500D-01	5.882D-03	1.200D-01	4.000D+00
	3.048D+01	1.000D-01	3.400D-01	0.000D+00	1.449D+03	7.070D+00	7.500D-03
CLASS # 3							
	1.000D+00	1.119D+01	8.640D-03	3.000D-01	6.897D-03	5.000D-02	6.000D+00
	1.524D+02	8.640D-01	4.700D-01	0.000D+00	1.400D+03	7.070D+00	7.500D-03

TEXTURAL CLASS INDEX MAP

TEXTURAL CLASS TO BE READ IN FOR EACH ROW

1	111
2 through 51	131
52 through 101	121
102	111

EQUILLIBRIUM PROFILE USED TO INITIALIZE PRESSURE HEADS ABOVE WATER TABLE AT 303.84 cm BELOW ORIGIN

EQUILLIBRIUM PROFILE ONLY USED UNTIL PRESSURE HEADS EQUAL -152.40 cm

PRESSURE HEADS BELOW 303.84 cm ARE HYDROSTATIC

INITIAL CONCENTRATION SET TO A CONSTANT VALUE OF 0.000E+00

RDM21 Scenario 6 + 8I Antimony(cL=0.0854mg/ml, K=9.08mL/mg, q=0.00566mg/mg)

TOTAL ELAPSED TIME = 0.000000E+00 day

TIME STEP 0

CONCENTRATION Not Shown

DATA FOR RECHARGE PERIOD 1

LENGTH OF THIS PERIOD = 3.65000E+02 day
LENGTH OF INITIAL TIME STEP FOR THIS PERIOD = 1.00000E-01 day
MULTIPLIER FOR TIME STEP = 1.200E+00
MAXIMUM TIME STEP SIZE = 2.00000E+01 day
MINIMUM TIME STEP SIZE = 1.00000E-02 day
TIME STEP REDUCTION FACTOR = 4.000E-01
MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP = 3.281
STEADY-STATE CLOSURE CRITERION = 3.280E-03
MAXIMUM DEPTH OF PONDING = 5.000E+01
PRINT SOLUTION AFTER EVERY TIME STEP? F SIMULATE EVAPORATION? F
SIMULATE EVAPOTRANSPIRATION? F SIMULATE SEEPAGE FACES? F

---------- MASS BALANCE SUMMARY FOR TIME STEP 43 ----------
RECHARGE PERIOD NUMBER 1 TOTAL ELAPSED SIMULATION TIME = 3.650000E+02 day

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.89310E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.23828E+03	-2.42221E+01	-1.76025E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	3.66568E+02	1.38198E+01	1.00430E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.85499E+02	1.38198E+01	1.00430E+00
TOTAL FLUX OUT OF DOMAIN --	-3.23828E+03	-2.42221E+01	-1.76025E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	7.31141E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-2.85264E+03	-1.03983E+01	-7.55657E-01
FLUID VOLUME BALANCE --	-1.36320E-01	-4.03951E-03	-2.93556E-04
SOLUTE MASS BALANCE	**mg**	**mg**	**mg /day**
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	3.13049E+01	1.18021E+00	8.57669E-02
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.13049E+01	1.18021E+00	8.57669E-02
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-2.72078E+01	-9.54888E-01	-6.93927E-02
SOLUTE FROM BOUNDARY CHANGE --	3.47491-291	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	2.18970E-02	9.18734E-04	6.67654E-05
SOLUTE MASS BALANCE --	4.07518E+00	2.24400E-01	1.63074E-02

```
 DATA FOR RECHARGE PERIOD         2
     LENGTH OF THIS PERIOD =   3.65000E+02 day
     LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
     MULTIPLIER FOR TIME STEP =  1.200E+00
     MAXIMUM TIME STEP SIZE =    2.00000E+01 day
     MINIMUM TIME STEP SIZE =    1.00000E-02 day
     TIME STEP REDUCTION FACTOR =  4.000E-01
          MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
          STEADY-STATE CLOSURE CRITERION =  3.280E-03
          MAXIMUM DEPTH OF PONDING =  5.000E+01
          PRINT SOLUTION AFTER EVERY TIME STEP? F                SIMULATE EVAPORATION? F
          SIMULATE EVAPOTRANSPIRATION? F                         SIMULATE SEEPAGE FACES? F

                ---------- MASS BALANCE SUMMARY FOR TIME STEP       85 ----------
                    RECHARGE PERIOD NUMBER         2
                    TOTAL ELAPSED SIMULATION TIME =   7.300000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.89310E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.66028E+03	-5.59191E+00	-8.09033E-01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	5.54969E+02	3.56766E+00	5.16166E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	5.73900E+02	3.56766E+00	5.16166E-01
TOTAL FLUX OUT OF DOMAIN --	-3.66028E+03	-5.59191E+00	-8.09033E-01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	7.31141E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-3.08612E+03	-2.02028E+00	-2.92292E-01
FLUID VOLUME BALANCE --	-2.60625E-01	-3.96971E-03	-5.74335E-04
SOLUTE MASS BALANCE	**mg**	**mg**	**mg /day**
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-2.09116E-89	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	4.73943E+01	3.04678E-01	4.40806E-02
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	4.73943E+01	3.04678E-01	4.40806E-02
TOTAL FLUX OUT OF DOMAIN --	-2.09116E-89	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-4.05895E+01	-2.46579E-01	-3.56748E-02
SOLUTE FROM BOUNDARY CHANGE --	9.34920E-94	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	2.34976E-02	1.93149E-04	2.79446E-05
SOLUTE MASS BALANCE --	6.78135E+00	5.79061E-02	8.37781E-03

```
 DATA FOR RECHARGE PERIOD         3
     LENGTH OF THIS PERIOD =   1.82500E+04 day
     LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
     MULTIPLIER FOR TIME STEP =  1.200E+00
     MAXIMUM TIME STEP SIZE =    2.00000E+01 day
     MINIMUM TIME STEP SIZE =    1.00000E-02 day
     TIME STEP REDUCTION FACTOR =  4.000E-01
          MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
          STEADY-STATE CLOSURE CRITERION =  3.280E-03
          MAXIMUM DEPTH OF PONDING =  5.000E+01
          PRINT SOLUTION AFTER EVERY TIME STEP? F               SIMULATE EVAPORATION? F
          SIMULATE EVAPOTRANSPIRATION? F                        SIMULATE SEEPAGE FACES? F

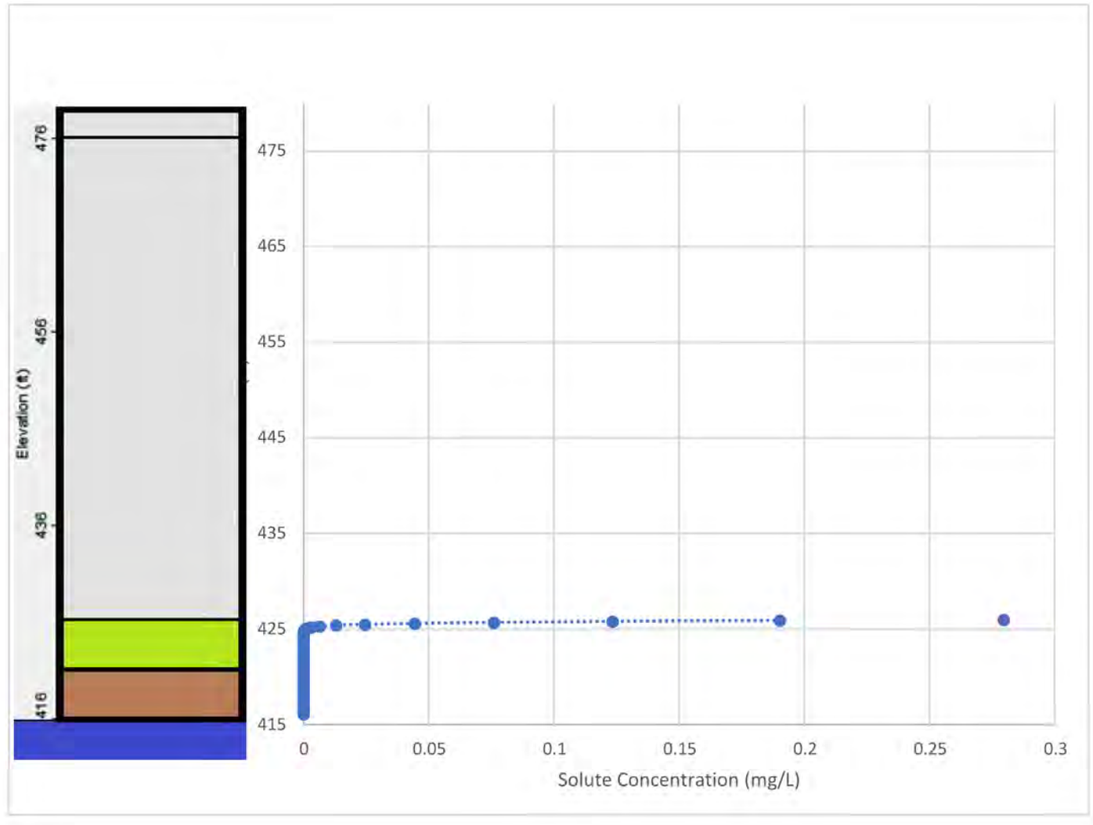
               ---------- MASS BALANCE SUMMARY FOR TIME STEP     1021 ----------
                   RECHARGE PERIOD NUMBER         3
                   TOTAL ELAPSED SIMULATION TIME =   1.898000E+04 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.89310E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-2.57697E+04	-1.45635E+01	-1.22261E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.29474E+04	1.46156E+01	1.22698E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.29663E+04	1.46156E+01	1.22698E+00
TOTAL FLUX OUT OF DOMAIN --	-2.57697E+04	-1.45635E+01	-1.22261E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	7.31141E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-2.87896E+03	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	7.55644E+01	5.21084E-02	4.37451E-03
SOLUTE MASS BALANCE	**mg**	**mg**	**mg /day**
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-2.88461E-35	-1.08234E-36	-9.08629E-38
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.95971E+03	1.24817E+00	1.04784E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.95971E+03	1.24817E+00	1.04784E-01
TOTAL FLUX OUT OF DOMAIN --	-2.88461E-35	-1.08234E-36	-9.08629E-38
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.67428E+03	-1.00983E+00	-8.47751E-02
SOLUTE FROM BOUNDARY CHANGE --	1.67809E-92	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.88856E+00	1.17245E-03	9.84276E-05
SOLUTE MASS BALANCE --	2.83535E+02	2.37173E-01	1.99107E-02

DEPTH_CM	CONC_MG_ML	DEPTH_FT	CONC_MG_L	ELEVATION
1.524	0.0002798	0.05	0.2798	425.95
4.572	0.0001904	0.15	0.1904	425.85
7.62	0.0001234	0.25	0.1234	425.75
10.668	0.00007596	0.35	0.07596	425.65
13.716	0.00004437	0.45	0.04437	425.55
16.764	0.00002457	0.55	0.02457	425.45
19.812	0.0000129	0.65	0.0129	425.35
22.86	0.000006416	0.75	0.006416	425.25
25.908	0.000003028	0.85	0.003028	425.15
28.956	0.000001356	0.95	0.001356	425.05
32.004	5.772E-07	1.05	0.0005772	424.95
35.052	2.337E-07	1.15	0.0002337	424.85
38.1	9.009E-08	1.25	0.00009009	424.75
41.148	3.312E-08	1.35	0.00003312	424.65
44.196	1.163E-08	1.45	0.00001163	424.55
47.244	3.902E-09	1.55	0.000003902	424.45
50.292	1.254E-09	1.65	0.000001254	424.35
53.34	3.862E-10	1.75	3.862E-07	424.25
56.388	1.142E-10	1.85	1.142E-07	424.15
59.436	3.244E-11	1.95	3.244E-08	424.05
62.484	8.866E-12	2.05	8.866E-09	423.95
65.532	2.334E-12	2.15	2.334E-09	423.85
68.58	5.927E-13	2.25	5.927E-10	423.75
71.628	1.453E-13	2.35	1.453E-10	423.65
74.676	3.441E-14	2.45	3.441E-11	423.55
77.724	7.882E-15	2.55	7.882E-12	423.45
80.772	1.748E-15	2.65	1.748E-12	423.35
83.82	3.758E-16	2.75	3.758E-13	423.25
86.868	7.835E-17	2.85	7.835E-14	423.15
89.916	1.586E-17	2.95	1.586E-14	423.05
92.964	3.118E-18	3.05	3.118E-15	422.95
96.012	5.961E-19	3.15	5.961E-16	422.85
99.06	1.109E-19	3.25	1.109E-16	422.75
102.108	2.008E-20	3.35	2.008E-17	422.65
105.156	3.544E-21	3.45	3.544E-18	422.55
108.204	6.099E-22	3.55	6.099E-19	422.45
111.252	1.024E-22	3.65	1.024E-19	422.35
114.3	1.678E-23	3.75	1.678E-20	422.25
117.348	2.687E-24	3.85	2.687E-21	422.15
120.396	4.205E-25	3.95	4.205E-22	422.05
123.444	6.435E-26	4.05	6.435E-23	421.95

Textural class	Ratio of Saturated Hydraulic Conductivity	Saturated Hydraulic Conductivity in the Vertical (x) direction	Specific Storage	Porosity	Alpha Parameter (Van Genuchten)	Theta - Residual Moisture (Van Genuchten)	Beta Parameter (Van Genuchten)	Longitudinal Dispersivity	Transverse Dispersivity	Coefficient of Molecular Diffusivity	Decay Coefficient	Bulk Density	Langmuir Coefficient (Kl)	Adsorptive Capacity (Langmuir Only)
	-	cm/day	1/cm	vol/vol	cm	vol/vol	-	cm	cm	cm2/day	1/day	mg/cm3	cm3/mg	mg/mg
Loess	1	4.800192	0.00864	0.45	0.005882353	0.12	4	30.48	0.1	0.34	0	1449.2	27.25	0.017
WBR	1	11.19	0.00864	0.3	0.006896552	0.05	6	152.4	0.864	0.47	0	1400	27.25	0.017

RDM22 **Scenario 6 + 8I Arsenic, 52 years (cL=0.006118mg/ml, K=27.25mL/mg, q=0.017mg/mg)**



```
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    +                          VS2DT                         +
                    +                       VERSION 3.3                      +
                    +          SIMULATION OF 2-DIMENSIONAL VARIABLY          +
                    +           SATURATED FLOW AND SOLUTE TRANSPORT          +
                    +                 THROUGH POROUS MEDIA.                  +
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

*******************************************************************************************
    RDM22 - Scenario 6 + 8I Arsenic (cL=0.006118mg/ml, K=27.25mL/mg, q=0.017mg/mg)
*******************************************************************************************

         SPACE AND TIME CONSTANTS
         ------------------------
    MAXIMUM SIMULATION TIME =   0.189800E+05 day
    STARTING TIME =     0.0000
    NUMBER OF RECHARGE PERIODS =         3
    MAXIMUM NUMBER OF TIME STEPS =      10000
    NUMBER OF ROWS =    852
    NUMBER OF COLUMNS =      3
    AXES TILTED BY ANGLE =     0.00
         SOLUTION OPTIONS
         ----------------
    WRITE ALL PRESSURE HEADS TO FILE 8 AT OBSERVATION TIMES? T
    STOP SOLUTION IF MAXIMUM NO. OF ITERATIONS EXCEEDED IN ANY TIME STEP? F
    WRITE BOUNDARY FLUXES TO FILE 7? F
    WRITE RESULTS AT SELECTED OBSERVATION POINTS TO FILE 11? F
    WRITE MASS BALANCE RATES TO FILE 9? T
    WRITE MASS BALANCE RATES TO FILE 6? F
    WRITE MOISTURE CONTENTS TO FILE 6? F
    WRITE SATURATIONS TO FILE 6? F
    WRITE PRESSURE HEADS TO FILE 6? F
    WRITE TOTAL HEADS TO FILE 6? F
    WRITE VELOCITIES TO FILE 6? F
                                            GRID SPACING IN VERTICAL DIRECTION, IN cm
    2.318     2.318     2.258     2.258     2.258     2.258     2.258     2.258     2.258     2.258
    Rows 2-85 not shown
    2.764     2.764
```

GRID SPACING IN HORIZONTAL OR RADIAL DIRECTION, IN cm

80.000 80.000 80.000

TIMES AT WHICH H WILL BE WRITTEN TO FILE 08

0.00000E+00 0.36500E+03 0.73000E+03 0.10950E+04 0.18250E+05

MASS BALANCE COMPONENTS WRITTEN TO FILE 9

16 17 18 55 56 57

COORDINATE SYSTEM IS RECTANGULAR

TRANSPORT TO BE SIMULATED

BACKWARD DIFFERENCING IN SPACE USED FOR TRANSPORT EQUATION

CENTRAL DIFFERENCING IN TIME USED FOR TRANSPORT EQUATION

NONLINEAR SORPTION TO BE SIMULATED

MATRIX EQUATIONS TO BE SOLVED BY SIP

INITIAL MOISTURE PARAMETERS

CONVERGENCE CRITERION FOR SIP FOR FLOW (EPS) = 3.280E-03 cm

CONVERGENCE CRITERION FOR SIP FOR TRANSPORT (EPS1) = 1.000E-02

DAMPING FACTOR, HMAX = 9.000E-01

ARITHEMTIC MEAN USED FOR INTERCELL CONDUCTIVITY

NUMBER OF SOIL TEXTURAL CLASSES = 3

NUMBER OF SOIL PARAMETERS FOR EACH CLASS = 6

NUMBER OF TRANSPORT PARAMETERS FOR EACH CLASS = 7

MINIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 2

MAXIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 80

CONSTANTS FOR SOIL TEXTURAL CLASSES

	ANISOTROPY	KSAT	SPECIFIC STORAGE	POROSITY			
	ALPHAL	ALPHAT	DM	LAMBDA	B	DENSITY	
CLASS # 1							
	1.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
CLASS # 2							
	1.000D+00	4.800D+00	8.640D-03	4.500D-01	5.882D-03	1.200D-01	4.000D+00
	3.048D+01	1.000D-01	3.400D-01	0.000D+00	1.449D+03	2.725D+01	1.700D-02
CLASS # 3							
	1.000D+00	1.119D+01	8.640D-03	3.000D-01	6.897D-03	5.000D-02	6.000D+00
	1.524D+02	8.640D-01	4.700D-01	0.000D+00	1.400D+03	2.725D+01	1.700D-02

TEXTURAL CLASS INDEX MAP

```
TEXTURAL CLASS TO BE READ IN FOR EACH ROW
     1 through 581     111
   582 through 716     131
   717 through 851     121
   852                 111
EQUILLIBRIUM PROFILE USED TO INITIALIZE PRESSURE HEADS ABOVE WATER TABLE AT   1919.28 cm   BELOW ORIGIN
EQUILLIBRIUM PROFILE ONLY USED UNTIL PRESSURE HEADS EQUAL   -152.40 cm
PRESSURE HEADS BELOW   1919.28 cm   ARE HYDROSTATIC
INITIAL CONCENTRATION SET TO A CONSTANT VALUE OF    0.000E+00
 RDM22 - Scenario 6 + 8I Arsenic (cL=0.006118mg/ml, K=27.25mL/mg, q=0.017mg/mg)
TOTAL ELAPSED TIME =  0.000000E+00 day
TIME STEP         0


                                                CONCENTRATION Not Shown
```

```
    DATA FOR RECHARGE PERIOD         1
        LENGTH OF THIS PERIOD =   3.65000E+02 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP       50 ----------
                       RECHARGE PERIOD NUMBER         1
                       TOTAL ELAPSED SIMULATION TIME =   3.650000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.11607E+04	-1.77799E+02	-1.09577E+01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	3.64964E+02	1.62243E+01	9.99903E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.78878E+02	1.62243E+01	9.99903E-01
TOTAL FLUX OUT OF DOMAIN --	-1.11607E+04	-1.77799E+02	-1.09577E+01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.07818E+04	-1.61574E+02	-9.95781E+00
FLUID VOLUME BALANCE --	-1.19509E-02	-4.19980E-04	-2.58833E-05

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.23285E+00	9.92603E-02	6.11740E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.23285E+00	9.92603E-02	6.11740E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.96514E+00	-8.93230E-02	-5.50497E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.83286E-04	9.89999E-06	6.10135E-07
SOLUTE MASS BALANCE --	2.67528E-01	9.92747E-03	6.11829E-04

```
    DATA FOR RECHARGE PERIOD         2
        LENGTH OF THIS PERIOD =   3.65000E+02 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP       92 ----------
                       RECHARGE PERIOD NUMBER         2
                       TOTAL ELAPSED SIMULATION TIME =   7.300000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.33474E+04	-2.47773E+01	-3.58476E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	5.52541E+02	3.55205E+00	5.13908E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	5.66455E+02	3.55205E+00	5.13908E-01
TOTAL FLUX OUT OF DOMAIN --	-1.33474E+04	-2.47773E+01	-3.58476E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.27805E+04	-2.12185E+01	-3.06987E+00
FLUID VOLUME BALANCE --	-4.75214E-01	-6.75103E-03	-9.76734E-04

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	3.38045E+00	2.17315E-02	3.14409E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.38045E+00	2.17315E-02	3.14409E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-2.97652E+00	-1.95564E-02	-2.82941E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	2.00742E-04	1.78276E-06	2.57928E-07
SOLUTE MASS BALANCE --	4.03726E-01	2.17324E-03	3.14423E-04

```
    DATA FOR RECHARGE PERIOD         3
        LENGTH OF THIS PERIOD =   1.82500E+04 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP      134 ----------
                       RECHARGE PERIOD NUMBER         3
                       TOTAL ELAPSED SIMULATION TIME =   1.095000E+03 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.42956E+04	-1.36460E+01	-1.97429E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	9.98430E+02	8.44360E+00	1.22161E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.01234E+03	8.44360E+00	1.22161E+00
TOTAL FLUX OUT OF DOMAIN --	-1.42956E+04	-1.36460E+01	-1.97429E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.32827E+04	-5.20047E+00	-7.52400E-01
FLUID VOLUME BALANCE --	-5.51172E-01	-1.91505E-03	-2.77068E-04

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	6.10839E+00	5.16579E-02	7.47383E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	6.10839E+00	5.16579E-02	7.47383E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-5.35672E+00	-4.18373E-02	-6.05299E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	6.67763E-04	5.42977E-06	7.85574E-07
SOLUTE MASS BALANCE --	7.51002E-01	9.81515E-03	1.42005E-03

---------- MASS BALANCE SUMMARY FOR TIME STEP 994 ----------
RECHARGE PERIOD NUMBER 3
TOTAL ELAPSED SIMULATION TIME = 1.825000E+04 day

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.51352E+04	-1.61299E+01	-1.21480E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.19552E+04	1.62203E+01	1.22161E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.19691E+04	1.62203E+01	1.22161E+00
TOTAL FLUX OUT OF DOMAIN --	-3.51352E+04	-1.61299E+01	-1.21480E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.32676E+04	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	1.01494E+02	9.04663E-02	6.81335E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.34322E+02	9.92360E-02	7.47383E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.34322E+02	9.92360E-02	7.47383E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.15270E+02	-8.93012E-02	-6.72560E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.41350E-02	1.09604E-05	8.25466E-07
SOLUTE MASS BALANCE --	1.90377E+01	9.92381E-03	7.47399E-04

---------- MASS BALANCE SUMMARY FOR TIME STEP 1031 ----------
RECHARGE PERIOD NUMBER 3
TOTAL ELAPSED SIMULATION TIME = 1.898000E+04 day

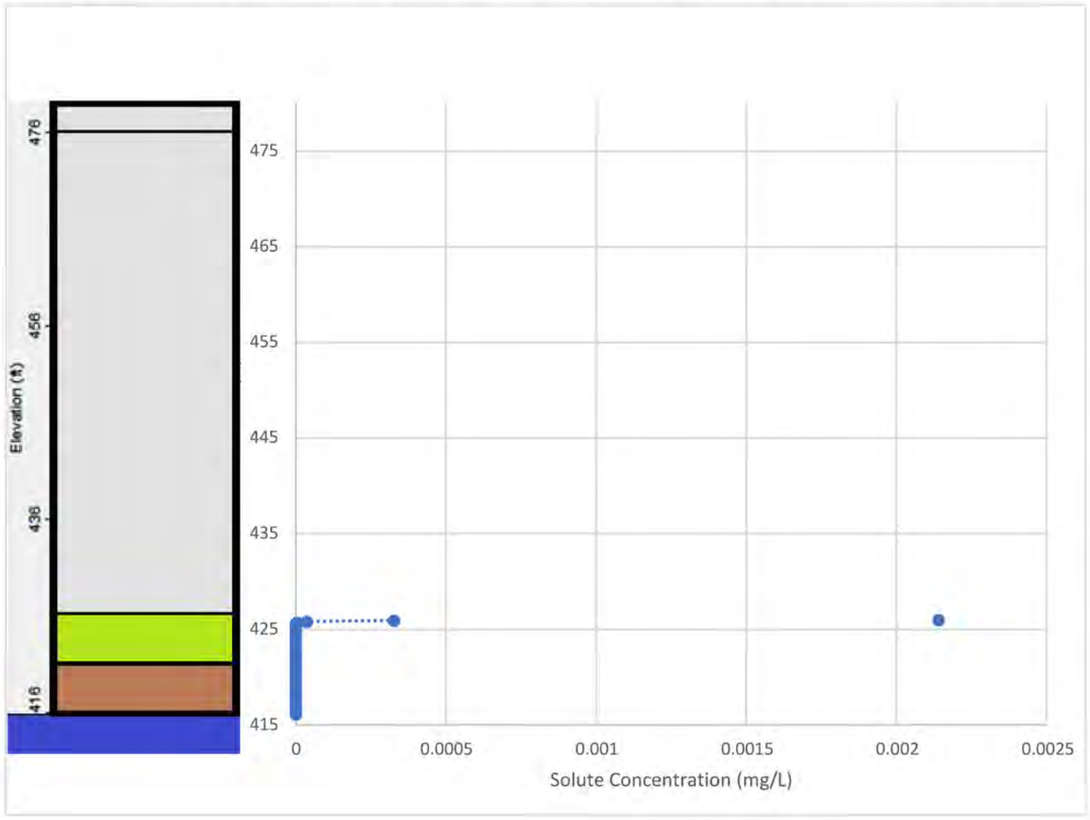
VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.60220E+04	-1.81572E+01	-1.21480E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.28470E+04	1.82590E+01	1.22161E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.28609E+04	1.82590E+01	1.22161E+00
TOTAL FLUX OUT OF DOMAIN --	-3.60220E+04	-1.81572E+01	-1.21480E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.32676E+04	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	1.06467E+02	1.01837E-01	6.81335E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.39778E+02	1.11708E-01	7.47383E-03
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.39778E+02	1.11708E-01	7.47383E-03
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.19930E+02	-9.04726E-02	-6.05304E-03
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	1.47070E-02	1.11057E-05	7.43026E-07
SOLUTE MASS BALANCE --	1.98328E+01	2.12248E-02	1.42004E-03

DEPTH_CM	CONC_MG_ML	DEPTH_FT	CONC_MG_L	ELEVATION
1.524	0.000002141	0.05	0.002141	425.95
4.572	3.265E-07	0.15	0.0003265	425.85
7.62	3.596E-08	0.25	0.00003596	425.75
10.668	3.077E-09	0.35	0.000003077	425.65
13.716	2.147E-10	0.45	2.147E-07	425.55
16.764	1.262E-11	0.55	1.262E-08	425.45
19.812	6.403E-13	0.65	6.403E-10	425.35
22.86	2.857E-14	0.75	2.857E-11	425.25
25.908	1.137E-15	0.85	1.137E-12	425.15
28.956	4.082E-17	0.95	4.082E-14	425.05
32.004	1.335E-18	1.05	1.335E-15	424.95
35.052	4.009E-20	1.15	4.009E-17	424.85
38.1	1.113E-21	1.25	1.113E-18	424.75
41.148	2.871E-23	1.35	2.871E-20	424.65
44.196	6.918E-25	1.45	6.918E-22	424.55
47.244	1.564E-26	1.55	1.564E-23	424.45
50.292	3.331E-28	1.65	3.331E-25	424.35
53.34	6.702E-30	1.75	6.702E-27	424.25
56.388	1.278E-31	1.85	1.278E-28	424.15
59.436	2.317E-33	1.95	2.317E-30	424.05
62.484	4.002E-35	2.05	4.002E-32	423.95
65.532	6.602E-37	2.15	6.602E-34	423.85
68.58	1.042E-38	2.25	1.042E-35	423.75
71.628	1.577E-40	2.35	1.577E-37	423.65
74.676	2.291E-42	2.45	2.291E-39	423.55
77.724	3.203E-44	2.55	3.203E-41	423.45
80.772	4.313E-46	2.65	4.313E-43	423.35
83.82	5.603E-48	2.75	5.603E-45	423.25
86.868	7.031E-50	2.85	7.031E-47	423.15
89.916	8.533E-52	2.95	8.533E-49	423.05
92.964	1.003E-53	3.05	1.003E-50	422.95
96.012	1.142E-55	3.15	1.142E-52	422.85
99.06	1.262E-57	3.25	1.262E-54	422.75
102.108	1.354E-59	3.35	1.354E-56	422.65
105.156	1.413E-61	3.45	1.413E-58	422.55
108.204	1.434E-63	3.55	1.434E-60	422.45
111.252	1.417E-65	3.65	1.417E-62	422.35
114.3	1.365E-67	3.75	1.365E-64	422.25
117.348	1.282E-69	3.85	1.282E-66	422.15
120.396	1.175E-71	3.95	1.175E-68	422.05
123.444	1.052E-73	4.05	1.052E-70	421.95

Textural class	Ratio of Saturated Hydraulic Conductivity	Saturated Hydraulic Conductivity in the Vertical (x) direction	Specific Storage	Porosity	Alpha Parameter (Van Genuchten)	Theta - Residual Moisture (Van Genuchten)	Beta Parameter (Van Genuchten)	Longitudinal Dispersivity	Transverse Dispersivity	Coefficient of Molecular Diffusivity	Decay Coefficient	Bulk Density	Langmuir Coefficient (Kl)	Adsorptive Capacity (Langmuir Only)
	-	cm/day	1/cm	vol/vol	cm	vol/vol	-	cm	cm	cm2/day	1/day	mg/cm3	cm3/mg	mg/mg
Loess	1	4.800192	0.00864	0.45	0.005882353	0.12	4	30.48	0.1	0.34	0	1449.2	1660	0.00495
WBR	1	11.19	0.00864	0.3	0.006896552	0.05	6	152.4	0.864	0.47	0	1400	1660	0.00495

RDM23 **Scenario 6 + 8I Mercury, 52 years (cL=0.000357mg/ml, K=1660mL/mg, q=0.00495mg/mg)**



```
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    +                          VS2DT                         +
                    +                       VERSION 3.3                      +
                    +          SIMULATION OF 2-DIMENSIONAL VARIABLY          +
                    +           SATURATED FLOW AND SOLUTE TRANSPORT          +
                    +                 THROUGH POROUS MEDIA.                  +
                    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

*******************************************************************************************
    RDM23 - Scenario 6 + 8I Mercury (cL=0.000357mg/ml, K=1660mL/mg, q=0.00495mg/mg)
*******************************************************************************************

         SPACE AND TIME CONSTANTS
         ------------------------
    MAXIMUM SIMULATION TIME =   0.189800E+05 day
    STARTING TIME =     0.0000
    NUMBER OF RECHARGE PERIODS =         3
    MAXIMUM NUMBER OF TIME STEPS =      10000
    NUMBER OF ROWS =    852
    NUMBER OF COLUMNS =      3
    AXES TILTED BY ANGLE =     0.00
         SOLUTION OPTIONS
         ----------------
    WRITE ALL PRESSURE HEADS TO FILE 8 AT OBSERVATION TIMES? T
    STOP SOLUTION IF MAXIMUM NO. OF ITERATIONS EXCEEDED IN ANY TIME STEP? F
    WRITE BOUNDARY FLUXES TO FILE 7? F
    WRITE RESULTS AT SELECTED OBSERVATION POINTS TO FILE 11? F
    WRITE MASS BALANCE RATES TO FILE 9? T
    WRITE MASS BALANCE RATES TO FILE 6? F
    WRITE MOISTURE CONTENTS TO FILE 6? F
    WRITE SATURATIONS TO FILE 6? F
    WRITE PRESSURE HEADS TO FILE 6? F
    WRITE TOTAL HEADS TO FILE 6? F
    WRITE VELOCITIES TO FILE 6? F
                                            GRID SPACING IN VERTICAL DIRECTION, IN cm
    2.318     2.318     2.258     2.258     2.258     2.258     2.258     2.258     2.258     2.258
    Rows 2-85 not shown
    2.764     2.764
```

GRID SPACING IN HORIZONTAL OR RADIAL DIRECTION, IN cm

80.000 80.000 80.000

TIMES AT WHICH H WILL BE WRITTEN TO FILE 08

0.00000E+00 0.36500E+03 0.73000E+03 0.10950E+04 0.18250E+05

MASS BALANCE COMPONENTS WRITTEN TO FILE 9

16 17 18 55 56 57

COORDINATE SYSTEM IS RECTANGULAR

TRANSPORT TO BE SIMULATED

BACKWARD DIFFERENCING IN SPACE USED FOR TRANSPORT EQUATION

CENTRAL DIFFERENCING IN TIME USED FOR TRANSPORT EQUATION

NONLINEAR SORPTION TO BE SIMULATED

MATRIX EQUATIONS TO BE SOLVED BY SIP

INITIAL MOISTURE PARAMETERS

CONVERGENCE CRITERION FOR SIP FOR FLOW (EPS) = 3.280E-03 cm

CONVERGENCE CRITERION FOR SIP FOR TRANSPORT (EPS1) = 1.000E-02

DAMPING FACTOR, HMAX = 9.000E-01

ARITHEMTIC MEAN USED FOR INTERCELL CONDUCTIVITY

NUMBER OF SOIL TEXTURAL CLASSES = 3

NUMBER OF SOIL PARAMETERS FOR EACH CLASS = 6

NUMBER OF TRANSPORT PARAMETERS FOR EACH CLASS = 7

MINIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 2

MAXIMUM PERMITTED NO. OF ITERATIONS/TIME STEP = 80

CONSTANTS FOR SOIL TEXTURAL CLASSES

	ANISOTROPY	KSAT	SPECIFIC STORAGE	POROSITY			
	ALPHAL	ALPHAT	DM	LAMBDA	B	DENSITY	
CLASS # 1							
	1.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00	0.000D+00
CLASS # 2							
	1.000D+00	4.800D+00	8.640D-03	4.500D-01	5.882D-03	1.200D-01	4.000D+00
	3.048D+01	1.000D-01	3.400D-01	0.000D+00	1.449D+03	1.660D+03	4.950D-03
CLASS # 3							
	1.000D+00	1.119D+01	8.640D-03	3.000D-01	6.897D-03	5.000D-02	6.000D+00
	1.524D+02	8.640D-01	4.700D-01	0.000D+00	1.400D+03	1.660D+03	4.950D-03

TEXTURAL CLASS INDEX MAP

```
TEXTURAL CLASS TO BE READ IN FOR EACH ROW
     1 through 581     111
   582 through 716     131
   717 through 851     121
   852                 111
EQUILLIBRIUM PROFILE USED TO INITIALIZE PRESSURE HEADS ABOVE WATER TABLE AT   1919.28 cm   BELOW ORIGIN
EQUILLIBRIUM PROFILE ONLY USED UNTIL PRESSURE HEADS EQUAL   -152.40 cm
PRESSURE HEADS BELOW   1919.28 cm   ARE HYDROSTATIC
INITIAL CONCENTRATION SET TO A CONSTANT VALUE OF    0.000E+00
 RDM23 - Scenario 6 + 8I Mercury (cL=0.000357mg/ml, K=1660mL/mg, q=0.00495mg/mg)
TOTAL ELAPSED TIME =  0.000000E+00 day
TIME STEP         0


                                                CONCENTRATION Not Shown
```

```
    DATA FOR RECHARGE PERIOD         1
        LENGTH OF THIS PERIOD =   3.65000E+02 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP       50 ----------
                       RECHARGE PERIOD NUMBER         1
                       TOTAL ELAPSED SIMULATION TIME =   3.650000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.11607E+04	-1.77799E+02	-1.09577E+01
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	3.64964E+02	1.62243E+01	9.99903E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.78878E+02	1.62243E+01	9.99903E-01
TOTAL FLUX OUT OF DOMAIN --	-1.11607E+04	-1.77799E+02	-1.09577E+01
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.07818E+04	-1.61574E+02	-9.95781E+00
FLUID VOLUME BALANCE --	-1.19509E-02	-4.19980E-04	-2.58833E-05

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.30292E-01	5.79208E-03	3.56965E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.30292E-01	5.79208E-03	3.56965E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.14682E-01	-5.21282E-03	-3.21265E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	6.03306E-07	3.25792E-08	2.00785E-09
SOLUTE MASS BALANCE --	1.56093E-02	5.79229E-04	3.56978E-05

```
    DATA FOR RECHARGE PERIOD         2
        LENGTH OF THIS PERIOD =   3.65000E+02 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP       92 ----------
                       RECHARGE PERIOD NUMBER         2
                       TOTAL ELAPSED SIMULATION TIME =   7.300000E+02 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.33474E+04	-2.47773E+01	-3.58476E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	5.52541E+02	3.55205E+00	5.13908E-01
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	5.66455E+02	3.55205E+00	5.13908E-01
TOTAL FLUX OUT OF DOMAIN --	-1.33474E+04	-2.47773E+01	-3.58476E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.27805E+04	-2.12185E+01	-3.06987E+00
FLUID VOLUME BALANCE --	-4.75214E-01	-6.75103E-03	-9.76734E-04

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	1.97257E-01	1.26808E-03	1.83465E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.97257E-01	1.26808E-03	1.83465E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-1.73701E-01	-1.14127E-03	-1.65118E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	6.60973E-07	5.87966E-09	8.50665E-10
SOLUTE MASS BALANCE --	2.35558E-02	1.26809E-04	1.83467E-05

```
    DATA FOR RECHARGE PERIOD         3
        LENGTH OF THIS PERIOD =   1.82500E+04 day
        LENGTH OF INITIAL TIME STEP FOR THIS PERIOD =   1.00000E-01 day
        MULTIPLIER FOR TIME STEP =  1.200E+00
        MAXIMUM TIME STEP SIZE =    2.00000E+01 day
        MINIMUM TIME STEP SIZE =    1.00000E-02 day
        TIME STEP REDUCTION FACTOR =  4.000E-01
             MAXIMUM PRESSURE HEAD CHANGE ALLOWED IN ONE TIME STEP =   3.281
             STEADY-STATE CLOSURE CRITERION =  3.280E-03
             MAXIMUM DEPTH OF PONDING =  5.000E+01
             PRINT SOLUTION AFTER EVERY TIME STEP? F
             SIMULATE EVAPORATION? F
             SIMULATE EVAPOTRANSPIRATION? F
             SIMULATE SEEPAGE FACES? F
                   ---------- MASS BALANCE SUMMARY FOR TIME STEP      134 ----------
                       RECHARGE PERIOD NUMBER         3
                       TOTAL ELAPSED SIMULATION TIME =   1.095000E+03 day
```

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-1.42956E+04	-1.36460E+01	-1.97429E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	9.98430E+02	8.44360E+00	1.22161E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	1.01234E+03	8.44360E+00	1.22161E+00
TOTAL FLUX OUT OF DOMAIN --	-1.42956E+04	-1.36460E+01	-1.97429E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.32827E+04	-5.20047E+00	-7.52400E-01
FLUID VOLUME BALANCE --	-5.51172E-01	-1.91505E-03	-2.77068E-04

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	3.56439E-01	3.01436E-03	4.36116E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	3.56439E-01	3.01436E-03	4.36116E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-3.12617E-01	-2.44161E-03	-3.53251E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	2.19568E-06	1.78160E-08	2.57760E-09
SOLUTE MASS BALANCE --	4.38201E-02	5.72733E-04	8.28626E-05

---------- MASS BALANCE SUMMARY FOR TIME STEP 994 ----------
RECHARGE PERIOD NUMBER 3
TOTAL ELAPSED SIMULATION TIME = 1.825000E+04 day

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.51352E+04	-1.61299E+01	-1.21480E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.19552E+04	1.62203E+01	1.22161E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.19691E+04	1.62203E+01	1.22161E+00
TOTAL FLUX OUT OF DOMAIN --	-3.51352E+04	-1.61299E+01	-1.21480E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.32676E+04	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	1.01494E+02	9.04663E-02	6.81335E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	7.83801E+00	5.79066E-03	4.36116E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	7.83801E+00	5.79066E-03	4.36116E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-6.72708E+00	-5.21154E-03	-3.92501E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	4.64389E-05	3.60062E-08	2.71176E-09
SOLUTE MASS BALANCE --	1.11088E+00	5.79076E-04	4.36124E-05

---------- MASS BALANCE SUMMARY FOR TIME STEP 1031 ----------
RECHARGE PERIOD NUMBER 3
TOTAL ELAPSED SIMULATION TIME = 1.898000E+04 day

VOLUMETRIC FLOW BALANCE	TOTAL cm **3	TOTAL THIS TIME STEP cm **3	RATE THIS TIME STEP cm **3/day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	1.39137E+01	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	-3.60220E+04	-1.81572E+01	-1.21480E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	2.28470E+04	1.82590E+01	1.22161E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	2.28609E+04	1.82590E+01	1.22161E+00
TOTAL FLUX OUT OF DOMAIN --	-3.60220E+04	-1.81572E+01	-1.21480E+00
EVAPORATION --	0.00000E+00	0.00000E+00	0.00000E+00
TRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FLUID FROM BOUNDARY CHANGE --	2.08109E-09	0.00000E+00	0.00000E+00
CHANGE IN FLUID STORED IN DOMAIN --	-1.32676E+04	0.00000E+00	0.00000E+00
FLUID VOLUME BALANCE --	1.06467E+02	1.01837E-01	6.81335E-03

SOLUTE MASS BALANCE	mg	mg	mg /day
FLUX INTO DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX OUT OF DOMAIN ACROSS SPECIFIED PRESSURE HEAD BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
FLUX INTO DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	8.15637E+00	6.51846E-03	4.36116E-04
FLUX OUT OF DOMAIN ACROSS SPECIFIED FLUX BOUNDARIES --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX INTO DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
DIFFUSIVE/DISPERSIVE FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL FLUX INTO DOMAIN --	8.15637E+00	6.51846E-03	4.36116E-04
TOTAL FLUX OUT OF DOMAIN --	0.00000E+00	0.00000E+00	0.00000E+00
TOTAL EVAPOTRANSPIRATION --	0.00000E+00	0.00000E+00	0.00000E+00
FIRST ORDER DECAY --	0.00000E+00	0.00000E+00	0.00000E+00
ADSORPTION/ION EXCHANGE --	-6.99904E+00	-5.27991E-03	-3.53251E-04
SOLUTE FROM BOUNDARY CHANGE --	0.00000E+00	0.00000E+00	0.00000E+00
CHANGE IN SOLUTE STORED IN DOMAIN --	4.83181E-05	3.64835E-08	2.44092E-09
SOLUTE MASS BALANCE --	1.15728E+00	1.23852E-03	8.28627E-05