COMPUTER SIMULATION MODEL OF THE PLEISTOCENE VALLEY-FILL AQUIFER IN SOUTHWESTERN ESSEX AND SOUTHEASTERN MORRIS COUNTIES, NEW JERSEY

By Harold Meisler

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FACTORS FOR CONVERTING ENGLISH UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

Multiply English units	By	To obtain SI units
feet (ft)	.3048	metres (m)
miles (mi)	1.609	kilometres (km)
square miles (mi^2)	2.590	square kilometres (km^2)
gallons per minute (gal/min)	.06309	litres per second (l/s)
million gallons per day (Mgal/d)	.04381	cubic metres per second (m^3/s)
feet per second (ft/s)	26.33×10^3	metres per day (m/d)
feet per day (ft/d)	.3048	metres per day (m/d)
square feet per day (ft^2/d)	.09290	square metres per day (m^2/d)
square feet per second (ft^2/s)	8.026×10^3	square metres per day (m^2/d)
cubic feet per second (ft^3/s)	.02832	cubic metres per second (m^3/s)

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ABSTRACT

A finite-difference digital computer model was developed to simulate a buried valley-fill aquifer in southwestern Essex and southeastern Morris Counties, N.J. Withdrawal from this aquifer and from the adjacent consolidated-rock aquifer has increased from an estimated 5 million gallons per day (0.22 cubic metres per second) during the period 1900-29 to 28.5 million gallons per day (1.25 cubic metres per second) during the period 1972-73.

The valley-fill aquifer consists chiefly of outwash sand and gravel deposited in an interconnected series of valleys during the last glaciation. A total length of about 20 miles (32 kilometres) of valley-fill aquifer has been simulated. The aquifer is typically 0.5 to 1.5 miles (0.8 to 2.4 kilometres) wide and ranges in thickness from 0 to 100 feet (30 metres). Glacial till, lacustrine clay and silt, and swamp muck ranging in thickness from about 10 to 80 feet (3 to 24 metres) overlie the valley-fill aquifer and function as a confining layer.

The bedrock underlying and adjacent to the valley-fill aquifer belongs to the Newark Group of Triassic age. It consists of lava flows, referred to as Watchung Basalt, interbedded with shale and sandstone of the Brunswick Formation. The bedrock and valley-fill aquifer are in hydraulic connection.

The model simulates the valley-fill material as an artesian aquifer overlain by a semiconfining layer, but it allows for conversion to water-table conditions when the water level falls below the top of the aquifer. The bedrock between the valley-fill deposits is represented as an unconfined aquifer in which saturated thickness remains much greater than drawdown and its transmissivity can therefore be considered constant. It is assumed that a lateral hydraulic connection exists between the bedrock aquifer and the valley-fill aquifer along the valley walls but that bedrock beneath the valley-fill aquifer is impermeable.

260 ft/d - 345 ft/d

Values of hydraulic properties of the valley-fill aquifer used in the model are: hydraulic conductivity, 3×10^{-3} to 4×10^{-3} feet per second (78 to 105 metres per day) and specific storage, 4×10^{-6} ft^{-1} (1.2×10^{-6} m^{-1}). A specific yield of 0.16 is used if the simulated water level drops below the top of the aquifer during computer runs. Hydraulic conductivity of the semiconfining layer overlying the valley-fill aquifer, as used in the model, ranges from 7×10^{-8} to 4.9×10^{-7} feet per second (1.8×10^{-3} to 1.3×10^{-2} metres per day). Release of water from storage in the semiconfining layer was not simulated.

Values of hydraulic properties of the bedrock aquifer used in the model are: hydraulic conductivity, 3.6×10^{-5} to 6.0×10^{-5} feet per second (0.94 to 1.58 metres per day); thickness, 500 feet (152.4 metres); and coefficient of storage, or specific yield, 0.12.

The model was calibrated by simulating the pumpage from 1900 through 1971. For purposes of simulation this time interval was divided into seven pumping periods ranging from 3 to 19 years in duration. Calibration was based on comparison of computed water-level declines with declines measured in 12 observation wells during the latter part of the pumping history. Calibration of the model was more successful at some localities than at others. The model is adequately calibrated to be used for planning and predictive purposes for valley-fill aquifers in the East Hanover, Chatham, and Southern Millburn Valleys. The model is not calibrated or is poorly calibrated for valley-fill aquifers in the Northern Millburn, Slough Brook, and Canoe Brook Valleys.

The model has been used to determine pumpage available from the valley-fill aquifer, based upon the criterion that water levels would stabilize at least 30 feet (9.1 metres) above the base of the aquifer. On this basis, the model indicates that pumpage of approximately 40 million gallons per day (1.8 cubic metres per second) or about 40 percent more than the 1972-73 rates could be obtained on a continuing basis. All this increase would have to occur in the East Hanover and Chatham Valleys. In the other valleys, the amount of water pumped during 1972-73 either equals (Southern Millburn Valley) or exceeds the anticipated pumpage availability (Northern Millburn, Slough Brook, and Canoe Brook Valleys).

INTRODUCTION

Purpose and Scope

Sand and gravel deposits of Pleistocene age have been an important source of water for communities and industries in southwestern Essex and southeastern Morris Counties (fig. 1) for several decades. Withdrawal from these deposits has increased from an estimated 5 Mgal/d (million gallons per day) [0.22 m^3/s (cubic metres per second)] during the period 1900-29 to approximately 28.5 Mgal/d (1.25 m^3/s) during the period 1972-73. Yet

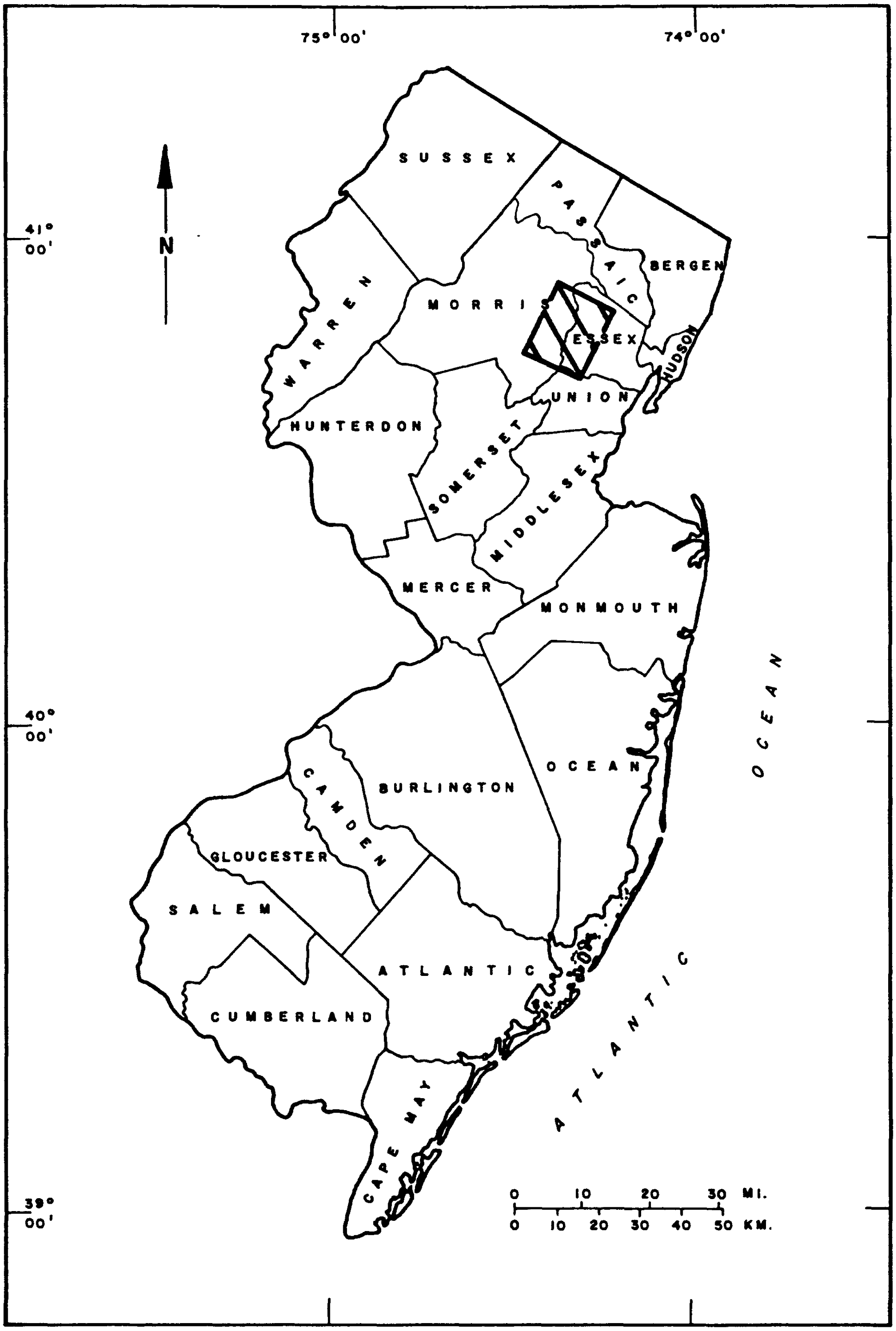


Figure 1.--Map of New Jersey showing location of study area.

virtually all this water was withdrawn from a buried valley-fill aquifer occupying (fig. 2 and plate 1) an area of approximately 20 mi^2 (square miles) [52 km^2 (square kilometres)].

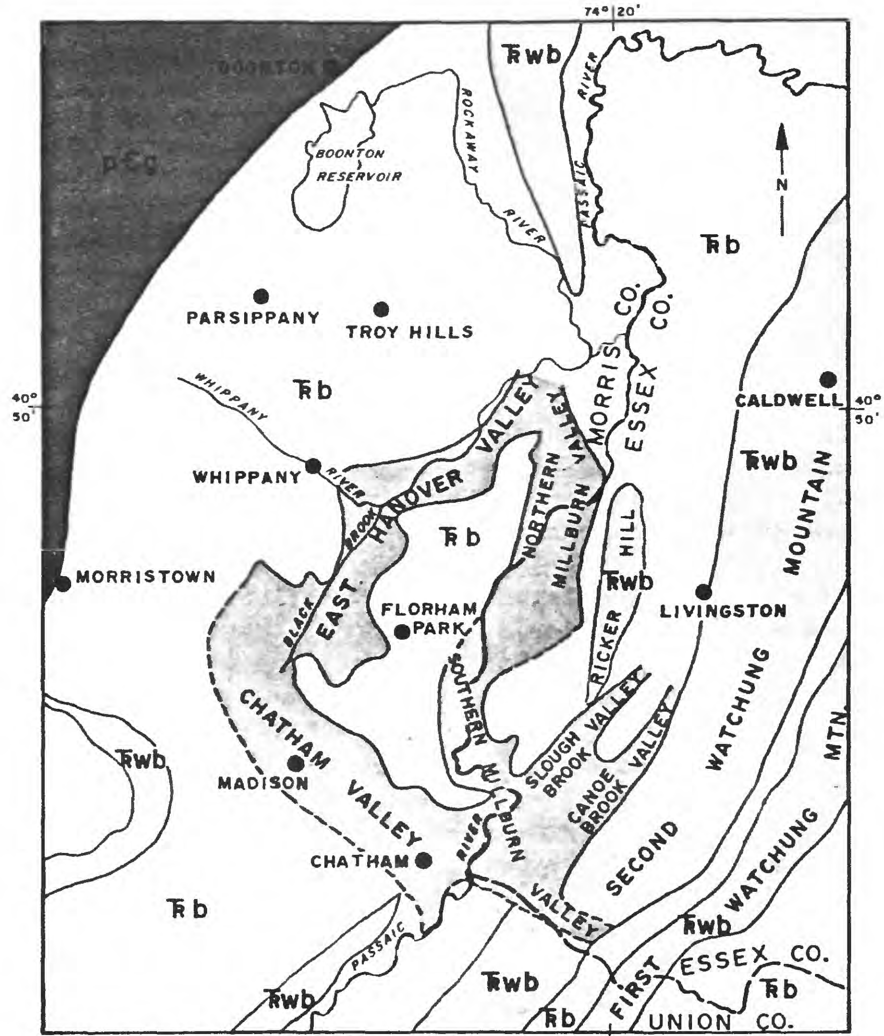
Because of increasing withdrawals accompanied by water-level declines, State and municipal officials and water-resources planners are concerned that the valley-fill aquifer may be overpumped locally. They wish to know where additional ground-water development can take place and how much ground water is available for future development. The purpose of the present study by the U.S. Geological Survey in cooperation with the Division of Water Resources of the New Jersey Department of Environmental Protection is to make a quantitative hydrologic analysis of the known buried valley-fill aquifer in southwestern Essex and southeastern Morris Counties in order to provide water-resources planners with the hydrologic basis to plan ground-water development and to allocate available water. The analysis is done by using a computer simulation model to provide estimates of the hydrologic effects of future ground-water development. The model simulates an area of approximately 50 mi^2 (130 km^2) which includes not only the area of the buried valley fills but also adjacent land underlain by bedrock of Triassic age (plate 1).

Geographic Setting

Southwestern Essex and southeastern Morris Counties are located within the Triassic lowlands of the Piedmont Province. The area covered by the computer simulation model lies within the Passaic River basin. Most of the buried valley fills trend northeast-southwest and occur in topographically low areas beneath stream valleys and marshes (plate 1).

The East Hanover Valley fill (valley names from Nichols, 1968a) underlies Black Meadows, Black Brook, and the Whippany River. The Millburn Valley fill underlies, in part, the Passaic River. Smaller buried valley fills (not named by Nichols, 1968a) occur beneath Slough Brook and Canoe Brook. The Chatham Valley fill runs transverse to the other valley fills and does not coincide with a topographic valley. It underlies and parallels, in part, a northwest-southeast trending terminal moraine.

Altitudes of land surface overlying the buried valley fills typically range from 180 to 240 ft [55 to 73 m]. The land surface is higher, 200 to 360 ft (60 to 110 m), where the Chatham Valley fill is overlain by terminal moraine. Topographically higher areas underlain by bedrock of Triassic age flank the buried valleys. The altitude of the bedrock area between the buried valley fills ranges from 200 to 280 ft (60 to 85 m). West of the East Hanover Valley fill, the altitude of hills in the area underlain by the Brunswick Formation is generally 300 to 420 ft (90 to 128 m). East of Millburn, Slough Brook, and Canoe Brook Valley fills, the altitude of Watchung Mountain, underlain by Watchung Basalt, is as much as 640 ft (195 m).



Geology modified from Darton and others, 1908.

SCALE

0 1 2 3 4 MILES

0 2 4 6 KILOMETERS

EXPLANATION

QUATERNARY

Valley fill
Sand and gravel overlain by glacial till, clay, and silt.

NEWARK GROUP — TRIASSIC

Ꞧb — Brunswick Formation
Sandstone and shale

Ꞧwb — Watchung Basalt

Rocks are thinly mantled by till in most areas and may contain valley fill that is not yet delineated.

PRECAMBRIAN

Gneiss

Figure 2.--Generalized geologic map of southwestern Essex and southeastern Morris counties.

Methods of this Investigation

The principal effort in this investigation has been to (1) assemble and interpret all the information needed to produce the digital computer simulation model, (2) put the data in computer-usable form, and (3) calibrate the model by comparing water-level declines computed by the model with measured water-level declines at 12 observation wells operated by the U.S. Geological Survey.

The delineation of the buried valleys and the thickness of the valley-fill aquifer were taken largely from studies by Vecchioli, Nichols, and Nemickas (1967) and Nichols (1968a). Hydraulic properties of both the valley-fill aquifer and bedrock aquifers were evaluated using data (including specific capacities of wells and results of pumping tests) reported by Gill and Vecchioli (1965), Vecchioli and Nichols (1966), Vecchioli, Nichols, and Nemickas (1967), and Nichols (1968b). Data on the thickness of the confining layer overlying the aquifers were obtained largely from Vecchioli, Nichols, and Nemickas (1967) and from drillers' well logs on file at the New Jersey Division of Water Resources. Because data on the hydraulic properties of the confining layer are not available, the properties were estimated on the basis of data on confining layers of similar origin or lithology reported by Walton (1960).

Data on pumpage from the valley-fill and bedrock aquifers were obtained from the files of the New Jersey Division of Water Resources and directly from several municipal water authorities and industrial companies. Some pumpage data prior to 1931 were taken from Thompson (1932).

The simulation model used for this study was developed by Trescott (1973) as a modification of the "Iterative Digital Model for Aquifer Evaluation" designed by Pinder (1970).

Previous Investigations

The present study is preceded by a considerable amount of earlier investigation in the study area. The first investigation, by Thompson (1932), summarized the ground-water supplies of the Passaic River Valley near Chatham, N.J. County-wide investigations of geology and ground-water hydrology were completed by Gill and Vecchioli (1965) for Morris County and by Nichols (1968b) for Essex County. The results of a test-drilling program conducted in 1965-66 were reported by Vecchioli and Nichols (1966) and Vecchioli, Nichols, and Nemickas (1967). The test drilling program, conducted at the request of the Office of Emergency Planning, was intended to locate additional ground-water supplies for the drought-disaster area in northeastern New Jersey. Well data obtained from the drilling program plus data available on other wells drilled in eastern Morris and western Essex Counties were used by Nichols (1968a) to produce a map of the area showing configuration of the bedrock surface.

Acknowledgments

The author is indebted to the many municipal water departments, water companies, and industrial firms that furnished data on ground-water withdrawals. Especially helpful were Florham Park Water Department, Madison Water Department, Allied Chemical Corp., Livingston Township Water Department, Esso Research and Engineering Co., and East Orange Water Department.

HYDROGEOLOGY

Introduction

Bedrock in the area of this study comprises the Brunswick Formation and Watchung Basalt of the Newark Group of Late Triassic age. Unconsolidated sand, clay, and gravel deposits of glacial, fluvial, and lacustrine origin of Pleistocene and Holocene age overlie bedrock throughout the area.

Figure 3 shows a generalized geohydrologic section extending from northwest to southeast through the study area, illustrating the disposition of the major lithologic units and the nature of the ground-water flow pattern prior to pumping. The valley-fill aquifers are deposits of glacial outwash sand and gravel occupying preexisting valleys in the bedrock surface and overlain by semipermeable deposits of till, clay, silt, and swamp muck. Water occurs under unconfined conditions in the bedrock and under confined conditions in the valley-fill aquifers. Ground-water movement is generally from the high areas toward areas of discharge in the valleys. The discharge originally occurred entirely as seepage through the semiconfining layers, into swamps and streams, as shown in figure 3. At the present time, discharge by wells tapping the valley-fill aquifers has diverted some of the natural discharge. In some localities there has been a reversal of flow in the semiconfining materials, which now conduct leakage from the surface sources to the underlying aquifer.

Consolidated Rocks

The Brunswick Formation underlies most of the area (fig. 2). It consists of interbedded brown, reddish-brown, and gray shale, sandy shale, sandstone, and some conglomerate. Total thickness of the Brunswick Formation probably exceeds 6,000 ft (1,830 m) (Nichols, 1968b, p. 5). Three sheets of gray to black basalt are intercalated with beds of the Brunswick Formation. The middle sheet, which forms Second Watchung Mountain, occurs along the east edge of the study area in Essex County (fig. 2 and plate 1). The uppermost basalt sheet forms a discontinuous ridge called Ricker Hill in the study area. Each of the basalt sheets is made up of several lava flows. Scoriaceous zones occur at the top of many of the individual flows. The Watchung Basalt in Second Watchung Mountain ranges from 750 to 900 ft (230-275 m) in thickness; the uppermost Watchung Basalt ranges from 225 to 350 ft (70-105 m) in thickness (Nichols, 1968b, p. 6). Sedimentary rocks and basalt sheets of the Newark Group dip west-northwest at about 10 degrees.

The Newark Group is capable of yielding large quantities of water to wells. Yields of wells tapping the Brunswick Formation in Essex County reported by Nichols (1968b p. 13) range from 35 to 820 gal/min (gallons per minute) [2.2 to 52 l/s (litres per second)] and average 364 gal/min (23 l/s). Yields of wells tapping the Watchung Basalt in Essex County range from 7 to 400 gal/min (0.4 to 25 l/s) and average 116 gal/min (7.3 l/s) Nichols, 1968b, p. 13). Transmissivity of the Newark Group in Morris County is typically between 2,700 and 4,000 ft^2/d (250 and 370 m^2/d). The average coefficient of storage is about 0.0005 (Gill and Vecchioli, 1965, p. 23).

Water in the Newark Group largely occurs in the numerous fractures that intersect the rocks. This is especially true of the shale beds. Additional void space is provided in the sandstone beds where cementing material is lacking. Vesicles in the basalt add to the porosity resulting from the fractures. The best producing wells tapping the Brunswick Formation are for the most part between 300 and 400 ft (90 and 120 m) deep.

Unconsolidated Deposits

The unconsolidated deposits of Pleistocene age can be divided (Nichols, 1968b, p. 6, 20) into two general categories; stratified drift and unstratified drift. The stratified drift includes buried valley fills of advance outwash and lacustrine silt and clay. The unstratified drift includes till or ground moraine and terminal moraine. Swamp muck of more recent age underlies most valley bottoms.

Buried valley fill of advance outwash sand and gravel occupies preexisting valleys in southeastern Morris and southwestern Essex Counties (fig. 2). This valley fill constitutes the principal aquifer system in the area of this investigation (fig. 3). The valley-fill aquifer is as thick as about 100 ft (30 m). The width of the buried valley fills ranges from about 0.5 to 1.5 mi (0.8 to 2.5 km) wide. Several of the buried valleys were named by Nichols (1968a). These are: East Hanover Valley, trending northeast-southwest in the western part of the study area; Chatham Valley, in the southern part of the area; and Millburn Valley in the eastern part of the area. Because of insufficient data, Nichols (1968a) did not connect the Millburn Valley in the northern part of the area with the Millburn Valley in the southern part. The two parts were joined for the simulation because of the strong probability that they are joined in actuality.

The terminal moraine, which marks the southernmost extent of Wisconsin Glaciation, forms a northwest-southeast-trending ridge along the southwestern border of the study area (plate 1). The top of the terminal moraine is generally about 160 ft (50 m) higher than the surface of the much thinner till, which covers the study area north of the terminal moraine. The till, in conjunction with lacustrine and swamp deposits, functions as an overlying confining layer for the valley-fill aquifer. Thickness of this confining layer ranges from about 10 ft (3 m) in the northern part of the study area to about 80 ft (24 m) in the vicinity of Madison and Chatham. The till overlying the Triassic rocks is generally less than

30 ft (10 m) thick. The valley-fill aquifer is confined throughout the modelled area. Good hydraulic connection exists, however, with the Newark Group, which underlies and flanks the valley-fill deposits.

The valley-fill aquifer is the most productive aquifer in Morris and Essex Counties. Reported yields of large-diameter wells range from 20 to 2,200 gal/min (1.3 to 140 l/s) and average 502 gal/min (32 l/s) in Morris County (Gill and Vecchioli, 1965, p. 26) and range from 410 to 1,593 gal/min (26 to 100 l/s) and average 908 gal/min (57 l/s) in Essex County (Nichols, 1968b, p. 25). Analysis of pumping test data from Morris County indicates an average transmissivity of 18,100 ft^2/d (1,680 m^2/d) and coefficient of storage of 3.9×10^{-4} (Gill and Vecchioli, 1965, p. 26).

Hydrologic History

Prior to 1900, the hydrologic system was virtually in a condition of natural equilibrium. Recharge to the aquifers from infiltrating precipitation was balanced by discharge through the semiconfining clays, to swamps and streams in the lowlands, through the pattern of circulation shown in figure 3. Significant withdrawals of water from wells began about 1900 and have increased continuously to the present time. In some areas the system has attained a new equilibrium in whch the withdrawal from wells has reached a constant level and has been balanced by decreases in the natural discharge to surface-water bodies and by induced recharge from those bodies. Elsewhere, particularly where pumpage is still increasing, the system is still in a process of adjustment. Some of the pumpage continues to be withdrawn from storage, and water levels are still declining.

SIMULATION OF THE GROUND-WATER SYSTEM

Simulation Theory

Simulation of the valley-fill aquifer makes use of an "iterative digital model for aquifer evaluation" developed by Pinder (1970) and modified by Trescott (1973). The model simulates the response of an aquifer to pumping from wells by solving the two-dimensional ground-water equation. The simulation takes into account lateral flow within the aquifer, vertical flow within or across a confining layer, accumulation or depletion of water in storage, both in the aquifer and the confining layer, and recharge or discharge to adjacent aquifers or surface-water bodies.

The differential equation for non-steady flow of a compressible fluid in an elastic nonhomogeneous porous medium can be written

$$\frac{\partial}{\partial x}\left(T_{xx}\frac{\partial h}{\partial x}\right) + \frac{\partial}{\partial y}\left(T_{yy}\frac{\partial h}{\partial y}\right) = S\frac{\partial h}{\partial t} + W(x,y,t)$$

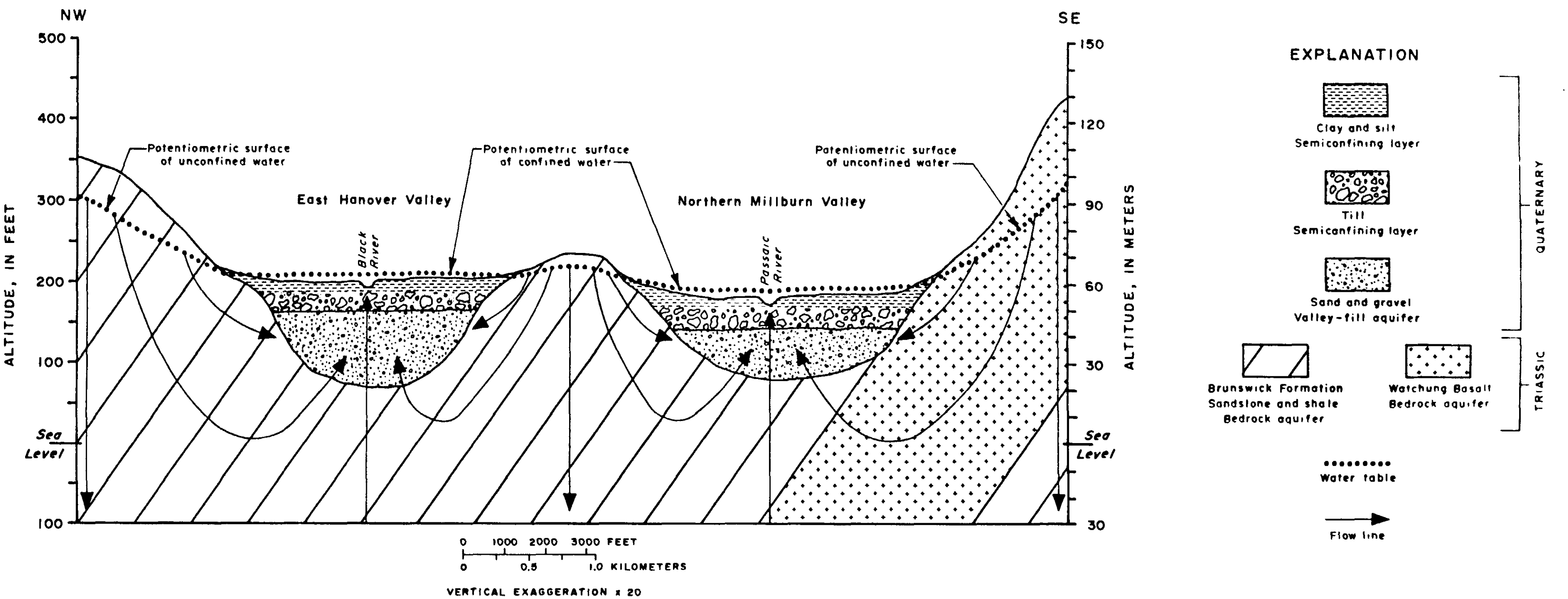


Figure 3.--Schematic geohydrologic section showing movement of ground water in 1900.

in which T_{xx}, T_{yy} are the principal components of the transmissivity tensor (L^2t^{-1})

h is the hydraulic head (L)
S is the storage coefficient (°)
t is the time (t)
W the volumetric flux of recharge or withdrawal per unit surface are of the aquifer (Lt^{-1})

As used in the model employed in this study, W includes pumpage and vertical leakage through the semiconfining bed from an overlying surface-water source, such as a swamp or stream but does not include recharge directly from precipitation into the unconfined Triassic aquifer. For points beneath such a source, the leakage flow per unit area is computed as

$$K_z \frac{h_s - h}{m},$$

where K_z is the vertical hydraulic conductivity of the semiconfining bed, m is its thickness, and h_s is the water level in the overlying surface-water source. At all other points, leakage is taken as zero. A modification to the model, described in a subsequent section, provides a limiting value of seepage in the event that water levels in the valley fill decline below the top of the aquifer.

Transient release of water from storage in the semiconfining bed was not simulated in the model, as trial calculation indicated that it would not be a significant factor.

In formulating the model, a rectangular net or grid is superposed on a plan view of the ground-water reservoir. The spacing between successive nodes may be variable. The model incorporates a computer program which calculates hydraulic head in the aquifer as a function of space and time; this program is written in FORTRAN IV for the IBM 360 system (Pinder, 1970). Using finite difference methods (Pinder and Bredehoeft, 1968, p. 1073-75) the ground-water flow equation is solved implicitly at each node of the grid, stepping through time in specified increments until the period of analysis is complete. The procedure used is known as the iterative alternating direction implicit method.

Each node of the aquifer represents a rectangular block of aquifer. For each node the following information is recorded: (1) transmissivity of the aquifer or hydraulic conductivity and thickness; (2) storage coefficient of the aquifer; (3) total pumpage from wells; (4) thickness, m, of the leaky confining layer; (5) hydraulic head, h_s, of the surface-water body overlying the confining layer; (6) dimensions, Δx and Δy, of the aquifer block; (7) initial hydraulic head in the aquifer; and (8) the product $K_z f$, where K_z represents vertical hydraulic conductivity of the semiconfining layer, and f is the fraction of the area of the aquifer block which is overlain by surface-water sources. The calculation of vertical leakage from surface-water sources, discussed previously, is actually carried out in the program by computing the term

$$K_z f \Delta x \Delta y \; \frac{h_s - h}{m}$$

for each node.

Features of the Simulation Model

As it was initially developed and calibrated, the model simulated the valley-fill aquifer as an artesian aquifer having an overlying leaky confining layer. The model was subsequently modified to simulate the valley fill as an artesian aquifer that may be converted to water-table conditions. This feature of the simulation is described in a later section.

The Triassic aquifer underlies the stratified-drift aquifer and is laterally adjacent to it (fig. 3). The two aquifers are treated in the model as being adjacent to one another and having a continuous hydraulic connection. Indeed, the model handles them as a single aquifer and simply incorporates a sharp change in transmissivity and storage coefficient along their line of contact. The Triassic aquifer is treated as an unconfined unit throughout the period of simulation; however, because the saturated thickness of the Triassic is much greater than any drawdown that can reasonably be anticipated, the transmissivity of the Triassic remains relatively constant during the simulation.

The size of the model grid is 52 x 52 nodes. The central 46 x 46 nodes are shown on plate 1. Grid spacing is variable, generally either 500 ft (152 m) or 1,000 ft (305 m). The outer six nodes on each side of the grid have spacings up to 20,000 ft (6,096 m) in order to simulate boundaries as being at least 5 mi (8 km) from the heavily pumped valley-fill aquifer. Boundaries of the model are simulated as being impermeable by assigning them zero values of transmissivity or hydraulic conductivity.

Hydraulic Properties Used in the Model

The hydraulic properties employed in the model include the hydraulic conductivity, thickness, artesian storage coefficient, and specific yield of the valley-fill aquifer; the vertical hydraulic conductivity and thickness of the semiconfining layer; and the hydraulic conductivity, thickness, and specific yield of the Triassic aquifers. The estimates used for these parameters and the methods by which they were obtained are outlined in this section. Two parameters--the vertical hydraulic conductivity of the semiconfining layer and specific yield of the Triassic aquifers--were adjusted by trial and error during model calibration. This process is discussed more fully in a later section.

Valley-Fill Aquifer

Values of transmissivity and hydraulic conductivity of the valley-fill aquifer determined from pumping tests in eastern Morris County are reported in Vecchioli and Nichols (1966). In the vicinity of Morristown Airport and Florham Park, transmissivities range from 12,900 to 42,900 ft^2/d (0.15 to 0.5 ft^2/s, 1,190 to 3,970 m^2/d). Computed hydraulic conductivities range from 210 to 440 ft/d (2.5×10^{-3} to 5.1×10^{-3} ft/s, 65 to 135 m/d).

Transmissivity values determined from several pumping tests in eastern Morris County and one test in western Essex County are given in Gill and Vecchioli (1965, p. 28). Hydraulic conductivities of the valley-fill aquifer at these test sites, based on thickness of the aquifer given by Vecchioli, Nichols, and Nemickas (1967), are as follows:

	Hydraulic Conductivity		
	(ft/d)	(ft/s)	(m/d)
Commonwealth Water Co., Well 49 (node 44, 38)	256	3.0×10^{-3}	78
Madison Water Department			
Well B (node 45, 25)	346	4.0×10^{-3}	106
Well C (node 40, 17)	289	3.3×10^{-3}	88
Esso Engineering and Design Co. (node 31, 13)	257	3.0×10^{-3}	79
Florham Park Water Department Columbia Avenue Well (node 26, 17)	226	2.6×10^{-3}	69

Values of hydraulic conductivity used in the model are 4.0×10^{-3} ft/s (105 m/d) in the Chatham Valley and 3.0×10^{-3} ft/s (79 m/d) in all other valleys. Values for aquifer thickness were taken from Vecchioli, Nichols, and Nemickas (1967) and interpreted from the bedrock surface depicted by Nichols (1968a). However, in parts of the southern and northern Millburn Valleys and Slough Brook and Canoe Brook Valleys, where data on aquifer thickness are sparse, thickness of the aquifer was estimated by interpretation from bedrock topography (Nichols, 1968a) and by correlation of aquifer thickness with specific capacity of wells. Aquifer hydraulic conductivity values used at each node in the grid are given in the data matrices.

Storage coefficients of the valley-fill aquifer computed from several pumping tests in the modelled area are reported in Gill and Vecchioli (1965, p. 28). Average storage coefficients for each pumping test site range from 2×10^{-4} to 9.2×10^{-4}. Computed specific storage (storage coefficient divided by aquifer thickness) ranges from 2.8 x 10^{-6} ft^{-1} to 14 x 10^{-6} ft^{-1} (0.9 x 10^{-6} m^{-1} to 4.3 x 10^{-6} m^{-1}); the mean is 5.5 x 10^{-6} ft^{-1} (1.7 x 10^{-6} m^{-1}); and the median is 3.4 x 10^{-6} ft^{-1} (1.0 x 10^{-6} m^{-1}). The storage coefficient of the valley-fill aquifer used in the simulation model was computed by multiplying aquifer thickness by a specific storage of 4 x 10^{-6} ft^{-1} (1.2 x 10^{-6} m^{-1}). Values of storage coefficient used at each node are given in the data matrices. A value of 0.16 was selected for the specific yield of the aquifer for use in the program modification, which allows simulation of water-table conditions as drawdown reaches the top of the aquifer. This value was based upon data from aquifers of similar origin in Indiana (J. R. Marie, written commun. 1974).

Newark Group

Transmissivity values computed from seven pumping tests of wells tapping the Newark Group in northern New Jersey range from 1,000 to 4,000 ft^2/d (0.012 to 0.046 ft^2/s, 90 to 370 m^2/d) (Gill and Vecchioli, 1965, p. 23). Throughout most of the area modelled, transmissivity values used in the model are 0.018 ft^2/s (144 m^2/d) for Watchung Basalt and 0.024 ft^2/s (193 m^2/d) for the Brunswick Formation. In areas immediately adjacent to the valley-fill deposits, a larger transmissivity value, generally 0.03 ft^2/s (241 m^2/d), is used. The slightly larger value is used to provide a gradual transition in transmissivity to the higher transmissivities of the valley fill. Moreover, the transmissivity is probably greater in the valleys owing to a greater degree of fracturing and weathering. Values for hydraulic conductivity used in the model were obtained by dividing the transmissivity values by a thickness of 500 ft (152 m). The selection of 500 ft (152 m) is based on Nichols (1968b, p. 10-11) discussion of the water-bearing properties of the Brunswick Formation.

The average coefficient of storage of the Newark Group computed from seven pumping tests in northern New Jersey is reported as 0.0005 (Gill and Vecchioli, 1965, p. 23). However, these tests were of short duration, and the pumpage was derived predominantly from compressive storage in the interior of the aquifer. The storage coefficient values calculated from the results thus represent the compressive or artesian storage coefficient of some indeterminate depth interval within the aquifer. In the long-term regional development of ground water, withdrawals from storage in the Triassic rocks will occur ultimately by dewatering. Thus, the storage coefficient required in calculation of long-term effects is actually the specific yield of the upper or weathered portions of these rocks. Unfortunately, data on the specific yield of weathered Newark Group rocks in New Jersey are not available. Rima, Meisler, and Longwill (1962, p. 29-30) reported laboratory determination of specific yields of 12 rock samples collected from outcrops of the Stockton Formation of the Newark Group in southern Pennsylvania. The specific yields range from 0 to 19.3 percent; the mean is 8.5 percent. However, the true mean specific yield is probably larger than 8.5 percent because of the occurrence of water-bearing fractures in addition to the primary porosity measured in the laboratory. Using this evidence as a guide, several values of specific yield were tried during the model calibration described in a later section of this report. A value of 0.12 finally gave the best results.

Semiconfining Layer

The semiconfining layer overlying the valley-fill aquifer consists predominantly of till, clay, silt, and swamp muck. Thickness of this layer ranges from 10 to 80 ft (3 to 24 m) in the model area. Thickness data on the Chatham and East Hanover Valleys were obtained from Vecchioli, Nichols, and Nemickas (1967, fig. 3 and plate 1). Thickness in the southern Millburn Valley was determined largely from interpretation of drillers' logs. In the northern Millburn Valley, thickness was estimated by interpolation of known thicknesses in the East Hanover and southern Millburn Valleys. Values used at each node of the model are shown in the Data matrices section.

Data on the hydraulic properties of the confining layer are not available. Initial values for hydraulic conductivity used in the simulation model prior to calibration were derived from data from other areas. Hydraulic conductivity values from laboratory tests on three samples of interbedded clay and sand of glacial origin from St. Clair County, Michigan, ranged from 2.9×10^{-11} ft/s to 3.8×10^{-9} ft/s (7.6×10^{-7} to 1×10^{-4} m/d) (F. S. Riley, oral commun., 1975). Analysis of seven leaky aquifer tests in Illinois by Walton (1960) gave hydraulic conductivities of till ranging from 1.2×10^{-7} to 2.5×10^{-6} ft/s (3.2×10^{-3} to 6.6×10^{-2} m/d). The mean is 6.6×10^{-7} ft/s (1.7×10^{-2} m/d). Several values of hydraulic conductivity within these ranges were tried during the model calibration described in the following section of this report. Values giving the best results are as follows: 7×10^{-8} ft/s (1.8×10^{-3} m/d) for the northern part of the model (rows 1-26 and eastern part of rows 27-33, plate 1); 1.05×10^{-7} ft/s (2.8×10^{-3} m/d) for the area immediately to the south (western part of rows 27-35); and 4.9×10^{-7} ft/s (1.3×10^{-2} m/d) for the southern part of the model (eastern part of rows 34 and 35 and all of rows 36-50).

As noted previously, the actual data entries to the model represent values of $K_z f$, where f represents the fraction of the node area overlain by surface-water sources. Values of the factor $K_z f$ for each node in the model are given in the Data matrices section.

Model Calibration

The model was calibrated by simulating pumpage from the aquifer during a 72-year period, extending from 1900 through 1971, and comparing the computed drawdowns at 12 nodes during the latter part of this period with actual drawdown observed in wells located at corresponding points (plate 1). Changes were made in the model to obtain the closest possible agreement between computed and actual drawdowns. Extensive adjustments were necessary in the hydraulic conductivity used for simulating the semiconfining clay overlying the valley-fill aquifer and in the storage coefficient used in simulating the bedrock aquifer. Minor adjustments were made in simulating the contact between the bedrock and valley-fill aquifers.

Because of inadequate data relating to prepumping water levels, no attempt was made to simulate the prepumping equilibrium condition in the model; rather, employing the principle of superposition, pumpage was treated as a change imposed on an initial condition of no lateral flow within the aquifer, and drawdown was considered to devolve from an initially flat potentiometric surface.

As noted previously, pumpage increased continuously from 1900 onward. The model can simulate continuous increases in pumpage only through a series of discrete stepwise increments. For purposes of the simulation, therefore, the 72-year interval was broken into seven separate pumping periods, within each of which pumpage was held at a constant level. The pumping periods and associated rates of pumpage are listed below:

Pumping Period	Duration	Total Pumping Rate
1	1900-29 (30 yrs)	8.0 ft^3/s (5.2 Mgal/d, 0.23 m^3/s)
2	1930-45 (16 yrs)	13.9 ft^3/s (9.0 Mgal/d, 0.39 m^3/s)
3	1946-52 (7 yrs)	19.3 ft^3/s (12.5 Mgal/d, 0.55 m^3/s)
4	1953-59 (7 yrs)	26.2 ft^3/s (16.9 Mgal/d, 0.74 m^3/s)
5	1960-65 (6 yrs)	34.6 ft^3/s (22.4 Mgal/d, 0.98 m^3/s)
6	1966-68 (3 yrs)	34.9 ft^3/s (22.5 Mgal/d, 0.99 m^3/s)
7	1969-71 (3 yrs)	40.6 ft^3/s (26.2 Mgal/d, 1.15 m^3/s)

The pumpage utilized in calibration is listed by node and pumping period in table 1. These data include all known pumpage from the valley-fill aquifer and from the adjacent Triassic rocks within the area simulated by rows 4-49 and columns 4-49 of the grid. Pumpage from valley-fill deposits northwest of the East Hanover Valley (primarily in Parsippany-Troy Hills) is not included in the model. The extent and hydraulic properties of the Parsippany-Troy Hills deposits are not adequately known. Exclusion of pumpage from these deposits probably causes a small error in the modelling of the northern part of the East Hanover Valley. Further data would be necessary to model this area in detail.

The periods of water-level record used for calibration differed considerably among the 12 observation wells. For two wells, records of 19 years duration (1953-71) were used; for two others, records of 12 years duration (1960-71) were used. Most of the remaining observation wells were drilled in 1965-66 and records of three (1969-71) and six years duration (1966-71) were used. The period of water-level record, rather than the total period of pumping (1900-71), represents the actual calibration period in each area of the model. No attempt has been made to calibrate the model for the period 1900-52. Nevertheless, pumpage during this earlier period is important as it affects drawdowns during the actual periods of calibration.

Table 1. Ground-water withdrawal in southwestern Essex and southeastern Morris Counties

(Sources of data: New Jersey Division of Water Resources; individual well owners; and Thompson, 1932)

Owner's name and well number	Location		Average pumping rate, in ft^3/s							Aquifer
	Row	Column	1900-29	1930-45	1946-52	1953-59	1960-65	1966-68	1969-71	
Livingston Township Water Dept. No. 2	7	40				0.01 *	0.033	0.05	0.37	Brunswick Formation
Livingston Township Water Dept. No. 1	8	38			0.80 *	.20 *	.26	.15	.12	Brunswick Formation
Livingston Township Water Dept. No. 3	9	27				1.00 *	1.87	1.49	1.30	Valley fill, Northern Millburn Valley
Livingston Township Water Dept. No. 5	10	28					.50	.65	.76	Valley fill, Northern Millburn Valley
Livingston Township Water Dept. No. 4	13	42				.02 *	.25	.42	.29	Brunswick Formation
East Hanover Township Water Dept. No. 1	14	14						.07	.57	Valley fill, East Hanover Valley
Livingston Township Water Dept. No. 6	14	32						.06	.23	Valley fill, Northern Millburn Valley
Suburban Propane	15	8		0.001*	.005*	.007*	.008	.008	.008	Valley fill, East Hanover Valley
Livingston Township Water Dept. No. 7	15	27						.24	.51	Valley fill, Northern Millburn Valley
Sandoz Inc. No. 1	16	13			.08 *	.10 *	.11**	.18	.23	Valley fill, East Hanover Valley
Sandoz Inc. No. 2	17	14			.08 *	.10 *	.11**	.08	.19	Valley fill, East Hanover Valley
Sandoz Inc. No. 3	18	15			.12 *	.18 *	.23**	.31	.43	Valley fill, East Hanover Valley
Livingston Township Water Dept. No. 8	18	34							.04	Valley fill, Northern Millburn Valley

* Estimated
** Pumpage at this node has not been reported. Value given is estimated from total pumpage for several nodes.

Location of wells shown in plate 1.

Table 1. Ground-water withdrawal in southwestern Essex and southeastern Morris Counties--Continued

(Sources of data: New Jersey Division of Water Resources; individual well owners; and Thompson, 1932)

Owner's name and well number	Location		Average pumping rate, in ft^3/s							Aquifer
	Row	Column	1900-29	1930-45	1946-52	1953-59	1960-65	1966-68	1969-71	
Sandoz Inc. No. 4	19	15							0.29	Valley fill, East Hanover Valley
Sandoz Inc. No. 5	20	13							.19	Valley fill, East Hanover Valley
Morristown Water Dept., Black Brook No. 1	22	12							.59**	Valley fill, East Hanover Valley
E. Orange Water Dept., Canoe Brook No. 4	22	45				0.05**	0.20**	0.17	.90	Valley fill, Canoe Brook Valley
Wilbur B. Driver Co.	23	14					.02	.05	.21	Valley fill, East Hanover Valley
Morristown Water Dept., Black Brook No. 2	24	12							.59**	Valley fill, East Hanover Valley
E. Orange Water Dept., Canoe Brook No. 3	24	45				.05**	1.00**	1.13	.76	Valley fill, Canoe Brook Valley
Florham Park Water Dept. No. 2	26	17				.32**	.50**	.58	.75	Valley fill, East Hanover Valley
Florham Park Water Dept. No. 3	26	20						.07	.013	Valley fill, East Hanover Valley
E. Orange Water Dept. Slough Brook Well Field	27	41	0.10 *	0.18**	0.16**	.30**	.07**	.21**	.17**	Valley fill, Slough Brook Valley
E. Orange Water Dept., Canoe Brook No. 2	27	45				.10**	1.40**	1.38	.95	Valley fill, Canoe Brook Valley
E. Orange Water Dept., Slough Brook Well Field	28	41	.10**	.18**	.16**	.30**	.07**	.21**	.17**	Valley fill, Slough Brook Valley
Florham Park Water Dept. No. 1	29	18		.16	.30	.30**	.50**	.56	.58	Valley fill, East Hanover Valley

* Estimated
** Pumpage at this node has not been reported. Value given is estimated from total pumpage for several nodes.

Location of wells shown in plate 1.

Table 1. Ground-water withdrawal in southwestern Essex and southeastern Morris Counties--Continued

(Sources of data: New Jersey Division of Water Resources; individual well owners; and Thompson, 1932)

Owner's name and well number	Location		Average pumping rate, in ft^3/s							Aquifer
	Row	Column	1900-29	1930-45	1946-52	1953-59	1960-65	1966-68	1969-71	
E. Orange Water Dept., Braidburn No. 3	29	29	0.20 *	0.60**	1.40**	1.40**	1.36**	1.74	2.08	Valley fill, Southern Millburn Valley
E. Orange Water Dept., Slough Brook Well Field	29	41	.10 *	.18**	.16**	.30**	.07**	.21**	.17**	Valley fill, Slough Brook Valley
E. Orange Water Dept., Braidburn No. 2	30	30	.20 *	.60**	1.20**	1.20**	1.15**	1.51	1.42	Valley fill, Southern Millburn Valley
E. Orange Water Dept., Canoe Brook No. 1	30	45	2.20 *	4.30	3.40	3.00**	1.40**	.37	.48	Valley fill, Canoe Brook Valley
Morristown Water Dept., Normandy Well	31	6	.10 *	.30	.40	.50	.35	.27	.18	Valley fill, East Hanover Valley
E. Orange Water Dept., Braidburn No. 1	31	30	.20 *	.40**	.70**	.70**	.65**	.84	1.42	Valley fill, Southern Millburn Valley
E. Orange Water Dept., Dickinson No. 3	32	34	.20 *	.50**	.80**	1.30**	1.40**	1.65	2.09	Valley fill, Southern Millburn Valley
Allied Chemical Co.	33	5					.38 *	.40	.42	Valley fill, Chatham Valley
E. Orange Water Dept., Dickinson No. 1	33	31	.20 *	.50**	.80**	1.30**	1.40**	1.58	1.93	Valley fill, Southern Millburn Valley
E. Orange Water Dept., Dickinson No. 2	34	33	.20 *	.40**	.60**	.60**	.60**	.66	.52	Valley fill, Southern Millburn Valley
Orange Products, Inc.	34	38					.04 *	.17	.17	Valley fill, Southern Millburn Valley
Esso Research and Engineering No. 1	35	12				.10 *	.45	.59	.54	Valley fill, Chatham Valley

* Estimated

** Pumpage at this node has not been reported. Value given is estimated from total pumpage for several nodes.

Location of wells shown in plate 1.

Table 1. Ground-water withdrawal in southwestern Essex and southeastern Morris Counties--Continued

(Sources of data: New Jersey Division of Water Resources; individual well owners; and Thompson, 1932)

Owner's name and well number	Location		Average pumping rate, in ft^3/s							Aquifer
	Row	Column	1900-29	1930-45	1946-52	1953-59	1960-65	1966-68	1969-71	
Commonwealth Water Co., Canoe Brook Well Field	36	39	0.30 *	0.33**	0.50**	0.63**	0.84**	0.74**	0.77**	Valley fill, Southern Millburn Valley
Commonwealth Water Co., Canoe Brook Well Field	36	41	.30 *	.33**	.50**	.63**	.84**	.74**	.77**	Valley fill, Southern Millburn Valley
Commonwealth Water Co., Canoe Brook Well Field	36	42	.90 *	1.00**	1.50**	1.89**	2.53**	2.21**	2.30**	Valley fill, Southern Millburn Valley
Commonwealth Water Co., Canoe Brook Well Field	36	43	.60 *	.67**	1.00**	1.26**	1.69**	1.48**	1.54**	Valley fill, Southern Millburn Valley
Morris Co. Golf Club	37	5					.001*	.05	.05	Valley fill, Chatham Valley
Commonwealth Water Co., Canoe Brook Well Field	37	43	.80 *	1.00**	1.50**	1.89**	2.53**	2.21**	2.30**	Valley fill, Southern Millburn Valley
Commonwealth Water Co., Canoe Brook Well Field	38	43	.60 *	.67**	1.00**	1.36**	1.69**	1.48**	1.54**	Valley fill, Southern Millburn Valley
Madison Water Dept., Well C	40	17				.20**	.86	.54	.49	Valley fill, Chatham Valley
Madison Water Dept., Well D	41	19					.16	.69	.45	Valley fill, Chatham Valley
Commonwealth Water Co., Passaic R. No. 51	43	37				1.00 *	1.57**	1.34**	1.44**	Valley fill, Southern Millburn Valley
Commonwealth Water Co. Passaic R. Nos. 48, 50	44	38				2.00 *	3.14**	2.68**	2.88**	Valley fill, Southern Millburn Valley
Madison Water Dept., Well B, No. 1-12	45	25	.20 *	.50 *	.67**	.40**	.81	.65	.75	Valley fill, Chatham Valley

* Estimated
** Pumpage at this node has not been reported. Value given is estimated from total pumpage for several nodes.

Location of wells shown in plate 1.

Table 1. Ground-water withdrawal in southwestern Essex and southeastern Morris Counties--Continued

(Sources of data: New Jersey Division of Water Resources; individual well owners; and Thompson, 19.2)

Owner's name and well number	Location		Average pumping rate, in ft^3/s							Aquifer
	Row	Column	1900-29	1930-45	1946-52	1953-59	1960-65	1966-68	1969-71	
Madison Water Dept., Well A, No. 1-12	45	26	0.20 *	0.50 *	0.67**	0.50**	0.37	0.48	0.57	Valley fill, Chatham Valley
Madison Water Dept., Well E	45	27							.41	Valley fill, Chatham Valley
Chatham Borough, Nos. 1, 2, 3	46	30	.30 *	.60 *	.80 *	1.00 *	1.23	1.48	1.51	Valley fill, Chatham Valley

* Estimated

** Pumpage at this node has not been reported. Value given is estimated from total pumpage for several nodes.

Location of wells shown in plate 1.

The most significant changes during calibration were to the hydraulic conductivity used to simulate the confining layer. This parameter is not only the most variable, as indicated by the data from Illinois (Walton, 1960), but is the least known. Calibration required three different hydraulic conductivities, the smallest in the north and the greatest in the south. Values for thickness of the confining layer were not modified during calibration, except for an area where thickness was estimated, in the poorly defined area southwest of Morristown Airport (plate 1).

Because of the relative accuracy of the transmissivity data and the relative insensitivity of the model to small or moderate changes in this parameter, transmissivity was not adjusted during calibration. Similarly, the storage coefficient of the valley-fill aquifer was not adjusted during calibration. Several storage coefficients, however, were tried for simulation of the bedrock aquifer during calibration. A value of 0.12, the largest value tried, was selected because it produced, after 72 years of simulated pumping, the least amount of drawdown adjacent to the model boundaries, as follows: northeastern boundary, 0.0 to 0.9 ft (0.0 to 0.27 m); southeastern boundary, 0.1 to 3.5 ft (0.03 to 1.07 m); southwestern boundary, 0 to 1.7 ft (0 to 0.52 m); and northwestern boundary, 0 to 1.1 ft (0 to 0.33 m). Larger values of storage coefficient would have produced even less drawdown near the model boundaries, but they would have been unrealistic. Some changes were made in the simulation of the bedrock and valley-fill contact on the south side of the Chatham Valley, where the actual contact location is unknown. The effect of these changes on calibration of the model was slight.

Table 2 compares the drawdowns measured at the 12 observation wells with those computed by the model, as finally calibrated, for the same periods of record. Matching of measured and computed water-level declines was more successful at some wells than at others. Computed drawdowns at the observation wells in the East Hanover Valley; Green Acres (7, 19), Sandoz (19, 13), Clemens (20, 12), Driver 2 (24, 13), Driver 1 (25, 16), and Esso 6-inch (31, 13), for the period 1966-71 are quite close to observed drawdowns. Computed drawdown at the Morristown Airport well (28, 7) located (plate 1) adjacent to the East Hanover Valley is somewhat greater than measured drawdown. The geometry and aquifer characteristics of the Morristown Airport area are not well known and may not be simulated accurately.

Computed drawdowns closely match observed drawdowns in the Briarwood School (27, 25) and Canoe Brook (35, 41) wells in the southern part of the Millburn Valley. At the Canoe Brook well, the model successfully reproduces two reversals in water-level trend during three pumping periods. Matching of drawdowns is less successful at the Greenhouse (38, 29) and Madison 4 (45, 26) wells in the Chatham Valley. Considering the total period of record at both Madison 4 and Greenhouse, the model computes about 33 percent too much drawdown. Although the computation for the Madison 4 well for 1960-65 is fairly accurate, too little drawdown is computed for 1966-68 and too much drawdown for 1969-71. This computation pattern suggests that inaccurate pumpage data near Madison 4, in addition to imperfect hydrologic data, have been used in the model.

Table 2. Comparison of computed water-level changes with those measured at 12 observation wells

Valley	Observation well name	Well node location		Water-level decline or rise (+), in feet (for conversion to meters, multiply feet by 0.305) 1953-65		1966-68		1969-71		Total		Total Years
		Row	Column	Measured	Computed	Measured	Computed	Measured	Computed	Measured	Computed	
East Hanover Valley	Green Acres	7	19					1.2	1.8	1.2	1.8	3
	Sandoz	19	13			1	1.9	9.2	8.9	10.2	10.8	6
	Clemens	20	12			1.5	1.9	9.8	9.1	11.3	11.0	6
	Driver 2	24	13			2.5	2.2	11	9.6	13.5	11.8	6
	Driver 1	25	16			1.7	2.7	9.0	8.1	10.7	10.8	6
				1960-65								
	Morristown Airport	28	7	3	4.2	.5	1.2	2	3.4	5.5	8.8	12
	Esso 6 inch	31	13					5	4.8	5	4.8	3
Southern Millburn Valley	Briarwood School	27	25					6.5	6.1	6.5	6.1	3
				1953-65								
	Canoe Brook	35	41	21	22.0	+2.5	+2.6	3	3.3	21.5	22.7	19
Canoe Brook Valley	Neutral Zone	31	45	29.5	16.0	+4.5	+4.8	+1	2.4	24	13.6	19
Chatham Valley	Greenhouse	38	29					3	4.0	3	4.0	3
				1960-65								
	Madison 4	45	26	8	9.8	3	1.6	1.3	4.8	12.3	16.2	12

Model computations of drawdowns at the Neutral Zone well in the Canoe Brook Valley are too small. Computation of water-level rise in the Neutral Zone well during 1966-68, however, is quite accurate.

Differing degrees of reliability can be placed upon different areas of the simulation model, depending upon knowledge of buried-valley geometry, aquifer hydrology, and closeness of model calibration. The most reliably simulated areas are the East Hanover Valley and the southern part of the Millburn Valley. Simulation of the Chatham Valley is adequate for prediction purposes. The Canoe Brook Valley, on the other hand, does not appear to be modelled adequately for prediction purposes. The reliability of the model in Slough Brook Valley and the northern Millburn Valley is unknown because of the lack of observation-well data. The simulation model may be used for these areas until a more refined model based upon additional data is available.

UTILIZATION OF THE MODEL

Modification of the Model

After calibration a function was added to the model to allow simulation of water-table conditions in the valley-fill aquifer should the head fall below the top of the aquifer during predictive experiments. This function is activited by a comparison of the water level at each node with the altitude of the top of the aquifer at that node, taken above the same datum. If the water level at a node falls below the top of the aquifer, the model converts from the artesian to the water-table calculation for that node, under which specific yield is used rather than storage coefficient. Transmissivity, then, is no longer treated as a constant, but is calculated as the product of hydraulic conductivity and saturated thickness above the base of the aquifer. Furthermore, leakage through the semiconfining layer is taken as a constant, equal to its value at the time of conversion to water-table conditions, rather than as proportional to the head difference between the aquifer and the overlying surface-water source. Three additional data entries are required for this modification: the specific yield of the aquifer, the altitude of the aquifer top above the head datum, and the altitude of the aquifer bottom above the same datum.

For purposes of calibration, the 1900-71 simulation utilized a flat initial potentiometric surface for 1900 rather than the actual unrecorded potentiometric surface in 1900. Simulations to predict water levels beyond 1971, however, utilize as an initial potentiometric surface, the 1971 potentiometric surface computed by the 1900-71 simulation. To the extent that the actual water levels in 1900 differed from this assumed flat potentiometric surface, the computed water levels for 1971 differ from actual levels in 1971. A corresponding adjustment was, therefore, made in the altitudes of the aquifer top and bottom, so that these altitudes would be consistent with the starting values of head used in the predictive runs and would, thus, permit correct identification of dewatering conditions. Geologic data on the altitudes of aquifer top and bottom were taken from Vecchioli, Nichols, and Nemickas (1967) and Nichols (1968a). The procedure used to make the adjustments was as follows: (1) water levels were measured in December 1971 in 12 observation wells, and the difference between water-level and aquifer top was determined at each site; (2) these differences were then subtracted from the computed water level for December 1971 to obtain an adjusted top of aquifer at each of the 12 sites; (3) the adjusted top of aquifer over the entire model was determined by contouring based on data from the 12 observation wells and the known configuration of the actual aquifer top; and (4) the adjusted bottom of the aquifer was determined by subtracting an amount equal to the thickness of the aquifer from the adjusted top of the aquifer. The adjusted altitudes of aquifer top and bottom determined in this way were entered for every node of the grid representing valley-fill aquifer; a specific yield of 0.16 was also entered for each of these nodes. At nodes representing the Triassic aquifer, values for top and bottom altitude and specific yield were assigned in such a way that essentially no change in the conditions of simulation would occur in response to head decline. Thus, the simulation of the Triassic in predictive runs is virtually identical to its simulation during model calibration; it is treated as a water-table aquifer in which the saturated thickness always remains very great relative to drawdown, so that transmissivity is virtually constant.

Altitude of aquifer top and bottom used at each node of the grid are given in the Data matrices section.

Predictive Simulation

The computer simulation model is designed to predict water-level declines resulting from ground-water withdrawals or the implementation of proposed withdrawals. The model also compares the computed water level with the altitude of the bottom of the valley-fill aquifer and thus determines when the aquifer simulated at a node goes dry and the transmissivity of the aquifer reaches zero in the vicinity of a pumping well. Under such conditions the simulated aquifer cannot sustain the pumping causing this condition and the pumping must be reduced or eliminated. Hence, the model indicates that a given quantity of pumpage at a site will exceed the capacity of the aquifer system. On the other hand, model predictions of water-level declines also indicate locations where additional ground-water withdrawals can be made because greater water-level declines can be accommodated.

A method was developed during this study to estimate the amount of water that could be withdrawn from the valley-fill aquifer on a continuing basis by making use of most of the available drawdown without drying up wells. Wells used in the calibration were deleted and hypothetical wells were simulated in the model at 61 selected nodes (plate 1). These wells were operated at constant drawdown, rather than at constant discharge, during the initial predictive simulation; that is, the water level in each hypothetical well was held constant at an arbitrary height (20 or

30 ft, 6 or 9 m) above the bottom of the aquifer. The water levels were maintained by simulating an extremely high aquifer storage coefficient (1×10^{40}) at each pumping node. For all nodes not containing the postulated constant-drawdown wells, the starting water levels were taken as the final values computed during model calibration for the end of 1971.

Simulation of pumpage from the constant-drawdown wells was continued until steady-state conditions were achieved. At this time, because water is no longer being withdrawn from storage, the simulated lateral flow into each node occupied by a hypothetical well, together with the vertical leakage into that node, must equal the rate of simulated pumpage from the well. Darcy's Law was used to compute the lateral flows and vertical leakage into each node containing a hypothetical well; the results give the discharge that can be obtained from each well at equilibrium if the water level is maintained 20 or 30 ft (6 or 9 m) above the bottom of the aquifer.

Two different computations of steady-state flow to the 61 hypothetical wells were made, using constant water levels of 20 ft (6 m) and 30 ft (9 m) above the bottom of the aquifer. Results using the two different constant water levels are similar. Total computed well yield is: 20 ft (6 m) level, 63.6 ft^3/s (1.80 m^3/s); and 30 ft (9 m) level, 61.9 ft^3/s (1.75 m^3/s). The similarity of yields at these two different water levels is not surprising. Utilizing the Dupuit equation, which has been shown by Wyckoff and others (1932) to give acceptable results for well discharge (though not for free surface elevation), it can be shown that the maximum discharge from a well tapping an unconfined aquifer occurs when the head in the well is at the bottom of the aquifer; and that at steady drawdowns of 80 percent and 70 percent of the original saturated thickness, the discharge will be 96 percent and 91 percent, respectively, of the maximum discharge.

Under the steady-state conditions achieved in the simulation, discharge from the hypothetical wells is sustained by a reduction in natural outflow of ground-water to surface-water sources and by induced seepage from those sources into the ground-water system.

As a check on the computations by the constant drawdown method, a simulation was carried out in which each hypothetical well was pumped at a constant rate, taken equal to that recorded for the well in the constant drawdown simulation with the water levels 30 ft (9 m) above the aquifer base. This constant discharge simulation was also carried to equilibrium. Initial results gave steady-state water levels in the hypothetical discharging wells that were generally higher than the levels used in the constant drawdown simulation. A small increase in simulated discharge, however, produced water levels much lower than those used in the constant drawdown simulation. Again, this result is not surprising, as the Dupuit analysis mentioned above shows that large changes in water level can be expected to accompany relatively small changes in discharge, once water levels have reached the lowermost third of the original saturated thickness. The result, in any case, confirms that the discharges determined in the constant drawdown simulation are approximately correct and give the total yield of the aquifer under a steady-state condition when water levels in the pumping wells are maintained 30 ft (9 m) to 20 ft (6 m) above the base of the aquifer. Both the experiments and the Dupuit analysis suggest that the pumpage as determined in the constant drawdown simulation is close to the maximum which could be developed from the aquifer under long-term (steady-state) conditions.

Estimates of the quantities of ground water available on a continuing basis from subareas of the valley-fill aquifer are shown in table 3. These estimates are based on the constant drawdown simulation, with pumping levels 30 ft (9 m) above the base of the aquifer. Comparison with actual pumpage during 1972-73 is given and evaluation of the reliability of the estimates is shown. As shown in table 3 the simulation model indicates that considerably more water could be withdrawn from the East Hanover and Chatham Valleys than was withdrawn during 1972-73. Ground-water withdrawal from the Southern Millburn Valley can probably be maintained at or near the 1972-73 rates. On the other hand, the aquifers in the Northern Millburn, Slough Brook, and Canoe Brook Valleys will probably be unable to maintain indefinitely the 1972-73 rate of withdrawal.

CONCLUSIONS

A valley-fill aquifer consisting of outwash sand and gravel of Pleistocene age occupies buried interconnected valleys that were cut into sandstone, shale, and basalt of Triassic age. The valley-fill aquifer is as much as 100 ft (30 m) thick and is typically 0.5 to 1.5 (0.8 to 2.4 km) wide. The aquifer is overlain by a leaky confining layer composed of glacial till, lacustrine clay and silt, and swamp deposits ranging in thickness from 10 ft (3 m) in the northern part of the study area to 80 ft (24 m) in the southern part.

The digital computer simulation model developed during this study simulates the valley-fill aquifer and adjacent bedrock aquifer. The section of the model simulating the valley-fill aquifer is a combined water table-artesian model that simulates water-table conditions wherever the head is below the top of the aquifer. The adjacent bedrock is treated as a water-table aquifer in which saturated thickness always remains great relative to drawdown. Throughout the period 1900-71, heads have remained predominantly above the top of the valley-fill aquifer. A combined water table-artesian model, however, is needed for predictions or future extensions of the model as water levels decline below the top of the aquifer.

Calibration of the model was achieved by comparing model-computed declines with field-measured water-level declines at 12 observation wells for four periods between 1953 and 1971. Aquifer simulation, however, was initiated for the year 1900, when virtually steady-state conditions existed. Ground-water withdrawal used in the simulation increased from 8.0 ft^3/s (cubic feet per second) (0.22 m^3/s) for the 1900-29 time period to 40.4 ft^3/s (1.14 m^3/s) for the 1969-71 time period.

Table 3.--Estimated availability of water from the valley-fill aquifer.

Area	Pumpage 1972-73	Rate of withdrawal Available indefinitely	Comments
East Hanover Valley	7.15 ft^3/s (4.62 Mgal/d, 0.20 m^3/s)	20 ft^3/s (13 Mgal/d, 0.6 m^3/s)	Model well calibrated. Geology and hydrology well documented. Availability estimates considered suitable for planning purposes.
Northern Millburn Valley	2.89 ft^3/s (1.87 Mgal/d, 0.08 m^3/s)	1 ft^3/s (0.7 Mgal/d, 0.03 m^3/s)	Model not calibrated. Geology and hydrology not well documented. Availability estimates considered a "first rough cut."
Chatham Valley	5.09 ft^3/s (3.29 Mgal/d, 0.14 m^3/s)	19 ft^3/s (12 Mgal/d, 0.5 m^3/s)	Model adequately calibrated. Geology and hydrology generally well documented. Availability estimates considered suitable for planning purposes.
Southern Millburn Valley	23.21 ft^3/s (15.00 Mgal/d, 0.66 m^3/s)	21 ft^3/s (14 Mgal/d, 0.6 m^3/s)	Model fairly well calibrated. Geology and hydrology adequately documented. Availability estimates considered suitable for planning purposes.

Table 3.--Estimated availability of water from the valley-fill aquifer--Continued

Area	Pumpage 1972-73	Rate of withdrawal Available indefinitely	Comments
Slough Brook Valley	0.60 ft^3/s (0.39 Mgal/d, 0.02 m^3/s)	0.1 ft^3/s (0.06 Mgal/d, 0.003 m^3/s)	Model not calibrated. Geology and hydrology not adequately documented. Availability estimates considered broadly generalized. Model results coupled with size and shape of the valley suggest that significantly larger quantities of water are not available.
Canoe Brook Valley	4.08 ft^3/s (2.64 Mgal/d, 0.12 m^3/s)	2 ft^3/s (1.3 Mgal/d, 0.06 m^3/s)	Model poorly calibrated. Geology and hydrology not adequated documented. Availability estimates considered broadly generalized. Model results coupled with size and shape of the valley suggest that significantly larger quantities of water are not available.
Total	43.02 ft^3/s (27.81 Mgal/d, 1.22 m^3/s)	63 ft^3/s (41 Mgal/d, 1.8 m^3/s)	

Hydraulic properties initially used during calibration were those determined by interpretation of available data. In the course of calibration, changes in several hydraulic properties were tested. The most significant changes made for the final calibration, however, were changes in simulation of the hydraulic conductivity of the overlying confining layer. Calibration of the model required simulating three different hydraulic conductivities, the smallest in the north and the greatest in the south.

Hydraulic properties simulated in the final calibration of the model are as follows:

Hydrologic unit	Hydraulic conductivity (ft/s)	Specific storage (ft^{-1})	Specific yield	Thickness (ft)
Valley-fill aquifer	$3x10^{-3}$ to $4x10^{-3}$	$4x10^{-6}$	0.16	0-100
Newark Group aquifer	$3.6x10^{-5}$ to $6x10^{-5}$	$2.4x10^{-4}$	0.12	500
Confining layer	$7x10^{-8}$ to $4.9x10^{-7}$	0	0	10-80

Calibration of the models has been more successful at some locations than others; and consequently, the simulation model is more reliable in some areas than others. The most reliably modelled areas are the East Hanover Valley and the southern part of the Millburn Valley. The Chatham Valley, although less accurately calibrated, is modelled adequately for most management purposes. Slough Brook and Canoe Brook Valleys and the northern Millburn Valley are either not calibrated or poorly calibrated.

The amount of water available from the valley-fill aquifer on a continuing basis was determined from the simulation model by computation of steady-state flow into 61 hypothetical wells using the criterion that water levels would not decline below 30 ft (9 m) above the base of the aquifer. The estimated yields available from the buried valley fills and a comparison with rates of withdrawal in 1972-73 are as follows:

	Water available	Water pumped 1972-73
East Hanover Valley;	20 ft^3/s (13 Mgal/d, 0.6 m^3/s)	7.15 ft^3/s (4.62 Mgal/d, 0.20 m^3/s)
Northern Millburn Valley;	1 ft^3/s (0.7 Mgal/d, 0.03 m^3/s)	2.89 ft^3/s (1.87 Mgal/d, 0.08 m^3/s)
Chatham Valley;	19 ft^3/s (12 Mgal/d, 0.5 m^3/s)	5.09 ft^3/s (3.29 Mgal/d, 0.14 m^3/s)
Southern Millburn Valley;	21 ft^3/s (14 Mgal/d, 0.6 m^3/s)	23.21 ft^3/s (15.0 Mgal/d, 0.66 m^3/s)
Slough Brook Valley;	0.1 ft^3/s (0.06 Mgal/d, 0.003 m^3/s)	0.60 ft^3/s (0.39 Mgal/d, 0.02 m^3/s)
Canoe Brook Valley;	2 ft^3/s (1.3 Mgal/d, 0.06 m^3/s)	4.08 ft^3/s (2.64 Mgal/d, 0.12 m^3/s)
Total	63 ft^3/s (41 Mgal/d, 1.8 m^3/s)	43.02 ft^3/s (27.81 Mgal/d, 1.22 m^3/s)

Hence, considerable additional quantities of water (above the 1972-73 rates) can be pumped from the East Hanover and Chatham Valleys. Future withdrawals from the other valleys will probably be at or below 1972-73 rates.

Additional supplies of ground water are probably available from valley-fill deposits occurring in the Whippany, Parsippany, and Troy Hills area located north and northwest of the northern part of the East Hanover Valley. That area was not included in the simulation model developed in this study because of lack of hydrologic data. In order to extend the computer simulation model to cover the Whippany, Parsippany, and Troy Hills area, considerable hydrologic and geologic work would be needed to define the aquifers and confining layers.

SELECTED REFERENCES

Darton, N. H., Bayley, W. S., Salisbury, R. D., and Kummel, H. B., 1908, Passaic Folio, N.J.: U.S. Geol. Survey Geologic Atlas, Folio 157, 27 p.

Gill, H. E., and Vecchioli, John, 1965, Availability of ground water in Morris County, New Jersey: New Jersey Dept. Conserv. and Econ. Devel. Spec. Rept. 25, 56 p.

Nichols, W. D., 1968a, Bedrock topography of eastern Morris and western Essex Counties, New Jersey: U.S. Geol. Survey Misc. Geol. Inv. Map I-594.

Nichols, W. D., 1968b, Ground-water resources of Essex County, New Jersey: New Jersey Dept. Conserv. and Econ. Devel. Spec. Rept. 28, 56 p.

Pinder, G. F., 1970, An iterative digital model for aquifer evaluation: U.S. Geol. Survey open-file rept., 44 p.

Pinder, G. F., and Bredehoeft, J. D., 1968, Application of digital computer for aquifer evaluation: Water Resources Research, v. 4, no. 5, p. 1069-1093.

Rima, D. R., Meisler, Harold, and Longwill, Stanley, 1962, Geology and hydrology of the Stockton Formation in Southeastern Pennsylvania: Pennsylvania Geol. Survey, 4th ser., Bull, W-14, 111 p.

Thompson, D. G., 1932, Ground water supplies of the Passaic River Valley near Chatham, N.J.: New Jersey Dept. Conserv. and Devel. Bull. 38, 51 p.

Trescott, P. C., 1973, Iterative digital model for aquifer evaluation: U.S. Geol. Survey open-file rept., 63 p.

Vecchioli, John, and Nichols, W. D., 1966, Results of the drought-disaster test-drilling program near Morristown, N.J.: New Jersey Dept. Conserv. and Econ. Devel. Water Resources Circ. 16, 48 p.

Vecchioli, John, Nichols, W. D., and Nemickas, Bronius, 1967, Results of the second phase of the drought-disaster test-drilling program near Morristown, N.J.: New Jersey Dept. Conserv. and Econ. Devel. Water Resources Circ. 17, 23 p.

Walton, W. C., 1960, Leaky artesian aquifer conditions in Illinois: Illinois Water Survey Rept. of Inv. 39.

Wolff, R. G., 1970, Field and laboratory determination of the hydraulic diffusivity of a confining bed: Water Resources Research, v. 6, no. 1, p. 194-203.

Wyckoff, R. D., Botset, H. G., and Muskat, M., 1932, Flow of liquids through porous media under the action of gravity: Physics, 3, 90-114.

DATA MATRICES USED IN SIMULATION MODEL

STORAGE COEFFICIENT MATRIX

ROWS														
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
2	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
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	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
3	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.00008	0.00016	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
4	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.00008	0.00016	0.00028	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000
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	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
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	0.12000	0.12000	0.12000	0.12000	0.00008	0.00020	0.00032	0.00028	0.00020	0.00008	0.00004	0.12000	0.12000	0.12000
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	0.12000	0.12000	0.12000	0.00008	0.00012	0.00032	0.00028	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00008
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	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
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	0.12000	0.12000	0.00008	0.00020	0.00032	0.00020	0.00008	0.00008	0.00008	0.00012	0.00012	0.00016	0.00016	0.00012
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	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
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	0.12000	0.00008	0.00016	0.00028	0.00036	0.00020	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012	0.00016	0.00012
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	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
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	0.12000	0.00008	0.00020	0.00028	0.00032	0.00020	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012	0.00016	0.00012
	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
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	0.00008	0.00016	0.00024	0.00032	0.00036	0.00028	0.00008	0.12000	0.12000	0.12000	0.00004	0.00008	0.00016	0.00020
	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
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	0.00020	0.00028	0.00032	0.00036	0.00032	0.00020	0.00008	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012	0.00016
	0.00016	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				

ROWS

13	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00016	0.00024
	0.00032	0.00036	0.00032	0.00024	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012	0.00016
	0.00020	0.00016	0.00012	0.00008	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
14	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00016	0.00024	0.00028	0.00032	0.00028
	0.00024	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012	0.00016
	0.00020	0.00016	0.00012	0.00008	0.00008	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
15	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00024	0.00032	0.00032	0.00028	0.00020	0.00016
	0.00012	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012
	0.00016	0.00020	0.00020	0.00016	0.00012	0.00008	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
16	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00024	0.00032	0.00020	0.00008	0.00012	0.00008
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012
	0.00016	0.00020	0.00020	0.00016	0.00016	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
17	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00024	0.00036	0.00024	0.00016	0.00016	0.00016
	0.00016	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012
	0.00016	0.00020	0.00016	0.00016	0.00012	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.00004	0.12000	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
18	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00020	0.00036	0.00032	0.00028	0.00028	0.00028
	0.00024	0.00020	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012
	0.00016	0.00020	0.00016	0.00016	0.00012	0.00008	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.00004	0.12000	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
19	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00020	0.00032	0.00040	0.00040	0.00036
	0.00028	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012
	0.00016	0.00020	0.00016	0.00016	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008
	0.00004	0.12000	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
20	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00016	0.00028	0.00036	0.00032	0.00024
	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012
	0.00016	0.00020	0.00016	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012
	0.12000	0.12000	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
21	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00020	0.00032	0.00036	0.00028	0.00016
	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00012	0.00016
	0.00020	0.00016	0.00012	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00016	0.00012
	0.12000	0.00008	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
22	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00020	0.00032	0.00036	0.00028	0.00016
	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00016	0.00020
	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00024	0.00004
	0.12000	0.00012	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
23	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00016	0.00028	0.00036	0.00028	0.00020
	0.00012	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00016	0.00020
	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00024	0.00004
	0.12000	0.00012	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
24	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00028	0.00036	0.00032	0.00028
	0.00020	0.00012	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00016	0.00020
	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00016	0.00020	0.12000
	0.12000	0.00016	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				

ROWS

25	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00016	0.00028	0.00032	0.00028
	0.00024	0.00020	0.00016	0.00012	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.00012	0.00020	0.00020
	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00016	0.00016	0.00008
	0.00008	0.00016	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
26	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012	0.00012	0.00016	0.00024	0.00028	0.00028
	0.00028	0.00028	0.00028	0.00028	0.00024	0.00020	0.00008	0.12000	0.12000	0.12000	0.12000	0.00012	0.00024	0.00024
	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00020	0.00016	0.00012
	0.00012	0.00016	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
27	0.0	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00008	0.00008	0.12000	0.00004	0.00008	0.00016	0.00024
	0.00028	0.00028	0.00028	0.00024	0.00020	0.00016	0.00012	0.12000	0.12000	0.12000	0.12000	0.00008	0.00020	0.00024
	0.00024	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00020	0.00016	0.00012
	0.00012	0.00016	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
28	0.0	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012	0.00008	0.12000	0.12000	0.12000	0.00004	0.00008	0.00016
	0.00024	0.00028	0.00028	0.00024	0.00016	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.00008	0.00020	0.00024
	0.00028	0.00008	0.12000	0.12000	0.12000	0.00004	0.00008	0.12000	0.12000	0.12000	0.00008	0.00020	0.00012	0.00012
	0.00012	0.00016	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
29	0.0	0.12000	0.12000	0.12000	0.00004	0.00008	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00012
	0.00020	0.00024	0.00028	0.00024	0.00020	0.00012	0.00004	0.12000	0.12000	0.12000	0.12000	0.00004	0.00012	0.00020
	0.00024	0.00020	0.00012	0.00008	0.00004	0.00008	0.00020	0.12000	0.12000	0.12000	0.00004	0.00020	0.00012	0.00012
	0.00012	0.00020	0.00032	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
30	0.0	0.12000	0.12000	0.12000	0.00004	0.00008	0.00004	0.12000	0.12000	0.12000	0.12000	0.00004	0.00012	0.00020
	0.00028	0.00020	0.00016	0.00016	0.00024	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012
	0.00020	0.00028	0.00024	0.00016	0.00016	0.00016	0.00016	0.12000	0.12000	0.12000	0.00008	0.00020	0.00012	0.00012
	0.00016	0.00024	0.00032	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
31	0.0	0.12000	0.12000	0.12000	0.00004	0.00012	0.00004	0.12000	0.00004	0.00008	0.00008	0.00016	0.00024	0.00028
	0.00020	0.00016	0.00012	0.00012	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00012
	0.00020	0.00028	0.00028	0.00020	0.00020	0.00028	0.00020	0.00008	0.12000	0.12000	0.00008	0.00024	0.00016	0.00012
	0.00008	0.00020	0.00028	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
32	0.0	0.12000	0.12000	0.12000	0.00004	0.00012	0.00008	0.12000	0.00004	0.00012	0.00020	0.00024	0.00028	0.00020
	0.00016	0.00012	0.00008	0.00004	0.00012	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008
	0.00016	0.00024	0.00028	0.00024	0.00028	0.00024	0.00024	0.00008	0.00012	0.00020	0.00020	0.00024	0.00016	0.00012
	0.00016	0.00020	0.00024	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
33	0.0	0.12000	0.12000	0.12000	0.00004	0.00012	0.00008	0.00004	0.12000	0.00008	0.00020	0.00028	0.00028	0.00020
	0.00016	0.00008	0.00008	0.12000	0.12000	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004
	0.00012	0.00020	0.00028	0.00028	0.00028	0.00020	0.00024	0.00020	0.00012	0.00016	0.00024	0.00024	0.00020	0.00012
	0.00020	0.00024	0.00020	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
34	0.0	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012	0.00008	0.00012	0.00008	0.00016	0.00024	0.00028	0.00024
	0.00016	0.00012	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.00004	0.00008	0.00012	0.00020	0.00020	0.00016	0.00016	0.00016	0.00024	0.00028	0.00028	0.00024	0.00024	0.00020
	0.00020	0.00028	0.00024	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
35	0.0	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012	0.00016	0.00020	0.00020	0.00020	0.00028	0.00028
	0.00024	0.00024	0.00024	0.00020	0.00008	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.00004	0.00008	0.00008	0.00008	0.00004	0.12000	0.00004	0.00008	0.00016	0.00020	0.00028	0.00028	0.00024
	0.00024	0.00028	0.00016	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
36	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00008	0.00020	0.00024	0.00024	0.00024	0.00028	0.00028
	0.00028	0.00028	0.00024	0.00024	0.00020	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00008	0.00008	0.00012	0.00020	0.00028	0.00028
	0.00028	0.00028	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				

ROWS

37	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012	0.00020	0.00024	0.00024	0.00028	0.00028
	0.00028	0.00028	0.00028	0.00028	0.00024	0.00016	0.00016	0.00008	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00016	0.00020	0.00016	0.00020	0.00020	0.00020	0.00028
	0.00028	0.00024	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
38	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012	0.00016	0.00020	0.00024	0.00024
	0.00028	0.00032	0.00032	0.00028	0.00028	0.00020	0.00020	0.00020	0.00008	0.00008	0.00012	0.00004	0.12000	0.12000
	0.00004	0.00004	0.00004	0.00004	0.00004	0.00012	0.00012	0.00020	0.00020	0.00020	0.00020	0.00016	0.00016	0.00024
	0.00028	0.00024	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
39	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00008	0.00012	0.00016	0.00016
	0.00024	0.00028	0.00028	0.00032	0.00032	0.00028	0.00024	0.00024	0.00016	0.00016	0.00016	0.00008	0.12000	0.00004
	0.00008	0.00012	0.00012	0.00012	0.00012	0.00020	0.00016	0.00024	0.00020	0.00020	0.00020	0.00020	0.00016	0.00020
	0.00024	0.00024	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
40	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012	0.00012
	0.00020	0.00024	0.00024	0.00028	0.00032	0.00036	0.00028	0.00028	0.00020	0.00020	0.00020	0.00012	0.00008	0.00008
	0.00012	0.00016	0.00016	0.00016	0.00016	0.00024	0.00020	0.00024	0.00020	0.00020	0.00020	0.00024	0.00016	0.00020
	0.00028	0.00024	0.00004	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
41	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00004
	0.00012	0.00020	0.00024	0.00028	0.00040	0.00036	0.00032	0.00028	0.00024	0.00024	0.00024	0.00020	0.00012	0.00016
	0.00020	0.00024	0.00024	0.00024	0.00024	0.00028	0.00024	0.00024	0.00020	0.00020	0.00020	0.00024	0.00024	0.00020
	0.00028	0.00028	0.00008	0.12000	0.00004	0.00008	0.12000	0.12000	0.12000	0.0				
42	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.00040	0.00016	0.00020	0.00028	0.00028	0.00028	0.00032	0.00028	0.00028	0.00024	0.00024	0.00020	0.00024
	0.00028	0.00028	0.00028	0.00028	0.00028	0.00032	0.00028	0.00028	0.00024	0.00024	0.00028	0.00028	0.00028	0.00028
	0.00028	0.00028	0.00024	0.00024	0.00024	0.00024	0.12000	0.12000	0.12000	0.0				
43	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.00004	0.00008	0.00020	0.00020	0.00024	0.00028	0.00032	0.00028	0.00028	0.00028	0.00028	0.00028
	0.00032	0.00032	0.00032	0.00032	0.00032	0.00036	0.00032	0.00032	0.00028	0.00028	0.00032	0.00032	0.00028	0.00028
	0.00028	0.00028	0.00028	0.00028	0.00028	0.00028	0.12000	0.12000	0.12000	0.0				
44	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012	0.00020	0.00020	0.00028	0.00032	0.00032	0.00032	0.00032	0.00032
	0.00036	0.00040	0.00040	0.00036	0.00036	0.00036	0.00036	0.00036	0.00036	0.00036	0.00032	0.00028	0.00024	0.00020
	0.00020	0.00020	0.00020	0.00020	0.00016	0.00016	0.12000	0.12000	0.12000	0.0				
45	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.00008	0.00012	0.00016	0.00020	0.00024	0.00024	0.00028	0.00032	0.00032
	0.00036	0.00040	0.00036	0.00036	0.00032	0.00032	0.00028	0.00028	0.00032	0.00028	0.00024	0.00020	0.00016	0.00012
	0.00012	0.00012	0.00012	0.00008	0.00008	0.00008	0.12000	0.12000	0.12000	0.0				
46	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00012	0.00016	0.00020	0.00024	0.00024	0.00028
	0.00032	0.00036	0.00032	0.00032	0.00028	0.00028	0.00024	0.00024	0.00024	0.00020	0.00016	0.00008	0.00004	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
47	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00004	0.00008	0.00008	0.00012	0.00012	0.00016
	0.00020	0.00024	0.00020	0.00020	0.00016	0.00016	0.00020	0.00020	0.00020	0.00004	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
48	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00020	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				

ROWS														
49	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00020	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
50	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00020	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
51	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.00020	0.00012	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

SPECIFIC YIELD MATRIX

ROWS

1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
2	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
3	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
4	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
5	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
6	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
7	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
8	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
9	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
10	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
11	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
12	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				

ROWS

13	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
14	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
15	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
16	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
17	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
18	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
19	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000
	0.12000	0.12000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
20	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000
	0.12000	0.12000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
21	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.12000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
22	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.12000
	0.12000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
23	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.12000
	0.12000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
24	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.12000
	0.12000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				

ROWS

25	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
26	0.0	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
27	0.0	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
28	0.0	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
29	0.0	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
30	0.0	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
31	0.0	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
32	0.0	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
33	0.0	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
34	0.0	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
35	0.0	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
36	0.0	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				

ROWS

37	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
38	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
39	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
40	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
41	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
42	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.0				
43	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.0				
44	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.0				
45	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.0				
46	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.12000	0.12000	0.12000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
47	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
48	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000
	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				

ROWS

49	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
50	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
51	0.0	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.16000	0.16000	0.12000	0.12000	0.12000	0.12000	0.12000
	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.12000	0.0				
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

MATRIX OF VALUES OF K2F

K2=VERTICAL HYDRAULIC CONDUCTIVITY OF MATERIAL OVERLYING AQUIFER (FT/SEC).
F=FRACTION OF NODE AREA OVERLAIN BY SURFACE WATER SOURCES

ROWS										
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0								
2	0.0	0.350E-08	0.350E-08	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.350E-08	0.210E-07	0.350E-07
	0.490E-07	0.490E-07	0.490E-07	0.490E-07	0.490E-07	0.490E-07	0.560E-07	0.630E-07	0.630E-07	0.490E-07
	0.420E-07	0.350E-07	0.350E-07	0.350E-07	0.280E-07	0.210E-07	0.210E-07	0.210E-07	0.210E-07	0.140E-07
	0.350E-08	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09
	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.350E-08	0.140E-08
	0.700E-09	0.700E-09								
3	0.0	0.140E-07	0.350E-07	0.700E-09	0.700E-08	0.420E-07	0.560E-07	0.560E-07	0.560E-07	0.210E-07
	0.210E-07	0.490E-07	0.490E-07	0.490E-07	0.350E-07	0.210E-07	0.210E-07	0.210E-07	0.280E-07	0.350E-07
	0.490E-07	0.490E-07	0.420E-07	0.630E-07	0.630E-07	0.630E-07	0.630E-07	0.630E-07	0.700E-07	0.490E-07
	0.350E-08	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09
	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.210E-08	0.700E-09	0.210E-08	0.700E-09
	0.700E-09	0.0								
4	0.0	0.210E-07	0.700E-08	0.700E-08	0.140E-07	0.420E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07
	0.560E-07	0.0	0.0	0.0	0.700E-08	0.0	0.350E-08	0.350E-08	0.560E-07	0.630E-07
	0.210E-07	0.140E-08	0.140E-08	0.140E-08	0.0	0.0	0.0	0.0	0.0	0.700E-09
	0.700E-09	0.0	0.0	0.0	0.210E-08	0.700E-09	0.0	0.0	0.700E-09	0.700E-09
	0.700E-09	0.0								
5	0.0	0.140E-07	0.350E-08	0.700E-09	0.0	0.350E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.350E-07	0.700E-08
	0.700E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.140E-08	0.0
	0.0	0.0	0.0	0.210E-08	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.210E-08	0.0	0.0	0.0	0.700E-09	0.700E-09
	0.700E-09	0.0								
6	0.0	0.140E-07	0.700E-09	0.700E-09	0.700E-09	0.350E-07	0.630E-07	0.700E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.420E-07	0.210E-07
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.0
	0.0	0.0	0.0	0.0	0.140E-08	0.140E-08	0.140E-08	0.140E-08	0.140E-08	0.0
	0.0	0.0	0.0	0.210E-08	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.700E-09
	0.140E-08	0.0								
7	0.0	0.700E-09	0.700E-09	0.700E-09	0.700E-09	0.0	0.350E-07	0.700E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.700E-09	0.700E-09	0.0	0.700E-09	0.0	0.0	0.700E-09	0.700E-09
	0.140E-08	0.0								
8	0.0	0.700E-09	0.140E-07	0.700E-09	0.700E-09	0.0	0.0	0.630E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.420E-07	0.560E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.140E-08	0.0	0.700E-09	0.700E-09	0.140E-08	0.0	0.700E-09	0.700E-09
	0.140E-08	0.0								

ROWS

9	0.0	0.700E-09	0.140E-07	0.700E-09	0.350E-08	0.0	0.350E-08	0.700E-08	0.560E-07	0.700E-07
	0.700E-07	0.700E-07	0.210E-07	0.140E-07	0.0	0.0	0.210E-07	0.700E-07	0.490E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.560E-07	0.630E-07	0.140E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.140E-08	0.700E-09	0.140E-08	0.0	0.0	0.0	0.700E-09	0.700E-09
	0.140E-08	0.0								
10	0.0	0.700E-09	0.140E-07	0.700E-09	0.700E-09	0.0	0.140E-08	0.0	0.350E-07	0.700E-07
	0.700E-07	0.700E-07	0.140E-07	0.0	0.0	0.0	0.210E-07	0.490E-07	0.420E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.700E-07	0.700E-07	0.280E-07	0.210E-08
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.140E-08	0.140E-08	0.0	0.0	0.0	0.700E-09	0.700E-09	0.700E-09
	0.140E-08	0.0								
11	0.0	0.350E-08	0.140E-07	0.0	0.700E-09	0.0	0.0	0.0	0.0	0.280E-07
	0.700E-07	0.700E-07	0.490E-07	0.350E-07	0.490E-07	0.420E-07	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.490E-07	0.700E-07	0.700E-07	0.700E-08
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.140E-08	0.140E-08	0.0	0.0	0.0	0.700E-09	0.700E-09	0.210E-08
	0.140E-08	0.0								
12	0.0	0.350E-08	0.700E-09	0.140E-07	0.0	0.0	0.0	0.0	0.0	0.0
	0.350E-07	0.700E-07	0.700E-07	0.700E-07	0.280E-07	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.280E-07	0.490E-07	0.700E-07	0.350E-07
	0.0	0.0	0.700E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.140E-08	0.0	0.0	0.0	0.140E-08	0.700E-09	0.700E-09
	0.140E-08	0.0								
13	0.0	0.700E-09	0.140E-07	0.700E-09	0.0	0.0	0.0	0.0	0.140E-07	0.350E-07
	0.630E-07	0.700E-07	0.700E-07	0.700E-07	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.0	0.700E-08	0.350E-07	0.490E-07
	0.490E-07	0.210E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.140E-08	0.0	0.0	0.0	0.700E-09	0.700E-09	0.700E-09
	0.140E-08	0.0								
14	0.0	0.700E-09	0.210E-07	0.0	0.0	0.0	0.0	0.350E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.560E-07	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.700E-08	0.700E-08	0.0	0.140E-08	0.0	0.0	0.0	0.700E-09	0.700E-08	0.700E-09
	0.140E-08	0.0								
15	0.0	0.700E-09	0.490E-07	0.700E-09	0.0	0.0	0.0	0.490E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.350E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.140E-08	0.0	0.0	0.140E-08	0.0	0.0	0.140E-08	0.0	0.700E-08	0.350E-08
	0.140E-08	0.0								
16	0.0	0.700E-09	0.280E-07	0.140E-08	0.140E-08	0.140E-08	0.140E-08	0.280E-07	0.140E-07	0.700E-08
	0.700E-08	0.140E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.700E-09	0.0	0.0	0.0	0.490E-07	0.700E-08	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.140E-08	0.0	0.0	0.140E-08	0.0	0.210E-08	0.700E-09	0.140E-08	0.350E-08	0.350E-08
	0.140E-08	0.0								

ROWS

17	0.0	0.700E-09	0.700E-08	0.700E-09	0.0	0.0	0.0	0.700E-07	0.700E-07	0.350E-07
	0.350E-08	0.0	0.210E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.280E-08	0.140E-08	0.0	0.0	0.560E-07	0.210E-07	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.140E-08	0.0	0.0	0.140E-08	0.0	0.210E-08	0.140E-08	0.0	0.0	0.350E-08
	0.140E-08	0.0								
18	0.0	0.700E-09	0.700E-08	0.700E-09	0.0	0.0	0.350E-07	0.700E-07	0.700E-07	0.700E-07
	0.700E-07	0.490E-07	0.350E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.140E-08	0.0	0.210E-07	0.280E-07	0.490E-07	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.140E-08	0.0	0.0	0.140E-08	0.0	0.140E-08	0.0	0.0	0.0	0.700E-09
	0.140E-08	0.0								
19	0.0	0.700E-09	0.700E-08	0.700E-09	0.0	0.0	0.630E-07	0.700E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.350E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.140E-08	0.140E-08	0.0	0.700E-08	0.490E-07	0.700E-07	0.280E-07	0.140E-08	0.280E-08	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.140E-08	0.0	0.0	0.140E-08	0.0	0.140E-08	0.0	0.0	0.700E-09	0.700E-09
	0.140E-08	0.0								
20	0.0	0.700E-09	0.210E-08	0.700E-09	0.0	0.0	0.560E-07	0.700E-07	0.700E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-08	0.350E-07	0.0	0.0	0.0	0.0	0.0	0.0
	0.140E-08	0.0	0.0	0.0	0.350E-07	0.490E-07	0.140E-07	0.0	0.210E-07	0.700E-07
	0.560E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.700E-09	0.700E-09	0.0	0.140E-08	0.210E-08	0.0	0.0	0.0	0.700E-09	0.700E-09
	0.140E-08	0.0								
21	0.0	0.700E-09	0.700E-09	0.0	0.0	0.0	0.420E-07	0.630E-07	0.420E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.210E-07	0.0	0.0	0.0	0.0	0.0
	0.140E-08	0.350E-08	0.0	0.0	0.210E-08	0.0	0.280E-07	0.0	0.0	0.700E-08
	0.700E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.140E-08	0.0	0.0	0.210E-08	0.0	0.0	0.0	0.700E-09	0.700E-09
	0.140E-08	0.0								
22	0.0	0.700E-09	0.700E-09	0.0	0.0	0.0	0.490E-07	0.560E-07	0.560E-07	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.630E-07	0.490E-07	0.700E-09	0.0	0.0	0.0	0.0
	0.210E-08	0.0	0.0	0.0	0.700E-09	0.700E-09	0.140E-07	0.350E-07	0.0	0.0
	0.0	0.0	0.700E-09	0.0	0.140E-08	0.0	0.0	0.0	0.0	0.0
	0.0	0.140E-08	0.0	0.0	0.700E-08	0.210E-07	0.0	0.0	0.0	0.700E-09
	0.140E-08	0.0								
23	0.0	0.700E-09	0.700E-09	0.0	0.0	0.490E-07	0.700E-07	0.560E-07	0.210E-07	0.700E-07
	0.700E-07	0.700E-07	0.350E-07	0.0	0.0	0.0	0.350E-08	0.350E-08	0.350E-08	0.0
	0.210E-08	0.0	0.0	0.0	0.0	0.140E-08	0.140E-07	0.490E-07	0.0	0.0
	0.0	0.350E-08	0.0	0.0	0.210E-08	0.0	0.0	0.0	0.0	0.0
	0.0	0.140E-08	0.0	0.0	0.700E-08	0.210E-07	0.0	0.0	0.0	0.700E-09
	0.140E-08	0.0								
24	0.0	0.700E-09	0.700E-09	0.0	0.350E-08	0.700E-07	0.700E-07	0.560E-07	0.280E-07	0.700E-07
	0.700E-07	0.210E-07	0.210E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.350E-08
	0.140E-08	0.0	0.0	0.0	0.0	0.140E-08	0.0	0.700E-08	0.0	0.0
	0.350E-08	0.0	0.0	0.0	0.140E-08	0.0	0.0	0.0	0.0	0.0
	0.0	0.210E-08	0.0	0.0	0.210E-08	0.140E-08	0.140E-08	0.350E-08	0.0	0.140E-08
	0.140E-08	0.0								

ROWS

25	0.0	0.700E-09	0.700E-09	0.700E-09	0.350E-08	0.630E-07	0.700E-07	0.560E-07	0.210E-07	0.350E-07
	0.700E-07	0.700E-07	0.630E-07	0.700E-08	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.700E-08	0.0	0.0	0.210E-08	0.0	0.280E-07	0.700E-07	0.700E-07
	0.280E-07	0.0	0.0	0.0	0.210E-08	0.0	0.0	0.0	0.0	0.0
	0.630E-08	0.0	0.0	0.0	0.350E-08	0.0	0.0	0.0	0.0	0.140E-08
	0.140E-08	0.0								
26	0.0	0.350E-08	0.350E-08	0.700E-09	0.700E-09	0.210E-07	0.700E-08	0.210E-08	0.210E-07	0.560E-07
	0.420E-07	0.700E-07	0.350E-07	0.420E-07	0.280E-07	0.280E-07	0.420E-07	0.700E-08	0.0	0.0
	0.0	0.0	0.0	0.0	0.140E-08	0.0	0.0	0.560E-07	0.700E-07	0.700E-07
	0.280E-07	0.0	0.0	0.210E-07	0.0	0.0	0.0	0.0	0.350E-08	0.0
	0.210E-08	0.0	0.0	0.0	0.210E-07	0.140E-07	0.210E-08	0.0	0.0	0.140E-08
	0.140E-08	0.0								
27	0.0	0.105E-08	0.525E-08	0.525E-08	0.210E-07	0.315E-07	0.315E-07	0.315E-08	0.525E-07	0.105E-06
	0.140E-06	0.315E-07	0.0	0.0	0.315E-07	0.105E-06	0.105E-06	0.735E-07	0.0	0.0
	0.0	0.0	0.0	0.105E-08	0.105E-08	0.0	0.0	0.105E-06	0.105E-06	0.105E-06
	0.210E-07	0.0	0.490E-07	0.700E-07	0.700E-08	0.0	0.0	0.0	0.350E-08	0.210E-08
	0.0	0.0	0.0	0.0	0.350E-07	0.700E-08	0.700E-09	0.700E-09	0.0	0.140E-08
	0.140E-08	0.0								
28	0.0	0.210E-08	0.105E-08	0.0	0.315E-08	0.420E-07	0.420E-07	0.420E-08	0.630E-07	0.105E-06
	0.105E-06	0.630E-07	0.0	0.0	0.0	0.945E-07	0.105E-06	0.105E-06	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.945E-07	0.105E-06	0.105E-06
	0.700E-07	0.350E-08	0.560E-07	0.700E-07	0.280E-07	0.280E-07	0.0	0.0	0.0	0.210E-08
	0.210E-08	0.0	0.0	0.0	0.210E-07	0.0	0.0	0.350E-08	0.700E-09	0.210E-08
	0.140E-08	0.0								
29	0.0	0.315E-08	0.105E-08	0.0	0.525E-08	0.840E-07	0.945E-07	0.840E-07	0.840E-07	0.105E-06
	0.105E-06	0.105E-06	0.840E-07	0.315E-07	0.210E-08	0.210E-08	0.210E-08	0.525E-08	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.315E-08	0.315E-08	0.105E-07	0.105E-06	0.105E-06
	0.560E-07	0.210E-07	0.700E-07	0.560E-07	0.700E-07	0.350E-07	0.0	0.0	0.0	0.210E-08
	0.210E-08	0.0	0.0	0.0	0.210E-07	0.0	0.0	0.140E-08	0.140E-08	0.210E-08
	0.140E-08	0.0								
30	0.0	0.315E-08	0.210E-08	0.0	0.0	0.420E-07	0.945E-07	0.105E-06	0.105E-06	0.105E-06
	0.105E-06	0.105E-06	0.105E-06	0.525E-08	0.0	0.0	0.0	0.105E-08	0.525E-08	0.0
	0.0	0.0	0.0	0.0	0.315E-08	0.0	0.0	0.0	0.420E-07	0.105E-06
	0.700E-07	0.700E-07	0.420E-07	0.700E-08	0.700E-07	0.700E-08	0.0	0.0	0.0	0.420E-07
	0.350E-07	0.0	0.0	0.0	0.0	0.280E-08	0.210E-08	0.0	0.0	0.140E-08
	0.140E-08	0.0								
31	0.0	0.105E-08	0.105E-08	0.0	0.0	0.0	0.945E-07	0.105E-06	0.105E-06	0.105E-06
	0.105E-06	0.105E-06	0.105E-06	0.525E-08	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.700E-08	0.700E-07
	0.700E-07	0.700E-07	0.420E-07	0.350E-07	0.700E-07	0.0	0.0	0.0	0.560E-07	0.700E-07
	0.630E-07	0.0	0.0	0.0	0.210E-08	0.0	0.140E-08	0.0	0.0	0.700E-09
	0.700E-09	0.0								
32	0.0	0.105E-08	0.105E-08	0.0	0.0	0.0	0.315E-07	0.105E-06	0.315E-07	0.105E-07
	0.630E-07	0.105E-06	0.105E-06	0.525E-07	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.140E-07	0.350E-07	0.350E-08	0.630E-07
	0.700E-07	0.700E-07	0.700E-07	0.700E-07	0.420E-07	0.0	0.0	0.0	0.420E-07	0.700E-07
	0.700E-07	0.210E-07	0.0	0.0	0.210E-08	0.0	0.140E-08	0.0	0.0	0.700E-09
	0.700E-09	0.0								

ROWS

33	0.0	0.105E-08	0.315E-08	0.105E-08	0.0	0.0	0.0	0.105E-06	0.0	0.0
	0.0	0.420E-07	0.105E-06	0.735E-07	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.210E-08	0.700E-08	0.700E-08	0.700E-07
	0.700E-07	0.700E-07	0.700E-07	0.490E-07	0.210E-08	0.420E-07	0.630E-07	0.280E-07	0.560E-07	0.700E-07
	0.700E-07	0.700E-07	0.0	0.0	0.210E-08	0.0	0.280E-08	0.700E-09	0.0	0.700E-09
	0.700E-09	0.0								
34	0.0	0.525E-08	0.105E-07	0.0	0.525E-08	0.0	0.0	0.735E-07	0.210E-08	0.525E-08
	0.525E-08	0.105E-07	0.105E-07	0.525E-08	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.147E-07	0.0	0.147E-07	0.245E-06	0.490E-06
	0.490E-06	0.490E-06	0.490E-06	0.490E-06	0.490E-06	0.980E-07	0.196E-06	0.490E-06	0.490E-06	0.490E-06
	0.490E-06	0.490E-06	0.294E-06	0.147E-07	0.0	0.0	0.980E-08	0.490E-08	0.490E-07	0.490E-08
	0.490E-08	0.0								
35	0.0	0.105E-08	0.315E-08	0.0	0.0	0.0	0.0	0.0	0.105E-08	0.0
	0.0	0.0	0.0	0.0	0.315E-08	0.315E-07	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.490E-07	0.147E-07	0.490E-07	0.490E-06	0.490E-06
	0.490E-06	0.490E-06	0.294E-06	0.490E-06	0.980E-07	0.490E-07	0.245E-06	0.490E-06	0.490E-06	0.490E-06
	0.490E-06	0.490E-06	0.392E-06	0.490E-07	0.0	0.0	0.980E-08	0.0	0.980E-08	0.490E-08
	0.490E-08	0.0								
36	0.0	0.490E-08	0.196E-07	0.0	0.196E-07	0.980E-08	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.490E-07	0.147E-07	0.147E-07	0.490E-06	0.490E-06
	0.490E-06	0.490E-06	0.294E-06	0.490E-06	0.980E-07	0.0	0.196E-06	0.490E-06	0.490E-06	0.441E-06
	0.490E-06	0.490E-06	0.245E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.490E-08
	0.490E-08	0.0								
37	0.0	0.490E-08	0.490E-08	0.0	0.980E-08	0.980E-08	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.245E-07	0.0	0.0	0.245E-07	0.490E-06
	0.490E-06	0.490E-06	0.490E-06	0.490E-06	0.980E-07	0.490E-06	0.392E-06	0.980E-07	0.490E-06	0.490E-06
	0.392E-06	0.196E-06	0.980E-08	0.490E-08	0.0	0.0	0.0	0.0	0.0	0.490E-08
	0.490E-08	0.0								
38	0.0	0.490E-08	0.490E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.147E-07	0.0	0.0	0.490E-06	0.490E-06
	0.490E-06	0.490E-06	0.147E-06	0.980E-08	0.0	0.0	0.0	0.0	0.490E-07	0.378E-06
	0.378E-06	0.294E-06	0.0	0.0	0.490E-08	0.0	0.0	0.0	0.0	0.490E-08
	0.490E-08	0.0								
39	0.0	0.490E-08	0.350E-08	0.0	0.0	0.490E-07	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.147E-07	0.0	0.0	0.490E-06	0.490E-06
	0.490E-06	0.490E-06	0.490E-07	0.980E-07	0.0	0.0	0.0	0.0	0.0	0.343E-06
	0.343E-06	0.245E-06	0.0	0.0	0.490E-08	0.0	0.0	0.0	0.0	0.980E-08
	0.490E-08	0.0								
40	0.0	0.490E-08	0.350E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.147E-07	0.0	0.0	0.490E-06	0.490E-06
	0.490E-06	0.490E-06	0.147E-06	0.0	0.0	0.0	0.0	0.0	0.0	0.490E-07
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-08
	0.490E-08	0.0								

ROWS

41	0.0	0.490E-08	0.350E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.147E-07	0.0	0.0	0.490E-07	0.245E-06
	0.490E-07	0.490E-07	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.490E-08
	0.980E-08	0.0								
42	0.0	0.490E-08	0.350E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.147E-07	0.0	0.0	0.980E-08	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-07	0.490E-07	0.490E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.490E-08
	0.245E-07	0.0								
43	0.0	0.490E-08	0.980E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.490E-08	0.0	0.0	0.0	0.980E-08	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-07	0.0	0.245E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.490E-08
	0.245E-07	0.0								
44	0.0	0.490E-08	0.980E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.147E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-07	0.245E-07	0.0
	0.0	0.0	0.0	0.0	0.490E-07	0.0	0.0	0.0	0.0	0.490E-08
	0.490E-08	0.0								
45	0.0	0.490E-08	0.490E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-07	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-07	0.245E-07
	0.490E-07	0.490E-07	0.147E-07	0.147E-07	0.490E-07	0.0	0.0	0.0	0.0	0.490E-08
	0.490E-08	0.0								
46	0.0	0.490E-07	0.490E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.490E-07	0.0	0.0	0.0	0.0	0.490E-07	0.0
	0.0	0.0	0.490E-08	0.980E-08	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-07
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-08	0.980E-08
	0.490E-08	0.0								
47	0.0	0.490E-07	0.245E-07	0.490E-08	0.0	0.980E-07	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.490E-07	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.980E-07
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.490E-07	0.245E-^7
	0.490E-08	0.0								
48	0.0	0.980E-07	0.245E-07	0.980E-08	0.490E-07	0.980E-08	0.245E-07	0.980E-08	0.980E-08	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.147E-07	0.147E-07	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.245E-07	0.245E-07	0.490E-07	0.0
	0.980E-08	0.980E-08	0.490E-08	0.0	0.0	0.0	0.0	0.0	0.980E-08	0.147E-07
	0.490E-08	0.0								

ROWS

49	0.0	0.490E-08	0.980E-08	0.490E-08	0.0	0.980E-08	0.490E-08	0.490E-08	0.490E-08	0.490E-08
	0.147E-07	0.490E-08	0.490E-07	0.490E-07	0.490E-07	0.490E-07	0.490E-08	0.0	0.490E-08	0.245E-07
	0.245E-07	0.147E-06	0.980E-07	0.980E-08	0.980E-08	0.147E-07	0.490E-08	0.490E-08	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.245E-07	0.980E-08	0.147E-07	0.245E-07	0.490E-08
	0.490E-08	0.490E-08	0.0	0.0	0.0	0.0	0.0	0.0	0.490E-08	0.490E-08
	0.490E-08	0.0								
50	0.0	0.490E-08	0.147E-07	0.980E-08	0.245E-07	0.147E-06	0.196E-06	0.196E-06	0.490E-07	0.147E-06
	0.245E-06	0.294E-06	0.294E-06	0.343E-06	0.196E-06	0.245E-06	0.343E-06	0.343E-06	0.245E-06	0.392E-06
	0.441E-06	0.490E-06	0.490E-06	0.490E-06	0.490E-06	0.490E-06	0.392E-06	0.245E-06	0.490E-08	0.490E-08
	0.490E-08	0.490E-08	0.980E-08	0.490E-08	0.980E-08	0.490E-08	0.490E-08	0.490E-08	0.490E-08	0.490E-08
	0.490E-08	0.490E-08	0.490E-08	0.490E-08	0.490E-08	0.490E-08	0.490E-08	0.490E-07	0.490E-08	0.147E-07
	0.980E-08	0.0								
51	0.0	0.490E-08	0.980E-08	0.245E-06	0.441E-06	0.392E-06	0.343E-06	0.343E-06	0.441E-06	0.441E-06
	0.441E-06	0.392E-06	0.343E-06	0.343E-06	0.343E-06	0.441E-06	0.441E-06	0.441E-06	0.343E-06	0.490E-06
	0.441E-06	0.490E-06	0.441E-06	0.294E-06	0.196E-06	0.980E-07	0.420E-08	0.420E-08	0.420E-08	0.147E-07
	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08
	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08	0.700E-08
	0.700E-08	0.0								
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0								

CONFINING BED THICKNESS (FT)

ROWS																				
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
2	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
3	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
4	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
6	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
7	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
8	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
9	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
11	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
12	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
13	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
14	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
15	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								

ROWS

16	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
17	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0								
18	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0								
19	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0								
20	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0								
21	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0								
22	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	30.0	30.0	30.0	30.0	30.0	30.0	30.0	10.0	10.0	10.0	10.0	10.0								
23	10.0	10.0	10.0	10.0	10.0	10.0	10.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
24	10.0	10.0	10.0	10.0	10.0	10.0	10.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
25	10.0	10.0	10.0	10.0	10.0	10.0	10.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
26	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
27	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
28	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
29	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
30	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								

ROWS

31	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
32	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	40.0	40.0	40.0	40.0	40.0	40.0	40.0	10.0	10.0	10.0	10.0	10.0								
33	10.0	10.0	10.0	10.0	50.0	50.0	50.0	20.0	20.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	50.0	50.0	50.0	50.0	50.0	50.0	50.0	10.0	10.0	10.0	10.0	10.0								
34	10.0	10.0	10.0	10.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	50.0	50.0	50.0	50.0	50.0	50.0	50.0	10.0	10.0	10.0	10.0	10.0								
35	10.0	10.0	10.0	10.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
	60.0	60.0	60.0	60.0	60.0	60.0	60.0	10.0	10.0	10.0	10.0	10.0								
36	10.0	10.0	10.0	10.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
	60.0	60.0	60.0	60.0	60.0	60.0	60.0	10.0	10.0	10.0	10.0	10.0								
37	10.0	10.0	10.0	10.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
	60.0	60.0	60.0	60.0	60.0	60.0	60.0	10.0	10.0	10.0	10.0	10.0								
38	10.0	10.0	10.0	10.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
	70.0	70.0	70.0	70.0	70.0	70.0	70.0	10.0	10.0	10.0	10.0	10.0								
39	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	10.0	10.0	10.0	10.0	10.0								
40	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	10.0	10.0	10.0	10.0	10.0								
41	10.0	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	10.0	10.0	10.0	10.0	10.0								
42	10.0	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	10.0	10.0	10.0	10.0	10.0								
43	10.0	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	10.0	10.0	10.0	10.0	10.0								
44	10.0	10.0	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	10.0	10.0	10.0	10.0	10.0								
45	10.0	10.0	10.0	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	10.0	10.0	10.0	10.0	10.0								

46	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
47	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
48	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	80.0	80.0
	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
ROWS 49	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
50	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
51	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								

AQUIFER HYDRAULIC CONDUCTIVITY MATRIX (FT/SEC)

ROWS										
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0								
2	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.900E-04	0.120E-03	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
3	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.900E-04	0.120E-03	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
4	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.900E-04	0.120E-03	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
5	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.900E-04	0.150E-03	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.900E-04	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
6	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.900E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.120E-03	0.600E-04	0.480E-04
	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
7	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.900E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04
	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
8	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04
	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								

ROWS

9	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04
	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
10	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.900E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04
	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
11	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.600E-04	0.900E-04	0.120E-03	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.120E-03	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
12	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.600E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
13	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04
	0.900E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
14	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
15	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
16	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.600E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								

ROWS

17	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.480E-04	0.480E-04	0.600E-04	0.480E-04	0.600E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
18	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04
	0.480E-04	0.480E-04	0.600E-04	0.480E-04	0.600E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
19	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04
	0.480E-04	0.300E-02	0.600E-04	0.480E-04	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.0								
20	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.360E-04	0.360E-04
	0.600E-04	0.300E-02	0.600E-04	0.600E-04	0.300E-02	0.300E-02	0.480E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
21	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04
	0.300E-02	0.300E-02	0.480E-04	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
22	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02
	0.300E-02	0.600E-04	0.480E-04	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
23	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02
	0.300E-02	0.600E-04	0.480E-04	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
24	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02
	0.300E-02	0.600E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								

ROWS

25	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
26	0.0	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
27	0.0	0.480E-04	0.480E-04	0.540E-04	0.840E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04
	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
28	0.0	0.360E-04	0.540E-04	0.840E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04
	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.600E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
29	0.0	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04
	0.480E-04	0.480E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
30	0.0	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.540E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
31	0.0	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.600E-04	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.480E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
32	0.0	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								

ROWS

33	0.0	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.600E-04	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.600E-04	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
34	0.0	0.480E-04	0.480E-04	0.840E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.600E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
35	0.0	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04
	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.600E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
36	0.0	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
37	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04
	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
38	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.900E-04	0.900E-04	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
39	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.600E-04	0.900E-04	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
40	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								

ROWS

41	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04
	0.600E-04	0.0								
42	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.0								
43	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.0								
44	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.0								
45	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.0								
46	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04	0.300E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02	0.400E-02
	0.400E-02	0.400E-02	0.400E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04	0.600E-04
	0.600E-04	0.0								
47	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.600E-04
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.600E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
48	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.600E-04	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02
	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.300E-02	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								

ROWS

49	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.600E-04	0.780E-04	0.780E-04	0.960E-04	0.960E-04	0.960E-04	0.960E-04	0.960E-04
	0.960E-04	0.960E-04	0.960E-04	0.960E-04	0.960E-04	0.300E-02	0.300E-02	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
50	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
51	0.0	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.480E-04	0.300E-02	0.300E-02	0.480E-04	0.480E-04	0.480E-04
	0.480E-04	0.480E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04	0.360E-04
	0.360E-04	0.0								
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0								

ADJUSTED ELEVATION OF IMPERMEABLE BASE OF AQUIFER (FT)

```
ROWS
  1     0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
        0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
        0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0

  2  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 130.0
      110.0 130.0 145.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

  3  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 130.0
      110.0 130.0 145.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

  4  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 130.0
      100.0 130.0 145.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

  5  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 125.0
       95.0 115.0 135.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0
     -325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0-325.0

  6  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 155.0 140.0 100.0
      110.0 140.0 140.0 140.0 140.0 140.0 140.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

  7  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 164.0 134.0 104.0 124.0
      154.0 160.0 160.0 150.0 150.0 140.0 140.0 150.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

  8  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 160.0 140.0 110.0  90.0 120.0
      160.0-320.0-320.0 160.0 150.0 140.0 150.0 160.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

  9  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 165.0 160.0 140.0 110.0  90.0 130.0
     -320.0-320.0-320.0-320.0 160.0 150.0 140.0 150.0 160.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

 10  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 155.0 125.0 105.0  95.0 125.0
     -325.0-325.0-325.0-325.0 155.0 145.0 135.0 145.0 155.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

 11  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-325.0 135.0 115.0  95.0  85.0 105.0
     -325.0-330.0-330.0-330.0-325.0 155.0 135.0 125.0 145.0 155.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

 12  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 155.0 140.0 120.0 100.0  90.0  80.0  90.0 120.0
      150.0-330.0-330.0-330.0-330.0 150.0 140.0 130.0 130.0 140.0 160.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

 13  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 160.0 130.0 110.0  90.0  80.0  90.0 110.0 130.0 150.0
     -330.0-335.0-335.0-335.0-330.0 150.0 140.0 130.0 120.0 130.0 140.0 160.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

 14  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 145.0 125.0 105.0  95.0  85.0  85.0 105.0 125.0 145.0-335.0-335.0-335.0
     -335.0-335.0-335.0-335.0-335.0 145.0 135.0 125.0 115.0 125.0 130.0 130.0 140.0-335.0-320.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

 15  -320.0-320.0-320.0-320.0-320.0-320.0-330.0 135.0 105.0  85.0  85.0  95.0 115.0 125.0 135.0-335.0-335.0-335.0-335.0-335.0
     -335.0-335.0-335.0-335.0-335.0-335.0 130.0 130.0 125.0 115.0 115.0 125.0 135.0 135.0-335.0-320.0-320.0-320.0-320.0-320.0
     -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
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ROWS

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16 -320.0-320.0-320.0-320.0-320.0-320.0-330.0 135.0 105.0  85.0 115.0 145.0 135.0 145.0 150.0-335.0-335.0-335.0-335.0-335.0
   -335.0-335.0-335.0-335.0-335.0-335.0 135.0 135.0 125.0 115.0 115.0 125.0 125.0 135.0 135.0-320.0-320.0-320.0-320.0-320.0
   -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

17 -320.0-320.0-320.0-320.0-320.0-320.0-320.0 145.0 105.0  75.0 105.0 125.0 125.0 125.0 135.0 145.0 145.0-335.0-335.0-335.0
   -335.0-335.0-335.0-335.0-335.0-335.0 135.0 135.0 125.0 115.0 125.0 125.0 135.0 135.0 135.0-335.0-335.0-335.0-335.0-335.0
   -335.0-335.0-335.0-335.0-335.0-335.0-320.0-320.0-320.0-320.0-320.0-320.0

18 -320.0-320.0-320.0-320.0-320.0-320.0-320.0 145.0 115.0  75.0  85.0  95.0  95.0  95.0 105.0 115.0 135.0-335.0-335.0-335.0
   -335.0-335.0-335.0-335.0-335.0-335.0 135.0 135.0 125.0 115.0 125.0 125.0 130.0 130.0-335.0-335.0-335.0-335.0-335.0-335.0
   -335.0-335.0-335.0-335.0-335.0-335.0-320.0-320.0-320.0-320.0-320.0-320.0

19 -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 135.0 115.0  85.0  75.0  75.0  75.0  95.0 125.0 145.0-335.0-335.0-335.0
   -340.0-340.0-340.0-340.0-335.0-335.0 135.0 135.0 125.0 115.0 125.0 125.0 130.0 130.0-335.0-335.0-335.0-335.0-335.0-335.0
   -335.0 140.0-335.0-335.0 135.0-335.0-320.0-320.0-320.0-320.0-320.0-320.0

20 -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 149.0 129.0  99.0  79.0  89.0 109.0 139.0 144.0-335.0-335.0-335.0-335.0
   -340.0-340.0-340.0-340.0-340.0-340.0 140.0 130.0 120.0 110.0 120.0 130.0 140.0-340.0-340.0-335.0-335.0-335.0-335.0-335.0
   -335.0 135.0-335.0-335.0 115.0 125.0-320.0-320.0-320.0-320.0-320.0-320.0

21 -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 140.0 115.0  85.0  75.0  95.0 125.0 140.0-335.0-335.0-335.0-340.0-340.0
   -345.0-345.0-345.0-340.0-340.0-340.0 130.0 120.0 110.0 120.0 130.0-340.0-340.0-340.0-340.0-340.0-340.0-340.0-340.0-340.0
    120.0 130.0-340.0 120.0 100.0 120.0-320.0-320.0-320.0-320.0-320.0-320.0

22 -320.0-320.0-320.0-320.0-320.0-320.0-320.0-340.0 135.0 110.0  80.0  70.0  90.0 120.0 135.0-340.0-340.0-340.0-340.0-345.0
   -345.0-345.0-345.0-345.0-345.0 135.0 115.0 105.0 125.0 135.0-345.0-345.0-345.0-345.0-345.0-340.0-340.0-340.0-340.0 140.0
    100.0-340.0-340.0 110.0  80.0 110.0-320.0-320.0-320.0-320.0-320.0-320.0

23 -320.0-320.0-320.0-320.0-320.0-320.0-320.0-345.0 135.0 115.0  85.0  65.0  85.0 105.0 125.0-345.0-345.0-345.0-345.0-345.0
   -345.0-345.0-350.0-350.0-350.0 125.0 115.0 105.0 125.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0 125.0
     95.0-345.0-345.0  95.0  75.0 105.0-320.0-320.0-320.0-320.0-320.0-320.0

24 -320.0-320.0-320.0-320.0-320.0-320.0-320.0-345.0 135.0 125.0  85.0  75.0  85.0  85.0 105.0 125.0-345.0-345.0-345.0-345.0
   -345.0-350.0-350.0-350.0-350.0 120.0 110.0 105.0 125.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0 115.0
    105.0-345.0-345.0  95.0  75.0 105.0-320.0-320.0-320.0-320.0-320.0-320.0

25 -320.0-320.0-320.0-320.0-320.0-320.0-320.0-350.0 130.0 130.0 110.0  80.0  70.0  80.0  90.0 110.0 120.0 120.0 120.0 130.0
   -350.0-350.0-355.0-355.0-355.0 120.0 100.0 100.0 120.0-350.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0-345.0 115.0
    115.0 125.0 105.0 105.0  85.0 105.0-320.0-320.0-320.0-320.0-320.0-320.0

26 -320.0-320.0-320.0-320.0-320.0 155.0 120.0 125.0 120.0 120.0 110.0  90.0  80.0  80.0  80.0  80.0  80.0  80.0  90.0 100.0
    130.0-355.0-360.0-360.0-360.0 115.0  85.0  85.0 120.0-350.0-350.0-350.0-350.0-350.0-350.0-350.0-345.0-345.0 125.0 105.0
    115.0 125.0 115.0 105.0  95.0 115.0-320.0-320.0-320.0-320.0-320.0-320.0

27 -320.0-320.0-320.0-320.0-320.0 130.0 115.0 120.0 130.0-350.0-350.0 130.0 110.0  90.0  80.0  80.0  80.0  90.0 100.0 110.0
    120.0-355.0-360.0-365.0-365.0 120.0  90.0  85.0  85.0-350.0-350.0-350.0-350.0-350.0-350.0-350.0-350.0-350.0 125.0 100.0
    110.0 120.0 110.0 100.0 100.0 120.0-320.0-320.0-320.0-320.0-320.0-320.0

28 -320.0-320.0-320.0-320.0 160.0 120.0 115.0 120.0-350.0-350.0-350.0-350.0 130.0 110.0  90.0  80.0  80.0  90.0 110.0 120.0
    125.0-360.0-365.0-370.0-370.0 115.0  90.0  80.0  75.0 125.0-355.0-355.0-355.0-350.0 130.0-350.0-350.0-350.0 125.0 100.0
    110.0 120.0 120.0 110.0 100.0 120.0-320.0-320.0-320.0-320.0-320.0-320.0

29 -320.0-320.0-320.0 130.0 123.0 115.0 110.0 125.0-355.0-355.0-355.0-355.0 130.0 115.0  95.0  85.0  75.0  85.0  95.0 115.0
   -360.0-365.0-365.0-370.0-370.0-365.0 110.0  90.0  80.0  95.0 115.0 125.0 125.0 125.0  95.0-355.0-355.0-355.0-355.0  95.0
    110.0 120.0 120.0 100.0 100.0 120.0-320.0-320.0-320.0-320.0-320.0-320.0

30 -320.0-320.0-320.0 165.0 118.0 105.0 120.0-360.0-360.0-360.0-360.0-360.0 110.0  90.0  70.0  90.0 100.0 100.0  80.0 110.0
   -360.0-365.0-365.0-370.0-370.0-365.0 120.0 110.0  90.0  70.0  80.0 100.0 100.0 100.0 100.0-360.0-360.0-360.0 120.0  90.0
    110.0 110.0 100.0  90.0  90.0 110.0-320.0-320.0-320.0-320.0-320.0-320.0
```

ROWS

```
31  -320.0-320.0-320.0 158.0 110.0 100.0 115.0-365.0-365.0 115.0 115.0  95.0  75.0  65.0  85.0  95.0 105.0 105.0  95.0 115.0
    -365.0-365.0-365.0-370.0-370.0-365.0-365.0 110.0  90.0  70.0  70.0  90.0  90.0  70.0  90.0 120.0-360.0-360.0 120.0  80.0
     100.0 110.0 120.0  90.0  90.0 110.0-320.0-320.0-320.0-320.0-320.0-320.0

32  -320.0-320.0-320.0 158.0 110.0 100.0 115.0-365.0 120.0 105.0  85.0  75.0  65.0  85.0  95.0 105.0 115.0-365.0 105.0 105.0
    -365.0-365.0-365.0-370.0-370.0-365.0-365.0 120.0 100.0  80.0  70.0  80.0  70.0  80.0  80.0 120.0 110.0  90.0  90.0 110.0
     100.0 110.0 100.0  90.0 100.0 120.0-320.0-320.0-320.0-320.0-320.0-320.0

33  -320.0-320.0-320.0 158.0 110.0 100.0 115.0-365.0-365.0 115.0  85.0  65.0  65.0  85.0  95.0 115.0 115.0-365.0-365.0 115.0
    -365.0-365.0-370.0-370.0-370.0-370.0-365.0-365.0 110.0  90.0  70.0  70.0  70.0  90.0  80.0  90.0 110.0 100.0  80.0  80.0
      90.0 110.0  90.0  90.0  90.0-360.0-320.0-320.0-320.0-320.0-320.0-320.0

34  -320.0-320.0-320.0-320.0 115.0 110.0 105.0 115.0 105.0 115.0  95.0  75.0  65.0  75.0  95.0 105.0 115.0-365.0-365.0-365.0
    -365.0-365.0-370.0-370.0-370.0-370.0-370.0-365.0 125.0 115.0 105.0  90.0  90.0 100.0 100.0 100.0  80.0  70.0  70.0  80.0
      80.0  90.0  90.0  80.0  80.0-360.0-320.0-320.0-320.0-320.0-320.0-320.0

35  -320.0-320.0-320.0-320.0 120.0 115.0 115.0 105.0  95.0  85.0  85.0  85.0  65.0  65.0  75.0  75.0  75.0  85.0 110.0 105.0
    -365.0-370.0-370.0-375.0-375.0-375.0-370.0-370.0-365.0-360.0 120.0 120.0 120.0-360.0-360.0-360.0 120.0 100.0  70.0  60.0
      60.0  60.0  70.0  60.0 100.0-360.0-320.0-320.0-320.0-320.0-320.0-320.0

36  -320.0-320.0-320.0-320.0 115.0 110.0 105.0 100.0  80.0  70.0  70.0  70.0  60.0  60.0  60.0  60.0  70.0  70.0  80.0  90.0
     105.0-370.0-375.0-375.0-375.0-375.0-375.0-370.0-370.0-370.0-370.0-365.0-365.0-365.0-365.0 115.0 115.0 115.0 105.0  70.0
      60.0  60.0  60.0  60.0 110.0-360.0-320.0-320.0-320.0-320.0-320.0-320.0

37  -320.0-320.0-320.0-320.0-375.0-375.0 105.0 100.0  95.0  75.0  65.0  65.0  55.0  55.0  55.0  55.0  55.0  55.0  65.0  85.0
      85.0 100.0-375.0-375.0-375.0-375.0-375.0-375.0-370.0-370.0-370.0-370.0-370.0-370.0 110.0  95.0  85.0  95.0  85.0  85.0
      85.0  65.0  65.0  75.0 105.0-365.0-320.0-320.0-320.0-320.0-320.0-320.0

38  -320.0-320.0-320.0-320.0-375.0-375.0-375.0 105.0 100.0  95.0  85.0  75.0  65.0  65.0  55.0  45.0  45.0  55.0  75.0  85.0
      75.0  70.0  95.0 100.0  90.0 100.0-375.0-375.0 105.0 105.0 105.0 105.0 105.0 105.0 110.0  80.0  80.0  80.0  80.0  90.0
      90.0  70.0  60.0  70.0-370.0-370.0-320.0-320.0-320.0-320.0-320.0-320.0

39  -320.0-320.0-320.0-320.0-380.0-380.0-380.0 105.0 100.0  95.0  90.0  90.0  80.0  80.0  60.0  40.0  40.0  40.0  40.0  50.0
      60.0  60.0  80.0  80.0  80.0 100.0-380.0-380.0 100.0  90.0  90.0  90.0  90.0  70.0  85.0  65.0  80.0  80.0  80.0  80.0
      90.0  80.0  70.0  70.0-370.0-370.0-320.0-320.0-320.0-320.0-320.0-320.0

40  -320.0-320.0-320.0-320.0-380.0-380.0-380.0-380.0 100.0  95.0  90.0  90.0  80.0  70.0  60.0  50.0  50.0  40.0  35.0  25.0
      45.0  45.0  65.0  65.0  65.0  85.0  95.0  95.0  85.0  75.0  75.0  75.0  75.0  55.0  65.0  60.0  70.0  75.0  75.0  65.0
      85.0  75.0  55.0  65.0-375.0-375.0-320.0-320.0-320.0-320.0-320.0-320.0

41  -320.0-320.0-320.0-320.0-320.0-380.0-380.0-380.0-380.0 100.0 100.0  90.0  90.0  80.0  70.0  60.0  50.0  40.0  15.0  25.0
      35.0  45.0  55.0  55.0  50.0  60.0  80.0  70.0  60.0  50.0  50.0  50.0  50.0  45.0  55.0  55.0  70.0  70.0  70.0  65.0
      65.0  75.0  55.0  65.0 105.0-375.0-375.0-320.0-320.0-320.0-320.0-320.0

42  -320.0-320.0-320.0-320.0-320.0-380.0-380.0-380.0-380.0 100.0 100.0  90.0  90.0  80.0  70.0  60.0  50.0  50.0  35.0  35.0
      25.0  35.0  40.0  40.0  50.0  50.0  60.0  50.0  40.0  40.0  40.0  40.0  40.0  30.0  45.0  45.0  55.0  55.0  50.0  50.0
      50.0  50.0  50.0  50.0  70.0  70.0  70.0 130.0 140.0 140.0 140.0-320.0

43  -320.0-320.0-320.0-320.0-320.0-320.0-380.0-380.0-380.0-380.0-380.0 100.0 100.0  90.0  80.0  80.0  70.0  60.0  45.0  45.0
      35.0  20.0  20.0  35.0  35.0  35.0  35.0  35.0  25.0  30.0  30.0  30.0  30.0  20.0  30.0  35.0  45.0  45.0  40.0  40.0
      50.0  50.0  50.0  50.0  70.0  70.0  70.0 130.0 140.0 140.0 140.0-320.0

44  -320.0-320.0-320.0-320.0-320.0-320.0-380.0-380.0-380.0-380.0-380.0-380.0-380.0 100.0 100.0  90.0  90.0  80.0  80.0  65.0
      65.0  50.0  40.0  25.0  25.0  25.0  25.0  25.0  25.0  30.0  30.0  30.0  30.0  30.0  30.0  35.0  35.0  35.0  35.0  50.0
      60.0  70.0  70.0  70.0  70.0  70.0  70.0 130.0 140.0 140.0 140.0-320.0

45  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-380.0-380.0-380.0-380.0-380.0-380.0-380.0-380.0 100.0 100.0  90.0  90.0  75.0
      65.0  60.0  50.0  35.0  25.0  25.0  25.0  25.0  25.0  30.0  30.0  30.0  30.0  30.0  40.0  45.0  35.0  45.0  55.0  70.0
      80.0  90.0 100.0 100.0 100.0 100.0 100.0 160.0 160.0 160.0 160.0-320.0
```

ROWS

```
46  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-380.0-380.0-380.0 105.0 100.0  90.0  90.0  80.0
      75.0  65.0  60.0  50.0  45.0  35.0  35.0  35.0  30.0  30.0  30.0  30.0  40.0  40.0  50.0  55.0  55.0  65.0  75.0  90.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

47  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-380.0-380.0-380.0-380.0-380.0-380.0-380.0-380.0
     100.0  90.0  85.0  70.0  70.0  60.0  60.0  60.0  60.0  60.0  60.0  60.0  60.0  60.0  65.0  65.0  65.0-385.0-385.0-385.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

48  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-380.0-380.0
    -380.0-380.0 105.0  95.0  95.0  90.0  90.0  90.0  90.0  90.0  90.0  90.0  90.0  90.0  90.0  85.0  85.0-385.0-385.0-385.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

49  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 155.0 155.0-320.0-320.0-320.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

50  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 155.0 155.0-320.0-320.0-320.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

51  -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0 155.0 155.0-320.0-320.0-320.0
    -320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0-320.0

52     0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
       0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
       0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
```

ADJUSTED ELEVATION OF TOP AQUIFER (FT)

ROWS																				
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
2	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	170.0
	170.0	170.0	170.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
3	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	170.0
	170.0	170.0	170.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
4	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	170.0
	170.0	170.0	170.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
5	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	175.0
	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0
	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0								
6	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
7	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	184.0	184.0	184.0	184.0
	184.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
8	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
9	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
10	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	175.0	175.0	175.0	175.0	175.0
	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
11	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	175.0	175.0	175.0	175.0	175.0	175.0
	175.0	170.0	170.0	170.0	175.0	175.0	175.0	175.0	175.0	175.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
12	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0
	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
13	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0
	170.0	165.0	165.0	165.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
14	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
15	180.0	180.0	180.0	180.0	180.0	180.0	170.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								

ROWS

16	180.0	180.0	180.0	180.0	180.0	180.0	170.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
17	180.0	180.0	180.0	180.0	180.0	180.0	180.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	165.0	165.0	180.0	180.0	180.0	180.0	180.0	180.0								
18	180.0	180.0	180.0	180.0	180.0	180.0	180.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	165.0	165.0	180.0	180.0	180.0	180.0	180.0	180.0								
19	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	160.0	160.0	160.0	160.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	155.0	165.0	180.0	180.0	180.0	180.0	180.0	180.0								
20	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	169.0	169.0	169.0	169.0	169.0	169.0	169.0	169.0	165.0	165.0	165.0	165.0
	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	165.0	165.0	165.0	165.0	165.0
	165.0	165.0	165.0	165.0	155.0	155.0	180.0	180.0	180.0	180.0	180.0	180.0								
21	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	165.0	160.0	160.0
	155.0	155.0	155.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0
	160.0	160.0	160.0	150.0	150.0	150.0	180.0	180.0	180.0	180.0	180.0	180.0								
22	180.0	180.0	180.0	180.0	180.0	180.0	180.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	155.0
	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	160.0	160.0	160.0	160.0	160.0
	160.0	160.0	160.0	150.0	150.0	150.0	180.0	180.0	180.0	180.0	180.0	180.0								
23	180.0	180.0	180.0	180.0	180.0	180.0	180.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0
	155.0	155.0	150.0	150.0	150.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0
	155.0	155.0	155.0	145.0	145.0	145.0	180.0	180.0	180.0	180.0	180.0	180.0								
24	180.0	180.0	180.0	180.0	180.0	180.0	180.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0
	155.0	150.0	150.0	150.0	150.0	150.0	150.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0
	155.0	155.0	155.0	145.0	145.0	145.0	180.0	180.0	180.0	180.0	180.0	180.0								
25	180.0	180.0	180.0	180.0	180.0	180.0	180.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
	150.0	150.0	145.0	145.0	145.0	150.0	150.0	150.0	150.0	150.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0	155.0
	155.0	155.0	145.0	145.0	145.0	145.0	180.0	180.0	180.0	180.0	180.0	180.0								
26	180.0	180.0	180.0	180.0	180.0	180.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
	150.0	145.0	140.0	140.0	140.0	145.0	145.0	145.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	155.0	155.0	155.0	155.0
	155.0	155.0	145.0	145.0	145.0	145.0	180.0	180.0	180.0	180.0	180.0	180.0								
27	180.0	180.0	180.0	180.0	180.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
	150.0	145.0	140.0	135.0	135.0	140.0	140.0	145.0	145.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
	150.0	150.0	150.0	150.0	150.0	150.0	180.0	180.0	180.0	180.0	180.0	180.0								
28	180.0	180.0	180.0	180.0	180.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
	145.0	140.0	135.0	130.0	130.0	135.0	140.0	140.0	145.0	145.0	145.0	145.0	145.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
	150.0	150.0	150.0	150.0	150.0	150.0	180.0	180.0	180.0	180.0	180.0	180.0								
29	180.0	180.0	180.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0
	140.0	135.0	135.0	130.0	130.0	135.0	140.0	140.0	140.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0
	150.0	150.0	150.0	150.0	150.0	150.0	180.0	180.0	180.0	180.0	180.0	180.0								
30	180.0	180.0	180.0	180.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	140.0	135.0	135.0	130.0	130.0	135.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	140.0	140.0	140.0	140.0	140.0	140.0	180.0	180.0	180.0	180.0	180.0	180.0								

ROWS

31	180.0	180.0	180.0	180.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
	135.0	135.0	135.0	130.0	130.0	135.0	135.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	140.0	140.0	140.0	140.0	140.0	140.0	180.0	180.0	180.0	180.0	180.0	180.0								
32	180.0	180.0	180.0	180.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
	135.0	135.0	135.0	130.0	130.0	135.0	135.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	140.0	140.0	140.0	140.0	140.0	140.0	180.0	180.0	180.0	180.0	180.0	180.0								
33	180.0	180.0	180.0	180.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
	135.0	135.0	130.0	130.0	130.0	130.0	135.0	135.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	140.0	140.0	140.0	140.0	140.0	140.0	180.0	180.0	180.0	180.0	180.0	180.0								
34	180.0	180.0	180.0	180.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
	135.0	135.0	130.0	130.0	130.0	130.0	130.0	135.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	140.0	140.0	140.0	140.0	140.0	140.0	180.0	180.0	180.0	180.0	180.0	180.0								
35	180.0	180.0	180.0	180.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
	135.0	130.0	130.0	125.0	125.0	125.0	130.0	130.0	135.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	140.0	140.0	140.0	140.0	140.0	140.0	180.0	180.0	180.0	180.0	180.0	180.0								
36	180.0	180.0	180.0	180.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0
	130.0	130.0	125.0	125.0	125.0	125.0	125.0	130.0	130.0	130.0	130.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	140.0
	140.0	140.0	140.0	140.0	140.0	140.0	180.0	180.0	180.0	180.0	180.0	180.0								
37	180.0	180.0	180.0	180.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0
	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	135.0	135.0	135.0	135.0	135.0
	135.0	135.0	135.0	135.0	135.0	135.0	180.0	180.0	180.0	180.0	180.0	180.0								
38	180.0	180.0	180.0	180.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0
	125.0	120.0	120.0	120.0	120.0	120.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	130.0	130.0	130.0	130.0	130.0	130.0
	130.0	130.0	130.0	130.0	130.0	130.0	180.0	180.0	180.0	180.0	180.0	180.0								
39	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	125.0	125.0	130.0	130.0	130.0	130.0
	130.0	130.0	130.0	130.0	130.0	130.0	180.0	180.0	180.0	180.0	180.0	180.0								
40	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	115.0	115.0
	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	120.0	120.0	125.0	125.0	125.0
	125.0	125.0	125.0	125.0	125.0	125.0	180.0	180.0	180.0	180.0	180.0	180.0								
41	180.0	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	115.0	115.0
	115.0	115.0	115.0	115.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	115.0	115.0	115.0	120.0	120.0	120.0	125.0
	125.0	125.0	125.0	125.0	125.0	125.0	125.0	180.0	180.0	180.0	180.0	180.0								
42	180.0	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	115.0	115.0
	115.0	115.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	115.0	115.0	115.0	115.0	120.0	120.0
	120.0	120.0	120.0	120.0	120.0	120.0	120.0	180.0	180.0	180.0	180.0	180.0								
43	180.0	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	115.0	115.0
	115.0	110.0	110.0	105.0	105.0	105.0	105.0	105.0	105.0	110.0	110.0	110.0	110.0	110.0	110.0	115.0	115.0	115.0	120.0	120.0
	120.0	120.0	120.0	120.0	120.0	120.0	120.0	180.0	180.0	180.0	180.0	180.0								
44	180.0	180.0	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	115.0
	115.0	110.0	110.0	105.0	105.0	105.0	105.0	105.0	105.0	110.0	110.0	110.0	110.0	110.0	110.0	115.0	115.0	115.0	115.0	120.0
	120.0	120.0	120.0	120.0	120.0	120.0	120.0	180.0	180.0	180.0	180.0	180.0								
45	180.0	180.0	180.0	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	115.0
	115.0	110.0	110.0	105.0	105.0	105.0	105.0	105.0	105.0	110.0	110.0	110.0	110.0	110.0	110.0	115.0	115.0	115.0	115.0	120.0
	120.0	120.0	120.0	120.0	120.0	120.0	120.0	180.0	180.0	180.0	180.0	180.0								

ROWS

46	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
	115.0	115.0	110.0	110.0	105.0	105.0	105.0	105.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	115.0	115.0	115.0	115.0	115.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
47	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
	120.0	115.0	115.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	115.0	115.0	115.0	115.0	115.0	115.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
48	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	120.0	120.0
	120.0	120.0	120.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
49	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
50	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
51	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0								
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								

GRID SPACING IN PROTOTYPE IN X DIRECTION (FT)

10000.	10000.	10000.	5000.	2000.	1000.	1000.	1000.	1000.	500.	500.	500.
500.	500.	500.	500.	500.	500.	500.	1000.	1000.	1000.	1000.	1000.
1000.	1000.	1000.	1000.	1000.	500.	500.	500.	500.	1000.	1000.	500.
500.	500.	500.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	2000.
5000.	15000.	25000.	10000.								

ROWS

GRID SPACING IN PROTOTYPE IN Y DIRECTION (FT)

10000.	20000.	7000.	2500.	1000.	2000.	1000.	1000.	1000.	1000.	1000.	1000.
1000.	1000.	1000.	1000.	500.	500.	1000.	1000.	1000.	1000.	500.	500.
1000.	1000.	500.	500.	1000.	500.	500.	500.	500.	1000.	1000.	500.
500.	500.	500.	500.	500.	500.	500.	500.	500.	1000.	1000.	2000.
5000.	10000.	10000.	10000.								