GROUND-WATER LEVELS AND FLOW DIRECTIONS IN THE BURIED VALLEY AQUIFER AROUND DAYTON, OHIO, SEPTEMBER 1993

by

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INTRODUCTION

The framework for understanding Buried Ohio, and numerous communities
within the region, is the surface water resources and groundwater system that
flows through the Buried Valley Aquifer. This understanding is facilitated by
the U.S. Environmental Protection Agency (EPA) Water Resources Program
that provides funding for regional and state water quality studies.

The Buried Valley Aquifer is a confined aquifer that underlies the
area. The aquifer is composed of a series of layers, each of which contains
water at different levels. The water in this aquifer is derived from surface
water sources such as rivers and streams, and from groundwater sources
such as springs and wells. The aquifer is divided into a number of
sub-basins, each of which contains water at different levels.

The groundwater levels in the Buried Valley Aquifer are influenced
by a variety of factors, including the amount of precipitation, the
amount of water withdrawn from the aquifer, and the natural
processes that occur within the aquifer. The groundwater levels
in the Buried Valley Aquifer are also influenced by the topography
of the area, as well as the location of the aquifer.

METHODS OF INVESTIGATION

Water levels were measured using a variety of methods, including
the use of piezometers and geophysical survey techniques. Piezometers
were used to measure the hydraulic head in the aquifer, while
geophysical surveys were used to determine the thickness of the
aquifer and the location of groundwater flow.

Piezometers were installed at various locations within the
Buried Valley Aquifer to measure the hydraulic head and
water levels. The piezometers were installed using a variety of
methods, including drilling and injection. The piezometers were
then monitored to determine the water levels and the flow of
groundwater in the aquifer.

Geophysical surveys were also used to determine the thickness
of the aquifer and the location of groundwater flow. Geophysical
surveys were conducted using a variety of methods, including
magnetometry, electrical Resistivity, and Ground Penetrating
Radar (GPR). The results of these surveys were used to
construct maps of the aquifer, which were then used to
interpret the flow of groundwater in the aquifer.

Ground-Water Levels and Flow Directions of Flow

The maps show the direction and magnitude of groundwater flow in
the Buried Valley Aquifer. The maps were constructed using a
variety of methods, including the use of piezometers and
geophysical surveys. The maps were then used to interpret the
flow of groundwater in the aquifer.

The maps show that groundwater flow is primarily from west to east in
the Buried Valley Aquifer. This is due to the topography of the area,
which is west high and east low. The groundwater flow is also
influenced by the location of the aquifer, as well as the presence
of surface water sources such as rivers and streams.

REFERENCES

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