

## Effect of Water Sources on Water Migration in the Vadose Zone

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### **ABSTRACT**

This paper evaluates the effect of precipitation events, irrigation practice, and deep wetting from underground sources on migration of water in soils and bedrock. The water migration analyses were conducted using the VADOSE/W software for the TRACON building at Denver International Airport, Denver, Colorado, USA. Measurements of water content and density from surface nuclear gauge tubes installed around the building were used to calibrate and validate input parameters and boundary conditions specified in the VADOSE/W models. Long-term water migration within the soils and bedrock was evaluated for the cases with various water sources. It was concluded that the presence of deep water bearing stratum and irrigation on the lawn can be significant in the migration of the wetting front within the soils and bedrock.

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