

New Mexico Tech Hydrology Program Seminar Series

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David Jordan, Intera, Inc., Albuquerque, NM
Water Resources Supply Decision Support System For Santa Fe County

INTERA is currently working with Santa Fe County, New Mexico, to develop a regional groundwater availability model and decision support system (DSS) to assist the County in evaluating potential well locations for groundwater supply sources to supplement surface water in a conjunctive use strategy. The groundwater availability model was used as part of a site suitability analysis DSS using multi-attribute utility theory (MAUT) to determine potential supply well locations. Using a geographic information systems (GIS) approach, the DSS identified potential supply well locations for the County that minimize impacts (and hence proximity) to existing supply wells, streams, and springs, while maximizing proximity to existing infrastructure, population centers, and areas of favorable geology and land ownership using a MAUT approach. As a final step, potential supply well locations were evaluated using the groundwater availability model to further refine the location alternatives to identify the most promising locations. This approach provided County decision-makers and the public with a structured, scientifically defensible, and unbiased method of identifying potential supply well locations.

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Related links:

http://www.swhydro.arizona.edu/archive/V5_N4/feature1.pdf

<http://www.intera.com/index.php>

<http://www.intera.com/jordan.php>

The last link is his bio:

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Mr. Jordan has over 17 years of experience in numerical modeling, quantitative hydrogeology, geographic information systems (GIS), database development, project management, environmental forensics, contamination allocation, and site investigation. Mr. Jordan has broad experience with MODFLOW, FORTRAN programming, GIS, and the integration of GIS with ground water flow models. Mr. Jordan has also provided environmental litigation support on a variety of high-profile cases, many of which involved allocating responsibility among numerous potentially responsible parties (PRPs) who contributed to large and complex ground water contamination problems. Mr. Jordan has served as both technical lead and project manager on projects with labor budgets as large as 2 million dollars with up to 10-15 project team members. Mr. Jordan's broad background, which includes all aspects of investigation and analysis from field data collection and reduction through data analysis and numerical simulation, results in client-focused solutions that are efficient and cost effective.

Mr. Jordan has substantial experience in GIS as a tool for data analysis and presentation. Mr. Jordan was accepted as an Authorized Consultant into the Environmental Systems Research Institute's (ESRI) Business Partner Program. He has extensive experience with the ESRI suite of products including ArcView GIS 3.2, and the 3D Analyst, Spatial Analyst, and Image Analysis extensions, and was a Beta Tester for ArcView 8.1. Mr. Jordan has developed or managed the development of a variety of utilities in Avenue for ArcView for analysis of environmental data such as automated time series generation, Stiff diagrams, radial diagrams, and statistical analysis of data. He has also developed sophisticated utilities using 3-dimensional GIS to perform conceptual regrading for evaluation of mine reclamation. He has managed up to three full-time GIS staff, as well as a group of hydrogeologists that used GIS for data management, data analysis, and map production. In addition, Mr. Jordan has routinely used GIS as a tool to communicate complex technical issues to lay audiences such as attorneys and juries, and has produced courtroom exhibits using GIS for trials that settled favorably.