

# OHIO AUTOMATION

MineWater Engineering  
Software since 1985



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Engineer

Save time and money with Integrated Computer Aided Mine Planning Software (*ICAMPS*) our high performance Coal Mine Planning, Ventilation and Water Simulation Software.

*ICAMPS* is a comprehensive, easy to learn and use, yet very complete coal mining software package. It runs inside AutoCAD and covers the entire process

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## MineWater Features

- AutoCAD Compatible Program
- Windows Dialog Box Interface
- Move Node
- Find Node
- List Nodes
- List Unused Nodes
- Creating Pump Files
- 3 to 10 Point Pump Curves
- List Pumps
- Define and Modify Branches
- Erase Branches
- Move/Stretch Branches
- Copy Branches
- List Branches
- Custom Branch Colors
- Custom Pipe Parameters
- Simple Controls
- Show by Time-step (Duration)
- Draw Quantity/Pressure Output
- List Pressure Output
- List Quantity Output
- Review Output Diagnostics
- Reverse Negative Branches
- Edit Schematic and Change Sizes
- Considers Elevation
- Spray Nozzle Support
- Define Various Node Types
- User Defined Tolerance

# MineWater

## *ICAMPS* MineWater

### **MineWater Pumping System Simulation Analysis.**

The MineWater program is designed to analyze the flow of mine discharges through complex piping networks. The program can be used to evaluate the effects of alternate pumps, pipe sizes and flow routings in existing or proposed discharge systems.

Currently the program generates a static solution showing flow rates through pipes, and pressures at pipe junctions (calculated using the Hazen-Williams headloss formula) for a fixed input condition. Ultimately the program will generate simulations of a system over time, allowing for control sequences such as the starting and/or stopping of pumps under specified conditions or at specific times.

The program interface is very similar to that of OhioAutomation's MineVent, as is the data output, and should be generally familiar to users of that program. The key user tasks in constructing a MineWater network are 1) digitizing nodes, 2) drawing and describing branches, and 3) describing the operating characteristics of existing and/or proposed pumps. The program stores up to 12 pre-defined pipe classifications which are assigned separate layers for display purposes; for user convenience, it is best to 4) configure the "typical" pipes found in the system (categorized at the user's discretion by material, size, condition and/or roughness

coefficient) before starting to construct the network model.

The hydraulic characteristics of "typical" branches can be described in "Branch Menu/Configure Branches..." for ease in defining new branches. The user has a great deal of flexibility in assigning how branches are to be displayed; the only limitation is the 12 available layers