

A Study of Urban Drool and Biodegradation in the Hyporheic Zone

Sydney Wilson

Researched at Colorado School of Mines with John McCray, Chris Higgins, Skuyler Herzog, and Taylor Baird

● **Urban Drool**

- **Essentially dry weather runoff**
- **Predominant in the western United States because of the drier climate**
- **Research focused on determining contaminants**
 - **Pesticides, pharmaceuticals, PAHs, heavy metals, nutrients**
- **Potential sources of runoff**
 - **Residential lawn watering, driveway car washes**
- **Tasks included locating and documenting several possible sources**
- **Completed preliminary sampling and various nutrient tests and water quality measurements**
- **Submitted samples for total organic carbon, heavy metal, and pharmaceutical testing**
- **Brief analysis of results to determine the significance of urban drool and its possible effects on the environment**

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● Hyporheic Zone

- Assisted Skuyler Herzog in his research concerning the hyporheic zone
 - Groundwater/surface water interaction
- Began construction on a model stream
- In the future will monitor nutrient levels in the stream which will be fed with water from an MBR on site
- Will conduct electrical resistivity tests
- Objective is to confirm that biodegradation of contaminants like pharmaceuticals is occurring in the hyporheic zone. Also, to implement a sub-surface structure that will divert more flow to the hyporheic zone for enhanced biodegradation