Protect the Source

A look at how Public Water Supplies can ensure safe drinking water for years to come.
Source water
Untreated water utilized to supply both private wells and public drinking water systems.

Source water protection
Proactive measures used to prevent the contamination/impairment of sources of drinking water.
Safe Drinking Water Act Section 1453
1996 Amendments

- Required all states to create a source water assessment program.
- Perform comprehensive assessment for every public water supply (PWS) system.
Source Water Assessment Process

1. Delineation
   - Fixed Radius Zones A, B, C

2. Contaminant Source Inventories
   - CAFO, Hazard Waste, Storage Tanks, Agricultural Land, Service Stations, Etc.

3. Susceptibility Analyses
   - Likelihood PWS could be impacted

4. Public Participation/Access to Assessment Results
   - Public awareness
Move to Protection?

Great assessment so now what?

Issues....

- No protection requirement under 1996 amendments
- Lack of Resources
- What does a protection plan look like?
- No clear direction?
Benefits of Source Water Protection

**Human Health**
- Acute/Chronic health issues
- Viruses, bacteria, parasites, nitrates, metals, VOCs,…

**Financial**
- Boost economic growth potential
- Cost savings (prevention vs treatment)

Improves Public Relations/Public Support

Improves Skill Set within Water Industry
Creation of the Drinking Water Protection Program

Lack of a state run program to protect source water
  • Source water protection oversight under watershed management (319)
  • Safe Drinking Water Act vs Clean Drinking Water Act

Statewide need for technical support, guidance, and follow through

Looking at WRAPS (319) approach and surrounding state programs
Drinking Water Protection

Partnering Internally

Clean Water Act

Safe Drinking Water Act

Focus on pollutants in US waters

Focus on drinking water standards
Drinking Water Protection Program

**Process**

1. Local Stakeholder Development
2. Assess of protection area
3. Development of Drinking Water Protection Plan
4. Implement Plan
5. Monitoring
Building a local stakeholder team

Local input sets implementation up for success

Give input/advise on goals, strategies, and advocate for drinking water protection

- Governing representative
- Water system operator
- Conservation District Manager
- NRCS
- Landowners/businesses/residents in DWP area
- KDHE
- WRAPS/Water Quality Coordinator
- County Sanitarian
- Other agencies/organizations as needed
Assess the protection area

Develop the conceptual site model (CSM)

- Land use history/impairment inventory
- Update Assessment
- Aerial Assessment
- Operational History
- Water quality data gathering
- PWS/surrounding infrastructure inventory
- Well pump test
- Soil conductivity
- Water sampling
- Modeling

Figure 3: Graphical conceptual site model
Taken from New Jersey Department of Environmental Protection’s Technical Guidance for Preparation and Submission of a Conceptual Site Model
Developing the plan

Modeled after EPA 9-Element Watershed Plans

- Identified sources of pollutions/contaminants
- *Determine reduction in pollutants needed*
- *Determine mitigation strategies*
- *Schedule implementation*
- *Develop implementation milestones to track progress*
- *Develop quality milestones to measure progress*
- *Develop plan monitoring strategy*
- *Determine information/education strategies*
- *Identify resources needs and sources*
Implementing the plan

Ownership of the plan starts locally
  - Governing body – formal adoption of plan
  - Local stakeholders – new implementation advisory role
  - Agencies – resources and technical assistance

Plan implantation schedule
  - Rate adjustments evaluated
  - Grants
  - Cost-share/EQIP programs
  - 319 assistance
Monitoring progress

- Monitor implementation strategies
- Monitor water quality data
- Adjust plan/strategies as needed
Oversight of the Drinking Water Protection Process

Technical Team
Assure that all drinking water protection assessments and plans are scientifically and professionally developed on scientific principles and meet the expectations of all stakeholders to provide protection of the source water.

- KDHE Geology
- KDHE PWS
- KDHE Watershed Management
- KS Geological Survey
- KDHE Remediation
- USGS
- KS Water Office
Current steps

Pilot community
- Focused on nitrates in groundwater
- Communities in current WRAPS/Nutrient Reduction watersheds
- Other criteria
  - Population served
  - Age of PWS infrastructure
  - Number of wells
  - Depth of groundwater
  - Other contaminants

Guidebook development/resources
Questions?

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