

SOURCE WATER ASSESSMENT IN GEORGIA

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Abstract. Georgia's Source Water Assessment and Protection Implementation Plan (Implementation Plan) was approved by Region IV of the U.S. EPA in May 2000. Upon approval of the Georgia Implementation Plan, all public drinking water systems in Georgia are required to have a Source Water Assessment Plan (SWAP).

Preparations of SWAPs are a critical technical issue for Georgia's public water systems. To assist drinking water systems with this formidable task, EPD is utilizing the successful efforts of other EPD environmental initiatives, as well as implementing new initiatives designed to aid both surface water and ground water users.

Successfully established EPD environmental initiatives include WellHead Protection and Monitoring Waivers. More recent environmental initiatives include definitions of the State's river basins and intake specific watersheds, funding availability through partnering contracts and strategy development for water wells with critical data needs. Additional initiatives will be developed as Source Water Assessment approaches its critical compliance date.

INTRODUCTION

Source Water Assessment and Protection was adopted by Congress in 1996 with the passage of the Amendments to the Safe Drinking Water Act. Adoption by the Federal Government helps to establish best management practice protocols for public water systems and technically sound means to reasonably determine the potential threat to drinking water quality prior to water treatment.

EPA approval of a Source Water Assessment and Protection Implementation Plan is required for a State to operate a Source Water Assessment and Protection Program.

SWAPs must be submitted within a prescribed time frame, November 2003 for Georgia.

ESTABLISHED EPD INITIATIVES

Established EPD environmental initiatives have provided Source Water Assessment and the public drinking water systems with a great deal of support. SWAPs include the same information that is required for WellHead Protection Plans and the water source specific Vulnerability Assessments prepared by the Monitoring Waiver Initiative.

All EPD prepared Well Head Protection Plans and source specific Vulnerability Assessments include the essential components of a SWAP. The first component is the identification and accurate location of the water source. The second component is the establishment of an area of investigation around the water well and an inventory of the cultural activity that is present within the area of investigation. The third component is an assessment of the water source's susceptibility of potentially impacted ground water arriving at the well's entry point. The last component is a written report of all of the above.

Well Head Protection

The primary environmental initiative to safeguard drinking ground water sources is Well Head Protection. Well Head Protection addresses only municipal water wells, has been in existence since the early 1990s and has established a high level of performance consistency because all of the Well Head Protection Plans are prepared by EPD's Geologic Survey Branch. Georgia's municipal drinking water systems may use their EPD prepared Well Head Protection Plans as a substitute for their SWAPs.

Monitoring Waiver Initiative

The Waiver Initiative was also established in the early 1990s when the Phase II and IV chemical monitoring requirements of the Safe Drinking Water Act became effective. Part of the Waiver Initiative includes water well evaluations for non-municipal water wells similar to those performed by Well Head

Protection for municipal water wells. This is termed the source specific Vulnerability Assessment. For the non-municipal water systems, now including transient water systems, the effort to provide each non-municipal system with source specific Vulnerability Assessment is ongoing. Georgia's non-municipal drinking water systems may use their EPD prepared source specific Vulnerability Assessment as a substitute for their SWAPs.

NEW EPD INITIATIVES

Watershed Definition

Established EPD initiatives addressed ground water sources benefiting only ground water users. The largest public water systems in Georgia use surface water. Approximately 60% of all Georgians rely on treated surface water for their drinking water supply. EPD undertook the task to geographically define the major watersheds in the State where surface water intakes were located. This task was completed at the close of 2000.

Fourteen complete or partial river basins have been outlined by EPD's Geologic Survey Branch. Partial river basins are those that are part in Georgia and part in some other State (i.e. the Tennessee River Basin). The interpretations have been digitized and are available from EPD upon request.

Location of Surface Water Intakes

Another project financed by the Water Resources Branch of EPD was the locating of all 183 surface water intakes operated by public water systems using the global positioning system (GPS). This information has been converted to geographic information system (GIS) coverage and is now available to the general public from EPD upon request.

The completion of the above projects attained a milestone because it allowed the surface water systems to prepare source specific watersheds for their intakes according to the guidelines established by the Implementation Plan.

Partnership Funding

It is common for many surface water users to locate their surface water intakes in the same part of a river basin. Each water system is required to prepare a SWAP for their intakes, potentially requiring many different surface water systems to undertake similar tasks to prepare their SWAPs. To avoid duplication of effort and to cut costs, EPD has encouraged water

systems to form partnerships. Water Systems that formed partnerships were eligible to apply to EPD for a one-time grant to help finance the cost of preparing a SWAP.

The Atlanta Regional Commission (ARC) has organized the largest partnership. It includes 16 water systems with 28 surface water intakes. EPD has awarded this partnership a \$400,000.00 grant. Participants include the City of Atlanta, Fulton Co., DeKalb Co., Cobb-Marietta and other water systems in the metro Atlanta area. Other large partnerships are headed by the Coosa Valley RDC, 15 systems, 20 intakes, \$300,000.00; and the Northeast Georgia RDC with 12 systems, 19 intakes and \$300,000.00.

Strategy Development for Data Needs

Transient Water Systems. Unlike previous drinking water initiatives that focus on non-transient water systems, Source Water Assessment and Protection includes transient water systems. Transients are water systems that are not operating full time, year round (i.e. campground open in the summertime) and service a transient population. Since transients are not addressed as comprehensively as other water systems by drinking water regulations, there has been a lesser need for well location and cultural data from these systems.

SWAP requires transient water well locations, areas of investigations around the water wells and inventories of cultural activity within the area of investigation. Also, SWAP requires a risk determination of the potential impact of any release into the subsurface from the cultural activity on water sources. To assist the transient well owners with this task, EPD has hired a GIS experienced geologist to develop techniques to produce the GIS coverages enabling the transients to comply with the requirement.

Non-municipal Water Systems. EPD is assisting the non-municipal water systems prepare their SWAPs through EPD preparation of source specific Vulnerability Assessments. Due to the large number of ground water systems (approximately 2,400) in Georgia, EPD may not be able to prepare a SWAP for every non-municipal public water well by the November 2003 compliance date. To help remedy this, four people have come forward indicating they will help the small water systems prepare their SWAPs. The four people include a consultant, two from academia and one from the Georgia Rural Water Association. The list of four is available upon request.

The Source Water Assessment Program encourages maximum participation for problematic resolution evidenced by the partnerships and public participation in the preparation of the Implementation Plan. To maintain this spirit, EPD will continue to expand its inventory of highly qualified individuals willing to provide critical assistance to the small water systems. EPD will also develop other means to maintain this spirit of cooperation as the compliance date draws closer.

Development of Forms and Guidance. The most useful guidance document is the Implementation Plan. It contains an explanation of what the water systems need to accomplish to properly prepare a SWAP. The Implementation Plan may be downloaded from the DNR web site (www.dnr.state.ga.us/dnr/environ) and is available upon request.

Any ground water using drinking water system may use an EPD prepared Well Head Protection Plan or source specific Vulnerability Assessment as a model to prepare their SWAP. Copies of WellHead Protection Plans and source specific Vulnerability Assessments may be obtained from the Source Water Assessment Program at EPD.

The Source Water Assessment Program has also prepared form cover letters to be used with EPD prepared Well Head Protection Plans and source specific Vulnerability Assessments if a system wishes to use either one as a substitute for their SWAP. The cover letters are distributed upon request. Other guidance, forms or templates may be developed on an as need basis.

SUMMARY

Public water systems have been burdened with a task that may require assistance to assure timely compliance. The drinking water systems are required to prepare a SWAP by November 2003. Many small water systems do not have the resources to prepare a SWAP without benefiting from EPD initiatives.

EPD has developed Well Head Protection, the Monitoring Waiver Initiative, GPS collection of geographic data, GIS coverages from the data and an Implementation Plan. EPD has provided financing enabling others to progress towards the goals established by Source Water Assessment and Protection.

Continued innovation by all involved with Source Water Assessment and Protection will result in

compliance with Source Water Assessment requirements by Georgia public water systems.

LITERATURE CITED

- Code of Federal Regulations, Title 40, Chapter 1, Subchapter D, Parts 141, 142 and 143, *Rules for Safe Drinking Water*
Georgia Department of Natural Resources, Environmental Protection Division, Chapter 391-3-5, *Rules for Safe Drinking Water*.
Georgia Department of Natural Resources, Environmental Protection Division, 2000. *Source Water Assessment and Protection Implementation Plan for Public Drinking Water Sources*.