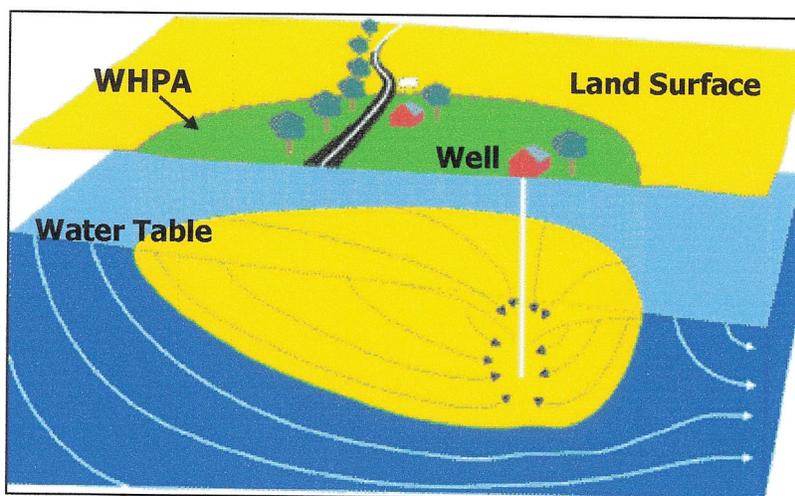


# **SOURCE WATER ASSESSMENT**

**FOR THE TOWN OF RISING SUN**

**CECIL COUNTY, MD**



**Prepared By**  
**Maryland Department of the Environment**  
**Water Management Administration**  
**Water Supply Program**  
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## SUSCEPTIBILITY SUMMARY

In 1998, Cecil County was awarded a Wellhead Protection (WHP) grant by the Maryland Department of the Environment (MDE) to establish a WHP plan for eight community water systems. The studies were completed in August 2000 by Advanced Land and Water, Inc (ALWI). The 1996 amendments to the Safe Drinking Water Act require the State to conduct source water assessments for all of its public drinking water systems.

The Maryland Department of the Environment Water Supply Program (WSP) has conducted a source water assessment for the Town of Rising Sun ground water supply based on the completed WHP Plan. The required components as described in Maryland's Source Water Assessment Plan (SWAP) are: (1) delineation of an area that contributes water to the source, (2) identification of potential sources of contamination, and (3) determination of the susceptibility of the water supply to contamination. The first two steps have been addressed in the Town of Rising Sun's WHP Plan as well as recommendations for protecting the drinking water supply (ALWI, 2000). The WSP is responsible for completing the susceptibility determinations for this system.

The source for the Rising Sun ground water supply is an unconfined aquifer in the Piedmont physiographic province known as the Baltimore Gabbro Complex. The system currently uses four wells to obtain their drinking water. The Town is proposing to drill a fifth well near Dairy Street at the south side of Town (Figure 1). The wellhead protection area (WHPA) for the Rising Sun wells was delineated for the Cecil County Office of Planning and Zoning by ALWI using U.S. EPA approved methods specifically designed for each source (ALWI, 2000). For ground water systems, a WHPA is considered to be the source water assessment area.

Table 1 shows the potential sources of contamination within the assessment area that was identified in the WHP Plan (ALWI, 2000). The delineated WHPA and the mapped contaminant point sources from Table 1 are shown on Figure 1. The WSP identified an additional potential contaminant line source shown on Figure 2. Well information and water quality data were also reviewed. Tables 2, 3, and 4 summarize the contaminant detects above 50% of the actual or proposed maximum contaminant levels (MCLs) since 1990 for the Rising Sun production wells. An aerial photograph of the well locations is shown on Figure 3.

The susceptibility analysis of Rising Sun's water supply was based on the review of the water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It was determined that Rising Sun's water supply is susceptible to volatile organic compounds (e.g. solvents and gasoline), but is not susceptible to inorganic compounds, synthetic organic compounds, and microbiological contaminants. The system may be susceptible to radon-222 if the final MCL approved by EPA is 300 picoCuries/Liter.

**Table 1. Point Source Contamination Hazards  
Rising Sun Wellhead Protection Area**

Site ID	Zonal Designation	Site Name	Potential Hazard	Data Source (see footnotes)
A	2	Sun Pharmacy	Underground Storage Tank	3
B	2	City Hall	Underground Storage Tank	3
C	2	Western Auto	Volatile Organic Compounds	1
D	2	Sunoco	Underground Storage Tank	1
E	1	Park Wellfield	Various Surficial Hazards (e.g. ASTs, drums)	1

DATA SOURCE: 1 - Field Reconnaissance; 2 - EDR Report; 3 - Field Reconnaissance and EDR Report

## SUMMARY OF WATER QUALITY SUSCEPTIBILITY ANALYSIS

CONT. ID	CONTAMINANT NAME	MCL (ppm)	SAMPLE DATE	RESULT (ppm)
1040	NITRATE	10	01-Dec-00	5.2

Table 2. IOC Results Above 50% of the MCL for Rising Sun Plant 1 Wells, Finished Water Since 1993

CONT.ID	CONTAMINANT NAME	MCL (ppb)	SAMPLE DATE	RESULT (ppb)
2980	1,2-DICHLOROETHANE	5	30-Sep-91	3
2980	1,2-DICHLOROETHANE	5	23-Dec-92	3.6

Table 3. VOC Results Above 50% of the MCL for Rising Sun Plant 1 Wells, Finished Water Since 1990

CONT. ID	CONTAMINANT NAME	PROPOSED MCL (pCi/L)	SAMPLE DATE	RESULT (pCi/L)
4004	RADON-222	300 or 4000	04-Apr-94	1000
4004	RADON-222	300 or 4000	04-Jun-97	740

Table 4. Radon-222 Results Above 50% of the More Conservative Proposed MCL for Plant 1 Wells, Finished Water Since 1994

## **REFERENCES**

Advanced Land and Water, Inc., 2000, Wellhead Protection Plan for the Rising Sun Groundwater Supply System Cecil County, Maryland, 15 p.

Maryland Department of the Environment Water Supply Program, 1999, Maryland's Source Water Assessment Plan, 36 p.

## **OTHER SOURCES OF DATA**

Water Appropriation and Use Permit No. CE1973G012

Water Treatment Plant Inspection Reports

MDE Water Supply Program Oracle Database

Department of Natural Resources 1995 Digital Orthophoto Quarter Quadrangles for Rising Sun NW & NE

USGS 7.5 Minute Series Topographic Maps, Rising Sun Quadrangle

Maryland Office of Planning 1997 Cecil County Land Use Map

Maryland Office of Planning 1995 Cecil County Sewerage Coverage Map