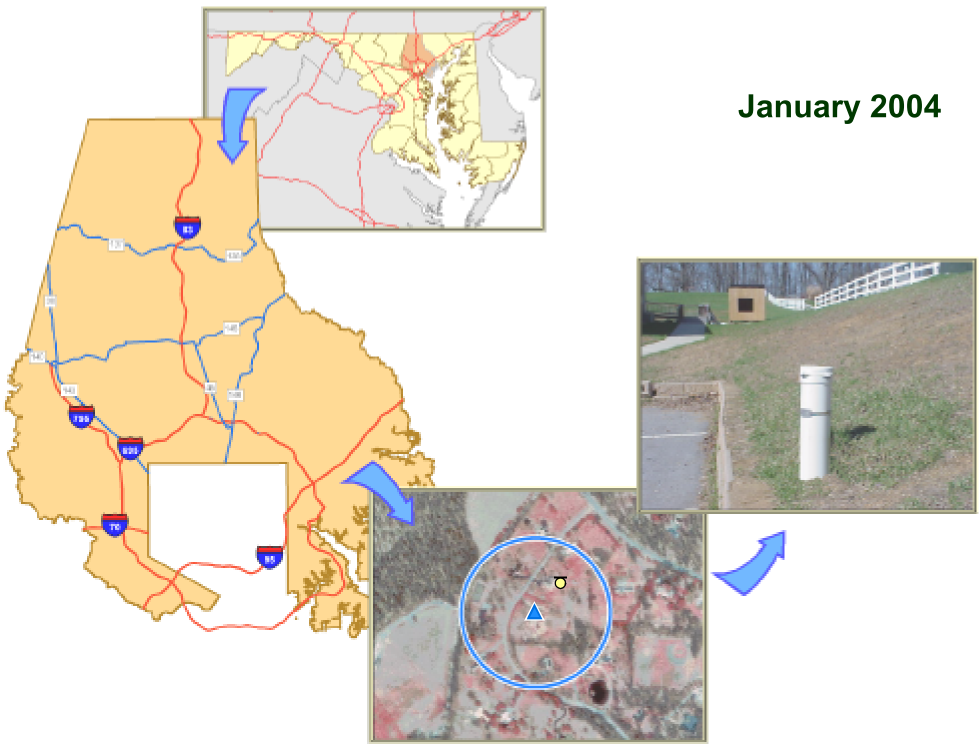
# Source Water Assessment for Small, Non-Transient, Non-Community Public Water Systems in Baltimore County, Maryland



January 2004

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# Source Water Assessment for Small, Non-Transient, Non-Community Public Water Systems in Baltimore County, Maryland

***Prepared For:***

**Maryland Department of the Environment**
**Water Supply Program**

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# Executive Summary

This report presents the results of a Source Water Assessment for 46 small, non-transient, non-community public water systems (PWS) in Baltimore County, Maryland. The assessment was performed in accordance with the 1996 amendments to the Safe Drinking Water Act, and Maryland's Source Water Assessment Plan. For these systems, the assessment includes 1) a delineation of the boundaries of areas providing source waters to the systems, 2) an inventory of significant potential sources of contamination, and 3) a determination of the susceptibility of the public water system to specific contaminants.

Water quality data for the non-transient systems, spanning the period from 1990 to 2003, were reviewed in paper and electronic copies. As per Maryland's requirements, these results were compared to levels equivalent to one-half the Maximum Contaminant Level (MCL). If more than 10% of sample results exceeded this level, an analysis was completed for that contaminant.

Analyses of nitrate and/or nitrite were reviewed for all the systems. Nitrate is a naturally-occurring ion that is also a contaminant associated with agricultural fertilizers and septic systems/sewage. Twenty-four systems (52%) recorded at least one sample result that exceeded one-half the MCL, although only two of these systems (4%) had ever exceeded the existing regulatory limit of 10 mg/L.

A total of 22 systems have been sampled and analyzed for Radon-222, a naturally-occurring radioactive isotope. Of these systems, 86% exceeded one half the proposed regulatory level of 300 pCi/L. Twenty-three percent (23%) also exceeded one-half the higher proposed level of 4,000 pCi/L. These relatively high levels of radon are unsurprising, as the U.S. Geological Survey classifies the Piedmont province of Baltimore County as having a "High" radon potential.

Analytical data for coliform bacteria, volatile organic compounds (VOCs), synthetic organic compounds (SOCs), and heavy metals were also reviewed. While nearly one-third of PWS had tested positive for total coliform at least once, a total of five systems (11%) had tested positive in more than 10% of the samples. Two systems had tested positive for fecal coliform. For the other compounds there were few results that exceeded the relevant levels.

Source Water Assessment Areas (SWAAs) were determined for each system based upon the local hydrogeology and the average groundwater usage of each system. As all of the non-transient PWS in Baltimore County produce water from unconfined fractured bedrock aquifers, their SWAAs are defined by a 1,000 foot radius from the wells. These were determined from GPS coordinates collected during site visits to each system.

Generally, land use within each SWAA includes mixtures of low-density residential with agricultural areas, and institutional areas such as the schools and churches served by the PWS.

The dominant land use in the majority of SWAAs is either residential (41%) or agricultural (30%). The total land use within the SWAAs is estimated to comprise sub-equal amounts of residential and agricultural lands, with the remaining percentages representing forested land, commercial land, and institutional lands. None of the PWS is in areas served by city water or sewer systems, although areas in sewer service do impinge on some SWAAs.

The following potential contaminant sources were considered and inventoried during site visits: groundwater discharge permits, land disposal sites, underground storage tanks, coal mining areas, and areas of salt water intrusion. For the 46 systems, nearly half of the SWAAs contained at least one underground storage tanks for heating oil, gasoline, and/or diesel fuel. About 13% of the SWAAs encompass at least one documented hazardous substance generator including telephone substations, hazardous waste sites, and industrial sites.

Overall, the water quality for the non-transient non-community systems in Baltimore County is good. A regional susceptibility analysis completed collectively for the 46 systems concludes that they are most susceptible to contamination from naturally-occurring Radon-222, nitrate from agricultural and septic sources, and BTEX and MTBE from underground fuel tanks. To a lesser degree some systems may be susceptible to coliform contamination via poor surface seals or other sanitary issues.

Based upon this review, recommendations to system operators and regulators include the following:

- Maintaining the sanitary integrity of the well, treatment system(s), and all above-ground portions of the water-supply system,
- Installation of physical barriers to damage for wells in trafficked areas,
- Potential modifications to monitoring requirements to include more frequent monitoring for BTEX, MTBE, and VOCs,
- Expansion of monitoring for Radon-222, and provision of information to system owners on methods of radon abatement for the water supplies,
- For wells completed within below-ground vaults, raising and proper sealing of the well head, if possible; where not feasible, additional testing for impacts of flooding on coliform and other contaminants,
- Awareness of changing land use within the SWAAs and implementation of appropriate changes to groundwater monitoring as development occurs,
- Consideration of SWAAs during planning of land use, e.g. in revising zoning, and providing permits for construction of facilities likely to be Potential Contaminant Sources (e.g. gas stations, industrial facilities).

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# Report

# Section 1
# Introduction

The 1996 Amendments to the Safe Drinking Water Act (SDWA) affirmed the importance of source water protection for maintaining drinking water quality. The Maryland Department of the Environment (MDE) is currently implementing a program to complete Source Water Assessments (SWAs) for sources of groundwater used as public water supplies throughout the state.

This report presents the results of the SWA for *small, non-transient, non-community* public water systems (PWS) in Baltimore County, Maryland. Forty-six (46) public water systems identified by MDE are covered. The work was carried out by S.S. Papadopulos & Associates (SSP&A) and Chesapeake Environmental Management (CEM) under contract to the MDE.

As defined in the Maryland Code of Regulations (COMAR 26.04.01.01) "*community*" public water systems serve at least 15 service connections used by year-round residents, or regularly serve at least 25 residents throughout the year. The systems covered by this report, are "*non-community*." They are also classified as *non-transient* systems because they serve at least 25 of the same individuals over 6 months per year[1]. All of the systems covered by this report are considered "*small*" because, on average, they pump less than 10,000 gallons per day (gpd) of water for use.

A formalized Source Water Assessment Program (SWAP) consists of:

1) delineating the boundaries of areas providing source waters for public systems;
2) inventorying significant potential sources of contamination; and
3) determining the susceptibility of the public water system to such contaminants as mandated by the SDWA.

In accordance with these three elements, this report presents for each of the subject PWS, a map delineating the boundaries of the areas providing water to the system – the Source Water Assessment Area (SWAA). Potential sources of contamination (PCS) are also inventoried and shown on the maps for each system. The methodologies for defining SWAAs and identifying PCSs are defined in Maryland's Source Water Assessment Program (MDE, 1999). These are explained in detail in appropriate sections of the report.

As per Maryland's SWAP (MDE, 1999), the report also presents a Susceptibility Analysis for the non-transient, non-community systems. This analysis is completed on a

[1] As defined in COMAR 26.04.01.01, transient, non-community water systems do not regularly serve at least 25 of the same individuals over six (6) months per year.

regional basis, considering collectively the SWAAs, PCSs and other factors for the non-transient, non-community systems.

Finally, the report concludes with recommendations for protecting the water supplies for the non-transient, non-community water systems.

The forty six (46) PWS shown in Table 1 and Figure 1 were identified by MDE as meeting the criteria for small, non-transient, non-community systems. These systems are composed of 88 individual wells or “sources” (Table 2). Information on the system locations, contacts, wells and water treatment were provided to SSP&A by the MDE from the Water Supply Program database, and updated with more recent information as the project progressed.

PWS records were reviewed at the MDE offices and obtained in database format from MDE. These included the most recent sanitary survey form for each site, well construction logs, water sampling data, and any other pertinent information in MDE’s files for each system. SSP&A provided updated information to MDE based upon these file reviews.

# Section 2
# Hydrogeology of Baltimore County

The ultimate source of all groundwater in Baltimore County is precipitation – rain and snow that fall to the earth (Trapp and Horn, 1997). The portion of precipitation that does not flow on the surface to streams can infiltrate into the ground through soil and rock. Once beneath the surface, this water infiltrates toward the zone in which all openings are filled with water – the *saturated zone*. Water in the saturated zone is called *groundwater*.

Groundwater moves at a generally slow pace through tiny holes and fractures in soil and rock. These openings are called *porosity*. Some types of rocks and sediments have a greater porosity and/or allow water to flow more freely than do others. Sands and gravels, for example, transmit water more easily than do clay, as the spaces between grains of sand are much larger than the spaces between clay particles. These materials are said to be more "*permeable*." Similarly, the rocks composed of sand and gravel (sandstones and conglomerates) tend to be more permeable than rocks made primarily of clays (shales). In metamorphic and igneous rocks such as gneiss and granite, fractures usually provide most of the porosity and permeability.

A geologic unit capable of supplying useable amounts of groundwater to a well or spring is called an *aquifer* (Heath, 1983). Aquifers may be composed of sands, gravels, limestones, granites, or other materials. When water only partly fills an aquifer and the upper surface of the saturated zone is free to rise and fall, the aquifer and its water are considered *unconfined* (Heath, 1983). The top water surface in such aquifers is called the *water table*.

In contrast, a geologic unit with low permeability and/or porosity that is not capable of supplying or transmitting useable amounts of water is called an *aquitard*. When this type of rock unit restricts the movement of groundwater into or out of adjacent aquifers, it is called a *confining* bed or unit (Heath, 1983). The underlying aquifer is considered *confined*.

Baltimore County covers an area of approximately 600 square miles and has a population of about 750,000 (Maryland Department of Business & Economic Development, 2002). The county straddles two physiographic provinces, the Piedmont province to the northwest and Atlantic Coastal Plain to the southeast. The dividing line between these two provinces, which is situated approximately along the trace of Route 95, is called the Fall Line (Figure 1).

The Piedmont physiographic province in Baltimore County consists of generally rolling topography of low to moderate elevation. It is underlain by metamorphic and igneous rocks of Paleozoic age (Crowley, 1976). Consequently, the aquifers in this region consist of fractured bedrock. On top of the bedrock is a layer of weathered rock and soil that may be just a trace or more than 100 feet thick (LeGrand, 1988, 1989; Figure 3). The Coastal Plain physiographic province consists of layered sediments and sedimentary rocks of Cretaceous and younger ages. These include both unconfined and confined aquifers. Small public water systems in Baltimore

County's coastal plain typically retrieve water from either unconsolidated surficial deposits or the Patapsco Aquifer, a major regional aquifer that is confined in places.

All of the systems covered by this report obtain water from fractured bedrock aquifers in the Piedmont province. Aquifers tapped by these systems include the Loch Raven Schist, the Prettyboy Schist, the Baltimore Gneiss, and Cockeysville Marble (Figure 2). These aquifers are unconfined and are in communication with the overlying unconsolidated sediments (regolith). Commonly, the top of the saturated zone (the water table) lies close to the top of bedrock, within the regolith. The regolith is generally more porous than the bedrock and therefore can provide a large amount of water to wells screened in the underlying bedrock (LeGrand, 1988; Trapp and Horn, 1997). The level of the water table fluctuates annually, and over longer periods of time due to changes in precipitation and infiltration. Normally, this fluctuation is on the order of several feet.

In the Maryland Piedmont, groundwater flow in the crystalline bedrock tends to be localized and dominated by flow to perennial streams within small topographic basins. There is relatively little inter-basin flow (LeGrand, 1988, 1989). Because groundwater flow in the bedrock aquifers occurs primarily in fractures, and because these fractures generally decrease in size and interconnectedness with depth, the zone of significant bedrock groundwater flow also decreases with depth. The base of the zone of useable water is diffuse and variable. For the Piedmont province as a whole, LeGrand (1988) indicates that useable amounts of groundwater are rarely obtainable from below a depth of approximately 400 feet.

# Section 3
# Review of Water Quality Data

We have reviewed water quality data from all of the public water systems described in this report. The initial data was supplied electronically to SSP&A from the MDE Water Supply Program database. These data are the results of regular sampling events from 1990 to 2002, with most of the analyses spanning 1996 to 2002. Approximately 25,000 records were in this electronic database, with the majority (~75%) representing volatile organic compounds, about 12% representing synthetic organic compounds, with the rest representing inorganic compounds and bacteriologic analysis (Table 3, Figure 4).

In addition to the electronic files, paper records of the analytical results were reviewed at MDE's offices in order to validate significant results and perform a quality control check on the database. For the non-transient systems, all detections greater than 50% of a relevant Maximum Contaminant Level (MCL) were verified with paper copies. Similarly, the complete electronic data set was verified for 3 systems (5% of the total number of systems).

As a result of this review, 426 additional records were added to the working database. Most of these records were recent sampling events not yet entered into electronic format. In particular, two systems recently added to the PWS list (PWSID 1030087 and 1030091) had not been sampled prior to summer 2002. A total of 399 analyses were added to the working database for these two systems. The remaining records represented sampling events that were apparently missed during data entry. A total of 38 records were corrected for the non-transient systems. These were primarily corrections to results of follow-up coliform sampling. Resulting changes to the overall picture of water quality were minor.

For Public Water Systems sourced in groundwater, MDE's Source Water Assessment Program requires that if a contaminant is detected at greater than 50% of its regulatory concentration limit in 10% or more of the data, then a detailed analysis will be completed for that contaminant. The following contaminants are considered in the assessment:

- Volatile organic compounds (VOCs)
- Synthetic organic compounds (SOCs)
- Heavy metals
- Nitrate/nitrite
- Cyanide
- Asbestos
- Radionuclides
- Total/Fecal Coliform
- Protozoa, and
- Viruses.

The current assessment is limited by the data available in MDE's and Baltimore County's files. Since cyanide, asbestos, protozoa and viruses are not routinely analyzed or reported for these systems, there are no data with which to make an assessment. The other contaminants are addressed below. Many of the records represent samples of water at the point of use, often subsequent to treatment. As a result, these results must be interpreted as an indicator of source water quality with caution.

## Nitrate

Nitrate ( $NO_3^-$ ) is a naturally-occurring form of nitrogen dissolved in groundwater. Its concentration in groundwater depends upon the nature of soil and/or bedrock through which groundwater has traveled, as well as the groundwater conditions at the sampling location. Depending upon the groundwater conditions, nitrate and other nitrogen ions (e.g. nitrite and ammonia) may be converted into each other through chemical reactions known as oxidation-reduction, or redox reactions. These reactions can change the measured concentrations of nitrate in response to changing environmental conditions. In general, nitrate is the most stable form of nitrogen in shallow, oxygen-rich groundwater.

Elevated levels of nitrate may pose a health risk to humans and livestock, particularly for newborn infants. As a result, the U.S. Environmental Protection Agency (US EPA) has set an MCL of 10 mg/L for nitrate in drinking water. Public water systems routinely analyze for nitrate during sampling events. Two of the primary man-made sources of nitrate to groundwater are septic systems and fertilizers. Both of these sources provide nitrogen compounds that may ultimately be converted to nitrate.

For the non-transient, non-community PWS in Baltimore County, there were 880 analyses of nitrate and/or nitrite in water sampling data (Tables 4 & 5). Of these, 260 (36%) of the samples exceeded one-half of the MCL. Of the 46 systems, 24 systems (52%) recorded at least one result exceeding one-half the MCL, although only two of these systems (4%) had ever exceeded the existing regulatory limit of 10 mg/L (Table 6; Figure 5).

These results are consistent with those reported by the Maryland Geological Survey in 1998 (Bolton, 1998). In that study, water samples from 112 wells in the Piedmont province were sampled for a variety of organic and inorganic contaminants. About 5% of these samples had nitrate levels exceeding the MCL, and about 36% of the samples exceeded one-half the MCL.

Since there are generally a large number of samples recorded for each facility, it is also possible to examine the results of each system individually. Twenty-one (21) of the systems, or 46% exceeded one-half of the MCL in more than 10% of samples (Table 5).

## Heavy Metals

Heavy metals are naturally occurring elements in rocks and soils that may also be present as dissolved ions in groundwater. Like nitrate, the concentration of a specific metal in groundwater depends not only on environmental sources for the metal, but also the groundwater redox conditions at the measuring point. Common sources of heavy metals in drinking water may include rocks and soils that contain metals at “background” levels, or in more concentrated forms such as metal ores. Man-made facilities such as waste disposal sites or factories can also be potential sources of metal to groundwater. At such sites addition of acids or other liquids to the subsurface may alter the natural concentrations of heavy metals.

The non-transient, non-community PWS in Baltimore County, were generally sampled between 1 and 5 times each for heavy metals (exclusive of copper and lead; Tables 4 & 7). Of these, arsenic, barium, and thallium were each detected at least once at a level greater than half their respective MCLs (Table 8). However, the total number of detections was small, and did not exceed the 10% criteria. These detections likely represent natural geochemical conditions in the bedrock and alluvium.

In water pumping, storage, and distribution systems, two heavy metals, copper (Cu) and lead (Pb) may be introduced into the water from the interaction of corrosive waters and piping. If not flushed sufficiently, these metals may be present at the tap. Elevated levels of lead and copper can cause serious health problems, particularly in children. As a result, non-transient non-community PWS may be required to analyze water samples for copper and lead under EPA’s “Copper and Lead Rule” implemented in 1991.

Copper and lead in groundwater generally do not represent source water contamination issues, and the results of analyses under the “Copper and Lead Rule” program are tracked separately from other inorganic contaminants. There were, however, 8 PWS for which data were available for review (Tables 7 & 8). In three out of four cases, one-half the MCLs were exceeded for both metals. The most likely explanation for these results is the presence of water distribution systems with copper piping and/or lead connections that can contribute metals to the water supply. These elevated readings may reflect the need for additional treatment of the water supply.

## Radiological Parameters

Radiological parameters are those that measure the radioactivity emitted by decay of unstable isotopes. Some isotopes are naturally occurring, and others may be man-made. Naturally-occurring isotopes such as uranium-234 or uranium-238 may also be concentrated by ore processing or enriching activities, thereby enhancing the possibility of elevated levels in groundwater.

The most common analytical parameters used to measure radioactive isotopes in drinking water are

- Gross alpha,
- Gross beta, and
- Radon-222 concentration.

Gross alpha and beta are measures of the total radioactivity via "alpha-decay" and "beta-decay" mechanisms. A variety of different isotopes decay by these mechanisms. In contrast the measurement of Radon-222 represents the concentrations of only that isotope in the groundwater. The US EPA has established an MCL for the gross alpha and beta parameters, but not for radon. EPA has, however, proposed an MCL of 300 pCi/L or an alternate of 4,000 pCi/L for community water systems if the State has a program to address the more significant risk from radon in indoor air.

A total of only 4 analyses for gross alpha or gross beta have been completed on the non-transient PWS. Although one analysis of gross beta exceeded half the regulatory limit, the small sample size, prevents a meaningful interpretation of this result. Gross beta readings may reflect not only the radioactivity dissolved in water, but also the radioactivity present in suspended particles. For example, potassium-40 is a naturally-occurring, unstable isotope that is common in clay particles and is a typical source of elevated gross beta measured in turbid water.

In contrast, a total 27 samples from 22 systems were sampled and analyzed for Radon-222 (Tables 4 & 9). Of these systems, 86% exceeded one half the proposed MCL of 300 pCi/L. Twenty-three percent (23%) of samples also exceeded one-half the higher level of 4,000 pCi/L (Table 10). Radon-222 is a naturally occurring radioisotope that is generated by decay of Uranium, a common trace element in igneous and metamorphic rocks like those in the Piedmont province of Baltimore County. Relatively high levels of radon are to be expected, however, as all of the PWS in Baltimore County are in the Piedmont Province. The USGS's generalized map of radon potential (Schumann, 1993) shows that the Piedmont portion of Baltimore County has a "High" radon potential.

In his study of Baltimore County, Bolton (1998) also found that 29% of the locations (wells) sampled for Radon-222 exceeded 4,000 pCi/L. Of the data reported in that study, about 95% of the samples exceeded one-half the 300 pCi/L level.

## Volatile Organic Compounds (VOCs)

Volatile organic compounds (VOCs) are a suite of carbon-based compounds that have a similar physical property – at moderate temperatures, they tend to evaporate more readily than do other chemicals. This group of compounds includes many man-made chemicals such as chlorinated solvents (e.g. trichloroethylene and chloroform) as well as naturally occurring compounds such as benzene and carbon disulfide. Because of their similar physical properties, these compounds are often analyzed together in a single analytical "scan" via gas chromatography or gas chromatography coupled with mass spectrometry.

VOCs are common groundwater contaminants, often due to releases from underground storage tanks, factories, or other facilities that use or store concentrated chemicals. Benzene, toluene, ethylbenzene, and xylenes (BTEX) are the most soluble components of gasoline, diesel fuels, and heating fuels. As a result, they are often an indication of groundwater impacted by leaking fuel tanks. Similarly, the solvent perchloroethene is used in dry cleaning operations and may affect groundwater due to a leak in an underground tank or piping. Chemical landfills, particularly older facilties that accepted quantities of volatile organic chemicals prior to increased regulation in the 1980s, are also common sources of VOCs in groundwater.

All 46 of the PWS had been sampled at least once for VOCs. These included 61 different compounds, of which only 20 compounds with MCLs were detected (Tables 11 & 12). Of these, only 14 compounds were detected more than once. Two compounds were detected above the relevant level: methylene chloride (dichloromethane) and methyl-tert-butyl-ether (MTBE). Methylene chloride is a common laboratory contaminant. When detected by itself in this manner, it is likely to be an artifact of laboratory analysis, and not an indicator of conditions in the groundwater. MTBE is a gasoline additive that is very soluble in groundwater.

The VOC compounds detected fall into three categories. The most frequently detected compounds were chlorinated and brominated methanes such as chloroform and bromodichloromethane. These compounds are common byproducts of chlorination. They do not represent contamination in the source water area, but form by reaction of chlorine with organic compounds in the water. The US EPA has established MCLs or Action Levels for this group compounds and for some of the individual compounds, although none of the detections in these PWS exceeded the relevant levels.

The second group of compounds detected were petroleum-related compounds - BTEX (benzene, toluene, ethylbenzene, and xylene) and MTBE, a common gasoline additive. As indicated earlier, the BTEX compounds are the most soluble components of fuel oils and gasoline. Although EPA has set MCLs for the BTEX compounds, none of the detections observed here exceeded those, or one-half of those limits. EPA has not set an MCL for MTBE, although MDE has established an Action Level of 10 ug/L. Of the 29 detections of MTBE recorded, only 1 exceeded one-half the Maryland Action Level (Tables 11 & 12)

The final group of compounds detected were chlorinated solvents (e.g. trichloroethene), most of which were detected only once, at levels below the criteria considered here. These compounds may have number of sources, including degreasing operations and household wastes.

Bolton (1998) found low levels of chlorinated solvents including methylene chloride and tetrachloroethylene in 3 of the 112 locations he sampled in Baltimore County. The data from this study show VOCs (other than chlorination byproducts) in samples from 15 of the 46 systems. The vast majority of these were gasoline-related compounds at levels below one-half the MCL.

## Synthetic Organic Compounds (SOCs)

Synthetic organic compounds (SOCs) are a group of primarily man-made chemicals that are used primarily as pesticides, herbicides, and fungicides (Tables 9 & 13). Of the non-transient PWS, a total of 43 systems were analyzed for SOCs at least once, resulting in over 2,900 individual analytical records in the data reviewed here.

For those SOCs that have an MCL or EPA Action Level, there was only 1 compound for which more than 10% of the samples exceeded one-half the MCL. This was di(2-ethylhexyl)phthalate (DEHP). Other compounds detected were di(2-ethylhexyl) adipate, dalapon, and pentachlorophenol (Table 14).

Both di(2-ethylhexyl)phthalate and di(2-ethylhexyl) adipate are "plastcizers" added to plastics to increase flexibility. These compounds are present in many common household items and in food packaging. They are also common laboratory contaminants. It is extremely common for these two compounds to be detected in laboratory "blanks" (analyses of distilled water) run at the same time as the unknown samples. For the majority of detections reported here, these compounds were also detected in the lab blanks. Therefore, these results are an artifact of the analytical process, and do no have any bearing on the source water quality.

Dalapon is an herbicide, and pentachlorophenol is a pesticide and wood preservative. As each of these compounds was only detected once at each of two PWS, it is difficult to draw any conclusions from their detection.

## Total Coliform and Fecal Coliform

Total coliforms are a group of closely related, mostly harmless bacteria that live in soil and water as well as the gut of animals. The extent to which total coliforms are present in source water can indicate the general quality of that water and the likelihood that the water is contaminated with fecal matter from animals or humans. Total coliforms are currently controlled in drinking water regulations (Total Coliform Rule) because their presence above the standard indicates problems in treatment or in the distribution system. EPA requires all PWS to monitor for total coliforms in distribution systems. If total coliforms are found, then the public water system must further analyze that total coliform-positive sample to determine if specific types of coliforms (i.e., fecal coliforms or *E. coli*) are present.

The frequency of sampling for PWS depends upon the number of people served by the system, the system's water quality history, and waivers granted by the state. The systems covered by this report are generally sampled monthly or quarterly.

Of the 46 subject PWS, there were fifteen systems that had at least one positive total coliform sample (Tables 15 & 16). Of these, six systems had more than one positive result. These were generally, but not exclusively, the systems for which more than 10% of the total coliform samples tested positive. Of these, only two systems have tested positive for fecal coliform, in either routine or repeat sampling. The presence of fecal coliform indicates that the system is in communication with sources of fecal matter from human or animal wastes. This contamination may occur in the subsurface as waste migrates away from septic systems or areas of concentrated animal waste like feed lots. More likely, it results from surface contamination due to poor surface seals, or problems with piping and/or treatment.

MDE collected and analyzed groundwater samples collected directly from some wells, bypassing any surface treatment and/or piping. These data (Table 17) include coliform samples from 19 of the systems considered here. Six of these 19 systems had tested positive for coliform bacteria at the point of use at least once (Table 15), but none yielded a positive result when tested directly from the well (source). This supports the inference that a significant proportion of positive coliform results are due to above-ground, rather than subsurface conditions.

Baltimore County and the state of Maryland require that water supply wells be located no closer than 100 feet from septic systems. However, leaks from septic systems, soil and rock types present, direction of groundwater flow, and depth to the water supply well all influence the degree of susceptibility of the system to contamination from septic systems.

# Section 4
# Source Water Assessment Areas

A fundamental part of the Source Water Assessment is the determination of a Source Water Assessment Area (SWAA). The goal of this determination is to estimate the area from which the well draws water, and evaluate the land use and presence of specific potential contaminant sources (PCSs). The following sections describe the methods used, and the results of that determination. Maps of each system showing its SWAA are included in Appendix A.

Maryland's Source Water Assessment Plan requires that every PWS be visited, that the sources (wells) for that system be located with GPS equipment to a specified accuracy, and that all potential contaminant sources in the vicinity be identified. In addition, the land use of the area surrounding the system must be verified, the most recent sanitary survey for the system reviewed, and each well visually inspected. Finally, a Source Water Assessment Area is determined for the site by a method based upon geologic conditions and the amount of water pumped from the system.

## Systems and Sources - Review and Validation

The list of PWS and Sources was obtained from the MDE Water Supply Program in late 2002. Prior to any site visits, paper files in the MDE's offices, and Baltimore County Health Department offices were reviewed and the working database updated. Types of information updated from these files included the addition of new wells, well depths, well names and contact information for the system owners/operators. During review of the sanitary surveys, all deficiencies were noted in the working database.

## Site Visits and Development of SWAAs

Once the site operator/owner's permission was granted, each system was visited. At each system, all sources were located, PCSs were verified and/or added to the list, and each well head was visually inspected. The area surrounding the system was visually surveyed for land use and PCSs. During site visits, geographic coordinates were obtained for each well and PCS using Trimble® GPS instruments. These coordinates were post-processed using data from a base-station of known fixed position. The accuracy of these locations is generally within several feet. When wells were situated inside buildings or otherwise inaccessible, geographic coordinates were estimated using aerial photographs and coordinates collected from a known position. The coordinates obtained in the field comprise the basis for development of the final SWAAs.

Maryland's SWAP defines the methods to be used for determining SWAAs, based upon the local hydrogeology and the average groundwater usage of each system. All of the non-transient PWS in Baltimore County produce water from unconfined fractured bedrock aquifers, and are therefore assigned Source Water Assessment Areas (SWAAs) defined by a 1,000 foot radius from the active wells. This SWAA is based upon the calculated land area needed to provide a 10,000 gpd yield, assuming 400 gpd/acre recharge and a safety factor. Using the coordinates collected in the field, 1,000 foot radius buffers were generated for each source. These were then merged to create the final SWAA for each system. The SWAAs are represented on the maps in Appendix A.

## Land Use

Maryland's SWAP requires that the following land uses be considered:

- Agricultural lands
- Forested lands
- Residential
    - Private Sewage Disposal Systems
    - Areas in Sewage Service
- Industrial areas
- Commercial areas
- Public Lands, and
- Mined Lands.

Evaluation of land use was initiated by obtaining Geographic Information System (GIS) files for Baltimore County from the Maryland Departments of the Environment and Planning. This information included sewer coverage, year 2000 Land Use data, and digital orthoquad aerial photographic images (Figures 6 & 7). The land use was confirmed for each system individually during site visits.

Land use within each SWAA typically included mixtures of low-density residential with agricultural areas, and institutional areas such as the schools and churches served by the PWS are also common (Table 1; Appendix A). As can be seen in Figure 8, the dominant land use in the majority of SWAAs is either residential (41%) or agricultural (30%). As a separate measure, the actual land use within each SWAA was visually estimated base upon the Year 2000 aerial imagery and field notes from the site visits. In this interpretation, the land use for residential and agricultural are similar (34% versus 27%), with significant percentages due to forested land, commercial land, and institutional lands (churches, schools).

The sewer coverage for Baltimore County is indicated on Figure 7. Both the existing coverage and planned coverage within the 6-year capital planning program are indicated. None of the non-transient systems discussed is served by public sewers. As a result, the SWAAs of these systems typically encompass not only the septic systems of the PWS, but also adjacent residential and institutional properties. These septic systems were not individually catalogued during the Source Water Assessment.

## Potential Contaminant Sources (PCSs)

Under Maryland's SWAP, for PWS sourced in groundwater, the following types of PCSs must be identified and inventoried:

- Ground Water Discharge Permits
- Land Disposal Sites (e.g. Landfills, CERCLA sites)
- Leaking Underground Storage Tanks
- Underground Storage Tanks
- Coal Mining Areas, and
- Salt Water Intrusion.

As a starting point, data from the following databases were used:

- USEPA's CERCLIS database,
- Maryland's UST database,
- Maryland's database of groundwater discharge permits
- Maryland's database of controlled hazardous substance (CHS) generators, and
- Maryland's database of pesticide dealers.

An attempt was made to verify each of these PCS in the field and obtain GPS coordinates for the location. If a PCS had been removed or could not be verified, it was removed from the list. When it was not possible to obtain permission to directly observe a PCS on private property, the coordinates were estimated based upon the property location.

During site visits, the area around each system was surveyed for additional PCSs which were then added to the database. The majority of new PCSs were fuel oil and gasoline station underground storage tanks (Tables 18 & 19). In some cases, underground storage tanks were noted as "permanently out of service" in the MDE database. If we could not confirm that the tank had been removed from the ground, then it was included as a PCS. Underground storage tanks for propane were identified at a number of locations, but these were excluded from the analysis due to their minimal likelihood of causing groundwater contamination.

Of the SWAAs for the 46 systems, nearly half, or 46% contained at least one underground storage tank containing heating oil, gasoline, and/or diesel fuel. One additional SWAA (or 2% of the total) encompassed an out-of-service tank (Figure 8). About 13% of the SWAAs encompass at least one documented CHS generator. These include telephone substations, hazardous waste sites, and industrial sites. The risks associated with these specific PCSs will vary depending upon the use. CHS generators include any location that has had a "pick-up" of hazardous material by a registered transporter of hazardous wastes.

# Section 5
# Susceptibility Analysis

Under MDE's SWAP, the four factors to be considered in susceptibility analyses are:

- Presence of Contaminant Sources within the SWAA
- Natural conditions in the aquifer/watershed capable of removing and/or reducing the impact of contaminants before reaching the sources
- Likelihood of contaminants or conditions changing the natural equilibrium, thereby affecting safety of a water supply, and
- Integrity of the well.

The susceptibility analysis for the 46 non-transient, non-community PWS in Baltimore County is summarized in Figure 9. As all of the systems are sourced within fractured bedrock aquifers, the susceptibility analysis treats the hydrogeological environments of all systems in a similar manner. Each group of potential contaminants is evaluated separately, consistent with the discussion of water quality data above.

## Potential and Actual Contaminant Sources

As discussed above, nearly half of the SWAAs contained at least one underground storage tank containing heating oil, gasoline, and/or diesel fuel. About 13% of the SWAAs encompass at least one documented CHS generator, primarily telephone substations. These two types of PCSs are primarily sources of VOCs and/or SOCs. With increasing development in Baltimore County, it is likely that number of these types of PCSs will be increasing.

The land use for non-transient PWS is predominantly residential and agricultural, and in areas without county or city sewer systems. More than 95% of the systems include at least some residential land within their SWAA. As a result, coliform bacteria and nitrate are both likely to be potential contaminants sourced within the SWAAs. Even when septic systems associated with the PWS are not within the SWAA, septic systems associated with other residences or institutions are likely to be encompassed by the SWAA.

Radon-222 is a naturally occurring isotope that is generated by bedrock containing trace amounts of uranium and thorium. All of the non-transient systems in Baltimore County are situated in an area of high radon potential.

## Transport / Natural Attenuation

Natural groundwater conditions for the systems being considered are dominated by downward transport of precipitation through alluvium and bedrock (Figure 3). Some portion of this water is captured by the pumping wells within the SWAAs, and then pumped back to the surface for use.

VOCs and SOCs may migrate as dissolved phases in groundwater, or, if released in large quantities from tanks, as a separate phase that is lighter than, or heavier than water. For the Baltimore County systems, the greatest potential risk appears to be from the VOCs contained in gasoline, diesel fuel, and heating oil. The most soluble compound in these fuels – BTEX and MTBE, will migrate with groundwater though alluvium and fractured bedrock. The BTEX compounds do, however, tend to degrade in the subsurface in reactions that are mediated by microbes present naturally in the soil. As shown by surveys in Texas and Florida, releases of BTEX tend to produce contaminant plumes less than 250 feet in length (Weidemeir et al., 1999). When large amounts of free product is released, or when special conditions exist (e.g. very permeable shallow aquifers), the plumes may be longer. In contrast MTBE, which is very soluble in groundwater, does not degrade as rapidly as do the BTEX compounds, and thus will form longer contaminant plumes (USEPA, 1998).

Many SOCs used as pesticides and fungicides degrade in the environment with relatively short half-lives. Some can, however, persist in the environment and travel with groundwater if present in sufficient concentrations.

Nitrate will travel with groundwater as the predominant dissolved ion of nitrogen. Due to changing redox conditions, it may be altered to nitrite, or removed from the groundwater as nitrogen. Generally speaking, under the unconfined groundwater conditions associated with these PWS, nitrate will be the most stable form of nitrogen and will travel with groundwater.

Coliform bacteria travel with groundwater as suspended particles. Generally, bacteria from a shallow source such as a septic leach field will travel downward through the unsaturated zone, their concentration being attenuated with time and distance from the source. Bacterial transport is limited by filtration in the soil, the bacterial life span, the rate of movement, and other factors (Bitton & Gerba, 1984; Hagedorn, 1984; Rahm, 1996). The distance of transport will be site-specific, but in properly designed and operating septic systems most bacteria are generally filtered out within several to several tens of meters.

It is most likely that fecal contamination of public water systems is due to failure of surface well seals, mixing of water in the supply/distribution system, and/or incomplete system disinfection. It is possible under special circumstances, however, (e.g. in karstic terranes or very shallow groundwater\) for coliform from surficial sources to reach the intake of these wells via subsurface transport.

Six of the non-transient systems are screened within a geologic unit, the Cockeysville Marble, which is locally karstic. Two of these systems did report more than 10% of analyses positive for Total coliform; although neither system tested positive for fecal coliform. These systems may be more prone to fecal coliform contamination from surficial sources, but the data reviewed here do are isufficient to be conclusive.

Radon-222 travels with groundwater as a dissolved gas. It poses a risk to humans primarily when removed from the ground and concentrated in indoor air. Radon transport is not significantly attenuated in the subsurface.

## Impact of Contaminants on Natural Equilibrium

At part of the susceptibility analysis, it is necessary to consider the possibility of contaminants altering subsurface conditions in such a way as to enhance or mitigate the risk to the groundwater sources. For the contaminants evaluated above, the greatest risk posed to the alternation of natural conditions will be modification of the natural redox conditions in the shallow soil and groundwater. These modifications to subsurface chemistry will primarily affect the contaminants themselves. There is, however, some risk that other redox-sensitive contaminants such as metals may be influenced.

For example, BTEX compounds released into the subsurface will degrade through microbially-mediated reactions that consume oxygen and potentially other electron acceptors. At high concentrations, particularly if there is a significant release of free product to the environment, the natural attenuation of these compounds may substantially alter redox conditions near the release (e.g. Weidermeir, et al., 1999). Similarly, the release of large amounts of reduced nitrogen (ammonia compounds) to the environment can substantially alter redox conditions as all available oxygen in the groundwater is used up in redox reactions. The actual impact on subsurface conditions, will depend upon the balance between local rates of groundwater infiltration, contaminant concentration, and rate of groundwater migration.

Altered redox conditions are most likely to impact conditions within the contaminant plume and lessen beyond. Considering the 46 PWS as a whole, it seems unlikely that any alteration of redox conditions due to a localized release will significantly alter the contaminant transport properties of the subsurface or significantly affect groundwater quality. Local conditions within a single SWAA may differ, but there is insufficient information with which to identify any specific risks.

## Integrity of the Wells

As part of the records review for this process, the most recent sanitary survey was reviewed for each system. In addition, during site visits, the well head was observed for each source, and deficiencies were noted.

Sanitary surveys noted deficiencies or other conditions for 21, or about one third of the systems (Table 20). The majority of these deficiencies, however, were not specifically related to well integrity. The majority of negative comments related to the need for certified operators and/or existing restrictions on water use or treatment due to bacterial or copper/lead levels. For only two systems were physical deficiencies noted: the well pit was flooded for PWS 103006, and the well cap was loose for PWS 1030054.

During site visits for this project, some additional issues were noted. Most well heads were in good condition, although a number were located in sumps that were inaccessible and present the risk of flooding similar to that reported for PWS 103006 (Appendix B). A number of wells are located in trafficked areas, but lack protective bollards, presenting the risk of damage due to vehicles or earth moving activities.

# Section 6
# Recommendations for Protecting Water Supply

Review of water quality data for the Baltimore County non-transient, non-community systems indicates that the overall water quality is good. There are relatively few systems that have experienced exceedances of specific water quality criteria.

Due to natural conditions in the Piedmont of Baltimore County, radon is a significant concern to all non-transient PWS. In addition, the inventory of potential contaminant sources indicates that nearly half the SWAAs may be susceptible to contamination from fuel oil or gasoline tanks; this number is likely to increase with increasing development of rural Baltimore County. A smaller percentage is also susceptible to VOC contamination from surficial sources such as CERCLIS sites and CHS generators. Under current conditions, nearly all the systems are susceptible to elevated nitrate and coliform bacteria, depending upon local land use and well integrity conditions.

The following recommendations are made for protection of the non-transient, non-community PWS in Baltimore County.

## Recommendations for System Owners and Operators

- Maintain the sanitary integrity of the well, treatment system(s), and all above-ground portions of the water-supply system. The primary route of bacterial contamination is through the surface, and thus special attention should be paid to proper maintenance and disinfection,
- For surface completions that are unprotected by bollards or other device, particularly those in high-traffic areas, install a physical barrier to well damage,
- Where feasible, wells sited within below-ground vaults should have the casing raised above ground level, and the area around the wellhead grouted and sealed to prevent flooding in accordance with Maryland well construction regulations,
- Where raising the casing is not possible, wells in underground vaults should be tested for coliform and nitrate immediately after rainfall events, as well as at dry times, in order to evaluate the risk of a poor surface seal.
- Wells that are potentially at risk for contamination by VOCs should be periodically tested for VOCs to ensure that none has occurred.
- Be sure that any additions or changes to septic systems meet or exceed county requirements for distance from sources of groundwater,
- Be aware of changing land use within the SWAA for your system, and consider making changes to groundwater monitoring as appropriate. For example, if a new service station is constructed within the SWAA, consider periodic testing for BTEX and MTBE,
- Include periodic radon testing within your sampling routine to determine if your system is affected; if so, take appropriate measures to mitigate the potential hazards associated with elevated radon (e.g. venting of rooms),

- Ensure that routine monitoring of groundwater for nitrate and coliform bacteria are completed at least as often as required by regulatory agencies; if exceedances are found, then take immediate action to identify specific potential sources, mitigate the source issue, or enhance treatment as necessary.

## Recommendations for Regulatory Agencies

- Consider modifications to monitoring requirements to address potential contamination from:
    - BTEX and MTBE
    - VOCs

  Either for selected systems shown to be at risk, or for all systems.
- Expand monitoring for Radon-222, and provide information to system owners on methods of radon abatement for the water supplies,
- Provide recommendations and support to system owners/operators for enhanced protection of surface completions through
    - Protection of well heads from physical damage, and
    - Replacement of surface seals/caps shown to be faulty
    - Prioritization of attention to systems with known problems
- Encourage all county residents to reduce nitrogen loading through proper siting and maintenance of septic systems, use of new technologies, and through appropriate use of fertilizers on agricultural lands.
- Source Water Assessment Areas should be considered during planning of land use, e.g. in revising zoning, and providing permits for construction of facilities likely to be Potential Contaminant Sources (e.g. gas stations, industrial facilities).

# Section 7
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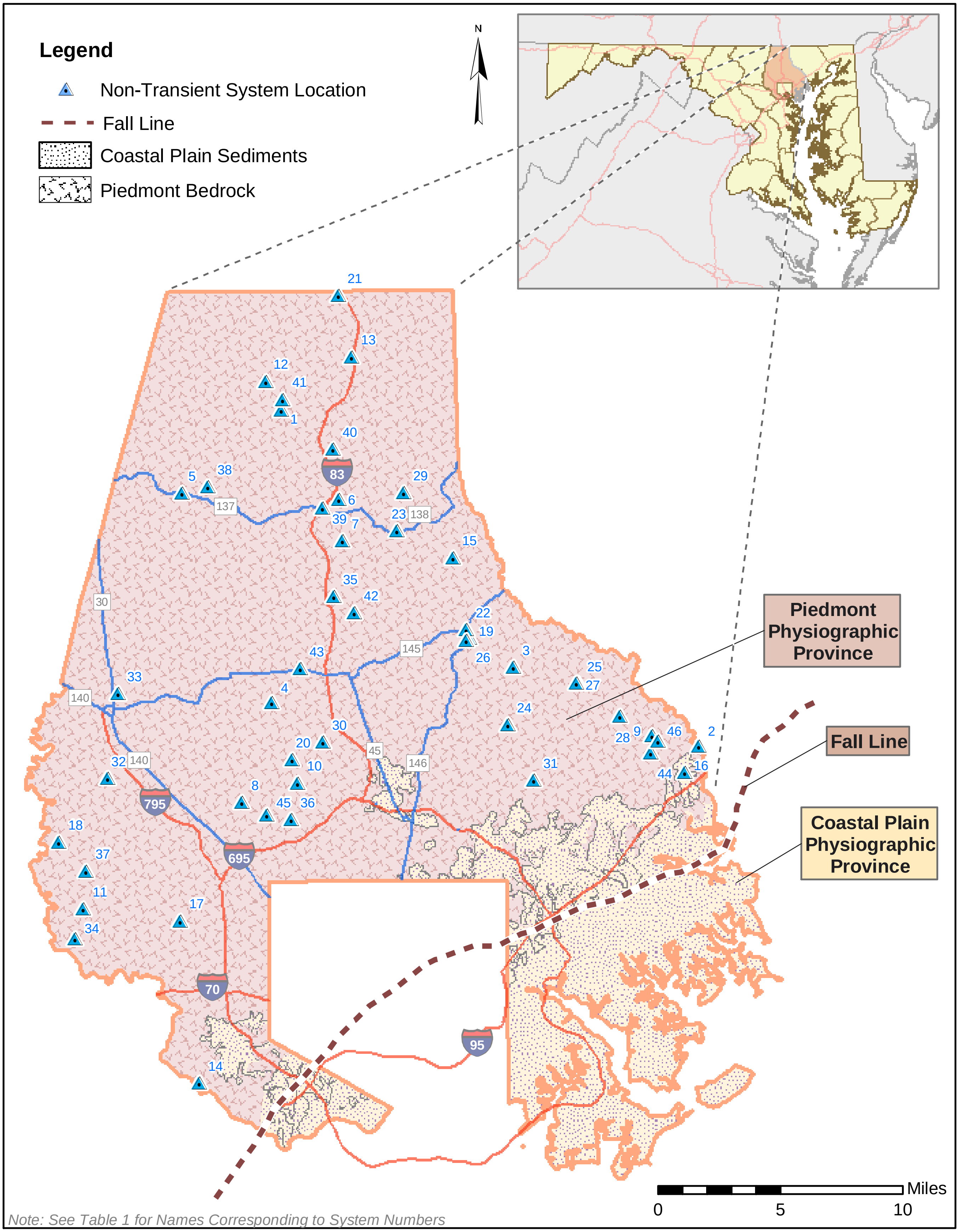


**Figure 1** Map of Non-Transient, Non-Community Public Water Systems in Baltimore County

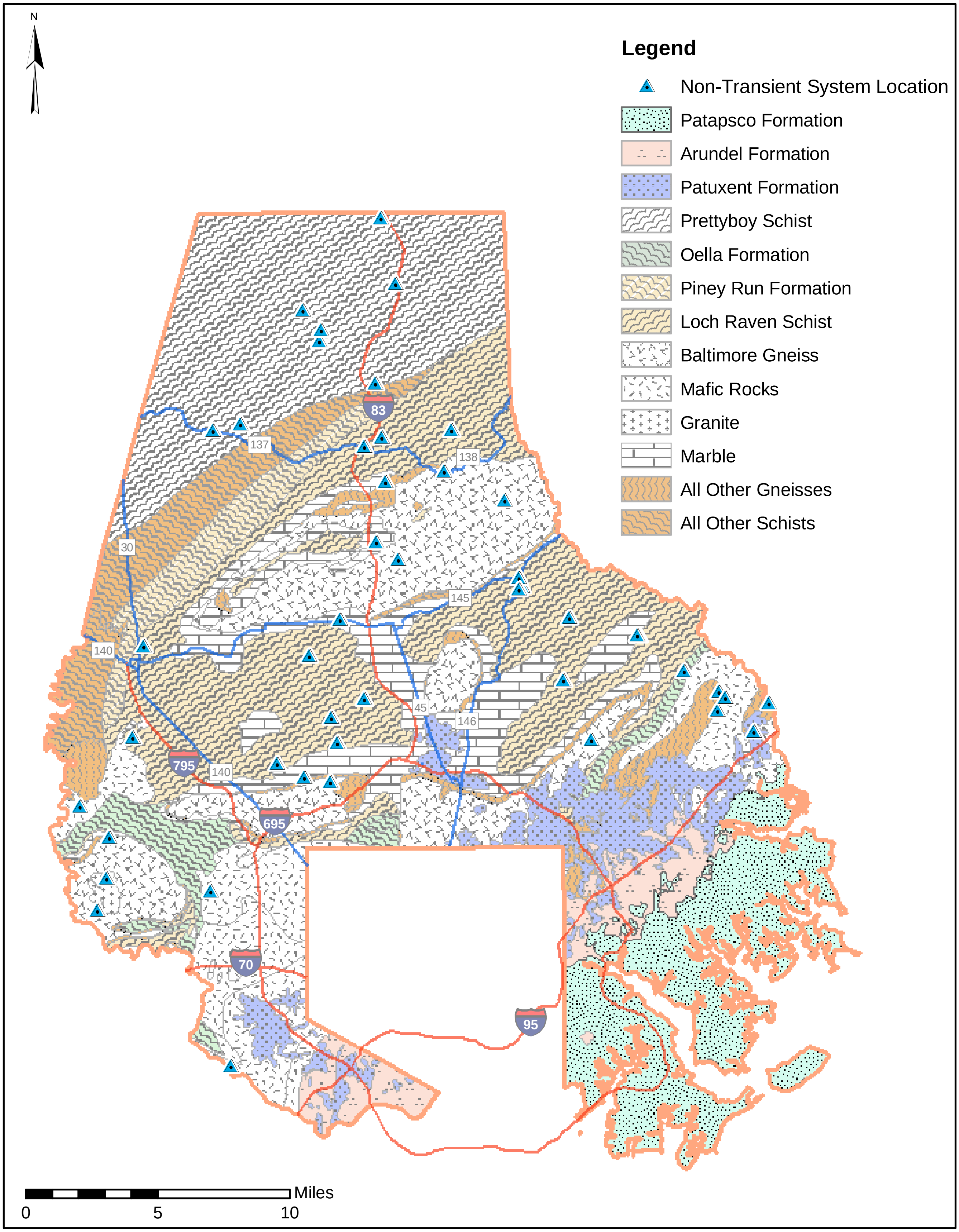


**Figure 2** Bedrock Geology Map of Baltimore County

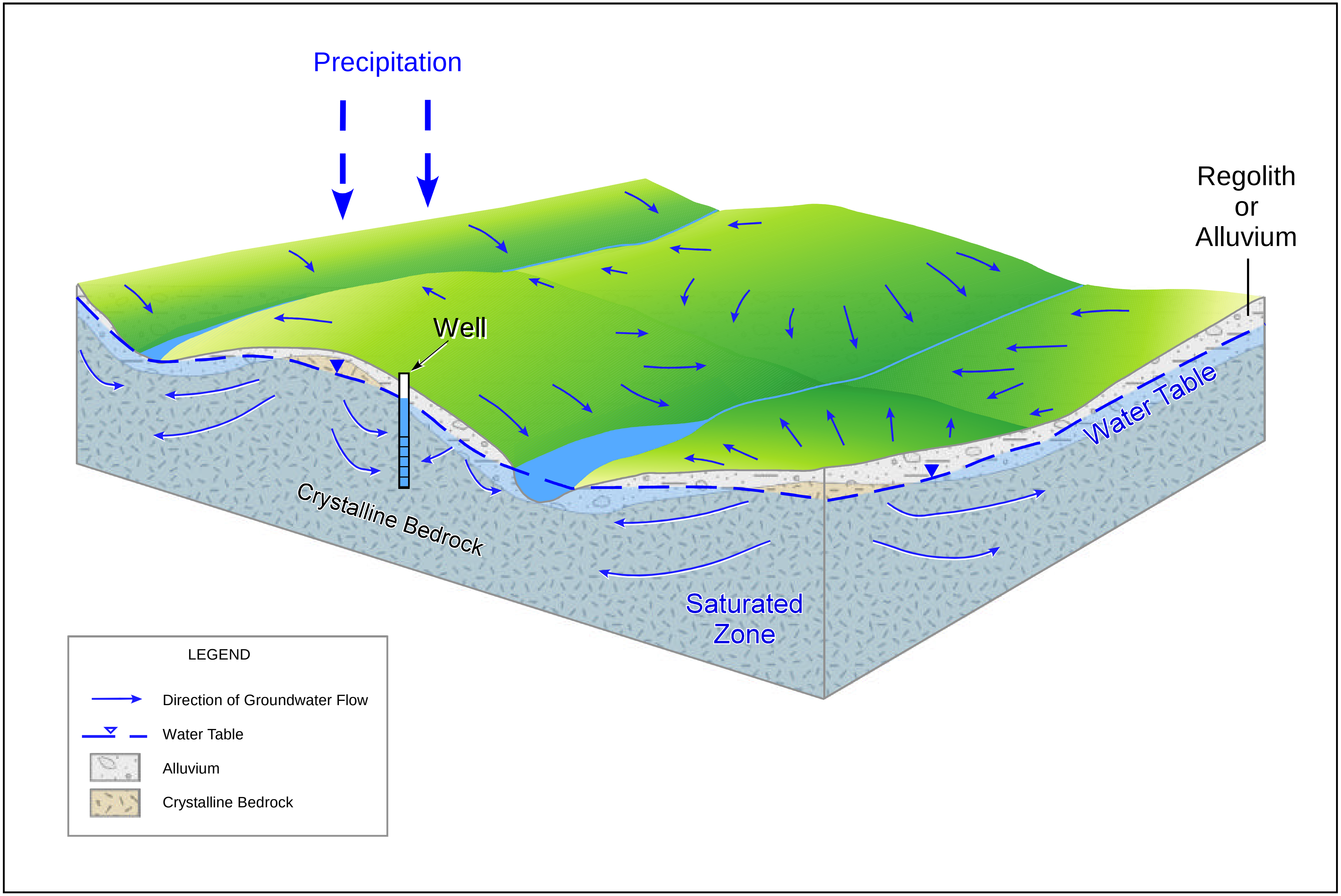


**Figure 3** Schematic Hydrogeologic Conditions in Piedmont of Baltimore County (after Le Grand, 1989)

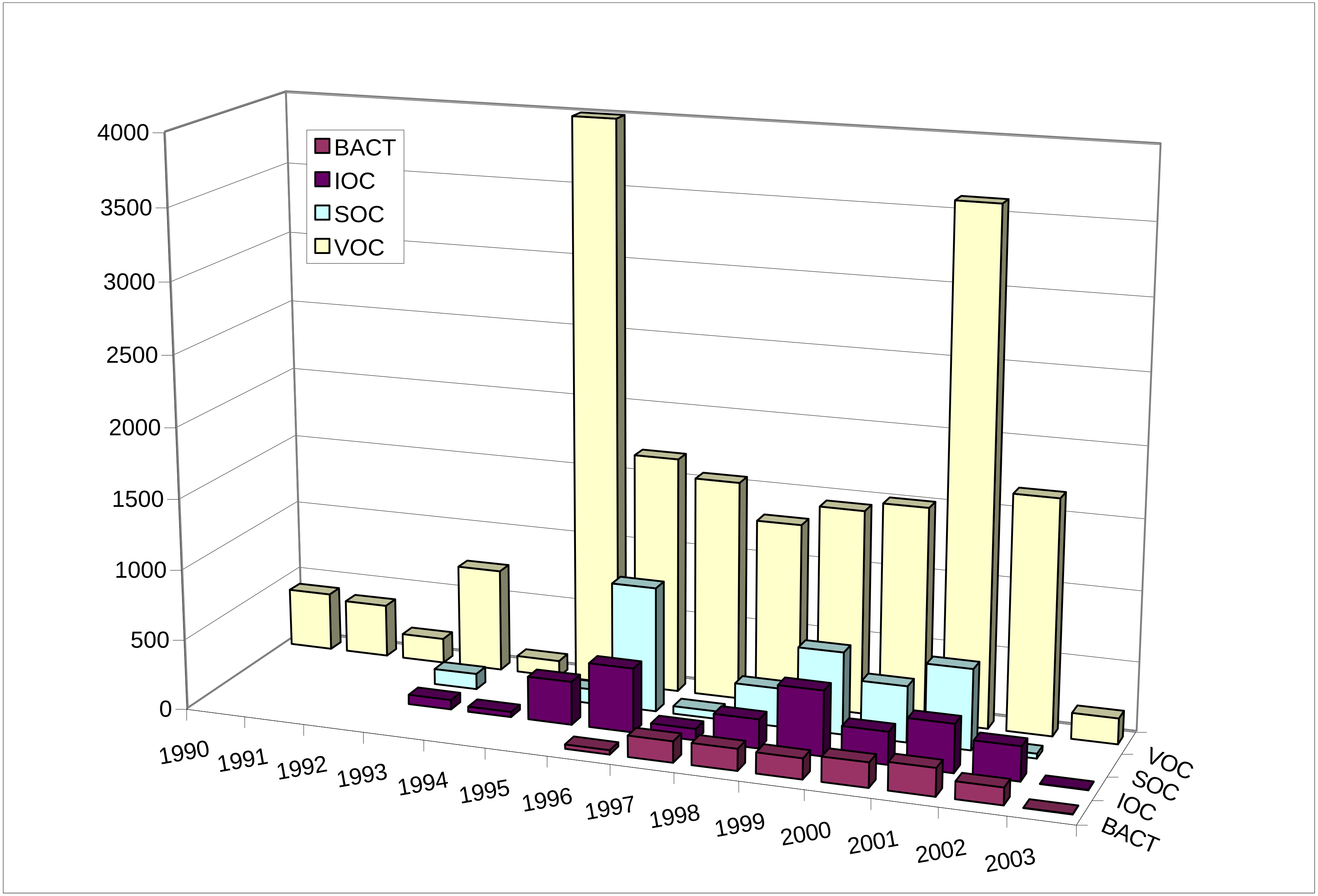


**Figure 4** Water Quality Data - Number of Records by Year

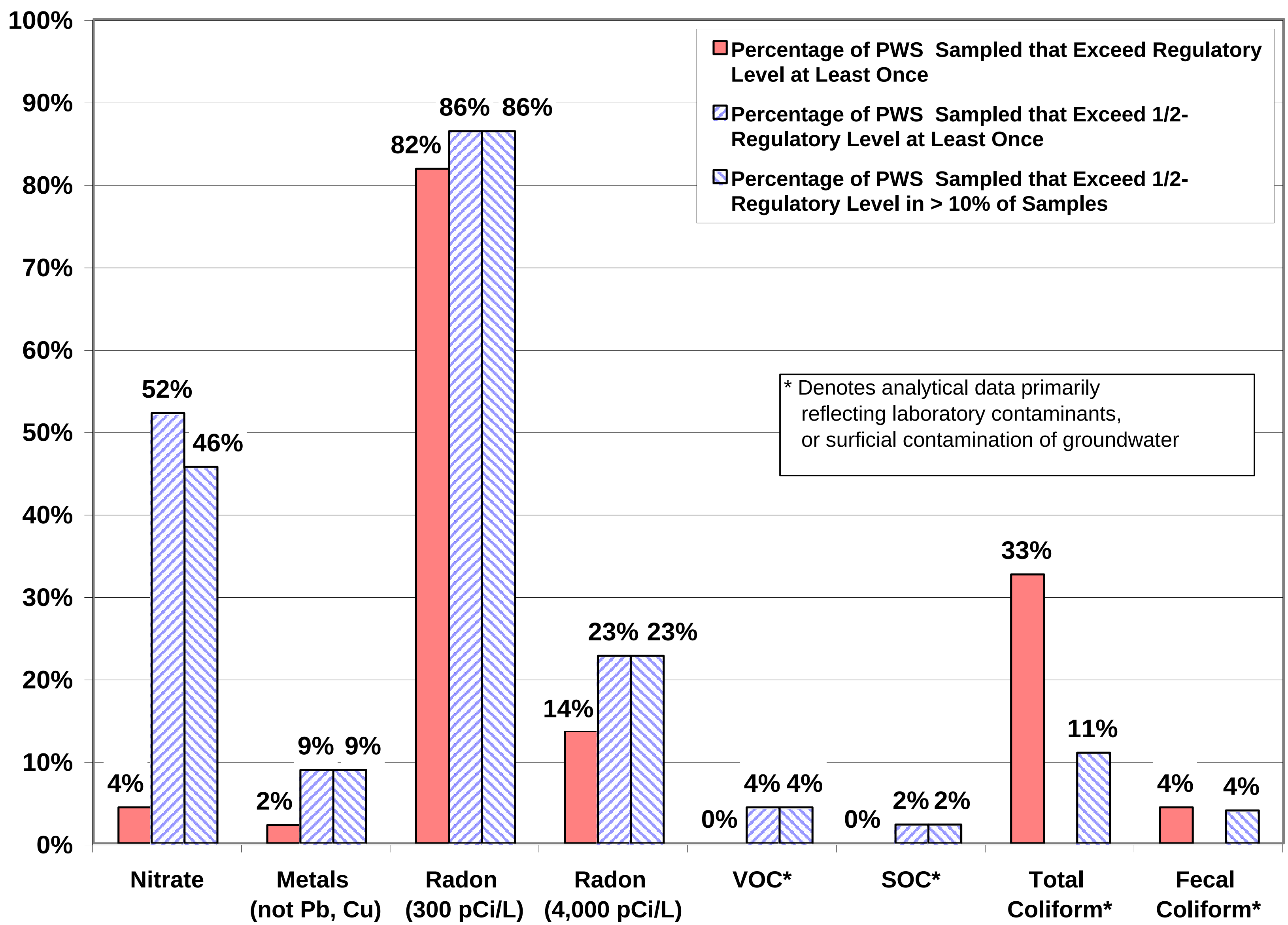


**Figure 5** Summary of Comparsion Between Water Quality Data and Relevant Regulatory Limits

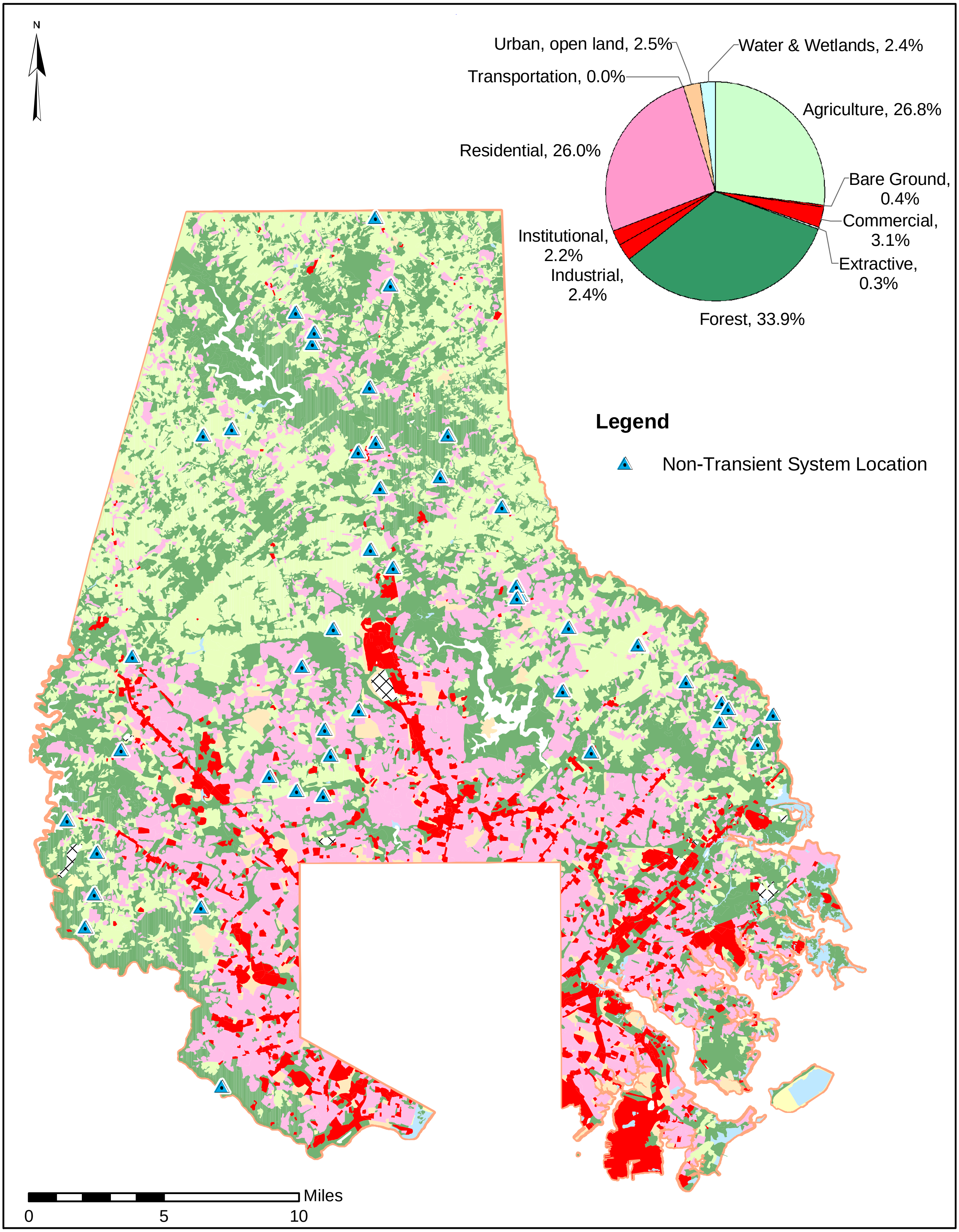


**Figure 6** Land Use in Baltimore County

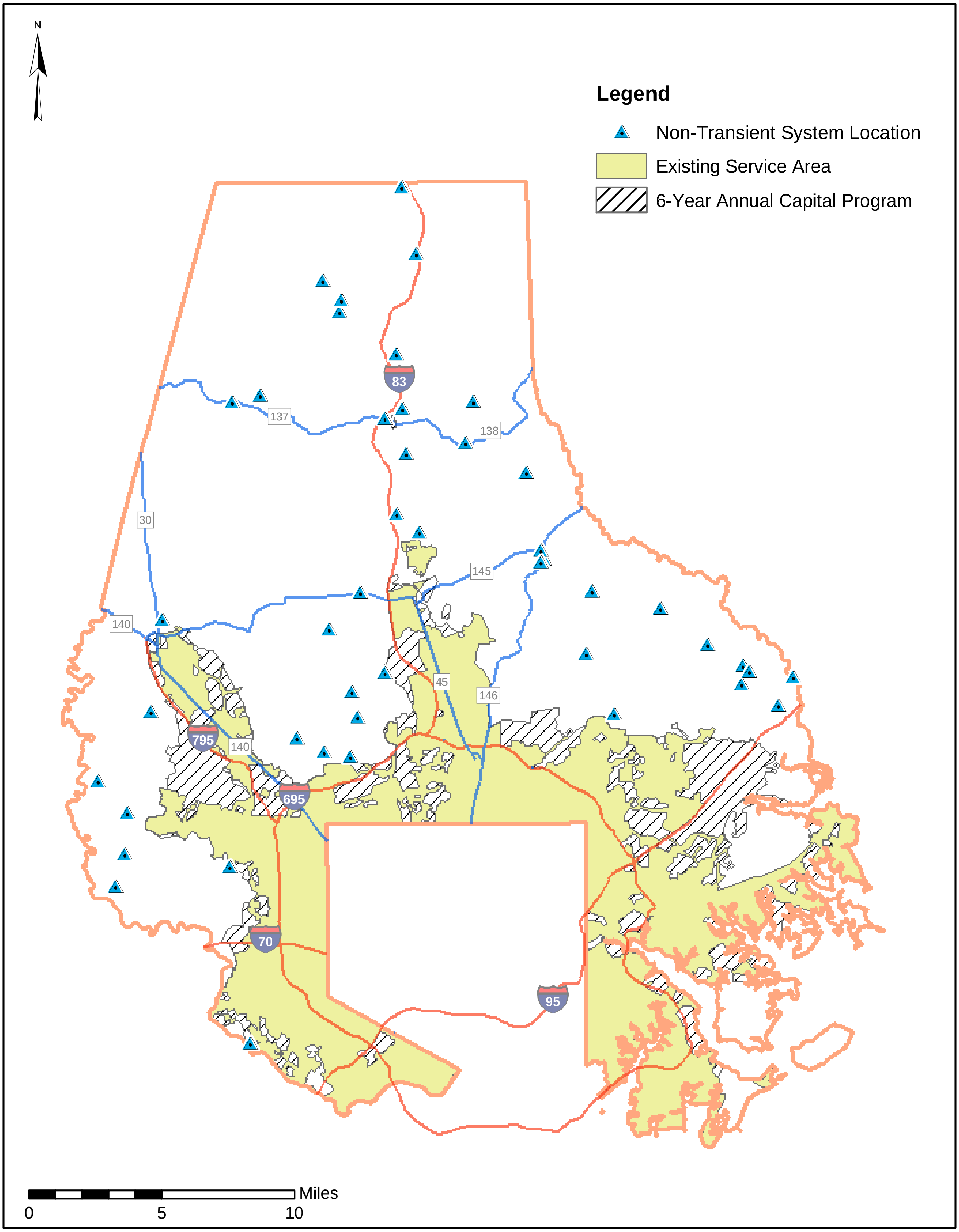


**Figure 7** Extents of Existing and Planned (6-Year Capital Program) Sewer Service in Baltimore County

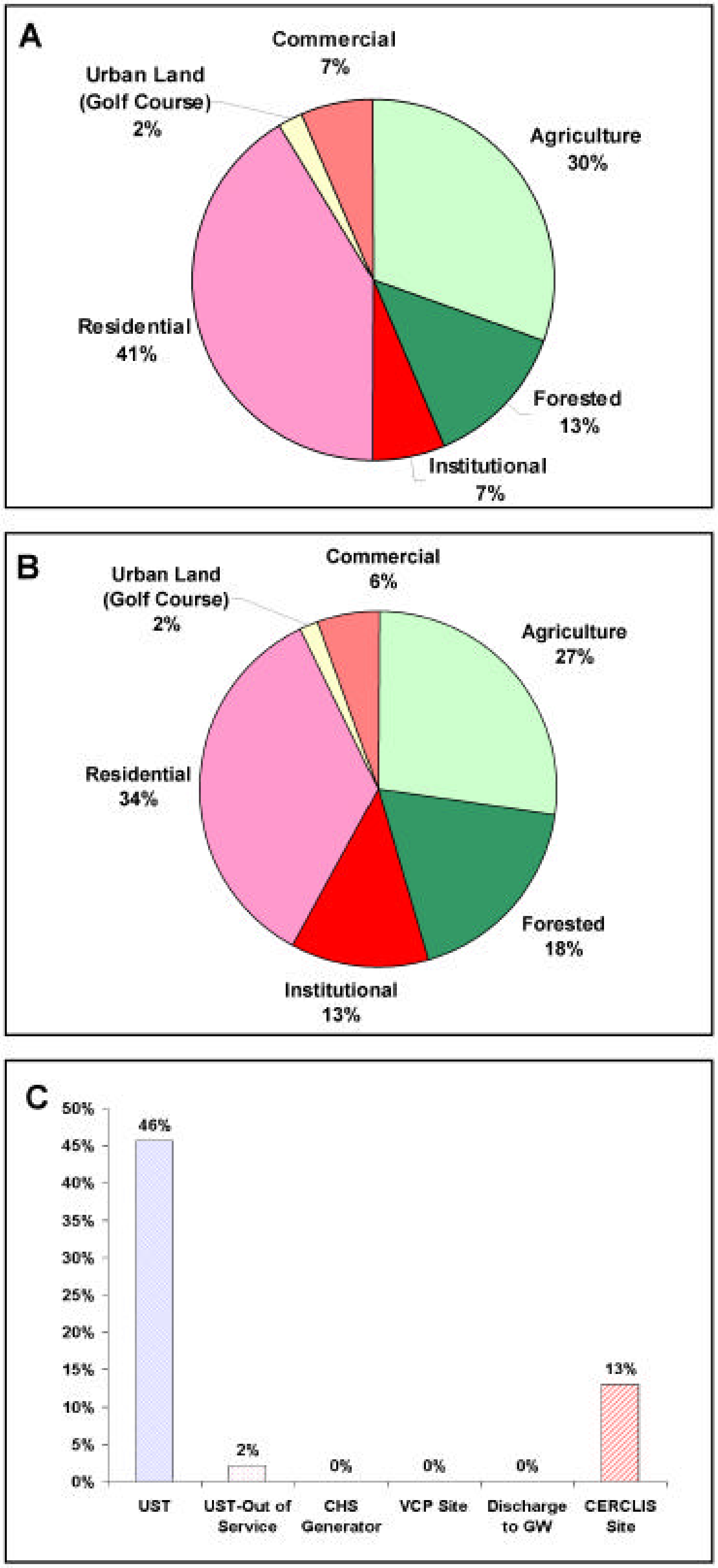


**Figure 8** Land Use Within SWAAs of Non-Transient Systems; A) Dominant Land Use within each of the 46 Systems, B) Estimated Total Land Use within all SWAAs, C) Number of SWAAs that impinge on each of the specified Potential Contaminant Sources Types

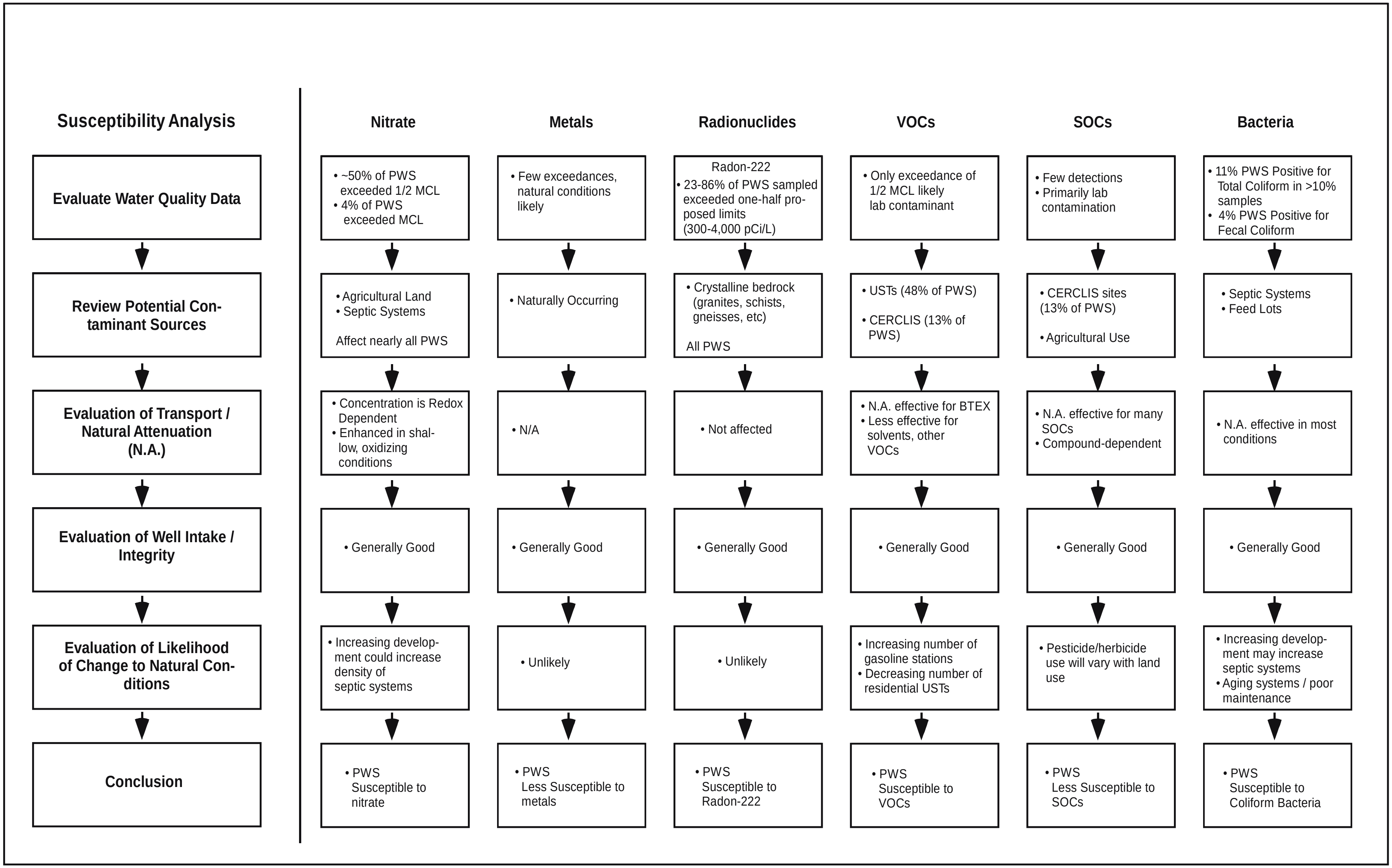


**Figure 9** Susceptibility Analysis Flowchart and Summary

# Tables

# Table 1: Non-Transient, Non-Community Public Water Systems in Baltimore County

| No. | PWSID | PWS Name | Address | Town | No. of Sources | SWAA Land Use (Estimated Fractions) |
|---|---|---|---|---|---|---|
| 1 | 1030001 | A.I.M. Corporation | 19200 Middletown Road | Middletown | 2 | Residential (0.5), Agricultural (0.4), Commercial (0.1) |
| 2 | 1030003 | Belko Corporation | 11931 Jericho Road | Kingsville | 3 | Forested (0.75), Residential (0.25) |
| 3 | 1030005 | Carroll Manor Elementary School | 4434 Carroll Manor Road | Baldwin | 1 | Agriculture, crop (0.5), Residential (0.3), Institutional (0.2) |
| 4 | 1030006 | Chestnut Ridge Pre-School | 1804 Ridge Road | Reisterstown | 2 | Residential (0.85), Institutional (0.15) |
| 5 | 1030013 | Fifth District Elementary | 3725 Mt Carmel Road | UpperCo | 1 | Agriculture, pasture (0.7), Institutional (0.3) |
| 6 | 1030017 | Hereford High School | 17301 York Road | Parkton | 7 | Institutional (0.7), Forested (0.2), Agriculture (0.1) |
| 7 | 1030018 | Hereford Middle School | 712 Corbett Rd | Parkton | 2 | Forested (0.4), Institutional (0.4), Residential (0.2) |
| 8 | 1030020 | Jemicy Farm School | 11 Celadon Road | Owings Mills | 2 | Residential (0.75), Forested (0.15), Institutional (0.1) |
| 9 | 1030021 | Kingsville Elementary School | 7300 Sunshine Avenue | Kingsville | 1 | Residential (0.4), Institutional (0.4), Residential (0.2) |
| 10 | 1030025 | Maryvale Trinity Prep. School | 11300 Falls Road | Brooklandville | 3 | Forested (0.85), Institutional (0.15) |
| 11 | 1030026 | Police & Correctional Training | 3085 Hernwood Road | Woodstock | 1 | Institutional (0.5), Residential (0.3), Forested (0.2) |
| 12 | 1030028 | Prettyboy Elementary School | 19810 Middletown Road | Freeland | 1 | Residential (0.6), Agricultural (0.4) |
| 13 | 1030030 | Seventh District Elementary | 20300 York Road | Parkton | 3 | Residential (0.5), Institutional (0.3), Agriculture (0.2) |
| 14 | 1030031 | Simkins Industries | 201 River Road | Catonsville | 1 | Forested (0.9), Institutional (0.1) |
| 15 | 1030034 | St James Academy | 3100 Monkton Road | Monkton | 4 | Institutional (0.5), Agricultural (0.3), Forested (0.2) |
| 16 | 1030038 | St Stephens Elementary | 8030 Bradshaw Road | Kingsville | 3 | Residential (0.7), Forested (0.2), Agriculture (0.1) |
| 17 | 1030045 | Child Care Academy | 8007 Windsor Mill Road | Baltimore | 1 | Residential (0.4), Agricultural (0.3), Forested (0.3) |
| 18 | 1030048 | Liberty Christian School | 11303 Liberty Rd | Owings Mills | 2 | Agriculture, crop (0.5), Forested (0.3), Institutional (0.2) |
| 19 | 1030054 | Manor Shopping Center | Jarrettsville Pike And Sweet Air Rd | Phoenix | 5 | Commercial (0.4), Residential (0.4), Institutional (0.2) |
| 20 | 1030056 | Chestnut Ridge Country Club | 11700 Falls Rd | Lutherville | 2 | Urban Open Land (golf course) (0.8), Forested (0.1), Residential (0.1) |
| 21 | 1030058 | Penn-Mar Organization, Inc. | 310 Old Freeland Road | Maryland Line | 1 | Agriculture, crop (0.6), Institutional (0.3), Residential (0.1) |
| 22 | 1030060 | Paper Mill Village Shopping Center | Corner Of Jarretsville Rd And Paper Mill | Jacksonville | 1 | Commercial (0.5), Residential (0.4), Agriculture (0.1) |
| 23 | 1030062 | Monkton UM Church/Country Day Care | 1930 Monkton Rd | Monkton | 1 | Residential (0.5), Forested (0.4), Institutional (0.1) |
| 24 | 1030066 | Trinity Episcopal Church | 12400 Manor Road | Long Green | 1 | Residential (0.5), Forested (0.4), Agriculture (0.1) |
| 25 | 1030067 | Saint Johns School | 13311 Longgreen Pike | Hydes | 2 | Agriculture, crop (0.5), Residential (0.4), Institutional (0.1) |
| 26 | 1030068 | Jacksonville Elementary | Jarrettsville Pike | Phoenix | 2 | Residential (0.7), Institutional (0.2), Forested (0.1) |
| 27 | 1030069 | Saint Johns Church | 13311 Long Green Pike | Hydes | 1 | Agriculture, crop (0.7), Residential (0.2), Institutional (0.1) |
| 28 | 1030070 | Free-State Montessori School | 12536 Harford Rd Near Sunshine Ave | Fork | 1 | Residential (0.8), Institutional (0.1), Agriculture (0.1) |
| 29 | 1030073 | Bluemount Nurseries, Inc. | 2103 Bluemount Road | Monkton | 5 | Forested (0.8), Residential (0.1), Agriculture (0.1) |
| 30 | 1030076 | Padonia Corporation | 12006 Jenifer Road | Cockeysville | 2 | Agriculture, crop (0.4), Residential (0.3), Institutional (0.3) |
| 31 | 1030077 | Purnell Armory | 10901 Notchcliff Road | Glen Arm | 1 | Forested (0.6), Commerical (0.4) |
| 32 | 1030081 | Temple Emanuel Of Baltimore | 909 Berrymans Lane | Reisterstown | 1 | Residential (0.85), Urban Land (0.15) |
| 33 | 1030082 | Reisterstown Lumber Company | 13040 Old Hanover Road | Reisterstown | 1 | Agriculture, crop (0.7), Commerical (0.15), Residential (0.15) |
| 34 | 1030083 | Woodmont Academy | 10817 Davis Ave | Woodstock | 2 | Residential (0.9), Agricultural (0.1) |
| 35 | 1030084 | Sparks Elementary School | 601 Belfast Road | Sparks | 2 | Agriculture, crop (1) |
| 36 | 1030087 | Odyssey School | 3257 Bridle Ridge Lane | Stevenson | 1 | Agriculture, crop (0.5), Forested (0.4), Institutional (0.1) |
| 37 | 1030091 | Ptach School | 10712 Marriottsville Rd | Randallstown | 2 | Agriculture, crop (0.6), Forested (0.3), Residential (0.1) |
| 38 | 1031052 | Friendly Farms | 17434 Foreston Road | UpperCo | 1 | Agriculture, crop (0.9), Forested (0.1) |
| 39 | 1031060 | Grauls Superthrift Market | 218-220 Mt Carmel Road | Parkton | 1 | Commercial (0.5), Agricultural (0.4), Residential (0.1) |
| 40 | 1031124 | Our Lady Of Grace Church And School | 18311 Middletown Road | Parkton | 3 | Agriculture, crop (0.7), Residential (0.15), Forested (0.15) |
| 41 | 1031131 | Pine Grove Nursery And Day Care | 19401 Middletown Road | Parkton | 1 | Residential (0.7), Agricultural (0.3) |
| 42 | 1031150 | Mercantile Bank (Formerly Sparks State Bank) | 14804 York Road | Sparks | 1 | Residential (0.4), Agricultural (0.4), Institutional (0.2) |
| 43 | 1031211 | Oregon Grille | 1201 Shawan Road | Cockeysville | 2 | Agriculture, crop (0.9), Forested (0.1) |
| 44 | 1031258 | Kingsville Plaza | 11775 Belair Road | Kingsville | 2 | Residential (0.5), Agricultural (0.3), Commercial (0.2) |
| 45 | 1031267 | Stevenson Shopping Center | 10405 Stevenson Lane | Stevenson | 1 | Residential (0.35), Forested (0.35), Commercial (0.3) |
| 46 | 1031312 | St Pauls Lutheran Church & School | 12022 Jerusalem Road | Kingsville | 2 | Residential (0.8), Institutional (0.1), Forested (0.1) |

# Table 2: Details of Sources in Non-Transient Public Water Systems in Baltimore County

| No. | PWSID | PWS Name | Source ID [1] | Source Name | Source Well Tag [2] | Aquifer | Total Depth (ft) [2] |
|---|---|---|---|---|---|---|---|
| 1 | 1030001 | A.I.M. Corporation | 2 | A.I.M. Well 2 | BA880948 | Prettyboy Schist | 305 |
| 2 | 1030001 | A.I.M. Corporation | 3* | A.I.M. Well 3 | | Prettyboy Schist | 400 |
| 5 | 1030003 | Belko Corporation | 3 | Belko Corporation Factory | | Franklinville Gneiss | |
| 3 | 1030003 | Belko Corporation | 1* | Belko Corporation 1 | | Franklinville Gneiss | 200 |
| 4 | 1030003 | Belko Corporation | 2* | Belko Corporation 2 | | Franklinville Gneiss | |
| 6 | 1030005 | Carroll Manor Elementary School | 1* | Carroll Manor Elementary School | | Loch Raven Schist | |
| 7 | 1030006 | Chestnut Ridge Pre-School | 1* | Chestnut Ridge 1 | | Loch Raven Schist | 180 |
| 8 | 1030006 | Chestnut Ridge Pre-School | 2* | Chestnut Ridge 2 | | Loch Raven Schist | |
| 9 | 1030013 | Fifth District Elementary | 1* | Fifth District Elem. School | | Prettyboy Schist | |
| 13 | 1030017 | Hereford High School | 4 | Hereford High School 6 | BA943100 | Loch Raven Schist | 300 |
| 14 | 1030017 | Hereford High School | 5 | Hereford High School 7 | BA943101 | Loch Raven Schist | 400 |
| 15 | 1030017 | Hereford High School | 6 | Hereford High School | BA930492 | Loch Raven Schist | |
| 10 | 1030017 | Hereford High School | 1* | Hereford High School 2 | | Loch Raven Schist | 240 |
| 11 | 1030017 | Hereford High School | 2* | Hereford High School 3 | | Loch Raven Schist | 417 |
| 12 | 1030017 | Hereford High School | 3* | Hereford High School 4 | | Loch Raven Schist | 395 |
| 16 | 1030017 | Hereford High School | 7* | Hereford High School | | Loch Raven Schist | |
| 17 | 1030018 | Hereford Middle School | 1 | Hereford Middle School Well 1 | BA738284 | Setters Formation | 275 |
| 18 | 1030018 | Hereford Middle School | 2 | Hereford Middle School Well 2 | BA810033 | Setters Formation | 273 |
| 19 | 1030020 | Jemicy Farm School | 1 | Jemicy Farm Well 1 | BA942534 | Loch Raven Schist | 100 |
| 20 | 1030020 | Jemicy Farm School | 2 | Jemicy Farm - Standby | BA816320 | Loch Raven Schist | |
| 21 | 1030021 | Kingsville Elementary School | 1* | Kingsville Elementary School | | Perry Hall Gneiss | 100 |
| 23 | 1030025 | Maryvale Trinity Prep. School | 2 | Maryvale Trinity 2 | BA810767 | Cockeysville Marble | 200 |
| 24 | 1030025 | Maryvale Trinity Prep. School | 3 | Maryvale Trinity 3 | BA946047 | Cockeysville Marble | |
| 22 | 1030025 | Maryvale Trinity Prep. School | 1* | Maryvale Trinity 1 | | Cockeysville Marble | |
| 25 | 1030026 | Police & Correctional Training | 1* | Md St. Police Correctional | | Ultramafic And Gabbroic Rocks | 150 |
| 26 | 1030028 | Prettyboy Elementary School | 1* | Prettyboy Elementary School | | Prettyboy Schist | |
| 28 | 1030030 | Seventh District Elementary | 2 | Seventh Dist Elementary 2 | BA942450 | Prettyboy Schist | 700 |
| 29 | 1030030 | Seventh District Elementary | 3 | Seventh Dist Elementary 3 | BA942449 | Prettyboy Schist | 400 |
| 27 | 1030030 | Seventh District Elementary | 1* | Seventh District Elementary - Old Well | | Prettyboy Schist | |
| 30 | 1030031 | Simkins Industries | 1 | Simkins Industries | BA883967 | Mt. Wash. Amphibolite | 200 |
| 31 | 1030034 | St James Academy | 1 | St James Academy 1 | BA817458 | Baltimore Gneiss | 240 |
| 32 | 1030034 | St James Academy | 2 | St James Academy 2 | BA940787 | Baltimore Gneiss | 300 |
| 33 | 1030034 | St James Academy | 3 | St James Academy 3 | BA944260 | Baltimore Gneiss | |
| 34 | 1030034 | St James Academy | 4 | St James Academy 4 | BA945033 | Baltimore Gneiss | |
| 37 | 1030038 | St Stephens Elementary | 4 | St Stephens New Well | BA943739 | Bradshaw Layered Amphibolite | 500 |
| 35 | 1030038 | St Stephens Elementary | 2* | St Stephens Elementary 2 | | Bradshaw Layered Amphibolite | |
| 36 | 1030038 | St Stephens Elementary | 3* | St Stephens Elementary 3 | BA734350 | Bradshaw Layered Amphibolite | |
| 38 | 1030045 | Child Care Academy | 1* | Child Care Academyy | | Mt. Wash. Amphibolite | 80 |
| 39 | 1030048 | Liberty Christian School | 1 | Liberty Christian School 1 | BA881713 | Balto. Gabbro Complex | 420 |
| 40 | 1030048 | Liberty Christian School | 2 | Liberty Christian School 2 | | Balto. Gabbro Complex | |
| 43 | 1030054 | Manor Shopping Center | 3 | Manor Shopping Center 2B | BA735311 | Loch Raven Schist | 110 |
| 45 | 1030054 | Manor Shopping Center | 5 | Manor Shopping Center 4 | BA817734 | Loch Raven Schist | 400 |
| 41 | 1030054 | Manor Shopping Center | 1* | Manor Shopping Center 1 | | Loch Raven Schist | |
| 42 | 1030054 | Manor Shopping Center | 2* | Manor Shopping Center 2A | | Loch Raven Schist | |
| 44 | 1030054 | Manor Shopping Center | 4* | Manor Shopping Center 3 | | Loch Raven Schist | |
| 47 | 1030056 | Chestnut Ridge Country Club | 2 | Chestnut Ridge Country Club 2 | BA844487 | Loch Raven Schist | 300 |
| 46 | 1030056 | Chestnut Ridge Country Club | 1* | Chestnut Ridge Country Club 1 | | Loch Raven Schist | 200 |
| 48 | 1030058 | Penn-Mar Organization, Inc. | 1* | Pen-Mar Organization, Inc. | | Prettyboy Schist | 200 |
| 49 | 1030060 | Paper Mill Village Shopping Center | 1 | Papermill Village Shop. Ctr. | BA734559 | Loch Raven Schist | 175 |

# Table 2: Details of Sources in Non-Transient Public Water Systems in Baltimore County

| No. | PWSID | PWS Name | Source ID [1] | Source Name | Source Well Tag [2] | Aquifer | Total Depth (ft) [2] |
|---|---|---|---|---|---|---|---|
| 50 | 1030062 | Monkton UM Church/Country Day Care | 1* | Monkton UM Church | | Baltimore Gneiss | 120 |
| 51 | 1030066 | Trinity Episcopal Church | 1* | Trinity Episcopal Church | | Loch Raven Schist | 150 |
| 52 | 1030067 | Saint Johns School | 1 | St John's School (Well 1) | BA814242 | Cockeysville Marble | 125 |
| 53 | 1030067 | Saint Johns School | 2 | St John'S School New Well | BA945276 | Cockeysville Marble | 300 |
| 54 | 1030068 | Jacksonville Elementary | 1 | Jacksonville Elementary School 1 | BA733256 | Lwr Pelitic Schist Wissahickon | 300 |
| 55 | 1030068 | Jacksonville Elementary | 2 | Jacksonville Elementary School 2 | BA920544 | Lwr Pelitic Schist Wissahickon | 301 |
| 56 | 1030069 | Saint Johns Church | 1 | St John's Church (Well 2) | BA680479 | Cockeysville Marble | 179 |
| 57 | 1030070 | Free-State Montessori School | 1* | Free-State Montessori | | Oella Formation | |
| 59 | 1030073 | Bluemount Nurseries, Inc. | 2 | Bluemount Nurseries, Inc. (Shipping Building Well) | BA815483 | Loch Raven Schist | 150 |
| 58 | 1030073 | Bluemount Nurseries, Inc. | 1* | Bluemount Nurseries, Inc. (Office Well) | | Loch Raven Schist | 500 |
| 60 | 1030073 | Bluemount Nurseries, Inc. | 3* | Bluemount Nurseries, Inc. | BA945470 | Loch Raven Schist | |
| 61 | 1030073 | Bluemount Nurseries, Inc. | 4* | Bluemount Nurseries, Inc. | | Loch Raven Schist | |
| 62 | 1030073 | Bluemount Nurseries, Inc. | 5* | Bluemount Nurseries, Inc. | BA941291 | Loch Raven Schist | |
| 63 | 1030076 | Padonia Corporation | 1 | Padonia Corporation (Office Building Well) | BA930453 | Loch Raven Schist | 450 |
| 64 | 1030076 | Padonia Corporation | 2 | Padonia Corporation (Child Care Well) | | Loch Raven Schist | |
| 65 | 1030077 | Purnell Armory | 1 | Purnell Armory | BA732198 | Baltimore Gneiss | 150 |
| 66 | 1030081 | Temple Emanuel Of Baltimore | 1 | Temple Emanuel Of Baltimore | BA883728 | Loch Raven Schist | 280 |
| 67 | 1030082 | Reisterstown Lumber Company | 1* | Reisterstown Lumber Company | | Loch Raven Schist | 118 |
| 68 | 1030083 | Woodmont Academy | 1 | Woodmont Academy (Upper School Well) | | Baltimore Gneiss | |
| 69 | 1030083 | Woodmont Academy | 2 | Woodmont Academy (Lower School Well) | | Baltimore Gneiss | |
| 70 | 1030084 | Sparks Elementary School | 3* | Sparks Elementary School 3 | BA941874 | Cockeysville Marble | |
| 71 | 1030084 | Sparks Elementary School | 4* | Sparks Elementary School 4 | | Cockeysville Marble | |
| 72 | 1030087 | Odyssey School | 1* | Odyssey School | | Baltimore Gneiss | 300 |
| 73 | 1030091 | Ptach School | 1 | Ptach School 1 | BA944052 | Unknown | 300 |
| 74 | 1030091 | Ptach School | 2 | Ptach School 2 | BA812451 | Unknown | |
| 75 | 1031052 | Friendly Farms | 1* | Friendly Farms | | Prettyboy Schist | 125 |
| 76 | 1031060 | Grauls Superthrift Market | 1 | Grauls Superthrift Market | BA810152 | Loch Raven Schist | 170 |
| 77 | 1031124 | Our Lady Of Grace Church And School | 1 | Our Lady Of Grace Church And School | BA943764 | Prettyboy Schist | 200 |
| 78 | 1031124 | Our Lady Of Grace Church And School | 2 | Our Lady Of Grace Church And School (Office/School 1) | BA942504 | Prettyboy Schist | 200 |
| 79 | 1031124 | Our Lady Of Grace Church And School | 3 | Our Lady Of Grace Church And School (Office/School 2) | BA944644 | Prettyboy Schist | 300 |
| 80 | 1031131 | Pine Grove Nursery And Day Care | 1* | Pine Grove Nursery And Day Care (Vernon 1) | | Prettyboy Schist | |
| 81 | 1031150 | Mercantile Bank | 1* | Well | | Prettyboy Schist | 200 |
| 82 | 1031211 | Oregon Grille | 1 | Oregon Grille (New Well) | BA943753 | Cockeysville Marble | 250 |
| 83 | 1031211 | Oregon Grille | 2 | Oregon Grille (Well) | BA942358 | Cockeysville Marble | 200 |
| 84 | 1031258 | Kingsville Plaza | 1 | Well 2 - High's Store | BA882057 | Bradshaw Layered Amphibolite | 200 |
| 85 | 1031258 | Kingsville Plaza | 2 | Well 1 - Day Care | BA921051 | Bradshaw Layered Amphibolite | 104 |
| 86 | 1031267 | Stevenson Shopping Center | 1* | Stevenson Shopping Center | | Cockeysville Marble | |
| 87 | 1031312 | St Pauls Lutheran Church & School | 1 | St Pauls Lutheran Church & School 1 | BA883678 | Prettyboy Schist | 30 |
| 88 | 1031312 | St Pauls Lutheran Church & School | 2 | St Pauls Lutheran Church & School 2 | | Prettyboy Schist | |

[1] Source ID is used to link specific well locations to information retained in MDE files/databases such as well depth and construction date; for this project Source IDs were assigned to wells through correlation of well tags observed in the field to permit numbers in MDE database/sanitary surveys; for wells without tags a Source ID was assigned based upon the best available information such as descriptive well names; these Source IDs are marked with asterisks

[2] For Source IDs marked with an asterisk, Well Tag Number and Depth could not be confirmed (see note 1)

**Table 3: Summary of Water Quality Data for Non-Transient, Non-Community Public Water Systems in Baltimore County**

| Type | Number of Records | Earliest Date | Most Recent Date |
|---|---|---|---|
| Bacteriological (Coliform) | 1,012 | Oct-96 | Dec-02 |
| Volatile Organic Compounds (VOCs) | 18,858 | Dec-90 | May-03 |
| Synthetic Organic Compounds (VOCs) | 3,003 | Mar-93 | Nov-01 |
| Inorganic Compounds (IOCs) and Radiological Parameters | 2,425 | Jan-93 | Aug-02 |
| **Summary:** | **25,298** | **Dec-90** | **May-03** |

## Table 4: Summary of Inorganic Constituents in Water Quality Data

| Inorganic Contaminant [1] | MCL or Action Level | | Earliest Sample | Most Recent Sample | No. of Systems Sampled | No. of Samples | No. of Samples Exceeding one-half MCL | Percent Samples Exceeding one-half MCL[4] |
|---|---|---|---|---|---|---|---|---|
| **Antimony** | 0.006 | mg/L | Jun-95 | Aug-02 | 44 | 114 | | |
| **Arsenic [2]** | 0.01 | mg/L | Jun-95 | Aug-02 | 42 | 93 | 3 | 3% |
| **Barium** | 2 | mg/L | Mar-93 | Aug-02 | 45 | 124 | 1 | 1% |
| **Beryllium** | 0.004 | mg/L | Jun-95 | Aug-02 | 45 | 115 | | |
| **Cadmium** | 0.005 | mg/L | Mar-93 | Aug-02 | 45 | 124 | | |
| **Chromium** | 0.1 | mg/L | Mar-93 | Aug-02 | 45 | 124 | | |
| **Copper** | 1.3 | mg/L | Mar-98 | Dec-02 | 8 | 26 | 3 | **12%** |
| **Fluoride** | 4 | mg/L | Jun-95 | Aug-02 | 7 | 7 | | |
| **Gross Alpha** | 15 | pCi/L | Jun-00 | Jun-00 | 1 | 2 | | |
| **Gross Alpha (Short Term)** | 15 | pCi/L | Jun-00 | Jun-00 | 1 | 2 | | |
| **Gross Beta** | 4 | mrem | Jun-00 | Jun-00 | 1 | 1 | 1 | **100%** |
| **Gross Beta (Short Term)** | 4 | mrem | Jun-00 | Jun-00 | 1 | 1 | | |
| **Lead** | 0.015 | mg/L | Mar-96 | Dec-02 | 8 | 24 | 3 | **13%** |
| **Mercury** | 0.002 | mg/L | Mar-93 | Aug-02 | 45 | 124 | | |
| **Nitrate** | 10 | mg/L | Jul-92 | Dec-02 | 46 | 722 | 260 | **36%** |
| **Nitrite** | 1 | mg/L | Mar-93 | Dec-02 | 46 | 158 | | |
| **Radon-222 [3]** | 300 | pCi/L | Jan-96 | Apr-03 | 22 | 27 | 21 | **78%** |
| **Radon-222 [3]** | 4000 | pCi/L | Jan-96 | Apr-03 | 22 | 27 | 7 | **26%** |
| **Selenium** | 0.05 | mg/L | Mar-93 | Aug-02 | 45 | 123 | | |
| **Thallium** | 0.002 | mg/L | Jun-95 | Aug-02 | 45 | 115 | 1 | 1% |

[1] Contaminants for which there is no MCL (Maximum Contaminant Level) or USEPA Action Level are excluded

[2] Arsenic MCL of 0.01 mg/L will take effect in 2006; the MCL is currently 0.05 mg/L

[3] Proposed Levels of 300 and 4,000 pCi/L have not been adopted by EPA, but are used here for illustrative purposes

[4] Values greater than 10% shown in **Bold** Font

# Table 5: Summary of Nitrate Data for Non-Transient, Non-Community Public Water Systems

| | | | | | Number of Samples | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **No.** | **PWSID** | **PWS Name** | **Earliest Sample** | **Most Recent Sample** | **Total** | **Exceeding MCL** | **Exceeding Half MCL** | **Percent Exceeding Half MCL *** | **LAND USE IN SWAA (In Descending Importance)** |
| 1 | 1030001 | A.I.M. Corporation | Oct-93 | Feb-02 | 31 | | 23 | **74%** | Residential, Agricultural, Commercial |
| 2 | 1030003 | Belko Corporation | Feb-93 | Mar-02 | 29 | | 6 | **21%** | Forested, Residential |
| 3 | 1030005 | Carroll Manor Elementary School | Mar-93 | May-02 | 14 | | 1 | 7% | Agriculture-crop, Residential, Institutional |
| 4 | 1030006 | Chestnut Ridge Pre-School | Feb-93 | Jan-02 | 12 | | | | Residential, Institutional |
| 5 | 1030013 | Fifth District Elementary | Mar-93 | Aug-02 | 28 | | 13 | **46%** | Agriculture-pasture, Institutional |
| 6 | 1030017 | Hereford High School | Mar-93 | Sep-01 | 14 | | | | Institutional, Forested, Agriculture |
| 7 | 1030018 | Hereford Middle School | Mar-93 | Sep-01 | 14 | | | | Forested, Institutional, Residential |
| 8 | 1030020 | Jemicy Farm School | May-94 | May-02 | 14 | | 2 | **14%** | Residential, Forested, Institutional |
| 9 | 1030021 | Kingsville Elementary School | Mar-93 | Sep-01 | 15 | | | | Residential, Institutional, Residential |
| 10 | 1030025 | Maryvale Trinity Prep. School | Dec-93 | Jan-01 | 11 | | | | Forested, Institutional, |
| 11 | 1030026 | Police & Correctional Training | Feb-93 | Jan-02 | 12 | | | | Institutional, Residential, Forested |
| 12 | 1030028 | Prettyboy Elementary School | Mar-93 | Aug-02 | 41 | | 35 | **85%** | Residential, Agricultural, |
| 13 | 1030030 | Seventh District Elementary | Mar-93 | May-02 | 12 | | | | Residential, Institutional, Agriculture |
| 14 | 1030031 | Simkins Industries | Dec-93 | Jul-02 | 15 | | | | Forested, Institutional, |
| 15 | 1030034 | St James Academy | Jan-94 | May-02 | 24 | | | | Institutional, Agricultural, Forested |
| 16 | 1030038 | St Stephens Elementary | Dec-93 | Feb-02 | 32 | | 1 | 3% | Residential, Forested, Agriculture |
| 17 | 1030045 | Child Care Academy | Feb-93 | Mar-02 | 14 | | 1 | 7% | Residential, Agricultural, Forested |
| 18 | 1030048 | Liberty Christian School | Mar-93 | May-02 | 13 | | | | Agriculture-crop, Forested, Institutional |
| 19 | 1030054 | Manor Shopping Center | Mar-93 | Jul-02 | 32 | | 32 | **100%** | Commercial, Residential, Institutional |
| 20 | 1030056 | Chestnut Ridge Country Club | Mar-93 | May-02 | 27 | | 16 | **59%** | Urban Open Land (golf course), Forested, Residential |
| 21 | 1030058 | Penn-Mar Organization, Inc. | Apr-93 | Jun-02 | 47 | 5 | 22 | **47%** | Agriculture-crop, Institutional, Residential |
| 22 | 1030060 | Paper Mill Village Shopping Center | Mar-93 | May-01 | 18 | | 3 | **17%** | Commercial, Residential, Agriculture |
| 23 | 1030062 | Monkton UM Church/Country Day Care | Dec-93 | Jan-02 | 10 | | | | Residential, Forested, Institutional |
| 24 | 1030066 | Trinity Episcopal Church | Aug-93 | Jan-02 | 11 | | | | Residential, Forested, Agriculture |
| 25 | 1030067 | Saint Johns School | May-93 | Jul-02 | 29 | | | | Agriculture-crop, Residential, Institutional |
| 26 | 1030068 | Jacksonville Elementary | Jul-92 | Aug-02 | 36 | | 24 | **67%** | Residential, Institutional, Forested |
| 27 | 1030069 | Saint Johns Church | Sep-95 | Jul-02 | 30 | | 26 | **87%** | Agriculture-crop, Residential, Institutional |
| 28 | 1030070 | Free-State Montessori School | Jan-98 | Jan-02 | 8 | | | | Residential, Institutional, Agriculture |
| 29 | 1030073 | Bluemount Nurseries, Inc. | Jul-99 | Apr-02 | 4 | | 4 | **100%** | Forested, Residential, Agriculture |
| 30 | 1030076 | Padonia Corporation | Jul-99 | Jul-02 | 8 | | 4 | **50%** | Agriculture-crop, Residential, Institutional |
| 31 | 1030077 | Purnell Armory | Mar-01 | Apr-02 | 2 | | | | Forested, Commerical, |
| 32 | 1030081 | Temple Emanuel Of Baltimore | Oct-99 | Oct-01 | 3 | | 1 | **33%** | Residential, Urban Land, |
| 33 | 1030082 | Reisterstown Lumber Company | Aug-99 | Dec-01 | 5 | | 1 | **20%** | Agriculture-crop, Commerical, Residential |
| 34 | 1030083 | Woodmont Academy | Oct-98 | Aug-02 | 14 | | | | Residential, Agricultural, |
| 35 | 1030084 | Sparks Elementary School | Mar-98 | Aug-02 | 21 | | 10 | **48%** | Agriculture-crop, , |
| 36 | 1030087 | Odyssey School | Aug-02 | Aug-02 | 2 | | | | Agriculture-crop, Forested, Institutional |
| 37 | 1030091 | Ptach School | Dec-02 | Dec-02 | 1 | | | | Agriculture-crop, Forested, Residential |
| 38 | 1031052 | Friendly Farms | May-00 | Jan-02 | 3 | | | | Agriculture-crop, Forested, |
| 39 | 1031060 | Grauls Superthrift Market | Sep-99 | May-02 | 6 | 2 | 4 | **67%** | Commercial, Agricultural, Residential |
| 40 | 1031124 | Our Lady Of Grace Church And School | Apr-99 | Mar-02 | 8 | | | | Agriculture-crop, Residential, Forested |
| 41 | 1031131 | Pine Grove Nursery And Day Care | Jan-95 | Jan-02 | 10 | | | | Residential, Agricultural, |
| 42 | 1031150 | Mercantile Bank | Jun-99 | Dec-01 | 8 | | 8 | **100%** | Residential, Agricultural, Institutional |
| 43 | 1031211 | Oregon Grille | Apr-00 | Apr-02 | 4 | | 1 | **25%** | Agriculture-crop, Forested, |
| 44 | 1031258 | Kingsville Plaza | Aug-99 | Aug-02 | 10 | | 10 | **100%** | Residential, Agricultural, Commercial |
| 45 | 1031267 | Stevenson Shopping Center | Mar-00 | Jan-02 | 5 | | | | Residential, Forested, Commercial |
| 46 | 1031312 | St Pauls Lutheran Church & School | May-99 | Apr-02 | 6 | | 4 | **67%** | Residential, Institutional, Forested |
| | | | | **Systems Sampled:** | **46** | **4%** | **52%** | **46% of PWS with >10% of samples** | |

* Values greater than 10% shown in **Bold** Font

# Table 6: Nitrate Data Exceeding One-Half the Regulatory Limit for Non-Transient, Non-Community Public Water Systems

| PWSID | PWS Name | Contaminant | Regulatory Level (mg/L) | Date | Result (mg/L) |
|---|---|---|---|---|---|
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 19-Jan-95 | 6 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 22-Apr-96 | 5.3 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 18-Feb-97 | 8.3 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 15-May-97 | 7.8 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 29-May-97 | 7.8 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 28-Jul-97 | 9.1 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 13-Nov-97 | 6 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 2-Feb-98 | 6.4 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 1-Apr-98 | 7.5 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 1-Apr-98 | 7.5 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 27-Jul-98 | 6.9 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 27-Jul-98 | 6.9 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 6-Oct-98 | 5.8 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 28-Jan-99 | 5.8 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 21-May-99 | 7.4 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 5-Aug-99 | 8.6 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 17-Jan-00 | 6.1 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 16-Jun-00 | 8 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 24-Aug-00 | 9.4 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 12-Feb-01 | 8.1 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 12-Jun-01 | 7.8 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 13-Aug-01 | 6 |
| 1030001 | A.I.M. Corporation | Nitrate | 10 | 6-Feb-02 | 8 |
| 1030003 | Belko Corporation | Nitrate | 10 | 28-Feb-95 | 6.01 |
| 1030003 | Belko Corporation | Nitrate | 10 | 21-Jan-97 | 5.79 |
| 1030003 | Belko Corporation | Nitrate | 10 | 21-Apr-97 | 5.28 |
| 1030003 | Belko Corporation | Nitrate | 10 | 27-Jan-99 | 5.6 |
| 1030003 | Belko Corporation | Nitrate | 10 | 9-Aug-00 | 5.8 |
| 1030003 | Belko Corporation | Nitrate | 10 | 15-Nov-00 | 5.2 |
| 1030005 | Carroll Manor Elementary School | Nitrate | 10 | 15-Apr-02 | 5.3 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 26-Mar-93 | 8.6 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 29-Mar-93 | 8.6 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 9-Dec-93 | 6.3 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 10-Mar-94 | 8.42 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 27-Jun-94 | 8.2 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 16-Sep-94 | 6.46 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 14-Mar-95 | 7.1 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 10-Nov-95 | 5.14 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 19-Dec-95 | 6.73 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 14-Mar-96 | 6.5 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 17-Mar-97 | 6.3 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 24-Apr-01 | 5.34 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 15-Apr-02 | 7.2 |
| 1030013 | Fifth District Elementary | Nitrate | 10 | 26-Aug-02 | 7.7 |
| 1030020 | Jemicy Farm School | Nitrate | 10 | 13-Feb-96 | 6.2 |
| 1030020 | Jemicy Farm School | Nitrate | 10 | 14-Feb-97 | 7.4 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 26-Mar-93 | 6 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 29-Mar-93 | 6 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 9-Dec-93 | 7.8 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 10-Mar-94 | 5.32 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 27-Jun-94 | 5.74 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 16-Sep-94 | 6.48 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 10-Nov-95 | 7.22 |

**Table 6: Nitrate Data Exceeding One-Half the Regulatory Limit for Non-Transient, Non-Community Public Water Systems**

| PWSID | PWS Name | Contaminant | Regulatory Level (mg/L) | Date | Result (mg/L) |
|---|---|---|---|---|---|
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 19-Dec-95 | 7.61 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 27-Feb-96 | 5.4 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 14-Mar-96 | 5.5 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 4-Jun-96 | 5.3 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 14-Mar-97 | 5.7 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 9-Jun-97 | 5.2 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 25-Sep-97 | 9.9 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 10-Mar-98 | 8 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 12-Jun-98 | 6 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 9-Dec-98 | 7.5 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 23-Mar-99 | 8.81 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 4-Jun-99 | 8.62 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 30-Sep-99 | 8.67 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 6-Dec-99 | 9.2 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 20-Dec-99 | 9.07 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 24-Mar-00 | 8.66 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 16-May-00 | 6.14 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 12-Sep-00 | 8 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 4-Dec-00 | 6.73 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 13-Mar-01 | 6.92 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 24-Apr-01 | 6.04 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 4-Sep-01 | 6.8 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 11-Sep-01 | 6.6 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 11-Sep-01 | 6.3 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 11-Sep-01 | 6.6 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 13-Sep-01 | 7.1 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 13-Dec-01 | 5.7 |
| 1030028 | Prettyboy Elementary School | Nitrate | 10 | 15-Apr-02 | 5.4 |
| 1030038 | St Stephens Elementary | Nitrate | 10 | 16-Dec-93 | 7.9 |
| 1030045 | Child Care Academy | Nitrate | 10 | 8-Feb-93 | 5.9 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 10-Mar-93 | 8.5 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 3-Feb-94 | 7.7 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 4-May-94 | 7.4 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 21-Jul-94 | 7.8 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 7-Nov-94 | 8.4 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 4-Oct-95 | 6.1 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 11-Dec-95 | 6.7 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 18-Jun-96 | 6.1 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 30-Jul-96 | 7.5 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 4-Nov-96 | 8.7 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 28-Jan-97 | 9.1 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 7-Jan-98 | 7.9 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 7-Jan-98 | 7.9 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 11-May-98 | 8.8 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 15-Jul-98 | 6.6 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 26-Aug-98 | 7.3 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 3-Nov-98 | 5.9 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 12-Jan-99 | 6.9 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 5-May-99 | 6.4 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 6-Jul-99 | 6.9 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 12-Oct-99 | 5.2 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 4-Jan-00 | 6 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 31-Jan-00 | 8 |

**Table 6: Nitrate Data Exceeding One-Half the Regulatory Limit for Non-Transient, Non-Community Public Water Systems**

| PWSID | PWS Name | Contaminant | Regulatory Level (mg/L) | Date | Result (mg/L) |
|---|---|---|---|---|---|
| 1030054 | Manor Shopping Center | Nitrate | 10 | 10-May-00 | 7.8 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 19-Oct-00 | 7.6 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 15-Jan-01 | 8.1 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 5-Apr-01 | 6.3 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 23-May-01 | 7.7 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 23-Jul-01 | 8.5 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 8-Oct-01 | 9.7 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 2-Jan-02 | 7.9 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 3-Apr-02 | 9.2 |
| 1030054 | Manor Shopping Center | Nitrate | 10 | 1-Jul-02 | 7.6 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 10-Mar-93 | 6.2 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 8-Dec-93 | 5.1 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 19-Jan-95 | 5.6 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 17-Jun-96 | 5.3 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 27-Aug-97 | 5.62 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 9-Feb-98 | 9.18 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 2-Jun-98 | 5.13 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 18-Aug-98 | 5.92 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 2-Dec-98 | 5.96 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 18-Aug-99 | 5.4 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 17-Feb-00 | 5.2 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 31-Jul-00 | 6.5 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 27-Apr-01 | 5.4 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 26-Oct-01 | 5.8 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 24-Jan-02 | 6 |
| 1030056 | Chestnut Ridge Country Club | Nitrate | 10 | 3-May-02 | 5.7 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 1-Apr-93 | 7.1 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 7-Jul-93 | 9.8 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 23-Nov-93 | 8.04 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 20-Jan-94 | 8.2 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 20-Apr-94 | 8.91 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 7-Jul-94 | 9.49 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 23-Nov-94 | 8.82 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 13-Mar-95 | 10 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 7-Jun-95 | 12.2 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 8-Jun-95 | 12.6 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 30-Jan-96 | 7.8 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 12-Mar-96 | 8.4 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 10-May-96 | 10.7 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 22-Jul-96 | 10.2 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 25-Oct-96 | 8.85 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 16-Jan-97 | 9.22 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 4-Apr-97 | 9.77 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 11-Jul-97 | 9.61 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 21-Oct-97 | 8.07 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 21-Oct-97 | 8.07 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 27-Feb-98 | 7.42 |
| 1030058 | Penn-Mar Organization, Inc. | Nitrate | 10 | 21-May-98 | 10.2 |
| 1030060 | Paper Mill Village Shopping Center | Nitrate | 10 | 10-Mar-93 | 8.1 |
| 1030060 | Paper Mill Village Shopping Center | Nitrate | 10 | 30-Jan-01 | 6.6 |
| 1030060 | Paper Mill Village Shopping Center | Nitrate | 10 | 23-May-01 | 5.5 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 14-Jul-92 | 5.53 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 5-Jan-95 | 5.97 |

**Table 6: Nitrate Data Exceeding One-Half the Regulatory Limit for Non-Transient, Non-Community Public Water Systems**

| PWSID | PWS Name | Contaminant | Regulatory Level (mg/L) | Date | Result (mg/L) |
|---|---|---|---|---|---|
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 26-Jun-95 | 7.21 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 10-Nov-95 | 5.21 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 20-Dec-95 | 5.62 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 17-Mar-97 | 6 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 9-Jun-97 | 5.2 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 25-Sep-97 | 9 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 12-Jun-98 | 5.3 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 9-Dec-98 | 7.14 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 23-Mar-99 | 6.69 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 2-Jun-99 | 6 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 4-Jun-99 | 6.43 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 20-Dec-99 | 5.44 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 24-Mar-00 | 5.4 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 12-Sep-00 | 5.87 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 4-Dec-00 | 7.51 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 13-Mar-01 | 6.63 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 4-Sep-01 | 5.2 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 11-Sep-01 | 5.7 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 11-Sep-01 | 7 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 11-Sep-01 | 5.93 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 13-Dec-01 | 6.6 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 11-Mar-02 | 6 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 15-Apr-02 | 5.9 |
| 1030068 | Jacksonville Elementary | Nitrate | 10 | 27-Aug-02 | 7.4 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 27-Oct-95 | 6.5 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 5-Sep-96 | 8.2 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 17-Feb-97 | 6.3 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 25-Feb-97 | 7.3 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 5-May-97 | 9.7 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 1-Jul-97 | 6.1 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 21-Oct-97 | 9.8 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 5-Jan-98 | 8.8 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 16-Mar-98 | 7.3 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 1-Jun-98 | 9.7 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 29-Sep-98 | 7.7 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 14-Dec-98 | 9.2 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 2-Jun-99 | 8.5 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 8-Nov-99 | 7.6 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 4-Jan-00 | 8.6 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 4-Apr-00 | 8.1 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 11-Jul-00 | 8.5 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 4-Oct-00 | 8.3 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 5-Jan-01 | 8.8 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 4-Mar-01 | 7.8 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 4-Apr-01 | 7.8 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 2-Jul-01 | 7.2 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 1-Oct-01 | 6.5 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 7-Jan-02 | 6 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 3-Apr-02 | 8.6 |
| 1030069 | Saint Johns Church | Nitrate | 10 | 2-Jul-02 | 7.9 |
| 1030073 | Bluemount Nurseries, Inc. | Nitrate | 10 | 19-Jul-99 | 6.8 |
| 1030073 | Bluemount Nurseries, Inc. | Nitrate | 10 | 27-Dec-00 | 6.6 |
| 1030073 | Bluemount Nurseries, Inc. | Nitrate | 10 | 1-May-01 | 5.6 |

**Table 6: Nitrate Data Exceeding One-Half the Regulatory Limit for Non-Transient, Non-Community Public Water Systems**

| PWSID | PWS Name | Contaminant | Regulatory Level (mg/L) | Date | Result (mg/L) |
|---|---|---|---|---|---|
| 1030073 | Bluemount Nurseries, Inc. | Nitrate | 10 | 30-Apr-02 | 6.8 |
| 1030076 | Padonia Corporation | Nitrate | 10 | 7-Jul-99 | 5.2 |
| 1030076 | Padonia Corporation | Nitrate | 10 | 7-Jul-99 | 5.2 |
| 1030076 | Padonia Corporation | Nitrate | 10 | 7-Jul-99 | 5.3 |
| 1030076 | Padonia Corporation | Nitrate | 10 | 23-Jul-01 | 5.1 |
| 1030076 | Padonia Corporation | Nitrate | 10 | 19-Jul-02 | 8.9 |
| 1030081 | Temple Emanuel of Baltimore | Nitrate | 10 | 4-Oct-01 | 5.6 |
| 1030082 | Reisterstown Lumber Company | Nitrate | 10 | 5-Dec-00 | 6.8 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 25-Mar-98 | 6 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 4-Jun-99 | 5.6 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 30-Sep-99 | 6.94 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 20-Dec-99 | 6.09 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 24-Mar-00 | 5.8 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 12-Sep-00 | 6.01 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 4-Dec-00 | 6.17 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 5-Dec-00 | 5.6 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 13-Mar-01 | 5.16 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 15-Apr-02 | 5.3 |
| 1030084 | Sparks Elementary School | Nitrate | 10 | 26-Aug-02 | 5.3 |
| 1031060 | Grauls Superthrift Market | Nitrate | 10 | 1-Sep-99 | 8.6 |
| 1031060 | Grauls Superthrift Market | Nitrate | 10 | 1-May-00 | 9.4 |
| 1031060 | Grauls Superthrift Market | Nitrate | 10 | 11-Jul-01 | 12.2 |
| 1031060 | Grauls Superthrift Market | Nitrate | 10 | 6-Aug-01 | 11.5 |
| 1031150 | Mercantile Bank | Nitrate-Nitrite | 10 | 2-Jun-99 | 5.7 |
| 1031150 | Mercantile Bank | Nitrate | 10 | 2-Jun-99 | 5.7 |
| 1031150 | Mercantile Bank | Nitrate | 10 | 9-Sep-99 | 5.6 |
| 1031150 | Mercantile Bank | Nitrate | 10 | 6-Dec-99 | 6.2 |
| 1031150 | Mercantile Bank | Nitrate | 10 | 20-Mar-00 | 5.7 |
| 1031150 | Mercantile Bank | Nitrate | 10 | 14-Jun-00 | 6.1 |
| 1031150 | Mercantile Bank | Nitrate | 10 | 20-Sep-01 | 5.6 |
| 1031150 | Mercantile Bank | Nitrate | 10 | 11-Dec-01 | 7.5 |
| 1031211 | Oregon Grille | Nitrate | 10 | 18-Apr-01 | 5.6 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 4-Aug-99 | 7.3 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 4-Aug-99 | 7.6 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 26-Apr-00 | 5.5 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 31-Aug-00 | 6.3 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 31-Aug-00 | 6.3 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 31-Aug-00 | 7 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 16-May-01 | 5.2 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 16-May-01 | 6 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 31-Jul-01 | 7.6 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 31-Jul-01 | 8.1 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 12-Aug-02 | 9.4 |
| 1031258 | Kingsville Plaza | Nitrate | 10 | 12-Aug-02 | 8.5 |
| 1031312 | St Pauls Lutheran Church & School | Nitrate | 10 | 20-May-99 | 6.7 |
| 1031312 | St Pauls Lutheran Church & School | Nitrate | 10 | 21-May-99 | 6.7 |
| 1031312 | St Pauls Lutheran Church & School | Nitrate | 10 | 15-May-00 | 5.7 |
| 1031312 | St Pauls Lutheran Church & School | Nitrate | 10 | 17-Apr-02 | 5.6 |

# Table 7: Summary of Metals Data for Non-Transient, Non-Community Public Water Systems

| | | | Arsenic (As) | | | Barium (Ba) | | | Copper (Cu) | | | Lead (Pb) | | | Thallium (Tl) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | PWSID | PWS Name | No. of Samples | No. > MCL | No. > Half MCL | No. of Samples | No. > MCL | No. > Half MCL | No. of Samples | No. > MCL | No. > Half MCL | No. of Samples | No. > MCL | No. > Half MCL | No. of Samples | No. > MCL | No. > Half MCL |
| 1 | 1030001 | A.I.M. Corporation | 2 | | | 3 | | | | | | | | | 3 | | |
| 2 | 1030003 | Belko Corporation | 3 | | | 4 | | | | | | | | | 3 | | |
| 3 | 1030005 | Carroll Manor Elementary School | 3 | | | 4 | | | | | | | | | 4 | | |
| 4 | 1030006 | Chestnut Ridge Pre-School | 2 | | | 3 | | | | | | | | | 2 | | |
| 5 | 1030013 | Fifth District Elementary | 2 | | | 3 | | | | | | | | | 3 | | |
| 6 | 1030017 | Hereford High School | 2 | | | 4 | | | | | | | | | 3 | | |
| 7 | 1030018 | Hereford Middle School | 2 | | | 3 | | | | | | | | | 3 | | |
| 8 | 1030020 | Jemicy Farm School | 3 | | | 5 | | | | | | | | | 5 | | |
| 9 | 1030021 | Kingsville Elementary School | 2 | | **1** | 3 | | | | | | 1 | | | 3 | | |
| 10 | 1030025 | Maryvale Trinity Prep. School | 3 | | | 3 | | | | | | | | | 3 | | |
| 11 | 1030026 | Police & Correctional Training | 2 | | | 3 | | | | | | | | | 2 | | |
| 12 | 1030028 | Prettyboy Elementary School | 2 | | | 3 | | | | | | | | | 3 | | |
| 13 | 1030030 | Seventh District Elementary | 2 | | | 3 | | | | | | 1 | | | 3 | | |
| 14 | 1030031 | Simkins Industries | 3 | | | 4 | | | | | | | | | 5 | | |
| 15 | 1030034 | St James Academy | 5 | | | 6 | | | | | | | | | 6 | | |
| 16 | 1030038 | St Stephens Elementary | 3 | | **1** | 3 | | | 1 | | | 1 | | | 3 | | |
| 17 | 1030045 | Child Care Academy | 3 | | | 4 | | | | | | | | | 4 | | |
| 18 | 1030048 | Liberty Christian School | 3 | | **1** | 4 | | | | | | | | | 3 | | |
| 19 | 1030054 | Manor Shopping Center | 3 | | | 4 | | | | | | | | | 3 | | |
| 20 | 1030056 | Chestnut Ridge Country Club | 2 | | | 4 | | | | | | | | | 2 | | |
| 21 | 1030058 | Penn-Mar Organization, Inc. | 4 | | | 4 | | | 1 | | | | | | 3 | | |
| 22 | 1030060 | Paper Mill Village Shopping Center | 3 | | | 5 | | | | | | | | | 4 | | |
| 23 | 1030062 | Monkton UM Church/Country Day Care | 1 | | | 2 | | | | | | | | | 2 | | |
| 24 | 1030066 | Trinity Episcopal Church | 1 | | | 2 | | | | | | | | | 2 | | |
| 25 | 1030067 | Saint Johns School | 5 | | | 5 | | | | | | | | | 5 | | |
| 26 | 1030068 | Jacksonville Elementary | 2 | | | 3 | | | | | | | | | 3 | | |
| 27 | 1030069 | Saint Johns Church | 3 | | | 3 | | | | | | | | | 3 | | |
| 28 | 1030070 | Free-State Montessori School | 2 | | | 2 | | | | | | | | | 2 | | |
| 29 | 1030073 | Bluemount Nurseries, Inc. | | | | 1 | | | | | | | | | 1 | | |
| 30 | 1030076 | Padonia Corporation | 2 | | | 2 | | | | | | | | | 2 | | |
| 31 | 1030077 | Purnell Armory | 1 | | | 1 | | | 1 | 1 | 1 | 1 | 1 | **1** | 1 | | |
| 32 | 1030081 | Temple Emanuel Of Baltimore | | | | 1 | | | | | | | | | 1 | | |
| 33 | 1030082 | Reisterstown Lumber Company | | | | 1 | | | 2 | 2 | 2 | 1 | 1 | **1** | 1 | | |
| 34 | 1030083 | Woodmont Academy | 2 | | | 4 | | | 2 | | | | | | 4 | | |
| 35 | 1030084 | Sparks Elementary School | 3 | | | 3 | | | 2 | | | 2 | 1 | **1** | 3 | | |
| 36 | 1030087 | Odyssey School | 1 | | | 1 | | | 12 | 10 | 10 | 12 | 2 | **7** | 1 | | |
| 37 | 1030091 | Ptach School | | | | | | | 5 | | 1 | 5 | | | | | |
| 38 | 1031052 | Friendly Farms | 1 | | | 1 | | | | | | | | | 1 | | |
| 39 | 1031060 | Grauls Superthrift Market | 1 | | | 1 | | | | | | | | | 1 | | |

# Table 7: Summary of Metals Data for Non-Transient, Non-Community Public Water Systems

| | | | Arsenic (As) | | | Barium (Ba) | | | Copper (Cu) | | | Lead (Pb) | | | Thallium (Tl) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | PWSID | PWS Name | No. of Samples | No. > MCL | No. > Half MCL | No. of Samples | No. > MCL | No. > Half MCL | No. of Samples | No. > MCL | No. > Half MCL | No. of Samples | No. > MCL | No. > Half MCL | No. of Samples | No. > MCL | No. > Half MCL |
| 40 | 1031124 | Our Lady Of Grace Church And School | 1 | | | 1 | | | | | | | | | 1 | | |
| 41 | 1031131 | Pine Grove Nursery And Day Care | 1 | | | 1 | | | | | | | | | 1 | | |
| 42 | 1031150 | Mercantile Bank | 1 | | | 1 | | **1** | | | | | | | 1 | | |
| 43 | 1031211 | Oregon Grille | 1 | | | 1 | | | | | | | | | 1 | 1 | **1** |
| 44 | 1031258 | Kingsville Plaza | 2 | | | 2 | | | | | | | | | 2 | | |
| 45 | 1031267 | Stevenson Shopping Center | 2 | | | 2 | | | | | | | | | 2 | | |
| 46 | 1031312 | St Pauls Lutheran Church & School | 1 | | | 1 | | | | | | | | | 1 | | |
| | | **Systems Sampled:** | **42** | **0%** | **7%** | **45** | **0%** | **2%** | **8** | **38%** | **50%** | **8** | **50%** | **50%** | **45** | **2%** | **2%** |

**Table 8: Metals Data Exceeding One-Half the Regulatory Level for Non-Transient, Non-Community Public Water Systems**

| PWSID | PWS Name | Contaminant | Regulatory Level (mg/L) | Date | Result (mg/L) |
|---|---|---|---|---|---|
| 1030021 | Kingsville Elementary School | Arsenic | 0.01 | 22-Nov-99 | 0.01 |
| 1030038 | St Stephens Elementary | Arsenic | 0.01 | 22-Nov-99 | 0.01 |
| 1030048 | Liberty Christian School | Arsenic | 0.01 | 16-Nov-99 | 0.01 |
| 1030077 | Purnell Armory | Copper | 1.3 | 30-Nov-99 | 3.75 |
| 1030077 | Purnell Armory | Lead | 0.015 | 30-Nov-99 | 0.0272 |
| 1030082 | Reisterstown Lumber Company | Copper | 1.3 | 31-Aug-99 | 7.26 |
| 1030082 | Reisterstown Lumber Company | Copper | 1.3 | 31-Aug-99 | 1.64 |
| 1030082 | Reisterstown Lumber Company | Lead | 0.015 | 31-Aug-99 | 0.0475 |
| 1030084 | Sparks Elementary School | Lead | 0.015 | 25-Mar-98 | 2.5 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 3.2 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 3.5 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 6.3 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 3.4 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 5.4 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 6.7 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 5.8 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 5.7 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 6.3 |
| 1030087 | Odyssey School | Copper | 1.3 | 22-Nov-02 | 3.9 |
| 1030087 | Odyssey School | Lead | 0.015 | 22-Nov-02 | 0.014 |
| 1030087 | Odyssey School | Lead | 0.015 | 22-Nov-02 | 0.013 |
| 1030087 | Odyssey School | Lead | 0.015 | 22-Nov-02 | 0.029 |
| 1030087 | Odyssey School | Lead | 0.015 | 22-Nov-02 | 0.012 |
| 1030087 | Odyssey School | Lead | 0.015 | 22-Nov-02 | 0.008 |
| 1030087 | Odyssey School | Lead | 0.015 | 16-Dec-02 | 0.032 |
| 1030087 | Odyssey School | Lead | 0.015 | 23-Dec-02 | 0.01 |
| 1030091 | Ptach School | Copper | 1.3 | 20-Dec-02 | 1.15 |
| 1031150 | Mercantile Bank | Barium | 2 | 11-Dec-01 | 1.18 |
| 1031211 | Oregon Grille | Thallium | 0.002 | 18-Apr-01 | 0.003 |

# Table 9: Summary of Radon Data for Non-Transient, Non-Community Public Water Systems

| | | | | | | 300 pCi/L Level | | 4000 pCi/L Level | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **No.** | **PWSID** | **PWS Name** | **Earliest Sample** | **Most Recent Sample** | **Number of Samples** | **Number Exceeding Level** | **Number Exceeding Half Level** | **Number Exceeding Level** | **Number Exceeding Half Level** | **AQUIFER** |
| 1 | 1030001 | A.I.M. Corporation | Feb-96 | Feb-96 | 1 | 1 | **1** | | | Prettyboy Schist |
| 2 | 1030003 | Belko Corporation | Mar-02 | Mar-02 | 1 | 1 | **1** | | | Franklinville Gneiss |
| 3 | 1030005 | Carroll Manor Elementary School | | | | | | | | Loch Raven Schist |
| 4 | 1030006 | Chestnut Ridge Pre-School | Jan-96 | Jan-96 | 1 | 1 | **1** | | | Loch Raven Schist |
| 5 | 1030013 | Fifth District Elementary | Dec-96 | Dec-96 | 1 | 1 | **1** | | | Prettyboy Schist |
| 6 | 1030017 | Hereford High School | Mar-96 | Mar-96 | 1 | 1 | **1** | | | Loch Raven Schist |
| 7 | 1030018 | Hereford Middle School | Mar-96 | Mar-96 | 1 | 1 | **1** | | | Setters Formation |
| 8 | 1030020 | Jemicy Farm School | | | | | | | | Loch Raven Schist |
| 9 | 1030021 | Kingsville Elementary School | | | | | | | | Perry Hall Gneiss |
| 10 | 1030025 | Maryvale Trinity Prep. School | Jan-96 | Jan-96 | 1 | | **1** | | | Cockeysville Marble |
| 11 | 1030026 | Police & Correctional Training | Oct-01 | Oct-01 | 1 | 1 | **1** | 1 | **1** | Ultramafic And Gabbroic Rocks |
| 12 | 1030028 | Prettyboy Elementary School | Feb-96 | Feb-96 | 1 | 1 | **1** | | **1** | Prettyboy Schist |
| 13 | 1030030 | Seventh District Elementary | Mar-96 | Mar-96 | 1 | 1 | **1** | 1 | **1** | Prettyboy Schist |
| 14 | 1030031 | Simkins Industries | | | | | | | | Mt. Wash. Amphibolite |
| 15 | 1030034 | St James Academy | Mar-96 | May-01 | 2 | 2 | **2** | | | Baltimore Gneiss |
| 16 | 1030038 | St Stephens Elementary | Jun-00 | Jun-00 | 2 | | | | | Bradshaw Layered Amphibolite |
| 17 | 1030045 | Child Care Academy | | | | | | | | Mt. Wash. Amphibolite |
| 18 | 1030048 | Liberty Christian School | | | | | | | | Balto. Gabbro Complex |
| 19 | 1030054 | Manor Shopping Center | Apr-96 | Apr-96 | 1 | 1 | **1** | | | Loch Raven Schist |
| 20 | 1030056 | Chestnut Ridge Country Club | Jun-96 | Jun-96 | 1 | 1 | **1** | | | Loch Raven Schist |
| 21 | 1030058 | Penn-Mar Organization, Inc. | | | | | | | | Prettyboy Schist |
| 22 | 1030060 | Paper Mill Village Shopping Center | Mar-96 | Mar-96 | 1 | | | | | Loch Raven Schist |
| 23 | 1030062 | Monkton Um Church/Country Day Care | Jun-96 | Jun-96 | 1 | 1 | **1** | | | Baltimore Gneiss |
| 24 | 1030066 | Trinity Episcopal Church | May-96 | May-96 | 1 | 1 | **1** | | | Loch Raven Schist |
| 25 | 1030067 | Saint Johns School | | | | | | | | Cockeysville Marble |
| 26 | 1030068 | Jacksonville Elementary | | | | | | | | Lwr Pelitic Schist Wissahickon |
| 27 | 1030069 | Saint Johns Church | | | | | | | | Cockeysville Marble |
| 28 | 1030070 | Free-State Montessori School | Nov-01 | Nov-01 | 1 | | | | | Oella Formation |
| 29 | 1030073 | Bluemount Nurseries, Inc. | | | | | | | | Loch Raven Schist |
| 30 | 1030076 | Padonia Corporation | | | | | | | | Loch Raven Schist |
| 31 | 1030077 | Purnell Armory | | | | | | | | Baltimore Gneiss |
| 32 | 1030081 | Temple Emanuel Of Baltimore | | | | | | | | Loch Raven Schist |
| 33 | 1030082 | Reisterstown Lumber Company | | | | | | | | Loch Raven Schist |
| 34 | 1030083 | Woodmont Academy | Feb-01 | Feb-01 | 2 | 2 | **2** | | | Baltimore Gneiss |
| 35 | 1030084 | Sparks Elementary School | | | | | | | | Cockeysville Marble |
| 36 | 1030087 | Odyssey School | Apr-03 | Apr-03 | 2 | 2 | **2** | 2 | **2** | Baltimore Gneiss |
| 37 | 1030091 | Ptach School | | | | | | | | Unknown |
| 38 | 1031052 | Friendly Farms | | | | | | | | Prettyboy Schist |
| 39 | 1031060 | Grauls Superthrift Market | | | | | | | | Loch Raven Schist |
| 40 | 1031124 | Our Lady Of Grace Church And School | Jul-01 | Jul-01 | 1 | 1 | **1** | | | Prettyboy Schist |
| 41 | 1031131 | Pine Grove Nursery And Day Care | Feb-96 | Aug-97 | 2 | 2 | **2** | | **1** | Prettyboy Schist |
| 42 | 1031150 | Mercantile Bank | | | | | | | | Prettyboy Schist |
| 43 | 1031211 | Oregon Grille | | | | | | | | Cockeysville Marble |
| 44 | 1031258 | Kingsville Plaza | | | | | | | | Bradshaw Layered Amphibolite |
| 45 | 1031267 | Stevenson Shopping Center | | | | | | | | Cockeysville Marble |
| 46 | 1031312 | St Pauls Lutheran Church & School | | | | | | | | Prettyboy Schist |
| | | | | **Systems Sampled:** | **22** | **82%** | **86%** | **14%** | **23%** | |

# Table 10: Radon and Gross Beta Data Exceeding One-Half the Regulatory Level for Non-Transient, Non-Community Public Water Systems

| PWSID | PWS Name | Contaminant | Regulatory Level* | | Date | Result |
|---|---|---|---|---|---|---|
| 1030001 | A.I.M. Corporation | Radon-222 | 300 | pCi/L | 27-Feb-96 | 1615 |
| 1030003 | Belko Corporation | Radon-222 | 300 | pCi/L | 6-Mar-02 | 450 |
| 1030006 | Chestnut Ridge Pre-School | Radon-222 | 300 | pCi/L | 30-Jan-96 | 1585 |
| 1030013 | Fifth District Elementary | Radon-222 | 300 | pCi/L | 2-Dec-96 | 1155 |
| 1030017 | Hereford High School | Radon-222 | 300 | pCi/L | 12-Mar-96 | 735 |
| 1030018 | Hereford Middle School | Radon-222 | 300 | pCi/L | 7-Mar-96 | 1115 |
| 1030025 | Maryvale Trinity Prep. School | Radon-222 | 300 | pCi/L | 30-Jan-96 | 195 |
| 1030026 | Police & Correctional Training | Radon-222 | 300 | pCi/L | 23-Oct-01 | 7710 |
| 1030028 | Prettyboy Elementary School | Radon-222 | 300 | pCi/L | 27-Feb-96 | 2745 |
| 1030030 | Seventh District Elementary | Radon-222 | 300 | pCi/L | 12-Mar-96 | 4715 |
| 1030034 | St James Academy | Radon-222 | 300 | pCi/L | 19-Mar-96 | 1565 |
| 1030034 | St James Academy | Radon-222 | 300 | pCi/L | 23-May-01 | 660 |
| 1030038 | St Stephens Elementary | Gross Beta | 4 | mrem | 8-Jun-00 | 2.4 |
| 1030054 | Manor Shopping Center | Radon-222 | 300 | pCi/L | 22-Apr-96 | 335 |
| 1030056 | Chestnut Ridge Country Club | Radon-222 | 300 | pCi/L | 17-Jun-96 | 1935 |
| 1030062 | Monkton UM Church/Country Day Care | Radon-222 | 300 | pCi/L | 17-Jun-96 | 850 |
| 1030066 | Trinity Episcopal Church | Radon-222 | 300 | pCi/L | 14-May-96 | 430 |
| 1030083 | Woodmont Academy | Radon-222 | 300 | pCi/L | 26-Feb-01 | 765 |
| 1030083 | Woodmont Academy | Radon-222 | 300 | pCi/L | 26-Feb-01 | 1625 |
| 1030087 | Odyssey School | Radon-222 | 300 | pCi/L | 29-Apr-03 | 9290 |
| 1030087 | Odyssey School | Radon-222 | 300 | pCi/L | 29-Apr-03 | 12430 |
| 1031124 | Our Lady Of Grace Church And School | Radon-222 | 300 | pCi/L | 10-Jul-01 | 1440 |
| 1031131 | Pine Grove Nursery And Day Care | Radon-222 | 300 | pCi/L | 27-Feb-96 | 2045 |
| 1031131 | Pine Grove Nursery And Day Care | Radon-222 | 300 | pCi/L | 21-Aug-97 | 1915 |

* For Radon, the lower proposed MCL of 300 pCi/L is used

**Table 11: Summary of Volatile Organic Compound Data for Non-Transient, Non-Community Public Water Systems**

| | | | | Number of Samples | | | | |
|---|---|---|---|---|---|---|---|---|
| VOC Contaminant [1] | Earliest Sample | Most Recent Sample | Regulatory Level (ug/L) | Total | Detections | Exceeding Level | Exceeding Half Level | Percent Exceeding Half Level |
| 1,1,1-Trichloroethane | Dec-90 | May-03 | 200 | 321 | 1 | | | |
| 1,1,2-Trichloroethane | Dec-90 | May-03 | 5 | 311 | | | | |
| 1,1-Dichloroethylene | Dec-90 | May-03 | 7 | 321 | | | | |
| 1,2,4-Trichlorobenzene | Dec-90 | May-03 | 70 | 311 | 1 | | | |
| 1,2-Dibromo-3-Chloropropane | Dec-90 | May-03 | 0.2 | 336 | | | | |
| 1,2-Dichloroethane | Dec-90 | May-03 | 5 | 321 | 2 | | | |
| 1,2-Dichloropropane | Dec-90 | May-03 | 5 | 311 | | | | |
| Benzene | Dec-90 | May-03 | 5 | 321 | 1 | | | |
| Bromodichloromethane | Dec-90 | May-03 | 100 | 292 | 32 | | | |
| Bromoform | Dec-90 | May-03 | 100 | 292 | 15 | | | |
| Carbon Tetrachloride | Dec-90 | May-03 | 5 | 321 | | | | |
| Chloroform | Dec-90 | May-03 | 100 | 292 | 45 | | | |
| cis-1,2-Dichloroethylene | Dec-90 | May-03 | 70 | 311 | | | | |
| Dibromochloromethane | Dec-90 | May-03 | 100 | 292 | 28 | | | |
| Ethylbenzene | Dec-90 | May-03 | 700 | 311 | 6 | | | |
| Ethylene Dibromide | Jul-91 | May-03 | 0.05 | 156 | | | | |
| Methylene Chloride | Dec-90 | May-03 | 5 | 312 | 2 | 1 | 2 | 1% |
| Methyl-Tert-Butyl-Ether | Feb-95 | May-03 | 10 [2] | 559 | 29 | | 1 [2] | 0% |
| Monochlorobenzene | Dec-90 | May-03 | 100 | 311 | | | | |
| m-Xylene | Dec-90 | May-03 | 10000 | 306 | 3 | | | |
| o-Dichlorobenzene | Dec-90 | May-03 | 600 | 311 | | | | |
| o-Xylene | Dec-90 | May-03 | 10000 | 307 | 9 | | | |
| p-Dichlorobenzene | Dec-90 | May-03 | 75 | 321 | 1 | | | |
| p-Xylene | Dec-90 | May-03 | 10000 | 307 | 8 | | | |
| Styrene | Dec-90 | May-03 | 100 | 311 | 1 | | | |
| Tetrachloroethylene | Dec-90 | May-03 | 5 | 311 | 1 | | | |
| Toluene | Dec-90 | May-03 | 1000 | 311 | 6 | | | |
| trans-1,2-Dichloroethylene | Dec-90 | May-03 | 100 | 311 | | | | |
| Trichloroethylene | Dec-90 | May-03 | 5 | 321 | 1 | | | |
| Vinyl Chloride | Dec-90 | May-03 | 2 | 321 | | | | |
| Xylenes, Total | Dec-90 | May-03 | 10000 | 311 | 11 | | | |

[1] Contaminants for which there is no MCL (Maximum Contaminant Level), USEPA or Maryland Action Level are excluded

[2] Maryland Action Level for MTBE of 10 ug/L is lower than the US EPA Health Advisory of 20-40 ug/L

# Table 12: Volatile Organic Compound Data Exceeding One-Half the Regulatory Level for Non-Transient, Non-Community Public Water Systems

| PWSID | PWS Name | Contaminant | Regulatory Level (ug/L) | Date | Result (mg/L) |
|---|---|---|---|---|---|
| 1030021 | Kingsville Elementary School | Methylene Chloride | 5 | 26-Mar-93 | 41 |
| 1030087 | Odyssey School | Methylene Chloride | 5 | 22-Aug-02 | 3.4 |
| 1030003 | Belko Corporation | Methyl-tert-Butyl-Ether (MTBE) | 10 * | 21-Jan-97 | 6.3 |

* Maryland Action Level for MTBE of 10 ug/L is lower than the US EPA Health Advisory of 20-40 ug/L

**Table 13: Summary of Synthetic Organic Compound Data for Non-Transient, Non-Community Public Water Systems**

| SOC Contaminant [1] | Earliest Sample | Most Recent Sample | MCL (ug/L) | Number of Samples | Number of Detections | Number Exceeding MCL | Number Exceeding Half MCL | Percent Exceeding Half MCL |
|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | Jun-95 | Nov-01 | 0.2 | 156 | | | | |
| 2,4,5-Tp (Silvex) | Mar-93 | Aug-02 | 50 | 78 | | | | |
| 2,4-D | Mar-93 | Aug-02 | 70 | 84 | | | | |
| Alachlor (Lasso) | Mar-93 | Aug-02 | 2 | 84 | | | | |
| Aldicarb | Jan-98 | Aug-02 | 3 | 54 | | | | |
| Aldicarb Sulfone | Jan-98 | Aug-02 | 3 | 54 | | | | |
| Aldicarb Sulfoxide | Jan-98 | Aug-02 | 4 | 54 | | | | |
| Atrazine | Mar-93 | Aug-02 | 3 | 84 | | | | |
| Benzo(A)Pyrene | Jun-95 | Aug-02 | 0.2 | 77 | | | | |
| Bhc-Gamma(Lindane) | Mar-93 | Nov-01 | 0.2 | 87 | | | | |
| Carbofuran | Mar-93 | Aug-02 | 40 | 62 | | | | |
| Chlordane | Mar-93 | Aug-02 | 2 | 87 | | | | |
| Dalapon | Jun-95 | Aug-02 | 200 | 77 | 1 | | | |
| Di(2-Ethylhexyl) Adipate | Jun-95 | Aug-02 | 400 | 77 | 4 | | | |
| Di(2-Ethylhexyl) Phthalate | Jun-95 | Aug-02 | 6 | 77 | 35 | 2 | 6 | **17%** |
| Dinoseb | Jun-95 | Aug-02 | 7 | 77 | | | | |
| Endrin | Mar-93 | Aug-02 | 2 | 87 | | | | |
| Ethylene Dibromide (Edb) | Jun-95 | Nov-01 | 0.05 | 78 | | | | |
| Heptachlor | Mar-93 | Aug-02 | 0.4 | 88 | | | | |
| Heptachlor Epoxide | Mar-93 | Aug-02 | 0.2 | 88 | | | | |
| Hexachlorobenzene (Hcb) | Jun-95 | Aug-02 | 1 | 77 | | | | |
| Hexachlorocyclopentadiene | Jun-95 | Aug-02 | 50 | 77 | | | | |
| Methoxychlor | Mar-93 | Aug-02 | 40 | 87 | | | | |
| Oxamyl (Vydate) | Jan-98 | Aug-02 | 200 | 54 | | | | |
| Pentachlorophenol | Mar-93 | Aug-02 | 1 | 78 | 2 | | | |
| Picloram | Jun-95 | Aug-02 | 500 | 77 | | | | |
| Simazine | Jun-95 | Aug-02 | 4 | 76 | | | | |
| Toxaphene | Mar-93 | Aug-02 | 3 | 44 | | | | |

[1] Contaminants for which there is no MCL (Maximum Contaminant Level) or USEPA Action Level are excludec

**Table 14: Synthetic Organic Compound Data Exceeding One-Half the Regulatory Level for Non-Transient, Non-Community Public Water Systems**

| PWSID | PWS Name | Contaminant | Regulatory Level (mg/L) | Date | Result (mg/L) |
|---|---|---|---|---|---|
| 1030076 | Padonia Corporation | Di(2-Ethylhexyl) Phthalate | 6 | 10-Jul-01 | 3.1 |
| 1030076 | Padonia Corporation | Di(2-Ethylhexyl) Phthalate | 6 | 10-Jul-01 | 5.4 |
| 1030077 | Purnell Armory | Di(2-Ethylhexyl) Phthalate | 6 | 29-Aug-01 | 11.4 |
| 1030082 | Reisterstown Lumber Company | Di(2-Ethylhexyl) Phthalate | 6 | 5-Jul-01 | 14.6 |
| 1031060 | Grauls Superthrift Market | Di(2-Ethylhexyl) Phthalate | 6 | 11-Jul-01 | 4.3 |
| 1031267 | Stevenson Shopping Center | Di(2-Ethylhexyl) Phthalate | 6 | 5-Jul-01 | 4.5 |

## Table 15: Summary of Coliform Data for Non-Transient, Non-Community Public Water Sytems

| | | | | | Routine Samples | | | Repeat Samples | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | PWSID | PWS Name | Earliest Sample | Most Recent Sample | Number of Samples | Positive Samples (Total Coliform) | Positive Samples (Fecal Coliform) | Number of Samples | Positive Samples (Total Coliform) | Positive Samples (Fecal Coliform) | Percent Total Coliform Positive |
| 1 | 1030001 | A.I.M. Corporation | Oct-96 | May-02 | 24 | 2 | | 12 | 2 | | **11.1%** |
| 2 | 1030003 | Belko Corporation | Oct-96 | May-02 | 37 | 1 | | 4 | | | 2.4% |
| 3 | 1030005 | Carroll Manor Elementary School | Dec-96 | Aug-02 | 30 | | | | | | |
| 4 | 1030006 | Chestnut Ridge Pre-School | Nov-96 | May-02 | 23 | | | | | | |
| 5 | 1030013 | Fifth District Elementary | Dec-96 | Apr-02 | 30 | | | | | | |
| 6 | 1030017 | Hereford High School | Dec-96 | Aug-02 | 59 | 3 | | 12 | 12 | **12** | **21.1%** |
| 7 | 1030018 | Hereford Middle School | Dec-96 | Aug-02 | 59 | | | | | | |
| 8 | 1030020 | Jemicy Farm School | Nov-96 | Jul-02 | 35 | 1 | | 10 | | | 2.2% |
| 9 | 1030021 | Kingsville Elementary School | Dec-96 | Jul-02 | 30 | | | | | | |
| 10 | 1030025 | Maryvale Trinity Prep. School * | Dec-96 | Jun-02 | 22 | 1 | | 4 | | | 3.8% |
| 11 | 1030026 | Police & Correctional Training | Dec-96 | Apr-02 | 25 | | | | | | |
| 12 | 1030028 | Prettyboy Elementary School | Dec-96 | Apr-02 | 29 | | | | | | |
| 13 | 1030030 | Seventh District Elementary | Dec-96 | Apr-02 | 27 | | | | | | |
| 14 | 1030031 | Simkins Industries | Oct-96 | Jul-02 | 50 | 3 | **2** | 25 | 4 | **4** | 9.3% |
| 15 | 1030034 | St James Academy | Nov-96 | Jul-02 | 48 | | | | | | |
| 16 | 1030038 | St Stephens Elementary | Oct-96 | Jul-02 | 32 | 1 | | 4 | | | 2.8% |
| 17 | 1030045 | Child Care Academy | Oct-96 | May-02 | 24 | | | | | | |
| 18 | 1030048 | Liberty Christian School | Nov-96 | Apr-02 | 25 | 1 | | 4 | 2 | | **10.3%** |
| 19 | 1030054 | Manor Shopping Center | Oct-96 | Jul-02 | 25 | | | | | | |
| 20 | 1030056 | Chestnut Ridge Country Club | Dec-96 | May-02 | 50 | | | | | | |
| 21 | 1030058 | Penn-Mar Organization, Inc. | Oct-96 | Jul-02 | 26 | | | | | | |
| 22 | 1030060 | Paper Mill Village Shopping Center | Oct-96 | Apr-02 | 25 | | | | | | |
| 23 | 1030062 | Monkton UM Church/Country Day Care | Nov-96 | Jul-02 | 26 | | | | | | |
| 24 | 1030066 | Trinity Episcopal Church | Nov-96 | Apr-02 | 23 | | | | | | |
| 25 | 1030067 | Saint Johns School * | Nov-96 | Jul-02 | 32 | 2 | | 4 | | | 5.6% |
| 26 | 1030068 | Jacksonville Elementary | Oct-96 | Jul-02 | 30 | 1 | | 5 | | | 2.9% |
| 27 | 1030069 | Saint Johns Church * | Nov-96 | Jul-02 | 24 | 1 | | | | | 4.2% |
| 28 | 1030070 | Free-State Montessori School | May-98 | Jul-02 | 17 | | | | | | |
| 29 | 1030073 | Bluemount Nurseries, Inc. | Jul-99 | Apr-02 | 5 | | | | | | |
| 30 | 1030076 | Padonia Corporation | Jul-99 | Apr-02 | 22 | | | | | | |
| 31 | 1030077 | Purnell Armory | Mar-00 | Jul-02 | 10 | | | | | | |
| 32 | 1030081 | Temple Emanuel Of Baltimore | Oct-99 | Apr-02 | 14 | | | | | | |
| 33 | 1030082 | Reisterstown Lumber Company | Sep-99 | May-02 | 26 | 3 | | 14 | 8 | | **27.5%** |
| 34 | 1030083 | Woodmont Academy | Oct-98 | Jun-02 | 23 | 1 | | | | | 4.3% |
| 35 | 1030084 | Sparks Elementary School * | Jan-99 | May-02 | 14 | | | | | | |
| 36 | 1030087 | Odyssey School | Nov-02 | Nov-02 | 1 | | | | | | |
| 37 | 1030091 | Ptach School | Dec-02 | Dec-02 | 1 | | | | | | |
| 38 | 1031052 | Friendly Farms | Jul-99 | Jul-02 | 13 | | | | | | |
| 39 | 1031060 | Grauls Superthrift Market | Sep-99 | May-02 | 13 | | | | | | |
| 40 | 1031124 | Our Lady Of Grace Church And School | Aug-99 | Jul-02 | 36 | 3 | | | | | 8.3% |
| 41 | 1031131 | Pine Grove Nursery And Day Care | Nov-96 | Jul-02 | 25 | | | | | | |
| 42 | 1031150 | Mercantile Bank | Jun-99 | Jun-02 | 13 | | | | | | |
| 43 | 1031211 | Oregon Grille * | Aug-99 | Apr-02 | 11 | | | | | | |
| 44 | 1031258 | Kingsville Plaza * | Nov-99 | Apr-02 | 22 | 5 | | | 3 | | **36.4%** |
| 45 | 1031267 | Stevenson Shopping Center | Jul-99 | May-02 | 12 | | | | | | |
| 46 | 1031312 | St Pauls Lutheran Church & School | May-99 | Apr-02 | 11 | | | | | | |
| | | **Systems Sampled:** | | | **46** | **33%** | **2%** | **11** | **55%** | **4%** | **11% of PWS with >10% of samples** |

* Wells screened in Cockeysville Marble, which is locally karstic, and may under certain circumstances be more susceptible to fecal coliform contamination

**Table 16: Positive Coliform Data for**
**Non-Transient, Non-Community Public Water Systems**

| | | | Routine Samples | | Repeat Samples | |
|---|---|---|---|---|---|---|
| PWSID | PWS Name | Date | Positive Samples (Total Coliform) | Positive Samples (Fecal Coliform) | Positive Samples (Total Coliform) | Positive Samples (Fecal Coliform) |
| 1030001 | A.I.M. Corporation | 1-Jan-01 | 1 | 0 | 2 | 0 |
| 1030001 | A.I.M. Corporation | 1-Jun-01 | 1 | 0 | 0 | |
| 1030003 | Belko Corporation | 11-Jan-01 | 1 | 0 | 0 | |
| 1030017 | Hereford High School | 1-Jul-97 | 1 | 0 | 4 | 4 |
| 1030017 | Hereford High School | 1-Aug-97 | 1 | 0 | 4 | 4 |
| 1030017 | Hereford High School | 1-Sep-97 | 1 | 0 | 4 | 4 |
| 1030020 | Jemicy Farm School | 1-Jan-01 | 1 | 0 | 0 | 0 |
| 1030025 | Maryvale Trinity Prep. School | 1-Sep-97 | 1 | 0 | | |
| 1030031 | Simkins Industries | 1-May-97 | 1 | 0 | 0 | |
| 1030031 | Simkins Industries | 1-Jul-99 | 1 | | 0 | |
| 1030031 | Simkins Industries | 1-Jan-02 | 1 | 1 | 4 | 4 |
| 1030038 | St Stephens Elementary | 1-Sep-00 | 1 | 0 | 0 | 0 |
| 1030048 | Liberty Christian School | 1-Sep-99 | 1 | 0 | 2 | |
| 1030067 | Saint Johns School | 1-Sep-99 | 1 | | 0 | |
| 1030067 | Saint Johns School | 1-Oct-99 | 1 | | | |
| 1030068 | Jacksonville Elementary | 1-Oct-96 | 1 | 0 | 0 | |
| 1030069 | Saint Johns Church | 1-Nov-99 | 1 | | | |
| 1030082 | Reisterstown Lumber Company | 1-Jun-00 | 1 | 0 | 4 | |
| 1030082 | Reisterstown Lumber Company | 1-Dec-00 | 1 | 0 | 4 | 0 |
| 1030082 | Reisterstown Lumber Company | 1-Jan-01 | 1 | 0 | 0 | 0 |
| 1030083 | Woodmont Academy | 1-Sep-00 | 1 | | | |
| 1031124 | Our Lady Of Grace Church And School | 23-Oct-96 | 3 | 0 | | |
| 1031258 | Kingsville Plaza | 1-Dec-00 | 3 | | | |
| 1031258 | Kingsville Plaza | 1-Jan-01 | 1 | | | |
| 1031258 | Kingsville Plaza | 12-Mar-01 | 1 | 0 | 3 | |

## Table 17: Coliform Data from Untreated Water Samples Collected at Individual Non-Transient, Non-Community Sources

| PWSID | PWS Name | Source ID | Date | Total Coliform | Fecal Coliform |
|---|---|---|---|---|---|
| 1030001 | A.I.M. Corporation | 2 | 4-Jun-02 | ND | ND |
| 1030001 | A.I.M. Corporation | 3 | 4-Jun-02 | ND | ND |
| 1030005 | Carroll Manor Elementary School | 1 | 11-Oct-02 | ND | ND |
| 1030006 | Chestnut Ridge Pre-School | 1 | 7-Mar-03 | ND | ND |
| 1030013 | Fifth District Elementary | 1 | 27-Sep-02 | ND | ND |
| 1030017 | Hereford High School | 1 | 11-Oct-02 | ND | ND |
| 1030017 | Hereford High School | 2 | 11-Oct-02 | ND | ND |
| 1030017 | Hereford High School | 3 | 11-Oct-02 | ND | ND |
| 1030018 | Hereford Middle School | 1 | 6-Sep-02 | ND | ND |
| 1030018 | Hereford Middle School | 2 | 6-Sep-02 | ND | ND |
| 1030021 | Kingsville Elementary School | 1 | 27-Sep-02 | ND | ND |
| 1030028 | Prettyboy Elementary School | 1 | 27-Sep-02 | ND | ND |
| 1030030 | Seventh District Elementary | 1 | 27-Sep-02 | ND | ND |
| 1030030 | Seventh District Elementary | 2 | 15-Nov-02 | ND | ND |
| 1030030 | Seventh District Elementary | 3 | 27-Sep-02 | ND | ND |
| 1030045 | Child Care Academy | 1 | 23-Apr-02 | ND | ND |
| 1030048 | Liberty Christian School | 1 | 21-Nov-02 | ND | ND |
| 1030054 | Manor Shopping Center | 1 | 3-Apr-02 | ND | ND |
| 1030054 | Manor Shopping Center | 2 | 3-Apr-02 | ND | ND |
| 1030054 | Manor Shopping Center | 3 | 3-Apr-02 | ND | ND |
| 1030054 | Manor Shopping Center | 4 | 3-Apr-02 | ND | ND |
| 1030054 | Manor Shopping Center | 5 | 3-Apr-02 | ND | ND |
| 1030058 | Penn-Mar Organization, Inc. | 1 | 30-Oct-02 | ND | ND |
| 1030060 | Paper Mill Village Shopping Center | 1 | 3-Apr-02 | ND | ND |
| 1030066 | Trinity Episcopal Church | 1 | 29-Apr-02 | ND | ND |
| 1030067 | Saint Johns School | 2 | 20-Mar-01 | ND | ND |
| 1030067 | Saint Johns School | 2 | 21-Mar-01 | ND | ND |
| 1030067 | Saint Johns School | 2 | 22-Mar-01 | ND | ND |
| 1030067 | Saint Johns School | 2 | 23-Mar-01 | ND | ND |
| 1030067 | Saint Johns School | 2 | 24-Mar-01 | ND | ND |
| 1030067 | Saint Johns School | 2 | 25-Mar-01 | ND | ND |
| 1030068 | Jacksonville Elementary | 1 | 27-Sep-02 | ND | ND |
| 1030068 | Jacksonville Elementary | 2 | 27-Sep-02 | ND | ND |
| 1030070 | Free-State Montessori School | 1 | 7-Mar-03 | ND | ND |
| 1030076 | Padonia Corporation | 1 | 22-Apr-02 | ND | ND |

# Table 18: Underground Storage Tanks (USTs) Identified/Confirmed During Site Verification Visits

| ID | Owner | Name | Town | Type | Volume (Gal) | Relevant PWSIDs * |
|---|---|---|---|---|---|---|
| 42 | Woodstock Job Corps | UST A | Woodstock | Unknown | | |
| 43 | Woodstock Job Corps | UST B | Woodstock | Unknown | | |
| 44 | Woodstock Job Corps | UST C | Woodstock | Unknown | | |
| 45 | St. Alphonsus Rodriguez Church | UST | Woodstock | Heating Oil | | 1030083, 1031160 |
| 46 | Chase Elementary School | UST | Baltimore | Heating Oil | | |
| 47 | Maryland Police & Correctional Training | UST | Woodstock | Unknown | | 1030026 |
| 48 | Maryland Police & Correctional Training | UST | Woodstock | Unknown | | 1030026 |
| 49 | Ezrine, Charles | UST | Pikesville | Residential Heating Oil | | |
| 50 | Baptist Home Of Md. | UST | Owings Mills | Heating Oil | | |
| 51 | Lee & Sandra Gordon | UST | Owings Mills | Residential Heating Oil | | |
| 52 | Crown Station, Md-081 | UST A | Joppa | Gasoline | | 1031334 |
| 53 | Crown Station, Md-081 | UST B | Joppa | Gasoline | | |
| 54 | Crown Station, Md-081 | UST C | Joppa | Gasoline | | |
| 55 | Mobil Oil Corp # GP4 | UST C | Baltimore | Gasoline | | |
| 56 | Mobil Oil Corp # GP4 | UST B | Baltimore | Gasoline | | |
| 57 | Mobil Oil Corp # GP4 | UST A | Baltimore | Gasoline | | |
| 58 | Smoot's Auto | UST | Reisterstown | Gasoline | | 1031306, 1031310, 1031317 |
| 59 | Deer Park United Methodist Church | UST | Reistertown | Heating Oil | | 1031031 |
| 60 | Joseph Ragan Carpenter | UST | Reisterstown | Heating Oil | | 1031086 |
| 61 | Reisterstown Evergreen Church Of The Brethren | UST | Reisterstown | Heating Oil | | |
| 62 | Mr. & Mrs. Valley (Tenants) | UST | Lutherville | Residential Heating Oil | | |
| 63 | Ridge Country Store | UST B | Baltimore | Gasoline | | 1031236 |
| 64 | Ridge Country Store | UST A | Baltimore | Gasoline | 2000 | 1031236 |
| 65 | Padonia Park Club | UST | Cockeysville | Heating Oil | | 1030076 |
| 66 | Isadore S. Jachman Reserve Center | UST | Owings Mills | | | 1031188, 1031189 |
| 67 | Congregation Rosh Pina | UST | Owings Mills | Heating Oil | 1500 | 1031055 |
| 68 | G. Edgar Harr Son'S Corp | UST B | Baltimore | Gasoline | | |
| 69 | G. Edgar Harr Son'S Corp | UST A | Baltimore | Gasoline | | |
| 70 | Kingsville Elementary School | UST | Kingsville | Heating Oil | 10000 | 1030021 |
| 71 | Kings Court Motel | UST | Kingsville | Heating Oil | 800 | 1030021, 1031080, 1031083 |
| 72 | Philip C. Cohen | UST | Reistertown | Residential Heating Oil | | 1031179 |
| 73 | Joel Stephen Turett | UST | Glen Arm | Residential Heating Oil | | |
| 74 | St. John The Evangelist | UST | Hydes | Heating Oil | | 1030067, 1030069 |
| 75 | St. John's School | UST | Hydes | Heating Oil | | 1030067, 1030069 |
| 76 | Cox, Claude P. | UST | Hydes | Residential Heating Oil | | 1031212 |
| 77 | Valley Wine | UST A | Baldwin | Gasoline | 6000 | 1031215, 1031321 |
| 78 | Valley Wine | UST B | Baldwin | Gasoline | 8000 | 1031212, 1031215, 1031321 |
| 79 | Carroll Manor Elementary School | UST | Baldwin | Heating Oil | 10000 | 1030005 |
| 80 | Fairview United Methodist Church | UST | Phoenix | Heating Oil | | 1031198 |
| 81 | Jacksonville Elementary School | UST A | Phoenix | Heating Oil | | 1030054, 1030068 |
| 82 | Jacksonville Elementary School | UST B | Phoenix | Heating Oil | | 1030054 |
| 82 | Jacksonville Elementary School | UST B | Phoenix | Heating Oil | | 1030068 |
| 83 | Sparks Post Office | UST | Sparks | Heating Oil | | 1031114, 1031150, 1031333 |
| 84 | Mercantile Bank | UST | Sparks | Heating Oil | | 1031114, 1031150, 1031333 |
| 85 | Sparks Full Serve, Inc. | UST A | Sparks | Gasoline | | 1031114, 1031333, 1031351 |
| 86 | Sparks Full Serve, Inc. | UST B | Sparks | Gasoline | | 1031114, 1031333, 1031351 |

# Table 18: Underground Storage Tanks (USTs) Identified/Confirmed During Site Verification Visits

| ID | Owner | Name | Town | Type | Volume (Gal) | Relevant PWSIDs * |
|---|---|---|---|---|---|---|
| 87 | Gable, Robert R. | UST | Upperco | Residential Heating Oil | | 1031070 |
| 88 | Sharp, Alfred E. | UST | Sparks | Residential Heating Oil | | |
| 89 | Glencoe Gardens | UST | Monkton | Heating Oil | | |
| 90 | Hereford Middle School | UST A | Parkton | Heating Oil | | 1030018 |
| 91 | Hereford Middle School | UST A | Parkton | Heating Oil | | 1030018 |
| 92 | Crown Station, MD-142 | UST D | Hampstead | Gasoline | | |
| 93 | Crown Station, MD-142 | UST C | Hampstead | Gasoline | | |
| 94 | Crown Station, MD-142 | UST B | Hampstead | Gasoline | | |
| 95 | Crown Station, MD-142 | UST A | Hampstead | Gasoline | | |
| 96 | Crown Station, MD-142 | UST E | Hampstead | Gasoline | | |
| 97 | Cedar Grove United Methodist Church | UST | Monkton | Heating Oil | 500 | 1031330 |
| 98 | Rittenhouse Fuel Company | UST | Monkton | Heating Oil | | 1031232 |
| 98 | Rittenhouse Fuel Company | UST | Monkton | Heating Oil | | 1031060 |
| 99 | Mt. Carmel U. M. Church Educational Building | UST | Parkton | Heating Oil | | 1031118 |
| 100 | Hereford High School | UST D | Parkton | Heating Oil | | 1030017 |
| 101 | Hereford High School | UST C | Parkton | Heating Oil | | 1030017 |
| 102 | Hereford High School | UST B | Parkton | Heating Oil | | 1030017 |
| 103 | Hereford High School | UST A | Parkton | Heating Oil | | 1030017 |
| 104 | Sparks Store | UST A | Upperco | Gasoline | | 1030013, 1031029 |
| 105 | Sparks Store | UST B | Upperco | Gasoline | | 1030013, 1031029 |
| 106 | Sparkle Dew Farm (Formerly Sparks & Hare Farm) | UST | Upperco | Heating Oil | | |
| 107 | Wally's Citgo | UST B | Parkton | Gasoline | | 1030001, 1031264 |
| 108 | Wally's Citgo | UST C | Parkton | Gasoline | | 1030001, 1031264 |
| 109 | Wally's Citgo | UST A | Parkton | Gasoline | | 1030001, 1031264 |
| 110 | Exxon #26679 | UST A | Parkton | Gasoline | | 1031043, 1031290 |
| 111 | Exxon #26679 | UST B | Parkton | Gasoline | | 1031043 |
| 112 | Exxon #26679 | UST C | Parkton | Gasoline | | 1031043 |
| 113 | Exxon #26679 | UST D | Parkton | Gasoline | | 1031043 |
| 114 | Prettboy Elementary School | UST | Freeland | Heating Oil | 10000 | 1030028 |
| 115 | Prettyboy Market, Inc. | UST B | Freeland | Gasoline | | 1031064 |
| 115 | Prettyboy Market, Inc. | UST B | Freeland | Gasoline | | 1031214 |
| 116 | Prettyboy Market, Inc. | UST A | Freeland | Gasoline | | 1031064, 1031214 |
| 117 | Meadowcroft Motors | UST A | Freeland | Gasoline | | 1031352 |
| 118 | Meadowcroft Motors | UST B | Freeland | Gasoline | | 1031352 |
| 119 | Seventh District Elementary School | UST | Parkton | Heating Oil | 10000 | 1030030 |
| 120 | Maryland Line Service Center | UST C | Parkton | Diesel | | 1031231 |
| 121 | Maryland Line Service Center | UST B | Parkton | Diesel | | 1031231 |
| 122 | Maryland Line Service Center | UST A | Parkton | Diesel | | 1031231 |
| 123 | Nakazawa, Hiroshi | UST | Stevenson | Residential Heating Oil | | 1031267 |
| 124 | Wards Chapel UMC / Preschool | UST | Randallstown | Heating Oil | 15000 | 1031171 |
| 125 | Citgo, Hanover Pike | UST B | Hampstead | Gasoline | | |
| 126 | Citgo, Hanover Pike | UST A | Hampstead | Gasoline | | |
| 127 | Getty, Liberty Rd | UST C | Randallstown | Gasoline | | |
| 128 | Getty, Liberty Rd | UST B | Randallstown | Gasoline | | |
| 129 | Getty, Liberty Rd | UST A | Randallstown | Gasoline | | |
| 130 | Exxon, Liberty Rd | UST A | Randallstown | Gasoline | | |
| 131 | Exxon, Liberty Rd | UST B | Randallstown | Gasoline | | |
| 132 | Exxon, Liberty Rd | UST C | Randallstown | Gasoline | | |
| 133 | Exxon, Liberty Rd | UST D | Randallstown | Gasoline | | |
| 134 | Exxon, Liberty Rd | UST E | Randallstown | Gasoline | | |
| 135 | Citgo, Liberty Rd | UST C | Randallstown | Gasoline | | |
| 136 | Citgo, Liberty Rd | UST B | Randallstown | Gasoline | | |
| 137 | Citgo, Liberty Rd | UST A | Randallstown | Gasoline | | |
| 138 | Grace United Methodist Church | UST | Upperco | Heating Oil | | 1031057 |
| 139 | St Peter's Lutheran Church | UST | Hampstead | Heating Oil | | 1031159 |
| 140 | Citgo, Frederick Rd | UST A | Catonsville | Gasoline | | |
| 141 | Citgo, Frederick Rd | UST C | Catonsville | Gasoline | | |

## Table 18: Underground Storage Tanks (USTs) Identified/Confirmed During Site Verification Visits

| ID | Owner | Name | Town | Type | Volume (Gal) | Relevant PWSIDs * |
|---|---|---|---|---|---|---|
| 142 | Citgo, Frederick Rd | UST B | Catonsville | Gasoline | | |
| 143 | Fifith District Elementary School | UST | Upperco | Heating Oil | 10000 | 1030013, 1031029 |
| 144 | Gray & Sons Inc | UST | Butler | Diesel | 10000 | 1031061 |
| 145 | Butler Volunteer Fire Co | UST B | Parkton | Unknown | | 1031016, 1031017 |
| 146 | Butler Volunteer Fire Co | UST A | Parkton | Unknown | | 1031016 |
| 146 | Butler Volunteer Fire Co | UST A | Parkton | Unknown | | 1031017 |
| 147 | Genesee Valley Learning Center | UST | Parkton | Diesel | | 1031264 |
| 148 | Md State Highway Administration | UST C | Hereford | Unknown | | 1031060, 1031232 |
| 149 | Md State Highway Administration | UST B | Hereford | Unknown | | 1031060, 1031232 |
| 150 | Md State Highway Administration | UST A | Hereford | Unknown | | 1031232 |
| 150 | Md State Highway Administration | UST A | Hereford | Unknown | | 1031060 |
| 151 | Grauls Superthrift Market | UST | Parkton | Gasoline | 20000 | 1031060, 1031232 |
| 152 | Meadowcroft Exxon | UST A | Parkton | Gasoline | | 1031060, 1031232 |
| 153 | Meadowcroft Exxon | UST B | Parkton | Gasoline | | 1031060, 1031232 |
| 154 | Meadowcroft Exxon | UST D | Parkton | Gasoline | | 1031060, 1031232 |
| 155 | Meadowcroft Exxon | UST C | Parkton | Gasoline | | 1031060, 1031232 |
| 156 | Valley Inn | UST | Lutherville | Residential Heating Oil | | 1031168 |
| 157 | Bob's Auto | UST - Permanently out of use | Monkton | | | 1030019, 1031047, 1031067, 1031203, 1031301, 1031302, 1031320, 1031345 |
| 158 | Property Adjacent To Food Market | UST | Maryland Line | Diesel | 250 | 1031163, 1031230 |
| 159 | Winkler Auto | UST B | Parkton | Gasoline | | 1031106, 1031163 |
| 160 | Winkler Auto | UST A | Parkton | Gasoline | | 1031106, 1031163 |
| 161 | White Hall Market | UST A - Out of Use | White Hall | Gasoline | | 1031173, 1031173 |
| 162 | White Hall Market | UST B - Out of Use | White Hall | Gasoline | | |
| 163 | White Hall Market | UST C - Out of Use | White Hall | Gasoline | | 1031173 |
| 164 | West Liberty Um Church | UST | White Hall | Heating Oil | | 1031241 |
| 165 | Twin Oaks Carryout & General Store | UST | Monkton | Gasoline | | 1031327 |
| 166 | Citgo, Jarrettsville Pike | UST B | Phoenix | Gasoline | | 1030054, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332, |
| 167 | Citgo, Jarrettsville Pike | UST A | Phoenix | Gasoline | | 1030054, 1031074, 1031146, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 168 | Citgo, Jarrettsville Pike | UST D | Phoenix | Gasoline | | 1030054, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332, |
| 169 | Citgo, Jarrettsville Pike | UST C | Phoenix | Gasoline | | 1030054, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332, |
| 170 | Four Corners Exxon, Jacksonville | UST A | Phoenix | Gasoline | | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 171 | Four Corners Exxon, Jacksonville | UST B | Phoenix | Gasoline | | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |

## Table 18: Underground Storage Tanks (USTs) Identified/Confirmed During Site Verification Visits

| ID | Owner | Name | Town | Type | Volume (Gal) | Relevant PWSIDs * |
|---|---|---|---|---|---|---|
| 172 | Four Corners Exxon, Jacksonville | UST C | Phoenix | Gasoline | | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 173 | Four Corners Exxon, Jacksonville | UST D | Phoenix | Gasoline | | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 174 | Four Corners Amoco | UST B | Phoenix | Gasoline | 10000 | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 175 | Four Corners Amoco | UST A | Phoenix | Gasoline | 10000 | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 176 | Four Corners Amoco | UST C | Phoenix | Gasoline | | 1030060 |
| 177 | Long Green Baptist Church | UST | Long Green | Heating Oil | | 1031300 |
| 178 | Glen Arm Maintenance | UST | Randallstown | Unknown | | 1031210 |
| 179 | R Gervais | UST - Permanently out of use | Glen Arm | Residential Heating Oil | | |
| 181 | White Marsh Exxon | UST A | White Marsh | Gasoline | | |
| 182 | White Marsh Exxon | UST B | White Marsh | Gasoline | | |
| 183 | White Marsh Exxon | UST C | White Marsh | Gasoline | | |
| 184 | White Marsh Exxon | UST D | White Marsh | Gasoline | | |
| 185 | Fork United Methodist Church | UST | Fork | Heating Oil | | 1031200 |
| 186 | Fork Citgo | UST A | Kingsville | Gasoline | 6000 | 1030070, 1031199, 1031250, 1031259, 1031263, 1031346 |
| 187 | Fork Citgo | UST B | Kingsville | Gasoline | | 1030070, 1031199, 1031250, 1031259, 1031263, 1031346 |
| 188 | Fork Citgo | UST E | Kingsville | Gasoline | | 1030070, 1031199, 1031250, 1031259, 1031263, 1031346 |
| 189 | Fork Citgo | UST D | Kingsville | Gasoline | | 1030070, 1031199, 1031250, 1031259, 1031263, 1031346 |
| 190 | Fork Citgo | UST C | Kingsville | Gasoline | | 1030070, 1031199, 1031250, 1031259, 1031263, 1031346 |
| 191 | Riley's Marina | UST | Baltimore | Gasoline | | 1031144, 1031196 |
| 192 | Kingsville Food Rite | UST | Kingsville | Heating Oil | 10000 | 1031080, 1031083, 1031312 |
| 193 | Island View Inn, Inc. | UST - Permanently out of use | Baltimore | Heating Oil | | 1031072 |
| 194 | Hawthorne Elementary School | UST - Permanently out of use | Baltimore | Heating Oil | | |
| 195 | Clark Residence | UST - Permanently out of use | Reistertown | Residential Heating Oil | | 1031031 |
| 196 | James Keelty, III | UST - Permanently out of use | Lutherville | Residential Heating Oil | | |
| 197 | Fairbank, David / Woodensburg Country Store | UST - Permanently out of use | Reisterstown | Residential Heating Oil | | 1031176 |
| 198 | Baltimore County Fd Training/Nike Site | UST - Permanently out of use | Phoenix | Heating Oil | | 1031129 |
| 199 | Parish House Of Church | UST - Permanently out of use | Sparks | Heating Oil | | 1031228 |

## Table 18: Underground Storage Tanks (USTs) Identified/Confirmed During Site Verification Visits

| ID | Owner | Name | Town | Type | Volume (Gal) | Relevant PWSIDs * |
|---|---|---|---|---|---|---|
| 200 | Sparkle Dew Farm | UST - Permanently out of use | Upperco | Unknown | | 1031052 |
| 201 | Lawrence Peter | UST - Permanently out of use | Reistertown | Residential Heating Oil | | 1031046 |

* This table includes PCS identified during site visits for both transient and non-transient non-community PWS;
PWSIDs include both Non-Transient (this report) and Transient (not this report) locations

# Table 19: Non-UST Potential Contaminant Sources Identified/Confirmed During Site Verification Visits

| ID | Owner | Type | Town | Relevant PWSIDs * |
|---|---|---|---|---|
| 1 | Granite - Launch | CERCLIS | Woodstock | 1031188 |
| 2 | Granite - Control | CERCLIS | Woodstock | 1031189 |
| 3 | Maryvale Preparatory School | CERCLIS | Lutherville | 1030025 |
| 4 | Greenspring - Control | CERCLIS | Owings Mills | 1031188, 1031189 |
| 5 | United Container Machinery | CERCLIS | Glen Arm | 1031202 |
| 6 | Us Army Phoenix - Launch | CERCLIS | Phoenix | 1031129 |
| 7 | Four Corners (Jacksonville) | CERCLIS | Phoenix | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 8 | Tyco Intsruments | CERCLIS | Sparks | |
| 9 | Greenspring Control Cerclis | CERCLIS | Owings Mills | 1031188, 1031189 |
| 10 | Riley'S Marina | CHS Generator | Baltimore | 1031144, 1031196 |
| 11 | American Tower | CHS Generator | Randallstown | |
| 12 | Photographic Directory Publishing | CHS Generator | Randallstown | |
| 13 | King's Valet Cleaners | CHS Generator | Randallstown | |
| 14 | Box Hill Cleaners | CHS Generator | Joppa | |
| 15 | Smoots Body Shop | CHS Generator | Reisterstown | 1031306, 1031310, 1031317 |
| 16 | Belko Corporation | CHS Generator | Kingsville | 1030003 |
| 17 | United Container Machinery | CHS Generator | Glen Arm | 1031202 |
| 18 | Verizon Telephone | CHS Generator | Fork | 1030070, 1031199, 1031250, 1031259, 1031263, 1031346 |
| 19 | Field, Paul E Jr DDS | CHS Generator | Fork | 1030070, 1031199, 1031250, 1031259, 1031263, 1031346 |
| 20 | Weschler Instruments | CHS Generator | Hunt Valley | |
| 21 | AAI Corp. | CHS Generator | Hunt Valley | |
| 22 | Jacksonville Chevron | CHS Generator | Phoenix | 1030054, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332, |
| 23 | Amoco #3033 | CHS Generator | Phoenix | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |

## Table 19: Non-UST Potential Contaminant Sources Identified/Confirmed During Site Verification Visits

| ID | Owner | Type | Town | Relevant PWSIDs * |
|---|---|---|---|---|
| 24 | Exxon #28077 | CHS Generator | Jacksonville | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 25 | Four Corners Exxon, Jacksonville | CHS Generator | Phoenix | 1030054, 1030060, 1031074, 1031146, 1031184, 1031260, 1031291, 1031323, 1031328, 1031332 |
| 26 | Tyco Intsruments | CHS Generator | Sparks | |
| 27 | Tyco Intsruments | CHS Generator | Sparks | |
| 28 | Fowblesburg Motors | CHS Generator | Upperco | 1031040, 1031068 |
| 29 | Ed's Garage | CHS Generator | Hereford | 1030019, 1031047, 1031067, 1031203, 1031301, 1031320, 1031345 |
| 30 | Autotech | CHS Generator | Monkton | 1030019, 1031047, 1031067, 1031203, 1031301, 1031320, 1031345 |
| 31 | Maryland State Highway Administration | CHS Generator | Parkton | 1031060, 1031232 |
| 32 | Troyer's Self-Serve Station | CHS Generator | Parkton | 1031170, 1031292, 1031302 |
| 33 | Troyer's Self-Serve Station | CHS Generator | Parkton | 1031170, 1031292, 1031302 |
| 34 | White House Farm Supply | CHS Generator | Upperco | 1031029 |
| 35 | Verizon Telephone | CHS Generator | Parton | 1031124 |
| 36 | Meadowcroft Motors | CHS Generator | Freeland | 1031352 |
| 37 | BGE | CHS Generator | Catonsville | 1031224 |
| 38 | Verizon Telephone | CHS Generator | Kingsville | 1030070, 1031199, 1031250, 1031259, 1031263, 1031346 |
| 39 | Randallstown Animal Hospital | Groundwater Discharge | Randallstown | 1031191, 1031307 |
| 40 | Smoots Body Shop | Groundwater Discharge | Reisterstown | 1031306, 1031310, 1031317 |
| 41 | Har Sinai Property | VCP Site | Baltimore | |
| 202 | Days Cove Rd Reclamation Site Rubble Landfill | Rubble Landfill | White Marsh | 1031275 |
| 203 | Mt. Vista Golf Course | Yard Waste Dump | Bradshaw | 1031303 |
| 204 | Redland-Genstar Quarry | Mined Land | Baltimore County | 1031325 |
| 205 | Redland-Genstar Quarry | Mined Land | Baltimore County | 1031298 |
| 206 | Gunpowder Falls State Park | Mined Land | Baltimore | 1031334 |

* This table includes PCS identified during site visits for both transient and non-transient non-community PWS;
PWSIDs include both Non-Transient (this report) and Transient (not this report) locations

# Table 20: Summary of Sanitary Survey and Site Visit Observatations for Non-Transient Public Water Systems

| No. | PWSID | PWS NAME | Date Of Most Recent Sanitary Survey Reviewed | Deficiency Noted? | Sanitary Survey Deficiency Explanation / Comments | Date of SWAP Visit | SWAP Field Notes |
|---|---|---|---|---|---|---|---|
| 1 | 1030001 | A.I.M. Corporation | Oct-00 | No | Drilled third well due to 1999 drought, well 1 has no tag; Changed from bottled to filtered well water in 1997. | May-03 | 2 wells GPS'd, one located underneath manhole cover in paved area; Employees knew of no third well. |
| 2 | 1030003 | Belko Corporation | Jul-00 | No | Daily pH monitoring due to corrosive water. Bottled water in office. | Mar-03 | Plant undergoing changes in ownership; three wells GPS'd, only two formerly used for PWS; wells not accessible, beneath rubber and metal sheetings; in concrete vaults |
| 3 | 1030005 | Carroll Manor Elementary School | Aug-00 | No | Developed bacteriological sampling plan. | Apr-03 | Well inside pump house; condition OK |
| 4 | 1030006 | Chestnut Ridge Pre-School | Sep-01 | Yes | Well Pit #1 was flooded. Water was just below top of wellhead. Vent 6" above cap. Discussed operator certification. Follow up required. Follow up states need for certified operator. bottle water for drinking. | Mar-03 | Two wells GPS'd. both in concrete vaults, no tags; condition OK |
| 5 | 1030013 | Fifth District Elementary | Aug-00 | No | New well pump in June, New bact. sampling plan. | May-03 | Well underneath pavement in basement of school; no tag; condition OK |
| 6 | 1030017 | Hereford High School | Feb-00 | No | New wells in Service. | May-03 | Seven wells GPS'd, three with tags; condition OK; yield from all the wells is directed to water tower on-site. |
| 7 | 1030018 | Hereford Middle School | Aug-00 | No | | Apr-03 | 2 wells GPS'd; condition OK |
| 8 | 1030020 | Jemicy Farm School | May-01 | Yes | Needs daily chlorine and pH monitoring. Follow up required, need better daily monitoring. | Mar-03 | Two wells GPS'd, one currently not in use; condition OK |
| 9 | 1030021 | Kingsville Elementary School | Aug-00 | No | New bact. sampling plan. | Mar-03 | Well inside school; condition OK |
| 10 | 1030025 | Maryvale Trinity Prep. School | Sep-01 | No | | Mar-03 | Three wells on site, one w/ no tag; condition of all OK; two wells without protective bollards |
| 11 | 1030026 | Police & Correctional Training | May-02 | Yes | Need certified operator,pH monitoring, bact. plan; followup letter sent, bottled water supplied. | Mar-03 | Well inside pump house; condition OK |
| 12 | 1030028 | Prettyboy Elementary School | Aug-00 | No | Bottleed water supplied since 1994, Bact plan developed. | May-03 | Well inside building, no tag; condition OK |
| 13 | 1030030 | Seventh District Elementary | Feb-00 | No | Well #2 is very close to parking lot. Using bottled water since August 2001. | May-03 | 3 wells GPS'd, "Old Well" w/ no tag, located in basement; conditions OK; no protective bollards |
| 14 | 1030031 | Simkins Industries | Jan-01 | Yes | Fecal Contamination. Bottled water notices posted. Well cap loose, conduit not sealed. Air in Cl line. Sanitary survey may be from 1/24/02 not 1/24/01 because it notes fecal contamination and there is another san survey from 1/4/01; Discussed disinfecting system. May have cross connection issues. | Apr-03 | Well OK |
| 15 | 1030034 | St James Academy | Aug-01 | Yes | Operator certification required. sent follow up letter. | Apr-03 | Four wells GPS'd on property; all in good condition, some without protective bollards |

# Table 20: Summary of Sanitary Survey and Site Visit Observatations for Non-Transient Public Water Systems

| No. | PWSID | PWS NAME | Date Of Most Recent Sanitary Survey Reviewed | Deficiency Noted? | Sanitary Survey Deficiency Explanation / Comments | Date of SWAP Visit | SWAP Field Notes |
|---|---|---|---|---|---|---|---|
| 16 | 1030038 | St Stephens Elementary | Nov-00 | No | Other wells at site not in use nor noted here; discussed connecting new well to system. Water is currently purchased from Balt City and delivered 1-2 times per week at 10,000 gal each. Contractor maintains Cl residual. | Mar-03 | 3 wells in use and in good condition; one well in concrete vault |
| 17 | 1030045 | Child Care Academy | Jan-01 | No | No Treatment. | Apr-03 | Well in vault inside house, covered by rug; condition OK |
| 18 | 1030048 | Liberty Christian School | Sep-01 | Yes | Need operator certification; There is reference to a second well onsite, but no information in sanitary survey. Second well was tested for coliform, confirming presence of well. Coliform documentation confusing and difficult to confirm database. | Apr-03 | 2 wells GPS'd, one w/ no tag; new well identified; condition OK, no protective bollards |
| 19 | 1030054 | Manor Shopping Center | May-02 | Yes | Well #1 loose cap.<br>Well #4 cracked cap.<br>Need certified operator. | Apr-03 | Five wells GPS'd; condition of all OK, only two with tags |
| 20 | 1030056 | Chestnut Ridge Country Club | Mar-01 | Yes | Need Operator certification, bact sampling plan. | Mar-03 | Two wells GPS'd, condition OK; no protective bollards |
| 21 | 1030058 | Penn-Mar Organization, Inc. | Jul-00 | No | Water coolers serve water from RO units. | May-03 | Well OK; adjacent to parking lot; no protective bollards |
| 22 | 1030060 | Paper Mill Village Shopping Center | Jul-00 | Yes | Lead and copper exceedances. | Apr-03 | Well OK |
| 23 | 1030062 | Monkton Um Church/Country Day Care | Aug-00 | No | Bottled Water. | Apr-03 | Well OK, no tag; At edge of field, nearly covered in brush |
| 24 | 1030066 | Trinity Episcopal Church | Feb-01 | No | Bottle water supplied. | Mar-03 | Well inside building, in a closet, connected to a pressurized tank; no tag visible; cemetery on site uphilll from well and building. |
| 25 | 1030067 | Saint Johns School | Mar-01 | Yes | New well, discussed operator certification. | Mar-03 | Two wells GPS'd; condition OK, no protective bollards |
| 26 | 1030068 | Jacksonville Elementary | Aug-00 | No | Bottled water since 1995; Bottle water supplied. | Apr-03 | 2 wells GPS'd (both OK); well coditions OK; no protective bollards |
| 27 | 1030069 | Saint Johns Church | Mar-01 | Yes | Operator certification required. sent follow up letter. | Mar-03 | Well OK; at edge of parking lot w/ no protective bollards |
| 28 | 1030070 | Free-State Montessori School | Aug-00 | No | Rusted storage tank. Replacement recommended. Bottled water supplied. | Apr-03 | Well underneath manhole cover |
| 29 | 1030073 | Bluemount Nurseries, Inc. | Oct-00 | No | No treatment. | Apr-03 | Five wells GPS'd, 3 w/ no tags; conditions OK |
| 30 | 1030076 | Padonia Corporation | Nov-00 | Yes | Need certified operator, wrote bact. sampling plan. | Mar-03 | Office Well in manhole; tag not visible; well appears in good condition. Water pumped to underground holding tank, then distributed to building. Daycare Well - BA 93-0453 in good condition; tag visible. |
| 31 | 1030077 | Purnell Armory | Feb-01 | No | Bottled water supplied. | Mar-03 | Well in good condition, in wet area |
| 32 | 1030081 | Temple Emanuel Of Baltimore | May-02 | Yes | Need licensed operator. | Apr-03 | Well condition OK; no protection; in bushes |
| 33 | 1030082 | Reisterstown Lumber Company | Jun-00 | Yes | Under boil water advisory due to total coli detect. Bottle water supplied. Need to raise casing of water. | Mar-02 | Well OK; in traffic area with no protective bollards |

# Table 20: Summary of Sanitary Survey and Site Visit Observatations for Non-Transient Public Water Systems

| No. | PWSID | PWS NAME | Date Of Most Recent Sanitary Survey Reviewed | Deficiency Noted? | Sanitary Survey Deficiency Explanation / Comments | Date of SWAP Visit | SWAP Field Notes |
|---|---|---|---|---|---|---|---|
| 34 | 1030083 | Woodmont Academy | Aug-01 | No | Corrosion control systeminstalled. Hired cert. Operator. | Mar-03 | Upper well in concrete vault, unable to observe directly; lower well beneath/djacent to ASTs |
| 35 | 1030084 | Sparks Elementary School | Aug-00 | No | Bact sampling plan developed. Softener not being used. | Apr-03 | Two wells GPS'd; one w/ no tag; condition OK |
| 36 | 1030087 | Odyssey School | Sep-02 | Yes | No treatment, school built w/o construction permit, cap development; Discussed SOP, sampling plan, treatment, sent follow up letter. Will revisit to meet with operator. | Mar-03 | Well OK, soon to receive tag; good condition |
| 37 | 1030091 | Ptach School | | No | No Sanitary Survey in file. One sheet saying that MDE staff evaluated the system based on a phone conversation and determined it to be a Non-transient, Non-community system. 31 students, 9 full time staff. | Apr-03 | 2 wells GPS'd, conditions OK; one in traffic area, no protective bollards |
| 38 | 1031052 | Friendly Farms | Oct-99 | No | New system, one well. | May-03 | Well OK, almost buried under mulch; condition unclear |
| 39 | 1031060 | Grauls Superthrift Market | Mar-02 | Yes | Will visit in 2 months to discuss consistent MTBE detections. No follow-up letter noted in file; Recently installed water softener to reduce nitrates, allowed them to remove notices. | May-03 | One well GPS'd; nearly buried in soil |
| 40 | 1031124 | Our Lady Of Grace Church And School | Jul-01 | Yes | Need operator certification; New NTNC, System wants to separate church to different transient system. Poor yeilding wells. UV system with alarm and back-up power. | May-03 | 3 wells GPS'd; condition OK |
| 41 | 1031131 | Pine Grove Nursery And Day Care | May-02 | Yes | Need certified operator. Bottled water system. | May-03 | Well in vault on concrete pad; condition OK |
| 42 | 1031150 | Mercantile Bank | Dec-00 | No | Monitoring and daily log ok. | May-03 | Well inside building; condition OK |
| 43 | 1031211 | Oregon Grille | Sep-01 | Yes | Need certified operator. | Mar-03 | 2 wells GPS'd, condition OK; one well in traffic-area, no protective bollards |
| 44 | 1031258 | Kingsville Plaza | Jan-02 | Yes | Total coliform detect. System has been disinfected. Planning to install a UV system. Susequent samples have been clean. | Mar-03 | Two wells GPS'd; both wells in good condition |
| 45 | 1031267 | Stevenson Shopping Center | Apr-02 | Yes | Need cert operator and bact. sampling plan. | Jun-03 | Well inside building; condition OK |
| 46 | 1031312 | St Pauls Lutheran Church & School | May-00 | No | New NTNC system. Calcite fillers, but no cu/pb problems. | Mar-03 | Wells in good condition; near buidling |