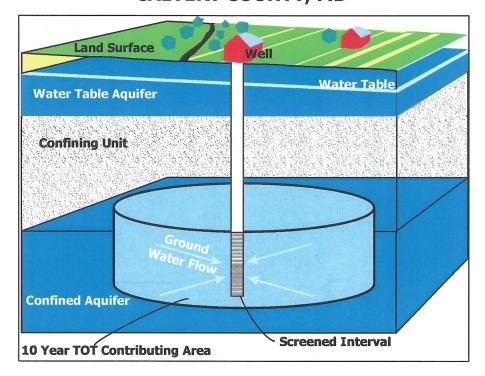
SOURCE WATER ASSESSMENT

FOR CALVERT COUNTY, MD



Prepared By
Water Management Administration
Water Supply Program
December 2005



Robert L. Ehrlich, Jr. Governor

Kendl P. Philbrick Secretary

Michael S. Steele Lt. Governor Jonas A. Jacobson Deputy Secretary

Table of Contents

Summary	Page <u>ii</u>
Introduction	
Well Information	1
Hydrogeology	2
Water Quality Data	3
Susceptibility Analysis	4
Summary and Recommendations for Protecting Water Supplies	6
References	7
Sources of Data	7
Tables	
Table 1. Well Information	8
Table 1. Well Information Table 2. Treatment Methods	13
Table 3. IOC Water Quality Data	17
Table 4. Routine Bacteriological Samples	22
Table 5. Well Deficiencies	27
Figures	
Figure 1. Location of Each System in County	29
Figure 2. Simplified Aquifer Cross Section	30

SUMMARY

The Maryland Department of the Environment's Water Supply Program (WSP) has conducted a Source Water Assessment for one hundred and forty one transient noncommunity water systems in Calvert County. The required components of this report as described in Maryland's Source Water Assessment Program (SWAP) are: 1) delineation of an area that contributes water to the source; 2) identification of potential sources of contamination; and 3) determination of the susceptibility of the water supply to contamination. Recommendations for protecting the drinking water supply conclude this report.

Confined aquifers protect water supplies from contaminants originating on the land surface. Transient water supply systems in Calvert County use only confined aquifers. One hundred forty nine wells supply the one hundred forty one transient systems in Calvert County. Through investigation of MDE records and interviewing system owners, it was concluded that all of these are completed in confined aquifers.

The WSP reviewed water quality results, along with the presence of potential sources of contamination within the individual assessment area, the integrity of the system's well, and the inherent vulnerability of the aquifer. None of the transient systems are susceptible to volatile organic compounds or nitrate/nitrite; however, some systems are susceptible to microbiological contaminants through well construction deficiencies. The sanitary integrity of the water supply systems should be maintained by following the protection recommendations at the end of this report to individual water system owners and county officials. These include disinfecting the well and/or system after any work is performed, replacing deficient well caps with two-piece caps, caulking the electrical conduits and continuing regular inspections of the water system.

INTRODUCTION

The Water Supply Program (WSP) has conducted a Source Water Assessment for one hundred and forty-one transient noncommunity water systems in Calvert County. As defined in Maryland's Source Water Assessment Plan (SWAP), a transient noncommunity water system is any noncommunity water system that does not regularly serve at least twenty-five of the same individuals over six months per year. Some good examples of transient water systems include hotels, restaurants, parks, fire departments, and churches. Figure 1 shows where each of the transient systems is located in Calvert County.

The transient systems must sample for two contaminants. The first is total coliform bacteria, which is an indicator that other microbiological contaminants could be in the water supply. Systems are required to test for coliform organisms regularly. Additional sampling is required for fecal coliform and at other sample taps following positive total coliform results. The second contaminant is nitrogen in the form of nitrate or nitrite. This SWAP report will focus on these two contaminants, but will address other obvious potential sources of contamination.

Calvert County is located in the Southern portion of the State and is located in the Coastal Plain physiographic province. The Coastal Plain, geologically the youngest province in Maryland, covers nearly half of the State and consists entirely of unconsolidated sediments. All of the transient water supplies obtain their water from wells of various size and depth. All of these wells are completed in confined aquifers. Depth of well, lithology, and nitrate data were used to determine whether the wells are completed in confined or unconfined aquifers. An accurate determination of the aquifer type is very important because no assessment area needs to be defined for systems using confined aquifers.

WELL INFORMATION

Well information for each system was obtained from the WSP's database, owner interviews, site visits accompanied by the system engineer for the county, well completion reports, sanitary survey inspection reports, and published reports. A total of one hundred forty-nine wells are used by the one hundred forty-one transient systems assessed in this report. The well tag number, which provides vital well information, was found for one-hundred twenty seven of the one hundred forty-nine wells that are being used by the systems (Table 1). From the well tag information, ground water appropriation data, and with the nitrate sampling data it was concluded that all of the wells are completed in confined aquifers (Aquifer code "C") and none of the wells were completed in unconfined aquifers (Aquifer code "U"). Table 1 contains a summary of the well information for each system.

The well information that was available at the start of this project for the transient systems in Calvert County needed to be supplemented with additional research in order to perform the Source Water Assessment for the county. Using this information, it was

determined that eighty of the wells were completed in confined aquifers. After field investigations, interviews with the system owners, and reviewing the nitrate data for the other wells, it was determined that all of the wells were confined. Well tags were found for an additional forty-seven wells through field observations. Well locations were taken with a GPS unit at the transient systems that required fieldwork. The other wells were located by using both the county sanitary survey and aerial photos. Information was found that at least one hundred twenty four of the one hundred forty-nine wells were completed after 1973, which is when the State adopted the well completion standards for wells.

HYDROGEOLOGY

Ground water flows through pores between gravel, sand, and silt grains in unconsolidated sedimentary aquifers such as those used by the transient non-community water systems in Calvert County. An aquifer is any formation that is capable of yielding a significant amount of water. A confining unit is a layer generally composed of fine material such as clay and silt, which transmits relatively very little water. Confined aquifers are those formations that are overlain by a confining unit. Confined aquifers are recharged from the water stored in the confining unit above and from precipitation that infiltrates into the formation where it is exposed at the surface. Due to the depth and areal extent of the unconsolidated sediments in Southern Maryland, water stored in these aquifers is very old and the water pumped from wells in these aquifers has generally traveled great distances from its origin at the land surface. (DNR, 1987)

Calvert County lies within the Atlantic Coastal Plain physiographic province, which is characterized by low topography due to the underlying horizontal sedimentary layers. This province, which in Maryland includes roughly the area east of Interstate 95, is underlain by unconsolidated clastic sediments of Lower Cretaceous to recent age, which thicken to the southeast. In Calvert County, the transient non-community system wells draw water from the Piney Point/Nanjemoy aquifer, the Aquia aquifer and the Magothy aquifer. (DNR, 1987)

Piney Point (124E)

The Piney Point/Nanjemoy system is a significant aquifer used by transient non-community water systems in Calvert County due to its accessibility at relatively shallow depths, its generally good transmissivity, and its good water quality. The top of the aquifer in Calvert County ranges from fifty feet below sea level near the northern tip of the county, where its limited thickness prohibits its use, to approximately two-hundred fifty feet below sea level at the southeastern end of the county. The Piney Point/Nanjemoy does not crop out at the surface in Maryland and is overlain by the Chesapeake Group sediments, which vary in thickness depending on the geographic location. The Piney Point/Nanjemoy formation is composed primarily of quartz sand, glauconite, and shell fragments. Clay content tends to increase towards the bottom of the formation. The effective thickness (the thickness of the sandy portion of the formation that produces water) of the Piney Point/Nanjemoy in Calvert County ranges from

approximately zero to eighty feet. Transmissivity values, estimated by modeling and aquifer tests, range from less than one hundred to five hundred feet squared per day, and are highest near Solomons in the southern part of the County. (MDE, 2004)

Aquia Aquifer (125B)

The Aquia aquifer is used by a large number of transient non-community water systems in Calvert County due to its accessibility in the northern half of the County, its high transmissivity, and its relatively good water quality. The top of the Aquia aquifer in Calvert County ranges from one-hundred twenty-five feet below sea level near the northern tip of the County to approximately four-hundred fifty feet below sea level at the southern end of the County near Solomons Island. The Aquia is overlain by the Nanjemoy formation, which acts as a leaky confining unit, and is between one hundred and two hundred feet thick depending on the geographic location. The Aquia is composed of fine to medium-grained sands, of varying composition but are generally quartz and glauconite rich with calcite cementation. Shell material is more abundant in the upper portion of the aquifer. Transmissivity values, as determined by aquifer tests, range from six hundred to one thousand three hundred feet squared per day, and tend to be highest in the northernmost portions of the County. (MDE, 2004)

Magothy Aquifer (211D)

The use of the Magothy aquifer is limited to the northernmost reaches of Calvert County. The top of the Magothy aquifer in this part of the county is approximately three hundred to three hundred fifty feet below sea level. The Magothy is a primary water source in Anne Arundel County, but is not present in much of southern Calvert County. The overlying confining units are the Severn and Matawan formations. The Magothy is not well studied in this part of the State due to its limited use, but in other parts of Southern Maryland and the Eastern Shore it is a highly producing aquifer. Published transmissivity values for this aquifer are as high as ten thousand feet squared per day (MGS, 1985). The Magothy is composed of interbedded silt, sand, and clay ranges from three hundred fifty to one thousand seven hundred feet thick depending on geographic location. (MDE, 2004)

WATER QUALITY DATA

Water quality data was reviewed from the Water Supply Program's database for Safe Drinking Water Act (SDWA) contaminants. All data reported is from the water supplied to consumers. Thirteen of the Calvert County Transient Systems are known to have some type of water treatment. Table 3 summarizes the treatment methods and the reason for that treatment. Six of the systems use disinfection. If coliforms are not present in the finished water for the other one hundred thirty-five systems this data can be used to evaluate ground water or source water quality. A review of the monitoring data shows that there is some microbiological contamination believed to be caused by well construction, treatment and/or distribution deficiencies.

Nitrogen compounds

Water quality data indicates that the nitrate levels for all but one of these one hundred forty-one systems are <50% of the SDWA maximum contaminate level (MCL) standards (Table 4). Twin Shields Golf Club had a nitrate result that exceeded 50% of the MCL. The sample came from their old unconfined well that has since been replaced with a new confined well. It is not expected that the system will have any more problems with nitrate contamination because nitrate levels in confined aquifers are very low to nonexistent.

None of the systems had nitrite results that exceeded 50% of the MCL of 1 ppm for nitrite.

Microbiological Contaminants

All of the transient water suppliers are routinely sampled for microbiological contamination (total coliform analysis). If this routine sample is positive the sample is also analyzed for fecal coliform and repeat samples are required within twenty-four hours or as soon as possible. This bacteriological sampling is required by the SDWA. Table 6 summarizes the results of the coliform monitoring carried out for each system since 1996. Twenty-six of the systems have never had a positive bacteriological sample. Fifty-seven systems have had more than twenty-five percent of their bacteriological samples come back positive since 1996. Two of the systems have had positive fecal coliform samples. Both of these samples were taken in 1999, and neither sample was ever confirmed with positive fecal repeat samples.

SUSCEPTIBILITY ANALYSIS

Wells serving the Calvert County Transient Water Systems all draw their water from wells in unconsolidated sedimentary aquifers. All of these wells are completed in confined aquifers. The wells drawing from confined aquifers are protected, if the well is maintained and constructed correctly, and are not susceptible to contamination from surface activity.

Inorganic Compounds

None of the systems are susceptible to nitrogen contamination. There are only significant nitrate results for one of the one hundred forty-one systems. The positive nitrate results for Twin Shields Golf Club were taken from their old shallow well. They have since abandoned that well and are now using a confined well.

Microbiological Contaminants

As stated earlier in this report, Calvert County's unconsolidated sediments, and soil, provide protection from microbiological contamination as water percolates through the overlying soil and aquifer sediments. Most, if not all, of the microbiological contamination of unconsolidated wells comes from either well construction problems or contamination of the well water with bacteria in either the treatment or distribution.

Well construction problems can be caused from improper completion of the well by the well driller, but are mostly caused by vehicles, or lawnmowers, hitting unprotected wells. Common problems include cracked or broken well casings, and well caps. Pitless adaptors and the grouting can also be damaged during well accidents. Wells constructed in pits or low areas that are subject to flooding should be inspected and sampled to ensure their integrity. Waterproof caps are also available to be installed on wells drilled in areas prone to flooding.

All of these construction deficiencies can allow surface water containing microbiological contaminants to enter a well. Two-piece insect proof caps should be installed on all wells to prevent insects from entering the wellhead, which can cause bacterial problems.

Contaminating clean well water with coliform is very easy. Ion-exchange units, and cartridge filters can harbor bacteria that will cause positive bacterial samples. Storage or a distribution problem or repair can also introduce coliform into the system. Correctly disinfecting the water system is very important after pulling a well pump or completing improvements to the distribution system. Dead ends in the water distribution can also cause bacterial problems.

Confined Wells with > 25% Positive Bacterial Results:

If there are no well construction problems with a well drawing from a confined aquifer, the supply should be safe from microbiological contamination. A review of Table 5 indicates that at least one hundred eighteen of the one hundred forty-one confined systems have had at least one positive total coliform sample in the past eight years. Fifty-seven of the systems have had greater than 25% of their samples come back positive for coliform.

Any confined water system where >25% of their water samples are positive for bacteria should have their wellhead inspected. This inspection should focus on eliminating any ways that insects or surface water could enter the wellhead. All water systems should also inspect their distribution systems to insure that drinking water is not contaminated through distribution deficiencies. These may include dead ends, cross connections, inadequate backflow prevention and static water in pipes.

MDE did site visits to numerous water systems across Calvert County. Table 5 highlights the wellhead deficiencies that MDE employees noted while on site. The recommended well improvements should be made as soon as possible. The well and entire water system must be chlorinated after the improvements are made.

SUMMARY AND RECOMMENDATIONS FOR PROTECTING WATER SUPPLIES

Key Findings:

This report identified transient water supplies in Calvert County as being more likely to be contaminated by microbiological contaminants than nitrate or nitrite nitrogen. Sources of microbiological contamination, however, are not believed to be related to ground water contamination, but rather the maintenance of the integrity of the individual water supply system. The recommendations that immediately follow are a result of these key findings.

Recommendations for Individual Water System Owners

- Any wellhead deficiencies noted in Table 5 must be corrected as soon as possible.
- The sanitary integrity of the water supply system must be maintained. Sanitary defects noted in county sanitary surveys should be corrected. All work on the water system should be performed in a sanitary manner and followed with a one-time disinfection.
- Coliform testing results are a good indication if the sanitary integrity of the system has been affected. All positive results should be investigated to determine the cause of the positive tests. Corrective action should be taken to eliminate the source of the problem. Any sources with confirmed fecal contamination must be rehabilitated or abandoned.
- Installing new two-piece well caps is a good way to reduce potential contamination from insects. Caulking of the electrical conduit is needed to ensure a sanitary seal.
- Any wells in areas subject to flooding or just above grade should be sampled following significant rain events to demonstrate if they are sensitive to flooding impacts. If they are, a watertight model well cap should be installed.
- Water systems for seasonal facilities should be disinfected and flushed prior to the opening of a new season.
- Wells should be protected from damage by vehicles or other machinery. If a well is or was damaged, it should be repaired. All work on wells should be followed by disinfections to avoid contamination of the water supply.

Recommendations for County Officials

- Continue regular inspection, oversight and testing of transient noncommunity water systems. Ensure that systems correct the cause of positive bacterial test results.
- Test results show that some systems have a high percentage of positive results. Priority should be placed on those systems that have not corrected the root causes of past positive results.

Reference

- Maryland Department of the Environment. Water Supply Program, 1999, Maryland Source Water Assessment Plan
- Maryland Department of the Environment. Water Supply Program, 2004, <u>Source Water</u>
 Assessment for Community Water Systems in Calvert County, MD
- Maryland Department of Natural Resources (DNR), 1987, <u>The Quantity and Natural Quality of Ground Water in Maryland</u>: DNR Water Resources Administration.
- Bennion V., Dougherty D., and Overbeck R., 1951, <u>The Water Resources of Calvert County</u>: (Department of Geology, Mines and Water Resources) Bulletin 8
- Otton E., 1955, <u>Ground-Water Resources of the Southern Maryland Coastal Plain</u>: (Department of Geology, Mines and Water Resources) Bulletin 15

Other Sources of Data

Water Appropriation and Use Permits
Calvert County Sanitary Survey Inspection Reports
MDE Water Supply Program (PDWIS) Database
MDE Waste Management Sites Database
Department of Natural Resources Digital Orthophoto Quarter Quadrangles
USGS Topographic 7.5 Minute Quadrangles

	_

DWein	Suotam Nama	Source	1	Use	Ground Water	Aquifer		Mall T "	Casing	Well
PWSID	System Name	#	#	Code		Code	Туре	Well Tag #	Depth	Depth
1040058	CALVERT CLIFFS NUCLEAR - BALLFIELD	1	1	P	CA1963G003	124E	С	CA733897	315	415
1040058	CALVERT CLIFFS NUCLEAR - BALLFIELD	2	1	F	CA1963G003	125B	С	CA942506	530	562
1040059	CALVERT CLIFFS NUCLEAR - CAMP CANOY POOL	1	1	Р	CA1963G003	124E	С	CA733896	315	390
1040059	CALVERT CLIFFS NUCLEAR - CAMP CANOY POOL	2	1	В	CA1963G003	125B	С	CA812152	414	560
1040072	BREEZY POINT BATHHOUSE	1	1	Р	CA2002G113	124C	С	CA813107	185	200
1040072	BREEZY POINT BATHHOUSE	2	1	Р	CA2002G113	124C	С	CA813114	185	200
1041002	AMERICAN LEGION POST 274	1	1	Р	CA1977G017	124E	С	CA732514	336	435
1041004	BILL'S BOAT RENTAL	1	1	Р	CA1999G004	124E	С	CA941558	170	230
1041005	BETHEL WAY CHURCH	1	1	Р	CA1979G013	124E	С	CA733401	336	435
1041008	BOWENS GROCERY	1	1	Р	CA1993G003	125B	С	CA883521	500	554
1041010	BRIDGE DINER	1	1	Р	CA1977G009	125B	С	CA731896	380	395
1041012	CALVERT CLIFFS STATE PARK	3	1	Р	CA1961G004	124C	С	CA043867	276	428
1041012	CALVERT CLIFFS STATE PARK	1	1	Р		9999	С			
1041012	CALVERT CLIFFS STATE PARK	2	1	Р	CA1961G004	124C	С	CA883894	410	420
1041013	DUNKIRK DISTRICT PARK	1	1	Р	CA1979G004	211D	С	CA733129	497	512
1041015	HALLOWING POINT PARK	1	1	Р	CA1976G005	124C	С	CA882198	420	462
1041018	CALVERT SKATING CENTER	1	1	Р	CA1982G008	125B	С	CA734410	334	410
1041023	CJ'S FOOD STORE	1	1	Р		9999	С	CA813882		
1041025	COOPER UM CHURCH	1	1	Р	CA1978G009	125B	С	CA732691	200	230
1041026	DASH IN OWINGS	1	1	Р	CA1984G007	125B	С	CA810145	320	330
1041028	BRIGHT CENTER WEST	1	1	Р	CA1985G007	125B	С	CA811494	322	403
1041031	DUNKIRK VOL FIRE DEPT	1	1	Р	CA2000G014	125B	С	CA943466	310	350
1041033	EMMANUEL U M CHURCH	1	1	Р		9999	С			
1041034	EAST JOHN YOUTH CENTER	1	1	Р	CA1984G010	9999	С	CA811068		
1041036	FRYING PAN	1	1	Р	CA1979G002	124E	С	CA733111	294	435
1041037	GATEWAY NORTH	1	1	Р		9999	С			
1041039	GRAY-RAY AMER LEGION	1	1	Р	CA1968G003	124E	С	CA884598	290	325
1041040	GREATER BIBLE WAY CHURCH	1	1	Р		124C	С	CA050381	222	338
1041041	HARDESTY GROCERY-SUNDERLAND	1	1	Р		124C	С	CA734154	194	325
1041046	HUDSON'S SUNOCO	1	1	P	CA1989G009	124C	C	CA880647	175	190
1041049	HUNTINGTOWN UM CHURCH	1	1	P	CA1986G006	124C	C	CA812216	240	390
	HUNTINGTOWN VOL FIRE DEPT	1	1	P	CA1974G008	125B	C	CA945154	500	605
	FLAVOR OF THE SOUTH CAFE	1	1	P	2	9999	C	5. 10 10 10 1		
	KINGS LANDING CAMP	1	1	P		9999	C			

Table 1, Well Information for Calvert County Transient Systems.

		Source	Plant	Use	Ground Water	Aquifer	Aquifer		Casing	Well
PWSID	System Name	#	#	Code	Appropriation	Code	Туре	Well Tag #	Depth	Depth
1041055	BURNOUTS BAR & GRILL / STETSONS	1	1	Р	CA1986G014	125B	С	CA812638	400	465
1041056	LEN'S MARKET	1	1	Р		9999	С			
1041059	LORD CALVERT BOWL	1	1	Р	CA1975G005	125B	С	CA731211	210	385
1041061	MT HOPE UM CHURCH	1	1	Р	CA1991G008	124C	С	CA882206	300	315
1041065	DON'S GENERAL STORE	1	1	Р	CA1988G010	125B	С	CA880282	515	530
1041066	PATUXENT CAMPSITES	1	1	Р	CA1968G008	124C	С	CA734069	168	223
1041069	PETERS UM CHURCH	1	1	Р		9999	С			
1041070	PARIS CENTER (FKA GRIFFITHS)	1	1	Р	CA2005G026	125B	С	CA733888	397	460
1041074	TASTY KWIK	1	1	Р		9999	С			
1041076	ADAMS RIBS	1	1	Р	CA1969G014	124C	С	CA812176	275	335
1041079	SOLID ROCK CHURCH	1	1	Р	CA1981G008	125B	С	CA734153	360	545
1041080	AMERICAN LEGION POST 206	1	1	Р	CA1966G010	124C	С	CA731036	212	285
1041080	AMERICAN LEGION POST 206	2	1	Р	CA1966G010	125B	С	CA732592	380	424
1041081	ST EDMONDS UM CHURCH	1	1	Р		124C	С	CA730757	216	365
1041086	TWIN SHIELDS GOLF CLUB	1	1	Р	CA1996G241	125B	С	CA945656	260	280
1041089	WATERS MEMORIAL UM CHURCH	1	1	Р	CA1965G009	124E	С	CA882818	320	360
1041093	HUNTINGTOWN PLAZA SHOPPING CENTER	1	1	Р	CA1985G002	124C	С	CA811407	328	405
1041095	PRINCE FREDERICK PROFESSIONAL BLDG	1	1	Р	CA1979G005	124C	С	CA882565	252	295
1041098	FAIRVIEW CENTER	1	1	Р		9999	С			
1041101	GRACE BRETHREN CHURCH - EAST WING	1	1	Р	CA1988G003	124C	С	CA813975	330	350
1041103	MT HOPE CENTER	1	1	Р	CA1973G007	124C	C	CA812409	318	390
1041111	COVE POINT PARK SNACK BAR	1	1	Р	CA1981G001	124E	С			
1041113	CALVERT UNITED APOSTOLIC CHURCH	1	1	Р		124C	С	CA811303	200	325
1041115	CHRIST EPISCOPAL CHURCH	1	1	Р	CA1983G006	124E	С	CA810284	305	442
1041116	CHURCH OF CHRIST	1	1	Р	CA1983G007	124C	С	CA810415	213	310
1041117	CHURCH OF LATTER DAY SAINTS	1	1	Р	CA1984G013	124C	С	CA811103	250	285
1041120	EMMANUAL BAPTIST CHURCH	1	1	Р	CA1998G010	125B	С	CA941104	550	570
1041121	FIRST LUTHERAN CHURCH	1	1	Р	CA1982G006	9999	С			,
1041123	JEHOVAHS WITNESS OF PRINCE FREDERICK	1	1	Р	CA1986G010	124C	С	CA812576	240	263
1041124	LANDMARK BAPTIST TEMPLE	1	1	Р		124C	С	CA733790	231	250
1041125	GUIDOS RESTAURANT	1	1	Р	CA1986G016	124E	С	CA812750	320	365
1041127	ISLAND CREEK PROPERTIES	1	1	Р		9999	С	CA883114	NA	NA
1041129	MT GETHSEMANE BAPTIST CHURCH	1	1	Р	CA1991G006	124E	С	CA882130	240	264
1041133	SMITHVILLE U M CHURCH	1	1	Р		125B	С	CA941020	320	340

Table 1 (Continued), Well Information for Calvert County Transient Systems.

_	٠,	

		Source	Plant	Use	Ground Water	Aquifer	Aquifer		Casing	Well
PWSID	System Name	#	#	Code	Appropriation	Code	Type	Well Tag #	Depth	Depth
1041137	ST PAUL UM CHURCH	1	1	Р	CA1978G001	124E	С	CA732576	315	445
1041140	KINGS LANDING POOL	1	1	Р	CA1966G011	125B	С	CA942776	345	397
1041144	APOSTOLIC FAITH CHURCH	1	1	Р	CA1997G028	125B	С	CA920466	430	437
1041145	CHINA KING RESTAURANT	1	1	Р	CA2000G008	125B	С	CA942499	440	455
1041148	STONEYS CRAB HOUSE	1	1	Р		9999	С			
1041150	WHITE SANDS RESTAURANT	1	1	Р	CA2005G029	9999	С	CA950061	NA	NA
1041154	BREEZY POINT BEACH/CAMP	1	1	Р	CA2002G013	125B	С	CA943997	368	425
1041158	MARLEY RUN RECREATION AREA	1	1	Р	CA1991G009	124E	С	CA883218	240	264
1041160	ALL SAINTS EPISCOPAL CHURCH	1	1	Р	CA1976G007	124E	С	CA731499	212	345
1041161	SOUTHERN CALVERT BAPTIST CHURCH	1	1	Р	CA1993G007	124E	С	CA883410	380	420
1041162	MIDDLEHAM & ST PETERS PARISH	1	1	Р		9999	С	CA941679		
1041164	CALVARY BIBLE CHURCH	1	1	Р		9999	С	CA920724		
1041165	CALVERT LIGHTHOUSE TABERNACLE	1	1	Р	CA1985G014	124C	С	CA943204	280	305
1041166	ROUTE 260 AMOCO	1	1	Р	CA1998G001	125B	С	CA940847	268	275
1041167	DUNKIRK CITGO	1	1	Р	CA1996G039	125B	С	CA920916	308	333
1041168	EMMANUEL SEVENTH DAY ADVENTIST CHURCH	1	1	Р		9999	С			
1041170	FASTOP #56	1	1	Р	CA1998G025	124E	С	CA941386	320	335
1041171	WINDSORS EZ STOP	1	1	Р		124C	С	CA920631	280	295
1041172	ISLAMIC CENTER	1	1	Р	CA1985G003	124C	С	CA880860	220	365
1041172	ISLAMIC CENTER	2	1	Р	CA1985G003	124C	С	CA811408	226	365
1041174	ROUTE 231 CITGO	1	1	Р	CA1967G005	125B	С	CA884517	505	535
1041175	TOWN CENTER AMOCO	1	1	Р	CA1995G010	124C	C	CA921044	320	355
1041177	7TH DAY ADVENTIST CHURCH OF PR. FRED.	1	1	Р	CA1969G008	124E	С	CA884261	340	355
1041180	FASTOP #54	1	1	Р	CA1994G008	124C	С	CA920167	390	415
1041181	BREEZY POINT GRILL WINE & SPIRITS	. 1	1	Р		124C	С	CA812985	245	270
1041182	REID BUILDING	1	1 -	Р	CA1969G007	124C	С	CA882638	380	510
1041185	HALLOWING POINT PARK MAINTENANCE BLDG	1	1	Р	CA1976G005	125B	С	CA881906	450	470
1041186	COVE POINT PARK MAINTENANCE BLDG	1	1	Р	CA1981G001	124E	С	CA734259	399	433
1041187	LEE FUNERAL HOME	1	1	Р	CA1995G048	124C	С	CA920386	380	420
1041188	RAUSCH FUNERAL HOME OWINGS	1	1	Р	CA1999G012	125B	С	CA941803	460	470
1041189	RAUSCH FUNERAL HOME PORT REPUBLIC	1	1	Р	CA2001G049	124E	С	CA943401	340	375
	RAYMOND FUNERAL HOME	1	1	Р	CA1989G021	125B	С	CA881173	320	330
1041191	SEWELL FUNERAL HOME	1	1	Р		9999	C			r =
1041195	LUSBY SUNOCO	1	-1	Р	CA1986G002	124E	С	CA812071	405	415

Table 1 (Continued), Well Information for Calvert County Transient Systems.

	-
•	

PWSID	System Name	Source #	Plant #	Use Code	Ground Water Appropriation	Aquifer Code	Aquifer Type	Well Tag #	Casing Depth	Well Depth
1041197	CALVERT ARUNDEL MEDICAL	1	1	Р	CA1974G004	125B	С	CA730381	308	333
1041198	BENNETT & BATONG MEDICAL	1	1	Р		124E	С	CA945545	400	430
1041199	CALVERT DENTAL ASSOCIATES	1	1	Р		9999	С			
1041200	DOUBLE D'S SPORTS	1	1	Р	CA1996G016	124C	С	CA940477	260	289
1041201	HOWLIN BUILDING	1	1	Р	CA1985G006	125B	С	CA811493	300	340
1041202	NEW CALVERT CO FAIRGROUND	1	1	Р		9999	С			
1041203	SMECO BUILDING	1	1	Р	CA1977G019	124C	С	CA943668	500	562
1041204	CALVERT PROFESSIONAL BUILDING	1	1	Р	CA1986G013	125B	С	CA812647	520	530
1041207	MCDONALDS 16243	1	1	Р	CA1994G002	125B	С	CA884269	280	310
1041208	GAMETIME DELI / LIQUORS	1	1	Р		9999	С			
1041209	THE PAVILLION AT GODSGRACE	1	1	Р	CA1996G036	125B	С	CA920915	400	430
1041211	J & J PHYSICAL THERAPY	1	1	Р		9999	С			
1041213	GATEWAY CENTER/ GREAT WALL RESTAURANT	1	1	Р	CA1989G022	125B	С	CA881162	340	360
1041214	GENTLE FAMILY DENTISTRY	1	1	Р		124C	С	CA810383	270	445
1041215	CALVERT ELKS LODGE	1	1	Р		124C	C	CA880554	310	320
1041218	FIRST BAPTIST CHURCH	1	1	Р	CA1984G012	9999	С	CA811079		
1041219	GRACE BRETHREN CHURCH - WEST WING	1	1	Р	CA1988G003	125B	С	CA940087	337	350
1041221	CYPRESS SWAMP NATURE CENTER	1	1	Р	CA1979G008	124C	С	CA944182	205	225
1041222	CVS DUNKIRK	1	1	Р	CA2003G004	124C	С	CA941212	320	330
1041223	DOMINOS PIZZA-HUNTINGTOWN	1	1	Р	CA1989G010	124C	С	CA880648	180	205
1041224	JENEVAS CAKES	1	1	Р		125B	С	CA036124	210	315
1041226	DUNKIRK BAPTIST CHURCH	1	1	Р	CA1998G031	125B	С	CA941418	335	345
1041227	HUNTINGTOWN MEDICAL BUILDING	1	1	Р		124C	С	CA732172	175	305
1041227	HUNTINGTOWN MEDICAL BUILDING	2	1	Р		124C	С	CA813084	240	280
1041228	CALVERT MEDICAL CENTER	1	1	Р	CA1977G002	124C	С	CA731803	175	305
1041229	OPTIMISTS CLUB BINGO	1	1	Р	CA1978G006	124C	С	CA732598	216	335
1041231	MT HARMONY UMC	1	1	Р	CA1981G003	125B	С	CA734087	446	452
1041232	HARVEST FELLOWSHIP	1	1	Р	CA1976G006	124E	С	CA945204	380	435
1041233	ST NICHOLAS LUTHERAN	1	1	Р		124C	С	CA882851	270	280
1041234	HUNTINGTOWN NORTH/FLOOR SYSTEMS	1	1	Р	CA2000G009	125B	С	CA942421	458	500
1041235	BAY BREEZE STATE PARK	1	1	Р		9999	С	,		
1041236	7-11 SUNDERLAND	1	1	Р	CA2002G018	124C	С	CA944022	241	275
1041237	BRIGHT CENTER EAST	1	1	Р		9999	С			
1041238	BROWN CLEARY BUILDING (CALVERT ANIMAL)	1	1	Р	CA1986G001	124C	С	CA812119	230	260

Table 1 (Continued), Well Information for Calvert County Transient Systems.

		Source	Plant	Use	Ground Water	Aquifer	Aquifer		Casing	Well
PWSID	System Name	#	#	Code	Appropriation	Code	Туре	Well Tag #	Depth	Depth
1041239	DUNKIRK ANIMAL HOSPITAL	1	1	Р	CA1994G052	125B	С	CA920539	323	330
1041240	DUNKIRK SUPPLY - LUSBY	1	1	Р		9999	С			
1041241	DUNKIRK SUPPLY OWINGS	1	1	Р		125B	С	CA810558	260	320
1041242	DUNKIRK SUPPLY - TRUSS PLANT	1	1	Р		9999	С			
1041243	HEGARTY AND KOPICKI BUILDING	1	1	Р	CA1988G001	124C	С	CA943414	285	365
1041244	JLH BUILDING	1	1	Р	CA2000G010	124C	С	CA942503	492	517
1041245	SCHEIBELS CONSTRUCTION	1	1	Р	CA1998G016	125B	С	CA941230	450	490
1041247	SAFEWAY GAS STATION	1	1	Р	CA2002G021	125B	С	CA944338	360	390
1041248	WAWA #573	1	1	Р	CA2002G016	125B	С	CA945439	330	370
1041250	ETERNAL BUZZ TATTOO PARLOR	1	.1	Р		124E	С	CA733559	223	265
1041251	TOWN & COUNTRY LIQUORS/BARBER SHOP	1	1	Р		124E	С	CA733715	257	400
1041252	MATTESON SUPPLY COMPANY	1	1	Р	CA2004G008	124C	С	CA945137	300	345
1041253	WORLD GYM	1	1	Р		125B	С	CA944815	560	585

Table 1 (Continued), Well Information for Calvert County Transient Systems.

Aquifer Code	A
Code	Aquifer Name
124C	Nanjemoy
124E	Piney Point
125B	Aquia
211D	Magothy
9999	Unknown

PWSID System Name	Plant ID	SO TREA	Known Treatment Methods	Reason for Treatment
1041177 7TH DAY ADVENTIST CHURCH OF PR. FRED.	1	N000	No Treatment	None
1041076 ADAMS RIBS	1	N000	No Treatment	None
1041160 ALL SAINTS EPISCOPAL CHURCH	1	F341	Filter, Cartridge (NON-SDWIS)	Iron Removal
1041080 AMERICAN LEGION POST 206	1	N000	No Treatment	None
1041002 AMERICAN LEGION POST 274	1	N000	No Treatment	None
1041144 APOSTOLIC FAITH CHURCH	1	N000	No Treatment	None
1041198 BENNETT & BATONG MEDICAL	1	N000	No Treatment	None
1041005 BETHEL WAY CHURCH	1	N000	No Treatment	None
1041004 BILL'S BOAT RENTAL	1	N000	No Treatment	None
1041008 BOWENS GROCERY	1	N000	No Treatment	None
1040072 BREEZY POINT BATHHOUSE	1	D421	Post Hypochlorination	Disinfection
1041154 BREEZY POINT BEACH/CAMP	_ 1	D421	Post Hypochlorination	Disinfection
1041181 BREEZY POINT GRILL WINE & SPIRITS	1 *	N000	No Treatment	None
1041010 BRIDGE DINER	1	N000	No Treatment	None
1041028 BRIGHT CENTER WEST	1	N000	No Treatment	None
1041055 BURNOUTS BAR & GRILL / STETSONS	1	N000	No Treatment	None
1041164 CALVARY BIBLE CHURCH	1	N000	No Treatment	None
1041197 CALVERT ARUNDEL MEDICAL	1	N000	No Treatment	None
1040058 CALVERT CLIFFS NUCLEAR - BALLFIELD	1	N000	No Treatment	None
1040059 CALVERT CLIFFS NUCLEAR - CAMP CANOY POOL	1	N000	No Treatment	None
1041012 CALVERT CLIFFS STATE PARK	1	D421	Post Hypochlorination	Disinfection
1041199 CALVERT DENTAL ASSOCIATES	1	N000	No Treatment	· None
1041215 CALVERT ELKS LODGE	1	N000	No Treatment	None
1041165 CALVERT LIGHTHOUSE TABERNACLE	1	N000	No Treatment	None
1041204 CALVERT PROFESSIONAL BUILDING	1	N000	No Treatment	None
1041018 CALVERT SKATING CENTER	1	N000	No Treatment	None
1041113 CALVERT UNITED APOSTOLIC CHURCH	1	N000	No Treatment	None
1041019 CAMP CANOY EAGLES DEN	1	N000	No Treatment	None
1041145 CHINA KING RESTAURANT	1	N000	No Treatment	None
1041115 CHRIST EPISCOPAL CHURCH	1	N000	No Treatment	None
1041116 CHURCH OF CHRIST	1	N000	No Treatment	None
1041117 CHURCH OF LATTER DAY SAINTS	1	N000	No Treatment	None
1041023 CJ'S FOOD STORE	1	N000	No Treatment	None
1041025 COOPER UM CHURCH	1	N000	No Treatment	None
1041186 COVE POINT PARK MAINTENANCE BLDG	1	D423	Pre Hypochlorination	Disinfection

Table 2, Known Treatment methods for Calvert County Transient Systems.

_	
-	

DIMOID	Oucton Name	Disastin	LOO TOEA	1/ T	D f T
	System Name			Known Treatment Methods	
	COVE POINT PARK SNACK BAR	1	N000	No Treatment	None
	CROSSROADS CHRISTIAN CHURCH	1	N000	No Treatment	None
	CVS DUNKIRK	1	N000	No Treatment	None
	CYPRESS SWAMP NATURE CENTER	1	N000	No Treatment	None
	DASH IN OWINGS	1	N000	No Treatment	None
	DOMINOS PIZZA-HUNTINGTOWN	1	N000	No Treatment	None
	DON'S GENERAL STORE	1	N000	No Treatment	None
	DOUBLE D'S SPORTS	1	N000	No Treatment	None
	DUNKIRK CITGO	1	N000	No Treatment	None
	DUNKIRK DISTRICT PARK	1	D423	Pre Hypochlorination	Disinfection
	DUNKIRK VILLAGE SHOPPING CENTER	1	N000	No Treatment	None
	DUNKIRK VOL FIRE DEPT	1	N000	No Treatment	None
1041034	EAST JOHN YOUTH CENTER	1	N000	No Treatment	None
1041120	EMMANUAL BAPTIST CHURCH	1	N000	No Treatment	None
1041168	EMMANUEL SEVENTH DAY ADVENTIST CHURCH	1	N000	No Treatment	None
1041033	EMMANUEL U M CHURCH	1	N000	No Treatment	None
1041098	FAIRVIEW CENTER	1	N000	No Treatment	None
1041180	FASTOP #54	1	N000	No Treatment	None
	FASTOP #56	1	N000	No Treatment	None
1041218	FIRST BAPTIST CHURCH	1	N000	No Treatment	None
1041121	FIRST LUTHERAN CHURCH	1	N000	No Treatment	None
1041036	FRYING PAN	1	N000	No Treatment	None
1041208	GAMETIME DELI / LIQUORS	1	N000	No Treatment	None
1041213	GATEWAY CENTER/ GREAT WALL RESTAURANT	1	N000	No Treatment	None
	GATEWAY NORTH	1	N000	No Treatment	None
1041214	GENTLE FAMILY DENTISTRY	1	N000	No Treatment	None
1041101	GRACE BRETHREN CHURCH - EAST WING	1	N000	No Treatment	None
1041219	GRACE BRETHREN CHURCH - WEST WING	1	N000	No Treatment	None
1041039	GRAY-RAY AMER LEGION	1	N000	No Treatment	None
1041040	GREATER BIBLE WAY CHURCH	1	N000	No Treatment	None
1041125	GUIDOS RESTAURANT	1	N000	No Treatment	None
1041015	HALLOWING POINT PARK	1	P341	Filtration, Cartridge	Particulate Removal
1041185	HALLOWING POINT PARK MAINTENANCE BLDG	1	N000	No Treatment	None
1041041	HARDESTY GROCERY-SUNDERLAND	1	N000	No Treatment	None
	HARVEST FELLOWSHIP	1	N000	No Treatment	None
	ontinued) Known Treatment methods for Calvert County				

Table 2 (Continued), Known Treatment methods for Calvert County Transient Systems.

_	
-	0
L	וכ

PWSID	System Name	Plant ID	SO TREA	Known Treatment Methods	Reason for Treatment
	HOWLIN BUILDING	1	N000	No Treatment	None
	HUDSON'S SUNOCO	1	N000	No Treatment	None
	HUNTINGTOWN MEDICAL BUILDING	1	S460	Ion Exchange	Softening
	HUNTINGTOWN NORTH/FLOOR SYSTEMS	1	N000	No Treatment	None
1041093	HUNTINGTOWN PLAZA SHOPPING CENTER	1	N000	No Treatment	None
	HUNTINGTOWN UM CHURCH	1	N000	No Treatment	None
1041050	HUNTINGTOWN VOL FIRE DEPT	1	N000	No Treatment	None
1041172	ISLAMIC CENTER	1	N000	No Treatment	None
1041127	ISLAND CREEK PROPERTIES	1	N000	No Treatment	None
1041211	J & J PHYSICAL THERAPY	1	N000	No Treatment	None
1041123	JEHOVAHS WITNESS OF PRINCE FREDERICK	1	N000	No Treatment	None
1041053	KINGS LANDING CAMP	1	N000	No Treatment	None
1041140	KINGS LANDING POOL	1	N000	No Treatment	None
1041124	LANDMARK BAPTIST TEMPLE	1	N000	No Treatment	None
1041187	LEE FUNERAL HOME	1	N000	No Treatment	None
1041056	LEN'S MARKET	1	N000	No Treatment	None
1041059	LORD CALVERT BOWL	1	N000	No Treatment	None
1041195	LUSBY SUNOCO	1	N000	No Treatment	None
1041158	MARLEY RUN RECREATION AREA	1	D421	Post Hypochlorination	Disinfection
1041027	MARYLAND COUNTRY CATERERS	1	N000	No Treatment	None
1041207	MCDONALDS 16243	1	N000	No Treatment	None
1041162	MIDDLEHAM & ST PETERS PARISH	1	N000	No Treatment	None
1041129	MT GETHSEMANE BAPTIST CHURCH	1	N000	No Treatment	None
1041231	MT HARMONY UMC	1	N000	No Treatment	None
1041103	MT HOPE CENTER	1	N000	No Treatment	None
1041061	MT HOPE UM CHURCH	1	N000	No Treatment	None
	NEW CALVERT CO FAIRGROUND	1	N000	No Treatment	None
1041070	PARIS CENTER (FKA GRIFFITHS)	1	N000	No Treatment	None
	PATUXENT CAMPSITES	1	N000	No Treatment	None
1041069	PETERS UM CHURCH	1	N000	No Treatment	None
1041095	PRINCE FREDERICK PROFESSIONAL BLDG	1	F341	Filter, Cartridge (NON-SDWIS)	Iron Removal
	RAUSCH FUNERAL HOME OWINGS	1	N000	No Treatment	None
1041189	RAUSCH FUNERAL HOME PORT REPUBLIC	1	N000	No Treatment	None
1041190	RAYMOND FUNERAL HOME	1	N000	No Treatment	None
	REID BUILDING	1	N000	No Treatment	None

Table 2 (Continued), Known Treatment methods for Calvert County Transient Systems.

-	_	
	7	
ι	גנ	į

PWSID	System Name	Plant ID	SO TREA	Known Treatment Methods	Reason for Treatment
1041174	ROUTE 231 CITGO	1	N000	No Treatment	None
1041166	ROUTE 260 AMOCO	1	S460	Ion Exchange	Softening
1041247	SAFEWAY GAS STATION	1	N000	No Treatment	None
1041245	SCHEIBELS CONSTRUCTION	1	S460	Ion Exchange	Softening
1041191	SEWELL FUNERAL HOME	1	N000	No Treatment	None
1041203	SMECO BUILDING	1	N000	No Treatment	None
1041133	SMITHVILLE U M CHURCH	1	N000	No Treatment	None
1041079	SOLID ROCK CHURCH	1	N000	No Treatment	None
1041161	SOUTHERN CALVERT BAPTIST CHURCH	1	N000	No Treatment	None
1041081	ST EDMONDS UM CHURCH	1	N000	No Treatment	None
1041233	ST NICHOLAS LUTHERAN	1	N000	No Treatment	None
1041137	ST PAUL UM CHURCH	1	N000	No Treatment	None
1041148	STONEYS CRAB HOUSE	1	N000	No Treatment	None
1041074	TASTY KWIK	1	N000	No Treatment	None
1041209	THE PAVILLION AT GODSGRACE	1	N000	No Treatment	None
1041175	TOWN CENTER AMOCO	1	N000	No Treatment	None
1041086	TWIN SHIELDS GOLF CLUB	1	N000	No Treatment	None
1041089	WATERS MEMORIAL UM CHURCH	1	N000	No Treatment	None
1041248	WAWA #573	1	SSSS	Hardness Removal	Softening
1041248	WAWA #573	1	F660	Sedimentation	Iron Removal
1041150	WHITE SANDS RESTAURANT	1	N000	No Treatment	None
1041171	WINDSORS EZ STOP	1	N000	No Treatment	None

Table 2 (Continued), Known Treatment methods for Calvert County Transient Systems.

-	_
-	. 1

PWSID	System Name	Total # of Nitrate Samples	>1 ppm	>50% MCL	Nitrite	Number of Nitrite Samples > 50% MCL
1041236	7-11 SUNDERLAND	2	0	0	1	0
1041177	7TH DAY ADVENTIST CHURCH OF PR. FRED.	8	0	0	4	0
1041076	ADAMS RIBS	10	0	0	6	0
1041160	ALL SAINTS EPISCOPAL CHURCH	9	0	0	4	0
1041080	AMERICAN LEGION POST 206	8	0	0	4	0
1041002	AMERICAN LEGION POST 274	7	0	0	2	0
1041144	APOSTOLIC FAITH CHURCH	9	0	0	5	0
1041235	BAY BREEZE STATE PARK	1	0	0	0	0
1041198	BENNETT & BATONG MEDICAL	5	0	0	3	0
1041005	BETHEL WAY CHURCH	8	0	0	4	0
1041004	BILL'S BOAT RENTAL	4	0	0	3	0
1041008	BOWENS GROCERY	9	0	0	4	0
1040072	BREEZY POINT BATHHOUSE	7	0	0	6	0
1041154	BREEZY POINT BEACH/CAMP	7	0	0	5	0
1041181	BREEZY POINT GRILL WINE & SPIRITS	6	0	0	2	0
1041010	BRIDGE DINER	9	0	0	5	0
1041237	BRIGHT CENTER EAST	2	0	0	1	0
1041028	BRIGHT CENTER WEST	9	0	0	3	0
1041238	BROWN CLEARY BUILDING (CALVERT ANIMAL)	2	0	0	1	0
1041055	BURNOUTS BAR & GRILL / STETSONS	8	0	0	4	0
1041164	CALVARY BIBLE CHURCH	7	0	0	3	0
1041197	CALVERT ARUNDEL MEDICAL	8	0	0	3	0
1040058	CALVERT CLIFFS NUCLEAR - BALLFIELD	10	0	0	6	0
1040059	CALVERT CLIFFS NUCLEAR - CAMP CANOY POOL	20	0	. 0	13	0
1041012	CALVERT CLIFFS STATE PARK	5	0	0	3	0
1041199	CALVERT DENTAL ASSOCIATES	9	0	0	4	0
1041215	CALVERT ELKS LODGE	8	0	0	4	0
1041165	CALVERT LIGHTHOUSE TABERNACLE	9	0	0	5	0
1041228	CALVERT MEDICAL CENTER	5	0	0	2	0
1041204	CALVERT PROFESSIONAL BUILDING	6	0	0	3	0
1041018	CALVERT SKATING CENTER	8	0	0	4	0
1041113	CALVERT UNITED APOSTOLIC CHURCH	9	0	0	5	0
	CAMP CANOY EAGLES DEN	4	0	0	1	0

Table 3, Total IOC water quality samples collected for transient systems.

		Total # of	T		Total # of	Number of Nitrite
		Nitrate			Nitrite	Samples > 50%
PWSID	System Name	Samples	>1 nnm	 >50% MCL	Samples	MCL
	CHINA KING RESTAURANT	9	0	0	4	1 0
	CHRIST EPISCOPAL CHURCH	8	0	0	3	0
	CHURCH OF CHRIST	8	0	0	3	0
	CHURCH OF LATTER DAY SAINTS	8	0	0	4	0
	CJ'S FOOD STORE	8	0	0	3	0
	COOPER UM CHURCH	7	0	0	3	0
	COVE POINT PARK MAINTENANCE BLDG	8	0	0	4	0
	COVE POINT PARK SNACK BAR	7	0	0	3	0
	CROSSROADS CHRISTIAN CHURCH	5	0	0	2	0
	CVS DUNKIRK	6	0	0	2	0
	CYPRESS SWAMP NATURE CENTER	8	0	0	4	0
	DASH IN OWINGS	10	0	0	4	0
	DOMINOS PIZZA-HUNTINGTOWN	7	0	0	2	0
	DON'S GENERAL STORE	9	0	0	5	0
	DOUBLE D'S SPORTS	8	0	0	4	0
	DUNKIRK ANIMAL HOSPITAL	2	0	. 0	1	0
	DUNKIRK BAPTIST CHURCH	7	0	0	3	0
	DUNKIRK CITGO	9	0	0	4	0
	DUNKIRK DISTRICT PARK	8	0	0	5	0
	DUNKIRK SUPPLY - LUSBY	3	0	0	1	0
	DUNKIRK SUPPLY - TRUSS PLANT	2	0	0	1	0
	DUNKIRK SUPPLY OWINGS	2	0	0	1	0
	DUNKIRK VILLAGE SHOPPING CENTER	8	0	0	4	0
	DUNKIRK VOL FIRE DEPT	9	0	0	4	0
1041034	EAST JOHN YOUTH CENTER	5	0	0	3	0
1041120	EMMANUAL BAPTIST CHURCH	10	0	0	4	0
1041168	EMMANUEL SEVENTH DAY ADVENTIST CHURCH	8	0	0	6	0
	EMMANUEL U M CHURCH	9	0	0	4	0
1041098	FAIRVIEW CENTER	9	0	0	5	0
1041180	FASTOP #54	7	0	0	3	0
1041170	FASTOP #56	7	0	0	3	0
1041218	FIRST BAPTIST CHURCH	9	0	0	4	0
1041121	FIRST LUTHERAN CHURCH	9	0	0	3	0

Table 3 (Continued), Total IOC water quality samples collected for transient systems.

ce	7

PWSID	System Name	Total # of Nitrate Samples	>1 ppm	>50% MCL	Total # of Nitrite Samples	Number of Nitrite Samples > 50% MCL
1041052	FLAVOR OF THE SOUTH CAFE	6	0	0	2	0
1041036	FRYING PAN	8	0	0	3	0
1041208	GAMETIME DELI / LIQUORS	8	0	0	3	0
1041213	GATEWAY CENTER/ GREAT WALL RESTAURANT	7	0	0	2	0
1041037	GATEWAY NORTH	10	0	0	5	0
1041214	GENTLE FAMILY DENTISTRY	7	0	0	2	0
1041101	GRACE BRETHREN CHURCH - EAST WING	9	0	0	3	0
1041219	GRACE BRETHREN CHURCH - WEST WING	8	0	0	3	0
	GRAY-RAY AMER LEGION	7	0	0	4	0
1041040	GREATER BIBLE WAY CHURCH	8	0	0	4	0
1041125	GUIDOS RESTAURANT	8	0	0	3	0
1041015	HALLOWING POINT PARK	8	0	0	5	0
1041185	HALLOWING POINT PARK MAINTENANCE BLDG	10	0	0 -	5	0
1041041	HARDESTY GROCERY-SUNDERLAND	10	0	0	4	0
1041232	HARVEST FELLOWSHIP	6	0	0	1	0
1041243	HEGARTY AND KOPICKI BUILDING	2	0	0	1	0
	HOWLIN BUILDING	8	0	0	3	0
1041046	HUDSON'S SUNOCO	7	0	0	3	0
1041227	HUNTINGTOWN MEDICAL BUILDING	6	0	0	2	0
1041234	HUNTINGTOWN NORTH/FLOOR SYSTEMS	5	0	0	1	0
	HUNTINGTOWN PLAZA SHOPPING CENTER	9	0	0	4	0
	HUNTINGTOWN UM CHURCH	7	0	0	3	0
	HUNTINGTOWN VOL FIRE DEPT	10	0	0	5	0
	ISLAMIC CENTER	8	0	0	3	0
	ISLAND CREEK PROPERTIES	11	0	0	6	0
	J & J PHYSICAL THERAPY	8	0	0	3	0
	JEHOVAHS WITNESS OF PRINCE FREDERICK	8	0	0	4	0
	JENEVAS CAKES	5	0	0	2	0
	JLH BUILDING	1	0	0	5	0
	KINGS LANDING CAMP	10	0	0	0	0
	KINGS LANDING POOL	5	0	0	4	0
	LANDMARK BAPTIST TEMPLE	7	0	0	3	0
1041187	LEE FUNERAL HOME	8	0	0	3	0

Table 3 (Continued), Total IOC water quality samples collected for transient systems.

- 1	×		١
1	1	٠,	o
	_	•	'n

PWSID	System Name	Total # of Nitrate Samples	>1 ppm	>50% MCL	Total # of Nitrite Samples	Number of Nitrite Samples > 50% MCL
1041056	LEN'S MARKET	9	0	0	5	0
1041059	LORD CALVERT BOWL	9	0	0	5	0
1041195	LUSBY SUNOCO	7	0	0	3	0
1041158	MARLEY RUN RECREATION AREA	9	0	0	5	0
1041027	MARYLAND COUNTRY CATERERS	8	0	0	3	0
1041252	MATTESON SUPPLY COMPANY	1	0	0	0	0
1041207	MCDONALDS 16243	8	0	0	3	0
1041162	MIDDLEHAM & ST PETERS PARISH	7	0	0	3	0
1041129	MT GETHSEMANE BAPTIST CHURCH	9	0	0	4	0
1041231	MT HARMONY UMC	6	0	0	2	0
1041103	MT HOPE CENTER	9	0	0	5	0
1041061	MT HOPE UM CHURCH	9	0	0	5	0
1041202	NEW CALVERT CO FAIRGROUND	2	0	0	1	0
1041229	OPTIMISTS CLUB BINGO	7	0	0	2	0
1041070	PARIS CENTER (FKA GRIFFITHS)	4	0	0	2	0
1041066	PATUXENT CAMPSITES	9	0	0	6	0
1041069	PETERS UM CHURCH	9	0	0	3	0
1041095	PRINCE FREDERICK PROFESSIONAL BLDG	9	0	0	5	0
1041188	RAUSCH FUNERAL HOME OWINGS	8	0	0	3	0
1041189	RAUSCH FUNERAL HOME PORT REPUBLIC	7	0	0	3	0
1041190	RAYMOND FUNERAL HOME	10	0	0	4	0
1041182	REID BUILDING	9	0	0	4	0
1041174	ROUTE 231 CITGO	9	0	0	5	0
1041166	ROUTE 260 AMOCO	8	0	0	4	0
1041247	SAFEWAY GAS STATION	2	0	0	1	0
1041245	SCHEIBELS CONSTRUCTION	2	0	0	1	0
1041191	SEWELL FUNERAL HOME	8	0	0	4	0
1041203	SMECO BUILDING	8	0	0	4	0
	SMITHVILLE U M CHURCH	11	0	0	6	0
1041079	SOLID ROCK CHURCH	6	0	0	2	0
1041161	SOUTHERN CALVERT BAPTIST CHURCH	7	0	0	3	0
1041081	ST EDMONDS UM CHURCH	8	0	0	4	0
1041233	ST NICHOLAS LUTHERAN	4	0	0	1	0

Table 3 (Continued), Total IOC water quality samples collected for transient systems.

DWOLD	O . t No	Total # of Nitrate		- FOO! BEOL	Total # of Nitrite	Number of Nitrite Samples > 50% MCL
	System Name	Samples	>1 ppm	>50% MCL	Samples	INICL
	ST PAUL UM CHURCH	8	0	0	4	0
1041148	STONEYS CRAB HOUSE	6	0	0	5	0
1041074	TASTY KWIK	7	0	0	3	0
1041209	THE PAVILLION AT GODSGRACE	9	0	0	4	0
1041251	TOWN & COUNTRY LIQUORS/BARBER SHOP	1	0	0	4	0
1041175	TOWN CENTER AMOCO	9	0	0	0	0
1041086	TWIN SHIELDS GOLF CLUB *	11	9	1	1	0
1041089	WATERS MEMORIAL UM CHURCH	9	0	0	5	0
1041248	WAWA #573	1	0	0	1	0
1041150	WHITE SANDS RESTAURANT	5	0	0	3	0
1041171	WINDSORS EZ STOP	10	0	0	5	0
1041253	WORLD GYM	1	0	0	0	0

Table 3 (Continued), Total IOC water quality samples collected for transient systems.

^{*} In 2005 a new club well was drilled for use by this system. The most recent results are <1 ppm.

PWSID	System Name	Total Number of Samples Taken	Number of Positive Bacti. Samples	Percentage of Total Samples Positive	Number of Positive Fecal Samples
	7-11 SUNDERLAND	9	0	0	0
1041177	7TH DAY ADVENTIST CHURCH OF PR. FRED.	23	6	26	0
	ADAMS RIBS	42	18	43	0
	ALL SAINTS EPISCOPAL CHURCH	29	8	28	0
	AMERICAN LEGION POST 206	24	6	26	0
	AMERICAN LEGION POST 274	17	0	0	0
1041144	APOSTOLIC FAITH CHURCH	25	13	52	0
	BENNETT & BATONG MEDICAL	41	27	66	0
	BETHEL WAY CHURCH	31	7	23	0
	BILL'S BOAT RENTAL	7	0 ·	0	0
	BOWENS GROCERY	25	2	8	0 -
1040072	BREEZY POINT BATHHOUSE	10	2	20	0
1041154	BREEZY POINT BEACH/CAMP	16	1	6	0
1041181	BREEZY POINT GRILL WINE & SPIRITS	22	4	18	0
	BRIDGE DINER	36	11	31	0
1041237	BRIGHT CENTER EAST	16	10	63	0
1041028	BRIGHT CENTER WEST	23	1	4	0
1041238	BROWN CLEARY BUILDING (CALVERT ANIMAL)	13	8	62	0
1041055	BURNOUTS BAR & GRILL / STETSONS	24	3	13	0
1041164	CALVARY BIBLE CHURCH	30	10	33	0
1041197	CALVERT ARUNDEL MEDICAL	24	2	8	0
1040058	CALVERT CLIFFS NUCLEAR - BALLFIELD	6	0	0	0
1040059	CALVERT CLIFFS NUCLEAR - CAMP CANOY POOL	8	0	0	0
1041012	CALVERT CLIFFS STATE PARK	22	3	14	1
1041199	CALVERT DENTAL ASSOCIATES	23	4	17	0
1041215	CALVERT ELKS LODGE	27	18	67	0
1041165	CALVERT LIGHTHOUSE TABERNACLE	23	13	57	0
1041228	CALVERT MEDICAL CENTER	17	0	0	0
	CALVERT PROFESSIONAL BUILDING	27	17	63	0
1041018	CALVERT SKATING CENTER	23	2	9	0
1041113	CALVERT UNITED APOSTOLIC CHURCH	22	13	59	0
1041019	CAMP CANOY EAGLES DEN	3	0	0	0
1041145	CHINA KING RESTAURANT	25	6	24	0

Table 4, Routine and repeat bacteriological samples for each system since 1996.

		T. (I N)	Number of	Percentage of	Number of
		Total Number of	Positive Bacti.	Total Samples	Positive Fecal
	System Name	Samples Taken	Samples	Positive	Samples
	CHRIST EPISCOPAL CHURCH	28	6	21	0
	CHURCH OF CHRIST	24	2	8	0
	CHURCH OF LATTER DAY SAINTS	17	1	6	0
	CJ'S FOOD STORE	21	2	10	0
	COOPER UM CHURCH	24	10	42	0
	COVE POINT PARK MAINTENANCE BLDG	27	11	41	0
	COVE POINT PARK SNACK BAR	21	8	38	0
1041163	CROSSROADS CHRISTIAN CHURCH	20	5	25	0
	CVS DUNKIRK	18	0	0	0
	CYPRESS SWAMP NATURE CENTER	26	7	27	. 0
	DASH IN OWINGS	37	23	62	0
	DOMINOS PIZZA-HUNTINGTOWN	24	3	13	0
	DON'S GENERAL STORE	37	23	62	0
	DOUBLE D'S SPORTS	23	2	9	0
1041239	DUNKIRK ANIMAL HOSPITAL	13	7	54	0
1041226	DUNKIRK BAPTIST CHURCH	20	0	0	0
1041167	DUNKIRK CITGO	24	3	13	0
1041013	DUNKIRK DISTRICT PARK	24	14	58	0
1041240	DUNKIRK SUPPLY - LUSBY	11	10	91	0
	DUNKIRK SUPPLY - TRUSS PLANT	7	1	14	0
	DUNKIRK SUPPLY OWINGS	16	5	31	0
1041077	DUNKIRK VILLAGE SHOPPING CENTER	21	7	33	0
1041031	DUNKIRK VOL FIRE DEPT	23	1	4	0
	EAST JOHN YOUTH CENTER	19	8	42	0
1041120	EMMANUAL BAPTIST CHURCH	30	9	30	0
1041168	EMMANUEL SEVENTH DAY ADVENTIST CHURCH	20	3	15	0
1041033	EMMANUEL U M CHURCH	29	1	3	0
	ETERNAL BUZZ TATTOO PARLOR	2	0	0	0
1041098	FAIRVIEW CENTER	23	9	39	0
1041180	FASTOP #54	27	9	33	0
	FASTOP #56	23	1	4	0
1041218	FIRST BAPTIST CHURCH	29	7	24	0
1041121	FIRST LUTHERAN CHURCH	25	4	16	0

Table 4 (Continued), Routine and repeat bacteriological samples for each system since 1996.

DIAZOID	Custom Name	Total Number of	Number of Positive Bacti.	Percentage of Total Samples	Number of Positive Fecal
	System Name	Samples Taken	Samples	Positive	Samples
	FLAVOR OF THE SOUTH CAFE	17	0	0	0
	FRYING PAN	28	5	18	0
	GAMETIME DELI / LIQUORS	20	1	5	0
	GATEWAY CENTER/ GREAT WALL RESTAURANT	29	19	66	0
	GATEWAY NORTH	27	6	22	0
	GENTLE FAMILY DENTISTRY	23	2	9	0
	GRACE BRETHREN CHURCH - EAST WING	27	10	37	0
	GRACE BRETHREN CHURCH - WEST WING	23	11	4	0
	GRAY-RAY AMER LEGION	21	1	5	0
	GREATER BIBLE WAY CHURCH	22	1	5	0
	GUIDOS RESTAURANT	13	0	0	0
1041015	HALLOWING POINT PARK	27	14	52	0
1041185	HALLOWING POINT PARK MAINTENANCE BLDG	36	15	42	0
1041041	HARDESTY GROCERY-SUNDERLAND	33	8	24	0
1041232	HARVEST FELLOWSHIP	23	9	39	0
1041243	HEGARTY AND KOPICKI BUILDING	12	3	25	0
1041201	HOWLIN BUILDING	23	5	22	0
1041046	HUDSON'S SUNOCO	33	16	49	0
1041227	HUNTINGTOWN MEDICAL BUILDING	17	1	6	0
1041234	HUNTINGTOWN NORTH/FLOOR SYSTEMS	17	0	0	0
1041093	HUNTINGTOWN PLAZA SHOPPING CENTER	21	11	52	0
1041049	HUNTINGTOWN UM CHURCH	28	13	46	0
1041050	HUNTINGTOWN VOL FIRE DEPT	26	4	15	0
1041172	ISLAMIC CENTER	22	6	27	0
1041127	ISLAND CREEK PROPERTIES	24	3	13	0
1041211	J & J PHYSICAL THERAPY	23	4	17	0
1041123	JEHOVAHS WITNESS OF PRINCE FREDERICK	27	8	30	0
	JENEVAS CAKES	20	9	45	0
1041244	JLH BUILDING	2	0	0	0
1041053	KINGS LANDING CAMP	19	0	0	0
	KINGS LANDING POOL	8	1	13	0
	LANDMARK BAPTIST TEMPLE	29	3	10	0
	LEE FUNERAL HOME	26	6	23	0

Table 4 (Continued), Routine and repeat bacteriological samples for each system since 1996.

PWSID	System Name	Total Number of Samples Taken	Number of Positive Bacti. Samples	Percentage of Total Samples Positive	Number of Positive Fecal Samples
1041056	LEN'S MARKET	26	6	23	0
1041059	LORD CALVERT BOWL	22	1	5	0
1041195	LUSBY SUNOCO	30	10	33	0
1041158	MARLEY RUN RECREATION AREA	18	3	17	0
1041027	MARYLAND COUNTRY CATERERS	21	2	10	0
1041252	MATTESON SUPPLY COMPANY	2	0	0	0
	MCDONALDS 16243	22	0	0	0
1041162	MIDDLEHAM & ST PETERS PARISH	19	9	47	0
1041129	MT GETHSEMANE BAPTIST CHURCH	27	12	· 44	0
	MT HARMONY UMC	27	14	52	0
	MT HOPE CENTER	32	11	34	1
1041061	MT HOPE UM CHURCH	28	17	61	0
1041202	NEW CALVERT CO FAIRGROUND	2	0	0	0
1041229	OPTIMISTS CLUB BINGO	16	0	0	0
	PARIS CENTER (FKA GRIFFITHS)	10	1	10	0
1041066	PATUXENT CAMPSITES	24	7	29	0
1041069	PETERS UM CHURCH	22	3	14	0
1041095	PRINCE FREDERICK PROFESSIONAL BLDG	21	0	0	0
1041188	RAUSCH FUNERAL HOME OWINGS	20	0	0	0
1041189	RAUSCH FUNERAL HOME PORT REPUBLIC	21	1	5	0
	RAYMOND FUNERAL HOME	29	8	28	0
1041182	REID BUILDING	24	9	38	0
	ROUTE 231 CITGO	33	19	58	0
1041166	ROUTE 260 AMOCO	32	13	41	0
1041247	SAFEWAY GAS STATION	2	0	0	0
	SCHEIBELS CONSTRUCTION	8	0	0	0
	SEWELL FUNERAL HOME	24	3	13	0
	SMECO BUILDING	23	1	4	0
	SMITHVILLE U M CHURCH	22	6	27	0
	SOLID ROCK CHURCH	19	3	16	0
1041161	SOUTHERN CALVERT BAPTIST CHURCH	20	2	10	0
1041081	ST EDMONDS UM CHURCH	18	1	6	0
1041233	ST NICHOLAS LUTHERAN	28	14	50	0

Table 4 (Continued), Routine and repeat bacteriological samples for each system since 1996.

PWSID	System Name	Total Number of Samples Taken	Number of Positive Bacti. Samples	Percentage of Total Samples Positive	Number of Positive Fecal Samples
1041137	ST PAUL UM CHURCH	21	2	10	0
1041148	STONEYS CRAB HOUSE	20	3	15	0
1041074	TASTY KWIK	33	12	36	0
1041209	THE PAVILLION AT GODSGRACE	41	18	44	0
1041251	TOWN & COUNTRY LIQUORS/BARBER SHOP	2	0	0	0
	TOWN CENTER AMOCO	24	1	4	0
1041086	TWIN SHIELDS GOLF CLUB	40	6	15	0
1041089	WATERS MEMORIAL UM CHURCH	23	1	4	0
1041248	WAWA #573	2	0	0	0
1041150	WHITE SANDS RESTAURANT	20	3	. 15	0
	WINDSORS EZ STOP	24	2	8	0
1041253	WORLD GYM	2	0	0	0

Table 4 (Continued), Routine and repeat bacteriological samples for each system since 1996.

n	c
-	П

PWSID	System Name	Install an Insect- proof cap	Install Ballards to protect well	Repair electrical conduit	Extend casing further above grade	Repair Casing	Inspect/Repair Treatment System	Integrity of Wellhead Could Not be Assessed	Well Recently Replaced
1041195	Lusby Sonoco	Х	Х						
	Cove Point Maintenance Building	Х	Х	Х					
1041111	Cove Point Park Snack Bar		Х			Х			
1041034	East St. John's Youth Center	Х		,					
1041115	Christ Episcopal Church	Х							
1041076	Adam's Ribs	Х		Х					
1041015	Hallowing Point Park		Х	Х			Х		
	Hallowing Point Park Maintenance Building	X				Х			
	Don's General Store	Х	Х			Х			
	Route 231 Citgo	Х		Х					
	Tasty Quick	Х				Х			
	Huntingtown United Methodist Church		Х			Х			
	Bethel Way Church	Х		X					
	Grace Brethren Church- East Wing	Х				Х			
1041239	Dunkirk Animal Hospital	Х	Х			Х			
1041190	Raymond Funeral Home	х	Х			Х			
1041113	Calvert United Apostolic Church			X					
1041182	The Reid Building	Х	Х	X					
	Apostolic Faith Church	Х	Х			Х			
	China King Restaurant		Х			Х			
1041241	Dunkirk Supply Owings	Х							
	Gateway Center/ Great Wall Restaurant				Х				
	Jeneva's Cakes		Х	Х					
	Cooper United Methodist Church	Х			Х				
	First Baptist Church	Х	Х			Х			
	The Islamic Center	х	Х			Х			
	Emmanuel Baptist	Х	Х						
	Calvert Elks Lodge	Х	Х			Х			
	St. Nicholas Lutheran	х		v		Х			
	The Pavillion at God's Grace	Х	Х		Х				
1041180	Fast Stop #54	Х	Х						

Table 5. Wellhead deficiencies for each system with >25% bacterial results

r	ĸ	٦
٠	3	۰
•	v	٦

PWSID	System Name	Install an Insect- proof cap	Install Ballards to protect well	Repair electrical conduit	Extend casing further above grade	Repair Casing	Inspect/Repair Treatment System	Integrity of Wellhead Could Not be Assessed	Well Recently Replaced
	Calvary Bible Church	Х	X	oonaar	grado	ouomig	- Cycloni		rtopiaoca
	Patuxent Campsites	X	_^						
	Seventh Day Adventist	X	Х						
	Hudson Sonoco	X	X						
	Mt. Hope United Methodist Church	X	X						
	Mt. Harmony United Methodist Church	X	X						
	Calvert Professional Building	X	Х						
	Jehovah's Witness of Prince Frederick	X	Х						
1041129	Mt. Gethsemane	Х	Х						
1041160	All Saints Episcopal Church	Х	Х				Х		
1041166	Route 260 Amoco						Х		
1040072	Breezy Point Bath House		Х			Х			
1041013	Dunkirk District Park						12	Х	
1041098	Fairview Center							Х	
1041240	Dunkirk Supply-Lusby							Х	
1041103	Mt. Hope Center							х	
	Dash Inn Owings		Х						
	Middleham St. Peter's Parish		Х						
1041221	Cypress Swamp Nature Center		' X						
1041165	Calvert Lighthouse Tabernacle		Х						
	Hegarty and Kopicki Building		Х						
	Brown Cleary Building		Х						
	Huntingtown Plaza Shopping Center		Х						Х
	Bridge Diner		Х						
1041086	Twin Shields Golf Club								Х

Table 5 (Continued). Wellhead deficiencies for each system with >25% bacterial results

