Report to EPA

MARYLAND OPERATOR CERTIFICATION REPORT FOR CALENDAR YEAR 2013

June 2014

**Department of the Environment
Water Supply Program**

Martin O' Malley, Governor   *Robert M. Summers, Ph.D., Secretary*
Anthony G. Brown, Lt. Governor

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Safe Drinking Water Act Reauthorization of 1996 requires States to develop, implement and enforce operator certification regulations in cooperation with the Drinking Water State Revolving Funds. This annual program report for the Maryland Operator Certification Program is submitted pursuant to federal guidelines published in the February 5, 1999 Federal Register, and in accordance with the guidance provided by the Environmental Protection Agency (EPA) headquarters. Maryland's annual operator certification report provides an update on the implementation of the Operator Certification Program for the period from January 1, 2013 through December 31, 2013.

Maryland regulates 1013 community and non-transient non-community water systems. During 2013, a total of 432 of the 473 community water systems were in compliance with the requirement to maintain a certified operator. Of the 540 active non-transient non-community water systems, 405 systems employed certified operators. Compliance with the operator certification regulations increased from 59% of water systems in the 2001 baseline to 83% of the water systems in 2013. The rate of compliance for community water systems that serve 3300 or more people is 100%. In addition, the majority of the water systems that serve more than 100 persons are in compliance.

The Maryland Department of the Environment is committed to ensuring that the staff who operate Maryland's water systems are qualified, well trained, and are in compliance with certification requirements. To accomplish this commitment, MDE's efforts are supported by State general funds.

MARYLAND OPERATOR CERTIFICATION

BACKGROUND

Under the Safe Drinking Water Act (SDWA) Amendments of 1996, the State primacy agency is required to implement an Operator Certification Program, and to provide annual reports in order to receive the full federal allocation under the Drinking Water State Revolving Fund (DWSRF). The Environmental Protection Agency may withhold 20% of the State's funding if the Operator Certification Program requirements are not met.

Maryland Department of the Environment (MDE) is the designated State primacy agency. The Water Supply Program (WSP) and the Board of Waterworks and Waste Systems Operators (Board) are both part of the Water Management Administration within MDE. The WSP is the program that oversees all aspects of the SDWA requirements. Staff from the WSP are responsible for verifying whether a system is operated by a State-certified operator. This verification is determined as part of the sanitary survey of the public water system.

The Board is responsible for the certification of five categories of water, wastewater, and industrial facilities. Within the five categories are 24 classes of facilities, each with a unique certificate defined by treatment technologies. In total, the Board administers the program for about 8,000 certificate holders. While the Board oversees the requirements for the certification of operators, the WSP is responsible for the enforcement of the requirements in accordance with the SDWA.

In response to federal guidelines, the Code of Maryland Regulations for the Operator Certification Program was revised in January, 2001. The Environmental Protection Agency (EPA) approved Maryland's Operator Certification Program on July 13, 2001.

The regulations for the Board of Waterworks and Waste Systems Operators were last revised in 2005 to address concerns related to continuing education requirements. In 2013, the Board continued to work with stakeholders to revise the Operator Certification regulations.

CLASSIFICATION OF WATER SYSTEMS & OPERATOR QUALIFICATIONS

Maryland classifies water facilities according to treatment technology. This ensures that operators are technically qualified for the process they are certified to operate.

The operator and superintendent must have certification that matches the water system's classification. Certain classifications of certificates also authorize the holder to operate other classifications of facilities. Table 1 presents the classification of water systems and outlines the typical treatment processes found in each classification.

A temporary operator is defined as an operator who works under the direction of a certified operator or superintendent, and is employed at a water system, but has not met the experience requirements for the classification and/or has not passed an examination for the classification. This type of certificate is only used for operators in training.

Table 1.   CLASSIFICATION OF WATER TREATMENT SYSTEMS

Class of Plants	Type of Treatment Systems	Typical Processes Included in the Plant
1	Disinfection	Chlorination
2	Chemical Treatment	Chlorination, pH control and fluoridation
3	Simple Iron Removal	Chlorination, pH control, fluoridation, filtration and iron removal utilizing ion exchange or contact oxidation processes
4	Complete Treatment	Chlorination, pH control, fluoridation, aeration, coagulation, sedimentation, filtration and complex iron removal
5	Site specific	Site specific – any alternative technology plants not covered under the classification system (i.e. reverse osmosis, diatomaceous earth, and arsenic treatment, groundwater under direct influence of surface water)
D	Distribution	Water distribution
G	No Chemical Treatment	Well, storage tanks, UV disinfection

MARYLAND COMPLIANCE AND ENFORCEMENT

Water system compliance with the Operator Certification Program is tracked through the Water Supply Program's Public Drinking Water Information System (PDWIS) that manages all public water system data under the Public Water System Supervision grant.   The Water Supply Program coordinates updates to the Public Drinking Water Information System (PDWIS) database from the Board's administrative database throughout the year. The WSP receives updates from the water systems on operator coverage through a number of sources including sanitary surveys, monthly operating reports, operator surveys, and electronic communications.

Table 2 provides an overview of the progress made by public water systems in Maryland since 2001 when the federal program was established. The table summarizes the information that is currently available in PDWIS. The number of systems that employ certified operators has increased by 210 since 2001. This represents a significant increase from 59% to 83% of the active community and non-transient non-community water systems. The number of active water systems with certified operators remained consistent with the percentage in 2012.

Table 2.   OPERATOR CERTIFICATION COMPLIANCE OVERVIEW

Water System Type	Number of Systems		Number of Systems with Operators		Percentage of Systems with Operators	
	2013	Baseline 2001	2013	Baseline 2001	2013	Baseline 2001
Community	473	503	432	402	91%	80%
Non-transient Non-community	540	568	405	225	75%	40%
Total	1013	1071	837	627	83%	59%

Figure 1 represents the percentage of systems by water treatment classification that are in compliance with operator certification requirements for 2013. The Class G water systems, with no chemical treatment, continue to have the lowest number of certified operators.

FIGURE 1. OPERATOR CERTIFICATION COMPLIANCE BY CLASSIFICATION, 2013
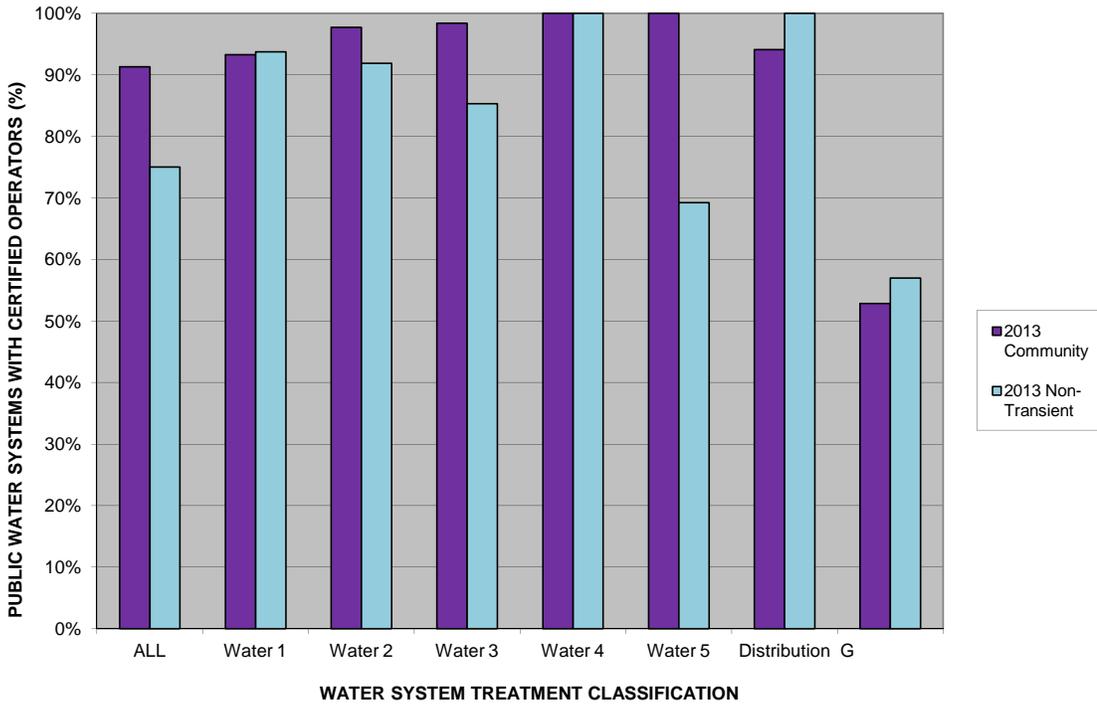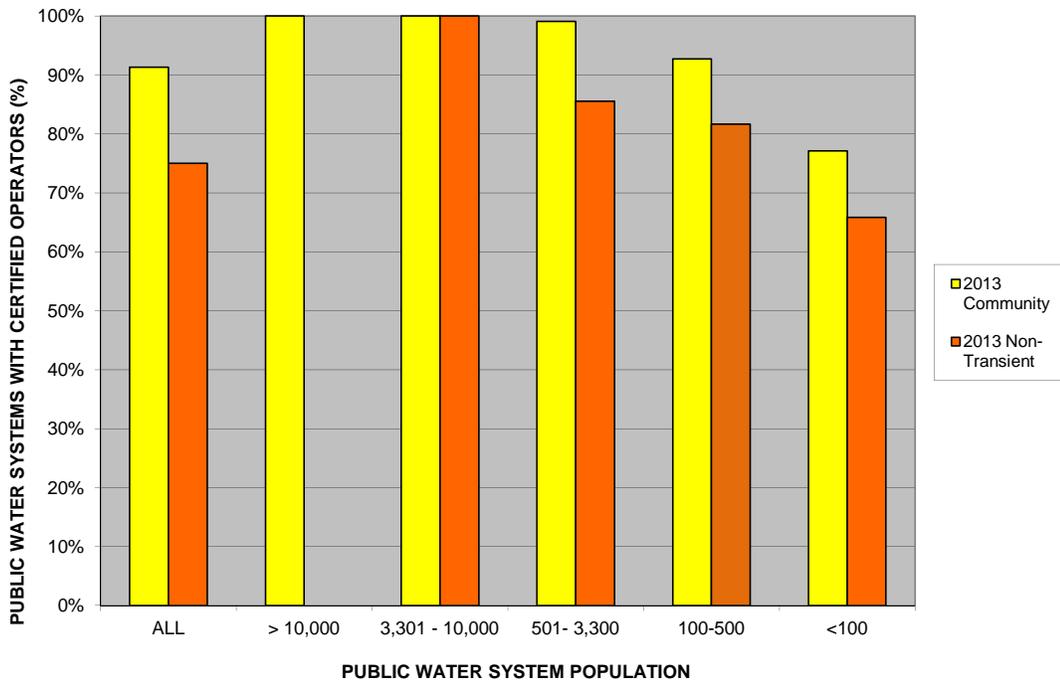

Figure 2 represents the percentage of systems by public water system type that are in compliance for 2013 based on the population that the water system serves. The overall rate of compliance among community systems serving 100 or more persons is greater than 93%.

FIGURE 2. OPERAOR CERTIFICATION COMPLIANCE BY POPULATION, 2013

TEMPORARY, CERTIFIED, & GRANDPARENTED OPERATORS

Individual operator certification status is tracked through the Board of Waterworks and Waste Systems Operators database. MDE staff maintains the administrative records for all classifications of operators in Maryland: water, wastewater, and industrial. The Board also maintains records of operators with temporary certification who are in training for operator certification. In addition, 83 Grandparented certificates were granted to persons who acted as operators for water treatment facilities that were not required to employ operators prior to February 2001. The grandparented certificates are site-specific, and were issued to qualified recipients through February 5, 2003.

Table 3 summarizes the number of water operator certificates that are currently in effect in Maryland (Source: Board of Waterworks and Waste Systems Operators database, June 2014).

Table 3.   CERTIFIED AND GRANDPARENTED OPERATORS

CLASS OF WATER SYSTEMS	Temporary	Operator
G	71	39
1	126	224
2	128	251
3	116	148
4	215	511
5	49	49
D	267	401
Total	972	1623

Enforcement – The Department's Office of Attorney General (OAG) provides legal counsel to the Board. OAG's representative attends Board meetings and offers interpretations on the Board's statutes and regulations as needed.

MDE's Water Supply Program provides investigative support for matters involving enforcement action by OAG against public water system operators.

CERTIFICATION RENEWAL

All certificates issued by the Board are renewed on a triennial basis. Each operator must obtain a minimum number of continuing education units as a condition of renewal. Most operators must obtain 16 units every three years, while some operators at facilities with higher classification levels must obtain 30 hours. Temporary and grandparented certificate holders must obtain either 24 or 45 units, depending on the classification of the facility in which they work. All superintendent certificates (except Industrial Wastewater Treatment Classes 1 and 2) require seven units of "superintendent-approved" training review. Temporary certificate holders must take an examination during each three-year period until they pass the examination for their classification.

Code of Maryland Regulations (COMAR) 26.06.01.13 requires that the Board approve training that operators may take for certification renewal. The Training Review and Evaluation (TRE) Committee was created by the Board to receive, review, and evaluate each application for training approval. The Committee's comments and recommendations are considered by the Board when determining if training will be approved.

Training Approval Process - The approval process begins when an "Application for Training Program Approval" is submitted to the Board. This can occur before or after the training has taken place. When the Board receives the application, the training is assigned a course code, by which the course is thereafter identified. The TRE Committee evaluates the training's content and the instructor's credentials to determine the value and appropriateness for the continuing education of an operator. The committee also determines the classifications for which the training is appropriate. Following the TRE Committee's recommendation and the Board's decision, the applicant will receive a letter detailing the final outcome of the approval request.

OPERATIONAL STRUCTURE

The Board of Waterworks and Waste Systems Operators is a part of the Maryland Department of Environment – Environmental Boards, established by the Maryland General Assembly. The Board was created to certify individuals as superintendents and operators of water, wastewater, and industrial systems. The Board establishes the training and experience requirements for applicants who want to enter the profession. Competency is evaluated using examinations that are based on Board-approved Need-to-Know documents. Continuing education is a prerequisite for license renewal. The Board collects fees for operator certification, and fees for testing from certificate holders. In addition, the Board has authority to take disciplinary action against a licensee who has been determined to be professionally incompetent, falsified records, failed to submit self-monitoring reports, or been negligent in operation and maintenance of the works.

Funding -The administrative staff are funded under a combination of federal funds (Drinking Water State Revolving Fund set-asides), and State general funds.

Data Management – In 2012, MDE-Water Supply Program began to upgrade and consolidate certain databases as part of a conversion to the State Drinking Water Information System for States (SDWIS-State) through a third party contract. The Board's database which is currently in D-Base will be included in this project. The project is scheduled for completion in 2015.

Examinations – Testing for operator certification is offered monthly at various locations across the State. The certification program administers the exams which consist of multiple choice exams for the designated classification. The exams are forwarded to the Association of Boards of Certification (ABC) for scoring and preparation of an individualized report for the certificate holder. Each examinee receives a report that identifies their performance for each topic, and their overall score. Scores of 70 or above are passing. ABC has a contract with the State that must be renewed annually through State procurement as an outside sole source vendor.

In 2013, 257 water examinations were taken by certificate holders, which by comparison was only a 3% decline in examinations taken during 2012. The passing rate for the examinations was 42% (108 operators passed examinations). This passing rate was higher than the overall passing rates for 2011 (30%) and for 2012 (36%). Table 4 summarizes the examination data based on the certification classification.

Table 4.   2013 EXAMINATION PERFORMANCE

CLASS OF WATER SYSTEMS	WATER EXAMINATIONS		
	Exams Taken	Exams Passed	Percentage Passed
G	No exam	Not applicable	Not applicable
1	27	11	41%
2	30	16	53%
3	32	6	19%
4	70	38	54%
5	9	3	33%
D	89	34	38%
Total	**257**	**108**	**42%**

Computer-Based Examinations – Computer-based examinations are available for all categories at select locations in the area. This project is coordinated through the Association of Boards of Certification (ABC). ABC allows approved third-party contractors to administer the examinations. This type of testing arrangement is used routinely in other industries such as real estate, tax preparation, and education. Some applicants prefer this arrangement because they can take the exam in a location near them at their convenience, and they would have the results prior to leaving the testing facility.

Paper examinations will continue to be offered to those applicants who are more comfortable with this format; computer-based exams are gradually being accepted by the new generation operators. There are additional fees associated with the computer-based testing. The computer-based testing facility charges between $44 and $81 for an electronic exam, depending on the amount of time allotted for the examination. The testing site fee is the responsibility of the applicant, and it is not covered by MDE. Currently, there are seven locations in Maryland, Virginia, Pennsylvania, and the District of Columbia that are available for electronic testing. The Board has been working with stakeholders to promote the use of the electronic testing. Currently, 29 exams were taken at the computer-based facilities. The passing rate for the computer-based examinees is about 34 percent; this rate is similar the passing rate for those who take the paper examination. The Board is working with several Community Colleges throughout the State to host computer examinations due to applicants' concerns with noise distractions at the current facilities.

Examination Development - As a fully accredited testing client, Maryland is allowed to make use of the Need-To-Know (NTK) criteria developed by ABC. The Board reviewed all categories of NTK documents for water treatment, and determined that this document was acceptable for Maryland examinations. Following a review of two ABC exams, the Board determined that the ABC exams were acceptable for use and approved the use of ABC examinations for all principal Water classifications (1, 2, 3, and 4). As of 2013, the ABC exams are used for Maryland Water 2 and Water 3 classifications; Water 1 and Water 4 exams are prescriptive and incorporate ABC exam questions pertinent to processes used in Maryland.

STAKEHOLDER INVOLVEMENT

Board of Waterworks and Waste Systems Operators

The Board of Waterworks and Waste Systems Operators was created by the Maryland General Assembly in 1967, and consists of eleven voting members who are appointed by the Governor and the Secretary of the Department for four-year terms. Terms may be renewed. The Board members represent various interest groups including municipal government, county government, sanitary commissions, water and wastewater operators, academia, agriculture, and the public. The Board meets once per month, at various sites around the State. The meetings are open to the public. The Board encourages interested operators to attend these meetings to observe the Board's activities.

Board Meetings

Monthly Board meetings are attended by representatives of the various water and wastewater organizations including: American Water Works Association (AWWA) Chesapeake Section, Maryland Water and Wastewater Operators Association (WWOA), Maryland Rural Water Association, and Maryland Environmental Service. These stakeholders are not voting members of the Board, but they are recognized liaisons who participate in the meetings. The liaisons report on Board activities to their organizations, and update the Board on operator concerns.

Board Committees

The Training Review Evaluation Committee involves Board members and representatives from the MDE-Water Supply Program, Maryland Center for Environmental Training, Maryland Rural Water Association, AWWA, private industrial wastewater system, and Chesapeake Water Environment Association (CWEA), and WWOA. The TRE committee reviews all requests for training approval, established minimum standards for approval of operator training, and makes recommendations to the Board. This committee meets quarterly.

PROGRAM REVIEW

Internal Reviews

The Board completed a programmatic review, and provided a report to the Legislature in 2011. Additional internal assessments of the Board continued in 2013 as part of the regulation review process.

Examination Update
The Board continues to work on the development of a new water examination for Class G. Site-specific examinations are available for Arsenic Removal, Reverse Osmosis, Diatomaceous Earth filtration and Groundwater Under Direct Influence of Surface Water.

Examination Performance
The Board continues to monitor the overall passing rate for examinees. The overall passing rate has not varied greatly over the last decade, but higher passing rates were observed in 2013 for some exams. The Board's staff surveyed the operators who have taken the exam, and found that some operators take the examination without completing any training. Other operators indicated that they did not study for the examination, but took the exam because it was required for the permanent certification. These may be contributing factors to the low passing rate.

The Board and an ad-hoc committee reviewed the Need-to-Know (NTK) criteria established by ABC for water. The Water NTK criteria were determined to be consistent with the Examination prescription used by the Board for the development of water examinations, and was adopted as Maryland's NTK where appropriate. The Board currently recommends exam applicants utilize study guides provided by ABC and California State University, Sacramento, for exam preparation.

Training
The Water and Wastewater Operators Association sponsor a week-long training session every June, called the Annual Short Course. Certification exams are given at the end of the week, and the Board has observed increased passing rates for Short Course attendees. The Board will continue to work with MDE and water organizations on possible training opportunities for operators.

MDE negotiated multiple contracts with the Maryland Center for Environmental Training, and Maryland Rural Water Association to provide a wide range of training classes for eligible operators free of charge. MDE's contract with each of the organizations targeted a different training need based in regional location. Collectively, three training partners cover a comprehensive curriculum of all of the training needs.

Fees
The 2009 Legislative Audit suggested that the Board's fees were not sufficient to support all of the current Board expenses. In 2012, the Department evaluated the Board's expenses and determined that additional resources were needed to support the operator certification program. The Board reviewed a fee increase of $25 per certificate; this change was-incorporated into the regulation revisions effective October 1, 2014.

External Reviews

In 2009, legislative auditors completed a full programmatic review of the Board's functions. There were no external reviews in 2013.

<u>Regulations</u>

In consultation with various water and wastewater organizations, regulations were drafted to address the following items:

1. Technical corrections to COMAR 26.06.01 Table 8 for continuing education credit (50% Rule); Water G, 1, and 2 are exempt.
2. Provide a reference for Technical Review and Evaluation (TRE) Committee in the State regulations.
3. Technical correction for the physical location of the Board.
4. Review fees for certification and examination for operators.
5. Establish definition for "Pending Employment"; this limitation typically impacts new operators, or operators from out-of-state that are seeking reciprocity.

The regulation revision is expected to be finalized in 2014.

<u>2013 Customer Satisfaction Survey</u>

A survey of water and wastewater operators was completed in 2014. The survey collected data on the Board's performance, operator knowledge of regulatory requirements, and operator experience/turnover. The survey, raw data, and a results summary are included as Appendix A.

ADDITIONAL ACTIVITIES

The following summarizes the activities that were initiated by the Water Supply Program to educate and target public water system operators:

1. Direct contact with small water systems by Water Supply Program staff and Maryland Rural Water Association (MRWA) circuit riders was made throughout *2013*. This activity is coordinated by the Water Supply Program under a contract with MRWA.
2. The Water Supply Program and Board staff provide training for operators at various annual conferences such as American Waterworks Association (AWWA), Water and Wastewater Operators Association (WWOA), and MRWA.
3. The WSP participates in EPA's Area Wide Optimization Program (AWOP). AWOP was developed to increase awareness of the need for continuous optimization of surface water plants so that the risk of waterborne disease outbreaks will be reduced. AWOP has developed tools and methods to promote plant optimization. The WSP participates in on-site, multi-state activities to assess and ensure optimized plant performance.
4. Email communications updating public drinking water regulations and guidance; providing guidance during emergency events.
5. Public water system operators are invited to participate in security training, and emergency exercises.
6. The Water Supply Program continued the annual notification of the monitoring schedules, water quality data, and general updates to all community and non-transient non-community water systems in 2014.

APPENDIX A

SURVEY OVERVIEW

In 2014, the Board of Water and Waste Systems Operators administered a formal external review of Maryland's Certification Program for Water, Wastewater, and Industrial Operators. More than 3,800 certified operators, professional education providers, or members of water associations were solicited to participate in an in-depth survey that included both on-line and written survey completion; 240 surveys were completed and returned. The responses will be reviewed by the Board to assess the status and efficacy of this program, and develop future initiatives regarding administration, training, and examination.

Approximately 2,500 of the solicited individuals work in the water sector; 142 of the respondents operate community and non-transient non-community public water systems. As such, the Water Supply Program will evaluate applicable responses regarding operator certification.

ADMINISTERED SURVEY

MARYLAND BOARD OF WATERWORKS AND WASTE SYSTEMS OPERATORS

1800 Washington Boulevard, Ste 410

Baltimore, Maryland 21230

CUSTOMER SATISFACTION SURVEY

February 2014

The Maryland Department of the Environment (MDE) is conducting a survey of certified wastewater, water treatment, and industrial wastewater operators in Maryland.

The purpose of this survey is to help gauge the effectiveness of this program and future needs. The survey will be anonymous, and no names will be collected. This survey is also available on the web at https://www.surveymonkey.com/s/MDE_Board2014. If you have Internet access, we strongly encourage you to complete the on-line survey to save time and money.

Please complete the on-line survey, or return completed mail survey to the MDE-Water Supply Program. **NO LATER THAN May 31, 2014**. Thank you for your feedback.

MARYLAND BOARD OF WATERWORKS AND WASTE SYSTEMS OPERATORS

CUSTOMER SATISFACTION SURVEY 2014

1. Please describe who you are.

>   Operator
>   Manager
>   Owner
>   Consultant who provides services to utilities

Other (Please specify) _____

2. What is the size of the utility you work for?

>   Very small (population 25-500)
>   Small (population 501-3,300)
>   Medium (population 3,300-10,000)
>   Large (population 10,001-100,000)
>   Very Large (population >100,000)
>   Not sure
>   Not Applicable

3. Are you currently a certified wastewater, water treatment, distribution/collection, or industrial wastewater operator in Maryland? Which certifications do you hold? (Select all that apply)

Water 1	Wastewater 1	Industrial 1
Water 2	Wastewater 2	Industrial 2
Water 3	Wastewater 3	Industrial 3
Water 4	Wastewater 4	Industrial 4
Water 5	Wastewater 5	Industrial 5
Water G	Wastewater A	Not Applicable
Water Distribution	Wastewater Collection	

Other (Please specify) _____

4. **If you are a water operator, the type of water system that you represent is:**

> Community
>
> Non-transient Non-community
>
> Transient Non-community
>
> Not sure
>
> Not applicable

5. **Are you a full-time operator?**

> No – less than 40 hours per week
>
> Yes – 40 hours or more per week
>
> Not applicable

6. **How many years have you been a practicing operator?**

> Less than 1 year
>
> 1-5 years
>
> 6-10 years
>
> 11-15 years
>
> 16-20 years
>
> Over 20 years
>
> not applicable

7. **How many more years do you expect to continue as a practicing operator?**

> I am not currently employed as an operator, but I have retained my license
>
> Less than 3 years
>
> 3 - 5 years
>
> 6 years or more
>
> No plans to leave
>
> Not applicable

8. **Why would you consider leaving?**

> Better pay
>
> Other employment
>
> Retirement
>
> Not applicable

Other (please specify) _____

9. **Do you feel you receive adequate support in your efforts to ensure the quality of operations at your facility from your Utility?**

        Yes

        No

        Not Applicable

Other (please specify) _____

10. **How would you rate your understanding of the following operator certification components?**

	Low	Below Average	Average	Above Average	High
Exam Application Process and Deadlines					
Renewal Process and Deadlines					
Who to Contact with Certification Program Questions					
Operator Training Requirements					
The 50% Process Training Requirement					

Comments: _____

11. **How would you rate your level of satisfaction with communications and information resources provided by the Operator Certification Program**

	Low	Below Average	Average	Above Average	High
Examinations and Instructions					
Examination Availability and Location					
Certification Program Guidelines					
Certification Renewal Notice					
Operator Certification Website					

Comments: _____

12. How would you rate the promptness of responses to your inquiries and /or requests by the Operator Certification Program staff at MDE?

  Extremely Prompt

  Above Average

  Average

  Below Average

  Not Prompt At All

  Not Applicable

Comments: _____

13. Overall, how would you rate the quality of assistance provided by the Operator Certification Program staff at MDE?

  Excellent

  Above Average

  Average

  Below Average

  Poor Quality

  Not Applicable

Comments: _____

14. Did you know ……?   **Yes**   **No**

All training must be approved by the Board

All training is classified as Process or Non-process

Certificates expire every three years

To renew a temporary certificate, an operator is required to obtain training and to sit for an examination given by the Board

An operator needs to notify the Board in writing of changes to his/ her home mailing address

Comments: _____

15. Do you have any additional comments?

_____

RESULTS SUMMARY

Responder Type

1. Please describe who you are	2014 Number	2014 Percent	2008 Number	2008 Percent
Operator	143	59.8%	260	63.9%
Manager	70	29.3%	100	24.6%
Owner	3	1.3%	18	4.4%
Consultant who provides service to utilities	9	3.8%	11	2.7%
Other	14	5.9%	18	4.4%
Total	239	100.0%	407	100.0%
Missing Cases =	*3*		*2*	
Response Percent =	*98.8%*		*99.5%*	

Utility Size

2. What is the size of the utility you work for?	2014 Number	2014 Percent	2008 Number	2008 Percent
Very small (population 25-500)	49	20.5%	104	25.8%
Small (population 501-3,300)	25	10.5%	72	17.9%
Medium (population 3,300-10,000)	39	16.3%	58	14.4%
Large (population 10,001-100,000)	62	25.9%	87	21.6%
Very Large (population > 100,000)	32	13.4%	58	14.4%
Not sure	5	2.1%	24	6.0%
Not Applicable	27	11.3%		
Total	239	100.0%	403	100.0%
Missing Cases =	*3*		*6*	
Response Percent =	*98.8%*		*98.5%*	

Certification

3. Are you currently a certified wastewater, water treatment, distribution/collection, or industrial wastewater operator in Maryland? Which certifications do you hold? (Select all that apply)

	2014 Number	2014 Percent	2008 Number	2008 Percent
Not applicable	32	6.5%	6	1.1%
Not certified	0	0.0%	24	4.3%
Water Class	165	33.3%	199	35.5%
Water Distribution	18	3.6%	174	31.0%
Wastewater	226	45.6%	58	10.3%
Wastewater Collection	23	4.6%	46	8.2%
Industrial Wastewater	32	6.5%	54	9.6%
Total	496	100.0%	561	100.0%

Water Certification- Class	2014 Number	2014 Percent	2008 Number	2008 Percent
1	39	23.5%	36	16.3%
2	27	16.3%	48	21.7%
3	16	9.6%	32	14.5%
4	60	36.1%	83	37.6%
5	15	9.0%	8	3.6%
G	9	5.4%	14	6.3%
Total	166	100.0%	221	100.0%
Missing Cases =	*76*		*188*	
Response Percent =	*68.6%*		*54.0%*	

Wastewater Certification- Class	2014 Number	2014 Percent	2008 Number	2008 Percent
1	10	4.4%	21	6.8%
2	10	4.4%	14	4.5%
3	16	7.1%	26	8.4%
4	21	9.3%	34	11.0%
5	86	38.2%	115	37.3%
6	excluded		7	2.3%
A	82	36.4%	91	29.5%
Total	225	100.0%	308	100.0%
Missing Cases =	*17*		*101*	
Response Percent =	*93.0%*		*75.3%*	

Industrial Wastewater Certification- Class	2014 Number	2014 Percent	2008 Number	2008 Percent
1	2	6.3%	9	16.4%
2	10	31.3%	28	50.9%
3	0	0.0%	5	9.1%
4	1	3.1%	1	1.8%
5	19	59.4%	12	21.8%
Total	32	100.0%	55	100.0%
Missing Cases =	*210*		*354*	
Response Percent =	*13.2%*		*13.4%*	

Water Systems Represented

4. If you are a water operator, the water system that you represent is:	2014 Number	2014 Percent	2008 Number	2008 Percent
Community	121	55.0%	206	56.0%
Non-transient Non-community	24	10.9%	37	10.1%
Transient Non-community	5	2.3%	13	3.5%
Not sure	14	6.4%	28	7.6%
Not applicable	56	25.5%	84	22.8%
Total	220	100.0%	368	100.0%
Missing Cases =	*22*		*41*	
Response Percent =	*90.9%*		*90.0%*	

Full Time Operator

5. Are you a full-time operator?	2014 Number	2014 Percent	2008 Number	2008 Percent
No- less than 40 hours per week	37	15.4%	108	26.8%
Yes- 40 hours or more per week	154	64.2%	295	73.2%
Not applicable	49	20.4%	0	0.0%
Total	240	100.0%	403	100.0%
Missing Cases =	*2*		*6*	
Response Percent =	*99.2%*		*98.5%*	

Years Practicing As Operator

6. How many years have you been a practicing operator?	2014 Number	2014 Percent	2008 Number	2008 Percent
Less than 1 year	2	0.8%	14	3.5%
1-5 years	27	11.3%	80	19.8%
6-10 years	38	15.9%	49	12.1%
11-15 years	25	10.5%	50	12.3%
16-20 years	18	7.5%	61	15.1%
Over 20 years	101	42.3%	151	37.3%
Not applicable	28	11.7%	0	0.0%
Total	239	100.0%	405	100.0%
Missing Cases =	*3*		*4*	
Response Percent =	*98.8%*		*99.0%*	

Expected Years More As Operator

7. How many more years do you expect to continue as a practicing operator?	2014 Number	2014 Percent	2008 Number	2008 Percent
Currently not employed as an operator, but retained my license	7	2.9%	17	4.2%
Less than 3 years	19	7.9%	30	7.4%
3-5 years	38	15.8%	56	13.8%
6 years or more	58	24.2%	155	38.2%
No plans to leave	86	35.8%	148	36.5%
Not applicable	32	13.3%	0	0.0%
Total	240	100.0%	406	100.0%
Missing Cases =	*2*		*3*	
Response Percent =	*99.2%*		*99.3%*	

Reasons for Leaving Industry

8. Why would you consider leaving?	2014 Number	2014 Percent	2008 Number	2008 Percent
Better pay	42	17.5%	103	26.6%
Other employment	14	5.8%	26	6.7%
Retirement	112	46.7%	222	57.4%
Not applicable	52	21.7%	36	9.3%
Other	20	8.3%	0	0.0%
Total	240	100.0%	387	100.0%
Missing Cases =	*2*		*22*	
Response Percent =	*99.2%*		*94.6%*	

Adequate Utility Support

9. Do you feel you receive adequate support in your efforts to ensure the quality of operations at your facility from your Utility?

	2014 Number	2014 Percent	2008 Number	2008 Percent
Yes	140	56.0%	322	80.9%
No	60	24.0%	61	15.3%
Not Applicable	38	15.2%	15	3.8%
Total	238	95.2%	398	100.0%
Missing Cases =	*4*		*11*	
Response Percent =	*98.3%*		*97.3%*	

Understanding Operator Certification

A. Exam Application Process and Deadlines	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	7	3.0%	20	5.0%
Below Average	17	7.3%	24	6.0%
Average	74	31.9%	82	20.4%
Above Average	67	28.9%	115	28.7%
High	67	28.9%	146	36.4%
NS			14	3.5%
Total	232	100.0%	401	100.0%
Missing Cases =	*10*		*8*	
Response Percent =	*95.9%*		*98.0%*	

B. Renewal Process and Deadlines	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	5	2.2%	16	4.0%
Below Average	14	6.1%	17	4.3%
Average	76	32.9%	69	17.3%
Above Average	61	26.4%	134	33.6%
High	75	32.5%	150	37.6%
NS			13	3.3%
Total	231	100.0%	399	100.0%
Missing Cases =	*11*		*10*	
Response Percent =	*95.5%*		*97.6%*	

C. Who to Contact with Certification Program Questions	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	5	2.2%	22	5.5%
Below Average	36	15.8%	29	7.3%
Average	63	27.6%	89	22.3%
Above Average	55	24.1%	107	26.8%
High	69	30.3%	127	31.8%
NS			25	6.3%
Total	228	100.0%	399	100.0%
Missing Cases =	*14*		*10*	
Response Percent =	*94.2%*		*97.6%*	

D. Operator Training Requirements	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	11	4.8%	20	5.0%
Below Average	14	6.1%	24	6.0%
Average	73	31.6%	82	20.4%
Above Average	62	26.8%	115	28.7%
High	71	30.7%	146	36.4%
NS			14	3.5%
Total	231	100.0%	401	100.0%
Missing Cases =	*11*		*8*	
Response Percent =	*95.5%*		*98.0%*	

E. 50% Process Training Requirement	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	22	9.6%	37	9.4%
Below Average	23	10.0%	22	5.6%
Average	74	32.2%	77	19.5%
Above Average	49	21.3%	101	25.6%
High	62	27.0%	114	28.9%
NS			43	10.9%
Total	230	100.0%	394	100.0%
Missing Cases =	*12*		*15*	
Response Percent =	*95.0%*		*96.3%*	

Satisfaction with Communications & Resources

A. Examinations and Instructions	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	13	5.7%	10	2.5%
Below Average	15	6.6%	18	4.5%
Average	95	41.7%	95	24.0%
Above Average	65	28.5%	124	31.3%
High	40	17.5%	121	30.6%
NS			28	7.1%
Total	228	100.0%	396	100.0%
Missing Cases =	*14*		*13*	
Response Percent =	*94.2%*		*96.8%*	

B. Examination Availability and Location	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	15	6.6%	35	8.9%
Below Average	27	11.9%	34	8.6%
Average	88	38.8%	92	23.4%
Above Average	59	26.0%	113	28.7%
High	38	16.7%	96	24.4%
NS			24	6.1%
Total	227	100.0%	394	100.0%
Missing Cases =	*15*		*15*	
Response Percent =	*93.8%*		*96.3%*	

C. Certification Program Guidelines	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	12	5.3%	21	5.3%
Below Average	22	9.7%	32	8.0%
Average	99	43.8%	97	24.3%
Above Average	56	24.8%	129	32.3%
High	37	16.4%	101	25.3%
NS			19	4.8%
Total	226	100.0%	399	100.0%
Missing Cases =	*16*		*10*	
Response Percent =	*93.4%*		*97.6%*	

D. Certification Renewal Notice	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	9	4.1%	17	4.3%
Below Average	19	8.6%	28	7.1%
Average	76	34.2%	70	17.7%
Above Average	78	35.1%	123	31.1%
High	40	18.0%	134	33.8%
NS			24	6.1%
Total	222	100.0%	396	100.0%
Missing Cases =	*20*		*13*	
Response Percent =	*91.7%*		*96.8%*	

E. Operator Certification Website	2014 Number	2014 Percent	2008 Number	2008 Percent
Low	22	10.2%	9	2.3%
Below Average	28	13.0%	33	8.3%
Average	93	43.1%	69	17.4%
Above Average	45	20.8%	98	24.7%
High	28	13.0%	70	17.7%
NS			117	29.5%
Total	216	100.0%	396	100.0%
Missing Cases =	*26*		*13*	
Response Percent =	*89.3%*		*96.8%*	

Promptness of Response to Inquiries

12. How would you rate the promptness of responses to your inquiries and/ or requests by the Operator Certification Program staff at MDE?

	2014 Number	2014 Percent	2008 Number	2008 Percent
Extremely Prompt	35	15.0%	74	18.6%
Above Average	86	36.8%	149	37.5%
Average	64	27.4%	111	28.0%
Below Average	21	9.0%	14	3.5%
Not Prompt At All	5	2.1%	7	1.8%
Not Applicable	23	9.8%	42	10.6%
Total	234	100.0%	397	100.0%
Missing Cases =	*8*		*12*	
Response Percent =	*96.7%*		*97.1%*	

Overall Quality of Assistance

13. Overall, how would you rate the quality of assistance provided by the Operator Certification Program staff at MDE?

	2014 Number	2014 Percent	2008 Number	2008 Percent
Excellent	50	21.2%	64	16.0%
Above Average	75	31.8%	147	36.7%
Average	69	29.2%	129	32.2%
Below Average	19	8.1%	13	3.2%
Poor Quality	8	3.4%	10	2.5%
Not Applicable	15	6.4%	38	9.5%
Total	236	100.0%	401	100.0%
Missing Cases =	*6*		*8*	
Response Percent =	*97.5%*		*98.0%*	

Did You Know…?

a. All training must be provided by the Board	2014 Number	2014 Percent	2008 Number	2008 Percent
Yes	219	94.4%	366	95.6%
No	13	5.6%	17	4.4%
Total	232	100.0%	383	100.0%
Missing Cases =	*10*		*26*	
Response Percent =	*95.9%*		*93.6%*	

b. All training is classified as Process or Non-process	2014 Number	2014 Percent	2008 Number	2008 Percent
Yes	208	90.4%	341	85.0%
No	22	9.6%	60	15.0%
Total	230	100%	401	100%
Missing Cases =	*12*		*8*	
Response Percent =	*95.0%*		*98.0%*	

c. Certificates expire every three years	2014 Number	2014 Percent	2008 Number	2008 Percent
Yes	228	98.3%	382	96.7%
No	4	1.7%	13	3.3%
Total	232	100%	395	100%
Missing Cases =	*10*		*14*	
Response Percent =	*95.9%*		*96.6%*	

d. To renew a temporary certificate, an operator is required to obtain training and to sit for an examination given by the Board

	2014 Number	2014 Percent	2008 Number	2008 Percent
Yes	201	88.2%	315	79.7%
No	27	11.8%	80	20.3%
Total	228	100%	395	100%
Missing Cases =	*14*		*14*	
Response Percent =	*94.2%*		*96.6%*	

e. An operator needs to notify the Board in writing of changes to his/ her home mailing address

	2014 Number	2014 Percent	2008 Number	2008 Percent
Yes	207	90.8%	341	85.9%
No	21	9.2%	56	14.1%
Total	228	100%	397	100%
Missing Cases =	*14*		*12*	
Response Percent =	*94.2%*		*97.1%*	