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Dedicated to protecting and improving the health and environment of the people of Colorado

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## **MEMORANDUM**



**Colorado Department** of Public Ĥealth and Environment

TO:	Water and Wastewater Facility Operator Certification Board
FROM:	Jackie Whelan, Division Liaison
	Water Quality Control Division
DATE:	October 17, 2012
SUBJECT:	Calendar Year 2011 Facility Operator Certification Program Annual Report

The Division is pleased to present the Year 2011 Facility Operator Certification Program Annual Report to the Water and Wastewater Facility Operators Certification Board.

This is the first annual program report to the Board. The report follows the basic reporting requirements for the operator certification annual report to EPA, but this report includes data for all water and wastewater facilities to provide the Board with a comprehensive overview of program activities.

As the title indicates the report covers calendar year 2011 and includes data for the previous four years for comparison and trending purposes.



**Facility Operator Certification Water Quality Control Division** 

Colorado Department of Public Health and Environment

## Facility Operator Certification Program Calendar Year 2011 Annual Report

Submitted to the Water and Wastewater Facility Operators Certification Board October 17, 2012

> Dedicated to protecting and improving the health and environment for the people of Colorado.

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#### **Introduction**

Operator certification is an important step in protecting public health and the environment by promoting compliance with the Safe Drinking Water Act (SDWA), the Clean Water Act (CWA), and federal and state implementing regulations.

In 1959 the State Health Department formed an Advisory Committee on Certification of Water and Sewage Plant Operators in Colorado. The advisory committee recommended establishing a policy for a voluntary program for certification of qualified operators of water and sewage treatment plants. The certification of treatment plant operators remained voluntary until the 1970s.

In the early 1970s, the water and wastewater treatment plant operator certification program became a mandatory program with legislation that created the Colorado Certification Board. The Colorado Certification Board adopted *100-Regulations, Certification of Water Treatment Plant and Wastewater Treatment Plant Operators* in July 1973. The name of the Board was later changed to the Water and Wastewater Facility Operator Certification Board (Board).

The water distribution and wastewater collection operator certification remained a voluntary certification program until 1999 when the U.S. Environmental Protection Agency (EPA) issued operator certification program guidelines specifying minimum standards for certification and recertification of the operators of community and non-transient non-community public water systems, which included distribution system operators.

In 2000, the Colorado statute was modified to require certified operators for all water and wastewater treatment plants, water distribution systems, and wastewater collection systems to meet all the requirements of the "Final Guidelines for the Certification and Recertification of the Operators of Community and Non-Transient Non-Community Public Water Systems," 64 FR 5916 (Guidelines).

The goal of the operator certification program is to ensure that skilled professionals are overseeing the treatment and distribution of safe drinking water and the collection and treatment of wastewater prior to discharge into waters of the State. The State of Colorado's Operator Certification Program was approved by EPA as consistent with the Guidelines on June 22, 2001.

#### **Purpose of this Report**

This is the first annual program report to the Board. The report follows the basic reporting requirements for the operator certification annual report to EPA for community and non-transient non-community water systems. This report includes data for all water and wastewater facilities to provide the Board with a comprehensive overview of program activities.

The report covers calendar year 2011 and includes data for the previous four years for comparison and trending purposes. Historical information was reported using various reporting periods, for example state fiscal year or federal fiscal year rather than calendar year. For ease of reporting between the program groups, beginning with calendar year 2011 all data will be

reported for calendar years where possible. Because the state fiscal year is July 1 to June 30, some historical data includes part of 2006 for state fiscal year 2007.

The sources of data used to compile this report are the Facility Operator Program EPA Annual Reports 2006 - 2011, the contractors' annual reports to the Board, and the Division's fiscal, compliance, and facility operator certification records, unless otherwise noted.

#### **Organizational Information**

The Water and Wastewater Facility Operators Certification Board (Board) is a governorappointed board that represents a variety of water and wastewater professionals. The Board is established by Article 9 of Title 25, C.R.S. The Board has promulgated *Regulation 100 Water and Wastewater Facility Operators Certification Requirements* pursuant to sections 25-9-101 through 110, C.R.S. and in particular section 25-9-101, C.R.S.

The Board contracts the operator certification and examination aspects of the Program to nonprofit organizations comprised of subject matter experts (SME) who volunteer their time and expertise, this is a unique configuration. The non-profit organizations also review and approve training courses to meet the professional development requirements for certification renewal. These contractors subcontract daily operations to Total Events and Management Services, Inc. (TEAMS). TEAMS manages the Operator Certification Program Office (OCPO), which oversees the daily operations of operator certification.

The Water Quality Control Division (Division) is responsible for compliance and enforcement of the requirement that every water and wastewater facility be under the supervision of a certified operator holding a certificate equal to or greater than the classification of the facility. The Division is also responsible for the classification of all water and wastewater facilities and for the investigation of complaints of misconduct by certified operators in the performance of their duties. The Facility Operator Certification supervisor within the Division serves as the Division liaison and staff to the Board. The workgroup serves as liaison between the Division, the Board, certified operators, and facility owners providing compliance assistance, regulation implementation, outreach and education.

The facility operator certification program is made up of four distinct groups that have interrelated responsibilities for activities within the program. The table below describes which group or groups have a primary role or responsibility associated with various activities as currently assigned by statute, regulation, or contract.

	Application Review	Application Appeal	Training Unit Approval	Examinations	Compliance & Enforcement	Facility Penalty Amool	Outreach & Education	Facility Classification	Facility Classification Amode	Disciplinary Actions	Regulation & Policy Revisions
Board		Х				Х			Х	Х	Х
Board Administrator		Х				Х			Х		Х
Division					X	Х	Х	Х	Х	Х	X
Contractors	Х	Х	Х	Х			Х				

 Table 1 - Responsibilities of the Board, Administrator, Division, and Contractors

#### **Facility Compliance**

Article 9 of Title 25, C.R.S., requires "every water treatment facility, domestic or industrial wastewater treatment facility, wastewater collection system and water distribution system be under the supervision of a certified operator, holding a certificate in a class equal to or higher than the class of the facility or system." Section 100.6, Regulation 100, 5 CCR 1003-2, lists permitted wastewater facilities that are exempt from this requirement and those facilities are not counted in the compliance data below.

	Number of Facilities Tracked	Compliant	Non-compliant	Compliance Rate								
	Community Water Systems											
2007	901	853	48	95%								
2008	902	880	22	97%								
2009	926	914	12	98%								
2010	927	916	11	98%								
2011	933	916	17	98%								
	Non-Transi	ent, Non-Community W	Vater Systems									
2007	178	173	5	97%								
2008	171	168	3	98%								
2009	179	178	1	99%								
2010	184	182	2	98%								
2011	182	180	2	98%								
	Transien	t, Non-Community Wat	ter Systems									
2007	706	662	44	94%								
2008	741	717	24	97%								
2009	778	761	17	98%								
2010	767	750	17	98%								
2011	782	746	36	95%								

Table 2 – Drinking Water System Compliance Data, G	Calendar Years 2007 to 2011
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	Number of Facilities Tracked	Compliant	Non-compliant	Compliance Rate							
	Domestic Wastewater										
2011	598	581	17	97%							
		Industrial Wastewater									
2011	129	127	2	98%							
Wastewater Collection											
2011	124	119	5	96%							

#### Table 3 – Wastewater Facility Compliance Data, Calendar Years 2007 to 2011

#### **Facility Enforcement**

Notices of Violation are formal enforcement actions that are taken against the owner of facilities who fail to comply with the requirement to ensure their facility is under the supervision of a certified operator who holds a certificate in a class equal to or higher than the class of the facility or system. There were no formal actions issued in years 2006-2010. There were 4 formal actions issued in 2011. All four were Notices of Violation without Penalty.

#### **Operator Certification**

Building an educated, experienced, and professional workforce is a primary focus in operator certification. To facilitate monitoring and evaluation of certification trends, data is maintained that includes the number of exams taken, certified operator counts, training opportunities, and expense reimbursement for certifications.

In November 2011, the Board amended Regulation 100 to require applicants for examination to move through the certification levels sequentially. Previously, if an applicant met the education and experience requirements they could apply to take any level of exam regardless of current certification. Under the sequential testing schema an applicant must hold the certificate in the category and level immediately below the level they are applying for. The change to sequential testing is effective for the calendar year 2012 exam cycles.

The table below indicates the exam failure rate has averaged 46% for the past five years. Although the change to sequential testing was not an attempt to address the exam failure rates, there may be a positive change in the pass/fail rates as a result of the change in the testing schema.

Exam Year	Applications Received	Applications Approved <sup>1</sup>	Exams Taken	Pass	Pass Rate	Fail	Fail Rate
2007	3126	1469	2626	1427	54%	1199	46%
2008	2961	1508	2564	1363	53%	1201	47%
2009	2936	1468	2548	1465	57%	1083	43%
2010	2840	2739	2528	1350	53%	1178	47%
2011	2909	2787	2514	1374	55%	1140	45%

Table 4 - Written Examination Pass/Fail Rates, Calendar Years 2007 to 2011, All Levels

<sup>1</sup>Only treatment exams until 2010 (when the Certification Council began reporting)

Electronic testing allows operators to make an appointment to take exams at their convenience in the OCPO office. The advantages are flexibility in scheduling, quiet atmosphere, receiving the results immediately after taking the exam and, if they pass the exam, they can complete all the paperwork and receive their certificate on the same day. Data available is for 2011 only.

Class & Level	Tests Scheduled	Failure to Show	Pass	Pass Rate	Fail	Fail Rate						
Water Treatment												
W-A	53	12	19	46.3	22	53.7						
W-B	33	1	17	53.1	15	46.9						
W-C	27	2	18	72.0	7	28.0						
W-D	53	4	36	73.5	13	26.5						
W-S	9	-	8	88.8	1	11.2						
W-T	2	-	2	100.0	-	-						
		W	astewater Treatme	ent								
WW-A	30	1	17	58.6	12	41.4						
WW-B	19	2	8	47.1	9	52.9						
WW-C	28	3	7	28.0	18	72.0						
WW-D	46	4	31	73.8	11	26.2						
WW-S	3	1	2	100.0	-	-						
IND-A	17	2	5	33.3	10	66.7						
IND-B	-	-	-	-	-	-						
IND-C	3	-	3	100.0	-	-						
IND-D	9	-	7	77.7	2	22.3						
			Water Distribution	ı								
D-1	43	2	27	65.9	14	34.1						
D-2	19	-	10	52.6	9	47.4						
D-3	21	-	12	57.1	9	42.9						
D-4	25	1	14	58.3	10	41.7						
W-S	6	-	5	83.3	1	16.7						
		W	astewater Collecti	on								
C-1	22	1	17	80.9	4	19.1						
C-2	12	-	10	83.3	2	16.7						
C-3	10	-	8	80.0	2	20.0						
C-4	14	1	10	76.9	3	23.1						
WW-S	-	-	-	-	-	-						

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#### Table 5 - Electronic Test Summary, 2011

	2007	2008	2009	2010	2011	Total
Water Treatment	353	391	337	304	308	1693
Water Distribution	331	441	348	372	334	1826
Wastewater Treatment	266	277	340	347	271	1501
Wastewater Collection	298	308	290	302	260	1458
Small Water System	65	117	52	126	96	456

Table 6 - Certificates Issued, Calendar Years 2007 to 2011

Colorado has 5,650 active water and wastewater certified operators holding a total of 10,144 certificates.

	Water Treatment												
	W-A	W	<b>'-B</b>	W-C	W-D	W	-S	W-T					
2006	697	2	39	592	814	53	39	63					
2011	760	2	39	569	778	53	39	75					
	W	ater Distrib	ution			Wastewate	r Treatment						
	D-1	D-2	D-3	D-4	WW-A	WW-B	WW-C	WW-D					
2006	1046	556	n/a	830	528	138	404	648					
2011	1079	604	139	865	580	146	401	671					
	Was	tewater Col	lection	4	In	dustrial Wastew	vater Treatmen	nt					
	C-1	C-2	C-3	C-4	Ind-A	Ind-B	Ind-C	Ind-D					
2006	735	425	-	603	97	28	139	115					
2011	699	401	145	687	113	31	174	172					

 Table 7 - Active Operator Counts, 2006 and 2011<sup>1</sup>

<sup>1</sup> Active operator counts not available for years 2007-2010

## Table 8 - Approved Training Opportunities for Professional Development, 2006 to 2011

	2006	2007	2008	2009	2010	2011
Courses Offered - Once	67	50	33	53	53	58
Courses Offered - Multiple	132	170	141	173	173	353
Web-based and Home Study	113	107	87	121	121	160
Total	312	327	261	347	347	571

#### **Expense Reimbursement Grant**

The Expense Reimbursement Grant is a grant from the U.S. Environmental Protection Agency to encourage certification of operators for small drinking water systems. In Colorado, the grant reimbursed applicants that worked for non-transient non-community and community water systems that serve no more than 3, 300 persons per day. The Division reimbursed applicants \$230 per certified operator for the costs of training, fees, and examinations for initial certificates. After 2009 it also covered the costs of certificate renewals.

	2006	2007	2008	2009	2010	2011
Approved	15	41	37	44	86	108
Denied	-	-	-	3	8	6

 Table 9 - Expense Reimbursement Grant Number of Applicants, 2006 to 2011

#### **Disciplinary Action Investigations**

The Board is authorized to take disciplinary action against a certified operator under sections 25-9-104(6) and -104(6.5) C.R.S. This authority provides the Board with discretion to reprimand a certified operator or suspend or revoke an operator's certification. As delegated in statute, the Division investigates allegations of operator misconduct and makes recommendations to the Board for action.

Complaints are received by phone, email or mail. Complaints can be made anonymously and confidentiality of the complainant is maintained throughout the investigation and disposition of the complaint. Complaints come from facility customers, Division staff from interaction and inspections, co-workers, supervisors, subordinates, etc.

Types of complaints received:

- Waterborne disease outbreak resulting from failure to properly maintain the distribution system
- Sample collection protocol not maintained
- Failure to monitor and report in compliance with the Colorado Primary Drinking Water Regulations
- Falsification of experience/education requirements on applications for examination
- Falsification of laboratory data/falsification of records
- Un-cooperative with Division staff during the investigation of an acute situation at a drinking water system while acting as the facility's operator in responsible charge

Below is a summary of the disposition of complaints received against a certified operator of misconduct in the exercise of their duties.

Type of Action	2006	2007	2008	2009	2010	2011
Board Actions Taken			L		l	
Letter of Reprimand	-	1	-	1	3	
Certification Suspension	-	-	-	-	-	-
Certification Revocation	-	-	-	-	-	-
Consent Agreement	-	1	1	-	1	-
Dismissed for Lack of Evidence (no action taken)	2	-	2	1	4	1
Total Investigations	2	2	3	2	8	1

Table 10 – Disciplinary Action Investigations Conducted (with Disposition)Calendar Years 2006 to 2011

#### **Regulation Revisions**

The following table briefly identifies revisions to Regulation 100, 5 CCR 1003-2, from 2006 through 2011. For a detailed description of the changes refer to the corresponding statements of basis and purpose comprising sections 100.43-100.48, Regulation 100.

	Effective Date	Statement of Basis and Purpose
2006	Amended 10/25/05; Effective 1/1/06	Not available
	Amended 02/14/06; Effective 4/30/06	100.43
2007	Amended 07/31/07; Effective 09/30/07	100.44
2008	No changes	
2009	Amended 04/28/09; Effective 6/30/09	100.45
	Amended 09/29/09; Effective 11/30/09	100.46
2010	Amended 11/24/09; Effective 1/30/2010	100.47
2011	Amended 11/29/11, Effective 01/30/12	100.48

Table 11 - Regulation 100, 5 CCR 1003-2 Revisions, 2006 to 2012

## **Outreach and Education**

The Facility Operator Certification workgroup staff routinely participates in conferences, seminars, and trainings. These specifically targeted presentations provide additional opportunities for contact with the public, businesses owners and permittees, special district and town boards, trustees, city councils and other municipal officials, and certified operators. Presentations have been given to companies that contract to provide certified operators, the Water and Wastewater Utility Councils, large metro water and wastewater special districts, and regional certified operator organizations.

The following table gives a brief outline of outreach and presentation efforts with number of staff attending and/or presenting.

Event	Staff Attending Event					
Even	2006	2007	2008	2009	2010	2011
RMSAWWA Action Now Seminars (10 per year)	Х	Х	Х	X	X	X
Rocky Mountain Plant Operator School: Fundamental	Х	X	X	X	X	X
Rocky Mountain Plant Operator Schools: Intermediate-Advanced	Х	Х	X	X	X	X
Colorado Rural Water Association Conference - Colorado Springs	Х	Х	Х	X	X	X
Colorado Rural Water Association Conference - Grand Junction	Х	Х	Х	Х	Х	X
Leadville Operator School	Х	Х	Х	Х	Х	Х
Joint RMSAWWA-RMWEA Small Systems Committee Seminars	-	-	-	-	-	Х
Colorado Environmental Health Association Conference	Х	Х	Х	Х	-	-
ABC Annual Conference	Х	Х	Х	X	X	Х
RMSAWWA-RMWEA Annual Conference	Х	Х	Х	-	-	Х
Colorado Distribution & Collection Short School						Х
Total events one or more staff attended	18	18	18	17	16	19

Table 12 - Facility Operator Certification Staff Outreach and Education, 2007 to 2011

## **Stakeholder Groups and Participation**

The EPA has identified stakeholder involvement as important to the public health objectives of the program. It helps to ensure the relevancy and validity of the program, and the confidence of all interested parties. States are required to include ongoing stakeholder involvement in the revision and operations of State operator certification programs. Stakeholder involvement goes beyond public comment on rule revisions and participation in Board meetings. Examples of stakeholders include: certified operators, drinking water system owners, domestic and industrial wastewater permittees, environmental/public health groups, the general public, consumer groups, technical assistance providers, utility managers, trainers, water and wastewater professional organizations, etc.

The Facility Operator Certification workgroup is currently participating as members of the RMSAWWA/RMWEA Joint Small Systems Committee, CDPHE 2015 Public Water System Training Strategy Administrative Framework Project Task Force, and Value of Water Project.

EPA has recommended each State have a stakeholder advisory committee. The Division is committed to expanding its participation in existing organizations and other outreach activities, and to evaluating the formation of a stakeholder advisory committee.

#### **Fiscal Information**

Tables 13 and 14 describe operator certification funds as they relate to each program entity. All fees paid for individual operator certification and training unit approvals are paid to the Board's contractors. The fees assessed and collected do not reflect the actual cost of the program.

Table 13 describes the contractors' income and expenditures as reported in their annual reports to the Board.

		<b>Contractors</b>		
<b>Reporting Year</b>	Income/Expense	CECTI	Certification Council	FTE
CY 2006	Income:	\$205,746.90	\$148,240.83	
	Expenses:	\$219,709.32	\$172,704.74	
	Net Income:	(\$13,962.42)	(\$24,464.74)	
CY 2007	Income:	\$281,597.58	\$206,579.82	1
	Expenses:	\$234,353.41	\$149,460.13	1
	Net Income:	\$47,244.17	\$57,119.69	
CY 2008	Income:	\$247,511.06	\$201,315.67	1
	Expenses:	\$207,158.12	\$170,330.94	Estimated 1.5 FT Volunteer Time Program Management Subcontracted t OCPO
	Net Income:	\$40,352.94	\$30,984.73	
CY 2009	Income:	\$227,434.72	\$208,762.71	
	Total Expenses:	\$230,872.09	\$199,213.02	
	Net Income:	(\$3,437.37)	\$9,549.69	
CY 2010	Income:	\$289,890.73	\$240,438.67	
	Total Expenses:	\$261,310.68	\$249,457.71	-
	Net Income:	\$28,580.68	(\$9,019.04)	
CY2011	Income:	\$275,276.21	\$217,764.19	1
	Total Expenses:	\$269,694.97	\$234,225.20	1
	Net Income:	\$5,581.24	(\$16,461.01)	1
	Accumulated Balance	\$238,179.57	\$103,639.14	1

#### Table 13 – Contractors' Income and Expenditures, 2006 to 2011

<sup>1</sup> FTE- Full-time equivalent calculated as 2,080 hours per year

These expenses do not include the cost of more than 3,000 volunteer hours each year spent reviewing applications and training courses, proctoring exams, and completing other contractual

activities. Income originates from fees charged to applicants and operators as authorized by statute and Regulation 100.

Table 14 describes the Division's and the Board administrator expenses are only salary expenses. Both are paid through general funds, federal grants, and drinking water and permitted facility fees.

Reporting Year	Expenses	FTE					
	Board Administration						
SFY <sup>1</sup> 2007	Not available	0.104 FTE 0.04 Management <sup>2</sup> 0.1 PAIII					
SFY 2008	Not available	0.104 FTE 0.04 Management 0.1 PAIII					
SFY 2009	Not available	0.104 FTE 0.04 Management 0.1 PAIII					
SFY 2010	Not available	0.104 FTE 0.04 Management 0.1 PAIII					
SFY 2011	(\$13,008.50)	0.104 FTE 0.04 Management 0.1 PAIII					
	Water Quality Control	Division					
SFY 2006	Not available	1.5 FTE 1.0 - EPS II 0.5 - admin temp					
SFY 2007	Not available	1.75 FTE 1.0 - EPS II 0.75 - AAII					
SFY 2008	(\$149,883.93)	2.0 FTE 1.0- EPS II 1.0- EPS Intern					
SFY 2009	(\$170,425.39)	2.0 FTE 1.0-EPS III 1.0-EPS I					
SFY 2010	(\$169,831.52)	2.0 FTE 1.0-EPS III 1.0-EPS II					
SFY 2011	(\$119,043.62)	1.86 FTE <sup>3</sup> 1.0-EPS II 0.33-PA I 0.53-EPS III					
SFY 2012	(\$227,744)	3.0 FTE 1.0-EPS III 1.0-EPS II 0.42-PA I 0.5 GP I <sup>4</sup>					

Table 14 – Administration and Division Income and Expenditures, 2006 to 2011

<sup>1</sup>SFY – State Fiscal Year (July 1- June 30)

 <sup>2</sup> Part time position 0.4 FTE - estimated 10% spend on WWFOCB
 <sup>3</sup> EPS III position full-time from July-Oct 2010 (0.33 FTE) then returned as a term-limited position 0.4 FTE from Jan-Jun 2011; PA I position part-time 0.5 FTE from July 2010 -Feb 2011

<sup>4</sup> Term-limited position: 1.0 FTE from Jan-Jun 2012