

# Wastewater Treatment Plant Operator Information



# Wastewater Operator Certification Information



June 2005

## What is Operator Certification?

To ensure that wastewater treatment plants in California are properly operated and maintained, the Legislature established the Wastewater Treatment Plant Classification and Operator Certification Program. This law requires the following individuals to hold a valid certificate: (1) anyone employed in the operation of a public wastewater treatment or public industrial treatment plant and (2) operators at private wastewater or industrial plants if the plant is regulated by the Public Utilities Commission (PUC). Recently enacted legislation expands certification requirements to include anyone employed as an operator at a private sewage plant for which a Regional Water Quality Control Board (Regional Water Board) has issued waste discharge requirements. However, regulations must be adopted before this new category of plants is incorporated into the Program.

The certification level or grade necessary for a specific job is determined by wastewater treatment plant classification criteria. The Office of Operator Certification (OOC) in the Division of Financial Assistance is responsible for testing applicants and issuing certifications. The Division also establishes the classification of each wastewater treatment plant.

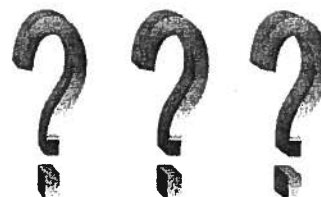
There are five levels of operator certification. To receive a certificate, a person must meet the minimum experience and education requirements and pass a written test. Any person may take a test by submitting an application form with the appropriate fees and verification of the educational requirements. Completed applications must be postmarked by the published final filing date. These dates are listed on Page 2, Question 6 of this booklet. A person then has time after passing the test to document the experience requirement before receiving their certificate. The amount of experience needed depends on the grade level of the certificate. However, the examination results are valid for four years.

The law establishing the Certification Program is found in Sections 13625-13633, Chapter 9, Division 7, of the Water Code. Regulations, which implement this law, are found in

Sections 3670-3719.19, Chapter 26, Title 23, of the California Code of Regulations. Copies of the law and regulations can be requested from the OOC or accessed through the OOC website at the Law and Regulations tab.

## How to Reach Us

Office of Operator Certification  
Division of Financial Assistance  
State Water Resources Control Board  
PO Box 944212  
Sacramento, CA 94244-2120  
[www.waterboards.ca.gov/cwphome/opcert/](http://www.waterboards.ca.gov/cwphome/opcert/)  
(916) 341-5819



## Most frequently asked questions (and answers)

### 1. How can I get certified?

There are three major things that you must do to get certified. **Number 1** - You must take courses in either: wastewater treatment operations, water treatment operations or college level mathematics, chemistry, biology or engineering. The number and difficulty of courses depend on the certificate grade you want. **Number 2** - You must pass a written test. Wastewater treatment plant operator certification tests are given twice each year, once in early April and once in early October. Tests for all five grades are given at the same time at several locations throughout the state. To take a test, you must show that you meet the minimum educational requirements and submit a fee and application. **Number 3** -

You must meet experience requirements and submit a fee and an application for a certificate. Your experience must be in the operation of a wastewater treatment plant with a valid operator certificate or Operator-in-Training (OIT) certificate. You may submit your application for a certificate up to four years after you pass the written exam.

## 2. How can I get a job as an operator?

The OOC does not maintain a job registry. The owners of the wastewater plant do the hiring of operators. Usually, this is a city, county or special district. You need to contact them to see if there are any jobs available. Other potential sources of job listings are local newspapers and the website of the California Water Environment Association ([www.cwea.org](http://www.cwea.org)).

## 3. What is the Office of Operator Certification (OOC)?

The OOC administers the Wastewater Treatment Plant Operator Certification Program to provide certificates for operators. The OOC conducts the tests required by the regulations, including developing the test questions, processing applications, printing and mailing the certificates, mailing out renewal notices, and processing renewal applications. Along with these major duties, OOC does other work including answering questions, updating regulations, investigating violations of the law and regulations by certified operators, and classifying treatment plants.

## 4. How much supervision does an OIT need?

The regulations require that an OIT be under the direct supervision of an operator with a certificate of equal or higher grade. Direct supervision means the oversight and inspection of the OIT's work by the supervisor without an intervening person. An OIT cannot work as the sole operator at a plant during swing, late night or weekend shifts. The OIT must have ready access to the supervising operator, so that if the OIT has any doubt about what to do they can ask. On the other hand, the supervising operator need not be the shift supervisor. Common sense indicates a well-experienced operator would be the best mentor for an OIT.

## 5. Where can I get wastewater operator training?

Many State University campuses and Community Colleges offer training. There are also nonprofit organizations and for-profit organizations that also offer courses. Training opportunities can be found in our Training Directory, which is available through the OOC or on our website under the Publications tab. Please be aware that the law only allows us to recognize training given by colleges and universities and by professional associations or other nonprofit private or public agencies as meeting the educational requirements for certification. Private trainers must be sponsored by a public wastewater entity.

## 6. When are applications due for examinations?

Our regulations list the examination application final filing dates. They are February 1 for tests given in April and August 1 for tests given in October. Your complete application package, including fee and documentation of your education, must be postmarked no later than the final

filing date. Our regulations allow for no exceptions. On the other hand, you may submit your application as early as you like.

## 7. Do you need a certificate to work at a plant?

The law requires you to have a certificate to work as an operator at a publicly owned wastewater or industrial treatment plant, a privately owned wastewater or industrial plant (if it is regulated by the PUC) or a private sewage plant, which has waste discharge requirements. You do not need a certificate to work as something other than an operator at any of these treatment plants, (e.g., a laboratory technician or maintenance worker). You do not need a certificate to be an operator at a privately owned industrial or manufacturing wastewater treatment plant.

## 8. When is the next test?

Tests are given in April and October each year. Tests for all grades are given each time. The following dates have been set:

October 1, 2005	April 1, 2006
October 7, 2006	March 31, 2007

Examinations begin at 9:00 a.m. on the scheduled date. Examinees must show the notice card and photo identification. No books, notes, or references are allowed at the examination site. Hand calculators may be used. Alphanumeric and programmable calculators are not allowed.

## 9. How long are certificates valid?

Certificates must be renewed every two years. OOC will send you a renewal notice. You must submit an application for renewal and a fee. It must be postmarked by the expiration date. You will receive a new certificate about 30 days later. Renewal is very important. It is illegal to work as an operator with an expired certificate. If you move, please give us your new address so you will receive a renewal notice. Whether or not you receive a renewal notice, **it is your responsibility to submit your application for renewal before the expiration date.** You do not have to take the examination again unless your certificate has been expired for more than one year.

**Remember – there is no grace period for an expired certificate. Once it expires, it is no longer valid and you cannot work as an operator.**

## 10. What is the difference between drinking water and wastewater treatment plant operator certification?

Drinking water operator certification is separate from wastewater operator certification. Drinking water treatment plant operator certification is required to work as an operator in a treatment plant that produces water for human consumption in homes and businesses. Wastewater treatment plant operator certification is required to work as an operator in a treatment plant that receives and treats wastewater from

homes and businesses. The Department of Health Services administers the water treatment plant operator certification program. They also administer the drinking water distribution operator program. They take applications, give tests and issue certificates on applicants who meet their requirements. The Department may be reached at:

Department of Health Services  
 Office of Drinking Water  
 Certification Unit  
 P.O. Box 942732  
 Sacramento, CA 94234-7320  
 (916) 449-5610

## Roles and responsibilities of certified operators

When you become a certified operator, you take on certain responsibilities of a profession. As a certified operator, you must use reasonable care and judgement in the operation of your plant. You must not commit fraud or deception in the operation of your plant. You must not allow uncertified operators or operators without the proper grade of certificate to operate your plant. You must not willfully or negligently violate, or cause or allow the violation of, your plant's waste discharge requirements issued by the Regional Water Board Board.

There are five grades of certification. Grade I is the easiest to obtain, requiring the least difficult examination. Each succeeding grade requires more education, experience and knowledge regarding treatment processes up to and including that level; therefore, each higher grade has an increasingly more difficult examination. Exam topics and sample questions for each grade are available by calling the OOC or accessing the Exam tab on the OOC website.

Likewise, the responsibility and the role an operator takes changes with each grade. The largest and most complex plants are required to have a Chief Plant Operator with a Grade V certificate, shift supervisors with a minimum of Grade III certificate and at least half of the operators must have a Grade II certificate or higher. On the other hand, a small plant that consists of a pond needs operators with only a Grade I certificate.

Operators holding OIT certificates have the same general responsibilities as operators with regular certificates. However, an OIT may not be a Chief Plant Operator nor supervise other operators. Additionally, a certified operator at the same or higher grade must directly supervise OITs.

For more information on roles and responsibilities of Chief Plant Operators and OITs, please see the Chief Plant Operator and Operators-in-Training sections below.

## Chief Plant Operators

The Chief Plant Operator has a unique position among certified operators. Not only does the Chief Plant Operator have management and supervisory responsibilities at the plant, but also additional responsibilities regarding operator certification.

The job of Chief Plant Operator is defined by regulation (Section 3671(h), Title 23, California Code of Regulations) as "a supervisor who is certified as an operator and who is responsible as an operator and who is responsible for the overall operation of a wastewater treatment plant." This places responsibility for the overall operation of a plant and the achievement of the goals of the certification program on the Chief Plant Operator. Because of the importance of this job, the regulations require that agencies keep the OOC informed of who is their Chief Plant Operator. If an operator is employed at a wastewater treatment plant, the Chief Plant Operator must sign applications for grade I through V certificates. The Chief Plant Operator must also sign all applications for OIT certificates. In signing these applications, the Chief Plant Operator is verifying that the information about present employment is true and correct.

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### OPERATOR AND OIT FEES

Grade	Exam *	Certificate **	Renewal ***
I	\$80	\$95	\$95
II	\$100	\$130	\$130
III	\$195	\$170	\$170
IV	\$250	\$190	\$190
V	\$250	\$190	\$190

\* This fee includes both application and examination.

\*\* The fees for an OIT certificate are the same as an operator certificate.

\*\*\* The fees for renewal of an OIT certificate are the same as an operator certificate.

## Operators-in-Training

If it takes experience to get a certificate, how can someone without a certificate get experience? The answer is the OIT certificate. The OIT certificate is a valid temporary certificate that allows someone to get experience as an operator.

The regulations define OIT as "any person who operates a wastewater treatment plant under the direct supervision of a certified operator while gaining experience to qualify for an operator certificate." An OIT can hold any job at a plant for

which they are qualified, except as Chief Plant Operator. OITs must be directly supervised by a certified operator at the same grade as the OIT or higher. The OIT has the same responsibilities under the operator certification regulations as a certified operator.

OIT certificates are issued at Grades I through V. You may apply for a Grade I OIT without having passed the test or meeting the education requirements for a Grade I certificate. You need only have a job as a plant operator. OIT certificates are valid for two years. You must gain the required education and pass a wastewater exam during these two years. At the end of the two-year period, if you have passed a wastewater exam, but do not yet have sufficient experience for a regular certificate, your OIT may be renewed once for two more years. However, if you do not pass the examination within the two years, your OIT certificate will not be renewed.

If you apply for an OIT certificate at Grades II through V, you must have passed the test for the grade, met the education requirements and be able to meet the experience requirements within four years after you passed the test. Grades II through V OIT certificates are valid for two years and may be renewed once for up to two more years. However, you still only have four years after you pass the test to get the required experience for that grade.

Applications for OIT certificates must be signed by the Chief Plant Operator. OIT certificates are issued for a specific job at a specific treatment plant. If you change jobs while an OIT, you need to apply for a new certificate.

**“Reciprocity”**

The word describes an agreement between two parties. With the certification program, it means that California’s



operator certification program is recognized by another state as being equivalent to theirs and that California recognizes that state’s program as equivalent to ours. It does **not** mean that you may work in California under a certificate issued by another state. You still need a valid California operator’s certificate. However, you may qualify for a California certificate without having to pass the test, and may use experience gained while holding another state’s certificate.

California has reciprocity with all states except Florida and Michigan. We do have limitations on reciprocity with other states:

1. Only Grade I and II operator certificates may be granted through reciprocity.
2. For a state to have reciprocity with California, the experience and education requirements must be comparable to California’s and it must grant reciprocal privileges to California certificate holders.

3. You must have passed a written test comparable to California’s at the appropriate level within the last four years.

To get a Grade I or II certificate through reciprocity, you must complete an application and submit it along with the appropriate fee to the OOC. Remember that, even if you do not qualify for reciprocity, it may be possible for you to take a California wastewater exam and use your work in another state to meet our experience requirements.

**Plant Classifications**

The Water Code gives the OOC responsibility for classifying wastewater treatment plants. Agencies may not “class” their own plants nor can the Regional Water Boards assign a designation.

The OOC asks that the Chief Plant Operator complete a “Wastewater Treatment Plant Class Data Form”. Copies of the form may be requested by contacting the OOC or accessing the Plant Classification tab on the OOC website. That form along with an organization chart, flow diagram of the plant, job descriptions for all personnel classifications and duty rosters must be submitted to the OOC. Once the OOC reviews the information, we will send a letter indicating the classification and appropriate operator grades. However, the OOC does not specify how many operators must be employed at each grade level.

<u>Class</u>	<u>Process</u>	<u>Design Flow (MGD)</u>
I	Pond	All
	Primary	1.0 or less
II	Primary	>1.0 through 5.0
	Biofiltration	1.0 or <
	Extended Aeration	All
III	Primary	>5.0 through 20.0
	Biofiltration	>1.0 through 10.0
	Activated Sludge	5.0 or <
	Tertiary	1.0 or <
IV	Primary	>20.0
	Biofiltration	>10.0 through 30.0
	Activated Sludge	>5.0 through 20.0
	Tertiary	>1.0 through 10.0
V	Biofiltration	>30.0
	Activated Sludge	>20.0
	Tertiary	>10.0

## Reporting Requirements

Agencies must report the following to the OOC within 30 calendar days of occurrence:

1. A plant begins operation or changes the design flow or treatment process.
2. The person designated as Chief Plant Operator changes.
3. Final disciplinary action is taken which results in suspension, demotion or discharge of a certified operator or OIT if the disciplinary action is the result of the commission of any of the acts that are grounds for discipline in Section 3710, Title 23, of the California Code of Regulations.

## Contract Operators

Effective August 27, 1994, any person or firm that contracts to operate a public or private wastewater treatment plant must be registered with the OOC. In addition, all operators employed by a contract operator must be certified by the OOC. If you currently operate a public or private treatment plant regulated by PUC, under contract and are not registered, you are in violation of Section 3719, Title 23, California Code of Regulations. You should register immediately. If you plan to operate a public or private treatment plant regulated by PUC under contract in the near future, you must be registered before you start operations.

Registration is done by submitting an application and fee to the OOC. Applications and instructions can be obtained by calling OOC or on our website under the Contract Operators tab. OOC has 30 days after receipt of an application to either issue a registration or tell the applicant why their application is deficient. Registration must be renewed annually. The renewal application must be postmarked no later than 30 days prior to the registration expiration date.

The responsibilities of a contract operator are similar to those of a certified operator.

## Experience counts . . .

Applicants may be credited with one year of experience if they have had **two or more years of full-time experience in the operation of a water treatment plant** regulated by the California Department of Health Services or by a governmental agency in another state. To receive this credit, applicants must meet the following criteria:

1. Experience was obtained while in possession of a valid water treatment plant operator certificate,
2. The water treatment plant where the experience was gained uses two or more of the following processes:

coagulation, sedimentation, aeration, filtration, oxidation, or disinfection, and

3. At the time of the application for wastewater certification, the applicant has had one year of experience in the operation of a wastewater treatment plant.

## Educational Opportunities



### Assignment of Educational Points

1. One three-unit semester course, which is directly related to wastewater treatment, is equal to eight educational points.
2. All other courses will be assigned educational points at the rate of one point per 10 hours of completed classroom instruction. Subjects that are directly related to wastewater treatment receive full credit for educational points. Subjects that are indirectly related to wastewater are given one-half credit. Examples of indirectly related courses include mathematics, chemistry, biological sciences and water treatment.
3. One Continuing Education Unit that is directly related to wastewater treatment is equal to one educational point.

### University of California and State Universities

1. All universities offer bachelor of science degrees in engineering or scientific disciplines applicable to wastewater treatment plant operations.
2. The Office of Water Programs at California State University, Sacramento, offers home study courses in wastewater operations and related areas. Contact them at (916) 278-6142 or their website ([www.owp.csus.edu](http://www.owp.csus.edu)) for more information.

### Community Colleges

Many Community Colleges offer daytime and evening classes. Examples of some colleges are:

College of the Sequoias	(559) 730-3777
Columbia	(209) 588-5100
Citrus	(626) 914-8700
Hartnell	(831) 755-6960
Imperial Valley	(760) 352-8320
L.A. Trade	(213) 763-3700
Mt. San Antonio	(909) 594-5611
Orange Coast	(714) 432-0202
Palomar	(760) 744-1150
San Diego Mesa	(619) 388-2600

Santiago Canyon	(714) 628-4900
Sacramento City	(916) 558-2491
San Bernardino	(909) 888-6511
Santa Barbara	(805) 965-0581
Santa Rosa	(707) 527-4603
Shasta College	(530) 225-4660
Solano College	(707) 864-7221
Ventura College	(805) 654-6452

### Non-Profit Organizations

A number of nonprofit organizations provide training through regional and statewide conferences and seminars. Examples of these organizations include, but are not limited to, the California Water Environment Association (CWEA) and the California Rural Water Association. Local wastewater agencies also provide training opportunities for their employees by sponsoring classes taught by private instructors.

### Private Companies

Private companies involved in wastewater training offer a different approach to training compared to community colleges and universities. Private companies offer courses that are usually shorter and are very intense as compared to the traditional semester-long course. Short courses can reinforce previously learned material and provide updates on new technology. Another difference is that generally, only private companies offer classes devoted strictly to wastewater certification examination review.

Please be aware that our regulations allow us to only count training taken through colleges and universities, public agencies and nonprofit organizations as satisfying the education requirements for certification. A public agency or nonprofit organization must notify us in advance if they wish to sponsor any private class before we can issue educational points.

## Suggested reading to prepare for testing

Following is a list of references, which may be useful to applicants preparing to take a certification test. Each reference is subject to revision and the current version should be used. Other references covering similar subjects may be used at the applicant's discretion. The OOC does not endorse specific reference materials.

### Grades I and II

1. "Operation of Wastewater Treatment Plants, Volumes I and II," Kenneth Kerri, Office of Water Programs, California State University, 6000 J Street, Sacramento, CA 95819-6025
2. Title 23, California Code of Regulations, Division 3,

Chapter 26, Section 3670, et seq., "Wastewater Treatment Plant Classification, Operator Certification, and Contract Operator Registration Regulations," SWRCB, OOC, P.O. Box 944212, Sacramento, CA 94244-2120

### Grades III

1. Both listed above.
  2. "Advanced Waste Treatment," Kenneth Kerri, Office of Water Programs, California State University, 6000 J Street, Sacramento, CA 95819-6025
  3. "Pretreatment Facility Inspection," Kenneth Kerri, address listed above.
  4. Water Environment Federation Manual of Practice, Wythe Street, Alexandria, VA 23314-1994
- No. 1, "Safety and Health in Wastewater Systems"  
No. OM-9, "Activated Sludge"  
No. 11, "Operation of Municipal Wastewater Treatment Plants"
5. Title 8, California Code of Regulations, Division 1, Chapter 4, Article 108, "Confined Spaces", and Section 3203, "Injury and Illness Prevention Program," Division of Occupational Safety and Health, P.O. Box 420603, San Francisco, CA 94142
  6. Title 22, California Code of Regulations, Division 4, Chapter 3, "Reclamation Criteria," Environmental Management Branch, Department of Health Services, P.O. Box 942732, Sacramento, CA 94234-7320

### Grades IV and V

1. All of the above.
2. "Wastewater Engineering," Metcalf and Eddy, Inc., McGraw Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020.
3. "Industrial Wastewater Treatment", Kenneth Kerri, Office of Water Programs, California State University, 6000 J Street, Sacramento, CA 95819-6025
4. Water Environment Federation Manual of Practice No. SM-4, "Plant Managers' Handbook", 610 Wythe Street, Alexandria, VA 23314-1994

### Requirements by Grade

Please refer to Sections 3670.1, 3671 and 3683, Title 23, of the California Code of Regulations for more information. Please contact the Office of Operator Certification at (916) 341-5639 or [nittaj@swrcb.ca.gov](mailto:nittaj@swrcb.ca.gov) if you have questions on qualifying duties and education.

<b>Grade I</b>		
Path 1	6 educational points	and 1 year performing duties of operator while holding a certificate
<b>Grade II</b>		
Path 1	High School or equivalent and 6 educational points	and 2 year performing duties of operator while holding a certificate
Path 2		1 1/2 years as Grade I
<b>Grade III</b>		
Path 1	Associate degree or 60 college semester units including 15 semester units of basic science courses	and 2 year performing duties of operator while holding a certificate
Path 2	High School or equivalent and 16 educational points	and 4 year performing duties of operator while holding a certificate
Path 3		3 years as Grade II
<b>Grade IV</b>		
Path 1	Bachelor's degree with a major related to wastewater treatment including 30 semester units of basic science courses	and 2 year performing duties of operator while holding a certificate
Path 2	Associate degree or 60 college semester units including 15 semester units of basic science courses	and 4 year performing duties of operator while holding a certificate
Path 3	High School or equivalent and 32 educational points	and 6 year performing duties of operator while holding a certificate
Path 4		4 years as Grade III
<b>Grade V</b>		
Path 1	Valid license as a civil or chemical engineer issued by the California Board of Registration for Professional Engineers and Land Surveyors	and 4 years performing duties of operator while holding a certificate
Path 2	Bachelor's degree with a major related to wastewater treatment including 30 semester units of basic science courses	and 5 years performing duties of operator while holding a certificate
Path 3	Associate degree or 60 college semester units including 15 semester units of basic science courses	and 6 years performing duties of operator while holding a certificate
Path 4	High School or equivalent and 48 educational points	and 10 years performing duties of operator while holding a certificate
Path 5		6 years as Grade IV

## REQUIREMENTS BY GRADE

Please refer to Sections 3670.1, 3671 and 3683, Title 23, of the California Code of Regulations for more information.  
Please contact the Office of Operator Certification at (916) 341-5672 or [scfong@waterboards.ca.gov](mailto:scfong@waterboards.ca.gov) if you have questions on qualifying duties and education.

<b>GRADE I</b>			
Path 1	6 educational points	and	1 year performing the duties of an operator while holding a certificate
<b>GRADE II</b>			
Path 1	High School or equivalent and 6 educational points	and	2 years performing the duties of an operator while holding a certificate
Path 2			1 ½ years performing the duties of an operator while holding a Grade 1 certificate
<b>GRADE III</b>			
Path 1	Associate degree or 60 college semester units, either of which includes 15 semester units of basic science courses	and	2 years performing the duties of an operator while holding a certificate
Path 2	High School or equivalent and 16 educational points	and	4 years performing the duties of an operator while holding a certificate
Path 3			3 years performing the duties of an operator while holding a Grade II certificate
<b>GRADE IV</b>			
Path 1	Bachelor's degree with a major related to wastewater treatment including 30 semester units of basic science courses	and	2 years performing the duties of an operator while holding a certificate
Path 2	Associate degree or 60 college semester units, either of which includes 15 semester units of basic science courses	and	4 years performing the duties of an operator while holding a certificate
Path 3	High School or equivalent and 32 educational points	and	6 years performing the duties of an operator while holding a certificate
Path 4			4 years performing the duties of an operator while holding a Grade III certificate
<b>GRADE V</b>			
Path 1	Valid license as a civil or chemical engineer issued by the California Board of Registration for Professional Engineers and Land Surveyors	and	4 years performing the duties of an operator while holding a certificate
Path 2	Bachelor's degree with a major related to wastewater treatment including 30 semester units of basic science courses	and	5 years performing the duties of an operator while holding a certificate
Path 3	Associate degree or 60 college semester units, either of which includes 15 semester units of basic science courses	and	6 years performing the duties of an operator while holding a certificate
Path 4	High School or equivalent and 48 educational points	and	10 years performing the duties of an operator while holding a certificate
Path 5			6 years performing the duties of an operator while holding a Grade IV certificate