

# How the ADEC Determines Eligibility for Level Provisional, I, II, III, and IV Certification Exams

**Overall Requirements:** The Alaska Department of Environmental Conservation (ADEC) offers certification exams in four different system types: water treatment, water distribution, wastewater collection and wastewater treatment. There are five levels of certification in each system type (Provisional, I, II, III, and IV). Operators must meet experience and education requirements before being approved to take a certification exam. The following chart summarizes those requirements for each certification level and system type. The requirements are listed in years.

System Type	Operator Level									
	Provisional		I		II		III		IV	
	Ed.	Op. Exp.	Ed.	Op. Exp.	Ed.	Op. Exp.	Ed.	Op. Exp.	Ed.	Op. Exp.
Wastewater Collection	12	*	12	1	12	3	13	4	13	6
Wastewater Treatment	12	*	12	1	12	3	14	4	16	4
Water Distribution	12	*	12	1	12	3	13	4	13	6
Water Treatment	12	*	12	1	12	3	14	4	16	4

**Notes:** Required periods of education and experience are reflected in years. Twelve years of education represents high school diploma or general educational development (GED) diploma. The department will waive the minimum education requirement for the provisional level and level 1 in accordance with 18 AAC 74 (e)(6).

\* Three months of operating experience or the completion of a department-approved training course, as described in 18 AAC 74(c)(1).

**Abbreviations:** Ed. - Education Op. Exp. - Operator Experience

One thousand nine hundred fifty (1,950) hours of work experience during a twelve month period is considered as one year of experience. One thousand nine hundred fifty hours is based on an eight hour work day for 49 weeks per year. Hours in excess of 1,950 during any twelve month period are NOT counted as more than one year. In other words, an operator working 16 hours per day for twelve months is *not* credited with two years of experience. Operators who work less than 1,950 hours per year are credited with less than one year of experience. For example, an operator who works four hours per day would be credited with six months of experience after working twelve months.

**Q:** A wastewater collection operator works eight hours per day for 13 months. Does this operator have one year of wastewater collection experience?

**A:** Yes, because the operator works eight hours per day, he has over one year of wastewater collection experience.

**Q:** An operator works four hours per day in the water plant and four hours per day grading roads. After twelve months, does the operator have one year of experience as a water treatment operator?

**A:** No, because the operator only works four hours per day as an operator; therefore, the operator has only six months of operations experience.

**System Types:** Certification is divided into four system types: water treatment, water distribution, wastewater treatment and wastewater collection.

A **water treatment** system means devices, structures, and equipment used to condition, purify, or refine water for human consumption, and does not include a groundwater supply treated only with chlorine. Typical components of a water treatment system might include coagulation, flocculation, sedimentation, filtration, reverse osmosis, fluoridation units, softening units, and disinfection units. Time that an operator spends operating, inspecting, and adjusting the components of a water treatment system is counted as water treatment experience.

A **water distribution** system means post-treatment storage facilities, conduits, mains, lines, pumping stations, or other devices used to carry water to the consumer, and includes a groundwater supply treated only with chlorine. Typical components of a water distribution system might include fire hydrants, standby generators, water lines, in-line disinfection units, pump stations, valves, meters, and utilidors. Time that an operator spends operating, inspecting, and adjusting the components of a water distribution system is counted as water distribution experience. *Construction, installation, and plumbing experience is not counted as water distribution experience.* Only time spent operating an active distribution system is counted.

A **wastewater treatment** system means devices, structures, and equipment used to treat, neutralize, stabilize, or dispose of wastewater and residuals. Typical components of a wastewater treatment system might include screening, comminution, grit chambers, primary clarifiers, dissolved air flotation units, trickling filters, lagoons, rotating biological contactors, activated sludge units, advanced waste treatment units, solids handling facilities, and disinfection units. Time that an operator spends operating, inspecting, and adjusting the components of a wastewater treatment system is counted as wastewater treatment experience.

A **wastewater collection** system means pipelines or conduits, pumping stations and force mains, and all other related construction, devices, and appliances used to conduct wastewater to a wastewater treatment system. Typical components of a wastewater collection system might include sewer lines, utilidors, standby generators, lift stations, pumps, valves, and manholes. Time that an operator spends operating, inspecting, and adjusting the components of a wastewater collection system is counted as wastewater collection experience. *Construction, installation, and plumbing experience is not counted as wastewater collection experience.* Only time spent operating an active wastewater collection system is counted.

**Percentages:** It is very important that an operator keep track of which system types (s)he operates. When an operator applies to take a certification exam, (s)he will be asked for a percentage of time spent working in each of the four systems types. An operator's eligibility for an exam is based on that information provided by the operator. Keeping track of experience may be easy for an operator who works in a large system. For example, an operator working eight hours per day at a wastewater treatment plant has 100 percent of their time counted as wastewater treatment experience. Keeping track of percentages may be difficult for an operator performing duties in other areas. For example, an operator working as the garbage collector and distribution operator will only have a portion of their time counted as operations.

Many operators are responsible for operating more than one system type. For example, some cities have operators who are responsible for both the water distribution and wastewater collection systems. It is important to understand how the ADEC evaluates experience for operators of more than one system type.

Years of experience, and likewise eligibility, are determined based on the percentages of time spent working in each system type. The following examples illustrate how an operator's percentages should be listed on an application. The following examples assume an eight hour work day.

% Time Spent Working in Each System Type
% WWT= 100
% WT=
% WD=
% WWC=

Represents 8 hours per day working in a wastewater treatment plant

% Time Spent Working in Each System Type
% WWT= 50
% WT= 50
% WD=
% WWC=

Represents 4 hours per day in the wastewater treatment plant and 4 hours per day in the water treatment plant

% Time Spent Working in Each System Type
% WWT= 25
% WT= 25
% WD= 25
% WWC= 25

Represents 2 hours per day in each system (wastewater treatment, water treatment, water distribution, wastewater collection).

If an operator works less than eight hours per day, the percentage of time spent in each system type should still be listed. A separate section of the application asks for the overall number of hours spent working. The ADEC determines how many years of experience an operator has based on the reported number of work hours per day and percentages.

The following examples illustrate how the ADEC determines the amount of experience an operator has based on percentages listed on an application.

% Time Spent Working in Each System Type
% WWT= 100
% WT=
% WD=
% WWC=

**Example 1**  
After 12 months of work, this operator has 12 months of wastewater treatment experience (12 months X 100% wastewater treatment = 12 months of wastewater treatment experience).

% Time Spent Working in Each System Type
% WWT= 50
% WT=
% WD=
% WWC=

**Example 2**  
After 12 months of work, this operator has 6 months of wastewater treatment experience (12 months X 50% wastewater treatment = 6 months of wastewater treatment experience).

% Time Spent Working in Each System Type
% WWT= 25
% WT= 25
% WD= 25
% WWC= 25

### Example 3

After 12 months of work, this operator has 3 months of wastewater treatment experience, 3 months of water treatment experience, 3 months of water distribution experience, and 3 months of wastewater collection experience (wastewater treatment = 12 months X 25% wastewater treatment = 3 months of wastewater treatment experience). Calculations for the other three system types work exactly the same way.

### Experience Substitutions:

The certification regulations allow substitutions of experience as follows:

- Wastewater treatment and water treatment experience are interchangeable;
- Wastewater collection and water distribution experience are interchangeable;
- Wastewater treatment and wastewater collection experience are interchangeable at 25%;
- Water treatment and water distribution experience are interchangeable at 25%.

The ADEC determines how much time the operator has in each system type based on percentages provided by the operator. Those experience times are added together according to the substitutions to arrive at an overall amount of experience. Experience substitutions can only be used once the *50% Rule* is met (see page titled “*The 50% Rule*”).

### Example 1:

% Time Spent Working in Each System Type
% WWT= 50
% WT= 50
% WD=
% WWC=

This operator worked eight hour per day for one year. First, the ADEC determines how much experience the operator has in each system type:  
(WWT = wastewater treatment experience and WT = water treatment experience)

$$\text{WWT} = 12 \text{ months} \times 50\% = 6 \text{ months WWT}$$

$$\text{WT} = 12 \text{ months} \times 50\% = 6 \text{ months WT}$$

Once the ADEC determines how much experience the operator has in each system type, experiences are added according to the substitutions. The overall amount of experience determines whether an operator is eligible for an exam:

$$\text{Overall WWT} = 6 \text{ months WWT} + 6 \text{ months interchangeable WT} = 12 \text{ months WWT}$$

$$\text{Overall WT} = 6 \text{ months WT} + 6 \text{ months interchangeable WWT} = 12 \text{ months WT}$$

**Example 2:**

<b>% Time Spent Working in Each System Type</b>
% WWT= <b>50</b>
% WT= <b>50</b>
% WD=
% WWC=

This operator worked 10 years. First the ADEC determines how much experience the operator has in each system type:  
(WWT = wastewater treatment experience and WWC = wastewater collection experience)

WWT = 10 years X 50% = 5 years WWT  
WWC = 10 years X 50% = 5 years WWC

Once the ADEC determines how much experience the operator has in each system type, experiences are added according to the substitutions. The overall amount of experience determines whether an operator is eligible for an exam:

Overall WWT = 5 years WWT + (5 years interchangeable WWC X 25%) = 6.25years WWT  
Overall WWC = 5 years WWC + (5 years interchangeable WWT X 25%) = 6.25 years WWC

**Educational Substitutions:**

The Operator Certification regulations allow substitution of approved postsecondary education for experience. The ADEC uses continuing education units (CEUs) when considering education. Courses must apply to the water/ wastewater industry to be counted.

- 1 CEU = 10 contact hours of training (i.e. a four hour course = 0.4 CEUs).
- 45 CEUs = one year of education (i.e. 3.75 CEUs = one month of education).
- 1 college semester hour = 1.5 CEUs (i.e. a three semester credit hour course = 4.5 CEUs).
- 1 college quarter hour = 1.0 CEUs (i.e. a three quarter credit course = 3 CEUs).

Certain restrictions apply to the use of educational substitutions:

- Educational substitutions cannot be used toward level 1 certification;
- The *50% Rule* must be met before education can be substituted for experience (see the page titled “*The 50% Rule*”);
- Education substituted for experience cannot be used to satisfy educational requirements.

**Example:**

<b>% Time Spent Working in Each System Type</b>
% WWT=
% WT=
% WD= <b>100</b>
% WWC=

Is this operator eligible for the level 2 water distribution exam?

Given: This operator has worked for two years.  
This operator has 45 CEUs of approved education (45 CEUs = 1 year).  
Level 2 certification requires three years of experience.

First: The ADEC calculates the amount of experience as follows:  
(WD = water distribution experience)

WD = 2 years X 100% = 2 years of water distribution experience.

Next: The ADEC determines eligibility as follows:

### Water Distribution

Does this operator have three years of experience? NO

But,

Does this operator have three years of experience and education? YES

(2 years of experience + 1 year of education = 3 years)

This operator is eligible for the level 2 water distribution exam.

**The 50% Rule:** 18 AAC 74.050 (b)(2) of the Operator Certification regulations is referred to as the *50% Rule* by the ADEC. It states:

“...at least 50 percent of the operating experience must be obtained in the same system type at no more than one class lower than the level of certification requested, and the department will not allow substitution of education or substitution operating experience gained in another system type to meet the requirement of this paragraph,”

In other words, at least half of an operators experience must be specific to the system type of the exam for which the operator is applying. Specific experience is determined using the percentages provided on the application. The *50% Rule* must be met before experience and education substitutions can be used. For example, the level 1 wastewater treatment exam requires one year of overall experience. To be eligible, an operator must have 12 months of experience, six months of which must be specific to wastewater treatment.

### Example:

% Time Spent Working in Each System Type
% WWT= 25
% WT= 75
% WD=
% WWC=

Is this operator eligible for the level 1 wastewater and water treatment exams?

Given: Level 1 exams require one year of experience.

The operator has worked at these percentages for one year.

First: The ADEC calculates the specific amounts of experience in each system type:

(WWT = wastewater treatment and WT = water treatment)

Specific WWT = 12 months X 25% = 3 months

Specific WT = 12 months X 75% = 9 months

Next: The ADEC calculates the overall amounts of experience using the substitutions allowed in the regulations as follows:

Overall WWT = 3 months WWT + 9 months interchangeable WT = 12 months

Overall WT = 9 months WT + 3 months interchangeable WWT = 12 months

Next: The ADEC determines eligibility:

#### Water Treatment (WT):

Does the operator have one year of overall water treatment experience? YES

Does the operator meet the *50% Rule* (have 6 months of specific WT experience)? Yes

This operator is eligible for the water treatment level 1 exam.

**Wastewater Treatment (WWT):**

Does the operator have one year of overall WWT experience? YES

Does the operator meet the *50% Rule* (have 6 months of specific WWT experience)? NO

This operator is *not* eligible for the wastewater treatment level 1 exam.

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