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WATER TREATMENT CERTIFICATION 9400.0300

CHAPTER 9400

WATER AND WASTEWATER TREATMENT OPERATOR CERTIFICATION COUNCIL WATER TREATMENT CERTIFICATION

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9400.0100 DEFINITIONS.

Subpart 1. **Scope.** Terms and abbreviations used in these rules shall have the meanings specified in this part. Terms and abbreviations used herein which are not specifically defined shall be construed in conformance with Minnesota Statutes, chapters 115 and 116, the context, and professional usage.

Subp. 2. **Agency.** "Agency" means the Minnesota Pollution Control Agency.

Subp. 3. **Department.** "Department" means the Minnesota Department of Health.

Subp. 4. **Facility.** "Facility" means wastewater treatment facility as defined in Minnesota Statutes, section 115.71.

Subp. 5. **Population equivalent.** "Population equivalent" is a means of expressing the strength of pollutational material in wastewater. For the purpose of these rules the population equivalent shall be determined by dividing a daily pound load of five-day, 20-degree-centigrade biochemical oxygen demand (BOD) of the raw waste by 0.17.

Subp. 6. **Responsible experience.** "Responsible experience" means:

A. where shift operation is not required, permanent accountability for and performance of active daily on-site operation;

B. where shift operation is required, permanent accountability for active daily on-site technical and administrative supervision, and permanent, active, daily, on-site charge of an operating shift, or a major segment of a system or facility.

A city manager, superintendent of public works, or other administrative officials shall not be deemed to have direct responsibility of a system or facility unless their duties include the day-to-day operation of the system or facility.

Subp. 7. **System.** "System" means water supply system as defined in Minnesota Statutes, section 115.71.

Statutory Authority: *MS s 115.79*

9400.0200 APPLICATION.

Parts 9400.0100 and 9400.0300 state the purpose for and the definitions which are to apply in the interpretation of parts 9400.0100 to 9400.1500.

Statutory Authority: *MS s 115.79*

9400.0300 PURPOSE.

These rules are intended to:

A. serve as a vehicle by which persons desiring to demonstrate their competency in the operation and maintenance of water supply systems or wastewater treatment facilities may demonstrate such competency;

B. implement the requirements of Laws of Minnesota 1971, chapter 828, as amended, Minnesota Statutes, section 115.71 et seq., that persons in direct responsible charge of a water supply system or wastewater treatment facility must obtain a certificate of competency from the council in a class equal to or higher than the class of his or her system or facility; and

C. promote the employment of trained, experienced, reliable, and efficient personnel in positions relating to the operation and maintenance of such systems and facilities, whether or not such personnel are required by these rules to obtain proper certification.

Statutory Authority: *MS s 115.79*

9400.0400 CLASSIFICATION OF WATER SUPPLY SYSTEMS.

Subpart 1. **Basis.** The commissioner hereby establishes the basis for classification of all public water supply systems based on the degree of hazard to the public health, together with the type and loading of plant and the population affected.

Subp. 2. **Rating values.** Water supply system item classifications shall be based on the following rating values:

- A. water supply source:
 - (1) ground water, three points;
 - (2) surface water, 15 points;
- B. quality of water supply:
 - (1) less than 1.0 coliform per 100 milliliters, two points;
 - (2) 1.0 to 100 coliform per 100 milliliters, four points;
 - (3) 100 to 1,000 coliform per 100 milliliters, six points;
 - (4) 1,000 to 5,000 coliform per 100 milliliters, eight points;
 - (5) 5,000 to 20,000 coliform per 100 milliliters, ten points;
 - (6) more than 20,000 coliform per 100 milliliters, 12 points;
- C. unit treatment processes:
 - (1) groundwater source:
 - (a) aeration, two points;
 - (b) chemical precipitation (softening), 16 points;
 - (c) filtration other than after softening process, ten points;
 - (d) ion exchange, five points;
 - (e) disinfection, five points;
 - (f) chemical oxidation, two points;
 - (g) stabilization, two points;
 - (h) fluoridation, five points;
 - (i) ammoniation, five points;
 - (j) taste and odor control, two points;
 - (2) surface water source:
 - (a) aeration, two points;
 - (b) coagulation, ten points;
 - (c) sedimentation, five points;
 - (d) filtration, ten points;
 - (e) disinfection, five points;
 - (f) ion exchange, five points;
 - (g) chemical oxidation, two points;

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- (h) stabilization, two points;
- (i) fluoridation, five points;
- (j) ammoniation, five points;
- (k) taste and odor control, two points;
- D. distribution storage capacity:
 - (1) 0 to 5,000 gallons, one point;
 - (2) 5,001 to 50,000 gallons, two points;
 - (3) 50,001 to 500,000 gallons, three points;
 - (4) 500,001 to 5 million gallons, four points;
 - (5) Over 5 million gallons, five points;
- E. number of wells:
 - (1) one to three, two points;
 - (2) four to seven, four points;
 - (3) eight to 15, six points;
 - (4) over 15, eight points;
- F. population affected:
 - (1) 0 to 1,000 persons, two points;
 - (2) 1,001 to 5,000 persons, five points;
 - (3) 5,001 to 10,000 persons, 11 points;
 - (4) 10,001 to 20,000 persons, 20 points;
 - (5) 20,001 to 50,000 persons, 32 points;
 - (6) 50,001 to 100,000 persons, 47 points;
 - (7) 100,001 persons and over, 70 points.

Subp. 3. **Accumulated value.** The accumulated point values for water supply systems are as follows:

- A. Class A, 76 or more points;
- B. Class B, 56 to 75 points;
- C. Class C, 31 to 55 points; and
- D. Class D, 30 or less points.

Statutory Authority: *MS s 115.79*

9400.0500 CLASSIFICATION OF WASTEWATER TREATMENT FACILITIES.

Subpart 1. **Basis.** The director hereby establishes the basis for classification of all wastewater treatment facilities actually used or intended for use by the public or by any considerable number of persons based on the degree of hazard to the public health, together with the type and loading of the facilities and the population served or the average population equivalent of the wastewater handled.

Subp. 2. **Rating values.** Wastewater treatment facility classification shall be based on the following rating values:

- A. size:
 - (1) maximum population equivalent (P.E.) served, one point per 10,000 P.E. or part thereof;
 - (2) design flow, average day, or peak months flow, average day, whichever is greater, one point per million gallons;
- B. effluent discharge:
 - (1) receiving stream sensitivity based on general standards applicable to all intra- and inter-state waters, as prescribed in parts 7050.0220 and 7055.0120 (as adopted in 1973);

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- (a) domestic consumption:
 - i. Class B, six points;
 - ii. Class C, five points;
 - iii. Class D, four points;
- (b) fisheries and recreation:
 - i. Class A, five points;
 - ii. Class B, three points;
 - iii. Class C, two points;
- (2) dechlorination, five points;
- (3) land disposal — evaporation, two points;
- (4) subsurface disposal, four points;
- C. variation in raw wastes:
 - (1) one to five percent industrial flow contributed to facility, one point;
 - (2) six to ten percent industrial flow contributed to facility, two points;
 - (3) 11 to 25 percent industrial flow contributed to facility, three points;
 - (4) 26 to 50 percent industrial flow contributed to facility, four points;
 - (5) 51 percent or more industrial flow contributed to facility, five points;
 - (6) for special treatment of industrial wastes at the wastewater treatment facility, one point;
- D. pretreatment:
 - (1) screening, comminution, three points;
 - (2) grit removal, three points;
 - (3) plant pumping of main flow, three points;
 - (4) preaeration with less than two hours' detention time, three points;
 - (5) hydro sieve, four points;
- E. primary treatment:
 - (1) primary clarifiers, five points;
 - (2) combined sedimentation and digestion, five points;
 - (3) chemical addition, except chlorine and enzymes, four points;
- F. secondary treatment:
 - (1) trickling filter, five points;
 - (2) activated sludge including pure oxygen activated sludge, ten points;
 - (3) stabilization ponds, designed for more than 180 days' detention time, five points;
 - (4) aerated ponds designed for more than two hours' detention time, eight points;
 - (5) rotating biological surface, five points;
 - (6) any number of secondary clarifiers, five points;
 - (7) on-site generation of oxygen, five points;
- G. advanced waste treatment:
 - (1) aerated polishing ponds designed for less than 180 days' detention time, five points;
 - (2) polishing ponds without aeration, two points;

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- (3) chemical and physical, 15 points;
 - (4) biological treatment for nitrogen removal, eight points;
 - (5) chemical addition for phosphorous and/or solids removal, eight points;
 - (6) multimedia filters and/or activated carbon beds, eight points;
 - (7) ion exchange, ten points;
 - (8) reverse osmosis, electrodialysis, 15 points;
 - (9) chemical recovery, carbon regeneration, four points;
 - (10) micro-strainers, four points;
- H. solids handling:
- (1) thickening including chemical treatment, five points;
 - (2) anaerobic digestion, ten points;
 - (3) aerobic digestion, six points;
 - (4) evaporative sludge drying, two points;
 - (5) mechanical dewatering, eight points;
 - (6) solids reduction, such as incineration, wet oxidation, 12 points;
 - (7) on-land disposal, five points;
- I. disinfection:
- (1) chlorination or comparable, five points;
 - (2) on-site generation of disinfectant, five points;
- J. laboratory monitoring:
- (1) minimum required tests (pH, Cl₂, residual D.O., settleable solids, B.O.D. and T.S.S.), two points;
 - (2) bacteriology (fecal coliform, total coliform, fecal streptococcal, etc.), three points;
 - (3) activated sludge process control, three points;
 - (4) nutrients, one point;
 - (5) groundwater monitoring, one point.

Subp. 3. **Accumulated Values.** The accumulated point values for wastewater treatment facilities are as follows:

- A. Class A, 76 or more points;
- B. Class B, 56 to 75 points;
- C. Class C, 31 to 55 points; and
- D. Class D, 30 and less points.

Subp. 4. **Type S facility.** Type S treatment facility shall mean a system of collection, pumping, and conveyance facilities which are distinctly separate in operation or maintenance from a wastewater treatment facility which treats, stabilizes, or disposes of the wastewater collected, pumped, or conveyed therein. Where such a conveyance facility is not so distinctly separate, it is considered to be part of the treatment facility for which the designated operator is responsible. A type S treatment facility shall be subclassified as follows:

- A. Class S-A, serving a population of 50,000 or more;
- B. Class S-B, serving a population of 15,000 or more but less than 50,000;
- C. Class S-C, serving a population of 1,500 or more but less than 15,000;
- D. Class S-D, serving a population of less than 1,500.

Statutory Authority: *MS s 115.79*

9400.0600 RECLASSIFYING SYSTEMS OR FACILITIES.

When the accumulated point value necessitates a change in the classification

of a system or facility, or when unusual factors may affect the degree of hazard to the public health, the type and loading of the system or facility, or the average population served or population equivalent of the wastewater handled, the commissioner or director may modify the classification of a system or facility.

Statutory Authority: *MS s 115.79*

9400.0700 CERTIFICATION OF WATER SYSTEM AND TREATMENT FACILITY OPERATORS.

Subpart 1. General qualifications. In order to be certified, an applicant must:

A. demonstrate that he or she possesses the skill, knowledge, experience, and education that a person must have to operate a specified class of system or facility successfully, to maintain it economically, to safeguard the public health, and protect the waters of the state; and

B. have passed a written examination taken pursuant to this rule.

Subp. 2. Certification in particular class. In addition, before applying to take an examination, a person who seeks certification in a particular class must meet the qualifications for that class as specified below:

A. Class A certificate: an applicant shall take and pass an oral examination, and have been certified as a Class B operator for two years, and have a:

(1) bachelor's degree in an appropriate branch of engineering or in a physical or biological science, and submit satisfactory evidence of at least four years of responsible experience in the operation and management of a Class A or B system or facility or a similar industrial facility; or

(2) high school diploma with at least eight years of responsible experience in the operation and management of a Class A or B system or facility, or a similar industrial facility.

B. Class B certificate: an applicant shall:

(1) possess a bachelor's degree in an appropriate branch of engineering or in a physical or biological science, and submit satisfactory evidence of at least two years of experience in the operation of a Class A, B, or C system or facility, or similar industrial facility; or

(2) be a high school graduate with at least six years of experience in the operation of a Class A, B, or C system or facility, or a similar industrial facility.

C. Class C certificate: an applicant shall be a high school graduate with a minimum of three years of experience in the operation of a water supply system, wastewater treatment facility, or similar industrial facility.

D. Class D certificate: an applicant shall be a high school graduate:

(1) who has a minimum of one year of experience in a water supply system, wastewater treatment facility, or in a related field; or

(2) who has satisfactorily completed an approved, postsecondary program of courses in water and wastewater technology at an accredited institution.

E. An applicant for a type S wastewater treatment certificate shall possess the same educational and experiential qualifications as are required of one who applies for a regular wastewater certificate in the same class, with the following exceptions:

(1) experience shall have been gained in a regular wastewater or type S facility; and

(2) when one applies for an S-A type certificate, he or she shall have been certified as an S-B operator for two years.

Statutory Authority: *MS s 115.79*

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9400.0800 SUBSTITUTIONS FOR QUALIFICATIONS.

Subpart 1. **Experience.** When a person applies for certification to operate:

A. a wastewater treatment facility, experience gained in a water supply system or a type S wastewater treatment facility may be given up to 50 percent credit towards meeting the experience requirement for that class of facility for which the applicant seeks the certificate; or

B. a water supply system, experience gained in a wastewater treatment facility may be given up to 50 percent credit towards meeting the experience requirement for that class of system for which the applicant seeks the certificate (experience gained in a type S wastewater treatment facility may not be substituted when one applies for a water supply system certificate).

Subp. 2. **Certificate for classes A, S-A, B, S-B, C, or S-C.** Persons who apply for a Class A, S-A, B, S-B, C, or S-C certificate may substitute education for experience according to the following formulas:

A. Except as noted below, the council may reduce the experience required in part 9400.0700, subpart 2 by up to six months for the successful completion of:

(1) each academic year beyond high school in which the applicant took courses relating to water supply and wastewater treatment, or in an appropriate branch of engineering, or in the chemical or biological sciences; or

(2) one hundred contact hours of courses relating to water supply or wastewater treatment.

B. In no event shall such education be substituted for experience so as to reduce the experience requirement to less than one year.

C. An applicant may be given credit for taking the same course more than once if there is a substantial difference in course content and only upon approval of the council.

Subp. 3. **Experience substituted for education.** One year of experience in the operation of a water supply system or wastewater treatment facility may be considered as equivalent to one year of high school. Experience which is substituted for education cannot also be used to satisfy the experience requirements.

Statutory Authority: *MS s 115.79*

9400.0900 APPLICATION FOR EXAMINATION.

Subpart 1. **Form and time.** Application for examination shall be made in writing to the commissioner or director on a prescribed form, and shall be submitted at least 15 days prior to the date on which the examination will be given.

Subp. 2. **Proof of attendance.** The applicant may be required to submit a copy of the school or college diploma, equivalency certificate, or other proof of school or college attendance and/or graduation.

Subp. 3. **Fee.** The examination fee shall accompany the application.

Subp. 4. **Review.** The appropriate reviewing authority shall review all information and documents needed to determine the eligibility for examination and notify the applicant of his or her status.

Statutory Authority: *MS s 115.79*

9400.1000 EXAMINATIONS.

Subpart 1. **Preparation.** The council shall authorize the preparation of written and oral examinations to be used in determining the knowledge, ability, and judgment of operators.

Subp. 2. **Written examination.** Separate written examinations shall be prepared for each designated water supply system and wastewater treatment facility class to cover basic differences in the duties and responsibilities of operators,

types of water and wastewater treatment, variations in water and wastewater characteristics, water distribution systems, and wastewater collection systems. The written examination shall test the applicant's knowledge in any one or more of the following areas, as they relate to either water or wastewater treatment: basic science, mathematics, operating procedures, treatment processes, equipment and its maintenance, and applicable law and rules.

Subp. 3. **Oral examination.** The oral examination for an A certificate will include questions concerning the scope of the applicant's experience, supervisory and managerial responsibilities, and operational capabilities. Such an examination may be conducted by a subcommittee of the council.

Subp. 4. **Closed-book.** All examinations shall be closed-book.

Subp. 5. **Passing.** For the written examination, a grade of 70 percent shall be considered a passing grade. For the oral examination, the grade shall be either "pass" or "fail".

Subp. 6. **Results; review.** The applicant shall be notified of the results. Papers shall not be returned to the applicant, but upon request within 60 days' notification of the results, the applicant may be allowed to review the written examination.

Subp. 7. **Reexamination.** An applicant who fails to pass may not retake the same examination for a period of three months.

Statutory Authority: *MS s 115.79*

9400.1100 ISSUANCE OF CERTIFICATES.

Certificates shall be issued by the commissioner or director when all the conditions prescribed in these rules have been satisfied.

Statutory Authority: *MS s 115.79*

9400.1200 RENEWAL OF CERTIFICATES.

Subpart 1. **Minimum requirements.** A certificate in any given classification must be renewed within 30 days of its expiration date. Except as provided in subpart 2, a renewal certificate will be issued upon receipt of the application, renewal fee, and evidence of the fact that the operator has, during the preceding three years, obtained credit for attending approved water and wastewater training courses, or participated in substantially similar educational activities, for the number of hours specified in the following schedule:

- A. Class A and S-A, 32 contact hours;
- B. Class B and S-B, 24 contact hours;
- C. Class C and S-C, 16 contact hours;
- D. Class D and S-D, 8 contact hours.

Subp. 2. **Class D or S-D.** A person who has obtained a Class D or S-D certificate pursuant to part 9400.0700, subpart 2, item D, subitem (2), who has not worked as an operator for at least one year during the time the certificate was in effect shall not be eligible to renew such a certificate.

Subp. 3. **Accredited courses and activities.** The council shall annually prepare and make available to operators and the public a list of accredited training courses and approved educational activities for which credit may be obtained.

Statutory Authority: *MS s 115.79*

9400.1300 REINSTATEMENT.

Subpart 1. **Application.** A person whose certificate has expired may apply to the commissioner or director for reinstatement of the certificate in the same classification. Before a certificate will be issued, such person must submit the following: the application for reinstatement; the fee for a reinstatement certificate, which fee is nonrefundable; and evidence of the fact that he or she has complied

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with the continuing education requirements imposed in part 9400.1200, subpart 1 during the entire time since the expired certificate was last issued or renewed.

Subp. 2. Denial. A person who is denied reinstatement will be required to follow the procedure imposed for a new applicant. In such case the reinstatement fee already paid shall be credited towards the fees for examination and a new certificate.

Statutory Authority: *MS s 115.79*

9400.1400 FEES.

Subpart 1. Amount. Fees for certification shall be as follows:

- A. Application for examination, \$15;
- B. Issuance of certificate, \$15;
- C. Reexamination resulting from failure to pass an examination, \$15;
- D. Renewal of certificate, \$15;
- E. Replacement certificate, \$5;
- F. Reinstatement or reciprocity certificate, \$20.

Subp. 2. Refunding. Only fees from persons who are rejected for examination will be returned to them.

Statutory Authority: *MS s 115.79*

9400.1500 RESTRICTED CERTIFICATE.

Subpart 1. Restriction and renewal. The operator of a system or facility which is reclassified to a higher class pursuant to part 9400.0600 is eligible for a restricted certificate in the higher class, except as noted in part 9400.0600. A restricted certificate shall be issued upon receipt of the certificate fee and shall be effective for three years from the date of issue. A restricted certificate may be renewed in the same manner as an unrestricted certificate. A restricted certificate shall specify that the operator named therein is certified to operate only the reclassified system or facility for which the restricted certificate is issued.

Subp. 2. Certification limits. No restricted certificate will be granted if reclassification was the result of a major alteration to the system or facility, the operation of which would require considerably more training, knowledge, or experience than that required by the system or facility as it was formerly classified.

Statutory Authority: *MS s 115.79*