

**Effective April 1, 2016, Env-Dw 305 reads as follows:****PART Env-Dw 305 SMALL PRODUCTION WELLS FOR SMALL COMMUNITY WATER SYSTEMS**

Statutory Authority: RSA 485:2, V; RSA 485:41, II, IV, & V

Env-Dw 305.01 Purpose. The purpose of these rules is to implement those portions of RSA 485, the New Hampshire Safe Drinking Water Act, pertaining to the department's obligation to approve public water systems, by establishing procedures and standards for the development of small production wells for small community water systems (CWS) in order to ensure that such wells will be capable of producing an adequate supply of water that meets drinking water quality standards.

Env-Dw 305.02 Applicability.

- (a) These rules shall apply to any small CWS that:
- (1) Develops a new small production well;
  - (2) Replaces an existing small production well with a new small production well;
  - (3) Hydrofractures or deepens an existing small production well to increase its capacity, provided the increased capacity does not cause the well to be a large production well; or
  - (4) Reactivates an inactive small production well or a small production well that has been removed from monitoring responsibility in accordance with Env-Dw 708.11 or its predecessor rule, Env-Ws 321.17.
- (b) An applicant for a new production well for a large community water system shall comply with Env-Dw 302 regardless of the volume of water produced by the well.

Env-Dw 305.03 Definitions.

- (a) "New small production well" means a new production well that is a small production well.
- (b) "Small bedrock production well" means a small production well that is a bedrock well.
- (c) "Small overburden production well" means a small production well that is an overburden well.
- (d) "Small production well" means a production well having a permitted production volume of less than 57,600 gallons in any 24-hour period.

Env-Dw 305.04 Pre-Approval Required.

- (a) A person shall obtain approval from the department in accordance with Env-Dw 305.05 through Env-Dw 305.29 prior to:
- (1) Connecting a new small production well to a small CWS; or
  - (2) Requesting an increase in the permitted production volume of an existing small production well currently connected to a small CWS, provided the increase will not result in a permitted production volume of equal to or greater than 57,600 gallons in a 24-hour period.
- (b) Prior to hydrofracturing or deepening an existing small bedrock production well to regain lost well capacity, the applicant shall:
- (1) Submit a request to the department in accordance with Env-Dw 305.33; and

(2) Comply with (a), above, if the department denies the request submitted pursuant to Env-Dw 305.33.

(c) Prior to replacing an existing small production well with a new small production well, the applicant shall submit a request to the department in accordance with Env-Dw 305.34 and Env-Dw 305.35.

Env-Dw 305.05 Process for Obtaining Approval.

(a) A person seeking approval pursuant to Env-Dw 305.04(a) shall submit a preliminary report to the department that contains the following:

(1) The cover page specified in Env-Dw 305.06, which has been signed as specified in Env-Dw 305.07; and

(2) The information and maps specified in Env-Dw 305.08.

(b) All work conducted to fulfill the requirements of Env-Dw 305 shall be completed by, or under the supervision of, an individual who is:

(1) Qualified by training and experience to complete the work required by Env-Dw 305; and

(2) At least one of the following, as applicable based on the specific work being performed:

a. A professional geologist (P.G.) licensed to work in New Hampshire pursuant to RSA 310-A;

b. A professional engineer (P.E.) licensed to work in New Hampshire pursuant to RSA 310-A;

c. A water system operator licensed in New Hampshire pursuant to RSA 332-E;

d. A water well contractor licensed in New Hampshire pursuant to RSA 482-B; or

e. A pump installer licensed in New Hampshire pursuant to RSA 482-B.

(c) The preliminary report submitted pursuant to (a), above, shall be:

(1) Signed and dated by the individual who completed or supervised the work as required by (b), above, and if the individual is a P.G. or P.E., stamped or sealed by the individual; and

(2) Filed electronically in a portable document format.

(c) The department shall review the preliminary report as specified in Env-Dw 305.16.

(d) If the department approves the preliminary report and the applicant wishes to continue, the applicant shall proceed as specified in Env-Dw 305.18.

Env-Dw 305.06 Preliminary Report: Cover Page. The cover page required by Env-Dw 305.05(a)(1) shall contain the following:

(a) Information to identify the persons involved, specifically the name, mailing address, email address, and daytime telephone number of each of the following:

(1) The water system owner, or, if there is no owner at the time the preliminary report is submitted, the project owner and a description of the plan to transition ownership of the CWS in the future;

(2) The owner of the well site property;

(3) The individual responsible for responding to questions from the department regarding the preliminary report; and

- (4) The person responsible for performing the pumping test and water quality sampling program;
- (b) A description of the purpose of the new well and who is or will be served by the CWS; and
- (c) The source capacity requirements for the small CWS established in accordance with Env-Dw 405, including:
  - (1) Irrigation water use requirements; and
  - (2) Estimated water use based on the water use categories specified by Env-Dw 405.

Env-Dw 305.07 Signatures; Certifications.

(a) The signatures required for the preliminary report, the final report, the compliance report, or any request related thereto shall be provided as follows:

- (1) If the applicant or supplier of water, as applicable, is an individual, the applicant shall sign and date the report; and
- (2) If the applicant or supplier of water, as applicable, is other than an individual, the applicant shall authorize an official of the applicant to sign the report, and the authorized individual shall sign and date the application and print or type his or her name and title.

(b) All signatures provided under this part, including those provided by the professional required by Env-Dw 305.05(b), shall constitute certification that:

- (1) The information for which the signer is responsible that is contained in or otherwise submitted with the report or request is true, complete, and not misleading to the knowledge and belief of the signer;
- (2) The signer understands that:
  - a. The submission of false, incomplete, or misleading information is grounds for:
    - 1. Not approving the report or request;
    - 2. Revoking any approval that is granted based on the information;
    - 3. Suspending or revoking the professional license held by the signer if the department is the permitting authority, or referring the matter to the appropriate permitting authority for potential action against the professional license held by the signer if other than the department; and
    - 4. If the signer is acting as or on behalf of a listed engineer as defined in Env-C 502.10, debarring the listed engineer from the roster; and
  - b. He or she is subject to the penalties specified in New Hampshire law, currently RSA 641:3, for making unsworn false statements.

(c) Any signature provided by an applicant pursuant to (a), above, shall also constitute certification that the applicant agrees to comply with all applicable rules and conditions of the approval if one is issued.

Env-Dw 305.08 Preliminary Report: Contents. The applicant shall provide the following pursuant to Env-Dw 305.05(a)(2):

(a) A general description of the current use and 50 year history of the property where the new well is to be located;

- (b) A description of existing and proposed land use activities within the sanitary protective area and how the area is or will be controlled by the applicant;
- (c) Documentation to demonstrate that the well site and land within the sanitary protective area will be under the direct control of the supplier of water and will be maintained as required by Env-Dw 305.10;
- (d) If the applicant does not own the well site property, a letter or equivalent document signed by the owner of the well site property that authorizes the applicant to apply for a new small production well on the property;
- (e) A USGS map on which the following are clearly marked:
  - (1) The well location and estimated wellhead protection area;
  - (2) The location of the contamination sources, water resources, and water uses inventoried; and
  - (3) The title, scale, and date of the quadrangle;
- (f) One or more municipal tax maps or survey maps at a scale of not smaller than one inch equals 100 feet on which the following are identified:
  - (1) The location of the proposed well and the sanitary protective area, determined as specified in Env-Dw 305.10;
  - (2) Lot lines and the owner of each lot into which the sanitary protective area extends;
  - (3) The location of any public or private water supply wells located within 1,000 feet of the well;
  - (4) The location of surface waters and wetlands to show that the well will meet the setback requirements in Env-Dw 305.09;
  - (5) All property lines and any easements;
  - (6) All land uses, including any paths, trails, structures, storage, landscaping, or other alteration of the natural terrain; and
  - (7) All stormwater discharge areas and drainage structures;
- (g) A copy of the Flood Insurance Rate Map depicting the location of the well, or a description of the elevation of the well in reference to the 100-year flood zone depicted on the nearest adjacent Flood Insurance Rate Map;
- (h) A preliminary estimate of the wellhead protection area for the well and a proposed method for refining the estimate in accordance with Env-Dw 305.11;
- (i) A preliminary contamination source inventory and water use inventory in accordance with Env-Dw 305.12;
- (j) Identification and evaluation of all contamination sources in accordance with Env-Dw 305.13;
- (k) A proposal for a pumping test in accordance with Env-Dw 305.14; and
- (l) A proposal for a water quality sampling program in accordance with Env-Dw 305.15.

Env-Dw 305.09 Well Location Relative to Surface Water.

- (a) No well shall be located closer than 50 feet from the high water line of any surface water.
- (b) No well shall be located closer than 50 feet from wetlands that are inundated with standing or flowing water for more than 30 continuous days.
- (c) No well shall be subject to flooding at the 100-year recurrence interval. The applicant may fill to elevate the permanent well casing for flood protection purposes, provided that all required permits for placing fill in wetlands and flood plains have been obtained.

Env-Dw 305.10 Sanitary Protective Area.

- (a) The sanitary protective area shall be a circle, centered on the well, having a radius based on the permitted production volume of the well as set forth in Table 305-1:

Table 305-1: Sanitary Protective Area Radii

Permitted Production Volume (gallons in a 24-hour period)	Radius (feet)
less than 14,400	150
14,401 to 28,800	175
28,801 to less than 57,600	200

- (b) When more than one well is within a sanitary protective area, the individual sanitary protective area for each well shall be based on the combined permitted production volume of all of the wells, unless the applicant proves by clear and convincing evidence that the wells are not hydraulically connected.
- (c) The department shall not approve the source unless the applicant owns the land within the sanitary protective area, provided however, that if the applicant does not own the land, the applicant shall control the land by perpetual easement, covenant, or similarly legally binding means.
- (d) If the well is approved, the sanitary protective area shall be maintained in a natural state at all times except for:
  - (1) Limited land clearing and terrain alteration required for well access and construction of a pump house or other structure(s) associated with the well or water system; and
  - (2) Activities necessary for the maintenance of the well that do not pose a contamination risk to groundwater.
- (e) No person shall discharge to the sanitary protective area any drainage from:
  - (1) Any area where fertilizer or pesticides, or both, have been applied;
  - (2) Any roadway, parking lot, or other area on which motor vehicles of any type travel or are parked; or
  - (3) Any detention and retention pond, infiltration strip, drainage swale, or similar structure.
- (f) No underground utilities shall be installed in the sanitary protective area except for drinking water supply and electrical or communications conduits associated with the well or water system.

Env-Dw 305.11 Preliminary Estimate of the Wellhead Protection Area and Proposed Refinement.

(a) The estimate of the wellhead protection area shall be derived for small overburden production wells, except those in confined aquifers, by drawing a circle with a 4,000 foot radius around the well or, when sufficient data is available, by using the method as specified in (c)(1), below.

(b) For small bedrock production wells and small overburden production wells in confined aquifers, the estimate of the wellhead protection area shall be derived by drawing a circle around the well with a radius based on the proposed permitted production volume, as set forth in Table 305-2:

Table 305-2: Wellhead Protection Area Radii

Permitted Production Volume (gallons per day)	Radius (feet)
0 to 7,200	1,300
7,201 to 14,400	1,500
14,401 to 28,800	2,050
28,801 to 43,200	2,850
43,201 to less than 57,600	3,600

(c) The wellhead protection area refinement method required by Env-Dw 305.08(h) for small overburden production wells, except those in confined aquifers, shall be one of the following:

- (1) An analytical or numerical model that identifies the contributing area of the well based on assuming 180 days of continuous pumping without recharge from precipitation, provided that the model's assumptions are not violated and conservative estimates of aquifer parameters are used; or
- (2) A circle centered on the well having a radius of 4,000 feet.

(d) The wellhead protection area refinement method required by Env-Dw 305.08(h) for small bedrock production wells and small overburden production wells in confined aquifers shall be the same methodology used in (b), above, based on the permitted production volume established by the pumping test performed in accordance with Env-Dw 305.19.

Env-Dw 305.12 Preliminary Contamination Source and Water Use Inventories.

(a) The preliminary contamination source inventory and the preliminary water use inventory required by Env-Dw 305.08(i) shall be:

- (1) Completed before the pumping test and water quality sampling program proposals required by Env-Dw 305.08(k) and (l), respectively, are developed; and
- (2) Compiled from a search of the following information sources:
  - a. Records at the department;
  - b. Records at the municipality; and
  - c. A windshield survey of all properties within the wellhead protection area.

(b) The contamination source inventory shall:

- (1) Identify and describe all known contamination sources and all potential contamination sources in the wellhead protection area; and
- (2) Include the following information for each known contamination source and each potential contamination source:

- a. The site name and address;
  - b. The name, mailing address, and daytime telephone number of each property owner or operator;
  - c. For each known contamination source, a description of the nature and extent of the investigation and the status of any remedial action that has been or is being performed; and
  - d. For each potential contamination source, the type of potential contamination source(s) at the facility.
- (c) The water use inventory shall:
- (1) Identify water resources and uses within 1,000 feet of the proposed well, including:
    - a. Private wells, assuming that all developed lots not served by a public water system have private wells;
    - b. Public wells; and
    - c. All surface water bodies and wetlands;
  - (2) Identify registered water users within the wellhead protection area; and
  - (3) Include the following information:
    - a. For each private well:
      - 1. The property address;
      - 2. Tax map and lot number; and
      - 3. The well construction record number, if available;
    - b. For each public well:
      - 1. The water system name and address; and
      - 2. The well's federal identification number;
    - c. For each registered water user:
      - 1. The name and address of the user;
      - 2. The type of use; and
      - 3. The water user registration number; and
    - d. For each surface water body or wetland:
      - 1. Name and type of water body; and
      - 2. Location of the surface water or wetland in relation to the proposed well.

Env-Dw 305.13 Known Contamination Source Evaluation.

- (a) The applicant shall review the applicable department site file(s) on each known contamination source identified in accordance with Env-Dw 305.12 and evaluate its potential to degrade water quality at the well.

(b) The applicant shall present, in the preliminary report, a description of how each known contamination source that has potential to degrade water quality at the proposed well will be addressed by the pumping test and water quality sampling program, by:

- (1) Collecting additional water quality samples from the proposed well;
- (2) Collecting additional water quality samples from other wells within the wellhead protection area;
- (3) Increasing the duration of the pumping test; or
- (4) A combination of (1)-(3), above.

Env-Dw 305.14 Proposal for Pumping Test.

(a) Subject to (c), below, the proposal required by Env-Dw 305.08(k) shall be for:

- (1) A standard pumping test as specified in (d), below, in which case the preliminary report shall contain the information specified in (e), below; or
- (2) An alternate pumping test as specified in (f), below, in which case the preliminary report and the final report shall include an explanation of the justification for using the alternative method.

(b) The pumping test shall be conducted to gather the information necessary to:

- (1) Demonstrate that the proposed permitted production volume is sustainable;
- (2) Assess the effects of the proposed well on surrounding water resources and water uses; and
- (3) Demonstrate the small CWS source capacity required by Env-Dw 405.

(c) An applicant for a new source of water for a new small CWS with a design flow requirement less than 57,600 gallons per day, but with a source capacity requirement that exceeds 57,600 gallons per day, shall comply with the wellhead protection area refinement, pumping test, and water quality testing requirements of Env-Dw 302.11, Env-Dw 302.14, and Env-Dw 302.15, respectively.

(d) A standard pumping test shall be completed as follows:

(1) The pumping of and discharge from the water system's wells shall be as follows:

- a. The new well and any other well being pumped as part of the pumping test shall be operated continuously at a discharge rate that does not vary more than approximately 5% after the first 24 hours of pumping;
- b. For an existing CWS with one or more existing wells that will continue to be used even if the proposed well is approved, each other well shall be operated as usual to demonstrate system capacity requirements under Env-Dw 405;
- c. The pumping test production rate shall not be less than the proposed permitted production volume for each new well;
- d. The discharge rate shall be:
  1. Measured using a device capable of providing measurements accurate to within 5% of the discharge rate; and
  2. Measured every 15 minutes for the first 2 hours and at least once every hour thereafter;

- e. Discharge measurements shall:
  - 1. Not be averaged over a period greater than one minute; and
  - 2. Include at least 2 readings collected and recorded for each measurement; and
- f. Pumped water shall be discharged outside the estimated contributing area of operating wells so there is no effect on the pumping test results;
- (2) Subject to (3), below, the pumping test shall be conducted for not less than 72 hours;
- (3) The pumping test may be terminated sooner than 72 hours if the applicant submits field observations and water level data to the department to demonstrate that the average change in water level in the pumping well is 0.5 feet or less over a period of at least 12 hours, provided that the pumping test duration shall be not less than 48 hours;
- (4) Water levels shall be measured as follows:
  - a. For each proposed new well, water level measurements and time shall be recorded:
    - 1. Just before pumping begins;
    - 2. After pumping starts, every 5 minutes for the first hour, and at least once every hour thereafter; and
    - 3. After pumping stops, during the recovery period, so that at least 10 data points are recorded over a period equivalent to the pumping period of the pumping test or until the water level in the new well has recovered to 90% of the pre-pumping water level; and
  - b. Water level measurements shall be made using equipment capable of measuring to the nearest 0.01 foot;
- (5) For existing water systems, water levels in the system's other wells shall be recorded before the pumping test starts, during the pumping test at intervals no greater than once every 2 hours, and just after the pumping test ends;
- (6) Water levels in any surface water within 150 feet of the operating wells shall be measured using a water level staff gauge marked in 0.01-foot intervals, with gauge readings being taken just before pumping starts and at least every 6 hours thereafter;
- (7) Water levels in private and public wells within 1,000 feet of the proposed new source well or wells shall be monitored, if permission has been obtained from the owner as specified in Env-Dw 302.14(h)(1), to estimate the effect on these wells as required by Env-Dw 305.28(i);
- (8) On-site weather condition observations shall be recorded daily during pumping and recovery.
- (e) When a standard pumping test is proposed, the proposal shall include the following:
  - (1) The proposed pumping test production rate;
  - (2) The methods, locations, and schedule for water level measurements;
  - (3) A site sketch showing the discharge location;
  - (4) A site sketch showing the location of any surface water staff gauges and a description of their construction;

- (5) A description of the method and equipment that will be used to ensure a constant pumping rate is maintained;
  - (6) A description of the discharge measurement method and schedule;
  - (7) A description of how the system's other wells, if any, will be operated while the new well is being tested; and
  - (8) Copies of notification letter which extend an offer to monitor water levels in nearby wells identified in (d)(7), above.
- (f) When an alternate pumping test is proposed, the proposal shall include:
- (1) Information that explains how the pumping test will be conducted and monitored, how the effect of the pumping test on surface waters and wells will be measured, how ambient conditions will be monitored, and any other information needed to comprise a complete proposal consistent with (d) and (e), above; and
  - (2) Information demonstrating that the program will meet or exceed the requirements for the standard pumping test.

Env-Dw 305.15 Proposal for Water Quality Sampling Program.

- (a) The water quality sampling program required by Env-Dw 305.08(l) shall be conducted to demonstrate the water quality of each proposed new well.
- (b) The water quality sampling proposal shall include a description of how the applicant will:
  - (1) Obtain a water sample from the well immediately prior to the cessation of pumping;
  - (2) Store and transport the sample bottles to the laboratory;
  - (3) Ensure that the water sample is analyzed for:
    - a. Those parameters required to be monitored in groundwater systems per Env-Dw 707 through 713;
    - b. 1,4-Dioxane;
    - c. Radon; and
    - d. Microscopic particulate analysis as specified in (c), below, if the location of the proposed new well meets one of the following criteria, unless exempted by (d), below:
      - 1. For overburden wells, the well is within 100 feet of the normal high water line of any surface water; or
      - 2. For bedrock wells, the well is within 200 feet of the normal high water line of any surface water;
  - (4) Ensure that the water sample is analyzed by a laboratory that is accredited for all applicable drinking water categories in accordance with Env-C 300; and
  - (5) For well sites with specific water quality concerns, including those related to known or potential contamination sources, perform additional sampling and analyses to ensure acceptable water quality.

- (c) Samples for microscopic particulate analysis pursuant to (b)(3)d., above, shall:
  - (1) Be collected during the last day of the pumping test;
  - (2) Be collected only after screening the discharge water hourly, for a period of no less than 6 hours before the start of sample collection, for pH, specific conductance, and temperature;
  - (3) Be analyzed in accordance with the US EPA 2004 Consensus Method for Determining Groundwaters Under the Direct Influence of Surface Water Using Microscopic Particulate analysis (MPA), MiC004B or an equivalent method;
  - (4) Be screened for pH, specific conductance and temperature throughout the duration of sample collection; and
  - (5) Include screening for pH, specific conductance, and temperature in the surface water closest to the proposed new well at the same monitoring frequency as the discharge water.
- (d) New wells shall be exempt from sampling for microscopic particulates if the applicant demonstrates through site-specific observations and monitoring that:
  - (1) A continuous confining unit is present between the proposed new well and the surface water; and
  - (2) Water level monitoring performed during the pumping test shows that a direct hydraulic connection does not appear to exist between the proposed new well and the surface water.

Env-Dw 305.16 Criteria and Procedures for Approval of the Preliminary Report.

- (a) The department shall approve or deny the preliminary report in writing within 30 days of receipt of all information required by Env-Dw 305.05(a).
- (b) The department shall approve the preliminary report upon determining that:
  - (1) The report contains all information required by Env-Dw 305.05(a);
  - (2) The information contained in the report is complete and correct; and
  - (3) The water system concept approval required by Env-Dw 405 has been issued.
- (c) The department shall advise the applicant not to proceed further in the well siting process if information concerning known contamination sources evaluated in accordance with Env-Dw 305.13 indicates that an adequate contamination control program cannot be implemented to prevent degradation of water quality at the proposed well.
- (d) The department shall advise the applicant if a waiver will be required from specific requirements of this rule based on the preliminary report information.
- (e) The department shall require additional sampling to be conducted at the production well or other sampling points if review of the preliminary report identifies contamination sources that could contaminate the well.
- (f) The department shall include such conditions in the preliminary report approval as are necessary to ensure compliance with this part and protection of public health and the environment.

Env-Dw 305.17 Duration of Preliminary Report Approval; Effect of Expiration.

- (a) The preliminary report approval shall expire 4 years from the date of approval if a final report has not been received by the department prior to that date.

(b) Any person wishing to develop the well after a preliminary report approval has expired shall submit a new preliminary report in compliance with this part.

Env-Dw 305.18 Completion of Approval Process. Upon receipt of department approval of the preliminary report, the applicant shall:

(a) Perform the pumping test and water quality sampling program in accordance with Env-Dw 305.19 and any conditions specified in the approval;

(b) Demonstrate that under existing land use and aquifer conditions, acceptable water quality can be delivered by the well provided that, for parameters which exceed primary or secondary maximum contaminant levels under Env-Dw 702 through 706, treatment or other management techniques may be used if approved by the department in accordance with Env-Dw 405;

(c) Establish the permitted production volume in accordance with Env-Dw 305.20;

(d) Refine the wellhead protection area delineation in accordance with Env-Dw 305.21;

(e) Update and revise the contamination source inventory and the water use inventory in accordance with Env-Dw 305.22;

(f) Establish a contamination source control program in accordance with Env-Dw 305.23 for any known sources of contamination identified in accordance with Env-Dw 305.22;

(g) Establish a wellhead protection program in accordance with Env-Dw 305.24;

(h) Document that the construction of the well is in compliance with applicable water well construction standards in accordance with Env-Dw 305.25;

(i) Submit a final report to the department in accordance with Env-Dw 305.26;

(j) Submit and obtain approval for a water conservation plan prepared in accordance with Env-Wq 2101; and

(k) Obtain approval of the new small production well in accordance with Env-Dw 305.29.

Env-Dw 305.19 Performing the Pumping Test and Water Quality Sampling.

(a) Subject to (c) and (d), below, the applicant shall perform the pumping test in accordance with the pumping test proposal as approved in the preliminary report.

(b) The applicant shall notify the department of the anticipated start date of the pumping test at least one week prior to the start of testing, so that department personnel can conduct a site visit during the pumping test.

(c) The applicant shall postpone or prolong the pumping test if high recharge conditions are likely to result in test data that cannot be used for the purposes specified in Env-Dw 305.14(b). This determination shall be made jointly by the applicant and the department based on site specific conditions at the time of testing. If high recharge conditions are present but postponing or prolonging the test is not reasonably feasible, the applicant shall include a justification for not postponing or prolonging the test in the final report and adjust the collected data using conservative assumptions to reflect average conditions.

(d) The applicant shall postpone the pumping test if open pits used during well construction or any other depressions within 20 feet of the well contain standing water, or if the well site is flooded.

(e) The applicant shall undertake water quality sampling in accordance with the approved proposal.

(f) If the applicant wishes to change any aspect of the pumping test or water quality sampling program, the applicant shall submit a written request to the department that identifies the requested change(s) and explains why the change(s) should be approved.

(g) The department shall approve a requested change if the modification does not affect the integrity of the data collected and the resulting modified testing protocol will produce the necessary information.

Env-Dw 305.20 Permitted Production Volume.

(a) The permitted production volume shall be the volume produced during the pumping test by pumping at a constant pumping rate for at least the final 24 continuous hours of the pumping test.

(b) The actual rate at which water is withdrawn from an approved well may vary, but shall not exceed the permitted production volume.

(c) The sanitary protective area for the well shall correspond to the permitted production volume.

(d) The combined permitted production volumes of all new sources of water for a new small CWS shall equal at least the source capacity requirements for the water system as established by Env-Dw 405.

Env-Dw 305.21 Wellhead Protection Area Refinement.

(a) Subject to (b), below, the applicant shall refine the estimated wellhead protection area presented in the preliminary report using the method described in the preliminary report.

(b) If the applicant wishes to change the refinement method described in the preliminary report, the applicant shall submit a written request to the department that includes a detailed description of the requested change and the reason(s) why the change is being requested.

(c) The department shall approve a request to alter the refinement method if the method as proposed to be changed results in a wellhead protection area that is technically equal to, or more conservative than, the wellhead protection area that the original method would have produced.

Env-Dw 305.22 Contamination Source and Water Use Inventories Update and Revision. The applicant shall update and revise the preliminary contamination source inventory and the water uses inventory for the refined wellhead protection area as follows:

(a) If fewer than 90 days have elapsed since the preliminary inventories were completed, the applicant shall determine whether any new contamination sources or water uses, or both, have been located in the refined wellhead protection area and, if so, add them to the preliminary inventory for the final report; and

(b) If 90 days or more have elapsed since the preliminary inventories were completed and for any area that is in the revised wellhead protection area that was not in the preliminary estimate, the applicant shall perform all of the procedures required for the preliminary inventories as specified in Env-Dw 305.12.

Env-Dw 305.23 Contamination Control Program.

(a) The applicant shall establish a program that minimizes the risk of contamination at the well from known contamination sources.

(b) The program shall establish requirements, including a schedule, for monitoring and any necessary remediation of residual contamination from known contamination sources in the wellhead protection area.

Env-Dw 305.24 Wellhead Protection Program. The applicant shall establish a wellhead protection program that includes:

- (a) Updating the contamination source inventory as specified in Env-Dw 305.22 at intervals no greater than 3 years; and
- (b) Sending groundwater protection educational material that the department has developed to all owners of property in the wellhead protection area:
  - (1) Within 90 days of:
    - a. Department approval of a well for an existing small CWS; or
    - b. System start up for a new small CWS; and
  - (2) At intervals no greater than 3 years thereafter.

Env-Dw 305.25 Well Construction.

- (a) The applicant shall engage a New Hampshire-licensed water well contractor to install the well in compliance with the rules adopted by the New Hampshire water well board pursuant to RSA 482-B, We 100 et seq.
- (b) In addition to any construction standards included in (a), above, the following shall apply:
  - (1) To prevent surface water from channeling along the well casing, the void area outside the casing shall be filled with cement grout, bentonite grout, or a cement-bentonite grout mixture to within at least 6 feet of the ground surface from:
    - a. For a bedrock production well, the bottom of the pilot hole; and
    - b. For an overburden production well, an appropriate depth determined by the NH-licensed water well contractor based on well design and the type of unconsolidated material encountered when installing the well;
  - (2) The well casing shall:
    - a. Extend at least 18 inches above the ground surface for production wells that are not installed within the 100-year flood zone; and
    - b. Extend at least 3 feet above the base flood elevation or highest known flood elevation, whichever is higher, for production wells that are installed within the 100-year flood zone.

Env-Dw 305.26 Final Report Required.

- (a) The applicant shall submit a final report as specified in (c), below, to the department while the approval of the preliminary report is in effect.
- (b) The final report submitted pursuant to (a), above, shall be:
  - (1) Signed as specified in Env-Dw 305.07 by the applicant and by the professional licensee(s) who performed the work, as specified in Env-Dw 305.05(b); and
  - (2) Submitted electronically in portable document format.

- (c) The final report shall include:
  - (1) A cover page as specified in Env-Dw 305.27, which has been signed as specified in Env-Dw 305.07; and
  - (2) The information identified in Env-Dw 305.28.
- (d) The department shall review the final report as specified in Env-Dw 305.29.

Env-Dw 305.27 Final Report: Cover Page. The cover page required by Env-Dw 305.26(c)(1) shall contain the following:

- (a) Information to identify the persons involved, as follows:
  - (1) The applicant's name, mailing address, daytime telephone number including area code, and website URL, if any;
  - (2) The name, daytime telephone number including area code, and email address, if any, of an individual authorized by the applicant to represent the applicant for purposes of the department's review of the preliminary report;
  - (3) The name, mailing address, email address, and daytime telephone number with area code of the water system owner and the owner of the property on which the well is located, if other than the applicant; and
  - (4) The name, mailing address, daytime telephone number including area code, and email address of the person responsible for performing the pumping test and water quality sampling program; and
- (b) If any of the information provided pursuant to Env-Dw 305.06(b) or (c) has changed, updated information.

Env-Dw 305.28 Final Report: Contents. The applicant shall provide the following pursuant to Env-Dw 305.26(c)(2):

- (a) A description of the pumping test, including:
  - (1) All of the data collected;
  - (2) A description of how each pumping test requirement in the approved preliminary report was met;
  - (3) A graph developed using the following methodology:
    - a. Water level data shall be plotted as a semi-logarithmic plot of drawdown versus elapsed time, expressed in minutes elapsed since pumping began, presented on the logarithmic axis; and
    - b. A straight line shall be:
      - 1. Drawn through the data on the semi-logarithmic plot with a slope based on the data points from the end of the pumping period; and
      - 2. Used to extrapolate the drawdown for a time of 180 days, or 259,200 minutes, which shall be the theoretical 180-day drawdown; and

- (4) If an alternate pumping test method was approved in the preliminary report, all data and analyses as approved in the preliminary report and the justification for the alternative method required by Env-Dw 305.14(a)(2);
- (b) A description of the water quality sampling program, with specific note of any deviations from the program as approved in the preliminary reports, and copies of all laboratory results;
- (c) A description of the method used to refine the wellhead protection area;
- (d) Updated contamination source and water use inventories;
- (e) A description of the contamination risk control program with supporting evaluations and documentation;
- (f) A description of the wellhead protection program, including:
- (1) The name, title, mailing address, daytime telephone number, and email address, if any, of the person who is or will be responsible for implementing the wellhead protection program; and
  - (2) A copy of or reference to the education materials;
- (g) A copy of the well completion report prepared in accordance with We 800;
- (h) A proposed permitted production volume and a description of the means by which it was established in accordance with Env-Dw 305.20;
- (i) An estimate of the effect pumping the permitted production volume from the well will have on:
- (1) Water levels in private and public wells within 1,000 feet of the production well;
  - (2) Water levels in nearby surface waters and wetlands;
  - (3) Existing groundwater contamination plumes; and
  - (4) Saltwater intrusion into the freshwater aquifer;
- (j) A vulnerability assessment of potential impacts to the well from natural hazards, if necessary based on:
- (1) The site's location relative to surrounding topographic and hydrologic features that pose a reasonable threat to the facility's structural integrity or functionality, or both; or
  - (2) The well location's history of impacts by natural hazards; and
- (k) Documentation of legal control of the sanitary protective area.

Env-Dw 305.29 Criteria for Approval of New Small Production Wells.

- (a) The department shall approve or not approve the well documented in the final report in writing within 30 days of receipt of all information required by Env-Dw 305.26(c).
- (b) The department shall approve the well upon determining that:
- (1) The final report contains all required information;
  - (2) The information provided is complete and correct; and
  - (3) All applicable requirements of Env-Dw 305 and We 600 have been met.

(c) If the final report does not meet all of the criteria in (b), above, the notice sent pursuant to (a), above, shall identify the reason(s) for the denial.

(d) The department shall not approve the well if any of the following are true:

- (1) One or more contamination source(s) is present in the wellhead protection area and the contamination control program prepared in accordance with Env-Dw 305.23 does not ensure that contamination will not degrade water quality at the well;
- (2) The well was not constructed as specified in Env-Dw 305.25;
- (3) The applicant failed to obtain legal control of the sanitary protective area as required by Env-Dw 305.10(c) and did not obtain a waiver to the requirement;
- (4) Drawdown in the well exceeds 35 feet per gallon per minute of yield, unless hydrogeologic data support and field measurements from the pumping test or additional testing demonstrate that drawdown in the well has stabilized at a yield that is sustainable;
- (5) Within a duration of time not exceeding the pumping period of the pumping test, the water level in the well did not recover to within 2 feet of the static water level measured at the beginning of the pumping test or to a minimum of 90% of the total drawdown measured during the test;
- (6) The extrapolated 180-day drawdown exceeds 90% of the total available drawdown in the proposed production well at the production volume sought for approval;
- (7) The applicant failed to perform any activity or meet any of the requirements contained in these rules; or
- (8) The applicant failed to obtain approval for the water conservation plan required by Env-Wq 2101.

(e) The department shall include such conditions in the final approval as are necessary to ensure compliance with this part and protection of the public health.

Env-Dw 305.30 Duration of Final Approval; Reactivation; Effect of Expiration.

(a) Any approval issued pursuant to Env-Dw 305.29 shall lapse 4 years after issuance if the well is not connected to a water system approved in accordance with Env-Dw 405 prior to that date.

(b) The applicant may request the department to reinstate a lapsed approval within 10 years of the original approval by submitting the following in writing to the department:

- (1) Information demonstrating the well still meets the well siting requirements of Env-Dw 305.09 and Env-Dw 305.10;
- (2) An update of the contamination source and water user inventories in accordance with Env-Dw 305.22;
- (3) An update of the wellhead protection program in accordance Env-Dw 305.23 using information obtained pursuant to (2), above; and
- (4) A plan that includes:
  - a. Completion of a short-term pumping test at least 6 hours in duration at the previously approved permitted production volume; and
  - b. Collection of a water quality sample of the well at the end of the short-term pumping test.

(c) Within 30 days of receiving a complete request under (b), above, the department shall authorize the applicant to conduct the proposed short-term pumping test if the information submitted demonstrates that ambient conditions have not materially changed since the well was approved or, if ambient conditions have materially changed, the change(s) can be addressed so that the well will provide acceptable water quality.

(d) The department shall approve or deny the request to reinstate the well approval in writing within 30 days of receiving the results of the short-term pumping test.

(e) The department shall reinstate the approval if the information submitted meets the criteria for approval stated in Env-Dw 305.29.

(f) Any approval reinstated pursuant to (e), above, shall be valid for 4 years from the date of issuance and shall not be subject to subsequent reinstatement.

(g) If approval for a new well has lapsed for more than 10 years from the date of the original approval, the applicant shall apply for approval as specified in these rules for a new well.

Env-Dw 305.31 On-Going Compliance with Wellhead Protection Program.

(a) The supplier of water shall demonstrate ongoing compliance with the wellhead protection program by providing a compliance report to the department as specified in (b), below, once every 3 years concurrent with the education mailing program.

(b) The compliance report required by (a), above, shall include the following information on an Educational Mailing Completion form obtained from the department:

(1) The name of the supplier of water and the name and title of the individual authorized by the supplier to sign the compliance report;

(2) Whether the supplier of water has homeowners and potential contamination sources (PCSs) within the wellhead protection area of the source and, if so, has mailed or directly delivered the educational materials to all of the homeowners, tenants, PCSs, and non-residential buildings within the wellhead protection area(s);

(3) If the supplier of water does not have any homeowners or PCSs within the wellhead protection area of the source, whether the educational materials have been posted in readily accessible areas for those served by the system to review;

(4) The CWS name, PWS identifier, and source identifier;

(5) The town in which the CWS is located; and

(6) The date the educational materials were distributed.

(c) The individual authorized by the supplier of water shall sign the compliance report in accordance with Env-Dw 305.07.

Env-Dw 305.32 Modifying the Wellhead Protection Area.

(a) A supplier of water that wishes to modify the wellhead protection area of a well shall submit a written request to the department.

(b) A request filed pursuant to (a), above, shall be based on data analysis from a pumping test that meets the requirements for a standard pumping test or alternate pumping test as specified in Env-Dw 305.14.

(c) The department shall approve a request to modify the wellhead protection area if the new or updated information provided with the request demonstrates that modifying the wellhead protection area will not materially increase the risk of contamination of the water drawn from the well.

Env-Dw 305.33 Hydrofracturing or Deepening an Existing Small Bedrock Production Well.

(a) Subject to (b) and (c), below, an applicant proposing to hydrofracture or deepen an existing bedrock well to increase well capacity shall comply with this section, provided the resulting well capacity will remain below 57,600 gallons in a 24-hour period.

(b) An applicant proposing to hydrofracture or deepen a bedrock well to regain lost well capacity to expand the water system or increase the yield beyond that previously established pursuant to Env-Dw 405 shall comply with all requirements for a new well as specified in Env-Dw 305.05(a), provided the resulting well capacity will remain below 57,600 gallons in a 24-hour period.

(c) An applicant proposing to hydrofracture or deepen a bedrock well shall comply with Env-Dw 302 if the resulting well would produce 57,600 or more gallons in a 24-hour period.

(d) Prior to hydrofracturing or deepening a bedrock well, the supplier of water shall submit the following information to the department:

- (1) The name, mailing address, email address, and daytime phone number of the supplier of water and the supplier's authorized representative;
- (2) The name and PWS identifier of the CWS;
- (3) The source capacity requirements for the CWS established during design approval in accordance with Env-Dw 405;
- (4) A description of the well in relation to the 100-year flood plain and any measures, if applicable, to be taken to elevate the permanent well casing;
- (5) Whether the proposed well capacity will require a larger sanitary protective area under Env-Dw 305.10 and, if so, the measures proposed to be taken to achieve compliance with Env-Dw 305.10; and
- (6) A proposal for determining the sustainable yield of and water quality from the well after hydrofracturing or deepening.

(e) The department shall approve or deny a request to hydrofracture or deepen a small bedrock production well within 30 days of receiving a complete request.

(f) The department shall approve a request to hydrofracture or deepen an existing small bedrock production well only if:

- (1) The information submitted is complete and correct; and
- (2) The applicant demonstrates all of the following:
  - a. The project is necessary to meet approved source capacity and will not be used to expand the water system or for water use beyond the approved source capacity;
  - b. The well will not be subject to flooding at the 100-year recurrence interval; and
  - c. There is no contamination in the vicinity of the well that is likely to reach the well as a result of the hydrofracturing or deepening to recover lost yield from withdrawal.

(g) If the department denies a request to hydrofracture or deepen an existing small bedrock production well because the applicant fails to demonstrate conditions listed in (f), above, the applicant shall meet all requirements for new small production wells described in Env-Dw 305.05(a) prior to hydrofracturing or deepening the well.

(h) Upon hydrofracturing or deepening a small bedrock production well in accordance with the requirements of this section, the applicant shall:

- (1) Purge the well for a period of at least 6 hours at maximum capacity of the well, but not in excess of the capacity previously established or permitted for the well;
- (2) Record the water level and pumping rate at least once every hour during the purge test completed in accordance with (1), above;
- (3) After purging the well in accordance with (1), above, collect a water quality sample in accordance with Env-Dw 305.15(b)(3) through (5); and
- (4) Submit the water level, pumping rate and water quality laboratory results to the department within 60 days of hydrofracturing or deepening the well to demonstrate that acceptable water quality can be delivered by the well, provided that for parameters that exceed primary or secondary maximum contaminant levels under Env-Dw 702 through 706, treatment or other management techniques may be used if approved by the department in accordance with Env-Dw 405.

Env-Dw 305.34 When An Existing Small Production Well Can Be Replaced. A small CWS may proceed under Env-Dw 305.35 if:

- (a) A new well is needed to replace an existing small production well in order to:
  - (1) Regain lost well capacity and meet the source capacity requirements established in Env-Dw 405; or
  - (2) Meet current water quality requirements established in Env-Dw 702 through 706; and
- (b) The supplier of water submits information that demonstrates:
  - (1) The replacement well is needed because:
    - a. The yield from the existing small production well has declined below that needed to meet the water supply source capacity requirements of existing customers; or
    - b. Treatment to meet current drinking water standards is either not possible or not cost-effective;
  - (2) The replacement well will not be used to expand the CWS or to supply water above the approved or established capacity of the well to be replaced;
  - (3) The replacement well will be installed in the same aquifer as that of the well being replaced;
  - (4) The replacement well will meet all setback requirements specified in Env-Dw 305.09; and
  - (5) There is no contamination in the vicinity of the replacement well that is likely to reach the wellhead as a result of the change in the location of the well.

Env-Dw 305.35 Procedure and Criteria for Approval of Replacement Wells.

(a) A small CWS proposing to replace any active small production well shall submit a request to the department that contains the following information:

- (1) The name, mailing address, email address, and daytime telephone number of the supplier of water and the supplier's authorized representative;
- (2) The name and PWS identifier of the CWS;
- (3) The source capacity requirements for the system established during design approval in accordance with Env-Dw 405;
- (4) Such explanations and information as are needed to demonstrate that the criteria of Env-Dw 305.34(b) are met;
- (5) A site plan and description of all land uses in the sanitary protective area of the replacement well and any measures that need to be taken to achieve compliance with Env-Dw 305.10;
- (6) A current tax map showing property boundaries, well location, eased areas, sanitary protection area, and lot owners;
- (7) A description of the replacement well in relation to surface water, wetlands, and the 100-year flood zone and any department-approved measures, if applicable, taken to elevate the permanent well casing;
- (8) A plan for:
  - a. Conducting a constant rate pumping test of the replacement well for at least 24 hours at the previously-established permitted production volume of the well being replaced; and
  - b. Collecting a water quality sample in accordance with Env-Dw 305.15(b); and
- (9) A plan for sealing the well that is being replaced in accordance with We 600, provided that if the well will not or cannot be sealed, the applicant shall submit a water conservation plan in accordance with Env-Wq 2101.

(b) The department shall authorize the supplier of water to install the replacement well and conduct the pumping test and sample collection and analysis if the information submitted pursuant to (a), above, demonstrates that the replacement well is needed and is likely to meet the criteria for approving the replacement well.

(c) Subsequent to the pumping test and water sampling and analysis, the supplier of water shall submit the results of the pumping test, the laboratory results from the sample, and a copy of the well completion report filed in accordance with We 800 to the department.

(d) The department shall approve the replacement well for the previously-approved capacity of the well being replaced or the sustainable yield of the replacement well as tested, whichever is less, within 30 days of receiving all of the information required by (c), above, if:

- (1) The pumping test results demonstrate a sustainable yield for the replacement well and document the total drawdown at the end of the test;
- (2) The water quality laboratory results from the sample collected at the end of the pumping test demonstrate that acceptable water quality can be delivered by the well, provided that for parameters that exceed primary or secondary maximum contaminant levels under Env-Dw 702

through 706, treatment or other management techniques may be used if approved by the department in accordance with Env-Dw 405;

- (3) The requirements of (a)(10), above, have been met by:
  - a. A statement provided by a NH licensed water well contractor that:
    - 1. The existing well has been abandoned in accordance with We 600; or
    - 2. The well cannot be abandoned as required; and
  - b. If the well cannot be abandoned, a statement from the applicant that a water conservation plan developed in accordance with Env-Wq 2101 has been submitted and approved by the department;
- (4) The well completion report for the replacement well was prepared and filed in accordance with We 800; and
- (5) The applicant has documented that the sanitary protective area requirements established in Env-Dw 305.10 have been met, or improvements have been made to minimize the risk of contamination.

Env-Dw 305.36 Waivers. Any applicant or supplier of water who would be adversely impacted by the strict application of a rule in this part and who wishes to request a waiver of the rule shall do so as specified in Env-Dw 202.

**APPENDIX A: STATUTES IMPLEMENTED**

<b>Rule Section(s)</b>	<b>State Statute(s) Implemented</b>
Env-Dw 305.01 - Env-Dw 305.35	RSA 485:3, I(c), IX, & XII; RSA 485:8; RSA 485:48
Env-Dw 305.36	RSA 541-A:22, IV