



R.61-113, GROUNDWATER USE AND REPORTING

Effective June 23, 2006

(This regulation replaces and supercedes any former regulations)

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DISCLAIMER

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PREAMBLE

Pursuant to South Carolina Code Sections 49-5-10 (1976, as amended), the Department of Health and Environmental Control shall establish and implement an effective statewide groundwater management program. R.61-113 prescribes the procedures necessary for obtaining a permit to withdraw, obtain, or utilize groundwater and construct, maintain, and operate groundwater withdrawal wells within designated Capacity Use Areas. This regulation also establishes procedures to abate and/or control saltwater encroachment, and for measures to prevent or mitigate unreasonable adverse effects on water users or water uses within designated Capacity Use Areas.

Regulation History

Promulgated pursuant to South Carolina Code Section 49-5-10 et seq. (1976, as amended)

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R.61-113 Groundwater Use and Reporting

A. Purpose and Scope

Regulation 61-113, *et seq.* is promulgated pursuant to the Groundwater Use and Reporting Act, S.C. Code Ann. Sections 49-5-10 *et seq.* (1976 Code of Laws, as amended), and is known as the Groundwater Use and Reporting Regulation. The Department finds the standards and procedures prescribed are necessary to maintain, conserve and protect the groundwater resources of the State. Designation of capacity use areas shall be in accordance with the Groundwater Use and Reporting Act, S.C. Code Ann. Sections 49-5-60 (1976 Code of Laws, as amended).

B. Definitions

Unless the context otherwise requires, as used in this regulation:

1. “Abandoned well” means a well where the pump has been disconnected for reasons other than repair or replacement and whose use has been discontinued for a period of one year, or has been pronounced as abandoned by the owner or operator.
2. “Annular space” means the space between the well casing and the formation or the space between the outer casing and the inner casing in a well where two or more casings are used.
3. “Aquifer” means a geologic formation, group of these formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of groundwater to wells and springs.
4. “Aquifer storage and recovery (ASR)” means a water well which allows potable water to be injected into a subsurface aquifer to be recovered by pumping at a later date.
5. “Artificial filter or gravel-pack” means specially graded filter material that is placed in the annular space to increase the effective diameter of the well and to prevent fine-grained sediments from entering the well.
6. “Artificial-filter or gravel-packed well” means a screened well that is constructed with artificially emplaced filter material in the annular space between the well screen(s) and borehole wall.
7. “Available precipitation” for water use calculations means the annual average precipitation less annual average evapotranspiration.
8. “Bedrock” means the competent parent solid rock formation (crystalline, metamorphic, limestone) underlying weathered rock, soil, and sediments.
9. “Best Management Plan” means a document that supports the design, installation, maintenance, and management of water conveyance systems and/or water withdrawal systems (water supply, commercial, industrial, agricultural, etc.), which promotes water conservation, and protects water quality.
10. “Board” means the Board of the S.C. Department of Health and Environmental Control.

11. "Capacity Use Area" means an area, designated by the Board, where excessive groundwater withdrawal presents potential adverse effects to the natural resource or poses a threat to public health, safety, or economic welfare or where conditions pose a significant threat to the long-term integrity of a groundwater source, including saltwater intrusion.
12. "Certified Well Driller" means any person duly and currently registered by the S.C. Department of Labor, Licensing, and Regulation to practice as a well driller in South Carolina.
13. "Coastal Plain" means:
 - a. All of Aiken, Allendale, Bamberg, Barnwell, Beaufort, Berkeley, Calhoun, Charleston, Clarendon, Colleton, Darlington, Dillon, Dorchester, Florence, Georgetown, Hampton, Horry, Jasper, Lee, Marion, Marlboro, Orangeburg, Sumter, and Williamsburg counties; and
 - b. Those portions of Chesterfield, Edgefield, Kershaw, Lexington, Richland, and Saluda counties east or southeast of the fall line as identified on the best available geologic map.
14. "Cone of depression" means the deviation of the hydraulic gradient from the normal path of groundwater flow (potentiometric surface) converging towards a pumping well or system of wells.
15. "Confining bed" means a strata of relatively impermeable material having distinctly lower hydraulic conductivity stratigraphically adjacent to one or more aquifers.
16. "Consumptive use" means any use of withdrawn groundwater other than a non-consumptive use, as defined in this section.
17. "Department" means the S.C. Department of Health and Environmental Control, including personnel thereof authorized and empowered by the Board to act on behalf of the Department or Board.
18. "Dewatering operation" means an operation that is withdrawing groundwater from an aquifer for the purpose of draining an excavation or preventing or retarding groundwater flow into an excavation. This operation includes, but is not limited to, mining, water and sewer line construction, and excavating for a building foundation.
19. "Domestic well" means an individual residential or irrigation well intended to supply water to a single family dwelling for routine household purposes, lawns, or gardens.
20. "Drawdown" means the difference in levels between the static water level in a well and the surface of the depressed water level that occurs when the well is pumped.
21. "Effluent" means water conveyed out of a wastewater treatment facility or other works used for the purpose of treating, stabilizing, or holding wastewater.
22. "Emergency withdrawal" means the withdrawal of groundwater, for a period not exceeding thirty calendar days, for the purpose of fire fighting, hazardous substance or waste spill response, or both, or other emergency withdrawal of groundwater as determined by the Department.

23. “Evapotranspiration” means a collective term that includes water discharged to the atmosphere as a result of evaporation from the soil and surface water bodies and as a result of plant transpiration.
24. “Flowing well” means a well releasing groundwater under such pressure that pumping is not necessary to bring it above the ground surface.
25. “Geophysical log” means a continuous record from an instrument that measures physical, chemical, electrical, or radioactive properties of subsurface geological formations or groundwater contained in these formations.
26. “Groundwater” means subsurface water found in the void spaces of geologic materials within the zone of saturation.
27. “Groundwater withdrawal permit” means a permit issued by the Department to groundwater withdrawers in designated Capacity Use Areas for the withdrawal of groundwater.
28. “Groundwater withdrawer” means a person withdrawing groundwater in excess of three million gallons during any one month from a single well or from multiple wells under common ownership within a one-mile radius from any one existing or proposed well.
29. “Industrial Well” means a well used for supplying water to an industrial or commercial operation or establishment whose ultimate use of the water is for processing, manufacturing, cooling, or similar industrial process.
30. “Irrigation requirement” means the total amount of water required at the field to produce a specific crop or maintain a healthy, functional turf or landscape.
31. “Irrigation well” includes, but is not limited to, a well used for supplying water for agricultural, commercial or aesthetic irrigation, and livestock operations.
32. “Limestone” means a sedimentary formation composed chiefly of calcium carbonate, consolidated or unconsolidated, which may be in the form of shell pieces or calcareous muds or sands.
33. “Marl” means calcareous clays. In South Carolina, the term is mostly applied to the Cooper Marl of Eocene Age, characterized by its dark greenish drab to grayish green color.
34. “Non-consumptive use” means the use of water from an aquifer that is returned to the aquifer from which it was withdrawn, at or near the point from which it was withdrawn, without substantial diminution in quantity or quality.
35. “Permit to construct” means a permit for well construction issued by the Department after consideration of, among other things, proposed well location, depth, rated capacity, withdrawal rate, and existing water withdrawals.
36. “Permittee” means a person having obtained a permit to construct or a groundwater withdrawal permit issued in accordance with these regulations.

37. "Person" means an individual, firm, partnership, association, public or private institution, municipality or political subdivision, local, state, or federal government agency, department, or instrumentality, public water system, or a private or public corporation organized under the laws of this State or any other state or county.

38. "Public water system" means a water system as defined in the State Safe Drinking Water Act, S.C. Code Ann. Section 44-55-20 (1976 Code of Laws, as amended).

39. "Pumping water level" means the distance, usually measured in feet, from the land surface or other permanent specified datum to the water surface (water level) in a well being pumped.

40. "Rated capacity" means the amount, in gallons per minute (gpm), of groundwater that is withdrawn or capable of being withdrawn from the completed well with the pump installed.

41. "Saltwater" means water containing concentrations of chloride and total dissolved solids in excess of standards as defined in S.C. R.61-58, State Primary Drinking Water Regulation.

42. "Saltwater intrusion" means the movement of saltwater into a freshwater aquifer.

43. "Surface water" means all water that is open to the atmosphere and subject to surface runoff, which includes lakes, streams, ponds, and reservoirs.

44. "Static water level" means the distance, usually measured in feet, from the land surface or other permanent specified datum to the water surface (water level) in a non-pumping well.

45. "Well" means an excavation that is cored, bored, drilled, jetted, dug hole, driven shaft, or otherwise constructed whose depth is greater than the largest surface dimension from which water is extracted or injected for the purpose of locating, testing, or withdrawing groundwater or for evaluating, testing, developing, draining, or recharging a groundwater reservoir or aquifer, or that may control, divert, or otherwise cause the movement of groundwater from or into an aquifer. Wells typically fall into one of the following types of construction:

- a. Type I, open hole wells completed in crystalline bedrock aquifers;
- b. Type II, screened, natural filter wells completed in unconsolidated aquifers;
- c. Type III, screened, gravel-packed wells completed in unconsolidated aquifers;
- d. Type IV, open hole wells completed in consolidated limestone aquifers; and
- e. Type V, bored or dug well having large diameter.

46. "Well interference" means the instance where cones of depression from two or more wells overlap creating an additive drawdown in the affected area.

C. Applicability of Regulations

The standards contained herein apply to all persons who withdraw or are capable of withdrawing groundwater in excess of three million gallons in any given month from a well or multiple wells under common ownership within a one-mile radius from any one existing or

proposed well in South Carolina. These regulations do not change or modify previous Capacity Use Area designations.

D. Permits and Registrations Required

1. Before a groundwater withdrawer or proposed groundwater withdrawer in a designated capacity use area can construct a new well or increase the rated capacity of an existing well, an application for a permit to construct shall be made to, and a permit to construct obtained from, the Department unless exempt pursuant to Section J.
2. Before a person may become a groundwater withdrawer in a designated capacity use area, an application for a groundwater withdrawal permit shall be made to, and a groundwater withdrawal permit obtained from, the Department unless exempt pursuant to Section J.
3. Before a groundwater withdrawer or proposed groundwater withdrawer outside a designated capacity use area in the Coastal Plain can construct a new well or increase the rated capacity of an existing well, a Notice of Intent shall be made to the Department at least thirty days prior to initiating the action, unless exempt pursuant to Section J.
4. All groundwater withdrawers in the State shall register their groundwater withdrawal and subsequent use with the Department.
5. A groundwater withdrawer outside a designated capacity use area shall register all new wells with the Department within thirty days after initiating use of the wells.

E. Permit Application

1. A person who is required to obtain a Groundwater Withdrawal Permit for an existing or proposed groundwater withdrawal or use under Section D shall submit a permit application on forms, furnished upon request, by the Department. The applicant shall furnish the Department, as determined by the Department, with sufficient documented evidence as described in Section E to aid in evaluating the effect of the existing or proposed groundwater withdrawal or use on the water resources of the Capacity Use Area.
2. Sufficient documented evidence shall include, but not be limited to, the following:
 - a. Name, address, and phone number of applicant who shall be the owner and his applicable agent, professional engineer or professional geologist, as appropriate;
 - b. Location of all existing and/or proposed wells, properly identified, for which the permit is requested, marked on the best available map, which may be a portion or copy of a United States Geological Survey 7 ½ (seven and one-half) minute quadrangle map, latest county highway map, or more detailed map or aerial photography, where required by the Department, provided the map or aerial photography submitted is clearly identified;
 - c. The latitude and longitude of all wells, obtained from the location map or by acceptable Global Positioning System (GPS) instrumentation;
 - d. As-built construction details of all wells to include, but not limited to, the following;

1. Name of driller;
 2. Date of drilling;
 3. Total depth of well (in feet);
 4. Diameter of drilled hole;
 5. Diameter, depth, and type of casing;
 6. Depth (length) of grouting;
 7. Depth and diameter of well screen(s), if used, and the material, type, and diameter of screen openings;
 8. Type of pump, size (horsepower), and performance curves;
 9. Static water level and pumping water level; and
 10. Number of hours per day the well(s) is pumped.
- e. A completed SCDHEC Water Well Record or other approved form and driller's logs, if available;
 - f. Copy of geophysical/mechanical logs, if available;
 - g. The ground elevation of the well(s), if available;
 - h. The location of all abandoned or unused well(s) owned or under the control of the applicant;
 - i. The proposed amount of groundwater withdrawal (in million gallons) per year;
 - j. A "Best Management Plan" for water use and water conservation designed to protect water quality and reduce water consumption to include, but not limited to, the following, as applicable;
 1. Reasonable and appropriate conservation techniques, application processes, and alternate sources of water, including but not limited to, surface water(s) and/or availability of treated effluent, to minimize or eliminate groundwater sources;
 2. Based on the current and/or proposed withdrawal rates, provide reasonable and appropriate documentation that the proposed water use is necessary to the anticipated needs of the applicant to include, but not limited to, the following;
 - a. Public Water Supply- by system, population served, anticipated growth, annual water use statistics (e.g., monthly average, peak summer/winter consumption);

- b. Industrial Water Supply- by industry type, anticipated growth, and annual water use statistics (e.g., monthly average, peak summer/winter consumption);
 - c. Irrigation Water Supply- irrigated acreage, major crops (with irrigated acreage for each crop), water use by crop (per acre), calculated irrigation requirement (including available precipitation), critical period growth requirements, growing season, and nutrient and pest management strategy;
 - d. Golf Course Irrigation Water Supply- irrigated acreage (differentiating actual golf course areas and aesthetic landscaping), water use per acre, calculated irrigation requirement (including available precipitation), annual water use statistics (e.g., monthly average, peak summer/winter consumption), and nutrient and pest management strategy;
 - e. Aquaculture Water Supply- pond capacity (acre-feet), make-up water requirement, drain-fill periodicity, (e.g., monthly average, peak summer/winter consumption).
- 3. Maintenance schedule to preserve the integrity and efficient operation of water conveyance system(s); and
 - 4. A statement specifying the beneficial use of the groundwater being withdrawn as necessary to meet the reasonable needs of the applicant.
- k. Historical water use information;
 - l. Availability of alternate water sources;
 - m. Any present or anticipated unreasonable adverse or potential adverse effects on other water uses or users, including, but not limited to, adverse effects on public use; and
 - n. Permitted effluent discharges in accordance with a valid NPDES Discharge Permit.
- 3. In addition to the information required under Section E.2. above, applicants proposing new well construction or increasing the rated capacity of an existing well or wells shall provide proposed well construction details and technical specifications or pump specifications, including, but not limited to, the following:
 - a. Name of driller, if known;
 - b. Date of drilling, if known;
 - c. Total depth of well (in feet);
 - d. Diameter of drilled hole;

- e. Diameter, depth, and type of casing;
 - f. Depth of grouting – the minimum length of grout to protect the aquifer utilized, unless demonstrated that an alternate grout length is as protective, shall be;
 - 1. Type II and III, the first confining bed (clay, marl, etc.) immediately above the aquifer being utilized or to within ten (10) feet of the uppermost screen when no confining bed is encountered;
 - 2. Type IV, twenty (20) feet into firm limestone or firm marl, whichever is less.
 - g. Depth and diameter of the open hole or well screen(s), if used, and the material, type, and diameter of screen openings. The open hole or screen setting(s) shall not connect aquifers or zones with documented differences in water quality or result in or create the potential for contamination of any aquifer or zone or cause depletion or significant loss of head in any aquifer or zone;
 - h. Type of pump, size (horsepower), and performance curves;
 - i. Deep well airline of steel, iron, or heavy gauge copper material, or an access port not less than one-half inch in diameter, with screw cap for water-level measurements; and
 - j. Filling, plugging, and sealing procedures for any well(s) that are to be abandoned in accordance with Section N.
4. In addition to the information and standards required under Section E.2 and Section E.3 above, applicants proposing new well construction must comply with requirements established in S.C. R.61-44, South Carolina Individual Residential Well & Irrigation Permitting, and, at a minimum, comply with the S.C. R.61-71, South Carolina Well Standards, as appropriate.
- F. Department Actions on Permit Applications, Modifications, Revocation and Denials
- 1. In considering all permit applications, modifications, and revocations, the Department shall consider, but not be limited to, the following:
 - a. The number of persons using an aquifer and the object, extent, and necessity of their respective withdrawals or uses;
 - b. The nature and size of the aquifer;
 - c. The physical and chemical nature of any impairment of the aquifer adversely affecting its availability or viability for other water uses, including public use;
 - d. The severity and duration of such impairment under foreseeable conditions;
 - e. The injury to public health, safety, or welfare which may result if such impairment were not prevented or abated;
 - f. The kinds of businesses or activities to which the various uses are related;

- g. The relative importance and necessity of uses claimed by permit holders and permit applicants, or of the water use of the area, and the extent of injury or detriment caused or reasonably expected to be caused to other water uses, including public use;
 - h. Diversion from or reduction of flows in surface water or other aquifers;
 - i. Information provided by the applicant in accordance with Section E;
 - j. An approved local or regional Groundwater Management Strategy; and
 - k. Any other relevant factors, such as, but not limited to, public comments and best available geologic and hydrologic information on the aquifer or aquifers of the area.
2. In each case where an applicant for a Groundwater Withdrawal Permit demonstrates to the Department's satisfaction that the groundwater withdrawal is reasonable and necessary to meet the applicant's requirements and where there are no unreasonable adverse effects on other water users, including public use, and including potential as well as current use, a Groundwater Withdrawal Permit may be issued by the Department and contain, but not be limited to, the following conditions:
- a. Amount of groundwater to be withdrawn or used;
 - b. Well(s) to be utilized;
 - c. Aquifer(s) to be utilized;
 - d. Well spacing to minimize well interference; and
 - e. Monitoring well(s) to be installed for monitoring groundwater levels and water quality.
3. Groundwater withdrawn under any permit shall be used only for the purposes set forth in the permit.
4. The Department may grant a temporary Groundwater Withdrawal Permit for up to one hundred eighty days or until a final decision is made on the application if an imminent hazard to public health exists or if an applicant demonstrates that physical or financial damage has occurred, or will occur, if a temporary permit is not granted. The issuance of a temporary permit does not guarantee the issuance of a final Groundwater Withdrawal Permit.
5. The Department may:
- a. Revoke a construction permit or a Groundwater Withdrawal Permit if it determines information in the permit application is false or misleading, the permittee fails to comply with the conditions set forth in the permit, or when there is found to be an unreasonable adverse effect upon the water uses or water users in the area, including public use, and including potential as well as current use, based upon considerations set forth in Section F;

- b. Deny a permit if the application therefore or the effect of the water use proposed or described therein upon the water resources of the area is found to be contrary to the public interest or general welfare, based upon considerations in Section F; and
 - c. Revoke a temporary Groundwater Withdrawal Permit if the permittee fails to comply with the conditions of the temporary permit or provide timely response to requests for actions for information made pursuant to the application review.
6. The Department's denial or revocation of any permit shall be final unless a request for a contested case hearing is filed in accordance with the Administrative Procedures Act and the Rules of the Administrative Law Court.
7. A Groundwater Withdrawal Permit shall not be transferred to any other person or user except by modification of the permit in accordance with Section G.
8. Public notices shall be required for an:
 - a. Initial application for a Groundwater Withdrawal Permit in an existing capacity use area;
 - b. Application to modify an existing Groundwater Withdrawal Permit where an increase in the permitted withdrawal limit is requested;
 - c. Application to modify an existing Groundwater Withdrawal Permit where construction of a new well or wells, with concurrent increase in the permitted withdrawal limit, is requested; and
 - d. Application to renew an existing Groundwater Withdrawal Permit, where no increase in the permitted withdrawal limit is requested, only if the Department determines there is sufficient public interest on the proposed groundwater withdrawal.
9. Wording for public notices will be provided to the applicant by the Department and shall contain, but not be limited to, the following:
 - a. Applicant's name and mailing address;
 - b. Location of the well or wells;
 - c. Aquifers to be utilized;
 - d. Proposed withdrawal limit(s); and
 - e. Notice of thirty day comment period.
10. The applicant will publish the public notice, for one day, in a newspaper of general circulation in the area of the proposed withdrawal.
11. The applicant will provide an affidavit of publication from the newspaper to the Department within fifteen days of initial publication and a copy of the published notice.

12. The Department will notify currently permitted groundwater withdrawers of newly proposed groundwater withdrawal within a one-mile radius of the proposed well location. This notification will be provided at least thirty days prior to issuance of the final permit.

G. Permit Modifications

1. An application to modify a Groundwater Withdrawal Permit shall be required when:
 - a. The permittee desires to increase the permitted groundwater withdrawal limit;
 - b. The permittee desires to increase the rated capacity of a well or wells;
 - c. The permittee desires to construct a new well, unless exempt pursuant to Section J; or
 - d. There is a proposed change or transfer of ownership of the permitted entity.
2. Applications to modify a Groundwater Withdrawal Permit shall be made in compliance with the provisions in Section E. The Department may modify a permit after consideration of factors pursuant to Section F. If the Department determines that no modification will be granted, this determination shall be final unless a request for a contested case hearing is filed in accordance with the Administrative Procedures Act and the Rules of the Administrative Law Court.

H. Duration of Permits and Renewal

1. No permit shall be issued for a period longer than the following:
 - a. Five (5) years;
 - b. The period found by the Department necessary to conserve and protect the resource, prevent waste, and to provide and maintain conditions which are conducive to the development and use of water resources; or
 - c. The temporary period as specified in Section F.
2. A Groundwater Withdrawal Permit shall be renewed by filing a completed application in compliance with Section E at least ninety days prior to its expiration. A Groundwater Withdrawal Permit that expires, with a completed application in compliance with Section E received by the Department at least ninety days prior to the expiration date, will continue to be valid until a decision is reached on the permit renewal application.

I. Groundwater Use Reports

1. Every permitted and registered groundwater withdrawer in the State shall annually, before January 30th, file with the Department a water use report on forms furnished by the Department or approved by the Department of the quantities of groundwater withdrawn. Failure to provide a groundwater use report is grounds for revocation of a permit.
2. Water use reports shall include, but not be limited to, the following:

- a. Name of permit holder and permit number;
 - b. Use of the groundwater being withdrawn;
 - c. Source of groundwater, identifying the well or wells utilized;
 - d. Monthly quantity of water withdrawn from each well; and
 - e. How the withdrawal was measured.
3. The quantity of groundwater withdrawn must be determined by one of the following:
- a. Flow meters accurate to within ten percent of calibration;
 - b. Rated capacity of the pump in conjunction with the use of an hour meter, electric meter, or log;
 - c. The rated capacity of a cooling system;
 - d. Any standard or method employed by the United States Geological Survey in determining such quantities; or
 - e. Any other method approved by the Department, which will provide reliable groundwater withdrawal data.
4. The groundwater withdrawer is not required to submit the groundwater withdrawal report required by Section I if the monthly quantity withdrawn from each well is being reported to the Department as a result of another environmental program reporting requirement, permit condition, or consent agreement.

J. Exemptions

1. The following are exempt from this regulation:
 - a. Emergency withdrawal of groundwater;
 - b. Any person withdrawing groundwater for non-consumptive uses;
 - c. A person withdrawing groundwater for the sole purpose of wildlife habitat management; or
 - d. A person withdrawing groundwater at a single-family residence or household for noncommercial use.
2. The following are exempt from the permitting of Section D and public notification requirements of Section F:
 - a. Dewatering operations at mines;
 - b. All other dewatering operations;

- c. Type I wells installed into crystalline bedrock in a designated capacity use area;
or
 - d. Groundwater withdrawer constructing a new well to replace an existing well with no increase in capacity or withdrawal amount.
3. Aquifer Storage and Recovery (ASR) wells are exempt from the requirements of this regulation if:
- a. A permit pursuant to S.C. R.61-87, Underground Injection Control Regulations, is obtained from the Department; and
 - b. The amount of water withdrawn does not exceed the amount of water injected.

K. Saltwater Intrusion

- 1. To protect against or abate saltwater intrusion, the Department shall consider the best available information on the geologic and hydrologic characteristics of the aquifer or aquifers and the groundwater withdrawals of the area, and shall require water users to take such action as the Department deems necessary for its control.
- 2. Types of control measures the Department may require applicants, permit holders, and groundwater withdrawers to take may include, but not be limited to, the following:
 - a. Pumping arrangements to reduce groundwater withdrawal in areas of concentrated pumping;
 - b. Location of wells to eliminate or reduce groundwater withdrawals near zones of saltwater intrusion;
 - c. Requirement of selective withdrawal from other available freshwater aquifers than those currently used;
 - d. Selective curtailment or reduction of groundwater withdrawals where it is found to be in the public interest or general welfare or to protect the water resource;
 - e. Conjunctive use of freshwater or saltwater aquifers, or waters of less desirable quality where water quality of a specific character is not essential;
 - f. Construction and use of observation or monitor wells, drilled into freshwater aquifers between areas of groundwater withdrawal (or proposed areas of groundwater withdrawal) and sources of saltwater;
 - g. Construction and use of wells, drilled into areas of intrusion, to intercept saltwater moving towards the center of excessive groundwater withdrawal;
 - h. Construction and use of wells, drilled into the saltwater aquifer, to relieve hydraulic pressure causing saltwater intrusion in the aquifer;

- i. Abandonment of wells, in accordance with Section N, that have penetrated saltwater zones or zones of undesirable water quality and are determined by the Department to be causing contamination of freshwater aquifers;
 - j. Prohibiting the hydraulic connection of saltwater and freshwater aquifers that could result in deterioration of water quality in a freshwater aquifer(s);
 - k. Abandonment of wells, not covered under Section K.2.i., in accordance with Section N; and
 - l. Such other necessary and appropriate control or abatement techniques as are technically feasible and have proven to be successful in other areas.
- L. Unreasonable Adverse Effects on Other Water Users
- 1. To protect against or abate unreasonable adverse or potential unreasonable adverse effects on other water users within a designated capacity use area, including but not limited to adverse effects on public use, the Department shall consider the best available information on the geologic and hydrologic characteristics of the aquifer or aquifers and the groundwater withdrawals of the area, and shall require groundwater users to take such action as the Department deems necessary and appropriate for its control.
 - 2. Types of control measures which the Department may require applicants, permit holders, and groundwater withdrawers to take may include, but not be limited to, the following:
 - a. Requirement of selective withdrawal from other available freshwater aquifers than those currently used;
 - b. Pumping arrangements to reduce groundwater withdrawal in areas of concentrated pumping;
 - c. Selective curtailment or reduction of groundwater withdrawals where it is found to be in the public interest or general welfare or to protect the water resource;
 - d. Conjunctive use of aquifers, or waters of less desirable quality where water quality of a specific character is not essential;
 - e. Construction and use of observation or monitor wells;
 - f. Abandonment of wells, in accordance with Section N, that have penetrated zones of undesirable water quality where such wells are determined by the Department to be causing contamination of freshwater aquifers;
 - g. Prohibiting the hydraulic connection of aquifers that could result in deterioration of water quality in a freshwater aquifer(s);
 - h. Abandonment of wells, not covered under Section L.2.f., in accordance with Section N below;
 - i. Require the applicants, permit holders, and groundwater withdrawers to cooperate with the Department and other groundwater users in the affected area, in

determining and implementing reasonable and practical methods to conserve and protect the water resources and to avoid or minimize adverse effects of the quantity and quality of water available to persons whose water supply has been materially reduced or impaired as a result of groundwater withdrawals; and

j. Such other necessary and appropriate control or abatement techniques as are technically feasible and have proven to be successful in other areas.

M. Hydrologic and Geologic Information

1. The Department may gather and/or require the submission of hydrologic and geologic information on the aquifer or aquifers in and adjacent to a designated capacity use area for the purpose of evaluating and managing the groundwater resource.

2. Required information may include, but not be limited to, the following:

- a. Surface and/or subsurface geologic mapping;
- b. Areas of groundwater recharge and amount of recharge;
- c. Drilled well cuttings and/or drilled well cores;
- d. Geophysical logs;
- e. Pumping test to establish hydraulic characteristics of an aquifer(s);
- f. Static and pumping water levels of wells;
- g. Groundwater availability and flow;
- h. Water quality analyses;
- i. Amount of groundwater withdrawal from the aquifer(s); and
- j. Drill test, monitor or observation wells.

3. All persons who are required to obtain a Groundwater Withdrawal Permit under this regulation shall furnish the Department such additional geologic and hydrologic information and well construction data as the Department requires which may include, but not be limited to, the following:

- a. Collection of drill cuttings at ten foot intervals and/or at lithological changes of the stratigraphy, showing depth, in feet, below ground surface, at which the cuttings were collected;
- b. Geophysical logs, where the Department finds additional information on the geology, hydrology or well construction is required;
- c. Data on all water bearing zones encountered;
- d. Drill stem or packer tests;

- e. Pumping test data;
- f. Water quality analyses; and
- g. Completed DHEC Water Well Record or other approved reporting form.

4. Any person drilling a test or exploration well for the purpose of obtaining geologic and/or hydrologic information on water or mineral resources in a designated capacity use area shall apply for a permit to construct in accordance with Section E from the Department to drill such well and shall submit to the Department the information identified in this Section; provided that no person shall be required to disclose any secret formula, process or methods used in any manufacturing operation or any confidential information concerning business activities carried on by him or under his supervision; provided, however, if the information is necessary for the Department to make a determination on a permit application or modification, the Department may deny such permit on the grounds that the applicant failed to provide the necessary information. In addition to the information required under Section E the following information shall be submitted on forms provided by or approved by the Department prior to the drilling of a test, exploration, or observation well:

- a. Name and address of applicant who shall be the owner and his applicable agent, professional engineer, or professional geologist, as appropriate;
- b. Intended purpose of the well(s);
- c. Name and address of owner(s) of property on which the proposed test, exploration, or observation well(s) is to be located;
- d. Proposed location(s) of all test, exploration, or observation well(s), identified by number, for which the permit is requested, marked on the best available map;
- e. Proposed depth(s) of all test, exploration, or observation well(s), the diameter(s), and proposed method of drilling and construction;
- f. Type of casing, screen, and other materials to be used in construction of the well(s);
- g. Type of borehole logs, including geophysical logs, to be run on the well(s); and
- h. Proposed method of abandonment.

5. Upon completion of the test, exploration, or observation well(s) the following information shall be submitted to the Department:

- a. A completed SCDHEC Water Well Record or other approved form;
- b. As-built construction diagram of the completed well, showing hole sizes and depths, casing sizes, and screen (if applicable), grout location, and construction materials;
- c. Elevation data;

- d. Aquifer test or pumping test data;
 - e. Driller's log, geologist's or engineer's log;
 - f. Geophysical logs; and
 - g. Method of abandonment (if applicable).
6. All test, exploratory, and observation well(s) drilled and not developed for groundwater withdrawal shall be filled, plugged, and sealed in accordance with Section N.
7. Wells without pumps which are declared not to be abandoned shall be fitted with a secure cap when they are not being used as observation wells or for other purposes.

N. Abandoned Wells

1. Where the Department finds any existing well(s) of groundwater withdrawers or any test, exploratory, or observation well(s) have been abandoned and are no longer put to beneficial use and which are deemed by the Department to have an unreasonable adverse or potential unreasonable adverse effect on other water users or uses, or which result, or may result, in physical or chemical impairment of the aquifer(s), shall require the well owner to fill, plug, and seal the well in a manner acceptable to and approved by the Department.
2. Where the Department finds an abandoned well to be a contributor, or may in the future become a contributor to saltwater intrusion or contamination or to be having an unreasonable adverse impact on groundwater users or freshwater aquifers, shall require the well owner to fill, plug, and seal the well in a manner acceptable to and approved by the Department.
3. Upon completion of abandonment the well owner or his agent shall submit a completed SCDHEC Water Well Record or other approved form to the Department.

O. Wells Not Requiring Pumps

Wells that are flowing by releasing groundwater under such pressure that pumping is not necessary to bring it above the ground surface at a rate of greater than five thousand gallons a day at any time are an unreasonable use of groundwater constituting waste and are prohibited, except that the water from these wells may be utilized to the extent actually necessary for a specific use. These wells must be fitted with a mechanism to restrict the flow of water if the flow is in excess of that necessary for the specific use. The Department may promulgate additional regulations to govern use of these wells in this State.

P. Severability

In the event that any portion of these regulations is construed by a court of competent jurisdiction to be invalid, or otherwise unenforceable, such determination shall in no manner affect the remaining portions of these regulations, and they shall remain in effect, as if such invalid portions were not originally a part of these regulations.