

**REGULATIONS GOVERNING CONSTRUCTION
REPAIR AND ABANDONMENT OF WELLS IN
HALIFAX COUNTY, NORTH CAROLINA**

SECTION I - GENERAL PROVISIONS

(a) Authorization - The Halifax County Board of Health is authorized under the provisions of Chapter 130A, Section 39, of the General Statutes of North Carolina to adopt appropriate rules and regulations for the protection of public health.

(b) Purpose - Consistent with the responsibility to protect and advance the public health, it is declared to be the policy of the Halifax County Board of Health to require that the location, construction, repair and abandonment of water supply wells conform to such reasonable standards and requirements as may be necessary to protect the public health and ground water sources.

(c) Scope - No person shall construct, repair, or abandon, or cause to be constructed, repaired, or abandoned any well contrary to the provisions of these regulations and standards. Previously adopted procedures and requirements of the Halifax County Health Department are superseded by these regulations and standards.

(d) Conflict with Other Laws and Regulations - The provisions of any federal, state, or municipal law or regulation establishing standards affording greater protection to the public welfare, safety, health and the ground water resources shall prevail within the jurisdiction of such agency or municipality over standards established by these regulations.

(e) Penalties - Any person who willfully violates any provision of these regulations or any order issued pursuant thereto, shall be guilty of a misdemeanor punishable by a fine in the discretion of the court or imprisonment not to exceed two (2) years or both as provided by G.S. 14.3 and G.S. 130A-25. As provided by G.S. 130A-18, the Health Director may also institute an action in the Halifax County Superior Court for injunctive relief. All other remedies provided by state law, including part 2 of Article 1 of Chapter 130A of the North Carolina General Statutes shall be available to the Health Director.

(f) Inspection - Before being used to supply water for human consumption, all newly constructed wells shall be inspected and found to comply with the provisions of these regulations. Any repairs to a well which necessitate breaking the well's seal, shall be inspected by the Health Director before use. The Health Director shall make these inspections as soon as practicable after he receives notice that an installation or repair has been made.

Emergency repairs that are made outside normal working hours of the Health Director, i.e., nights, weekends, and holidays, shall be inspected on the next regular working day of the Health Department or

as soon as practicable thereafter.

(g) Appeals - Any person aggrieved by any action of the Health Department Representative with regard to wells shall first confer with the local Health Director who may affirm or reverse the original decision of the representative. If the person is dissatisfied with the Health Director's decision, he shall give written notice of appeal to the Health Director within thirty (30) days after the decision of the Health Director. The notice of appeal shall set forth the person's grievances. Upon receiving this notice the Health Director shall, within five (5) working days, transmit to the Chairman of the Board of Health the notice and all other pertinent papers. The board shall hold a hearing within fifteen (15) days after it receives the notice of appeal. The Board shall give the appellant no less than ten days notice of the date, time and place of the hearing. Any party may appear in person or by agent or attorney. No person shall take any action prohibited by the Health Department until there is a final resolution of the grievance. On appeal the Board of Health shall issue a concise written decision setting forth its reasons with all deliberate speed after the hearing.

SECTION II - DEFINITIONS

(a) Access port means an opening in the well casing or well head installed for the primary purpose of determining the water level in the well.

(b) Agent means any person who by mutual and legal agreement with a well owner has authority to act in his behalf in executing applications for permits. The agent authorized may be either a general agent or a limited agent to do one particular act.

(c) Aquifer means a geological formation, group of formations, or part of a formation that will yield usable quantities of water to wells.

(d) Board of Health means the Halifax County Board or its official representatives.

(e) Casing means pipe or tubing constructed of specified materials and having specified dimensions and weights, that is installed in a borehole, during or after completion of the borehole, to support the side of the hole and thereby prevent caving to allow completion of a well, to prevent formation material from entering the well, to prevent the loss of drilling fluids into permeable formations, and/or prevent entry of undesirable water.

(f) Consolidated Rock means rock that is firm and coherent, solidified, or cemented and that has not been decomposed by weathering. Examples are granite, gneiss, argillite, slate or sandstone.

(g) Construction of Wells includes all acts necessary to construct wells for any intended use, including the location and excavation of the well, placement of casings, grouting, screens and fittings development and testing.

(h) Contamination means the introduction into water of foreign materials of such nature, quality and quantity as to cause degradation of the quality of the water.

(i) Domestic Use means use of water for drinking, bathing, household purposes, livestock or gardens.

(j) Grout shall mean and include the following:

(1) Neat cement grout means a mixture of not more than six gallons of clear non-polluted water to one 94 pound bag of portland cement.

(2) Sand cement grout means a mixture of not more than two parts sand and one part cement and not more than six gallons of clear non-polluted water per 94 pound bag of portland cement.

(3) Concrete grout means a mixture of not more than two parts gravel to one part cement and not more than six gallons of clear non-polluted water per 94 pound bag of portland cement. One hundred percent of the gravel must pass through a one-half inch mesh screen.

(4) Gravel, sand cement grout or rock cutting cement grout means a mixture of not more than two parts gravel and sand or rock cuttings to one part cement and not more than six gallons of clear non-polluted water per 94 pound bag of portland cement.

(k) Health Department means the Halifax County Health Department.

(l) Health Director means the Director of the Halifax County Health Department or his authorized representative.

(m) Installing Pumps, and Pumping Equipment means placing and preparing pumps and pumping equipment for operation, including all construction involved in making entrances to the well and establishing seals.

(n) Liner Pipe means pipe that is installed inside a complete and cased well for the purposes of sealing off undesirable water or for repairing ruptured or punctured casing or screens.

(o) Monitoring well means any well constructed for the primary purpose of obtaining samples of groundwater or other liquids for examination or testing, or for the observation or measurement of groundwater levels. This definition excludes lysimeters, tensiometers, and other devices used to investigate the characteristics of the unsaturated zone.

(p) Non-Potable Mineralized Water means brackish, saline or other water containing minerals of such quantity or type as to render the water unsafe, harmful, or generally unsuitable for domestic use.

(q) Owner means any person who holds the fee or other ownership rights in the well being constructed. A well is real property and its construction on land creates a presumption that the owner of the land also owns the well.

(r) Permit means a written permit issued by the Health Director permitting the construction or repair of any well as defined in this ordinance.

(s) Person means any and all persons; including individuals, firms, partnerships, associations, public or private institutions, municipalities or political subdivisions, governmental agencies, or private or public corporations organized or existing under the laws of this state or of any other state or country.

(t) Polluted Water means water containing organic or other contaminants of such type and quantity as to render it unsafe, harmful or unsuitable for human consumption.

(u) Private Well Water Supply means any water supply furnishing potable water to one residence or an owner occupied business except where either might furnish water to persons on a regular basis who are not members of the household or immediate family. One residence includes cases of multiple residences of members of the same family on family owned land.

(v) Public Water System means a water system as defined in 15A NCAC 18C .0702 (Rules Governing Public Water Supplies).

(w) Pumps and Pumping Equipment means the well seal and any other equipment or materials used or intended to be used for withdrawing or obtaining groundwater.

(x) Repair means work involved in deepening or changing depths, reaming, sealing, installing, perforating, screening or cleaning, acidizing or redeveloping a well excavation or any other work which results in breaking or opening the well seal. This shall not apply to routine pump maintenance or replacement, however, routine pump maintenance or replacement shall be followed by disinfection of the water system and proper replacement of the seal.

(y) Semi-public Water Supply means a water supply that serves water for the purpose of human consumption from two to fourteen (2-14) service connections that does not meet the definitions for a public water system.

(z) Site means the land or water area where any facility, activity, or situation is physically located, including adjacent or nearby land use in connection with the facility, activity or situation.

(aa) Specific Capacity means the yield of the well expressed in gallons per draw-down of the water level (gpm/ft-dd).

(bb) Static Level means the level at which the water stands in the well when the well is not being pumped and is expressed as the distance from a fixed reference point to the water level in the well.

(cc) Types of Wells:

(1) The Drilled Well. Constructed by percussion or rotary methods; may be found in depths up to 1000 feet. Due to the greater depths associated with drilled wells, they offer generally more protection to ground water.

(2) The Bored Well. Constructed by means of an auger; found in depths up to 100 feet.

(3) The Driven Well. Constructed by driving well points and pipe from the surface into a water bearing stratum; found in depths up to 50 feet.

(4) The Jetted Well. Construction by "washing in" or "jetting in" well points with water pressure; may be found in depths up to 150 feet.

(5) The Dug Well. Constructed with a pick and shovel; found in depths up to 50 feet. The dug well, due to its shallow depth and large diameter, is difficult to protect from outside contamination. The dug well is the least desirable well type for furnishing high quality potable water.

(dd) Unconsolidated Rock means those rock formations that are not solid i.e., sand, clay, shell, saprolite or decaying rock.

(ee) Water Supply means any source of ground water.

(ff) Water Supply System means pump and pipe used in connection with or pertaining to the operation of a water supply, including pumps, pipes, pressure tanks and fittings.

(gg) Well means any excavation:

(1) that is cored, bored, drilled, dug or otherwise constructed for the purpose of locating, testing, or withdrawing ground water;

(2) constructed for evaluating, testing, developing, draining, or recharging any ground water-reservoirs, or aquifers, or;

(3) that may control, divert, or otherwise cause the movement of water from or into any aquifer.

(hh) Well Capacity means the maximum quantity of water that well will yield continuously.

(ii) Well Driller, Driller, or Water-Well Contractor means any person, firm, or corporation engaged in the business of constructing wells.

(jj) Well Head means the upper terminal of the well including adapters, ports, valves, seals, and other attachments.

(kk) Well Seal means an approved arrangement or device used to cap a well or to establish and maintain a junction between the casing or curbing of a well and the piping or equipment installed therein, the purpose of function of which is to prevent pollutants from entering the well at the upper terminal.

SECTION III - WELL DRILLER REGISTRATION

(a) Every person, firm or corporation engaged in the business of using power machinery to drill, bore, core, or construct wells in Halifax County shall register annually with the Health Department.

(b) Registration shall be accomplished during the period from January 1 to January 31 of each year, or such other time the Health Department may determine.

(c) Registration shall be accomplished by completing and submitting to the Health Department a registration application form provided by the Health Department for this purpose.

(d) Upon submitting a properly completed application form, the applicant will be issued a certificate of registration.

SECTION IV - PERMITS

(a) It shall be unlawful for any person to construct or repair a well in Halifax County without first obtaining a permit from the Health Director. The permit shall be obtained by the well owner or his authorized agent. Unless otherwise specified in writing by the Health Department, permits shall become invalid twelve months from the date of issue if the construction has not been completed during that time period. When a permit has become invalid, the installation shall not be commenced or completed until a new permit has been obtained.

(b) The location of any private well water supply in Halifax County shall be approved by the Health Director before any construction activity on the lot is begun. Any site for a public well water supply shall be approved by any authorized representative of the Division of Health Services.

(c) No person shall allow permanent electrical service to a residence, place of business or place of public assembly upon construction, location, or relocation, until the official electrical inspector with jurisdiction as provided in G.S. 143-143.2 certifies to the electrical supplier that the required Well Completion has been obtained. Replacement wells are exempt from the above provision. Replacement wells must meet all other provisions of these regulations.

(d) The well contractor shall not commence any drilling activity until the permit has been obtained.

(e) The Health Director is authorized to revoke any permits issued pursuant to these regulations upon the determination that these regulations are not being fully complied with.

(f) No residence, place of business, or place of public assembly shall be occupied, nor shall any well defined in these regulations be placed into use until the Halifax County Health Department has determined by inspection that the water supply well is in compliance with these regulations, and all conditions prescribed by the Well Permit have been met.

(g) Unless otherwise specified in writing by the Halifax County Health Department, permits shall become invalid after twelve (12) months from the date of issue if the construction has not been completed during that time period. When a permit has become invalid, the installation shall not be commenced or completed until a new permit has been obtained.

(h) It shall be unlawful for any person to locate, construct, or repair any of the following wells in Halifax County without a permit issued by the Halifax County Health Department:

(1) Any water well or well system intended for private or semi-public domestic use.

(2) Any well added to an existing system intended for private or semi-public domestic use.

(3) Any well with a design deviation from the standards set forth herein.

(4) Any monitoring wells.

(i) The fee for a new well permit shall be established by the Board of Health and approved by the Board of County Commissioners and is payable to the Halifax County Health Department at the time the permit application is submitted. Fee includes the permit, location approval, necessary inspections, and the collection and bacteriological analysis of an official sample upon completion of the well and water supply system after chlorination.

(j) It shall be the responsibility of the well owner or his agent to see that a permit is secured prior to the construction or repair of any well for which a permit is required.

SECTION V - STANDARDS OF CONSTRUCTION

(a) Location

(1) The well shall not be located in an area generally subject to flooding. Areas which have a propensity for flooding include those with concave slope, gullies, depressions, and drainage ways.

(2) The minimum horizontal separation between a well intended for a single-family residence or other non-public water system and potential of groundwater contamination shall be as follows unless otherwise specified. These distances in no way guarantee protection from contamination in all circumstances.

- (A) Any septic tank and drain field. 100 ft.
- (B) Other subsurface ground absorption waste disposal system. 100 ft.
- (C) Industrial or municipal sludge-spreading or wastewater-irrigation sites. 100 ft.
- (D) Water-tight sewage or liquid-waste collection or transfer facility 50 ft.
- (E) Other sewage and liquid-waste collection or transfer facility. 100 ft.
- (F) Cesspools and privies. 100 ft.
- (G) Animal feedlots or manure piles. 100 ft.
- (H) Fertilizer, pesticide, herbicide or other chemical storage areas 100 ft.
- (I) Non-hazardous waste storage, treatment, or disposal lagoons 100 ft.
- (J) Sanitary landfills 500 ft.
- (K) Other non-hazardous solid waste landfills. 100 ft.
- (L) Animal barns or mortality burial sites . . 100 ft.
- (M) Building Foundations 50 ft.

- (N) Surface water bodies 50 ft.
- (O) Chemical or petroleum fuel underground storage regulated under 15A NCAC 2N:
 - (i) with secondary containment. 50 ft.
 - (ii) without secondary containment100 ft.
- (P) All other known sources of groundwater contamination.100 ft.

(3) For a private well water supply serving a single-family dwelling where lot size or other fixed conditions preclude the separation distances specified in Subparagraph (a) (2) of this Rule, the required separation distances may be reduced to the maximum possible but in no case less than the following:

- (A) Any septic tank and drain field. 50 ft.
- (B) Water-tight sewage or liquid-waste collection or transfer facility 25 ft.
- (C) Building foundations 25 ft.
- (D) Cesspool or privies. 50 ft.

(4) A well or well system serving more than one single-family dwelling but with a designed capacity of less than 100,000 gpd must meet the separation requirements specified in Subparagraph (a) (2) OF this Rule;

(b) Source of Water

(1) The source of water for any well intended for domestic use shall be from a water-bearing zone or aquifer that is potable and that does not contain non-potable mineralized water.

(c) Drilling and Casing

(1) The pumping capacity of the pump shall be consistent with the intended use and yield characteristic of the well.

(2) All water-bearing zones that contain polluted or non-potable mineralized water shall be adequately cased and cemented off so that pollution of underlying or overlying water-bearing zones will not occur.

(3) Drilling fluids shall be obtained from an uncontaminated source, or shall be disinfected by adding chlorine to a 100 parts per million level.

(4) Every well shall be cased with the bottom of casing extending to a minimum depth of at least 20 feet relative to the land surface.

(5) The top of the casing shall be terminated, by the drilling contractor, at least 12 inches above land surface.

(6) The well shall be adequately cased to prevent formation material from entering the well after the well has been developed and completed by the drilling contractor.

(7) The casing in wells constructed to obtain water from an unconsolidated rock formation (such as gravel, sand, or shells) shall extend at least one foot into the top of the water-bearing formation.

(8) Except as otherwise specified in these regulations, the permanent well casing shall:

(A) Conform to the "North Carolina Administrative Code, Title #15, Department of Environment, Health and Natural Resources, Subchapter 2C .0100, Environmental Management Well Construction Standards, Criteria and Standards Applicable to Water Supply and Certain Other Type Wells", or its subsequent counterpart.

(B) Grouting

(i) The casing in wells in which the producing zone underlies zones containing non-potable water shall be grouted from land surface to the top of the producing zone or first impervious layer having a thickness of at least 10 feet above the producing zone. In no case shall there be less than twenty feet of casing.

(ii) The casing in all other wells shall be grouted from land surface to a depth of at least 20 feet.

(iii) The cement grout shall be placed around the casing by one of the following methods:

(a) Pressure - The annular space between the casing and the formation shall be a minimum of 2.0 inches. Cement grout shall be pumped or forced under pressure through the bottom of the casing until it fills the annular area around the casing and overflows at the surface.

(b) Pumping - The annular space between the casing and formation shall be a minimum of 2.0 inches. Cement grout shall be pumped into place through a hose or pipe extended to the bottom of the annular space which can be raised as the grout is applied. The grout hose or pipe should remain submerged in grout during the entire application.

(c) Other - The annular space around the casing shall be a minimum of two inches. The annular space shall be

completely filled with cement grout by any method that will insure complete filling of the space, provided the annular area does not contain water. If the annular area contains water, the water shall be removed or the grout shall be placed by either the pumping or pressure methods.

(iv) If an outer casing is installed it shall be grouted by either the pumping or pressure methods.

(v) All grout mixtures shall be prepared before emplacement.

(vi) The well shall be grouted within five working days after completion of drilling.

(vii) The contractor will give oral notice to the Health Director of any grouting to be done. The notice shall be given in sufficient time to allow the Health Director to inspect the well before grout is emplaced.

(d) Large Diameter Wells Cased With Concrete Pipe

(1) If the casing joints are not sealed, the construction shall be as follows:

(A) The bore hole shall have a minimum diameter of six inches larger than the outside diameter of the casing.

(B) The annular space around the casing shall be filled with neat cement, sand-cement, or concrete grout to a depth of at least 20 feet below land surface.

(C) The annular space around the casing below the grout shall be filled with sand or gravel.

(D) The gravel-pack shall have a minimum thickness of at least three inches.

(E) The gravel-pack material shall be composed of quartz, granite, or similar rock material and shall be clean, rounded, uniform, water-washed and free from clay, silt, or other deleterious material.

(F) The gravel shall be disinfected before or during the installation with a solution containing at least 100 parts per million (mg/l) of residual chlorine.

(2) If the casing joints are sealed, the construction shall be as follows:

(A) The bore hole shall have a minimum diameter of six inches larger than the outside diameter of the casing to a depth of at least 20 feet below land surface.

(B) The annular space around the casing shall be filled with neat or sand-cement grout to a depth of at least 20 feet below surface as required for other water-supply well.

(e) Well Screens

(1) The well, if constructed to obtain water from an unconsolidated rock formation, shall be equipped with a screen that will adequately prevent the entrance of formation material into the well after the well has been developed and completed by the well contractor.

(2) The well screen shall:

(A) Be of a standard design and manufactured specifically for the purpose of well construction.

(B) Be of steel, brass, bronze, or plastic and shall be of a strength to withstand satisfactorily chemical and physical forces applied to it during and after installation. Plastic well screens shall:

(i) have an accurate uniform gauge;

(ii) have a minimum wall thickness and tolerance which meets or exceeds requirements for Schedule 40 thermoplastic water well casing pipe for nominal sizes three inches and smaller;

(iii) have a minimum wall thickness and tolerance which meets or exceeds requirements for SDR 17 thermoplastic water well casing for nominal sizes greater than three inches;

(iv) be constructed with keystone shaped NSF approved plastic wire or rings surrounding pipe or calibrated slots cut in pipe base;

(v) be installed in wells without interference from formational material or other objects that may cause physical damage during emplacement; and

(vi) be approved by federal, state, and municipal agencies having requirements applicable to well construction.

(C) Be designed to permit the optimum development of the aquifer with minimum head loss consistent with the intended use of the well. The openings shall be designed to prevent clogging and shall be free of rough edges, irregularities or other defects that may accelerate or contribute to corrosion or clogging.

(D) Be provided with such fittings as are necessary to seal the top of the screen to the casing and to close the bottom; if the screen is installed inside the casing, a lead-packer seal or other

approved device shall be used to seal the screen, or screen extension to the casing.

(f) Well Development

(1) Every well shall be properly developed by the drilling contractor.

(2) Development shall include removal of:

(A) Formation cuttings and mud from the entire depth of the well. A total suspended solids concentration of less than 5 mg/l of formation material is considered acceptable;

(B) Drilling fluids and additives.

(g) Well Identification Plate

(1) An identification plate showing the drilling contractor and his registration number shall be installed on the well within 24 hours after the drilling is complete.

(2) The identification plate shall be constructed of a durable, weather-proof, rustproof metal or equivalent material.

(3) The identification plate shall be securely attached to the well casing or enclosure floor around the casing where it is readily visible.

(4) The identification plate shall not be removed from the well by any person.

(5) The identification tag shall be stamped with a permanent marking within thirty (30) days after drilling is completed to show the:

(A) total depth of well;

(B) casing depth (ft) and inside diameter (in);

(C) screened interval of screened wells;

(D) gravel interval of gravel packed wells;

(E) yield or specific capacity expressed in gallons per minute (gpm), or gallons per minute per foot of draw-down (gpm/ft-dd);

(F) static water level and date measured;

(G) date well completed.

(h) Well-Head Completion and Equipment

(1) The top of the casing shall be cut off smooth and level, be free from dents and cracks, and shall terminate a minimum of 12 inches above ground level and at least 6 inches above the concrete slab around the casing.

(2) The identification plate, if removed or obscured during pump installation shall be relocated and securely attached to the well casing or enclosure floor around the casing by the person installing the pump and pumping equipment.

(3) The well-head shall be completely enclosed except on wells with turbine or other type pumps and pumping equipment designed for all weather conditions. The enclosure shall be well drained and constructed to prevent the entrance of surface and rain water, insects and rodents, and to protect the well-head equipment against freezing. The enclosure shall have a concrete floor with a thickness of at least four (4) inches and extending a minimum of two (2) feet outward from the outer well casing. The top of the floor shall be at least two (2) inches above land surface and shall slope away from the well casing in all directions. A conduit of sufficient size shall be cast into the floor to provide for installing the pump piping and wiring through the floor. The space between the piping and wiring and the conduit walls shall be sealed.

(4) All piping, wiring, and vents shall enter the well at least eight inches above land surface.

(5) Every well shall be equipped by the person completing the well-head with a usable access port.

(A) The access port shall be located directly on top of the well if the pump is offset from the well.

(B) For wells on which the pump is installed directly over the well, an access port pipe shall be installed through the pump base or outside of the well casing, and terminate inside the well casing at some point below the base of the pump.

(C) The access port shall have a minimum inside diameter of $\frac{1}{2}$ inch, so that the position of the water level may be determined at any time.

(D) The access port shall be installed and maintained in such a manner as to prevent the entrance of water, dust, insects, or other foreign material, and to permit ready access for water-level measurements.

(6) Every well that flows to the surface under natural pressure shall be equipped with a valve so that the flow can be completely stopped. Well owners shall be responsible for the operation and maintenance of the valve.

(7) Any suction line installed underground between the well

and pump shall be surrounded by six inches of cement, or encased in a larger pipe that is sealed at each end.

(8) The well shall be properly vented at the well head to allow; for the pressure changes within the well except when a suction lift type pump is used.

(9) A hose bib shall be installed at the well head by the person installing the pump for obtaining water samples. In the case of offset jet pump installations the hose bib shall be installed on the return (pressure) side of the jet pump piping.

(10) A priming tee shall be installed at the well head in conjunction with offset jet pump installations.

SECTION VI - STANDARDS OF CONSTRUCTION: WELLS OTHER THAN WATER SUPPLY

(a) No well shall be located, constructed, operated, or repaired in any manner that may adversely impact the quality of groundwater. Any test hole or boring shall be permanently abandoned by the driller in accordance with Rule XII of this Section within two days after drilling or two days after testing is complete, whichever is less restrictive; except in the case that a test well is being converted to a production well, in which case conversion shall be completed within 30 days.

(b) Monitoring wells and recovery wells shall be located, designed, constructed, operated and abandoned with materials and by methods which are compatible with the chemical and physical properties of the contaminants involved, specific site conditions and specific subsurface conditions. Specific construction standards will be itemized in the construction permit, if such a permit is required, but the following general requirements will apply:

(1) For wells from which samples of groundwater or other liquids will be obtained for the purpose of examination or testing, or for the recovery of polluted groundwater:

(A) The borehole shall not penetrate to a depth greater than the depth to be monitored or the depth from which contaminants are to be recovered.

(B) The well shall not hydraulically connect separate aquifers.

(C) The construction materials shall be compatible with the contaminants to be monitored or recovered.

(D) The well shall be constructed in such a manner that water or contaminants from the land surface cannot migrate along the borehole annulus into the packing material or well screen area.

(E) Packing material placed around the screen shall extend to a depth at least one foot above the top of the screen. A one foot thick seal, comprised of bentonitic clay or other material approved by the Director, shall be emplaced directly above and in contact with the packing material.

(F) Grout shall be placed in the annular space between the casing and the borehole wall from land surface to the top of the clay seal or to the bottom of the casing for open end wells.

(G) All wells shall be secured to reasonably insure against unauthorized access and use.

(H) All wells shall be afforded reasonable protection against damage during construction and use.

(I) Any wells which are flowing artesian wells shall be valved so that the flow can be regulated.

(J) The well casing shall be terminated no less than 12 inches above land surface datum unless both of the following conditions are met:

(i) site-specific conditions directly related to business activities, such as vehicle traffic, would endanger the physical integrity of the well; and

(ii) the well head is completed in such a manner so as to preclude surficial contaminants from entering the well.

(K) Each well shall have permanently affixed an identification plate constructed of a durable material and shall contain the following information:

(i) drilling contractor name and registration number;

(ii) date well completed;

(iii) total depth of well;

(iv) a warning that the well is not for water supply and that the groundwater may contain hazardous materials; and

(v) depth(s) to screen(s).

(L) Each well shall be developed such that the level of turbidity or settleable solids does not preclude accurate chemical analysis of any fluid samples collected.

(2) For any well which will only be used to measure groundwater levels, the following general requirements will apply:

(A) The well shall not hydraulically connect separate aquifers;

(B) The well shall be constructed in such a manner that water or contaminants from the land surface cannot migrate along the borehole channel into the packing material or well screen areas;

(C) Grout shall be placed in the annular space between the casing and the borehole from land surface to the clay seal above the packing material or to the bottom of the casing for open end wells;

(D) Unless the wells will not be left unattended, such as during a well capacity or aquifer capacity test, all wells shall be secured to reasonable insure against unauthorized access and use;

(E) All wells shall be afforded reasonable protection against damage during construction and use;

(F) Any well which is a flowing artesian well shall be valved such that flow can be regulated;

(G) The well casing shall be terminated no less than 12 inches above land surface datum unless both of the following conditions are met:

(i) site-specific conditions related to business activities, such as vehicle traffic, would endanger the physical integrity of the well; and

(ii) the well head is completed in such a manner so as to preclude surficial contaminants from entering the well.

(H) An identification plate constructed of a rustproof, durable material shall be permanently affixed to the well and shall contain the following information:

(i) drilling contractor name and registration number;

(ii) date well completed;

(iii) total depth of well; and

(iv) a warning that the well is not a water supply well and that the groundwater may contain contaminants.

(c) Wells constructed for the purpose of monitoring or testing for the presence of liquids associated with tanks regulated under 15A NCAC 2N (Criteria and Standards Applicable to Underground Storage Tanks) shall be constructed in accordance with 15A NCAC 2N .0504.

(d) Wells constructed for the purpose of monitoring for the

presence of vapors associated with tanks regulated under 15A NCAC 2N shall:

(1) be constructed in such a manner as to prevent the entrance of surficial contaminants or water into or alongside the well casing; and

(2) be provided with a lockable cap in order to reasonably insure against unauthorized access and use.

(e) Temporary wells and all other non-water supply wells shall be constructed in such a manner as to preclude the vertical migration of contaminants within and along the borehole channel.

(f) For sand-or gravel-packed wells, centering guides must be evenly distributed in the borehole.

SECTION VII - WELL TESTS FOR YIELD AND CAPACITY

(a) Every new well constructed for use as a private or semi-public water supply shall be tested for capacity as outlined in the "North Carolina Administrative Code, Title #15, Department of Environment, Health, and Natural Resources, Subchapter 2C .0100, Environmental Management Well Construction Standards, Criteria and Standards Applicable to Water Supply and Certain Other Type Wells", or its subsequent counterpart.

SECTION VIII - DISINFECTION OF WATER SUPPLY WELL

(a) All water supply wells shall be disinfected upon completion of construction, maintenance, repairs, pump installation and testing as outlined in the "North Carolina Administrative Code, Title #15, Department of Environment, Health, and Natural Resources, Subchapter 2C .0100, Environmental Management Well Construction Standards, Criteria and Standards Applicable to Water Supply and Certain Other Type Wells", or its subsequent counterpart.

(b) For all new wells, an official sample shall be collected by the Health Director, after disinfection has been completed and after the disinfecting agent has been removed from the well.

SECTION IX - WELL ABANDONMENT, MAINTENANCE, AND REPAIR

(a) Any well which has been abandoned must be abandoned as outlined in "North Carolina Administrative Code, Title 15A, Department of Environmental Health and Natural Resources, Subchapter 2C .0100, Environmental Management Well Construction Standards, Criteria and

Standards Applicable to Water Supply and Certain Other Type Wells", or its subsequent counterpart.

(b) All wells shall be maintained and repaired as outlined in the "North Carolina Administrative Code, Title #15, Department of Environment, Health, and Natural Resources, Subchapter 2C .0100, Environmental Management Well Construction Standards, Criteria and Standards Applicable to Water Supply and Certain Other Type Wells", or its subsequent counterpart.

SECTION X - RECORDS REQUIRED

(a) Any person completing any well in Halifax County shall submit to the Halifax County Health Department and to the well owner a record of the construction which includes the owner's name, the well's location, diameter and depth, casing depth, the method of finishing, static water level, pumping water level, yield, pump type, capacity and setting, date of completion, and drilling log of formations encountered. Use Form GS-1 (revised 12/90) DEHNR, DEM, GWS to make the report.

(b) Any person repairing a well shall submit to the Halifax County Health Department and the well owner a record of the repair to include the owner's name, location of the well, change in construction and materials replaced, date of repair, and disinfection procedures followed before returning the well to service.

(c) The reports required in Sections (a) and (b) above shall be submitted to the Halifax County Health Department within five (5) days after completing construction or repair.

(d) Reports shall be certified by the contractor or other person completing the construction or repair. Any person who willfully falsifies a report shall be guilty of a misdemeanor punishable by fine in the discretion of court or imprisonment not to exceed two years or both as provided by G.S. 130-A-25 and G.S. 14.3.

SECTION XI - REQUIREMENTS FOR SEMI-PUBLIC WATER SUPPLIES

(a) No construction of a semi-public well water supply shall be undertaken prior to approval by the Halifax County Health Department of the location, plans and specifications of the proposed water system.

(b) Plans shall contain, but not be limited to, the following information:

(1) Description of the water system related to the project.

(2) Identification of the area to be served by the proposed water system.

(3) Name and address of the owner.

(4) A description of the establishments to be served by the proposed water system.

(5) Proposed water treatment processes if applicable.

(6) A preliminary plot plan or map showing the location of the water source and service connection to each user.

(c) Semi-public water supplies should be capable of meeting the water supply needs of each service connection.

(d) All new semi-public water supplies that serve two (2) connections (residences or businesses) or more, but less than fifteen (15), shall have a bacteriological analysis performed annually and submitted to the Halifax County Health Department. This bacteriological analysis shall be performed by a Laboratory Certified to Analyze Drinking Water for Safe Drinking Water Act Compliance.

(e) All semi-public water supplies that fail to meet the bacteriological standards shall be equipped with mechanical devices to insure adequate disinfection.

SECTION XII - VARIANCES

The Health Director may grant a variance upon a finding that compliance with the provisions of these regulations is not possible because of conditions beyond the control of the well owner, or because compliance would result in unreasonable or unnecessary hardship to the well owner. Requests for variances may be required to be in writing and addressed to the Health Director. A variance may be issued at the sole discretion of the Health Director and may be conditioned on the submission of periodic progress reports. It may be revoked or modified after thirty (30) days notice to the persons affected by the revocation or modification, and may be extended from one date certain to another if circumstances warrant such extension. Application for renewal of a variance must be made at least thirty (30) days prior to the expiration of an existing variance.

SECTION XIII - ENFORCEMENT AND PENALTIES

If any person violates any part of these regulations or willfully fails to perform any acts required by these regulations, he shall be guilty of a misdemeanor and shall be subject to sanctions as provided in G.S. 130A-25; additionally, he may have any permit issued pursuant to these rules suspended or revoked. Such enforcement procedures shall be in addition to and not to the exclusion of any other civil

enforcement mechanisms available under law.

SECTION XIV - INJUNCTIONS

If any person violates any of these regulations or if any person hinders or interferes with the proper performance of duty by the Health Director, the Health Director may institute an action in the Superior Court of Halifax County for injunctive relief as provided in G.S. 130A-18.

SECTION XV - APPEAL PROCEDURE

Appeals concerning the interpretation and enforcement of these rules shall be made in writing to the Health Director and shall be in compliance with G.S. 130A-24.

SECTION XVI - SEVERABILITY

If any provision or clause of these regulations or the application thereof shall be declared invalid by a court of competent jurisdiction, such declaration shall not invalidate any other provision, clause, or application of these regulations.

Chairman, Halifax County Board of Health

Attested:

Secretary

Amendments adopted this 24th day of April, 1995.