

**CHAPTER VI
CONSTRUCTION, REPAIR, AND ABANDONMENT FOR MONITORING,
INJECTION AND RECOVERY WELLS**

SECTION I REGISTRATION

- (A) The Owner of a monitoring, injection or recovery well installed prior to January 1, 2005 must register the monitoring, injection or recovery well with the Department by submitting the following information on forms provided by the Department:
1. Names, addresses and phone numbers of the monitoring, injection or recovery well Owner and/or legal agent of the property Owner.
 2. Address and tax parcel number of the property for the monitoring, injection or recovery well (s).
 3. Number of monitoring, injection or recovery wells located on the property.
 4. Use of the monitoring, injection or recovery well (monitoring, injection, recovery etc.).
 5. Violations of the Groundwater Standard referenced in Chapter V of these Regulations.
- (B) Monitoring, injection and recovery wells must be registered every 12 months. The registration shall be submitted on forms to be supplied by the Department during the period from January 1 to January 31 of each year or such time as the Department designates.
- (C) A non-refundable fee as specified in the fee schedule shall be submitted with each registration if applicable.
- (D) The Owner of a monitoring, injection or recovery well installed or repaired after January 1, 2005 must register the monitoring, injection or recovery well with the Department by completing the following Application and Permit process.

SECTION II APPLICATION

- (A) On or after January 1, 2005 any entity seeking to install a monitoring, injection, or recovery well(s) must file an application, with the Department in order to receive a subsurface investigation permit. The permit must be obtained prior to the start of monitoring, injection or recovery well installation.
- (B) Applications for monitoring, injection or recovery well construction and abandonment shall be submitted on forms to be supplied by the Department.
- (C) A monitoring well open more than five days is a permanent monitoring well and must be registered with the Department within 30 days by submitting the following information on forms provided by the Department:
 - 1. Names, addresses and phone numbers of the monitoring, injection or recovery well Owner and/or legal agent of the property Owner.
 - 2. Address and tax parcel number of the property for the monitoring injection or recovery well (s).
 - 3. Number of monitoring, injection or recovery wells located on the property.
 - 4. Use of the monitoring, injection or recovery well (monitoring, injection, recovery etc.).
 - 5. Violations of the Groundwater Standard referenced in Chapter V of these Regulations.
- (D) A monitoring, injection or recovery well closed within five days is a temporary monitoring, injection or recovery well. Notification of completion of the subsurface investigation, the type and number of monitoring, injection or recovery wells installed, the date of installation and the date of abandonment must be provided the Department within 30 days of monitoring, injection or recovery well abandonment.

SECTION III PERMITS

(A) Subsurface Investigation Permits

1. It shall be unlawful for any Person to commence any well contractor activities in Mecklenburg County without first obtaining a permit from the Director. The monitoring, injection or recovery well Owner or their authorized legal agent shall obtain the permit. The permit is valid for one year from date of issuance. If construction has not been commenced within one year from the date of issuance of the permit, the permit then becomes invalid. When a permit has become invalid, construction may not be commenced until a new permit is issued.
2. A copy of the permit must be on site during the construction, or abandonment of any monitoring, injection or recovery well.
3. A Department representative is authorized to witness any portion of the drilling or construction process, or abandonment of any monitoring, injection or recovery well in Mecklenburg County as part of the inspection. Failure of the Owner or contractor to allow inspection of any material or observation of any drilling or construction, or abandonment of any monitoring, injection or recovery well in Mecklenburg County will be grounds for the revocation of the permit.
4. Failure to comply with these Regulations authorizes the Director to revoke any permits issued pursuant to these Regulations.

SECTION IV PERMANENT MONITORING, INJECTION AND RECOVERY WELLS

(A) Permanent monitoring, injection, and recovery wells are required to be registered with the Department.

1. It shall be the responsibility of the monitoring, injection or recovery well Owner or their legal agent to provide the Department with complete information on the total number of monitoring, injection or recovery wells installed, their type, purpose and location.
2. Registration information must be provided in the manner and format proscribed by the Department including but not limited to the site name, location, type of monitoring, injection or recovery well, Owner, name and

address of the monitoring, injection or recovery well contractor and/or the consultant.

3. Registration information must be submitted within thirty (30) days of monitoring, injection or recovery well completion.
- (B) It shall be the responsibility of the monitoring, injection or recovery well Owner or their legal agent to annually update the monitoring, injection or recovery well status and changes to Groundwater Quality Standards referenced in Chapter V of these Regulations.
 - (C) It shall be the responsibility of the monitoring, injection or recovery well Owner or their legal agent to provide the Department with monitoring, injection or recovery well abandonment records within thirty (30) days of abandonment completion.

SECTION V STANDARDS OF CONSTRUCTION

- (A) No monitoring, injection or recovery well shall be located, constructed, operated, or repaired in any manner that may adversely impact the quality of groundwater.
- (B) Injection wells shall conform to the standards set forth in 15A NCAC 2C .0200
- (C) 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. The following general requirements will apply:
 1. 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.
 2. The monitoring, injection or recovery well shall not hydraulically connect: separate aquifers; or those portions of a single aquifer where known or suspected contamination would occur in separate and definable layers within the aquifer.
 3. The monitoring, injection or recovery well construction materials shall be compatible with the depth of the monitoring, injection or recovery well and the contaminants to be monitored or recovered.

4. The monitoring, injection or recovery well shall be constructed and maintained in such a manner that water or contaminants from the land surface cannot migrate along the borehole annulus into any packing material or monitoring, injection or recovery well screen area.
5. Packing material placed around the screen shall extend at least one foot above the top of the screen. Unless the depth of the screen necessitates a thinner seal; a one foot thick seal, comprised of bentonite clay or other material approved by the Director, shall be emplaced directly above and in contact with the packing material.
6. Grout shall be placed in the annular space between the outermost casing and the borehole wall from the land surface to the top of the bentonite clay seal above any monitoring, injection or recovery well screen or to the bottom of the casing for open end monitoring, injection or recovery wells. To provide stability for the monitoring, injection or recovery well casing, the uppermost three feet of grout below land surface must be a concrete or cement-type grout.
7. All monitoring, injection or recovery wells shall be secured, with a locking monitoring, injection or recovery well cap, to reasonably ensure against unauthorized access and use.
8. All monitoring, injection or recovery wells shall be afforded reasonable protection against damage during construction and use.
9. Any monitoring, injection or recovery wells that would flow under natural artesian conditions shall be valved so that the flow can be regulated.
10. The monitoring, injection or recovery well casing shall be terminated no less than 12 inches above land surface datum unless both of the following conditions are met:
 - a. site-specific conditions directly related to business activities, such as vehicle traffic, would endanger the physical integrity of the monitoring, injection or recovery well; and
 - b. the monitoring, injection or recovery well head is completed in such a manner so as to preclude surficial contaminants from entering the monitoring, injection or recovery well.

11. Each well shall have securely affixed an identification plate constructed of a durable material and shall contain the following information:
 - a. drilling contractor, or pump installation contractor, name and applicable certification or registration numbers; date monitoring, injection or recovery well completed; total depth of monitoring, injection or recovery well;
 - b. a warning that the monitoring, injection or recovery well is not for water supply and that the groundwater may contain hazardous materials; and
 - c. depth(s) to the top(s) and bottom(s) of the screen(s).
12. Each monitoring, injection or recovery well shall be developed such that the level of turbidity or settleable solids does not preclude accurate chemical analyses of any fluid samples collected.
13. Monitoring, injection or recovery wells constructed for the purpose of monitoring or testing for the presence of liquids associated with tanks regulated under 15A NCAC 02N (Criteria and Standards Applicable to Underground Storage Tanks) shall be constructed in accordance with 15A NCAC 02N .0504.
14. Monitoring, injection or recovery wells constructed for the purpose of monitoring for the presence of vapors associated with tanks regulated under 15A NCAC 02N shall:
 - a. be constructed and maintained in such a manner as to prevent the entrance of surficial contaminants or water into or alongside the monitoring, injection or recovery well casing; and
 - b. be provided with a lockable cap in order to reasonably ensure against unauthorized access and use.
15. Non-water supply monitoring, injection or recovery wells shall be constructed and abandoned in such a manner as to preclude the vertical migration of contaminants within and along the borehole channel
16. For monitoring, sand-or gravel packed monitoring, injection or recovery wells, centering guides must be evenly distributed in the borehole.

Reference (15A NCAC 02C .0108)

SECTION VI ABANDONMENT

- (A) Procedures for permanent abandonment of monitoring, injection and recovery wells.
1. All casing and screen materials may be removed prior to initiation of abandonment procedures if such removal will not cause or contribute to contamination of the groundwater. Any casing not grouted in accordance with 15A NCAC 2C .0107(e) shall be removed or properly grouted.
 2. The entire depth of the monitoring, injection and recovery well shall be sounded before it is sealed to ensure freedom from obstructions that may interfere with sealing operations.
 3. In the case of gravel-packed monitoring, injection and recovery wells in which the casing and screens have not been removed, neat-cement, or bentonite grout shall be injected into the monitoring, injection and recovery well completely filling it from the bottom of the casing to the top.
 4. Monitoring, injection and recovery wells constructed in unconsolidated formations shall be completely filled with cement grout, or bentonite grout by introducing it through a pipe extending to the bottom of the monitoring, injection and recovery well which can be raised as the monitoring, injection or recovery well is filled.
 5. Monitoring, injection and recovery wells constructed in consolidated rock formations or that penetrate zones of consolidated rock shall be filled with cement grout or bentonite grout by introducing it through a pipe extending to the bottom of the monitoring, injection or recovery well which can be raised as the monitoring, injection or recovery well is filled. The top of the cement grout or bentonite grout shall extend up to land surface.

Reference (15A NCAC 02C .0113)

SECTION VII INSPECTION AND FEES

- (A) The Department shall conduct random inspections of new and existing monitoring, injection, and/or recovery wells to ensure the conditions of Section V and Section VI of this Chapter are met.
- (B) The Director shall have the right to enter any property for the purpose of identifying the location and to evaluate the condition of existing monitoring, injection and recovery wells on the property.
- (C) The Department shall conduct compliance audits to identify the location and evaluate the condition of existing monitoring, injection and recovery wells. If the Department identifies a monitoring, injection and recovery well that is not registered the monitoring, injection or recovery well Owner and/or property Owner shall pay the full registration fee plus a compliance inspection fee within thirty (30) days of notification.
- (D) Following the inspection, the Department shall notify the monitoring, injection or recovery well Owner and/or property Owner of its findings and any requirements for repair. The monitoring, injection or recovery well Owner and/or property Owner shall have thirty days from the date of notification to conduct any required repairs or to properly abandon the monitoring, injection or recovery well(s).
- (E) Monitoring, injection, and recovery wells in existence prior to January 1, 2005 must pay the appropriate annual registration fee. Registration fees for existing monitoring, injection or recovery wells shall be waived until July 1, 2005 if the existing well(s) is registered by July 1, 2005.
- (F) Annual registration fees must be paid by the monitoring, injection or recovery well Owner, or their legal agent for all active monitoring, injection, or recovery wells. Fees must be paid between September 1 and October 1 of each year the monitoring, injection or recovery wells are active.
- (G) Permanent monitoring, injection and recovery wells installed by a State or federal entity shall be exempt from registration fee requirements when
 1. acting as the lead at an orphan site
 2. conducting remedial activities at an orphan site, or

3. investigating a contamination incident for purposes of determining the responsible party.

SECTION VIII PETROLEUM UNDERGROUND STORAGE TANK MONITORING,
INJECTION AND RECOVERY WELL EXEMPTIONS

- (A) Monitoring, injection and recovery wells installed at petroleum UST contamination sites classified as High Risk are exempt from Mecklenburg County Well Regulations so long as the site is in compliance with NCDENR requirements for well construction and maintenance. All other UST contamination sites, regardless of risk ranking or No Further Action status are required to comply with Mecklenburg County Well Regulations. For sites ranked High Risk, if the risk ranking is lowered, the site is then required to comply with Mecklenburg County Well Regulations within sixty (60) days, including but not limited to the annual registration fee and well maintenance rules.
- (B) This exemption can be repealed by the Department on a site-by-site basis if NCDENR notifies the Department in writing that a contamination site is not in compliance with NCDENR requirements for well construction and maintenance. If the exemption is repealed all applicable Mecklenburg County registration fees and maintenance requirements will be applicable.