ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT WATER DIVISION - WATER QUALITY CONTROL ADMINISTRATIVE CODE

CHAPTER 335-6-8 UNDERGROUND INJECTION CONTROL

TABLE OF CONTENTS

335-6-8-.01	Purpose
335-6-8-.02	Definitions
335-6-8-.03	Underground Sources Of Drinking Water (USDW)
335-6-8-.04	Exempted Operations
335-6-8-.05	Prohibited Actions
335-6-8-.06	Required Actions
335-6-8-.07	Permit Issuance Procedures
335-6-8-.08	Public Notice Requirements
335-6-8-.09	Class III Well Permit Application Requirements
335-6-8-.10	Class V Well Permit Application Requirements
335-6-8-.11	Class III Well Permit Requirements
335-6-8-.12	Class V Well Permit Requirements
335-6-8-.13	Class VI Well Applicability And General Requirements
335-6-8-.14	Class VI Well Permit Application And Application Review Requirements
335-6-8-.15	Class VI Well Minimum Criteria For Siting
335-6-8-.16	Class VI Well Area Of Review And Area Of Review Corrective Action
335-6-8-.17	Class VI Well Financial Responsibility Requirements
335-6-8-.18	Class VI Well Construction Requirements
335-6-8-.19	Class VI Well Logging, Sampling And Testing Requirements Prior To Injection Well Operation
335-6-8-.20	Class VI Well Operating Requirements
335-6-8-.21	Class VI Well Mechanical Integrity Requirements
335-6-8-.22	Class VI Well Testing And Monitoring Requirements
335-6-8-.23	Class VI Well Reporting Requirements
335-6-8-.24	Class VI Well Plugging Requirements
335-6-8-.25	Class VI Well Post-Injection Site Care and Site Closure Requirements
335-6-8-.26	Class VI Well Emergency And Remedial Response Requirements
335-6-8-.27	Class VI Well Permit Requirements

335-6-8-.28 Technical Submittals And Other Reports To The Department
335-6-8-.29 Coordination With EPA
335-6-8-.30 Confidentiality

335-6-8-.01 Purpose.

(1) The Safe Drinking Water Act, Public Law 93-523, provides that a state may administer its own UIC Program. Such a program, however, must conform to the requirements of applicable Federal regulations, in particular 40 CFR Parts 124, 144 and 146.

(2) Section 22-22-1 et seq., Code of Ala. 1975, includes as its purpose "… to conserve the waters of the State and to protect, maintain and improve the quality thereof for public water supplies, for the propagation of wildlife, fish and aquatic life and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses; to provide for the prevention, abatement and control of new or existing water pollution; and to cooperate with other agencies of the State, agencies of other states and the federal government in carrying out these objectives."

(3) It is the purpose of this Chapter to establish rules and procedures which will enable the State to administer a UIC Program in conformance with applicable Federal laws and regulations and to administer the provisions of Section 22-22-1 et seq., Code of Ala. 1975.

Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed August 22, 2011; effective September 26, 2011. **Amended:** Filed August 25, 2015; effective September 29, 2015.

335-6-8-.02 Definitions.

Whenever used in this Chapter, unless a different meaning clearly appears from the context or unless a different meaning is stated in a definition applicable to only a portion of this Chapter, the following definitions shall apply:

(a) "Abandoned well" means an injection well into which the injection has been terminated or a well in such a state of disrepair as to be unusable. A temporary abandonment shall be when injection has ceased but is expected to resume within one year. A permanent abandonment shall be when injection has

ceased and no future injection is planned or when no injection has taken place for a period of one year or more.

(b) "Administrator" means the Administrator of the United States Environmental Protection Agency (EPA) or an authorized representative.

(c) "Area of review" means the area around an injection well or well field in which migration of injected fluids and/or pollutants or formation fluids into an Underground Source of Drinking Water (USDW) may occur.

(d) "Area of Review Corrective Action" means the use of Department-approved methods to ensure that wells within the area of review do not serve as conduits for the movement of fluids into underground sources of drinking water (USDW).

(e) "Aquiclude" means a formation that stores water, but does not transmit significant quantities of water, and which is often referred to as a confining interval.

(f) "Aquifer" means a geological formation, group of formations or part of a formation that is capable of yielding a significant amount of water to a well or spring.

(g) "Aquifer Storage and Recovery (ASR) Well" means an injection well used for the injection of treated municipal wastewater, groundwater or surface water, treated or untreated, for the purpose of storage in a designated aquifer and recovery at a later time for a beneficial use.

(h) "Best Management Practices" ("BMP's") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMP's also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

(i) "Blow-out Preventer" means a mechanical device used to keep pressurized fluids in a well from leaving the well head, while allowing access to the well casing by drilling tools and well-1ogging tools.

(j) "Bypass" means the intentional diversion of waste streams from any portion of a waste treatment facility.

(k) "Carbon Dioxide Plume" means the extent underground, in three dimensions, of an injected carbon dioxide stream.

(l) "Carbon Dioxide Stream" means carbon dioxide that has been captured from an emission source (e.g., a power plant), plus incidental associated substances derived from the source

materials and the capture process, and any substances added to the stream to enable or improve the injection process. This subpart does not apply to any carbon dioxide stream that meets the definition of a hazardous waste under 40 CFR part 261.

(m) "Casing" means a heavy pipe or tubing which is lowered into a borehole, during or after drilling in order to support the sides of a hole and prevent caving; to prevent loss of drilling mud into porous formations; or to prevent water, gas or other fluid from entering or leaving the hole.

(n) "Cementing" means the operation where a cement slurry is placed into a borehole and/or forced behind a casing or between casings.

(o) "Cesspool" means a drywell that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and/or perforated sides.

(p) "Class I Well" means an injection well used to inject a fluid and/or pollutant beneath the lowermost formation which contains an underground source of drinking water within five miles of the borehole. This definition excludes Aquifer Storage and Recovery Wells as defined in paragraph 335-6-8-.02(g).

(q) "Class II Well" means an injection well which is used:

1. To inject brine or other fluids which are brought to the surface in connection with oil or natural gas production and which may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection;

2. For enhanced recovery of oil or natural gas; or

3. For storage of hydrocarbons which are liquid at standard temperature and pressure.

(r) "Class III Well" means an injection well which is used for extraction of minerals or energy, including mining of sulfur by the Frasch process, solution mining of minerals, in-situ combustion of fossil fuel and recovery of geothermal energy to produce electricity. Fossil fuels include coal, tar sands, oil shale and any other fossil fuel which can be mined by in-situ combustion. Geothermal recovery wells used for heating and aquaculture are not considered Class III wells and are classified as Class V wells.

(s) "Class IV Well" means an injection well which is used for injection of a hazardous or radioactive waste into or above a formation which contains an USDW. A Class IV well does not

include injection of treated contaminated ground water into the same formation from which it was drawn as a result of a cleanup of a release under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), or the Alabama Hazardous Waste Minimization Act, Code of Alabama § 22-30-1 through 22-30-24.

(t) "Class V Well" means an injection well not included in Classes I, II, III, IV or VI. Class V wells include but are not limited to:

1. Injection wells used to inject treated ground water as part of a ground water corrective action system;

2. Injection wells used to return the water used for heating or cooling in a heat pump to the supply aquifer (air conditioning return flow wells);

3. Cesspools, drywells, or other similar systems designed for injection;

4. Injection wells used for the injection of water previously used for cooling (cooling water return flow wells);

5. Injection wells used to drain surface fluid, primarily storm runoff into a subsurface formation (drainage wells);

6. Injection wells used to replenish the water in an aquifer (recharge wells);

7. Injection wells used for the injection of water into a fresh water aquifer to prevent the intrusion of salt water into the fresh water (salt water intrusion barrier wells);

8. Injection wells used for the injection of a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines or injection wells used for the injection of wastewater form a coal washing operation into subsurface mines;

9. Injection wells used for the injection of any treated sanitary waste from business establishment, multiple dwelling, community or regional septic tank or other treatment system;

10. Injection wells (not used for the purpose of oil or natural gas production) used for injection into a non-oil or gas producing zone to reduce or eliminate subsidence

associated with the overdraft of fresh water (subsidence control wells);

11. Injection wells used in heating, aquaculture and production of electric power (geothermal wells);

12. Injection wells used for injection of treated commercial or industrial fluids or pollutants, such as motor vehicle waste disposal wells, which are not hazardous or toxic;

13. Injection wells used for solution mining of conventional mines such as stopes leaching;

14. Injection wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts;

15. Injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale;

16. Injection wells used in experimental technologies.

(u) "Class VI Well" means a well that is not experimental in nature that is used for geologic sequestration of carbon dioxide beneath the lowermost formation containing a USDW.

(v) "Class VI Well Area of Review" means the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity. The area of review is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and displaced fluids, and is based on available site characterization monitoring, and operational data as set forth in 335-6-8-.16.

(w) "Completion" means the subsurface preparation of an injection well as approved by the Department.

(x) "Confining Zone" means a geologic formation, group of formations, or part of a formation stratigraphically overlying the injection zone(s) that acts as a barrier to fluid movement.

(y) "Construction" means that the owner or operator has:

1. Entered into a binding contractual obligation for the purpose of placement, assembly, or installation of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility,

engineering, and design studies do not constitute a contractual obligation under the paragraph; or

2. Begun, or caused to begin as part of a continuous on-site construction program:

(i) Any placement, assembly, or installation of facilities or equipment; or

(ii) Significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment.

(z) "Corrective Action" means remedial action taken to mitigate or correct the introduction of pollutants to ground water, surface water or soils, the discharge from which could result in the introduction of pollutants to ground water or surface water.

(aa) "Department" means the Alabama Department of Environmental Management, established by the Alabama Environmental Management Act, Code of Ala. 1975, §§ 22-22A-1 to 22-22A-16.

(bb) "Director" means the Director of the Department or an authorized representative.

(cc) "Discharge" means the addition, introduction, leaking, spilling or emitting of any sewage, industrial waste, pollutant or other wastes into the waters of the state.

(dd) "Draft Permit" means a document indicating the Department's tentative decision to issue, modify and issue, revoke and reissue, or reissue a permit. A denial of a request for issuance, modification and issuance, revocation and reissuance, or termination is not a draft permit.

(ee) "Drywell" means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids and/or pollutants.

(ff) "Existing Injection Well" means a permitted injection well that is in operation or under construction on the effective date of this chapter.

(gg) "Facility or Activity" means any injection well or other facility or activity that is subject to regulation under the UIC program.

(hh) "Fluid" means a material or substance which flows or moves whether in a semi-solid, liquid, sludge, gas or any other form or state.

(ii) "Formation" means a body of consolidated or unconsolidated rock characterized by a degree of lithologic homogeneity which is prevailingly but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

(jj) "Formation Fluid" means a fluid present naturally as opposed to a fluid introduced into a formation from drilling or well injection.

(kk) "General Permit" means a permit that may be issued to an owner or operator of Class V wells with same or similar facilities and activities that generate similar fluids and or pollutants for well injection when in the opinion of the Department, the injection is more appropriately controlled by this type of permit.

(ll) "Geologic Sequestration" means the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations. This term does not apply to carbon dioxide capture or transport.

(mm) "Geologic Sequestration Project" means an injection well or wells used to emplace a carbon dioxide stream beneath the lowermost formations containing a USDW.

(nn) "Ground Water" means water below the land surface in a zone of saturation.

(oo) "Hazardous Waste" means a hazardous waste as defined by Code of Ala. 1975, §22-30-3(5).

(pp) "Improved Sinkhole" means a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings which have been modified by man for the purpose of injection.

(qq) "Industrial Wastes" means liquid or other wastes resulting from any process of industry, manufacture, trade or business or from the development of natural resources.

(rr) "Injection" means the subsurface emplacement of fluids and/or pollutants through a well.

(ss) "Injection Well" means a well that is used for well injection.

(tt) "Injection Zone" means the formation, group of formations or part of a formation receiving fluids and/or pollutants through an injection well.

(uu) "Injection Zone Class VI" means a geologic formation, group of formations, or part of a formation that is of sufficient areal extent, thickness, porosity, and permeability to receive carbon dioxide through a well or wells associated with a geologic sequestration project.

(vv) "Modification of a Well" means any operation requiring reworking of an injection well causing a change in the physical construction of the well after its initial completion, and not requiring a permit modification. Such reworking operations include, but are not limited to, squeezing, reperforating, setting a liner, and side tracking of a well into the same injection zone. Routine maintenance where the physical construction and/or operations are not changed does not constitute modification of a well. Modifications resulting in new injection zones are not allowed except by permit modification.

(ww) "Motor Vehicle Waste Disposal Well" means an injection well that receives or has received fluids from motor vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work.

(xx) "Municipal Wastewater" means wastewater discharged to a POTW or a Semi-Public or Private treatment facility containing majority domestic wastewater.

(yy) "New Injection Well" means an injection well other than an existing injection well.

(zz) "Operator" means the person responsible for the operation of a treatment system and/or an injection well.

(aaa) "Other Wastes" means all other substances, whether liquid, gaseous, or solid, or energy in the form of heat from all other sources including but not limited to, any vessels or other conveyances traveling or using the waters of this state, except industrial wastes or sewage.

(bbb) "Owner" means a person that owns a facility or activity subject to regulation under the UIC Program.

(ccc) "Packer" means a mechanical or physical device used to seal off certain sections of an injection well.

(ddd) "Permit" means any issued permit under the UIC Program.

(eee) "Permittee" means a person to whom a permit has been issued under this chapter.

(fff) "Person" means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

(ggg) "Plugging" means the act or process of permanently stopping any flow of any pollutants, water, oil, gas, formation fluids or surface waters into or out of a borehole or well.

(hhh) "Point of Injection" means the last accessible sampling point prior to fluids and/or pollutants being injected into an injection well.

(iii) "Pollutant" includes but is not limited to any physical, chemical, biological, sanitary, industrial, radioactive substance, matter, or waste, or other waste.

(jjj) "Pollution" means the discharge of a pollutant or combination of pollutants.

(kkk) "Post-Injection Site Care" means appropriate monitoring and other actions (including corrective action) needed following cessation of injection to ensure that USDWs are not endangered, as required under 335-6-8-.25.

(lll) "Pressure Front" means the zone of elevated pressure that is created by the injection of carbon dioxide into the subsurface. For the purposes of this chapter, the pressure front of a carbon dioxide plume refers to a zone where there is a pressure differential sufficient to cause the movement of injected fluids or formation fluids into a USDW.

(mmm) "Radioactive Waste" means any waste which contains radioactive materials in concentrations which exceed those listed in 10 CFR Part 20, Appendix B, Table II, Column 2.

(nnn) "Sanitary Waste" means liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities provided the waste is not mixed with industrial waste.

(ooo) "Schedule of Compliance" means a schedule of remedial measures included in a permit including an enforceable sequence of interim requirements leading to compliance with the appropriate regulations.

(ppp) "Septic System" means a treatment tank and injection well that is used to treat and inject sanitary waste and is typically comprised of a septic tank and subsurface fluid distribution system.

(qqq) "Sewage" means water-carried human wastes from residences, buildings, industrial establishments or other places, together with such ground, surface, storm or other wastes as may be present.

(rrr) "Site" means the area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

(sss) "Site Closure" means the point/time, as determined by the Department following the requirements under 335-6-8-.25, at which the owner or operator of a geologic sequestration site is released from post-injection site care responsibilities.

(ttt) "State/EPA UIC Memorandum of Agreement" means an official document signed by the Director and Administrator which describes the functions and responsibilities of the Department and EPA in the conduct or management of the UIC Program.

(uuu) "Subsurface Fluid Distribution System" means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute and inject fluids and/or pollutants below the surface of the ground.

(vvv) "Total Dissolved Solids (TDS)" means the total dissolved solids as determined by use of the method specified in 40 CFR Part 136.

(www) "Transmissive Fault or Fracture" means a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

(xxx) "Underground Injection Control (UIC)" means the regulatory management and control of well injection.

(yyy) "UIC Program" means the EPA approved state program for management and regulation of well injection.

(zzz) "Underground Source of Drinking Water (USDW)" means an aquifer or portion thereof:

1. Which currently supplies drinking water for human consumption; or

2. In which the ground water contains fewer than 10,000 mg/l of total dissolved solids.

(aaaa) "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the owner or operator. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(bbbb) "Vertical Well" means a bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension.

(c) "Waters of the state" means all waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the state, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a person unless such waters are used in interstate commerce.

(dddd) "Well" means a borehole; or, drilled or driven shaft; or, a dug hole; or, an improved sinkhole; or, a subsurface fluid distribution system; or a cesspool; or a drywell; or, any other system which results in subsurface emplacement of fluids and/or pollutants.

(eeee) "Well Field" means a well or group of wells of similar construction which are used for the same purpose, penetrate essentially the same geological formations and are located in the same area.

(ffff) "Well Injection" means injection.

(gggg) "Well Log" means a recording obtained from a well, showing such information as resistivity, radioactivity, spontaneous potential, acoustic velocity, and other information as a function of depth and/or time.

Author: Curt Johnson, Thad Pittman, Sonja Massey, Joe Kelly
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed June 23, 2009; effective July 28, 2009. **Amended:** Filed August 22, 2011; effective September 26, 2011. **Amended:** Filed August 25, 2015; effective September 29, 2015.

335-6-8-.03 Underground Sources Of Drinking Water (USDW).

All aquifers or portions of aquifers partially or wholly within the State of Alabama which supply water for human consumption, and all aquifers or portions of aquifers partially or wholly within the State of Alabama in which the groundwater contains less than 10,000 mg/l of total dissolved solids, are designated underground sources of drinking water and shall be protected from pollution.
Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002.

335-6-8-.04 Exempted Operations.

The following well injection operations are not subject to the provisions of this Chapter:

(a) Single family sanitary waste disposal systems.

(b) All sanitary waste subsurface distribution wastewater systems serving establishments, a single development, or contiguous developments which collectively have a design flow of 15,000 gallons per day or less shall be permitted and regulated by the Alabama Department of Public Health pursuant to Act 2009-773.

(c) Facilities injecting natural gas for purposes of storage.

(d) Class II wells.

(e) Class V wells for disposal of laundromat, seafood processing, and meat processing (not slaughter house) wastewaters, if permitted by the Alabama Department of Public Health.

(f) Any dug hole which is not used for injection.

(g) Dug, drilled, or driven shafts used to extract oil, gas, or ground water.

Author: Curt Johnson, Thad Pittman, Sonja Massey, Joe Kelly
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** April 15, 1983; October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002;

effective May 16, 2002. **Amended:** Filed June 23, 2009; effective July 28, 2009.

335-6-8-.05 Prohibited Actions.

(1) The following actions are prohibited by this Chapter:

(a) The discharge of fluids and/or pollutants to ground water and/or to soils, which may result in a discharge of fluids and/or pollutants to ground water which is not authorized by and in compliance with a permit issued under the provisions of this Chapter, the Alabama Hazardous Waste Management and Minimization Act or ADEM Administrative Code Division 335-14 (Hazardous Waste Program) or other Chapter of the ADEM administrative Code.

(b) The injection into any injection well or the construction of any injection well or facility to be used for the injection into any injection well unless such injection and construction is authorized by permit in accordance with this Chapter.

(c) Violation of any condition or requirement of any permit issued pursuant to this Chapter.

(d) Constructing, operating, maintaining, converting, plugging, abandoning, or conducting any other injection activity in a manner that allows the movement of fluids and/or pollutants into a USDW, if the presence of fluids and/or pollutants may cause an exceedance of any primary or secondary drinking water regulation under 40 CFR Part 141 and 143; or may result in a water of the state failing to meet applicable water quality criteria in accordance with ADEM Administrative Code Rule 335-6-10; or may otherwise adversely affect the health of persons or other legitimate beneficial uses. The owner or operator shall have the burden of showing that the requirements of this paragraph are met.

(e) Well injection between the outermost casing and the borehole.

(f) Construction or operation of a Class I well.

(g) Operation of a Class III well lacking mechanical integrity.

(h) Operation of a Class VI well lacking mechanical integrity.

(i) Construction or operation of a Class IV well.

(j) Construction or operation of a cesspool.

(k) Construction or operation of a motor vehicle waste disposal well.

(l) Construction or operation of a Class V vertical well for the injection of sanitary waste, treated or untreated, unless the injection is through an Aquifer Storage and Recovery (ASR) well permitted under this chapter.

(2) If the Department becomes aware that an injection well may cause a violation of primary or secondary drinking water regulations under 40 CFR Part 141 and 143 in a USDW, has not been operated in accordance with the requirements of this Chapter, or otherwise poses a threat to the environment or the health of persons, the Department may order the owner or operator to take such actions (including where required closure of the injection well) as may be necessary to prevent or abate the violation of a primary or secondary drinking water regulation under 40 CFR Part 141 and 143 in a USDW. This may include the performance of ground water quality investigations and the implementation of corrective actions. Such investigations and/or corrective actions shall be conducted in a manner suitable to the Department.

3. The Department may take emergency action upon receipt of information that a fluid and/or pollutant which is present in or likely to enter a USDW may present an imminent and substantial endangerment to the health of persons or the environment.

Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** April 15, 1983; October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed June 23, 2009; effective July 28, 2009. **Amended:** Filed August 22, 2011; effective September 26, 2011. **Amended:** Filed August 25, 2015; effective September 29, 2015.

335-6-8-.06 Required Actions.

(1) In the event of a discharge of fluids and/or pollutants to ground water and/or to soils, which may result in a discharge of fluids and/or pollutants to ground water, which is not authorized by a permit, the following actions must be taken by the person responsible for the discharge:

(a) Make a report to the Department within 24 hours of becoming aware that an unauthorized discharge has occurred;

(b) Take immediate action to prevent any further unauthorized discharge of fluids and/or pollutants;

(c) Take immediate action to identify and mitigate threats which may be posed to people or the environment;

(d) When required by the Department, conduct an investigation to determine the lateral and vertical extent of soil and ground water contamination for the pollutants likely to be present considering the source and nature of the unauthorized discharge. This investigation shall be conducted within the time frame and according to the requirements identified by the Department.

(e) When required by the Department, prepare and implement a corrective action plan sufficient to mitigate the impact or potential impact of the unauthorized discharge to the surrounding population and the environment. The corrective action plan shall be prepared to address risks to human health and the environment and shall take into account current and future exposure pathways and receptors, toxicity of pollutants, current and reasonable future land uses, and current and future use of aquifers. The corrective action shall be conducted within the time frame and according to site-specific requirements identified by the Department.

Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** April 15, 1983; October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002.

335-6-8-.07 Permit Issuance Procedures.

Upon receipt of a complete permit application the Department shall:

(a) Determine the type of well.

(b) Determine if a general permit may be applicable.

(c) Determine whether the proposed injection poses an unacceptable risk of contamination of an USDW. Where the application does not provide sufficient information to demonstrate that the proposed injection well will not cause the exceedance of a primary or secondary drinking water regulation under 40 CFR Part 141, 142, and 143, or otherwise render the ground water unsafe or objectionable for human consumption, or result in a water of the state failing to meet applicable water quality criteria in accordance with ADEM Administrative Code Rule 335-6-10, the Department shall not issue the permit.

(d) Determine any special construction and operation requirements which may be required to protect a USDW.

(e) For a Class III or Class VI well, or a Class V well permitted by an individual permit:

1. Prepare a fact sheet and include as a minimum the information required by 40 CFR 124.8 or future Federal regulations applicable to State UIC Programs;

2. Submit a copy of the draft permit to the owner or operator and EPA for review and comment.

(f) Allow public participation in the permitting process in accordance with procedures established in Rule 335-6-8-.08.

(g) Review comments received from any interested persons, EPA and the owner or operator.

(h) Make a final decision to issue, modify and issue, or deny the permit.

(j) A Class VI well may not be permitted or authorized by procedures of permit by rule, general permit, or by an area permit.

Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed June 23, 2009; effective July 28, 2009. **Amended:** Filed August 22, 2011; effective September 26, 2011. **Amended:** Filed August 25, 2015; effective September 29, 2015.

335-6-8-.08 Public Notice Requirements.

(1) Public notice is required when the Department takes the following actions:

(a) A permit application has been received and a draft permit, or draft modification to a permit has been prepared and a tentative determination made to issue or reissue the permit or modification;

(b) A public hearing has been scheduled.

(c) A general permit is proposed for issuance for a stated category of Class V wells.

(d) Proposes termination of a permit for cause.

(2) Public notice is not required when the Department makes a minor modification to a permit. Minor permit modification may only:

(a) Correct administrative and typographical errors;

(b) Increase the frequency of monitoring or reporting by the permittee;

(c) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;

(d) Allow for a change in name or operational control of the facility where the Department determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new owner or operator has been submitted to the Department;

(e) Delete an injection well when the injection to that well is terminated, the well has been properly abandoned, and the injection well does not result in injection to other injection wells except in accordance with permit limits. This provision does not apply to a permitted Class VI well.

(f) Amend a Class VI injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the Department and in accordance with this rule.

(3) The duration of a public notice shall be as follows:

(a) At least 30 days shall be allowed by the Department to receive public comment after a public notice is issued for a general permit, draft permit, or draft modification to a permit;

(b) At least 30 days shall be allowed by the Department to receive public comment prior to the scheduled date of a public hearing. The public notice of the hearing may be given at the same time as public notice of the general or draft permit. The two notices may be combined.

(4) Public notice shall be provided using the following methods:

(a) A copy of public notices shall be mailed to the persons listed below. Any person entitled to receive notice under this

paragraph may waive his or her rights to receive notice for any classes and categories of permits:

1. The person applying for a permit.

2. Any other agency which the Department knows has issued or is required to issue a RCRA, UIC, PSD, NPDES or 404 permit for the same facility or activity.

3. Federal and state agencies with jurisdiction over fish, shellfish, and wildlife resources and over coastal zone management plans, the Advisory Council on Historic Preservation, State Historic Preservation Officers, public health, and other appropriate government authorities including any affected states.

4. Any state agency responsible for plan development under the FWPCA Section 208(b)(2), 208(b)(4) or 303(e) and the U.S Army Corps of Engineers, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

5. Persons on a mailing list developed by:

(i) Including those who request in writing to be on the list;

(ii) Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as regional and state funded newsletters, environmental bulletins, or state law journals (the Department may update the mailing list from time to time by requesting written indication of continued interest from those listed and may delete from the list the name of any person who fails to respond to such a request);

6. To any unit of local government having jurisdiction over the area where the facility is or is proposed to be located.

7. To each state agency having any authority under state law with respect to the construction or operation of such facility.

(b) Public notice shall be published in a daily or weekly newspaper of general circulation within the area affected by the facility or activity.

(c) For a Class VI permit, at the time that the public notice is issued for the draft permit, a notice shall be mailed or e-mailed to the State Oil and Gas Board and any state agency

regulating mineral exploration and recovery, the Chief of the Public Water Supply regulatory program in Alabama, and all agencies that oversee injection wells in the State.

(5) All public notices shall, as a minimum, contain the following information:

(a) Name and address of the office processing the permit action for which notice is being given;

(b) Name and address of the person applying for a permit or holding a permit and, if different, of the facility or activity regulated by the permit (when an address is not applicable to the regulated entity, a general location shall be given);

(c) Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the general or draft permit, statement of basis or fact sheet, and the application;

(d) A general description of the public comment procedures required by this Rule and the time and place of any hearing that will be held, (if applicable) including a statement of procedures to request a hearing, unless a hearing has already been scheduled, and other procedures by which the public may participate in the final permit decision;

(e) A general description of the location of each existing or proposed injection well or well field; and

(f) A general description of the activity or business conducted at the facility generating the fluids and/or pollutants to be injected.

(6) The public notice of a hearing shall contain, in addition to public notice information requirements in paragraph (4) of this Rule, the following information:

(a) A reference to the date of previous public notices relating to the permit;

(b) Date, time, and place of the hearing; and

(c) A description of the nature and purpose of the hearing, including a citation of the applicable rules and procedures.

(7) The Department shall accept public comments and requests for public hearings as follows:

(a) During the public comment period, any interested person may submit written comments on the permit application, and

general or draft permit, and may request a public hearing if no hearing has already been scheduled.

(b) A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

(8) The Department shall determine when a public hearing is appropriate as follows:

(a) Whenever it is found, on the basis of hearing requests, that there exists a significant degree of public interest in a permit application, or general or draft permit.

(b) At the Department's discretion, whenever such a hearing might clarify one or more issues involved in the permit decision.

(9) The Department shall hold a public hearing in the following manner:

(a) At a location that shall be convenient to the majority of those providing comments in response to the public notice.

(b) To allow any person to present oral or written statements and to present data concerning the permit application, and general or draft permit to the Department. Reasonable limits may be set upon the time allowed for oral statement. As a result, the submission of statements in writing may be necessary.

(c) Automatically extend the public comment period to the close of any public hearing. The hearing officer may also extend the comment period by so stating at the hearing.

(d) The Department shall make a record of the public hearing available to the public in the form of a tape recording or written transcript.

(10) The Department shall prepare and make available to the public upon request, a response to comments received during the public comment period or public hearing, as follows:

(a) After consideration of any comments, the Department may revise and issue a draft or general permit, or not issue a draft or general permit.

(b) The Department may provide a written reply to significant comments (like comments may be grouped and one response written) concerning the general or draft permit. A significant comment is a comment that offers information or suggestions of a technical, environmental, legal, or regulatory nature that are applicable to the general or draft permit.

(c) After consulting with, or receiving written comments from Federal or State agencies with jurisdiction over public health, the Department may add and/or modify permit conditions that these Federal or State agencies have advised the Department are necessary to avoid substantial impairment of a public water supply.

Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed June 23, 2009; effective July 28, 2009. **Amended:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.09 Class III Well Permit Application Requirements.

(1) For any new well field(s), the owner or operator shall submit the information required in subparagraphs (1)(a) through (1)(e) and (1)(h) of Rule 335-6-8-.10, any additional information required by paragraph (3) of Rule 335-6-8-.10, and the following information:

(a) Data on all wells (to include injection wells, oil and gas exploration and/or production wells, and water wells) located within the area of review which represents well type, well construction, date drilled, location, depth, record of plugging and/or completion and the present use of the well.

(b) An inventory of all surface waters located within the area of review to include type, location, and use.

(c) A map(s) which shows the location of wells, surface waters, and other pertinent surface features such as roads, mines, quarries, residences, and other structures within the area of review.

(d) Hydrogeological data including maps and cross sections showing local geological structure, regional geological structure, and the horizontal and vertical location of USDW's within the area of review. Where sufficient information is available, the direction of flow of water in each USDW shall also be shown.

(e) The source and analysis of the chemical, physical, radiological, and biological characteristics of the pollutants to be injected and, if available, of the formation fluid from the intended injection zone.

(f) A best management practice plan shall be developed in accordance with sound engineering practices to prevent or respond to pollution of any USDW or surface water which may be

caused by operation or failure of the well or any other associated equipment at the facility as follows:

1. Examine each facility component or system with respect to its potential for causing a release of significant amounts of fluids and/or pollutants into a USDW or surface water due to equipment failure, improper operation, natural phenomena such as rain, freezing temperatures, etc.;

2. Include a prediction of the direction, rate of flow and total quantity of fluids and/or pollutants which could be discharged from the facility as a result of equipment failure, natural phenomena or other circumstances;

3. Establish best management practices addressing each system capable of causing a release of significant amounts of fluids and/or pollutants into a USDW or surface water;

4. Reflect all applicable requirements for Spill Prevention Control and Countermeasure (SPCC) plans under 40 CFR Part 151, and incorporate such plans into the plan by reference;

5. Assure the proper management of solid and hazardous waste;

6. Address materials storage areas, process and material handling areas, loading and unloading areas, plant site runoff, and sludge and waste disposal areas;

7. Consider including statement of policy, employee training, inspections, preventative maintenance, and housekeeping;

8. When necessary, provide impervious liners, dikes, or other structures sufficient to prevent the discharge of a fluids and/or pollutant to a USDW;

9. Document the plan in narrative form and include any necessary plot plans, drawings or maps.

(g) A plan for plugging and abandonment of the injection well. Plugging shall be accomplished so that USDW's are completely isolated and the movement of fluids and/or pollutants into any USDW or between USDW's is prevented and so that the injection zone is isolated. Plugging shall also be accomplished so that surface water cannot enter the well.

(h) An executed financial guarantee sufficient to demonstrate the financial responsibility and resources to close, plug, and

abandon the underground injection operation in a manner acceptable to the Department. Financial responsibility may be demonstrated by the submission of adequate assurance, such as financial statements or other materials acceptable to the Department.

(i) A description of the corrective actions planned to eliminate any deficiencies in the plugging or completion of wells located in the area of review which, if not eliminated, may result in pollution of a USDW. In determining the adequacy of the corrective action, the following criteria shall be considered:

1. Nature and volume of the injected fluid;

2. Nature of by-products of injection;

3. Potentially affected population;

4. Geology;

5. Hydrology;

6. History of the injection operation; and

7. Hydraulic connections with underground sources of drinking water.

(j) A proposed ground water monitoring program showing the location, depth, and method of construction of any monitoring wells to be installed and similar information concerning any existing wells or surface water bodies to be monitored. This submittal shall also provide a proposed sampling and testing scheme to be followed during groundwater monitoring. Monitoring wells shall be located and constructed in accordance with approved plans and shall conform to subparagraph (1)(e) items 1. through 4. of Rule 335-6-8-.10 and the following requirements:

1. Where injection is into a formation containing less than 10,000 mg/l total dissolved solids, monitoring wells shall extend into the injection zone.

2. Where a USDW is penetrated by the injection well and the operation may cause or be affected by subsidence or catastrophic collapse, monitoring wells shall be located outside the physical influence of the possible subsidence or collapse.

3. Where the injection zone is an USDW; the number, location, construction, and frequency of monitoring of the monitoring wells shall be determined by considering:

(i) The population relying upon the USDW affected or potentially affected by the injection operation;

(ii) The proximity of the injection operation to points of withdrawal of drinking water;

(iii) The local geology and hydrology;

(iv) The operating pressure and whether a negative gradient is being maintained;

(v) The nature and volume of the injected fluid, the formation water, and the process by-products; and

(vi) The injection well density.

(k) If the permit application is for a well field with more than one well, the ultimate expected well field configuration shall be submitted on a drawing showing the area of review, and showing injection and recovery wells.

(l) Proposed operational procedures which include estimated average and maximum daily injection rates and injection pressures.

(m) Drilling and well testing plans, completion plans, and surface construction plans which meet the requirements of subparagraph (1)(b), (1)(c), and (1)(d) items 4. and 5. of Rule 335-6-8-.11.

(n) A signature of a person who meets the requirements of a responsible official as indicated below:

1. In the case of a corporation, by a principal executive officer of at least the level of vice-president;

2. In the case of a partnership, by a general partner;

3. In the case of a sole proprietorship, by the owner;

4. In the case of a municipal, state, federal, or other public agency, by either a principal executive officer or ranking elected official.

(o) A signed certification by the responsible official described in subparagraph (1)(n) of the permit application as follows: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting

false information, including the possibility of fine and imprisonment."

(2) For any existing well field(s), the owner or operator of the well(s) or well field(s) shall, in addition to the information required by paragraph (1) of this Rule, submit in duplicate the following information:

(a) Available past operation data, to include average and maximum daily injection rates, volume and characteristics of the fluids and/or pollutants injected, the average and maximum injection pressures, and annular pressures shall be submitted in a format that allows comparison of data such as injection rate versus corresponding injection pressure.

(b) The following cased hole logs and their interpretation, or substitute logs as agreed upon by the Department, to form base conditions for future well monitoring:

1. A combination cement bond, variable density, gamma ray, and casing collar locator log;

2. A high resolution temperature log performed after the well has been shut down for a minimum of three days or a thermal decay log;

3. A caliper log;

4. Any well logs run previously in the well to determine the past performance of the well system;

5. Other logs as the Department may require.

(c) A description of the actions planned to upgrade the well and meet the minimum requirements of paragraph (1) of this Rule or other requirement determined by the Department and a proposed compliance schedule for completion of these actions.

(d) Proof of mechanical integrity of the well which shall demonstrate that there is no detectable leak in the casing, tubing, or packer and that there is no detectable movement of pollutants from the injection zone through vertical channels adjacent to the injection well bore. As a minimum the absence of leaks must be determined by the monitoring of annulus pressure or pressure test with liquid or gas. As a minimum, the absence of vertical pollutant migration must be determined by a temperature log or a noise or acoustic log. The owner or operator may submit a request for substitution of another test method to the Department. This request must be in such detail as to show that the proposed test method will reliably demonstrate mechanical integrity of the wells for which its use is proposed. Should the Department agree to the request, approval of the Administrator will be requested and must be

obtained prior to substitution of the method. The owner or operator and the Department will apply methods and standards generally accepted in the industry. Reports on mechanical integrity will include description of the tests and methods used. In making the evaluation, the Department shall review all data submitted since the previous evaluation.

(3) For purpose of this Rule, the area of review shall include all of that area within a one and one-half mile radius of a well or in the case of a well field, a circumscribing area the width of which is the lateral distance from the perimeter of the well field, unless the Department approves a smaller radius or width of not less than one-fourth mile. The Department may, on a case-by-case basis require a radius or width greater than one and one-half miles if available data indicate that a larger area of review is justified.

(4) The permit application will not be processed until a completed application is received by the Department with the appropriate permit fee in accordance with Rule 335-1-6.
Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed August 22, 2011; effective September 26, 2011. **Amended:** Filed August 25, 2015; effective September 29, 2015.

335-6-8-.10 Class V Well Permit Application Requirements.

(1) To apply for a Class V individual permit, an owner or operator of a new or existing well field(s) shall submit a permit application to the Department which shall include the following information:

(a) Name, address and phone number of the owner and, if different, the name, address and phone number of the property owner and operator.

(b) Facility name, address, phone number (if applicable) and physical location (if different from the address).

(c) A map(s) which shows the location of proposed injection well(s), public and private water supply wells, source water assessment areas meeting the requirements of Rule 335-7-5, well head protection areas meeting the requirements of Rule 335-7-12, surface waters and other pertinent surface features such as roads, natural or manmade drainage courses, residences, and other structures within the area of review.

(d) A description of the fluids and/or pollutants to be injected and proposed operational procedures which include estimated average and maximum daily injection rates and volume of fluids and/or pollutants to be injected.

(e) The design, plans, construction specifications and other pertinent information of the treatment system, injection well(s), sampling system, and ground water monitoring well(s) required by the Department. Monitoring wells shall be located and constructed in accordance with approved plans and shall conform to the following requirements:

1. The monitoring well configuration shall be designed to detect pollutant movement away from the well or well field;

2. The monitoring well plan shall be designed to detect pollution in the USDW into which injection is permitted and any other USDW which the Department determines may or has the potential to be impacted by the permitted injection and any associated facility or activity in the area of review;

3. An adequate number of monitoring wells shall extend into all USDW's, likely to be affected, to detect any movement of fluids and/or pollutants injected, process by-products or formation fluids into the USDW;

4. For the purposes of determining the bottom elevation of a subsurface fluid distribution system, the seasonal high ground water elevation or soil restrictive layer shall be determined either by measurement of ground water levels or natural soil features indicative of soil saturation. A minimum separation distance between the bottom elevation of a subsurface fluid distribution system and the seasonal high ground water elevation or soil restrictive feature shall be established by the Department based upon the proposed disposal technology to allow for the protection of groundwater quality and for the proper functioning of the subsurface distribution system.

5. A plugging and abandonment plan may be required for a monitoring well when the Director deems it is necessary in order to prevent pollution of a USDW.

(f) Hydrodrogeological data determined to be necessary by the Department such as depth to ground water, direction of ground water flow, topographic description, physiographic province, etc.

(g) When required, the financial responsibility requirements in subparagraph (1)(h) of Rule 335-6-8-.09 shall be demonstrated.

(h) A certification described in subparagraph (1)(o) of Rule 335-6-8-.09 signed by the responsible official described by subparagraph (1)(n) of Rule 335-6-8-.09.

(2) To apply for coverage under a Class V general permit, an owner or operator of a new or existing well field(s) shall submit a permit application to the Department which shall include the requirements of (a), (b), (d), and (h) of rule 335-6-8-.10(1) and the type of general permit under which coverage is requested.

(3) The Department may require submittal of additional information concerning any permit application when that information is required to evaluate the potential for pollution of a USDW or surface water or to determine permit conditions necessary to protect a USDW or surface water.

(4) A permit application will not be processed until a completed application is received by the Department with the appropriate permit fee in accordance with Rule 335-1-6.

(5) A permit application for discharge of treated sanitary waste must include a demonstration of compliance with any applicable requirement for financial viability certification. Any permit application for which permit issuance has not occurred prior to July 28, 2009, must comply with this requirement prior to permit issuance.

(6) The Department may require a Class V experimental well for research or pilot projects relating to carbon sequestration to comply with all permitting and operational requirements of 335-6-8-.13 through 335-6-8-.27.

(7) A permit application for an ASR well(s) must include all applicable requirements of rule 335-6-8-.10 and include but not be limited to those items identified below. A separate permit application will be required for the construction and cycle testing phase of operation as well as for the full operational phase of the proposed ASR well.

(a) Identification and characterization of the aquifer into which injection is to occur to include hydrogeological and geochemical properties.

(b) Proposed method, rates and schedule of recovery from the aquifer for cycle testing and for full operation.

(c) Proposed use of the recovered water. The designated reuse facility must be permitted under chapter 335-6-20 or other applicable chapter of the ADEM Administrative Code.

(d) Proposed lateral and vertical extent of injected water within the aquifer.

(e) The proposed treatment to be provided to a water source proposed for injection.

(f) Complete water quality characterization for the water source proposed for injection. This must include but may not be limited to all substances and microorganisms for which primary and secondary maximum contaminant levels and monitoring requirements have been established for public water systems as required by Division 335-7 of the ADEM Administrative Code. Analyses shall also include Total Organic Carbon, Dissolved Organic Carbon, Total Suspended Solids, Total Kjeldahl Nitrogen, Ammonia Nitrogen, Carbonaceous Biochemical Oxygen Demand and Specific Conductance.

(g) Proposed monitoring plan to:

(i) Verify the lateral and vertical extent of injected water.

(ii) Verify quality of water to be injected, quality of injected water within the aquifer, and water quality of the surrounding aquifer(s).

(iii) Verify containment of injected water within the aquifer(s) designated for injection.

(iv) Monitor water level fluctuations within the aquifer(s) designated for injection and other aquifers as may be required.

(h) Any implemented or proposed institutional controls which may be used to prevent the use of the injected water(s) as a drinking water source by the public.

(i) The financial responsibility requirements in subparagraph (1)(h) of rule 335-6-8-.09 shall be demonstrated.

Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed June 23, 2009; effective July 28, 2009. **Amended:** Filed August 22, 2011; effective September 26, 2011. **Amended:** Filed August 25, 2015; effective September 29, 2015.

335-6-8-.11 Class III Well Permit Requirements.

(1) A permit for any Class III injection well shall contain the following:

(a) Authorization to operate as follows:

1. Authorization to inject for a period not to exceed the life of the injection well field, but shall be reviewed at least once every five years.

2. When required by the Department, the well density in the permitted field and the area included in the well field shall be limited.

3. The requirements found in subparagraph (a) item 2. of Rule 335-6-8-.12 shall apply.

(b) Construction and maintenance requirements as follows:

1. A well head shall be constructed so that a blow out preventer and workover rig can be placed over the well.

2. Injection shall be through casing.

3. Injection wells shall be double cased to a depth below the deepest USDW and shall be cased for the full depth of the well. Casing shall be designed for the expected life of the well when axial loading, diameter of casing, down hole pressures, corrosiveness of injected fluids and/or pollutants and formation fluids, temperatures to be encountered, and any other pertinent conditions are considered.

4. Injection wells shall be cemented from the surface to the upper limit of the injection zone. Cementing shall be conducted in such a manner and shall use a type and grade of cement such that all USDW's are protected from pollution by surface waters, other formation fluids, or fluids and/or pollutants injected and that the injection zone is isolated from all formations above it.

5. Deviation checks on all holes constructed by first drilling a pilot hole and then enlarging the pilot hole by reaming or another method shall be performed at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created.

6. Any annular spaces formed between casings or casing and injection tubing shall be filled with a noncorrosive fluid or inert gas under pressure.

7. The requirements found in subparagraph (b) items 1. through 3. of Rule 335-6-8-.12 shall apply.

(c) Monitoring and operating requirements as follows:

1. Operating restrictions shall include, as a minimum, a maximum allowable injection pressure which shall preclude fracturing that could result in migration of fluids and/or pollutants from the injection zone.

2. The requirements found in subparagraph (c) items 1. through 8., and 12. of Rule 335-6-8-.12 shall apply.

3. When required by the Department, injection pressure, annulus pressure, flow rate, and volume injected shall be monitored. Instrumentation shall be sufficient to provide the data required by the permit.

(d) Logging and well integrity requirements as follows:

1. In the case of a new well, the following logs and their interpretation, or substitute logs as agreed upon by the Department, shall be run before the casing is installed and submitted: resistivity, spontaneous potential, porosity, caliper, and gamma ray. This requirement shall also apply to a new well in a permitted well field.

2. In the case of a new well, the cased hole logs described in subparagraph (2)(b) items 1. through 4. of Rule 335-6-8-.09 and their interpretation, or substitute logs as agreed upon by the Department shall be submitted. This requirement shall also apply to a new well in a permitted well field.

3. In the case of a new well, proof of mechanical integrity shall be submitted as described in subparagraph (2)(d) of Rule 335-6-8-.09 prior to operation of the well.

4. The following information concerning the injection zone may be required to be calculated or determined:

i. Fluid pressure;

ii. Temperature;

iii. Fracture pressure;

iv. Other physical and chemical characteristics of the injection matrix;

v. Physical and chemical characteristics of the formation fluids.

5. The results obtained in subparagraph (1)(d) item 4. of this Rule shall be used to determine the compatibility of the injection fluids and/or pollutants with the formation fluids and matrix. The Department will consider the results of the testing program prior to granting approval for the injection.

6. Cased hole logs described in subparagraph (2)(b) of Rule 335-6-8-.09 or substitute logs as agreed upon by the Department shall be performed every five years and shall demonstrate proof of mechanical integrity. The results and their interpretation shall be submitted to the Department. The Department may require these evaluations to be performed more frequently after considering the nature of the fluids and/or pollutants to be injected, the age of the well, or other conditions that may adversely affect the expected life of the well.

7. Logging requirements may be relaxed by the Department after consideration of the intended function, depth, construction, and other characteristics of the well, availability of similar data in the area of the drilling site, and the need for additional information that may arise from time to time as the construction of the well progresses.

(e) Records, reports and submittals as follows:

1. The permittee shall submit copies of all logs or other analyses performed and their interpretation to the Department not later than 28 days after completion of the logs and/or analyses.

2. The requirements found in subparagraph (d) items 1. through 5.of Rule 335-6-8-.12.

(f) Plugging and abandonment as follows:

1. The requirements found in subparagraph (e) items 3. through 6. of Rule 335-6-8-.12.

2. The permittee shall notify the Department at least 180 days prior to actual plugging of the well and submit for approval by the Department an updated plugging and abandonment plan. The plan shall be submitted to the Department at least 90 days prior to actual plugging of the well.

3. The plugging or abandonment plan shall be made a part of the permit.

4. The permittee shall correct any improperly sealed, completed, or abandoned well located within the area of review which extends into the injection zone or any other well which may cause pollution of a USDW. A schedule of compliance for taking corrective action will be established and included in the permit.

(g) Well or well field management as follows:

1. The permittee shall cease injection immediately upon determination that a well has malfunctioned and correct the malfunction prior to resumption of injection. Permittee shall notify the Department in writing within 5 days of the occurrence of any malfunction. This notification shall include a description of the malfunction, its cause, and the corrective action(s) taken. Notification within 24 hours shall be required if the malfunction results in pollution of a surface water or a USDW, when any noncompliance with a permit condition or malfunction of the injection system may cause fluid migration into or between USDW's, or when monitoring or other information indicates that any fluid and/or pollutant may cause a violation of subparagraph (d) of Rule 335-6-8-.05.

2. In the case of a new well, prior authorization shall be obtained from the Department for any change in the approved construction of the well.

3. Well data required by subparagraph (1)(d) items 1. and 3. of this Rule shall be submitted for each new well-constructed in the permitted field.

(h) Permit modification, revocation, suspension, and termination as follows:

1. The requirements found in subparagraph (f) items 1. through 3. of Rule 335-6-8-.12 shall apply.

(i) General provisions as follows:

1. The requirements found in subparagraph (g) items 1. through 6. of Rule 335-6-8-.12 shall apply.

2. The best management practices plan shall be made a part of the permit.

3. In the case of an existing well the following may be required:

(i) A schedule of compliance in accordance with 40 CFR §144. 53.

(ii) Special construction requirements.

4. For a new well, no injection may begin until:

(i) A notice of completion of construction and the information required to be gathered during construction having been received and reviewed by the Department and any changes in permit conditions such as maximum injection pressure, etc., have been determined.

(ii) Notification that all required corrections to other wells in the area of review are complete and have been received by the Department.

(iii) When a permit modification is necessary, the permittee has been issued a modified permit containing any change in permit conditions and has been informed in writing by the Department that injection may begin.

(iv) The permittee has been informed of any intention to inspect the well prior to operation.

Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002.

335-6-8-.12 Class V Well Permit Requirements.

A permit for any Class V well shall contain the following:

(a) Authorization to operate as follows:

1. Authorization to inject for a period not to exceed five (5) years, except as provided for in paragraph (h) of this rule.

2. Only the fluids and/or pollutants described in the original permit application or any subsequent permit application approved by the Department shall be injected.

3. If the permittee desires to continue operation of the well past the expiration date, at least 180 days prior to expiration of a permit the permittee shall submit an application for reissuance of the permit.

4. Applications for reissuance shall comply with Rule 335-6-8-.10, except that previously submitted information need not be submitted unless requested by the Department.

5. Permit reissuance procedures shall be in accordance with Rules 335-6-8-.07 and 335-6-8-.08.

6. The terms and conditions of an existing permit are automatically extended pending reissuance of the permit if the permittee has submitted a timely and complete application.

(b) Construction and maintenance requirements as follows:

1. The permittee shall properly construct operate and maintain treatment systems, injection well(s), monitoring well(s), sampling systems, and other related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of the permit.

2. Treatment system structures, and electrical and mechanical equipment shall be protected from physical damage by the maximum expected one hundred (100) year flood. The treatment system shall remain fully operational, unless the flow of wastewater may be stored or eliminated, during a twenty-five (25) year flood. Treatment systems located in coastal areas subject to flooding by wave action shall be similarly protected from (100) year and twenty-five (25) year wave actions.

3. Department approval shall be obtained prior to constructing new wells, and modifying existing wells or surface structures.

4. When monitoring wells are required by the Department, an as built description and geologic log of the monitoring well(s) shall be obtained. The monitoring well(s) shall be completed and sampled prior to the use of the injection well.

(c) Monitoring and operating requirements as follows:

1. The permittee shall provide a method of obtaining grab and/or composite samples of fluids and/or pollutants after all treatment and prior to injection.

2. The permittee shall comply with applicable Federal and State hazardous waste management rules and regulations, and the permittee not inject any substance that is defined as hazardous or toxic by Federal or State laws or regulations or any substance not identified in the permit application. The proposed use of any substances other

than those identified in the permit application must be reviewed and approved by the Department prior to use.

3. The permittee shall monitor injection(s) and monitoring well(s) as required by the Department.

4. When sampling is required by the Department, all sampling and analysis shall be in accordance with EPA approved methods and procedures in all cases where an approved method and procedure is in existence.

5. When EPA has not approved methods and procedures for any sampling and analysis required by this Chapter, the method and procedure shall be stated by reference or verbatim in the permit, administrative order, directive, or plugging and abandonment plan requiring the monitoring.

6. Calibration of meters and other instruments used in monitoring shall be in accordance with the manufacturer's recommended procedure and frequency.

7. The permittee shall not exceed the limits that the Department has determined may cause, have reasonable potential to cause, or contribute to an exceedance of a narrative or numerical water quality standard for an individual fluid and/or pollutant.

8. The injection well shall function properly and, when required by the Department, fluids and/or pollutants shall not surface or saturate the uppermost soil layer.

9. When required by the Department, the permittee shall not operate any wastewater treatment plant unless the competency of the operator of such plant has been duly certified by the Department pursuant to the Alabama Water Pollution Control Act (AWPCA) and meets the requirements specified in Rule 335-10-1.

10. When allowed by the Department, the permittee may bypass the treatment facilities if the bypass does not cause an injection that exceeds the limits of the permit and the bypass is necessary for essential maintenance to ensure efficient operation.

11. When allowed by the Department, the permittee may exceed permit limits due to an upset if no later than 24 hours after becoming aware of the upset, the permittee reports the occurrence and circumstances of the upset to the Department and no later than five (5) days after becoming aware of the upset, the permittee furnishes the Department with evidence, including properly signed operating logs or other relevant evidence that an upset

occurred; identification of the cause of the upset; the facility was being properly operated at the time of the upset; and the permittee took all reasonable steps to minimize and adverse impact on human health or the environment resulting from the upset.

12. When required by the Department, the permittee shall perform best management practices.

(d) Records, reports and submittals as follows:

1. The permittee shall retain all records concerning the data used to complete the permit application, the operation of the well, nature and composition of fluids and/or pollutants injected and ground water monitoring records for a period of at least three years from the date of the record(s), and shall deliver copies of any records to the Department if requested. Samples and measurements taken for monitoring, and records kept for documentation shall be representative of the activity monitored or documented. Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used;

(vi) The results of such analyses.

2. When required by the Department, the permittee shall submit to the Department, monitoring reports summarizing the results from fluid and/or pollutant monitoring, and injection well operation monitoring, not later than 28 days after the reporting period specified in the permit.

3. All reports required to be submitted to the Department by the permit and other information requested by the Department shall include the certification in subparagraph (d) item 4. of this Rule signed by either the responsible official described in subparagraph (1)(n) of Rule 335-6-8-.09, or a duly authorized representative of the responsible official. A person is a duly authorized representative only as follows:

(i) The authorization is made in writing by a person described in paragraph (1)(n) of Rule 335-6-8-.09;

(ii) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity;

(iii) The written authorization is submitted to the Department.

4. The certification required in subparagraph (d) item 3. of this Rule shall be as follows:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the document, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

5. The permittee shall report to the Department any of the following:

(i) Any planned changes in the permitted facility or activity which may result in noncompliance with permit conditions;

(ii) Any planned transfer of ownership of the permitted facility by the person buying and the person selling the facility;

(iv) Compliance or noncompliance with interim and final requirements contained in any permit schedule of compliance within 14 days following each schedule date;

(v) Any relevant facts which the permittee becomes aware of which should have been submitted in a permit application, or corrections to incorrect data submitted in a permit application.

(e) Plugging and abandonment as follows:

1. The permittee shall notify the Department at least 180 days prior to well abandonment.

2. At least 90 days prior to abandonment, the permittee shall submit a plugging and abandonment plan to the Department which protects each USW from pollution by surface water and which prevents the movement of any

pollutant or formation fluid from one USDW to another or from one formation to another and which isolates the injection zone.

3. Placement of cement may be by the Balance Method, Dump Bailer Method, the Two-Plug Method, or other method approved by the Department. Where required by the permit, the method to be used shall be approved by the Department prior to plugging. The well to be plugged shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method approved by the Department, prior to the placement of cement plugs.

4. When required by the Department, the permittee shall measure for the presence of contamination where it is most likely to be present at the site in accordance with procedures which are acceptable to the Department. In selecting sample types, sample locations, and measurement methods, the permittee shall consider the method of plugging and abandonment, the nature of the fluid and/or pollutant injected, the depth to ground water, and other factors appropriate for identifying the presence of contamination. A report of the findings shall be submitted to the Department within 45 days of initiating the plugging and abandonment.

5. If contaminated soils and/or contaminated ground water is discovered as a result of subparagraph 4. of this Rule, or by any other manner, the permittee shall submit a corrective action plan. Department approval of the plan shall be obtained before beginning aquifer cleanup procedures and ground water monitoring at the site.

6. Other precautions or actions may be required if deemed necessary by the Department to protect or restore a USDW.

(f) Permit modification, revocation, suspension, and termination as follows:

1. Permits may be modified, suspended, revoked, or terminated either at the request of any interested person (including the permittee) or upon the Department's initiative for any of the reasons specified below. All requests shall be in writing and shall contain facts or reasons supporting the request. The filing of a request for a permit modification, revocation and reissuance, or termination; or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(i) Violation of any provision of the permit or the Chapter has occurred;

(ii) Information submitted for the purpose of obtaining the permit or influencing the permit conditions is found to be misrepresented, materially false or inaccurate;

(iii) Errors in calculations, typographical errors or clerical errors are found in the permit application or other information submitted for the purpose of obtaining a permit which materially affects permit conditions;

(iv) The Department has reason to believe that the permitting activity has resulted in pollution of an USDW or surface water or that pollution of a USDW or surface water is imminent;

(v) New information becomes known to the Department which, if available at the time the permit was issued, would have influenced the permitting decision or permit conditions;

(vi) Failure to meet conditions specified in the schedule of compliance contained in the permit;

(vii) New rules or regulations are promulgated which have a bearing upon the permitted operations;

(viii) Any other information not available at the time of permitting which may have a bearing upon the permitted operations;

(ix) The ownership of the facility is transferred to another person.

2. Modification, revocation, suspension, or termination of a permit shall not relieve the permittee of his responsibility to properly abandon the injection well.

3. If the Department tentatively decides to terminate a permit, the Department shall issue a notice of intent to terminate.

4. Permit requirements for an ASR well shall include but not be limited to the following:

(i) Recovery and use of water injected through an ASR well must occur as provided for in the permit. The Department may terminate, revoke, suspend, or modify the permit, or deny reissuance if recovery and use of injected water does not occur within a timeframe identified in the permit, and in accordance with all applicable permit conditions.

(ii) Water injected through an ASR well must not migrate beyond the aquifer designated in the permit and shall not go beyond the subsurface lateral and vertical extent designated in the permit. Monitoring as required by the Department, shall be performed by the permittee to verify these requirements are met. The Department may terminate, revoke, suspend, or modify the permit, or deny reissuance if the permittee does not maintain compliance with these requirements.

(g) General provisions as follows:

1. Any permittee authorized by permit to construct or operate an injection well shall allow access to their property and records by a duly authorized representative of the Department for the purpose of routine or other inspections and shall allow copying of records by a duly authorized representative of the Department. The duly authorized representative of the Department shall also be allowed to sample the fluids and/or pollutants to be injected, the processes and wastewater streams associated with the permitted well, and the monitoring wells.

2. When required by the Department, the permittee shall maintain financial resources in compliance with subparagraph (1)(g) of Rule 335-6-8-.10 and furnish proof of this financial capability to the Department prior to beginning construction.

3. The permit shall not convey any property rights of any sort, or any exclusive privilege.

4. The permittee shall comply with all conditions in the permit.

5. The permittee shall halt or reduce injection if needed to maintain compliance with the conditions of the permit.

6. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with the permit.

(h) The Department may require a Class V Experimental carbon sequestration well to comply with all permitting and operational requirements of 335-6-8-.13 through 335-6-8-.27. Authorization to inject for a Class V experimental carbon sequestration well may be for a period not to exceed 10 years.

Author: Curt Johnson, Thad Pittman, Sonja Massey, Joe Kelly
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16,

2002. **Amended:** Filed June 23, 2009; effective July 28, 2009. **Amended:** Filed August 22, 2011; effective September 26, 2011. **Amended:** Filed August 25, 2015; effective September 29, 2015.

335-6-8-.13 Class VI Well Applicability And General Requirements.

(1) All rules of this chapter relating to Class VI wells apply to any wells used to inject carbon dioxide specifically for the purpose of geologic sequestration, i.e., the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations. Class VI requirements of this chapter shall only apply to carbon sequestration occurring through a permitted Class II well, as provided for in paragraphs (6), (8) and (9) of this rule.

(2) A permit for a Class VI well shall be issued for the operating life of the facility and the post-injection site care period. The Department shall review each issued Class VI well permit at least once every 5 years to determine whether it should be modified, revoked and reissued, terminated or a minor modification made.

(3) Construction of a new Class VI injection well is prohibited prior to the issuance of a permit which contains the construction requirements of 335-6-8-.18 and specific construction details approved by the Department in accordance with this chapter.

(4) Requirements prior to commencing injection. Injection may not begin through a permitted Class VI well until:

(a) Modification of the Class VI UIC permit authorizing construction to authorize Class VI injection well operation pursuant to 335-6-8-.08. The Class VI operating permit shall include all applicable requirements of this chapter regarding Class VI wells, including but not limited to, area of review and area of review corrective action, operational requirements, maintenance of mechanical integrity, testing and monitoring, emergency and remedial response, plugging and abandonment and post-injection site care requirements for Class VI injection wells.

(b) Final injection well construction procedures and details demonstrating compliance with the requirements of 335-6-8-.18 have been submitted to the Department;

(c) All available logging and testing program data pursuant to the requirements of 335-6-8-.19 for a new Class VI injection well has been submitted to the Department;

(d) Mechanical integrity of the Class VI well has been demonstrated to the satisfaction of the Department pursuant to 335-6-8-.21;

(e) Any updates have been submitted to the Department for the proposed area of review and area of review corrective action plan, testing and monitoring plan, injection well plugging plan, post-injection site care and site closure plan, or the emergency and remedial response plan submitted under paragraph (1) of 335-6-8-.14, which are necessary to address new information collected during logging and testing of the Class VI injection well and the formation and any updates to the alternative post-injection site care timeframe demonstration submitted under paragraph (1) of 335-6-8-.14, which are necessary to address new information collected during the logging and testing of the Class VI injection well and the formation as required by 335-6-8-.19.

(f) The Department has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit. If the Department intends to inspect the well prior to authorizing injection operation, notice shall be given by the Department to the permittee.

(g) Notification has been received by the Department from the permittee that all required area of review corrective actions have been completed in the Class VI well area of review;

(h) Any other information has been submitted which the Department requests; and

(i) The Department has given written authorization for injection operation to begin.

(5) The construction, operation or maintenance of any non-experimental Class V geologic sequestration well is prohibited.

(6) All rules of this chapter relating to Class VI wells also apply to owners or operators of Class II carbon dioxide injection wells or Class V experimental carbon dioxide injection wells who seek to apply for a Class VI geologic sequestration permit. Owners or operators seeking to convert existing Class II or Class V experimental wells to Class VI geologic sequestration wells must demonstrate to the Department that the wells were engineered and constructed to meet the requirements of 335-6-.18(1) and ensure protection of USDWs, in lieu of requirements of 335-6-.18(2) and 335-6-8-.19(1). A converted well must still meet all other requirements under 335-6-8-.18.

(7) By December 10, 2011, owners or operators of Class V geologic sequestration experimental technology wells no longer being used for experimental purposes that will continue injection of carbon

dioxide for the purpose of geologic sequestration must apply for a Class VI permit.

(8) Owners or operators that are injecting carbon dioxide for the primary purpose of long-term storage into an oil and gas reservoir must apply for and obtain a Class VI geologic sequestration permit when there is an increased risk to USDWs compared to Class II operations and a Class VI permit is required. In determining if there is an increased risk to USDWs, the owner or operator must consider the factors specified in (9) below.

(9) The Department shall determine when there is an increased risk to USDWs compared to Class II operations and a Class VI permit is required. In order to make this determination the Department must consider the following:

(a) Increase in reservoir pressure within the injection zone(s);

(b) Increase in carbon dioxide injection rates;

(c) Decrease in reservoir production rates;

(d) Distance between the injection zone(s) and USDWs;

(e) Suitability of the Class II area of review delineation;

(f) Quality of abandoned well plugs within the area of review;

(g) The owner's or operator's plan for recovery of carbon dioxide at the cessation of injection;

(h) The source and properties of injected carbon dioxide; and

(i) Any additional site-specific factors as determined by the Department.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.14 Class VI Well Permit Application And Application Review Requirements.

(1) Prior to the issuance of a permit for the construction and operation of a new Class VI well or the conversion of an existing Class II or Class V well to a Class VI well, the owner or operator shall submit to the Department; and pursuant to 335-6-8-.23(e), the owner or operator shall also submit to the EPA; and the Department shall consider, the following:

(a) Information required in 40 CFR Part 144.31(e)(1) through (6) which includes:

1. The activities conducted by the applicant which require it to obtain permits under the Resource Conservation and Recovery Act, the UIC program under the Safe Drinking Water Act, the National Pollutant Discharge Elimination System program under the Clean Water Act, or the Prevention of Significant Deterioration program under the Clean Air Act

2. Name, mailing address, and location of the facility for which the application is submitted.

3. Up to four SIC codes which best reflect the principal products or services provided by the facility.

4. The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity.

5. Whether the facility is located on Indian lands.

6. A listing of all permits or construction approvals received or applied for under any of the following Programs within the State of Alabama:

(i) Hazardous Waste Management program under RCRA.

(ii) UIC program under SDWA.

(iii) NPDES program under CWA.

(iv) Prevention of Significant Deterioration (PSD) program under the Clean Air Act.

(v) Nonattainment program under the Clean Air Act.

(vi) National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act.

(vii) Ocean dumping permits under the Marine Protection Research and Sanctuaries Act.

(viii) Dredge and fill permits under section 404 of CWA.

(ix) Other relevant environmental permits, including State permits.

(b) A map showing the location of the proposed or existing injection well, including locational coordinates, for which a

permit is sought, and the applicable area of review consistent with 335-6-8-.16. Within the area of review, the map must show the number or name, and location of all injection wells, producing wells, abandoned wells, plugged wells or dry holes, deep stratigraphic boreholes, State-or EPA-approved subsurface cleanup sites, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells, other pertinent surface features including structures intended for human occupancy, State, Tribal and Territory boundaries, and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;

(c) Information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, including:

1. Maps and cross sections of the area of review;

2. The location, orientation, and properties of known or suspected faults and fractures that may transect the confining zone(s) in the area of review and a determination that they would not interfere with containment;

3. Data on the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of the injection and confining zone(s); including geology/facies changes based on field data which may include geologic cores, outcrop data, seismic surveys, well logs, and names and lithologic descriptions;

4. Geomechanical information on fractures, stress, ductility, rock strength, and insitu fluid pressures within the confining zone(s);

5. Information on the seismic history including the presence and depth of seismic sources and a determination that the seismicity would not interfere with containment; and

6. Geologic and topographic maps and cross sections illustrating regional geology, hydrogeology, and the geologic structure of the local area.

(d) A tabulation of all wells within the area of review which penetrate the injection or confining zone(s). Such data must include a description of each well’s type, construction, date drilled, location, depth record of plugging and/or completion, and any additional information the Department may require;

(e) Maps and stratigraphic cross sections indicating the general vertical and lateral limits of all USDWs, water wells and springs within the area of review, their positions relative to the injection zone(s), and the direction of water movement, where known;

(f) Baseline geochemical data on subsurface formations, including all USDWs in the area of review;

(g) Proposed operating data for the proposed geologic sequestration site:

1. Average and maximum daily rate and volume and/or mass and total anticipated volume and/or mass of the carbon dioxide stream;

2. Average and maximum injection pressure;

3. The source(s) of the carbon dioxide stream; and

4. An analysis of the chemical and physical characteristics of the carbon dioxide stream.

(h) Proposed pre-operational formation testing program to obtain an analysis of the chemical and physical characteristics of the injection zone(s) and confining zone(s) and that meets the requirements at 335-6-8-.19;

(i) Proposed stimulation program, a description of stimulation fluids to be used and a determination that stimulation will not interfere with containment;

(j) Proposed procedure to outline steps necessary to conduct injection operation;

(k) Schematics or other appropriate drawings of the surface and subsurface construction details of the existing or proposed well;

(l) Injection well construction procedures that meet the requirements of 335-6-8-.18;

(m) Proposed area of review and corrective action plan that meets the requirements under 335-6-8-.16;

(n) A demonstration, satisfactory to the Department, that the applicant has met the financial responsibility requirements under 335-6-8-.17;

(o) Proposed testing and monitoring plan required by 335-6-8-.22;

(p) Proposed post-injection site care and site closure plan required by 335-6-8-.25.

(q) At the Department's discretion, a demonstration of an alternative post-injection site care timeframe required by 335-6-8-.25(3);

(r) Proposed emergency and remedial response plan required by 335-6-8-.26(1);

(s) A list of contacts, submitted to the Department, for those States, Tribes, and Territories identified to be within the area of review of the Class VI project based on information provided in paragraph 335-6-8-.14(1)(b); and

(t) Any other information requested by the Department

(2) The Department shall notify, in writing, any States, Tribes, or Territories within the area of review of the Class VI project based on information provided in paragraphs 335-6-8-.14(1)(b) and 335-6-8-.14(1)(s) of the permit application.

(3) Prior to granting approval for the operation of a Class VI well, the Department shall consider the following information:

(a) The final area of review based on modeling, using data obtained during logging and testing of the well and formation in the case of a Class II or Class V well for which a Class VI permit application is being submitted; or using data obtained during logging and testing of the well and the formation, as required by paragraphs (3)(b), (c), (d), (f), (g), and (j), of this rule.

(b) Any relevant updates, based on data obtained during logging and testing of the well and the formation as required by paragraphs (3)(c), (3)(d), (3)(f), (3)(g) and (3)(j) of this rule, to the information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, submitted to satisfy the requirements of paragraph (1)(c) of this rule;

(c) Information on the compatibility of the carbon dioxide stream with fluids in the injection zone(s) and minerals in both the injection and the confining zone(s), based on the results of the formation testing program, and with the materials used to construct the well;

(d) The results of the formation testing program required at paragraph (1)(h) of this rule;

(e) Proposed injection well construction procedures that meet the requirements of 335-6-8-.18;

(f) The status of corrective action on wells in the area of review;

(g) All available logging and testing program data on the well required by 335-6-8-.19;

(h) A proposal for demonstration of mechanical integrity pursuant to 335-6-8-.21;

(i) Any updates to the proposed area of review and corrective action plan, testing and monitoring plan, injection well plugging plan, post-injection site care and site closure plan, or the emergency and remedial response plan submitted under paragraph (1) of this rule, which are necessary to address new information collected during logging and testing of the well and the formation as required by all paragraphs of this rule, and any updates to the alternative post-injection site care timeframe demonstration submitted under paragraph (1) of this rule, which are necessary to address new information collected during the logging and testing of the well and the formation as required by all paragraphs of this rule; and

(j) Any other information requested by the Department.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.15 Class VI Well Minimum Criteria For Siting.

(1) Owners or operators of Class VI wells must demonstrate to the satisfaction of the Department that the wells will be sited in areas with a suitable geologic system. The owners or operators must demonstrate that the geologic system comprises:

(a) An injection zone(s) of sufficient areal extent, thickness, porosity, and permeability to receive the total anticipated volume of the carbon dioxide stream:

(b) Confining zone(s) free of transmissive faults or fractures and of sufficient areal extent and integrity to contain the injected carbon dioxide stream and displaced formation fluids and allow injection at proposed maximum pressures and volumes without initiating or propagating fractures in the confining zone(s).

(2) The Department may require owners or operators of Class VI wells to identify and characterize additional zones that will impede vertical fluid movement, are free of faults and fractures that may interfere with containment, allow for pressure

dissipation, and provide additional opportunities for monitoring, mitigation, and remediation.
Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.16 Class VI Well Area Of Review And Area Of Review Corrective Action.

(1) The area of review is the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity. The area of review is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and is based on available site characterization, monitoring, and operational data.

(2) The owner or operator of a Class VI well must prepare, maintain, and comply with a plan to delineate the area of review for a proposed geologic sequestration project, periodically reevaluate the delineation, and perform corrective action that meets the requirements of this section and is acceptable to the Department. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. As a part of the permit application for approval by the Department, the owner or operator must submit an area of review and corrective action plan that includes the following information:

(a) The method for delineating the area of review that meets the requirements of paragraph (3) of this section, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based;

(b) A description of:

1. The minimum fixed frequency, not to exceed five years, at which the owner or operator proposes to reevaluate the area of review;

2. The monitoring and operational conditions that would warrant a reevaluation of the area of review prior to the next scheduled reevaluation as determined by the minimum fixed frequency established in paragraph (2) (b) (1) of this section.

3. How monitoring and operational data (e.g. injection rate and pressure) will be used to inform an area of review reevaluation; and

4. How corrective action will be conducted to meet the requirements of paragraph (4) of this section, including what corrective action will be performed prior to injection and what, if any, portions of the area of review will have corrective action addressed on a phased basis and how the phasing will be determined; how corrective action will be adjusted if there are changes in the area of review; and how site access will be guaranteed for future corrective action.

(3) Owners or operators of Class VI wells must perform the following actions to delineate the area of review and identify all wells that require corrective action:

(a) Predict, using existing site characterization, monitoring and operational data, and computational modeling, the projected lateral and vertical migration of the carbon dioxide plume and formation fluids in the subsurface from the commencement of injection activities until the plume movement ceases, until pressure differentials sufficient to cause the movement of injected fluids or formation fluids into a USDW are no longer present, or until the end of a fixed time period as determined by the Department. The model must:

1. Be based on detailed geologic data collected to characterize the injection zone(s), confining zone(s) and any additional zone(s); and anticipated operating data, including injection pressures, rates, and total volumes over the proposed life of the geologic sequestration project;

2. Take into account any geologic heterogeneities, other discontinuities, data quality, and their possible impact on model predictions; and

3. Consider potential migration through faults, fractures, and artificial penetrations.

(b) Using methods approved by the Department, identify all penetrations, including active and abandoned wells and underground mines, in the area of review that may penetrate the confining zone(s). Provide a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Department may require; and

(c) Determine which abandoned wells in the area of review have been plugged in a manner that prevents the movement of carbon dioxide or other fluids that may endanger USDWs, including use of materials compatible with the carbon dioxide stream.

(4) Owners or operators of Class VI wells must perform corrective action on all wells in the area of review that are determined to

need corrective action, using methods designed to prevent the movement of fluid into or between USDWs, including use of materials compatible, with the carbon dioxide stream, where appropriate.

(5) At the minimum fixed frequency, not to exceed five years, as specified in the area of review and corrective action plan, or when monitoring and operational conditions warrant, owners and operators must:

(a) Reevaluate the area of review in the same manner specified in paragraph (3)(a) of this rule;

(b) Identify all wells in the reevaluated area of review that require corrective action in the same manner specified in paragraph (3) of this rule:

(c) Perform corrective action on wells requiring corrective action in the reevaluated area of review in the same manner specified in paragraph (4) of this rule; and

(d) Submit an amended area of review and corrective action plan or demonstrate to the Department through monitoring data and modeling results that no amendment to the area of review and corrective action plan is needed. Any amendments to the area of review and corrective action plan must be approved by the Department, must be incorporated into the permit, and are subject to the permit modification requirements at rule 335-6-8-.08 of this chapter, as appropriate.

(6) The emergency and remedial response plan (as required by rule 335-6-8-.26 and the demonstration of financial responsibility (as described by 335-6-8-.17 must account for the area of review delineated as specified in paragraph (3)(a) of this section, or the most recently evaluated area of review delineated under paragraph (5) of this section, regardless of whether or not corrective action in the area of review is phased.

(7) All modeling inputs and data used to support area of review reevaluations under paragraph (5) of this section shall be retained for 10 years.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.17 Class VI Well Financial Responsibility Requirements.

(1) The owner or operator must demonstrate and maintain financial responsibility as determined by the Department that meets the following conditions:

(a) The financial responsibility instrument(s) used must be from the following list of qualifying instruments:

1. Trust Funds.

2. Surety Bonds.

3. Letter of Credit.

4. Insurance.

5. Self-Insurance (i.e., Financial Test and Corporate Guarantee).

6. Escrow Account.

7. Any other instrument(s) satisfactory to the Department.

(b) The qualifying instrument(s) must be sufficient to cover the cost of:

1. Corrective action (that meets the requirements of 335-6-8-.16;

2. Injection well plugging (that meets the requirements of 335-6-8-.24;

3. Post injection site care and site closure (that meets the requirements of 335-6-8-.25; and

4. Emergency and remedial responses (that meet the requirements of 335-6-8-.26.

(c) The financial responsibility instrument(s) must be sufficient to address endangerment of underground sources of drinking water.

(d) The qualifying financial responsibility instrument(s) must comprise protective conditions of coverage.

1. Protective conditions of coverage must include at a minimum cancellation, renewal, and continuation

provisions, specifications on when the provider becomes liable following a notice of cancellation if there is a failure to renew with a new qualifying financial instrument, and requirements for the provider to meet a minimum rating, minimum capitalization, and ability to pass the bond rating when applicable.

(i) Cancellation - for purposes of this part, an owner or operator must provide that their financial mechanism may not cancel, terminate, or fail to renew except for failure to pay such financial instrument. If there is a failure to pay the financial instrument, the financial institution may elect to cancel, terminate, or fail to renew the instrument by sending notice by certified mail to the owner or operator and the Department. The cancellation must not be final for 120 days after receipt of cancellation notice. The owner or operator must provide an alternate financial responsibility demonstration within 60 days of notice of cancellation, and if an alternate financial responsibility demonstration is not acceptable (or possible), any funds from the instrument being cancelled must be released within 60 days of notification by the Department.

(ii) Renewal - for the purposes of this part, owners or operators must renew all financial instruments, if an instrument expires, for the entire term of the geologic sequestration project. The instrument may be automatically renewed as long as the owner or operator has the option of renewal at the face amount of the expiring instrument. The automatic renewal of the instrument must, at a minimum, provide the holder with the option of renewal at the face amount of the expiring financial instrument.

(iii) Cancellation, termination, or failure to renew may not occur and the financial instrument will remain in full force and effect in the event that on or before the date of expiration: The Department deems the facility abandoned; or the permit is terminated or revoked or a new permit is denied; or closure is ordered by the Department or a U.S. district court or other court of competent jurisdiction; or the owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or the amount due is paid.

(e) The qualifying financial responsibility instrument(s) must be approved by the Department.

1. The Department shall consider and approve the financial responsibility demonstration for all phases of the geologic sequestration project prior to issuance of a Class VI permit 335-6-8-.14.

2. The owner or operator must provide any updated information related to their financial responsibility instrument(s) on an annual basis and if there are any changes, the Department must evaluate, within a reasonable time, the financial responsibility demonstration to confirm that the instrument(s) used remain adequate for use. The owner or operator must maintain financial responsibility requirements regardless of the status of the Department's review of the financial responsibility demonstration.

3. The Department may disapprove the use of a financial instrument if he determines that it is not sufficient to meet the requirements of this section.

(f) The owner or operator may demonstrate financial responsibility by using one or multiple qualifying financial instruments for specific phases of the geologic sequestration project.

1. In the event that the owner or operator combines more than one instrument for a specific geologic sequestration phase (e.g., well plugging), such combination must be limited to instruments that are not based on financial strength or performance (i.e., self-insurance or performance bond), for example trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, escrow account, and insurance. In this case, it is the combination of mechanisms, rather than the single mechanism, which must provide financial responsibility for an amount at least equal to the current cost estimate.

2. When using a third-party instrument to demonstrate financial responsibility, the owner or operator must provide a proof that the third-party providers either have passed financial strength requirements based on credit ratings; or has met a minimum rating, minimum capitalization, and ability to pass the bond rating when applicable. 3, An owner or operator using certain types of third-party instruments must establish a standby trust to enable the Department to be party to the financial responsibility agreement without the Department being the beneficiary of any funds. The standby trust fund must be used along with other financial responsibility instruments (e.g., surety bonds, letters of credit, or escrow accounts) to provide a location to place funds if needed.

4. An owner or operator may deposit money to an escrow account to cover financial responsibility requirements; this account must segregate funds sufficient to cover estimated costs for Class VI (geologic sequestration) financial responsibility from other accounts and uses.

5. An owner or operator or its guarantor may use self-insurance to demonstrate financial responsibility for geologic sequestration projects. In order to satisfy this requirement the owner or operator must meet a Tangible Net Worth of an amount approved by the Department, have a Net working capital and tangible net worth each at least six times the sum of the current well plugging, post injection site care and site closure cost, have assets located in the United States amounting to at least 90 per cent of total assets or at least six times the sum of the current well plugging, post injection site care and site closure cost, and must submit a report of its bond rating and financial information annually. In addition, the owner or operator must either: Have a bond rating test of AAA, AA, A, or BBB as issued by Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or meet all of the following five financial ratio thresholds: A ratio of total liabilities to net worth less than 2.0; a ratio of current assets to current liabilities greater than 1.5; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; A ratio of current assets minus current liabilities to total assets greater than -0.1; and a net profit (revenues minus expenses) greater than 0.

6. An owner or operator who is not able to meet corporate financial test criteria may arrange a corporate guarantee by demonstrating that its corporate parent meets the financial test requirements on its behalf. The parent's demonstration that it meets the financial test requirements is insufficient if it has not also guaranteed to fulfill the obligations for the owner or operator.

7. An owner or operator may obtain an insurance policy to cover the estimated costs of geologic sequestration activities requiring financial responsibility. This insurance policy must be obtained from a third-party provider.

(2) The requirement to maintain adequate financial responsibility and resources is directly enforceable regardless of whether the requirement is a condition of the permit.

(a) The owner or operator must maintain financial responsibility and resources until:

1. The Department receives and approves the completed post-injection site care and site closure plan; and

2. The Department approves site closure.

(b) The owner or operator may be released from a financial instrument in the following circumstances:

1. The owner or operator has completed the phase of the geologic sequestration project for which the financial instrument was required and has fulfilled all its financial obligations as determined by the Department, including obtaining financial responsibility for the next phase of the geologic sequestration project, if required: or

2. The owner or operator has submitted a replacement financial instrument and received written approval from the Department accepting the new financial instrument and releasing the owner or operator from the previous financial instrument.

(3) The owner or operator must have a detailed written estimate, in current dollars, of the cost of performing corrective action on wells in the area of review, plugging the injection well(s), post-injection site care and site closure, and emergency and remedial response.

(a) The cost estimate must be performed for each phase separately and must be based on the costs to the regulatory agency of hiring a third party to perform the required activities. A third party is a party who is not within the corporate structure of the owner or operator.

(b) During the active life of the geological sequestration project, the owner or operator must adjust the cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with paragraph (1) of this section and provide this adjustment to the Department. The owner or operator must also provide to the Department written updates of adjustments to the cost estimate within 60 days of any amendments to the area of review and corrective action plan (335-6-8-.16), the injection well plugging plan (335-6-8-.24), the post-injection site care and site closure plan (335-6-8-.25), and the emergency and remedial response plan (335-6-8-.26).

(c) The Department must approve any decrease or increase to the initial cost estimate. During the active life of the geologic sequestration project, the owner or operator must revise the cost estimate no later than 60 days after the Department has approved the request to modify the area of review and corrective action plan (335-6-8-.16), the injection well plugging plan (335-6-8-.24), the post-injection site care and site closure plan (335-6-8-.25), and the emergency and response plan 335-6-8-.26), if the change in the plan increases the cost. If the change to the plans decreases the cost, any withdrawals of funds must be approved by the Department. Any decrease to the value of the financial assurance instrument must first be approved by the Department. The revised cost estimate must be adjusted for inflation as specified in paragraph (3)(b) of this section.

(d) Whenever the current cost estimate increases to an amount greater than the face amount of a financial instrument currently in use, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current cost estimate and submit evidence of such increase to the Department, or obtain other financial responsibility instruments to cover the increase. Whenever the current cost estimate decreases, the face amount of the financial assurance instrument may be reduced to the amount of the current cost estimate only after the owner or operator has received written approval from the Department.

(4) The owner or operator must notify the Department by certified mail of adverse financial conditions such as bankruptcy that may affect the ability to carry out injection well plugging and post-injection site care and site closure.

(a) In the event that the owner or operator or the third party provider of a financial responsibility instrument is going through bankruptcy, the owner or operator must notify the Department by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U. S. Code, naming the owner or operator as debtor, within 10 days after the commencement of the proceeding.

(b) A guarantor of a corporate guarantee must make such a notification to the Department if he/she is named as debtor, as required under the terms of the corporate guarantee.

(c) An owner or operator who fulfills the requirements of paragraph (1) of this section by obtaining a trust fund, surety bond, letter of credit, escrow account, or insurance policy will be deemed to be without the required financial assurance in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of

the trustee institution to act as trustee of the institution issuing the trust fund, surety bond, letter of credit, escrow account, or insurance policy. The owner or operator must establish other financial assurance within 60 days after such an event.

(5) The owner or operator must provide an adjustment of the cost estimate to the Department within 60 days of notification by the Department, if the Department determines during the annual evaluation of the qualifying financial responsibility instrument(s) that the most recent demonstration is no longer adequate to cover the cost of corrective action (as required by (335-6-8-.17), injection well plugging (as required by 335-6-8-.24), post-injection site care and site closure (as required by 335-6-8-.25), and emergency and remedial response (as required by 335-6-8-.26).

(6) The Department must approve the use and length of pay-in-periods for trust funds or escrow accounts.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.18 Class VI Well Construction Requirements.

(1) The owner or operator must demonstrate that all Class VI wells are constructed and completed to:

(a) Prevent the movement of fluids into or between USDWs or into any unauthorized zones;

(b) Permit the use of appropriate testing devices and workover tools; and

(c) Permit continuous monitoring of the annulus space between the injection tubing and long string casing.

(2) Casing and Cementing of Class VI Wells.

(a) Casing and cement or other materials used in the construction of each Class VI well must have sufficient structural strength and be designed for the life of the geologic sequestration project. All well materials must be compatible with fluids with which the materials may be expected to come into contact and must meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the Department. The casing and cementing program must be designed to prevent the movement of

fluids into or between USDWs. In order to allow the Department to determine and specify casing and cementing requirements, the owner or operator must provide the following information:

1. Depth to the injection zone(s);

2. Injection pressure, external pressure, internal pressure, and axial loading;

3. Hole size;

4. Size and grade of all casing strings (wall thickness, external diameter, nominal weight, length, joint specification, and construction material);

5. Corrosiveness of the carbon dioxide stream and formation fluids;

6. Down-hole temperatures;

7. Lithology of injection and confining zone(s);

8. Type or grade of cement and cement additives; and

9. Quantity, chemical composition, and temperature of the carbon dioxide stream.

(b) Surface casing must extend through the base of the lowermost USDW and be cemented to the surface through the use of a single or multiple strings of casing and cement.

(c) At least one long string casing, using a sufficient number of centralizers, must extend to the injection zone and must be cemented by circulating cement to the surface in one or more stages.

(d) Circulation of cement may be accomplished by staging. The Department may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement does not allow fluid movement behind the well bore.

(e) Cement and cement additives must be compatible with the carbon dioxide stream and formation fluids and of sufficient quality and quantity to maintain integrity over the design life of the geologic sequestration project. The integrity and location of the cement shall be verified using technology capable of evaluating cement quality radially and identifying the location of channels to ensure that USDWs are not endangered.

(3) Tubing and packer.

(a) Tubing and packer materials used in the construction of each Class VI well must be compatible with fluids with which the materials may be expected to come into contact and must meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the Department.

(b) All owners or operators of Class VI wells must inject fluids through tubing with a packer set at a depth opposite a cemented interval at the location approved by the Department.

(c) In order for the Department to determine and specify requirements for tubing and packer, the owner or operator must submit the following information:

1. Depth of setting;

2. Characteristics of the carbon dioxide stream (chemical content, corrosiveness, temperature, and density) and formation fluids;

3. Maximum proposed injection pressure;

4. Maximum proposed annular pressure;

5. Proposed injection rate (intermittent or continuous) and volume and/or mass of the carbon dioxide stream;

6. Size of tubing and casing; and

7. Tubing tensile, burst, and collapse strengths.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§ 22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.19 Class VI Well Logging, Sampling And Testing Requirements Prior To Injection Well Operation.

(1) During the drilling and construction of a Class VI injection well, the owner or operator must run appropriate logs, surveys and tests to determine or verify the depth, thickness, porosity, permeability, and lithology of, and the salinity of any formation fluids in all relevant geologic formations to ensure conformance with the injection well construction requirements under 335-6-8-.18 and to establish accurate baseline data against which future measurements may be compared. The owner or operator must submit to the Department a descriptive report prepared by a knowledgeable log analyst that includes an interpretation of the results of such logs and tests. At a minimum, such logs and tests must include:

(a) Deviation checks during drilling on all holes constructed by drilling a pilot hole which is enlarged by reaming or another method. Such checks must be at sufficiently frequent intervals to determine the location of the borehole and to ensure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

(b) Before and upon installation of the surface casing:

1. Resistivity, spontaneous potential, and caliper logs before the casing is installed; and

2. A cement bond and variable density log to evaluate cement quality radially, and a temperature log after the casing is set and cemented.

(c) Before and upon installation of the long string casing:

1. Resistivity, spontaneous potential, porosity, caliper, gamma ray, fracture finder logs, and any other logs the Department requires for the given geology before the casing is installed; and

2. A cement bond and variable density log, and a temperature log after the casing is set and cemented.

(d) A series of tests designed to demonstrate the internal and external mechanical integrity of injection wells, which may include:

1. A pressure test with liquid or gas;

2. A tracer survey such as oxygen-activation logging;

3. A temperature or noise log;

4. A casing inspection log, and

(e) Any alternative methods that provide equivalent or better information and that are required by and/or approved of by the Department.

(2) The owner or operator must take whole cores or sidewall cores of the injection zone and confining system and formation fluid samples from the injection zone(s), and must submit to the Department a detailed report prepared by a log analyst that includes: Well log analyses (including well logs), core analyses, and formation fluid sample information. The Department may accept information on cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The Department may require the owner or operator to core other formations in the borehole.

(3) The owner or operator must record the fluid temperature, pH, conductivity, reservoir pressure, and static fluid level of the injection zone(s).

(4) At a minimum, the owner or operator must determine or calculate the following information concerning the injection and confining zone(s):

(a) Fracture pressure;

(b) Other physical and chemical characteristics of the injection and confining zone(s); and

(c) Physical and chemical characteristics of the formation fluids in the injection zone(s).

(5) Upon completion, but prior to operation, the owner or operator must conduct the following tests to verify hydrogeologic characteristics of the injection zone(s):

(a) A pressure fall-off test; and,

(b) A pump test; or

(c) Injectivity tests.

(6) The owner or operator must provide the Department with the opportunity to witness all logging and testing conducted pursuant to requirements of this chapter for Class VI wells. The owner or operator must submit a schedule of such activities to the Department 30 days prior to conducting the first test and submit any changes to the schedule 30 days prior to the next scheduled test.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.20 Class VI Well Operating Requirements.

(1) Except during stimulation, the owner or operator must ensure that injection pressure does not exceed 90 percent of the fracture pressure of the injection zone(s) so as to ensure that the injection does not initiate new fractures or propagate existing fractures in the injection zone(s). In no case may injection pressure initiate fractures in the confining zone(s) or cause the movement of injection or formation fluids that endangers a USDW. Pursuant to requirements at 335-6-8-.14(1)(i), all stimulation programs must be approved by the Department as part of the permit application and incorporated into the permit.

(2) Injection between the outermost casing protecting USDWs and the well bore is prohibited.

(3) The owner or operator must fill the annulus between the tubing and the long string casing with a non-corrosive fluid approved by the Department. The owner or operator must maintain on the annulus a pressure that exceeds the operating injection pressure, unless the Department determines that such requirement might harm the integrity of the well or endanger USDWs.

(4) Other than during periods of well workover (maintenance) approved by the Department in which the sealed tubing-casing annulus is disassembled for maintenance or corrective procedures, the owner or operator must maintain mechanical integrity of the injection well at all times.

(5) The owner or operator must install and use:

(a) Continuous recording devices to monitor: The injection pressure; the rate, volume and/or mass, and temperature of the carbon dioxide stream; and the pressure on the annulus between the tubing and the long string casing and annulus fluid volume; and

(b) Alarms and automatic surface shut-off systems or, at the discretion of the Department, down-hole shut-off systems (e.g., automatic shut-off, check valves) for onshore wells or, other mechanical devices that provide equivalent protection; and

(c) Alarms and automatic down-hole shut-off systems for wells located offshore but within State territorial waters, designed to alert the operator and shut-in the well when operating parameters such as annulus pressure, injection rate, or other parameters diverge beyond permitted ranges and/or gradients specified in the permit.

(6) If a shutdown (i.e., down-hole or at the surface) is triggered or a loss of mechanical integrity is discovered, the owner or operator must immediately investigate and identify as expeditiously as possible the cause of the shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under paragraph (5) of this rule otherwise indicates that the well may be lacking mechanical integrity, the owner or operator must:

(a) Immediately cease injection;

(b) Take all steps reasonably necessary to determine whether there may have been a release of the injected carbon dioxide stream or formation fluids into any unauthorized zone;

(c) Notify the Department within 24 hours;

(d) Restore and demonstrate mechanical integrity to the satisfaction of the Department prior to resuming injection; and

(e) Notify the Department when injection can be expected to resume.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.21 Class VI Well Mechanical Integrity Requirements.

(1) Operation of a Class VI well without mechanical integrity is prohibited. Mechanical integrity must be demonstrated to the satisfaction of the Department. A Class VI well has mechanical integrity if:

(a) There is no significant leak in the casing, tubing, or packer; and

(b) There is no significant fluid movement into a USDW through channels adjacent to the injection well bore.

(2) To evaluate the absence of significant leaks under paragraph (1)(a) of this section, owners or operators must, following an initial annulus pressure test, continuously monitor injection pressure, rate, injected volumes; pressure on the annulus between tubing and long-string casing; and annulus fluid volume as specified in 335-6-8-.20(5);

(3) At least once per year, the owner or operator must use one of the following methods to determine the absence of significant fluid movement under paragraph (1)(b) of this section:

(a) An approved tracer survey such as an oxygen-activation log; or

(b) A temperature or noise log.

(4) If required by the Department, at a frequency specified in the testing and monitoring plan required at 335-6-8-.22, the owner or operator must run a casing inspection log to determine the presence or absence of corrosion in the long-string casing.

(5) The Department may require any other test to evaluate mechanical integrity under paragraphs (1)(a) or (1)(b) of this rule. Also, the Department may allow the use of a test to demonstrate mechanical integrity other than those listed above with written approval of the Administrator. To obtain approval for

a new mechanical integrity test, the Department must submit a written request to the Administrator setting forth the proposed test and all technical data supporting its use. The Administrator may approve the request if he or she determines that it will reliably demonstrate the mechanical integrity of wells for which its use is proposed.

(6) In conducting and evaluating the tests enumerated in this section or others to be allowed by the Department, the owner or operator and the Department must apply methods and standards generally accepted in the industry. When the owner or operator reports the results of mechanical integrity tests to the Department, he/she shall include a description of the test(s) and the method(s) used. In making his/her evaluation, the Department must review monitoring and other test data submitted since the previous evaluation.

(7) The Department may require additional or alternative tests if the results presented by the owner or operator under paragraphs (1) through (4) of this section are not satisfactory to the Department to demonstrate that there is no significant leak in the casing, tubing, or packer, or to demonstrate that there is no significant movement of fluid into a USDW resulting from the injection activity as stated in paragraphs (1)(a) and (b) of this rule.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.22 Class VI Well Testing And Monitoring Requirements.

(1) The owner or operator of a Class VI well must prepare, maintain, and comply with a testing and monitoring plan to verify that the geologic sequestration project is operating as permitted and is not endangering USDWs. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. The testing and monitoring plan must be submitted with the permit application, for Department approval, and must include a description of how the owner or operator will meet the requirements of this rule, including accessing sites for all necessary monitoring and testing during the life of the project. Testing and monitoring associated with geologic sequestration projects must, at a minimum include:

(a) Analysis of the carbon dioxide stream with sufficient frequency to yield data representative of its chemical and physical characteristics;

(b) Installation and use, except during well workovers as defined in 335-6-8-.20(4), of continuous recording devices to monitor injection pressure, rate, and volume; the pressure on the annulus between the tubing and the long string casing; and the annulus fluid volume added;

(c) Corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion, which must be performed on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in 335-6-8-.18(2), by:

1. Analyzing coupons of the well construction materials placed in contact with the carbon dioxide stream; or

2. Routing the carbon dioxide stream through a loop constructed with the material used in the well and inspecting the materials in the loop; or

3. Using an alternative method approved by the Department;

(d) Periodic monitoring of the ground water quality and geochemical changes above the confining zone(s) that may be a result of carbon dioxide movement through the confining zone(s) or additional identified zones including:

1. The location and number of monitoring wells based on specific information about the geologic sequestration project, including injection rate and volume, geology, the presence of artificial penetrations, and other factors; and

2. The monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data that has been collected under 335-6-8-.14(1)(f) and on any modeling results in the area of review evaluation required by 335-6-8-.16(3).

(e) A demonstration of external mechanical integrity pursuant to 335-6-8-.21(3) at least once per year until the injection well is plugged; and, if required by the Department, a casing inspection log pursuant to requirements at 335-6-8-.21(4) at a frequency established in the testing and monitoring plan;

(f) A pressure fall-off test at least once every five years unless more frequent testing is required by the Department based on site-specific information;

(g) Testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure (e.g., the pressure front) by using:

1. Direct methods in the injection zone(s); and,

2. Indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys and/or down-hole carbon dioxide detection tools), unless the Department determines, based on site-specific geology, that such methods are not appropriate;

(h) The Department may require surface air monitoring and/or soil gas monitoring to detect movement of carbon dioxide that could endanger a USDW.

1. Design of Class VI surface air and/or soil gas monitoring must be based on potential risks to USDWs within the area of review;

2. The monitoring frequency and spatial distribution of surface air monitoring and/or soil gas monitoring must be decided using baseline data, and the monitoring plan must describe how the proposed monitoring will yield useful information on the area of review delineation and/or compliance with standards under 335-6-8-.05 of this chapter;

3. If an owner or operator demonstrates that monitoring employed under §§98.440 to 98.449 (Clean Air Act, 42 U.S.C. 7401 et seq.) accomplishes the goals of paragraphs (h)(1) and (2) of this section, and meets the requirements pursuant to 335-6-8-.23(1)(c)(5), the Department must approve the use of monitoring employed under §§98.440 to 98.449 if surface air/soil gas monitoring is required by the Department. Compliance with §§98.440 to 98.449 pursuant to this provision is considered a condition of the Class VI permit;

(i) Any additional monitoring, as required by the Department, necessary to support, upgrade, and improve computational modeling of the area of review evaluation required under 335-6-8-.16(3) and to determine compliance with standards under 335-6-8-.05 of this chapter;

(j) The owner or operator shall periodically review the testing and monitoring plan to incorporate monitoring data collected under any requirements for Class VI wells of this chapter, operational data collected under 335-6-8-.20, and the most recent area of review reevaluation performed under 335-6-8-.16(5). In no case shall the owner or operator review the testing and monitoring plan less often than once every five years. Based on this review, the owner or operator shall submit an amended testing and monitoring plan or demonstrate to the Department that no amendment to the testing and monitoring plan is needed. Any amendments to the testing and monitoring plan must be approved by the Department, must be

incorporated into the permit, and are subject to the permit modification requirements at 335-6-8-.08 of this chapter, as appropriate. Amended plans or demonstrations shall be submitted to the Department as follows:

1. Within one year of an area of review reevaluation;

2. Following any significant changes to the facility, such as addition of monitoring wells or newly permitted injection wells within the area of review, on a schedule determined by the Department; or

3. When required by the Department.

(k) A quality assurance and surveillance plan for all testing and monitoring requirements.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.23 Class VI Well Reporting Requirements.

(1) The owner or operator must provide the following reports to the Department, and to EPA, at a minimum, on a semi-annual basis, and as specified in paragraph (e) of this section, for each permitted Class VI well. The Department and EPA may each specify a more frequent schedule for submittal of the following reports:

(a) Reports containing:

1. Any changes to the physical, chemical, and other relevant characteristics of the carbon dioxide stream from the proposed operating data;

2. Monthly average, maximum, and minimum values for injection pressure, flow rate and volume, and annular pressure;

3. A description of any event that exceeds operating parameters for annulus pressure or injection pressure specified in the permit;

4. A description of any event which triggers a shut-off device required pursuant to 335-6-8-.20(5) and the response taken;

5. The monthly volume and/or mass of the carbon dioxide stream injected over the reporting period and the volume injected cumulatively over the life of the project;

6. Monthly annulus fluid volume added; and

7. The results of monitoring prescribed under 335-6-8-.22.

(b) Report, within 30 days, the results of:

1. Periodic tests of mechanical integrity;

2. Any well workover; and,

3. Any other test of the injection well conducted by the permittee if required by the Department.

(c) Report, within 24 hours:

1. Any evidence that the injected carbon dioxide stream or associated pressure front may cause an endangerment to a USDW;

2. Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs;

3. Any triggering of a shut-off system (i.e., down-hole or at the surface);

4. Any failure to maintain mechanical integrity; or

5. Pursuant to compliance with the requirements at 335-6-8-.22(h) for surface air/soil gas monitoring or other monitoring technologies, if required by the Department, any release of carbon dioxide to the atmosphere or biosphere.

(d) Owners or operators must notify the Department in writing 30 days in advance of:

1. Any planned well workover;

2. Any planned stimulation activities, other than stimulation for formation testing conducted under 335-6-8-.14; and

3. Any other planned test of the injection well conducted by the permittee.

(e) Owners or operators must submit all required reports, submittals, and notifications relating to Class VI injection well facilities and activities, required by this chapter, to EPA in an electronic format approved by EPA.

(f) Records shall be retained by the owner or operator as follows:

1. All data collected under 335-6-8-.14 for Class VI permit applications shall be retained throughout the life of the geologic sequestration project and for 10 years following site closure.

2. Data on the nature and composition of all injected fluids collected pursuant to 335-6-8-.22(1)(a) shall be retained until 10 years after site closure. The Department may require the owner or operator to deliver the records to the Department at the conclusion of the retention period.

3. Monitoring data collected pursuant to 335-6-8-.22(1)(b) through (i) shall be retained for 10 years after it is collected.

4. Well plugging reports, post-injection site care data, including, if appropriate, data and information used to develop the demonstration of the alternative post-injection site care timeframe, and the site closure report collected pursuant to requirements at 335-6-8-.25(6) and (8) shall be retained for 10 years following site closure.

5. The Department has authority to require the owner or operator to retain any records required in this subpart for longer than 10 years after site closure.

Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.24 Class VI Well Plugging Requirements.

(1) At the conclusion of CO2 injection activities, the injection well must be permanently plugged, permanently removed from service, and cannot be converted to any other type of use.

(2) Prior to the well plugging, the owner or operator must flush each Class VI injection well with a buffer fluid, determine bottomhole reservoir pressure, and perform a final external mechanical integrity test.

(3) The owner or operator of a Class VI well must prepare, maintain, and comply with a well plugging plan that is acceptable to the Department. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the

requirement is a condition of the permit. The well plugging plan must be submitted as part of the permit application and must include the following information:

(a) Appropriate tests or measures for determining bottomhole reservoir pressure;

(b) Appropriate testing methods to ensure external mechanical integrity as specified in 335-6-8-.21;

(c) The type and number of plugs to be used;

(d) The placement of each plug, including the elevation of the top and bottom of each plug;

(e) The type, grade, and quantity of material to be used in plugging. The material must be compatible with the carbon dioxide stream; and

(f) The method of placement of the plugs.

(4) The owner or operator must notify the Department, in writing, at least 60 days before plugging of a well. At this time, if any changes have been made to the original well plugging plan, the owner or operator must also provide the proposed revisions to the well plugging plan. The Department may allow for a shorter notice period. Any amendments to the injection well plugging plan must be approved by the Department, must be incorporated into the permit, and are subject to the permit modification requirements of 335-6-8-.08.

(5) Within 60 days after plugging, the owner or operator must submit a plugging report to the Department, and to the EPA, pursuant to rule 335-6-8-.23(e). The report must be certified as accurate by the owner or operator and by the person who performed the plugging operation (if other than the owner or operator.) The owner or operator shall retain the well plugging report for 10 years following site closure.
Author: Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.25 Class VI Well Post-Injection Site Care and Site Closure Requirements.

(1) The owner or operator of a Class VI well must prepare, maintain, and comply with a plan for post-injection site care and site closure that meets the requirements of paragraph (1)(b) of this rule and is acceptable to the Department. The requirement to

maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(a) The owner or operator must submit the post-injection site care and site closure plan as a part of the permit application to be approved by the Department.

(b) The post-injection site care and site closure plan must include the following information:

1. The pressure differential between pre-injection and predicted post-injection pressures in the injection zone(s);

2. The predicted position of the carbon dioxide plume and associated pressure front at site closure as demonstrated in the area of review evaluation required under 335-6-8-.16(3)(a);

3. A description of post-injection monitoring location, methods, and proposed frequency;

4. A proposed schedule for submitting post-injection site care monitoring results to the Department and to EPA pursuant to 335-6-8-.23(1)(e); and,

5. The duration of the post-injection site care timeframe and, if approved by the Department, the demonstration of the alternative post-injection site care timeframe that ensures non-endangerment of USDWs.

(c) Upon cessation of injection, owners or operators of Class VI wells must either submit an amended post-injection site care and site closure plan or demonstrate to the Department through monitoring data and modeling results that no amendment to the plan is needed. Any amendments to the post-injection site care and site closure plan must be approved by the Department, be incorporated into the permit, and are subject to the permit modification requirements at 335-6-8-.08 of this chapter, as appropriate.

(d) At any time during the life of the geologic sequestration project, the owner or operator may modify and resubmit the post-injection site care and site closure plan for the Department’s approval within 30 days of such change.

(2) The owner or operator shall monitor the site following the cessation of injection to show the position of the carbon dioxide plume and pressure front and demonstrate that USDWs are not being endangered.

(a) Following the cessation of injection, the owner or operator shall continue to conduct monitoring as specified in the Department-approved post-injection site care and site closure plan for at least 50 years or for the duration of the alternative timeframe approved by the Department pursuant to requirements in paragraph (3) of this rule, unless he/she makes a demonstration under (2)(b) of this rule. The monitoring must continue until the geologic sequestration project no longer poses an endangerment to USDWs and the demonstration under (2)(b) of this section is submitted and approved by the Department.

(b) If the owner or operator can demonstrate to the satisfaction of the Department before 50 years or prior to the end of the approved alternative timeframe based on monitoring and other site-specific data, that the geologic sequestration project no longer poses an endangerment to USDWs, the Department may approve an amendment to the post-injection site care and site closure plan to reduce the frequency of monitoring or may authorize the site closure before the end of the 50-year period or prior to the end of the approved alternative timeframe, where he or she has substantial evidence that the geologic sequestration project no longer poses a risk of endangerment to USDWs.

(c) Prior to authorization for site closure, the owner or operator must submit to the Department for review and approval a demonstration, based on monitoring and other site-specific data, that no additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to USDWs.

(d) If the demonstration in paragraph (2)(c) of this section cannot be made (i.e., additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to USDWs) at the end of the 50-year period or at the end of the approved alternative timeframe, or if the Department does not approve the demonstration, the owner or operator must submit to the Department a plan to continue post-injection site care until a demonstration can be made and approved by the Department.

(3) *Demonstration of alternative post-injection site care timeframe*. At the Department's discretion, the Department may approve, in consultation with EPA, an alternative post-injection site care timeframe other than the 50 year default, if an owner or operator can demonstrate during the permitting process that an alternative post-injection site care timeframe is appropriate and ensure non-endangerment of USDWs. The demonstration must be based on significant, site-specific data and information including all data and information collected pursuant to 335-6-8-.14 and 335-6-8-.15, and must contain substantial evidence that the geologic sequestration project will no longer pose a risk of

endangerment to USDWs at the end of the alternative post-injection site care timeframe.

(a) A demonstration of an alternative post-injection site care timeframe must include consideration and documentation of:

1. The results of computational modeling performed pursuant to delineation of the area of review under 335-6-8-.16;

2. The predicted timeframe for pressure decline within the injection zone, and any other zones, such that formation fluids may not be forced into any USDWs; and/or the timeframe for pressure decline to pre-injection pressures;

3. The predicted rate of carbon dioxide plume migration within the injection zone, and the predicted timeframe for the cessation of migration;

4. A description of the site-specific processes that will result in carbon dioxide trapping including immobilization by capillary trapping, dissolution, and mineralization at the site;

5. The predicted rate of carbon dioxide trapping in the immobile capillary phase, dissolved phase, and/or mineral phase;

6. The results of laboratory analyses, research studies, and/or field or site-specific studies to verify the information required in 335-6-8-.25(3)(a)4 and 335-6-8-.25(3)(a)5 of this rule;

7. A characterization of the confining zone(s) including a demonstration that it is free of transmissive faults, fractures, and micro-fractures and of appropriate thickness, permeability, and integrity to impede fluid (e.g., carbon dioxide, formation fluids) movement;

8. The presence of potential conduits for fluid movement including planned injection wells and project monitoring wells associated with the proposed geologic sequestration project or any other projects in proximity to the predicted/modeled, final extent of the carbon dioxide plume and area of elevated pressure;

9. A description of the well construction and an assessment of the quality of plugs of all abandoned wells within the area of review;

10. The distance between the injection zone and the nearest USDWs above and/or below the injection zone; and

11. Any additional site-specific factors required by the Department.

(b) Information submitted to support the demonstration in paragraph (3)(a) of this rule must meet the following criteria:

1. All analyses and tests performed to support the demonstration must be accurate, reproducible, and performed in accordance with the established quality assurance standards;

2. Estimation techniques must be appropriate and EPA-certified test protocols must be used where available;

3. Predictive models must be appropriate and tailored to the site conditions, composition of the carbon dioxide stream and injection and site conditions over the life of the geologic sequestration project;

4. Predictive models must be calibrated using existing information (e.g., at Class II, or Class V experimental technology well sites) where sufficient data are available;

5. Reasonably conservative values and modeling assumptions must be used and disclosed to the Department whenever values are estimated on the basis of known, historical information instead of site-specific measurements;

6. An analysis must be performed to identify and assess aspects of the alternative post-injection site care timeframe demonstration that contribute significantly to uncertainty. The owner or operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration.

7. An approved quality assurance and quality control plan must address all aspects of the demonstration; and,

8. Any additional criteria required by the Department.

(4) Notice of intent for site closure. The owner or operator must notify the Department in writing at least 120 days before site closure. At this time, if any changes have been made to the original post-injection site care and site closure plan, the owner or operator must also provide the revised plan. The Department may allow for a shorter notice period.

(5) After the Department has authorized site closure, the owner or operator must plug all monitoring wells in a manner which will not

allow movement of injection or formation fluids that endangers a USDW.

(6) The owner or operator must submit a site closure report to the Department within 90 days of site closure, which must thereafter be retained at a location designated by the Department for 10 years. The report must include:

(a) Documentation of appropriate injection and monitoring well plugging as specified in 335-6-8-.24 and paragraph (5) of this rule. The owner or operator must provide a copy of a survey plat which has been submitted to the local zoning authority designated by the Department. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks. The owner or operator must also submit a copy of the plat to the Regional Administrator of the appropriate EPA Regional Office;

(b) Documentation of appropriate notification and information to such State, local, and Tribal authorities that have authority over drilling activities to enable such State, local, and Tribal authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zone(s); and

(c) Records reflecting the nature, composition, and volume of the carbon dioxide stream.

(7) Each owner or operator of a Class VI injection well must record a notation on the deed to the facility property or any other document that is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(a) The fact that land has been used to sequester carbon dioxide;

(b) The name of the State agency, local authority, and/or Tribe with which the survey plat was filed, as well as the address of the Environmental Protection Agency Regional Office to which it was submitted; and

(c) The volume of fluid injected, the injection zone or zones into which it was injected, and the period over which injection occurred.

(8) The owner or operator must retain for 10 years following site closure, records collected during the post-injection site care period. The owner or operator must deliver the records to the Department at the conclusion of the retention period, and the records must thereafter be retained at a location designated by the Department for that purpose.

Author: Sonja Massey

Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: New Rule: Filed August 22, 2011; effective September 26, 2011.

335-6-8-.26 Class VI Well Emergency And Remedial Response Requirements.

(1) As part of the permit application, the owner or operator must provide the Department with an emergency and remedial response plan that describes actions the owner or operator must take to address movement of the injection or formation fluids that may cause an endangerment to a USDW during construction, operation, and post-injection site care periods. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

2. If the owner or operator obtains evidence that the injected carbon dioxide stream and associated pressure front may cause an endangerment to a USDW, the owner or operator must:

(a) Immediately cease injection;

(b) Take all steps reasonably necessary to identify and characterize any release;

(c) Notify the Department within 24 hours; and

(d) Implement the emergency and remedial response plan approved by the Department.

3. The Department may allow the operator to resume injection prior to remediation if the owner or operator demonstrates that the injection operation will not endanger USDWs.

4. The owner or operator shall periodically review the emergency and remedial response plan developed under paragraph (1) of this rule. In no case shall the owner or operator review the emergency and remedial response plan less often than once every five years. Based on this review, the owner or operator shall submit an amended emergency and remedial response plan or demonstrate to the Department that no amendment to the emergency and remedial response plan is needed. Any amendments to the emergency and remedial response plan must be approved by the Department, must be incorporated into the permit, and are subject to the permit modification requirements at 335-6-8-.08 of this chapter, as appropriate. Amended plans or demonstrations shall be submitted to the Department as follows:

(a) Within one year of the area of review reevaluation;

(b) Following any significant changes to the facility, such as addition of injection or monitoring wells, on a schedule determined by the Department; or

(c) When required by the Department.

Author: Sonja Masse
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.27 Class VI Well Permit Requirements.

The following conditions apply to all Class VI permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the applicable rule will be given in the permit.

(1) Duty to comply. The permittee must comply with all conditions of the permit. Any permit non-compliance constitutes a violation of this chapter and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification.

(2) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(3) Duty to mitigate. The permittee shall take all necessary steps to minimize or correct any adverse impact on a USDW, the environment, or the health of persons, in accordance with the requirements of rule 335-6-8-.05(2) and rule 335-6-8-.06.

(4) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit.

(5) Permit actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by

the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated non-compliance, does not stay any permit condition.

(6) Property rights. This permit does not convey any property rights of any sort, or any exclusive privilege.

(7) Duty to provide information. The permittee shall furnish to the Department, within a time specified, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

(8) Inspection and entry. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials and other documents as may be required by law, to:

(a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

(9) Monitoring and records. The following monitoring and recordkeeping requirements shall apply:

(a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(b) EPA approved analytical methods shall be used for all sampling and analytical requirements. If there is no EPA approved method for a monitoring parameter, the Department reserves the right to approve the analytical method to be used.

(c) The permittee shall retain records of all monitoring information, including the following:

(i) Calibration and maintenance records and all original strip chart recording for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 10 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Department at any time; and

(ii) The nature and composition of all injected fluids collected pursuant to 335-6-8-.22(1)(a) shall be retained until 10 years after site closure pursuant to 335-6-8-.23(1)(f)2. The Department may require the owner or operator to deliver the records to the Department at the conclusion of the retention period.

(d) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

(e) Owners or operators of Class VI wells shall also retain records as specified in rules 335-6-8-.16(7), 335-6-8-.23(1)(f), 335-6-8-.24(5), 335-6-8-.25(6), and 335-6-8-.25(8)

(10) Signatory requirement. All applications, reports, or information submitted to the Department shall be signed and certified:

(a) For a corporation, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means;

(i) A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

(ii) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures

(b) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

(c) For a municipality, State. Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) The chief executive officer of the agency, or

(ii) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

(11) Reports. All reports required by permits and other information requested by the Department shall be signed by a person described in paragraph (10) of this rule, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(a) The authorization is made in writing by a person described in paragraph (10) of this rule;

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may be either a named individual or any individual occupying a named position); and

(c) The written authorization is submitted to the Department.

(l2) Changes in authorization. If an authorization under paragraph (11) of this rule is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (11) if this rule must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

(13) Certification. Any person signing a document under paragraph (10) or (11) of this rule shall make the following certification:

(i) I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

(14) Reporting requirements

(a) Compliance with 335-6-8-.23. The permittee shall comply with all requirements of 335-6-8-.23. All Class VI program reports shall be consistent with reporting requirements set forth in 335-6-8-.23.

(b) Planned Changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility.

(c) Anticipated noncompliance. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements

(d) Transfers. The permittee shall report any proposed change of ownership to the Department. This permit is not transferable to any person except by modification of the permit or revocation and reissuance of the permit pursuant to 335-6-8-.08 to change the name of the permittee and incorporate such other requirements as may be necessary under the requirements of this chapter.

(e) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit. Monitoring reports shall be submitted to the Department not later than 28 days after the reporting period specified in the permit.

(f) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

(g) Twenty-four hour reporting. The permittee shall report within 24 hours, any noncompliance which may endanger the health of persons or the environment, including:

1. Any monitoring or other information which indicates that any contaminant may cause the pollution of a USDW, surface waters, or soils which could result in the pollution of a USDW or surface waters; or

2. Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs.

(h) Any circumstance or event which requires 24 hour reporting pursuant to paragraph (14)(g) of this rule shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance.

(i) Other noncompliance. The permittee shall report all instances of noncompliance not otherwise reported under paragraph (14) of this rule, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (14)(h) of this rule.

(j) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

(15) The requirements of rules 335-6-8-.13(1) through (4) and 335-6-8-.14 through 335-6-8-.26 shall be incorporated into any Class VI permit, either expressly or by reference. If incorporated by reference, a specific citation to the applicable rule will be given in the permit.

(16) The permit duration for a Class VI well shall be for the operating life of the facility and the post-injection site care period. The Department shall review each issued Class VI well UIC permit at least once every 5 years to determine whether it should be modified, revoked and reissued,

terminated or a minor modification made as provided in 335-6-8-.08.

(17) Construction of a new Class VI injection well is prohibited prior to the issuance of a permit which contains the construction requirements of 335-6-8-.18 and specific construction details approved by the Department in accordance with this chapter, pursuant to 335-6-8-.05 (1)(b). Changes in construction plans during construction may be approved by the Department as a minor modification.

(18) Requirements prior to commencing injection. Injection may not begin through a permitted Class VI well until:

(a) Modification of the Class VI UIC permit authorizing construction to authorize Class VI injection well operation pursuant to 335-6-8-.08. The Class VI operating permit shall include all applicable requirements of this chapter regarding Class VI wells, including but not limited to, area of review and area of review corrective action, operational requirements, maintenance of mechanical integrity, testing and monitoring, emergency and remedial response, plugging and abandonment and post-injection site care requirements for Class VI injection wells.

(b) Final injection well construction procedures and details demonstrating compliance with the requirements of 335-6-8-.18 have been submitted to the Department;

(c) All available logging and testing program data pursuant to the requirements of 335-6-8-.19 for a new Class VI injection well has been submitted to the Department;

(d) Mechanical integrity of the Class VI well has been demonstrated to the satisfaction of the Department pursuant to 335-6-8-.21;

(e) Any updates have been submitted to the Department for the proposed area of review and area of review corrective action plan, testing and monitoring plan, injection well plugging plan, post-injection site care and site closure plan, or the emergency and remedial response plan submitted under paragraph (1) of 335-6-8-.14, which are necessary to address new information collected during logging and testing of the Class VI injection well and the formation and any updates to the alternative post-injection site care timeframe demonstration submitted under paragraph (1) of 335-6-8-.14, which are necessary to address new information collected during the logging and testing of the Class VI injection well and the formation as required by 335-6-8-.19.

(f) The Department has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit. If the Department intends to inspect the well prior to authorizing injection operation, notice shall be given by the Department to the permittee.

(g) Notification has been received by the Department from the permittee that all required area of review corrective actions have been completed in the Class VI well area of review;

(h) Any other information has been submitted which the Department requests; and

(i) The Department has given written authorization for injection operation to begin.

(19) Plugging. The permittee shall notify the Department in writing at least 60 days prior to plugging of a well. The Department may allow for a shorter notice period.

(a) The permittee shall comply with all requirements of 335-6-8-.24 and 335-6-8-.25. The plugging and post-injection site care and site closure plans must be approved by the Department and shall be a part of the permit.

(b) Any amendments to the plugging and post-injection site care and site closure plans must be approved by the Department, must be incorporated into the permit and are subject to the permit modification requirements of 335-6-8-.08.

(c) Within 60 days after plugging, the permittee must submit a plugging report to the Department pursuant to 335-6-8-.24. The plugging report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of:

(i) A statement that the well was plugged in accordance with the plan which is included in the permit; or

(ii) Where actual plugging differed from the plan previously submitted, a description of all differences shall be submitted to the Department.

(d) For the purposes of this paragraph, temporary or intermittent cessation of injection operations is not abandonment as long as all requirements for active wells are met.

(e) After a cessation of operations of two years the owner or operator shall plug the well in accordance with the approved plan unless the permittee:

(i) Provides notice to the Department;

(ii) Describes actions or procedures, satisfactory to the Department, that the permittee will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with all requirements applicable to active Class VI injection wells unless waived by the Department.

(20) Duty to establish and maintain mechanical integrity.

(a) The owner or operator of a Class VI well permitted under this chapter shall establish mechanical integrity prior to commencing injection. Thereafter the owner or operator of a Class VI well must maintain mechanical integrity pursuant to 335-6-8-.21.

(b) When the Department determines that a Class VI well lacks mechanical integrity pursuant to 335-6-8-.21, the Department shall give written notice of such determination to the permittee. The Department may require immediate cessation of injection.

(c) Operation of a Class VI well which lacks mechanical integrity is prohibited until the permittee can again demonstrate mechanical integrity to the satisfaction of the Department pursuant to 335-6-8-.21.

(d) The Department may allow plugging of a well which lacks mechanical integrity, pursuant to the requirements of 335-6-8-.24 or require the permittee to take such actions as are necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The permittee may not resume injection until receiving written notification from the Department that mechanical integrity has again been adequately demonstrated.

(21) In the case of an existing well the following may be required;

(a) A schedule of compliance in accordance with 40 CFR Part 144.53

(b) Construction requirements necessary to achieve compliance.

(22) Area of review corrective action. Area of review corrective action shall be performed in accordance with a plan approved pursuant to 335-6-8-.16. The area of review and corrective action plan shall be established, maintained, reviewed and revised pursuant to 335-6-8-.16, and is subject to approval by the Department.

(23) A Class VI injection well permit shall include maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any USDW, that formation fluids are not displaced into any USDW, and must require compliance with the Class VI operating requirements of 335-6-8-.20.

(24) Financial Responsibility. The permittee shall show evidence of such financial responsibility to the Department by the submission of a qualifying instrument pursuant to 335-6-8-.17. The owner or operator of a Class VI well must comply with the financial responsibility requirements set forth in 335-6-8-.17, until:

(a) The well has been plugged in accordance with an approved plugging plan pursuant to 335-6-8-.24; submitted a plugging report; and has met all post-injection site care requirements of 335-6-8-.25 ; or

(b) The transferor of a permit has received notice from the Department that the owner or operator receiving transfer of the permit, the new permittee, has demonstrated financial responsibility for the well.

(25) Additional conditions.

(a) The Department shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into underground sources of drinking water;

(b) The Department shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all state statutory or regulatory requirements relating to Class VI injection wells. An applicable requirement is any requirement which takes effect prior to the modification or revocation and reissuance of a permit, pursuant to 335-6-8-.08.

(26) Modification or revocation and reissuance of permit. When the Department receives any information from such sources as a facility inspection, information submitted by the permittee, a request for modification or revocation and reissuance under 40 CFR Part 124.5, or conducts a review of the permit file, the Department may determine whether or not one or more of the

causes listed in subparagraphs (a) and (b) of this paragraph for modification or revocation and reissuance or both exist. If cause exists, the Department may modify or revoke and reissue the permit accordingly, subject to the limitations of paragraph (c) of this rule, and may request an updated application if necessary. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision. See 40 CFR Part 124.5(c)(2). If cause does not exist under this paragraph or paragraph (27) of this rule, the Department shall not modify or revoke and reissue the permit. If a permit modification satisfies the criteria in paragraph (27) of this rule for "minor modifications" the permit may be modified without a draft permit or public review. Otherwise, a draft permit must be prepared and the public notice procedures in 335-6-8-.08 must be followed.

(a) Causes for modification. The following are causes for modification. For Class VI wells the following may be causes for revocation and reissuance as well as modification;

1. Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

2. Information. The permit may be modified for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance.

3. New regulations. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued.

4. Compliance schedules. The Department determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy.

5. Additional causes for modification of permits for Class VI wells:

(i) Area of review reevaluation under 335-6-8-.16;

(ii) Any amendments to the testing and monitoring plan under 335-6-8-.22;

(iii) Any amendments to the injection well plugging plan under 335-6-8-.24;

(iv) Any amendments to the post-injection site care and site closure plan under 335-6-8-.25;

(v) Any amendments to the emergency and remedial response plan under 335-6-8-.26; or

(vi) A review of monitoring and/or testing results conducted in accordance with permit requirements;

(b) Causes for modification or revocation and reissuance. The following are causes to modify or, alternatively, revoke and reissue a permit:

1. Cause exists for termination under paragraph (28) of this rule and the Department determines that modification or revocation and reissuance is appropriate.

2. The Department has received notification, pursuant to 335-6-8-.27(14)(d) of a proposed transfer.

(c) Facility siting. Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.

(27) Minor modifications of permit. Upon the consent of the permittee, the Department may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this paragraph, without following the procedures of 335-6-8-.08. Any permit modification not processed as a minor modification under this section must be made for cause and follow the procedures of 335-6-8-.08 with the preparation of a draft permit and completion of public notice procedures. Minor modifications may only;

(a) Correct typographical errors;

(b) Require more frequent monitoring or reporting by the permittee;

(c) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and

does not interfere with attainment of the final compliance date requirement; or

(d) Allow for a change in ownership or operational control of a facility where the Department determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Department.

(e) Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the Department, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification.

(f) Change construction requirements approved by the Department pursuant to 335-6-8-.27(17), provided that any such alteration shall comply with the requirements of 335-6-8-.27(27), 335-6-8-.27 (17), and 335-6-8-.18.

(g) Amend a Class VI injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the Department.

(28) Termination of permit.

(a) The Department may terminate a permit during its term, or deny a permit renewal application for the following causes:

(1) Noncompliance by the permittee with any condition of the permit;

(2) The permittee’s failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee’s misrepresentation of any relevant facts at any time; or

(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.

(b) The Department shall follow the applicable procedures in 335-6-8-.08 in terminating any permit for cause under this section.

Author: Sonja Massey

Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: **New Rule:** Filed August 22, 2011; effective September 26, 2011.

335-6-8-.28 Technical Submittals And Other Reports To The Department.

(1) Studies, engineering reports, plans and specifications, plugging and abandonment plans, well logs, drilling logs, and other technical submittals required by this Chapter involve the practice of engineering and/or land surveying, as those terms are defined in Code of Ala. 1975, as amended, §§34-11-1 to 34-11-37; and/or the practice of geology, as that term is defined in Code of Ala. 1975, as amended, §§34-41-1 to 34-41-24. It is the responsibility of any person preparing or submitting such submissions to ensure compliance with these laws and any regulations promulgated thereunder, as may be required by the State Board of Registration for Professional Engineers and Land Surveyors and/or the Alabama Board of Licensure for Professional Geologists. All submissions, or parts thereof, which are required by State law to be prepared by a licensed engineer, land surveyor, or geologist, must include the engineer's, land surveyor's, and/or geologist's signature and/or seal, as required by the applicable licensure laws.

(2) Technical submittals and other reports, other than permit applications for Class III and Class V wells, shall include the certification in subparagraph (d) item 4. of Rule 335-6-8-.12 and the signature of the responsible official described in subparagraph (1)(n) of Rule 335-6-8-.09, or a duly authorized representative of the responsible official in accordance with item 3. of Rule 335-6-8-.12. For Class VI wells, technical submittals, reports and permit applications must meet the certification and signature requirements of 335-6-8-.27(10) through 335-6-8-.27(13).
Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed August 22, 2011; effective September 26, 2011.

Ed. Note: Rule .13 was renumbered to .28 as per certification filed August 22, 2011; effective September 26, 2011.

335-6-8-.29 Coordination With EPA.

Copies of permit applications, permits, inspection reports, monitoring reports, and compilations of various other information concerning the UIC program shall be submitted to EPA by the Department in accordance with Federal regulations and/or State/EPA UIC Memorandum of Agreement.
Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed August 22, 2011; effective September 26, 2011.

Ed. Note: Rule .14 was renumbered to .29 as per certification filed August 22, 2011; effective September 26, 2011.

335-6-8-.30 Confidentiality.

The public shall have access to applications, public notices, fact sheets, draft, general and final permits and written comments on these documents. Other permit related forms shall not be released to the extent that they contain confidential information. Information determined to be data describing fluids and/or pollutants injected or to be injected shall not be classified confidential. Any trade secret information shall be classified as confidential information. All matters involving public access to information and protection of confidential information shall be handled in accordance with Chapter 335-6-1.
Author: Curt Johnson, Thad Pittman, Sonja Massey
Statutory Authority: Code of Ala. 1975, §§22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.
History: Effective June 10, 1982. **Amended:** October 10, 1984. **Repealed and New Rule:** Filed April 11, 2002; effective May 16, 2002. **Amended:** Filed June 23, 2009; effective July 28, 2009. **Amended:** Filed August 22, 2011; effective September 26, 2011.

Ed. Note: Rule .15 was renumbered to .30 as per certification filed August 22, 2011; effective September 26, 2011.