

**TRANSMITTAL SHEET FOR
NOTICE OF INTENDED ACTION**

Control 335 Department or Agency Environmental Management
Rule No. 335-6-8-20
Rule Title: Class VI Well Operating Requirements

New Amend Repeal Adopt by Reference

Would the absence of the proposed rule significantly harm or endanger the public health, welfare, or safety? YES

Is there a reasonable relationship between the state's police power and the protection of the public health, safety, or welfare? YES

Is there another, less restrictive method of regulation available that could adequately protect the public? NO

Does the proposed rule have the effect of directly or indirectly increasing the costs of any goods or services involved and, if so, to what degree? NO

Is the increase in cost, if any, more harmful to the public than the harm that might result from the absence of the proposed rule? N/A

Are all facets of the rulemaking process designed solely for the purpose of, and so they have, as their primary effect, the protection of the public? YES

Does the proposed rule have an economic impact? NO

If the proposed rule has an economic impact, the proposed rule is required to be accompanied by a fiscal note prepared in accordance with subsection (f) of section 41-22-23, Code of Alabama 1975.

Certification of Authorized Official

I certify that the attached proposed rule has been proposed in full compliance with the requirements of Chapter 22, Title 41, Code of Alabama 1975, and that it conforms to all applicable filing requirements of the Administrative Procedure Division of the Legislative Reference Service.

Signature of certifying officer Marilyn Elliott

Date May 20, 2011

Date Filed



APA-2
11/96

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WATER DIVISION**

NOTICE OF INTENDED ACTION

AGENCY NAME: Alabama Department of Environmental Management

| Rule NO. | Title |
|-----------------|--|
| 335-6-8-.01 | Purpose |
| 335-6-8-.02 | Definitions |
| 335-6-8-.05 | Prohibited Actions |
| 335-6-8-.07 | Permit Issuance Procedures |
| 335-6-8-.08 | Public Notice Requirements |
| 335-6-8-.10 | Class V Well Permit Application 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 |

INTENDED ACTION: Revise Division 6 of the ADEM Administrative Code with the addition or amendment of Rules 335-6-8-.01 (Purpose), 335-6-8-.02 (Definitions), 335-6-8-.05 (Prohibited Actions), 335-6-8-.07 (Permit Issuance Procedures), 335-6-8-.08

(Public Notice), 335-6-8-.10 (Class V Well Permit Application Requirements), 335-6-8-.12 (Permit Issuance Procedures), 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 (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 Plan), 335-6-8-.25 (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), and 335-6-8-.30 (Confidentiality).

SUBSTANCE OF PROPOSED ACTION:

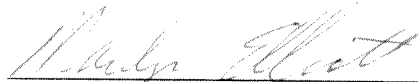
Revisions to the Division 6 Code are being proposed to include requirements for Class VI injection wells, for geologic sequestration of carbon dioxide. The proposed additions and amendments are consistent with the federal regulations for Class VI wells published in the Federal Register on December 10, 2010.

TIME, PLACE, MANNER OF PRESENTING VIEWS:

Comments may be submitted in writing or orally at a public hearing to be held 1:00 p.m., July 11, 2011, in the ADEM Hearing Room, 1400 Coliseum Blvd., Montgomery, Alabama 36110.

FINAL DATE FOR COMMENT AND COMPLETION OF NOTICE: July 11, 2011

CONTACT PERSON AT AGENCY: Sonja Massey (334) 271-7832



Lance R. LeFleur
Director

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 Alabama 1975, §§ 22-22-9, 22-22A-5, 22-22A-6, 22-22A-8.

History: XXXXXX, 2011.