

Procedure for Class IV Groundwater Reclassification

Approved by _____ Date 11/12/00
Scott Johnstone, Secretary
Agency of Natural Resources

I. Purpose and Authority

This procedure is adopted under the authority of 3 VSA Chapter 25, 10 VSA Chapter 48, and the Groundwater Protection Rule and Strategy. This procedure supersedes the “Procedure for Class IV Groundwater Reclassification,” dated March 9, 1999; the “Interim Procedures for the Submission and Review of Proposals for the Reclassification of Ground Water to Class IV,” dated October 13, 1992; and the “Hazardous Materials Management Division Policy to Map Class IV Ground Water Areas,” dated November 16, 1992.

This procedure is intended to provide guidance to parties interested in submitting a petition to reclassify groundwater in Vermont to Class IV. 10 VSA Chapter 48 and the Groundwater Protection Rule and Strategy should also be reviewed in conjunction with this procedure.

Statutory Authority

This procedure is written to address the requirements of the Groundwater Protection statute, 10 VSA §1392:

- (a) The secretary shall develop a comprehensive groundwater management program to protect the quality of groundwater resources by: . .*
- (6) classifying groundwater resources according to the provisions of this chapter and adopting technical criteria and standards for the management of activities that may pose a risk to their beneficial uses;. . . .*

The statute (10 VSA §1394(b)) states “All groundwater of the state is hereby classified as Class III water unless reclassified by the secretary.”

Regulatory Authority

The Groundwater Protection Rule and Strategy, effective date 11/15/97 (GWPR&S), details the process of reclassification in Subchapter Four. This subchapter is copied at the end of this procedure.

II. Definitions

“Agency” means the Agency of Natural Resources.

“Class III groundwater” means groundwater that has been classified by the statute or reclassified by the Secretary and that is suitable as a source of water for individual domestic water supply, irrigation, agricultural use and general industrial and commercial use.

“Class IV groundwater” means groundwater that has been classified by the Secretary and that is not suitable as a source of potable water but suitable for some agricultural, industrial and commercial use.

“Groundwater” means water below the land surface in a zone of saturation, but does not include surface waters within the meaning of 10 V.S.A. §1251(13).

“Groundwater Coordinating Committee” means the committee established by the Secretary which advises the Secretary on matters concerning groundwater.

“Non-potable groundwater” means groundwater which is not “potable groundwater” or which will not be “potable groundwater” for at least five years, or is scientifically predicted to become unsuitable as a source of “potable groundwater” within five years.

“Potable groundwater” means groundwater free from impurities in amounts sufficient to cause disease or harmful physiological effects, and having biological, chemical, physical and radiological quality conforming to applicable standards of the Agency.

“Secretary” means the Secretary of the Agency of Natural Resources or the Secretary’s designee.

III. When to Reclassify

The decision to reclassify or for the Secretary to require reclassification through the regulatory authority of other programs should be based on scientific evidence of non-potable groundwater, the regulatory considerations for reclassification, and the risk to public health. The Secretary may prioritize which sites to initiate reclassification actions for.

Other parties who are considering submitting a petition to reclassify groundwater to Class IV should also consider the same concepts. Potential petitioners may wish to review previous Class IV actions. These are available for review at the Department of Environmental Conservation, Water Supply Division’s offices in Waterbury, Vermont.

IV. Petition Information

This section details the documents and information that should be included in the initial submittal to request reclassification of groundwater to Class IV. The Groundwater Coordinating Committee may request additional information after it has completed the review. Also, the Groundwater Coordinating Committee may request that the petitioner or a representative of the petitioner to attend a committee meeting to explain the petition and answer questions.

A groundwater reclassification applies to all groundwater under a site in accordance with statutory language.

A petition to reclassify groundwater to Class IV must include the following information. The Secretary reserves the right to require additional information. The data must be sufficient to justify the proposed reclassification.

A. Administrative Information

1. A signed petition requesting reclassification (see example)
2. Names and addresses of all adjoining landowners to the parcel(s) proposed for reclassification
3. Names and addresses of all owners of parcels proposed for reclassification
4. Site Description and History
5. Long and short-term management of the site

B. Technical Information

All available groundwater quality and hydrogeological data should be considered in delineating an area of Class IV groundwater. The technical information for delineating the boundary of a Class IV area is attached to this document.

1. Maps and information
 - a. USGS topo map showing location of proposed Class IV groundwater area
 - b. Map(s) of an appropriate scale showing:
 - i. Outline of area proposed for reclassification
 - ii. Outline of contaminated groundwater area
 - iii. Monitoring well locations and well identification numbers
 - iv. Buildings, roads, drinking water sources (public and private) near the site, and any Public Water Supply Source Protection Areas
 - v. Topography
 - vi. Property lines and parcel owners
 - vii. Surface water bodies and wetlands
 - viii. Geologic Information (e.g., soils, geology, hydrogeology)
2. Analysis of Data
 - a. Groundwater and surface water quality data

- b. Statistical analysis of data as specified in the Groundwater Protection Rule and Strategy (Section 12-706(2))
- c. Description of the fate and transport of contaminants
- d. Geology and soils information
- e. Description of boundary delineation methodology

C. Evaluation Criteria

The petition must address the site with respect to each of the follow evaluation criteria:

- 1. The use or potential future use of the groundwater as a public water supply source;
- 2. The extent of activity which poses a risk to groundwater;
- 3. The current water quality of the groundwater;
- 4. The availability of the groundwater in quantities needed for beneficial use;
- 5. The consequences of its potential contamination and the availability of alternate sources of water;
- 6. The classification of adjacent surface waters;
- 7. The high probability for use as a public water supply source; and
- 8. Other factors relevant to determine the maximum beneficial use of the groundwater.

V. Reclassification Process

A. Submittal of Petition

- 1. A minimum of three copies of the petition should be submitted to the Chair of the Groundwater Coordinating Committee, through the Director of the Water Supply Division.
- 2. The Water Supply Division and other appropriate divisions within the Department of Environmental Conservation will complete an initial review of the petition. If the petition is considered administratively complete, it will be forwarded for the Groundwater Coordinating Committee to review.
- 3. The Chair of the Groundwater Coordinating Committee will notify the petitioner of the scheduled meeting time and location.

B. Review and Comment by Groundwater Coordinating Committee

- 1. The Groundwater Coordinating Committee will review the petition. They may request additional information from the petitioner. This review and request process may occur multiple times. The Groundwater Coordinating Committee may request technical assistance in reviewing the petition from other appropriate parties.
- 2. Once the Committee has sufficient information to make a recommendation, it will recommend to the Secretary whether to continue with the reclassification process and provide a basis for the recommendation.

3. The Groundwater Coordinating Committee is responsible for writing a Draft Findings of Fact and Reclassification Order for review during the public participation phase.

C. Public Participation

1. Public Comment Period

A minimum 30 day comment period starting on the date that the notice is published in the local newspaper will be provided.

The Secretary will provide notice of any proposed reclassification by:

- a. advertisement in newspapers of general circulation in the area of the proposed classification or reclassification;
- b. written notice with the appropriate town clerk;
- c. written notice to all potentially affected property owners of record, and other persons as appropriate, of the proposed classification or reclassification action;
- d. written notice to the appropriate Regional Planning Commission; and
- e. written notice to the Groundwater Coordinating Committee.

2. Public Meeting

Upon the request of an interested person or upon the Secretary's motion, the Secretary will hold a public information meeting on any proposed reclassification.

The public information meeting will be held in a location convenient to the users or potential users of the groundwater which is the subject of the public information meeting. The Secretary will provide notice of the date, time, and location of the public information meeting.

- a. The petitioner or a designated representative must attend the public meeting.
- b. The Water Supply Division will facilitate the meeting.
- c. The DEC program responsible for technical review should attend the meeting.

3. Response

- a. Prior to the issuance of any final classification or reclassification decision, the Groundwater Coordinating Committee and the Secretary shall consider all comments received during the public comment period and the public information meeting. As appropriate the Findings of Fact and Reclassification Order will be revised.
- b. The Groundwater Coordinating Committee will make a recommendation to the Secretary to either deny the reclassification request or reclassify the groundwater.

D. Recommendation to the Secretary

1. Decision to Reclassify to Class IV

If the Secretary decides to approve the reclassification, the petitioner is responsible for submitting a GIS data file of the reclassified area prior to the Secretary signing the Findings of Fact and Reclassification Order. The petitioner may submit this file as part of the original petition; however, the Groundwater Coordinating Committee may request the petitioner to change the proposed reclassified area.

2. Denial of Reclassification

If the Secretary decides to deny the reclassification, the petitioner will be notified in writing with the reasons for the denial.

E. Distribution of Maps and Decision

A copy of the decision and a map of the reclassified area will be distributed by the Secretary to:

- (a) the petitioner and directly affected landowners;
- (b) the town clerk in the town or towns affected;
- (c) the Agency regional office for the area affected;
- (d) the owners and/or operators of any public water supplies affected;
- (e) Well Drillers Advisory Board [i.e., Water Well Advisory Committee];
- (f) the Vermont Center for Geographic Information;
- (g) the appropriate Regional Planning Commission; and
- (h) other interested parties as appropriate.

F. Appeal of Reclassification Decision

The Groundwater Protection Rule and Strategy states:

12-405 Appeals

10 V.S.A. Chapter 48 is silent regarding appeals of reclassification decisions. However in the opinion of the Secretary, any person aggrieved by a reclassification decision of the Secretary may appeal that decision under the Rules of Civil Procedure to the Superior Court of the county where the affected groundwaters are located.

Attachments

1. Methodology to Delineate Class IV Groundwater Area Boundaries
2. Example of petition letter
3. 10 VSA §1394
4. Subchapter Four of the Groundwater Protection Rule and Strategy

Methodology to Delineate Class IV Groundwater Area Boundaries

A. *Define the Area of Contaminated Groundwater*

Step 1: Assess existing groundwater quality data to determine where groundwater quality exceeds Vermont Groundwater Enforcement Standards (VGES) at a 95% statistical confidence level. *(See Groundwater Rule, Section 12-706, 2, Determining if a Groundwater Quality Standard has been Reached or Exceeded.)*

Step 2: Project a vertical line to the ground surface around the outermost limits of VGES exceedence (as defined in 1).

B. *Determine Up-gradient and Cross-gradient Buffer Distances*

Step 1: Where data points are sparse, or where temporal shifts in the area of contaminated groundwater are expected, add a reasonable buffer (based upon accepted hydrogeological practices) to account for uncertainties in locating the edge of the contamination zone.

Step 2: Add a 200-foot buffer along all cross-gradient and up-gradient boundaries. *(This step is based upon Appendix A, Section 12.2 of the Water Supply Rule, which sets isolation standards for drinking water wells not requiring permits. Section 12.2 requires a 200 ft minimum isolation distance from a hazardous or solid waste disposal site.)*

Step 3: Calculate the area of influence for a 1 gpm (average daily demand) hypothetical well. If the calculated distance from the hypothetical well to either the well's down-gradient or cross-gradient stagnation point is greater than 200 feet, enlarge the buffer in accordance with the calculation. *(1 gpm is the average daily design flow for a 5-bedroom residence, according to the Vermont Water Supply Rule, Appendix A, Section 2.2, Table 5.)*

Step 4: Determine whether there are any non-permitted wells outside of the buffer that will draw in the contaminated groundwater within 5 years. If so, enlarge the buffer to incorporate these wells. *(The basis for this step is the Groundwater Rule's definition of non-potable groundwater: "groundwater which ... is scientifically predicted to become unsuitable as a source of 'potable groundwater' within 5 years.)*

Step 5: In cases where the up-gradient or cross-gradient edge of the contaminated groundwater is clearly contained by a hydrogeological boundary, the hydrogeological boundary can be invoked to reduce the buffer around the contamination zone.

C. *Determine Downgradient Buffer Distances*

If the groundwater contamination is entirely captured by a major surface water body, place the Class IV boundary at the near edge of the surface water body.

If the groundwater contamination is entirely contained by engineered hydraulic controls, place the Class IV boundary 200 feet down-gradient from the area of influence for these controls.

If the contaminated groundwater is *not* entirely captured by a surface water body or contained by engineered hydraulic controls:

Step 1: Where data points are sparse, add a reasonable buffer (based upon accepted hydrogeological practices) to account for uncertainties in locating the down-gradient edge of the contamination.

Step 2: Calculate the distance the contamination would travel in 5 years, beginning at the contamination front and following the expected contamination trajectory. Assume current gradient conditions (natural or induced). Draw a line at the 5-year travel boundary. *(The basis for this step is the Groundwater Rule's definition of non-potable groundwater: "groundwater which ... is scientifically predicted to become unsuitable as a source of 'potable groundwater' within 5 years.)*

Step 3: Add a 200-foot isolation distance down-gradient from the 5-year travel boundary.

D. Adjust Boundaries to Enable Field Verification

After the above process is completed, minor adjustments should be made where necessary to ensure ease of field verification. For administrative ease, the petitioner may propose to reclassify an entire parcel of land, although this is subject to review and approval.

EXAMPLE PETITION LETTER

**Agency of Natural Resources
Groundwater Coordinating Committee
Director of the Water Supply Division
103 South Main Street
Waterbury, VT 05671-0403**

Re: Petitioner's Name Request for Groundwater Reclassification

Dear Chair of the Groundwater Coordinating Committee:

Pursuant to Subchapter Four of the Vermont Groundwater Protection Rule and Strategy (effective date 11/15/97), the Petitioner's Name hereby requests that the groundwater described in the attached petition and shown on diagram or map # be reclassified from Class III to Class IV.

Dated at town, state on month day, year.

Signed Responsible Person(s)

§ 1394. Classification of groundwater

(a) The state adopts, for purposes of classifying its groundwater, the following classes and definitions thereof:

Class I. Suitable for public water supply. Character uniformly excellent. No exposure to activities which pose a risk to its current or potential use as a public water supply.

Class II. Suitable for public water supply. Character uniformly excellent but exposed to activities which may pose a risk to its current or potential use as a public water supply.

Class III. Suitable as a source of water for individual domestic water supply, irrigation, agricultural use and general industrial and commercial use.

Class IV. Not suitable as a source of potable water but suitable for some agricultural, industrial and commercial use.

(b) All groundwater of the state is hereby classified as Class III water unless reclassified by the secretary.

(c) Any hearing on a classification or reclassification shall be held in a location convenient to the users or potential users of the groundwater which is the subject of the hearing.

(d) Class I or II classification shall apply to aquifers in use as a public water supply source or which in the opinion of the secretary have a high probability for such use.

(e) In determining the appropriate classification of groundwater, the secretary shall consider:

- (1) its use or potential future use as a public water supply source;
- (2) the extent of activity which poses a risk to the groundwater;
- (3) its current water quality;
- (4) its availability in quantities needed for beneficial use;
- (5) the consequences of its potential contamination and the

availability of alternate sources of water; and

(6) the classification of adjacent surface waters; and other factors relevant to determine the maximum beneficial use of the aquifer.

(f) It is the policy of the state to protect permanently Class I aquifers. The secretary pursuant to subsection (h) of this section shall establish by rule activities which pose risks to Class I aquifers and which activities shall be prohibited in Class I aquifers. Any classification of Class I waters involving privately owned lands or reclassification of Class I waters by the secretary shall become effective only when approved by act of the general assembly.

(g) The secretary's classifications shall be presumed correct if, in establishing the geographical limits of each class of groundwater, he or she uses generally accepted methods of determining aquifers based on existing knowledge of surficial and bedrock geology and available hydrological data.

(h) The secretary by rule may establish technical criteria and standards to define the classes of groundwater and manage activities that may pose risks to groundwater classes. The criteria and standards shall include the identification of activities which constitute risks to the groundwater and which may be precluded. In adopting criteria and standards, the secretary shall consider:

- (1) drinking water standards adopted by the department of health and United States Environmental Protection Agency;
- (2) the nature and quantity of groundwater at risk;
- (3) the availability, cost and effectiveness of measures to mitigate risks;
- (4) the nature and quantity of risks that activities may generate;
- (5) the expense and effectiveness of correcting the damage the risks may cause;
- (6) the consequences to the public interest should damage occur and be irremediable;
- (7) the economic, social and environmental value of existing activities;
- (8) the surface water quality standards including the classification of surface waters; and
- (9) other factors relevant to designating appropriate groundwater classes or managing risks to groundwater quality.

(i) The secretary shall not promulgate criteria and standards to manage activities that restrict agricultural activities or those activities under the jurisdiction of the commissioner of agriculture, food and markets without the commissioner's consent. Nor shall the secretary promulgate criteria and standards that restrict forestry management activities without consultation with the commissioner of forests, parks and recreation. — Added 1985, No. 53, § 1.

Groundwater Protection Rule and Strategy
SUBCHAPTER FOUR - PROCEDURES FOR CLASSIFICATION

12-401 Groundwater Classification

- (1) As provided for in 10 VSA §1394(b), all groundwater of the state is classified as Class III, unless reclassified by the Secretary.**
- (2) The Secretary may on his or her own motion, or upon the submittal of a written petition from a state agency, a municipality, or twenty-five or more potentially affected persons classify or reclassify any groundwater of the state. Reclassification to a Class I or II may be done in conjunction with the Secretary's Source Approval of a Public Water System.**
- (3) The Secretary, upon the advice of the Groundwater Coordinating Committee, may adopt technical and other procedures necessary to implement these reclassifications. These may include procedures detailing the scientific processes required to delineate the physical boundaries of Class I, II, III, or IV groundwater areas.**
- (4) The Director of the Water Supply Division in coordination with the Groundwater Coordinating Committee is responsible for recommending groundwater classifications or reclassifications to the Secretary.**
- (5) Petitions for classification or reclassification of groundwater shall be submitted to the Director of the Water Supply Division for review.**
- (6) Any classification or reclassification decision issued by the Secretary may include conditions for the management of the classified groundwater area that shall apply to activities regulated by the Secretary.**

12-402 Criteria and Procedures for Distribution of Classification Maps

The Secretary will publish and distribute maps for each groundwater classification to:

- (a) the town clerk in the town or towns affected;**
- (b) the Agency regional office for the area affected;**
- (c) the owners and/or operators of any public water supplies affected;**
- (d) Well Drillers Advisory Board;**
- (e) the Vermont Center for Geographic Information;**
- (f) the appropriate Regional Planning Commission; and**
- (g) other interested parties as appropriate.**

12-403 Class I, II, III, and IV Groundwater Reclassification Process

- (1) In determining whether or not to reclassify groundwater as a Class I, II, III, or IV the Secretary shall consider the following:**
 - (a) the use or potential future use of the groundwater as a public water supply source;**
 - (b) the extent of activity which poses a risk to groundwater;**
 - (c) the current water quality of the groundwater;**
 - (d) the availability of the groundwater in quantities needed for beneficial use;**
 - (e) the consequences of its potential contamination and the availability of alternate sources of water;**
 - (f) the classification of adjacent surface waters;**
 - (g) the high probability for use as a public water supply source (Subchapter 12-201(18)).**
 - (i) Groundwater not presently in use as public water supply source may be reclassified as Class I or II, if it has a high probability for use as a public water supply source.**
 - (ii) Scientifically delineated SPAs for public water supplies may be adopted as a Class I or II, as appropriate;**
 - (h) other factors relevant to determine the maximum beneficial use of the groundwater.**
- (2) The Secretary will provide notice of any proposed reclassification by:**
 - (a) advertisement in newspapers of general circulation in the area of the proposed classification or reclassification;**
 - (b) written notice with the appropriate town clerk;**
 - (c) written notice to all potentially affected property owners of record, and other persons as appropriate, of the proposed classification or reclassification action;**
 - (d) written notice to the appropriate Regional Planning Commission; and**
 - (e) written notice to the Groundwater Coordinating Committee.**
- (3) The Secretary will provide a thirty day (30) comment period for each proposed reclassification action which shall start on the date that the notice is published in the newspaper.**
- (4) Upon the request of an interested person or upon the Secretary's motion, the Secretary will hold a public information meeting on any proposed reclassification. The public information meeting will be held in a location convenient to the users or potential users of the groundwater which is the subject of the public information meeting. The Secretary will provide notice of the date, time, and location of the public information meeting.**
- (5) Prior to the issuance of any final classification or reclassification decision, the Secretary shall consider all comments received during the public comment period and the public information meeting.**

12-404 Statutory Requirements for Class I Reclassifications

(1) Submission to the Legislature for Approval

The Secretary shall follow the reclassification procedures in these rules for Class I reclassifications. However, pursuant to 10 V.S.A., §1394(f) any classification of Class I groundwater involving privately owned lands or a reclassification of Class I groundwater to another class shall be submitted by the Secretary to the Natural Resources Committees to both houses of the General Assembly

within 15 days of the issuance of the decision order. Under 10 V.S.A. §1394 (f), any such classification or reclassification must be approved by an act of the General Assembly prior to becoming effective.

(2) Permanent Protection

Pursuant to statutory policy at 10 V.S.A. §1394(f), any Class I groundwater shall be permanently protected unless and until a reclassification is approved in accordance with Section 12-404(1).

12-405 Appeals

10 V.S.A. Chapter 48 is silent regarding appeals of reclassification decisions. However, in the opinion of the Secretary, any person aggrieved by a reclassification decision of the Secretary may appeal that decision under the Rules of Civil Procedure to the Superior Court of the county where the affected groundwaters are located.