



**GUIDANCE
FOR THE SUBMISSION
OF APPLICATIONS TO LOWER
GROUNDWATER QUALITY CLASSIFICATIONS
TO CLASS GB,
AS PROVIDED FOR IN THE
GROUNDWATER QUALITY STANDARDS**

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Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
www.ct.gov/deep
Affirmative Action/Equal Opportunity Employer

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Purpose

This document is intended to provide guidance on the submission and review of an application to the Connecticut Department of Energy and Environmental Protection (“the Department”) for lowering a groundwater quality classification from Class GA to Class GB. The application requirements and considerations are outlined in Subparagraph GW8 of the Groundwater Quality Standards (GWQS)¹. Connecticut General Statutes (“C.G.S.”) Section 22a-426 provides the overall framework for Connecticut’s Water Quality Standards. Effective March 1, 2011, the statutes were revised to require the Department to adopt regulations establishing Water Quality Standards. However, Public Act 11-141 made provisions for the existing Water Quality Standards to remain in effect until such regulations are developed, and provided for an administrative process for a person to request a change in the groundwater classification of a particular site. Such administrative process has been incorporated into this document. Note that the criteria for changing a groundwater classification has not changed - it is still consistent with the Water Quality Standards adopted in 1996 - so the Department’s general approach and philosophy remain the same. There are some minor changes to the administrative procedure with respect to public notice requirements.

This guidance is a staff interpretation of the requirements for lowering a groundwater quality classification. The final decision to reclassify a site rests with the Commissioner of the Department. Due to the variability of pollution, groundwater uses and hydrogeologic conditions, no requirement can be universally applied and therefore applications are considered on a case by case basis.

Introduction

In order to better understand the requirements for reclassification, it is important to understand the basis of the Water Quality Standards program and the Department’s intentions. C.G.S. Section 22a-426 states “Such standards shall be...for the purpose of providing clear and objective public policy statements of a general program to **improve** the water resources of the state...” Within the framework of Connecticut’s Clean Water Act (C.G.S. Chapter 446k), the Standards establish broad policy and goals for permitting discharges to the waters of the State and for the abatement of pollution. They are part of a program to protect the public health and welfare, promote economic development, and to preserve and enhance the quality of State waters for present and prospective future use for public water supplies, propagation of fish and aquatic life and wildlife, recreational, agricultural, industrial and other legitimate uses.

¹ Copies of the most recent revision of the Water Quality Standards, dated February 25, 2011, are available on the internet at the Department’s website, www.ct.gov/deep/wqsc

The Water Quality Classifications, based on the adopted Water Quality Standards, establish designated uses for surface and groundwaters, and identify the water quality criteria necessary to support those uses. At this point in time, all groundwaters of the state have been assigned a groundwater quality classification. This was accomplished during the 1980's on a state-wide basis with opportunity for public comment. However, detailed information on specific sites was not necessarily available at the time. In some cases, given detailed information on the current condition and use of the groundwater at a particular site, it may be appropriate to reclassify the groundwater for that area.

A site proposed for lowering the groundwater quality classification from Class GA to Class GB must meet specific criteria which are set forth under GWQS Subparagraph GW8. Subparagraph GW8(A) provides the general requirements for the content of an application to lower a water quality classification to Class GB. Subparagraph GW8(B) provides the basic criteria that all requests for reclassification must meet, as well as three different "tracks" for applying for groundwater reclassification, each with additional criteria. It should be noted that all such reclassifications require public notice and a hearing, as set forth in C.G.S. Section 22a-426. The criteria for reclassification and content of an application will be discussed in detail below.

Time Frames for Applications

The Department will consider applications for reclassification as they are submitted. A public hearing for all pending applications will be convened once each year. The deadline for submission of applications is March 31 of each year. Once applications are received and reviewed, a public hearing will be scheduled. There will be at least a six week public notice interval between the deadline for submission of an application and the date of the public hearing. This reflects the time needed to enter the notice in the local newspaper and comply with other statutory notice requirements. Once a public hearing is conducted, a Final Decision and Statement of Reasons is written and signed by the Commissioner. A copy of this final document is provided to all applicants, and any others who may request a copy of the decision. Notice of the final decision will also be published in the Connecticut Law Journal.

General Philosophy

The Department is obligated to carefully and critically examine applications that are intended to lower a water quality classification goal. Although "promote economic development" is a criterion of the Standards, it is subordinate to the clean water goals of the statute. A reclassification to Class GB is a change in the groundwater use goals for an area, from potential drinking water supply to non-drinking water supply, and the Department will only do this under very specific circumstances.

An important consideration in reclassification is the proximity of the area to be reclassified to an existing area which is classified Class GB or to a Class B surface water where the groundwater will discharge. It should be understood that it is not the intent of the Department to reclassify individual properties or small areas that are isolated and removed from existing Class GB areas or Class B streams. To do so would undermine the validity of the general Class GA or GAA goals of the state. Class GA and GAA standards ensure that homeowners, developers, and commercial and industrial enterprises can use groundwater for a potable water supply in most areas of the State.

The area proposed for reclassification must extend from the site to the downgradient discharge point or a downgradient Class GB area. The simplest and most readily accepted application will be one where the site is immediately upgradient of an existing Class GB area or Class B stream, as this will clearly define and limit the reclassification area. In general, sources that are more than 1000 feet from a receiving water body or downgradient Class GB area are not appropriate candidates for reclassification. This is especially true when the pollution source is small and where significant downgradient impact is either unlikely or not demonstrated. The Department typically will not consider reclassification of significant land areas which are suburban or rural in character to accommodate an upgradient groundwater pollution source, as this contradicts the statutory goal of improving water quality. Nor will the Department typically consider reclassifying areas that discharge to a Class A stream, Class GAA waters within a Public Water Supply Watershed, or areas within Aquifer Protection Areas.

The applicant has an obligation to directly inform the chief elected official of the municipality and the local health director (or sanitarian) of the proposal to reclassify groundwater well before the hearing date. At minimum, a letter to the chief elected official with a copy to the health director is expected, and a copy should be included in the application. An example of such a letter is attached (Appendix 1) to use as a model. In addition, the Department will issue a public notice of the hearing in the local newspaper at least 30 days prior to the hearing. The Department will submit the notice to the newspaper and will subsequently bill the applicant for the cost of such notice. (In the case of multiple applications within the circulation of a single newspaper, the cost shall be divided up among the applicants accordingly.) The purpose of the letters and public notice is to ensure that the municipality and interested parties are aware of the request, and have an opportunity to voice their concerns. Involving interested parties and municipal officials may also result in additional support for the reclassification. The Department's desire is to avoid contested cases in this forum.

Finally, applicants should note that several of the criteria below require a demonstration that either the site currently meets applicable soil and groundwater standards for Class GB areas under the Remediation Standard Regulations (Regulations of Connecticut State Agencies (RCSA) Section 22a-133k-1 through -3), or that the applicant has agreed to remediate to such standards. If the site currently complies with the Remediation Standard Regulations, the application should include an approval from the commissioner or an opinion of a Licensed

Environmental Professional to that effect. If such standards have not yet been achieved, the applicant should identify how the necessary investigation and remediation will be conducted, and under which program: one of the voluntary remediation programs (R.C.S.A. Section 22a-133x or -133y), or pursuant to any of the Department's regulatory programs (such as the Transfer Program (C.G.S. 22a-134a), Administrative Order (C.G.S. 22a-432 or -433), Underground Storage Tank Regulations (R.C.S.A. 22a-449d-106), or RCRA Program (C.G.S. 22a-449(c)).

Basic Criteria for Reclassification Applications

All applications for lowering the groundwater classification must meet three basic criteria, as listed in GW8(B):

Criteria (1): Groundwater is not in use as potable supply

“A groundwater classification shall not be lowered to Class GB unless the applicant has satisfactorily demonstrated that any person within and downgradient of the area to be reclassified will be provided with an adequate public water supply...”

This is the most fundamental and absolute requirement for reclassification, and the applicant must deal with it thoroughly. There can be no question that all persons within or potentially downgradient from the area proposed for reclassification have abandoned all potable water supply wells and are served by an adequate public water supply drawn from outside the area. There are a considerable number of nuances to this statement.

It is not sufficient to simply state that public water is available in the area, as the Department has discovered many instances where private wells remain in use in urbanized areas served by public water supply. All addresses within the area proposed for reclassification and within a 500 foot buffer zone around the area proposed for reclassification must be checked against water company records to ensure that they are served by public water. Addresses may be obtained from Town Tax Assessor's maps, or by neighborhood survey. The local health director or sanitarian must also be contacted to check if any well permits were issued for the area, and if so, to verify that any such wells have been abandoned. Any vacant parcels of land must be within the water service area.

Considerable caution must be exercised in bedrock groundwater systems. Private wells drilled in bedrock may be downgradient despite the fact that the buildings they serve may be uphill from the proposed area. Bedrock flow directions and gradients must be fairly well established in such a setting, and characterized by borings and observation wells. Any bedrock potable water wells located within the proposed reclassification area, as well as within a 500-foot radius around the proposed reclassification area, must be identified, evaluated for likelihood of impact, and if appropriate, connected to public water.

If any property within the area to be reclassified is not already supplied with an adequate public water supply, the property owner(s) must be persuaded to consent to a plan to provide an adequate supply. Such consent must be supplied to the Department in writing before an application will be taken to public hearing. The Department believes it is reasonable for anyone requesting reclassification under this section to pay all costs associated with replacing groundwater with an adequate public water supply including, but not necessarily limited to: cost of proper well abandonment; the cost of water system extension; cost of connecting individual properties, including reasonable restoration of properties and structures affected by such connection; and payment of a lump sum that will cover the cost of water for at least 10 years.

Where connection to a public water supply is to be provided, the connection must be to a public water supply system regulated by the Department of Public Health and in compliance with relevant potability regulations. "Adequate" also means that the supply is sufficient as to quantity to meet the reasonable use of the affected properties as provided for in the town planning and zoning regulations. This provision should be supported by a letter from the relevant water company if the public water supply system serves less than 1000 people. Note that the Department will not typically support a reclassification that would result in abandonment of a viable existing public water supply well.

It should also be noted that a stream will not necessarily be considered a hydrologic "barrier", particularly if pumping wells are in the vicinity, or in shallow bedrock areas. In some cases pollution (or potential pollution) may traverse under a nearby stream, or only partially discharge to it. If a claim is made that the downgradient provision of potable water may terminate at a stream, convincing hydrologic evidence must be provided to support that thesis.

Criteria (2): Surface water quality goals have been or will be met

"...and that lowering of a groundwater classification will not prevent attainment of adjacent surface water quality goals ..."

The applicant for a reclassification must provide a demonstration based on pollutant concentrations, mobility and simple models of receiving surface waters that adjacent surface water quality goals have been or will be met. Such demonstration should be made in accordance with the Surface Water Protection Criteria of the Remediation Standards Regulation (R.C.S.A. Section 22a-133k3(b)).

Criteria (3): No unacceptable health risks

"...or present unacceptable health risks."

The applicant for a reclassification must demonstrate that the lowering of classification will not

present an unacceptable health risk. This demonstration should include an evaluation of whether any condition on the applicant's site would require reporting of a significant environmental hazard pursuant to C.G.S. Section 22a-6u, and that the site does or will meet the Direct Exposure Criteria (R.C.S.A. 22a-133k-2(b)) and the Pollutant Mobility Criteria (R.C.S.A. 22a-133k-2(c)). As noted in the "General Philosophy" section above, if these criteria are not met, the applicant must document the path to be taken to achieve these criteria.

Criteria for Each Reclassification Track

A site may be eligible for reclassification if it meets the three Basic Criteria listed above, and meets the additional criteria under one of the following three Reclassification "Tracks". The three Tracks are established respectively under GW8(B)(i), (ii), and (iii), as follows:

Track (i): Historic Pollution

GW8(B)(i) *"That the groundwater to be reclassified is polluted as a result of intensive urban, commercial or industrial development which occurred prior to 1981 and the hydrologic conditions of the subject area are not suitable for the development of a significant public water supply."*

This is the most common Track for consideration of reclassification. There are three criteria which must be met in addition to the three Basic Criteria for consideration under this section of the Water Quality Standards, as follows:

Criteria (i)(1): Groundwater is polluted

The first criterion is that groundwater at the site must be demonstrably degraded. Areas will not be lowered in classification because they "might" be polluted or as a means of limiting future liability associated with potential pollution. This demonstration will require a reasonable number of samples and analyses which will vary with the hydrogeologic conditions, types and amounts of pollutants, area size and similar factors. This does not have to be an exhaustive profile of groundwater pollution, but rather a reasonable demonstration of the situation. In many cases the testing which has probably been done for property transfer or remediation purposes will be sufficient.

It should be noted that if natural attenuation, or reasonable remediation measures such as removal of accessible polluted soil, will allow the groundwater to meet Class GA criteria within a reasonable time frame, it is unlikely that a reclassification will be favorably considered.

Criteria (i)(2): Cause of pollution is pre-1981 mixed development

The second criterion is that the groundwater pollution was caused by intense urban, commercial, or industrial development which occurred prior to 1981. Note that this means the development at the site occurred prior to 1981, and that it is either proven or reasonable to assume that the groundwater was polluted prior to 1981 as a result of that development. 1981 marked the promulgation of significant state and national hazardous waste management laws. While it is often not feasible to establish the exact date of such groundwater pollution, the type of historic development must correspond to the pollutants in the groundwater, and any available historic documentation should be consistent. For example, if an industrial facility was occupied by a company that did metal plating from the 1950's through 1986, a 1975 floor plan shows a degreasing station and a drum storage area, and high levels of PCE are persistent in the groundwater near those locations, it is reasonable to assume historic pollution.

Intense industrial, commercial or mixed urban areas are the most appropriate candidates for reclassification. These areas may not have originally been classified GB because the magnitude of the pollution was unknown at the time, public water service was not available then, or there were private wells in the area (that have since been abandoned). A reclassification may also be appropriate where a specific source of pollution or a continuing source cannot be identified. In addition, the Department does not plan to lower classifications under this paragraph (GW8(B)(i)) in areas where the groundwater pollution most likely occurred after 1981. (The provisions of the other two paragraphs of GW8(B), below, may apply in those cases.)

Criteria (i)(3): Unsuitable for development of public water supply

The area proposed for reclassification must not be suitable for development of a significant public water supply. This generally means the site has less than 20 feet of saturated sand or sand and gravel or that pumping of more than 15 gpm is not sustainable. This information can be obtained from U.S. Geological Survey mapping in the Water Resources Inventories of the appropriate major basin, and from soil borings or well logs from the site. Note that if the Water Resource Inventory indicates more than 20 feet of sand or sand and gravel, borings on site that hit refusal at shallower depths should be cored at least five feet to confirm that the refusal is on bedrock, and not just a boulder.

The argument that the area is unsuitable for development of a public water supply simply because the groundwater is polluted is not an appropriate argument. The Department is interested in the ability of the aquifer to produce water. Even if the water is of poor quality, it may become economically feasible to treat if the aquifer yield and water demand are sufficiently high. The goal for such an area would therefore remain Class GA.

Track (ii): Technical Impracticability

GW8(B)(ii) *“The groundwater proposed to be reclassified is polluted and remediation of such groundwater to a quality suitable for drinking without treatment is not technically practicable”*

This track is directly associated with the demonstration of “Technical Impracticability” under the Remediation Standard Regulations (R.C.S.A. 22a-133k(3)(c)). There is one criteria required in addition to the Basic Criteria:

Criteria (ii)(1): Technical impracticability demonstrated

A demonstration must be made that remediation to a Class GA standard is not technically practicable. Such demonstration must be coordinated through the Department’s Remediation Section in accordance with the above referenced section of the Remediation Standards, and must be concluded prior to the reclassification hearing. It should be noted that a determination of technical impracticability is not contingent upon receiving a reclassification to Class GB, but only upon applying for such reclassification. There may be many instances where reclassification is not appropriate, even if technical impracticability can be demonstrated. Anyone considering application under this reclassification track is strongly encouraged to meet with the Department prior to preparation of such an application.

Track (iii): Overriding social or economic justification

GW8(B)(iii) *“There is an overriding social or economic justification for reclassifying the groundwater to Class GB and the proposed reclassification is supported by the affected municipality”*

Note that this track for reclassification has very limited applicability, and is rarely utilized. Normally, reclassification applications under this track will be considered when the relevant major drainage basin is considered for reclassification (every 3-5 years). These applications involve complex issues, and anyone who wishes to pursue such a lowering of classification is urged to contact the Department and arrange a meeting to discuss both issues and procedures. Examination of technical data by the Remediation staff is also critical if the applicant maintains that the cost of remediation conflicts with an overriding social or economic need.

Criteria (iii)(1): Overriding justification

(a) Social justification

Overriding social justification for reclassification means a case can be made that a specific social need of the affected municipality or the state necessitates reclassification of the groundwater. For example, waste disposal is a significant social need for the state, and the number of sites with

appropriate hydrogeologic and logistical characteristics is very limited. In certain instances it may therefore be necessary to reclassify an area to allow for regulated solid waste disposal.

(b) Economic justification

Overriding economic justification for reclassification means avoidance of an economic impact that would substantially impair or otherwise detrimentally affect the economy of the community or of the state. Note that this justification must go beyond the financial impacts of remediation to a specific responsible party, rather, the economic impacts must extend to the entire community or state.

Criteria (iii)(2): Municipal support

In either of the above circumstances, the written support from the chief executive officer of the affected municipality or municipalities is required. The applicant is responsible for enlisting the support of the municipality, and such written support must be included in the application.

Criteria (iii)(3): Consistency with State C & D Plan

Demonstrate that the proposed reclassification is consistent with the goals and policies of the state, as put forth in the most recent revision of the State Conservation and Development Policies Plan adopted in accordance with C.G.S. Section 16a-30. In particular, state policies and strategies regarding water supply, environmental quality, natural resources, and economic opportunity, as well as Conservation and Preservation Areas, should be reviewed and discussed if pertinent.

Format of the Application

The application form is available online at www.ct.gov/deep/wqsc . The Supporting Documentation for the application should include the following information:

Minimum Requirements

Subsection GW8(A) contains minimum requirements for the submission of an application for reclassification. These requirements are as follows:

- (i) Describe the nature, extent, and date of commencement of pollution of the groundwater proposed to be reclassified;
- (ii) Identify all sources of drinking water in the area whose groundwater is proposed to be reclassified, and identify all existing uses of groundwater within and down gradient of

such area;

- (iii) Assess the potential of the subject area to produce groundwater in an amount suitable for a public water supply; and
- (iv) Describe all past and present land uses in the subject area, with dates.

Additional Requirements

In addition, the following items should be included to facilitate the reclassification process:

- (v) A table showing recent levels of groundwater contamination at each observation well, with the appropriate ground-water protection, surface-water protection and volatilization criteria listed.
- (vi) A table listing all addresses within the area proposed for reclassification and within a 500 foot buffer around the area proposed for reclassification, with the status of public water service to each address listed. For example:

Number	Street	Name	Verified Connected to Cool Blue Water Company
101	Main St	Donald Smith	√
102	Main St	Jane Doe	√
103	Main St	Gerry Hat	Vacant land
104	Main St	Ivory Tea Room	√
105	Main St		Abandoned commercial property

- (vii) Maps or drawings of the following:
 - a) At 1:24,000 scale, or greater show:
 - The location of any test wells or borings, sampling points, water table elevations and contours;
 - Location of any identified sources of pollution; and
 - Location of any properties within the area proposed for reclassification which have not been demonstrated to have an adequate public water supply. (These are the properties proposed to be connected to public water.)
 - b) On a 1:24,000 scale U.S. Geological Survey topographic map base, show the existing groundwater classifications in the vicinity, and the area proposed for reclassification.
- (viii) Copy of the notification letter to municipal officials.

The documentation should be thorough and concise, using summary tables and figures where appropriate to support the statements made in the application. Do not include full copies of hydrogeologic investigation reports, etc, only the pertinent information to document site conditions. In general, the goal is to produce an application that members of the public can easily understand.

Fees

There is currently no application fee for groundwater reclassification. However, as mentioned above, the applicant will be charged for the cost of noticing the hearing in the local newspaper. Note that the Commissioner's final decision on the matter will not be released until such costs are paid in full.

Staff Contact

Any questions on this program may be addressed to:

Corinne Fitting
Planning and Standards Division
Bureau of Water Protection and Land Reuse
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5217

Telephone inquiries may be directed to Ms. Fitting (860) 424-3724 and email to corinne.fitting@ct.gov. Anyone considering making an application for groundwater reclassification is urged to contact Ms. Fitting to discuss the site before submitting an application, so that any serious obstacles to potential reclassification can be identified prior to application.

Appendix 1: Sample Notification Letter for Municipal Officials

Note that a notification letter should be sent to the Chief Elected Official and copied to the local Director of Health (or Sanitarian), and should be accompanied by a map of the proposed reclassification area. The following is a sample of the type of letter that should be sent and the basic information it should include.

Smith Consulting, Inc.
123 Apple Way
Bigtown, CT 06000

January 1, 2008

The Honorable Freda Jones
Mayor, City of Newberg
1 Main Street
Newberg, CT 06999

Re: Proposed Groundwater Reclassification in the vicinity of 10 North Main St, Newberg, CT

Dear Mayor Jones:

On behalf of the Acme Stone Company, Smith Consulting has submitted an application to the Connecticut Department of Energy and Environmental Protection (the Department) to reclassify the groundwater from Class "GA" to Class "GB" in the area in Newberg shown on the attached map. This area includes the industrial property at 10 North Main Street owned by Acme Stone. As required by the Department, we are hereby notifying you of this reclassification application.

The application for reclassification was made under the Department's Groundwater Quality Standards, Paragraph GW8(B)(i). We believe that the state's GB groundwater classification, which is applied to urban / industrial areas served by public water supply and which are not considered to be potential sources of drinking water, more accurately reflects the appropriate water quality classification for the subject area. In contrast, the GA classification is applied to areas where the groundwater is or can be used as a drinking water source without treatment. The proposed area for reclassification adjoins an existing area of similar land use which is already classified GB.

In accordance with the Department's criteria for applications for reclassification, we have determined that an adequate public water supply is available throughout the area proposed for reclassification, and that all persons within the area are provided with public water. In addition, we have demonstrated that reclassification will not present unacceptable human health risks or cause harm to any surface water body (namely, the Roaring River).

Reclassification of the groundwater from GA to GB will aid Acme Stone in its efforts to achieve compliance with the applicable environmental standards for soils and groundwater on their North Main Street property. In turn, the ability to achieve regulatory compliance will make the property more attractive to potential buyers and/or lessees, and promote its continued industrial/commercial use.

The Department is currently reviewing our application. If the application is complete and has

merit, the Department will issue a public notice of the intent to reclassify the groundwater of the area. Your office will receive a copy of the public notice from the Department. During the subsequent review and comment period, interested parties may issue statements in writing and/or in person at the public hearing in Hartford. The application and any public comment will then go to the Commissioner of the Department for review and approval.

Should you have any questions, please contact me at (860) 123-4567, or our Department contact, Corinne Fitting at (860) 424-3724 or corinne.fitting@ct.gov.

Sincerely,

John Smith

John Smith, LEP

attachment: Map of proposed reclassification area

c: Eric Green, Newberg Director of Health w/ attachment
Randall Doe, Acme Stone Company
Corinne Fitting, DEEP Bureau of Water Protection and Land Reuse