COMMENTS OF RICHARD J. WEISBERG

I. Introduction

My name is Richard J. Weisberg. I reside at 34 Prince's Pine Road, Norwalk, CT 06850. I am a recreational fisherman and a member of Trout Unlimited. In this capacity I have utilized the following inland and marine waters of the State of Connecticut: the Norwalk River; the Saugatuck River; the Connecticut River; the Housatonic River; and Long Island Sound. I am a member of the Board of the Norwalk River Watershed Association, and the Association's representative on the Norwalk River Watershed Initiative. I am also a member of various citizen advisory panels and other nongovernmental organizations dealing primarily with the conservation and management of inland and marine fisheries, and the protection of Connecticut's inland and marine waters.

I submit these comments in response to the notice issued by the Connecticut Department of Environmental Protection ("DEP") dated April 16, 2009, and entitled Notice of Intent To Conduct a Triennial Review of Water Quality Standards, wherein DEP solicited comments from interested parties on any aspect of its water quality standards that it was believed DEP "should consider for potential revision."

II. Comments

1. DEP's Temperature Criteria For Class AA, A, and B Surface Waters Fail To Protect Cold Water Fisheries, Including Trout, And Should Be Revised Accordingly

Under Connecticut law, pollution includes "harmful thermal effect", which is defined as "any significant change in temperature of any waters resulting from a discharge therein, the magnitude of which temperature change does or is likely to render such waters harmful, detrimental or injurious to…recreational or other legitimate beneficial uses, or to…fish or to other aquatic life;" (CGS §22a-423).

Trout are universally recognized as cold water species, sensitive to changes in water temperature. Specific data obtained from DEP on the impact of temperature on trout, is set forth below.

Species	Temperature and Impacts			
	Growth Limited	Long-Term lethal	Short-Term lethal	Critical Thermal Max
Brook Trout	18C/64.4F	20C/68F	22C/71.6F	25 C/77F
Brown Trout	20C/68F	24.9C/76.82F	27C/80.6F	29.7C/85.46F

Long-term lethal: 50% mortality after 7 days exposure
Short-term lethal: est. 50% mortality occurs after 2 days exposure
Critical thermal Maximum: mortality in 20-30 minutes

The foregoing conforms to data published by EPA, as follows.

Species	Temperature and Impacts	
	Growth Limited	Critical Thermal Max
Brook Trout	19C/66F	24C/75F
Rainbow Trout	19C/66F	24C/75F

Quality Criteria for Water (AKA "The Gold Book", EPA 5/1/86) SeeTable 11 in chapter entitled "Temperature".

Connecticut's Class A, AA and B surface waters are designated for "habitat for fish and other aquatic life and wildlife [and] recreation". Surface Water Quality Standards, Effective December 17, 2002 (the "WQS") at 8. Trout fishing is also an existing use in many of Connecticut's rivers. For example, trout fishing has been conducted in the Norwalk River well before November 28, 1975, thereby satisfying DEP's definition of an existing use. WQS at A-3. Furthermore, the Norwalk River is stocked with trout by DEP twice annually, and has been designated as a Class 3 Wild Trout Management Area between Ridgefield and Wilton.

DEP's surface water quality standards contain criteria to support the designated and existing uses of Class AA, A and B waters. The water temperature criteria are found in a provision entitled "Allowable temperature increase", which contains one narrative criterion and two numeric criterion, as follows, [t]here shall be no changes from natural conditions that would impair any existing or designated uses…and , in no case exceed 85 degrees F, or in any case raise the temperature of surface water more than 4 degrees F." (WQS at 10, 11 and 12). These temperature criteria are longstanding, and have no known rationale. Thus, in an e-mail dated April 15, 2002, Lee Dunbar, Assistant Director of the Planning and Standards Division, Bureau of Water Protection and Land Reuse, stated that the two numeric criterion "were developed many years ago – probably 'BPJ' based on EPA guidance at that time. There is no technical support document explaining how it was done that I know of. We haven't revised the temperature criteria in many years." (Copy annexed as Exhibit A). In a letter to me dated August 6, 2008 (Exhibit B), Mr. Dunbar stated more precisely that the WQS' temperature criteria were established in 1973, 36 years ago, and have remained relatively unchanged since then.

The structure of the WQS' temperature criteria raises the question as to how the narrative criterion, which is seemingly protective of "existing or designated uses", interacts with the numeric criteria. In both his 4/15/02 e-mail and 8/6/08 letter, Mr. Dunbar indicates that determinations of the thermal impacts of new or revised discharges are "based on best professional judgment". This, however, introduces an element of subjectivity pursuant to which the narrative criterion could be subordinated to the more explicit and objective numeric criteria. In a meeting that I had on October 8, 2008, with Mr. Dunbar, Chris Bellucci and Rosemary Gatter, the DEP representatives acknowledged that in the context of a water quality standard which contains both narrative and numeric criterion, the numeric criterion is apt to get more consideration. This indicates that in the context of any permit application to DEP for a new or

revised discharge, the thermal component of the discharge is likely to be permitted as long as it complies with the two numeric criteria. This would not be objectionable, except that the two numeric criterion in the WQS are severely flawed, and fail to protect trout.

The 85 degree maximum numeric criterion is uniquely useless, since according to DEP and EPA critical thermal max (mortality in 20-30 minutes) is 75 - 77 degrees F for brook and rainbow trout. The long-term lethal temperature (50% mortality after 7 days exposure) for brook and brown trout ranges from 68 to approximately 77 degrees F. Thus, it is clear that permitting surface water temperatures to rise to levels far short of the 85 degree maximum numeric criterion would result in the extermination of every trout in Connecticut.

The 4 degree F allowable temperature increase criterion also appears useless, as applied. In his 8/6/08 letter (Exhibit B), Mr. Dunbar acknowledged that DEP does not apply the 4 degree F criterion from a fixed baseline temperature, but rather, applies it cumulatively (i.e., incrementally). Regulating temperature increases to Connecticut's surface waters resulting from new or modified discharges without reliance on a fixed baseline, however, inevitably results in water temperatures substantially in excess of the 4 degree limitation. This point is perhaps best explained by means of a hypothetical.

Take a hypothetical river segment (the "segment") which harbors a cold water trout fishery. Assume that upstream of the segment are two or more dischargers each of whose discharge has a thermal component which can elevate the ambient temperature of the segment. Assume further, that over the course of 10 years these dischargers make a total of 4 applications to DEP for revisions to their discharge permits. It is determined that each such discharge revision will raise the average, annual ambient temperature in the segment by 3 degrees F. Assume also that at the beginning of the 10 year period the average ambient temperature in the segment is 66 degrees F.

In this hypothetical, since each of the 4 revised discharges would result in an average temperature increase in the segment of 3 degrees F, there arguably would be no basis for denying any of the four applications on the basis of the numeric 4 degree F criterion. Nevertheless, granting all the applications would raise the average ambient temperature in the segment by 12 degrees to 78 degrees F, and would not necessarily violate the numeric 85 degree F maximum numeric criterion. However, an average annual ambient temperature of 78 degrees F, and even higher during the warmer months, would be deadly to trout.

The above may lack technical rigor, but suffices to make the point that in the long-term the 4 degree F criterion fails to protect cold water fisheries, since it is applied in a manner which permits incremental increases in water temperature far beyond 4 degrees F that are lethal to trout. Framed somewhat differently, the 4 degree F criterion as applied impairs existing and designated uses.

In light of the foregoing, it is essential that DEP revise the numeric temperature criteria in its WQS so as to eliminate their potential for the impairment of existing and designated uses.

Since application of the 4 degree F allowable temperature increase criterion over the last 36 years has undoubtedly contributed to a general rise of surface water temperatures above "natural conditions", this may be difficult. Alternatively, DEP could at a minimum delete the two numeric criterion from its WQS, and leave only the narrative prohibition on the impairment of existing and designated uses. This, hopefully, would serve to protect cold water fisheries from further impairment, if applied rigorously. In an era of global warming, more attention must be paid to the protection and preservation of existing cold water fisheries.

2. The WQS Lack Adequate Standards And Criteria For Phosphorus And Should Be Revised To Provide Numeric Criteria For This Destructive Pollutant.

Phosphorous is a member of the class of pollutants known as "nutrients" and causes a condition known as "eutrophication", which is characterized by excessive subsurface plant growth and the accumulation of algae at the water's surface. When this plant life dies, the chemical reaction associated with its decomposition depletes the water of oxygen. Eutrophication is primarily a warm weather phenomena. As the weather warms, phosphorus combines with a relatively small amount of nitrogen to effectively fertilize the water to produce choking plant growth. During the warmer months the resulting deoxygenation of the water column can create a dead zone in as much as the bottom one-third of an afflicted water body. Fish and other animal life in this zone must either vacate it, or die.

Phosphorus discharged to surface waters has several sources. Waste treatment plants ("WTPs") are a primary source. Other significant sources include nonpoint source discharges and malfunctioning septics.

The WQS contain some general narrative standards pertaining to phosphorus. (See standards 19 and 20 at 5). Additionally, with reference to Class AA and A surface waters, the WQS provide the following narrative criteria "[n]one other than natural origin". Id. at 10, 11. With reference to rivers and streams, the WQS contain no numeric criteria for phosphorus, and in the case of Class B rivers and streams, contain no criteria, either narrative or numeric, regulating the discharge of phosphorus. These limited standards and criteria are an apparent failure, in light of the serious eutrophication afflicting many of Connecticut's surface rivers and streams, as will be discussed more fully below.

The WQS do contain numeric criteria for phosphorus for lakes. Id. at 13, 14. According to these criteria, a lake is considered eutrophic when its phosphorus concentration reaches 30-50 ug/l (parts/billion), and highly eutrophic when its phosphorus concentration reaches 50 + ug/l. DEP defines highly eutrophic in this portion of the WQS as "[e]xcessive enrichment with plant nutrients…characterized by severe blooms of algae and /or extensive areas of dense macrophyte beds. Water contact recreation may be extremely limited."

The severe impacts of phosphorus pollution on Connecticut's surface waters can be exemplified by reference to data concerning the Norwalk River. This data was provided to me in my capacity as a representative to the Norwalk River Watershed Initiative, by Harbor

Watch/River Watch ("HWRW") a Westport laboratory often relied on by DEP. The Norwalk River has three upstream WTPs as follows: Ridgefield Main (site # NR22); Ridgefield Route 7 (site # NR16); and Redding (site # 9.8). Two of these WTPs, Ridgefield Main and Redding, are equipped with phosphorus removal equipment, which I am advised is relatively inexpensive and effective. Inexplicably, Ridgefield Main and Redding are authorized by DEP to shut down their phosphorus removal equipment annually, for seven months, from October 1 through April 30. The Redding WTP, however, voluntarily keeps its phosphorus removal equipment operative for the entire year. Data collected by HWRW for the spring, summer and early fall of 2008, on 5/1, 6/19, 8/21 and 9/24 indicate the following. The phosphorus for Ridgefield Main and Redding were non detect, except for Redding on 5/1 when the reading was 5.2 mg/l (parts/million, or 5,200 ug/l). This latter reading on 5/1 was probably connected to some sort of atypical upset. The four readings for the Ridgefield Route 7 WTP, which lacks phosphorus removal equipment, were consecutively from 5/1 through 9/24, as follows: 5.4 mg/l (5,400 ug/l); 5.15 mg/l (5,150 ug/l); 5.07 mg/l (5,070 ug/l); and 4.57 mg/l (4,570 ug/l). HWRW, Water Quality Data Report For the Norwalk River Watershed, May 2008 through September 2008, Table 4 at 4. (Exhibit C). Data collected by HWRW on four occasions during the winter of 2008 - 2009, on 11/4/08, 12/16/08, 1/20/09, 3/10/09, when the phosphorus removal equipment of Ridgefield Main was shut down, reflect phosphorus concentrations as follows: Ridgefield Main - .07 mg/l (70 ug/l) to 2.1 mg/l (2,100 ug/l); Ridgefield Route 7 - 4 mg/l (4,000 ug/l) to 5.2 mg/l (5,200 ug/l); and Redding - .07 mg/l (70 ug/l) to 5.1 mg/l (5,100 ug/l). (Exhibit D)[1]. Since Ridgefield Main is a much larger facility than either Ridgefield Route 7 or Redding, its discharge of phosphorus to the Norwalk River during the period that its phosphorus removal equipment was off, measured in pounds, was larger than the discharge of Ridgefield Route 7 and the disabled Redding WTP combined. (Exhibit E).

Given that DEP considers a concentration 50 ug/l or more to engender highly eutrophic conditions, the above discharges, primarily from the Ridgefield WTPs in the thousands of ug/l, represent a seemingly massive level of contamination. This no doubt contributes to the fact that most of the impoundments along the Norwalk River are highly eutrophic during the warmer months.[2]

Further, the above data evidences the insensibility of allowing Ridgefield Main and any other WTP to shut down their phosphorus removal equipment during the winter. In the Norwalk River Watershed, this has, and will continue to result in massive additional discharges of phosphorus to the Norwalk River, that could otherwise be avoided. Some of this phosphorous will be carried downstream into Long Island Sound, but the bulk will be retained in the River's

[1] These numbers are estimates, since Exhibit D is a bar graph. I am informed that the high readings for Redding on 12/16/08 and 1/20/09 were due to an upset involving the phosphorus removal equipment. The reading for 3/10/09, after the equipment had been repaired, is non detect for phosphorous.

[2] While impoundments are somewhat different from lakes, they are quite similar in terms of their characteristics, and are usually referred to as "ponds". In any event, they are sufficiently similar to lakes so that the discharge of phosphorus to the Norwalk River in concentrations of thousands of ug/l, up to a hundred times greater than DEP deems highly eutrophic, cannot be justified by any conceivable rationale.

sediment where it will be available in the spring to contribute to eutrophication.

The negative impacts of phosphorous pollution should also be viewed in the context of the warming of the Norwalk and other rivers as a result of DEP's deficient temperature criteria. As the temperature in Connecticut's rivers rises during the warmer months, trout seek refuge in colder river segments to survive. Many impoundments are both large and deep with the bottom of their water column being significantly colder than more shallow river segments. Consequently, impoundments should be an ideal refuge for trout during the warmer months. As indicated above, however, eutrophication turns the deeper, colder, bottom portions of afflicted impoundments into deoxygenated dead zones. Thus, eutrophic impoundments cannot be utilized by trout as a refuge. This, plus the heavy surface and subsurface growth associated with eutrophication, precludes the utilization of such impoundments by anglers, as well as other user groups, and increases trout mortality. There are numerous examples of eutrophic impoundments along the Norwalk River, including Fox Hill Pond, Topstone Pond, Factory Pond, Little Pond, and Stonehenge Pond. Another example is Lees Pond, which is a large very deep impoundment on the Saugatuck River, which could serve as an excellent trout refuge, but for the fact, as reported by HWRW, that it is highly eutrophic and burdened by an extensive dead zone in its deeper portions.[3]

In short, phosphorus is a pollutant with severe adverse impacts. It is a major contributor to eutrophication, which depletes water bodies of oxygen, destroys their aesthetic values, and precludes fishing and other recreation. DEP's current regulations governing phosphorus are aptly described as minimal and ineffective. To remedy this situation DEP should revise the WQS to include appropriate numeric criteria for phosphorus. The phosphorus removal equipment that would be universally required for dischargers by such criteria is relatively inexpensive and effective. Further, DEP should not permit WTPs, or other dischargers, to shut down their phosphorus removal equipment during the winter.

3. <u>The WQS Antidegradation Implementation Policy Is Internally Inconsistent And Less Stringent Than Its Federal Counterpart, And Therefore, Is Unlawful, And Must Be Revised To Conform To The Requirements Of The Clean Water Act And EPA's Implementing Regulations</u>

As a state authorized by EPA to manage its inland waters, DEP must conform its regulations to comply fully with the Clean Water Act (the "CWA") and EPA's implementing regulations. EPA's antidegradation regulation is set forth at 40 C.F.R. 131.12. Degradation is essentially a lowering of water quality. Forty C.F.R. 131.12 requires that every authorized state have an approved antidegradation policy, which is deemed to be an element of the state's water quality standards. (40 C.F.R. 131.6). Forty C.F.R. 131.12(a) also requires each authorized state to identify its methods for implementing its antidegradation policy, and that each authorized state's antidegradation policy and implementation methods "shall, at a minimum, be consistent

[3] Impoundments, if not eutrophic, can serve as a refuge for anadromous cold water species, as well as trout.

with" all the requirements of 40 C.F.R. 131.12(a). Furthermore, no state may adopt and enforce, and EPA may not authorize, any state standard that is less stringent than that required by the CWA. 33 U.S.C. §1370.

At Appendix E, the WQS contains an antidegradation "Implementation Policy". Appendix E appears to combine the antidegradation policy and implementation methods required by 40 C.F.R. 131.12(a) into a single provision, which will hereafter be referred to as the "Policy" The Policy, at points, is confusing and difficult to understand. More importantly, in a critical respect it is internally inconsistent and substantially less stringent than 40 C.F.R. 131.12(a). Consequently, despite the fact that it was approved by EPA in 2002, it is unlawful and permits Connecticut's waters to be degraded to a level not allowed by 40 C.F.R. 131.12(a). Consequently, the Policy must be revised, as a matter of law, to bring it into conformity with 40 C.F.R. 131.12(a).

Forty C.F.R. 131.12 sets out a three-tiered approach for the protection of water quality. Tier 1 (40 C.F.R. 131.12(a)(1)) provides that "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected". Tier 1 protection of existing uses "provides the absolute floor of water quality in all waters of the United States [and] applies a minimum level of protection to all waters." Water Quality Standards Handbook, 2d Ed. (EPA 8/94) §4.2 at 4-1. See also Advance Notice of Proposed Rulemaking, 63 Federal Register 36741, July 7, 1998, at 36780, 36781 (the "Advance Notice").[4] "Antidegradation policies are generally implemented for [T]ier 1[waters] by a review procedure that evaluates any discharge to determine whether it would impair an existing use." (Advance Notice at 36781). Thus, as will be discussed more fully below, EPA's antidegradation policy prohibits any lowering of water quality in Tier one waters not meeting standards, since such waters are impaired by definition, and any further impairment will unavoidably impair existing uses.

Tier 2 (40 C.F.R. 131.12(a)(2)) protects the water quality of so called "high quality waters" whose quality is better than that necessary to protect "fishable/swimmable" uses. Thus, tier 2, provides explicitly that:

> [w]here the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State

[4] The Advance Notice was never followed up on, but along with the Water Quality Standards Handbook remains one of EPA's most comprehensive and authoritative interpretations of antidegradation.

> shall assure water quality adequate to protect existing uses fully.

(Emphasis added). Thus, EPA's antidegradation policy does not prohibit the lowering of water quality in high quality waters. Rather, such lowering of water quality in Tier 2 waters is permitted when it is deemed necessary to "accommodate important economic or social development in the areas in which the waters are located...", but only to the extent that existing uses are "fully" protected. (40 C.F.R. 131.12(a)(2), emphasis added).

Antidegradation requirements are typically triggered when an activity is proposed that may have some effect on existing water quality. (Advance Notice at 36780). Further, EPA may disapprove and federally promulgate all or part of a state's antidegradation implementation process if, "in the judgment of the Administrator, the State's process (or certain provisions thereof) can be implemented in such a way as to circumvent the intent and purpose of [EPA's] antidegradation policy". Id., §4.3 at 4-2.

In the definitional section of the WQS, DEP defines antidegradation policy to mean:

> a statement of practice required by federal law which protects existing uses and prohibits a state from lowering high quality surface water quality in order to accommodate activities which impact a particular surface water unless a lowering of surface water quality is determined, following intergovernmental coordination and public participation, to be necessary to accommodate important economic or social development in the area where the water is located.

(WQS at A1). Thus, initially, DEP defines antidegradation in a manner consistent with 40 C.F.R. 131.12(a)(2), as legally required. In the Policy, however, DEP departs radically from this required formulation.

In the first section of the Policy DEP states that the "purpose of this policy is to establish procedures to implement Connecticut's anti-degradation policy as required by the federal Clean Water Act (Title 40 Part 131.2) and Connecticut's Surface Water Quality Standards 2 through 5." (The Policy, §I at E-1). Standard 3 of the WQS provides that high quality waters "shall be maintained at their existing high quality, unless the Commissioner finds…that allowing lower water quality is necessary to accommodate overriding statewide economic or social development..." (WQS at 1). In section III(3) of the Policy, a section explicitly applicable to "[h]igh quality Class B or SB water resources….", i.e., the apparent equivalent to EPA's Tier 2 waters, the Policy again provides that such waters will be maintained at their existing high quality unless "the Commissioner finds…that allowing lower water quality is necessary to accommodate overriding State economic or social development.…" (The Policy, §III(3)(b) at E-2).

The following section of the Policy, section IV is entitled "ANTI-DEGRADATION EVALUATION PROCEDURES FOR CLASS B AND SB WATER RESOURCES". The

absence of any reference to high quality waters in this section heading suggests that this section is applicable to Class B and SB waters that are not high quality. Nevertheless, in section IV(2) the Policy provides redundantly, that if "the Commissioner determines that a proposed discharge or activity will significantly lower water quality in a high quality Class B or SB water, he or she shall not issue a permit or certificate unless he or she finds that allowing lower water quality is necessary to accommodate overriding economic and social development…." (The Policy, §IV(2) at E-3). While the preceding language makes no reference to state policy, in the final (unnumbered) paragraph of section IV(2), following sections IV(2)(a) and (b) the Policy provides that the "applicant for a proposed permit or activity which will cause a lowering of water quality shall demonstrate to the Commissioner's satisfaction the overriding economic or social benefits to the state which will result from the proposed discharge or activity." (The Policy, §IV(2) at E4).

While there are some semantic differences between Water Quality Standard 3, section III(3), and section IV(2), the Policy essentially provides that water quality in high quality Class B and SB waters can be lowered if necessary to accommodate overriding state economic and social development. This formulation deviates markedly from that in 40 C.F.R. 131.12(a)(2). Also, it is substantially less stringent than EPA's antidegradation policy at 40 C.F.R. 131.12(a)(2), as detailed below.

The Policy's formulation that water quality may be lowered in high quality waters to accommodate overriding state economic and social development is so broad that it appears to be a classic example of the exception that swallows the rule. Further, this formulation is not readily comprehensible, since it is difficult to contemplate the typical industrial, residential, or municipal development having statewide ramifications. To give the Policy' s reference to "state economic and social development" some meaning, one must assume that it means a state policy that has statewide application. This interpretation, while comprehensible, is internally inconsistent with the Policy's definition of its antidegradation policy (at A-1). Moreover, it is substantially less stringent than the required formulation in 40 C.F.R. 131.12(a)(2) which provides that water quality can be lowered in high quality waters if necessary to accommodate "important economic or social development in the area in which the waters are located". (Emphasis added). This formulation, unlike DEP's, contemplates economic and social developments of a geographically limited scope.

According to EPA, the phrase "in the area in which the waters are located" defines the "level" of social and economic development that can be relied on "to justify a change in high-quality waters." Water Quality Standards Handbook, §4.5 at 4-7. Thus, EPA's formulation allows degradation of high quality waters only in the locale where the discharge will occur, provided that the facility which will be the source of the discharge is necessary to satisfy an important economic or social need in that limited area. State policies, however, are much broader in scope, and therefore, utilizing them for the purpose of implementing antidegradation policy is less stringent than required.

For example, every State has an arguably overriding policy of enhancing its tax base by

promoting development of its resources. Virtually any development for residential or business purposes can be construed as promoting this state policy. If, however, every such development can be construed as an exception to the basic rule of the antidegradation policy against lowering water quality in high quality waters, you are dealing with an exception of such extraordinary breadth that it swallows the rule. Consequently, application of state tax policies to antidegradation implementation is vastly less stringent than that contemplated by the federal rule.

Another example of a relevant statewide policy is that codified at CGS §22a-426(a)(3) which provides that when DEP establishes a water quality standard, such standard "shall…promote the economic development of the state." Again, since every industrial, residential, or municipal construction to some extent promotes the economic development of the state, application of this policy to antidegradation implementation suffers from colossal over breadth.

Yet a further example is CGS §8-30g, which favors the construction of affordable housing in towns in which less than 10% of the dwelling units constitute affordable housing as defined in the statute. (See CGS §8-30g(k)). In particular, CGS §8-30g(g) shifts the burden of proof from developers to the local planning and zoning commissions who now must prove that any decision adverse to a developer whose proposal contains an affordable housing component "is necessary to protect substantial public interests in health, health safety, or other matters which the commission may legally consider…", and that "such public interests clearly outweigh the need for affordable housing…." Section 8-30g does not by its terms favor development in environmentally sensitive areas, and in locales that would fall with the protection of EPA's formulation of antidegradation. Nevertheless, some developers have used it as a spearhead for constructing high density development in such areas, by including an affordable housing component in their projects.

In sum, "statewide economic or social development" is an internally inconsistent, ambiguous, overbroad formulation that is substantially less stringent than that required by 40 C.F.R. 131.12(a) and therefore, can result in permitting degradation, or permitting a greater level of degradation of high quality waters, that would not be allowed under the federal rule.

Further, DEP's formulation allowing degradation where it is deemed "necessary to accommodate overriding state economic or social development" is so broad that it virtually encourages degradation. This conclusion is buttressed by the substitution of the word "overriding" for the word "important". According to the dictionary, overriding means "taking precedence over all other considerations". This is a much stronger formulation than "important", and the only considerations to be overridden in the provisions of the Policy containing this language are the Policy's limitations on degradation in high quality waters and the need to protect existing uses. Between this and severe over breadth, DEP's formulation appears susceptible to being implemented "in such a way as to circumvent the intent and purpose of [EPA's] antidegradation policy."

In addition to the above, the Policy's structure and organization, particularly section IV, is

very confusing, and appears to contain further provisions that are less stringent than those of 40 C.F.R. 131.12(a). Although the headings of sections III and IV suggest clearly that section III deals exclusively with high quality waters, and that section IV deals exclusively with Class B and SB waters that lack high quality, the reality is that section IV makes alternating references to high quality and non-high quality waters, and reiterates some section III provisions. This is very confusing, since at any point in section IV it is unclear whether its provisions apply to high quality or non-high quality waters, or both. As noted above, the final (unnumbered) paragraph of section IV(2), following sections IV(2)(a) and (b), provides that any "applicant for a proposed permit or activity which will cause a lowering of water quality shall demonstrate to the Commissioner's satisfaction the overriding economic or social benefits to the state which will result from the proposed discharge or activity." (The Policy, §IV(2) at E4). This paragraph makes no reference to high quality waters and therefore, is presumptively applicable to Class B and SB waters lacking high quality. Thus, section IV is not only confusing, but appears to import the less stringent language of the Policy governing antidegradation reviews of high quality waters into the permit reviews of new or revised discharges to non-high quality waters. Furthermore, in a recent discussion with a DEP Environmental Analyst, I was advised that while this individual was unsure of how the Policy was interpreted as to Class B waters lacking high quality, to his knowledge there are individuals within DEP who interpret the Policy's "overriding statewide economic or social development" language to be applicable to such waters. This is radically less stringent than 40 C.F.R. 131.12(a)(1).

The reason that 40 C.F.R. 131.12(a)(2) authorizes the degradation of Tier 2, high quality waters under appropriate circumstances is because they have assimilative capacity in excess of the water quality necessary to support existing uses. Therefore, they can absorb some reduction in water quality and still retain quality in excess of that necessary to support existing uses. Non-high quality waters are so classified because they do not meet or exceed the water quality standards required to support designated or existing uses. Since their quality is lower than necessary to support existing uses, they are deemed to be impaired and may be listed on a state's 303(d) list. Consequently, any discharge to a non-high quality water of a pollutant for which the water does not meet the applicable water quality standard, or criteria, unless de minimus, unavoidably impairs the waters existing use(s). Such impairment, however, violates 40 C.F.R. 131.12(a)(1), which prohibits the impairment, or further impairment of existing uses.

EPA's Water Quality Standards Handbook, also addresses this issue as follows:

> If a planned activity will foreseeably lower water quality to the extent that it no longer is sufficient to protect and maintain the existing uses in that water body, such an activity is inconsistent with EPA's antidegradation policy, which requires that existing uses are to be maintained. In such a circumstance, the planned activity must be avoided or adequate mitigation or preventive measures must be taken to ensure that the existing uses and the water quality to protect them will be maintained.

Water Quality Standards Handbook, §4.4 at 4-3 – 4-4. The above, of course, applies equally to further impairments of existing uses, as well as an initial impairment. Accordingly, the implication in section IV(2) of the Policy that an applicant for a proposed permit may be allowed to initiate a discharge which will cause a lowering of water quality in a non-high quality Class B or SB water, provided that the applicant can demonstrate that it is necessary to accommodate an overriding state economic or social policy, is radically less stringent than 40 C.F.R. 131.12(a)(1), and unlawful.

Connecticut's need for an antidegradation policy that is as stringent as that required by 40 C.F.R. 131.12 is exemplified by the condition of the Norwalk River watershed. The Norwalk River is an extremely fragile, urbanized water, listed as impaired on DEP's 303(d) list for indicator bacteria and aquatic life use. The sources of the multiple stresses to which the Norwalk River is subject are numerous, as indicated below.

A primary source of indicator bacteria (pathogen) contamination is non point source stormwater runoff. Indeed, according to DEP, "[s]tormwater is recognized nationally as the leading cause of water pollution today." Rainfall as a Resource – A Resident's Guide to Low Impact Development In Connecticut. As impervious cover associated with development increases, so do the problems associated with stormwater, including pathogen contamination.

Another source of pathogens in the Norwalk River is the MS4 outfalls of the six Connecticut towns that discharge to the River. In November 2005, DEP established a Total Maximum Daily Load "TMDL" for indicator bacteria for the Norwalk River Regional Basin. This TMDL was incorporated into the MS4 General Permit of each of the above six towns. A recent freedom of information request that I made indicated that neither the TMDL, nor the MS4 permit were being enforced. Consequently, the municipal discharges of these six towns remain a major source of continuing pathogen contamination of the Norwalk River.

As with indicator bacteria, a primary source of the stresses leading to an aquatic life use impairment is increased stormwater runoff due to the increased impervious cover associated with development. Recently, DEP has compiled a "Multiple Stressor Presentation". In an online summary, DEP states that "[t]his presentation was developed to present the concept of 'multiple stressor syndrome' a common phenomenon in streams with developed watersheds. The data analysis within this presentation documents that 'no segment of stream in CT with > 12% Impervious Cover upstream of the sampling location was able to meet CT Water Quality Standard for aquatic life.' " Currently, DEP is conducting a stressor identification study, of the Norwalk River. In a draft report issued in February 2009 (the "Stressor ID Report") the amount of impervious cover at the sites sampled ranged from 14% to 19%.

To determine an aquatic life use impairment, DEP's 2006 CALM, at 11, states that "biological community assessment is the best and most direct measure of aquatic life use support….CT DEP has used benthic macroinvertebrate community structure as the primary indicator of biological integrity since the mid-1970s. These data provide a relatively direct characterization

of impairment and use support through comparison of sample communities to reference communities…" In the Stressor ID Report, a substantial, continuing degradation of the Norwalk River's macroinvertebrate community was noted from 1997 to 2006. The macroinvertebrate community, of course, includes insects sensitive to pollution such as mayflies, caddisflies, and stoneflies, which are primary forage of trout.

As indicated above, phosphorous and thermal impacts are critical issues in the Norwalk River. In the Stressor ID Report, phosphorus was found to be a candidate cause of the aquatic life use impairment at all 5 subject sites. Similarly, temperature was found to be a candidate cause at all 5 sites, with the highest temperatures recorded to be in the range of long-term lethal to critical thermal max for brook trout, and growth limited to long-term lethal for brown trout.

On April 24, 2007, Eureka V LLC, made an application to the Ridgefield Planning and Zoning Commission for an initial approval for a mixed residential development at the Bennett Farm site in northeast Ridgefield, comprised of 509 units. On December 5, 2007, Eureka made a resubmission application, which among the options proposed, included the construction of 327 units in the Norwalk River Watershed. It was proposed that the domestic wastewater generated would be serviced by sewers connected to the Ridgefield Route 7 WTP. It was estimated by Eureka's consultants that the volume of domestic wastewater that would be generated by these 327 units was approximately 107,000 gpd.

In February 2008, the Ridgefield Planning and Zoning Commission approved a development of 306 units, all of which would be constructed in the Norwalk River Watershed. The Planning and Zoning Commission approval prohibited the use of private septic systems on the site, which means that these units would have to be serviced by sewers connected the Ridgefield Route 7 WTP. This matter is now in litigation, but the 306 units approved by the Ridgefield Planning and Zoning Commission is the smallest number of units that it can be anticipated will be constructed at the Bennett Farm site. It is estimated that these 306 units will generate approximately100, 000 gpd of wastewater.

Thus, the ultimate build-out of the Eureka development holds ominous prospects for the Norwalk River. In general, there will be a significant increase in impervious cover in a waterbody in which the current impervious cover is well in excess of the 12% deemed antithetical to meeting WQS for aquatic life use. In particular, the increased impervious cover and the resultant increase in stormwater run-off will, if not controlled, lead to increased flooding, erosion, and pollution. In terms of pollution, the increased stormwater nonpoint discharge is apt to have an increased thermal impact on the River, and contain sediment, nutrients, and hydrocarbons and other chemicals, as well as pathogens, for which the Norwalk River is already listed as impaired. The increased discharge from the Ridgefield Route 7 WTP also has the potential for creating adverse thermal impacts, and because it lacks phosphorus removal equipment, will inevitably cause increased phosphorus pollution.

Another, problem looming in the future is the eventual development of the Gilbert & Bennett Wire Mill site in Redding, which until recently had been proceeding under Stephen Soler, the

principal of the Georgetown Land Development Co. The Redding WTP's permit authorizes a design flow of 75,000 gpd, with an increase to 245,000 gpd once the proposed Wire Mill development and the necessary upgrade to the Redding WTP are completed. My understanding is that the Redding WTP is currently discharging approximately 50,000 gpd to the Norwalk River, and that this will increase to approximately 190,000 gpd to accommodate the build-out of the proposed Wire Mill development. This will mean a potentially problematic increased discharge of 140,000 gpd. In this scenario, the prospective, combined increased discharge from the Ridgefield Route 7 and Redding WTPs will amount to approximately 240,000 gpd. According to DEP's 2006 CALM at 12, however, where treated wastewater effluent is >20% of stream flow, this constitutes a threat to aquatic life use support. This raises the question of what percentage of the Norwalk River's flow will be treated effluent after the completion of the projected Eureka and Wire Mill developments, particularly during the warmer months, and possible drought conditions, when natural stream flow may be decreased. Furthermore, the prospective increase in the Redding WTPs discharge by approximately 140,000gpd alone has the potential for adverse, downstream thermal impacts.

Recently, however, Mr. Soler, generally viewed as a "community-friendly developer", has been forced to abandon his project due to adverse market conditions caused by the current recession. 7 Years In, Renewal Plan Languishes, New York Times, 6/21/09, Real Estate Section at 4. Redding continues to seek to secure financial commitments from other sources that would allow the Town to continue to pursue Mr. Soler's original vision. Id. Redding officials are worried, however:

> that the site may attract a more conventional and less community-friendly developer.
>
> They are especially worried that a developer may use the state's affordable-housing appeals law to circumvent local zoning and fill the entire site with high-density housing.
>
> The law…makes the rejection of such projects more difficult for towns in which less than 10 percent of the housing units qualify as affordable. Redding Is 'a sitting duck' in that regard…as it has no affordable housing at all.

Id. Thus, whether the Wire Mill site is ultimately developed in accord with the original vision of Redding and Mr. Soler, or is subject to a high density development at the instance of a developer using CGS §8-30g as a spearhead to circumvent local zoning requirements (and antidegrada-tion), the future development of both the Eureka and Wire Mill sites holds ominous portents for the already overdeveloped Norwalk River Watershed.

The above indicates the extraordinary array of stresses to which the already fragile, impaired Norwalk River is subject to. Other local waters in southwest Fairfield County, such as the Mianus, Saugatuck, and Aspetuck are subject to similar threats. This emphasizes the necessity for an antidegradation policy that is as protective as the law allows, rather than one that fails to conform to EPA's policy and is riddled with broad exceptions that allow any party including local planning and zoning commissions, as well as developers, to evade otherwise legally

required obligations.

With reference to the Policy, I strongly urge the two revisions set forth below, to rectify the fact that as currently drafted the Policy is substantially less stringent, and therefore, unlawful and less protective than its federal counterpart.

1) It is imperative that DEP revise Standard 3 (at 1), section III(3)(b) of the Policy (at E-2), and the concluding paragraph of section IV(2) of the Policy (at E-4) to remove all references to allowing the lowering of water quality where it is necessary to accommodate overriding state economic or social development. These references should then be replaced with the language in the WQS' definitional section (at A-1) providing that a lowering of water quality may be allowed where it is determined "to be necessary to accommodate important economic or social development in the area where the water is located". (Emphasis added). This will render the WQS internally consistent, and the Policy consistent with EPA's antidegradation policy at 40 C.F.R. 131.12(a) (2), and not subject to interpretation that allows the further impairment of low quality Class B and SB waters. For the same reasons, the references in the heading and introductory paragraph of Section IV(2) of the Policy (at E-3) to "overriding economic and social development" should be removed and replaced with "important economic or social development"

The above revision requires only some simple draftsmanship, and can be done immediately. There is no reason to conflate this revision with the more complex and lengthy revision review that DEP is apparently contemplating.

2) The Policy should also be revised to avoid making reference to both high quality waters and non-high quality waters in the same section. This is extraordinarily confusing, and supports the interpretation that in Connecticut the lowering of water quality in already impaired waters is allowed, which as noted above, is contrary to law.

Respectfully submitted,
Richard J. Weisberg
July 6, 2009

Dunbar, Lee

From: LDunbar@DEPHTFD.Water_PO
Sent: Monday, April 15, 2002 2:13 PM
To: wenhom@mail01.dnr.state.wi.us
Subject: Re: Thermal Criteria

Michael-

1) Yes we have temperature criteria, no we don't have a "heat" criteria.
2) We have an "allowable temperature increase" value as well as a maximum value.
3) 4 degrees F maximum delta, 85 degrees F max for freshwaters
4 degrees F maximum delta except during July, August, September maximum delta 1.5 degrees F, 83 degrees max all seasons for estuarine waters.
4) Criteria were developed many years ago - probably "BPJ" based on EPA guidance at that time. There is no technical support document explaining how it was done that I know of. We haven't revised the temperature criteria in many years.

Good luck.
Lee Dunbar

Ex. A

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

August 6, 2008

Mr. Richard J. Weisberg
34 Prince's Pine Road
Norwalk, CT 06850

Dear Mr. Weisberg,

Thank you for your letter of July 21, 2008 to Betsey Wingfield in which you inquired about the Department's response to your earlier FOIA request. She has asked me to respond directly to your letter.

You are correct in assuming that the Department has not withheld any documents responsive to paragraph (3)p of your request. Staff made a thorough search of our files and were unable to identify any documents "comprising part of the process by which decisions and policies were formulated with reference to the baseline from which the 4 degree F criterion (for temperature) was to be applied". Your inference that the Department does not apply the 4 degree F criteria from a fixed baseline is also correct. As is clearly stated in the current effective Water Quality Standards, the criterion for temperature is benchmarked on the "natural condition" which will vary dependent upon geographic location, season, and in some cases even time of day. This provision has been a relatively unchanged part of our Water Quality Standards since 1973 when changes were made to conform with the recently enacted federal Water Pollution Control Act.

Your discussion of the potential impact of applying the temperature criterion in a "cumulative" fashion is unclear. You are correct in stating that the combined effect of several thermal discharges to the same waterbody could theoretically raise the ambient temperature by more than 4 degrees. However, excursions above the adopted criterion are unacceptable under our standards regardless of whether caused by one source or several acting in combination. That said, thermal pollution is not conservative, and heat is lost to the surrounding ambient water and air; much like the cooling of a cup of coffee left unattended on the corner of a desk.

Determining the effect of multiple discharges on a waterbody is not simply an exercise in addition. Staff evaluate carefully the impact of any proposed discharge and recommend permitting decisions based on best professional judgment. This analysis includes consideration of the impacts of existing sources as well as the sensitivity of the resource to assimilation of additional heat loads and a determination as to the appropriateness of allocating a zone of influence. In some case sophisticated computer models are used while in others a more simple analysis will suffice. If you would like a more complete explanation of the process by which staff evaluate relevant data concerning the potential for the thermal component of a regulated discharge on aquatic life, please contact me at 860-424-3731.

Sincerely,

Lee Dunbar
Assistant Director
Bureau of Water Protection and Land Reuse
Planning & Standards Division

Ex. B

Table 2 May 2008 through September 2008 *E. coli* bacteria concentrations, geometric means and % frequency exceeding 410 colonies/100 mLs at 12 sampling sites in the Norwalk River Watershed for the period of time when the two Ridgefield and the Georgetown wastewater treatment facilities are required by NPDES permits to disinfect effluent discharges

	Dates											
Sites	5/1/2008	5/7/2008	5/15/2008	5/21/2008	6/4/2008	6/11/2008	6/19/2008	6/25/2008	7/2/2008	7/9/2008	7/17/2008	7/23/2008
NR23	60	40	76	140	1700	1100	130	360	n/a	146	148	2300
NR22	0	0	0	0	1	1	0	0	0	0	1	n/a
NR21	68	32	76	148	1800	780	130	52	480	180	252	9800
NR20	88	28	108	168	3200	930	270	158	420	136	88	80
NR15	56	36	88	108	470	400	190	124	n/a	760	164	500
NR13	520	26	156	92	600	730	270	320	1100	232	144	460
NR9.5	94	18	56	88	400	340	92	156	1760	146	140	570
NR9	108	32	68	104	2600	500	200	140	n/a	68	88	380
NR6	104	68	212	148	1200	810	430	272	1060	360	168	3800
NR4	120	112	360	228	1300	330	170	380	800	440	380	6100
SM3	84	96	124	112	3100	430	520	220	460	900	6700	1100
NR1	72	96	88	188	1400	500	530	176	2800	200	270	6300

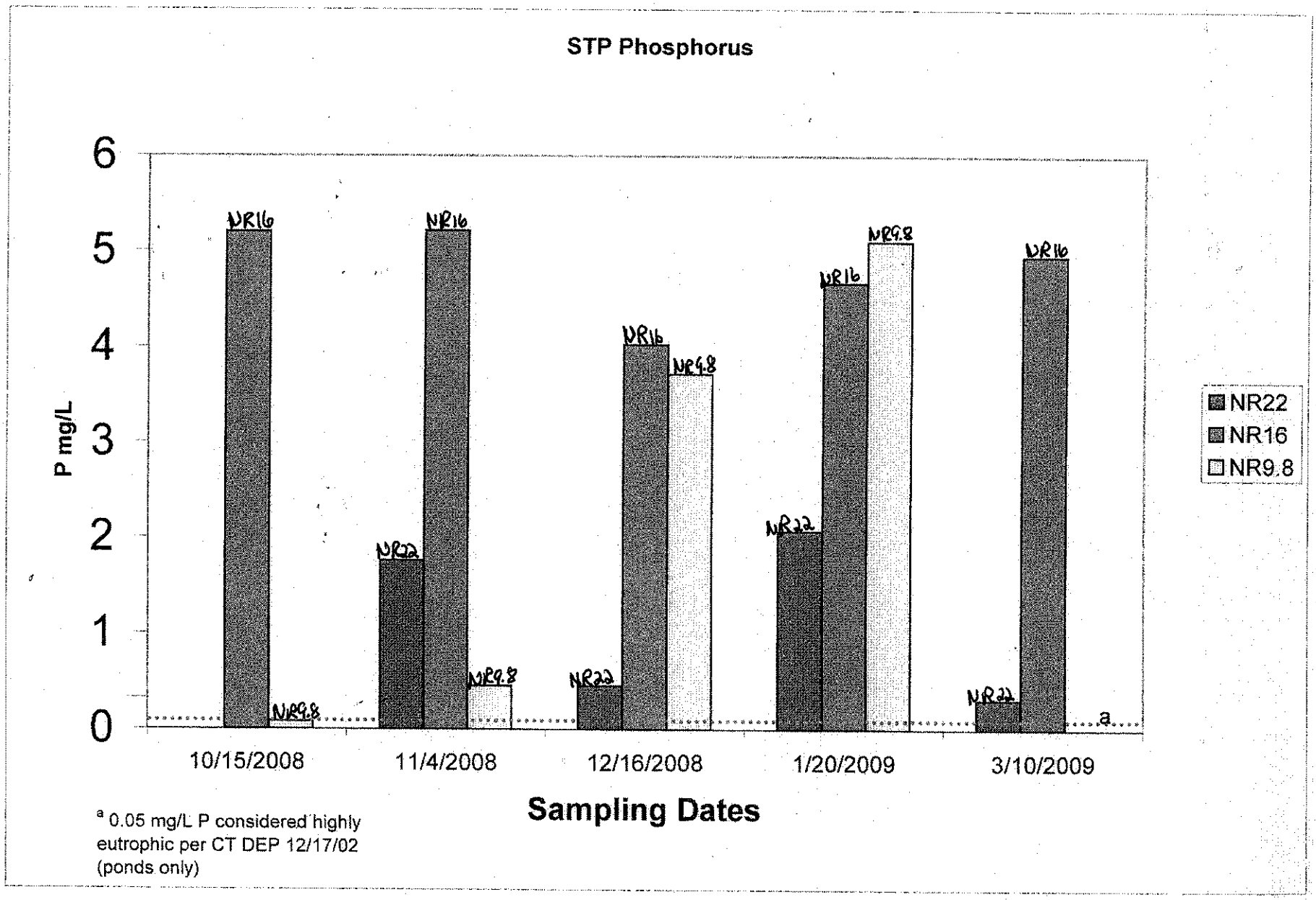
8/7/2008	8/13/2008	8/20/2008	8/27/2008	9/4/2008	9/10/2008	9/18/2008	9/24/2008	**Geomean**	%frequency over 410 colonies/100mLs
260	460	144	320	640	400	100	152	244	21.05%
0	0	0	0	0	0	0	0		0.00%
190	200	110	140	150	30	120	44	175	20.00%
100	160	80	40	212	130	120	108	152	15.00%
420	160	232	140	480	220	170	340	203	25.00%
290	160	244	360	400	180	160	124	247	25.00%
150	220	88	158	3600	356	96	156	188	15.00%
100	180	68	38	2200	260	112	72	155	15.00%
470	470	220	180	1700	390	220	248	367	40.00%
200	300	210	140	780	330	380	360	363	25.00%
900	290	210	68	144	330	90	148	320	40.00%
500	550	320	760	1080	380	28000	31000	648	55.00%

Table 4 Observed Total phosphorous (TP) values, mg/L at three WTP effluent discharges and two sampling sites on 5/1, 6/19, 8/21, and 9/24/2008

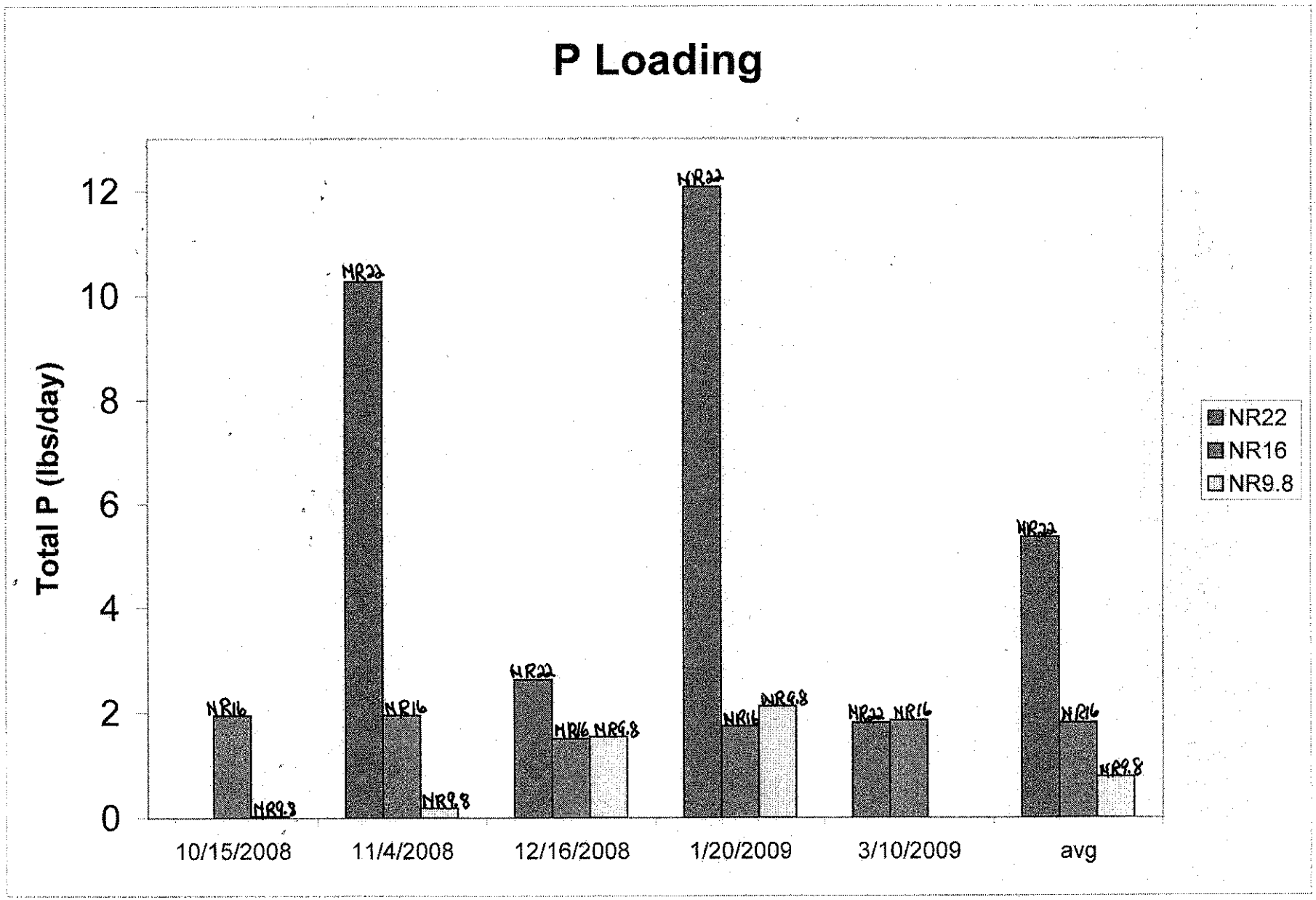
WTP	Site Number	TP mg/L on 5/1	TP mg/L on 6/19	TP mg/L on 8/21	TP mg/L on 9/24
Ridgefield	NR22	ND*	ND*	ND*	ND*
Route 7	NR16	5.40	5.15	5.07	4.57
	NR15	ND*	ND*	0.13	ND*
Georgetown	NR9.8	5.20	ND*	ND*	ND*
	NR1	ND*	ND*	ND*	0.32

* Non-detectable, minimum detection level is .05 mg/L at York laboratories, Inc.

EX. C


STP Phosphorus
P mg/L
6
5
4
3
2
1
0
NR16
NR9.8
NR22
NR16
NR9.8
NR22
NR16
NR9.8
NR22
NR16
NR9.8
NR22
NR16
a
10/15/2008
11/4/2008
12/16/2008
1/20/2009
3/10/2009
Sampling Dates
NR22
NR16
NR9.8
[a] 0.05 mg/L P considered highly eutrophic per CT DEP 12/17/02 (ponds only)

Ex. D


P Loading
Total P (lbs/day)
0
2
4
6
8
10
12
10/15/2008
11/4/2008
12/16/2008
1/20/2009
3/10/2009
avg
NR22
NR16
NR9.8

Ex. E