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By Overnight Certified Mail, Return Receipt Requested

Ms. Teresa Diehsner
Division of Environmental Permits
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

RE: Cornell University Lake Source Cooling Facility
Comments on Draft SPDES Permit 7-5099-000009/00001

Dear Ms. Diehsner:

Cornell University ("Cornell") has reviewed the above-referenced draft SPDES permit for the discharge from its Lake Source Cooling ("LSC") system. For the most part, Cornell accepts the draft permit as proposed. However, Cornell respectfully requests that the Department make a few changes to the permit prior to finalization. Cornell's suggested changes and suggestions for the Department's Response to Comments are discussed below. Attachment A contains mark-ups of the draft permit.

A. Brief History of the LSC System

As you are aware, the LSC system is one of the most significant environmental initiatives ever undertaken by an American university to promote a sustainable future. With its start up in 2000, the LSC system upgraded Cornell's central campus chilled water system to a more environmentally sound design. The LSC conserves energy and utilizes a renewable resource, the deep cold waters of

nearby Cayuga Lake, in an environmentally responsible fashion while significantly reducing Cornell's reliance on fossil fuels. Lake Source Cooling is a successful and innovative project – the peak summer electric demand of the entire campus would be 50% higher if conventional chillers were used instead of LSC (without the LSC, the summer electric peak would be 18 MW higher than the actual peak of about 36 MW). LSC reduces the need for electricity to run the chilled water system by 87%, with concurrent reductions in carbon air emissions of about 7,500 tons CO_2. LSC does no harm to the ecology or water quality of Cayuga Lake, as shown by several studies and over ten years of lake monitoring. In 2002, LSC won the Ecological Society of America "Award of Special Recognition and Merit," and helped Cornell's energy system win the International District Energy "System of the Year" award.

In conjunction with Cornell's development and operation of the LSC, Cayuga Lake now is one of the best studied waters in New York. In 1997, Cornell began an integrated, lake-wide monitoring program and has produced and made available to the State and to the general public 15 years' worth of water quality and other data from the lake. In addition, as specified by the current SPDES permit, Cornell has periodically undertaken a series of statistical analyses (using the "Before-After-Control-Impact," or BACI, design) to compare water quality data (notably chlorophyll-a, total phosphorus, and turbidity) in the southern zone of the lake over space and time. As its name implies, the BACI analysis examines measurements before and after the LSC facility came on line. It compares these conditions and trends at stations likely to be affected by the LSC facility's outfall to those at monitoring sites unlikely to be affected (control sites vs. impacted sites). While the existence of two non-Cornell wastewater treatment plant outfalls and the dynamic water circulation patterns in the southern zone complicates the analysis, several rounds of BACI statistical analyses have been completed, the most recent of which analyzed monitoring data through 2008. Based on

their review of the BACI results, statistical experts agree that the LSC discharge has not caused water quality degradation of southern Cayuga Lake.

Most recently, as reflected in the draft permit, Cornell has agreed to undertake--under Department oversight and using a team of scientific experts and researchers-- additional water quality data collection and to develop a nutrient model of the lake. This model will allow the Department to prepare a Total Maximum Daily Load (TMDL) for the lake to address the algal/weed growth and/or nutrient-related impairment in the southern end of the lake.[1] Because Cornell has offered to undertake this resource-intensive and expensive task, the Department can be assured that the modeling that is needed to do an objective TMDL will be done in the foreseeable future.

B. Clarification of the Responsibility for Additional Lake-wide Data Collection, Modeling and Development of the TMDL

In an October 11, 2012 letter to the Department regarding Cayuga Lake, the United States Environmental Protection Agency (EPA) observed:

> The sources of pollutant loadings are numerous and occur throughout the watershed. In addition to the discharge from the Cornell Lake Source Cooling facility, multiple municipal wastewater discharges and urban/storm water runoff from the City of Ithaca also contribute to impairment of the lake. Agricultural activity in the Southern Cayuga Lake watershed includes significant levels of dairy farming, poultry operations and cropland. Nonpoint source loadings from increasing development, stream erosion and road bank erosion are also identified as sources of pollutants to the tributaries and lake.[2]

It is significant that EPA recognizes that there are many potential sources of phosphorus that need to be evaluated, not just the LSC.

EPA's October 12 letter also states:

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1 See http://www.dec.ny.gov/docs/water_pdf/pwlorfllist.pdf.

2 See October 11, 2012 Letter to Mark Klotz, Director, NYSDEC Division of Water from Jeffrey F. Gratz, Deputy Director, Clean Water Division, USEPA Region 2, p. 1.

> Given the multiple point and nonpoint sources in the watershed, the NYSDEC should assess the available data and more fully understand water quality dynamics within the southern portion of the lake and develop remedial measures (e.g., development of a total maximum daily load, implementation of watershed control measures, etc.) to address these concerns.[3]

Cornell agrees with EPA that it is necessary to fully understand southern zone water quality dynamics and then develop remedial measures. This is precisely the two-step process contemplated by the Cayuga Lake Water Quality Plan section of the draft permit. As noted on page 5 of the draft permit, the Department, not Cornell, will develop the TMDL and identify and implement effective watershed controls designed to reduce the non-point source contribution of the nutrients and sediments that are determined to cause or contribute to the identified impairments on the southern zone.

So that there is no misunderstanding in the public's mind of the respective roles of Cornell and the Department as to how the information that will be generated by the modeling effort will factor into the Department's efforts to develop a TMDL, the Response to Comments that will accompany the final permit should clarify those roles.

1. The Response to Comments must state clearly that DEC is responsible for preparing the TMDL for the southern end of the lake.

Section II (B) on page 2 of the Industrial SPDES Permit Fact Sheet states "A TMDL shall be developed to address the impairment." This statement could be read as implying that the SPDES permit is requiring Cornell to develop the TMDL. Cornell requests that the Response to Comments clearly indicate that the Department, not Cornell, has the responsibility to prepare the TMDL.

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[3] Id., p. 2.

2. The Department should form its Cayuga Lake nutrient TMDL stakeholder group soon.

Cornell agrees with EPA's recommendation that the Department "should organize a group of stakeholders including Cornell University, other point and nonpoint source dischargers to the lake, other state and local governments and agencies, non-governmental organizations, and Indian Nations with a history of interest in the improvement of Cayuga Lake water quality."[4] Cornell believes that the stakeholder group should be formed soon to allow the stakeholder group to be the vehicle through which the Department does community outreach as the model is developed. Cornell, of course, will participate in this stakeholder group and assist the Department as it seeks stakeholder input and feedback on the model, as contemplated by the draft permit (page 5). The Department can then funnel appropriate model-related stakeholder input to the third-party modeling entity that Cornell has engaged to meet its obligation to oversee the development of the lake nutrient and watershed models for the lake, as required on page 5 of the draft permit.

3. The Response to Comments should describe Cornell's role in data gathering and model development.

Because Cornell has been gathering lake-wide water quality data for over ten years, Cayuga Lake has a much more robust and complete water quality data set than virtually any other water in New York. In particular, there is already much more high quality nutrient (and related) data for the lake as compared to most waters when development of a TMDL begins. This data gathering was done pursuant to a permit condition in the current LSC SPDES permit,

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[4] Id.

and, given the robust 10-year data, it is entirely appropriate for the Department to have eliminated this requirement in the draft permit. Contrary to the implication in the Town of Ithaca's analysis of the draft permit,[5] the former ambient water quality monitoring condition was not "permit compliance monitoring." That monitoring (of the LSC discharge, as opposed to the ambient lake) remains a requirement of the draft permit on page 3 and will be continued by Cornell.

Going forward, Cornell will be collecting a significant amount of additional data in furtherance of the model development requirements of the draft permit. These sampling efforts are detailed in the first two bullets on page 5 of the draft permit.

4. The Response to Comments should elaborate on how the model will help to identify the causes of phosphorus-related impairments in the southern end of the lake.

The model that Cornell's modeling team will be developing/enhancing should be of significant help in answering questions such as:

- What role, if any, does Soluble Reactive Phosphorus from the deeper area of the lake play in the algal impairment in the southern zone?
- Which of the significant tributaries introduce phosphorus into the lake at levels that need to be reduced in order to address the algal impairments in the southern zone?
- Is Total Phosphorus the impairment-causing parameter that needs to be controlled?

The calibrated and validated model will then be utilized by the Department as a tool in its development of the Cayuga Lake TMDL for phosphorus. With it, the Department will be able to run different scenarios to see what, if any, differences occur in the impairment-related indicators built

[5] See Town of Ithaca, Analysis of Draft SPDES Permit for Lake Source Cooling (November 2012), pp. 6-7.

into the model. This will allow objective Waste Load Allocations and Load Allocations to be set for those point and non-point source discharges that are shown to be material contributors to the algal impairment.

C. Comments on the Draft SPDES Permit and Industrial SPDES Permit Fact Sheet

1. The Response to Comments must reflect that the permit is a substantive permit renewal, not just a modification.

Cornell's SPDES permit has last administratively renewed in 2003. The current draft permit was triggered by several factors, including the fact that the permit had not undergone a substantive review for some time. As indicated on the first page of the draft permit by the acronym "EDP" (for "Effective Date of the Permit"), the draft permit, when finalized, will constitute a complete renewal of the permit, rather than just a "modification" to certain sections (in which case, the cover page would have used "EDPM"). However, the Fact Sheet refers to the draft permit just as an "EBPS modification" (Section I, p. 1) or a Department-initiated modification (Section II (A, p.1). This would lead a reviewer to think that the entire permit has not been substantively reviewed and updated since the last non-administrative renewal in March 1998. While Cornell understands that the draft permit is based on a "full technical review of the existing permit and information provided by the permittee,"[6] it believes that the Response to Comments should clearly state this.

2. The permit's "interim" numeric total phosphorus limit should be the only phosphorus limit, and it should have a longer averaging period.

The draft permit contains both an interim numeric phosphorus limit (6.4 lbs/day as a monthly average, established as a Water Quality Based Effluent Limit (WQBEL)) and a more restrictive final limit (4.8 pounds per day as a monthly average, established as a more restrictive Technology Based

[6] See TOGS 1.2.2, Permit Processing Procedures, Section VII(A).

Effluent Limit (TBEL)). As discussed in the following sections, Cornell does not believe that the 4.8 pounds per day final limit was calculated appropriately. Further, even the 6.4 pounds per day limit is lower than the limit would be had it been calculated properly using the Department's standard limit calculation methods.

In addition, New York, like EPA and many states, routinely express TMDL-driven nutrient SPDES permit limits in units reflecting a longer averaging period. As demonstrated in this section, Cornell believes that a phosphorus limit lower than 6.4 pounds per day cannot be squared with Department practices and procedures and that the 6.4 pounds per day WQBEL[7] (expressed as a rolling average) should remain in place until the TMDL is completed, at which time the LSC may be assigned a Waste Load Allocation (WLA) for phosphorus that is higher or lower than 6.4 pounds per day or receive no allocation at all if the LSC is determined not to be a significant contributor to the impairment of the southern shelf of the Lake.

a. The Department should follow its own practices and procedures when establishing a phosphorus limit.

As shown in the Industrial SPDES Permit Fact Sheet that accompanied the draft permit (page 5), when the Department calculated what the LSC's pre-TMDL Water Quality Based Effluent Limit (WQBEL) should be for phosphorus, it arrived at a WQBEL of 7.6 lbs/day when it used the calculation method it typically uses to calculate most SPDES permit limits for a facility discharging

[7] The proposed 6.4 interim limit is consistent with EPA's October 11, 2012 letter, which states that "permitting authorities must develop water-quality based effluent limits that are protective or water quality standards," because the Department has consistently applied the 0.02 mg/L guidance value as the numeric value that is protective of the narrative phosphorus water quality standard that is contained in 6 NYCRR § 703.2. Neither the proposed interim or final limits, when effective, would violate the Clear Water Act's anti-backsliding rule. Contrary to the position taken by the Town of Ithaca, anti-backsliding does not compare historical discharge data to proposed new permit limits (Town of Ithaca, Analysis, p. 3), but rather compares an existing permit limit with the proposed new limit to see if the latter is less stringent. See CWA § 402(o)(1).

to a nutrient-impaired water body. This method entails multiplying the New York State Phosphorus Water Quality Guidance Value (P-WQGV) for ponded water (0.02 mg/L)[8] by the design/permitted flow rate (2 m^3/s, or 45.6 MGD). Even when the Department used the more restrictive method of multiplying the "actual" flow rate times the 95th percentile flow, the calculated WQBEL was 6.4 pounds per day. Because the Department continues to use this 0.020 mg/l P-WQGV throughout the State as a numeric target for phosphorus-impaired ponded waters,[9] it would be unreasonable for it to say that a limit calculated using this long-established procedure and water quality guidance value is not protective of phosphorus-impaired waters, at least until such time as the Cayuga Lake modeling is done and the subsequent TMDL is approved and WLA set.

b. When calculating either a WQBEL or a TBEL, the Department should follow its own (and EPA's) practices and use only recent representative data.

Based upon the information presented in the Industrial SPDES Permit Fact Sheet, the Department used flow and water quality data from July 2000 (the start of LSC operations) through 2009 when calculating both the potential WQBELs and Technology Based Effluent Limit (TBEL) in the table on page 5 of the Fact Sheet. Use of such old data is contrary to the Department's

[8] In the 1990s, the Department sought to quantify the relationship between the causal variable (phosphorus) and the response variables (algal abundance, dissolved oxygen [DO], and water clarity) for lakes in the State. It also sought to relate the trophic state of a lake to its perceived suitability for recreational use, and applied a statistical technique to define Total Phosphorus (TP) levels associated with a low risk of conditions that would diminish the lake's attractiveness for recreational use. This TP guidance value was set at 0.020 milligrams per liter (mg/L or 20 ug/L), and was applied as a summer (June 1- Sept 30) average value in the upper waters. *Phosphorus Removal Requirements for Wastewater Discharges to Lakes & Lake Watersheds* (NYSDEC 1988) Division of Water Technical and Operational Guidance Series (1.3.6). This guidance value is still used by the Department today as the numeric equivalent of the State's phosphorus water quality standard for most lakes and ponded waters.

[9] See, for example, Section 3.3 of the Total Maximum Daily Load (TMDL) for Phosphorus in Onondaga Lake ("Onondaga Lake TMDL" available at http://www.dec.ny.gov/docs/water_pdf/tmdlondrft.pdf) and Section 3.0 of the *Total Maximum Daily Load (TMDL) for Phosphorus in Chautauqua Lake* (EPA August 2011) (http://www.dec.ny.gov/docs/water_pdf/tmdlchautlkdftaug11.pdf) which states "NYSDEC has suggested that for waters classified as ponded (i.e., lakes, reservoirs and ponds, excluding Lakes Erie, Ontario, and Champlain), the epilimnetic summer mean total phosphorus level shall not exceed 20 μg/L (or 0.02 mg/L), based on biweekly sampling, conducted from June 1 to September 30. This guidance value of 20 μg/L is the TMDL target for Chautauqua Lake."

procedures in that it does not reflect the more representative recent flow and water quality data. For example, the instructions for the Department's SPDES Industrial Application Form NY-2C state: "For existing discharges, *sampling data* [for total phosphorus and other non-toxic parameters] *from the previous 12 months that are considered representative* of your current discharge may be used for completing [the application] (emphasis added)."[10]

Similarly, monitoring data from "the last three years, or for the time period representative of the current discharge if less than 3 years" is to be supplied in SPDES permit applications for priority pollutants, toxic pollutants and hazardous substances.[11] Thus, any phosphorus TBEL and WQBEL for phosphorus should have been based either on the LSC's design/permitted flow (2 m^3/s (45.6 MGD) or on the most recent one or three years' worth of reported flows. As shown in Attachment B, the flow values (and the resulting limits) used in the table on page 5 of the Fact Sheet should have been 1.9 m^3/sec as shown on the table below, yielding a WQBEL of 7.2 pounds per day (rather than the 6.4 pounds per day proposed by in the draft permit).

Further, even if a more stringent TBEL is necessary at all, it should not be 4.8 pounds per day. In order to calculate a TBEL designed to limit LSC operation to the level at which it has operated during the last three years, the calculation must recognize that the two variables in this calculation (flow and phosphorus concentration) are independent of each other. The flow rate is determined by ambient air temperatures (and hence the amount of air conditioning needed on the Cornell campus) while the phosphorus level in the intake water is determined by the quantity of phosphorus present in the lake at the time the water is withdrawn. Neither the flow rate nor the phosphorus level will follow any predictable statistical pattern, in contrast to the normal or lognormal

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10 See *SPDES Industrial Application Form NY-2C Application Instructions,* Section III(1)(B).
11 Id., Section III(2)(A)(ii).

distribution that is assumed in the EPA document that the Department used.[12] Given that these two variables are independent of each other, the best way to reasonably assure that Cornell can continue to operate the LSC as it has in the recent past is to utilize either the 95th or 99th percentile flow and phosphorus concentrations measured during the last three years.

Using the more recent flow and phosphorus data as required by the SPDES Industrial Application Form Instructions, the lowest that the TBEL properly should be is 7.1 pounds per day, measured as a 12 Month Rolling Average (12 MRA) (see section 2(c) below). While the Department had used the 95th percentile monthly average mass load in its calculation, use of the mass load removes much of the inherent and uncontrollable variability present in both the flow rate and phosphorus concentration. Because these two variables are independent of each other, the 95th percentile of each must be used in the calculation, with the conversion to a mass limit being done as the last step in the calculation. Because it is unlikely that both the LSC flow rate and the ambient phosphorus levels near the intake would be above their respective 95 percentiles on any given day, proper statistical practices suggest that the Department should apply the 95 percentile to both flow and phosphorus as Cornell has done in the table attached to this letter.

That said, Cornell will accept a phosphorus limit of 6.4 pounds per day on a 12 MRA until the TMDL process is completed or the outfall relocated, notwithstanding that our analysis results in a WQBEL and a TBEL of 7.2 and 7.1 pounds per day, respectively.

c. All phosphorus limits should be expressed as twelve month, or least seasonal, rolling averages.

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[12] See *Technical Support Document for Water Quality-Based Toxics Control* (EPA March 1991) at Appendix E. This is the "TSD Method" on page 5 of 8 of the Industrial SPDES Permit Fact Sheet.

EPA's regulations at 40 CFR § 122.44(d)(1)(vii), which are applicable to State-issued SPDES permits, "require the permitting authority to ensure that: (a) the level of water quality to be achieved by limits on point sources is derived from, and complies with, all applicable water quality standards; and (b) effluent limitations developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are [to be] consistent with the assumptions and requirements" of the underlying water quality criteria or standard.

The Department's narrative Water Quality Standard for phosphorus is:

> None in amounts that will result in growths of algae, weeds and slime that will impair the waters for their best usages.

As discussed above, New York has long used a 0.02 mg/L Total Phosphorus numeric water quality guidance value to quantify the above standard. The Department applies this value to the upper waters during the summer months to "translate" the narrative water quality standard into a numeric limit. Thus, both the narrative water quality standard and its current state water quality guidance value are meant to protect against phosphorus-related algae, weed and slime impairments over the aquatic plant growing season.

EPA allows and encourages the use of extended averaging periods for permit limits applicable for discharges into nutrient-impaired waters: As noted in guidance developed by EPA Region 1,

> The hydraulic residence time is a critical concept for lakes, as it influences so many aspects of lake condition and pollutant processing. The Hydraulic residence time is almost never on a scale of a day, but rather on a scale of weeks, months, or sometimes years. For many New England lakes, long hydraulic residence times justify expressing the TMDL in terms of annual loading. However, regardless of hydraulic residence time, an annual scale may be reasonable where the lack of information prevents any kind of meaningful monthly or seasonal analysis. Also, most of the available empirical lake models use annual loads rather than daily loads to estimate in-

> lake concentrations, and the overall accuracy of an analysis involving nonpoint source loading and lake water quality typically improves as the averaging period for estimating nonpoint source loading and lake water quality increases.[13]

Consistent with this and other similar EPA guidance, recent New York TMDLs and draft TMDLs have stated that WLA-based permit limits[14] will be based on a 12 MRA. These include the Onondaga Lake TMDL[15] and the draft Chautauqua Lake TMDL. Echoing EPA's guidance, this latter draft TMDL explains the basis for setting year round "rolling average" permit limits for phosphorus:

> The permit writer has the flexibility to express the effluent limitation using a time frame appropriate to the water body, pollutant, and the applicable water quality standard. In addition, allocations based on monthly, seasonal or annual timeframes may be used to guide management measures and implementation efforts because they are related to the overall loading capacity of the water body, while the daily expressions represent day to day snapshots of the total loading capacity based on ambient conditions. Given the retention time of Chautauqua Lake, annual (12- month rolling average) load limits would be appropriate.[16]

According to the Department, the retention time of Cayuga Lake is 8.5 to 10 years,[17] four to five times longer than the 2.1 year estimated Chautauqua Lake retention time.[18] Onondaga Lake flushes even faster, an estimated four times a year.[19] Just as the Department has determined that a 12 MRA

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13 *Regional* Guidance *on Submittal Requirements for Lake and Reservoir Nutrient* (EPA 1999) http://www.epa.gov/region1/eco/tmdl/pdfs/final.pdf. While this guidance was written specifically for New England, these statements are equally applicable to New York lakes.

14 Consistent with court decisions, the WLA for each point source discharger in a TMDL must be based on a "daily" loading. However, the subsequent limits can and should have averaging periods that are consistent with the underlying water quality standards.

15 See *Total Maximum Daily Load (TMDL) for Phosphorus in Onondaga Lake* (DEC May 2012) http://www.dec.ny.gov/docs/water_pdf/tmdlondrft.pdf.

16 See Section 6.1, *Total Maximum Daily Load (TMDL) for Phosphorus in Chautauqua Lake* (DEC August 2011) http://www.dec.ny.gov/docs/water_pdf/tmdlchautlkdftaug11.pdf.

17 See Table 2.6, *Water Quality Study of the Finger Lakes (*DEC July 2011) http://www.dec.ny.gov/docs/water_pdf/chapter2.pdf.

18 See *CSLAP 2009 Lake Water Quality Summary: Chautauqua Lake* http://www.dec.ny.gov/docs/water_pdf/cslrpt09chautauqual.pdf.

19 See Section 2.2, *Onondaga Lake TMDL.*

phosphorus limit is appropriate for these two phosphorus-impaired New York lakes that have significantly shorter retention times, a 12 MRA is the appropriate period to express phosphorus limits for Cayuga Lake. Use of anything shorter than a 12 MRA is unwarranted.

Despite the strong basis for a 12 MRA, Cornell recognizes that the Department may feel that the averaging period for the phosphorus limit it imposes on the LSC should be consistent with those it has imposed on the two other point source dischargers to the southern shelf of the lake. The Ithaca Area Wastewater Treatment Plant has a seasonal monthly rolling average mass limit of 40 lb/day while the Cayuga Heights Wastewater Treatment Plant has a monthly average concentration limit of 200 micrograms per liter. Cornell understands that, like the proposed final 4.8 pounds per day LSC phosphorus limit, these are both TBELs. The Department has expressed a concern that there may be short-term acute water quality issues during hot, low flow situations on the southern shelf. These are the exact conditions under which the discharge of the LSC flow is high and accounts for a significant portion of the water flowing into the south shelf of the lake.

Thus, the Department's concern that the LSC could be exacerbating water quality on the south shelf during the summer is wholly misplaced. As shown in Attachment C, the water that the LSC discharges even during the summer has a 95th percentile phosphorus concentration that is less than the State's 20 ug/L P-WQGV. In addition, because the southern shelf has been found to have a "flushing" time of approximately a day[20] and because uptake of phosphorus by aquatic plants does not happen within days, longer critical season (summer) or annual rolling averages are the appropriate time frames for phosphorus limits.[21]

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[20] See Figure 10, *Tripton, Trophic States Metrics, and Near-Shore Versus Pelagic Zone Responses To External Loads in Cayuga Lake, New York, U.S.A.* Effler et al., Fundam. Appl. Limol. (September 2010).

[21] Id., note 7.

While Cornell believes that the 12 MRA limits that New York consistently applies to other nutrient-impaired lakes is the appropriate averaging period, it is also willing to accept a limit expressed as a summer[22] seasonal MRA, similar to the Ithaca Wastewater Treatment Plant. Appendix D contains the summer data from 2010 through 2012. Based on this data, and utilizing both the 95th percentile flow and phosphorus concentrations,[23] the summer seasonal MRA would be 7.3 pounds per day.

3. The purpose and objective for potentially relocating the outfall must be accurately and consistently stated in both the permit and the Industrial SPDES Permit Fact Sheet/Response to Comments.

At the beginning of the permit renewal process, the Department informed Cornell that, because the southern end of the lake is included on the State's CWA § 303(d) Priority Waters list,[24] a phosphorus limit would have to be included (even though operation of the LSC adds no phosphorus) in the LSC SPDES permit **unless** Cornell agreed to relocate its discharge out into the deeper waters of the lake. The Department's rationale for this "either" (phosphorus limit) "or" (outfall relocation) position was premised on the notion that relocating the outfall to an unimpaired section of the lake and returning the ambient total phosphorus load to the same colder, deeper unimpaired segment of the lake (below the photic zone) from which it is withdrawn would obviate the need for any phosphorus limit because the discharge would not be contributing to any impairment of the lake.

After considerable discussion, the Department and Cornell agreed that Cornell would conduct an outfall relocation study. The study requirements are set forth on page 9 of the draft permit. In

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22 Cornell suggests that the summer season be defined as the months of May through September.

23 Again, due to the inherent weather-related variability in both phosphorus concentrations and in LSC flow rates, the 95th percentile of each should be used in these calculations rather than the recent 3 year long term averages.

24 See http://www.dec.ny.gov/docs/water_pdf/pwlorfllist.pdf. The southern end of the lake is identified as Ont 66-12-P296 (portion 4). It appears that, from a regulatory perspective, this priority waterbodies listing applies to those waters within the segment of the lake described in Item 228 of 6 NYCRR § 898.4 "Item 228 Segment." This segment of the lake has a classification of "A."

spite of the "either/or" premise behind the study, the draft permit incorrectly ties possible outfall relocation to compliance with a phosphorus limit. The first box in the Compliance Action table on page 9 of the draft permit correctly ties the study of outfall relocation to its intended purpose, stating that "[t]he requirement of the study shall be to identify one or more discharge locations, in waters of sufficient depth to ensure that the discharge plume remains below the photic zone, and *to determine that the discharge will not contribute to an impairment of the designated uses of the lake* (emphasis added)."

However, in the fifth box of the Compliance Action table, the Department, while repeating the "no impairment" purpose of outfall relocation, goes on to add the phrase "and to comply with the final phosphorus effluent limit or the Cayuga Lake TMDL...." Because the premise behind outfall relocation is to eliminate the possibility that the LSC discharge might contribute to the impairment of a §303 water body, relocating it would obviate the need for a phosphorus limit on the LSC discharge. The language in the fifth box quoted above should be deleted, as should the sixth box in the Compliance Action table because a phosphorus limit would not be a compliance action if the outfall were relocated.

Similarly, the Industrial SPDES Permit Fact Sheet in two places (section I, page 1 and Section III(c), page 7) links outfall relocation with compliance with a phosphorus limit. These two statements inaccurately suggest that the discharge from the relocated outfall would have to comply with a phosphorus limit. These statements should be corrected in the Response to Comments.

Further, the Response to Comments should clarify that, contrary to the position taken by the Town of Ithaca,[25] 6 NYCRR § 704.2(iii) does not apply to the placement of the discharge because the

[25] See Town of Ithaca, Analysis, pp. 5-6.

southern zone of the lake (a separately classified State water) does not stratify.[26] Because the shallow southern zone is only approximately 6 meters deep at its deepest,[27] the classic stratification patterns that are exhibited in the deeper sections of the lake (and which have separate regulatory classifications) do not occur in the southern zone where the LSC discharge is located. Accordingly, the Department appropriately concluded that no § 704.4 modification procedure was required when the location of the LSC discharge was approved.

4. The Response to Comments should state that the draft permit appropriately implements federal and state cooling water intake requirements.

The Department's cooling water intake requirements, which implement and are modeled after the requirements of Clean Water Act § 316(b), require that certain cooling water intake structures reflect Best Technology Available (BTA) for fish and shellfish impingement mortality and entrainment. As noted in the Department's Biological Fact Sheet on page 2, the LSC intake structure does reflect BTA for impingement mortality because it "exceeds the impingement performance goals of CP-52 [DEC Commissioner's Policy, *Best Technology Available (BTA) for Cooling Water Intake Structures* (July 2011)]." Accordingly, the draft permit appropriately only addresses entrainment. In keeping with CP-52, the draft permit imposes the Department's standard step-wise schedule of studies and reports that will be used by the Department to determine if the current intake structure is BTA for entrainment. The Response to Comments should note that these proposed requirements, and their compliance deadlines, are consistent with CP-52 and similar to BTA requirements that are being imposed elsewhere in the State.

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[26] Section 704.2(3)(iii) states that it only applies to "lakes subject to stratification as defined in Part 562 of this Title." While this regulatory provision references a 6 NYCRR Part 652 definition of "lakes subject to stratification," Part 652 was repealed on May 11, 2003.

[27] See Tripton, *Trophic States Metrics, and Near-Shore Versus Pelagic Zone Responses To External Loads in Cayuga Lake, New York, U.S.A.* Effler et al., Fundam. Appl. Limol. (September 2010).

Finally, as also acknowledged in the Biological Fact Sheet, mysid shrimp are found throughout the lake. Even though mysids are not shellfish and hence are not covered by §§ 316(b) or 704.5, the current LSC permit required the installation and operation of a light-based deterrent system on the LSC intake. While this type of a deterrent system was demonstrated to repel mysid in laboratory settings, once installed on the actual intake, the system was found to have an insignificant repellant effect. Data supporting this finding was submitted to the Department on February 12, 2003 in the annual biomonitoring report (*Biomonitoring of Cayuga Lake Water Passing through the Lake Source Cooling Plant: 2001-2002, A Progress Report*). Based on these data, the report concluded that the mysid light system had no deterrent effect. These results were also discussed during a meeting with DEC on March 20, 2003. Subsequently, while trying to install additional lighting elements as had been suggested by the Department, the power line feeding the light system was inadvertently cut. Following a series of subsequent meetings and discussions between Cornell and the Department, the Department decided in 2007 that, rather than having Cornell rebuild the system, it would have Cornell do additional intake-related biomonitoring. Based on this, the Department has inserted in the draft permit additional requirements consistent with CP-52. This sequence of events should be noted in the Response to Comments.

5. The reference to "annual reports" in Special Condition 2 should be deleted.

Neither the draft permit nor Part 750 requires preparation of an annual report. The reference to annual reports in Special Condition 2 (page 4), which likely is an artifact of a requirement in Cornell's current permit that is being eliminated, should be removed.

D. Conclusion

Cornell remains committed to working cooperatively with the Department on the proposed permit renewal. We would be happy to respond to any questions you may have on our comments. Further, we also would be happy to travel to either Syracuse or Albany if you feel a face-to-face meeting would be more productive. Should you have any questions or wish to schedule a meeting, please contact James Adams, Director of Utilities at 1-607-255-6648.

Respectfully submitted,

KyuJung Whang
Vice President for Facilities Services

By: Robert Bland
Energy and Sustainability

cc: Stephen Philip Johnson, Vice President, Government Relations and Community Relations
Thomas Bruce, Vice President, University Communications
Bert Bland, Senior Director, Energy & Sustainability
Stephanie Sechler, Associate University Counsel
Scott M. Turner, Nixon Peabody LLP
Libby Ford, Nixon Peabody LLP

Table

Potential TP Limits Using More Recent Data

Calculation	Possible TP Limit	Type of Limit
Loading at design flow of 2 m3s (45.6 MGD), P = 0.5 mg/ l:	190.2 lb/day	WQBEL
Loading at 95%ile average flow of 1.6 m3/s (37.5 MGD),P = 0.5 mg/l	156.5 lb/day	WQBEL
Loading at design flow of 2 m3/s (45.6 MGD), P = 0.02 mg/l	7.6 lb/day	WQBEL
Loading at 95%ile average flow of 1.9 m3/s (43.0 MGD*), P = 0.02 mg/ l:	7.2 lb/day	WQBEL
Year Round Loading, 95% ile Flow and TP monthly average, 7/2000 - 12/2009 10/2011 – 9/2012, TSD method	7.1 lb/day	TBEL
Summer (May- September) Loading, 95%ile Flow and TP 10/2011 – 9/2012, TSD method	7.3 lb/day	TBEL

* 43.0 MGD = 95th percentile flow, October 2011 through September 2012. The 3 year (October 2009- Sept. 2012) 95th percentile flow was 42.0 MGD, which translates to a 6.6 lb/day WQBEL.

Attachment A

draft

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

State Pollutant Discharge Elimination System (SPDES) DISCHARGE PERMIT

Fmt3.99

Industrial Code:	**9999**	SPDES Number:	**NY0244741**
Discharge Class (CL):	**01**	DEC Number:	**7-5099-00009/00001**
Toxic Class (TX):	**N**	Effective Date (EDP):	**EDP**
Major Drainage Basin:	**07**	Expiration Date (ExDP):	**ExDP**
Sub Drainage Basin:	**05**	Modification Dates:(EDPM)	
Water Index Number:	**Ont. 12-66-P296**		
Compact Area:			

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et.seq.)(hereinafter referred to as "the Act").

PERMITTEE NAME AND ADDRESS

Name: **Cornell University** Attention: **Patrick McNally**

Street: **395 Pine Tree Road, Suite 230**

City: **Ithaca** State: **NY** Zip Code: **14850**

is authorized to discharge from the facility described below:

FACILITY NAME AND ADDRESS

Name: **Cornell University Lake Source Cooling Facility**

Location (C,T,V): **Ithaca** County: **Tompkins**

Facility Address: **983 East Shore Drive**

City: **Ithaca** State: **NY** Zip Code: **14850**

NYTM -E: NYTM - N:

From Outfall No.: **001** at Latitude: **48 ° 28 ' 15 "** & Longitude: **76 ° 30 ' 10 "**

into receiving waters known as: **Southern Basin of Cayuga Lake** Class: **A**

and; (list other Outfalls, Receiving Waters & Water Classifications)

in accordance with: effluent limitations; monitoring and reporting requirements; other provisions and conditions set forth this permit; and 6 NYCRR Part 750-1.2(a) and 750-2.

DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS

Mailing Name: **Cornell University**

Street: **395 Pine Tree Road, Suite 230**

City: **Ithaca** State: **NY** Zip Code: **14850**

Responsible Official or Agent: **Timothy Peer** Phone: **(607) 254-8722**

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:

CO BWP - Permit Coordinator
RWE
RPA
EPA Region II - Michelle Josilo
NYSEFC
IJC
NYSDOH District Office

Permit Administrator:	
Address:	
Signature:	Date: / /

draft

PERMIT LIMITS, LEVELS AND MONITORING DEFINITIONS

OUTFALL	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
	This cell describes the type of wastewater authorized for discharge. Examples include process or sanitary wastewater, storm water, non-contact cooling water.	This cell lists classified waters of the state to which the listed outfall discharges.	The date this page starts in effect. (e.g. EDP or EDPM)	The date this page is no longer in effect. (e.g. ExDP)

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQ.	SAMPLE TYPE
e.g. pH, TRC, Temperature, D.O.	The minimum level that must be maintained at all instants in time.	The maximum level that may not be exceeded at any instant in time.	SU, °F, mg/l, etc.		

PARA-METER	EFFLUENT LIMIT	PRACTICAL QUANTITATION LIMIT (PQL)	ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE
	Limit types are defined below in Note 1. The effluent limit is developed based on the more stringent of technology-based limits, required under the Clean Water Act, or New York State water quality standards. The limit has been derived based on existing assumptions and rules. These assumptions include receiving water hardness, pH and temperature; rates of this and other discharges to the receiving stream; etc. If assumptions or rules change the limit may, after due process and modification of this permit, change.	For the purposes of compliance assessment, the permittee shall use the approved EPA analytical method with the lowest possible detection limit as promulgated under 40CFR Part 136 for the determination of the concentrations of parameters present in the sample unless otherwise specified. If a sample result is below the detection limit of the most sensitive method, compliance with the permit limit for that parameter was achieved. Monitoring results that are lower than this level must be reported, but shall not be used to determine compliance with the calculated limit. This PQL can be neither lowered nor raised without a modification of this permit.	Action Levels are monitoring requirements, as defined below in Note 2 which trigger additional monitoring and permit review when exceeded.	This can include units of flow, pH, mass, temperature, or concentration. Examples include µg/l, lbs/d, etc.	Examples include Daily, 3/week, weekly, 2/month, monthly, quarterly, 2/yr and yearly. All monitoring periods (quarterly, semiannual, annual, etc) are based upon the calendar year unless otherwise specified in this Permit.	Examples include grab, 24 hour composite and 3 grab samples collected over a 6 hour period.

Note 1: DAILY DISCHARGE: The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day. DAILY MAX: The highest allowable daily discharge. DAILY MIN: The lowest allowable daily discharge. MONTHLY AVG (daily avg): The highest allowable average of daily discharges over a calendar month, calculated as the sum of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. RANGE: The minimum and maximum instantaneous measurements for the reporting period must remain between the two values shown. 7 DAY ARITHMETIC MEAN (7 day average): The highest allowable average of daily discharges over a calendar week. 12 MRA (twelve month rolling avg): The average of the most recent twelve month's monthly averages. 30 DAY GEOMETRIC MEAN (30 d geo mean): The highest allowable geometric mean of daily discharges over a calendar month, calculated as the antilog of: the sum of the log of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. 7 DAY GEOMETRIC MEAN (7 d geo mean): The highest allowable geometric mean of daily discharges over a calendar week.

Note 2: ACTION LEVELS: Routine Action Level monitoring results, if not provided for on the Discharge Monitoring Report (DMR) form, shall be appended to the DMR for the period during which the sampling was conducted. If the additional monitoring requirement is triggered as noted below, the permittee shall undertake a short-term, high-intensity monitoring program for the parameter(s). Samples identical to those required for routine monitoring purposes shall be taken on each of at least three consecutive operating and discharging days and analyzed. Results shall be expressed in terms of both concentration and mass, and shall be submitted no later than the end of the third month following the month when the additional monitoring requirement was triggered. Results may be appended to the DMR or transmitted under separate cover to the same address. If levels higher than the Action Levels are confirmed, the permit may be reopened by the Department for consideration of revised Action Levels or effluent limits. The permittee is not authorized to discharge any of the listed parameters at levels which may cause or contribute to a violation of water quality standards. TYPE I: The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results in excess of the stated Action Level. TYPE II: The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results that show the stated action level exceeded for four of six consecutive samples, or for two of six consecutive samples by 20 % or more, or for any one sample by 50 % or more.

draft

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
001	Non-Contact Cooling Water	Cayuga Lake	EDP	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.5	8.5	SU	Weekly	Grab	

PARAMETER	COMPLIANCE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	2.0			m^3/s	Continuous	Instantaneous	
Dissolved Oxygen	Monitor	Monitor			mg/l	Weekly	Grab	
Phosphorus, Total (12 mRA)	6.4 ~~4.8~~	Monitor			lb/d	Weekly	Grab	1
Phosphorus, Total	Monitor	Monitor			mg/l	Weekly	Grab	1
Phosphorus, Soluble Reactive	Monitor	Monitor			mg/l	Weekly	Grab	
Temperature (effluent)	Monitor	21.1			°C	Continuous	Instantaneous	

FOOTNOTES:

1. ~~During the period of the Schedule of Compliance on pages 7 and 8 of this Permit,~~ The enforceable effluent limit for Phosphorus, Total from Outfall 001 shall be **6.4 lb/d**. ~~Following the conclusion of the compliance schedule period, the effluent limit of 4.8 lb/day shall become effective unless the final effluent limit is otherwise determined in the approved phosphorus TMDL for Cayuga Lake.~~

unless the outfall has been relocated per the Schedule of Compliance - Outfall Redesign, in which case there will no longer be a Total Phosphorus limit.

Alternative Langvage if the Final Limit is 4.8

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PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
001	Non-Contact Cooling Water	Cayuga Lake	EDP	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.5	8.5	SU	Weekly	Grab	

PARAMETER	COMPLIANCE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	2.0			m^3/s	Continuous	Instantaneous	
Dissolved Oxygen	Monitor	Monitor			mg/l	Weekly	Grab	
Phosphorus, Total	4.8	Monitor			lb/d	Weekly	Grab	1,2
Phosphorus, Total	Monitor	Monitor			mg/l	Weekly	Grab	1
Phosphorus, Soluble Reactive	Monitor	Monitor			mg/l	Weekly	Grab	
Temperature (effluent)	Monitor	21.1			°C	Continuous	Instantaneous	

FOOTNOTES:

Until EDP + 57 months,

At EDP + 57 months,

1. ~~During the period of the Schedule of Compliance on pages 7 and 8 of this Permit,~~ the enforceable effluent limit for Phosphorus, Total from Outfall 001 shall be **6.4 lb/d.** ~~Following the conclusion of the compliance schedule period,~~ the effluent limit of ~~4.8~~ lb/day shall become effective unless the final effluent limit is otherwise determined in the approved phosphorus TMDL for Cayuga Lake.

unless the outfall has been relocated per the Schedule of Compliance-Outfall Redesign, in which case there will no longer be a Total Phosphorus limit.

2. [put text of footnote 1 on page 9 here]

draft

SPECIAL CONDITIONS

1. Discharge Notification Requirements: No discharge sign is required.

2. Data Retention: The permittee shall retain records for a minimum period of 5 years in accordance with 6NYCRR Part 750-1.12(b)(2) and Part 750-2.5(c)(1). These records, which include discharge monitoring reports (DMRs) ~~and annual reports~~, must be retained at a repository accessible to the public. This repository shall be open to the public, at a minimum, during normal daytime business hours. The repository may be the business office, wastewater treatment plant, village, town, city, or county clerk's office, the local library, or other location approved by the Department.

3. No biocides, algaecides or other chemical treatment for biological activity or any other water treatment chemicals may be used without express permission of the Department.

4. No chemical methods for Zebra/Quagga mussel control shall be allowed without express written permission of this Department. Evaluation of mussel control alternatives must include a complete available technology review. Application for chemical control of Zebra/Quagga mussels must be made no less than sixty (60) days prior to the proposed date of treatment.

5. An annual report of scheduled downtime shall be provided to this Department by April 1 for the following twelve months.

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Special Conditions: BIOLOGICAL MONITORING REQUIREMENTS

The permittee shall submit two (2) paper and electronic copy to the Steam Electric Unit Leader, NYSDEC, Bureau of Habitat, 625 Broadway 5th Floor, Albany, NY 12233-4756; One (1) copy of the cover letter to the Division of Water SPDES Compliance Information Section; and one (1) copy of the cover letter to the Regional Water Engineer, unless otherwise noted.

Entrainment Characterization Study

1. By EDP + 9 months, the permitee must submit an approvable plan for an *Entrainment Characterization Study* at the Cornell University Lake Source Cooling Facility. The study plan must include a schedule for implementation, standard operating procedures for data collection, and a final report. At a minimum, the study must include:

   a) Duration – April through August during 2014
   b) Intensity – at least one 24 hour collection made in every seven calendar day period through the study duration
   c) All samples will be analyzed for ichthyoplankton and juvenile fish
   d) Concurrent samples shall also be collected in the near shore area so as to provide a baseline density of ichthyoplankton, and basis for comparison with entrainment samples.
   e) The final report shall be submitted within 9 months of completion of data collection and include a summary table of the total number of fish entrained by species and life stage based upon continuous operation of all pumps at full rated flow and actual operation and cooling water volume over the study period. All data collected during the entrainment study must be provided to the department in an agreed upon electronic format.

   Once approved by the Department, the permittee must conduct the *Entrainment Characterization Study* according to the approved schedule. If, based on the results of the *Entrainment Characterization Study*, the Department determines that the performance goals of CP-52 have been met the Department will modify this SPDES permit to: (1) identify the current location, design, construction, and capacity of the cooling water intake structure as BTA thereby meeting the requirements of 6 NYCRR Part 704.5; and (2) remove Biological Monitoring Requirements Nos. 2, 3, 4, 5, and 6.

Design and Construction Technology Review

2. Within nine (9) months after Department notification that based on the results of the *Entrainment Characterization Study* the Cornell LSC intake structure does not meet the performance goals of CP-52, the permittee must submit an approvable *Design and Construction Technology Review* that include an analysis of all feasible technologies and/or operational measures capable of being installed and implemented at Cornell University Lake Source Cooling Facility. For each feasible alternative include:

   i. A detailed description of the alternative (including preliminary drawings and site maps, if appropriate);
   ii. A discussion of the engineering feasibility of the alternative;
   iii. An assessment of the mitigative benefits in reducing impingement mortality and entrainment abundance for all life stages of fish, through utilization of the alternative;
   iv. A breakdown of all applicable costs including costs associated with capital improvements, operation and maintenance, and construction downtime;
   v.. An estimate of the time required to implement the alternative; and
   vi. An evaluation of any adverse environmental impacts to aquatic biota, habitat, or water quality that may result from construction, installation, and use of the alternative.

Proposed Technologies

3. Within 2 months of the Department's approval of the *Design and Construction Technology Review*, the permittee must submit, for Department review and consideration, a proposed suite of technologies or operational measures that meets the requirements of 6 NYCRR Part 704.5, Section 316(b) CWA and the performance goals of Commissioner Policy #52:

   a. Alone, or in combination, these technologies or operational measures *minimize* entrainment of fish at Cornell University Lake Source Cooling Facility.
   b. The reductions in entrainment resulting from the proposed technologies and/or operational measures must meet the performance goals of Commissioner Policy #52.

NOTE: Based on this and other relevant information, the Department will select technologies and/or operational measures that meet the requirements of 6 NYCRR Part 704.5, Section 316(b) CWA , and the performance goals of Commissioner Policy #52 and will modify this SPDES permit to require the use of these selected technologies and/or operational measures.

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CAYUGA LAKE WATER QUALITY MODEL PLAN

The permittee shall oversee the development of the lake nutrient model and watershed model for Cayuga Lake. This model shall be suitable for the development of a Total Maximum Daily Load (TMDL) by the Department to address the phosphorus impairment for the southern zone of Cayuga Lake as listed in the most recent 303(d) list. The development of the model shall include, but not be limited to, the following components:

- **Lake-wide sampling and water quality model:** The permittee shall develop a Quality Assurance Project Plan (QAPP) and collect samples along Cayuga Lake as well as at the mouths of selected significant tributaries, analyze the samples and develop the nutrient model of Cayuga. The water quality model shall also include sampling and analysis to enable an assessment of the impacts of plankton of various types and Zebra and Quagga mussels on water quality in Cayuga Lake.

- **Watershed sampling and model development:** The permittee shall gather appropriate watershed data to enhance an existing watershed model, for use as an input to the lake model. This work includes analysis of synoptic samples along selected significant lake tributaries. Work may also include the development of a more sophisticated model if necessary.

- **Model development community outreach**: The permittee shall assist the Department to engage stakeholders as the model is developed and foster their input and feedback.

Schedule of Quality Assurance Program Plan (QAPP) Submittal

The permittee shall submit the following QAPP to the Regional Water Engineer at the address listed on the Recording, Reporting and Monitoring page of this Permit, and to the Bureau of Water Permits, 625 Broadway, Albany NY 12233-3505 for Departmental review and approval:

Outfall	Required Action	Due Date	FN
001	***Cayuga Lake Water Quality Model Plan*** The permittee shall submit an approvable QAPP to develop the monitoring, data analysis and simulation modeling program for Cayuga Lake and selected significant tributaries in accordance with the Model Plan on Page 5 of this Permit, including an approved implementation schedule for the proposed activities. Upon receipt of Department approval, the permittee shall conduct the proposed plan in accordance with the approved QAPP. The QAPP and approved schedule will become an enforceable condition of this SPDES permit.	EDP + 6 months	1

1. The above actions are one time requirements. The permittee shall submit the results of the above actions to the Department's satisfaction once. When this permit is administratively renewed by NYSDEC letter entitled "SPDES NOTICE/RENEWAL APPLICATION/PERMIT," the permittee is not required to repeat the submittal(s) noted above. The above due dates are independent from the effective date of the permit stated in the letter of "SPDES NOTICE/RENEWAL APPLICATION/PERMIT."

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SCHEDULE OF COMPLIANCE – OUTFALL REDESIGN

a) The permittee shall comply with the following schedule:

Outfall	Compliance Action	Due Date	FN
001	The permittee shall develop and submit an approvable plan for an Outfall Redesign Study to evaluate potential alternative sites for relocating the discharge from Outfall 001 to a location within the Class AA segment of Cayuga Lake (as depicted by transect A-A' on the Monitoring Locations map, and defined in 6 NYCRR Part 898.4, Table I, Item 227). The requirement of this Study shall be to identify one or more discharge locations, in waters of sufficient depth to ensure that the discharge plume remains below the photic zone, and to determine that the discharge will not contribute to an impairment of the designated uses of the Lake. The plan shall be submitted to the Region 7 Regional Water Engineer at the address listed on the Recording, Reporting, and Monitoring page of this Permit, and to the Bureau of Water Permits, 625 Broadway, Albany NY 12233-3505.	EDPM +9 months	
001	The permittee shall commence the approved Outfall Redesign Study	Effective Date of Approval (EDA)	
001	The permittee shall submit Outfall Redesign Study status reports to the addresses above.	EDA + 8 months EDA + 16 months EDA + 24 months	
001	The permittee shall submit an approvable report summarizing the results of the Outfall Redesign Study. This report shall identify the recommended location for the outfall, based upon the results of the Study, and include a proposed schedule for implementation. The implementation schedule shall include submittal dates for preliminary and final design reports and a proposed schedule for construction. This report shall be submitted to the addresses listed above.	EDA + 30 months	
001	In the event that an outfall relocation is determined by the permittee to be the most practical approach to ensure that the discharge will not contribute to an impairment (as determined by the Department) of the designated uses of the receiving water, ~~and to comply with the final phosphorus effluent limit or the Cayuga Lake TMDL,~~ the permittee shall submit preliminary and final design reports and complete construction of the approved redesigned outfall in accordance with the approved implementation schedule in the Outfall Redesign Study.	In accordance with the approved schedule	
~~001~~	~~The permittee shall comply with the final effluent limit of Phosphorus, Total of 4.8 lb/d or such phosphorus allocation as assigned by the TMDL.~~	~~EDPM + 57 months~~	~~1~~

The above compliance actions are one time requirements. The permittee shall comply with the above compliance actions to the Department's satisfaction once. When this permit is administratively renewed by NYSDEC letter entitled "SPDES NOTICE/RENEWAL APPLICATION/PERMIT," the permittee is not required to repeat the submission(s) noted above. The above due dates are independent from the effective date of the permit stated in the letter of "SPDES NOTICE/RENEWAL APPLICATION/PERMIT."

~~FOOTNOTE (FN):~~

~~1. The permittee may request an extension of the final compliance date in accordance with 6 NYCRR Part 750-1.18 should the final compliance action be delayed as a result of extended review by a federal, state or local government or as a result of public process, resulting in a delay in issuing the TMDL past EDPM + 57 months. Such request shall be made in writing to the Region 7 Regional Water Engineer at the address listed on the Recording, Reporting and Monitoring page and to the Bureau of Water Permits, 625 Broadway, Albany NY 12233-3505. The Department shall make all best efforts to respond to such written request as soon as practicable and, if the Department is in agreement with the request, will grant the proposed extension at that time. The Department will not unreasonably withhold its approval for a modification. The due dates referenced for these Schedule of Compliance items may also be revised by the Department based upon the completion date of the TMDL Implementation Plan.~~

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Special Conditions: BIOLOGICAL MONITORING REQUIREMENTS ctd.

Technology Installation and Operation Plan

4. Within 4 months of the effective date of the permit modification requiring technologies and/or operational measures to meet requirements of 6 NYCRR Part 704.5, Section 316(b) CWA , and the performance goals of Commissioner Policy #52, the permittee must submit an approvable *Technology Installation and Operation Plan*. This plan must include:

   a. a schedule for installing and implementing the technologies and/or operational measures selected to meet requirements of 6 NYCRR Part 704.5, Section 316(b) CWA , and the performance goals of Commissioner Policy #52; and
   b. the methodology for assessing the efficacy of these technologies and operational measures.

   Upon receipt of Department approval, the permittee must implement the *Technology Installation and Operation Plan* in accordance with the approved schedule. The *Technology Installation and Operation Plan* and approved schedule will become an enforceable condition of this SPDES permit.

Verification Monitoring Plan

5. Within 3 months of Department approval of the *Technology Installation and Operation Plan*, the permittee must submit an approvable *Verification Monitoring Plan*. This plan must include details of procedures to confirm that the necessary reductions in entrainment required by this permit are being achieved, and must include the following:

   a. At a minimum, two years of in-plant entrainment monitoring to verify the full-scale performance of BTA measures.
   b. A description of the frequency and duration of monitoring, the parameters to be monitored, and the basis for determining the parameters and the frequency and duration for monitoring.
   c. A schedule of implementation.
   d. A draft proposed Standard Operation Procedure (SOP) that describes the sampling protocols for these monitoring studies.

   The plan and SOP must be updated as required by the Department. Upon receipt of Department approval the permittee must complete the *Verification Monitoring Plan* studies in accordance with the approved schedule. The *Verification Monitoring Plan* and approved schedule will become an enforceable condition of this SPDES permit.

Demonstration of Compliance

6. Within 6 months of the completion of the *Verification Monitoring Plan* the permittee must submit an approvable report to the Steam Electric Unit Leader that demonstrates compliance with 6 NYCRR Part 704.5 and Section 316(b) CWA .

Additional Reporting Requirements

7. The permittee must maintain records of all data, reports and analysis pertaining to compliance with 6NYCRR Part 704 and Section 316(b) CWA for a period no less than 10 years from the Effective Date of the Permit.

8. The permittee must submit status reports at EDP + 2.5 years. At a minimum, these status reports must include a description of the operational status of the facility during the preceding two years and compliance with Biological Requirements 1 through 6 of this permit.

9. Six (6) months prior to the expiration date of this permit, the permittee must submit a report that includes:
   a. A description and detailed analysis of the cumulative reductions in entrainment achieved during the first four years of this permit modification, and
   b. a detailed analysis of technologies and/or operational measures available at that time, which have been demonstrated to, or have the potential to, further reduce fish mortality at Cornell University Lake Source Cooling Facility. The list of technologies and/or operational measures included in this analysis must be selected with the concurrence of the Department.

General Requirement

10. Modification of the facility cooling water intake must not occur without prior Department approval. The permittee must submit written notification, including detailed descriptions and plans, to the NYS DEC Steam Electric Unit; the Director of the Bureau of Water Compliance Program; and both the Regional Permit Administrator and the Regional Water Engineer, Region 7, at least 60 days prior to any proposed change which would result in the alteration of the permitted operation, location, design, construction or capacity of the cooling water intake structure. The permittee must submit with the written notification a demonstration that the change reflects the best technology available for minimizing adverse environmental impacts pursuant to 6 NYCRR Part 704.5, Section 316(b) CWA, and Commissioner Policy #52. As determined by NYS DEC, a permit modification application in accordance with 6 NYCRR Part 621 may be required.

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Schedule of Compliance – Biological Monitoring Requirements

The permittee shall comply with the following schedule:

Outfall	Compliance Action	Due Date	FN
N/A	1. Submit an approvable *Entrainment Study* Plan	EDP + 9 months	1
	2. Submit an approvable *Design and Construction Technology Review*	Department notification + 9 months	1
	3. Submit a proposed suite of technologies or operational measures for Department review and consideration	DCTR approval + 2 months	1
	4. Submit an approvable *Technology Installation and Operation Plan*	EDFPM + 4 months	1, 2
	5. Submit an approvable *Verification Monitoring Plan*	TIOP approval + 3 months	1
	6. Submit an approvable report to the Steam Electric Unit Leader that demonstrates compliance with 6 NYCRR Part 704.5 and 316(b) of the Clean Water Act	VMP approval + 6 months	1
	8. Submit status reports	EDP + 2.5 years	1
	9. Submit report on cumulative reductions in impingement and entrainment and analyses of technologies.	EDP + 4.5 years	1

FOOTNOTES:

1. The above actions are one time requirements. The numbers correspond to the items in the preceding Biological Monitoring Requirements section. The permittee shall submit the results of the above actions to the Department's satisfaction once. When this permit is administratively renewed by NYSDEC letter entitled "SPDES NOTICE/RENEWAL APPLICATION/PERMIT," the permittee is not required to repeat the submittal(s) noted above. The above due dates are independent from the effective date of the permit stated in the letter of "SPDES NOTICE/RENEWAL APPLICATION/PERMIT."

2. From the suite of technologies and/or operational measures submitted for review, the Department will select technologies and/or operational measures that meet the requirements of 6NYCRR Part 704, section 704.5, and Section 316(b) of the Clean Water Act. Subsequent to these selections the Department will modify this permit. This date is hereby referred to as the "Effective Date of Future Permit Modification" or EDFPM.

Alternative Language if the Final Limit is 4.8

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SCHEDULE OF COMPLIANCE – OUTFALL REDESIGN

a) The permittee shall comply with the following schedule:

Outfall	Compliance Action	Due Date	FN
001	The permittee shall develop and submit an approvable plan for an Outfall Redesign Study to evaluate potential alternative sites for relocating the discharge from Outfall 001 to a location within the Class AA segment of Cayuga Lake (as depicted by transect A-A' on the Monitoring Locations map, and defined in 6 NYCRR Part 898.4, Table I, Item 227). The requirement of this Study shall be to identify one or more discharge locations, in waters of sufficient depth to ensure that the discharge plume remains below the photic zone, and to determine that the discharge will not contribute to an impairment of the designated uses of the Lake. The plan shall be submitted to the Region 7 Regional Water Engineer at the address listed on the Recording, Reporting, and Monitoring page of this Permit, and to the Bureau of Water Permits, 625 Broadway, Albany NY 12233-3505.	EDPM +9 months	
001	The permittee shall commence the approved Outfall Redesign Study	Effective Date of Approval (EDA)	
001	The permittee shall submit Outfall Redesign Study status reports to the addresses above.	EDA + 8 months EDA + 16 months EDA + 24 months	
001	The permittee shall submit an approvable report summarizing the results of the Outfall Redesign Study. This report shall identify the recommended location for the outfall, based upon the results of the Study, and include a proposed schedule for implementation. The implementation schedule shall include submittal dates for preliminary and final design reports and a proposed schedule for construction. This report shall be submitted to the addresses listed above.	EDA + 30 months	
001	In the event that an outfall relocation is determined by the permittee to be the most practical approach to ensure that the discharge will not contribute to an impairment (as determined by the Department) of the designated uses of the receiving water, ~~and to comply with the final phosphorus effluent limit or the Cayuga Lake TMDL~~, the permittee shall submit preliminary and final design reports and complete construction of the approved redesigned outfall in accordance with the approved implementation schedule in the Outfall Redesign Study.	In accordance with the approved schedule	
~~001~~	~~The permittee shall comply with the final effluent limit of Phosphorus, Total of 4.8 lb/d. or such phosphorus allocation as assigned by the TMDL.~~	~~EDPM + 57 months~~	~~1~~

The above compliance actions are one time requirements. The permittee shall comply with the above compliance actions to the Department's satisfaction once. When this permit is administratively renewed by NYSDEC letter entitled "SPDES NOTICE/RENEWAL APPLICATION/PERMIT," the permittee is not required to repeat the submission(s) noted above. The above due dates are independent from the effective date of the permit stated in the letter of "SPDES NOTICE/RENEWAL APPLICATION/PERMIT."

~~FOOTNOTE (FN):~~

2. The permittee may request an extension of the final compliance date in accordance with 6 NYCRR Part 750-1.18 should the final compliance action be delayed as a result of extended review by a federal, state or local government or as a result of public process, resulting in a delay in issuing the TMDL past EDPM + 57 months. Such request shall be made in writing to the Region 7 Regional Water Engineer at the address listed on the Recording, Reporting and Monitoring page and to the Bureau of Water Permits, 625 Broadway, Albany NY 12233-3505. The Department shall make all best efforts to respond to such written request as soon as practicable and, if the Department is in agreement with the request, will grant the proposed extension at that time. The Department will not unreasonably withhold its approval for a modification. The due dates referenced for these Schedule of Compliance items may also be revised by the Department based upon the completion date of the TMDL Implementation Plan.

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SCHEDULE OF COMPLIANCE – OUTFALL REDESIGN ctd.

b) The permittee shall submit a written notice of compliance or non-compliance with each of the above schedule dates no later than 14 days following each elapsed date, unless conditions require more immediate notice as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2. All such compliance or non-compliance notification shall be sent to the locations listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS. Each notice of non-compliance shall include the following information:

1. A short description of the non-compliance;
2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirements without further delay and to limit environmental impact associated with the non-compliance;
3. A description or any factors which tend to explain or mitigate the non-compliance; and
4. An estimate of the date the permittee will comply with the elapsed schedule requirement and an assessment of the probability that the permittee will meet the next scheduled requirement on time.

c) The permittee shall submit copies of any document required by the above schedule of compliance to NYSDEC Regional Water Engineer at the location listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS and to the Bureau of Water Permits, 625 Broadway, Albany, N.Y. 12233-3505, unless otherwise specified in this permit or in writing by the Department.

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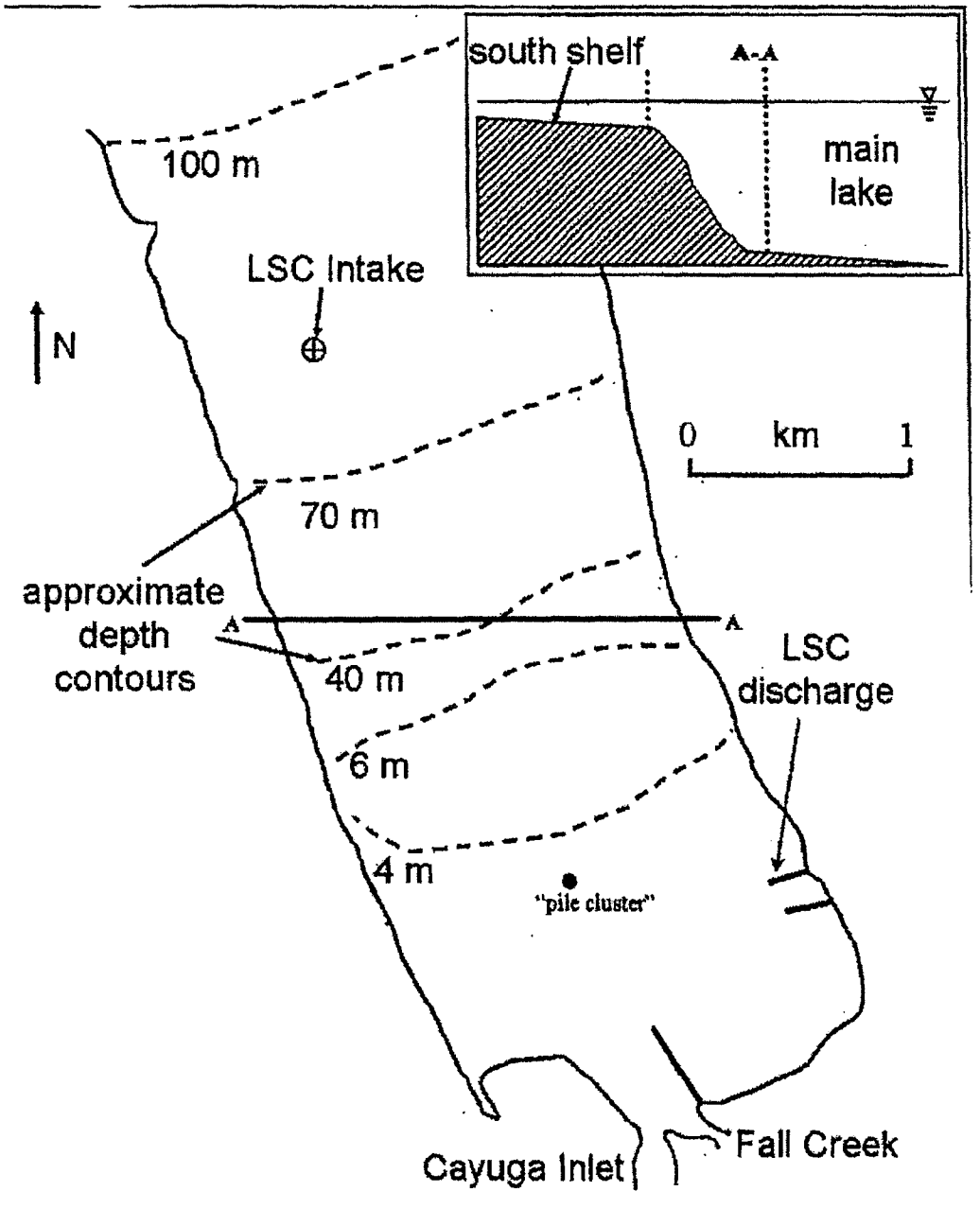
MONITORING LOCATIONS

The Permittee shall take samples and measurements, to comply with the monitoring requirements of this permit, at these locations: Effluent monitoring is done inside the LSC facility.



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RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

a) 6 NYCRR Part 750 is hereby incorporated by reference and its conditions are enforceable requirements of this permit. The permittee shall comply with all conditions set forth in this permit and with 6 NYCRR Part 750, including, but not limited to: additional monitoring and reporting requirements and conditions, including noncompliance reporting.

b) In addition to a) above, all **POTWs** shall provide adequate notice to the Department and USEPA of the following: (1) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging those pollutants; and (2) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit. (3) For purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

c) The monitoring information required by this permit shall be summarized, signed and retained for a period of three years from the date of the sampling for subsequent inspection by the Department or its designated agent. **Also, monitoring information required by this permit shall be summarized and reported by submitting;**

[X] (if box is checked) completed and signed Discharge Monitoring Report (DMR) forms for each one month reporting period to the locations specified below. Blank forms are available at the Department's Albany office listed below. The first reporting period begins on the effective date of this permit and the reports will be due no later than the 28th day of the month following the end of each reporting period.

[ ] (if box is checked) an annual report to the Regional Water Engineer at the address specified below. The annual report is due by February 1 and must summarize information for January to December of the previous year in a format acceptable to the Department.

[ ] (if box is checked) a monthly "Wastewater Facility Operation Report..." (form 92-15-7) to the:
[ ] Regional Water Engineer and/or [ ] County Health Department or Environmental Control Agency specified below

Send the DMRs with **original signatures** to:

Department of Environmental Conservation
Division of Water
Bureau of Water Compliance Programs
625 Broadway
Albany, New York 12233-3506
Phone: (518) 402-8177

Send a **copy** of each DMR page to:

Department of Environmental Conservation
Regional Water Engineer
615 Erie Boulevard West
Syracuse, New York 13204-2400

Phone: (315) 426-7500

Send an **additional copy** of each DMR page to:
Town of Ithaca
Director of Planning
215 N. Tioga Street
Ithaca, New York 14850

d) Noncompliance with the provisions of this permit shall be reported to the Department as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2.

e) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

f) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculations and recording of the data on the Discharge Monitoring Reports.

g) Calculation for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

h) Unless otherwise specified, all information recorded on the Discharge Monitoring Report shall be based upon measurements and sampling carried out during the most recently completed reporting period.

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i) Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section five hundred two of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be sent to the Environmental Laboratory Accreditation Program, New York State Health Department Center for Laboratories and Research, Division of Environmental Sciences, The Nelson A. Rockefeller Empire State Plaza, Albany, New York 12201.

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
1-Oct-2009	0.48	11	
2-Oct-2009	0.53	12	
3-Oct-2009	0.83	19	
4-Oct-2009	0.70	16	
5-Oct-2009	0.66	15	
6-Oct-2009	0.66	15	16.3
7-Oct-2009	0.70	16	
8-Oct-2009	0.70	16	
9-Oct-2009	0.70	16	
10-Oct-2009	0.57	13	
11-Oct-2009	0.48	11	
12-Oct-2009	0.48	11	
13-Oct-2009	0.48	11	14.7
14-Oct-2009	0.48	11	
15-Oct-2009	0.48	11	
16-Oct-2009	0.48	11	
17-Oct-2009	0.48	11	
18-Oct-2009	0.48	11	
19-Oct-2009	0.53	12	
20-Oct-2009	0.61	14	15.6
21-Oct-2009	0.70	16	
22-Oct-2009	0.74	17	
23-Oct-2009	0.48	11	
24-Oct-2009	0.79	18	
25-Oct-2009	0.48	11	
26-Oct-2009	0.57	13	
27-Oct-2009	0.61	14	16.7
28-Oct-2009	0.61	14	
29-Oct-2009	0.53	12	
30-Oct-2009	0.61	14	
31-Oct-2009	0.66	15	
1-Nov-2009	0.48	11	
2-Nov-2009	0.53	12	
3-Nov-2009	0.53	12	14.9
4-Nov-2009	0.48	11	
5-Nov-2009	0.48	11	
6-Nov-2009	0.48	11	
7-Nov-2009	0.48	11	
8-Nov-2009	0.57	13	
9-Nov-2009	0.74	17	
10-Nov-2009	0.57	13	16.2
11-Nov-2009	0.57	13	
12-Nov-2009	0.48	11	
13-Nov-2009	0.48	11	
14-Nov-2009	0.48	11	
15-Nov-2009	0.61	14	
16-Nov-2009	0.48	11	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
17-Nov-2009	0.48	11	16.8
18-Nov-2009	0.48	11	
19-Nov-2009	0.53	12	
20-Nov-2009	0.48	11	
21-Nov-2009	0.53	12	
22-Nov-2009	0.48	11	
23-Nov-2009	0.48	11	15.6
24-Nov-2009	0.48	11	
25-Nov-2009	0.48	11	
26-Nov-2009	0.48	11	
27-Nov-2009	0.48	11	
28-Nov-2009	1.23	28	
29-Nov-2009	1.80	41	
30-Nov-2009	0.53	12	
1-Dec-2009	0.61	14	
2-Dec-2009	0.48	11	17.0
3-Dec-2009	0.53	12	
4-Dec-2009	0.48	11	
5-Dec-2009	0.48	11	
6-Dec-2009	0.66	15	
7-Dec-2009	0.70	16	
8-Dec-2009	0.48	11	17.3
9-Dec-2009	0.48	11	
10-Dec-2009	0.48	11	
11-Dec-2009	0.48	11	
12-Dec-2009	0.88	20	
13-Dec-2009	1.10	25	
14-Dec-2009	0.66	15	
15-Dec-2009	0.48	11	
16-Dec-2009	0.48	11	12.6
17-Dec-2009	0.66	15	
18-Dec-2009	0.74	17	
19-Dec-2009	0.74	17	
20-Dec-2009	0.74	17	
21-Dec-2009	0.74	17	
22-Dec-2009	0.74	17	9.5
23-Dec-2009	0.74	17	
24-Dec-2009	0.74	17	
25-Dec-2009	0.74	17	
26-Dec-2009	0.74	17	
27-Dec-2009	0.53	12	
28-Dec-2009	0.48	11	11.3
29-Dec-2009	0.48	11	
30-Dec-2009	0.48	11	
31-Dec-2009	0.48	11	
1-Jan-2010	0.48	11	
2-Jan-2010	0.48	11	
3-Jan-2010	0.48	11	
4-Jan-2010	0.48	11	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
5-Jan-2010	0.48	11	
6-Jan-2010	0.48	11	12.3
7-Jan-2010	0.48	11	
8-Jan-2010	0.48	11	
9-Jan-2010	0.48	11	
10-Jan-2010	0.48	11	
11-Jan-2010	0.48	11	
12-Jan-2010	0.48	11	12.3
13-Jan-2010	0.48	11	
14-Jan-2010	0.48	11	
15-Jan-2010	0.48	11	
16-Jan-2010	0.48	11	
17-Jan-2010	0.48	11	
18-Jan-2010	0.48	11	
19-Jan-2010	0.48	11	11.2
20-Jan-2010	0.53	12	
21-Jan-2010	0.53	12	
22-Jan-2010	0.53	12	
23-Jan-2010	0.57	13	
24-Jan-2010	0.53	12	
25-Jan-2010	0.48	11	
26-Jan-2010	0.48	11	18.9
27-Jan-2010	0.48	11	
28-Jan-2010	0.48	11	
29-Jan-2010	0.48	11	
30-Jan-2010	0.48	11	
31-Jan-2010	0.48	11	
1-Feb-2010	0.48	11	
2-Feb-2010	0.48	11	13.0
3-Feb-2010	0.48	11	
4-Feb-2010	0.48	11	
5-Feb-2010	0.44	10	
6-Feb-2010	0.39	9	
7-Feb-2010	0.35	8	
8-Feb-2010	0.39	9	
9-Feb-2010	0.44	10	13.6
10-Feb-2010	0.44	10	
11-Feb-2010	0.35	8	
12-Feb-2010	0.31	7	
13-Feb-2010	0.26	6	
14-Feb-2010	0.22	5	
15-Feb-2010	0.35	8	
16-Feb-2010	0.39	9	12.3
17-Feb-2010	0.39	9	
18-Feb-2010	0.39	9	
19-Feb-2010	0.39	9	
20-Feb-2010	0.39	9	
21-Feb-2010	0.39	9	
22-Feb-2010	0.39	9	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
23-Feb-2010	0.39	9	13.6
24-Feb-2010	0.39	9	
25-Feb-2010	0.39	9	
26-Feb-2010	0.39	9	
27-Feb-2010	0.35	8	
28-Feb-2010	0.35	8	
1-Mar-2010	0.39	9	
2-Mar-2010	0.39	9	
3-Mar-2010	0.44	10	8.9
4-Mar-2010	0.48	11	
5-Mar-2010	0.44	10	
6-Mar-2010	0.39	9	
7-Mar-2010	0.39	9	
8-Mar-2010	0.39	9	
9-Mar-2010	0.44	10	11.6
10-Mar-2010	0.44	10	
11-Mar-2010	0.53	12	
12-Mar-2010	0.48	11	
13-Mar-2010	0.48	11	
14-Mar-2010	0.48	11	
15-Mar-2010	0.44	10	
16-Mar-2010	0.48	11	16.0
17-Mar-2010	0.48	11	
18-Mar-2010	0.57	13	
19-Mar-2010	0.53	12	
20-Mar-2010	0.48	11	
21-Mar-2010	0.48	11	
22-Mar-2010	0.48	11	
23-Mar-2010	0.48	11	13.0
24-Mar-2010	0.48	11	
25-Mar-2010	0.53	12	
26-Mar-2010	0.48	11	
27-Mar-2010	0.48	11	
28-Mar-2010	0.48	11	
29-Mar-2010	0.48	11	
30-Mar-2010	0.48	11	12.2
31-Mar-2010	0.53	12	
1-Apr-2010	0.70	16	
2-Apr-2010	0.88	20	
3-Apr-2010	0.88	20	
4-Apr-2010	0.61	14	
5-Apr-2010	0.74	17	
6-Apr-2010	0.74	17	14.4
7-Apr-2010	1.05	24	
8-Apr-2010	0.83	19	
9-Apr-2010	0.48	11	
10-Apr-2010	0.53	12	
11-Apr-2010	0.57	13	
12-Apr-2010	0.53	12	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
13-Apr-2010	0.57	13	13.1
14-Apr-2010	0.57	13	
15-Apr-2010	0.70	16	
16-Apr-2010	0.83	19	
17-Apr-2010	0.48	11	
18-Apr-2010	0.48	11	
19-Apr-2010	0.53	12	
20-Apr-2010	0.66	15	21.3
21-Apr-2010	0.74	17	
22-Apr-2010	0.48	11	
23-Apr-2010	0.57	13	
24-Apr-2010	0.70	16	
25-Apr-2010	0.48	11	
26-Apr-2010	0.48	11	
27-Apr-2010	0.48	11	12.9
28-Apr-2010	0.66	15	
29-Apr-2010	0.83	19	
30-Apr-2010	1.27	29	
1-May-2010	1.49	34	
2-May-2010	1.80	41	
3-May-2010	1.84	42	
4-May-2010	1.27	29	
5-May-2010	1.18	27	12.7
6-May-2010	1.05	24	
7-May-2010	0.66	15	
8-May-2010	0.70	16	
9-May-2010	0.74	17	
10-May-2010	0.83	19	
11-May-2010	0.61	14	12.7
12-May-2010	1.01	23	
13-May-2010	1.10	25	
14-May-2010	1.10	25	
15-May-2010	1.10	25	
16-May-2010	1.10	25	
17-May-2010	1.10	25	
18-May-2010	1.10	25	15.1
19-May-2010	1.10	25	
20-May-2010	1.10	25	
21-May-2010	1.10	25	
22-May-2010	1.10	25	
23-May-2010	1.10	25	
24-May-2010	1.10	25	
25-May-2010	1.10	25	14.2
26-May-2010	1.10	25	
27-May-2010	1.10	25	
28-May-2010	1.10	25	
29-May-2010	1.10	25	
30-May-2010	1.10	25	
31-May-2010	1.10	25	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
1-Jun-2010	1.60	37	15.0
2-Jun-2010	1.60	37	
3-Jun-2010	1.60	37	
4-Jun-2010	1.60	37	
5-Jun-2010	1.60	37	
6-Jun-2010	1.60	37	
7-Jun-2010	1.60	37	
8-Jun-2010	1.60	37	15.5
9-Jun-2010	1.60	37	
10-Jun-2010	1.60	37	
11-Jun-2010	1.60	37	
12-Jun-2010	1.60	37	
13-Jun-2010	1.60	37	
14-Jun-2010	1.45	33	
15-Jun-2010	1.45	33	15.5
16-Jun-2010	1.53	35	
17-Jun-2010	0.96	22	
18-Jun-2010	1.31	30	
19-Jun-2010	1.66	38	
20-Jun-2010	1.80	41	
21-Jun-2010	1.62	37	
22-Jun-2010	1.66	38	16.4
23-Jun-2010	1.88	43	
24-Jun-2010	1.97	45	
25-Jun-2010	1.58	36	
26-Jun-2010	1.31	30	
27-Jun-2010	1.71	39	
28-Jun-2010	1.93	44	
29-Jun-2010	1.66	38	14.6
30-Jun-2010	1.01	23	
1-Jul-2010	1.05	24	
2-Jul-2010	1.14	26	
3-Jul-2010	1.53	35	
4-Jul-2010	1.75	40	
5-Jul-2010	1.84	42	
6-Jul-2010	1.88	43	11.7
7-Jul-2010	1.97	45	
8-Jul-2010	1.97	45	
9-Jul-2010	1.97	45	
10-Jul-2010	1.93	44	
11-Jul-2010	1.62	37	
12-Jul-2010	1.80	41	
13-Jul-2010	1.97	45	13.8
14-Jul-2010	1.97	45	
15-Jul-2010	1.97	45	
16-Jul-2010	1.97	45	
17-Jul-2010	1.97	45	
18-Jul-2010	1.97	45	
19-Jul-2010	1.97	45	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
20-Jul-2010	1.93	44	15.8
21-Jul-2010	1.97	45	
22-Jul-2010	1.97	45	
23-Jul-2010	1.97	45	
24-Jul-2010	1.97	45	
25-Jul-2010	1.88	43	
26-Jul-2010	1.66	38	
27-Jul-2010	1.75	40	13.4
28-Jul-2010	1.88	43	
29-Jul-2010	1.66	38	
30-Jul-2010	1.49	34	
31-Jul-2010	1.31	30	
1-Aug-2010	1.58	36	
2-Aug-2010	1.88	43	
3-Aug-2010	1.97	45	
4-Aug-2010	1.97	45	15.0
5-Aug-2010	1.97	45	
6-Aug-2010	1.75	40	
7-Aug-2010	1.27	29	
8-Aug-2010	1.45	33	
9-Aug-2010	1.88	43	
10-Aug-2010	1.97	45	12.2
11-Aug-2010	1.93	44	
12-Aug-2010	1.93	44	
13-Aug-2010	1.53	35	
14-Aug-2010	1.62	37	
15-Aug-2010	1.75	40	
16-Aug-2010	1.88	43	
17-Aug-2010	1.62	37	14.9
18-Aug-2010	1.71	39	
19-Aug-2010	1.88	43	
20-Aug-2010	1.58	36	
21-Aug-2010	1.49	34	
22-Aug-2010	1.75	40	
23-Aug-2010	1.66	38	
24-Aug-2010	1.49	34	13.5
25-Aug-2010	1.62	37	
26-Aug-2010	1.36	31	
27-Aug-2010	1.18	27	
28-Aug-2010	1.36	31	
29-Aug-2010	1.53	35	
30-Aug-2010	1.66	38	
31-Aug-2010	1.93	44	12.6
1-Sep-2010	1.93	44	
2-Sep-2010	1.93	44	
3-Sep-2010	1.93	44	
4-Sep-2010	1.18	27	
5-Sep-2010	1.05	24	
6-Sep-2010	1.27	29	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
7-Sep-2010	1.71	39	12.8
8-Sep-2010	1.45	33	
9-Sep-2010	1.01	23	
10-Sep-2010	1.05	24	
11-Sep-2010	1.05	24	
12-Sep-2010	1.10	25	
13-Sep-2010	1.18	27	
14-Sep-2010	1.05	24	11.5
15-Sep-2010	1.01	23	
16-Sep-2010	1.14	26	
17-Sep-2010	0.83	19	
18-Sep-2010	1.01	23	
19-Sep-2010	0.96	22	
20-Sep-2010	0.88	20	
21-Sep-2010	1.01	23	16.3
22-Sep-2010	1.58	36	
23-Sep-2010	1.49	34	
24-Sep-2010	1.88	43	
25-Sep-2010	1.66	38	
26-Sep-2010	0.96	22	
27-Sep-2010	1.31	30	
28-Sep-2010	1.71	39	15.4
29-Sep-2010	1.10	25	
30-Sep-2010	1.27	29	
1-Oct-2010	0.92	21	
2-Oct-2010	0.74	17	
3-Oct-2010	0.74	17	
4-Oct-2010	0.74	17	
5-Oct-2010	0.70	16	12.5
6-Oct-2010	1.05	24	
7-Oct-2010	1.10	25	
8-Oct-2010	1.05	24	
9-Oct-2010	0.92	21	
10-Oct-2010	0.83	19	
11-Oct-2010	0.79	18	
12-Oct-2010	0.74	17	
13-Oct-2010	0.79	18	15.0
14-Oct-2010	0.74	17	
15-Oct-2010	0.74	17	
16-Oct-2010	0.74	17	
17-Oct-2010	0.74	17	
18-Oct-2010	0.70	16	
19-Oct-2010	0.74	17	13.3
20-Oct-2010	0.74	17	
21-Oct-2010	0.74	17	
22-Oct-2010	0.74	17	
23-Oct-2010	0.74	17	
24-Oct-2010	0.83	19	
25-Oct-2010	1.05	24	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
26-Oct-2010	1.23	28	
27-Oct-2010	1.14	26	13.7
28-Oct-2010	0.53	12	
29-Oct-2010	0.79	18	
30-Oct-2010	0.74	17	
31-Oct-2010	0.74	17	
1-Nov-2010	0.74	17	
2-Nov-2010	0.66	15	15.8
3-Nov-2010	0.74	17	
4-Nov-2010	0.74	17	
5-Nov-2010	0.70	16	
6-Nov-2010	0.48	11	
7-Nov-2010	0.48	11	
8-Nov-2010	0.48	11	
9-Nov-2010	0.83	19	15.4
10-Nov-2010	1.01	23	
11-Nov-2010	1.01	23	
12-Nov-2010	0.92	21	
13-Nov-2010	0.88	20	
14-Nov-2010	1.01	23	
15-Nov-2010	1.01	23	
16-Nov-2010	1.01	23	14.7
17-Nov-2010	1.01	23	
18-Nov-2010	1.01	23	
19-Nov-2010	1.18	27	
20-Nov-2010	0.92	21	
21-Nov-2010	0.57	13	
22-Nov-2010	0.61	14	14.9
23-Nov-2010	0.74	17	
24-Nov-2010	0.88	20	
25-Nov-2010	1.58	36	
26-Nov-2010	0.92	21	
27-Nov-2010	0.53	12	
28-Nov-2010	0.53	12	
29-Nov-2010	1.45	33	
30-Nov-2010	1.49	34	
1-Dec-2010	1.01	23	17.1
2-Dec-2010	0.53	12	
3-Dec-2010	0.53	12	
4-Dec-2010	1.36	31	
5-Dec-2010	1.62	37	
6-Dec-2010	1.62	37	
7-Dec-2010	1.62	37	14.4
8-Dec-2010	1.62	37	
9-Dec-2010	1.62	37	
10-Dec-2010	1.62	37	
11-Dec-2010	1.58	36	
12-Dec-2010	1.53	35	
13-Dec-2010	1.53	35	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
14-Dec-2010	1.49	34	12.6
15-Dec-2010	1.53	35	
16-Dec-2010	1.49	34	
17-Dec-2010	1.23	28	
18-Dec-2010	1.01	23	
19-Dec-2010	1.01	23	
20-Dec-2010	1.01	23	
21-Dec-2010	1.01	23	11.0
22-Dec-2010	1.01	23	
23-Dec-2010	0.79	18	
24-Dec-2010	0.48	11	
25-Dec-2010	0.48	11	
26-Dec-2010	0.48	11	
27-Dec-2010	0.48	11	
28-Dec-2010	0.48	11	17.9
29-Dec-2010	0.48	11	
30-Dec-2010	0.48	11	
31-Dec-2010	0.53	12	
1-Jan-2011	0.48	11	
2-Jan-2011	0.48	11	
3-Jan-2011	0.48	11	
4-Jan-2011	0.53	12	
5-Jan-2011	0.53	12	12.4
6-Jan-2011	0.48	11	
7-Jan-2011	0.48	11	
8-Jan-2011	0.48	11	
9-Jan-2011	0.39	9	
10-Jan-2011	0.39	9	
11-Jan-2011	0.44	10	12.4
12-Jan-2011	0.48	11	
13-Jan-2011	0.53	12	
14-Jan-2011	0.48	11	
15-Jan-2011	0.35	8	
16-Jan-2011	0.39	9	
17-Jan-2011	0.39	9	
18-Jan-2011	0.48	11	12.1
19-Jan-2011	0.48	11	
20-Jan-2011	0.48	11	
21-Jan-2011	0.48	11	
22-Jan-2011	0.48	11	
23-Jan-2011	0.48	11	
24-Jan-2011	0.48	11	
25-Jan-2011	0.48	11	12.1
26-Jan-2011	0.53	12	
27-Jan-2011	0.48	11	
28-Jan-2011	0.48	11	
29-Jan-2011	0.48	11	
30-Jan-2011	0.48	11	
31-Jan-2011	0.44	10	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
1-Feb-2011	0.48	11	12.9
2-Feb-2011	0.48	11	
3-Feb-2011	0.39	9	
4-Feb-2011	0.39	9	
5-Feb-2011	0.39	9	
6-Feb-2011	0.35	8	
7-Feb-2011	0.44	10	
8-Feb-2011	0.48	11	12.1
9-Feb-2011	0.35	8	
10-Feb-2011	0.26	6	
11-Feb-2011	0.35	8	
12-Feb-2011	0.39	9	
13-Feb-2011	0.44	10	
14-Feb-2011	0.39	9	
15-Feb-2011	0.18	4	
16-Feb-2011	0.44	10	14.2
17-Feb-2011	0.44	10	
18-Feb-2011	0.44	10	
19-Feb-2011	0.22	5	
20-Feb-2011	0.26	6	
21-Feb-2011	0.35	8	
22-Feb-2011	0.44	10	
23-Feb-2011	0.26	6	
24-Feb-2011	0.26	6	11.9
25-Feb-2011	0.35	8	
26-Feb-2011	0.44	10	
27-Feb-2011	0.44	10	
28-Feb-2011	0.39	9	
1-Mar-2011	0.31	7	14.2
2-Mar-2011	0.35	8	
3-Mar-2011	0.31	7	
4-Mar-2011	0.31	7	
5-Mar-2011	0.35	8	
6-Mar-2011	0.31	7	
7-Mar-2011	0.31	7	
8-Mar-2011	0.31	7	13.8
9-Mar-2011	0.31	7	
10-Mar-2011	0.35	8	
11-Mar-2011	0.35	8	
12-Mar-2011	0.35	8	
13-Mar-2011	0.31	7	
14-Mar-2011	0.31	7	
15-Mar-2011	0.26	6	22.6
16-Mar-2011	0.44	10	
17-Mar-2011	0.35	8	
18-Mar-2011	0.44	10	
19-Mar-2011	0.31	7	
20-Mar-2011	0.35	8	
21-Mar-2011	0.35	8	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
22-Mar-2011	0.35	8	17.8
23-Mar-2011	0.44	10	
24-Mar-2011	0.44	10	
25-Mar-2011	0.44	10	
26-Mar-2011	0.44	10	
27-Mar-2011	0.44	10	
28-Mar-2011	0.44	10	
29-Mar-2011	0.44	10	16.2
30-Mar-2011	0.44	10	
31-Mar-2011	0.44	10	
1-Apr-2011	0.44	10	
2-Apr-2011	0.44	10	
3-Apr-2011	0.44	10	
4-Apr-2011	0.09	2	
5-Apr-2011			
6-Apr-2011	0.18	4	
7-Apr-2011	0.44	10	16.7
8-Apr-2011	0.44	10	
9-Apr-2011	0.44	10	
10-Apr-2011	0.44	10	
11-Apr-2011	0.66	15	
12-Apr-2011	0.48	11	15.6
13-Apr-2011	0.44	10	
14-Apr-2011	0.44	10	
15-Apr-2011	0.44	10	
16-Apr-2011	0.44	10	
17-Apr-2011	0.44	10	
18-Apr-2011	0.44	10	
19-Apr-2011	0.44	10	17.9
20-Apr-2011	0.57	13	
21-Apr-2011	0.44	10	
22-Apr-2011	0.44	10	
23-Apr-2011	0.48	11	
24-Apr-2011	0.66	15	
25-Apr-2011	0.48	11	
26-Apr-2011	0.96	22	21.0
27-Apr-2011	1.27	29	
28-Apr-2011	0.96	22	
29-Apr-2011	0.57	13	
30-Apr-2011	0.57	13	
1-May-2011	0.66	15	
2-May-2011	0.66	15	
3-May-2011	0.48	11	15.8
4-May-2011	0.61	14	
5-May-2011	0.48	11	
6-May-2011	0.66	15	
7-May-2011	0.70	16	
8-May-2011	0.74	17	
9-May-2011	0.66	15	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
10-May-2011	0.61	14	16.2
11-May-2011	0.74	17	
12-May-2011	0.92	21	
13-May-2011	1.05	24	
14-May-2011	0.96	22	
15-May-2011	0.70	16	
16-May-2011	0.44	10	
17-May-2011	0.61	14	17.8
18-May-2011	1.01	23	
19-May-2011	0.96	22	
20-May-2011	0.88	20	
21-May-2011	1.05	24	
22-May-2011	1.05	24	
23-May-2011	1.10	25	
24-May-2011	1.14	26	18.5
25-May-2011	0.88	20	
26-May-2011	1.36	31	
27-May-2011	1.27	29	
28-May-2011	1.31	30	
29-May-2011	1.49	34	
30-May-2011	1.58	36	
31-May-2011	1.58	36	16.9
1-Jun-2011	1.66	38	
2-Jun-2011	0.70	16	
3-Jun-2011	0.70	16	
4-Jun-2011	0.70	16	
5-Jun-2011	1.05	24	
6-Jun-2011	1.05	24	
7-Jun-2011	1.45	33	18.6
8-Jun-2011	1.66	38	
9-Jun-2011	1.93	44	
10-Jun-2011	1.14	26	
11-Jun-2011	1.31	30	
12-Jun-2011	1.14	26	
13-Jun-2011	0.83	19	
14-Jun-2011	0.66	15	16.0
15-Jun-2011	0.92	21	
16-Jun-2011	0.96	22	
17-Jun-2011	1.23	28	
18-Jun-2011	1.23	28	
19-Jun-2011	0.88	20	
20-Jun-2011	1.05	24	
21-Jun-2011	1.58	36	15.4
22-Jun-2011	1.66	38	
23-Jun-2011	1.84	42	
24-Jun-2011	1.75	40	
25-Jun-2011	1.23	28	
26-Jun-2011	1.10	25	
27-Jun-2011	1.45	33	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
28-Jun-2011	1.58	36	17.5
29-Jun-2011	1.05	24	
30-Jun-2011	1.05	24	
1-Jul-2011	0.88	20	
2-Jul-2011	1.18	27	
3-Jul-2011	1.80	41	
4-Jul-2011	1.23	28	
5-Jul-2011	1.18	27	19.5
6-Jul-2011	1.49	34	
7-Jul-2011	1.66	38	
8-Jul-2011	1.66	38	
9-Jul-2011	1.45	33	
10-Jul-2011	1.40	32	
11-Jul-2011	1.93	44	
12-Jul-2011	1.97	45	17.1
13-Jul-2011	1.71	39	
14-Jul-2011	1.23	28	
15-Jul-2011	1.23	28	
16-Jul-2011	1.31	30	
17-Jul-2011	1.58	36	
18-Jul-2011	1.84	42	
19-Jul-2011	1.88	43	16.7
20-Jul-2011	1.88	43	
21-Jul-2011	1.97	45	
22-Jul-2011	1.97	45	
23-Jul-2011	1.97	45	
24-Jul-2011	1.93	44	
25-Jul-2011	1.66	38	
26-Jul-2011	1.88	43	15.8
27-Jul-2011	1.58	36	
28-Jul-2011	1.58	36	
29-Jul-2011	1.80	41	
30-Jul-2011	1.80	41	
31-Jul-2011	1.53	35	
1-Aug-2011	1.84	42	
2-Aug-2011	1.88	43	20.5
3-Aug-2011	1.84	42	
4-Aug-2011	1.75	40	
5-Aug-2011	1.84	42	
6-Aug-2011	1.84	42	
7-Aug-2011	1.84	42	
8-Aug-2011	1.75	40	
9-Aug-2011	1.66	38	15.3
10-Aug-2011	1.58	36	
11-Aug-2011	1.10	25	
12-Aug-2011	1.23	28	
13-Aug-2011	1.40	32	
14-Aug-2011	1.66	38	
15-Aug-2011	1.62	37	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
16-Aug-2011	1.49	34	18.7
17-Aug-2011	1.40	32	
18-Aug-2011	1.58	36	
19-Aug-2011	1.53	35	
20-Aug-2011	1.49	34	
21-Aug-2011	1.58	36	
22-Aug-2011	1.05	24	
23-Aug-2011	1.14	26	15.6
24-Aug-2011	1.40	32	
25-Aug-2011	1.71	39	
26-Aug-2011	1.66	38	
27-Aug-2011	1.58	36	
28-Aug-2011	1.31	30	
29-Aug-2011	0.96	22	
30-Aug-2011	1.18	27	16.8
31-Aug-2011	1.36	31	
1-Sep-2011	1.53	35	
2-Sep-2011	1.66	38	
3-Sep-2011	1.80	41	
4-Sep-2011	1.93	44	
5-Sep-2011	1.36	31	
6-Sep-2011	0.96	22	16.6
7-Sep-2011	1.23	28	
8-Sep-2011	1.53	35	
9-Sep-2011	1.53	35	
10-Sep-2011	1.14	26	
11-Sep-2011	1.10	25	
12-Sep-2011	1.40	32	
13-Sep-2011	1.53	35	21.3
14-Sep-2011	1.31	30	
15-Sep-2011	0.74	17	
16-Sep-2011	0.61	14	
17-Sep-2011	0.66	15	
18-Sep-2011	0.70	16	
19-Sep-2011	0.79	18	
20-Sep-2011	1.05	24	17.2
21-Sep-2011	1.36	31	
22-Sep-2011	1.62	37	
23-Sep-2011	1.45	33	
24-Sep-2011	1.31	30	
25-Sep-2011	1.40	32	
26-Sep-2011	1.58	36	
27-Sep-2011	1.62	37	17.5
28-Sep-2011	1.62	37	
29-Sep-2011	1.18	27	
30-Sep-2011	0.92	21	
1-Oct-2011	0.53	12	
2-Oct-2011	0.53	12	
3-Oct-2011	0.61	14	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
4-Oct-2011	0.70	16	16.4
5-Oct-2011	0.70	16	
6-Oct-2011	0.57	13	
7-Oct-2011	0.66	15	
8-Oct-2011	0.83	19	
9-Oct-2011	0.92	21	
10-Oct-2011	0.96	22	
11-Oct-2011	1.10	25	20.1
12-Oct-2011	0.92	21	
13-Oct-2011	1.01	23	
14-Oct-2011	1.14	26	
15-Oct-2011	0.53	12	
16-Oct-2011	0.57	13	
17-Oct-2011	0.70	16	
18-Oct-2011	0.66	15	18.4
19-Oct-2011	0.74	17	
20-Oct-2011	0.70	16	
21-Oct-2011	0.48	11	
22-Oct-2011	0.48	11	
23-Oct-2011	0.53	12	
24-Oct-2011	0.57	13	
25-Oct-2011	0.57	13	16.8
26-Oct-2011	0.53	12	
27-Oct-2011	0.48	11	
28-Oct-2011	0.48	11	
29-Oct-2011	0.48	11	
30-Oct-2011	0.48	11	
31-Oct-2011	0.48	11	
1-Nov-2011	0.53	12	16.7
2-Nov-2011	0.61	14	
3-Nov-2011	0.61	14	
4-Nov-2011	0.48	11	
5-Nov-2011	0.48	11	
6-Nov-2011	0.48	11	
7-Nov-2011	0.66	15	
8-Nov-2011	0.74	17	15.9
9-Nov-2011	0.66	15	
10-Nov-2011	0.48	11	
11-Nov-2011	0.48	11	
12-Nov-2011	0.53	12	
13-Nov-2011	0.57	13	
14-Nov-2011	0.61	14	
15-Nov-2011	0.53	12	
16-Nov-2011	0.53	12	
17-Nov-2011	0.48	11	16.6
18-Nov-2011	0.48	11	
19-Nov-2011	0.48	11	
20-Nov-2011	0.53	12	
21-Nov-2011	0.48	11	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
22-Nov-2011	0.48	11	15.9
23-Nov-2011	0.48	11	
24-Nov-2011	0.48	11	
25-Nov-2011	0.53	12	
26-Nov-2011	0.57	13	
27-Nov-2011	0.57	13	
28-Nov-2011	0.53	12	
29-Nov-2011	0.74	17	20.6
30-Nov-2011	0.48	11	
1-Dec-2011	0.48	11	
2-Dec-2011	0.48	11	
3-Dec-2011	0.48	11	
4-Dec-2011	0.48	11	
5-Dec-2011	0.48	11	
6-Dec-2011	0.48	11	17.0
7-Dec-2011	0.48	11	
8-Dec-2011	0.53	12	
9-Dec-2011	0.57	13	
10-Dec-2011	0.53	12	
11-Dec-2011	0.48	11	
12-Dec-2011	0.53	12	
13-Dec-2011	0.53	12	16.9
14-Dec-2011	0.48	11	
15-Dec-2011	0.53	12	
16-Dec-2011	0.53	12	
17-Dec-2011	0.48	11	
18-Dec-2011	0.48	11	
19-Dec-2011	0.53	12	
20-Dec-2011	0.53	12	15.6
21-Dec-2011	0.48	11	
22-Dec-2011	0.48	11	
23-Dec-2011	0.48	11	
24-Dec-2011	0.48	11	
25-Dec-2011	0.48	11	
26-Dec-2011	0.48	11	
27-Dec-2011	0.48	11	16.3
28-Dec-2011	0.48	11	
29-Dec-2011	0.44	10	
30-Dec-2011	0.48	11	
31-Dec-2011	0.48	11	
1-Jan-2012	0.48	11	
2-Jan-2012	0.48	11	
3-Jan-2012	0.44	10	12.2
4-Jan-2012	0.48	11	
5-Jan-2012	0.48	11	
6-Jan-2012	0.48	11	
7-Jan-2012	0.48	11	
8-Jan-2012	0.48	11	
9-Jan-2012	0.53	12	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
10-Jan-2012	0.53	12	13.1
11-Jan-2012	0.48	11	
12-Jan-2012	0.48	11	
13-Jan-2012	0.44	10	
14-Jan-2012	0.39	9	
15-Jan-2012	0.39	9	
16-Jan-2012	0.39	9	
17-Jan-2012	0.39	9	12.3
18-Jan-2012	0.39	9	
19-Jan-2012	0.39	9	
20-Jan-2012	0.48	11	
21-Jan-2012	0.57	13	
22-Jan-2012	0.57	13	
23-Jan-2012	0.57	13	
24-Jan-2012	0.57	13	13.5
25-Jan-2012	0.57	13	
26-Jan-2012	0.57	13	
27-Jan-2012	0.57	13	
28-Jan-2012	0.57	13	
29-Jan-2012	0.57	13	
30-Jan-2012	0.57	13	
31-Jan-2012	0.57	13	14.3
1-Feb-2012	0.53	12	
2-Feb-2012	0.53	12	
3-Feb-2012	0.48	11	
4-Feb-2012	0.53	12	
5-Feb-2012	0.53	12	
6-Feb-2012	0.48	11	
7-Feb-2012	0.48	11	13.1
8-Feb-2012	0.48	11	
9-Feb-2012	0.48	11	
10-Feb-2012	0.53	12	
11-Feb-2012	0.53	12	
12-Feb-2012	0.53	12	
13-Feb-2012	0.53	12	
14-Feb-2012	0.53	12	15.1
15-Feb-2012	0.48	11	
16-Feb-2012	0.48	11	
17-Feb-2012	0.48	11	
18-Feb-2012	0.53	12	
19-Feb-2012	0.48	11	
20-Feb-2012	0.53	12	
21-Feb-2012	0.53	12	12.6
22-Feb-2012	0.53	12	
23-Feb-2012	0.53	12	
24-Feb-2012	0.48	11	
25-Feb-2012	0.48	11	
26-Feb-2012	0.48	11	
27-Feb-2012	0.48	11	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
28-Feb-2012	0.48	11	13.7
29-Feb-2012	0.53	12	
1-Mar-2012	0.48	11	
2-Mar-2012	0.48	11	
3-Mar-2012	0.53	12	
4-Mar-2012	0.48	11	
5-Mar-2012	0.48	11	
6-Mar-2012	0.48	11	14.1
7-Mar-2012	0.53	12	
8-Mar-2012	0.53	12	
9-Mar-2012	0.39	9	
10-Mar-2012	0.48	11	
11-Mar-2012	0.53	12	
12-Mar-2012	0.57	13	
13-Mar-2012	0.61	14	17.9
14-Mar-2012	0.53	12	
15-Mar-2012	0.61	14	
16-Mar-2012	0.61	14	
17-Mar-2012	0.66	15	
18-Mar-2012	0.70	16	
19-Mar-2012	0.83	19	
20-Mar-2012	0.83	19	16.1
21-Mar-2012	0.88	20	
22-Mar-2012	0.70	16	
23-Mar-2012	0.70	16	
24-Mar-2012	0.57	13	
25-Mar-2012	0.53	12	
26-Mar-2012	0.53	12	
27-Mar-2012	0.53	12	
28-Mar-2012	0.57	13	14.6
29-Mar-2012	0.53	12	
30-Mar-2012	0.53	12	
31-Mar-2012	0.53	12	
1-Apr-2012	0.53	12	
2-Apr-2012	0.53	12	
3-Apr-2012	0.53	12	11.7
4-Apr-2012	0.53	12	
5-Apr-2012	0.48	11	
6-Apr-2012	0.48	11	
7-Apr-2012	0.48	11	
8-Apr-2012	0.57	13	
9-Apr-2012	0.53	12	
10-Apr-2012	0.48	11	11.6
11-Apr-2012	0.53	12	
12-Apr-2012	0.53	12	
13-Apr-2012	0.57	13	
14-Apr-2012	0.70	16	
15-Apr-2012	0.88	20	
16-Apr-2012	1.36	31	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
17-Apr-2012	0.66	15	12.3
18-Apr-2012	0.53	12	
19-Apr-2012	0.83	19	
20-Apr-2012	1.01	23	
21-Apr-2012	0.57	13	
22-Apr-2012	0.48	11	
23-Apr-2012	0.48	11	
24-Apr-2012	0.48	11	
25-Apr-2012	0.48	11	11.4
26-Apr-2012	0.61	14	
27-Apr-2012	0.53	12	
28-Apr-2012	0.48	11	
29-Apr-2012	0.53	12	
30-Apr-2012	0.74	17	
1-May-2012	0.48	11	10.8
2-May-2012	0.53	12	
3-May-2012	0.57	13	
4-May-2012	0.57	13	
5-May-2012	0.61	14	
6-May-2012	0.61	14	
7-May-2012	0.66	15	
8-May-2012	0.70	16	14.6
9-May-2012	0.70	16	
10-May-2012	0.74	17	
11-May-2012	0.74	17	
12-May-2012	0.79	18	
13-May-2012	1.10	25	
14-May-2012	1.10	25	
15-May-2012	1.40	32	17.0
16-May-2012	1.14	26	
17-May-2012	0.70	16	
18-May-2012	0.92	21	
19-May-2012	1.10	25	
20-May-2012	1.27	29	
21-May-2012	1.49	34	
22-May-2012	1.62	37	18.7
23-May-2012	1.62	37	
24-May-2012	1.75	40	
25-May-2012	1.80	41	
26-May-2012	1.62	37	
27-May-2012	1.40	32	
28-May-2012	1.84	42	
29-May-2012	1.97	45	
30-May-2012	1.58	36	
31-May-2012	0.92	21	19.4
1-Jun-2012	0.96	22	
2-Jun-2012	0.92	21	
3-Jun-2012	0.88	20	
4-Jun-2012	0.83	19	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
5-Jun-2012	0.79	18	
6-Jun-2012	0.96	22	20.5
7-Jun-2012	1.01	23	
8-Jun-2012	1.27	29	
9-Jun-2012	1.49	34	
10-Jun-2012	1.75	40	
11-Jun-2012	1.88	43	
12-Jun-2012	1.75	40	16.7
13-Jun-2012	1.01	23	
14-Jun-2012	1.14	26	
15-Jun-2012	1.36	31	
16-Jun-2012	1.49	34	
17-Jun-2012	1.40	32	
18-Jun-2012	1.45	33	
19-Jun-2012	1.75	40	13.6
20-Jun-2012	1.97	45	
21-Jun-2012	1.97	45	
22-Jun-2012	1.84	42	
23-Jun-2012	1.40	32	
24-Jun-2012	1.31	30	
25-Jun-2012	1.31	30	
26-Jun-2012	1.10	25	14.8
27-Jun-2012	1.27	29	
28-Jun-2012	1.58	36	
29-Jun-2012	1.84	42	
30-Jun-2012	1.66	38	
1-Jul-2012	1.49	34	
2-Jul-2012	1.53	35	12.6
3-Jul-2012	1.53	35	
4-Jul-2012	1.58	36	
5-Jul-2012	1.58	36	
6-Jul-2012	1.58	36	
7-Jul-2012	1.62	37	
8-Jul-2012	1.62	37	
9-Jul-2012	1.62	37	
10-Jul-2012	1.66	38	13.7
11-Jul-2012	1.66	38	
12-Jul-2012	1.66	38	
13-Jul-2012	1.71	39	
14-Jul-2012	1.71	39	
15-Jul-2012	1.75	40	
16-Jul-2012	1.75	40	
17-Jul-2012	1.75	40	13.5
18-Jul-2012	1.80	41	
19-Jul-2012	1.80	41	
20-Jul-2012	1.80	41	
21-Jul-2012	1.84	42	
22-Jul-2012	1.84	42	
23-Jul-2012	1.84	42	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
24-Jul-2012	1.88	43	11.0
25-Jul-2012	1.88	43	
26-Jul-2012	1.93	44	
27-Jul-2012	1.93	44	
28-Jul-2012	1.93	44	
29-Jul-2012	1.97	45	
30-Jul-2012	1.97	45	
31-Jul-2012	1.97	45	8.8
1-Aug-2012	1.97	45	
2-Aug-2012	1.84	42	
3-Aug-2012	1.93	44	
4-Aug-2012	1.93	44	
5-Aug-2012	1.93	44	
6-Aug-2012	1.71	39	
7-Aug-2012	1.45	33	
8-Aug-2012	1.75	40	10.4
9-Aug-2012	1.88	43	
10-Aug-2012	1.97	45	
11-Aug-2012	1.80	41	
12-Aug-2012	1.49	34	
13-Aug-2012	1.71	39	
14-Aug-2012	1.75	40	14.6
15-Aug-2012	1.75	40	
16-Aug-2012	1.53	35	
17-Aug-2012	1.75	40	
18-Aug-2012	1.27	29	
19-Aug-2012	1.14	26	
20-Aug-2012	1.31	30	
21-Aug-2012	1.23	28	13.7
22-Aug-2012	1.31	30	
23-Aug-2012	1.49	34	
24-Aug-2012	1.62	37	
25-Aug-2012	1.71	39	
26-Aug-2012	1.75	40	
27-Aug-2012	1.88	43	
28-Aug-2012	1.88	43	12.7
29-Aug-2012	1.18	27	
30-Aug-2012	1.31	30	
31-Aug-2012	1.66	38	
1-Sep-2012	1.80	41	
2-Sep-2012	1.45	33	
3-Sep-2012	1.75	40	
4-Sep-2012	1.88	43	12.3
5-Sep-2012	1.93	44	
6-Sep-2012	1.80	41	
7-Sep-2012	1.80	41	
8-Sep-2012	1.58	36	
9-Sep-2012	1.01	23	
10-Sep-2012	0.92	21	

Appendix B
10/2009 to 9/2012 Data

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
11-Sep-2012	1.05	24	
12-Sep-2012	1.27	29	17.2
13-Sep-2012	1.53	35	
14-Sep-2012	1.49	34	
15-Sep-2012	0.96	22	
16-Sep-2012	0.96	22	
17-Sep-2012	1.18	27	
18-Sep-2012	1.53	35	14.9
19-Sep-2012	0.83	19	
20-Sep-2012	0.92	21	
21-Sep-2012	1.14	26	
22-Sep-2012	1.10	25	
23-Sep-2012	0.66	15	
24-Sep-2012	0.70	16	
25-Sep-2012	0.92	21	18.1
26-Sep-2012	1.14	26	
27-Sep-2012	0.83	19	
28-Sep-2012	0.74	17	
29-Sep-2012	0.66	15	
30-Sep-2012	0.57	13	

Avg, 10/2011 to 9/2012	0.92	20.83	14.59
Avg, 10/2009 to 9/2012	0.93	21.16	14.87
95th percentile, 10/2011 to 9/2012	**1.88**	**43.00**	**19.72**
95th percentile, 10/2009 to 9/2012	**1.88**	**43.00**	**19.65**

TBEL (using recent data)

Oct.2011 to Sept-2012	7.1	lbs/day
Oct. 2009 to Sept 2012	7.1	lbs/day

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
1-May-2010	1.49	34	
2-May-2010	1.80	41	
3-May-2010	1.84	42	
4-May-2010	1.27	29	
5-May-2010	1.18	27	12.7
6-May-2010	1.05	24	
7-May-2010	0.66	15	
8-May-2010	0.70	16	
9-May-2010	0.74	17	
10-May-2010	0.83	19	
11-May-2010	0.61	14	12.7
12-May-2010	1.01	23	
13-May-2010	1.10	25	
14-May-2010	1.10	25	
15-May-2010	1.10	25	
16-May-2010	1.10	25	
17-May-2010	1.10	25	
18-May-2010	1.10	25	15.1
19-May-2010	1.10	25	
20-May-2010	1.10	25	
21-May-2010	1.10	25	
22-May-2010	1.10	25	
23-May-2010	1.10	25	
24-May-2010	1.10	25	
25-May-2010	1.10	25	14.2
26-May-2010	1.10	25	
27-May-2010	1.10	25	
28-May-2010	1.10	25	
29-May-2010	1.10	25	
30-May-2010	1.10	25	
31-May-2010	1.10	25	
1-Jun-2010	1.60	37	15.0
2-Jun-2010	1.60	37	
3-Jun-2010	1.60	37	
4-Jun-2010	1.60	37	
5-Jun-2010	1.60	37	
6-Jun-2010	1.60	37	
7-Jun-2010	1.60	37	
8-Jun-2010	1.60	37	15.5
9-Jun-2010	1.60	37	
10-Jun-2010	1.60	37	
11-Jun-2010	1.60	37	
12-Jun-2010	1.60	37	
13-Jun-2010	1.60	37	
14-Jun-2010	1.45	33	
15-Jun-2010	1.45	33	15.5
16-Jun-2010	1.53	35	

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
17-Jun-2010	0.96	22	
18-Jun-2010	1.31	30	
19-Jun-2010	1.66	38	
20-Jun-2010	1.80	41	
21-Jun-2010	1.62	37	
22-Jun-2010	1.66	38	16.4
23-Jun-2010	1.88	43	
24-Jun-2010	1.97	45	
25-Jun-2010	1.58	36	
26-Jun-2010	1.31	30	
27-Jun-2010	1.71	39	
28-Jun-2010	1.93	44	
29-Jun-2010	1.66	38	14.6
30-Jun-2010	1.01	23	
1-Jul-2010	1.05	24	
2-Jul-2010	1.14	26	
3-Jul-2010	1.53	35	
4-Jul-2010	1.75	40	
5-Jul-2010	1.84	42	
6-Jul-2010	1.88	43	11.7
7-Jul-2010	1.97	45	
8-Jul-2010	1.97	45	
9-Jul-2010	1.97	45	
10-Jul-2010	1.93	44	
11-Jul-2010	1.62	37	
12-Jul-2010	1.80	41	
13-Jul-2010	1.97	45	13.8
14-Jul-2010	1.97	45	
15-Jul-2010	1.97	45	
16-Jul-2010	1.97	45	
17-Jul-2010	1.97	45	
18-Jul-2010	1.97	45	
19-Jul-2010	1.97	45	
20-Jul-2010	1.93	44	15.8
21-Jul-2010	1.97	45	
22-Jul-2010	1.97	45	
23-Jul-2010	1.97	45	
24-Jul-2010	1.97	45	
25-Jul-2010	1.88	43	
26-Jul-2010	1.66	38	
27-Jul-2010	1.75	40	13.4
28-Jul-2010	1.88	43	
29-Jul-2010	1.66	38	
30-Jul-2010	1.49	34	
31-Jul-2010	1.31	30	
1-Aug-2010	1.58	36	
2-Aug-2010	1.88	43	
3-Aug-2010	1.97	45	
4-Aug-2010	1.97	45	15.0
5-Aug-2010	1.97	45	

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
6-Aug-2010	1.75	40	
7-Aug-2010	1.27	29	
8-Aug-2010	1.45	33	
9-Aug-2010	1.88	43	
10-Aug-2010	1.97	45	12.2
11-Aug-2010	1.93	44	
12-Aug-2010	1.93	44	
13-Aug-2010	1.53	35	
14-Aug-2010	1.62	37	
15-Aug-2010	1.75	40	
16-Aug-2010	1.88	43	
17-Aug-2010	1.62	37	14.9
18-Aug-2010	1.71	39	
19-Aug-2010	1.88	43	
20-Aug-2010	1.58	36	
21-Aug-2010	1.49	34	
22-Aug-2010	1.75	40	
23-Aug-2010	1.66	38	
24-Aug-2010	1.49	34	13.5
25-Aug-2010	1.62	37	
26-Aug-2010	1.36	31	
27-Aug-2010	1.18	27	
28-Aug-2010	1.36	31	
29-Aug-2010	1.53	35	
30-Aug-2010	1.66	38	
31-Aug-2010	1.93	44	12.6
1-Sep-2010	1.93	44	
2-Sep-2010	1.93	44	
3-Sep-2010	1.93	44	
4-Sep-2010	1.18	27	
5-Sep-2010	1.05	24	
6-Sep-2010	1.27	29	
7-Sep-2010	1.71	39	12.8
8-Sep-2010	1.45	33	
9-Sep-2010	1.01	23	
10-Sep-2010	1.05	24	
11-Sep-2010	1.05	24	
12-Sep-2010	1.10	25	
13-Sep-2010	1.18	27	
14-Sep-2010	1.05	24	11.5
15-Sep-2010	1.01	23	
16-Sep-2010	1.14	26	
17-Sep-2010	0.83	19	
18-Sep-2010	1.01	23	
19-Sep-2010	0.96	22	
20-Sep-2010	0.88	20	
21-Sep-2010	1.01	23	16.3
22-Sep-2010	1.58	36	
23-Sep-2010	1.49	34	
24-Sep-2010	1.88	43	

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
25-Sep-2010	1.66	38	
26-Sep-2010	0.96	22	
27-Sep-2010	1.31	30	
28-Sep-2010	1.71	39	15.4
29-Sep-2010	1.10	25	
30-Sep-2010	1.27	29	
1-May-2011	0.66	15	
2-May-2011	0.66	15	
3-May-2011	0.48	11	15.8
4-May-2011	0.61	14	
5-May-2011	0.48	11	
6-May-2011	0.66	15	
7-May-2011	0.70	16	
8-May-2011	0.74	17	
9-May-2011	0.66	15	
10-May-2011	0.61	14	16.2
11-May-2011	0.74	17	
12-May-2011	0.92	21	
13-May-2011	1.05	24	
14-May-2011	0.96	22	
15-May-2011	0.70	16	
16-May-2011	0.44	10	
17-May-2011	0.61	14	17.8
18-May-2011	1.01	23	
19-May-2011	0.96	22	
20-May-2011	0.88	20	
21-May-2011	1.05	24	
22-May-2011	1.05	24	
23-May-2011	1.10	25	
24-May-2011	1.14	26	18.5
25-May-2011	0.88	20	
26-May-2011	1.36	31	
27-May-2011	1.27	29	
28-May-2011	1.31	30	
29-May-2011	1.49	34	
30-May-2011	1.58	36	
31-May-2011	1.58	36	16.9
1-Jun-2011	1.66	38	
2-Jun-2011	0.70	16	
3-Jun-2011	0.70	16	
4-Jun-2011	0.70	16	
5-Jun-2011	1.05	24	
6-Jun-2011	1.05	24	
7-Jun-2011	1.45	33	18.6
8-Jun-2011	1.66	38	
9-Jun-2011	1.93	44	
10-Jun-2011	1.14	26	
11-Jun-2011	1.31	30	
12-Jun-2011	1.14	26	
13-Jun-2011	0.83	19	

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
14-Jun-2011	0.66	15	16.0
15-Jun-2011	0.92	21	
16-Jun-2011	0.96	22	
17-Jun-2011	1.23	28	
18-Jun-2011	1.23	28	
19-Jun-2011	0.88	20	
20-Jun-2011	1.05	24	
21-Jun-2011	1.58	36	15.4
22-Jun-2011	1.66	38	
23-Jun-2011	1.84	42	
24-Jun-2011	1.75	40	
25-Jun-2011	1.23	28	
26-Jun-2011	1.10	25	
27-Jun-2011	1.45	33	
28-Jun-2011	1.58	36	17.5
29-Jun-2011	1.05	24	
30-Jun-2011	1.05	24	
1-Jul-2011	0.88	20	
2-Jul-2011	1.18	27	
3-Jul-2011	1.80	41	
4-Jul-2011	1.23	28	
5-Jul-2011	1.18	27	19.5
6-Jul-2011	1.49	34	
7-Jul-2011	1.66	38	
8-Jul-2011	1.66	38	
9-Jul-2011	1.45	33	
10-Jul-2011	1.40	32	
11-Jul-2011	1.93	44	
12-Jul-2011	1.97	45	17.1
13-Jul-2011	1.71	39	
14-Jul-2011	1.23	28	
15-Jul-2011	1.23	28	
16-Jul-2011	1.31	30	
17-Jul-2011	1.58	36	
18-Jul-2011	1.84	42	
19-Jul-2011	1.88	43	16.7
20-Jul-2011	1.88	43	
21-Jul-2011	1.97	45	
22-Jul-2011	1.97	45	
23-Jul-2011	1.97	45	
24-Jul-2011	1.93	44	
25-Jul-2011	1.66	38	
26-Jul-2011	1.88	43	15.8
27-Jul-2011	1.58	36	
28-Jul-2011	1.58	36	
29-Jul-2011	1.80	41	
30-Jul-2011	1.80	41	
31-Jul-2011	1.53	35	
1-Aug-2011	1.84	42	
2-Aug-2011	1.88	43	20.5

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
3-Aug-2011	1.84	42	
4-Aug-2011	1.75	40	
5-Aug-2011	1.84	42	
6-Aug-2011	1.84	42	
7-Aug-2011	1.84	42	
8-Aug-2011	1.75	40	
9-Aug-2011	1.66	38	15.3
10-Aug-2011	1.58	36	
11-Aug-2011	1.10	25	
12-Aug-2011	1.23	28	
13-Aug-2011	1.40	32	
14-Aug-2011	1.66	38	
15-Aug-2011	1.62	37	
16-Aug-2011	1.49	34	18.7
17-Aug-2011	1.40	32	
18-Aug-2011	1.58	36	
19-Aug-2011	1.53	35	
20-Aug-2011	1.49	34	
21-Aug-2011	1.58	36	
22-Aug-2011	1.05	24	
23-Aug-2011	1.14	26	15.6
24-Aug-2011	1.40	32	
25-Aug-2011	1.71	39	
26-Aug-2011	1.66	38	
27-Aug-2011	1.58	36	
28-Aug-2011	1.31	30	
29-Aug-2011	0.96	22	
30-Aug-2011	1.18	27	16.8
31-Aug-2011	1.36	31	
1-Sep-2011	1.53	35	
2-Sep-2011	1.66	38	
3-Sep-2011	1.80	41	
4-Sep-2011	1.93	44	
5-Sep-2011	1.36	31	
6-Sep-2011	0.96	22	16.6
7-Sep-2011	1.23	28	
8-Sep-2011	1.53	35	
9-Sep-2011	1.53	35	
10-Sep-2011	1.14	26	
11-Sep-2011	1.10	25	
12-Sep-2011	1.40	32	
13-Sep-2011	1.53	35	21.3
14-Sep-2011	1.31	30	
15-Sep-2011	0.74	17	
16-Sep-2011	0.61	14	
17-Sep-2011	0.66	15	
18-Sep-2011	0.70	16	
19-Sep-2011	0.79	18	
20-Sep-2011	1.05	24	17.2
21-Sep-2011	1.36	31	

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
22-Sep-2011	1.62	37	
23-Sep-2011	1.45	33	
24-Sep-2011	1.31	30	
25-Sep-2011	1.40	32	
26-Sep-2011	1.58	36	
27-Sep-2011	1.62	37	17.5
28-Sep-2011	1.62	37	
29-Sep-2011	1.18	27	
30-Sep-2011	0.92	21	
1-May-2012	0.48	11	10.8
2-May-2012	0.53	12	
3-May-2012	0.57	13	
4-May-2012	0.57	13	
5-May-2012	0.61	14	
6-May-2012	0.61	14	
7-May-2012	0.66	15	
8-May-2012	0.70	16	14.6
9-May-2012	0.70	16	
10-May-2012	0.74	17	
11-May-2012	0.74	17	
12-May-2012	0.79	18	
13-May-2012	1.10	25	
14-May-2012	1.10	25	
15-May-2012	1.40	32	17.0
16-May-2012	1.14	26	
17-May-2012	0.70	16	
18-May-2012	0.92	21	
19-May-2012	1.10	25	
20-May-2012	1.27	29	
21-May-2012	1.49	34	
22-May-2012	1.62	37	18.7
23-May-2012	1.62	37	
24-May-2012	1.75	40	
25-May-2012	1.80	41	
26-May-2012	1.62	37	
27-May-2012	1.40	32	
28-May-2012	1.84	42	
29-May-2012	1.97	45	
30-May-2012	1.58	36	
31-May-2012	0.92	21	19.4
1-Jun-2012	0.96	22	
2-Jun-2012	0.92	21	
3-Jun-2012	0.88	20	
4-Jun-2012	0.83	19	
5-Jun-2012	0.79	18	
6-Jun-2012	0.96	22	20.5
7-Jun-2012	1.01	23	
8-Jun-2012	1.27	29	
9-Jun-2012	1.49	34	
10-Jun-2012	1.75	40	

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
11-Jun-2012	1.88	43	
12-Jun-2012	1.75	40	16.7
13-Jun-2012	1.01	23	
14-Jun-2012	1.14	26	
15-Jun-2012	1.36	31	
16-Jun-2012	1.49	34	
17-Jun-2012	1.40	32	
18-Jun-2012	1.45	33	
19-Jun-2012	1.75	40	13.6
20-Jun-2012	1.97	45	
21-Jun-2012	1.97	45	
22-Jun-2012	1.84	42	
23-Jun-2012	1.40	32	
24-Jun-2012	1.31	30	
25-Jun-2012	1.31	30	
26-Jun-2012	1.10	25	14.8
27-Jun-2012	1.27	29	
28-Jun-2012	1.58	36	
29-Jun-2012	1.84	42	
30-Jun-2012	1.66	38	
1-Jul-2012	1.49	34	
2-Jul-2012	1.53	35	12.6
3-Jul-2012	1.53	35	
4-Jul-2012	1.58	36	
5-Jul-2012	1.58	36	
6-Jul-2012	1.58	36	
7-Jul-2012	1.62	37	
8-Jul-2012	1.62	37	
9-Jul-2012	1.62	37	
10-Jul-2012	1.66	38	13.7
11-Jul-2012	1.66	38	
12-Jul-2012	1.66	38	
13-Jul-2012	1.71	39	
14-Jul-2012	1.71	39	
15-Jul-2012	1.75	40	
16-Jul-2012	1.75	40	
17-Jul-2012	1.75	40	13.5
18-Jul-2012	1.80	41	
19-Jul-2012	1.80	41	
20-Jul-2012	1.80	41	
21-Jul-2012	1.84	42	
22-Jul-2012	1.84	42	
23-Jul-2012	1.84	42	
24-Jul-2012	1.88	43	11.0
25-Jul-2012	1.88	43	
26-Jul-2012	1.93	44	
27-Jul-2012	1.93	44	
28-Jul-2012	1.93	44	
29-Jul-2012	1.97	45	
30-Jul-2012	1.97	45	

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
31-Jul-2012	1.97	45	8.8
1-Aug-2012	1.97	45	
2-Aug-2012	1.84	42	
3-Aug-2012	1.93	44	
4-Aug-2012	1.93	44	
5-Aug-2012	1.93	44	
6-Aug-2012	1.71	39	
7-Aug-2012	1.45	33	
8-Aug-2012	1.75	40	10.4
9-Aug-2012	1.88	43	
10-Aug-2012	1.97	45	
11-Aug-2012	1.80	41	
12-Aug-2012	1.49	34	
13-Aug-2012	1.71	39	
14-Aug-2012	1.75	40	14.6
15-Aug-2012	1.75	40	
16-Aug-2012	1.53	35	
17-Aug-2012	1.75	40	
18-Aug-2012	1.27	29	
19-Aug-2012	1.14	26	
20-Aug-2012	1.31	30	
21-Aug-2012	1.23	28	13.7
22-Aug-2012	1.31	30	
23-Aug-2012	1.49	34	
24-Aug-2012	1.62	37	
25-Aug-2012	1.71	39	
26-Aug-2012	1.75	40	
27-Aug-2012	1.88	43	
28-Aug-2012	1.88	43	12.7
29-Aug-2012	1.18	27	
30-Aug-2012	1.31	30	
31-Aug-2012	1.66	38	
1-Sep-2012	1.80	41	
2-Sep-2012	1.45	33	
3-Sep-2012	1.75	40	
4-Sep-2012	1.88	43	12.3
5-Sep-2012	1.93	44	
6-Sep-2012	1.80	41	
7-Sep-2012	1.80	41	
8-Sep-2012	1.58	36	
9-Sep-2012	1.01	23	
10-Sep-2012	0.92	21	
11-Sep-2012	1.05	24	
12-Sep-2012	1.27	29	17.2
13-Sep-2012	1.53	35	
14-Sep-2012	1.49	34	
15-Sep-2012	0.96	22	
16-Sep-2012	0.96	22	
17-Sep-2012	1.18	27	
18-Sep-2012	1.53	35	14.9

Appendix C
Summer Data 2010 - 2012

Date	Daily Flow		P (ug/L)
	m^3/sec	MGD	
19-Sep-2012	0.83	19	
20-Sep-2012	0.92	21	
21-Sep-2012	1.14	26	
22-Sep-2012	1.10	25	
23-Sep-2012	0.66	15	
24-Sep-2012	0.70	16	
25-Sep-2012	0.92	21	18.1
26-Sep-2012	1.14	26	
27-Sep-2012	0.83	19	
28-Sep-2012	0.74	17	
29-Sep-2012	0.66	15	
30-Sep-2012	0.57	13	

Ave. Summer 2012	1.42	32.31	14.53
Long Term Ave. Summer 2010-2012	1.41	32.10	15.33
Summer 2012 95th Percentile	**1.95**	**44.40**	**19.37**
95th Percentile Summer 2010-2012	**1.97**	**45.00**	**19.48**

TBEL (using 2010-2012 data)

Summer Only, w/ 95 %ile Flow and TP	**7.3**	**lbs/day**