LAKE & RESERVOIR ASSESSMENTS
NEUSE RIVER BASIN

Wiggins Mill Reservoir

Intensive Survey Branch
Water Sciences Section
Division of Environmental Quality
December 3, 2015

TABLE OF CONTENTS

TABLES

FIGURES

GLOSSARY

Algae	Small aquatic plants that occur as single cells, colonies, or filaments. May also be referred to as phytoplankton, although phytoplankton are a subset of algae.
Algal biovolume	The volume of all living algae in a unit area at a given point in time. To determine biovolume, individual cells in a known amount of sample are counted. Cells are measured to obtain their cell volume, which is used in calculating biovolume.
Algal density	The density of algae based on the number of units (single cells, filaments and/or colonies) present in a milliliter of water. The severity of an algae bloom is determined by the algal density as follows: Mild bloom = 10,000 to 20,000 units/ml Moderate bloom = 20,000 to 30,000 units/ml Severe bloom = 30,000 to 100,000 units/ml Extreme bloom = Greater than 100,000 units/ml
Algal Growth Potential Test (AGPT)	A test to determine the nutrient that is the most limiting to the growth of algae in a body of water. The sample water is split such that one sub-sample is given additional nitrogen, another is given phosphorus, a third may be given a combination of nitrogen and phosphorus, and one sub-sample is not treated and acts as the control. A specific species of algae is added to each sub-sample and is allowed to grow for a given period of time. The dry weights of algae in each sub-sample and the control are then measured to determine the rate of productivity in each treatment. The treatment (nitrogen or phosphorus) with the greatest algal productivity is said to be the limiting nutrient of the sample source. If the control sample has an algal dry weight greater than 5 mg/L, the source water is considered to be unlimited for either nitrogen or phosphorus.
Centric diatom	Diatoms are photosynthetic algae that have a siliceous skeleton (frustule) and are found in almost every aquatic environment including fresh and marine waters, soils, in fact almost anywhere moist. Centric diatoms are circular in shape and are often found in the water column.
Chlorophyll *a*	Chlorophyll *a* is an algal pigment that is used as an approximate measure of algal biomass. The concentration of chlorophyll *a* is used in the calculation of the NCTSI, and the value listed is a lake-wide average from all sampling locations.
Clinograde	In productive lakes where oxygen levels drop to zero in the lower waters near the bottom, the graphed changes in oxygen concentration from the surface to the lake bottom produces a curve known as clinograde curve.
Coccoid	Round or spherical shaped cell.
Conductivity	This is a measure of the ability of water to conduct an electrical current. This measure increases as water becomes more mineralized.
Dissolved oxygen	The range of surface concentrations found at the sampling locations.
Dissolved oxygen saturation	The capacity of water to absorb oxygen gas. Often expressed as a percentage, the amount of oxygen that can dissolved into water will change depending on a number of parameters, the most important being temperature. Dissolved oxygen saturation is inversely proportion to temperature, that is, as temperature increases, water's capacity for oxygen will decrease, and vice versa.
Eutrophic	Describes a lake with elevated biological productivity and low water transparency.

Eutrophication	The process of physical, chemical, and biological changes in a lake associated with the presence of one or more of the following: excessive nutrients, organic matter, silt enrichment and sedimentation.
Limiting nutrient	The plant nutrient present in lowest concentration relative to need limits growth such that addition of the limiting nutrient will stimulate additional growth. In north temperate lakes, phosphorus (P) is commonly the limiting nutrient for algal growth.
Manganese	A naturally occurring metal commonly found in soils and organic matter. As a trace nutrient, manganese is essential to all forms of biological life. Manganese in lakes is released from bottom sediments and enters the water column when the oxygen concentration in the water near the lake bottom is extremely low or absent. Manganese in lake water may cause taste and odor problems in drinking water and require additional treatment of the raw water at water treatment facilities to alleviate this problem.
Mesotrophic	Describes a lake with moderate biological productivity and water transparency.
NCTSI	North Carolina Trophic State Index was specifically developed for North Carolina lakes as part of the state's original Clean Lakes Classification Survey (NRCD 1982). Values for total organic nitrogen, total phosphorus, chlorophyll *a* and Secchi depth are used to calculate a numeric score representing the lake's degree of biological productivity.
Oligotrophic	Describes a lake with low biological productivity and high water transparency.
pH	The range of surface pH readings found at the sampling locations. This value is used to express the relative acidity or alkalinity of water.
Photic zone	The portion of the water column in which there is sufficient light for algal growth. DWQ considers 2 times the Secchi depth as depicting the photic zone.
Secchi depth	This is a measure of water transparency expressed in meters. This parameter is used in the calculation of the NCTSI value for the lake. The depth listed is an average value from all sampling locations in the lake.
Temperature	The range of surface temperatures found at the sampling locations.
Total Kjeldahl nitrogen	The sum of organic nitrogen and ammonia in a water body. High measurements of TKN typically results from sewage and manure discharges in water bodies.
Total organic Nitrogen (TON)	Total Organic Nitrogen (TON) can represent a major reservoir of nitrogen in aquatic systems during summer months. Similar to phosphorus, this concentration can be related to lake productivity and is used in the calculation of the NCTSI. The concentration listed is a lake-wide average from all sampling stations and is calculated by subtracting Ammonia concentrations from TKN concentrations.
Total phosphorus (TP)	Total phosphorus (TP) includes all forms of phosphorus that occur in water. This nutrient is essential for the growth of aquatic plants and is often the nutrient that limits the growth of phytoplankton. It is used to calculate the NCTSI. The concentration listed is a lake-wide average from all sampling stations.
Trophic state	This is a relative description of the biological productivity of a lake based on the calculated NCTSI value. Trophic states may range from extremely productive (Hypereutrophic) to very low productivity (Oligotrophic).
Turbidity	A measure of the ability of light to pass through a volume of water. Turbidity may be influenced by suspended sediment and/or algae in the water.
Watershed	A drainage area in which all land and water areas drain or flow toward a central collector such as a stream, river, or lake at a lower elevation.

Overview

The Neuse River basin is the third largest basin in North Carolina and is one of only three basins that are located entirely within the state. The Neuse River Basin covers 6,192 square miles and spans 19counties. The Neuse River originates northwest of the City of Durham in Person and Orange counties and the headwaters start in the Southern Outer Piedmont and the Carolina Slate Belt ecoregions. The uppermost 22 miles of the river's main stem is impounded behind Falls of the Neuse Reservoir dam just northeast of the city of Raleigh. Downstream of the dam, the river continues its course for approximately 185 miles southeasterly past the cities of Raleigh, Smithfield, Goldsboro, and Kinston after which it reaches the tidal waters near Street's Ferry just upstream of New Bern. Downstream of Street's Ferry, the Neuse River significantly broadens and changes into a tidal estuary that empties into the Pamlico Sound. Overall, most of the land use in the Neuse River Basin is agriculture or forest with the only major area of protected forest associated with the Croatan National Forest located in the lower reaches of the basin in Jones and Craven counties. However, there are several areas of rapidly expanding urban land use particularly associated with the cities of Durham, Raleigh, Clayton, Goldsboro, Kinston, and New Bern.

A statewide fish consumption advisory from the North Carolina Department of Health and Human Resources, Division of Public Health is in place due to mercury contamination (http://epi.publichealth.nc.gov/oee/programs/fish.html.) Fish such as blackfish (bowfin), largemouth bass and chained pickerel (jack fish) have been found to have high mercury levels.

Assessment Methodology

For this report, data from data from January 1, 2011 through December 31, 2015 were reviewed. All lakes were sampled during the summer from May through September of 2009. Data were assessed for excursions of the state's class C water quality standards for chlorophyll *a*, pH, dissolved oxygen, water temperature, turbidity, and surface metals. Other parameters discussed in this report include Secchi depth and percent dissolved oxygen saturation. Secchi depth provides a measure of water clarity and is used in calculating the trophic or nutrient enriched status of a lake. Percent dissolved oxygen saturation gives information on the amount of dissolved oxygen in the water column and may be increased by photosynthesis or depressed by oxygen-consuming decomposition.

For algae collection and assessment, water samples are collected from the photic zone, preserved in the field and taken concurrently with chemical and physical parameters. Samples were quantitatively analyzed to determine assemblage structure, density (units/ml) and biovolume (m^3/mm^3).

For the purpose of reporting, algal blooms were determined by the measurement of unit density (units/ml). Unit density is a quantitative measurement of the number of filaments, colonies or single celled taxa in a waterbody. Blooms are considered mild if they are between 10,000 and 20,000 units/ml. Moderate blooms are those between 20,000 and 30,000 units/ml. Severe blooms are between 30,000 and 100,000 units/ml. Extreme blooms are those 100,000 units/ml or greater.

An algal group is considered dominant when it comprises 40% or more of the total unit density or total biovolume. A genus is considered dominant when it comprises 30% or more of the total unit density or total biovolume.

Additional data considered as part of the use support assessment include historic DWQ water quality data, documented algal blooms and/or fish kills, problematic aquatic macrophytes, or listing on the EPA's 303(d) List of Impaired Waters.

For a more complete discussion of lake ecology and assessment, please go to http://portal.ncdenr.org/web/wq/ess/isu. The 1992 North Carolina Lake Assessment Report (downloadable from this website) contains a detailed chapter on ecological concepts that clarifies how the parameters discussed in this review relate to water quality and reservoir health..

Quality Assurance of Field and Laboratory Lakes Data

Data collected in the field via multiparameter water quality meters are uploaded into the Ambient Lakes Database within 24 hours of the sampling date. These data are then reviewed for accuracy and completeness within a week of entry. Data that have not been reviewed are given a 'P' code for 'Provisional' (data has been entered but not been verified for accuracy and/or completeness). Data that have been verified are given an 'A' code for 'Accepted'.

Chemistry data from the DWR Water Quality Laboratory are uploaded into the Lakes Database. As with the field data, laboratory results are coded 'P' until the entered data is verified for entry accuracy and completeness, after which, the code is changed to 'A'. Generally, laboratory data entered into the Lakes Database are verified within a week following the initial entry. Data, either laboratory or field, which appear to be out of range for the lake sampled are double checked against field sheets or the laboratory results by the Lakes Data Administrator for possible data entry error. If there are data entry mistakes, possible equipment, sampling, and/or analysis errors, these are investigated and corrected if possible. If the possible source of an error cannot be determined, the data remains in the database. If an error is determined, the data value is removed from the appropriate database parameter field and placed in the 'Notes' field along with a comment regarding the error. Chemistry results received from the laboratory that are given a qualification code are entered along with the assigned laboratory code.

Additional information regarding the Quality Assurance Program is covered in the Ambient Lake Monitoring Program Quality Assurance Plan. Version 2.0 (March 28, 2014) of this document is available on the ISB website (http://portal.ncdenr.org/web/wq/ess/isu).

Weather Overview for Summer 2015

The weather in North Carolina in May, 2015 was warm and wet, especially in the central portion of the state. The average statewide temperature of 67.8° F was 1.4° F above the long-term average for May. An upper level ridge over the southeast was responsible for these warmer than usual temperatures as well as dryer than normal conditions. Tropical Storm Ana, which made landfall near Myrtle Beach, SC, helped to reduce dryness in the coastal and eastern parts of the state while the western Piedmont to the mountains became abnormally dry (Figure 1).

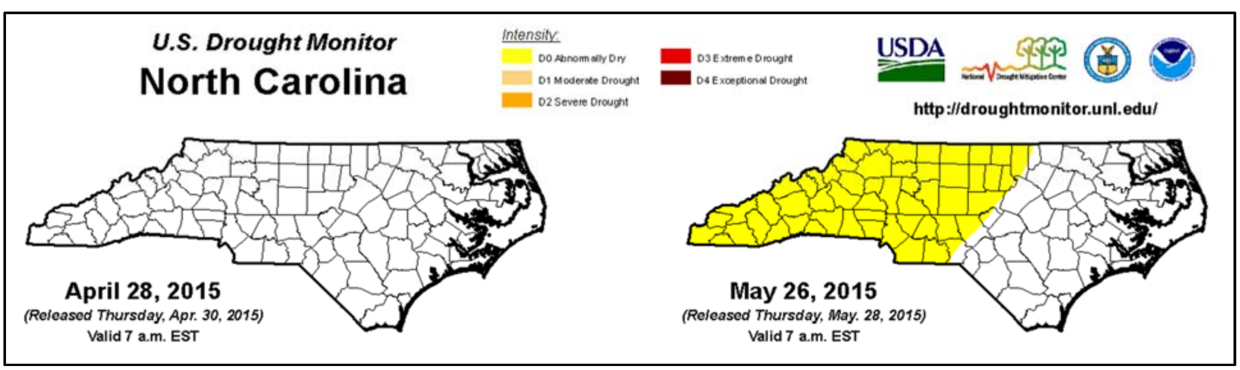

Figure 1. Increasing dryness in the western half of North Carolina in May 2015.

June 2015 was the 10th-wamest June in the past 121 years with a statewide average temperature of 76.5° F. A mid-level ridge in June brought hot, dry air into the state from the west and southwest. In Raleigh, temperatures hit 95° F from June 13th through the 24th, breaking the previous streak of high temperatures of nine consecutive days from July 1977. Precipitation in the western part of the state was below normal with the western Piedmont receiving less than three inches for the month. The eastern Piedmont and Coastal Plain, in contrast, received frequent rains and thunderstorms. New Bern had 7.7 inches of rain in June, making it the 9th wettest June for that area on record. Raleigh also received above normal rainfall (6.4 inches of rain), making June the 20th wettest June for that city.

Above normal temperatures continued through July along with dry weather due to the mid-level ridging over the southern US (Figure 2). By August 2015, drought conditions in the state expanded throughout the Piedmont with parts of the upper Neuse River Basin in Abnormal to Moderate drought conditions (Figure 3).

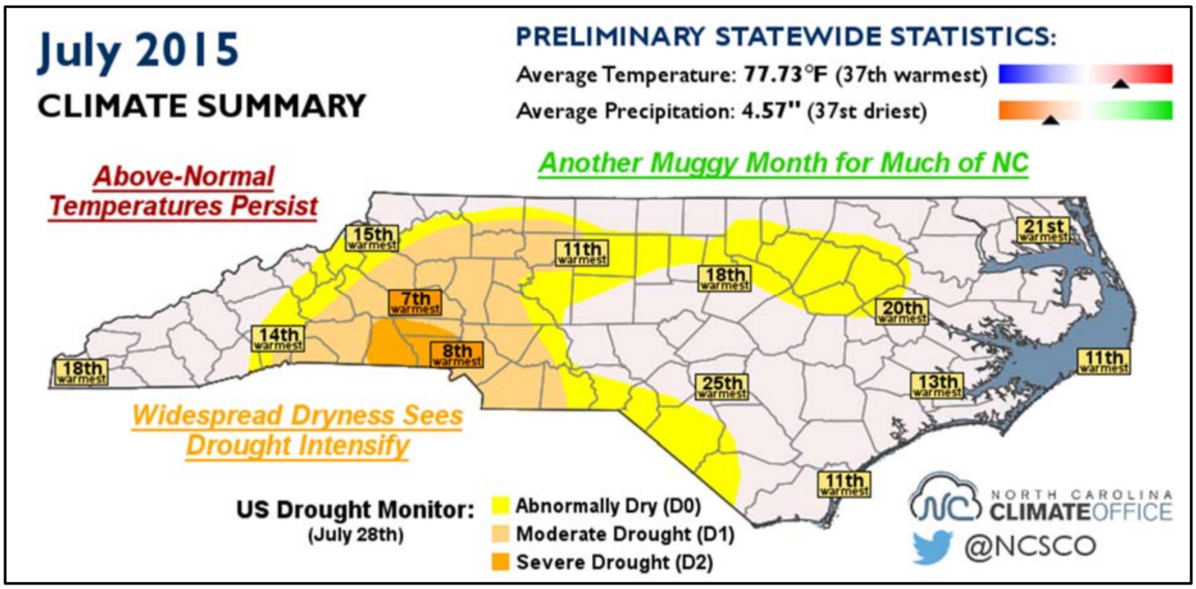

Figure 2. Increasing dryness in the state, July 2015.

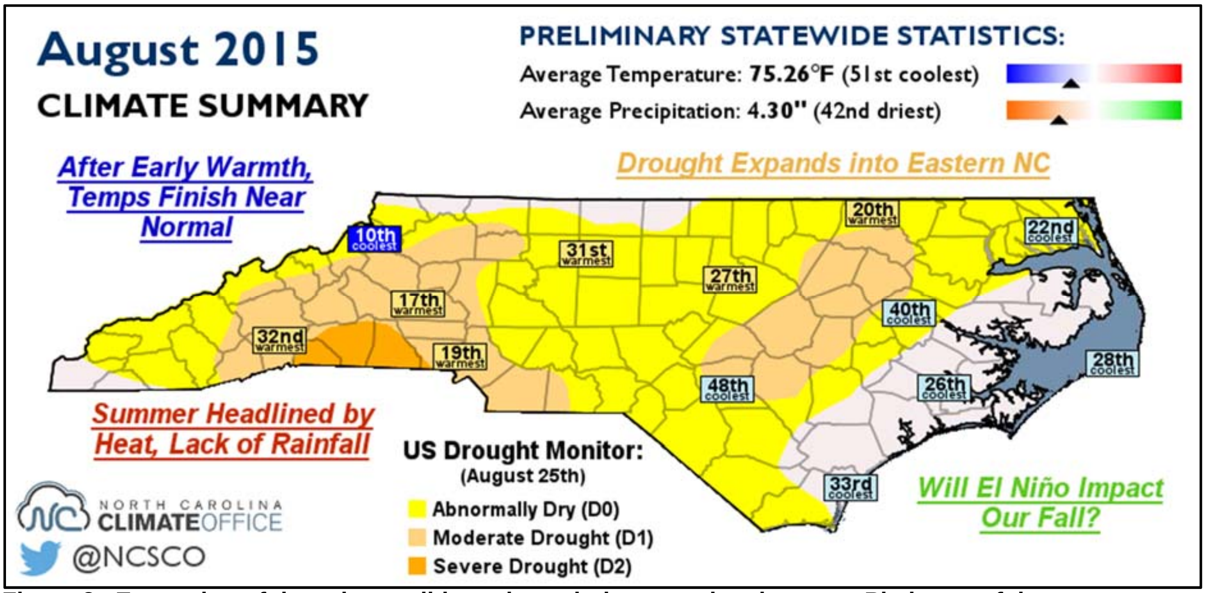

Figure 3. Expansion of drought conditions through the central and eastern Piedmont of the state, August 2015

Warm, dry conditions, which had expanded the drought throughout most of the state in the first part of September was reduced by the end of the month by much needed rainfall over some parts of the state (Figure 4 Both Raleigh and New Bern in the Neuse River Basin saw seven consecutive days of rainfall.

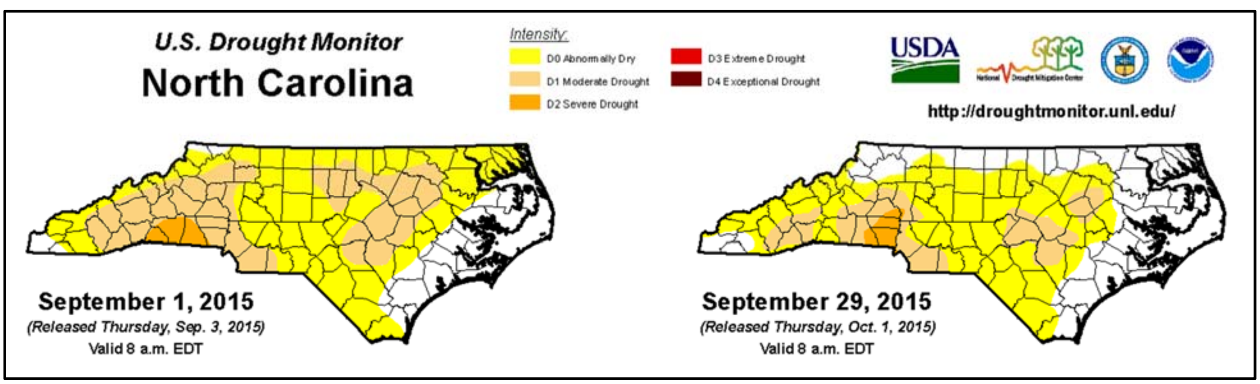

Figure 4. Decrease in drought conditions due to end of month rainfall, September 2015.

LAKE & RESERVOIR ASSESSMENTS

HUC 03020201

Lake Michie

Ambient Lakes Program Name	Lake Michie		
Trophic Status (NC TSI)	Eutrophic		
Mean Depth (meters)	26.2		
Volume ($10^6 m^3$)	15.60		
Watershed Area (mi^2)	170.0		
Classification	WS-III; NSW CA		
Stations	NEU0061G	NEU0061J	NEU0061L
Number of Times Sampled	3	3	3

The City of Durham built Lake Michie in 1926 to serve as a water supply. The drainage area of this piedmont reservoir consists of a combination of rural, forested, agricultural and urban land uses. The primary tributary to Lake Michie is the Flat River. In addition to serving as a water supply source, Lake Michie provides public recreation such as fishing and boating.

Lake Michie was sampled three time in 2015 by DEQ field staff. The lowest secchi depth was observed at the upstream lake sampling site (NEU0061G) in May (Table 1). Chlorophyll *a* values were also greater at this site as compared with the other two lake sampling sites. Nutrient concentrations in 2015 were similar to those previously observed in this reservoir.

Table 1. Water Quality Data for Lake Michie, Neuse River Basin.

	SURFACE PHYSICAL DATA										PHOTIC ZONE DATA						Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 18, 2015	NEU0061G	9.8	26.6	8.8	87	0.8	122.1%	0.05	0.65	0.02	0.02	0.67	0.63	0.04	24.0	80	15.0	12.0	
May 18, 2015	NEU0061J	9.2	26.2	8.7	84	1.1	113.8%	0.03	0.66	0.02	<0.02	0.67	0.64	0.03	16.0	76	6.5	5.3	
May 18, 2015	NEU0061L	9.1	27.1	8.7	83	1.1	114.4%	0.03	0.68	0.02	<0.02	0.69	0.66	0.03	16.0	78	6.5	5.3	26.0
June 1, 2015	NEU0061G	8.6	30.5	8.3	90	1.0	115.1%	0.04	0.64	0.02	<0.02	0.65	0.62	0.03	15.0	78	7.0	8.3	
June 1, 2015	NEU0061J	8.1	30.5	8.2	87	1.5	108.1%	0.03	0.56	0.02	<0.02	0.57	0.54	0.03	11.0	72	<6.2	5.0	
June 1, 2015	NEU0061L	8.1	29.7	8.2	86	1.2	106.2%	0.02	0.48	0.02	<0.02	0.49	0.46	0.03	5.8	88	<6.2	3.6	27.0
July 27, 2015	NEU0061G	8.4	31.0	8.3	80	1.0	113.1%	0.05	0.53	0.02	<0.02	0.54	0.51	0.03	27.0	69	7.4	7.4	
July 27, 2015	NEU0061J	7.9	30.7	8.1	77	1.3	105.8%	0.03	0.41	0.02	<0.02	0.42	0.39	0.03	21.0	64	<6.2	3.3	
July 27, 2015	NEU0061L	7.3	30.7	7.8	76	1.4	97.8%	0.02	0.41	0.02	<0.02	0.42	0.39	0.03	15.0	68	<6.2	3.0	24.0

An Algal Growth Potential Test was performed by the Region IV EPA Laboratory on water samples collected from Lake Michie (Table 2). Results of this test indicated that the most upstream (NEU0061G) and mid-lake (NEU0061J) sampling sites were nitrogen limited while the site near the dam (NEU0061L) was limited by both nitrogen and phosphorus.

Based on the calculated NCTSI scores, Lake Michie was determined to exhibit elevated biological productivity (eutrophic conditions). Lake Michie was previously determined to be eutrophic in 1988 when it was first monitored by DEQ and again in 1995 and 2010. In 1991, Lake Michie exhibited moderate biological productivity (mesotrophic).

Table 2. Algal Growth Potential Test Results for Lake Michie, July 27, 2015

	Maximum Standing Crop, Dry Weight (mg/L)			
Station	Control	C+N	C+P	Limiting Nutrient
NEU0061G	0.27	2.35	0.20	Nitrogen
NEU0061J	0.19	0.42	0.19	Nitrogen
NEU0061L	0.18	0.26	0.26	Nitrogen + Phosphorus*

Freshwater AGPT using *Selenastrum capricornutum* as test alga

C+N = Control + 1.0 mg/L Nitrate-N

C+P = Control + 0.05 mg/L Phosphate-P

*Sample rerun twice due to high variability and outliers in nitrogen and phosphorus treatments. Re-analysis confirmed potential limitation by both nutrients (data not shown).

Little River Reservoir

Ambient Lakes Program Name	Little River Reservoir		
Trophic Status (NC TSI)	Eutrophic		
Mean Depth (meters)	26.4		
Volume ($10^6 m^3$)	18.00		
Watershed Area (mi^2)	97.7		
Classification	WS-II; HQW, NSW, CA		
Stations	NEU006S	NEU006T	NEU006U
Number of Times Sampled	4	4	4

Little River Reservoir is an upper piedmont water supply for the City of Durham. Filled in February 1988, the lake has a maximum depth is 49 feet (15 meters). Retention time is normally about 74 days. Mountain Creek, Buffalo Creek, North Fork and South Fork Little River are the tributaries of this reservoir. The drainage area and is equally divided between forest, agriculture, and residences. The lake was previously classified WS-III, but was reclassified to WS-II on request from the City of Durham. An aerator operates near the lower end of this lake to breakdown lake stratification and improve the quality of the raw drinking water taken from this lake.

Little River Reservoir was sampled from May through July and in September 2015. Despite the overall eutrophic status of this reservoir based on the calculated NCTSI scores, chlorophyll *a* values were less than the state water quality standard of 40 *u*g/L (Table 3).

Table 3. Water Quality Data for Little River Reservoir, Neuse River Basin

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA							
Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Solids Total mg/L	Total Solids Suspended mg/L	Turbidity NTU	Total Hardnes mg/L
May 4, 2015	NEU006S	10.4	22.5	7.6	81	1.0	120.1%	0.04	0.61	<0.02	0.18	0.79	0.60	0.19	20.0	78	<6.2	4.9	
May 4, 2015	NEU006T	10.1	20.7	7.5	80	1.3	112.7%	0.03	0.57	<0.02	0.19	0.76	0.56	0.20	14.0	80	<6.2	3.6	
May 4, 2015	NEU006U	10.7	21.4	7.5	80	1.5	121.0%	0.03	0.52	<0.02	0.19	0.71	0.51	0.20	15.0	92	7.0	3.6	26.0
June 1, 2015	NEU006S	8.4	30.0	8.7	88	1.8	110.8%	0.03	0.54	0.02	<0.02	0.55	0.52	0.03	23.0	73	<6.2	4.6	
June 1, 2015	NEU006T	8.4	28.2	8.5	86	1.8	107.4%	0.02	0.53	0.02	<0.02	0.54	0.51	0.03	12.0	106		3.0	
June 1, 2015	NEU006U	8.9	27.7	8.6	85	1.8	113.2%	0.03	0.62	0.02	<0.02	0.63	0.60	0.03	36.0	74	<6.2	2.9	28.0
July 27, 2015	NEU006S	8.0	30.2	8.5	87	1.3	106.2%	0.02	0.43	0.02	<0.02	0.44	0.41	0.03	11.0	62	12.0	3.9	
July 27, 2015	NEU006T	7.6	30.0	8.4	87	1.3	100.6%	0.02	0.40	0.02	<0.02	0.41	0.38	0.03	9.5	61	<6.2	4.4	
July 27, 2015	NEU006U	7.7	29.8	8.4	87	1.3	101.5%	0.02	0.35	0.02	<0.02	0.36	0.33	0.03	7.8	62	<6.2	3.1	27.0
September 28, 2015	NEU006S	4.4	22.6	6.7	88	1.2	50.9%	0.03	0.51	0.07	<0.02	0.52	0.44	0.08	25.0	70	<6.2	3.7	
September 28, 2015	NEU006T	5.0	22.5	6.8	88	1.2	57.8%	0.02	0.52	0.10	<0.02	0.53	0.42	0.11	16.0	65	6.2	3.6	
September 28, 2015	NEU006U	5.4	22.5	6.9	88	1.1	62.4%	0.02	0.54	0.10	<0.02	0.55	0.44	0.11	17.0	84	<6.2	4.6	29.0

An Algal Growth Potential Test run on water samples collected at each sampling site in July determined that nuisance algal growth in Little River Reservoir was co-limited for nitrogen and phosphorus (Table 4). In 2015, Little River Reservoir was determined to have eutrophic or elevated biological productivity in May, June and September. In July, the trophic state indicated the presence of moderate productivity or mesotrophic conditions. The trophic state of this reservoir has alternated between mesotrophic or eutrophic since it was first monitored by DWQ in 1988.

Table 4. Algal Growth Potential Test Results for Little River Reservoir, July 27, 2015.

	Maximum Standing Crop, Dry Weight (mg/L)			
Station	Control	C+N	C+P	Limiting Nutrient*
NEU006S	0.30	0.25	0.22	Nitrogen + Phosphorus
NEU006T	0.31	0.29	0.21	Nitrogen + Phosphorus
NEU006V	0.22	0.21	0.18	Nitrogen + Phosphorus

Freshwater AGPT using *Selenastrum capricornutum* as test alga

C+N = Control + 1.0 mg/L Nitrate-N

C+P = Control + 0.05 mg/L Phosphate-P

Lake Butner

Ambient Lakes Program Name	Lake Butner	
Trophic Status (NC TSI)	Mesotrophic	
Mean Depth (meters)	29.5	
Volume ($10^6 m^3$)	1.40	
Watershed Area (mi^2)	30.1	
Classification	WS-II; HQW, NSW, CA	
Stations	NEU007	NEU007B
Number of Times Sampled	5	5

Lake Butner (also known as R.D. Holt Reservoir) is located on Knap of Reeds Creek in Granville County. The Town of Butner uses this lake for water supply and for recreational fishing and boating. The maximum depth is 49 feet (15 meters). The watershed is composed of rolling topography characterized by farmland and forests.

DEQ field staff monitored Lake Butner monthly from May through September 2015. Table 5 shows the surface physical measurements and photic zone chemistry results for each month this lake was monitored. Chlorophyll *a* values did not exceed 10 *u*g/L and Secchi depths ranged from 1.0 to 3.1 meters. Lake Butner NCTSI scores for May, June and September indicated that the reservoir was mesotrophic and in July and August it was oligotrophic. Overall, for 2015 this lake was determined to be mesotrophic. Lake Butner's trophic state has ranged between oligotrophic (very low biological productivity) to eutrophic since it was first monitored by DWQ in 1988.

Table 5. Water Quality Data for Lake Butner, Neuse River Basin.

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA							
Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Solids Total mg/L	Total Solids Suspended mg/L	Turbidity NTU	Total Hardnes mg/L
May 27, 2015	NEU007	8.2	26.2	7.2	58	1.5	101.5%	0.02	0.47	0.02	<0.02	0.48	0.45	0.03	5.7	59	<6.2	2.9	
May 27, 2015	NEU007B	7.9	25.7	7.1	58	1.5	96.9%	0.03	0.52	0.02	0.05	0.57	0.50	0.07	5.1	8.1	<6.2	3.2	18.0
June 10, 2015	NEU007					1.0		0.02	0.49	0.02	<0.02	0.50	0.47	0.03	5.3	48	<6.2	3.3	
June 10, 2015	NEU007B					1.0		0.02	0.49	<0.02	0.02	0.51	0.48	0.03	4.7	57	<6.2	2.0	18.0
July 29, 2015	NEU007	6.7	30.3	7.4	60	2.4	89.1%	0.02	0.36	<0.02	<0.02	0.37	0.35	0.02	2.7	72		2.6	
July 29, 2015	NEU007B	6.8	29.8	7.4	59	2.9	89.7%	<0.02	0.36	<0.02	<0.02	0.37	0.35	0.02	3.7	54	<6.2	2.3	18.0
August 20, 2015	NEU007	7.3	28.3	7.3	61	1.9	93.8%	<0.02	0.37	<0.02	<0.02	0.38	0.36	0.02	4.0	64		3.3	
August 20, 2015	NEU007B	7.1	27.7	7.2	60	3.1	90.3%	<0.02	0.36	<0.02	<0.02	0.37	0.35	0.02	3.3	56	<6.2	1.9	17.0
September 24, 2015	NEU007	7.1	23.3	7.1	58	1.7	83.3%	0.02	0.38	<0.02	<0.02	0.39	0.37	0.02	3.8	58	<6.2	2.9	
September 24, 2015	NEU007B	7.7	23.7	7.1	58	2.8	91.0%	0.02	0.42	<0.02	<0.02	0.43	0.41	0.02	2.8	63	<6.2	2.0	17.0

Lake Rogers

Ambient Lakes Program Name	Lake Rogers
Trophic Status (NC TSI)	Hypereutrophic
Mean Depth (meters)	8.5
Volume ($10^6 m^3$)	0.50
Watershed Area (mi^2)	17.4
Classification	WS-II; HQW, NSW, CA
Stations	NEU017A
Number of Times Sampled	5

Lake Rogers is the water supply reservoir for the Town of Creedmoor. This reservoir was built in 1939 and has a surface area of approximately 210 acres (57 hectares). The maximum depth of the reservoir is approximately nine feet (three meters). Tributaries to Lake Rogers include Ledge Creek and Holman Creek. Land in the drainage area consists of mostly of forested land along with some residential, agricultural, and wetland areas.

Lake Rogers was sampled five times by DEQ field staff in 2015. Table 6 shows the surface physical measurements and photic zone chemistry results for each month this lake was monitored. From July through September, chlorophyll a values were greater than the state water quality standard of 40 ug/L. Secchi depths were less than a meter, indicating limited water clarity. Turbidity values from July through September were greater than the state water quality standard of 25 mg/L for a lake not designated as a Trout Water (Tr). Based on the calculated NCTSI scores, Lake Rogers was found to have elevated biological productivity (eutrophic conditions) in May and June 2015. From July through September 2015, the NCTSI scores indicated the presence of excessive biological productivity or hypereutrophic conditions. The trophic status of Lake Rogers has varied from eutrophic to hypereutrophic since monitoring by DEQ began in 1991.

Table 6. Water Quality Data for Lake Rogers, Neuse River Basin.

	SURFACE PHYSICAL DATA							PHOTIC ZONE DATA									Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 27, 2015	NEU017A	7.0	26.4	7.3	98	0.5	86.9%	0.08	1.10	0.020	<0.02	1.11	1.08	0.03	22.0	100	15.0	15.0	31.0
June 10, 2015	NEU017A					0.8		0.06	1.20	0.02	<0.02	1.21	1.18	0.03	38.0	102	25.0	18.0	31.0
July 29, 2015	NEU017A	6.5	29.9	8.5	103	0.3	85.9%	0.13	2.10	<0.02			2.09		110.0	109	18.0	30.0	32.0
August 20, 2015	NEU017A	3.2	27.8	7.2	109	0.3	40.7%	0.16	1.80	<0.02			1.79		94.0	120	23.0	32.0	35.0
September 24, 2015	NEU017A	6.9	22.7	7.3	95	0.3	80.0%	0.14	1.60	<0.01	<0.01	1.61	1.59	0.02	74.0	129	31.0	27.0	27.0

Corporation Lake

Ambient Lakes Program Name	Corporation Lake	
Trophic Status (NC TSI)	Eutrophic	
Mean Depth (meters)	3.3	
Volume ($10^6 m^3$)	0.90	
Watershed Area (mi^2)	40.9	
Classification	WS-II; HQW, NSW, CA	
Stations	NEU00C	NEU00C1
Number of Times Sampled	5	5

Corporation Lake is a water supply reservoir located on the Eno River downstream of Lake Orange. This lake was built in 1967 by the Orange-Alamance Water Authority. The surface area is 28 acres (11 hectares) and the maximum depth is approximately eight feet (2.5 meters). McGowan Creek is a tributary of Corporation Lake. The watershed is composed of forested and agricultural areas with a rolling topography.

Monitoring of Corporation Lake was performed monthly from May through September 2015 by DEQ field staff. Table 7 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled. The invasive aquatic weed*, Hydrilla verticillata*, is present in this reservoir. Based on the calculated NCTSI scores, Corporation Lake was determined to exhibit eutrophic conditions (elevated biological productivity) in 2015. The trophic state of Corporation Lake has ranged between mesotrophic and eutrophic since it was first monitored by DEQ in 1988.

Table 7. Water Quality Data for Corporation Lake, Neuse River Basin.

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA					Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 5, 2015	NEU00C	8.2	17.3	6.9	76	1.0	85.4%	0.04	0.42	0.06	0.31	0.73	0.36	0.37	1.6	83		14.0	
May 5, 2015	NEU00C1	7.8	18.8	6.9	76	0.7	83.8%	0.06	0.55	0.07	0.27	0.82	0.48	0.34	3.8	94	14.0	19.0	28.0
June 2, 2015	NEU00C	6.1	21.8	6.9	85	0.9	69.9%	0.05	0.42	0.06	0.36	0.78	0.36	0.42	2.7	86	<6.2	12.0	
June 2, 2015	NEU00C1	5.8	24.6	6.9	88	0.9	70.0%	0.05	0.58	0.10	0.29	0.87	0.48	0.39	7.6	88	9.8	14.0	31.0
July 1, 2015	NEU00C	6.5	24.2	7.0	84	0.7	77.5%	0.05	0.46	0.04	0.31	0.77	0.42	0.35	12.0	80	8.5	14.0	
July 1, 2015	NEU00C1	6.6	27.8	7.1	84	0.7	84.0%	0.05	0.53	0.08	0.24	0.77	0.45	0.32	8.1	84	14.0	15.0	29.0
August 6, 2015	NEU00C	6.7	26.2	7.4	82	1.1	82.9%	0.03	0.38	0.02	0.13	0.51	0.36	0.15	5.8	73	9.0	6.2	
August 6, 2015	NEU00C1	5.8	26.7	7.4	85	1.0	72.4%	0.05	0.48	0.07	0.08	0.56	0.41	0.15	8.0	82	24.0	16.0	32.0
September 1, 2015	NEU00C	6.5	22.9	7.7	79	1.1	75.7%	0.04	0.49	0.02	0.07	0.56	0.47	0.09	8.1	87	18.0	12.0	
September 1, 2015	NEU00C1	6.3	24.6	7.2	81	0.7	75.7%	0.07	0.55	0.05	0.03	0.58	0.50	0.08	14.0	110	30.0	26.0	26.0

Lake Ben Johnson

Ambient Lakes Program Name	Lake Ben Johnson
Trophic Status (NC TSI)	Eutrophic
Mean Depth (meters)	4.9
Volume ($10^6 m^3$)	0.02
Watershed Area (mi^2)	64.9
Classification	WS-II; HQW, NSW, CA
Stations	NEU00D
Number of Times Sampled	5

Lake Ben Johnson is a run-of-the- river lake formed by a dam on the Eno River downstream of Corporation Lake. This lake has a maximum depth of approximately seven feet (two meters). The watershed consists of a mix of agricultural, urban and forested areas. The City of Hillsborough owns the lake, which is also the back-up water supply source for this municipality.

Lake Ben Johnson was monitored monthly from May through September 2015. Table 8 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled. Surface dissolved oxygen on September 1st was very low, but did not violate the state water quality standard of less than 4.0 mg/L for an instantaneous reading. Based on the calculated NCTSI scores, Lake Ben Johnson was determined to exhibit eutrophic conditions (elevated biological productivity) in 2015. This lake has ranged between mesotrophic to eutrophic (elevated biological productivity) since it was first monitored by DEQ in 1988.

Table 8. Water Quality Data for Lake Ben Johnson, Neuse River Basin.

	SURFACE PHYSICAL DATA							PHOTIC ZONE DATA									Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 5, 2015	NEU00D	7.9	19.0	7.1	76	0.8	85.2%	0.05	0.45	0.06	0.27	0.72	0.39	0.33	2.9	84	9.2	19.0	28.0
June 2, 2015	NEU00D	5.4	25.5	7.0	89	1.0	66.2%	0.04	0.51	0.07	0.24	0.75	0.44	0.31	5.7	89	6.5	11.0	31.0
July 1, 2015	NEU00D	5.3	26.3	7.0	82	0.8	65.7%	0.04	0.54	0.08	0.24	0.78	0.46	0.32	7.5	74	<6.2	12.0	27.0
August 6, 2015	NEU00D	6.7	29.7	7.4	86	1.0	49.3%	0.03	0.38	<0.02	0.07	0.45	0.37	0.08	19.0	66	7.8	7.8	31.0
September 1, 2015	NEU00D	4.0	26.0	7.4	85	1.1	88.2%	0.03	0.50	0.07	0.07	0.57	0.43	0.14	6.9	76	<6.2	8.4	29.0

West Fork Eno River Reservoir

Ambient Lakes Program Name	West Fork Eno River Reservoir		
Trophic Status (NC TSI)	Eutrophic		
Mean Depth (meters)	13.0		
Volume ($10^6 m^3$)	3.00		
Watershed Area (mi^2)	9.5		
Classification	WS-II; HQW, NSW, CA		
Stations	NEUWFE2	NEUWFE3	NEUWFE4
Number of Times Sampled	4	4	4

West Fork Eno River Reservoir is maintained by the Town of Hillsborough, which is the largest water system withdrawer. The reservoir was constructed on the West Fork of the Eno River beginning in 1999 and was completed in 2000. The watershed consists of forested and rural areas with agricultural fields, pastureland and residences.

This reservoir was monitored monthly from May through July and September 2015 by DEQ field staff. Table 9 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled. Secchi depths were at or greater than one meter from May through July, then dropped to less than a meter at all three sampling sites in September. Chlorophyll a values were less than the state water quality standard of 40ug/L with the exception of values for the mid and lower lake sampling sites in September. The invasive aquatic weed, *Hydrilla verticillata*, is present in West Fork Eno River Reservoir and control methods have consisted of herbicide applications and stocking with sterile grass carp. Based on the calculated NCTSI scores, this reservoir exhibited elevated biological productivity (eutrophic conditions) in 2015. West Fork Eno River Reservoir has varied between mesotrophic and eutrophic since it was first monitored by DEQ in 2010.

Table 9. Water Quality Data for West Fork Eno River Reservoir, Neuse River Basin.

	SURFACE PHYSICAL DATA							PHOTIC ZONE DATA									Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 5, 2015	NEUWFE2	9.4	24.3	7.6	76	1.4	112.3%	0.05	0.64	0.04	0.03	0.67	0.60	0.07	11.0	76	6.8	6.7	
May 5, 2015	NEUWFE3	9.1	22.6	7.6	75	1.5	105.3%	0.04	0.62	0.05	0.04	0.66	0.57	0.09	14.0	76	<6.2	4.2	
May 5, 2015	NEUWFE4	9.4	20.9	7.4	75	1.3	105.3%	0.04	0.72	0.06	0.04	0.76	0.66	0.10	14.0	84	<6.2	4.3	23.0
June 8, 2015	NEUWFE2	7.9	27.8	7.6	77	1.2	101.0%	0.03	0.70	0.02	<0.02	0.71	0.68	0.03	10.0	63	<6.2	4.7	
June 8, 2015	NEUWFE3	8.0	27.0	7.7	77	1.2	100.9%	0.02	0.61	0.02	<0.02	0.62	0.59	0.03	9.8	66	<6.2	4.4	
June 8, 2015	NEUWFE4	8.1	26.0	7.6	76	1.0	100.2%	0.02	0.60	0.02	0.02	0.62	0.58	0.04	12.0	60	6.2	5.1	24.0
July 7, 2015	NEUWFE2	7.5	30.2	7.8	77	1.2	99.6%	0.04	0.51	0.02	<0.02	0.52	0.49	0.03	21.0	60	<6.2	3.8	
July 7, 2015	NEUWFE3	7.8	29.5	8.0	77	1.2	102.3%	0.03	0.54	0.02	<0.02	0.55	0.52	0.03	18.0	61	<6.2	4.0	
July 7, 2015	NEUWFE4	7.5	29.4	7.9	77	1.2	98.2%	0.02	0.55	0.02	<0.02	0.56	0.53	0.03	9.1	60	<6.2	4.2	23.0
September 30, 2015	NEUWFE2	6.6	24.2	7.4	82	0.7	78.7%	0.05	0.88	0.18	0.02	0.90	0.70	0.20	17.0	74		10.0	
September 30, 2015	NEUWFE3	8.4	23.8	7.6	77	0.7	99.4%	0.06	0.85	0.02	<0.02	0.86	0.83	0.03	63.0	78	82.0	11.0	
September 30, 2015	NEUWFE4	8.5	23.5	7.7	77	0.7	100.1%	0.06	0.87	<0.02	<0.02	0.88	0.86	0.02	56.0	79	9.5	10.0	25.0

Lake Orange

Ambient Lakes Program Name	Lake Orange		
Trophic Status (NC TSI)	Eutrophic		
Mean Depth (meters)	13.1		
Volume ($10^6 m^3$)	0.30		
Watershed Area (mi^2)	10.0		
Classification	WS-II; HQW, NSW, CA		
Stations	NEU00B	NEU00B2	NEU00B4
Number of Times Sampled	5	5	5

Lake Orange is a piedmont water supply reservoir for the City of Hillsborough. Maximum depth is 20 feet (six meters). Major tributaries to Lake Orange include the East and West Fork of the Eno River.

DEQ field staff monitored Lake Orange monthly, from May through September 2015 by DEQ field staff. Table 10 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled.

Table 10. Water Quality Data for Lake Orange, Neuse River Basin.

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA					Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 12, 2015	NEU00B	8.4	25.9	7.7	83	1.9	103.4%	0.03	0.52	0.02	<0.02	0.53	0.50	0.03	9.0	72	<6.2	5.6	
May 12, 2015	NEU00B2	8.4	26.1	7.7	83	1.8	103.8%	0.04	0.70	0.02	<0.02	0.71	0.68	0.03	9.6	74	<6.2	7.1	
May 12, 2015	NEU00B4	8.7	25.1	7.8	82	1.7	105.5%	0.03	0.56	0.02	<0.02	0.57	0.54	0.03	12.0	72	<6.2	5.8	26.0
June 2, 2015	NEU00B	7.2	27.8	7.5	84	1.0	91.6%	0.03	0.59	0.02	<0.02	0.60	0.57	0.03	11.0	78	<6.2	8.0	
June 2, 2015	NEU00B2	7.1	28.0	7.3	85	0.9	90.3%	0.03	0.60	0.02	<0.02	0.61	0.58	0.03	14.0	81	<6.2	7.5	
June 2, 2015	NEU00B4	7.4	27.3	7.6	84	0.9	93.9%	0.03	0.55	<0.02	<0.02	0.56	0.54	0.02	16.0	82	<6.2	7.4	29.0
July 1, 2015	NEU00B	7.3	28.7	7.3	50	1.9	94.4%	0.03	0.49	<0.02	<0.02	0.50	0.48	0.02	13.0	80	<6.2	4.2	
July 1, 2015	NEU00B2	7.3	27.9	7.3		1.4	93.1%	0.03	0.59	<0.02	<0.02	0.60	0.58	0.02	7.9	72	<6.2	3.2	
July 1, 2015	NEU00B4	7.2	28.2	7.2	83	1.8	92.3%	0.02	0.50	0.02	<0.02	0.51	0.48	0.03	9.5	70	<6.2	3.4	28.0
August 6, 2015	NEU00B	7.4	31.0	8.1	83	2.0	99.6%	0.02	0.45	<0.02	<0.02	0.46	0.44	0.02	12.0	89	<6.2	4.4	
August 6, 2015	NEU00B2	7.6	30.9	8.4	83	1.8	102.1%	0.03	0.44	<0.02	<0.02	0.45	0.43	0.02	9.9	92	<6.2	4.4	
August 6, 2015	NEU00B4	7.4	30.8	8.3	83	2.1	99.3%	0.03	0.54	<0.02	<0.02	0.55	0.53	0.02	3.3	77	<6.2	6.6	28.0
September 1, 2015	NEU00B	7.6	27.4	7.8	88	0.8	96.1%	0.02	0.43	<0.02	<0.02	0.44	0.42	0.02	11.0	78	<6.2	4.2	
September 1, 2015	NEU00B2	7.1	26.9	7.8	88	0.7	89.0%	0.02	0.47	<0.02	<0.02	0.48	0.46	0.02	16.0	75	<6.2	5.1	
September 1, 2015	NEU00B4	7.4	27.4	8.0	88	1.8	93.6%	0.02	0.42	<0.02	<0.02	0.43	0.41	0.02	13.0	70	<6.2	5.4	28.0

Water samples collected from Lake Orange in August were used in an Algal Growth Potential Test (AGPT) conducted by the Region IV EPA laboratory. Results of this test indicated that algal growth in the upper and lower ends of this lake were limited by the nutrient, phosphorus (Table 11). In contrast, the sampling site near the middle of the lake was limited by both nitrogen and phosphorus. Based on the calculated NCTSI scores, Lake Orange was determined to exhibit eutrophic conditions (elevated biological productivity) in 2015. Lake Orange has been eutrophic since it was first monitored by DEQ in 1988 with the exception of a mesotrophic (moderate biological productivity) score in 1991.

Table 11. Algal Growth Potential Test Results for Lake Orange, August 6, 2015.

Station	Maximum Standing Crop, Dry Weight (mg/L)				Limiting Nutrient
	Control	C+N	C+P	C+N+P	
NEU00B2	0.49	0.42	0.81	24.95	Phosphorus
NEU00B	0.33	0.34	0.33	22.51	Nitrogen + Phosphorus
NEU00B4	0.27	0.29	0.43	23.74	Phosphorus

Freshwater AGPT using *Selenastrum capricornutum* as test alga

C+N = Control + 1.0 mg/L Nitrate-N

C+P = Control + 0.05 mg/L Phosphate-P

C+N+P = Control + 1.0 mg/L Nitrate-N + 0.05 mg/L Phosphate-P

Falls of the Neuse Reservoir

Ambient Lakes Program Name	**Falls of the Neuse Reservoir**											
Trophic Status (NC TSI)	**Eutrophic**											
Mean Depth (meters)	**16.4**											
Volume ($10^6 m^3$)	**176.60**											
Watershed Area (mi^2)	**769.9**											
Classification	**WS-IV, B; NSW, CA**											
Stations	**LC01**	**LI01**	**LLC01**	**NEU013**	**NEU013B**	**NEU0171B**	**NEU018C**	**NEU018E**	**NEU019E**	**NEU019L**	**NEU019P**	**NEU020D**
Number of Times Sampled	**56**	**53**	**56**	**56**	**57**	**56**	**12**	**56**	**57**	**57**	**57**	**56**

Falls of the Neuse Reservoir (Falls Lake) is a large impoundment of the upper Neuse River Basin. This reservoir is used for a variety of purposes including recreation, and as the main water supply reservoir for the City of Raleigh and surrounding towns in Wake County, NC. Falls Lake Dam was constructed in 1981 by the US Army Corps of Engineers (ACOE) and the reservoir began filling in 1983. This reservoir is located on the headwaters of the Neuse River, which is formed by the confluence of the Eno and Flat Rivers in Durham County. Other tributaries include the Little River, and Knap of Reeds, Ellerbe, Ledge, Lick, Little Lick, and Beaverdam Creeks. The watershed of this lake contains a mixture of urban, residential, agricultural and forested areas.

DEQ staff monitored Falls of the Neuse Reservoir 57 times from January 1, 2011 to September 30, 2015 (Appendix A). Surface dissolved oxygen ranged from 4.2 to 13.6 mg/L and surface pH ranged from 5.6 to 10.0 s.u. (1.1% exceedance). Secchi depths in Falls of the Neuse Reservoir were predominantly less than a meter, indicating limited water clarity, with a range of 0.1 to 2.2 meters and a mean of 0.7 meter. Chlorophyll *a* ranged from 2.5 to 105.0 *u*g/L (mean = 29.4 *u*g/L). Turbidity in the reservoir ranged from 2.7 to 110.0 NTU (mean = 12.8 NTU). An Algal Growth Potential Test (AGPT) performed on water samples collected at sampling sites located in the upper end of the reservoir (NEU013B) and the lower end near the dam (NEU020D) indicated that these two sampling sites were limited for nitrogen on the day they were sampled (Table 12).

Table 12. Algal Growth Potential Test Results for Falls of the Neuse Reservoir, July 16, 2015.

Station	Maximum Standing Crop, Dry Weight (mg/L)			Limiting Nutrient
	Control	C+N	C+P	
NEU020D	0.33	1.27	0.26	Nitrogen
NEU013B	1.58	7.02	1.49	Nitrogen

Freshwater AGPT using *Selenastrum capricornutum* as test alga

C+N = Control + 1.0 mg/L Nitrate-N

C+P = Control + 0.05 mg/L Phosphate-P

Based on the calculated NCTSI scores for each of the sampling trips performed from January 2011 through September 2015, Falls of the Neuse Reservoir exhibited elevated biological productivity or eutrophic conditions, and has been consistently eutrophic since sampling by DEQ began in 1983.

Big Lake

Ambient Lakes Program Name	**Big Lake**	
Trophic Status (NC TSI)	**Eutrophic**	
Mean Depth (meters)	**6.5**	
Volume ($10^6 m^3$)	**0.05**	
Watershed Area (mi^2)	**7.0**	
Classification	**B; NSW**	
Stations	**NEU035G**	**NEU035H**
Number of Times Sampled	**3**	**3**

Big Lake is located in Umstead State Park in northwestern Wake County, adjacent to the Raleigh-Durham International Airport. Sycamore Creek is impounded twice within the park, first forming Big Lake and then Sycamore Lake. Land use in Big Lake's watershed is primarily forest and agriculture; and urban development. Big Lake has a maximum depth of 16 feet (five meters) and a mean hydraulic retention time of 25 days.

Monitoring of Big Lake was performed in May, June and August 2015 by DEQ field staff. Table 13 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled. The invasive aquatic weed, *Hydrilla verticillata*, occurs in Big Lake and efforts to control this plant in 2015 involved re-stocking of grass carp and applications of herbicide. Based on the calculated NCTSI scores, Big Lake was determined to exhibit eutrophic conditions (elevated biological productivity) in 2015. Big lake has been consistently eutrophic since it was first monitored by DEQ in 1981.

Table 13. Water Quality Data for Big Lake, Neuse River Basin.

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA					Total	
			Temp			Secchi										Solids	Solids	
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU
May 7, 2015	NEU035H	9.5	23.0	7.7	115	0.8	110.8%	0.07	0.85	0.07	0.15	1.00	0.78	0.22	33.0	82	6.2	15.0
June 1, 2015	NEU035H	8.6	28.4	8.2	131	1.3	110.7%	0.07	0.84	0.02	<0.02	0.85	0.82	0.03	36.0	110	16.0	16.0
August 3, 2015	NEU035H	8.8	30.5	8.8	82	0.9	117.5%	0.04	0.73	<0.02	<0.02	0.74	0.72	0.02	36.0	74	8.2	9.8

Reedy Creek Lake

Ambient Lakes Program Name	Reedy Creek Lake
Trophic Status (NC TSI)	Eutrophic
Mean Depth (meters)	7.0
Volume ($10^6 m^3$)	0.14
Watershed Area (mi^2)	4.0
Classification	B; NSW
Stations	NEU035A7
Number of Times Sampled	3

Reedy Creek Lake is located in Umstead State Park, which is adjacent to the Raleigh Durham International Airport. This lake is relatively small with a surface area of 20 acres (eight hectares), a maximum depth of 13 feet (four meters) and a retention time of 11 days. Land use within the watershed is primarily forest and urban. This lake is one of three lakes (Big Lake, Reedy Creek and Sycamore) located within Umstead State Park. Reedy Creek Lake is used primarily for education and recreation.

Monitoring of Reedy Creek Lake was performed in May, June and August 2015 by DEQ field staff. Table 14 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled. Based on the calculated NCTSI scores, Reedy Creek Lake was determined to exhibit eutrophic conditions (elevated biological productivity) in 2015. *Hydrilla verticillata,* a nuisance aquatic weed, occurs in Reedy Creek Lake. Herbicide applications were performed in 2015 to control this plant. Reedy Creek Lake was previously determined to be eutrophic in 1995 and mesotrophic (exhibiting moderate biological productivity) in 1991 when it was first monitored by DEQ.

Table 14. Water Quality Data for Reedy Creek Lake, Neuse River Basin.

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA					Total	
			Temp			Secchi										Solids	Solids	
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU
May 7, 2015	NEU035A7	10.1	23.8	8.0	102	1.0	119.6%	0.06	0.61	0.02	<0.02	0.62	0.59	0.03	11.0	74	18.0	15.0
June 1, 2015	NEU035A7	9.5	29.5	8.7	123	1.0	124.6%	0.07	0.78	0.02	0.01	0.79	0.76	0.03	20.0	110	21.0	16.0
August 3, 2015	NEU035A7					0.5		0.05	1.10	<0.02	<0.02	1.11	1.09	0.02	59.0	82	12.0	19.0

Sycamore Lake

Ambient Lakes Program Name	Sycamore Lake
Trophic Status (NC TSI)	Eutrophic
Mean Depth (meters)	6.6
Volume ($10^6 m^3$)	0.17
Watershed Area (mi^2)	4.2
Classification	B; NSW
Stations	NEU035J
Number of Times Sampled	3

Sycamore Lake is the third of the three lakes monitored in Umstead State Park. Sycamore Lake, with a surface area of 22 acres and is relatively small. The maximum depth of 13 feet (four meters). Land use in the watershed is primarily forest and agriculture. Sycamore is used for recreation and education.

Sycamore Lake monitoring was performed in May, June and August 2015 by DEQ field staff. Table 15 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled. Due to the presence of *Hydrilla verticillata*, an invasive aquatic weed, Reedy Creek Lake was restocked with sterile grass carp in 2015 as a means of controlling this plant. Based on the calculated NCTSI scores, Sycamore Lake was determined to exhibit eutrophic conditions (elevated biological productivity) in 2015. This lake has been consistently eutrophic since it was first monitored by DEQ in 1991.

.

Table 15. Water Quality Data for Sycamore Lake, Neuse River Basin.

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA					Total	
			Temp			Secchi										Solids	Solids	
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU
May 7, 2015	NEU035J	9.9	23.0	7.7	106	0.8	115.4%	0.06	0.81	0.05	0.11	0.92	0.76	0.16	39.0	80	9.8	18.0
June 1, 2014	NEU035J	7.7	28.4	7.7	130	1.4	99.1%	0.05	0.79	0.02	<0.02	0.80	0.77	0.03	25.0	104	12.0	11.0
August 3, 2015	NEU035J	9.8	29.4	8.9	84	0.7	128.4%	0.05	0.90	<0.02	<0.02	0.91	0.89	0.02	44.0	102	11.0	13.0

Lake Wheeler

Ambient Lakes Program Name	Lake Wheeler	
Trophic Status (NC TSI)	Eutrophic	
Mean Depth (meters)	13.1	
Volume ($10^6 m^3$)	7.60	
Watershed Area (mi^2)	28.2	
Classification	WS-III; NSW	
Stations	NEU055A01	NEU055A02
Number of Times Sampled	5	5

Lake Wheeler is located in southwestern Wake County upstream of Lake Benson on Swift Creek. Approximately half of the watershed is forested, but urban and agricultural areas are also significant. This lake has a maximum depth of 30 feet (nine meters) and an average hydraulic retention time of 72 days. Lake Wheeler provides water for the City of Raleigh via flow to Lake Benson, which is located immediately downstream. This lake is also used extensively for recreational purposes including canoeing and kayaking.

Lake Wheeler was sampled monthly from May through September 2015 by DEQ field staff. Table 16 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled. Based on the calculated NCTSI scores, Lake Wheeler was determined to exhibit eutrophic conditions (elevated biological productivity) in 2015. The trophic state of Lake Wheeler has varied between mesotrophic (moderate biological productivity) and eutrophic since is was first monitored by DEQ in 1981.

Table 16. Water Quality Data for Lake Wheeler, Neuse River Basin.

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA					Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 12, 2015	NEU055A01	7.7	24.3	7.2	97	0.7	92.0%	0.04	0.59	0.02	<0.02	0.60	0.57	0.03	22.0	74	6.8	7.7	
May 12, 2015	NEU055A02	7.8	24.3	7.2	97	0.9	93.2%	0.04	0.57	0.02	<0.02	0.58	0.55	0.03	16.0	68	<6.2	5.6	24.0
June 8, 2015	NEU055A01	7.0	27.3	7.5	102	0.5	88.5%	0.05	0.75	0.03	<0.02	0.76	0.72	0.04	32.0	70	23.0	19.0	
June 8, 2015	NEU055A02	8.1	26.9	7.9	101	1.0	101.8%	0.03	0.64	0.02	<0.02	0.65	0.62	0.03	22.0	74	6.2	7.5	26.0
July 8, 2015	NEU055A01	7.0	30.3	7.5	93	0.7	93.1%	0.05	0.79	0.02	<0.02	0.80	0.77	0.03	36.0	72	10.0	12.0	
July 8, 2015	NEU055A02	8.1	29.5	8.3	97	1.0	106.3%	0.03	0.66	<0.02	<0.02	0.67	0.65	0.02	27.0	66	<6.2	4.6	24.0
August 12, 2015	NEU055A01	5.9	28.1	7.2	92	0.3	75.5%	0.05	0.85	0.03	<0.02	0.86	0.82	0.04	40.0	81	11.0	15.0	
August 12, 2015	NEU055A02	6.8	28.1	7.6	93	0.6	87.1%	0.03	0.76	0.01	<0.02	0.77	0.75	0.02	35.0	78	<6.2	8.5	24.0
September 3, 2015	NEU055A01	8.7	29.0	8.3	92	0.6	113.2%	0.04	0.83	<0.02	<0.02	0.84	0.82	0.02	34.0	74	10.0	13.0	
September 3, 2015	NEU055A02	9.0	28.6	8.5	92	0.6	116.2%	0.03	0.80	<0.02	<0.02	0.81	0.79	0.02	30.0	72	7.7	12.0	25.0

Lake Benson

Ambient Lakes Program Name	Lake Benson	
Trophic Status (NC TSI)	**Eutrophic**	
Mean Depth (meters)	**9.8**	
Volume ($10^6 m^3$)	**3.60**	
Watershed Area (mi^2)	**64.9**	
Classification	**WS-III; NSW**	
Stations	**NEU055A3**	**NEU055A4**
Number of Times Sampled	**4**	**4**

Lake Benson is a man-made impoundment located in southern Wake County. The first impoundment on the site, called Rand's Mill Pond, was built in 1844. In 1927, the City of Raleigh purchased the land and the dam for use as a water supply. Lake Benson was a water supply source for the City of Raleigh from 1953 to 1987. With the increasing growth of Raleigh and surrounding areas in Wake County, a new water treatment facility was constructed at Lake Benson. The Dempsey E. Benton Water Treatment Plant was dedicated in May 2010 and has a capacity of producing 20 million gallons of drinking water per day (MGD) with the possibility of a future increase in production of up to 40 MGD. The primary tributary to the lake is Swift Creek. The topography of the drainage area is characterized by rolling hills with approximately half of the area forested.

Lake Benson was sampled four times in 2015 by DEQ field staff. Chlorophyll *a* values were less than the state water quality standard of 40 ug/L (Table 17). Hydrilla (*Hydrilla verticillata*) is present in Lake Benson and application of herbicides has been used as a means of controlling this aquatic weed.

Table 17. Water Quality Data for Lake Benson, Neuse River Basin.

	SURFACE PHYSICAL DATA							PHOTIC ZONE DATA									Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 26, 2015	NEU055A3	8.8	28.0	8.2	102	0.6	112.5%	0.05	0.69	0.02	<0.02	0.70	0.67	0.03	15.0	91	12.0	14.0	
May 26, 2015	NEU055A4	9.1	27.9	8.3	98	0.8	116.1%	0.04	0.63	0.02	<0.02	0.64	0.61	0.03	22.0	80	8.8	9.4	27.0
June 26, 2015	NEU055A3	8.1	32.2	8.1	102	0.3	111.3%	0.04	0.72	0.02	<0.02	0.73	0.70	0.03	21.0	82	7.2	9.9	
June 26, 2015	NEU055A4	7.1	32.5	8.1	102	0.3	98.0%	0.04	0.76	0.02	<0.02	0.77	0.74	0.03	29.0	72	6.2	8.7	28.0
July 23, 2015	NEU055A3	6.8	30.5	7.2	86	0.3	90.8%	0.04	0.61	0.02	<0.02	0.62	0.59	0.03	20.0	73	8.2	12.0	
July 23, 2015	NEU055A4	6.7	24.6	7.5	92	0.8	80.5%	0.04	0.60	0.02	<0.02	0.61	0.58	0.03	20.0	70		7.3	25.0
September 23, 2015	NEU055A3	7.8	23.5	7.7	92	0.4	91.8%	0.10	1.10	<0.02	<0.02	1.11	1.09	0.02	42.0	116	41.0	37.0	
September 23, 2015	NEU055A4	6.7	24.6	7.5	92	0.4	80.5%	0.07	0.98	<0.02	<0.02	0.99	0.97	0.02	50.0	86	14.0	15.0	

A water sample was collected at the sampling site near the lower end of this reservoir in September for an Algal Growth Potential Test (AGPT). Results from the Region IV EPA Laboratory determined that the water at this sampling site was limited for the nutrient, nitrogen, in supporting the nuisance level growth of algae (Table 18).

Table 18. Algal Growth Potential Test Results for Lake Benson, September 23, 2015.

Station	Maximum Standing Crop, Dry Weight (mg/L)			Limiting Nutrient
	Control	C+N	C+P	
NEU055A4	1.80	11.76	1.87	Nitrogen

Freshwater AGPT using *Selenastrum capricornutum* as test alga

C+N = Control + 1.0 mg/L Nitrate-N

C+P = Control + 0.05 mg/L Phosphate-P

Based on the calculated NCTSI scores, Lake Benson was determined to exhibit elevated biological productivity (eutrophic conditions) in May, June and July 2015 and hypereutrophic conditions in September. This lake has been predominantly eutrophic since it was first monitored in 1981 by DEQ.

Lake Johnson

Ambient Lakes Program Name	Lake Johnson	
Trophic Status (NC TSI)	Eutrophic	
Mean Depth (meters)	20.0	
Volume ($10^6 m^3$)	0.70	
Watershed Area (mi^2)	7.1	
Classification	B; NSW	
Stations	NEU042C	NEU0431A
Number of Times Sampled	5	5

Lake Johnson is owned by the City of Raleigh and is located in Wake County. The original use of the lake was as an auxiliary water supply for the City of Raleigh, but the lake is now used solely for recreation. Lake Johnson is subdivided into two basins by a road crossing at mid-lake. The lake has a maximum depth of 20 feet (six meters) and Walnut Creek is the major lake tributary. In recent years, the predominantly forested and agricultural watershed has become increasingly urban.

DEQ field staff monitored Lake Johnson monthly from May through September 2015. Despite the eutrophic status of this reservoir based on the calculated NCTSI scores for each sampling trip, chlorophyll *a* values were not greater than the state water quality standard of 40 *u*g/L (Table 19). Secchi depths were generally less than one meter, indicating limited water clarity. The trophic state of this lake has varied between oligotrophic (very low productivity) and eutrophic since it was first monitored by DEQ in 1981.

Table 19. Water Quality Data for Lake Johnson, Neuse River Basin

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA					Total	
			Temp			Secchi										Solids	Solids	
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU
May 12, 2015	NEU042C	8.5	27.5	7.4	108	0.5	107.7%	0.07	0.80	0.04	0.02	0.82	0.76	0.06	31.0	81	11.0	12.0
May 12, 2015	NEU0431A	8.7	26.0	7.7	110	1.0	107.3%	0.04	0.55	0.03	0.03	0.58	0.52	0.06	15.0	69	6.2	5.2
June 8, 2015	NEU042C	6.9	26.9	7.4	111	0.8	87.0%	0.07	0.74	0.02	<0.02	0.75	0.72	0.03	19.0	119	62.0	24.0
June 8, 2015	NEU0431A	7.6	26.5	7.6	110	1.4	94.7%	0.02	0.48	0.02	<0.02	0.49	0.46	0.03	7.2	90	<6.2	3.8
July 14, 2015	NEU042C	6.3	28.6	7.5	79	0.4	81.4%	0.07	0.62	0.02	<0.02	0.63	0.60	0.03	25.0	145	110.0	50.0
July 14, 2015	NEU0431A	6.4	28.9	7.4	86	0.9	83.1%	0.03	0.46	0.02	<0.02	0.47	0.44	0.03	11.0	60	<6.2	4.8
August 27, 2015	NEU042C	7.0	28.2	7.1	74	0.6	89.8%	0.06	0.62	<0.02	<0.02	0.63	0.61	0.02	31.0	74	11.0	11.0
August 27, 2015	NEU0431A	6.1	27.9	7.0	78	0.9	77.8%	0.03	0.54	<0.02	<0.02	0.55	0.53	0.02	15.0	62	<6.2	7.0
September 23, 2015	NEU042C	7.9	24.9	7.5	81	0.5	95.3%	0.06	0.64	<0.02	<0.02	0.65	0.63	0.02	33.0	83	25.0	19.0
September 23, 2015	NEU0431A	7.1	24.8	7.3	81	0.9	48.6%	0.02	0.47	<0.02	<0.02	0.48	0.46	0.02	21.0	63		5.9

LAKE & RESERVOIR ASSESSMENTS

HUC 03020202

Cliffs of the Neuse Lake

Ambient Lakes Program Name	Cliffs of the Neuse Lake
Trophic Status (NC TSI)	Mesotrophic
Mean Depth (meters)	29.5
Volume ($10^6 m^3$)	0.10
Watershed Area (mi^2)	0.4
Classification	B; NSW
Stations	NEU07113A
Number of Times Sampled	2

Cliffs of the Neuse Lake is located in a state-owned park of the same name in Wayne County. The lake has a maximum depth of 194 feet (59 meters). Mill Creek, the only significant tributary, was impounded to form the lake in 1953. The small forested watershed is entirely contained in the park. The lake is used for recreational swimming, boating and education.

This lake was monitored in May and August 2015 by DEQ field staff. Table 20 shows the surface physical measurements and photic zone chemistry results for each month this lake was sampled. The low pH values observed in this lake are due to the presence of an aquifer beneath the state park that contains iron sulfite, which forms sulfuric acid. Springs are present in the bottom of Cliffs of the Neuse Lake that release this acidic water from the aquifer into the lake. Based on the calculated NCTSI scores, Cliffs of the Neuse Lake was determined to exhibit low biological productivity (oligotrophic conditions) in May and moderate productivity (mesotrophic conditions) in August. Cliffs of the Neuse Lake has previously been found to fluctuate between oligotrophic and mesotrophic conditions since it was first monitored by DEQ in 1981.

Table 20. Water Quality Data for Cliffs of the Neuse Lake, Neuse River Basin.

	SURFACE PHYSICAL DATA							PHOTIC ZONE DATA									Total	
			Temp			Secchi										Solids	Solids	
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU
May 4, 2015	NEU07113A	10.5	19.9	4.1	85	2.9	115.3%	<0.02	0.32	0.02	0.31	0.63	0.30	0.33	7.3	86	6.2	3.2
August 4, 2015	NEU07113A	8.6	30.7	4.2	143	2.5	115.2%	0.02	0.27	0.02	0.06	0.33	0.25	0.08	13.0	61		2.9

Buckhorn Reservoir

Ambient Lakes Program Name	Buckhorn Reservoir	
Trophic Status (NC TSI)	Eutrophic	
Mean Depth (meters)	7.0	
Volume ($10^6 m^3$)	3.80	
Watershed Area (mi^2)	154.8	
Classification	WS-V; NSW	
Stations	NEU084B	NEU084C
Number of Times Sampled	5	5

Buckhorn Reservoir is a shallow impoundment, which serves as the water supply for the City of Wilson. Completed in 1976, this reservoir has a maximum depth of eight feet (2.4 meters). The drainage area consists of flat land used for agriculture and forests. Turkey Creek and Moccasin Creek are the primary tributaries to Buckhorn Reservoir.

This lake was monitored monthly from May through September by DEQ field staff in 2015. Secchi depths ranged from 0.7 to 1.2 meters and chlorophyll *a* was less than the state water quality standard of 40 *u*g/L (Table 21) Hydrilla (*Hydrilla verticillata*) is present in Buckhorn Reservoir which is controlled with stocking the lake with sterile grass carp and applications of herbicides. This reservoir was determined to exhibit elevated biological productivity (eutrophic conditions) each month it was sampled in 2015. Buckhorn Reservoir has been consistently eutrophic since it was first monitored by DEQ in 1988.

Table 21. Water Quality Data for Buckhorn Reservoir, Neuse River Basin.

	SURFACE PHYSICAL DATA							PHOTIC ZONE DATA											
Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Solids Total mg/L	Total Solids Suspended mg/L	Turbidity NTU	Total Hardnes mg/L
May 21, 2015	NEU084B	7.5	25.7	7.1	57	1.0	92.0%	0.05	0.79	0.04	<0.02	0.80	0.75	0.05	15.0	88	6.2	8.3	
May 21, 2015	NEU084C	7.8	25.7	7.1	57	1.0	95.6%	0.05	0.79	0.04	0.02	0.81	0.75	0.06	17.0	66	<6.2	6.0	17.0
June 30, 2015	NEU084B	7.7	29,7	7.8	66	0.8	101.4%	0.04	0.70	0.02	<0.02	0.71	0.68	0.03	26.0	71	<6.2	8.0	
June 30, 2015	NEU084C	7.4	29.8	7.6	65	1.0	97.6%	0.03	0.63	0.02	<0.02	0.64	0.61	0.03	18.0	66	<6.2	5.5	18.0
July 28, 2015	NEU084B					0.8		0.04	0.61	0.02	<0.02	0.62	0.59	0.03	23.0	86	7.2	8.2	
July 28, 2015	NEU084C					1.0		0.03	0.63	<0.02	<0.02	0.64	0.62	0.02	18.0	57	<6.2	5.3	17.0
August 26, 2015	NEU084B	6.8	28.5	7.2	70	1.0	87.7%	0.04	0.72	0.02	<0.02	0.73	0.70	0.03	21.0	68	<6.2	8.7	
August 26, 2015	NEU084C	7.3	28.4	7.4	69	1.2	93.9%	0.02	0.57	<0.02	<0.02	0.58	0.56	0.02	18.0	58	<6.2	5.1	18.0
September 23, 2015	NEU084B	6.4	24.8	7.1	67	0.7	77.2%	0.04	0.74	0.02	<0.02	0.75	0.72	0.03	20.0	66	8.5	9.7	
September 23, 2015	NEU084C	6.4	24.8	7.1	67	0.8	77.2%	0.04	0.71	0.02	<0.02	0.72	0.69	0.03	20.0	64	7.2	7.5	18.0

Wiggins Mill Reservoir

Ambient Lakes Program Name	Wiggins Mill Reservoir	
Trophic Status (NC TSI)	Eutrophic	
Mean Depth (meters)	1.6	
Volume ($10^6 m^3$)	0.60	
Watershed Area (mi^2)	237.1	
Classification	WS-IV; NSW, CA	
Stations	NEU084D	NEU084F
Number of Times Sampled	5	5

Contentnea Creek was impounded in 1915 to form Wiggins Mill Reservoir. Forty years later, the dam was raised by a foot, increasing the lake to 200 acres (81 hectares) in surface area. The City of Wilson owns Wiggins Mill Reservoir, which uses it as a water supply. Access is restricted to boats with electric motors. Land use in the Contentnea Creek watershed is dominated by agriculture with some forested areas and residential development. The water of Wiggins Mill Reservoir has a distinctive tannin or tea-color which is due to water from Bloomery and Contentnea Creek Swamps flowing into the reservoir.

Wiggins Mill Reservoir was sampled monthly from May through September 2015 by DEQ field staff. Secchi depths were consistently less than a meter (Table 22). Chlorophyll *a* at NEU084D in May and at NEU094F near the dam in July was greater than the state water quality standard of 40 ug/L. Based on the calculated NCTSI scores for 2015, Wiggins Mill Reservoir was determined to have elevated biological productivity (eutrophic conditions) from May through September. This reservoir has been consistently eutrophic since it was first monitored by DEQ in 1988.

Table 22. Water Quality Data for Wiggins Mill Reservoir, Neuse River Basin.

	SURFACE PHYSICAL DATA											PHOTIC ZONE DATA					Total		
			Temp			Secchi										Solids	Solids		Total
Date	Sampling	DO	Water	pH	Cond.	Depth	Percent	TP	TKN	NH3	NOx	TN	TON	TIN	Chla	Total	Suspended	Turbidity	Hardnes
	Station	mg/L	C	s.u.	µmhos/cm	meters	SAT	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	NTU	mg/L
May 21, 2015	NEU084D	9.0	25.8	7.2	65	0.9	110.6%	0.09	0.98	0.02	0.12	1.10	0.96	0.14	50.0	70	<6.2	7.1	
May 21, 2015	NEU084F	7.8	25.6	6.9	65	0.9	95.5%	0.08	0.88	0.02	0.17	1.05	0.86	0.19	24.0	69	<6.2	8.0	21.0
June 30, 2015	NEU084D	7.2	29.7	7.1	73	0.8	94.8%	0.07	0.81	0.02	<0.02	0.82	0.79	0.03	37.0	74	7.2	8.1	
June 30, 2015	NEU084F	7.7	29.7	7.8	66	0.8	101.4%	0.06	0.79	0.02	<0.02	0.80	0.77	0.03	31.0	76		7.1	23.0
July 28, 2015	NEU084D	7.5	29.4	7.2	72	0.8	98.2%	0.09	0.71	<0.02	<0.02	0.72	0.70	0.02	34.0	78	25.0	15.0	
July 28, 2015	NEU084F	8.5	29.0	7.5	72	0.7	110.6%	0.09	0.78	<0.02	<0.02	0.79	0.77	0.02	69.0	71	8.6	9.1	22.0
August 26, 2015	NEU084D	6.5	28.0	7.1	76	0.6	83.1%	0.07	0.76	<0.02			0.75		36.0	67	<12.5	11.0	
August 26, 2015	NEU084F	6.3	28.0	7.1	76	0.6	80.5%	0.07	0.77	<0.02	<0.02	0.78	0.76	0.02	38.0	85	8.0	10.0	22.0
September 23, 2015	NEU084D	7.6	24.0	7.2	70	0.7	90.3%	0.06	0.71	<0.02	<0.02	0.72	0.70	0.02	25.0	68	7.8	9.9	
September 23, 2015	NEU084F	7.5	24.5	7.2	70	0.7	90.0%	0.06	0.73	<0.02	<0.02	0.74	0.72	0.02	30.0	70	8.5	9.6	19.0

Lake	Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Turbidity NTU
	SURFACE PHYSICAL DATA								PHOTIC ZONE DATA								
	January 27, 2011	LC01	12.3	4.3	6.8	130	1.0	94.6%	0.04	0.67	0.02	0.02	0.69	0.65	0.04	5.5	7.2
FALLS OF THE NEUSE RESERVOIR	January 27, 2011	LLC01	12.6	4.0	7.0	156	0.9	96.2%	0.04	0.67	0.02	0.04	0.71	0.65	0.06	5.8	5.9
	January 27, 2011	NEU013	13.5	4.2	8.4	305	0.3	103.6%	0.08	0.95	<0.02	1.20	2.15	0.94	1.21		21.0
	January 27, 2011	NEU013B	13.6	4.1	8.2	288	0.4	104.1%	0.07	0.98	<0.02	0.81	1.79	0.97	0.82	16.0	23.0
	January 27, 2011	NEU0171B	12.1	3.9	6.9	164	1.1	92.1%	0.04	0.75	0.02	0.06	0.81	0.73	0.08	6.3	8.9
	January 27, 2011	NEU018E	12.4	4.0	6.8	133	1.1	94.6%	0.04	0.60	0.04	0.03	0.63	0.56	0.07	5.8	4.9
	January 27, 2011	NEU019E	12.5	4.3	6.7	121	1.1	96.1%	0.03	0.71	0.04	0.04	0.75	0.67	0.08	12.0	7.2
	January 27, 2011	NEU019L	12.4	4.8	6.6	111	1.0	96.6%	0.03	0.71	0.07	0.07	0.78	0.64	0.14	18.0	7.4
	January 27, 2011	NEU019P	12.3	4.6	6.7	106	1.1	95.4%	0.03	0.65	0.09	0.09	0.74	0.56	0.18	23.0	3.5
	January 27, 2011	NEU020D	11.8	4.6	6.6	99	1.3	91.5%	0.03	0.65	0.17	0.19	0.84	0.48	0.36	10.0	3.7
	February 17, 2011	LC01	12.3	8.6	7.7	132	0.8	105.4%	0.04	0.78	<0.02	<0.02	0.79	0.77	0.02	11.0	8.2
	February 17, 2011	LLC01	12.7	8.5	8.2	176	0.8	108.6%	0.04	0.78	<0.02	0.02	0.80	0.77	0.03	15.0	7.5
	February 17, 2011	NEU013	13.0	10.3	9.4	214	0.1	116.0%	0.16	1.20	<0.02	0.33	1.53	1.19	0.34		50.0
	February 17, 2011	NEU013B	12.4	8.9	10.0	227	0.3	107.0%	0.10	1.10	<0.02	0.16	1.26	1.09	0.17	39.0	30.0
	February 17, 2011	NEU0171B	12.4	8.5	7.8	177	0.8	106.0%	0.04	0.71	<0.02	0.03	0.74	0.70	0.04	13.0	13.0
	February 17, 2011	NEU018E	12.2	7.9	7.7	139	0.9	102.8%	0.04	0.61	<0.02	<0.02	0.62	0.60	0.02	12.0	9.0
	February 17, 2011	NEU019E	12.9	8.0	7.9	118	0.9	109.0%	0.04	0.74	<0.02	<0.02	0.75	0.73	0.02	16.0	10.0
	February 17, 2011	NEU019L	13.2	7.8	7.9	109	0.9	110.9%	0.03	0.46	<0.02	0.05	0.51	0.45	0.06	23.0	6.7
	February 17, 2011	NEU019P	12.6	7.9	7.5	107	1.0	106.2%	0.03	0.66	0.02	0.12	0.78	0.64	0.14	15.0	8.4
	February 17, 2011	NEU020D	12.6	7.6	7.6	98	1.3	105.4%	0.03	0.66	0.08	0.19	0.85	0.58	0.27	15.0	5.3
	March 17, 2011	LC01	11.4	12.1	7.2	148	0.9	106.1%	0.04	0.68	<0.02	<0.02	0.69	0.67	0.02	20.0	6.2
	March 17, 2011	LLC01	11.5	12.6	8.2	184	0.7	108.2%	0.06	0.93	<0.02	<0.02	0.94	0.92	0.02	29.0	11.0
	March 17, 2011	NEU013	10.9	12.4	7.7	112	0.2	102.1%	0.14	1.00	<0.02	0.14	1.14	0.99	0.15		60.0
	March 17, 2011	NEU013B	11.6	12.5	7.4	156	0.3	108.9%	0.11	1.10	<0.02	<0.02	1.11	1.09	0.02	83.0	40.0
	March 17, 2011	NEU0171B	11.4	13.0	8.1	181	0.7	108.2%	0.06	0.85	<0.02	<0.02	0.86	0.84	0.02	31.0	10.0
	March 17, 2011	NEU018E	11.4	13.1	8.3	156	0.9	108.5%	0.04	0.74	<0.02	<0.02	0.75	0.73	0.02	28.0	7.8
	March 17, 2011	NEU019E	11.6	13.6	7.8	129	0.9	111.6%	0.04	0.82	<0.02	<0.02	0.83	0.81	0.02	31.0	6.4
	March 17, 2011	NEU019L	12.0	13.2	7.9	117	1.2	114.4%	0.03	0.70	<0.02	<0.02	0.71	0.69	0.02	35.0	5.0
	March 17, 2011	NEU019P	11.6	13.3	7.8	112	1.0	110.9%	0.03	0.70	<0.02	0.04	0.74	0.69	0.05	29.0	6.5
	March 17, 2011	NEU020D	11.0	13.2	7.4	104	1.1	104.9%	0.03	0.62	0.02	0.16	0.78	0.60	0.18	21.0	5.2
	April 7, 2011	LC01	10.2	15.6	7.6	147	0.7	102.5%	0.05	0.69	<0.02	<0.02	0.70	0.68	0.02	16.0	13.0
	April 7, 2011	LI01	10.5	15.4	7.7	144	0.6	105.1%	0.04	0.65	<0.02	<0.02	0.66	0.64	0.02	24.0	14.0
	April 7, 2011	LLC01	10.4	14.6	7.7	146	0.8	102.3%	0.06	0.80	<0.02	0.02	0.82	0.79	0.03	32.0	8.0
	April 7, 2011	NEU013	9.8	15.2	7.6	109	0.3	97.6%	0.11	1.00	<0.02	0.23	1.23	0.99	0.24		39.0
	April 7, 2011	NEU013B	9.7	14.6	7.5	109	0.3	95.4%	0.11	0.92	0.02	0.08	1.00	0.90	0.10	57.0	32.0
	April 7, 2011	NEU0171B	10.0	14.6	7.7	150	0.8	98.3%	0.05	0.72	<0.02	<0.02	0.73	0.71	0.02	25.0	8.6
	April 7, 2011	NEU018E	10.3	15.9	7.7	161	0.7	104.2%	0.05	0.71	0.02	<0.02	0.72	0.69	0.03	26.0	7.3
	April 7, 2011	NEU019E	10.8	16.5	7.4	141	1.0	110.6%	0.04	0.62	<0.02	<0.02	0.63	0.61	0.02	23.0	5.4
	April 7, 2011	NEU019L	10.1	15.6	7.7	129	1.3	101.5%	0.03	0.59	0.04	0.02	0.61	0.55	0.06	16.0	4.6
	April 7, 2011	NEU019P	9.4	15.5	7.5	122	1.4	94.3%	0.02	0.55	0.08	0.04	0.59	0.47	0.12	9.9	6.3
	April 7, 2011	NEU020D	8.8	15.7	7.2	107	1.0	88.6%	0.04	0.54	0.12	0.13	0.67	0.42	0.25	3.4	8.3
	May 10, 2011	LC01	9.0	22.4	7.5	147	0.9	103.8%	0.04	0.73	0.06	0.02	0.75	0.67	0.08	17.0	6.9
	May 10, 2011	LI01	9.5	23.2	7.8	150	1.4	111.2%	0.03	0.67	0.04	0.03	0.70	0.63	0.07	13.0	6.3
	May 10, 2011	LLC01	9.6	23.4	7.4	135	0.9	112.8%	0.05	0.86	0.08	0.05	0.91	0.78	0.13	22.0	9.7
	May 10, 2011	NEU013	9.2	22.2	7.9	124	0.4	105.7%	0.09	0.96	<0.02	0.02	0.98	0.95	0.03		23.0
	May 10, 2011	NEU013B	9.5	22.6	7.8	125	0.4	109.9%	0.08	0.91	<0.02	<0.02	0.92	0.90	0.02	39.0	19.0
	May 10, 2011	NEU0171B	8.6	22.0	7.6	136	0.8	98.4%	0.05	0.81	0.10	0.05	0.86	0.71	0.15	22.0	9.4
	May 10, 2011	NEU018E	9.3	22.5	7.7	148	1.1	107.4%	0.04	0.72	0.06	0.04	0.76	0.66	0.10	18.0	6.6
	May 10, 2011	NEU019E	9.7	22.9	7.9	142	1.4	112.9%	0.03	0.70	0.08	0.03	0.73	0.62	0.11	16.0	5.1
	May 10, 2011	NEU019L	10.0	24.1	8.0	147	1.4	119.1%	0.03	0.59	0.02	0.02	0.61	0.57	0.04	11.0	4.3
	May 10, 2011	NEU019P	9.8	24.4	7.9	148	1.2	117.3%	0.03	0.61	<0.02	<0.02	0.62	0.60	0.02	13.0	4.0
	May 10, 2011	NEU020D	9.4	24.2	8.1	128	1.8	112.1%	0.02	0.50	0.02	0.05	0.55	0.48	0.07	7.9	3.1
	June 14, 2011	LC01	5.4	29.2	6.4	140	0.8	70.5%	0.03	0.57	0.06	<0.02	0.58	0.51	0.07	8.7	7.1
	June 14, 2011	LI01	7.1	29.7	6.8	140	0.8	93.5%	0.03	0.74	0.12	<0.02	0.75	0.62	0.13	14.0	8.5
	June 14, 2011	LLC01	7.0	29.5	6.5	135	0.8	91.8%	0.04	0.74	0.06	<0.02	0.75	0.68	0.07	20.0	10.0
	June 14, 2011	NEU013	6.0	28.1	7.2	161	0.3	76.8%	0.14	1.20	0.02	0.02	1.22	1.18	0.04		35.0
	June 14, 2011	NEU013B	5.9	28.6	7.2	133	0.4	76.2%	0.08	0.98	0.02	<0.02	0.99	0.96	0.03	31.0	19.0
	June 14, 2011	NEU0171B	6.6	28.7	6.7	136	0.8	85.4%	0.03	0.76	0.12	<0.02	0.77	0.64	0.13	15.0	9.4
	June 14, 2011	NEU018E	6.7	29.1	6.9	139	0.9	87.3%	0.03	0.67	0.09	<0.02	0.68	0.58	0.10	15.0	6.2
	June 14, 2011	NEU019E	6.2	28.4	6.8	132	1.0	79.8%	0.02	0.62	0.05	<0.02	0.63	0.57	0.06	12.0	5.1
	June 14, 2011	NEU019L	6.7	29.9	6.8	140	1.3	88.5%	0.02	0.52	<0.02	<0.02	0.53	0.51	0.02	10.0	3.7
	June 14, 2011	NEU019P	6.6	29.6	6.7	141	1.3	86.7%	0.02	0.50	<0.02	<0.02	0.51	0.49	0.02	6.2	4.0
	June 14, 2011	NEU020D	6.8	29.5	6.9	138	1.6	89.2%	<0.02	0.45	<0.02	<0.02	0.46	0.44	0.02	4.6	2.9
	July 12, 2011	LC01	7.2	31.6	7.0	140	0.6	97.9%	0.04	0.68	<0.02	<0.02	0.69	0.67	0.02	16.0	10.0
	July 12, 2011	LI01	6.0	30.1	6.6	133	0.6	79.5%	0.05	0.79	0.02	<0.02	0.80	0.77	0.03	24.0	8.2
	July 12, 2011	LLC01	5.9	30.2	7.2	139	0.6	78.4%	0.04	0.78	0.02	<0.02	0.79	0.76	0.03	28.0	8.7
	July 12, 2011	NEU013	7.7	30.5	8.2	161	0.3	102.8%	0.16	1.40	<0.02	<0.02	1.41	1.39	0.02		40.0
	July 12, 2011	NEU013B	6.7	30.0	7.3	163	0.3	88.7%	0.12	1.30	0.02	<0.02	1.31	1.28	0.03	66.0	30.0
	July 12, 2011	NEU0171B	7.5	30.8	7.4	140	0.7	100.6%	0.04	0.73	<0.02	<0.02	0.74	0.72	0.02	23.0	8.3
	July 12, 2011	NEU018E	7.2	30.5	6.9	138	0.9	96.1%	0.03	0.67	<0.02	<0.02	0.68	0.66	0.02	18.0	3.7
	July 12, 2011	NEU019E	7.3	31.1	6.0	132	1.1	98.4%	0.03	0.54	<0.02	<0.02	0.55	0.53	0.02	15.0	6.1
	July 12, 2011	NEU019L	7.2	31.2	6.6	135	1.5	97.3%	0.02	0.47	0.10	<0.02	0.48	0.37	0.11	9.3	3.9
	July 12, 2011	NEU019P	7.1	31.0	6.7	138	1.6	95.6%	<0.02	0.45	<0.02	<0.02	0.46	0.44	0.02	6.7	4.3
	July 12, 2011	NEU020D	7.0	31.2	6.7	140	2.0	94.6%	<0.02	0.44	<0.02	<0.02	0.45	0.43	0.02	4.5	
	August 9, 2011	LC01		30.8	7.4	146	0.4		0.05	0.94	<0.02	<0.02	0.95	0.93	0.02	37.0	12.0
	August 9, 2011	LI01		31.4	8.2	142	0.7		0.04	0.85	<0.02	<0.02	0.86	0.84	0.02	35.0	7.9
	August 9, 2011	LLC01		30.6	7.3	149	0.5		0.07	1.10	0.03	<0.02	1.11	1.07	0.04	41.0	19.0
	August 9, 2011	NEU013	8.8	31.0	6.8	205	0.2	118.5%	0.26	2.20	<0.02	<0.02	2.21	2.19	0.02		80.0
	August 9, 2011	NEU013B	7.5	30.4	6.2	175	0.3	99.9%	0.15	1.60	0.04	<0.02	1.61	1.56	0.05	92.0	45.0
	August 9, 2011	NEU0171B		30.8	8.0	148	0.5		0.06	0.97	<0.02	<0.02	0.98	0.96	0.02	49.0	18.0

Lake	Date	Sampling Station	SURFACE PHYSICAL DATA DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	PHOTIC ZONE DATA TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Turbidity NTU
	August 9, 2011	NEU018E		31.4	8.4	145	0.6		0.04	0.89	<0.02	<0.02	0.90	0.88	0.02	44.0	8.2
FALLS OF THE	August 9, 2011	NEU019E		31.0	6.7	136	0.9		0.03	0.78	<0.02	<0.02	0.79	0.77	0.02	27.0	5.2
NEUSE	August 9, 2011	NEU019L		31.8	6.9	135	1.1		0.02	0.63	<0.02	<0.02	0.64	0.62	0.02	21.0	4.6
RESERVOIR	August 9, 2011	NEU019P		31.5	6.0	133	1.4		<0.02	0.55	<0.02	<0.02	0.56	0.54	0.02	12.0	3.8
	August 9, 2011	NEU020D		31.7	7.1	137	1.6		<0.02	0.48	<0.02	<0.02	0.49	0.47	0.02	8.3	3.2
	September 13, 2011	LC01	7.9	28.7	8.0	149	0.4	102.2%	0.07	1.00	<0.02	<0.02	1.01	0.99	0.02	44.0	16.0
	September 13, 2011	LI01	10.2	28.1	8.9	148	0.6	130.6%	0.06	0.94	<0.02	<0.02	0.95	0.93	0.02	45.0	8.6
	September 13, 2011	LLC01	11.5	29.2	9.1	161	0.4	150.1%	0.09	1.10	<0.02	<0.02	1.11	1.09	0.02	66.0	14.0
	September 13, 2011	NEU013	7.5	27.5	7.6	118	0.3	95.0%	0.16	1.40	<0.02	<0.02	1.41	1.39	0.02		45.0
	September 13, 2011	NEU013B	7.0	26.6	7.5	147	0.3	87.2%	0.14	1.30	<0.02	<0.02	1.31	1.29	0.02	62.0	50.0
	September 13, 2011	NEU0171B	10.3	30.3	8.9	160	0.4	137.0%	0.08	1.00	<0.02	<0.02	1.01	0.99	0.02	50.0	17.0
	September 13, 2011	NEU018E	10.0	27.9	8.9	149	0.5	127.6%	0.05	0.91	<0.02	<0.02	0.92	0.90	0.02	39.0	9.4
	September 13, 2011	NEU019E	7.4	27.7	7.3	145	0.7	94.1%	0.04	0.72	<0.02	<0.02	0.73	0.71	0.02	30.0	7.1
	September 13, 2011	NEU019L	8.1	28.6	7.8	141	1.1	104.6%	0.02	0.57	<0.02	<0.02	0.58	0.56	0.02	22.0	4.7
	September 13, 2011	NEU019P	8.0	29.2	7.9	139	1.3	104.4%	0.02	0.52	<0.02	<0.02	0.53	0.51	0.02	14.0	4.0
	September 13, 2011	NEU020D	8.3	28.0	8.1	138	1.4	106.1%								10.0	3.3
	October 20, 2011	NEU013	7.5	15.5	7.4	181	0.2	75.2%	0.26	1.60	0.09	0.34	1.94	1.51	0.43		110.0
	October 20, 2011	NEU013B	8.2	17.1	7.5	233	0.3	85.0%	0.17	1.60	<0.02	0.25	1.85	1.59	0.26	60.0	55.0
	October 20, 2011	NEU019E	8.4	19.4	7.6	145	0.5	91.3%	0.05	0.90	<0.02	<0.02	0.91	0.89	0.02	22.0	13.0
	October 20, 2011	NEU019L	7.1	20.1	7.4	143	0.8	78.3%	0.03	0.81	0.12	<0.02	0.82	0.69	0.13	20.0	5.6
	October 20, 2011	NEU019P	7.1	20.0	7.3	140	0.7	78.1%	0.02	0.77	0.17	<0.02	0.78	0.60	0.18	20.0	5.1
	October 20, 2011	NEU020D	5.5	20.1	7.1	137	0.9	60.6%	0.02	0.76	0.20	<0.02	0.77	0.56	0.21	13.0	4.1
	November 8, 2011	LC01	10.0	14.1	8.3	148	0.7	97.3%	0.04	0.76	<0.02	<0.02	0.77	0.75	0.02	26.0	11.0
	November 8, 2011	LI01	10.4	14.7	8.4	140	0.6	102.5%	0.06	0.81	<0.02	<0.02	0.82	0.80	0.02	26.0	18.0
	November 8, 2011	LLC01	10.7	13.2	8.3	155	0.6	102.0%	0.07	0.83	<0.02	<0.02	0.84	0.82	0.02	27.0	20.0
	November 8, 2011	NEU013	7.7	12.8	7.4	148	0.1	72.8%	0.20	1.20	0.11	0.94	2.14	1.09	1.05		85.0
	November 8, 2011	NEU013B	11.2	12.8	7.7	137	0.2	105.9%	0.15	1.00	<0.02	0.28	1.28	0.99	0.29	42.0	56.0
	November 8, 2011	NEU0171B	11.2	13.4	8.6	167	0.7	107.3%	0.06	0.73	0.02	<0.02	0.74	0.71	0.03	27.0	13.0
	November 8, 2011	NEU018E	10.7	14.8	8.6	151	0.9	105.7%	0.04	0.76	<0.02	<0.02	0.77	0.75	0.02	24.0	9.4
	November 8, 2011	NEU019E	10.6	14.1	8.4	142	0.9	103.1%	0.04	0.78	<0.02	<0.02	0.79	0.77	0.02	27.0	7.9
	November 8, 2011	NEU019L	9.1	15.4	8.4	142	1.1	91.1%	0.03	0.69	0.05	0.02	0.71	0.64	0.07	26.0	6.7
	November 8, 2011	NEU019P	8.6	16.1	8.4	141	1.3	87.3%	0.02	0.89	0.15	0.03	0.92	0.74	0.18	20.0	5.2
	November 8, 2011	NEU020D	7.8	16.0	8.4	137	1.3	79.1%	0.02	0.76	0.26	0.03	0.79	0.50	0.29	15.0	5.9
	December 6, 2011	LC01	10.9	12.5	7.4	149	0.4	102.3%	0.05	0.77	<0.02	<0.02	0.78	0.76	0.02	24.0	8.7
	December 6, 2011	LI01	11.2	12.7	7.3	150	0.5	105.6%	0.05	0.73	<0.02	<0.02	0.74	0.72	0.02	29.0	6.2
	December 6, 2011	LLC01	11.2	12.8	7.7	162	0.5	105.9%	0.06	0.83	<0.02	<0.02	0.84	0.82	0.02	28.0	7.7
	December 6, 2011	NEU013	10.4	13.6	7.5	172	0.2	100.1%	0.14	0.90	0.06	0.76	1.66	0.84	0.82		45.0
	December 6, 2011	NEU013B	11.9	12.5	7.5	151	0.2	111.7%	0.12	0.93	<0.02	0.24	1.17	0.92	0.25	44.0	30.0
	December 6, 2011	NEU0171B	11.4	12.3	7.4	163	0.4	106.5%	0.05	0.81	<0.02	<0.02	0.82	0.80	0.02	30.0	8.2
	December 6, 2011	NEU018E	11.1	13.2	7.4	152	0.6	105.9%	0.04	0.74	<0.02	<0.02	0.75	0.73	0.02	27.0	6.1
	December 6, 2011	NEU019E	10.5	13.1	7.0	144	0.6	99.9%	0.04	0.73	<0.02	<0.02	0.74	0.72	0.02	31.0	5.7
	December 6, 2011	NEU019L	10.2	13.5	7.0	141	0.6	97.9%	0.03	0.70	<0.02	<0.02	0.71	0.69	0.02	28.0	6.0
	December 6, 2011	NEU019P	10.0	13.2	6.9	138	0.7	95.4%	0.03	0.65	0.02	0.05	0.70	0.63	0.07	36.0	4.7
	December 6, 2011	NEU020D	8.8	13.4	7.0	134	0.9	84.3%	0.02	0.59	0.10	0.12	0.71	0.49	0.22	22.0	4.5
	January 10, 2012	LC01	11.6	8.8	8.1	152	0.7	99.9%	0.05	0.86	<0.02	<0.02	0.87	0.85	0.02	22.0	6.0
	January 10, 2012	LI01	11.8	9.1	8.1	153	0.7	102.4%	0.06		<0.02	<0.02			0.02	31.0	6.8
	January 10, 2012	LLC01	11.9	9.4	8.3	160	0.5	104.0%	0.07	0.84	<0.02	<0.02	0.85	0.83	0.02	25.0	10.0
	January 10, 2012	NEU013	13.5	8.8	7.5	197	0.3	116.3%	0.12	1.00	<0.02	0.86	1.86	0.99	0.87		32.0
	January 10, 2012	NEU013B	13.1	8.0	7.4	139	0.3	110.7%	0.09	0.87	<0.02	0.24	1.11	0.86	0.25	40.0	26.0
	January 10, 2012	NEU0171B	11.4	9.3	8.0	159	0.5	99.4%	0.07	0.91	<0.02	0.13	1.04	0.90	0.14	24.0	9.6
	January 10, 2012	NEU018E	11.7	9.1	8.2	153	0.7	101.5%	0.06	1.00	<0.02	<0.02	1.01	0.99	0.02	30.0	5.6
	January 10, 2012	NEU019E	11.1	8.4	7.9	147	0.7	94.7%	0.04	0.78	0.03	0.02	0.80	0.75	0.05	27.0	4.3
	January 10, 2012	NEU019L	10.1	9.1	7.6	146	0.8	87.6%	0.05	0.75	0.06	<0.02	0.76	0.69	0.07	19.0	4.4
	January 10, 2012	NEU019P	11.0	9.1	7.7	143	0.9	95.4%	0.04	0.72	0.05	0.03	0.75	0.67	0.08	19.0	3.5
	February 22, 2012	LC01	12.0	9.2	6.0	146	0.6	104.3%	0.05	0.89	<0.02	<0.02	0.90	0.88	0.02	24.0	12.0
	February 22, 2012	LI01	11.7	9.6	6.0	150	0.7	102.7%	0.05	0.76	<0.02	<0.02	0.77	0.75	0.02	30.0	7.3
	February 22, 2012	LLC01	12.2	9.0	6.1	152	0.6	105.6%	0.06	0.83	<0.02	<0.02	0.84	0.82	0.02	36.0	9.5
	February 22, 2012	NEU013	11.5	9.6	7.3	137	0.4	101.0%	0.07	0.63	<0.02	0.12	0.75	0.62	0.13		24.0
	February 22, 2012	NEU013B	11.6	9.0	7.3	177	0.3	100.4%	0.11	1.20	<0.02	0.15	1.35	1.19	0.16	48.0	34.0
	February 22, 2012	NEU0171B	12.3	9.3	6.1	154	0.6	107.2%	0.06	0.86	<0.02	<0.02	0.87	0.85	0.02	33.0	11.0
	February 22, 2012	NEU018E	11.9	9.6	6.2	151	0.7	104.5%	0.05		<0.02	<0.02			0.02	27.0	5.0
	February 22, 2012	NEU019E	11.6	9.2	6.2	135	0.9	100.9%	0.05	0.76	<0.02	<0.02	0.77	0.75	0.02	38.0	8.8
	February 22, 2012	NEU019L	11.7	10.0	6.3	141	1.0	103.7%	0.04	0.70	0.02	0.03	0.73	0.68	0.05	33.0	4.7
	February 22, 2012	NEU019P	11.6	9.5	6.1	139	1.1	101.6%	0.03	0.66	0.02	0.08	0.74	0.64	0.10	30.0	3.9
	February 22, 2012	NEU020D	11.6	10.1	6.1	133	1.1	103.0%	0.03	0.58	<0.02	0.11	0.69	0.57	0.12	26.0	3.3
	March 14, 2012	LC01	11.2	16.0	7.8	143	0.6	113.5%	0.05	0.71	<0.02	<0.02	0.72	0.70	0.02	24.0	5.6
	March 14, 2012	LI01	10.8	15.3	7.4	142	0.6	107.8%	0.05	0.74	<0.02	<0.02	0.75	0.73	0.02	27.0	8.4
	March 14, 2012	LLC01	11.2	17.2	8.1	145	0.8	116.4%	0.06	0.90	<0.02	<0.02	0.91	0.89	0.02	45.0	7.0
	March 14, 2012	NEU013	11.6	17.3	7.5	126	0.3	120.8%	0.11	1.20	<0.02	0.05	1.25	1.19	0.06		31.0
	March 14, 2012	NEU013B	11.0	16.5	7.0	115	0.4	112.7%	0.10	1.10	<0.02	<0.02	1.11	1.09	0.02	82.0	19.0
	March 14, 2012	NEU0171B	11.7	16.3	8.1	145	0.9	119.3%	0.06	0.79	<0.02	<0.02	0.80	0.78	0.02	48.0	7.4
	March 14, 2012	NEU018E	10.8	16.1	7.6	148	0.9	109.7%	0.04	0.71	<0.02	<0.02	0.72	0.70	0.02	30.0	5.6
	March 14, 2012	NEU019E	11.5	15.2	7.3	140	0.8	114.6%	0.04	0.74	<0.02	<0.02	0.75	0.73	0.02	27.0	4.1
	March 14, 2012	NEU019L	11.4	17.1	8.0	139	0.9	118.2%	0.03	0.70	<0.02	<0.02	0.71	0.69	0.02	24.0	3.4
	March 14, 2012	NEU019P	11.6	15.5	8.1	137	0.9	116.3%	0.03	0.67	<0.02	<0.02	0.68	0.66	0.02	28.0	3.6
	March 14, 2012	NEU020D	11.6	16.6	8.0	132	1.3	119.1%	0.03	0.54	<0.02	0.04	0.58	0.53	0.05	24.0	4.4
	April 3, 2012	LC01	7.8	19.3	7.4	137	0.7	84.6%	0.05	0.76	0.02	<0.02	0.77	0.74	0.03	23.0	6.0
	April 3, 2012	LI01	7.8	19.8	7.7	135	0.6	85.5%	0.05	0.86	<0.02	<0.02	0.87	0.85	0.02	24.0	9.3
	April 3, 2012	LLC01	7.4	19.3	7.3	122	0.5	80.3%	0.06	0.96	0.04	<0.02	0.97	0.92	0.05	29.0	12.0
	April 3, 2012	NEU013	8.9	20.3	6.8	98	0.4	98.5%	0.12	1.10	<0.02	<0.02	1.11	1.09	0.02		24.0
	April 3, 2012	NEU013B	7.9	19.7	6.6	103	0.5	86.4%	0.07	0.91	0.03	<0.02	0.92	0.88	0.04	34.0	20.0

		SURFACE PHYSICAL DATA							PHOTIC ZONE DATA								
Lake	Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Turbidity NTU
	April 3, 2012	NEU0171B	7.4	19.3	7.6	124	0.6	80.3%	0.06	0.90	0.05	<0.02	0.91	0.85	0.06	26.0	9.7
FALLS OF THE	April 3, 2012	NEU018E	7.8	19.4	7.6	138	0.6	84.8%	0.05	0.76	<0.02	<0.02	0.77	0.75	0.02	26.0	8.3
NEUSE	April 3, 2012	NEU019E	7.9	19.3	7.3	132	0.7	85.7%	0.04	0.80	<0.02	<0.02	0.81	0.79	0.02	23.0	5.3
RESERVOIR	April 3, 2012	NEU019L	9.2	20.6	7.8	136	1.0	102.4%	0.04	0.66	<0.02	<0.02	0.67	0.65	0.02	17.0	5.6
	April 3, 2012	NEU019P	9.5	20.7	7.8	137	0.9	106.0%	0.03	0.64	<0.02	<0.02	0.65	0.63	0.02	16.0	3.9
	April 3, 2012	NEU020D	9.8	20.3	8.0	132	1.3	108.5%	0.02	0.52	<0.02	<0.02	0.53	0.51	0.02	15.0	3.7
	May 8, 2012	LC01	8.3	23.7	7.9	128	0.9	98.1%	0.04	0.80	<0.02	<0.02	0.81	0.79	0.02	47.0	5.3
	May 8, 2012	LI01	8.6	24.0	7.8	132	0.8	102.2%	0.04	0.79	<0.02	<0.02	0.80	0.78	0.02	38.0	6.8
	May 8, 2012	LLC01	8.4	24.1	7.7	123	0.7	100.0%	0.06	0.84	<0.02	<0.02	0.85	0.83	0.02	75.0	7.8
	May 8, 2012	NEU013	7.3	23.3	6.9	110	0.3	85.6%	0.11	1.10	<0.02	0.04	1.14	1.09	0.05		28.0
	May 8, 2012	NEU013B	7.5	23.6	6.8	117	0.4	88.5%	0.09	1.00	<0.02	<0.02	1.01	0.99	0.02	62.0	18.0
	May 8, 2012	NEU0171B	8.2	23.4	7.7	124	0.7	96.3%	0.05	0.81	<0.02	<0.02	0.82	0.80	0.02	77.0	7.7
	May 8, 2012	NEU018E	8.1	23.4	7.8	131	0.9	95.2%	0.04	0.85	<0.02	<0.02	0.86	0.84	0.02	45.0	5.3
	May 8, 2012	NEU019E	8.7	24.2	7.9	128	0.9	103.8%	0.04	0.71	<0.02	<0.02	0.72	0.70	0.02	40.0	4.0
	May 8, 2012	NEU019L	9.0	24.9	8.0	132	1.4	108.7%	0.03	0.62	<0.02	<0.02	0.63	0.61	0.02	18.0	3.1
	May 8, 2012	NEU019P	8.9	24.1	7.9	133	1.5	106.0%	0.17	0.54	<0.02	<0.02	0.55	0.53	0.02	16.0	2.9
	May 8, 2012	NEU020D	9.1	23.8	7.8	136	1.6	107.7%	0.02	0.59	<0.02	<0.02	0.60	0.58	0.02	21.0	3.0
	June 13, 2012	LC01	8.1	27.2	7.5	124	0.6	102.0%	0.05	0.69	<0.02	<0.02	0.70	0.68	0.02	37.0	11.0
	June 13, 2012	LI01	7.2	26.1	7.5	123	0.7	88.9%	0.04	0.67	<0.02	<0.02	0.68	0.66	0.02	29.0	7.1
	June 13, 2012	LLC01	6.7	26.0	7.2	121	0.6	82.6%	0.05	0.77	<0.02	<0.02	0.78	0.76	0.02	34.0	9.6
	June 13, 2012	NEU013	7.0	25.5	7.6	150	0.3	85.5%	0.13	1.10	<0.02	<0.02	1.11	1.09	0.02		35.0
	June 13, 2012	NEU013B	6.3	25.8	7.4	125	0.3	77.4%	0.09	1.10	<0.02	<0.02	1.11	1.09	0.02	52.0	25.0
	June 13, 2012	NEU0171B	7.1	26.2	7.2	122	0.6	87.9%	0.06	0.75	<0.02	<0.02	0.76	0.74	0.02	38.0	10.0
	June 13, 2012	NEU018E	7.8	26.6	7.3	123	0.8	97.2%	0.06	0.68	<0.02	<0.02	0.69	0.67	0.02	30.0	6.8
	June 13, 2012	NEU019E	7.4	26.5	7.1	122	1.0	92.1%	0.04	0.69	<0.02	<0.02	0.70	0.68	0.02	24.0	5.3
	June 13, 2012	NEU019L	7.7	27.1	7.0	123	1.3	96.8%	0.02	0.51	<0.02	<0.02	0.52	0.50	0.02	15.0	3.3
	June 13, 2012	NEU019P	7.7	26.9	7.0	125	1.3	96.5%	0.02	0.52	<0.02	<0.02	0.53	0.51	0.02	12.0	3.4
	June 13, 2012	NEU020D	7.7	26.9	7.4	126	1.6	96.5%	0.02	0.54	<0.02	<0.02	0.55	0.53	0.02	14.0	3.5
	July 17, 2012	LC01	8.2	30.9	8.1	133	0.6	110.2%	0.05	0.75	<0.02	<0.02	0.76	0.74	0.02	24.0	12.0
	July 17, 2012	LI01	7.1	30.4	8.5	134	0.7	94.6%	0.05	0.86	<0.02	<0.02	0.87	0.85	0.02	29.0	7.5
	July 17, 2012	LLC01	7.6	30.5	7.8	137	0.6	101.4%	0.05	0.84	<0.02	<0.02	0.85	0.83	0.02	32.0	10.0
	July 17, 2012	NEU013	6.8	31.3	7.8	150	0.3	92.0%	0.11	1.10	<0.02	<0.02	1.11	1.09	0.02		32.0
	July 17, 2012	NEU013B	6.9	30.4	7.8	154	0.4	91.9%	0.08	1.00	<0.02	<0.02	1.01	0.99	0.02	16.0	22.0
	July 17, 2012	NEU0171B	8.7	30.2	8.4	138	0.6	115.5%	0.05	0.81	<0.02	<0.02	0.82	0.80	0.02	29.0	11.0
	July 17, 2012	NEU018E	9.3	31.2	8.5	135	0.7	125.6%	0.04	0.79	<0.02	<0.02	0.80	0.78	0.02	26.0	5.9
	July 17, 2012	NEU019E	8.5	30.8	8.3	128	1.1	114.0%	0.03	0.77	<0.02	<0.02	0.78	0.76	0.02	17.0	4.8
	July 17, 2012	NEU019L	8.3	31.7	8.2	128	1.4	113.1%	0.02	0.72	<0.02	<0.02	0.73	0.71	0.02	10.0	3.8
	July 17, 2012	NEU019P	8.2	31.6	8.1	131	1.4	111.5%	0.02	0.65	<0.02	<0.02	0.66	0.64	0.02	9.8	5.0
	July 17, 2012	NEU020D	8.1	31.8	8.1	132	1.5	110.5%	<0.02	0.64	<0.02	<0.02	0.65	0.63	0.02	6.2	4.1
	August 29, 2012	LC01	8.6	28.9	9.0	129	0.5	111.7%	0.05	0.84	<0.02	<0.02	0.85	0.83	0.02	40.0	12.0
	August 29, 2012	LI01	7.7	27.7	8.3	126	0.5	97.9%	0.05	0.89	<0.02	<0.02	0.90	0.88	0.02	40.0	8.6
	August 29, 2012	LLC01	7.9	27.1	8.6	127	0.5	99.4%	0.06	0.95	<0.02	<0.02	0.96	0.94	0.02	53.0	12.0
	August 29, 2012	NEU013	7.3	28.3	8.5	145	0.3	93.8%	0.15	1.20	<0.02	<0.02	1.21	1.19	0.02		37.0
	August 29, 2012	NEU013B	6.0	27.1	7.4	148	0.3	75.5%	0.11	1.10	<0.02	<0.02	1.11	1.09	0.02	50.0	29.0
	August 29, 2012	NEU0171B	8.0	27.7	8.8	127	0.5	101.7%	0.06	0.95	<0.02	<0.02	0.96	0.94	0.02	43.0	15.0
	August 29, 2012	NEU018E	8.3	27.6	8.6	126	0.7	105.3%	0.04	0.79	<0.02	<0.02	0.80	0.78	0.02	49.0	7.4
	August 29, 2012	NEU019E	8.0	28.2	8.7	122	0.7	102.6%	0.03	0.73	<0.02	<0.02	0.74	0.72	0.02	32.0	4.8
	August 29, 2012	NEU019L	7.1	28.3	7.7	120	1.0	91.2%	0.02	0.58	<0.02	<0.02	0.59	0.57	0.02	17.0	3.6
	August 29, 2012	NEU019P	7.0	28.1	7.6	120	1.2	89.6%	0.02	0.53	<0.02	<0.02	0.54	0.52	0.02	17.0	3.4
	August 29, 2012	NEU020D	7.1	28.6	7.9	118	1.5	91.7%	<0.02	0.48	<0.02	<0.02	0.49	0.47	0.02	13.0	2.9
	September 11, 2012	LC01	6.9	21.4	7.7	122	0.5	78.0%	0.06	0.77	<0.02	<0.02	0.78	0.76	0.02	31.0	14.0
	September 11, 2012	LI01	8.0	28.0	8.4	120	0.6	102.2%	0.06	0.83	<0.02	<0.02	0.84	0.82	0.02	40.0	8.8
	September 11, 2012	LLC01	7.8	26.6	7.4	138	0.5	97.2%	0.07	0.96	<0.02	<0.02	0.97	0.95	0.02	46.0	15.0
	September 11, 2012	NEU013	8.0	25.8	7.5	110	0.4	98.3%	0.14	1.20	<0.02	<0.02	1.21	1.19	0.02		37.0
	September 11, 2012	NEU013B	7.6	25.5	7.8	137	0.4	92.9%	0.10	1.10	<0.02	<0.02	1.11	1.09	0.02	53.0	26.0
	September 11, 2012	NEU0171B	7.4	26.8	7.5	134	0.6	92.6%	0.06	0.88	0.02	<0.02	0.89	0.86	0.03	49.0	13.0
	September 11, 2012	NEU018E	8.7	26.8	8.7	123	0.5	108.8%	0.06	0.86	<0.02	<0.02	0.87	0.85	0.02	46.0	9.4
	September 11, 2012	NEU019E	5.3	26.8	7.1	120	0.7	66.3%	0.04	0.77	0.07	<0.02	0.78	0.70	0.08	26.0	7.0
	September 11, 2012	NEU019L	5.3	27.3	7.3	114	2.0	66.9%	0.02	0.58	0.02	<0.02	0.59	0.56	0.03	15.0	3.2
	September 11, 2012	NEU019P	6.0	27.3	7.4	109	2.0	75.7%	0.02	0.57	<0.02	<0.02	0.58	0.56	0.02	16.0	4.3
	September 11, 2012	NEU020D	6.5	27.6	7.5	105	2.2	82.5%	0.02	0.54	<0.02	<0.02	0.55	0.53	0.02	12.0	3.5
	October 10, 2012	LC01	8.0	19.5	7.7	119	0.6	87.1%	0.05	0.84	0.03	<0.02	0.85	0.81	0.04	33.0	7.9
	October 10, 2012	LI01	7.4	19.4	7.4	125	0.7	80.4%	0.05	0.77	0.02	<0.02	0.78	0.75	0.03	30.0	7.9
	October 10, 2012	LLC01	8.0	18.4	7.4	115	0.6	85.2%	0.06	0.89	0.06	<0.02	0.90	0.83	0.07	29.0	12.0
	October 10, 2012	NEU013	9.5	18.0	7.8	106	0.4	100.4%	0.09	0.90	<0.02	<0.02	0.91	0.89	0.02		22.0
	October 10, 2012	NEU013B	8.3	17.3	7.0	106	0.4	86.4%	0.09	0.95	0.06	<0.02	0.96	0.89	0.07	35.0	23.0
	October 10, 2012	NEU0171B	8.0	18.8	7.5	116	0.6	85.9%	0.06	0.90	0.08	<0.02	0.91	0.82	0.09	33.0	12.0
	October 10, 2012	NEU018E	6.6	19.5	7.5	127	0.7	71.9%	0.05	0.83	0.09	<0.02	0.84	0.74	0.10	29.0	8.4
	October 10, 2012	NEU019E	4.2	20.5	7.4	125	0.7	46.7%	0.04	0.92	0.24	<0.02	0.93	0.68	0.25	28.0	7.3
	October 10, 2012	NEU019L	5.5	21.1	7.6	125	0.9	61.8%	0.03	0.83	0.17	<0.02	0.84	0.66	0.18	22.0	4.2
	October 10, 2012	NEU019P	4.4	21.1	7.5	123	1.0	49.5%	0.02	0.87	0.19	<0.02	0.88	0.68	0.20	20.0	4.3
	October 10, 2012	NEU020D	4.3	21.4	7.3	124	1.1	48.6%	0.02	0.57	0.04	<0.02	0.58	0.53	0.05	17.0	2.9
	November 8, 2012	LC01	10.3	10.8	7.3	124	0.5	93.0%	0.04	0.68	<0.02	<0.02	0.69	0.67	0.02	19.0	9.1
	November 8, 2012	LI01	9.9	11.8	7.3	127	0.7	91.5%	0.04	0.71	<0.02	<0.02	0.72	0.70	0.02	19.0	9.5
	November 8, 2012	LLC01	10.7	11.2	7.5	121	0.6	97.5%	0.05	0.79	<0.02	<0.02	0.80	0.78	0.02	22.0	11.0
	November 8, 2012	NEU013	10.3	9.5	7.4	171	0.4	90.2%	0.10	0.90	<0.02	<0.02	0.91	0.89	0.02		21.0
	November 8, 2012	NEU013B	10.4	9.5	7.5	140	0.4	91.1%	0.08	0.88	<0.02	<0.02	0.89	0.87	0.02	24.0	19.0
	November 8, 2012	NEU0171B	9.8	11.1	7.5	121	0.4	89.1%	0.05	0.72	<0.02	<0.02	0.73	0.71	0.02	22.0	12.0
	November 8, 2012	NEU018E	9.9	11.4	7.3	125	0.7	90.6%	0.04	0.78	<0.02	<0.02	0.79	0.77	0.02	21.0	9.2
	November 8, 2012	NEU019E	9.9	12.5	7.0	122	0.7	92.9%	0.04	0.83	<0.02	<0.02	0.84	0.82	0.02	25.0	7.9

Lake	Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Turbidity NTU
		SURFACE PHYSICAL DATA							**PHOTIC ZONE DATA**								
	November 8, 2012	NEU019L	8.4	14.5	7.3	127	0.7	82.4%	0.03	0.76	0.10	<0.02	0.77	0.66	0.11	30.0	6.2
FALLS OF THE NEUSE RESERVOIR	November 8, 2012	NEU019P	6.7	13.9	6.9	129	0.7	64.9%	0.04	1.00	0.36	0.02	1.02	0.64	0.38	18.0	7.1
	November 8, 2012	NEU020D	7.1	14.3	7.1	125	1.0	69.4%	0.02	0.72	0.26	<0.02	0.73	0.46	0.27	11.0	5.4
	December 18, 2012	LC01	10.6	11.3	7.4	123	0.7	96.8%	0.04	0.72	<0.02	<0.02	0.73	0.71	0.02	30.0	9.7
	December 18, 2012	LI01	10.3	10.9	7.5	124	0.8	93.2%	0.04	0.77	0.09	0.02	0.79	0.68	0.11	28.0	8.4
	December 18, 2012	LLC01	10.1	10.7	7.6	123	0.6	91.0%	0.04	0.75	0.07	0.02	0.77	0.68	0.09	23.0	10.0
	December 18, 2012	NEU013	11.5	11.8	8.5	221	0.3	106.3%	0.16	1.30	<0.02	0.08	1.38	1.29	0.09		29.0
	December 18, 2012	NEU013B	11.0	11.0	7.9	178	0.5	99.8%	0.08	0.91	<0.02	<0.02	0.92	0.90	0.02	39.0	18.0
	December 18, 2012	NEU0171B	10.8	11.2	7.8	123	0.6	98.4%	0.05	0.75	0.02	0.02	0.77	0.73	0.04	27.0	11.0
	December 18, 2012	NEU018E	10.3	11.2	7.5	123	0.8	93.9%	0.04	0.78	0.06	<0.02	0.79	0.72	0.07	31.0	8.4
	December 18, 2012	NEU019E	10.0	11.6	7.5	120	0.8	92.0%	0.04	0.77	0.13	0.02	0.79	0.64	0.15	29.0	7.0
	December 18, 2012	NEU019L	9.6	11.8	7.6	123	0.8	88.7%	0.05	0.98	0.26	0.03	1.01	0.72	0.29	44.0	5.8
	December 18, 2012	NEU019P	9.8	11.6	7.6	125	1.0	90.1%	0.03	0.98	0.31	0.06	1.04	0.67	0.37	34.0	4.8
	December 18, 2012	NEU020D	10.0	11.8	7.5	124	1.1	92.4%	0.02	0.75	0.25	0.07	0.82	0.50	0.32	29.0	3.8
	January 14, 2013	LC01	13.1	11.2	7.9	110	0.8	119.4%	0.04	0.68	<0.02	<0.02	0.69	0.67	0.02	26.0	7.5
	January 14, 2013	LI01	12.1	9.9	7.3	118	0.8	107.0%								26.0	9.3
	January 14, 2013	LLC01	12.3	9.4	7.5	137	0.5	107.5%	0.05	0.76	<0.02	<0.02	0.77	0.75	0.02	30.0	9.0
	January 14, 2013	NEU013	13.1	11.5	7.4	127	0.4	120.2%	0.07	0.63	<0.02	0.28	0.91	0.62	0.29		20.0
	January 14, 2013	NEU013B	12.1	12.5	7.5	136	0.4	113.6%	0.09	0.82	<0.02	0.03	0.85	0.81	0.04	39.0	24.0
	January 14, 2013	NEU0171B	11.6	9.6	7.5	137	0.6	101.8%	0.04	0.72	<0.02	<0.02	0.73	0.71	0.02	30.0	8.7
	January 14, 2013	NEU018E	12.6	10.2	7.7	121	1.0	112.2%	0.04	0.70	0.04	0.04	0.74	0.66	0.08	30.0	6.8
	January 14, 2013	NEU019E	12.4	10.7	7.2	116	0.9	111.7%	0.04	0.79	0.05	0.06	0.85	0.74	0.11	31.0	5.3
	January 14, 2013	NEU019L	11.2	10.8	7.3	117	1.0	101.1%	0.04	0.90	0.25	0.06	0.96	0.65	0.31	29.0	4.8
	January 14, 2013	NEU019P	11.7	10.8	7.3	119	1.2	105.6%	0.03	0.91	0.31	0.10	1.01	0.60	0.41	29.0	3.9
	January 14, 2013	NEU020D	12.1	11.4	7.5	118	1.3	110.8%	0.02	0.78	0.25	0.11	0.89	0.53	0.36	19.0	3.9
	February 27, 2013	LC01	13.0	8.0	8.0	96	0.5	109.8%	0.06	0.81	<0.02	0.06	0.87	0.80	0.07	41.0	13.0
	February 27, 2013	LI01	13.4	8.2	7.8	104	0.4	113.7%	0.06	0.90	<0.02	0.04	0.94	0.89	0.05	46.0	15.0
	February 27, 2013	LLC01	11.5	7.5	6.7	109	0.5	95.9%	0.06	0.79	<0.02	0.18	0.97	0.78	0.19	39.0	15.0
	February 27, 2013	NEU013	11.2	7.3	7.3	96	0.3	93.0%	0.07	0.61	0.02	0.30	0.91	0.59	0.32	18.0	28.0
	February 27, 2013	NEU013B	11.9	7.6	7.4	115	0.3	99.5%	0.07	0.81	<0.02	0.23	1.04	0.80	0.24	40.0	27.0
	February 27, 2013	NEU0171B	11.6	7.5	6.8	109	0.4	96.8%	0.06	0.76	<0.02	0.19	0.95	0.75	0.20	34.0	14.0
	February 27, 2013	NEU018E	13.3	7.9	7.8	100	0.5	112.1%	0.05	0.82	<0.02	0.11	0.93	0.81	0.12	45.0	12.0
	February 27, 2013	NEU019E		7.9	8.2	102	0.6		0.04	0.81	<0.02	0.08	0.89	0.80	0.09	47.0	10.0
	February 27, 2013	NEU019L		8.4	7.7	104	0.6		0.05	0.82	0.02	0.09	0.91	0.80	0.11	46.0	9.5
	February 27, 2013	NEU019P		8.1	7.6	109	0.8		0.04	0.84	0.02	0.08	0.92	0.82	0.10	47.0	9.0
	February 27, 2013	NEU020D	12.5	8.2	7.8	108	0.8	106.1%	0.04	0.76	0.05	0.11	0.87	0.71	0.16	38.0	6.8
	March 20, 2013	LC01	10.5	10.5	6.6	104	0.5	94.2%	0.06	0.78	<0.02	0.06	0.84	0.77	0.07	41.0	13.0
	March 20, 2013	LI01	11.1	10.8	6.2	105	0.5	100.2%	0.06	0.96	<0.02	0.04	1.00	0.95	0.05	43.0	15.0
	March 20, 2013	LLC01	11.3	11.2	6.3	103	0.5	103.0%	0.07	0.80	<0.02	0.12	0.92	0.79	0.13	41.0	20.0
	March 20, 2013	NEU013	11.3	10.9	6.6	104	0.3	102.3%	0.09	0.74	<0.02	0.14	0.88	0.73	0.15		40.0
	March 20, 2013	NEU013B	11.2	11.0	6.6	110	0.3	101.6%	0.09	0.80	<0.02	0.11	0.91	0.79	0.12	52.0	35.0
	March 20, 2013	NEU0171B	11.4	11.3	6.0	104	0.6	104.1%	0.07	0.84	<0.02	0.12	0.96	0.83	0.13	50.0	15.0
	March 20, 2013	NEU018E	11.1	10.5	6.1	105	0.5	99.5%	0.06	0.89	<0.02	0.08	0.97	0.88	0.09	40.0	16.0
	March 20, 2013	NEU019E	10.7	10.5	6.3	100	0.6	95.9%	0.05	0.77	<0.02	0.06	0.83	0.76	0.07	36.0	11.0
	March 20, 2013	NEU019L	11.2	10.8	6.4	103	0.8	101.1%	0.06	0.84	<0.02	0.05	0.89	0.83	0.06	44.0	14.0
	March 20, 2013	NEU019P	11.3	11.0	6.5	103	0.6	102.5%	0.05	0.69	<0.02	0.05	0.74	0.68	0.06	40.0	6.8
	March 20, 2013	NEU020D	10.5	10.5	6.5	105	0.7	94.2%	0.04	0.71	<0.02	0.09	0.80	0.70	0.10	33.0	8.6
	April 24, 2013	LC01	7.8	18.2	6.3	106	0.6	82.8%	0.06	0.77	0.03	<0.02	0.78	0.74	0.04	25.0	10.0
	April 24, 2013	LI01	8.4	18.1	6.4	106	0.7	88.9%	0.06	0.80	<0.02	<0.02	0.81	0.79	0.02	29.0	9.3
	April 24, 2013	LLC01	9.5	18.4	5.9	109	0.6	101.2%	0.05	0.66	<0.02	<0.02	0.67	0.65	0.02		9.9
	April 24, 2013	NEU013	9.7	18.4	5.6	103	0.2	103.3%	0.08	0.74	<0.02	<0.02	0.75	0.73	0.02		18.0
	April 24, 2013	NEU013B	8.9	18.6	5.8	114	0.2	95.2%	0.07	0.71	<0.02	<0.02	0.72	0.70	0.02		30.0
	April 24, 2013	NEU0171B	8.7	18.2	5.7	109	0.5	92.3%	0.05	0.77	<0.02	<0.02	0.78	0.76	0.02	27.0	11.0
	April 24, 2013	NEU018E	8.9	18.6	6.3	107	0.7	95.2%	0.05	0.68	<0.02	<0.02	0.69	0.67	0.02	26.0	9.0
	April 24, 2013	NEU019E	8.3	18.6	6.5	105	0.7	88.8%	0.05	0.76	<0.02	<0.02	0.77	0.75	0.02	24.0	6.9
	April 24, 2013	NEU019L	9.2	19.2	6.4	101	0.9	99.6%	0.05	0.74	<0.02	<0.02	0.75	0.73	0.02	26.0	6.8
	April 24, 2013	NEU019P	8.5	19.3	6.4	101	1.0	92.2%	0.04	0.64	<0.02	<0.02	0.65	0.63	0.02		7.6
	April 24, 2013	NEU020D	9.1	19.4	6.5	100	1.2	98.9%	0.04	0.75	<0.02	<0.02	0.76	0.74	0.02		5.0
	May 14, 2013	LC01	8.5	20.9	7.5	101	0.4	95.2%	0.38	0.85	<0.02	<0.02	0.86	0.84	0.02	23.0	11.0
	May 14, 2013	LI01	9.0	21.5	7.8	104	0.6	102.0%	0.05	0.80	<0.02	<0.02	0.81	0.79	0.02	28.0	8.9
	May 14, 2013	LLC01	9.4	20.6	7.7	99	0.4	104.7%	0.07	0.90	<0.02	<0.02	0.91	0.89	0.02	34.0	12.0
	May 14, 2013	NEU013	9.8	21.3	7.6	99	0.2	110.6%	0.11	1.10	<0.02	0.02	1.12	1.09	0.03		31.0
	May 14, 2013	NEU013B	7.9	20.9	7.3	94	0.2	88.5%	0.12	1.00	0.02	0.02	1.02	0.98	0.04	26.0	39.0
	May 14, 2013	NEU0171B	8.9	20.8	7.6	99	0.5	99.5%	0.07	0.92	<0.02	<0.02	0.93	0.91	0.02	30.0	17.0
	May 14, 2013	NEU018E	9.8	21.0	7.6	105	0.5	110.0%	0.05	0.79	<0.02	<0.02	0.80	0.78	0.02	25.0	10.0
	May 14, 2013	NEU019E	9.5	21.8	7.5	78	0.7	108.3%	0.04	0.77	<0.02	<0.02	0.78	0.76	0.02	20.0	6.3
	May 14, 2013	NEU019L	9.3	22.4	7.8	102	0.6	107.2%	0.04	0.70	<0.02	<0.02	0.71	0.69	0.02	18.0	6.5
	May 14, 2013	NEU019P	8.8	21.3	7.6	102	0.8	99.3%	0.04	0.77	<0.02	<0.02	0.78	0.76	0.02	20.0	7.2
	May 14, 2013	NEU020D	9.9	22.2	7.8	99	1.0	113.7%	0.04	0.74	<0.02	<0.02	0.75	0.73	0.02	13.0	5.3
	June 13, 2013	LC01	8.7	28.1	8.1	85	0.5	111.4%	0.06	0.84	<0.02	<0.02	0.85	0.83	0.02	41.0	9.6
	June 13, 2013	LI01	8.3	27.3	8.3	87	0.6	104.8%	0.05	0.83	0.02	<0.02	0.84	0.81	0.03	37.0	9.1
	June 13, 2013	LLC01	8.7	26.8	8.1	86	0.5	108.8%	0.30	0.83	<0.02	<0.02	0.84	0.82	0.02	54.0	12.0
	June 13, 2013	NEU013	9.6	28.3	8.3	80	0.4	123.3%	0.09	1.10	<0.02	<0.02	1.11	1.09	0.02		18.0
	June 13, 2013	NEU013B	8.8	27.6	8.3	77	0.4	111.7%	0.27	0.87	<0.02	<0.02	0.88	0.86	0.02	40.0	13.0
	June 13, 2013	NEU0171B	9.4	27.5	8.7	87	0.5	119.1%	0.08	0.83	<0.02	<0.02	0.84	0.82	0.02	62.0	11.0
	June 13, 2013	NEU018E	9.1	27.9	8.7	90	0.6	116.1%	0.06	0.85	0.02	<0.02	0.86	0.83	0.03	42.0	7.8
	June 13, 2013	NEU019E	9.0	28.3	8.7	88	0.7	115.6%	0.05	0.74	<0.02	<0.02	0.75	0.73	0.02	36.0	6.1
	June 13, 2013	NEU019L	8.9	29.5	8.6	91	1.0	116.8%	0.04	0.72	0.02	<0.02	0.73	0.70	0.03	27.0	6.1
	June 13, 2013	NEU019P	8.8	29.3	8.4	92	0.8	115.1%	0.04	0.67	0.02	<0.02	0.68	0.65	0.03	27.0	5.3
	June 13, 2013	NEU020D	8.5	30.2	8.3	93	0.9	112.9%	0.03	0.56	<0.02	<0.02	0.57	0.55	0.02	14.0	3.9

Lake	Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Turbidity NTU
	SURFACE PHYSICAL DATA								PHOTIC ZONE DATA								
	July 17, 2013	LC01	8.6	30.6	8.5	79	0.8	115.0%	0.06	0.86	0.02	<0.02	0.87	0.84	0.03	58.0	7.6
FALLS OF THE	July 17, 2013	LI01	8.5	31.0	8.7	82	1.0	114.4%	0.04	0.84	<0.02	<0.02	0.85	0.83	0.02	36.0	6.4
NEUSE	July 17, 2013	LLC01	10.0	30.8	8.3	78	1.0	134.2%	0.05	0.84	0.02	<0.02	0.85	0.82	0.03	47.0	6.4
RESERVOIR	July 17, 2013	NEU013	10.1	29.8	7.5	85	0.5	133.2%	0.11	1.10	0.02	<0.02	1.11	1.08	0.03		16.0
	July 17, 2013	NEU013B	8.5	29.1	7.1	77	0.5	110.7%	0.07	0.91	0.02	<0.02	0.92	0.89	0.03	33.0	13.0
	July 17, 2013	NEU0171B	9.9	31.5	8.3	79	0.7	134.4%	0.05	0.79	0.02	<0.02	0.80	0.77	0.03	37.0	7.3
	July 17, 2013	NEU018E	8.9	31.2	9.0	81	0.8	120.2%								31.0	5.2
	July 17, 2013	NEU019E	8.2	31.1	8.3	71	0.9	110.6%	0.05	0.87	0.02	<0.02	0.88	0.85	0.03	44.0	6.1
	July 17, 2013	NEU019L	7.1	29.8	7.5	79		93.6%	0.02	0.69	<0.02	<0.02	0.70	0.68	0.02	39.0	6.6
	July 17, 2013	NEU019P	7.9	31.5	7.9	80	0.9	107.3%								30.0	6.4
	July 17, 2013	NEU020D	8.4	32.2	8.5	84	0.9	115.4%								22.0	5.0
	August 14, 2013	LC01	5.0	28.7	7.2	82	0.4	64.7%	0.06	0.86	<0.02	<0.02	0.87	0.85	0.02		13.0
	August 14, 2013	LI01	6.1	29.5	7.5	81	0.8	80.0%	0.04	0.77	<0.02	<0.02	0.78	0.76	0.02	19.0	7.7
	August 14, 2013	LLC01	4.6	29.1	7.1	87	0.6	59.9%	0.05	0.80	<0.02	<0.02	0.81	0.79	0.02	28.0	9.2
	August 14, 2013	NEU013	5.7	28.4	7.3	112	0.4	73.4%	0.10	1.10	<0.02	<0.02	1.11	1.09	0.02		31.0
	August 14, 2013	NEU013B	4.8	28.6	7.2	108	0.4	62.0%	0.08	0.93	<0.02	<0.02	0.94	0.92	0.02	33.0	27.0
	August 14, 2013	NEU0171B	5.0	28.9	7.2	87	0.6	64.9%	0.05	0.81	<0.02	<0.02	0.82	0.80	0.02	28.0	10.0
	August 14, 2013	NEU018E	6.0	29.3	7.4	81	0.9	78.4%	0.05	0.79	<0.02	<0.02	0.80	0.78	0.02	24.0	6.6
	August 14, 2013	NEU019E	6.1	29.6	7.4	78	1.0	80.2%	0.05	0.72	<0.02	<0.02	0.73	0.71	0.02	22.0	5.1
	August 14, 2013	NEU019L	7.1	30.3	7.8	78	1.1	94.4%	0.06	0.65	<0.02	<0.02	0.66	0.64	0.02	6.1	4.3
	August 14, 2013	NEU019P	6.1	29.6	7.3	77	1.1	80.2%	0.06	0.63	<0.02	<0.02	0.64	0.62	0.02	6.5	4.6
	August 14, 2013	NEU020D	7.3	30.2	8.0	81	1.3	96.9%	0.03	0.56	<0.02	<0.02	0.57	0.55	0.02	5.5	3.8
	September 11, 2013	LC01	8.9	28.7	7.9	89	0.6	115.1%	0.06	0.80	<0.02	<0.02	0.81	0.79	0.02	44.0	7.4
	September 11, 2013	LI01	7.4	28.2	7.9	84	0.6	94.9%	0.05	0.79	<0.02	<0.02	0.80	0.78	0.02	38.0	8.1
	September 11, 2013	LLC01	5.8	27.4	6.8	93	0.6	73.3%	0.09	0.85	0.02	<0.02	0.86	0.83	0.03	47.0	12.0
	September 11, 2013	NEU013	7.2	28.2	7.1	125	0.4	92.3%	0.16	1.10	0.02	<0.02	1.11	1.08	0.03	59.0	20.0
	September 11, 2013	NEU013B	8.0	28.6	7.2	110	0.5	103.3%	0.08	0.96	0.02	<0.02	0.97	0.94	0.03	44.0	16.0
	September 11, 2013	NEU0171B	8.4	28.1	7.5	93	0.6	107.5%	0.10	0.85	<0.02	<0.02	0.86	0.84	0.02	45.0	8.2
	September 11, 2013	NEU018E	8.1	28.6	8.5	83	0.6	104.6%	0.04	0.83	<0.02	<0.02	0.84	0.82	0.02	30.0	5.6
	September 11, 2013	NEU019E	7.9	28.7	8.2	79	1.0	102.2%	0.04	0.74	<0.02	<0.02	0.75	0.73	0.02	32.0	4.6
	September 11, 2013	NEU019L	8.0	29.2	7.9	78	1.3	104.4%	0.05	0.63	<0.02	<0.02	0.64	0.62	0.02	24.0	4.0
	September 11, 2013	NEU019P	7.9	29.0	8.0	78	1.4	102.7%	0.02	0.58	<0.02	<0.02	0.59	0.57	0.02	17.0	3.6
	September 11, 2013	NEU020D	7.7	29.6	8.2	79	1.2	101.2%	0.02	0.58	<0.02	<0.02	0.59	0.57	0.02	15.0	3.3
	October 24, 2013	LC01	9.9	17.6	8.4	89	0.5	103.8%	0.05	0.76	<0.02	<0.02	0.77	0.75	0.02	38.0	10.0
	October 24, 2013	LI01	8.2	17.6	7.6	89	0.7	85.9%	0.05	0.80	<0.02	<0.02	0.81	0.79	0.02	46.0	8.9
	October 24, 2013	LLC01	9.3	17.1	7.8	98	0.4	96.5%	0.06	0.86	<0.02	<0.02	0.87	0.85	0.02	45.0	11.0
	October 24, 2013	NEU013	9.2	15.1	7.9	167	0.3	91.5%	0.11	1.20	<0.02	<0.02	1.21	1.19	0.02		25.0
	October 24, 2013	NEU013B	8.9	15.4	7.7	154	0.3	89.1%	0.09	1.10	<0.02	<0.02	1.11	1.09	0.02	46.0	8.2
	October 24, 2013	NEU0171B	9.6	16.7	8.0	101	0.4	98.7%	0.05	0.74	<0.02	<0.02	0.75	0.73	0.02	41.0	11.0
	October 24, 2013	NEU018E	9.0	17.5	7.8	91	0.7	94.1%	0.04	0.77	<0.02	<0.02	0.78	0.76	0.02	50.0	9.2
	October 24, 2013	NEU019E	7.7	18.2	7.5	86	0.8	81.7%	0.04	0.76	0.04	<0.02	0.77	0.72	0.05	37.0	7.3
	October 24, 2013	NEU019L	6.1	19.2	7.2	87	0.9	66.0%	0.04	0.77	0.17	0.02	0.79	0.60	0.19	28.0	6.2
	October 24, 2013	NEU019P	5.9	19.5	7.1	87	0.9	64.3%	0.03	0.87	0.26	0.03	0.90	0.61	0.29	24.0	5.4
	October 24, 2013	NEU020D	4.9	19.9	7.1	88	1.0	53.8%	0.03	0.91	0.43	<0.02	0.92	0.48	0.44	17.0	5.0
	November 12, 2013	LC01	10.2	13.8	7.0	92	0.6	98.6%	0.05	0.73	<0.02	<0.02	0.74	0.72	0.02	24.0	8.8
	November 12, 2013	LI01	9.2	13.6	7.6	91	0.7	88.5%	0.06	0.72	<0.02	<0.02	0.73	0.71	0.02	26.0	7.9
	November 12, 2013	LLC01	9.4	13.3	7.2	107	0.6	89.8%	0.07	0.78	<0.02	<0.02	0.79	0.77	0.02	31.0	11.0
	November 12, 2013	NEU013	10.3	11.8	7.7	213	0.3	95.2%	0.13	1.40	<0.02	<0.02	1.41	1.39	0.02		27.0
	November 12, 2013	NEU013B	10.1	12.1	7.5	161	0.4	94.0%	0.10	0.95	<0.02	<0.02	0.96	0.94	0.02	32.0	22.0
	November 12, 2013	NEU0171B	9.6	13.0	7.2	106	0.7	91.1%	0.06	0.84	<0.02	<0.02	0.85	0.83	0.02	28.0	12.0
	November 12, 2013	NEU018E	8.7	13.7	7.4	93	0.7	83.9%	0.05	0.74	<0.02	<0.02	0.75	0.73	0.02	26.0	9.5
	November 12, 2013	NEU019E	9.2	14.6	7.6	86	0.8	90.5%	0.04	0.82	<0.02	<0.02	0.83	0.81	0.02	29.0	6.4
	November 12, 2013	NEU019L	7.5	15.4	7.4	86	0.9	75.0%	0.04	0.79	0.12	0.03	0.82	0.67	0.15	28.0	6.2
	November 12, 2013	NEU019P	7.8	15.4	7.4	87	1.0	78.0%	0.04	0.80	0.18	0.04	0.84	0.62	0.22	25.0	4.5
	November 12, 2013	NEU020D	7.1	15.7	7.4	87	1.1	71.5%	0.04	0.84	0.31	0.04	0.88	0.53	0.35	18.0	4.8
	December 2, 2013	LC01	11.4	8.5	6.9	96	0.5	97.5%	0.04	0.76	<0.02	<0.02	0.77	0.75	0.02	29.0	9.3
	December 2, 2013	LI01	10.9	8.3	7.7	94	0.6	92.7%	0.05	0.81	<0.02	<0.02	0.82	0.80	0.02	30.0	8.6
	December 2, 2013	LLC01	12.0	9.0	7.5	113	0.5	103.8%	0.07	0.85	<0.02	<0.02	0.86	0.84	0.02	24.0	9.8
	December 2, 2013	NEU013	13.6	7.8	7.9	202	0.3	114.3%	0.10	0.92	<0.02	0.13	1.05	0.91	0.14		17.0
	December 2, 2013	NEU013B	13.5	7.6	8.1	194	0.3	112.9%	0.07	0.93	<0.02	<0.02	0.94	0.92	0.02	38.0	12.0
	December 2, 2013	NEU0171B	11.8	9.4	7.4	113	0.5	103.1%	0.05	0.72	<0.02	<0.02	0.73	0.71	0.02	23.0	8.7
	December 2, 2013	NEU018E	11.0	8.3	7.7	95	0.8	93.6%	0.08	0.71	<0.02	<0.02	0.72	0.70	0.02	28.0	6.6
	December 2, 2013	NEU019E	10.1	9.1	7.6	89	0.8	87.6%	0.04	0.73	<0.02	<0.02	0.74	0.72	0.02	30.0	5.9
	December 2, 2013	NEU019L	8.3	10.4	7.4	87	0.8	74.3%	0.05	0.74	0.10	0.02	0.76	0.64	0.12	26.0	6.2
	December 2, 2013	NEU019P	9.8	10.8	7.5	86	0.8	88.5%	0.06	0.76	0.10	0.05	0.81	0.66	0.15	37.0	4.1
	December 2, 2013	NEU020D	8.6	11.0	7.4	87	1.0	78.0%	0.03	0.84	0.23	0.08	0.92	0.61	0.31	19.0	5.8
	January 14, 2014	LC01	11.7	6.8	7.6	85	0.3	95.9%	0.09	0.81	<0.02	0.27	1.08	0.80	0.28	39.0	29.0
	January 14, 2014	LI01	10.6	7.3	7.3	89	0.5	88.0%	0.09	0.80	<0.02	0.09	0.89	0.79	0.10	32.0	32.0
	January 14, 2014	LLC01	11.7	6.6	7.6	93	0.5	95.5%	0.07	0.80	<0.02	0.19	0.99	0.79	0.20	50.0	17.0
	January 14, 2014	NEU013	11.1	7.3	8.0	71	0.2	92.2%	0.10	0.74	0.05	0.31	1.05	0.69	0.36		50.0
	January 14, 2014	NEU013B	11.2	7.4	7.8	74	0.2	93.2%	0.11	0.73	0.02	0.29	1.02	0.71	0.31	18.0	50.0
	January 14, 2014	NEU0171B	11.5	6.7	7.7	102	0.8	94.1%	0.05	0.73	<0.02	0.10	0.83	0.72	0.11	43.0	8.8
	January 14, 2014	NEU018E	11.6	6.6	7.4	93	0.5	94.6%	0.06	0.82	<0.02	0.20	1.02	0.81	0.21	51.0	15.0
	January 14, 2014	NEU019E	10.7	6.9	7.3	85	0.9	88.0%	0.05	0.75	0.02	0.08	0.83	0.73	0.10	43.0	9.5
	January 14, 2014	NEU019L	11.2	7.0	7.4	100	1.0	92.3%	0.05	0.77	0.02	0.10	0.87	0.75	0.12	46.0	10.0
	January 14, 2014	NEU019P	10.3	7.1	7.3	105	1.0	85.1%	0.07	0.84	0.05	0.07	0.91	0.79	0.12	37.0	8.9
	January 14, 2014	NEU020D	10.5	7.9	7.3	97	1.0	88.5%	0.06	0.96	0.09	0.07	1.03	0.87	0.16	29.0	7.3

Lake	Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Turbidity NTU
	SURFACE PHYSICAL DATA								PHOTIC ZONE DATA								
	February 24, 2014	LC01	12.5	10.0	7.6	86	0.5	110.8%	0.06	0.70	<0.02	0.17	0.87	0.69	0.18	36.0	13.0
FALLS OF THE	February 24, 2014	LI01	11.0	9.5	8.1	96	0.4	96.3%	0.10	0.66	0.02	0.13	0.79	0.64	0.15	32.0	25.0
NEUSE	February 24, 2014	LLC01	12.2	9.6	7.5	113	0.4	107.1%	0.06	0.58	<0.02	0.35	0.93	0.57	0.36	26.0	19.0
RESERVOIR	February 24, 2014	NEU013	10.9	10.3	7.4	85	0.3	97.3%	0.09	0.62	<0.02	0.32	0.94	0.61	0.33		45.0
	February 24, 2014	NEU013B	11.0	10.5	7.1	103	0.2	98.6%	0.06	0.63	<0.02	0.35	0.98	0.62	0.36	19.0	38.0
	February 24, 2014	NEU0171B	11.7	9.6	7.5	115	0.4	102.7%	0.06	0.68	<0.02	0.36	1.04	0.67	0.37	19.0	21.0
	February 24, 2014	NEU018E	11.4	8.8	8.0	101	0.6	98.2%	0.07	0.67	0.02	0.32	0.99	0.65	0.34	32.0	13.0
	February 24, 2014	NEU019E	11.8	8.6	8.1	86	0.8	101.1%	0.05	0.65	0.02	0.18	0.83	0.63	0.20	33.0	10.0
	February 24, 2014	NEU019L	11.3	8.8	8.0	88	0.6	97.3%	0.09	0.72	0.02	0.24	0.96	0.70	0.26	34.0	9.8
	February 24, 2014	NEU019P	11.3	8.0	8.0	86	0.7	95.4%	0.05	0.71	0.02	0.22	0.93	0.69	0.24	37.0	9.3
	February 24, 2014	NEU020D	11.6	8.0	7.8	85	0.8	98.0%	0.06	0.79	0.02	0.21	1.00	0.77	0.23	41.0	7.0
	March 27, 2014	LC01	10.9	10.1	7.8	86	0.5	96.8%	0.06	0.72	<0.02	0.18	0.90	0.71	0.19	37.0	18.0
	March 27, 2014	LI01	10.3	9.3	8.0	90	0.6	89.8%	0.07	0.66	<0.02	0.16	0.82	0.65	0.17	35.0	23.0
	March 27, 2014	LLC01	11.2	9.6	8.0	89	0.5	98.3%	0.07	0.67	<0.02	0.24	0.91	0.66	0.25	36.0	25.0
	March 27, 2014	NEU013	11.5	8.7	7.9	99	0.3	98.8%	0.09	0.60	<0.02	0.31	0.91	0.59	0.32		45.0
	March 27, 2014	NEU013B	11.3	9.1	8.3	96	0.3	98.0%	0.08	0.68	<0.02	0.29	0.97	0.67	0.30	40.0	40.0
	March 27, 2014	NEU0171B	10.9	9.6	7.5	89	0.5	95.7%	0.09	0.62	<0.02	0.26	0.88	0.61	0.27	32.0	23.0
	March 27, 2014	NEU018E	10.2	9.2	7.7	89	0.6	88.7%	0.05	0.57	<0.02	0.26	0.83	0.56	0.27	26.0	17.0
	March 27, 2014	NEU019E	10.1	9.5	8.1	86	0.6	88.5%	0.06	0.61	<0.02	0.22	0.83	0.60	0.23	29.0	16.0
	March 27, 2014	NEU019L	10.2	10.2	7.8	88	0.7	90.8%	0.05	0.62	<0.02	0.22	0.84	0.61	0.23	30.0	13.0
	March 27, 2014	NEU019P	9.9	9.6	7.7	89	0.7	86.9%	0.05	0.58	<0.02	0.23	0.81	0.57	0.24	29.0	13.0
	March 27, 2014	NEU020D	10.1	9.7	7.8	92	0.7	88.9%	0.05	0.57	<0.02	0.22	0.79	0.56	0.23	36.0	10.0
	April 22, 2014	LC01	10.8	17.1	7.7	83	0.6	112.0%	0.08	0.86	<0.02	0.02	0.88	0.85	0.03	57.0	16.0
	April 22, 2014	LI01	11.1	17.2	8.5	85	0.6	115.4%	0.08	0.94	<0.02	<0.02	0.95	0.93	0.02	105.0	18.0
	April 22, 2014	LLC01	10.6	17.4	7.5	79	0.6	110.6%	0.06	0.72	<0.02	0.03	0.75	0.71	0.04	45.0	16.0
	April 22, 2014	NEU013	11.6	7.9	7.7	83	0.5	97.7%	0.07	0.69	<0.02	0.08	0.77	0.68	0.09		22.0
	April 22, 2014	NEU013B	10.9	17.0	7.7	86	0.4	112.8%	0.10	0.89	<0.02	<0.02	0.90	0.88	0.02	44.0	32.0
	April 22, 2014	NEU0171B	10.8	17.7	7.6	85	0.6	113.4%	0.09	0.91	<0.02	0.03	0.94	0.90	0.04	62.0	16.0
	April 22, 2014	NEU018E	10.6	18.0	8.4	85	0.7	112.0%	0.06	0.74	<0.02	0.06	0.80	0.73	0.07	65.0	13.0
	April 22, 2014	NEU019E	10.5	17.8	8.2	73	0.7	110.5%	0.05	0.71	<0.02	0.06	0.77	0.70	0.07	62.0	11.0
	April 22, 2014	NEU019L	10.4	18.4	8.1	85	0.8	110.8%	0.07	0.86	<0.02	<0.02	0.87	0.85	0.02	61.0	12.0
	April 22, 2014	NEU019P	10.3	18.1	7.7	85	0.5	109.1%	0.06	0.78	<0.02	0.06	0.84	0.77	0.07	58.0	11.0
	April 22, 2014	NEU020D	10.7	18.7	8.4	87	1.0	114.7%	0.05	0.82	<0.02	0.07	0.89	0.81	0.08	79.0	8.7
	May 12, 2014	LC01	8.1	25.1	8.0	84	0.8	98.2%	0.04	0.65	<0.02	<0.02	0.66	0.64	0.02	34.0	8.4
	May 12, 2014	LI01	8.9	25.3	7.4	91	0.6	108.3%	0.04	0.62	<0.02	<0.02	0.63	0.61	0.02	18.0	10.0
	May 12, 2014	LLC01	8.7	25.3	8.0	89	0.8	105.9%	0.04	0.65	<0.02	<0.02	0.66	0.64	0.02	21.0	11.0
	May 12, 2014	NEU013	8.9	26.1	8.3	107	0.4	109.9%	0.08	0.87	<0.02	<0.02	0.88	0.86	0.02		24.0
	May 12, 2014	NEU013B	8.7	25.8	8.2	101	0.4	106.9%	0.07	0.75	<0.02	<0.02	0.76	0.74	0.02	30.0	15.0
	May 12, 2014	NEU0171B	8.5	26.4	8.2	92	0.6	105.6%	0.04	0.66	<0.02	<0.02	0.67	0.65	0.02	18.0	10.0
	May 12, 2014	NEU018E	8.7	25.8	7.4	91	0.9	106.9%	0.03	0.64	<0.02	<0.02	0.65	0.63	0.02	16.0	7.9
	May 12, 2014	NEU019E	9.0	24.9	7.5	85	0.8	108.7%	0.04	0.66	<0.02	<0.02	0.67	0.65	0.02	23.0	9.3
	May 12, 2014	NEU019L	8.9	26.6	7.4	85	1.0	110.9%	0.03	0.52	<0.02	<0.02	0.53	0.51	0.02	17.0	6.5
	May 12, 2014	NEU019P	9.2	27.5	7.3	85	0.8	116.5%	0.03	0.57	<0.02	<0.02	0.58	0.56	0.02	23.0	7.1
	May 12, 2014	NEU020D	9.2	27.2	7.3	87	0.8	115.9%	0.03	0.57	<0.02	<0.02	0.58	0.56	0.02	22.0	6.8
	June 5, 2014	LC01	8.2	27.2	8.1	79	0.6	103.3%	0.06	0.70	<0.02	<0.02	0.71	0.69	0.02	30.0	7.5
	June 5, 2014	LI01	7.5	26.8	7.5	81	0.6	93.8%	0.05	0.81	<0.02	<0.02	0.82	0.80	0.02	46.0	8.6
	June 5, 2014	LLC01	6.4	25.9	7.7	77	0.5	78.8%	0.08	0.79	<0.02	<0.02	0.80	0.78	0.02	56.0	12.0
	June 5, 2014	NEU013	7.3	26.9	7.6	101	0.4	91.5%	0.13	0.92	<0.02	<0.02	0.93	0.91	0.02		45.0
	June 5, 2014	NEU013B	7.9	27.2	7.8	86	0.4	99.5%	0.09	0.95	<0.02	<0.02	0.96	0.94	0.02	68.0	22.0
	June 5, 2014	NEU0171B	6.8	26.0	7.6	77	0.5	83.8%	0.06	0.73	<0.02	<0.02	0.74	0.72	0.02	48.0	14.0
	June 5, 2014	NEU018E	8.0	26.3	7.8	76	0.8	99.2%	0.05	0.78	<0.02	<0.02	0.79	0.77	0.02	47.0	6.2
	June 5, 2014	NEU019E	8.1	27.0	7.7	71	0.9	101.7%	0.04	0.73	<0.02	<0.02	0.74	0.72	0.02	30.0	5.4
	June 5, 2014	NEU019L	8.9	28.4	8.5	77	0.6	114.5%	0.03	0.61	<0.02	<0.02	0.62	0.60	0.02	24.0	4.5
	June 5, 2014	NEU019P	8.6	27.6	8.2	80	0.8	109.1%	0.04	0.73	<0.02	<0.02	0.74	0.72	0.02	43.0	5.3
	June 5, 2014	NEU020D	8.7	28.2	8.4	81	0.9	111.6%	0.03	0.62	<0.02	<0.02	0.63	0.61	0.02	30.0	4.5
	July 2, 2014	LC01	6.3	29.4	7.5	83	0.8	82.5%	0.05	0.78	<0.02	<0.02	0.79	0.77	0.02	28.0	11.0
	July 2, 2014	LI01	5.9	28.8	7.2	81	0.7	76.5%	0.05	0.69	<0.02	<0.02	0.70	0.68	0.02	27.0	7.3
	July 2, 2014	LLC01	5.0	28.3	7.4	87	0.8	64.2%	0.06	0.77	<0.02	<0.02	0.78	0.76	0.02	33.0	9.1
	July 2, 2014	NEU013	6.7	30.0	7.5	135	0.3	88.7%	0.17	1.10	<0.02	<0.02	1.11	1.09	0.02		50.0
	July 2, 2014	NEU013B	6.8	29.1	7.6	106	0.5	88.6%	0.12	0.96	<0.02	<0.02	0.97	0.95	0.02	43.0	24.0
	July 2, 2014	NEU0171B	6.3	28.9	7.6	86	0.8	81.8%	0.06	0.79	<0.02	<0.02	0.80	0.78	0.02	35.0	11.0
	July 2, 2014	NEU018E	6.5	29.1	7.4	80	0.9	84.7%	0.04	0.62	<0.02	<0.02	0.63	0.61	0.02	18.0	5.4
	July 2, 2014	NEU019E	7.4	30.1	7.8	76	1.0	98.1%	0.04	0.67	<0.02	<0.02	0.68	0.66	0.02	18.0	4.4
	July 2, 2014	NEU019L	7.2	30.5	7.7	77	1.2	96.1%	0.03	0.57	<0.02	<0.02	0.58	0.56	0.02	26.0	4.7
	July 2, 2014	NEU019P	7.2	30.1	7.6	80	1.0	95.4%	0.02	0.52	<0.02	<0.02	0.53	0.51	0.02	18.0	4.6
	July 2, 2014	NEU020D	7.4	29.9	7.8	82	1.1	97.8%	0.02	0.50	<0.02	<0.02	0.51	0.49	0.02	14.0	4.0
	August 4, 2014	LC01	6.1	25.8	7.8	87	0.8	74.9%	0.04	0.73	0.06	<0.02	0.74	0.67	0.07	35.0	7.9
	August 4, 2014	LI01	5.2	26.3	7.0	87	0.7	64.5%	0.04	0.83	0.10	<0.02	0.84	0.73	0.11	28.0	8.2
	August 4, 2014	LLC01	6.5	25.4	7.8	99	0.7	79.3%	0.06	0.83	0.06	<0.02	0.84	0.77	0.07	43.0	11.0
	August 4, 2014	NEU013	8.2	24.8	7.9	110	0.4	98.9%	0.09	0.95	<0.02	<0.02	0.96	0.94	0.02		23.0
	August 4, 2014	NEU013B	8.0	25.3	7.8	124	0.6	97.4%	0.09	0.96	<0.02	<0.02	0.97	0.95	0.02	56.0	21.0
	August 4, 2014	NEU0171B	5.0	25.3	8.1	97	0.6	60.9%	0.05	0.88	0.13	<0.02	0.89	0.75	0.14	32.0	11.0
	August 4, 2014	NEU018E	6.6	26.0	7.2	87	0.7	81.4%	0.05	0.71	0.06	<0.02	0.72	0.65	0.07	40.0	8.9
	August 4, 2014	NEU019E	6.0	26.4	7.1	81	0.9	74.5%	0.03	0.69	0.07	<0.02	0.70	0.62	0.08	25.0	5.1
	August 4, 2014	NEU019L	5.1	27.4	6.9	77	0.9	64.5%	0.02	0.53	<0.02	<0.02	0.54	0.52	0.02	20.0	4.6
	August 4, 2014	NEU019P	5.9	27.2	7.0	75	1.0	74.3%	0.02	0.50	<0.02	<0.02	0.51	0.49	0.02	16.0	3.8
	August 4, 2014	NEU020D	5.5	27.3	7.0	79	1.0	69.4%	0.02	0.49	<0.02	<0.02	0.50	0.48	0.02	17.0	3.4
	September 4, 2014	LC01	6.7	29.6	7.6	97	0.6	88.1%	0.05	0.71	<0.02	<0.02	0.72	0.70	0.02	23.0	9.5
	September 4, 2014	LI01	7.5	29.4	8.1	91	0.7	98.2%	0.05	0.74	<0.02	<0.02	0.75	0.73	0.02	29.0	6.1
	September 4, 2014	LLC01	7.6	29.4	7.9	104	0.8	99.5%	0.06	0.72	<0.02	<0.02	0.73	0.71	0.02	40.0	9.5
	September 4, 2014	NEU013	4.5	29.4	7.4	142	0.4	58.9%	0.13	0.87	<0.02	<0.02	0.88	0.86	0.02		41.0

Lake	Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Turbidity NTU
		SURFACE PHYSICAL DATA							PHOTIC ZONE DATA								
	September 4, 2014	NEU013B	6.6	29.7	7.6	123	0.5	86.9%	0.07	0.84	<0.02	<0.02	0.85	0.83	0.02	29.0	27.0
FALLS OF THE	September 4, 2014	NEU0171B	7.2	28.7	7.7	104	0.6	93.2%	0.05	0.73	<0.02	<0.02	0.74	0.72	0.02	39.0	10.0
NEUSE	September 4, 2014	NEU018E	7.8	29.6	8.4	94	0.8	102.5%	0.05	0.75	<0.02	<0.02	0.76	0.74	0.02	33.0	5.9
RESERVOIR	September 4, 2014	NEU019E	7.3	29.6	7.9	82	0.8	95.9%	0.03	0.65	<0.02	<0.02	0.66	0.64	0.02	17.0	5.0
	September 4, 2014	NEU019L	7.6	30.3	8.0	80	1.0	101.1%	1.20	0.56	<0.02	<0.02	0.57	0.55	0.02	15.0	4.1
	September 4, 2014	NEU019P	7.3	29.9	7.6	77	1.1	96.4%	0.16	0.48	<0.02	<0.02	0.49	0.47	0.02	11.0	3.7
	September 4, 2014	NEU020D	7.4	30.0	7.7	74	1.5	97.9%	0.05	0.52	<0.02	<0.02	0.53	0.51	0.02	13.0	3.9
	October 28, 2014	LC01	9.7	18.2	8.2	89	0.6	102.9%	0.03	0.67	0.02	0.02	0.69	0.65	0.04	23.0	5.4
	October 28, 2014	LI01	8.8	18.0	7.6	94	0.6	93.0%	0.04	0.72	0.02	0.02	0.74	0.70	0.04	29.0	7.8
	October 28, 2014	LLC01	9.0	17.9	8.2	99	0.5	94.9%	0.04	0.60	0.02	0.02	0.62	0.58	0.04	24.0	7.4
	October 28, 2014	NEU013B	9.8	18.0	8.2	136	0.4	103.6%	0.05	0.68	0.02	0.02	0.70	0.66	0.04	27.0	12.0
	October 28, 2014	NEU0171B	9.6	18.0	8.3	98	0.7	101.4%	0.04	0.72	0.02	0.02	0.74	0.70	0.04	26.0	7.3
	October 28, 2014	NEU018C	9.6	18.3	8.3	90	0.7	102.1%	0.03	0.66	0.02	0.02	0.68	0.64	0.04	27.0	5.2
	October 28, 2014	NEU018E	9.2	18.1	7.8	96	0.6	97.4%	0.03	0.69	0.02	0.02	0.71	0.67	0.04	30.0	6.7
	October 28, 2014	NEU019E	9.2	19.5	7.7	84	0.8	100.2%	0.03	0.69	0.02	0.02	0.71	0.67	0.04	40.0	5.5
	October 28, 2014	NEU019L	6.9	19.6	7.5	86	1.0	75.3%	0.03	0.72	0.14	0.02	0.74	0.58	0.16	20.0	6.2
	October 28, 2014	NEU019P	5.2	19.8	7.3	88	0.9	57.0%	0.02	0.74	0.26	0.02	0.76	0.48	0.28	12.0	5.7
	October 28, 2014	NEU020D	5.1	20.2	7.4	86	1.2	56.3%	0.02	0.72	0.23	0.02	0.74	0.49	0.25	9.9	4.6
	November 12, 2014	LC01	10.0	15.4	7.9	98	0.6	100.1%	0.03	0.62	0.02	0.02	0.64	0.60	0.04	21.0	7.1
	November 12, 2014	LI01	10.1	14.9	8.4	90	0.8	100.0%	0.03	0.61	0.02	0.02	0.63	0.59	0.04	27.0	6.0
	November 12, 2014	LLC01	9.8	15.6	7.9	111	0.6	98.5%	0.03	0.60	0.02	0.02	0.62	0.58	0.04	22.0	6.3
	November 12, 2014	NEU013	10.3	15.1	7.9	182	0.4	102.4%	0.06	0.80	0.02	0.02	0.82	0.78	0.04		16.0
	November 12, 2014	NEU013B	10.0	16.6	7.8	164	0.5	102.6%	0.04	0.80	0.02	0.02	0.82	0.78	0.04	24.0	14.0
	November 12, 2014	NEU0171B	9.9	15.4	8.0	105	0.6	99.1%	0.03	0.65	0.02	0.02	0.67	0.63	0.04	23.0	6.9
	November 12, 2014	NEU018C	10.1	15.5	8.2	100	0.7	101.3%	0.03	0.53	0.02	0.02	0.55	0.51	0.04	22.0	5.2
	November 12, 2014	NEU018E	10.4	15.4	8.4	92	0.9	104.1%	0.03	0.63	0.02	0.02	0.65	0.61	0.04	25.0	5.9
	November 12, 2014	NEU019E	10.4	15.5	8.3	81	0.8	104.3%	0.02	0.60	0.02	0.02	0.62	0.58	0.04	31.0	5.3
	November 12, 2014	NEU019L	8.6	16.6	8.1	79	1.0	88.3%	0.03	0.58	0.06	0.02	0.60	0.52	0.08	21.0	4.1
	November 12, 2014	NEU019P	8.6	17.0	7.9	80	1.1	89.0%	0.02	0.69	0.16	0.04	0.73	0.53	0.20	17.0	4.2
	November 12, 2014	NEU020D	8.4	16.7	7.9	78	1.0	86.4%	0.02	0.65	0.17	0.03	0.68	0.48	0.20	23.0	5.1
	December 10, 2014	LC01	11.8	8.4	8.1	95	0.8	100.6%	0.04	0.67	0.02	0.02	0.69	0.65	0.04	23.0	8.0
	December 10, 2014	LI01	11.3	8.9	7.3	93	0.8	97.6%	0.05	0.63	0.02	0.02	0.65	0.61	0.04	29.0	12.0
	December 10, 2014	LLC01	12.5	8.1	8.0	119		106.0%	0.06	0.70	0.02	0.02	0.72	0.68	0.04	23.0	8.7
	December 10, 2014	NEU013	12.8	7.2	8.0	114	0.6	106.0%	0.08	0.79	0.02	0.15	0.94	0.77	0.17		20.0
	December 10, 2014	NEU013B	12.6	7.6	8.1	141	0.6	105.4%	0.07	0.83	0.02	0.02	0.85	0.81	0.04	32.0	18.0
	December 10, 2014	NEU0171B	12.3	8.2	8.1	118	0.8	104.4%	0.05	0.73	0.02	0.02	0.75	0.71	0.04	24.0	9.2
	December 10, 2014	NEU018C	11.4	8.5	8.0	99	0.8	97.5%	0.04	0.69	0.02	0.02	0.71	0.67	0.04	24.0	7.1
	December 10, 2014	NEU018E	11.6	8.7	7.4	99	0.9	99.7%	0.04	0.65	0.02	0.02	0.67	0.63	0.04	24.0	7.8
	December 10, 2014	NEU019E	11.0	9.2	6.9	90	0.8	95.6%	0.04	0.71	0.02	0.02	0.73	0.69	0.04	24.0	7.5
	December 10, 2014	NEU019L	10.6	10.5	7.4	85	0.9	95.0%	0.04	0.70	0.04	0.02	0.72	0.66	0.06	24.0	6.7
	December 10, 2014	NEU019P	10.0	9.9	7.2	82	1.0	88.4%	0.05	0.66	0.05	0.04	0.70	0.61	0.09	20.0	5.4
	December 10, 2014	NEU020D	9.3	10.3	7.2	80	1.1	83.0%	0.06	0.52	0.04	0.17	0.69	0.48	0.21	16.0	6.2
	January 6, 2015	LC01	10.5	8.8	9.0	99	1.0	90.4%	0.05	0.71	0.02	0.02	0.73	0.69	0.04	21.0	12.0
	January 6, 2015	LI01	9.9	8.5	6.8	82	0.4	84.6%	0.08	0.75	0.04	0.05	0.80	0.71	0.09	15.0	34.0
	January 6, 2015	LLC01	10.7	8.6	7.7	111	0.8	91.7%	0.05	0.74	0.02	0.09	0.83	0.72	0.11	29.0	14.0
	January 6, 2015	NEU013	10.4	8.5	7.8	98	0.4	88.9%	0.08	0.78	0.02	0.26	1.04	0.76	0.28		30.0
	January 6, 2015	NEU013B	10.6	8.6	7.8	92	0.4	90.8%	0.06	0.71	0.02	0.19	0.90	0.69	0.21	37.0	23.0
	January 6, 2015	NEU0171B	10.5	8.8	7.8	102	0.8	90.4%	0.06	0.76	0.02	0.17	0.93	0.74	0.19	31.0	14.0
	January 6, 2015	NEU018C	10.6	8.6	7.9	114	1.0	90.8%	0.04	0.67	0.02	0.04	0.71	0.65	0.06	2.5	8.3
	January 6, 2015	NEU018E	11.8	8.5	7.2	108	0.7	100.9%	0.05	0.67	0.02	0.07	0.74	0.65	0.09	26.0	9.2
	January 6, 2015	NEU019E	11.2	8.7	6.7	83	0.7	96.2%	0.05	0.73	0.02	0.02	0.75	0.71	0.04	23.0	12.0
	January 6, 2015	NEU019L	11.0	8.5	7.1	98	0.9	94.1%	0.04	0.62	0.03	0.02	0.64	0.59	0.05	20.0	8.6
	January 6, 2015	NEU019P	10.9	8.4	7.1	98	0.9	93.0%	0.04	0.68	0.04	0.02	0.70	0.64	0.06	20.0	8.2
	January 6, 2015	NEU020D	10.7	8.7	7.1	88	0.8	91.9%	0.04	0.58	0.05	0.05	0.63	0.53	0.10	21.0	7.9
	February 3, 2015	LC01	12.7	5.8	7.8	90	0.7	101.5%	0.05	0.71	<0.02	0.08	0.79	0.70	0.09	31.0	10.0
	February 3, 2015	LI01	11.6	6.5	7.3	87	0.4	94.4%	0.08	0.78	<0.02		0.78	0.77	0.01	48.0	32.0
	February 3, 2015	LLC01	12.8	5.8	7.8	91	0.7	102.3%	0.06	0.74	<0.02	0.16	0.90	0.73	0.17	33.0	13.0
	February 3, 2015	NEU013	13.6	5.3	7.8	125	0.4	107.4%	0.08	0.80	<0.02	0.41	1.21	0.79	0.42		18.0
	February 3, 2015	NEU013B	13.2	5.5	7.7	93	0.4	104.7%	0.07	0.70	<0.02	0.21	0.91	0.69	0.22	36.0	19.0
	February 3, 2015	NEU0171B	12.8	5.5	7.7	90	0.7	101.6%	0.06	0.69	<0.02	0.16	0.85	0.68	0.17	34.0	13.0
	February 3, 2015	NEU018C	12.4	5.7	7.5	91	0.9	98.9%	0.06	0.67	<0.02	0.08	0.75	0.66	0.09	30.0	10.0
	February 3, 2015	NEU018E	11.7	5.8	7.2	96	0.7	93.5%	0.36	0.72	<0.02	0.10	0.82	0.71	0.11	30.0	11.0
	February 3, 2015	NEU019E	11.5	6.4	7.3	87	0.7	93.4%	0.05	0.71	<0.02	0.05	0.76	0.70	0.06	31.0	10.0
	February 3, 2015	NEU019L	11.8	6.1	7.2	93	0.8	95.1%	0.05	0.72	0.02	0.07	0.79	0.70	0.09	29.0	8.3
	February 3, 2015	NEU019P	11.6	7.7	7.3	95	1.0	97.3%	0.04	0.69	0.02	0.06	0.75	0.67	0.08	28.0	7.8
	February 3, 2015	NEU020D	11.4	6.6	7.4	97	1.1	93.0%	0.04	0.68	0.03	0.07	0.75	0.65	0.10	25.0	6.8
	March 17, 2015	LC01	11.6	11.6	7.4	90	0.7	106.7%	0.05	0.60	<0.02	0.14	0.74	0.59	0.15	16.0	13.0
	March 17, 2015	LI01	10.8	12.5	8.1	96	0.4	101.4%	0.07	0.70	<0.02	0.05	0.75	0.69	0.06	30.0	36.0
	March 17, 2015	LLC01	11.0	12.1	7.4	91	0.5	102.3%	0.06	0.70	<0.02	0.20	0.90	0.69	0.21	24.0	24.0
	March 17, 2015	NEU013	9.9	13.3	7.5	85	0.3	94.6%	0.08	0.65	<0.02	0.18	0.83	0.64	0.19		45.0
	March 17, 2015	NEU013B	10.9	13.8	7.4	90	0.4	105.3%	0.08	0.80	<0.02	0.21	1.01	0.79	0.22	40.0	35.0
	March 17, 2015	NEU0171B	11.7	12.8	7.4	89	0.5	110.6%	0.08	0.82	<0.02	0.23	1.05	0.81	0.24	40.0	21.0
	March 17, 2015	NEU018C	11.5	11.5	7.5	92	0.7	105.5%	0.05	0.64	<0.02	0.21	0.85	0.63	0.22	20.0	16.0
	March 17, 2015	NEU018E	11.6	12.5	8.2	98	0.6	108.9%	0.06	0.76	<0.02	0.20	0.96	0.75	0.21	35.0	15.0
	March 17, 2015	NEU019E	11.7	12.6	8.1	92	0.6	110.1%	0.06	0.61	<0.02	0.14	0.75	0.60	0.15	28.0	16.0
	March 17, 2015	NEU019L	11.6	13.0	8.0	96	0.7	110.1%	0.05	0.56	<0.02	0.16	0.72	0.55	0.17	22.0	14.0
	March 17, 2015	NEU019P	12.0	11.1	8.0	97	0.7	109.1%	0.05	0.62	<0.02	0.16	0.78	0.61	0.17	26.0	12.0
	March 17, 2015	NEU020D	12.0	11.7	7.9	98	0.8	110.6%	0.06	0.64	<0.02	0.15	0.79	0.63	0.16	29.0	9.3

Lake	Date	Sampling Station	DO mg/L	Temp Water C	pH s.u.	Cond. µmhos/cm	Secchi Depth meters	Percent SAT	TP mg/L	TKN mg/L	NH3 mg/L	NOx mg/L	TN mg/L	TON mg/L	TIN mg/L	Chla µg/L	Turbidity NTU
		SURFACE PHYSICAL DATA							**PHOTIC ZONE DATA**								
	April 15, 2015	LC01	7.4	19.6	7.7	102	0.7	80.8%	0.05	0.71	0.07	0.08	0.79	0.64	0.15		15.0
FALLS OF THE	April 15, 2015	LI01	8.0	19.3	7.1	101	0.8	86.8%	0.05	0.62	0.06	0.06	0.68	0.56	0.12		14.0
NEUSE	April 15, 2015	LLC01	8.2	19.6	7.6	105	0.7	89.5%	0.06	0.67	0.05	0.06	0.73	0.62	0.11		20.0
RESERVOIR	April 15, 2015	NEU013	7.9	20.1	7.7	124	0.4	87.1%	0.09	0.70	0.01	<0.02	0.71	0.69	0.02		33.0
	April 15, 2015	NEU013B	7.7	20.2	7.6	114	0.4	85.1%	0.08	0.73	0.03	<0.02	0.74	0.70	0.04	27.0	41.0
	April 15, 2015	NEU0171B	7.8	19.7	7.5	105	0.7	85.3%	0.06	0.70	0.06	0.06	0.76	0.64	0.12	15.0	18.0
	April 15, 2015	NEU018C	7.9	19.9	7.9	102	0.8	86.7%	0.05	0.65	0.05	0.08	0.73	0.60	0.13		14.0
	April 15, 2015	NEU018E	8.2	19.3	7.1	100	0.8	89.0%	0.05	0.56	0.06	0.08	0.64	0.50	0.14		13.0
	April 15, 2015	NEU019E	8.0	19.8	7.1	94	1.0	87.7%	0.05	0.57	0.06	0.07	0.64	0.51	0.13		12.0
	April 15, 2015	NEU019L	8.5	20.5	7.2	95	1.3	94.4%	0.04	0.53	0.07	0.09	0.62	0.46	0.16		8.2
	April 15, 2015	NEU019P	8.5	19.9	7.2	95	1.5	93.3%	0.04	0.50	0.07	0.11	0.61	0.43	0.18	6.9	7.9
	April 15, 2015	NEU020D	9.3	19.5	7.4	96	1.5	101.3%	0.04	0.47	0.05	0.11	0.58	0.42	0.16	12.0	6.5
	May 14, 2015	LC01	7.2	22.8	7.4	108	0.8	84.1%	0.04	0.60	0.02	<0.02	0.63	0.60	0.03	20.0	13.0
	May 14, 2015	LI01	8.5	24.7	7.8	109	0.8	101.7%	0.05	0.66	0.02	<0.02	0.67	0.64	0.03	19.0	10.0
	May 14, 2015	LLC01	8.1	24.3	7.7	109	0.7	96.3%	0.05	0.67	0.02	<0.02	0.68	0.65	0.03	20.0	14.0
	May 14, 2015	NEU013	8.5	24.9	8.0	135	0.3	102.7%	0.12	0.99	0.02	<0.02	1.00	0.97	0.03		40.0
	May 14, 2015	NEU013B	8.2	24.6	7.9	124	0.5	98.8%	0.08	0.82	0.02	0.02	0.84	0.80	0.04	38.0	30.0
	May 14, 2015	NEU0171B	8.0	23.9	7.7	109	0.7	95.4%	0.05	0.67	0.02	<0.02	0.68	0.65	0.03	21.0	15.0
	May 14, 2015	NEU018C	8.2	23.4	7.7	108	1.0	96.3%	0.04	0.60	0.02	<0.02	0.61	0.58	0.03	17.0	11.0
	May 14, 2015	NEU018E	8.3	24.1	7.7	110	1.0	99.3%	0.04	0.60	0.02	<0.02	0.61	0.58	0.03	17.0	7.2
	May 14, 2015	NEU019E	8.8	24.4	7.8	105	1.1	105.9%	0.04	0.59	0.02	<0.02	0.60	0.57	0.03	15.0	5.8
	May 14, 2015	NEU019L	8.8	24.7	7.9	102	1.3	106.1%	0.03	0.53	0.02	0.01	0.54	0.51	0.03	11.0	5.0
	May 14, 2015	NEU019P	8.6	24.4	7.5	101	1.5	103.1%	0.03	0.56	0.04	0.04	0.60	0.52	0.08	9.9	4.5
	May 14, 2015	NEU020D	8.9	24.5	8.0	99	1.5	106.7%	0.03	0.57	0.03	0.05	0.62	0.54	0.08	12.0	3.9
	June 11, 2015	LC01	8.4	29.1	8.3	115	0.8	109.4%								22.0	6.7
	June 11, 2015	LI01	8.4	27.7	8.4	113	0.9	106.2%	0.03	0.61	0.02	<0.02	0.62	0.59	0.03	23.0	7.0
	June 11, 2015	LLC01	8.7	28.3	8.5	121	0.7	111.6%	0.04	0.75	0.02	<0.02	0.76	0.73	0.03	41.0	8.0
	June 11, 2015	NEU013	8.6	30.6	8.7	154	0.3	115.3%	0.07	0.90	0.02	<0.02	0.91	0.88	0.03		19.0
	June 11, 2015	NEU013B	8.6	29.8	8.7	139	0.6	113.8%	0.05	0.83	0.02	<0.02	0.84	0.81	0.03	23.0	11.0
	June 11, 2015	NEU0171B	8.8	28.1	8.6	123	0.8	112.0%	0.04	0.64	0.02	<0.02	0.65	0.62	0.03	26.0	6.6
	June 11, 2015	NEU018C	8.9	27.7	8.6	122	0.8	112.8%	0.04	0.58	0.02	<0.02	0.59	0.56	0.03	18.0	4.6
	June 11, 2015	NEU018E	8.3	28.8	8.4	116	1.0	108.0%	0.04	0.60	0.02	<0.02	0.61	0.58	0.03	18.0	5.2
	June 11, 2015	NEU019E	8.3	27.5	8.4	114	1.0	105.1%	0.03	0.55	0.02	<0.02	0.56	0.53	0.03	15.0	4.0
	June 11, 2015	NEU019L	8.1	29.0	8.4	109	1.4	105.3%	0.02	0.50	0.02	<0.02	0.51	0.48	0.03	18.0	3.6
	June 11, 2015	NEU019P	7.7	29.0	8.0	105	1.7	100.4%	0.02	0.45	0.02	<0.02	0.46	0.43	0.03	11.0	3.0
	June 11, 2015	NEU020D	8.0	28.6	8.0	104	1.7	102.6%	0.02	0.46	0.02	<0.02	0.47	0.44	0.03	13.0	3.0
	July 16, 2015	LC01	5.5	29.0	7.5	120	0.7	71.0%	0.05	0.62	0.02	<0.02	0.63	0.60	0.03	28.0	11.0
	July 16, 2015	LI01	7.4	30.2	8.1	112	0.8	98.4%	0.04	0.58	<0.02	<0.02	0.59	0.57	0.02	33.0	7.6
	July 16, 2015	LLC01	6.1	29.0	7.6	128	0.5	78.7%	0.05	0.62	<0.02	0.02	0.64	0.61	0.03	30.0	14.0
	July 16, 2015	NEU013	6.2	29.3	7.6	176	0.2	80.4%	0.14	0.92	0.02	<0.02	0.93	0.90	0.03		45.0
	July 16, 2015	NEU013B	6.5	28.9	7.7	156	0.3	84.5%	0.08	0.84	0.02	<0.02	0.85	0.82	0.03	49.0	29.0
	July 16, 2015	NEU0171B	6.3	29.0	7.7	130	0.7	82.1%	0.05	0.66	0.02	<0.02	0.67	0.64	0.03	42.0	13.0
	July 16, 2015	NEU018C	6.4	29.1	7.8	120	1.1	83.3%	0.04	0.62	0.02	<0.02	0.63	0.60	0.03	38.0	9.7
	July 16, 2015	NEU018E	8.1	30.0	8.6	114	0.8	107.7%	0.06	0.68	<0.02	<0.02	0.69	0.67	0.02	55.0	8.6
	July 16, 2015	NEU019E	6.9	29.7	7.8	102	1.0	90.2%	0.02	0.51	<0.02	<0.02	0.52	0.50	0.02	19.0	4.4
	July 16, 2015	NEU019L	7.4	31.0	8.1	97	1.5	99.6%	0.02	0.42	<0.02	<0.02	0.43	0.41	0.02	16.0	3.3
	July 16, 2015	NEU019P	7.4	30.4	7.9	94	1.4	98.3%	0.02	0.42	<0.02	<0.02	0.43	0.41	0.02	16.0	3.1
	July 16, 2015	NEU020D	7.6	30.0	8.2	94	1.3	100.6%	<0.02	0.38	<0.02	<0.02	0.39	0.37	0.02	9.4	2.7
	August 13, 2015	LC01	7.1	28.1	7.6	126	0.4	90.9%	0.05	0.70	<0.02	<0.02	0.71	0.69	0.02	39.0	12.0
	August 13, 2015	LI01	8.7	29.3	8.4	123	0.7	113.7%	0.05	0.65	<0.02	<0.02	0.66	0.64	0.02	42.0	8.1
	August 13, 2015	LLC01	9.4	28.6	8.7	138	0.5	121.4%	0.06	0.79	<0.02	<0.02	0.80	0.78	0.02	47.0	11.0
	August 13, 2015	NEU013	8.5	30.1	9.0	133	0.2	112.7%	0.17	1.40	<0.02			1.39		33.0	40.0
	August 13, 2015	NEU013B	9.5	28.8	8.8	160	0.3	123.1%	0.11	0.96	<0.02	0.02	0.98	0.95	0.03	67.0	30.0
	August 13, 2015	NEU0171B	8.4	28.5	8.6	135	0.4	108.3%	0.06	0.81	<0.02	<0.02	0.82	0.80	0.02	54.0	13.0
	August 13, 2015	NEU018C	7.1	27.5	7.6	125	0.5	89.9%	0.05	0.68	0.02	<0.02	0.69	0.66	0.03	43.0	11.0
	August 13, 2015	NEU018E	8.9	28.8	8.5	126	0.7	115.3%	0.04	0.63	<0.02	<0.02	0.64	0.62	0.02	39.0	8.5
	August 13, 2015	NEU019E	7.0	28.5	7.5	113	0.8	90.2%	0.04	0.63	<0.02	<0.02	0.64	0.62	0.02	26.0	6.1
	August 13, 2015	NEU019L	6.3	29.5	7.4	113	1.3	82.7%	0.02	0.44	<0.02	<0.02	0.45	0.43	0.02	13.0	4.0
	August 13, 2015	NEU019P	6.5	29.5	7.4	109	1.3	85.3%	0.02	0.41	<0.02	<0.02	0.42	0.40	0.02	14.0	3.8
	August 13, 2015	NEU020D	7.3	29.4	7.7	102	1.3	95.6%	0.02	0.37	<0.02	<0.02	0.38	0.36	0.02	15.0	3.4
	September 22, 2015	LC01	5.2	24.2	7.2	131	0.4	62.0%	0.06	0.77	0.06	<0.02	0.78	0.71	0.07	30.0	17.0
	September 22, 2015	LI01	6.8	24.9	7.6	125	0.5	82.2%	0.06	0.80	<0.02	<0.02	0.81	0.79	0.02	32.0	16.0
	September 22, 2015	LLC01	6.7	24.8	7.5	138	0.3	80.8%	0.07	0.84	<0.02	<0.02	0.85	0.83	0.02	40.0	24.0
	September 22, 2015	NEU013	5.5	23.1	7.4	253	0.2	64.3%	0.20	1.60	<0.02	<0.02	1.61	1.59	0.02	46.0	65.0
	September 22, 2015	NEU013B	5.9	23.7	7.4	201	0.2	69.7%	0.12	1.20	<0.02	<0.02	1.21	1.19	0.02	49.0	45.0
	September 22, 2015	NEU0171B	6.1	24.8	7.4	138	0.5	73.6%	0.07	0.81	<0.02	<0.02	0.82	0.80	0.02	34.0	19.0
	September 22, 2015	NEU018C	6.6	24.9	7.6	132	0.5	79.7%	0.05	0.78	<0.02	<0.02	0.79	0.77	0.02	35.0	15.0
	September 22, 2015	NEU018E	6.6	25.1	7.6	131	0.5	80.0%	0.06	0.74	<0.02	<0.02	0.75	0.73	0.02	34.0	14.0
	September 22, 2015	NEU019E	4.2	24.7	7.2	126	0.8	50.6%	0.04	0.79	0.07	<0.02	0.80	0.72	0.08	25.0	9.0
	September 22, 2015	NEU019L	4.6	24.9	7.2	75	1.1	55.6%	0.03	0.60	0.02	<0.02	0.61	0.58	0.03	23.0	5.5
	September 22, 2015	NEU019P	5.6	25.3	7.3	116	1.1	68.2%	0.03	0.51	<0.02	<0.02	0.52	0.50	0.02	17.0	5.1
	September 22, 2015	NEU020D	5.7	25.0	7.3	106	1.2	69.0%	0.02	0.46	<0.02	<0.02	0.47	0.45	0.02	18.0	4.2