2014 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT

Water Quality in Alabama
2012-2014

2014 Alabama Integrated Water Quality Monitoring and Assessment Report

April 1, 2014

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This report was prepared by the Alabama Department of Environmental Management as required by Section 305(b) (the Clean Water Act). Comments or questions related to the content of the report should be addressed to:

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Executive Summary

Alabama's 2014 Integrated Water Quality Assessment and Monitoring Report combines information about Alabama's surface and ground water resource management programs with a comprehensive listing of State waters consistent with EPA's 2006 Integrated Reporting Guidance (which is supplemented by EPA's 2008, 2010 and 2012 IR memos). The guidance requests that states report on the condition of all surface waters by categorizing rivers, streams, lakes, estuaries, and coastal waters according to their designated uses and the degree to which water quality is supporting those uses. State waters have been segmented using the high resolution National Hydrography Dataset (NHD) and assigned a unique identification number called an assessment unit ID (AU-ID). The AU-IDs are based on the twelve-digit Watershed Boundary Dataset (WBD). Waterbody data and information are evaluated using the use support assessment methodology and the waterbody is assigned to one of the following categories.

Category1

Waters that are attaining all applicable water quality standards.

Category 2

Waters for which readily available data, which meets the State's requirements as described in Section 4.9, supports a determination that some water quality standards are met and there is insufficient data to determine if remaining water quality standards are met. Attainment status of the remaining standards is unknown because data is insufficient. Waters for which the minimum data requirements (as described later) have not been met will be placed in Category 2.

Category 2A

For these waters available data does not satisfy minimum data requirements but there is a high potential for use impairment based on the limited data. These waters will be given a higher priority for additional data collection.

Category 2B

For these waters available data does not satisfy minimum data requirements but there is a low potential for use impairment based on the limited data. These waters will be included in future basin monitoring rotations as resources allow.

Category 3

Waters for which there is no data or information to determine if any applicable water quality standard is attained or impaired. These waters will be considered unassessed.

Category 4
Waters in which one or more applicable water quality standards are not met but establishment of a TMDL is not required.

Category 4A

Waters for which all TMDLs needed to result in attainment of all applicable WQSs have been approved or established by EPA.

Category 4B

Waters for which other required control measures are expected to attain applicable water quality standards in a reasonable period of time. Adequate documentation is required to indicate that the proposed control mechanisms will address all major pollutant sources and should result in the issuance of more stringent effluent limitations required by either Federal, State, or local authority or the implementation of "other pollution control requirements (e.g., best management practices) required by local, state, or federal authority" that are stringent enough to implement applicable water quality standards. Waters will be evaluated on a case by case basis to determine if the proposed control measures or activities under another program can be expected to address the cause of use impairment within a reasonable time period. A reasonable time period may vary depending on the degree of technical difficulty or extent of the modifications to existing measures needed to achieve water quality standards. EPA's 2006 assessment and listing guidance offers additional clarification of what might be expected of waters placed in Category 4b.

Category 4C

Waters in which the impairment is not caused by a pollutant. This would include waters which are impaired due to natural causes or pollution. A pollutant is defined in Section 502(6) of the Clean Water Act (CWA) as "spoil, solid waste, incinerator residue, sewerage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water." Pollution is defined as "the man-made or man-induced alteration of the chemical, physical, or radiological integrity of a waterbody." Invasive plants and animal species are considered pollution.

Category 5

Waters in which a pollutant has caused or is suspected of causing impairment. If the impairment is caused by an identified pollutant the water should be placed in Category 5. All "readily available data and information" will be used to determine when a water should be placed in Category 5. Waters in this category comprise the State's list of impaired waters or §303(d) list.
When the information used to assess the waterbody consist primarily of observed conditions, (limited water quality data, water quality data older than six years, or estimated impacts from observed or suspected activities), the assessment is generally referred to as an evaluated

assessment (Category 2). Evaluated assessments usually require the use of some degree of professional judgment by the person making the assessment and these assessments are not considered sufficient to place waters in or to remove waters from the impaired category (Category 5) or the fully supporting category (Category 1).

Monitored assessments (Categories 1 and 5) are based on readily available chemical, physical, and/or biological data collected during the previous six years, using commonly accepted and well-documented methods. Readily available data are data that have been collected or assembled by the Department or other groups or agencies and are available to the public. Data older than six years old may be used on a case-by-case basis when assessing waters that are not currently included in Category 1 or Category 5. (For example, older data could be used if conditions, such as land use, have not changed.) The 2014 §303(d) list was developed by using data collected by the Department and various other sources. The data assessed to categorize Alabama's waters ranged October 1 2007 thru September 30, 2013. For example, the Department collected over 416,000 samples at 1,094 stations during an estimated 13,378 site visits. Much of the remainder of this document will pertain to the use of monitoring data to make use support determinations.

Categorizing Alabama's surface waters represents a significant effort. With approximately 47,072 miles of perennial rivers and streams and approximately 30,170 miles of intermittent streams, this process will be ongoing and will require substantial resources and time. Table ES-3 shows the River Basin Rotation schedule from 2013-2017.

Table ES-1 River Basins

Alabama River Basin
Black Warrior River Basin
Cahaba River Basin
Chattahoochee River Basin
Chipola River Basin
Choctawhatchee River Basin
Coosa River Basin
Escatawpa River Basin
Lower Tombigbee River Basin
Mobile River Basin
Perdido - Escambia River Basin
Tallapoosa River Basin
Tennessee River Basin
Upper Tombigbee River Basin

Alabama's 2012 Water Quality Monitoring Strategy describes the Department's comprehensive strategy for monitoring Alabama's vast surface water resources and has resulted in a significant increase in data available for assessing the designated use support of surface waters in Alabama. The five part list included in the appendix of this report represents the categorization based on information currently available. As new information becomes available the list will be updated and placed on the Department's web site to give the public the most complete and accurate picture of the water quality status of Alabama's surface water resources.

A summary of Alabama's Active Trend Stations (Ambient Monitoring) can be found in the Appendix of this report. This information is an ongoing effort to demonstrate trends in water quality. Ambient Trend sites are sampled to identify long-term trends in water quality statewide and to provide data for the development of Total Maximum Daily Loads (TMDLs) and water quality criteria. Sampling frequency presently occurs 3 times a year during the months of June, August, and October at most trend stations and are sampled statewide annually. Selected sites are sampled more frequently. Sampling frequency and parameters collected at these sites vary from other station types. Currently, 105 trend stations are sampled statewide annually.

Table ES-2 Atlas

Topics	Value
State population	4,447,100
State surface area	51,609
Number of river basins	14
Total miles of rivers and streams	77,274
Miles of perennial rivers/streams	47,072
Miles of intermittent (nonperennial) streams	30,170
Miles of ditches and canals	32
Border miles of shared rivers/streams	210
Number of lakes/reservoirs/ponds	7,694
Number of significant publicly-owned lakes/reservoirs/ponds	43
Acres of lakes/reservoirs/ponds	490,472
Acres of significant publicly-owned lakes/reservoirs/ponds	425,748
Square miles of estuaries/harbors/ponds	610
Miles of ocean coast (includes bays and inlets)	337
Acres of freshwater wetlands*	3,600,000
Acres of tidal wetlands*	27,600

*historic National Wetland Inventory estimates

The U.S. Census estimates the population of Alabama in 2013 to be 4,833.722. The 2010 Census population was 4,779,736. This is a percent change of 1.1%. The cities of Birmingham, Huntsville, Montgomery, Mobile, and their surrounding suburbs contain approximately half of Alabama's population. The state is comprised of sixty-seven (67) counties. A large percentage of Alabama's industries are related to forestry, agriculture, and mining. The State is divided into fourteen (14) major river basins (Table ES-1) containing 77,272 miles of rivers and streams (Table ES-2). Table ES-4 shows Size of Surface Waters Assigned to Reporting Categories and Table ES-5 shows the size of Rivers/Streams, Lakes/ Reservoirs, and Estuary/Ocean impaired by Causes.

Alabama has ponds, lakes, and reservoirs in excess of 490,472 acres. Freshwater wetlands occupy an estimated 3,600,000 acres. Alabama's coastal wetlands are estimated at 27,600 acres (National Wetland Inventory estimates). Coastal Alabama also contains an estimated 610 square miles of estuaries and a coastal shoreline that is 337 miles long (includes Mobile Bay and island shorelines).

Assessing the State's abundant surface water resources requires a major effort and sizeable resources. These watersheds, ranging in size from approximately 10 square miles up to more than 100 square miles, were randomly selected to incorporate a range of human disturbances. In addition to the probabilistic watershed monitoring, the Department continued its more traditional monitoring of §303(d) listed streams, ambient trend monitoring, and the rivers and reservoirs monitoring programs. This monitoring strategy continues to be used to gather the data necessary to assess the state's surface waters.

Alabama's surface water is of generally high quality. An indication of full support of rivers and streams can be determined by analyzing Alabama's Category 4 and 5 waters. The total mileage for rivers and streams not supporting designated uses is 3,164.20 miles. This total is 4% of the 77,272 total rivers and streams miles. Approximately 53% of Alabama's publicly accessible lakes and reservoirs are fully supporting their designated uses. Much of the non-support the Coosa River Basin reservoirs. Naturally higher nutrients in the soils of the Coosa River Basin, to a large extent, dictate its reservoirs' eutrophic conditions. In an effort to manage eutrophic conditions more directly, the Department has developed nutrient criteria for 40 reservoirs (Weiss, Harris, West Point, Walter F. George, Martin, Yates, Thurlow, Guntersville, Wheeler, Wilson, Pickwick , Little Bear Creek , Cedar Creek , Claiborne , Dannelly, Bankhead, Holt, Lewis Smith, Oliver, Tuscaloosa, Warrior, Harding, Gantt, Point A, Inland, Jackson, Coffeeville, Demopolis, Gainesville, Purdy, Logan Martin, Neely Henry, Lay, Mitchell, Jordan, Big Creek, Aliceville, Frank Jackson Lake, Bear Creek, and Upper Bear).

ADEM and the ACNPCP have continued coordination with the U.S. Fish and Wildlife Service, and the Mississippi Department of Marine Resources through the Army Corps of Engineers' Mitigation Bank Interagency Review Team (MBIRT) to develop regionalized wetland functional assessment tools as Hydro-Geomorphic (HGM) guidebooks utilized for the standardized assessment of these wetland functions for Coastal Alabama. ADEM also coordinates with the Alabama Department of Conservation and Natural Resources (ADCNR) through the ACNPCP to present best available wetland-related technologies in the form of technical studies, workshops, and conferences, which are made available to state and federal regulatory staff, consultants, and the general public. Previous accomplishments have included the presentation of the Alabama Coastal *Wetland Rapid Assessment Procedure (WRAP) Workshop* and the *Alabama Coastal Wetland Plant Identification Workshop*, the regional *Alabama Stream and Wetlands Restoration Conference*.

Alabama's ground water continues to be managed effectively through efforts under the Underground Storage Tank (UST) Program, the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Underground Injection Control (UIC) Program, as well as the Wellhead Protection Program (WHPP). The lack of chronic detections of pollutants in public water supply groundwater sources is a good indication of Alabama's high ground water quality and effective management of the resource.

Alabama's estuaries enjoy overall good health, but pathogens and mercury are pollutants of concern in many coastal watersheds. The Department's coastal water quality monitoring program has participated in several monitoring initiatives with partners such as the Mobile Bay National Estuary Program, the National Oceanic and Atmospheric Administration, the Gulf of Mexico Alliance, the U.S. Environmental Protection Agency, and other local groups and

Table ES-3 ADEM's current Basin Rotation Schedule for Surface Water Quality Monitoring

River Basin Group	Year to be Monitored
Tennessee	2013
Chattahoochee / Chipola / Choctawhatchee / Perdido-Escambia	2014
Alabama / Coosa / Tallapoosa	2015
Escatawpa / Mobile / Lower Tombigbee / Upper Tombigbee	2016
Black Warrior / Cahaba	2017

Mexico Alliance, the U.S. Environmental Protection Agency, and other local groups and institutions to provide comprehensive assessments of Alabama's coastal waters.

Approximately 850,000,000 gallons of drinking water are taken from ground and surface sources each day, provided with treatment, and made available to approximately four million citizens in Alabama. Five hundred and twenty (520) community systems, fifty-one (51) transient non-community systems and twenty-one (21) non-transient non-community systems are permitted by the ADEM. Approximately sixty-five (65) percent of the water used is obtained from surface sources such as lakes, rivers, and streams and provided with full treatment to include coagulation, sedimentation, filtration, and disinfection. One hundred (100) percent of these systems meet turbidity requirements, ninety-seven (97) percent meet trihalomethane standards, one hundred (100) percent meet haloacetic acid standards and one hundred (100) percent meet inorganic and radiological drinking water standards.

Despite significant progress, much work remains to be done regarding water quality management with the 303(d) process and implementation of Total Maximum Daily Loads (TMDLs) in Alabama and the recent management efforts of the Source Water Protection Program and the Wellhead Protection Program. Management efforts continue in the UST, RCRA, CERCLA, and UIC Programs and through National Pollutant Discharge Elimination System (NPDES) permitting. Continuing watershed coordination efforts in Alabama are vital to the effective use of limited resources for surface and ground water management. Implementation of controls for nonpoint source runoff is an integral component of watershed management in Alabama. Water quality monitoring will be crucial in demonstrating the effectiveness of these implementation activities.

Table ES-4 Size of Surface Waters Assigned to Reporting Categories

Waterbody Type	Category								Total Assessed
	1	2A	2B	3	4A	4B	4C	5	
River/Stream (miles)	5,162.42	1,526.10	2,751.22	3,113.55	1,179.15	67.61	22.77	1,931.87	12,641.14
Reservoir/Lake (acres)	225,287.88	1,573.95	3,917.00	2,319.04	43,345.14	0	0	161,060.26	435,184.23
Estuary/Ocean (square miles)	449.71	0	18.20	0	8.72	0	0	300.01	776.64

*category 3 not included in total assessed waters

Table ES-5 Size of Rivers/Streams, Lakes/Reservoirs, and Estuary/Ocean impaired by Causes

Cause	Category 5			Category 4			Totals		
	River/ Stream (miles)	Reservoir/ Lake (acres)	Ocean/ Estuary (square miles)	River/ Stream (miles)	Reservoir/ Lake (acres)	Ocean/ Estuary (square miles)	River/ Stream (miles)	Reservoir/ Lake (acres)	Ocean/ Estuary (square miles)
FLOW ALTERATIONS							**3.15**		
Other flow regime alterations				3.15			3.15		
METALS							**1,212.90**	**40,976.91**	**296.37**
Aluminum	4.11			48.22			52.33		
Arsenic	19.56						19.56		
Chromium	18.82						18.82		
Copper	1.54			10.19			11.73		
Cyanide	12.43			44.57			57.00		
Iron				48.22			48.22		
Lead	25.16			3.30			28.46		
Mercury	915.12	40,976.91	201.75				915.12	40,976.91	201.75
Thallium			94.62						94.62
Zinc	0.22			61.44			61.66		
MINERALIZATION							**182.85**		
Total dissolved solids	62.95						62.95		
Turbidity	32.02			87.88			119.90		
NUTRIENTS							**984.95**	**166,296.94**	
Ammonia	0.22			222.93	527.25		223.15	527.25	
Nitrogen				192.65	2,291.85		192.65	2,291.85	
Phosphorus	208.61	88,876.29		360.54	74,601.55		569.15	163,477.84	
OXYGEN DEPLETION							**1,425.86**	**11,313.45**	
BOD, carbonaceous	132.45	3,881.66		689.28	3,022.88		821.73	6,904.54	
BOD, nitrogenous	132.45	3,881.66		452.06	527.25		584.51	4,408.91	
Dissolved oxygen				19.62			19.62		
PATHOGENS							**938.02**		**12.36**
Enterococcus bacteria			3.64	19.98		8.72	19.98		12.36
E. coli	73.51			844.53			918.04		
PESTICIDES							**174.72**	**85.73**	
Atrazine				23.42			23.42		
Chlorpyrifos				23.42			23.42		
DDT		85.73		18.77			18.77	85.73	
Dieldrin	7.65						7.65		
Endosulfan				50.73			50.73		
Methyl Parathion				50.73			50.73		
pH							**33.53**	**1,569.21**	
pH	16.00	1,569.21		17.53			33.53	1,569.21	
SEDIMENTATION							**1,144.30**	**3,052.93**	
Sedimentation/Siltation	689.41	212.45		454.89	2,840.48		1,144.30	3,052.93	
TOXIC INORGANICS							**0.22**		
Chlorides	0.22						0.22		
TOXIC ORGANICS							**86.79**	**78,348.24**	
Benzo(a)pyrene (PAHs)				44.57			44.57		
Polychlorinated biphenyls (PCBs)	42.22	32,196.15			25,518.98		42.22	57,715.13	
Perfluorooctane Sulfonate (PFOS)		20,633.11						20,633.11	
UNKNOWN							**11.08**		
Unknown toxicity	11.08						11.08		

* Category 4 includes all TMDLs

List of Acronyms

A&I	Agriculture and Industry water supply use classification
AAES	Alabama Agricultural Experiment Station
ACES	Alabama Cooperative Extension Service
ACT/ACF	Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee-Flint River Basins study
ACWI	Alabama Coastal Waters Initiative
ADAI	Alabama Department of Agriculture and Industries
ADCNR	Alabama Department of Conservation and Natural Resources
ADCNR-MRD	Alabama Department of Conservation and Natural Resources-Marine Resources Division
ADE	Alabama Department of Education
ADEM	Alabama Department of Environmental Management
ADPH	Alabama Department of Public Health
AEEI	Alabama Environmental Education Initiative
AEMA	Alabama Emergency Management Agency
AEMC	Alabama Environmental Management Commission
AFC	Alabama Forestry Commission
AGPT	Algal Growth Potential Test
ALAMAP	Alabama Monitoring and Assessment Program
ALUS	Aquatic Life Use Assessment
ANHP	Alabama Natural Heritage Program
ASCS	Agricultural Stabilization & Conservation Service
ASMC	Alabama Surface Mining Commission
ASSESS	ADEM's Strategy for Sampling Environmental indicators of Surface water Quality Status
ASWCC	Alabama Soil and Water Conservation Committee
AUC	Assessment Unit Code
AWPCA	Alabama Water Pollution Control Act
B/H	Biological/Habitat data
BMP	Best Management Practices
CBEP	Community-Based Environmental Protection
CERS	Center for Environmental Research and Service at Troy State University
CLP	Clean Lakes Program
CNPCP	Coastal Nonpoint Pollution Control Program
CPYRWMA	Choctawhatchee-Pea and Yellow Rivers Watershed Management Authority
CSO	Combined Sewer Overflow
CWA	Clean Water Act
CWP	Clean Water Partnership
DA	Drainage Area
DIZ	Discharge Information Zone for NPDES Coastal Permits
DO	Dissolved Oxygen

List of Acronyms

EMAP	Environmental Monitoring Assessment Program
EPA	U.S. Environmental Protection Agency
ERL-A	EPA's Environmental Research Laboratory at Athens, GA
ERL-C	EPA's Environmental Research Laboratory at Corvallis, OR
F&W	Fish and Wildlife use classification
FDA	U.S. Food and Drug Administration
FDER	Florida Department of Environmental Regulation
GDNR	Georgia Department of Natural Resources
GIS	Geographical Information System
GPS	Global Positioning System
GSA	Geological Survey of Alabama
HDG	Human Disturbance Gradient
HUC	Hydrologic Unit Code
IO	Industrial Operations
LDI	Landscape Development Index
MBP	Multihabitat Bioassessment Protocol
MCL	Maximum Contaminant Level
MESC	Marine Environmental Sciences Consortium of Dauphin Island, AL
MGD	Million Gallons per Day
MOPC	Mississippi Office of Pollution Control
MOU	Memorandum of Understanding
MPSs	Hester-Dendy Multiplate Samplers
MRD	Marine Resources Division of the ADCNR
MU	Monitoring Unit
NEP	National Estuary Program
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	Superfund National Priority Listed Sites
NRCS	Natural Resource Conservation Service of the USDA
NWI	National Wetland Inventory of the USFWS
OAW	Outstanding Alabama Water use classification
OEO	Office of Education and Outreach
ONRW	Outstanding National Resource Water designation
P/C	Physical/Chemical data
PACE	Pollution Abatement Costs and Expenditures
PCB	Polychlorinated Biphenyls

List of Acronyms

PFOA	Perfluorooctanoic Acid
PWS	Public Water Supply use classification
RBP	Rapid Bioassessment Protocol
RC&D	Resource Conservation and Development Councils of the USDA
RM	River Mile
RPS	Rapid Periphyton Surveys
RSMP	Rivers and Streams Monitoring Program
RWC	Receiving Water Concentration
S	Swimming and Other Whole Body Water contact Sports use classification
SH	Shellfish Harvesting use classification
SM/LG	Sand Mountain/Lake Guntersville watershed study
SMZ	Streamside Management Zone
SOC	Synthetic Organic Compound
SOD/NR	Sediment Oxygen Demand/Nutrient Release studies
SOP	Standard Operating Procedures
SRF	State Revolving Fund of Alabama
SSO	Sanitary Sewer Overflow
STP	Sewage Treatment Plant
SWCD	Soil and Water Conservation District
SWCP	State Wetland Conservation Plan
TAL	Treasured Alabama Lake
TMDL	Total Maximum Daily Loads
TOT	Time-of-travel studies
TRE	Toxicity Reduction Evaluation
TSI	Trophic State Index
UAA	Use Attainability Analysis
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USCG	United States Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service of the Department of the Interior
USGS	U.S. Geological Survey
VOC	Volatile Organic Compound
WCAMI	Wetlands Conservation and Management Initiative
WLA	Wasteload Allocation
WQB	Water Quality Branch
WWTP	Wastewater Treatment Plant

Chapter 1 Water Quality Standards

1.1 Water Quality Standards Program

For information pertaining to Water Quality Standards, contact Jennifer Haslbauer in ADEM's Montgomery Office at (334) 274-4250 or jhaslbauer@adem.state.al.us.

1.2 Water Quality Rule Changes

Changes made to previous **Chapter 335-6-10 Water Quality Criteria**:

- No changes/additions

Changes made to previous **Chapter 335-6-11 Water Use Classifications for Interstate and Intrastate Waters:**

- Added "Swimming and Other Whole Body Water-Contact Sports" use classification to portions of the Coosa River, Terrapin Creek, and Big Wills Creek within the Coosa River Basin and Warrior River, Locust Fork, Sipsey Fork and Tributaries, North River, Valley Creek, Village Creek, Fivemile Creek, Lost Creek, and Wolf Creek within the Warrior River Basin. (Date: November 27, 2012, Section 335-6-11-.02)Added "Public Water Supply" to Clear Creek (Lake Lewis Smith) within the Warrior River Basin. (Date: November 27, 2012, Section 335-6-11-.02(14))

1.3 Conceptual Approach to Nutrient Criteria Development

In developing nutrient criteria, the Department's objective is to determine nutrient levels that are protective of the beneficial uses designated for each reservoir. Keeping in mind that these reservoirs serve a variety of uses, including swimming and recreation, sport-fishing, and public water supply, while also supporting a wide diversity of aquatic life, nutrient criteria are targeted that support the designated uses and are protective of aquatic communities. Thus, the Department's rationale is to establish nutrient criteria consistent with the "fishable/swimmable" goal of the Clean Water Act.

Located within 14 major river basins and 25 different sub-ecoregions, Alabama's surface waters represent some of the most biologically diverse aquatic ecosystems in the United States. Because of the large diversity in geographic and climatic conditions from one region to another, as well as the significant variability in dam operations between reservoirs, the Department used best professional judgment to develop nutrient criteria on a lake-specific basis rather than on a more aggregate basis such as an ecoregional approach. The lake-specific approach captures the large variability inherent in man-made reservoirs, where chlorophyll a concentrations are typically affected by such factors as reservoir depth, reservoir retention time, and scheduling of power generation. Figure 1-1 and Figure 1-2 depicts Alabama's General Soils and Ecoregions respectively.

During the criteria development process, historical data are studied to provide an overall perspective of the condition of each reservoir. This information is analyzed to determine trends in trophic conditions, the degree to which reservoir conditions remained stable over time, and whether any impairment has occurred due to nutrient over-enrichment. From this data, nutrient levels (expressed as seasonal means of chlorophyll a concentrations) are targeted that correlate with reservoir conditions that support the designated beneficial uses. The historical data depicts the diversity of reservoir conditions in Alabama, from lakes in the Tallapoosa River Basin that are naturally oligotrophic-mesotrophic, such as lakes Martin, Yates and Thurlow, to lakes that tend to be more eutrophic in nature, such as the mainstem reservoirs on the Tennessee and Coosa Rivers.

The Department recognizes that using reference condition analysis to establish nutrient criteria in reservoirs can be limited due to the fact that there is uncertainty regarding what constitutes "natural" conditions in a man-made water body. Therefore, in developing nutrient criteria, the Department has selected to analyze historical ambient data on an individual reservoir basis to determine if each reservoir continues to support its designated uses. If so, the nutrient concentrations that have historically corresponded to that reservoir's use support are evaluated to determine a chlorophyll a target specific to that reservoir. This same approach is used regardless of the reservoir's trophic state (i.e. eutrophic, oligotrophic, or mesotrophic). Thus, the intent is that the selected chlorophyll a criteria values are specifically associated with a condition of full use support in each respective reservoir, taking into account the factors unique to various trophic conditions. Nutrient criteria are developed to support the existing uses that define each reservoir system and protect the aquatic communities that inhabit them. Data are analyzed to determine the ranges of chlorophyll a and total phosphorus concentrations historically occurring in each reservoir. To maintain nutrient levels within the ranges associated with full use-support conditions, best professional judgment is used to derive criteria values that "cap" each reservoir system with a protective chlorophyll a concentration. In establishing chlorophyll a targets, the variability occurring within the growing season was taken into account. The cooler months are generally less productive and lower chlorophyll a values are usually recorded while the warmer months are generally more productive with higher chlorophyll a values typically recorded.

To determine what constitutes healthy conditions in various types of reservoirs and how trophic gradients relate to use attainment, the Department utilizes research conducted by Dr. David Bayne at Auburn University. This research examines how the quality of fisheries correlates to varying trophic conditions in Alabama reservoirs. The study assesses the potential impacts of reverse eutrophication and nutrient reduction on reservoir fisheries and calculates target levels of primary production that provide both quality fishing and satisfactory water clarity for other recreational users, while protecting all aquatic communities. This research ("Compatibility between Water Clarity and Quality Black Bass and Crappie Fisheries in Alabama"; American Fisheries Society Symposium 16:296-305. 1996) provides substantial evidence that fish biomass and sport-fish harvesting are positively correlated to algal production in reservoirs. The research by Dr. Bayne demonstrates that the size, growth rates, and condition of certain species of sports fish are generally higher in eutrophic than in oligo-mesotrophic reservoirs. This study, along with case studies of reservoirs in other regions, raises the concern that the reversal of eutrophication and improvement in water clarity in some reservoirs can be deleterious to its warm-water sports fisheries by reducing fish production and biomass. The Department, therefore, believes that when establishing nutrient criteria it is vital to set water quality standards that adequately consider all the beneficial uses of the reservoir, fishing and swimming alike. Thus, caution is warranted when regulatory actions can potentially result in an undesirable shift in fish species. If, historically, a reservoir has supported all of its uses, including high-quality fisheries and other aquatic communities, nutrient criteria were targeted to preserve these reservoir conditions. The typical hydraulic regime and flow characteristics of

Figure 1-1 Alabama's General Soils

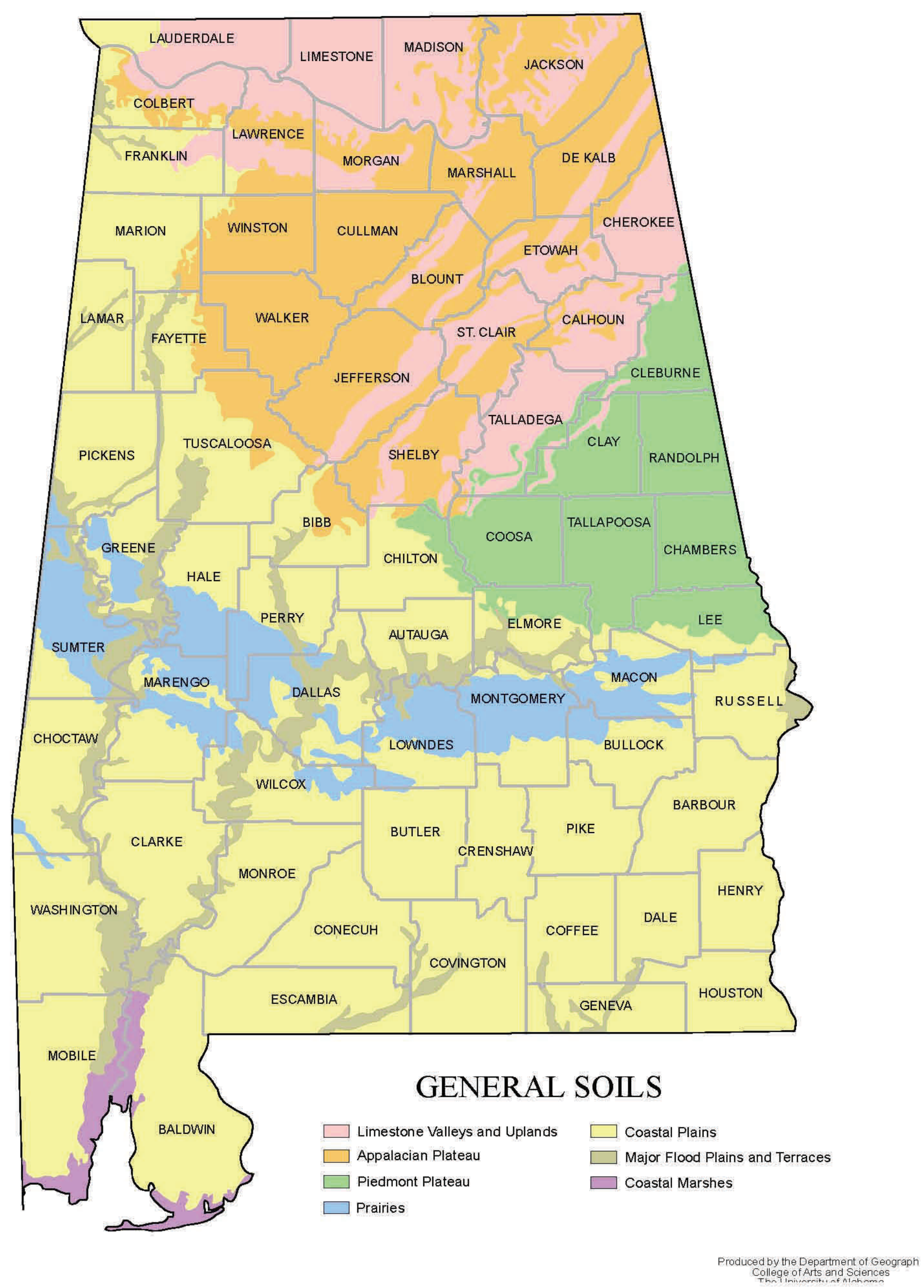


Figure 1-2 Alabama's Level III and IV Ecoregions

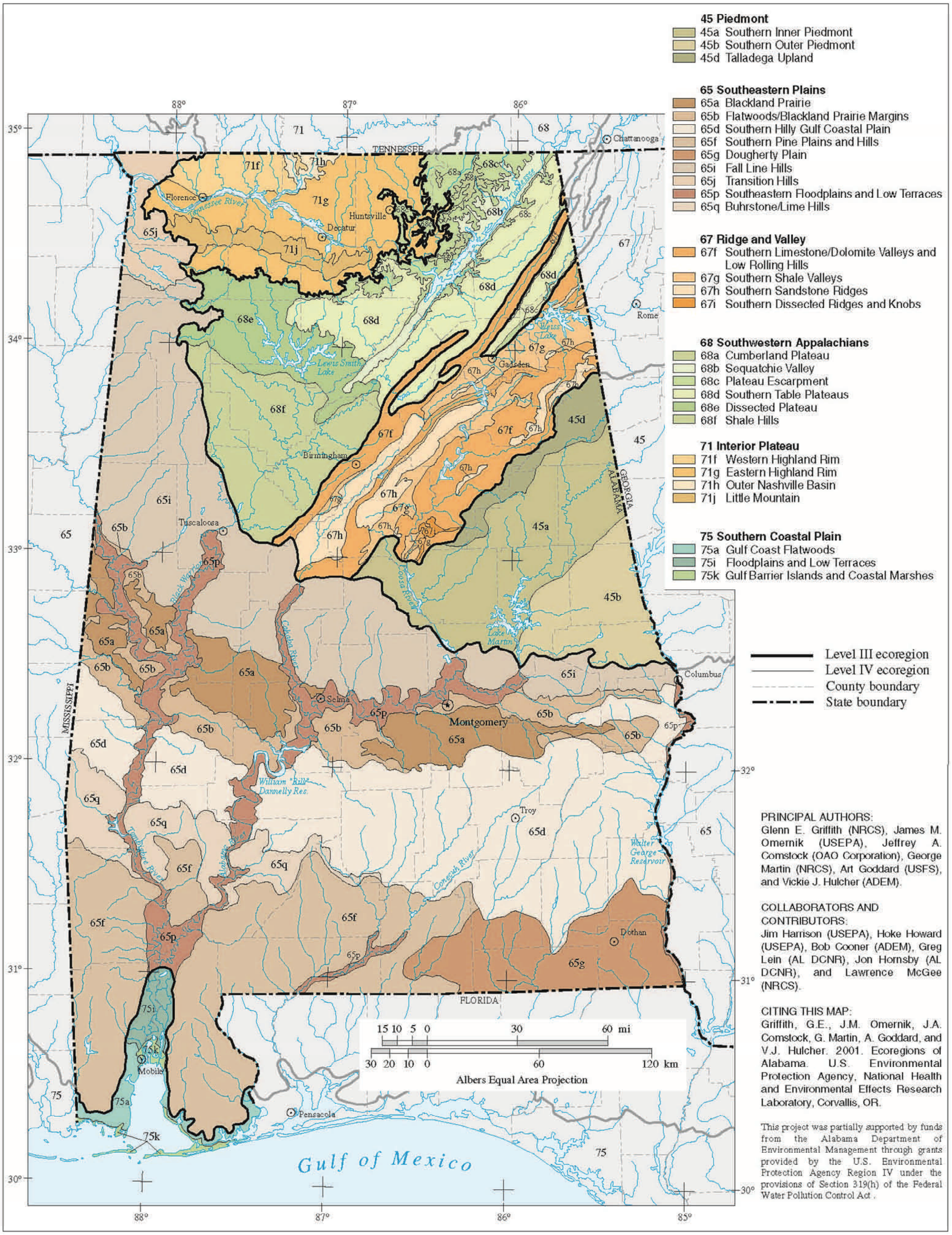


Table 1-1 Nutrient Criteria Implementation Schedule for Alabama Reservoirs

Year	Number of Reservoirs	Major Basin(s)	Name of Reservoirs
2001	4	Chattahoochee, Coosa, Tallapoosa	West Point, W.F. George, Weiss, R.L. Harris
2002	9	Tallapoosa, Tennessee	Martin, Yates, Thurlow, Guntersville, Wheeler, Wilson, Pickwick, Little Bear, Cedar
2004	11	Alabama	Claiborne, Dannelly
		Black Warrior	Bankhead, Holt, Lewis Smith, Oliver, Tuscaloosa,
		Chattahoochee	Harding
		Perdido-Escambia	Gantt, Point A
2005	5	Black Warrior	Inland
		Perdido-Escambia	Jackson
		Lower Tombigbee	Coffeeville
		Upper Tombigbee	Demopolis, Gainsville
2010	8	Cahaba	Purdy
		Coosa	Jordan, Lay, Logan Martin,
		Escatawpa	Big Creek
		Upper Tombigbee	Aliceville
2013	3	Perdido-Escambia	Frank Jackson
		Tennessee	Bear Creek, Upper Bear
2014	1	Alabama	Woodruff

each reservoir are other key factors considered during criteria development. The relationship between water quality, biomass accumulation, and hydraulic residence time (or retention time), which is the average amount of time required to completely renew a reservoir's water volume, was taken into account when establishing the chlorophyll a criteria. For example, reservoirs associated with "run-of-the-river" dams typically have small hydraulic head, limited storage area and short retention times and are less likely to be susceptible to conditions that can lead to eutrophication or promote excessive algal growth. In contrast, reservoirs associated with larger dams, such as storage or hydroelectric dams, are more likely to have longer retention times, providing a greater potential for incoming nutrients to stimulate increased algal production. Increased algal biomass can potentially deplete dissolved oxygen levels within the reservoir through bacterial decomposition and photosynthetic respiration.

A study by Dr. Bayne examined the relationship between reservoir water retention times and phytoplankton algae production on Weiss Lake during the summer of 2001. Dr. Bayne, along with Auburn University professor Dr. Mike Maceina, assessed the potential water quality effects on Weiss Lake of the draft Coosa River water-sharing agreement between Alabama and Georgia. Their study showed that reservoirs with typically short retention times, such as reservoirs on the Coosa River, are more susceptible to hypereutrohic effects and higher chlorophyll a concentrations when retention times are increased even moderately. Historical data shows that higher chlorophyll a concentrations in Weiss Lake have consistently corresponded to longer retention times. Hydrologic models in their study indicated that longer retention times in the reservoir would likely increase phytoplankton algae production and algal biomass accumulation, assuming that other factors remain unchanged. This result is particularly evident during drought periods, such as occurred in 2000, 2006, and 2007.

In addition, the nutrient criteria were developed to reflect downstream transport of nutrients and the processes by which nutrient uptake occurs in streams. Nutrient concentrations generally tend to decrease as they move downstream. This attenuation occurs as nutrients are absorbed by microorganisms and plants (biotic uptake) or as they adsorb onto sediment particles (abiotic uptake) and settle out of the water column. Thus, in developing nutrient criteria, the chlorophyll a targets were set so that along certain stretches of river, each successive reservoir has a lower criteria value as you move downstream. This approach takes into account natural processes that determine nutrient concentrations and is protective of downstream water quality.

1.4 Implementation of Alabama's Antidegradation Policy

On June 25, 2002, the Alabama Environmental Management Commission adopted Rule 335-6-10-.12, Implementation of the Antidegradation Policy. This rule codifies procedures for implementing the Department's antidegradation policy (contained in Rule 335-6-10-.04) which was last amended in 1991 and approved that same year by the U.S. Environmental Protection Agency (EPA), Region 4. In response to a petition from the Legal Environmental Assistance Foundation (LEAF), in 1997 EPA requested that ADEM develop written procedures for implementing the state's antidegradation policy. Final written implementation procedures were submitted to EPA in December 1998 and approved by EPA in August 1999. In November 1999, LEAF sued ADEM alleging that the Department's use of the EPA-approved implementation procedures in the NPDES permitting process was improper because these procedures were, in fact, "rules" that had not been adopted through the formal rulemaking process. The Montgomery Circuit Court found in favor of ADEM; a decision later affirmed by the Court of Civil Appeals.

LEAF then applied for a writ of certiorari to the Alabama Supreme Court, which was granted, and thereafter the Alabama Supreme Court concluded in a decision dated March 1, 2002, that the implementation procedures are "rules" within the context of the Alabama Administrative Procedure Act, reversed the judgment of the Court of Civil Appeals and remanded the case to the lower courts.
As a result of the Supreme Court decision, the Department ceased the review of permit applications for new or expanded discharges of treated wastewater to those waters affected by the Supreme Court decision until April 10, 2002, following adoption by the Alabama Environmental Management Commission of emergency rule (335-6-10-.12-.01ER) establishing implementation procedures. As adopted, the emergency rule procedures incorporate suggestions made by EPA and are essentially equivalent to the written procedures utilized by the Department prior to the Supreme Court decision. The provisions of the permanent rule adopted on June 25, 2002, are the same as those of the emergency rule and, as such, have been determined by EPA to be consistent with the federal requirement for implementation procedures included in EPA's water quality standards regulation. The final implementation procedures rule became effective on August 1, 2002.

The Department's antidegradation policy serves to conserve and protect the waters of Alabama and their beneficial uses and to prevent the deterioration of a water body even when its water quality surpasses the level necessary to meet the fishable and swimmable goals of the Clean Water Act. The antidegradation implementation policy addresses three categories of waters and beneficial uses:

- High-quality waters that constitute an outstanding national resource (Tier 3 waters);
- Waters where the quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife as well as recreation in and on the water (Tier 2 waters); and
- Existing instream water uses and the level of water quality necessary to protect the existing uses (Tier 1 waters).

The implementation policy codifies procedures for reviewing applications for new or expanded discharges to waters designated as Tier 2 waters. The two basic components of the implementation policy involve:

- The Departments determination, based on the applicant's demonstration, that the proposed discharge is necessary for important economic or social development in the area in which the waters are located; and
- An evaluation, by the applicant, of alternatives other than the proposed discharge to Tier 2 water.

The antidegradation implementation procedures comply with federal law and provides ADEM with adequate guidelines for making environmentally and economically sound decisions, industries with the predictability needed to operate and the public with the assurances needed to guarantee clean water.

1.5 Surface Water Use Classification Maps

The following maps depict Outstanding Alabama Waters, Outstanding National Resource Waters, and a Treasured Alabama Lake. Alabama's classified surface waters are listed in *ADEM Water Division, Water Quality Program, Chapter 335-6-11, Water Use Classifications for Interstate and Intrastate Waters (effective November 27, 2012)*. Table 1-2 shows Surface Water Classifications and Designations. Figures and Tables 1-3 through 1-11 show waters classified as Outstanding Alabama Water (OAW) and waters with the special designation of Outstanding National Resource Water (ONRW) and Treasured Alabama Lake (TAL).

Table 1-2 Surface Water Classifications and Special Designations

Use Classifications	
Outstanding Alabama Water	OAW
Public Water Supply	PWS
Swimming and Other Whole Body and Water Contact Sports	S
Shellfish Harvesting	SH
Fish and Wildlife	F&W
Limited Warmwater Fishery	LWF
Agricultural and Industrial Water Supply	A&I
Special Designations	
Outstanding National Resource Water	ONRW
Treasured Alabama Lake	TAL

Figure 1-3 Wolf Bay and Tributaries

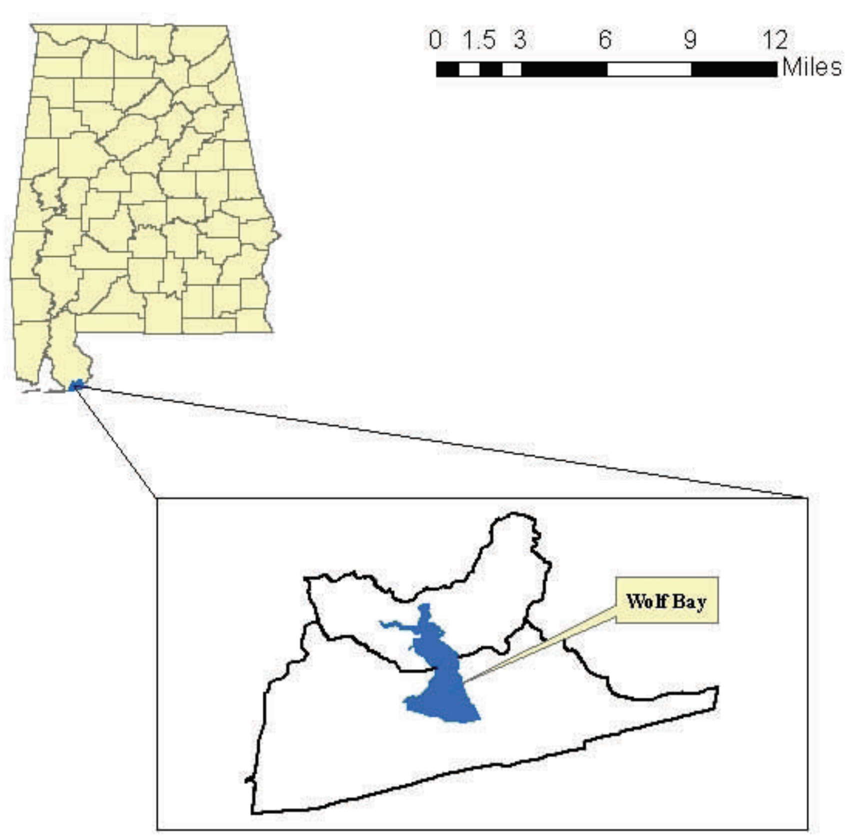


Table 1-3 Wolf Bay and Tributaries

#	Assessment Unit #	Name	From	To	Use Classification	Square Miles
1	AL03140107-0204-600	Wolf Bay	Bay la Launch	Moccasin Bayou	OAW/SH/S/F&W	4.65
					Total Square Miles	4.65

Figure 1-4 Cahaba River and Tributaries

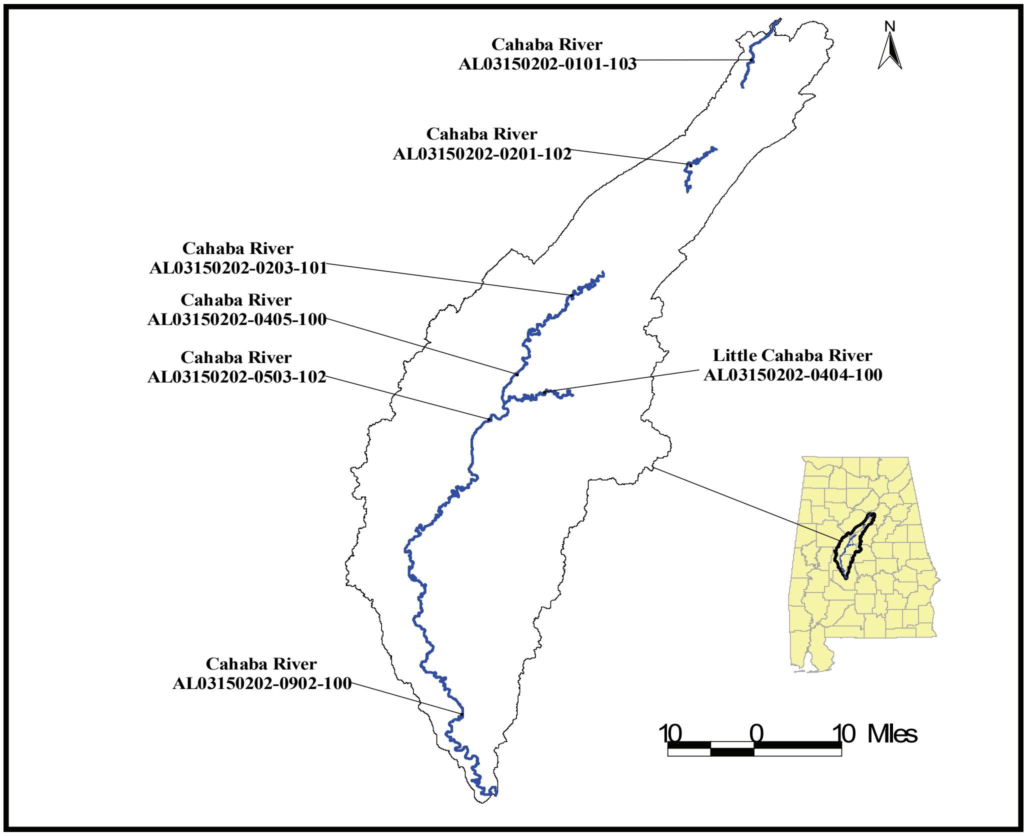


Figure 1-5 Hatchet Creek and Tributaries

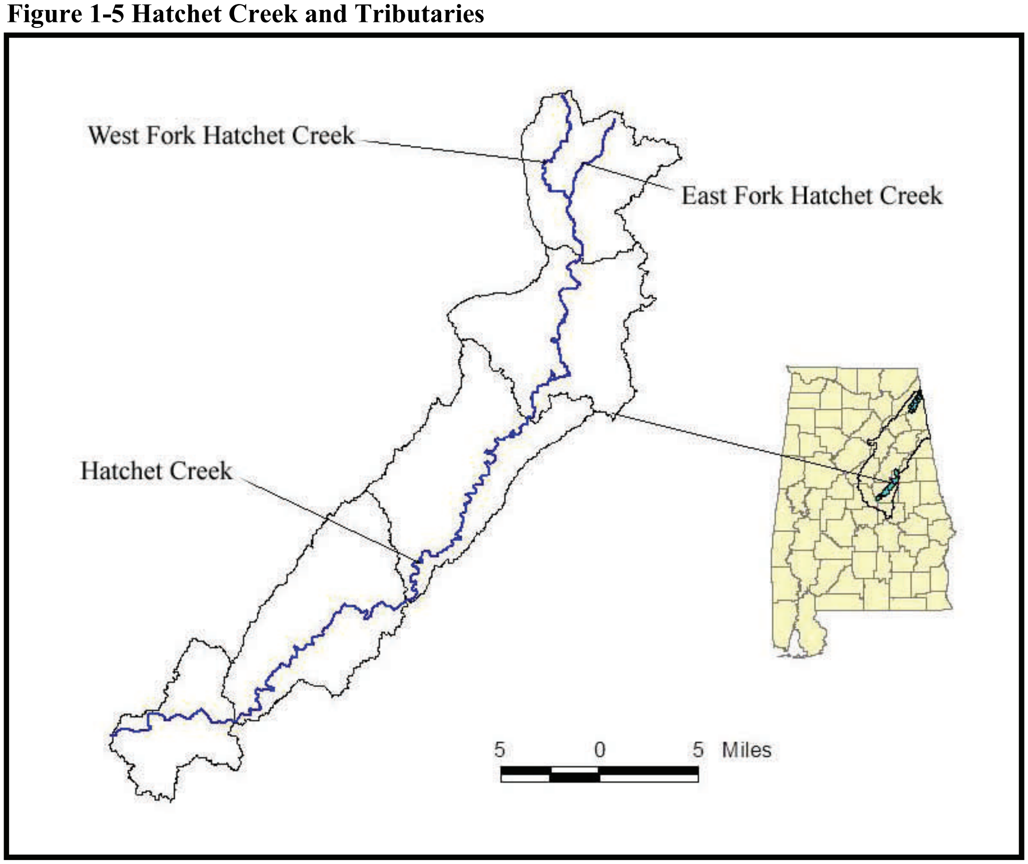


Table 1-4 Cahaba River and Tributaries

#	Assessment Unit #	Name	From	To	Use Classification	Miles
1	AL03150202-0902-100	Cahaba River	Alabama River	Alabama Highway 82	OAW/S	89.50
2	AL03150202-0503-102	Cahaba River	Alabama Highway 82	Lower Little Cahaba River	OAW/S	10.58
3	AL03150202-0407-100	Cahaba River	Lower Little Cahaba River	Shades Creek	OAW/F&W	13.51
4	AL03150202-0206-101	Cahaba River	Shades Creek	Shelby County Road 52	OAW/F&W	23.61
5	AL03150202-0204-102	Cahaba River	Dam near U.S. Highway 280	Grant's Mill Road	OAW/PWS	13.45
6	AL03150202-0101-102	Cahaba River	US Highway 11	I-59	OAW/F&W	3.13
7	AL03150202-0101-103	Cahaba River	I-59	Its source	OAW/F&W	2.22
8	AL03150202-0405-100	Little Cahaba River	Cahaba River	Its source	OAW/F&W	16.54
					Total Miles	**172.54**

Table 1-5 Hatchet Creek and Tributaries

#	Assessment Unit #	Name	From	To	Use Classification	Miles
1	AL03150107-0709-100	Hatchet Creek	Coosa River	Wildcat Creek	OAW/S/F&W	43.20
2	AL03150107-0706-102	Hatchet Creek	Wildcat Creek	Its source	OAW/PWS/S/F&W	18.87
3	AL03150107-0701-300	East Fork Hatchet Creek	Hatchet Creek	Its source	OAW/F&W	5.30
4	AL03150107-0701-400	West Fork Hatchet Creek	Hatchet Creek	Its source	OAW/F&W	7.71
					Total Miles	75.08

Figure 1-6 Lake Martin – Treasured Alabama Lake

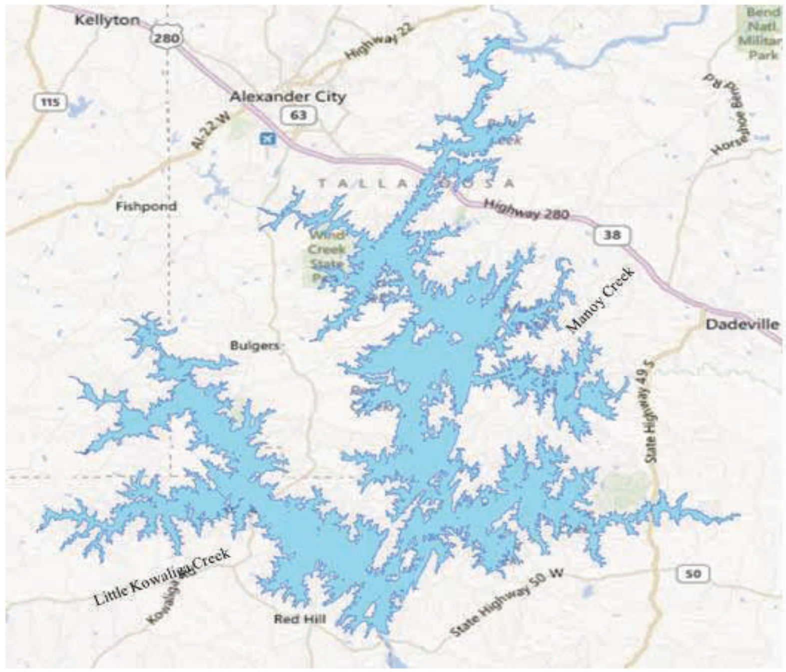


Figure 1-7 Little River and Tributaries

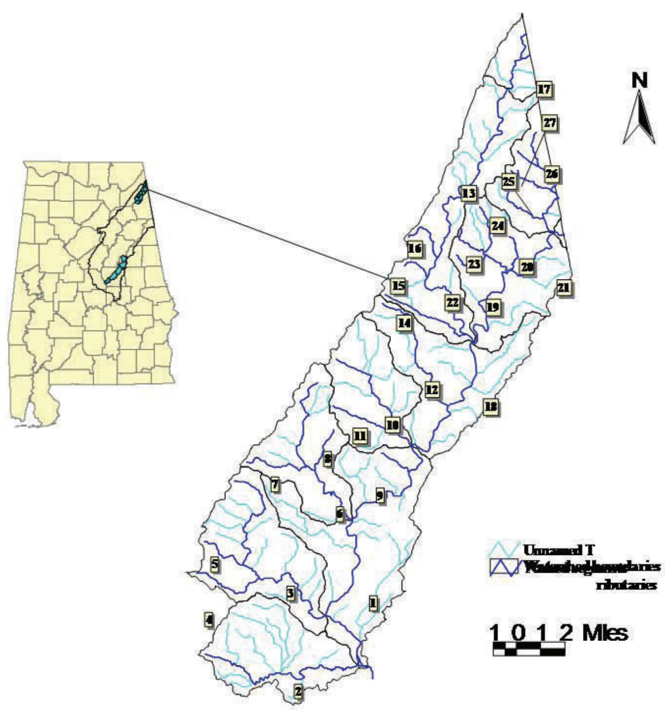


Table 1-6 Lake Martin – Treasured Alabama Lake

#	Assessment Unit #	Name	From	To	Use Classification	Acres
1	AL03150109-0502-102	Tallapoosa River (Lake Martin)	US Highway 280	Hillabee Creek	PWS/S/F&W	2,025.57
2	AL03150109-0504-201	Manoy Creek (Lake Martin)	Tallapoosa River	End of embayment	PWS/S/F&W	618.88
3	AL03150109-0505-100	Tallapoosa River (Lake Martin)	Martin Dam	US Highway 280	S/F&W	34,400.04
4	AL03150109-0702-201	Little Kowaliga Creek Lake Martin)	Big Kowaliga Creek	End of embayment	PWS/S/F&W	2,634.38
					Total Acres:	**39,678.87**

Table 1-7 Little River and Tributaries

#	Assessment Unit #	Name	From	To	Use classification	Miles
1	AL03150105-0806-100	Little River	Coosa River	Its source	PWS/S/F&W (ONRW)	22.19
2	AL03150105-0805-100	Wolf Creek	Little River	Its source	PWS/S/F&W (ONRW)	9.51
3	AL03150105-0804-100	Johnnies Creek	Little River	Its source	PWS/S/F&W (ONRW)	11.63
4	AL03150105-0804-200	Camprock Creek	Johnnies Creek	Its source	PWS/S/F&W (ONRW)	3.40
5	AL03150105-0804-300	Dry Creek	Johnnies Creek	Its source	PWS/S/F&W (ONRW)	2.37
6	AL03150105-0803-100	Bear Creek	Little River	Its source	PWS/S/F&W (ONRW)	8.67
7	AL03150105-0803-300	Hicks Creek	Bear Creek	Its source	PWS/S/F&W (ONRW)	3.42
8	AL03150105-0803-200	Falls Branch	Bear Creek	Its source	PWS/S/F&W (ONRW)	2.47
9	AL03150105-0806-200	Brooks Branch	Little River	Its source	PWS/S/F&W (ONRW)	1.68
10	AL03150105-0801-100	Yellow Creek	Little River	Its source	PWS/S/F&W (ONRW)	7.06
11	AL03150105-0801-200	Straight Creek	Yellow Creek	Its source	PWS/S/F&W (ONRW)	3.03
12	AL03150105-0802-200	Hurricane Creek	Little River	Its source	PWS/S/F&W (ONRW)	6.67
13	AL03150105-0705-100	West Fork Little River	Little River	AL-GA state line	PWS/S/F&W (ONRW)	18.87
14	AL03150105-0705-200	Straight Creek	West Fork of Little River	Its source	PWS/S/F&W (ONRW)	4.45
15	AL03150105-0705-300	Sharp Branch	West Fork of Little River	Its source	PWS/S/F&W (ONRW)	1.39
16	AL03150105-0705-400	Seymour Branch	West Fork of Little River	Its source	PWS/S/F&W (ONRW)	2.48
17	AL03150105-0703-201	East Fork West Fork Little River	West Fork of Little River	AL-GA state line	PWS/S/F&W (ONRW)	0.47
18	AL03150105-0704-100	East Fork Little River	Little River	AL-GA state line	PWS/S/F&W (ONRW)	9.55
19	AL03150105-0704-200	Laurel Creek	East Fork of Little River	Its source	PWS/S/F&W (ONRW)	3.97
20	AL03150105-0704-300	Gilbert Branch	East Fork of Little River	Its source	PWS/S/F&W (ONRW)	1.83
21	AL03150105-0702-101	Middle Fork Little River	East Fork of Little River	AL-GA state line	PWS/S/F&W (ONRW)	2.44
22	AL03150105-0704-400	Shrader Branch	Laurel Creek	Its source	PWS/S/F&W (ONRW)	1.95
23	AL03150105-0705-500	Armstrong Branch	Laurel Creek	Its source	PWS/S/F&W (ONRW)	1.75
24	AL03150105-0702-200	Brush Creek	Middle Fork of Little River	Its source	PWS/S/F&W (ONRW)	3.04
25	AL03150105-0702-300	Anna Branch	Middle Fork of Little River	Its source	PWS/S/F&W (ONRW)	2.18
26	AL03150105-0702-400	Blalock Branch	Anna Branch	Its source	PWS/S/F&W (ONRW)	3.46
27	AL03150105-0702-500	Stillhouse Branch	Blalock Branch	Its source	PWS/S/F&W (ONRW)	1.09
		Unnamed Tributaries				277.20
					Total Miles	**418.22**

Figure 1-8 Magnolia River - OAW

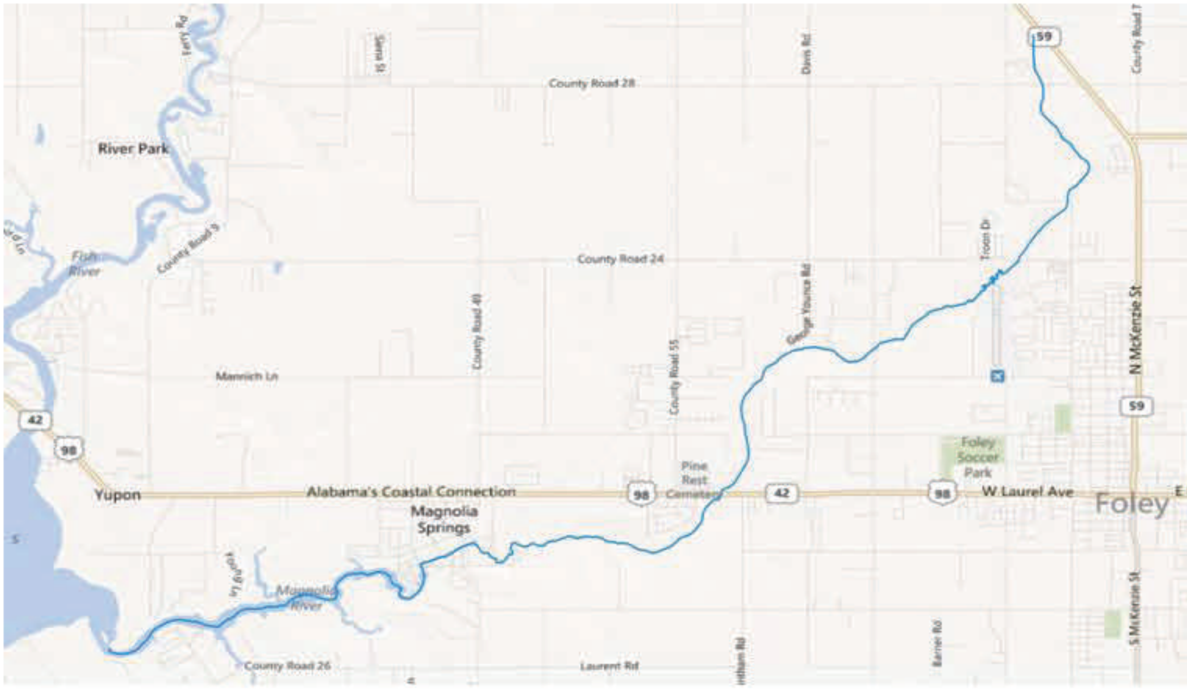


Table 1-8 Magnolia River - OAW

#	Assessment Unit #	Name	From	To	Use Classification	miles
1	AL03160205-0203-110	Magnolia River	Weeks Bay	Its source	OAW/S/F&W	12.41
					Total Square Miles	12.41

Figure 1-9 Tensaw River, Weeks Bay and Tributaries

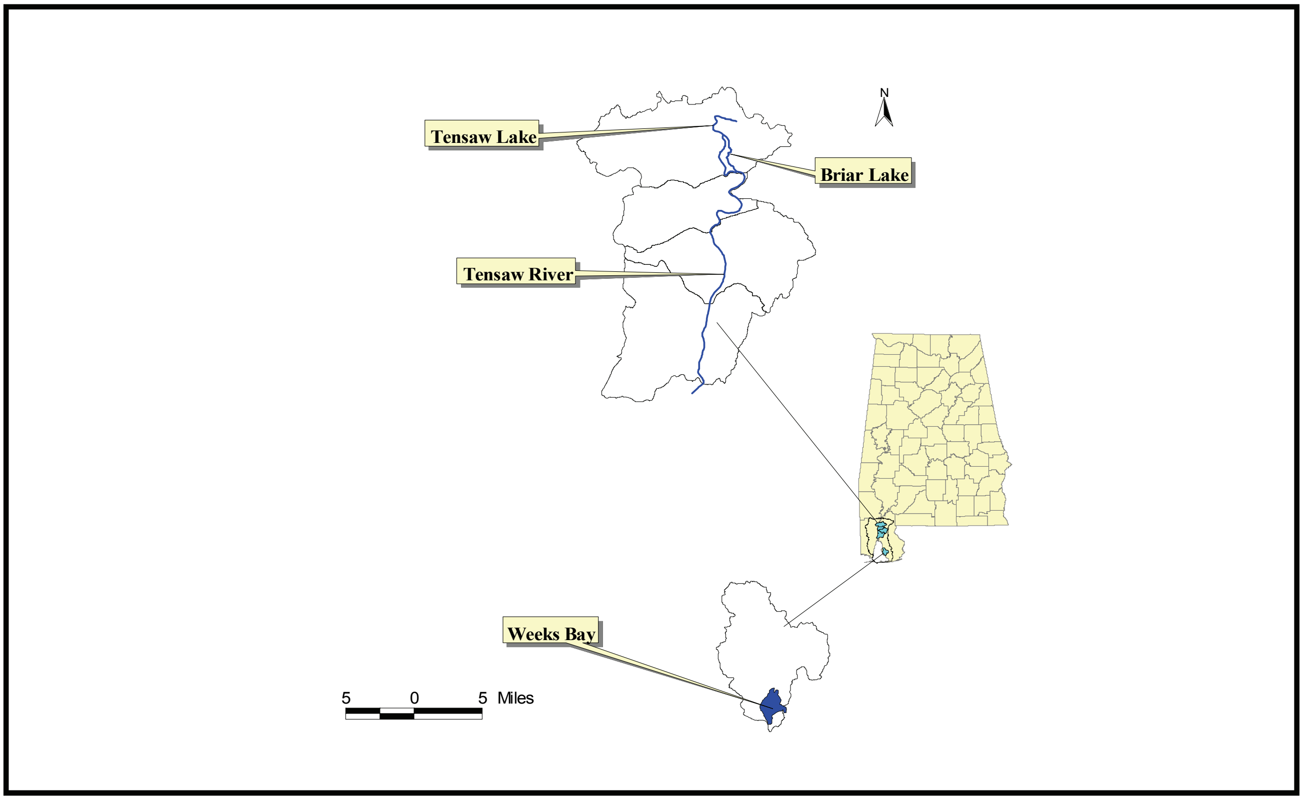


Table 1-9 Tensaw River, Weeks Bay and Tributaries

Tensaw River and Tributaries						
#	**Assessment Unit #**	**Name**	**From**	**To**	**Use Classification**	**Miles**
1	AL03160204-0505-202	Tensaw River	Junction of Tensaw and Apalachee Rivers	Junction of Briar Lake	OAW/S/F&W	21.73
2	AL03160204-0106-302	Tensaw River	Junction of Briar Lake	Junction of Tensaw Lake	OAW/F&W	2.93
					Total Miles	24.66
#	**Assessment Unit #**	**Name**	**From**	**To**	**Use Classification**	**Acres**
3	AL03160204-0106-400	Briar Lake	Junction of Tensaw River	Junction of Tensaw Lake	OAW/F&W	169.36
4	AL03160204-0106-500	Tensaw Lake	Junction of Tensaw River	Bryant Landing	OAW/F&W	436.74
					Total Acres	655.42
Weeks Bay and Tributaries						
#	**Assessment Unit #**	**Name**	**From**	**To**	**Use Classification**	**Square Miles**
1	AL03160205-0204-101	Weeks Bay	Bon Secour Bay	Fish River	S/F&W (ONRW)	3.04
					Total Sq Miles	2.70

Figure 1-10 Sipsey Fork and Tributaries

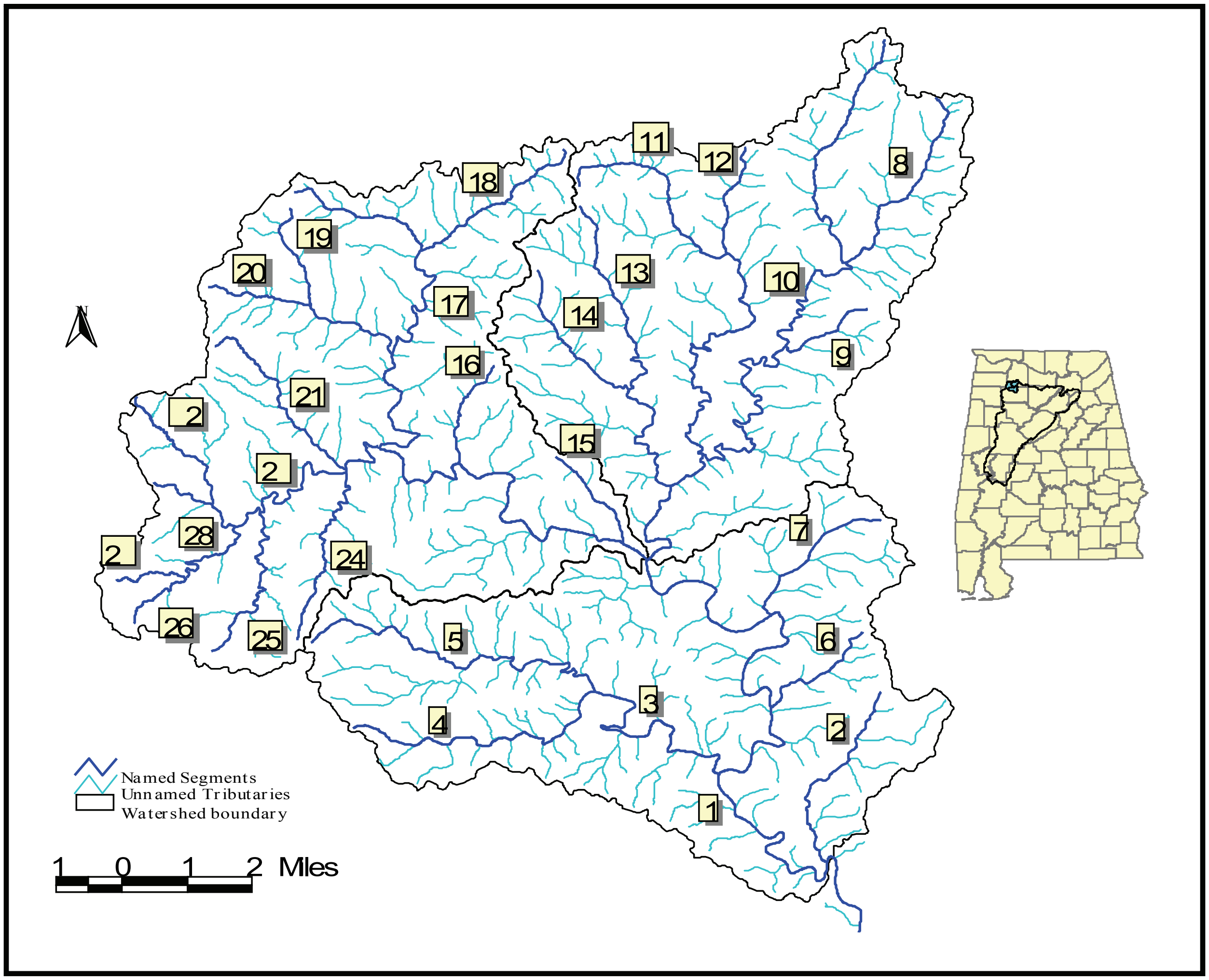


Table 1-10 Sipsey Fork and Tributaries

#	Assessment Unit #	Name	From	To	Use Classification	Miles
1	AL03160110-0104-103	Sipsey Fork	Sandy Creek	Its source	F&W (ONRW)	21.23
2	AL03160110-0101-100	Borden Creek	Sipsey Fork	Its source	F&W (ONRW)	16.61
3	AL03160110-0101-200	Braziel Creek	Borden Creek	Its source	F&W (ONRW)	5.69
4	AL03160110-0101-300	Flannagin Creek	Borden Creek	Its source	F&W (ONRW)	9.99
5	AL03160110-0101-400	Horse Creek	Borden Creek	Its source	F&W (ONRW)	1.76
6	AL03160110-0101-500	Montgomery Creek	Borden Creek	Its source	F&W (ONRW)	3.99
7	AL03160110-0101-600	Hagood Creek	Braziel Creek	Its source	F&W (ONRW)	4.23
8	AL03160110-0101-700	Dry Creek	Flannagin Creek	Its source	F&W (ONRW)	2.17
9	AL03160110-0102-110	Parker Branch	Hubbard Creek	Its source	F&W (ONRW)	3.82
10	AL03160110-0102-120	Whitman Creek	Hubbard Creek	Its source	F&W (ONRW)	3.73
11	AL03160110-0102-130	Maxwell Creek	Hubbard Creek	Its source	F&W (ONRW)	2.02
12	AL03160110-0102-140	Basin Creek	Hubbard Creek	Its source	F&W (ONRW)	2.81
13	AL03160110-0102-150	Dunn Branch	Maxwell Creek	Its source	F&W (ONRW)	1.33
14	AL03160110-0102-160	Natural Well Branch	Maxwell Creek	Its source	F&W (ONRW)	1.45
15	AL03160110-0102-170	White Oak Branch	Thompson Creek	Its source	F&W (ONRW)	1.69
16	AL03160110-0102-180	Wolf Pen Branch	Sipsey Fork	Its source	F&W (ONRW)	1.00
17	AL03160110-0102-190	Ugly Creek	Sipsey Fork	Its source	F&W (ONRW)	3.05
18	AL03160110-0102-200	Fall Creek	Sipsey Fork	Its source	F&W (ONRW)	2.06
19	AL03160110-0102-300	Bee Branch	Sipsey Fork	Its source	F&W (ONRW)	2.09
20	AL03160110-0102-400	Thompson Creek	Sipsey Fork	Its source	F&W (ONRW)	8.59
21	AL03160110-0102-500	Hubbard Creek	Sipsey Fork	Its source	F&W (ONRW)	6.59
22	AL03160110-0102-600	Tedford Creek	Thompson Creek	Its source	F&W (ONRW)	3.68
23	AL03160110-0102-700	Mattox Creek	Thompson Creek	Its source	F&W (ONRW)	3.26
24	AL03160110-0102-800	Ross Branch	Tedford Creek	Its source	F&W (ONRW)	2.06
25	AL03160110-0102-900	Quillan Creek	Hubbard Creek	Its source	F&W (ONRW)	3.77
26	AL03160110-0103-200	Payne Creek	Sipsey Fork	Its source	F&W (ONRW)	3.89
27	AL03160110-0103-300	Caney Creek	Sipsey Fork	Its source	F&W (ONRW)	4.66
28	AL03160110-0103-400	Hurricane Creek	Sipsey Fork	Its source	F&W (ONRW)	2.29
29	AL03160110-0103-500	Davis Creek	Sipsey Fork	Its source	F&W (ONRW)	2.83
30	AL03160110-0103-600	North Fork Caney Creek	Caney Creek	Its source	F&W (ONRW)	6.38
31	AL03160110-0103-700	South Fork Caney Creek	Caney Creek	Its source	F&W (ONRW)	5.04
32	AL03160110-0103-800	Lloyds Creek	Sipsey Fork	Its source	F&W (ONRW)	1.11
33	AL03160110-0103-900	Sweetwater Creek	Caney Creek	Its source	F&W (ONRW)	1.23
		Unnamed Tributaries				240.37
					Total Miles	386.47

Figure 1-11 Estil Fork and Hurricane Creek - OAW

Table 1-11 Estil Fork and Hurricane Creek - OAW

Assessment Unit #	Name	From	To	Use Classifica-	miles
AL06030002-0101-100	Hurricane Creek	AL-TN state line	Paint Rock River	OAW/F&W	10.89
AL06030002-0103-200	Estil Fork	AL-TN state line	Paint Rock River	OAW/F&W	8
				Total Square	**18.89**

Chapter 2 Rivers and Streams

2.1 Wadeable Rivers and Streams Monitoring Program (RSMP

ADEM's monitoring strategy is designed to characterize water quality, to identify impacts from a variety of sources, and to provide a systematic and integrated framework for gathering necessary information to support the decision-making process. It is implemented on a 5-year basin rotation and incorporates specific protocols and methodologies to ensure that monitoring activities provide the highest quality information and make the most efficient use of available resources.

2.1.2 Objectives

The objectives of ADEM's Wadeable Rivers and Streams Program are to provide data:

- Develop, adopt, or revise water quality standards;
- Develop criteria & indicators;
- Estimate water quality trends;
- Evaluate program effectiveness;
- Categorize waters in Alabama's Biennial Integrated Assessment Report;
- Support management decisions; and,
- Estimate overall water quality.

2.1.3 Monitoring Strategy

One of the key aspects of ADEM's Monitoring Strategy is to define a given monitoring station as being either wadeable or nonwadeable. This is important because the minimum data requirements for Alabama's Assessment and Listing Methodology vary based on waterbody type and wadeability. The four monitoring protocols included in the RSMP are as follows:
Wadeable-BIO (BIO-W): A station is classified as wadeable-bio if the 300-foot sampling reach is completely wadeable (~≤ 3 feet) and the 300-foot reaches upstream and downstream of the sampling location are also completely wadeable. This is to help ensure that the reach is representative of the watershed.
Wadeable-Water (H20-W): A station is classified as wadeable-H20 if water samples can be collected instream, but the sampling reach is not completely wadeable (~≤ 3 feet) or the 300-foot reaches upstream or downstream of the sampling location are not completely wadeable.
Nonwadeable Bridge Stations (NWG): Sub-surface grab samples are collected from a bridge if a nonwadeable station is not accessible by boat. A vertical profile of field parameters (temp., pH, cond., D.O.) is collected. This information is used to document that the stream is well-mixed and collection of a grab sample is appropriate. Once a protocol is established, the protocol used to collect the vertical profile should be consistent (i.e, if a full vertical profile is

collected in the spring, a full vertical profile should be collected throughout the sampling period; if in situ measurements are measured at surface, mid-, and bottom in the spring, the crew leader should continue to do so throughout the sampling period). By contrast, every attempt should be made to collect water samples at mid-depth. During the year, if the reach can be waded, water samples should be collected from in stream rather than from the bridge, if it is safe to do so. However, sub-surface grab samples can be collected from the bridge over fast flowing water when conditions are truly non-wadeable.

NWG-Deep: These stations are ≥ 10 ft. in depth. Full vertical profiles are measured at these stations.
NWG-Shallow: These stations are < 10 ft. in depth. A minimum of 3 measurements are collected at the surface (0.2 m), mid-depth, and the bottom.

ADEM's 2010 monitoring strategy is implemented by basin on a 5-year rotation. It incorporates a combination of fixed, targeted, and probabilistic monitoring sites and projects to meet state monitoring goals and objectives. Four types of non-navigable, flowing sites are included in the RSMP:

- **Probabilistic sites** are located at the downstream-most pour points of randomly-selected watersheds that reflect both overall water quality conditions within a basin group, as well as the complete gradient of potential human disturbances. They are sampled in accordance with ADEM's five year rotating basin cycle.
- **Targeted sites** are selected by ADEM's Water Quality Branch, Office of Education and Outreach, one of the Clean Water Partnerships of Alabama, or the Environmental Indicators Section to provide data for use support and assessment, TMDL development, Use Attainability Analyses, and education and outreach. Where possible, targeted sampling is conducted in accordance with ADEM's five year rotating basin cycle.
- Long term **ecoregional reference reaches,** established to reflect the best attainable conditions present within a specific ecoregion, are sampled to provide baseline data for comparison to other streams within the ecoregion. Ecoregional reference reaches sampled each year are selected to compliment the Level IV Ecoregions within any given basin group. A list of ADEM's ecoregional reference reaches is provided in Appendix D.
- Long term **ambient trend sites** are sampled to identify long-term trends in water quality statewide and to provide data for the development of TMDLs and water quality criteria. Sampling frequency and parameters collected at these sites vary from other station types. Currently, one-hundred and three trend sites are samples statewide annually.

The strategy incorporates a watershed-based monitoring program. A Watershed Disturbance Gradient (WDG) was developed to classify each wadeable, flowing monitoring location by its potential level of disturbance within its watershed. With this information, the monitoring strategy provides an estimate of overall water quality throughout the basin. Additionally, by ensuring that the entire gradient of watershed conditions within the basin group is sampled, the monitoring strategy increases ADEM's monitoring capacity by providing data to develop indicators and criteria appropriate for wadeable rivers and streams statewide. Because the WDG provides disturbance and landuse information for all stations assessed within the basin group, it enables ADEM to document the "least-impaired" landuse characteristics to set criteria for reference reach status in each Ecoregion or Bioregion. It also assists ADEM in stressor identification for §303(d) listing and TMDL development.

2.1.4 Monitoring Design

Indicator selection and sampling frequency: Core indicators and sampling frequency are selected to meet minimum data requirements as outlined in Alabama's Listing and Assessment Methodology so that the majority of waterbodies monitored can be categorized in Alabama's Integrated Report and listing/delisting decisions can be made to prioritize sites for §319 funding and BMP implementation.

Monitoring Units: As recommended in the Integrated Water Quality Monitoring and Assessment Guidance, ADEM delineated the wadeable, flowing portions of the 2004 12-digit hydrologic unit codes (HUCs) into smaller monitoring units (MUs) that represent true watersheds. This system limits the variability in drainage area and waterbody type associated with the 12-digit HUCs. Since 2005, a total of 978 wadeable, flowing MUs have been delineated in the ACT (342), the EMT (128), the BWC (179), the TN (121), and the SEAL (208) basin groups.

Watershed Disturbance Gradient: Monitoring watersheds in proportion to an environmental index or Watershed Disturbance Gradient (WDG) can limit error or bias associated with targeted sampling, a weakness of *ASSESS* identified during the review of the first monitoring cycle. The use of an WDG has also been recommended by the EPA to develop Tiered Aquatic Life Uses, to correlate suspected stressors to known levels of impairment, and consequently improve the overall assessment of water quality. Sampling MUs with relatively low and high potentials of impairment also provides a method of identifying the least- and most-impaired sites in support of the Ecoregional Reference Reach and §303(d) Monitoring Programs.

The Landscape Development Intensity Index (LDI) or disturbance gradient, used by the Florida Department of Environmental Protection, relates water quality conditions (physical, chemical, and biological) to human activity within a watershed (Fore 2004) using landuse data and a development-intensity measure derived from energy use per unit area (Brown and Vivas 2004). The Florida LDI was applied to the ACT flowing, wadeable MUs using the 2000 USEPA MRLC dataset, Departmental permit databases, population estimates, and the number of road crossings to place each MU into one of 8 Watershed Disturbance Gradient (WDG) categories (1=least potential for disturbance and 8=greatest potential for disturbance).

Watershed and Reach Selection: Stations targeted for sampling by ADEM's Water Quality Branch, the Office of Education and Outreach, or one of Alabama's Clean Water Partnerships are prioritized for monitoring to meet the multiple objectives and goals of the CWA. In addition, approximately 50 MUs are sampled each year to estimate overall water quality throughout the basin group. Using a WDG to categorize watersheds enables ADEM to coordinate targeted and probabilistic monitoring to maximize the efficiency and effectiveness of both monitoring designs and increase the accuracy of all assessments. Between 2005 and 2013, one hundred and eighty-five targeted sites were incorporated into basin assessment projects. Data from basin assessment stations is used for use support assessments, TMDL and criteria development, Use Attainability Analyses, NPS Intensive Watershed Surveys, and education and outreach. A total of 604 MUs were monitored, 2005-2013.

2.1.5 Core and Supplemental Indicators

Core indicators and sampling frequency were selected to meet data requirements as outlined in Alabama's Listing and Assessment Methodology so that the majority of waterbodies monitored each year can be categorized in Alabama's Integrated Report. The Ambient Monitoring Program was designed to provide the required data over the five year monitoring cycle. Sampling frequency and indicators collected at these sites differ from the other wadeable rivers and streams programs.

2.1.6 Data Analysis and Assessment

The development of indicators and assessment criteria was a primary objective of ADEM's Monitoring Strategy. Therefore, a very significant part of Monitoring Strategy is to link results from chemical, physical, and biological indicator sampling to conditions throughout each stream's watershed. These analyses will include the following:

- Methods analysis, including optimal sampling frequencies, timing and number of samples collected, and redundancy among parameters;

- Calculation of method performance characteristics based on duplicate samples, samples collected at reference sites, and known levels of watershed disturbance;

- Development of stream classification (bioregions) based on biological community data; and,

- Development of indicators, criteria, and assessment indices based on correlations among chemical, physical, and biological indicators, and watershed conditions.

2.1.7 Reporting

Results of data analysis will be compiled and documented in a Methods Development Document. All necessary changes to sampling methods, protocols, and assessment indices and criteria will be incorporated into the next revision of the appropriate standard operating procedures manual and the Alabama Listing and Assessment Methodology document.

Once appropriate indicators have been selected and criteria and assessment indices have been established, RSMP data is used to categorize and report water quality status in Alabama's Integrated Assessment Report. Biological assessment results are also documented in ADEM's RSMP Monitoring Summary Reports, which summarize data and assessment results on the basis of watershed or monitoring unit.

Figure 2-1 Subregions of Alabama's Ecoregions

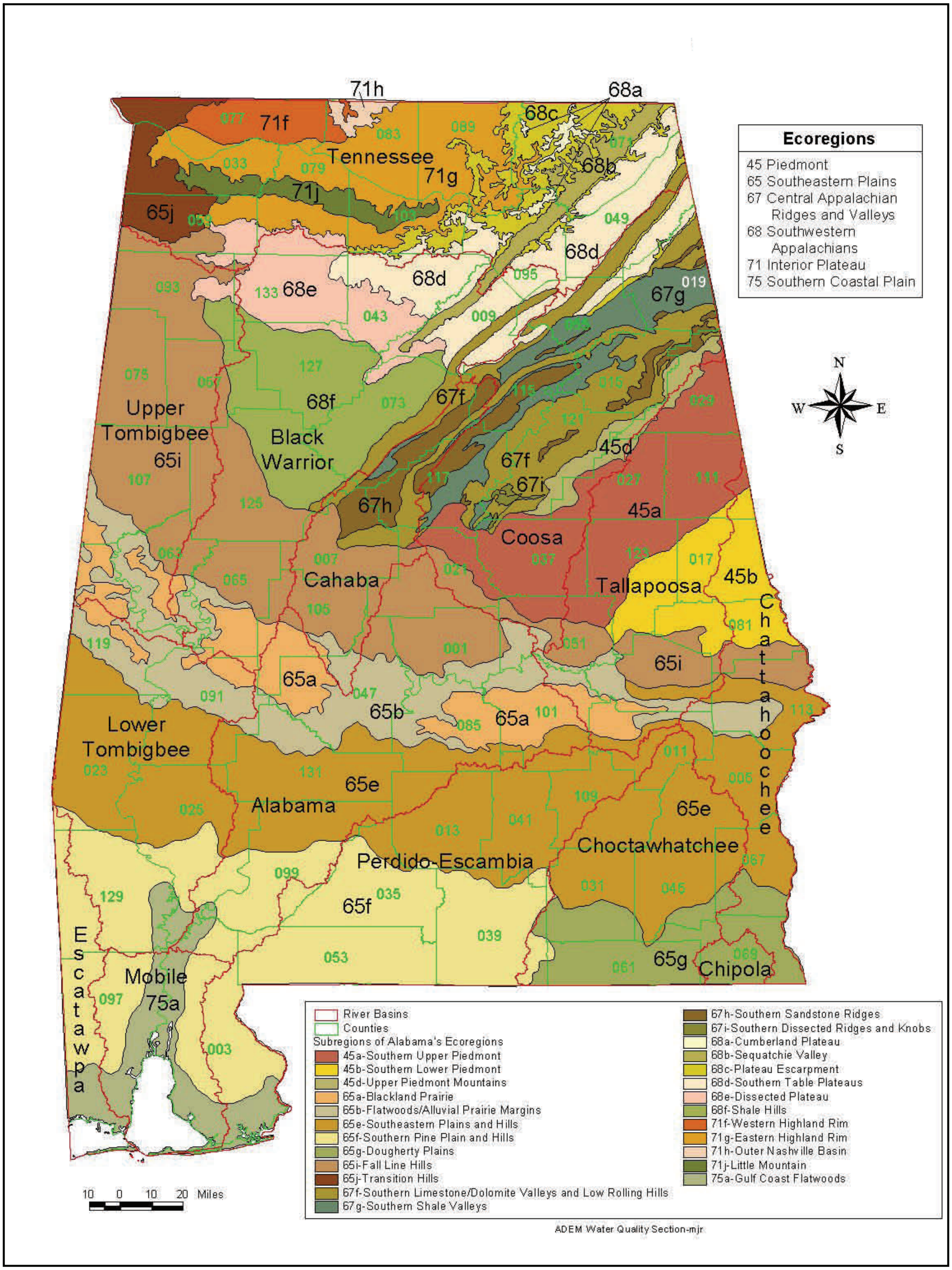


Table 2-1 Alabama Ecoregional Reference Stations

Station	Stream Name	County	Ecoregion	River Basin	Latitude	Longitude
CYD-1	Chaney Creek	Dallas	65a	Alabama River	32.35439	-87.28939
SPD-1	Soapstone Creek	Dallas	65b	Alabama River	32.32220	-86.90630
SRC-1	Silver Creek	Clarke	65q	Alabama River	31.69517	-87.58156
SWFC-1	Swift Creek	Chilton	65i	Alabama River	32.72145	-86.69159
VLYD-1	Valley Creek	Dallas	65i	Alabama River	32.57499	-86.98474
WASP-1	Washington Creek	Perry	65a	Alabama River	32.56997	-87.39136
BLVC-1	Blevens Creek	Cullman	68d	Black Warrior River	34.26736	-87.07761
BRSL-3	Brushy Creek	Lawrence	68e	Black Warrior River	34.33068	-87.28578
HNMB-4	Hendrick Mill Branch	Blount	67f	Black Warrior River	33.87612	-86.56885
INMW-1	Inman Creek	Winston	68e	Black Warrior River	34.21525	-87.22447
MRTC-1	Marriott Creek	Cullman	68e	Black Warrior River	34.04211	-86.86283
SSB-1	South Sandy Creek	Bibb	65i	Black Warrior River	32.96994	-87.39775
TPSL-1	Thompson Creek	Lawrence	68e	Black Warrior River	34.34092	-87.47108
MAYB-1	Mayberry Creek	Bibb	67h	Cahaba River	33.07125	-86.93853
BCR-1	Adams Branch	Russell	65i	Chattahoochee River	32.42469	-85.26067
IHGR-1	Ihagee Creek	Russell	65d	Chattahoochee River	32.23850	-84.98069
BRH-1	Bear Creek	Houston	65g	Choctawhatchee River	31.20769	-85.54619
DRYB-1	Dry Creek	Barbour	65d	Choctawhatchee River	31.93467	-85.61036
PATC-1	Patrick Creek	Coffee	65d	Choctawhatchee River	31.43840	-86.11210
BERD-9	Bear Creek	DeKalb	68d	Coosa River	34.38094	-85.69789
CHEC-6	Cheaha Creek	Clay	45d	Coosa River	33.45275	-85.90273
CHOC-2	Choccolocco Creek	Cleburne	45d	Coosa River	33.82946	-85.58173
DRYC-2	Dry Creek	Calhoun	67h	Coosa River	33.84240	-85.59422
FRMS-9	Fourmile Creek	Shelby	67f	Coosa River	33.25649	-86.48980
JNSC-16	Jones Creek	Coosa	45a	Coosa River	32.90492	-86.29758
LCNE-1	Little Canoe Creek	Etowah	67f	Coosa River	33.97006	-86.17892
PNTC-11	Paint Creek	Coosa	45a	Coosa River	33.01838	-86.44741
SHLC-3	Shoal Creek	Cleburne	45d	Coosa River	33.72529	-85.60115
TCT-5	Talladega Creek	Talladega	45d	Coosa River	33.37847	-86.03008
WGFC-1	Weogufka Creek	Coosa	45a	Coosa River	33.07288	-86.24847
WLFS-9	Wolf Creek	St. Clair	67g	Coosa River	33.56883	-86.33817
ULCC-1	Ulcanush Creek	Clarke	65q	Lower Tombigbee River	31.78408	-88.10808
PPM-1	Poplar Creek	Marengo	65b	Lower Tombigbee River	32.27733	-87.60669
HLB-1	Halls Creek	Baldwin	65f	Mobile Bay Area	31.05264	-87.83701
BRE-1	Bear Creek	Escambia	65f	Perdido-Escambia River	31.03334	-86.70961
CLC-1	Clear Creek	Covington	65g	Perdido-Escambia River	31.12153	-86.37575
PYW-1	Pineywoods Creek	Crehshaw	65d	Perdido-Escambia River	31.58378	-86.46186
CHNE-18	Channahatchee Creek	Elmore	45a	Tallapoosa River	32.65024	-85.95085
CRHR-9	Cornhouse Creek	Randolph	45a	Tallapoosa River	33.21195	-85.51806
EMKT-14	Emuckfaw Creek	Tallapoosa	45a	Tallapoosa River	33.05527	-85.69489
HCR-1	Hurricane Creek	Randolph	45a	Tallapoosa River	33.17546	-85.59829
LBM-1	Long Branch	Macon	65i	Tallapoosa River	32.41319	-85.48119
LCC-1	Little Chattahospee Creek	Chambers	45b	Tallapoosa River	32.90761	-85.51100
LINB-1	Line Creek	Bullock	65a	Tallapoosa River	32.20881	-85.89750
BYTJ-1	Bryant Creek	Jackson	68d	Tennessee River	34.64658	-85.84303
INCL-1	Indiancamp Creek	Lauderdale	71f	Tennessee River	34.92425	-87.62108
BLBP-1	Blubber Creek	Pickens	65i	Upper Tombigbee River	33.14725	-88.17053
BRP-1	Bear Creek	Pickens	65i	Upper Tombigbee River	33.36961	-87.90364
CLKM-4	Clark Creek	Marion	65i	Upper Tombigbee River	34.08091	-88.02659
CTML-6	Cantrell Mill Creek	Lamar	65i	Upper Tombigbee River	34.04098	-88.03327
JNS-1	Jones Creek	Sumter	65a	Upper Tombigbee River	32.70161	-88.14775

2.1.8 Programmatic Evaluation

An important component of ADEM's Monitoring Strategy is a thorough review of data and assessment results from ADEM's five year monitoring cycle to address program weaknesses and changing data needs. Further program evaluation will be conducted in 2014, in preparation for the 2015-2019 monitoring cycle. Annual status reports on methods development will be completed and provided to USEPA Region 4 to document interim progress during the monitoring cycle.

For more information on the Wadeable Rivers and Streams Monitoring Program contact Ms. Lisa Huff in ADEM's Montgomery Office at (334) 260-2752 or esh@adem.state.al.us.

2.2 Ecoregions

Innate regional differences exist in climate, landform, soil, natural vegetation, and hydrology. These factors, in turn, affect nutrient regime, substrate characteristics, and the composition of biological communities within aquatic ecosystems. By defining relatively homogeneous ecological areas, ecoregions provide a geographic framework for more efficient management of aquatic ecosystems and their components (Hughes et al. 1986, Hughes 1985, and Hughes and Larsen 1988). The USEPA has recommended the development of ecoregional reference conditions as a scientifically defensible method of defining expected habitat, biotic, and chemical conditions within streams, rivers, reservoirs, and wetlands. Level IV ecoregions have been developed or are under development in 37 states nationwide. Griffith et al. (2001) delineated six Level III ecoregions in Alabama: Piedmont, Southeastern Plains, Ridge and Valley, Southwestern Appalachians, Interior Plateau, and the Southern Coastal Plain. Within these, they delineated 29 Level IV ecoregions. Figure 2-1 shows Subregions of Alabama's Ecoregions.

ADEM uses ecoregions as an a priori classification of streams to assist in the development of a dataset representative of wadeable, flowing streams statewide. Since 1991, ADEM has selected and monitored least-impaired reference sites within each sub-ecoregion to be representative of "best attainable" conditions within that subecoregion, both for comparison with other streams and for the development of biological, physical, and chemical reference conditions (ADEM 2000b).

2.2.1 ADEM's Ecoregional Reference Reach Project: 1991-2004

Specific selection criteria were used to ensure that reference reaches were typical of the subecoregion and relatively unimpaired. Watersheds containing the highest percentage of natural vegetation were first located using topographic maps and land use information compiled by USEPA and local Soil and Water Conservation Districts. Departmental databases were used to ensure that potential reference watersheds did not contain any point source discharges, mining, or urban runoff, and minimal agricultural sources. Field reconnaissance was then conducted to ground truth land use estimates. In situ field parameters were collected and visual macroinvertebrate surveys were conducted to screen for obvious impacts to chemical and biological conditions. Substrate composition, gradient, canopy cover, sinuosity, and habitat quality and availability were estimated to assess stream condition and comparability to other streams in the subecoregion. Intensive site assessments were then conducted to verify that the reaches were in relatively good condition.

From 1991-1995, the Ecoregional Reference Reach Project was conducted annually, statewide by ecoregion. In 1996, the ADEM went to a 5-year basin rotation. Reference reaches and candidate reference reaches were sampled within the target basin, or as needed to support specific projects. Through this process, a total of 594 locations were investigated as potential reference reaches statewide. Sixty-five ecoregional reference reaches were established statewide. Data from these sites were used to develop assessment guidelines for ADEM's habitat assessments, screening-level macroinvertebrate assessments, and chemical parameters, including nutrient concentrations for 10 of the 29 subecoregions.

2.2.2 ADEM's Ecoregional Reference Reach Project: 2005-2013

In 2005, ADEM used its WDG and Departmental databases to identify candidate reference reaches in least-disturbed watersheds. Habitat and biological assessments (macroinvertebrates, fish, and periphyton), and monthly water quality data are used to verify that the sites are representative of least-impaired conditions within a subecoregion. Between 2005 and 2013, two hundred and forty-five locations were identified as candidate reference reaches. Although the project concentrated on wadeable streams and rivers, for which the USEPA and ADEM have developed rapid bioassessment protocols (Plafkin et al. 1989, Barbour et al. 1999, ADEM 1996, ADEM 1999, ADEM in press), large river ecoregional reference reaches have been established on Sipsey Fork and Hatchet Creek to assess specific impacts to Locust Fork, Mulberry Fork, and the Cahaba River.

In 2008, data from established ecoregional reference reaches were used to define macroinvertebrate site classes, and update reference guidelines for ADEM's habitat assessments and macroinvertebrate assessments, and chemical parameters. In 2010, guidelines for chemical parameters were revised using additional data.

In 2012, watershed information from 1,292 sites were used to identify candidate ecoregional reference reaches statewide. Sites were classified by level 4 ecoregion and stream size (<5 square miles, 5-75 square miles, >75<1,000 square miles). For each site class, sites in the top 25^{th} percentile of watershed condition based on ADEM's WDG scores were selected as candidate reference reaches.

Data collected at each candidate reference reach, including habitat assessment information, reach and watershed characteristics and observations, and the absence of permitted discharges within the watershed were used to validate reference reach status. Water quality data were used as a tertiary filter to exclude sites that may be impacted by unknown sources. Google Earth was also used to evaluate disturbances not reflected in the WDG score (silviculture, poultry, etc.). For sites >5 square miles, all watersheds within the lowest WDG category were selected as candidate reference reaches if at least five sites meeting this criterion could not be identified. Table 2-1 provides a list of Alabama's current Ecoregional Reference Stations.

For more information on Alabama's Ecoregions, contact Ms. Lisa Huff in ADEM's Montgomery Office at (334) 260-2752 or esh@adem.state.al.us

2.3 Trend Stations

The purpose of Alabama's trend station network is to gather surface water data at specific locations so that long-term trends in water quality can be identified. In addition, data gathered at these locations are helpful in water quality management decisions related to NPDES permitting and the development of TMDLs, water quality standards, and water quality assessment for the Department's Integrated Water Quality Assessment Report. These data will also be useful in development of nutrient and sediment water quality criteria in mid- and large-river systems for which ecoregional reference reaches are difficult to establish.

Ninety-five ambient monitoring stations were established statewide (Appendix E). To provide overall coverage throughout the state, the selected stations are distributed relatively evenly throughout each of Alabama's 14 major drainage basins. The stations also represent a range in watershed size and water quality. Over half (57) of these reaches were established at USGS gauging stations to provide continuous flow data that can be used to develop pollutant loading models. Sampling is conducted to meet the requirements of ADEM's Listing and Assessment Methodology over a five year monitoring cycle.

An important aspect of ADEM's Listing and Assessment Methodology is that the monitoring, assessment, and listing methodologies differ between wadeable and nonwadeable waterbodies, as well as between freshwater and estuarine waterbodies. Forty wadeable and thirty-three nonwadeable sampling reaches are monitored statewide in addition to twenty-one nonwadeable estuarine monitoring stations.

Monthly (January-December) sampling is conducted at stations where data are limited or where additional data are needed for TMDL development. June/August/October sampling was selected as the minimum sampling frequency that would provide data be representative of a water body under critical conditions and provide the minimum data needed for categorizing waterbodies in Alabama's Integrated Assessment Report. A list of water quality survey reports can be found at: http://adem.alabama.gov/programs/water/wqsurvey.cnt

For more information on Alabama's Trend Monitoring Sites, contact Chris Johnson ((334)-271-7827 or CLJohnson@adem.state.al.us) or Lisa Huff ((334) 260-2752 or esh@adem.state.al.us) in ADEM's Montgomery Office.

2.4 Summaries of Designated Use Support for Rivers /Streams

Table 2-2 and Table 2-3 show the Size of Rivers and Streams Impaired by causes and sources respectively. For more information about Designated Use Support contact Mr. John Pate in ADEM's Montgomery Office at (334) 270-5662 or jtp@adem.state.al.us

Table 2-2 Size of Rivers and Streams Impaired by Causes

Cause	Category 5 River/Stream (miles)	Category 4 River/Stream (miles)
Other flow regime alterations		3.15
Aluminum	25.13	48.22
Arsenic	19.56	
Chromium	14.65	
Copper	1.54	10.19
Cyanide	12.43	44.57
Iron	26.71	48.22
Lead	35.58	3.3
Mercury	859.70	
Zinc	0.22	61.44
Total dissolved solids	34.31	
Turbidity	32.02	87.88
Ammonia	3.44	270.60
Nitrogen		192.65
Phosphorus	274.67	376.99
BOD, carbonaceous	154.95	691.13
BOD, nitrogenous	154.95	453.91
Dissolved oxygen		19.62
Enterococcus bacteria	36.39	23.93
E. coli	167.00	716.42
Atrazine		23.42
Chlorpyrifos		23.42
DDT		18.77
Dieldrin	24.29	
Endosulfan		50.73
Methyl Parathion		50.73
pH	36.25	17.53
Sedimentation/Siltation	875.83	348.42
Chlorides	0.22	
Benzo(a)pyrene (PAHs)		44.57
Polychlorinated biphenyls (PCBs)	42.22	
Unknown toxicity	20.34	

Table 2-3 Size of Rivers and Streams Impaired by Sources

Sources	(miles)
Agriculture	515.16
Atmospheric deposition	837.85
Collection system failure	46.68
Contaminated sediments	46.43
Feedlots	8.46
Industrial	113.83
Land development	220.48
Municipal	459.06
Natural	71.31
Non-irrigated crop production	131.79
Pasture grazing	398.23
Sources outside state	30.78
Surface mining	127.62
Surface mining-abandoned	475.83
Unknown source	160.14
Urban development	90.75
Urban runoff/storm sewers	401.26

2.5 Industrial River Monitoring

The Industrial River Monitoring Program is a water quality monitoring program with the participation of twenty-one (21) facilities located within various river basins. The purpose of the river monitoring program is to inform operational decisions at the facilities and to assess the impact of a facility's discharge on water quality. Each facility's NPDES permit contains specific monitoring requirements which may include parameters such as pH, DO, Water Temperature, BOD_5, etc. Most of the facilities which collect this information are pulp and paper mills, although, other types of industries are included. Much of the sampling takes place during the months May through September when critical water quality conditions are anticipated. Table 2-4 and Figure 2-2 show industrial facilities that conduct river monitoring. Table 2-5 show Industrial River Monitoring Ambient Dissolved Oxygen Summaries for 2012 through 2013.

For more information about Industrial River Monitoring contact Ms. Carla Crews in ADEM's Water Division at (334) 271-7804 or ccrews@adem.state.al.us

Figure 2-2 Industrial River Monitoring

Table 2-4 Industrial River Monitoring

Facility Name	NPDES #	Facility Type	Parameters Sampled	Receiving Stream Name	Number of Stations	River Basin	City	County
ABC Coke	AL0003417	Iron and Steel Manufacturer	Stream Temperature, pH, Turbidity, Total Cyanide, Available Cyanide, Stream Depth	Five Mile Creek	2	Warrior	Birmingham	Jefferson
AbitibiBowater Alabama, Inc.	AL0003158	Paper Mill	D.O. (at 5 foot depth),Sample Time, Stream Temperature and pH	Coosa River	17	Coosa	Coosa Pines	Talladega
Alabama River Pulp Co., Inc.	AL0025968	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Alabama River	5	Alabama	Claiborne	Monroe
Boise White Paper LLC	AL0002755	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Tombigbee River	6	Lower Tom-bigbee	Jackson	Clarke
Bon Secour Fisheries	AL0003298	Seafood Proc-essing	Stream Temperature, pH, DO, Salinity	Bon Secour River	3	Mobile Bay	Bon Secour	Baldwin
Carson & Company, Inc.	AL0048194	Seafood Proc-essing	Stream Temperature, pH, DO, Salinity	Bon Secour River	3	Mobile Bay	Bon Secour	Baldwin
Ciba Specialty Chemical	AL0003093	Chemical Plant	Stream Temperature, pH, DO, Chloride,	Tombigbee River	6	Lower Tom-bigbee	McIntosh	Washington
Evonik Degussa Corporation	AL0023272	Chemical Plant	D.O. (at half -meter increments from 0.5 to a depth of 4.5 meters), Salinity, Con-ductivity, BOD5, Stream Temperature and pH	Theodore Industrial Barge Canal or Middle Fork Deer River	8	Mobile	Theodore	Mobile
Georgia Pacific Corporation Brewton Mill, Inc.	AL0002682	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature, Color and pH	Conecuh River	3	Perdido-Escambia	Brewton	Escambia
Georgia Pacific Naheola Mill	AL0003301	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Tombigbee River	2	Lower Tom-bigbee	Pennington	Choctaw
International Paper-Courtland Mill	AL0000396	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Tennessee River	5	Tennessee	Courtland	Lawrence
International Paper-Pine Hill Mill	AL0002674	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Alabama River	8	Alabama	Pine Hill	Wilcox
International Paper- Prattville Mill	AL0003115	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Alabama River	10	Alabama	Prattville	Autauga
International Paper-Riverdale Mill	AL0003018	Paper Mill	D.O. (at 5 foot depth)	Alabama River	1	Alabama	Selma	Dallas
Kimberly-Clark Corporation Mobile Mill	AL0002801	Paper Mill	D.O. (at 5 foot depth), Conductivity, pH and Temperature (both ambient & stream)	Mobile River	5	Mobile	Mobile	Mobile
MeadWestvaco Coated Board (non-continuous)	AL0000817	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Chattahoochee River	12	Chattahoochee	Cottonton	Russell
MeadWestvaco Coated Board (continuous)	AL0000817	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Chattahoochee River	4			
Rock-Tenn CompanyDemopolis	AL0002828	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Tombigbee River	2	Lower Tom-bigbee	Demopolis	Marengo
Rock-Tenn Company-Stevenson	AL0022314	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Tennessee River	6	Tennessee	Stevenson	Jackson
SCA Tissue NA LLC (Barton Opera-tions)	AL0074667	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Tennessee River	3	Tennessee	Cherokee	Colbert
Sloss Industries	AL0003247	Iron and Steel Manufacturer	Stream Depth, Stream Temperature, pH, Hardness, Turbidity, Total Cyanide, Avail-able Cyanide	Five Mile Creek	2	Warrior	Birmingham	Jefferson
ThyssenKrupp Steel and Stainless USA, LLC	AL0079901	Steel Manu-facturer	D.O. (at 1 meter increments from 0.2 meters until you reach the bottom) Stream Temperature, pH, Conductivity and Tur-bidity.	Tombigbee River	4	Lower Tom-bigbee	Calvert	Washington

Table 2-5 Industrial River Monitoring Ambient Dissolved Oxygen Summary 2012-2013

Facility Name	NPDES #	Total Samples	# of Samples < 5.0 mg/l	%DO < 5	# of Samples < 4.0 mg/l	%DO <4
ABC Coke	AL0003417	0	*	*	*	*
AbitibiBowater Alabama, Inc.	AL0003158	221	45	20.36	14	6.33
Alabama River Cellulose LLC	AL0025968	75	0	0.00	0	0.00
BASF-The Chemical Company	AL0003093	12	0	0.00	0	0.00
Boise White Paper LLC	AL0002755	167	0	0.00	0	0.00
Bon Secour Fisheries	AL0003298	**	**	**	**	**
Carson & Company, Inc.	AL0048194	**	**	**	**	**
Evonik Degussa Corporation	AL0023272	**	**	**	**	**
Georgia Pacific Corporation Brewton Mill, Inc.	AL0002682	189	0	0.00	0	0.00
Georgia Pacific Naheola Mill	AL0003301	106	0	0.00	0	0.00
International Paper-Courtland Mill	AL0000396	24	0	0.00	0	0.00
International Paper-Pine Hill Mill	AL0002674	576	124	21.53	29	5.03
International Paper- Prattville Mill	AL0003115	247	0	0.00	0	0.00
International Paper-Riverdale Mill	AL0003018	542	1	0.18	1	0.18
Kimberly-Clark Corporation Mobile Mill	AL0002801	24	7	29.17	2	8.33
MeadWestvaco Coated Board (non-continuous)	AL0000817	420	3	0.71	0	0.00
Rock-Tenn Company-Demopolis	AL0002828	127	0	0.00	0	0.00
Rock-Tenn Company-Stevenson	AL0022314	35	0	0.00	0	0.00
SCA Tissue NA LLC (Barton Operations)	AL0074667	48	27	56.25	6	12.50
Sloss Industries	AL0003247	**	**	**	**	**
ThyssenKrupp Steel and Stainless USA, LLC	AL0079901	223	0	0.00	0	0.00
ThyssenKrupp Steel and Stainless USA, LLC	AL0079901	9	0	0.00	0	0.00

Table prepared with incomplete data received

*Facilities ambient sampling parameters do not include Dissolved Oxygen

**Data not reported

Chapter 3 Lakes and Reservoirs

3.1 Lake Water Quality Assessment

3.1.1 Background

Section 314 (a) (2) of the Clean Water Act, as amended by the Water Quality Act of 1987, requires states to conduct assessments of publicly-owned lake water quality and report the findings as part of the biennial §305(b) Water Quality Report to Congress. The assessment process is conducted through the use of federal and matching funding, including that available pursuant to Sections 106 and 319 of the Act.

The Department has defined publicly-owned lakes/reservoirs as those that are of a multiple-use nature, publicly accessible, and exhibit physical/chemical characteristics typical of impounded waters. Lakes designated strictly for public water supply, privately owned lakes, or lakes managed by the Alabama Department of Conservation and Natural Resources (ADCNR) strictly for fish production are not included in this definition. Lakes currently meeting the above definition are included in the tables that follow.

In 1985, the need for information on the trophic state of Alabama's publicly-owned lakes led to the initial survey, conducted by the ADEM with the assistance of the U.S. Environmental Protection Agency Region IV. During the survey, limited baseline data was collected and used to rank the lakes according to trophic condition.

In 1989, Clean Lakes Program funds enabled the ADEM to conduct required water quality assessments of thirty-four (34) publicly-owned lakes in the State and submit collected information as part of the 1990 Water Quality Report to Congress. Trophic state index (TSI) values calculated from data gathered for the water quality assessments indicated potentially significant increases when compared to the TSI values derived from the study conducted in 1985.

Initiated in 1990 as the Reservoir Water Quality Monitoring Program, the program was given the name Rivers and Reservoirs Monitoring Program (RRMP) in 2004 with the addition of free-flowing river reaches:

Objectives of the program are:

- to develop an adequate water quality database for all rivers and publicly-accessible lakes in the state;
- to establish trends in river and lake trophic status that are only established through long-term monitoring efforts; and,
- to satisfy Section 314 (a) (2) of the Clean Water Act.

Acquiring this information enables the ADEM to determine lake water quality and identify lakes in which water quality may be deteriorating. Should deterioration in water quality be indicated by collected data, more intensive study of the lake can be instituted to establish the causes and extent of the deterioration.

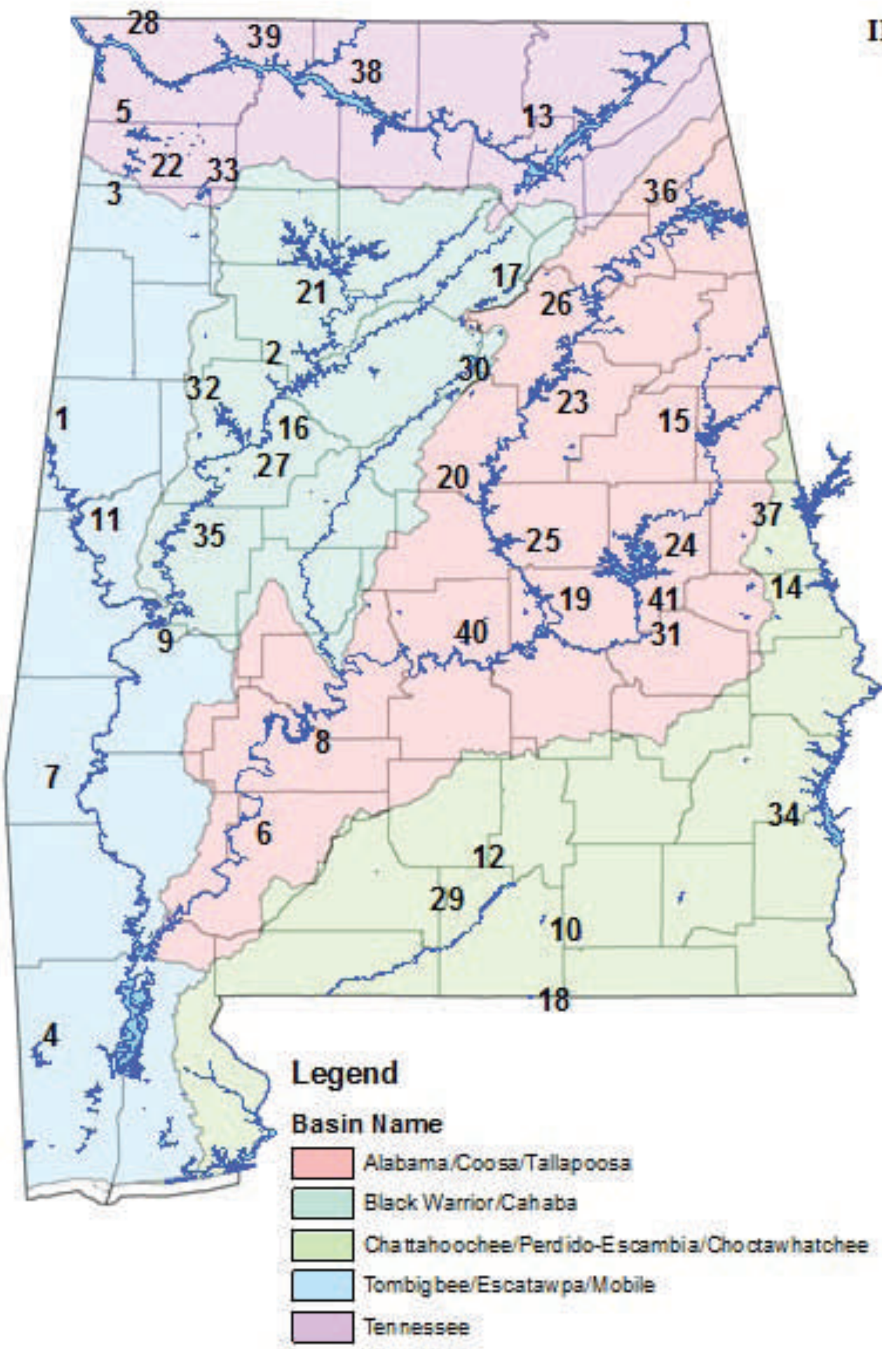
From 1990-1992, thirty-one publicly-owned lakes in the State were monitored at least once. Lakes indicated to be use-threatened or impaired from previously collected data were monitored annually. Additional funding received in 1991 through the Clean Lakes Program allowed the expansion of the Program to include all of the thirty-three (33) publicly-owned lakes in the State, with the exception of the eight reservoirs in the Tennessee River system. These reservoirs are monitored through the TVA Reservoir Vital Signs Program.

Beginning in 1994, the frequency of reservoir monitoring in the RRMP was increased to a minimum of once every two years (August monitoring) so that the water quality database and trends in trophic status could be more rapidly developed. Lakes indicated to be use-threatened or impaired continued to be monitored annually.

In 1997, intensive monitoring of reservoirs by basin was initiated, with spring season sampling for the RRMP discontinued to allow allocation of resources toward this effort. In 2010, August sampling was also discontinued to focus on full growing season sampling. The mainstem station(s) of each of the publicly-owned lakes are sampled once every three years, as either part of the basin rotation or compliance sampling. Compliance monitoring consists of monthly sampling of mainstem station(s) in each reservoir from April-October. Intensive monitoring is done on a 5-yr basin rotation and consists of monthly sampling of multiple mainstem, tributary embayment and main river stations in each reservoir from April-October. Basins sampled to date are as follows:

Coosa and Tallapoosa River Basin reservoirs, 1997;
Black Warrior River Basin reservoirs, 1998;
Chattahoochee and Conecuh River Basin reservoirs, 1999;
Coosa, Tallapoosa, and Alabama River Basin reservoirs, 2000;
Tombigbee and Escatawpa River Basin reservoirs, 2001;
Black Warrior and Cahaba River Basin reservoirs, 2002;
Tennessee River Basin tributary embayments, 2003;
Chattahoochee, Perdido-Escambia, and Choctawhatchee River Basins, 2004;
Coosa, Tallapoosa, and Alabama River Basins, 2005;
Tombigbee and Escatawpa River Basins, 2006;
Black Warrior and Cahaba River Basins, 2007;
Chattahoochee, Perdido-Escambia, and Choctawhatchee River Basins, 2008;
Tennessee River Basin tributary embayments, 2009;
Coosa, Tallapoosa, and Alabama River Basins, 2010;
Tombigbee, Mobile and Escatawpa River Basins, 2011;
Black Warrior and Cahaba River Basins, 2012; and,
Tennessee River Basin tributary embayments, 2013.

Figure 3-1 Publicly Accessible Reservoirs of Alabama



ID #	Reservoir
1	Aliceville
2	Bankhead
3	Bear Creek
4	Big Creek
5	Cedar Creek
6	Claiborne
7	Coffeeville
8	Dannelly
9	Demopolis
10	Frank Jackson
11	Gainesville
12	Gantt
13	Guntersville
14	Harding
15	Harris
16	Holt
17	Inland
18	Jackson
19	Jordan
20	Lay
21	Lewis Smith
22	Little Bear Creek
23	Logan Martin
24	Martin
25	Mitchell
26	Neely Henry
27	Oliver
28	Pickwick
29	Point A
30	Purdy
31	Thurlow
32	Tuscaloosa
33	Upper Bear Creek
34	Walter F. George
35	Warrior
36	Weiss
37	West Point
38	Wheeler
39	Wilson
40	Woodruff
41	Yates

Initiated in 1989, water quality monitoring of lakes of the Tennessee River system continues through the Tennessee Valley Authority (TVA) Reservoir Vital Signs Monitoring Program. The Program provides results of its monitoring activities to the ADEM on an annual basis through Program reports. Activities of the Program are based on the examination of appropriate physical, chemical, and biological indicators in the forebay, mid-region, and headwater areas of each lake. Objectives of the Program are to provide basic information on the "health" or integrity of the aquatic ecosystem in each TVA lake and to provide screening level information describing how well each reservoir meets the "fishable" and "swimmable" goals of the Clean Water Act. Figure 3‑1 shows Publicly Accessible Reservoirs of Alabama.

For more information about Lakes and Reservoirs, contact Ms. Gina Curvin in ADEM's Montgomery Office at (334) 260‑2783 or GCurvin@adem.state.al.us

3.2. Trophic Status

In the RRMP, the ADEM uses Carlson's trophic state index (TSI) for determination of the trophic state of Alabama lakes. Carlson suggests the use of corrected chlorophyll a concentrations in calculations of the trophic state of lakes during the summer months. Using corrected chlorophyll a concentrations to determine trophic state is considered to give the best estimate of the biotic response of lakes to nutrient enrichment when phytoplankton is the dominant plant community. In previous reporting due to limited data availability, the ADEM used the yearly August TSI value to characterize the reservoir's trophic state and determine long-term trends. Beginning with the 2012 report, the ADEM evaluated each reservoir using the season mean TSI value which is a better indicator for trophic status and trends.

Carlson's TSI provides the limnologist and the public with a single number that serves as an indicator of trophic status of a lake but does not necessarily define it. Lakes with a TSI of 70 or greater are generally considered to be hypereutrophic and in need of regulatory action

Table 3-1 Trophic Status of Significant Publicly Owned Lakes

	Number of Lakes	Acreage of Lakes
Total	41	479,470
Assessed	40	471,170
Oligotrophic	8	36,875
Mesotrophic	8	83,487
Eutrophic	24	350,808
Hypereutrophic	0	0
Dystrophic	0	0
Unknown	1	8,300

Table 3-2 Reservoir and Lake Trophic Status

Trophic State Designation	Index	Reservoir	River Basin	Growing Season TSI Value	Growing Season TSI Year	*Average TSI Value
Eutrophic (50-69)	1	Wheeler	Tennessee	62	2011	58
	2	Wilson	Tennessee	61	2011	57
	3	Pickwick	Tennessee	61	2011	56
	4	Bear	Tennessee	60	2011	57
	5	Neely Henry	Coosa	58	2013	63
	6	Upper Bear	Tennessee	57	2009	57
	7	Aliceville	Tombigbee	57	2011	57
	8	Guntersville	Tennessee	56	2011	55
	9	Dannelly	Alabama	54	2013	55
	10	Claiborne	Alabama	54	2013	52
	11	Weiss	Coosa	54	2013	61
	12	Lay	Coosa	54	2013	58
	13	Purdy	Cahaba	53	2013	57
	14	Gainesville	Tombigbee	53	2011	53
	15	Warrior	Warrior	53	2012	53
	16	West Point	Chattahoochee	52	2012	54
	17	Bankhead	Warrior	52	2012	53
	18	Little Bear	Tennessee	52	2011	50
	19	Jordan	Coosa	51	2013	54
	20	Holt	Warrior	51	2012	52
	21	Cedar	Tennessee	51	2011	47
	22	W.F. George	Chattahoochee	50	2012	54
	23	Logan Martin	Coosa	50	2013	57
	24	Frank Jackson	Perdido Escambia	50	2012	50
	25	Coffeeville	Tombigbee	50	2011	50
Mesotrophic (40-49)	26	Mitchell	Coosa	49	2013	56
	27	Woodruff	Alabama	47	2013	54
	28	Gantt	Perdido Escambia	47	2012	48
	29	Point A	Perdido Escambia	46	2012	46
	30	Harris	Tallapoosa	46	2013	50
	31	Demopolis	Tombigbee	45	2012	49
	32	Oliver	Warrior	45	2012	49
	33	Martin	Tallapoosa	44	2013	40
Oligotrophic (< 40)	34	Smith	Warrior	39	2012	40
	35	Big Creek	Escatawpa	37	2012	47
	36	Inland	Warrior	37	2012	42
	37	Harding	Chattahoochee	36	2012	48
	38	Yates	Tallapoosa	35	2013	43
	39	Thurlow	Tallapoosa	34	2013	40
	40	Tuscaloosa	Warrior	32	2012	39
	41	Jackson	Perdido Escambia	26	2012	39

*Average cumulative mean growing season values (1997-present) from dam forebay stations and may not reflect a lake's current trophic state.

Alabama River Basin

Figure 3-2 Woodruff Reservoir
Growing Season Mean TSI

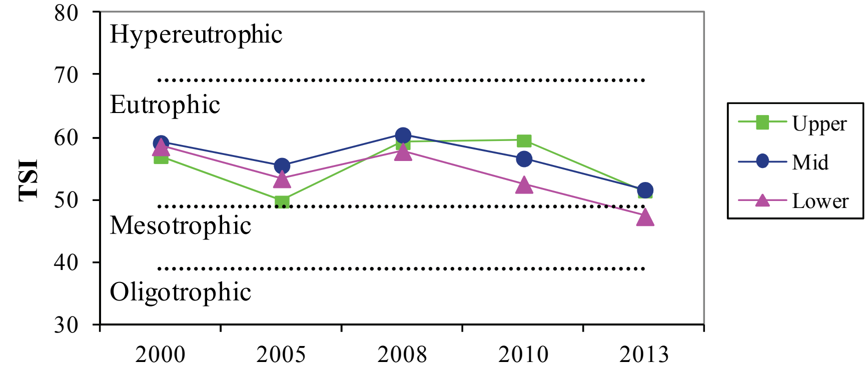


Figure 3-3 Dannelly Reservoir
Growing Season Mean TSI

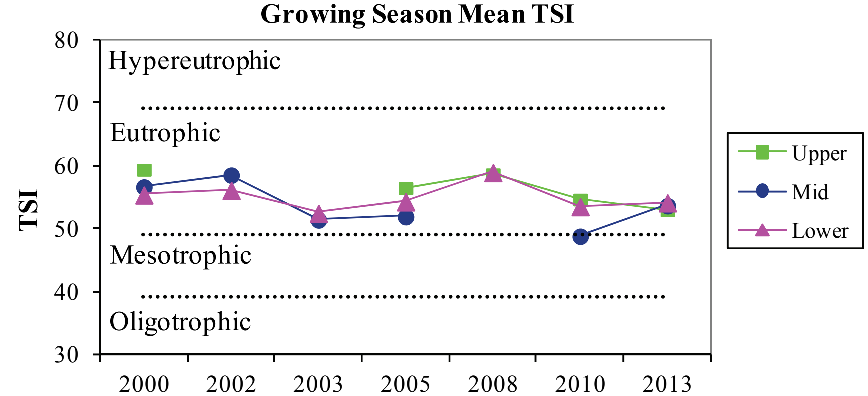
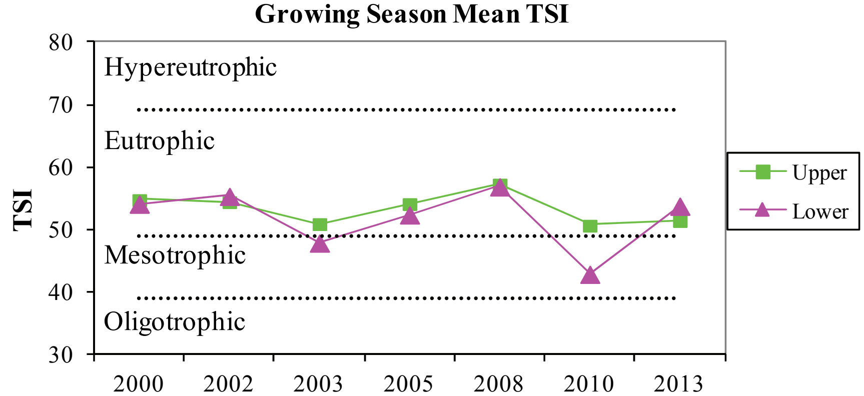
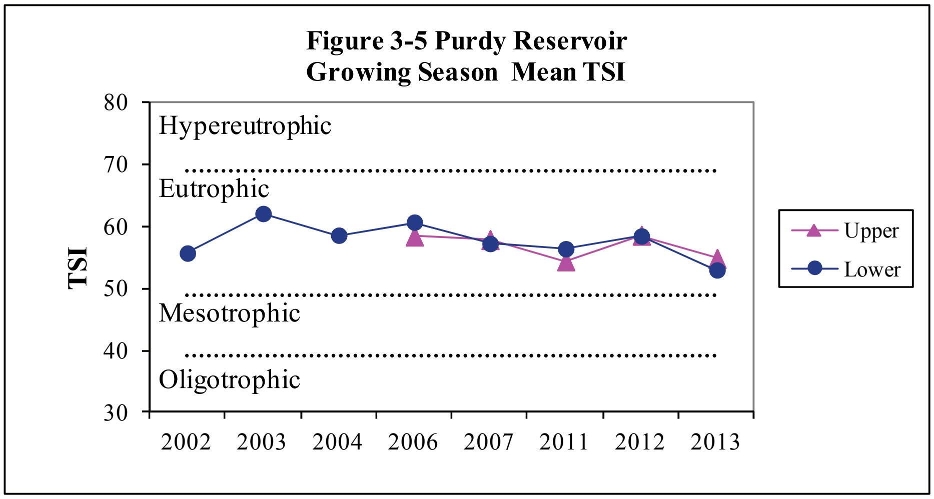


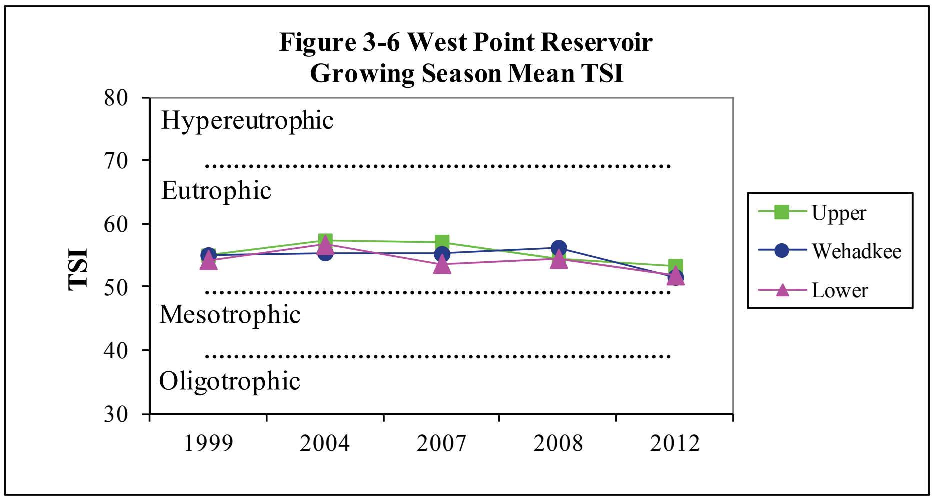
Figure 3-4 Claiborne Reservoir
Growing Season Mean TSI

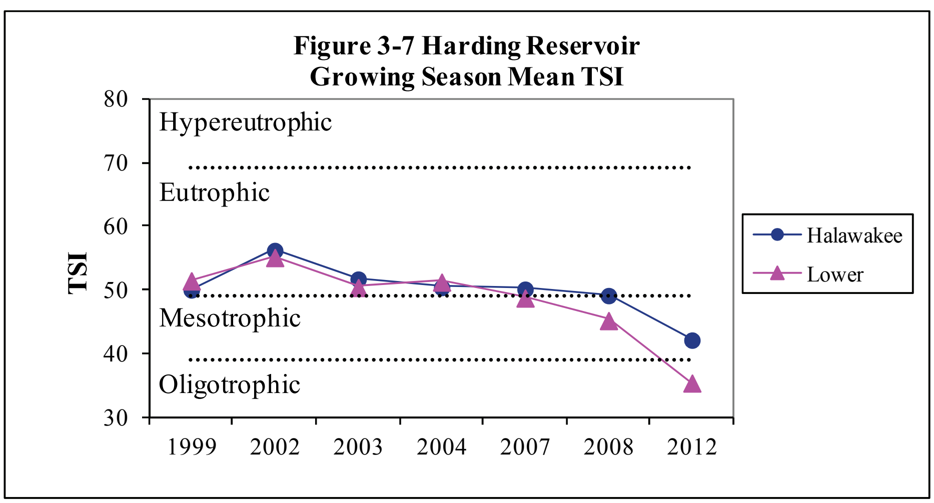


Cahaba River Basin

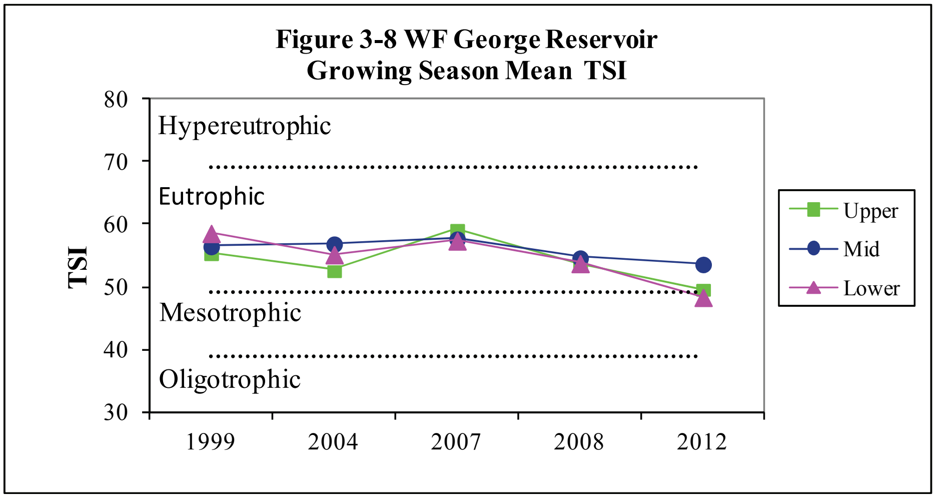


Chattahoochee River Basin

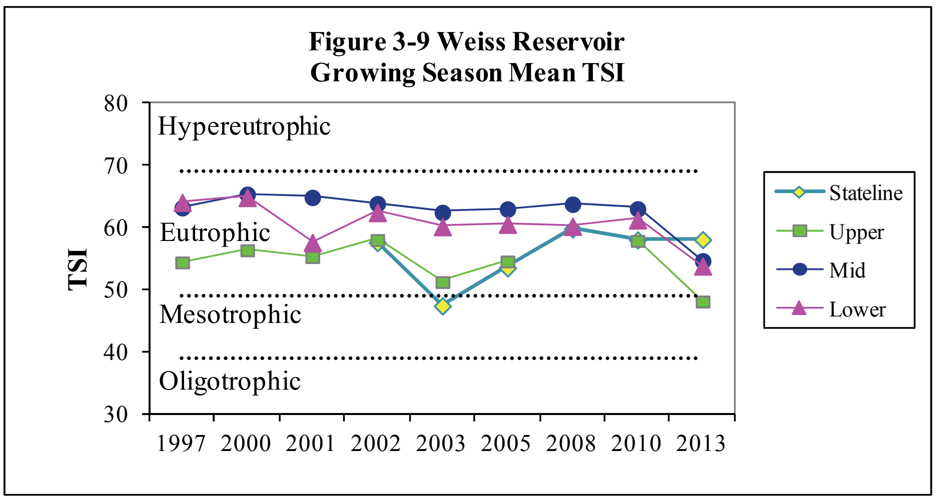


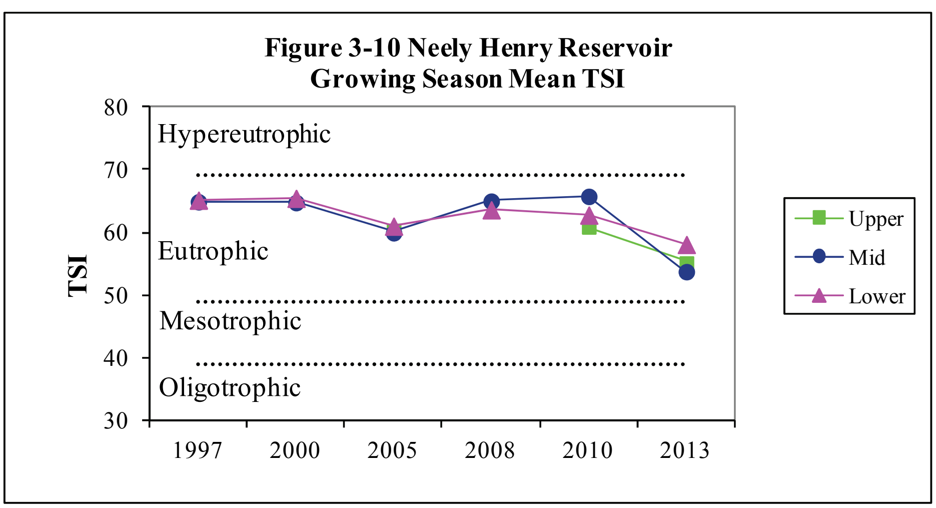


Chattahoochee River Basin

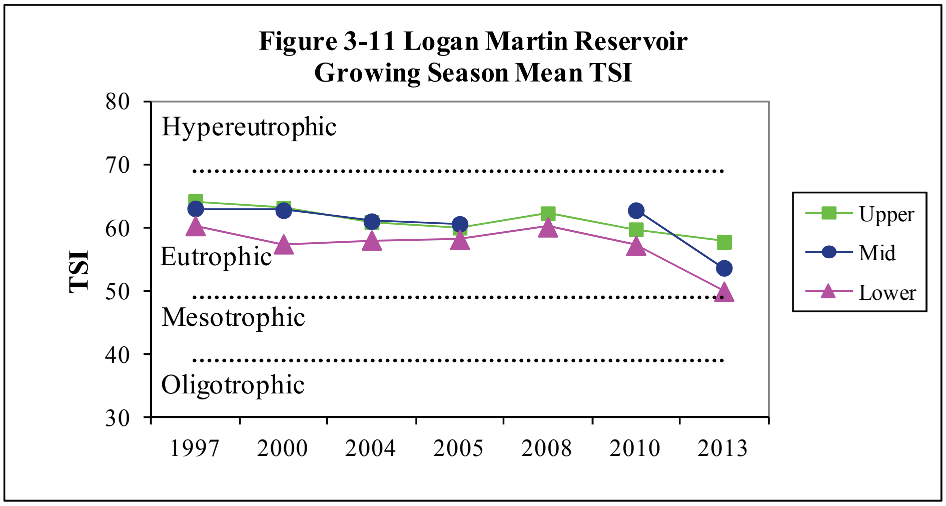


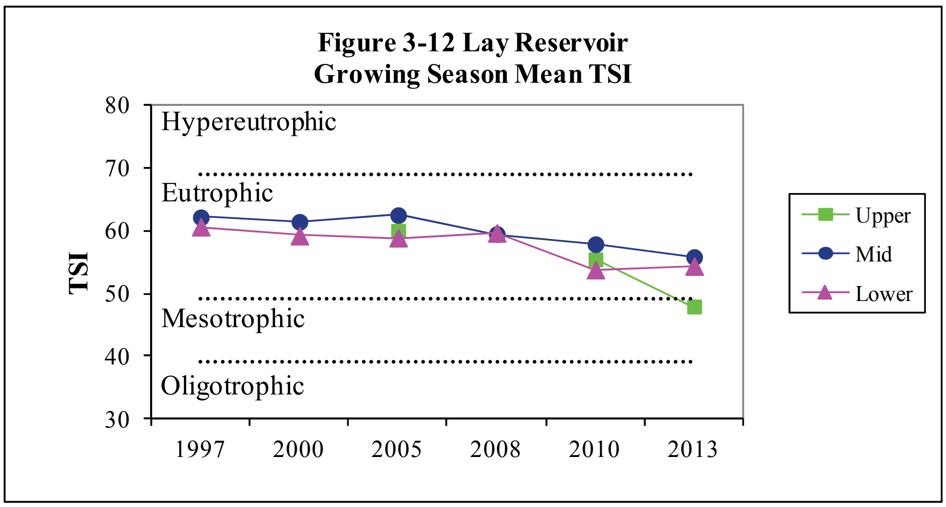
Coosa River Basin

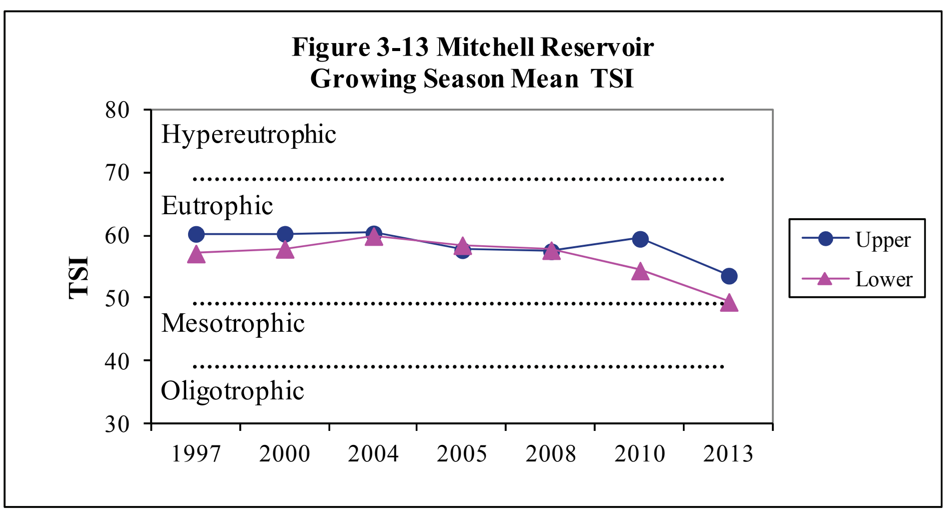




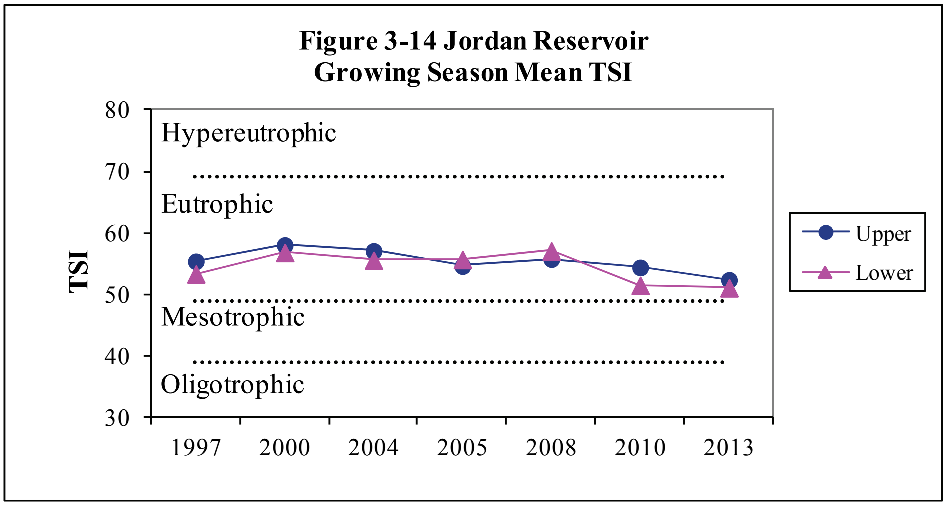
Coosa River Basin



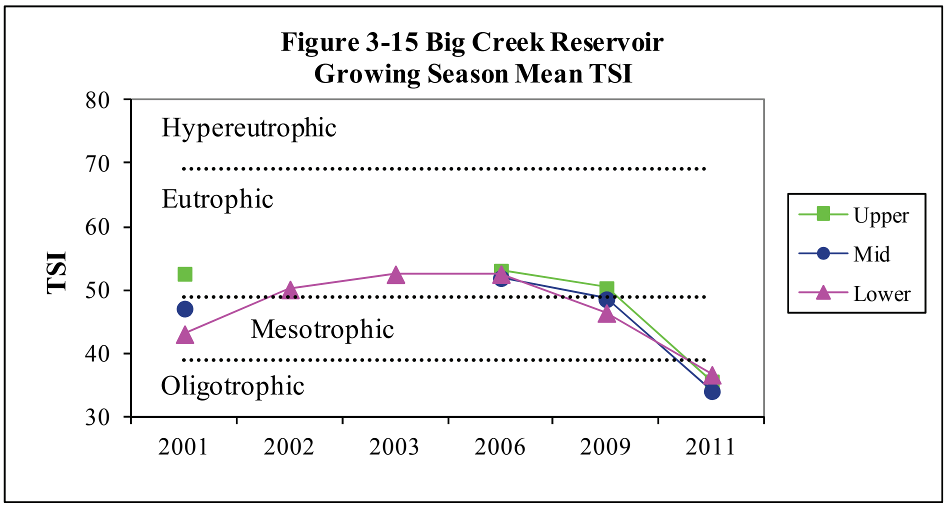




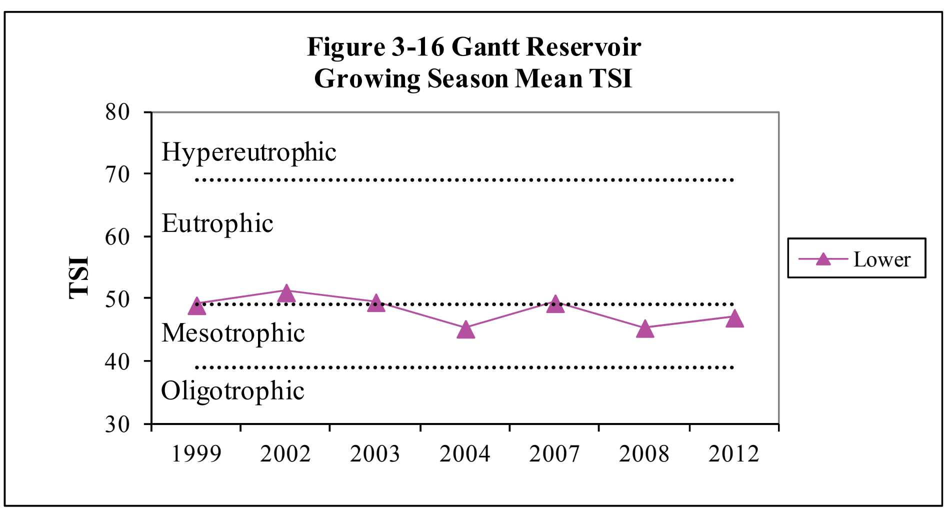
Coosa River Basin



Escatawpa River Basin



Perdido Escambia River Basin



Perdido Escambia River Basin

Figure 3-17 Point A Reservoir Growing Season Mean TSI

Figure 3-18 Lake Jackson in Florala, AL Growing Season Mean TSI

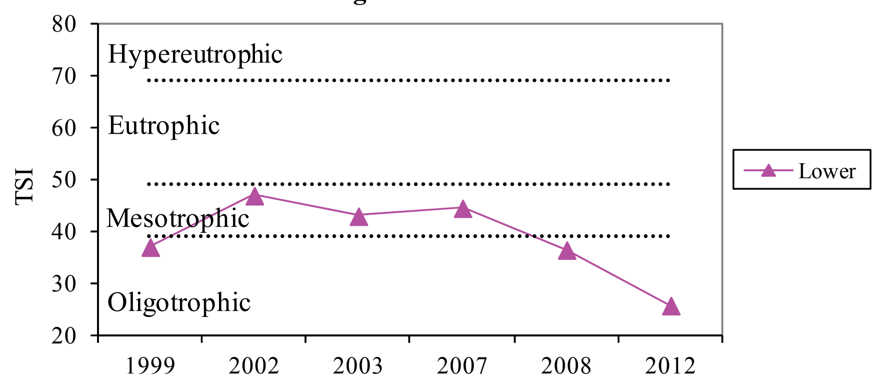
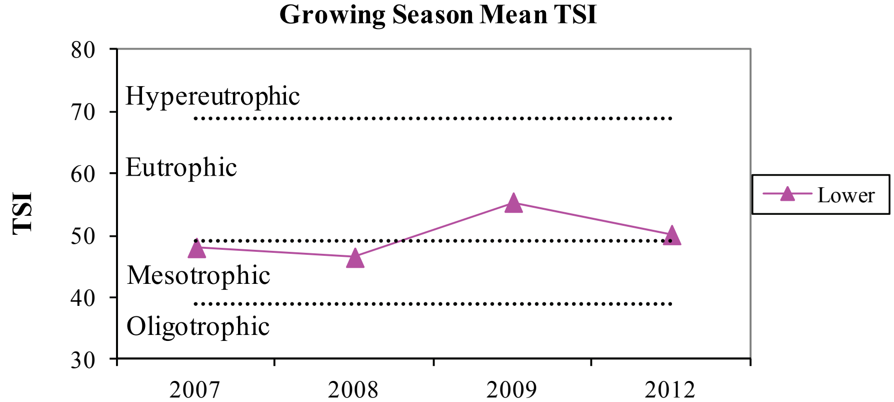


Figure 3-19 Frank Jackson Reservoir in Opp, AL Growing Season Mean TSI



Tallapoosa River Basin

Figure 3-20 Harris Reservoir
Growing Season Mean TSI

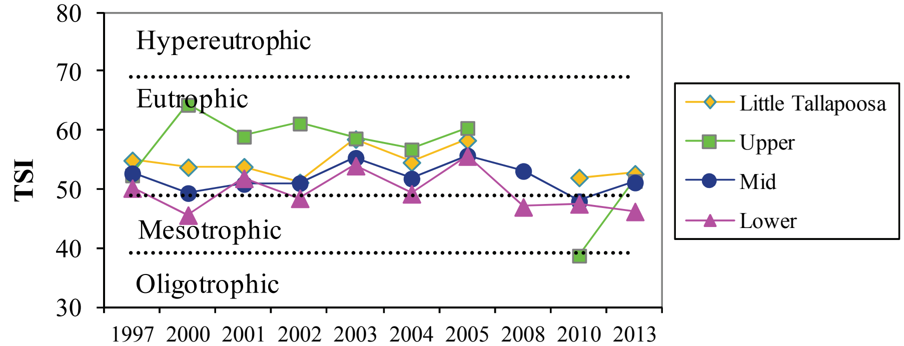


Figure 3-21 Martin Reservoir
Growing Season Mean TSI

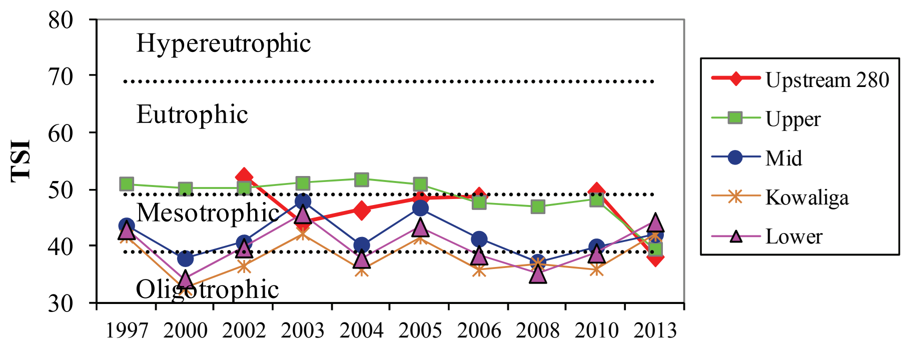
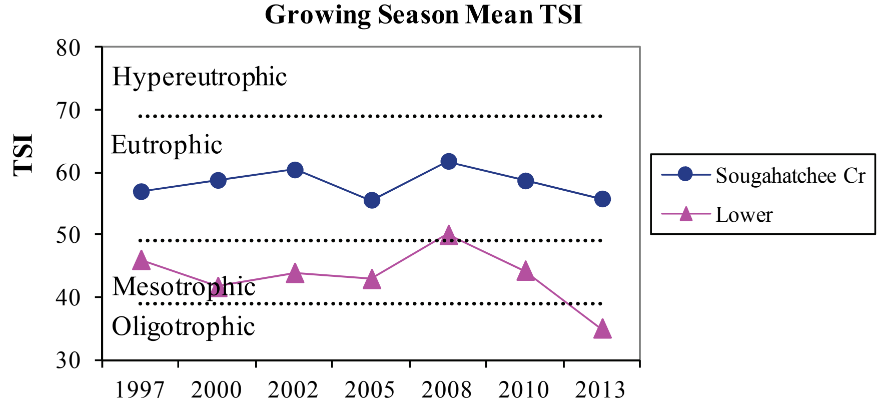
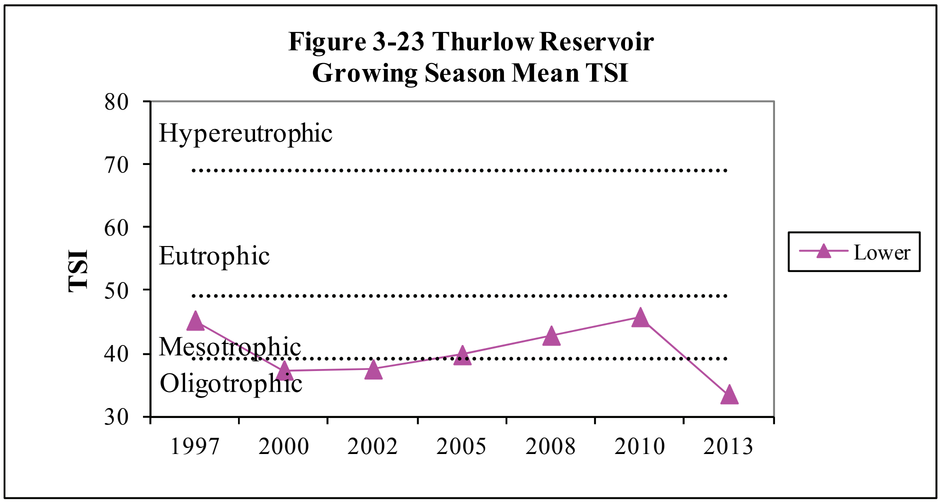
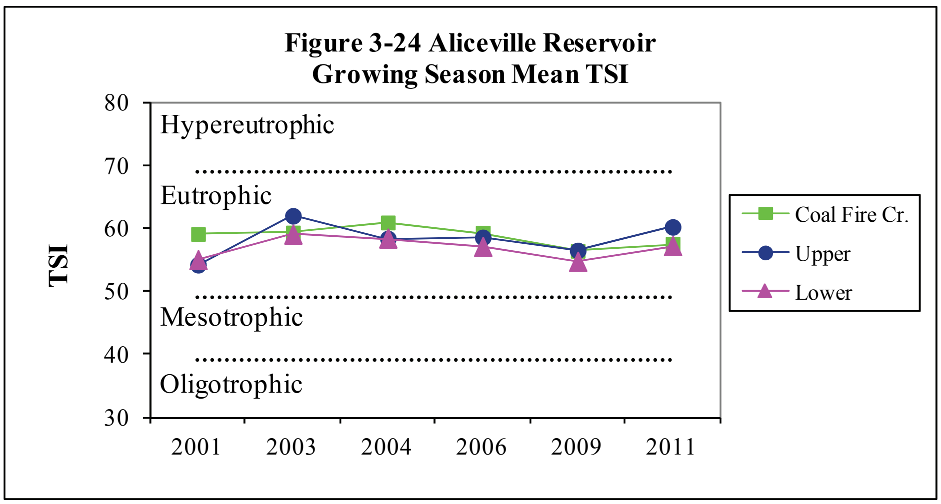


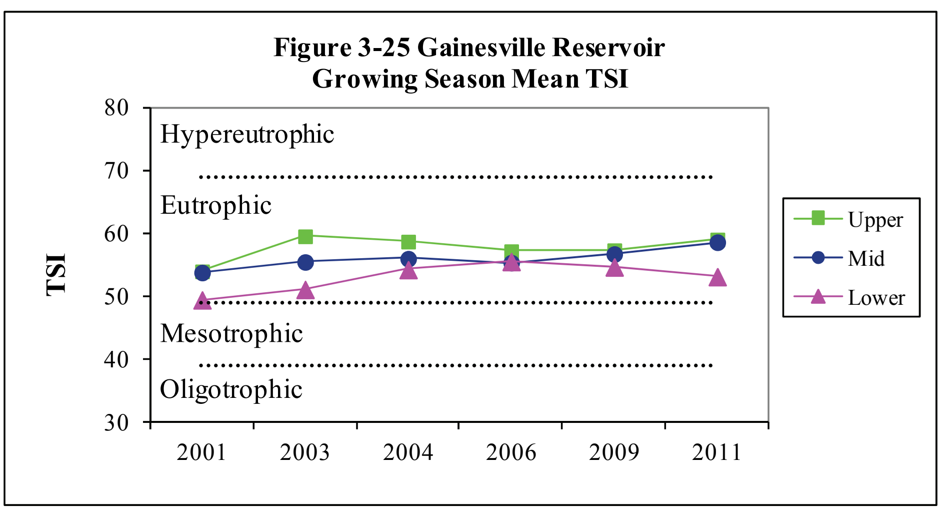
Figure 3-22 Yates Reservoir
Growing Season Mean TSI





Tombigbee River Basin





Tombigbee River Basin

Figure 3-26 Demopolis Reservoir
Growing Season Mean TSI

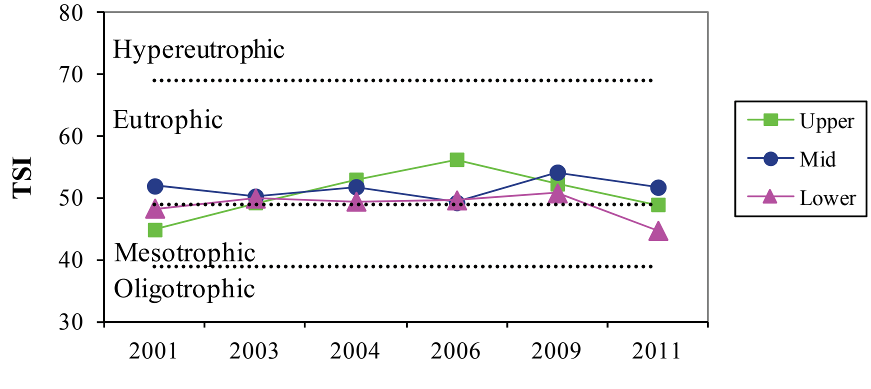


Figure 3-27 Coffeeville Reservoir
Growing Season Mean TSI

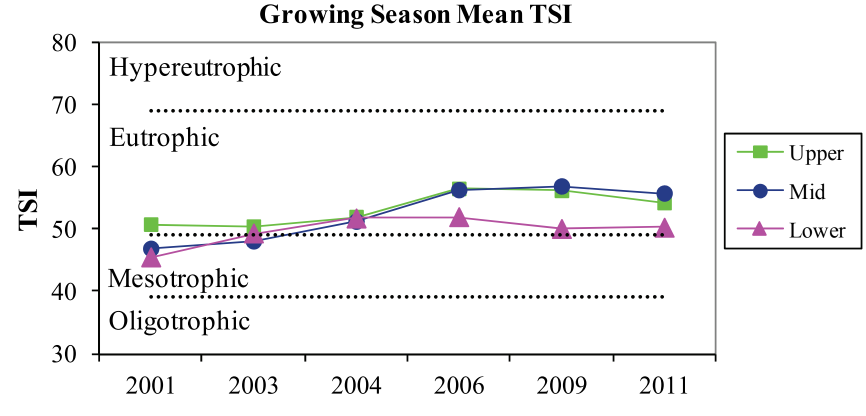
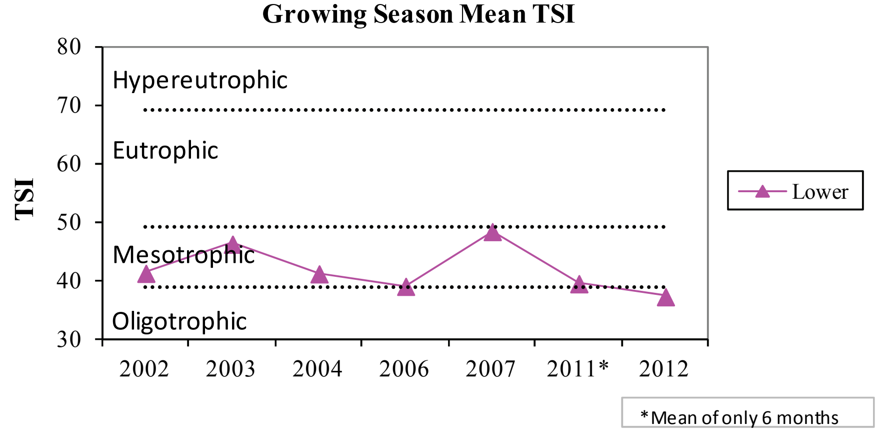
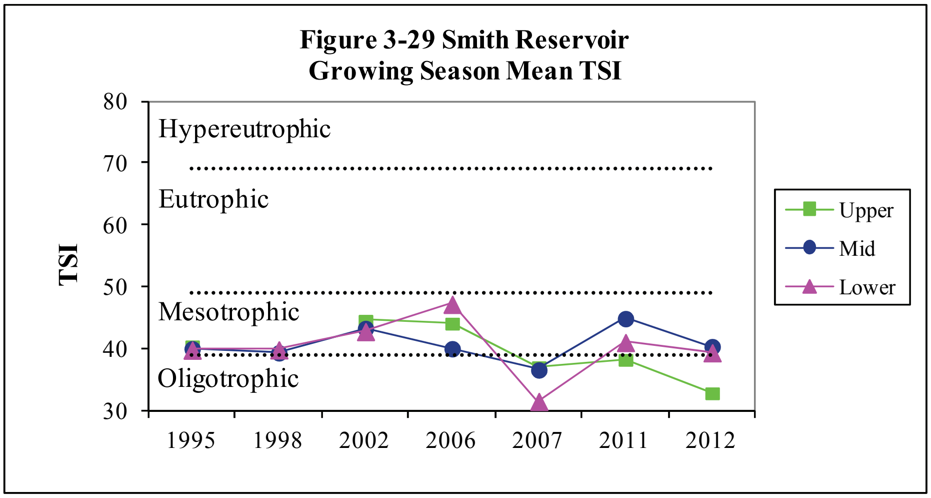
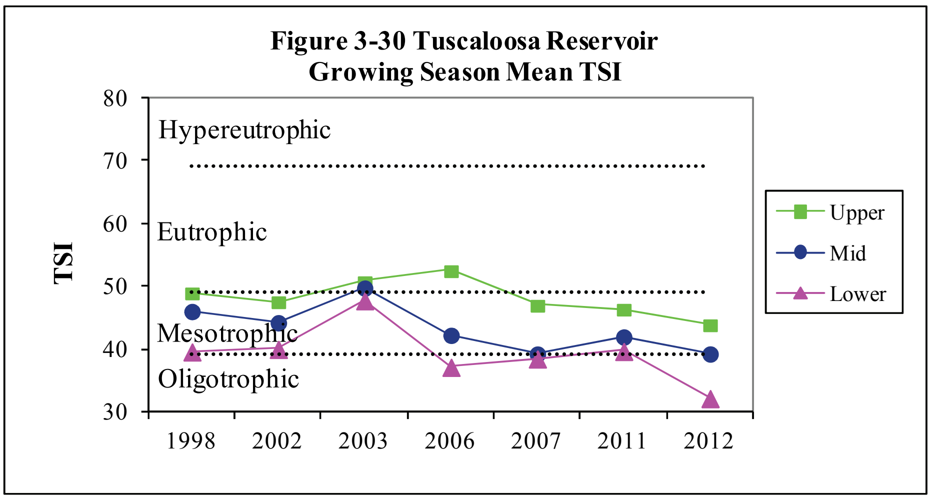


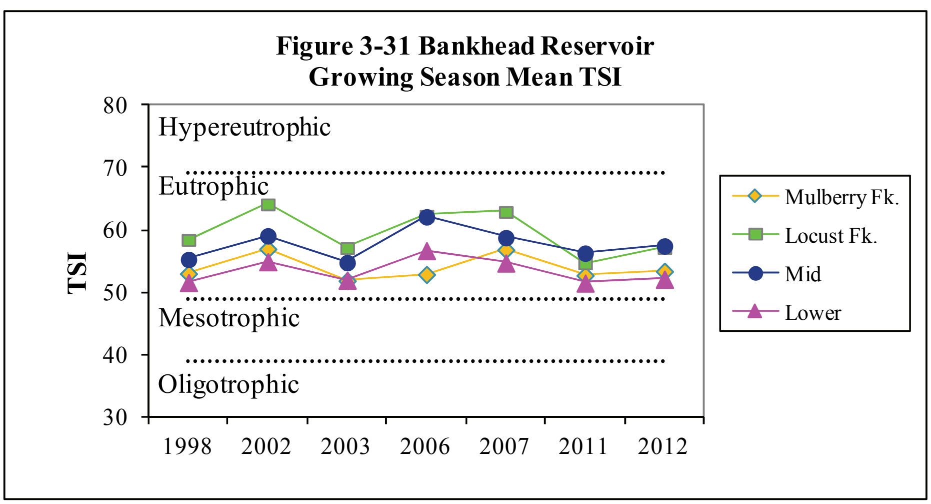
Figure 3-28 Inland Reservoir
Growing Season Mean TSI



Warrior River Basin







Warrior River Basin

Figure 3-32 Holt Reservoir
Growing Season Mean TSI

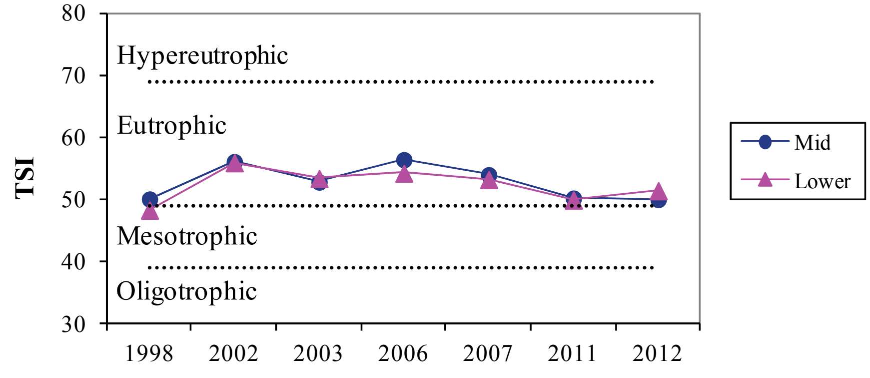


Figure 3-33 Oliver Reservoir
Growing Season Mean TSI

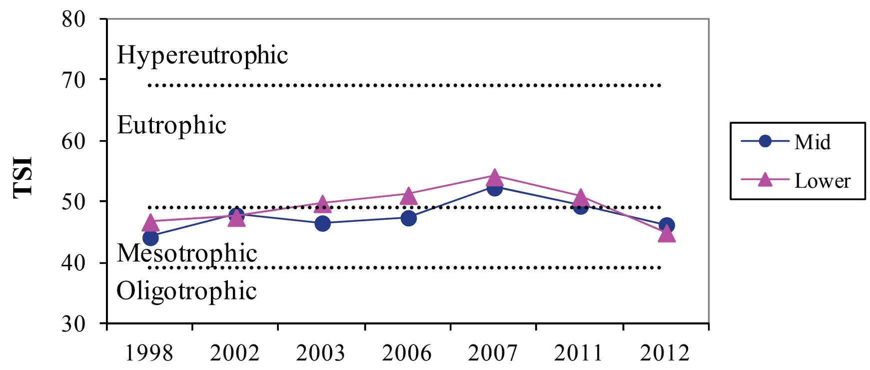
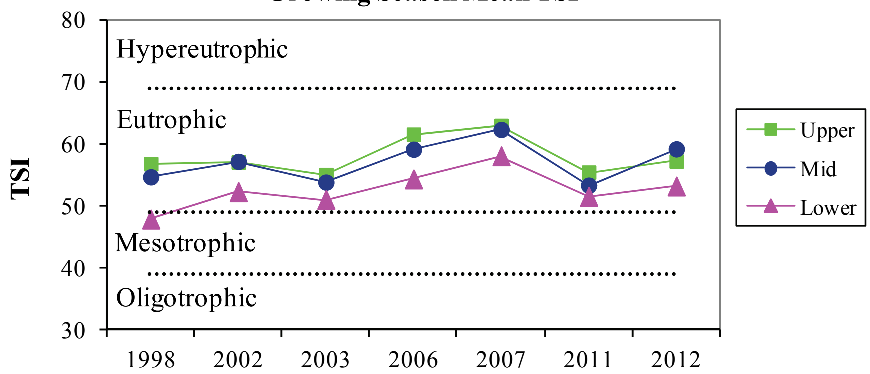


Figure 3-34 Warrior Reservoir
Growing Season Mean TSI



appropriate for protection and restoration. A TSI of 50 to 70 indicates eutrophic conditions in a lake. Trophic state index values from 40 to 50 indicate mesotrophic conditions. Oligotrophic conditions are indicated by TSI values less than 40.

The number and surface area of lakes for each trophic classification appear in Table 3-1, which was developed using current monitoring data. A trophic state ranking of Alabama lakes appears in Table 3-2. TSI graphs for Alabama reservoirs are found in Figures 3-2 thru 3-34.

3.3 Control Methods

The ADEM has not defined control methods specifically for lakes. Instead, the pollution controls of ADEM's Point Source Program (NPDES permitting) and the Nonpoint Source Program are applicable for all of the State's surface waters.

Table 3-3 List of Clean Lakes Program Projects

Name of Project	Type of Project	Federal Funding ($)	Problems Addressed	Management Measures Proposed or Undertaken
West Point Reservoir	Phase I	100,000	Diagnostic/ Feasibility	See Report
W.F. George Reservoir	Phase I	70,000	Diagnostic/ Feasibility	See Report
Neely Henry Reservoir	Phase I	92,000	Diagnostic/ Feasibility	See Report
Weiss Reservoir	Phase I	142,583	Diagnostic/ Feasibility	See Report
Smith Reservoir	Phase I	93,000	Diagnostic/ Feasibility	See Report

Table 3-4 State Owned and Operated Public Fishing Lakes

County	County Fishing Lakes	Acres
Barbour	Barbour County Lake	75
Bibb	Bibb County Lake	100
Chambers	Chambers County Lake	183
Clay	Clay County Lakes	74
Coffee	Coffee County Lake	80
Crenshaw	Crenshaw County Lake	53
Dale	Dale County Lake	92
Dallas	Dallas County Lake	100
DeKalb	DeKalb County Lake	120
Escambia	Escambia County Lake	184
Fayette	Fayette County Lake	60
Geneva	Geneva County Lakes	65
Lamar	Lamar County Lake	68
Lee	Lee County Lake	130
Madison	Madison County Lake	105
Marion	Marion County Lake	37
Monroe	Monroe County Lake	94
Pike	Pike County Lake	45
Walker	Walker County Lake	163
Washington	Washington County Lake	84
Totals	20 State Fishing Lakes	1,061

3.4. Restoration Efforts

Water quality data collected by the RRMP enabled the ADEM to determine lakes in need of Clean Lakes Program Phase I Diagnostic/Feasibility Studies. All Clean Lakes Program Phase I Diagnostic/Feasibility Studies were conducted through cooperative agreements between ADEM and Auburn University. A list of the Clean Lakes Program Projects of Alabama appears in Table 3-3. Table 3-4 shows State Owned and Operated Public Fishing Lakes.

3.5. Impaired Lakes

The Size of Rivers and Streams Impaired by Causes appears in Table 3-5. Size of Rivers and Streams Impaired by Sources appears in Table 3-6.
Water quality data collected by the ADEM RRMP, Clean Lakes Program Phase I Studies and TVA Reservoir Monitoring Program were used for determination of use support status.

Table 3-5 Size of Lakes/ Reservoirs Impaired by Causes

	Category 5	Category4
Cause	Reservoir/Lake (acres)	Reservoir/Lake (acres)
Mercury	40,976.91	
Ammonia		527.25
Nitrogen		2,291.85
Phosphorus	88,876.29	74,601.55
BOD, carbonaceous	3,881.66	3,022.88
BOD, nitrogenous	3,881.66	527.25
DDT	85.73	
pH	1,569.21	
Sedimentation/Siltation	212.45	2,840.48
Polychlorinated biphenyls (PCBs)	32,196.15	25,518.98
Perfluorooctane Sulfonate (PFOS)	20,633.11	

Table 3-6 Size of Lakes/ Reservoirs Impaired by Sources

Sources	(acres)
Agriculture	88,677.81
Atmospheric deposition	40,891.18
Collection system failures	527.25
Contaminated sediments	32,281.88
Dam construction	4,435.85
Flow regulation/modification	58,712.57
Industrial	32,909.91
Municipal	12,276.80
Non-irrigated crop production	4,200.98
Pasture grazing	2,300.24
Sources outside state	50,019.25
Surface mining-abandoned	412.49
Urban runoff/storm sewers	22,499.16
Unknown source	1,435.05

Available data from each reservoir was examined for repeated violations of specific water quality criteria established by the ADEM and evaluated with adherence to the Guidelines For Preparation of the State Water Quality Assessments (305(b) Reports). Waters affected by health advisories related to fish consumption were determined to be either partially supporting or not supporting. This determination was dependent upon whether advisories specified limited consumption or no consumption of a particular species as directed in the guidelines mentioned above.

3.6. Toxic Effects on Lakes

Lake-specific monitoring information for toxic pollutants is limited. Point source control efforts are directed at the source of toxic pollutants through NPDES permitting programs. Total lake acres affected by toxicants appear in Table 3-7. Lake acreage monitored for toxicants consists of lakes for which fish have been collected and analyzed through the ADEM Fish Tissue Monitoring Program and the TVA Reservoir Monitoring Program. Lake acreage with elevated levels of toxicants consists of lake areas upon which health advisories have been instituted that relate to consumption of fish contaminated with certain priority pollutants. Fish will continue to be collected from major lakes, rivers, and certain waterbodies of concern and analyzed for toxic pollutants as part of the ADEM Fish Tissue Monitoring Program. Fish tissue sampling results are contained in the Fish Tissue Monitoring section of Part V Public Health Information.

Table 3-7 Total Reservoir Size Affected by Toxicants

Waterbody	Size Monitored for Toxicants	Size with Elevated Levels of Toxicants
Rivers (miles)	-	-
Lakes (acres)	339,406	66,832
Estuaries (sq. miles)	-	-
Coastal waters (miles)	-	-
Freshwater wetlands (acres)	-	-
Tidal wetlands (acres)	-	-

3.7 Acid Effects on Lakes

The number and acreage of lakes affected by acidity appear in Table 3-8. The number and acreage of lakes affected by sources of high acidity appear in Table 3-9. No reservoirs monitored by the ADEM have been determined to be impacted by high acidity based on data collected through the RRMP. However, the following reservoirs are considered vulnerable to acidity based on low alkalinities and pH values observed in monitoring data that were near limits of specific ADEM water quality criteria: Big Creek; Inland; Jackson; Frank Jackson, Point A; Smith; and Tuscaloosa. Low pH values measured in Big Creek, Jackson, Frank Jackson, and Point A Reservoirs are determined to be of natural origin and are considered unlikely to cause adverse impacts. In the case of both Smith and Tuscaloosa Reservoirs, mining activities in the watershed were also considered in determining the vulnerability of the reservoirs to acid effects.

Table 3-8 Lakes Affected By Acidity

	Number of Lakes	Acreage of Lakes
Assessed for Acidity	41	479,470
Impacted by High Acidity	0	0
Vulnerable to Acidity	7	34,030

Table 3-9 Sources of High Acidity in Lakes and Reservoirs

Source	Number of Lakes Impacted	Acreage of Lakes Impacted
Acid Deposition	0	0
Acid Mine Drainage	0	0
Natural Sources	0	0
Other (list)	0	0

3.8. Trends

Status of Trends for Lakes and Reservoirs appears in Table 3-10. Trends were determined by reviewing three (3) or more years of water quality data from multiple sources, if available, for each reservoir during the period 1997 to 2013.

The reservoirs considered to be degrading were listed based on data collected through the RRMP. Assignment of a particular reservoir to the "Stable" category does not necessarily indicate desirable water quality but only that the water quality appears stable.

Future data collection is critical in further establishing trends in water quality of reservoirs in the State. For more information about Lakes and Reservoirs, contact Ms. Gina Curvin in ADEM's Montgomery Office at (334) 260-2783 or GCurvin@adem.state.al.us

Table 3-10 Status of Trends for Lakes and Reservoirs

	Number of Lakes	Acreage of Lakes
Assessed for Trends	41	479,470
Improving	8	68,062
Stable	33	411,408
Degrading	0	0
Trend Unknown	0	0

3.9 TVA Lakes

For certain lakes and reservoirs in Alabama there are waterbody-specific nutrient criteria. Nutrients may vary significantly lake-to-lake, and may vary from year to year depending on such factors as rainfall and hydraulic retention time. See Water Quality Criteria Applicable to Specific Lakes, ADEM Administrative code 335-6-10-.11. Table 3-11 shows the TVA Lake Sampling Chlorophyll a sampling locations. Tropic Status for TVA Reservoirs in Alabama appear in Figures 3-35 thru 3-42. For more information about TVA Lakes, contact Mr. Tyler Baker with Tennessee Valley Authority at (423)-876-6733 or tfbaker@tva.gov

Table 3-11 TVA Lake Sampling Chlorophyll A Sampling Locations

Site Code	**River Mile**	Reservoir	**Area**	Lat	**Long**
UBDFB	BCM 115.4	Upper Bear	Forebay	34°16'37.3"	87°41'06.3"
BCDFB	BCM 75.0	Bear Creek	Forebay	34°23'55.5"	87°58'57.8"
CCDFB	CCM 25.2	Cedar Creek	Forebay	34°32'03.0"	87°57'27.3"
LBDFB	LBCM 12.5	Little Bear	Forebay	34°27'12.7"	87°58'05.1"
PKHFB	TRM 207.3	Pickwick Land-	Forebay	35°04'13.0"	88°14'22.0"
WLHFB	TRM 260.8	Wilson	Forebay	34°48'30.8"	87°36'07.8"
WEHFB	TRM 277.0	Wheeler	Forebay	34°48'06.5"	87°21'15.7"
GUHFB	TRM 350.0	Guntersville	Forebay	34°25'16.1"	86°22'25.5"

Tennessee River Basin

Figure 3-35 Bear Creek Reservoir Growing Season Mean TSI

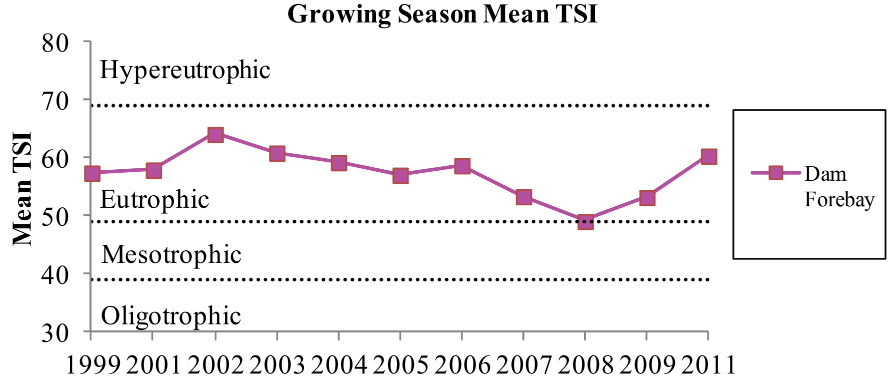
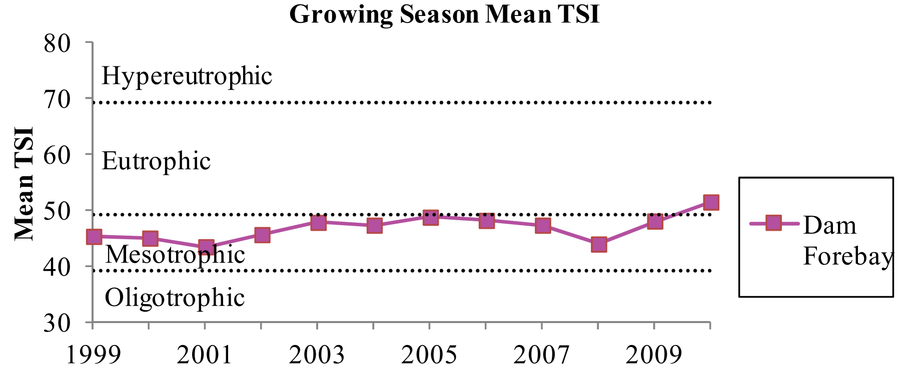


Figure 3-36 Cedar Creek Reservoir Growing Season Mean TSI



Tennessee River Bain

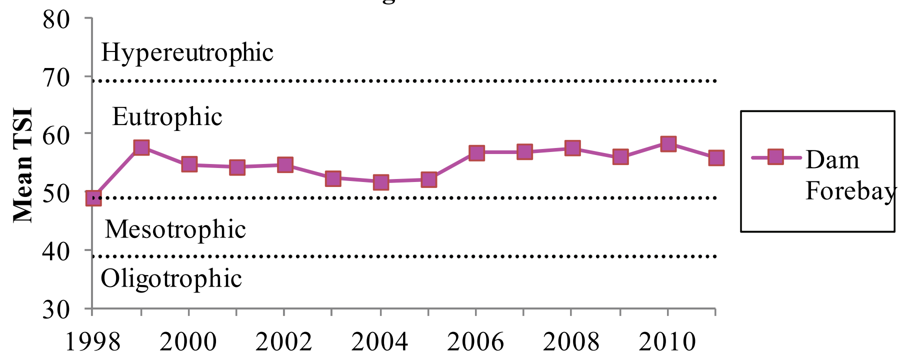


Figure 3-37 Guntersville Reservoir Growing Season Mean TSI

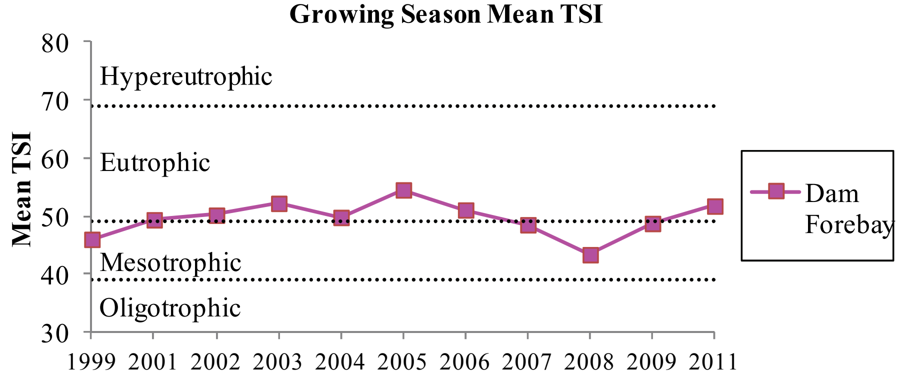


Figure 3-38 Little Bear Reservoir Growing Season Mean TSI

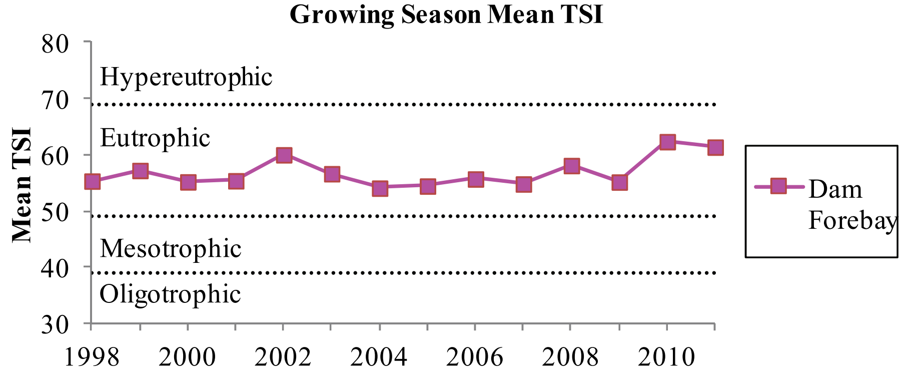


Figure 3-39 Pickwick Reservoir Growing Season Mean TSI

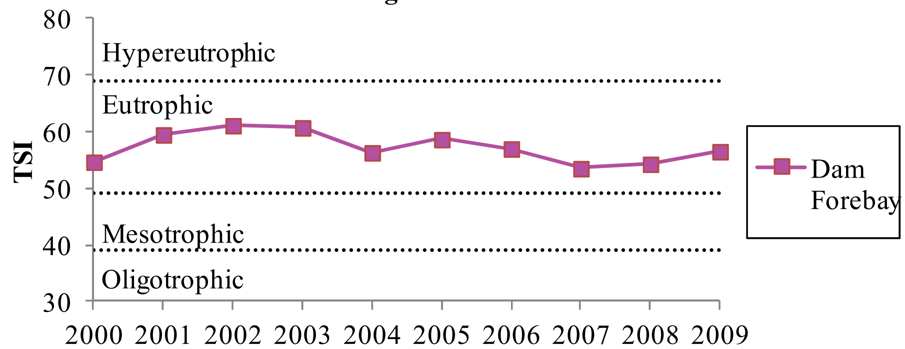


Figure 3-40 Upper Bear Reservoir Growing Season Mean TSI

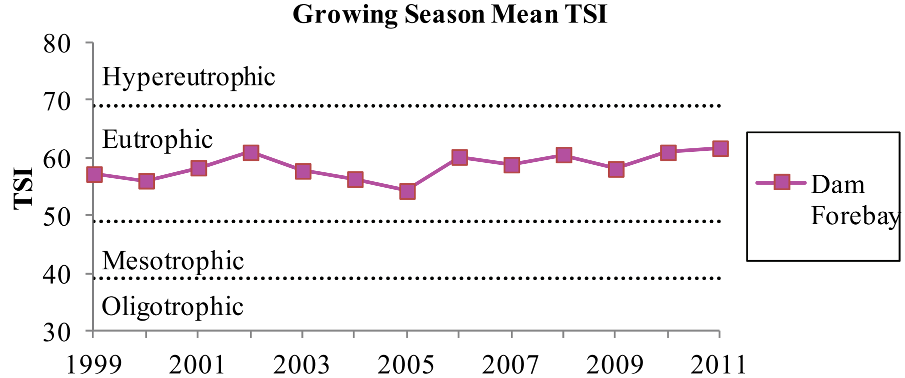


Figure 3-41 Wheeler Reservoir Growing Season Mean TSI

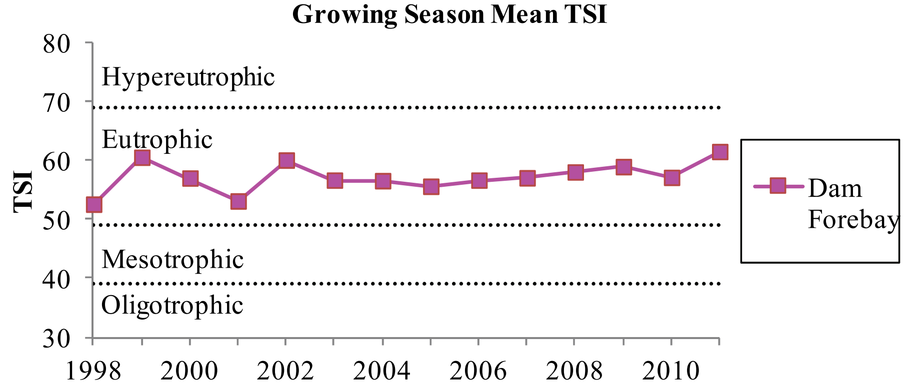


Figure 3-42 Wilson Reservoir Growing Season Mean TSI

Chapter 4 Wetlands

4.1 Alabama Wetland Management Programs

Alabama's coastal counties contain approximately 271,000 acres of functional wetlands, based upon ADEM's 305(b) report for 2002. This acreage represents 12.5% of the total acreage of the designated areas of the Alabama Coastal Nonpoint Pollution Control Program (ACNPCP) Management Area. Alabama recognizes the function of coastal wetlands and the important role they play to reduce Nonpoint Source (NPS) impacts and improve coastal water quality.

In addition, approximately 400,000 acres of coastal streams and estuarine waters, comprising 18% of the ACNPCP *Management Area*, are contained within the geographic area of Mobile and Baldwin counties. These coastal waters possess a large number of wetland, riparian and shoreline vegetative buffers that function to reduce NPS impacts and other ecosystem stressors while serving to protect coastal water quality and habitats. This sub-basin comprises the 6th largest watershed area in the United States that drains into this unique deltaic and estuarine complex contained within the southwestern region of Alabama.

4.2 Coastal Wetlands

Alabama manages its wetland, riparian areas and adjacent buffers as important resources that provide for protection of habitat and water quality. Alabama's Coastal Zone Management Program provides regulatory oversight through ADEM's Coastal Section for the review, avoidance and minimization of wetland development impacts. Wetlands are permitted and mitigated through the implementation of ADEM;s Administrative Code –R.335-8 for the Coastal Program.

Alabama's awareness of these resources, has resulted in the development of watershed oriented projects and programs that have proactively incorporated CZARA-§6217 (g) guidance management measures within the ACNPCP *Management Area*. ADEM's Mobile Branch and Coastal Section staff have continued participation in the development and approval of proposed coastal mitigation banks throughout this area, currently totaling more than 1,900 wetland acres that have been accredited or implemented to mitigate the ACNPCP Management Area and southern Alabama..

Additionally, ADEM and the ACNPCP have continued coordination with the U.S. Fish and Wildlife Service, and the Mississippi Department of Marine Resources through the Army Corps of Engineers' Mitigation Bank Interagency Review Team (MBIRT) that developed regionalized wetland functional assessment tools as Hydro-Geomorphic (HGM) guidebooks utilized for the standardized assessment of these wetland functions for the Northern Gulf of Mexico, inclusive of Coastal Alabama habitats and functions. ADEM also coordinates with the Alabama Department of Conservation and Natural Resources (ADCNR) with NOAA's Coastal Training

Program, along with the ACNPCP, to present best available wetland-related technologies in the form of technical studies, workshops, and conferences, which are made available to state and federal regulatory staff, consultants, and the general public. Previous accomplishments have included the presentation of the coastal *Wetland Rapid Assessment Procedure (WRAP) Workshops* and the *Alabama Coastal Wetland Plant Identification Workshops,* the regional *Alabama Stream and Wetlands Restoration Conference,* and the *Coastal Wetlands Hydric Soils Workshops*. A recent ACNPCP coastal counties technical report titled, *Coastal Alabama Hydromodification and Wetlands Technical Update* , presents an in-depth catalog of wetland-related activities and programs that have been implemented for southwest Alabama.

The most recent wetlands project implemented for Alabama has included the pilot development of the *Alabama Wetlands Monitoring Project.* This project has been developed through ADEM with coordination from EPA in order to monitor wetland attributes and conditions that contribute to the health of waters throughout the state.

For more information about Alabama's Wetland Resource Programs, contact Scott Hughes / ADEM-Montgomery at (334) 271-7700 or ash@adem.state.al.us , Greg Lein / ADCNR-State lands at (334) 242-7998 or glein@dcnr.state.al.us , Fred Leslie/ ADEM-Montgomery Branch at (334) 260-2748 or fal@adem.state.al.us, Scott Brown / ADEM-Mobile Branch at (334) 432 -6533 or jsb@adem.state.al.us .

Chapter 5 Groundwater

5.1. Overview of State Groundwater Protection Programs

Many of the elements of Alabama's groundwater programs listed in Table 5-1 are managed by subdivisions within the Alabama Department of Environmental Management (ADEM), including the Land, Field Operations, and Water Divisions. The Groundwater Branch in the Land Division provides the hydrogeological support for these programs. Other programs related to groundwater management and protection are managed by other state and federal agencies. The single family on-site sewage program and less than 15,000 gallon-per-day multi-family residential systems operated by management entities are managed by the Alabama Department of Public Health (ADPH). The Class II Underground Injection Control (UIC) Program is managed by the State of Alabama Oil and Gas Board. Groundwater withdrawal registrations are addressed by the Alabama Department of Economic and Community Affairs (ADECA) Office of Water Resources (Table 5-3). Other groundwater monitoring and regulatory programs are managed by the Geological Survey of Alabama and the Alabama Surface Mining Commission. The U.S. Environmental Protection Agency (EPA) provides oversight on all federally funded and delegated groundwater programs.

5.2 Significant State Groundwater Program Developments

Table 5-1 shows a Summary of State Groundwater Protection Programs. The following items summarize some of the recent groundwater developments that are underway in Alabama:

- Implementation of the Source Water Assessment Program within the ADEM Water Supply Branch regulations.
- Implementation of revised guidance for Alabama Risk-Based Corrective Action (ARBCA) with respect to releases from structures and/or facilities other than Underground Storage Tanks (USTs). This guidance was revised in 2008.
- Implementation of revised guidance for Alabama Risk-Based Corrective Action (ARBCA) with respect to releases of petroleum fuels from USTs. This guidance is currently under revision..
- Implementation of FileNet Program for transference of all new documentation from paper files to electronic files allowing these files to be more easily accessible to the public. Older files are being scanned as resources allow.
- The deadline for UST upgrades with spill, overfill and corrosion protection was December 22, 1998. Tanks should have been upgraded, replaced with a new system or permanently closed by this date. The compliance rate with these regulations is increasing with continuing enforcement of these requirements.
- A contract was signed with the Geological Survey of Alabama, in September 1997, to revise a series of 13 Aquifer Vulnerability Reports. These reports are being revised by updating

Table 5-1. Summary of State Groundwater Protection Programs

Programs or Activities	Check	Implementation Status	Responsible State Agency (1)
Active Sara Title III Program	X	Fully established	EPA/ADEM/FOD/EMA
Ambient Groundwater Level Monitoring Program	X	Fully established	GSA
Aquifer Vulnerability Assessment	X	Fully established Being updated	ADEM/GWB
Aquifer Mapping	X	Fully established	GSA
Aquifer Characterization	X	Fully established	GSA
Brownfield Redevelopment & Voluntary Cleanup Program Regulations	X	Fully established	ADEM/HWB
Dry Cleaner Trust Fund Program	X	Fully Established	ADEM/HWB
EPA-Endorsed Core Comprehensive State Groundwater Protection Program	X	Fully established	ADEM/GWB
Groundwater discharge permits	X	Established in UIC Regulations	ADEM/UIC
Groundwater Best Management Practices			
Groundwater Legislation			
Groundwater Classification	X	Established in UIC Reg Definition	ADEM/UIC
Groundwater Quality Standards			
Groundwater Use	X	Fully established	ADECA/WRD
Interagency coordination for ground water protection initiatives	X	Continuing efforts	ADEM/GWB
Non-point Source Controls	X	Ongoing education	ADEM/FOD
NPDES Permits for Land Application Sites	X	Fully established	ADEM/MUN/IND
Pesticide State Management Plan	X	Under Review	ADAI
Pollution Prevention Program	X	Fully established	ADEM/OEO
Resource Conservation and Recovery Act (RCRA) Primacy	X	Fully established	ADEM/HWB
Source Water Assessment Program	X	Fully established	ADEM/WSB
State Groundwater Program	X	Statute Based program	ADEM/GWB
State Superfund	X	Fully established	ADEM/LD
State RCRA Program incorporating more stringent requirements than RCRA Primacy	X	Fully established	ADEM/HWB
State Septic System Regulations	X	Fully established	ADPH
Subtitle D Solid Waste Program	X	Fully established	ADEM/SWB
Underground Storage Tank Installation Requirements	X	Fully established	ADEM/GWB
Underground Storage Tank Remediation Fund	X	Fully established	ADEM/GWB
Underground Storage Tank Registration Program	X	Fully established	ADEM/GWB
Underground Injection Control Program	X	Fully established	ADEM/GWB/OGB
Vulnerability Assessment for Drinking Water/Wellhead Protection	X	Fully established	ADEM/GWB
Well Abandonment Regulations	X	WSB Regs & Guidelines	ADEM/WSB/GWB
Wellhead Protection Program (EPA-approved)	X	Fully established	ADEM/WSB
Well Installation Regulations	X	Fully established	ADEM/WSB

(1) ADEM = Alabama Department of Environmental Management, FOD = Field Operations Division, GWB = Ground Water Branch, WSB = Water Supply Branch, LD = Land Division, HWB = Hazardous Waste Branch, OEO = Office of Education and Outreach, SWB = Solid Waste Branch, MUN = Municipal Section, IND = Industrial Section, GSA = Geological Survey of Alabama, ADPH = Alabama Department of Economic and Community Affairs, Office of Water Resources, EPA = Environmental Protection Agency, EMA = Emergency Management Agency

geologic names and terms to match the most recent state mapping, revising vulnerability maps from 1:250,000 scale to 1:100,000 scale, revising the vulnerability rating methods, updating information on public water supply wells, and inclusion of text, maps and figures in an electronic CDROM format and GIS Interactive maps. Area 13 (Baldwin and Mobile Counties), Area 10 (Washington, Choctaw and Clarke Counties), Area 5 (Coosa, Cleburne, Clay, Randolph, Tallapoosa, Chambers and Lee Counties), Area 11 (Covington, Escambia, Monroe, Clarke, Butler and Crenshaw Counties), and Area 4 (Jefferson, St. Clair, Calhoun, Talladega and Shelby Counties) were completed prior to 2006. The review process for Area 2 (Blount, Cherokee, DeKalb, Etowah, Jackson and Marshall Counties) has been completed and is available online. Area 7 (Bibb, Dallas, Hale, Perry and Wilcox Counties) and Area 3 (Cullman, Fayette, Lamar, Marion, Walker, and Winston Counties) are undergoing review and was available in 2009. Area 1 (Colbert, Franklin, Lauderdale, Lawrence, Limestone, Madison, and Morgan Counties), Area 6 (Greene, Marengo, Pickens, Sumter, and Tuscaloosa Counties), and Area 8 (Autauga, Chilton, Elmore, and Montgomery Counties) have been started and are currently in progress.

- Regulations have been developed and implemented by ADEM to manage Concentrated Animal Feeding Operations (CAFOs). Hydrogeologic site evaluations and groundwater monitoring requirements have been included in the regulations as part of siting and operation requirements for CAFO lagoons and land application sites.
- The U.S. Geological Survey has completed the National Water Quality Assessment that includes significant parts of Alabama's Mobile River and Lower Tennessee River Basins.
- The Alabama Department of Public Health has completed its on-site sewage regulations that went into effect on March 9, 2006.

5.3 Summary of Groundwater Contamination Sources

5.3.1 Reporting Area

The Alabama Department of Environmental Management has selected the physiographic district of the Alabama Valley and Ridge in Alabama for evaluation during this reporting period. These aquifers in the reporting area are significant sources of drinking water supplies for private residential use as well as for municipalities. Counties included in the reporting area in whole or part are Bibb, Blount, Calhoun, Cherokee, Chilton, Cleburne, Coosa, Etowah, Jefferson, Shelby, St. Clair, Talladega, and Tuscaloosa. Data contained in Table 5‑2 and 5‑3 were queried and retrieved by county. Some overlap of data from physiographic districts not included in the reporting area is shown where the above-mentioned counties do not lie wholly within the report's selected physiographic districts.

5.3.2 Data Review and Compilation

Hydrogeologists from the ADEM Groundwater Branch are assigned to the major groundwater regulatory programs as part of the Comprehensive State Groundwater Protection Program. The information contained in Table 5-2, Groundwater Contamination Summary, was researched from ADEM's electronic databases and prepared by the hydrogeologists assigned to each of the programs listed under the Source type column.

5.3.3 Superfund CERCLIS and DOD Sites

ADEM's Land Division works with EPA and the Department of Defense (DOD) to manage these types of sites. Four facilities identified in Table 5-2 are listed on the National Priority List.

There are eleven DOD facilities located within the reporting area. The ongoing site assessments are being funded by the Defense Environmental Restoration Fund.

The CERCLIS listings include 1 non-NPL site located in the report area. These are sites where state and federal funds have been used to conduct preliminary and secondary assessments by ADEM and EPA. The one site does not have a confirmed release of contaminants into groundwater.

5.3.4 Underground Storage Tank Program

The largest category of sites listed in Table 5-2 is Underground Storage Tanks (USTs). These sites are managed by the ADEM Groundwater Branch. Assessment and remediation of eligible sites is funded through the State UST Trust Fund. Many of the cleanups listed include free product, source and soil removals. Active groundwater remediation systems are also included. Most of these cleanups involve gasoline releases, but also include releases of diesel fuel oils and hazardous substances. The petroleum fuels include compounds such as Benzene, Ethylbenzene, Toluene, and Xylene (BTEX), Polynuclear Aromatic Hydrocarbons (PAHs), Methyl Tertiary Butyl Ether (MTBE), and Lead that affect groundwater quality. Monitoring for MTBE at UST sites has been required since 1996.

5.3.5 Hazardous Waste Management Program (RCRA)

There are twenty (20) hazardous waste sites managed under the Resource Conservation and Recovery Act (RCRA) identified in the study area. The ADEM Land Division's Hazardous Waste Branch manages these sites. These sites require extensive assessment, permitting and reporting requirements. Releases associated with these sites are persistent and difficult to assess and remediate. Compounds such as chlorinated VOCs and BTEX associated with hazardous waste generated by the facilities are present in many instances and have properties that make remediation problematic.

5.3.6 Alabama Brownfield & Voluntary Cleanup Program

The ADEM's Land Division administers the Brownfield Redevelopment and Voluntary Cleanup Program pursuant to the Alabama Land Recycling and Redevelopment Act, Code of Alabama 1975, § 22-30E-4 (ADEM Admin. Code Rule 335-15-x-.xx). The program provides a mechanism for the implementation of a cleanup program that encourages applicants to voluntarily assess, remediate and reuse rural and urban areas with actual or perceived contamination. There are one hundred and seventeen (117) sites managed under the Alabama Brownfield and Voluntary Cleanup Program within the study area. Compounds such as VOCs and metals are associated with these sites.

5.3.7 Alabama Drycleaning Trust Fund Program

The ADEM's Land Division administers the Alabama Drycleaning Environmental Response Trust Fund (DERTF) Program pursuant to the Alabama Drycleaning Environmental Response Trust Fund Act, Code of Alabama, 1975, § 22-30D-1 et. seq. (ADEM Admin. Code Rule 335-16-x-.xx). The program established: (1) performance standards for facilities brought into use after May 24, 2003; (2) a schedule for the retrofit of facilities that were in existence prior to May 24, 2000; (3) criteria required for reporting a suspected release or site discovery; and (4) requirements for initial investigation, assessment, and remediation of contamination. There are eighteen (18) facilities managed under the Alabama DERTF in the study area. The compounds associated with these sites are VOCs associated with chlorinated solvents.

5.3.8 Underground Injection Control Program

The Underground Injection Control (UIC) program is managed by the ADEM Groundwater Branch. Each Class V UIC facility in the State is required to operate under an individual performance-based discharge permit issued by the UIC Program. The UIC program reviews permit applications, issues individual performance-based discharge permits for all Class V facilities, and inspects and tracks Class V facilities for compliance. In this reporting area, permits are issued to Class V facilities for the subsurface injection of treated wastewater from various industrial and commercial activities, and for the injection of materials intended to aid remediation at existing contamination sites. Some types of activities that are permitted and regulated by the UIC Program include discharges from clustered on-site sewage Waste Water Treatment Plants (WWTPs), coal washing operations at coal mines, poultry processors, laundromats, truck and car washes, as well as other industrial or commercial activities. State UIC regulations prohibit the discharge from a Class V injection well that would cause an exceedance of federally established maximum contaminant limits (MCLs) in receiving groundwater. Class I and Class IV UIC wells are prohibited in the State of Alabama and Class II UIC wells are managed by the State of Alabama Oil and Gas Board.

5.3.9 State Groundwater Program

State Groundwater Program sites are those that are not regulated by established programs such as RCRA, UST, UIC, CERCLA, DERTF Program or the Brownfield & Voluntary Cleanup Program. Sites such as releases from bulk petroleum storage facilities, pipelines, and otherwise unregulated chemical spills are assessed and remediated using the authority of the Alabama Water Pollution Control Act (AWPCA). Releases from these sites are in many cases reported by the responsible party through company initiated environmental audits or are discovered as a result of real estate assessments during property transactions. Other groundwater incidents are discovered and reported to the Department by citizens or discovered through inspections. The responsible party is required to perform assessment and cleanup of these sites. Many types of contaminant releases have been addressed by this program. There are 37 facilities managed under the State Groundwater Program within this reporting area.

5.3.10 Solid Waste Program

There are twenty-nine (29) solid waste facilities managed under the Solid Waste Program within the study area. The ADEM Land Division's Solid Waste Branch manages these sites,

Table 5-2. Groundwater Contamination Summary

Source Type	Number of Sites	Number of sites that are listed and/or have confirmed releases	Number with confirmed groundwater contamination	Contaminants	Number of Site Investigations (optional)	Number of sites that have been stabilized or have had the source removed	Number of sites with corrective action plans (optional)	Number of sites with active remediation (optional)	Number of sites with cleanup completed (optional)
NPL	4	4	4	Antimony, arsenic, cadmium, chromium, copper, cyanide, dinitrotoluene, nickel, lead, thallium, tetryl, tricholoethylene, trinitrotoluene, and zinc	4	1	4	2	0
CERCLIS (non-NPL)	1	1	0	Cyanide, lead, PCBs, phenols and zinc	1	1	0	0	0
DOD/DOE	11	8	7	Acetone, antimony, benzene, chromium, dinitroltoluene, 1,2-dichloroethane, ethylbenzene, lead, tetryl, thallium, toluene, trichlorethylene, trinitrolouene and VOCs	11	1	5	4	0
Brownsfield & VCP Sites	117	99	88	VOCs, Metals	117	58	114	48	57
Drycleaning Trust Fund *	18	7	7	Chlorinated VOCs	6	0	1	1	1
UST #	359	359	321	BTEX, MTBE, PAHs	N/A	335	189	184	N/A
RCRA Corrective Action	20	19	16	Antimony, chromium, lead, thallium,	17	11	13	10	1
Underground Injection	63	0	0						
State Sites	37	36	36	Metals, Chlorinated VOCs, SVOCs,	10	19	12	23	5
Solid Waste	29	2	2	Metals, VOCs					
Totals	659	535	481		166	426	338	272	64

Hydrogeologic Setting: Alabama Valley and Ridge Physiographic Section Map Available: See Figure 5-1 Date Reporting Period: 2012-2013

* Total number of sites in the Dry Cleaner Fund - not sites under investigation
# The Number of sites reflects releases that have been reported but are not yet closed/NFA.

Figure 5-1 Alabama Physiographic Regions

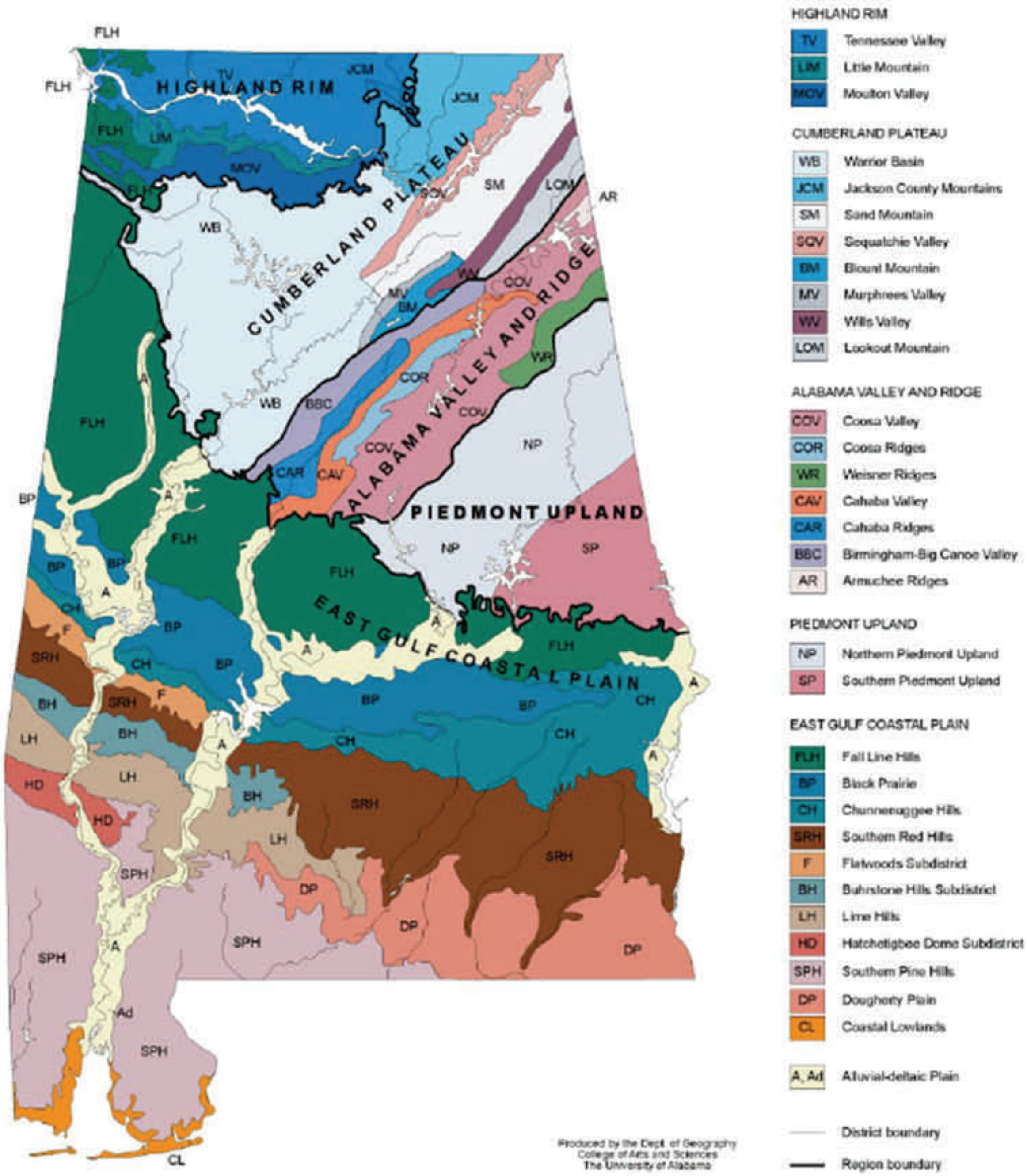


Table 5-3. Groundwater Withdrawals, Overall by Categories, by County - Alabama, 2010

County	Water withdrawals (Mgal/d)															
	Public Supply		Commercial	Domestic	Industrial		Thermoelectric		Mining		Livestock	Aquaculture		Irrigation	Total	
	Fresh	Saline	Fresh	Fresh	Fresh	Saline	Fresh	Saline	Fresh	Saline	Fresh	Fresh	Saline	Fresh	Fresh	Saline
Bibb	4.89			0.15	0		0		0.36		0.03	0		0.63	6.06	
Blount	2.44			0.89	0		0		0.12		0.47	0		0.12	4.04	
Calhoun	20.83			0.51	0.97		0		0.07		0.13	0		0	22.51	
Cherokee	2.53			0.52	0		0		0.01		0.11	0		0	3.17	
Chilton	3.06			0.74	0.35		0		0.01		0.07	0		1.12	5.35	
Cleburne	0			0.77	0		0		0		0.14	0		0	0.91	
Coosa	0.3			0.43	0		0		0.08		0.02	0		0.01	0.84	
Etowah	4.69			0.31	0		0		0.24		0.19	0		0	5.43	
Jefferson	8.45			0.46	0.5		0		0.85		0.03	0.01		0.01	10.31	
Shelby	9.61			0.59	0		0		0.41		0.15	0		0.89	11.65	
St. Clair	13.25			0.41	0		0		2.71		0.04	0		0	16.41	
Talladega	9.52			1.24	0		0		0.42		0.1	0		0.34	11.62	
Tuscaloosa	1.47			0.82	0.74		0		0		0.09	0.04		0.87	4.03	
Total:	**81.04**			**7.84**	**2.56**		**0**		**5.28**		**1.57**	**0.05**		**3.99**	**102.33**	

Source: Tom Littlepage, Office of Water Resources, Alabama Department of Economic & Community Affairs, 2013

* Public Supply, Thermal and Industrial Withdrawals are 2010 withdrawals from eWater.

Estimate of Domestic Water are from the Alabama Office of Water Resources

Estimates of Mining, Livestock, Aquacuture, and Irrigation are from the USGS and includes extensive assessment, permitting and reporting requirements. Analytical data associated with these sites documents that metals and VOCs are the constituents of concern.

5.4 Summary of Groundwater Quality

5.4.1 Physiography

The physiographic section in this 305(b) report is the Alabama Valley and Ridge. It includes several valley and ridge districts. From west to east, the districts are the Birmingham-Big Canoe Valley, the Cahaba Ridges, the Cahaba Valley, the Coosa Ridges, the Coosa Valley, Armuchee Ridge, and the Weisner Ridges. Twelve counties in Alabama contain one or more of the valley and ridge districts. The counties are Bibb, Blount, Etowah, Cherokee, Chilton, Cleburne, Coosa, Jefferson, Shelby, St. Clair, Talladega, and Tuscaloosa.

Birmingham-Big Canoe Valley District

Altitudes in the Birmingham-Big Canoe Valley range from about 500 feet in Jefferson County to about 600 feet in St. Clair County. Drainage is generally west to southwest into the Black Warrior River tributaries across Jefferson County; St. Clair County drainage is primarily east to Big Canoe Creek which flows to the Coosa River.

Cahaba Ridges District

The Cahaba Ridges trend northeast through parts of Shelby, Jefferson, and St. Clair Counties. Altitudes in the Cahaba Ridges range from about 300 feet in Shelby County to about 1, 100 feet in St. Clair County. Drainage from the ridges is southeast to the Cahaba River which flows along the eastern edge of the ridges.

Cahaba Valley District

The Cahaba Valley district lies to the east of the Cahaba River and extends northward into St. Clair County east of the Birmingham-Big Canoe Valley district. Altitudes in the Cahaba Valley range from 300 feet in Shelby County to 700 feet in St. Clair County and drainage is generally west to the Cahaba River.

Coosa Ridge District

The Coosa Ridge district lies east of the Cahaba Valley and consists mainly of the Double Oak Mountains with altitudes as high as 1,400 feet. Westward drainage off the mountains is generally into the Cahaba River tributaries; east-ward drainage is primarily into Coosa River tributaries.

Coosa Valley District

The Coosa Valley district extends from the Coosa Ridge district on the west to the Weisner Ridge district and Piedmont Upland section on the east. Altitudes of about 400 and 500 feet dominate the Coosa Valley west of the Coosa River; but east of the Coosa River, altitudes in thevalley range from about 500 feet to as much as 1,540 feet. Drainage from the Coosa Valley district is primarily into the Coosa River.

Armuchee Ridge District

The Armuchee Ridge district in Cherokee County has topography controlled by geology and is characterized by a series of relatively narrow, linear ridges. These ridges trend northeastwoard and have altitudes of about 1,500 to 1,600 feet.

Figure 5-2 Study Areas for the Geohydrology and Susceptibility of Major Aquifers

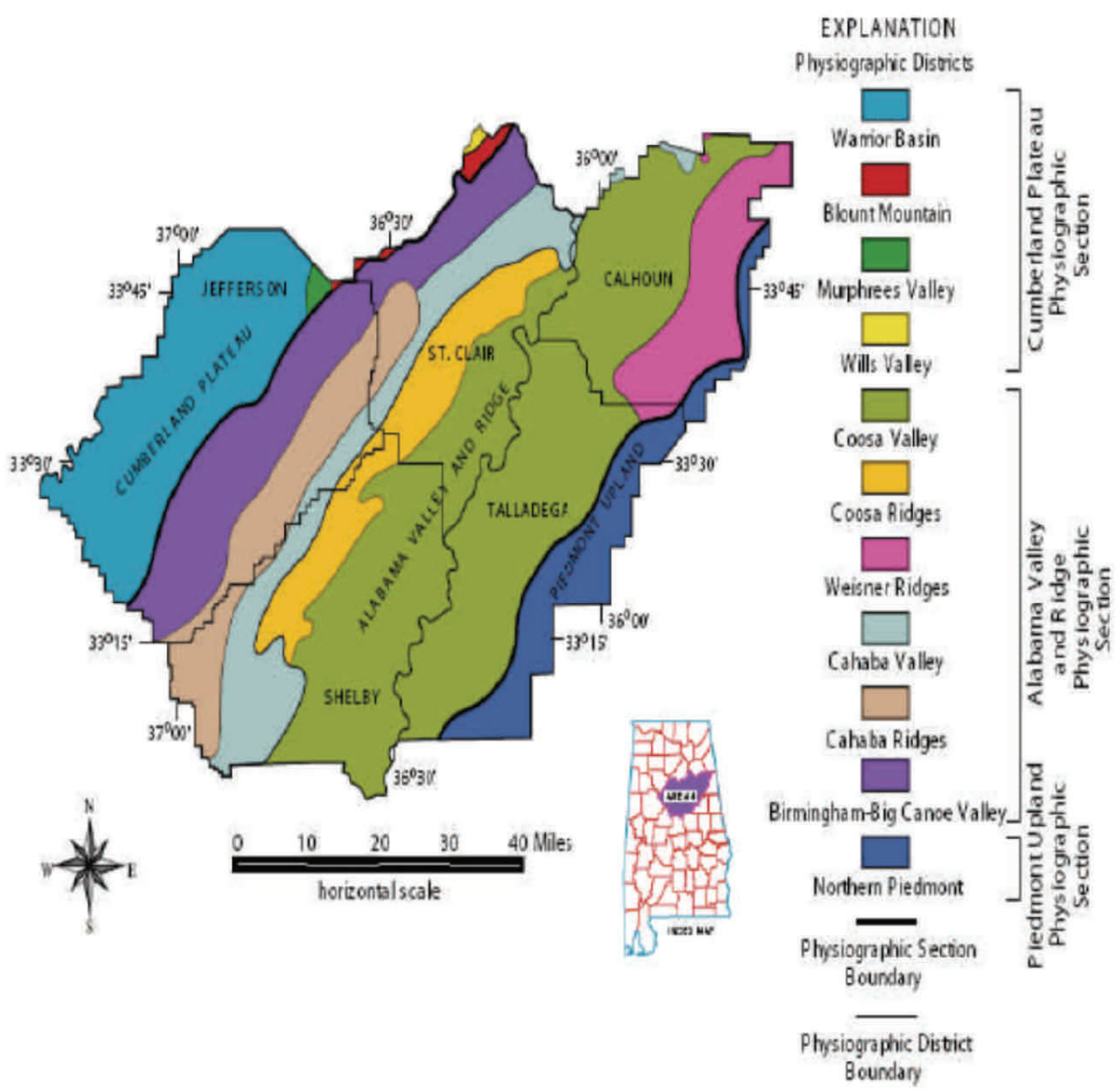
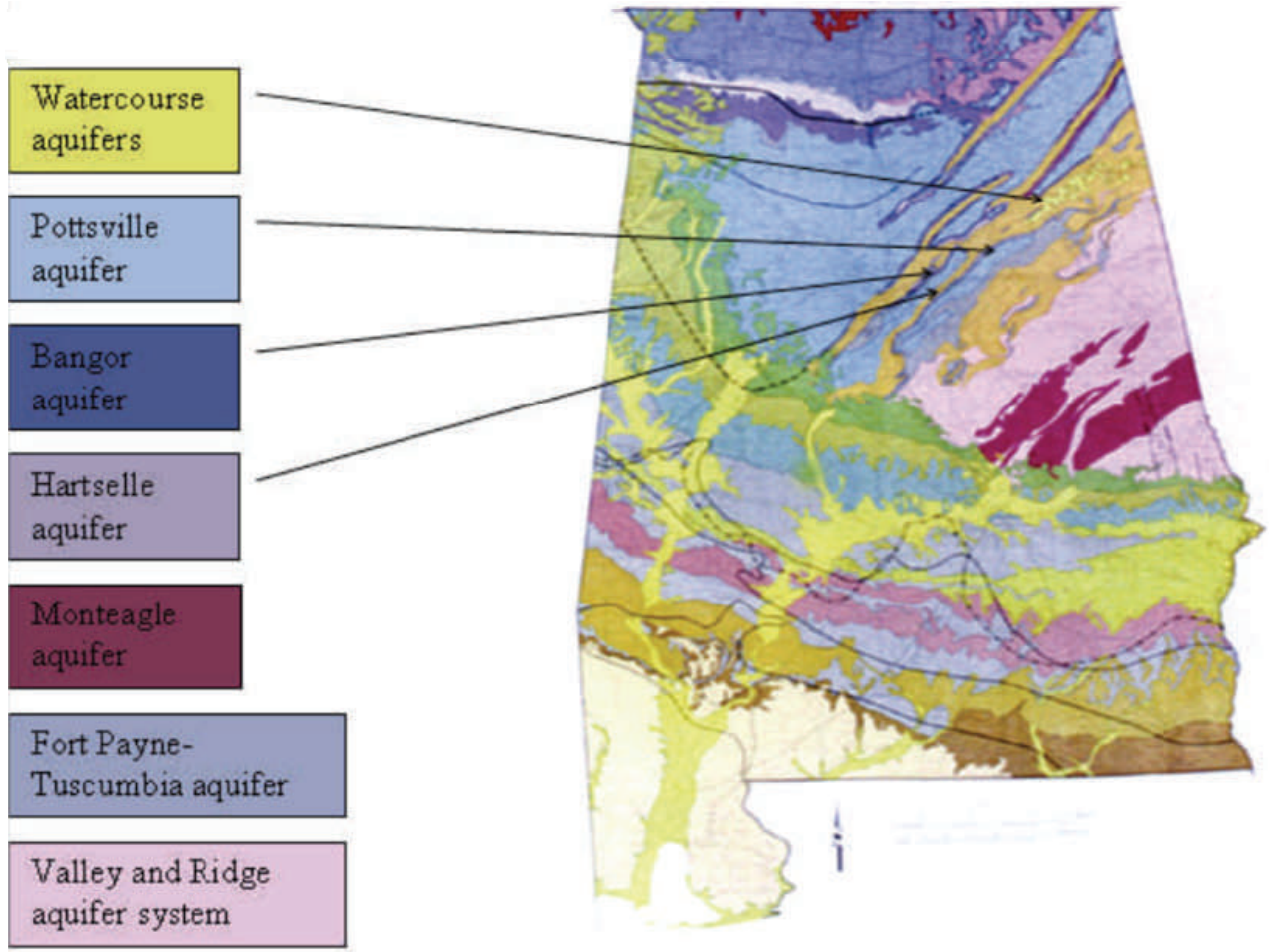


Figure 5-3 Aquifers in Alabama



Weisner Ridge District

The Weisner Ridge district, located in the northeastern corner of Talladega County and the eastern part of Calhoun County, consists primarily of the Choccolocco and Coldwater Mountains. Drainage from the Weisner Ridge district is into tributaries of the Coosa River, namely Choccolocco, Terrapin, and Tallasseehatchee Creeks.'

5.4.2 Geology

The geology of the reporting area, along with the diverse physiography, is quite complex due to large-scale tectonic activity, most of which took place during the Appalachian orogeny. The reporting area is in the Appalachian fold and thrust belt which consists of shallow marine to deltaic Paleozoic sedimentary strata that were deposited on a continental platform (Thomas, 1985). Paleozoic metasedimentary rocks crop out along the southeastern border of the area, andare separated from the fold and thrust belt by the Talladega fault.

5.4.3 Hydrogeology of the Major Aquifers

The geologic formations of a representative area within the Alabama Valley and Ridge physiographic section designated as Area 4 are in Figure 5-2. The formations can be grouped into three major aquifers and one minor aquifer—the Valley and Ridge aquifer system; the Mississippian aquifer system (consisting of the Hartselle, Bangor, and Fort Payne-Tuscumbia aquifers); the Pottsville aquifer; and the metasedimentary and metavolcanic aquifers. The Monteagle aquifer is included within the Mississippian aquifer system. Figure 5-3 shows Aquifers in Alabama.

The complex geologic structure of the reporting area has disrupted the regional continuity of rock units so that major aquifers or aquifer systems exhibit disjunctive distributions. Aquifers consisting of limestone, sandstone, and fractured rock are exposed in valleys that are separated by ridges. A given major aquifer may be present in adjacent valleys, but the two valleys may not be hydraulically connected because of faulting or folding. Most high-yield aquifers are carbonates, and the highest yields are from wells that penetrate interconnected dissolution cavities. Most rocks within the valleys are covered by a mantle of residuum, which is the product of the weathering of the underlying parent material. The presence of a mantle of residuum may or may not be permeable. It allows water to occur under either water-table or artesian conditions within the aquifers. Most carbonate aquifers are productive not because of primary porosity but because they contain networks of fractures that have been enlarged by dissolution. The dissolving waters enter the rock units from the surface, which means that, in general, porosity and permeability decrease with depth. Johnston (1933) recommended that wells drilled in lithified carbonates be abandoned if an adequate supply of water is not encountered within the first 200 feet of depth. The ridges dividing the valleys and the rock types that cap them are as follows: Weisner ridges, quartzite; western edge of the Northern Piedmont, slate; Cahaba ridges, sandstone and conglomerate; and Blount Mountain, sandstone. These rocks are highly resistant to weathering, are not significantly faulted, and are relatively impermeable.

Valley and Ridge Aquifer System

The Valley and Ridge aquifer system is found in the Coosa, Cahaba, Birmingham-Big Canoe, and Murphrees Valleys. Formations included in this aquifer system are the Weisner Formation; Shady Dolomite; Conasauga Formation; Copper Ridge and Chepultepec Dolomites; and the

Longview, Newala, Lenoir, and Little Oak Limestones. In some areas the Copper Ridge, Chepultepec, Longview, and Newala are united as the Knox Group. This aquifer system includes in the western part of Area 4 (Shelby County) the Ketona, Brierfield, and Bibb Dolomites. In the southeastern part of Area 4, the Sylacauga Marble Group is also included in the Valley and Ridge aquifer system. Most other rock units of Cambrian to Devonian age are included within the Valley and Ridge aquifer system because they do not form effective barriers to ground water movement among permeable units of the Valley and Ridge aquifer system. However, these other units also are not significant sources of ground water. The Valley and Ridge aquifer system is the Knox-Shady aquifer of Planert and Pritchett (1989) and the Valley and Ridge aquifer system of Moore (1998).

As an indication of the variability of potential yield of water from the Valley and Ridge aquifer system, the maximum yields for wells and springs, respectively, are given for the counties where the aquifer is used: Calhoun, 1,100 gpm (gallons per minute) and 32.0 mgd; Jefferson, 750 gpm and 3.6 mgd; St. Clair, 400 gpm and 3.2 mgd; Shelby, 1,600 gpm and 0.8 mgd; and Talladega, 400 gpm and 6.9 mgd (Planert and Pritchett, 1989). A potentiometric map of the Valley and Ridge aquifer system can be used to estimate regional trends of ground water movement in the unit.

Mississippian Aquifer System

The Mississippian aquifer system is roughly equivalent to the Tuscumbia-Fort Payne aquifer of Planert and Pritchett (1989) and to the combined Bangor, Hartselle, Monteagle, and Fort Payne-Tuscumbia aquifers of Moore (1998). The Mississippian aquifer system is found in the Cahaba, Birmingham-Big Canoe, Murphrees, and Coosa Valleys. Formations included in the Mississippian aquifer system are the Fort Payne Chert, Tuscumbia Limestone, Hartselle Sandstone, Bangor Limestone, and Monteagle Limestone (but not in Area 4) of Mississippian age. The five formations listed are united in a single aquifer system for two reasons. First, they are not separated by impermeable strata on a regional scale; on lithologic grounds, they are inferred to contain a single interconnected ground water system. Second, further evidence for the unity of the Mississippian aquifer system is provided by ground-water level measurements, which define a single potentiometric surface in Area 4 for this group of aquifers.

To illustrate the variability of the Fort Payne-Tuscumbia aquifer's potential, note the maximum yields for wells and springs, respectively, for the counties where the aquifer is used: Jefferson, 1,200 gpm and 0.2 mgd; and St. Clair, 250 gpm and 2.2 mgd (Planert and Pritchett, 1989).

Pottsville Aquifer

The youngest Paleozoic aquifer in Area 4 is the Pottsville aquifer, which consists of the Pottsville Formation. The Pottsville Formation is not a reliable source of large amounts of ground water, but for much of Areas 3 and 4, and parts of Areas 1 and 2, it is the only aquifer available. Ground water in the Pottsville aquifer is found chiefly in fractures and weathered zones; primary porosity is not an important part of the aquifer (Stricklin, 1989). In addition, ground water in the Pottsville aquifer is commonly confined by sharp permeability contrasts within the aquifer (Stricklin, 1989). The Pottsville yields small quantities of water suitable for domestic use almost everywhere it is exposed in Area 4 (Johnston, 1933). Yields typically are less than 10 gallons per minute per well.

5.4.4 General Statement of Groundwater Quality and Vulnerability

The source of recharge to the major aquifers in the study area is rainfall. Alluvial and terrace deposits along major streams overlie parts of the recharge areas for the major aquifers of this report. The various aquifers principally receive recharge from their outcrop areas within the various counties in the study area. All recharge areas for the major aquifers are susceptible to contamination from the surface. For more information about Groundwater, contact Mr. Whit Slagle in ADEM's Montgomery Office at (334) 271-7831 or cws@adem.state.al.us

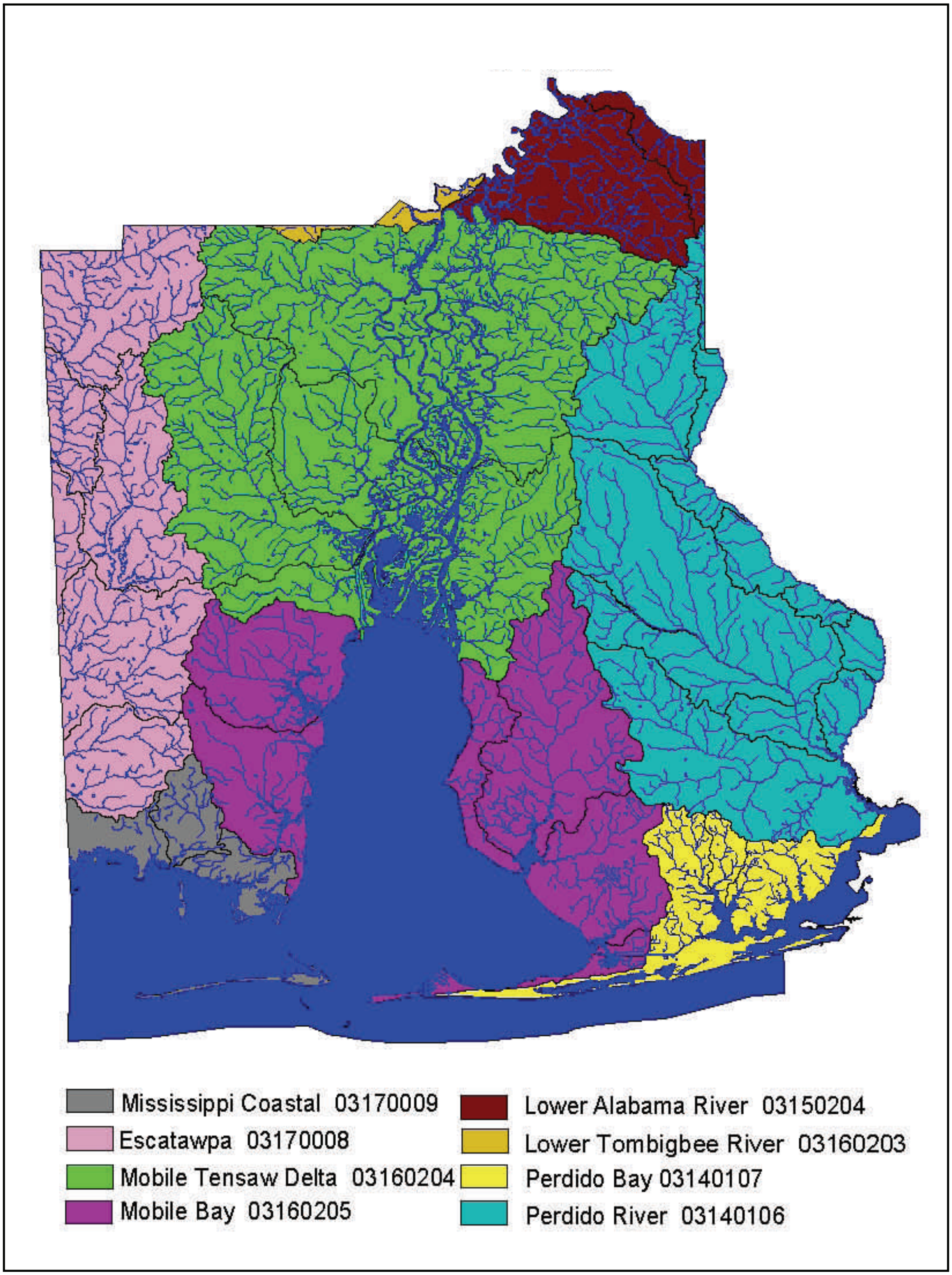
Chapter 6 Coastal Waters

6.1 Alabama Coastal Nonpoint Pollution Control Program (ACNPCP)

In June 1998, the NOAA-Office of Coastal and Resource Management (OCRM) and USEPA awarded conditional approval to the Alabama Coastal Nonpoint Pollution Control Program (ACNPCP). Since achieving conditional approval, ADEM has further developed the ACNPCP, seeking full program approval, in order to ensure that program components are implemented to the maximum extent practicable. The approved ACNPCP Management Area is inclusive of the subwatersheds of the Escatawpa River, Mobile-Tensaw Rivers, and Perdido River Sub-Basins, that are contained within the geo-political boundaries of Baldwin and Mobile Counties. Figure 6-1, on page #, depicts this *ACNPCP Management Area.*

ADEM continues to work with ADCNR-State Lands-Coastal Section, NOAA-OCRM, USEPA and other State and federal agencies to coordinate the Alabama Coastal Nonpoint Pollution Control Program (ACNPCP). ADEM and ADCNR jointly submitted the *ACNPCP: 2003 Submission Documentation; Response to NOAA/EPA Conditional Approval Items*; July 31, 2003, wherein the State described new and expanded program components that demonstrate an approvable ACNPCP. This submission included a 250 page description of the Program with over 500 supporting documents, which include statewide and coastal projects and programs that have been developed or tailored to address the ACNPCP management measures. This documentation was augmented by the submission of the ACNPCP: Response to “Final Administrative Changes” Guidance; ACNPCP 2003 Submission Support Document; October 31, 2003, that provided the enforcement policy, long term strategy and implementation planning documentation requested by the federal review agencies to complete their approval review process. The State is in the process of a new sequential category submission process documenting the State’s approach and implementation of over 34 supporting projects that address the joint NOAA/EPA Interim Decision Document for Unapproved Conditions of ACNPCP (February 16, 2005). These new Submissions outline the recommended actions implemented by Alabama to help the State gain federal approval and allow full program implementation. The ACNPCP utilizes partnerships with Federal, State and Local agencies, businesses, organizations and decision makers to influence the implementation of items necessary to achieve program approval and operation. Over the last 15 years the ACNPCP has facilitated the development the Coastal Alabama Clean Water Partnership, the development of a broad-based Technical Advisory Committee (TAC), and the Coastal Alabama Nonpoint Source Resources Matrix (CNPS-Matrix) The ACNPCP also works with the ADEM-§319 program to address nonpoint source pollution management program needs and issues. These various forums are utilized to enhance coordination and cooperation regarding coastal water quality resources management. NOAA-OCRM, USEPA, ADEM-§319, ADCNR-State Lands, and many other agency environmental partners have helped to further administrative coordination and interagency cooperation.

Figure 6-1 ACNPCP Management Area



ADEM has engaged in many ongoing projects pertinent to ACNPCP that monitor and promote the effectiveness of nonpoint source pollution controls, CZARA-§6217 management measures, and program approval criteria. ADEM's CNPCP submitted the initial *Coastal Monitoring Plan for the ACNPCP; Mobile and Baldwin Counties, Alabama*. This plan incorporates monitoring activities being conducted through ADEM, within the ACNPCP Management Area. ADEM staff continue extensive field monitoring efforts to conduct specific Land- Use Category (LUC) BMP Surveys, Targeted Water Quality Studies, inspections of construction, stormwater and mining operations, and targeted Watershed Studies within the ACNPCP Management Area. The ACNPCP has also provided valuable coordination toward the development of the new *Alabama Coastal Water Quality Monitoring* (CAWQM) *Program* -see Chapter 6.3 below.

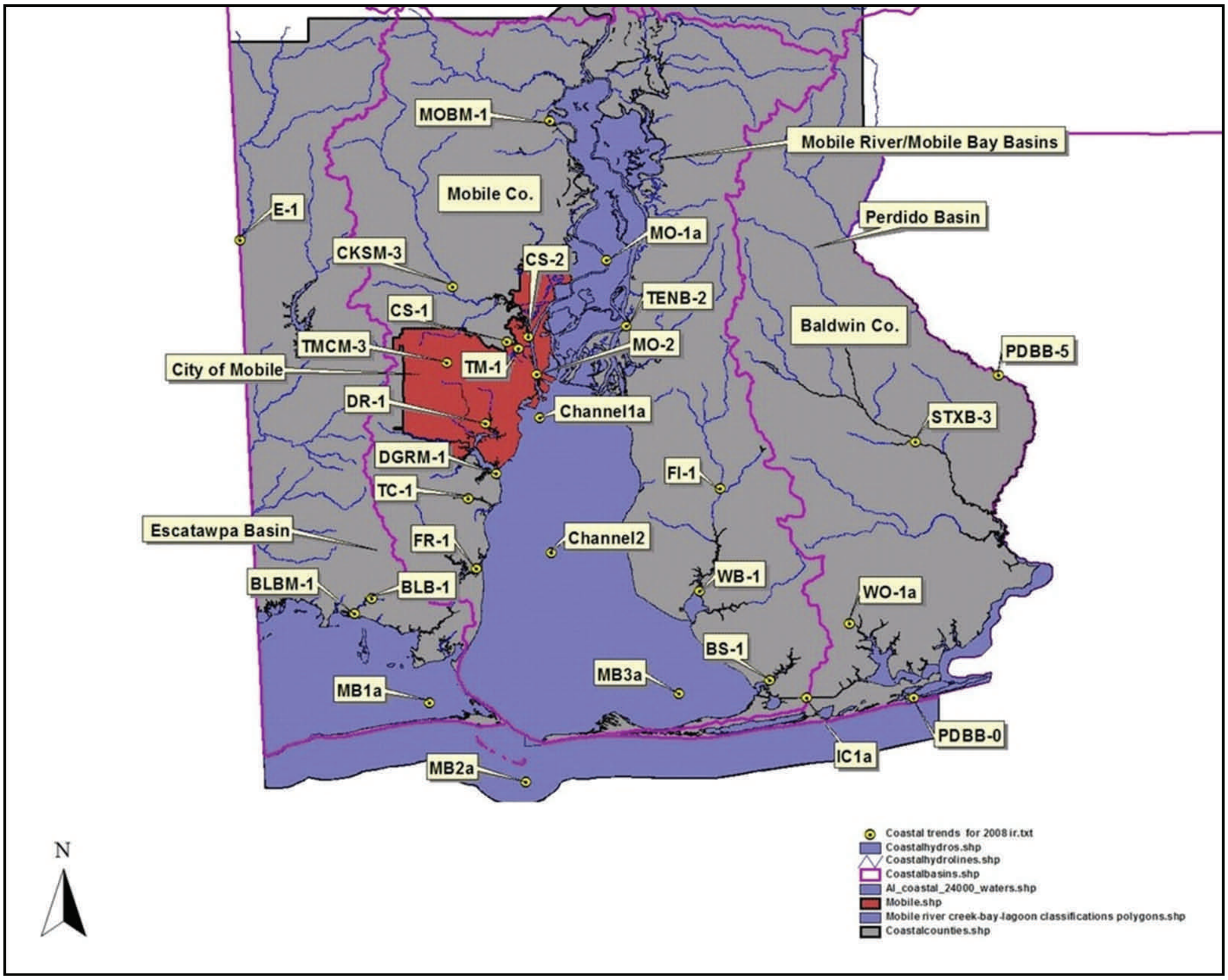
Our continued effort to address Urban Areas categories and issues involves the *ACNPCP Technical Advisory Projects for Urban Areas Management Measures*. Project efforts during this period that have continued focus on addressing potential Urban Areas impacts:

A. The ACNPCP has continued engagement with the *D'Olive Creek Restoration Plan* and the supporting the completion of the *Joe's Branch Stream Improvement Project* have continued; along with involvement with developing the *Eight Mile Creek (8MC)Watershed Management Plan,* and the newer *Three Mile Creek (3MC)Watershed Management and Restoration Plan* that has engaged the interest and involvement of the encompassing local coastal city -Mobile, Alabama. The Program has continued to provide technical assistance for development of the *3MC Watershed Management Plan* that has been led by the Mobile Bay NEP. The *3MC Watershed Management Workgroup* has been assembled to assist development of the 3MC Watershed Management *Plan* as a product, which should be available in 2014.

B. Another effort, the ACNPCP Municipal Advisory Project: Semmes, Alabama has continued development in order to provide Program coordination with the new City of Semmes, Alabama (established May 2, 2011), as they continue to amend/refine their municipal Subdivision Ordinances (see http://cityofsemmes.powweb.com/PlanningCommission/Subdivision%20Regulations/SUBREGS-REVISED-September%2011,2012-updated09-24-2012.pdf) and new Design Standards codes (see http://cityofsemmes.powweb.com/PlanningCommission/DesignStandardsWebsite.pdf). ACNPCP coordinated to proactively address Wetland, Hydromodification, and Urban Areas category issues and measures for Alabama's CNPCP. These ordinances promulgate cutting-edge concepts that directly address many ACNPCP MMs (also see http://www.cityofsemmes.org/PlanningCommission/SEMMES_REG_INFO/Semmes_Regs_IV/Main.html).

C. Other ACNPCP projects included technical follow-up to presentations of Coastal NPS concepts to the Public. ADEM's ACNPCP further addressed Urban Area issues by becoming engaged with the development and review of the *Alabama Low Impact Development (LID) Handbook*. This handbook is being developed through Auburn University and AL Soil & Water Conservation Committee (ASWCC) as a project for ADEM-319 and in support of ACNPCP. It is scheduled for release in December 2013. ADEM's Coastal NPS Program also developed a complete listing of "Priority Watersheds for Coastal Alabama" for current watershed assessment/prioritization efforts. This listing involved interagency coordination with ADEM-Water Division, ADEM-Field Operations, and ADEM-319, as well as continued coordination with Mobile Bay NEP to provide this product.

Figure 6-2 Active Coastal Trend Stations



D. Another project completed for the ACNPCP that was improved further during this period was the new *Coastal Alabama Marinas & Watersheds Mapping Project / Online GIS Viewer Format,* see http://gis.adem.alabama.gov/ADEM_Dash/marina_viewer/index.html ACNPCP coordination with ADEM's Information Services Branch continues to update this online Marinas and Watersheds tool. It allows the public to view our previous *Atlas of Coastal Alabama Marinas and Watersheds* (2008) online. The newest 12-digit HUCs and labels were overlaid with updated navigation data onto the *Atlas* to update this product.

E. Another recently completed effort is the *Coastal Alabama HeadWater Streams Survey Project-Year II,* which was contracted by the ACNPCP through ADEM-319. The Headwater Stream Survey serves to locate potential stream sites and to identify and survey 'representative' low-order streams within the two coastal counties. Documentation will be made of specific water quality conditions, flow, and basic geomorphic survey data for local headwater streams, both urban and rural. Quantification of adjacent Land Use Categories (LUC) has been assessed, along with correlating LUC management measures and best management practices in close proximity to the targeted stream sites. Intensive *Headwater Stream Field Surveys* have been finished and this project has been completed. The project Report data is being QA/QCd and is scheduled for distribution in December of 2013, following final ADEM and EPA-R4 Review.

Table 6-1 Actve Coastal Trend Stations

Station	Station Location	Latitude	Longitude
BLB-1	Bayou La Batre @ AL Hwy 188	30.40556	-88.24806
BLBM-1	Bayou La Batre in channel next to light approx. 0.4 miles upstream of mouth	30.38670	-88.27000
BS-1	Bon Secour River at Oyster Bay Canal	30.30139	-87.73542
Channel1a	Mobile ship channel just south of Arlington ship channel @ channel marker 76	30.63637	-88.03165
Channel2	Mobile ship channel south of Galliard Island @ channel marker 51	30.46424	-88.01657
CKSM-3	Chickasaw Creek @ State Highway 158	30.80297	-88.14334
CS-1	Chickasw Creek on north side U.S. Hwy 43 Bridge Crossing	30.73258	-88.07330
CS-2	Chickasaw Creek on north side of CSX RR Crossing @ confluence with Mobile River	30.73911	-88.04561
DR-1	Dog River @ Luscher Park Boat Launch near I-10	30.62861	-88.10139
DGRM-1	Dog River in main channel at State Highway 163	30.56510	-88.08780
E-1	Escatawpa River @ U.S. Hwy 98 (Moffat Road) near Mississippi/Ala state line	30.86241	-88.41769
FI-1	Fish River @ State Hwy 104	30.54542	-87.79861
FR-1	Fowl River @ State Hwy 193	30.44403	-88.11333
IC1a	Intracoastal Waterway @ State Highway 59	30.27930	-87.68700
MB1a	Intracoastal Waterway on east side of Portersville Bay @ buoy 25	30.27308	-88.17317
MB2a	Mobile ship channel just south of Sand Island Light House in the Gulf of Mexico @ buoy 10	30.17180	-88.04895
MB3a	Intracoastal Waterway in Bon Secour Bay @ channel marker 127	30.28407	-87.85137
MO-1a	Mobile River @ CSX RR Crossing	30.83667	-87.94472
MO-2	Mobile River @ Government Street (Bankhead Tunnel)	30.69083	-88.03556
MOBM-1	Mobile River @ APCO water intake (near Bucks @ doppler gage)	31.01370	-88.01853
PDBB-0	Perdido Bay approx. 0.25 mile upstream of State Highway 182 bridge	30.27968	-87.54948
PDBB-5	Perdido River @ Duck Place Rd. on AL/FL line (off State Highway 112)	30.69047	-87.44026
STXB-3	Styx River @ Baldwin County Rd. 87 (near Elsanor)	30.60532	-87.54700
TC-1	Theodore Industrial Canal @ State Hwy 193 (Rangeline Road)	30.53333	-88.12389
TENB-2	Tensaw River approx. 0.3 mile downstream of power line crossing (near Blakely Park and Steam Mill Landing)	30.75291	-87.91987
TM-1	Three Mile Creek between U.S. Hwy 43 & RR Crossing	30.72403	-88.05903
TMCM-3	Three Mile Creek @ Spring Hill Ave.	30.70630	-88.15111
WB-1	Weeks Bay @ U.S. Hwy 98 (Marina)	30.41470	-87.82575
WO-1a	Wolf Creek @ Swift Church Road (Baldwin Co. Rd. 12)	30.37361	-87.63250

Past activities implemented for the ACNPCP by ADEM have included *12 Digit Watershed NPS Prioritization*, category focused BMP Survey's for Marina and Agriculture LUCs; as well as Alabama's first *Riparian Reference Reach and Regional Curve Study for the lower Coastal Plain*. The current *Coastal HeadWater Streams Survey* is a complementary extension of this initial project. ADEM has also conducted the Targeted Water Quality Studies for designated categories (e.g. Marinas and Agriculture) that address high density sub-watershed areas, in order to acquire baseline water quality data associated with these land uses for the coastal waterbodies of Southwest Alabama. The data from many of these activities (e.g. *Coastal Alabama OSDS Inventory: Mobile County* and the *Marinas & Watershed Mapping Project*) are utilized to develop GIS information database and mapping applications that support the ACNPCP. Several of these projects were recently implemented or completed by ADEM for the ACNPCP (e.g. new Coastal Monitoring efforts are illustrated in Figure 6-2 and Table 6-1 below that show the Active Coastal Trend Stations that have been expanded to support Alabama's Coastal NPS Program.

For further information about Alabama's Coastal Nonpoint Pollution Control Program, contact Randy C. Shaneyfelt at ADEM's Mobile Branch Office at (251) 450-3408 or email: rcs@adem.state.al.us

6.2 Coastal Assessment

6.2.1 Eutrophication

Hypoxic and anoxic conditions are common in Alabama's coastal waters and are generally most prevalent during the summer months. Naturally occurring conditions combine to result in frequently stressed water quality conditions marked by stratification with low dissolved oxygen. These conditions include relatively shallow water depths found in all of Alabama's open bays and sounds; low average wind and tidal energies; variable fresh water inflow; and constricted tidal passes. This persistent pattern of hypoxia manifests itself in "Jubilees", an infrequently occurring summer condition in Mobile Bay that results when winds blowing from the mainland drive surface waters from shore, causing deeper, poorly oxygenated water to move into the shallows. Fish, shrimp and crabs are caught in the poorly oxygenated water and generally rise to the surface in stress. The Jubilee phenomenon was first recorded in 1821 indicating that its underlying causes are naturally occurring. At this time it has not been determined if anthropogenic sources exacerbate those underlying causes.

6.2.2 Habitat Modification

Alabama's coastal counties are experiencing tremendous population growth. Statistics indicate that the population of Baldwin County increased from 140,415 in 2000 to 182,265 in 2010. Between 2000 and 2010, the Baldwin County population increased by 29.8%. The population of Mobile County increased from 399,843 in 2000 to 412,992 in 2010. Between 2000 and 2010, the Mobile County population increased by 3.3%. Much of that growth is occurring within Alabama's defined coastal area, particularly in Baldwin County where there has been explosive growth in the beach communities of Orange Beach and Gulf Shores and on the Eastern Shore of Mobile Bay. The area of west Mobile, inside and outside of the current city boundary, is undergoing rapid commercial and residential development. Sedimentation from erosion at the numerous construction sites and the increased post development storm water runoff have placed a heavy burden on the receiving streams in the area increasing the incidence of flooding and stream bank erosion. All of Alabama's estuarine waters are being affected by this population growth.

Applications to the Department for coastal permits and certifications are growing, particularly in terms of complexity. Many of these applications propose projects that would have significant adverse impacts to coastal resources if approved as proposed. Projects having direct and significant adverse wetland impacts are routinely reviewed by Department personnel pursuant to the provisions of ADEM Administrative Code R.335-8 (Coastal Program) and Section 404 of the Clean Water Act. Generally, permits are issued for projects having wetland impacts only if all of the following conditions are satisfied.: the activity is related to an existing or approved water dependent use, or use of regional benefit or related to an approved beach nourishment, shoreline stabilization or marsh creation, restoration or enhancement project, elimination of dead-end canals or boat slips exhibiting poor water quality or other similar beneficial use, no other feasible alternatives exist; impacts to wetlands on the project site have been minimized by project design, and mitigation is incorporated into the project proposal.

There have been no coastal area wide surveys completed of wetland acreage for submersed aquatics, tidal emergence, or swamp forest during the reporting period. Due to the State's restrictive approval process, including mitigation requirements, it is believed that wetland losses that do occur are minimal for those wetlands regulated by the program and that other losses that may occur are due to natural erosion, unpermitted activities, and minimal losses due to Nationwide permitting by the U.S. Army Corps of Engineers.

ADEM's Coastal/Facility Unit is working with other governmental entities to support wetland and submersed aquatic vegetation status and trend identification. At this time, both Mobile and Baldwin Counties have been flown and color infrared digital ortho-quarter quads have been produced. This imagery will be used to map wetlands and uplands in Mobile and Baldwin Counties.

Alabama's Coastal Program is compiling data on stabilized versus unstabilized shoreline miles. In general, the explosive coastal population growth has resulted in near continuous shoreline development, with certain areas developing more rapidly than others. The Gulf shoreline is unstabilized along its length in Alabama, except at the passes from interior estuarine waters to the Gulf of Mexico at Perdido Pass, Little Lagoon Pass, and on the eastern tip of Dauphin Island at the entrance to Mobile Bay.

6.2.3 Changes in Living Resources

The Alabama Department of Conservation and Natural Resources-Marine Resources Division (ADCNR-MRD) manages Alabama's marine resources. According to ADCNR-MRD personnel, populations are cyclic and vary by species. ADCNR oversees the replanting of oyster reefs and believes that there has been a decrease in reef productivity recently due to changes in environmental conditions. Oyster landings have been below the 697k pound average (1990-2007) since 2008 and remain low. Brown shrimp landings in 2011 and 2012 were well below the 4.2 million pound average (2001-2010). Blue crab landings were also below average in 2011 and 2012.

6.2.4 Toxic Contamination

The ADEM has conducted studies to determine metals enrichment in estuarine sediments and has sampled sediments in proximity to shipyards, petroleum storage terminals, and industrial point source discharges. During 2000, ADEM began sampling Alabama's estuarine sediments for toxicity and fishes for whole-body contaminants as part of the NCA program, described above. However, no statement is being made as to the extent of areas having elevated levels of toxicants because no state or EPA criteria for toxins in sediments exist.

6.2.5 Pathogen Contamination

In addition to the recreational beach monitoring discussed above, Alabama's coastal shellfishing waters are monitored for pathogens and are subject to closings, advisories, or warnings. During the reporting period, all of Alabama's oyster harvest areas were closed at one time or another through closing orders issued by the State Health Officer of the Alabama Department of Public Health. Those orders were issued when excess fresh water entered Mobile Bay from the Mobile River. Information on Shellfish Harvesting Area Closures/ Reopenings and Fish Advisories are included in the chapter on Public Health.

6.2.6 Other State Coastal Activities

The U.S. EPA's National Coastal Condition Assessment (NCCA) is a partnership with EPA's Office of Water (OW), EPA's Regional office, all coastal states, and selected territories.

ADEM began and completed sampling for NCCA in July 2010. Samples were collected for water quality, sediment quality, benthic analysis, and fish tissue chemistry from seventeen sampling locations, with two sites being revisited. ADEM contracted with the ADCNR for collection of fish tissue. All samples were shipped to and analyzed by contract labs.

The NCCA program is based on EPA's EMAP program, and is a continuation of the National Coastal Assessment Program in which ADEM participated from 2000-2004 and again in 2006. These programs use a compatible probabilistic program and a common set of environmental indicators to survey each state's estuaries and assess their condition. These estimates can then be aggregated to assess conditions at the EPA Regional, biogeographical, and national levels. ADEM expects to participate in this program with sampling events occurring once every five years, with the next event occurring in 2015.

For more information about Alabama's National Coastal Condition Assessment, contact Mr. Joie Horn in ADEM's Mobile Office at (251) 450-3400 or mjhorn@adem.state.al.us

6.3 Alabama Coastal Water Quality Monitoring (CAWQM) Sites

This project will continue to provide data necessary to develop indicators and assessment criteria that link chemical, physical, and biological conditions for estuaries and coastal rivers within Alabama's Coastal Area. This data will be used in the development of nutrient criteria, and to update or revise protocols and methodologies to more accurately assess related water quality conditions for designated estuaries, coastal rivers, and streams. The project will also incorporate monitoring in priority watersheds identified by ADEM's Water Division and Nonpoint Source Management Program to provide corroborating data concerning the effectiveness of BMPs implemented using Section 319 funds. A total of 20 stations were sampled in 2012 as a part of the Coastal Alabama Water Quality Monitoring: Long Term Trends and Watershed Assessments (CAWQM). Samples were collected at a frequency of four times a year between the months of March and October. Conventional and field parameters as well as Bacteria and Chlorophyll a, are sampled at each site visit.. Total and dissolved metals were sampled once yearly at each site and flow was collected at eleven stations.

Figure 6-3 Alabama Coastal Water Quality Monitoring (CAWQM) Sites

Table 6-2 Alabama Coastal Water Quality Monitoring (CAWQM) Sites

Station	Station Description	Latitude	Longitude	Waterbody
BMBB-1	Middle of Bay Minette Basin	30.6978	-87.92060	Bay Min. Basin
BMCB-1	Bay Minette Ck upstream of 225	30.69947	-87.90219	Bay Minette Ck
BMCB-3	Bay Minette Ck @ Bromley Rd	30.7399	-87.87460	Bay Minette Ck
DLVB-2	D'Olive Ck upstream of Co Rd 11	30.65269	-87.91181	D'Olive Creek
DVBB-1	Middle of D'Olive Bay	30.6453	-87.91790	D'Olive Bay
ESLM-4	Eslava Ck 1400ft upstream of McVay Rd	30.6422	-88.09660	Eslava Creek
FRBM-1	Middle of Fowl River Bay	30.3559	-88.19650	Fowl River Bay
FWLM-2	Fowl R @ Half Mile Rd-USGS gage-02471078	30.5011	-88.18140	Fowl River
GDBM-1	Post Hurricane site Grand Bay	30.3709	-88.33500	Grand Bay
HMCM-2	Halls Mill Ck Approx. 1000 ft upstream of I-10	30.60619	-88.15053	Halls Mills Creek
HRBM-1	Middle of Heron Bayou	30.33445	-88.15178	Heron Bayou
HRNM-1	Middle of Heron Bay	30.33719	-88.13689	Heron Bay
MGNB-101	US Hwy 98 crossing	30.40662	-87.73671	Magnolia River
MGRB-9	Magnolia River downstream of Noltie Creek	30.3902	-87.80820	Magnolia River
MIFB-1	Miflin Creek @ Co Rd20	30.3637	-87.60270	Miflin Creek
MOBB-1	NE Mobile Bay	30.6276	-87.95480	Mobile Bay
RBTM-5	Rabbit Creek~1mile upstream of Hwy 193.	30.56503	-88.14146	Rabbit Creek
SDYB-2	Sandy Creek ~50ft dnstrm of Co Rd 20/ Miflin Rd	30.3704	-87.61840	Sandy Creek
WKBB-2	~2.5 miles downriver of State Hwy 98 bridge	30.3796	-87.83390	Weeks Bay
WLFB-2	Middle of Wolf Bay	30.32124	-87.58962	Wolf Bay
FR-1	Fowl River @ Alabama Highway 193 - Theodore Industrial Canal Bridge	30.44416	-88.11305	Fowl River
FWLM-3	Approximately .25 mile upstream of the confluence	30.43307	-88.13713	Fowl River
FWLM-4	Approximately 1.5 mile upstream of Highway 193	30.4313	-88.13181	Fowl River

*Highlighted Stations were sampled in 2012 and 2013 . Stations not highlighted were sampled beginning in 2013

In 2013 sampling occurred at 21 stations, most at the same frequency and for the same parameters as the previous year. Five stations in the Fowl River watershed were selected for intensive study and were sampled 8 times (monthly from March through October). Reports for 2012 efforts are expected to be available in March 2014 and the 2013 results reported by December 2014. All validated data is available on the ADEM web site, www.adem.state.al.us. Table 6-2 and Figure 6-3 show the 2013 Coastal Alabama Water Quality Monitoring (CAWQM) Sites.

For more information about Alabama Coastal Water Quality Monitoring, contact Ms Barbara Putnam in ADEM's Mobile Office at (251) 450-3426 or blputnam@adem.state.al.us

6.4 Summaries of Designated Use Support for Oceans /Estuaries

Table 6-3 and Table 6-4 show the Size of Oceans and Estuaries Impaired by causes and sources respectively. For more information about Designated Use Support contact Mr. John Pate in ADEM's Montgomery Office at (334) 270-5662 or jtp@adem.state.al.us

Table 6-3 Size of Ocean/Estuary Impaired by Causes

	Category 5	**Category 4**
Cause	Ocean/Estuary (square miles)	Ocean/Estuary (square miles)
Mercury	201.75	
Thallium	94.62	
Enterococcus bacteria	3.64	8.72

Table 6-4 Size of Ocean/Estuary Impaired by Sources

Sources	(square miles)
Atmospheric deposition	201.75
Collection system failure	1.29
Industrial	94.62
On-site wastewater systems	7.65
Urban runoff/storm sewers	9.80

Chapter 7 Nonpoint Source Management

7.1 Overview

The Alabama Nonpoint Source Management Program (Draft 2013) continues to respond to the nation's leading remaining causes of water quality problems. The program enhances public and private sector efforts to plan and implement environmentally-protective NPS pollution management practices, i.e., it provides a framework for all stakeholders to "work off the same page." Goals and objectives include facilitation of a flexible, targeted, iterative, and broad-based management approaches aimed at effectively and efficiently restoring NPS impaired waters and preventing the degradation of unimpaired waters. Management strategies are designed to prevent, reduce and abate NPS problems using a watershed-based planning and management approach. The statewide program also coordinates applicable coastal NPS water quality management efforts with the Alabama Coastal Nonpoint Source Program (see Chapter 6).

The primary source of funding to implement the state's NPS management program is annual CWA Section 319(h) grant awards from EPA. Efforts to mitigate NPS pollution include facilitation of cooperative public and private sector partnerships, education and outreach, technical assistance, technology transfer, development and implementation of watershed-based management plans, and implementation of best management practices and measures. The management of NPS pollution generally uses a voluntary approach; however, applicable federal and state water quality standards and NPDES pollutant discharge rules and regulations provide adequate regulatory backstops. The development and implementation of watershed-based management plans that incorporate EPAs nine-key watershed plan elements as presented in Section 319 grant guidelines is a statewide NPS management and Section 319 grant program priority. Watershed-based management plans generally target 12-digit hydrologic unit code areal extents to enhance watershed health and restore water quality, mitigate priority NPS pollutant load reductions (i.e., nitrogen, phosphorus, and sediment), and target other NPS causes identified in a draft or final TMDL.

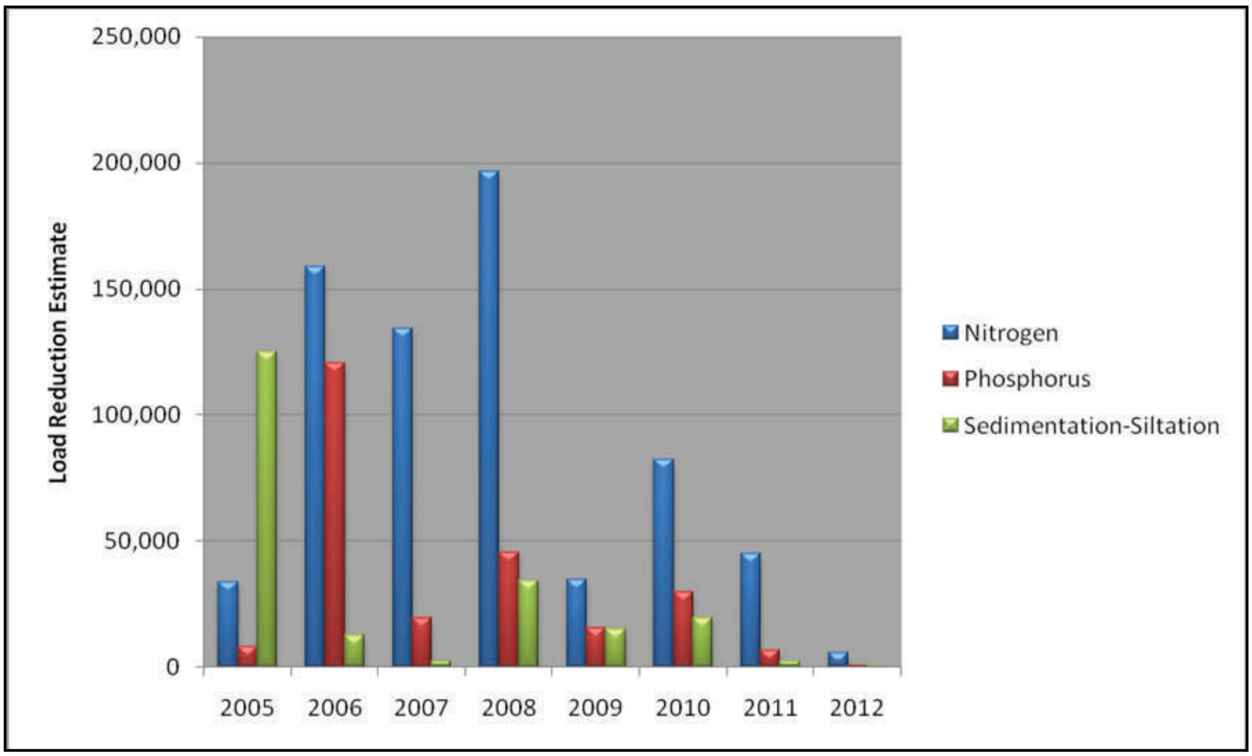
7.2 Nonpoint Source Water Quality

The Alabama Nonpoint Source Management Program and Section 319 grant program is evaluated using NPS water quality data collected as a component of the state's 5-year rotational water quality monitoring and assessment strategy, and/or as needed to assess interim and final NPS project implementation success. This major river basin-based strategy is the most efficient, practical, and cost-effective approach to holistically assess NPS watershed health and water quality on a statewide basis. Assessment reports are available on the ADEMs Water Quality Report website.

Table 7-1 Section 319 Grant Funded Pollutant Load Reduction Estimates

Load Reduction Estimate			
	Nitrogen	Phosphorus	Sedimentation-Siltation
Fiscal Year	LBS/YR	LBS/YR	TONS/YR
2005	33,564	8,147	124,710
2006	158,780	120,317	12,490
2007	134,176	19,216	2,108
2008	196,597	45,356	34,190
2009	34534	15277	14,875
2010	82370	29519	19,430
2011	44836	6759	2,156
2012	5534	593	239
Total	**690,391**	**245,184**	**210,198**

Figure 7-1 Section 319 Grant Funded Pollutant Load Reduction Estimates



*Note: Section 319 grants have a duration of 5 years, thus load reduction estimates are not calculated immediately but accumulate over time.

Section 319 nonpoint source pollutant load reduction estimates (Table 7-1/Figure 7-1) are used as an indicator of improvements in water quality and as a measure of success for Section 319 grant funded projects. The data is also required to be reported biannually in the EPA Grants Reporting and Tracking (GRTS) database. Data quantity and quality continues to improve as a result of continued enhancements to ADEM water quality assessment and monitoring methodologies, NPS partnerships, and cooperative public/private sector data-sharing and reporting

7.3 Watershed Management Approach

Because of the wide a variety of human activities on the land and the many diffuse causes of NPS pollution and impacts on water quality, the efficient and focused targeting of control measures can be problematic. Resources to implement a holistic statewide NPS program are insufficient. Nonpoint source water quality education and outreach, training, technical assistance, and technology transfer to specific and community-based audiences must continue. Dedicated and sustainable sources of NPS funding, incentives and continued outreach will improve water quality and enhance stakeholder efforts to mitigate the causes of personal or "pointless" pollution. Section 319 grant funded water quality improvement success stories are presented on the EPA-HQ and Region 4 websites, and along with other information, in Annual Reports located on the ADEM website.

No single state agency or public/private sector entity retains comprehensive authority or possesses adequate means, staff, resources, or funding to adequately address all facets of watershed health and water quality protection issues. Cooperative partnerships continue to be a NPS water quality management priority. Local stakeholders are encouraged to voluntarily assume local ownership of local water quality protection and restoration issues and provide local resources to implement locally-led solutions. Integral to this process is the continued efforts of the Alabama Clean Water Partnership and Alabama Water Watch.

The implementation of innovative, alternative, and creative water quality monitoring and assessment strategies will continue to be implemented where feasible and practical. Presenting opportunities for NPS stakeholders to provide input relative to water quality monitoring and assessment decision-making processes will also be maintained. Environmental, economic, human health, cultural and social conditions, threatened and endangered species, aquatic habitat, drinking water sources, recreational uses and other NPS pollution impairment issues continue to be integral components of watershed-based management plans. In addition, the roles and authorities of resource agencies, elected and appointed officials, environmental groups, producers, industries, municipalities, citizens and others is considered when developing the details of how NPS water quality will be managed in Alabama. Clearly defined goals and objectives will continue to be agreed upon before NPS water quality monitoring funds and resources are expended.

For more information about Section 319 grant funding and the AL Nonpoint Source Management Program, contact Mr. Norman Blakey at (334) 394-4354 or nb@adem.state.al.us.

7.4 Management Program Challenges and Success

Much progress has been made to protect water quality in Alabama and water quality continues to improve. However, specific targeting of some NPS best management practices can be problematic because it is sometimes difficult to definitively ascertain specific NPS pollutant sources and causes. In addition, human and financial capitol is insufficient statewide to implement some best management practices needed to protect water quality using a voluntary approach. Statewide and watershed-specific NPS and water quality protection education and outreach and provisions for citizen input must continue. Dedicated and sustainable sources of funding to be used as stakeholder incentives would likely enhance voluntary NPS management program efforts. Examples of NPS management program activities are presented in Annual Reports on the ADEM website at www.adem.state.al.us/programs/water/nps/default.cnt

The Alabama NPS Management Program integrates varied water quality programmatic issues such as the development and implementation of TMDLs and watershed management plans, and water quality monitoring and assessments. However, no single state agency or public/private sector entity retains comprehensive authority or possesses adequate staff, resources, or funding to adequately address all facets of watershed health and water quality protection issues. Therefore, facilitation of cooperative partnerships continues to be a NPS management program priority. Local stakeholders are encouraged to voluntarily assume local ownership of local issues and provide local resources to implement local watershed management and water quality protection solutions.

An example of a successful statewide NPS partnering effort is the Alabama Clean Water Partnership (ACWP). The ACWP is composed of a diverse and inclusive coalition of public and private interest groups and individuals who work to improve, protect, and maintain water resources and aquatic ecosystems. This voluntary non-profit organization has assumed a leadership role in helping stakeholders plan and implement natural resource protection and restoration efforts. Additional information concerning the ACWP can be found at: www.cleanwaterpartnership.org/

Education and outreach helps to motivate and sustain NPS partnerships. Examples of ADEM education and outreach initiatives include: 1) Nonpoint Source Education for Municipal Officials (NEMO) www.nemo.uconn.edu/index.htm and 2) Take Action for Clean Water; www.adem.state.al.us/programs/water/nps/takeaction.cnt

Additional NPS education and outreach resources and information is available at: www.adem.state.al.us/programs/water/npsprogram.cnt or from the USEPA website at: www.epa.gov/owow_keep/NPS/index.html

The Alabama Water Watch (AWW) is a statewide education and outreach program coordinated by the Auburn University Department of Fisheries and Allied Aquacultures. This national and internationally recognized group coordinates water quality monitoring data collected by citizen-volunteers. The Alabama Water Watch Association, in cooperation with the AWW, promotes water quality protection efforts. Additional AWW information and data is available at: www.fp.auburn.edu/icaae/index.aspx

Statewide NPS pollution management efforts support applicable CWA Section 6217 program requirements. The Alabama Coastal Nonpoint Pollution Control Program's primary focus is to protect, manage, and improve water quality seaward of the coastal zone management area (10-foot contour elevation) of Mobile and Baldwin counties. See Table 7-2 for for a list of Progress

Table 7-2 Progress to Achieve Full Approval of The Alabama Coastal NPS Pollution Control Program (§6217)

Year	Program Approval Activities	Status
1998	***Findings and Conditions for Alabama," Conditional Approval"*** *with* ***72 Conditions for 14 Categories*** *remaining to be addressed.*	-
2001	**ACNPCP Management Area Designated -Mobile & Baldwin Counties./ 1-FTE**	**100%**
2002	**ACNPCP Legal Opinion issued by State AG-submitted to NOAA & EPA./ 1-FTE**	**100%**
2003	Through ACNPCP Coordination by ADEM, **69 Conditions for 14 Categories** remaining to be addressed / **1-FTE**.	-
2003	***2003 ACNPCP Update*** *and* ***15-Year Strategy*** *documents submitted to NOAA and EPA /* ***1-FTE****.*	**100%**
2004	ADEM implemented 2 projects to address draft *IDD* /* ***2-FTE*** *Limited NOAA-OCRM Funding for ADEM Projects*	**100%**
2005	Following ***2003 ACNPCP Update Submission, 9 Conditions for 14 Categories*** *remaining to be addressed; remaining criteria re-addressed as* ***Recommended Actions*** *in* ***Alabama's *Interim Decision Document (IDD)*** *: 24 Actions in remaining Categories are identified to be addressed by Alabama's CNPCP.*	-
2005	ADEM implemented 6 projects to address *IDD criteria /* ***3-FTE reduced to 2 FTE****.* Reduced NOAA-OCRM Funding for ADEM-ACNPCP Projects.	**100%**
2005	**NOAA-OCRM and EPA assess ACNPCP as 87% complete.**	**-**
2006	ADEM implemented 3 projects to address *IDD criteria /* ***2-FTE****. Reduced NOAA-OCRM Funding for ADEM-ACNPCP Projects.*	**100%**
2007	ADEM implemented 3 projects to address *IDD criteria /****2-FTE****. No NOAA-OCRM Funding for ADEM-ACNPCP Projects.*	**100%**
2008	ADEM implemented 6 projects to address *IDD criteria /* ***2-FTE reduced to 1 FTE****. Limited Funding secured from EPA-R4 to ADEM-319 for ACNPCP. No new NOAA-OCRM Funding for ADEM -ACNPCP Projects.*	**100%**
2009	ADEM implements 2 projects to address *IDD criteria /* ***1-FTE.*** Reduced Funding secured from EPA-R4 to ADEM-319 for ACNPCP. No NOAA-OCRM Funding for ADEM-ACNPCP Projects.	**100%**
2010	ADEM to implement 1 project to address *IDD criteria/* ***1-FTE****. Project Report slated for December 2012. Reduced Funding secured from EPA-R4 to ADEM-319 for ACNPCP. No NOAA-OCRM Funding for ADEM-ACNPCP Projects.*	Project Reprogrammed*
2010	ADEM will assist and support ACNPCP's new 2010 ACNPCP UPDATE SUBMISSION for Alabama during 2010 through 2012. ADEM Chair of CSO-6217 National Workgroup.	-
2011	DRAFT 2011 Submission submitted to EPA in May 2011.*Staff assignments in alignment with BP MC-252 Oil Spill Recovery Activities. Projects reprogrammed to 2012. ACNPCP participates in DHS-USCG Investigation.	**100%**
2012	ADEM implements 1 project to address IDD criteria / **1-FTE** Reduced Funding secured from EPA -R4 to ADEM-319 for ACNPCP. No NOAA-OCRM Funding for ADEM-ACNPCP Projects.	**100%**
2012	ADEM will assist and support ACNPCP's new sequential UPDATE SUBMISSION for Alabama during 2012 through 2016. ADEM Chair of CSO-6217 National Workgroup.	-
2013	ADEM implements 1 project to address IDD criteria / **1-FTE** Reduced Funding secured from EPA -R4 to ADEM-319 for ACNPCP. No NOAA-OCRM Funding for ADEM-ACNPCP Projects.	**100%**
2013	ADEM will assist and support ACNPCP's new sequential UPDATE SUBMISSION for Alabama during 2012 through 2016. ADEM Chair of CSO-6217 National Workgroup.	-

to Achieve Full Approval of The Alabama Coastal NPS Pollution Control Program (§6217). Additional Coastal NPS program is discussed in Chapter 6 and on the ADEM website at: www.adem.state.al.us/FieldOps/ Coastal/ Coastal.htm

The Alabama NPS Management Program / Section 319 grant program partners with many federal, state, and local units of government to efficiently and effectively protect water quality. These entities include, but are not limited to the, USDA-NRCS (technical assistance and cost-share funding), State Soil and Water Conservation Committee and Districts (BMP implementation and watershed health assessments); ACES (stream restoration), OSM and ADIR (resource extraction); ADPH (on-site septage); AFC (silviculture); and GSA and USGS (water quality). In addition, ADEM also partners with academic institutions and the private sector.

7.5 Nonpoint Source Management Program Recommendations

The development and implementation of TMDL/watershed-based plans should continue to be a NPS management program priority. Stakeholders should be encouraged to implement plans that are locally developed and have local support.

Statewide and locally-specific NPS education and outreach, training, technical assistance, and technology transfer should be continued. Public awareness and knowledge related to the water quality protection processes, pollutant mitigation needs and available resources, and public/ private sector roles and responsibilities should be enhanced. Opportunities for NPS stakeholders to provide input into water quality protection and watershed management decision-making processes should continue to be facilitated. In addition, dedicated and consistent sources of funding are needed to help plan and implement a myriad of NPS TMDL and watershed-based best management practices and activities, and support water quality monitoring and watershed assessments, citizen volunteers, and public/private sector partnerships.

Environmental, economic, cultural, social, human health, threatened and endangered species, habitat protection, urban growth and development, recreation, and other NPS pollution impact issues should continue to be integrated into holistic watershed-based management plans. The roles, authorities, and views of regulatory and other agencies, elected and appointed officials, environmental groups, commodity groups, industries, municipalities, citizens, and others must be considered when developing the details of how watershed management plans will be implemented. In addition, implementation of innovative, alternative, or creative NPS approaches should be encouraged where feasible and practical and may include but are not limited to: pollutant trading, permitting using a watershed approach; and/or local ordinances, authorities, and incentives. Clearly defined water quality protection goals and objectives and measurable "success" endpoints should be agreed upon before management plans are implemented and funding is expended.

For more information about Section 319 grant funding and Nonpoint Source Management, contact Mr. Norman Blakey at (334) 394-4354 or nb@adem.state.al.us.

Chapter 8 Public Health

8.1 Fish Consumption Advisories

Concern about protecting the public from possible health exposure to mercury from eating fish has led to the issuance of several new fish consumption advisories for bodies of water in Alabama. The quality of water, based upon the levels of contaminants in fish from the waters in Alabama, generally continues improvements made in recent years. The Alabama Department of Environmental Management (ADEM) collected samples of specific fish species for analysis from various waterbodies throughout the state during the fall of 2010. The Alabama Department of Public Health assessed the results to determine potential human health effects. Fish consumption advisories are issued for specific waterbodies and specific species taken from those areas. The advisories apply to waters as far as a boat can be taken upstream in a tributary, that is, to full pool elevations. The Alabama Department of Public Health, in consultation with ADEM and the Alabama Department of Conservation and Natural Resources, has shifted to a more protective level for mercury. Mercury, which occurs both naturally and from man-made sources, can cause developmental disabilities and behavioral problems in children if it is consumed at high levels. One way to minimize exposure in populations at risk is to reduce mercury derived from eating fish from contaminated water. These populations include women of childbearing age, pregnant women, and children younger than 15 years of age. The fish consumption advisories are based on a stricter action level for mercury developed by the U.S. Environmental Protection Agency. Previously, Food and Drug Administration guidelines were used for mercury advisories. The FDA level was based on eating one fish meal per week.

Beginning with the 2007 advisories, the Department of Public Health adopted a contaminant level for mercury in fish that would protect those who eat more than one fish meal per week. The new EPA standards are four times more protective. This advisory will be represented as the safe number of meals of that fish species that can be eaten in a given period of time, such as meals per week, meals per month or no consumption. A meal portion consists of six (6) ounces of cooked fish or eight (8) ounces of raw fish.

For more information about Fish Consumption Advisories contact the ADPH Epidemiology Division, at 1-800-201-8208 or epidemiology@adph.state.al.us . To view current and historical notices visit http://adph.org/tox/index.asp?ID=1360. Table 8-1 shows 2012/2013 Fish Consumption Advisories for Alabama with restrictions and Table 8-2 shows the areas with no restrictions (No level of concern exceeded for chemicals tested).

8.2 Shellfish Harvesting Areas

Shellfish harvesting area closures are issued when the Mobile River stage rises above 8 feet at the Barry Steam Plant. For reopening the closed areas, the river stage must be below 8 feet, ambient fecal coliform counts must be below a geometric mean of 14 MPN (most probable

Table 8-1 Alabama Fish Consumption Advisories for 2012/2013

					Consumption Level	
Water Body	**County**	**Species of Fish**	**Waterbody Segment/Location**	**Pollutant**	**Type of Advisory**	
					Women of childbearing age and small children	**All other individuals**
Baker's Creek UPDATED 2013	Morgan	All Species	Baker's Creek embayment at Wheeler Reservoir.	PFOS	No Consump-tion	No Consumption
Bay Minette Creek NEW	Baldwin	Largemouth Bass	In the vicinity of AL Hwy 225 bridge	Mercury	No Consump-tion	One meal per month
Bear Creek NEW 2013	Franklin	Channel cat-fish	Bear Creek at Franklin County Road 53, river mile 95.7.	Mercury		One meal per month
Bear Creek NEW 2013	Franklin	Largemouth Bass	Bear Creek at Franklin County Road 53, river mile 95.7.	Mercury		Two meal per month
Big Creek Reservoir NEW	Mobile	Largemouth Bass	Lower reservoir. Deepest point, Big Creek channel, dam forebay.	Mercury	No Consump-tion	No Consumption
Big Creek Reservoir NEW	Mobile	Yellow Bull-head	Lower reservoir. Deepest point, Big Creek channel, dam forebay.	Mercury	No Consump-tion	One meal per month
Big Escambia Creek UPDATED 2013	Escambia	Largemouth Bass	Big Escambia Creek at Louisville & Nashville Rail-road bridge crossing. Approximately 0.5 miles up-stream of AL/FL state line.	Mercury		One meal per month
Big Escambia Creek UPDATED 2013	Escambia	Spotted Bass	Big Escambia Creek at Louisville & Nashville Rail-road bridge crossing. Approximately 0.5 miles up-stream of AL/FL state line.	Mercury		One meal per month
Bilbo Creek UPDATED	Washington	Largemouth Bass	Bilbo Creek upstream of the confluence with the Tom-bigbee River.	Mercury	No Consump-tion	One meal per month
Binion Creek UPDATED 2013	Tuscaloosa	Channel cat-fish	Binion Creek, deepest point, main channel, immedi-ately upstream of Hwy 43.	Mercury		Two meal per month
Binion Creek UPDATED 2013	Tuscaloosa	Largemouth Bass	Binion Creek, deepest point, main channel, immedi-ately upstream of Hwy 43.	Mercury		Two meal per month
Blackwater River/ Creek UPDATED	Baldwin	Largemouth Bass	Area between mouth of river and powerline crossing southeast of Robertsdale.	Mercury	No Consump-tion	One meal per month
Bon Secour River NEW	Baldwin	Largemouth Bass	In the vicinity of Baldwin County Road 10 bridge.	Mercury	No Consump-tion	No Consumption
Burnt Corn Creek UPDATED 2013	Escambia	Largemouth Bass	Burnt Corn Creek in the vicinity of US Hwy 31.	Mercury		One meal per month
Burnt Corn Creek UPDATED 2013	Escambia	Spotted Bass	Burnt Corn Creek in the vicinity of US Hwy 31.	Mercury		One meal per month
Cedar Creek UPDATED 2013	Houston	Largemouth Bass	Cedar Creek north of Dothan at US Hwy 431.	Mercury		Two meal per month
Chickasaw Creek UPDATED	Mobile	All Species	Between I-65 Bridge and Hwy 213 bridge. Includes Chickasabogue Park.	Mercury	No Consump-tion	No Consumption
Choccolocco Creek UPDATED	Talladega	All Species	Choccolocco Creek at Talladega County Road 399 crossing.	Mercury, PCB	No Consump-tion	No Consumption
Choctawhatchee River UPDATED 2013	Dale	Largemouth Bass	Deepest point, main river channel, approximately 0.5 miles downstream of Little Choctawhatchee conflu-ence, near State Hwy 92	Mercury		Two meal per month
Choctawhatchee River UPDATED 2013	Geneva	Largemouth Bass	Choctawhatchee River 1.5 miles above the AL/FL state line, approximately 3.0 miles downstream of Geneva, AL.	Mercury		Two meal per month
Choctawhatchee River UPDATED 2013	Geneva	Spotted Bass	Choctawhatchee River 1.5 miles above the AL/FL state line, approximately 3.0 miles downstream of Geneva, AL.	Mercury		Two meal per month

1 Do Not Consume advisory – Everyone should avoid eating the designated species of fish in the defined areas.

2 Limited consumption advisory – Women of childbearing age and children less than 15 years old should avoid eating the designated species of fish from the defined areas. Other people should limit their consumption of the particular species to one meal per month. A meal is considered to be 6 ounces of cooked fish or 8 ounces of raw fish.

Table 8-1 Alabama Fish Consumption Advisories for 2012/2013 (Continued)

					Consumption Level	
Water Body	County	Species of Fish	Waterbody Segment/Location	Pollutant	Type of Advisory	
					Women of childbearing age and small children	All other individuals
Coffeeville Reservoir UPDATED 2013	Sumpter	Largemouth Bass	Approximately 1.5 miles downstream of US Hwy80/ AL Hwy 28 bridge. Tombigbee River miles 202.0-200.0.	Mercury		One meal per month
Coffeeville Reservoir UPDATED 2013	Sumpter	Spotted Bass	Approximately 1.5 miles downstream of US Hwy80/ AL Hwy 28 bridge. Tombigbee River miles 202.0-200.0.	Mercury		Two meal per month
Conecuh River UPDATED 2013	Escambia	Largemouth Bass	Deepest point, main river channel, at AL/FL state line.	Mercury		One meal per month
Cowpen Creek UPDATED	Balwin	Lake Chub-sucker Spot-ted Sucker	Cowpen Creek upstream of the confluence with the Fish River.	Mercury	No Consump-tion	One meal per month
Cowpen Creek UPDATED	Balwin	Largemouth Bass	Cowpen Creek upstream of the confluence with the Fish River.	Mercury	No Consump-tion	No Consumption
Escatawpa River UPDATED	Mobile	Blacktail redhorse Spotted Bass	In the vicinity of US Hwy 98 bridge west of Wilmer.	Mercury	No Consump-tion	One meal per month
Fish River UPDATED	Balwin	Largemouth Bass	Approximately 2.0 miles upstream of US Hwy 98 bridge in the vicinity of Waterhole Branch/Fish River confluence just above the two islands.	Mercury	No Consump-tion	One meal per month
Fish River UPDATED	Balwin	Largemouth Bass	In the vicinity of the confluence with Polecat Creek. Approximately 1.0 mile upstream of the Baldwin County Road 32 bridge.	Mercury	No Consump-tion	No Consumption
Fowl River UPDATED	Mobile	Largemouth Bass	In the vicinity of Muddy Creek confluence and Fowl River Road bridge crossing.	Mercury	No Consump-tion	One meal per month
Frank Jackson Reser-voir UPDATED 2013	Covington	Largemouth Bass	Deepest point, main creek channel, dam forebay.	Mercury		One meal per month
Gantt Reservoir UPDATED 2013	Covington	Largemouth Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	Mercury		Two meal per month
Gulf Coast UPDATED 2013	Baldwin & Mobile	King Mack-erel Over 39 inches	Entire Coast.	Mercury		Do not consume[1]
Lake Jackson UPDATED 2013	Covington	Largemouth Bass	Approximate center of the lake.	Mercury		One meal per month
Magnolia River NEW	Baldwin	Largemouth bass	Magnolia River approximately 2.5 miles upstream of Weeks Bay. Area just upstream of Weeks Creek and Magnolia River confluence.	Mercury	No Consump-tion	No Consumption
Middle River NEW	Baldwin	Blue Catfish Largemouth bass	Middle River, 4.5 miles above its confluence with the Tensaw River. T1S, R1E, S15, NE 1/4.	Mercury	No Consump-tion	One meal per month
Mifflin Lake NEW	Baldwin	Blue Catfish Largemouth bass	Mifflin Lake, between the Middle and Tensaw Rivers; T1S, R2E, S19, NW quarter.	Mercury	One meal per month	One meal per week
Mobile River UPDATED	Mobile	Largemouth bass	Mobile River at Cold Creek, river mile 27.0.	Mercury	No Consump-tion	One meal per month
Mobile River UPDATED	Mobile	Largemouth bass	Mobile River at David Lake, river mile 41.3.	Mercury	No Consump-tion	One meal per month
Murder Creek UPDATED 2013	Escambia	Largemouth Bass	Between the confluence with Burnt Corn Creek and Conecuh River	Mercury		One meal per month

1 Do Not Consume advisory – Everyone should avoid eating the designated species of fish in the defined areas.

2 Limited consumption advisory – Women of childbearing age and children less than 15 years old should avoid eating the designated species of fish from the defined areas. Other people should limit their consumption of the particular species to one meal per month. A meal is considered to be 6 ounces of cooked fish or 8 ounces of raw fish.

Table 8-1 Alabama Fish Consumption Advisories for 2012/2013 (Continued)

					Consumption Level	
Water Body	**County**	**Species of Fish**	**Waterbody Segment/Location**	**Pollutant**	**Type of Advisory**	
					Women of childbearing age and small children	**All other individuals**
Murder Creek UPDATED 2013	Escambia	Spotted Bass	Between the confluence with Burnt Corn Creek and Conecuh River	Mercury		One meal per month
Patsaliga Creek UPDATED 2013	Covington	Largemouth Bass	Deepest point, main channel, Patsaliga Creek embayment.	Mercury		Two meal per month
Pea River UPDATED 2013	Coffee	Largemouth Bass	Deepest point, main river channel, approximately 0.5 miles downstream of Beaverdam Creek/Pea River confluence, south of Elba, AL.	Mercury		Two meal per month
Pea River UPDATED 2013	Coffee	Largemouth Bass	Deepest point, main river channel, approximately 0.5 miles upstream of the confluence with Choctawhatchee River.	Mercury		Two meal per month
Pea River UPDATED 2013	Coffee	Spotted Bass	Deepest point, main river channel, approximately 0.5 miles upstream of the confluence with Choctawhatchee River.	Mercury		Two meal per month
Perdido River UPDATED	Baldwin	Blacktail Redhorse Largemouth Bass	Perdido River at US Hwy 90.	Mercury	No Consumption	One meal per month
Point A Reservoir UPDATED 2013	Conecuh	Largemouth Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	Mercury		Two meal per month
Polecat Creek UPDATED	Baldwin	Largemouth Bass Spotted Sucker	Polecat Creek upstream of the confluence with Fish River.	Mercury	No Consumption	One meal per month
Rock Creek UPDATED 2013	Winston	Largemouth Bass	Ryan Creek, Smith Reservoir. In the vicinity of Little Crooked Creek and Rock Creek Marina. Approximately 5.0 miles upstream of the Sipsey Fork.	Mercury		Two meal per month
Ryan Creek UPDATED 2013	Cullman	Largemouth Bass	Ryan Creek, Smith Reservoir. Approximately 2.2 miles upstream of Big Bridge and approximately 12.0 miles upstream of the Sipsey Fork.	Mercury		Two meal per month
Sepulga River UPDATED 2013	Escambia	Largemouth Bass	Sepulga River in the vicinity of Brooklyn, AL	Mercury		One meal per month
Sepulga River UPDATED 2013	Escambia	Spotted Bass	Sepulga River in the vicinity of Brooklyn, AL	Mercury		One meal per month
Sipsey River UPDATED	Greene	Largemouth Bass	Deepest point, main river channel, Sipsey River embayment, approximately 0.5 miles upstream of the confluence with the Tombigbee River.	Mercury	No Consumption	One meal per month
Smith Reservoir UPDATED 2013	Winston	Spotted Bass	Smith Reservoir mouth of Clear Creek, Sipsey Fork in the vicinity of Clear Creek and Butler Creeks. Approximately 2.3 miles upstream of State Route 257 bridge.	Mercury		One meal per month
Styx River UPDATED	Baldwin	Channel Catfish Largemouth Bass	Styx River near its confluence with Perdido River in the vicinity of US Hwy 90 bridge crossing.	Mercury	No Consumption	One meal per month
Tallapoosa River UPDATED	Montgomery	Spotted Bass	Tallapoosa River, deepest point, main river channel, approximately 3.0 miles upstream of US Hwy 231.	Mercury	One meal per month	One meal per week
Tennessee River UPDATED	Jackson	Spotted Bass	At AL/TN state line, just upstream of Long Island at river mile 417.	Mercury	One meal per month	One meal per week
Tennessee River UPDATED 2013	Morgan	Largemouth Bass	River miles 303 to 296. Area south of the main river channel.	PFOS		One meal per month
Tensaw River UPDATED	Baldwin	Largemouth Bass	Tensaw River at the L&N Railroad crossing, Baldwin County.		One meal per month	One meal per week

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Table 8-1 Alabama Fish Consumption Advisories for 2012/2013 (Continued)

Water Body	County	Species of Fish	Waterbody Segment/Location	Pollutant	Consumption Level: Type of Advisory — Women of childbearing age and small children	Consumption Level: Type of Advisory — All other individuals
Thurlow Reservoir UPDATED	Elmore	Largemouth Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	Mercury	One meal per month	One meal per week
Tombigbee River UPDATED 2013	Washington	Largemouth Bass	Tombigbee River at river mile 50.0. Approximately 5.0 miles upstream of the confluence with the Alabama River.	Mercury		Two meal per month
Tombigbee River UPDATED 2013	Washington	Largemouth Bass	One mile upstream of the Tombigbee River/Alabama River confluence	Mercury		Two meal per month
Tombigbee River UPDATED	Washington	Largemouth Bass	Vicinity of McIntosh landing, river mile 60.0.	Mercury	One meal per month	One meal per week
Tuscaloosa Reservoir UPDATED 2013	Tuscaloosa	Largemouth Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	Mercury		One meal per month
Tuscaloosa Reservoir UPDATED 2013	Tuscaloosa	Largemouth Bass	Mid reservoir. Deepest point, main river channel, approximately 1.0 miles downstream of the AL Hwy 69 bridge.	Mercury		Two meal per month
Tuscaloosa Reservoir UPDATED 2013	Tuscaloosa	Largemouth Bass	North River immediately upstream of Bull Slough Road crossing, deepest point, main channel.	Mercury		Two meal per month
Weiss Reservoir Revised Sep 26 2012	Cherokee	Black Crappie	Lower reservoir. Deepest point, main river channel, power dam forebay.	PCB's	One meal per week	One meal per week
Weiss Reservoir Revised Sep 26 2012	Cherokee	Blue Catfish Channel Catfish Largemouth Bass Striped Bass	Lower reservoir. Deepest point, main river channel, power dam forebay.	PCB's	One meal per month	One meal per month
Weiss Reservoir Revised Sep 26 2012	Cherokee	Black Crappie	Mid reservoir. Deepest point, main river channel, immediately upstream of causeway at Cedar Bluff.	PCB's	One meal per week	One meal per week
Weiss Reservoir Revised Sep 26 2012	Cherokee	Blue Catfish Channel Catfish Largemouth Bass Striped Bass	Mid reservoir. Deepest point, main river channel, immediately upstream of causeway at Cedar Bluff.	PCB's	One meal per month	One meal per month
Weiss Reservoir Revised Sep 26 2012	Cherokee	Black Crappie	State line. Deepest point, main river channel, AL/GA state line.	PCB's	One meal per week	One meal per week
Weiss Reservoir Revised Sep 26 2012	Cherokee	Blue Catfish Largemouth Bass	State line. Deepest point, main river channel, AL/GA state line.	PCB's	One meal per month	One meal per month
Yellow River UPDATED 2013	Covington	Largemouth Bass	Deepest point, main river channel, at County Road 4 bridge.	Mercury		One meal per month
Yellow River UPDATED 2013	Covington	Spotted Bass	Deepest point, main river channel, at County Road 4 bridge.	Mercury		One meal per month

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Table 8-2 Alabama Fish Consumption Advisories for 2012/2013 No Restrictions

					Consumption Level	
Water Body	**County**	**Species of Fish**	**Waterbody Segment/Location**	**Pollutant**	**Type of Advisory**	
					Women of childbearing age and small children	**All other individuals**
Aliceville Reservoir NEW	Pickens	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Bankhead Reservoir UPDATED 2013	Tuscaloosa	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Bay Minette Creek NEW	Baldwin	Channel Catfish	In the vicinity of AL Hwy 225 bridge.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Bay Minette Creek NEW	Baldwin	Channel Catfish Striped Mullet	In the vicinity of AL Hwy 225 bridge.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Big Creek Reservoir NEW	Mobile	Channel Catfish	Lower reservoir. Deepest point, Big Creek channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Big Yellow Creek UPDATED 2013	Tuscaloosa	All Species	Big Yellow Creek embayment, approximately 1 mile upstream of the confluence with the Warrior River	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Bilbo Creek UPDATED	Washington	Channel Catfish	Bilbo Creek upstream of the confluence with the Tombigbee River.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Black Warrior River UPDATED 2013	Greene	All Species	Deepest point, main river channel, approximately 1 mile upstream of US Hwy 43 bridge near Demopolis.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Blackwater River/ Creek UPDATED	Baldwin	Striped Mullet	Area between mouth of river and powerline crossing southeast of Robertsdale.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Bon Secour Bay NEW	Baldwin	All Species	In main channel near confluence of Bon Secour Bay and Oyster Bay	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Bon Secour River NEW	Baldwin	Striped Mullet	In the vicinity of Baldwin County Road 10 bridge.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Cahaba River UPDATED 2013	Bibb	All Species	Cahaba River at US Hwy 82.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Cahaba River UPDATED 2013	Perry	All Species	Cahaba River at AL Hwy 183.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

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Table 8-2 Alabama Fish Consumption Advisories for 2012/2013 No Restrictions (Continued)

					Consumption Level	
Water Body	**County**	**Species of Fish**	**Waterbody Segment/Location**	**Pollutant**	**Type of Advisory**	
					Women of childbearing age and small children	**All other individuals**
Cahaba River UPDATED 2015	Dallas	All Species	Deepest point, main river channel, Cahaba River embayment, approximately 0.5 miles upstream of lake confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Coffeeville Reservoir UPDATED	Choctaw	Blue Catfish Largemouth Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Coffeeville Reservoir UPDATED	Marengo	All Species	Tombigbee River approximately 2.0 miles upstream of AL Hwy 10 bridge. River miles 168.6-166.6.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Demopolis Reservoir NEW	Sumpter	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Dog River NEW	Mobile	All Species	In the vicinity of the I-10 bridge.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Elkahatchee Creek NEW	Tallapoosa	All Species	Deepest point, main creek channel, Elkahatchee Creek embayment, approximately 0.5 miles downstream of Elkahatchee/Sugar Creek confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Fish River UPDATED	Baldwin	Striped Mullet	Approximately 2.0 miles upstream of US Hwy 98 bridge in the vicinity of Waterhole Branch/Fish River confluence just above the two islands.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Fish River UPDATED	Baldwin	Striped Mullet	In the vicinity of the confluence with Polecat Creek. Approximately 1.0 mile upstream of the Baldwin County Road 32 bridge.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Fowl River UPDATED	Mobile	Striped Mullet	In the vicinity of Muddy Creek confluence and Fowl River Road bridge crossing.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Gainesville Reservoir NEW	Greene	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Gulf Coast UPDATED 2013	Baldwin & Mobile	King Mackerel Under 39 inches	Entire Coast.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Heron Bay NEW	Mobile	All Species	Heron Bay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Holt Reservoir UPDATED 2013	Tuscaloosa	All Species	Lower reservoir. Forebay area, downstream of Deerlick Creek public access area.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

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Table 8-2 Alabama Fish Consumption Advisories for 2012/2013 No Restrictions (Continued)

Water Body	County	Species of Fish	Waterbody Segment/Location	Pollutant	Consumption Level Type of Advisory	
					Women of childbearing age and small children	All other individuals
Huntsville Spring Branch/ Indian Creek UPDATED	Madison	All Species	Deepest point, main creek channel, Indian Creek embayment, 1.0 mile upstream of lake confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Locust Fork UPDATED 2013	Jefferson	All Species	Locust Fork at river mile 388.5 near Vines Fish Camp.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Lost Creek UPDATED 2013	Walker	All Species	Deepest point, main creek channel, Lost Creek embayment. Approximately 0.5 mile downstream of Walker County Road 53 bridge.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Magnolia River NEW	Baldwin	Striped Mullet	Magnolia River approximately 2.5 miles upstream of Weeks Bay. Area just upstream of Weeks Creek and Magnolia River confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Middle River NEW	Baldwin	Blue Catfish	Middle River, 4.5 miles above its confluence with the Tensaw River. T1S, R1E, S15, NE 1/4.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Mobile Bay UPDATED	Mobile	All Species	Little Sand Island area, Mobile River at its confluence with Mobile Bay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Mobile River UPDATED	Mobile	Blue Catfish	Mobile River at Cold Creek, river mile 27.0.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Mobile River UPDATED	Mobile	Blue Catfish	Mobile River at David Lake, river mile 41.3.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Mulberry Fork UPDATED 2013	Walker	All Species	Mulberry Fork, Black Warrior River downstream of US Hwy 78.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Mulberry Fork UPDATED 2013	Walker	All Species	Mulberry Fork at river mile 391.8 downstream of Lost Creek.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Oliver Reservoir UPDATED 2013	Tuscaloosa	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Opossum Creek UPDATED 2013	Jefferson	All Species	Opossum Creek at Woodward Road.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Perdido Bay NEW	Baldwin	All Species	Perdido Bay below Lillian Bridge (US Hwy 98) crossing.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

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Table 8-2 Alabama Fish Consumption Advisories for 2012/2013 No Restrictions (Continued)

					Consumption Level	
Water Body	**County**	**Species of Fish**	**Waterbody Segment/Location**	**Pollutant**	**Type of Advisory**	
					Women of childbearing age and small children	**All other individuals**
Portersville Bay NEW	Mobile	All Species	Main channel offshore south of Bayou La Batre.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Sipsey River UPDATED	Greene	Blue Catfish	Deepest point, main river channel, Sipsey River embayment, approximately 0.5 miles upstream of the confluence with the Tombigbee River.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Sougahatchee Creek UPDATED	Tallapoosa	All species	Deepest point, main creek channel, Sougahatchee Creek embayment. Approximately 1.6 miles upstream from the Tallapoosa River confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Styx River UPDATED	Baldwin	Striped Mullet	Styx River near its confluence with Perdido River in the vicinity of US Hwy 90 bridge crossing.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Tennessee River UPDATED 2013	Marshal,Morgan & Madison	All Species	Guntersville Reservoir to river mile 303.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Tennessee River UPDATED 2013	Colbert, Lawrence & Morgan	All Species	River miles 296 to 264.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Tensaw River UPDATED	Baldwin	Striped Mullet	Tensaw River at the L&N Railroad crossing, Baldwin County.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Three Mile Creek NEW	Mobile	All Species	Three Mile Creek downstream of the Southern Railroad trestle to the confluence with the Mobile River.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Tombigbee River UPDATE	Washington	Channel Catfish	Tombigbee River at river mile 50.0 approximately 5.0 miles upstream of the confluence with the Alabama River.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Tombigbee River UPDATE	Washington	Blue Catfish	One (1.0) mile upstream of the Tombigbee/Alabama River confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Tombigbee River UPDATE	Washington	Channel Catfish	Vicinity of McIntosh landing, river mile 60.0.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Tombigbee River UPDATE	Clark	All Species	Approximately 9.3 miles downstream of US Hwy 43/ AL Hwy 13 bridge. River miles 85.6-83.6.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Weeks Bay NEW	Baldwin	All Species	In main channel, from boat ramp to US Hwy 98 crossing.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

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Table 8-2 Alabama Fish Consumption Advisories for 2012/2013 No Restrictions (Continued)

					Consumption Level	
Water Body	**County**	**Species of Fish**	**Waterbody Segment/Location**	**Pollutant**	**Type of Advisory**	
					Women of childbearing age and small children	**All other individuals**
Wolf Bay NEW	Baldwin	All Species	North of Mulberry Point.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Valley Creek UPDATED 2013	Jefferson	All Species	Downstream of Opossum Creek confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Warrior Reservoir UPDATED 2013	Greene	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Warrior Reservoir UPDATED 2013	Greene	Channel Catfish	Mid reservoir. Deepest point, main river channel, immediately downstream of Lock 8 Public Use Area.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wheeler Reservoir UPDATED 2013	Lauderdale	All Species	(Tennessee River) at river mile 281. Approximately 2.0 miles downstream of the mouth of Elk River. Due south of Rogersville.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

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number) in 100 milliliters of sample water with not more than 10 percent exceeding 43 MPN in 100 milliliter sample of water, and the E. coli count in oyster meat must be below 230 MPN in 100g of meat. From July 2009 through July 2011 a portion of Area V was sampled to determine its potential as a shellfish harvesting area. Area VI was approved in April 2012 and opened for the first time in October 2012 for shellfish harvesting. Figure 8-1 depicts Alabama's Oyster/ Shellfish Harvesting Areas in Coastal Waters. For exceptions to these areas such as around outfalls, marinas, or other specific waters refer to the ADEM Administrative Code Water Quality Program Volume I Chapter 335-6-11. Table 8-3 contains the notices pertaining to shellfish harvesting area closures and subsequent reopening.

For more information about shellfish harvesting areas refer to the 2011 ADPH Seafood Branch Shellfish Growing Water Report, ADPH Seafood Branch Triennial Report, 2007 Comprehensive Sanitary Survey of Alabama's Shellfish Growing Waters at http://adph.org/foodsafety/index.asp?ID=1141 and contact Mr. Jeff McCool with the ADPH Seafood Branch Mobile at (251) 432-7618 or JeffMcCool@adph.state.al.us or Mr. Ron Dawsey ADPH Montgomery at (334) 206-5375 or rdawsey@adph.state.al.us .

8.3 Public Water Supply/Drinking Water

Approximately 850,000,000 gallons of water are taken from ground and surface sources each day, provided with treatment, and made available to approximately four million citizens in Alabama. Five hundred and twenty (520) community systems, fifty-one (51) transient non-community systems and twenty-one (21) non-transient non-community systems are permitted by the ADEM.

Approximately sixty-five (65) percent of the water used is obtained from surface sources such as lakes, rivers, and streams and provided with full treatment to include coagulation, sedimentation, filtration, and disinfection. One hundred (100) percent of these systems meet turbidity requirements, one hundred (100) percent meet trihalomethane standards, ninety-seven (97) percent meet haloacetic acid standards and one hundred (100) percent meet inorganic and radiological drinking water standards. These water treatment facilities are required to employ Grade IV Certified Operators to ensure that proper doses of chemicals are applied and hourly tests are performed to demonstrate a satisfactory water quality.

Thirty-five (35) percent of the water is obtained from ground water sources such as wells and springs. An adequate source of ground water is generally available in this State; however, the ground water is extremely limited in the Piedmont area. Ground water sources are required to provide disinfection and monitor the draw down (water level change) in wells ensuring that a satisfactory available quantity of water remains. More than ninety-eight (98) percent of the Community Systems and ninety-five (95) percent of the Non-community Systems met the bacteriological quality standard of the Department. More than ninety-seven (97) percent of the community systems and approximately eighty (80) percent of the non-community systems were in full compliance with the bacteriological monitoring requirements. Ninety-six (96) percent meet disinfection byproduct standards and ninety-nine (99) percent of the groundwater public water systems were able to meet the inorganic and radiological maximum contaminant levels.

Figure 8-1 Alabama's Oyster/Shellfish Harvesting Areas in Coastal Waters

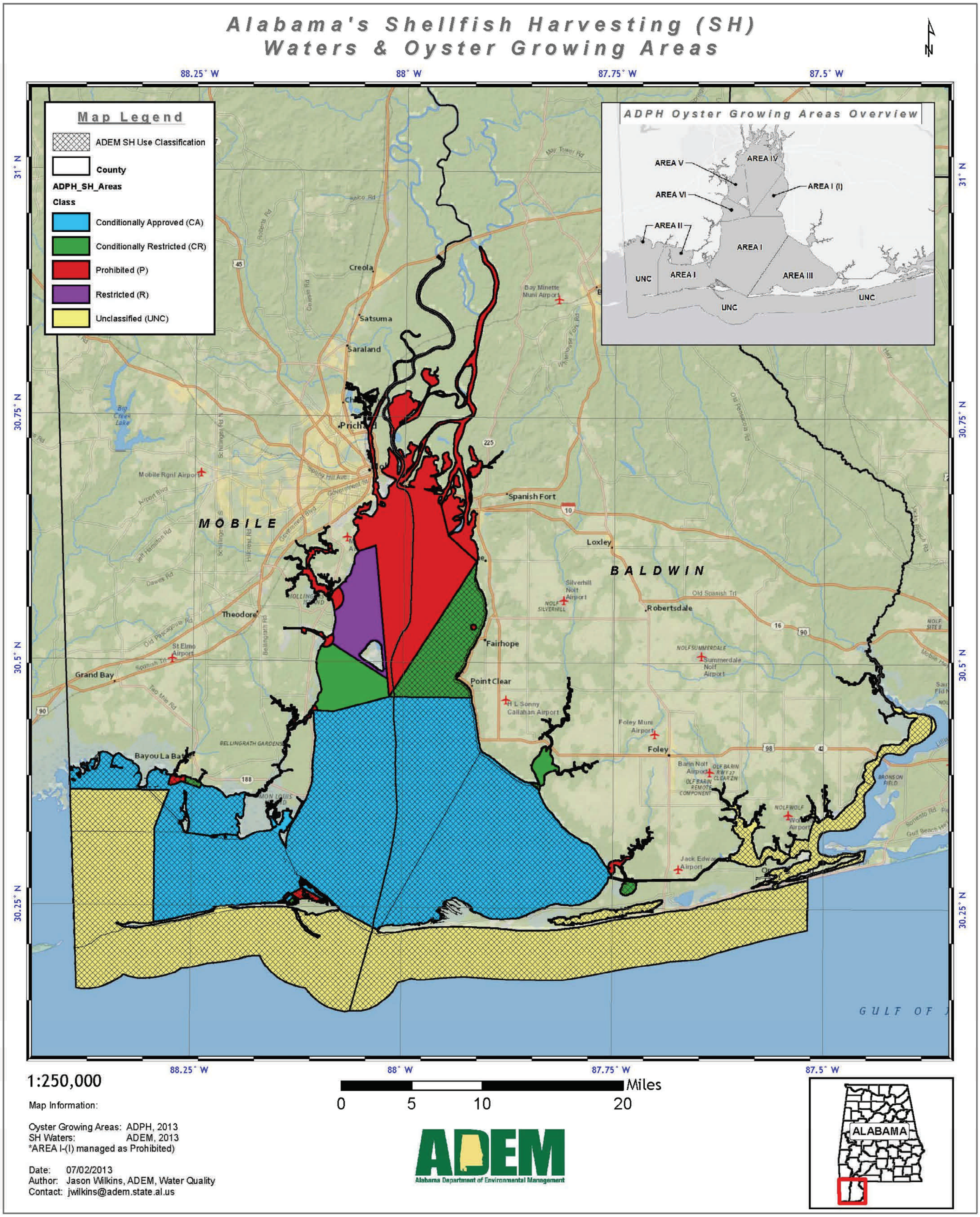


Table 8-3 Shellfish Harvesting Area Closures/Reopening

2012																	
NOTICE DATE	EFFECTIVE DATE	TIME EFFECTIVE	AREA I			AREA II			AREA III			AREA IV			AREA VI		
			STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED
12/31/12																	
11/06/12	11/07/12	0600	CONDITIONALLY OPEN	55		CONDITIONALLY OPEN	55		CONDITIONALLY OPEN	55		CONDITIONALLY CLOSED		55	CONDITIONALLY CLOSED		55
10/19/12	10/22/12	0600	CONDITIONALLY OPEN	16		CONDITIONALLY OPEN	16		CONDITIONALLY OPEN	16		CONDITIONALLY CLOSED		16	CONDITIONALLY OPEN	16	
09/24/12	09/25/12	0600	CONDITIONALLY OPEN	27		CONDITIONALLY OPEN	27		CONDITIONALLY OPEN	27		CONDITIONALLY CLOSED		27	CONDITIONALLY CLOSED		27
08/27/12	08/28/12	0600	CONDITIONALLY CLOSED		28	CONDITIONALLY CLOSED		28	CONDITIONALLY CLOSED		28	CONDITIONALLY CLOSED		28	CONDITIONALLY CLOSED		28
07/12/12	07/13/12	0600	CONDITIONALLY OPEN	46		CONDITIONALLY OPEN	46		CONDITIONALLY OPEN	46		CONDITIONALLY CLOSED		46	CONDITIONALLY CLOSED		46
06/11/12	06/11/12	1500	CONDITIONALLY CLOSED		32	CONDITIONALLY CLOSED		32	CONDITIONALLY CLOSED		32	CONDITIONALLY CLOSED		32	CONDITIONALLY CLOSED		32
05/11/12	05/12/12	0600	CONDITIONALLY OPEN	30		CONDITIONALLY OPEN	30		CONDITIONALLY OPEN	30		CONDITIONALLY CLOSED		30	CONDITIONALLY CLOSED		30
05/04/12	05/05/12	0600	CONDITIONALLY CLOSED		7	CONDITIONALLY CLOSED		7	CONDITIONALLY CLOSED		7	CONDITIONALLY CLOSED		7	CONDITIONALLY CLOSED		7
04/01/12	04/01/12		CONDITIONALLY OPEN	34		CONDITIONALLY OPEN	34		CONDITIONALLY OPEN	34		CONDITIONALLY CLOSED		34	CONDITIONALLY CLOSED		34
01/01/12			CONDITIONALLY OPEN	91		CONDITIONALLY OPEN	91		CONDITIONALLY OPEN	91		CONDITIONALLY CLOSED	0	91			
				299	67		299	67		299	67		0	366		16	259
TOTALS					18.31%			18.31%			18.31%			100.00%			70.77%

Conditionally means there are some exceptions to the open status, some parts of the area may still remain closed. See original notice for more detailed information.

***No Notice Found

Area VI added April 1, 2012

Table 8-3 Shellfish Harvesting Area Closures/Reopening (Continued)

2013																	
NOTICE DATE	EFFECTIVE DATE	TIME EFFECTIVE	AREA I			AREA II			AREA III			AREA IV			AREA VI		
				#DAYS OPEN	# DAYS CLOSED		#DAYS OPEN	# DAYS CLOSED		#DAYS OPEN	# DAYS CLOSED		#DAYS OPEN	# DAYS CLOSED		#DAYS OPEN	# DAYS CLOSED
12/31/13																	
09/06/13	09/07/13	0600	CONDITIONALLY OPEN	116		CONDITIONALLY OPEN	116		CONDITIONALLY OPEN	116		CONDITIONALLY CLOSED		116	CONDITIONALLY CLOSED		116
08/19/13	08/20/13	0600	CONDITIONALLY CLOSED		18	CONDITIONALLY CLOSED		18	CONDITIONALLY CLOSED		18	CONDITIONALLY CLOSED		18	CONDITIONALLY CLOSED		18
08/08/13	08/09/13	0600	CONDITIONALLY OPEN	11		CONDITIONALLY OPEN	11		CONDITIONALLY OPEN	11		CONDITIONALLY CLOSED		11	CONDITIONALLY CLOSED		11
07/15/13	07/13/13	0600	CONDITIONALLY OPEN	27		CONDITIONALLY OPEN	27		CONDITIONALLY CLOSED		27	CONDITIONALLY CLOSED		27	CONDITIONALLY CLOSED		27
05/21/13	05/22/13	0600	CONDITIONALLY OPEN	52		CONDITIONALLY OPEN	52		CONDITIONALLY OPEN	52		CONDITIONALLY CLOSED		52	CONDITIONALLY CLOSED		52
05/02/13	05/02/13	1500	CONDITIONALLY CLOSED		20	CONDITIONALLY CLOSED		20	CONDITIONALLY CLOSED		20	CONDITIONALLY CLOSED		20	CONDITIONALLY CLOSED		20
04/26/13	04/27/13	0600	CONDITIONALLY OPEN	5		CONDITIONALLY OPEN	5		CONDITIONALLY OPEN	5		CONDITIONALLY CLOSED		5	CONDITIONALLY CLOSED		5
04/18/13	04/19/13	0600	CONDITIONALLY CLOSED		8	CONDITIONALLY CLOSED		8	CONDITIONALLY CLOSED		8	CONDITIONALLY CLOSED		8	CONDITIONALLY CLOSED		8
04/10/13	04/11/13	0600	CONDITIONALLY OPEN	8		CONDITIONALLY OPEN	8		CONDITIONALLY OPEN	8		CONDITIONALLY CLOSED		8	CONDITIONALLY CLOSED		8
04/01/13	04/01/13	1500	CONDITIONALLY CLOSED		10	CONDITIONALLY CLOSED		10	CONDITIONALLY CLOSED		10	CONDITIONALLY CLOSED		10	CONDITIONALLY CLOSED		10
03/17/13	03/18/13	0600	CONDITIONALLY OPEN	14		CONDITIONALLY OPEN	14		CONDITIONALLY OPEN	14		CONDITIONALLY CLOSED		14	CONDITIONALLY CLOSED		14
02/14/13	02/15/13	0600	CONDITIONALLY CLOSED		31	CONDITIONALLY CLOSED		31	CONDITIONALLY CLOSED		31	CONDITIONALLY CLOSED		31	CONDITIONALLY CLOSED		31
02/06/13	02/07/13	0600	CONDITIONALLY OPEN	8		CONDITIONALLY OPEN	8		CONDITIONALLY OPEN	8		CONDITIONALLY CLOSED		8	CONDITIONALLY CLOSED		8
01/20/13	01/21/13	0600	CONDITIONALLY CLOSED		17	CONDITIONALLY CLOSED		17	CONDITIONALLY CLOSED		17	CONDITIONALLY CLOSED		17	CONDITIONALLY CLOSED		17
01/01/13			CONDITIONALLY OPEN	20		CONDITIONALLY OPEN	20		CONDITIONALLY OPEN	20		CONDITIONALLY CLOSED	0	20	CONDITIONALLY CLOSED	0	20
TOTALS				261	104		261	104		234	131		0	365		0	365
					28.42%			28.42%			35.79%			99.73%			99.73%

Conditionally means there are some exceptions to the open status, some parts of the area may still remain closed. See original notice for more detailed information.

***No Notice Found

Area VI added April 1, 2012

These figures demonstrate that the majority of the water provided to the citizens in Alabama is excellent. Contaminants, chemicals, and byproducts that water systems monitor for are shown in Tables 8-4 through 8-9.

All water systems continue to monitor for lead and copper. Six systems exceeded a lead or copper action level out of the 400 community and non-transient, non-community systems that were sampled in 2012 and 2013. This system is being required to formulate a corrosion control plan, and continue sampling every six months.

All community and non-transient non-community water system sources continued to be monitored for volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs). More than ninety-eighty (98) percent of the community systems and non-transient non-community systems required to monitor in 2012 and 2013 were in full compliance with the VOC and SOC monitoring requirements. Of the contaminants found, tetrachloroethylene (TCE) is the most common regulated VOC and Di(2-ethylhexyl)phthalate is the most common regulated SOC. Table 8-3 shows surface source public water systems with compliance violations. For more information about to Public Water Supply/Drinking Water, contact Mr. Tom Deloach in ADEM's Montgomery Office at (334) 271-7791 or tsd@adem.state.al.us.

8.4 Source Water Assessment Program

All public water supply systems have completed a Source Water Assessment Program (SWAP) for each of their existing groundwater sources. All water systems are required to update their SWAP's when applying for reissuance of their permits-to-furnish water. All new groundwater sources must have a completed SWAP, prior to using the source for potable water. A completed SWAP for a groundwater source must include the following:

- Delineation of the source water assessment area (SWAA),
- An inventory of the possible contaminant sources within the SWAA,
- A susceptibility analysis of each possible contaminant source in the inventory, and
- A public awareness requirement

When the Source Water Assessment Program requirements were initially promulgated, Alabama had a total of 414 public water supply systems that utilized one or more groundwater sources. Each of these systems was required to complete a SWAP for their groundwater sources.

These public water supply systems were categorized as follows:

- 310 Community Groundwater Systems
- 75 Non-Community Transient Groundwater Systems, and
- 29 Non-Community Non-Transient Groundwater Systems

Over the 2012 and 2013 fiscal years Alabama has received Source Water Assessment Reports for twenty-seven new or expanded groundwater sources. All of these new Source Water Assessment Reports were from existing public water systems. Of these, all twenty-seven of the reports were for new well sources. The Source Water Assessment Program has been finalized

Table 8-4 Surface Source Public Water Systems with Compliance Violations

Name of Facility	Municipality Served	Name of Water body	Contaminants with Percent Violations
Clay County Water Authority	Ashland, Lineville	Crooked Creek	Total Trihalomethanes
Opelika Utilities	Opelika	Halawakee Creek, Saugahatchee Lake	Total Trihalomethanes
Phenix City Utilities	Phenix City	Chattahoochee River	Total Trihalomethanes
Roanoke Utilities Board	Roanoke	Crystal Lake , Jones Creek	Total Trihalomethanes, Total Haloacetic Acids
Wedowee Water, Sewer and gas Board	Wedowee	Lake Wedowee	Total Haloacetic Acids
Winfield Water Works and Sewer Board	Winfield	Luxapilla Creek	Total Trihalomethanes

Table 8-5 Public Water Supply Elemental Contaminants

Elemental Contaminants	MCL in mg/L
Antimony	0.006
Arsenic	0.05
Asbestos	7 million fibers*/L
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide	0.2
Fluoride	4
Lead	0.015
Mercury	0.002
Nickel	0.1
Nitrate (as N)	10
Nitrite (as N)	1
Total Nitrate/Nitrite (as N)	10
Selenium	0.05
Sulfate	500
Thallium	0.002

* Longer than 10 micrometers

Table 8-6 Public Water Supply Radiological Contaminants

Radiological Contaminants	Concentrations
Gross alpha particle	15pCi/L
Combined radium226 and radium228	5 pCi/L
Tritium	20,000 pCi/L
Strontium90	8 pCi/L
Beta particle and photon radioactivity	4 millirem/Yr

for twenty of the new well sources. The SWAP's for the remaining seven groundwater sources are currently in the process of being reviewed and finalized.

For more information about the Source Water Assessment Program, contact Mr. Loren Crawford in ADEM's Montgomery Office at (334) 271-7788 or llc@adem.state.al.us.

8.5 Wellhead Protection Program

A Ground Water Branch staff member is assigned to the ADEM Public Water Supply Branch to support Source Water Assessment (SWA) and Drinking Water State Revolving Fund (DWSRF) grants and contracts, to manage the Wellhead Protection Program, and to conduct technical reviews of ground water source delineations and contaminant inventories. The Wellhead Protection Program supports the Source Water Assessment Program (SWAP) by providing a mechanism for communities and water systems to develop and implement drinking water protection strategies. The Ground Water Branch provides assistance and guidance to systems in developing a Wellhead Protection Plan, promotes the Ground Water Guardian program, coordinates drinking water protection sign distribution, coordinates with the Alabama Rural Water Association (ARWA) in recognizing water systems that have completed a Wellhead Protection Plan, attends meetings, conferences and workshops, and coordinates inspections and compliance issues in wellhead protection areas with ADEM Branches and other State agencies.
ADEM and the ARWA are working together to integrate the WHPP Tool Kit into implementation of the WHP Program. Nine utilities have developed a protection program utilizing the Tool Kit. In addition, the ADEM and ARWA are working together to install Drinking Water Protection signs in those communities with completed Wellhead Protection Plans. The sign installations were publicized for several of the communities in both the local media as well as the ARWA journal.

ADEM is working to insure that delineated source water area maps and potential contaminant site location information are available for use within the Department. Source Water Area maps have been digitized for use in developing a GIS layer. The ADEM Information Systems Branch is providing the digitizing and GIS support. The database is currently available to the agency as a draft. The ADEM Groundwater Branch UIC, UST and 106 Programs and the ADEM Industrial and Municipal Branches all consider existing Source Water Assessment areas as part of their permitting process.

The Groundwater Guardian Program was established within the State to provide recognition to communities, municipalities and counties that implement groundwater protection initiatives. The Department was awarded the Ground Water Guardian Affiliate designation for the 17th year by the Ground Water Foundation. Three communities were designated Groundwater Guardians during the reporting period. These communities include the Eufaula, Limestone County, and New Brockton/Coffee County.
Twenty seven (27) Groundwater or Water Festivals were hosted. Approximately 22,000 students participated in a festival during the reporting period. The ADEM Groundwater Branch with the assistance of the ADEM Office of Education and Outreach manages the State program and coordinates (on average) three festival committees per year. The ARWA Groundwater and Source Water Technicians provide volunteer hours to several festivals per year and provide 4th grade teacher training on groundwater in preparation for the festivals. Funding to support the

Table 8-8 Public Water Supply Disinfection Byproducts

Disinfection Byproduct	MCL in mg/L
Bromate	0.01
Chlorite	1
Haloacetic Acids	0.06
Trihalomethanes	0.08

Table 8-7 Public Water Supply Synthetic Organic Chemicals

Synthetic Organic Chemicals (non-volatile)	MCL in mg/L
Alachlor	0.002
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
Dibromochloropropane	0.0002
2,4-D	0.07
Endrin	0.002
Ethylene Dibromide	0.00005
Heptachlor	0.0004
Heptachlor Epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Polychlorinated Biphenyls	0.0005
Pentachlorophenol	0.001
Toxaphene	0.003
2,4,5-TP	0.05
Benso(a)pyrene	0.0002
Dalapon	0.2
Di (2-ethylhexyl) adipate	0.4
Di (2-ethylhexyl) phthalate	0.006
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Glyphosate	0.7
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Oxamyl (Vydate)	0.2
Picloram	0.5
Simazine	0.004
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$

Table 8-9 Public Water Supply Volatile Synthetic Organic Chemicals

Volatile Synthetic Organic Chemicals (VOC)	MCL in mg/L
Benzene	0.005
Carbon Tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
para-Dichlorobenzene	0.075
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.2
Vinyl chloride	0.002
cis-1,2-Dichloroethylene	0.07
1,2-Dichlorpropane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
0-Dichlorobenzene	0.6
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
Trans-1,2-Dichloroethylene	0.1
Xylene (Total)	10
Dichloromethane	0.005
1,2,4-Trichlorobenzene	0.07
1,1,2-Trichloroethane	0.005

program is provided through an ADEM grant program. Festival committees can apply yearly for a $1000 grant.

The Annual Alabama Groundwater Conference was held in June 2013 at the Gordon Persons Building in Montgomery. The conference provides a forum for discussion of the latest technology and protection programs for groundwater. Approximately one hundred and forty (140) people were registered for the conference. The audience for the conference is comprised of utility personnel, consultants, watershed managers, geologist, university professors and students, and ADEM personnel.

For more information about the Wellhead Protection Program, contact Mr. Whit Slagle in ADEM's Montgomery Office at (334) 271-7831 or cws@adem.state.al.us. For information about the Water Festival Program contact Scott Hughes, ADEM Office of Education and Outreach, at (334) 271-7955 or ash@adem.state.al.us.

8.6 Coastal Beach Monitoring

Alabama has approximately 50 miles of Gulf beaches and almost 70 miles of bay beaches, both of which are major tourist attractions and represent a significant component of the lifestyle of Alabama residents. In June 1999, ADEM, in cooperation with the ADPH, initiated a program to routinely monitor bacteria levels at five swimming beaches on the Gulf Coast and in August 2000, six additional beaches were added. Congressional passage of the Beaches Environmental Assessment and Coastal Health (BEACH) Act expanded the monitoring and assessment activities at public beaches and in the fall of 2002, ADEM and the Baldwin County Health Department conducted on-site surveys to evaluate additional public beach sites to add to the program. Figure 8-2 shows Alabama's coastal waters covered under the 2000 B.E.A.C.H. Act.

During the past summer, a total of 25 public beach areas were monitored. A majority of these sites were sampled twice weekly from Memorial Day through Labor Day and for the remainder of the year sampling is conducted monthly. All sample collection and analyses are performed by qualified ADEM or ADPH staff, with analytical results made available to the public within 24 hours.

The public beach locations that are sampled have signage with a color-coded bacteriological advisory status to inform the public of the potential health risk associated with swimming or other water contact activities at that site. A GREEN advisory means the most recent water quality test revealed bacterial levels are below recommended thresholds while a YELLOW advisory indicates the most recent water quality test revealed bacterial levels exceed recommended thresholds and an increased risk of illness may be associated with swimming. Once a yellow advisory status has been issued, the site is re-tested. A RED advisory indicates continued elevated bacterial levels at the site and the ADPH issues a swimming advisory. The site is re-tested until bacterial levels return to an acceptable level.

In 2012, approximately 950 samples were collected and analyzed for enterococcus bacteria. There were 11 advisories that occurred during the swim season, May through September; resulting in a total of 17 days that beaches were under advisories because of elevated bacteria.

Data and monitoring location information from this program are available at www.adem.alabama.gov.

Elevated bacterial levels can be caused by heavy rainfall events that allow stormwater runoff to carry bacterial matter into the coastal waters. ADEM and the ADPH use on-site signs, the ADEM web-page, press releases, and local newspapers to notify the public of the latest monitoring results. Graphs for each beach monitoring station's Enterococcus geomean or Individual count results are on the following pages.

For information pertaining to Coastal Beach Monitoring, contact Ms. Susan Rice in ADEM's Mobile Office at (251) 450-3400 or srice@adem.state.al.us

Figure 8-2 Coastal Beach Monitoring

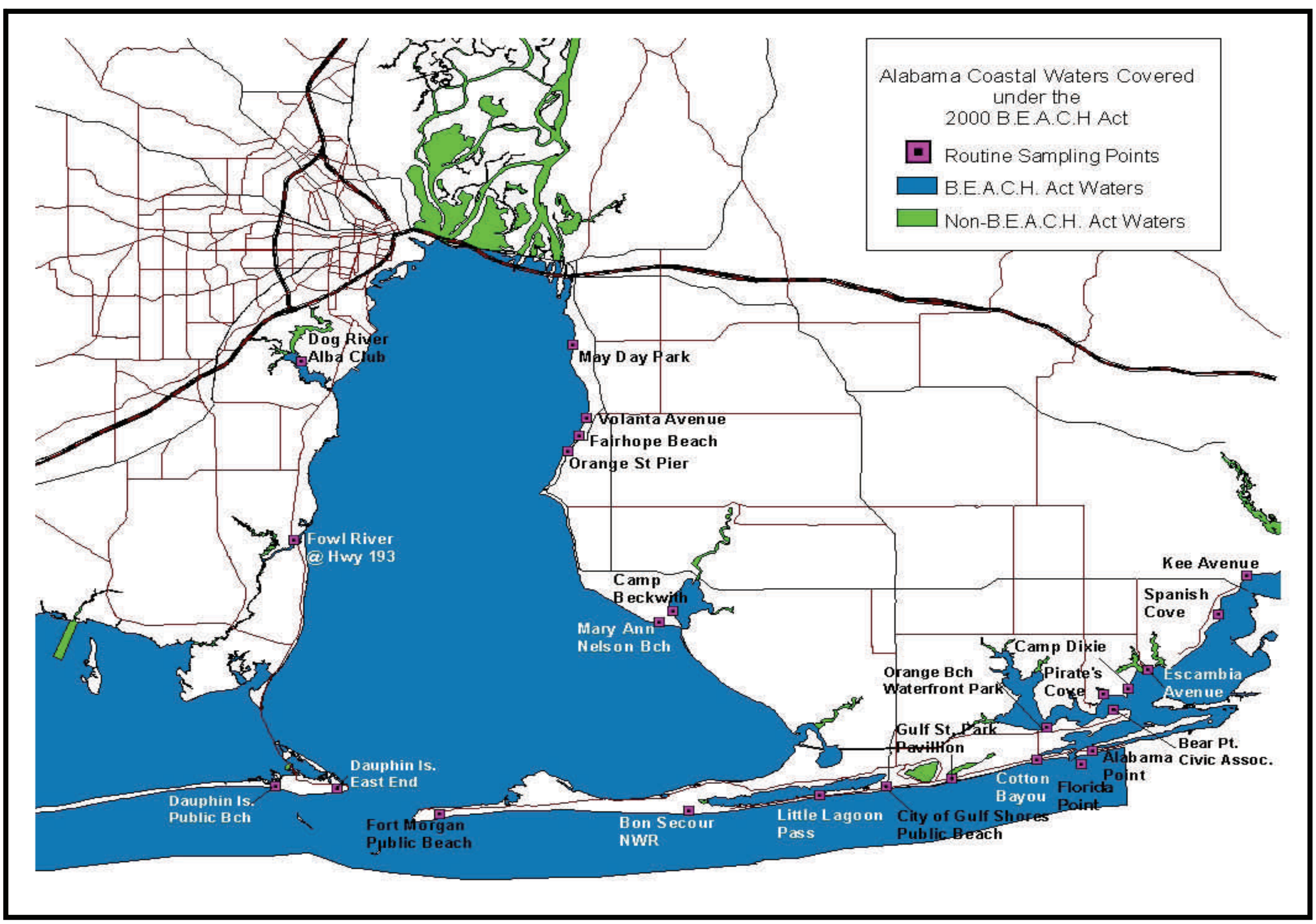


Figure 8-3 Alabama Point, Gulf of Mexico
Enterococcus Geometric Mean Value

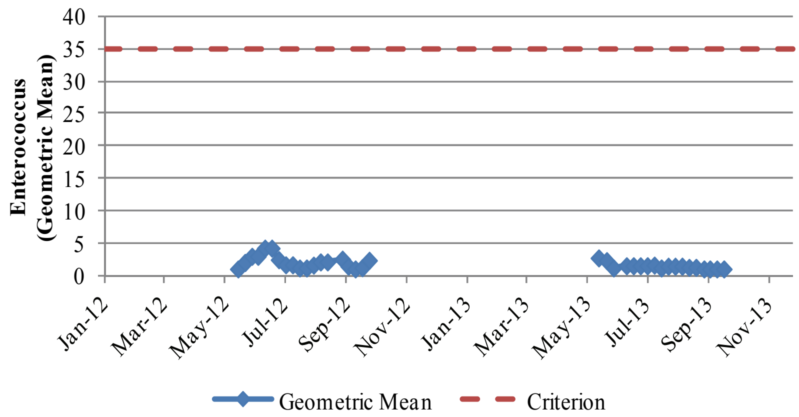


Figure 8-4 Camp Beckwith, Weeks Bay
Enterococcus Geometric Mean Value

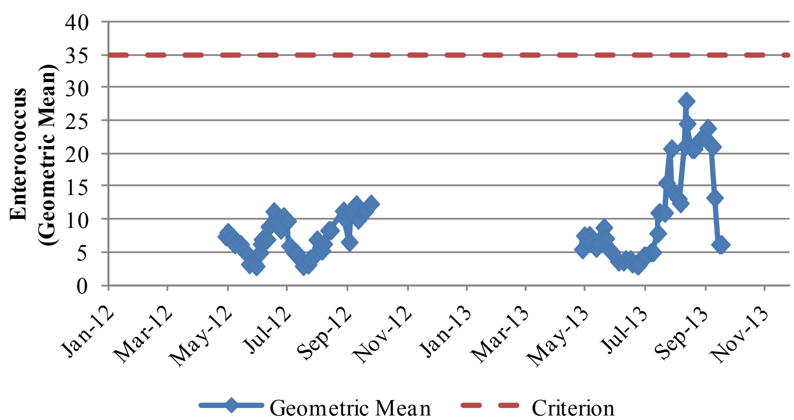
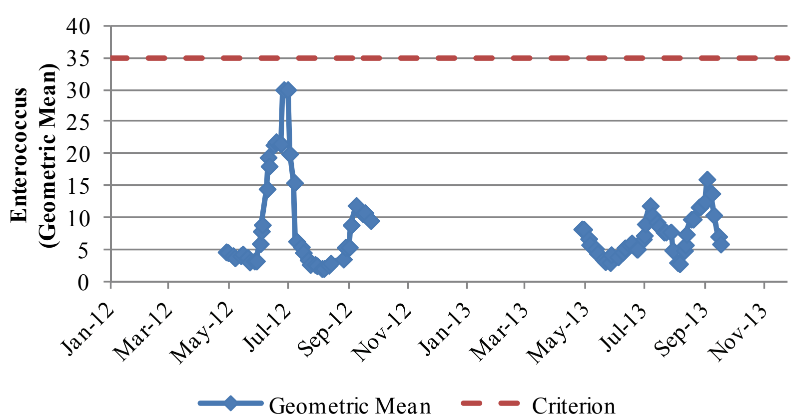


Figure 8-5 Camp Dixie, Perdido Bay
Enterococcus Geometric Mean Value



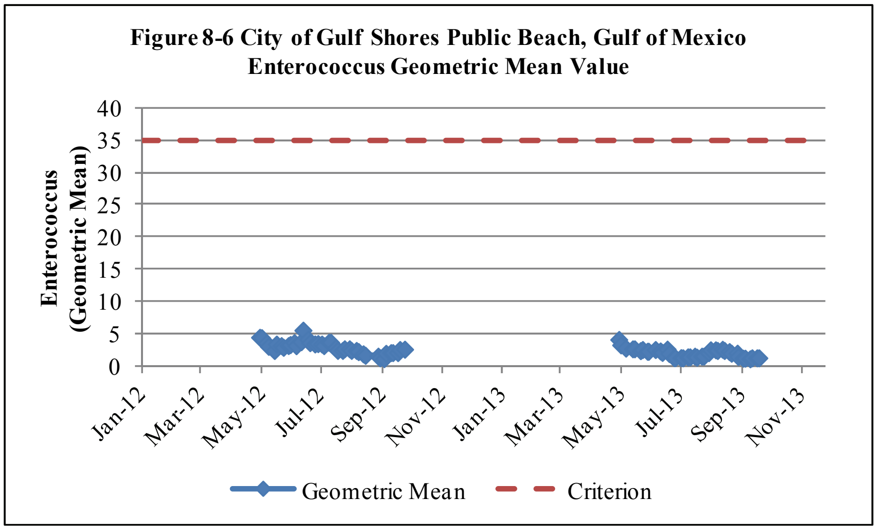


Figure 8-6 City of Gulf Shores Public Beach, Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

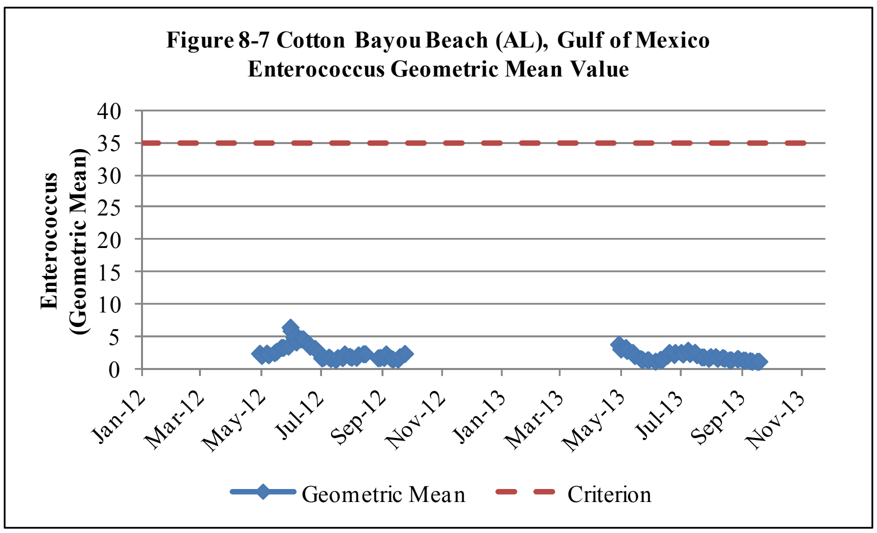


Figure 8-7 Cotton Bayou Beach (AL), Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

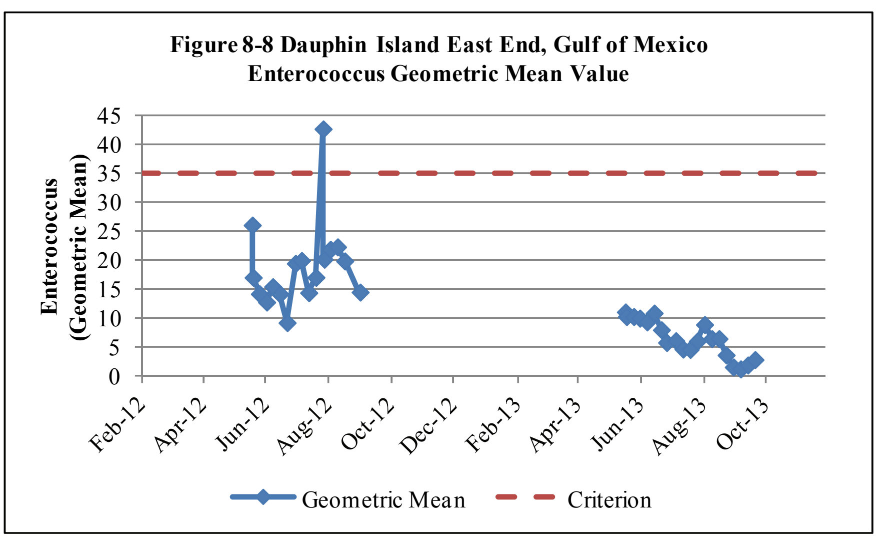


Figure 8-8 Dauphin Island East End, Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
45
40
35
30
25
20
15
10
5
0
Feb-12
Apr-12
Jun-12
Aug-12
Oct-12
Dec-12
Feb-13
Apr-13
Jun-13
Aug-13
Oct-13
Geometric Mean
Criterion

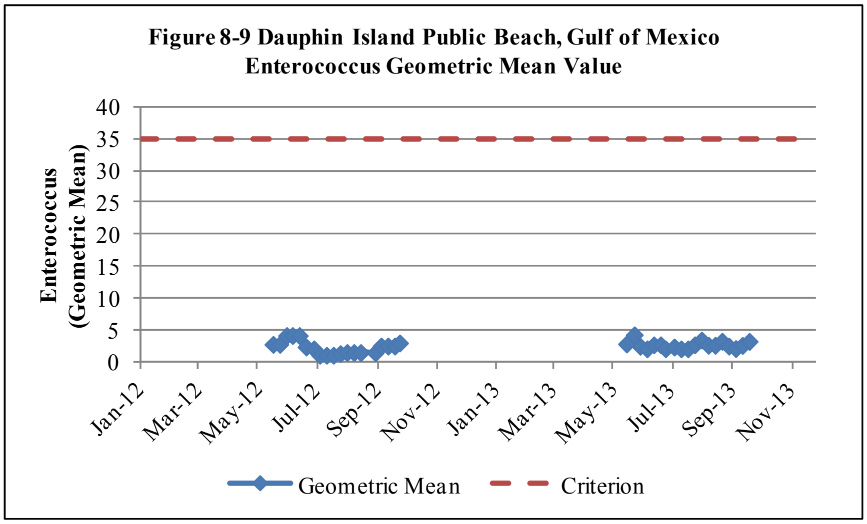


Figure 8-9 Dauphin Island Public Beach, Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

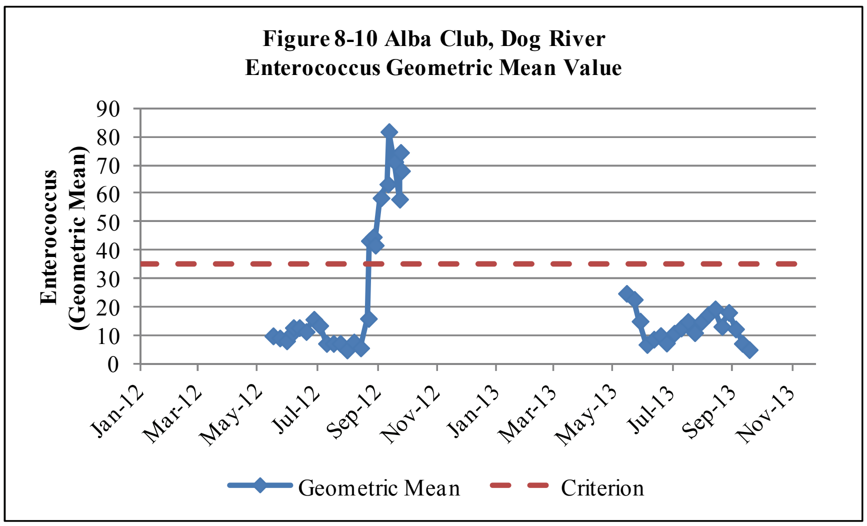


Figure 8-10 Alba Club, Dog River
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
90
80
70
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

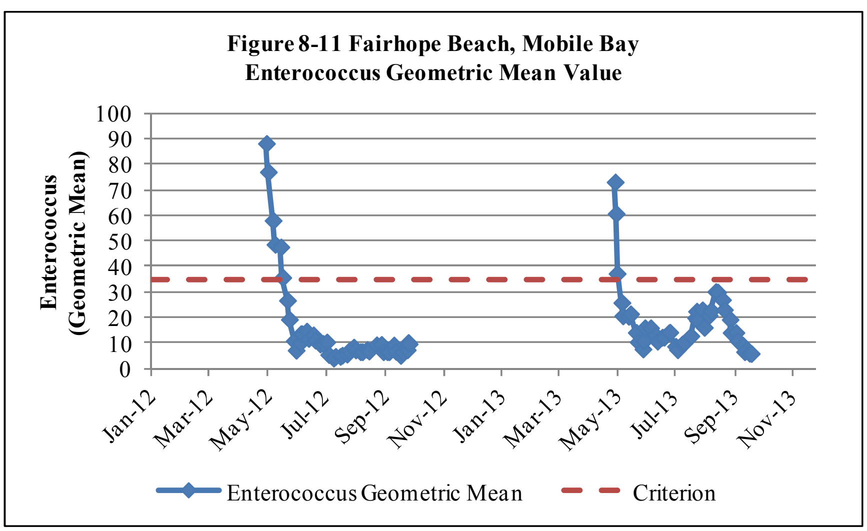


Figure 8-11 Fairhope Beach, Mobile Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
100
90
80
70
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Enterococcus Geometric Mean
Criterion

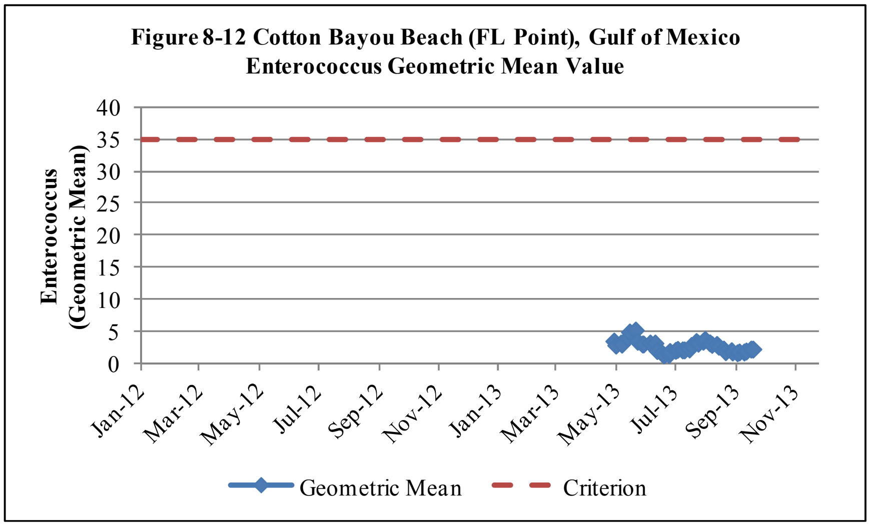


Figure 8-12 Cotton Bayou Beach (FL Point), Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus
(Geometric Mean)
40
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

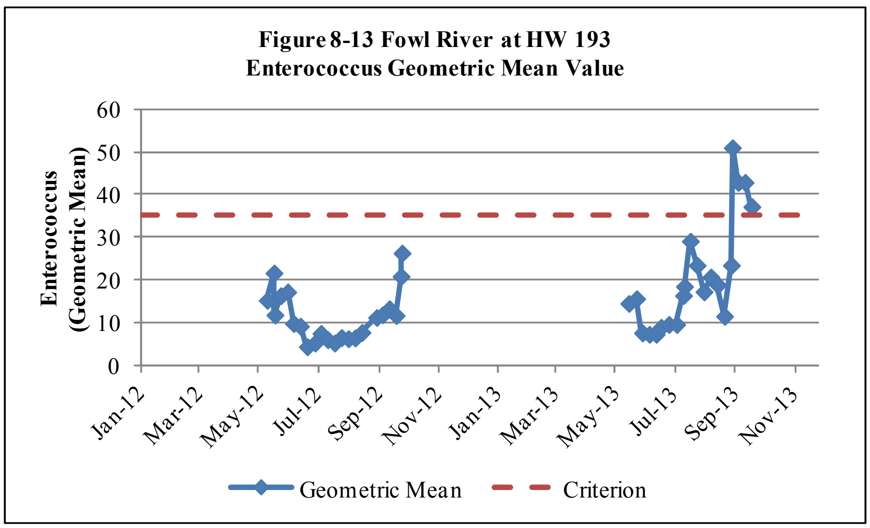


Figure 8-13 Fowl River at HW 193
Enterococcus Geometric Mean Value
Enterococcus
(Geometric Mean)
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

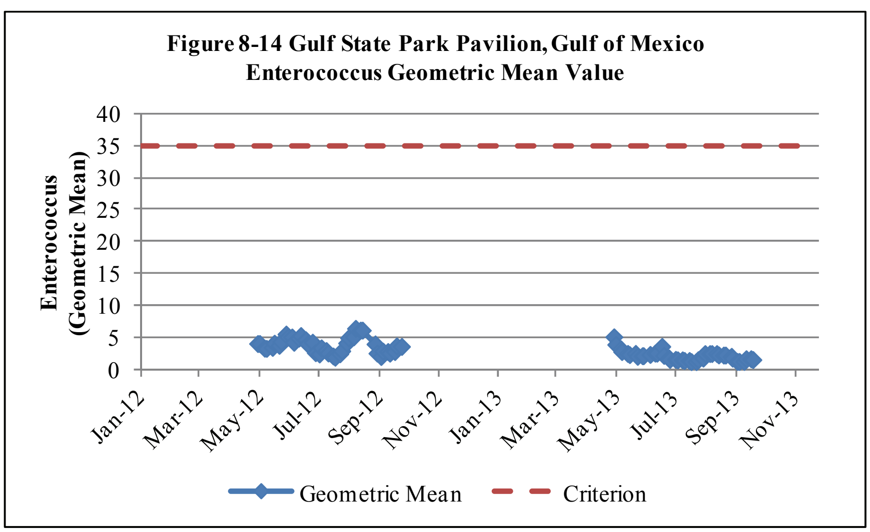


Figure 8-14 Gulf State Park Pavilion, Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus
(Geometric Mean)
40
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

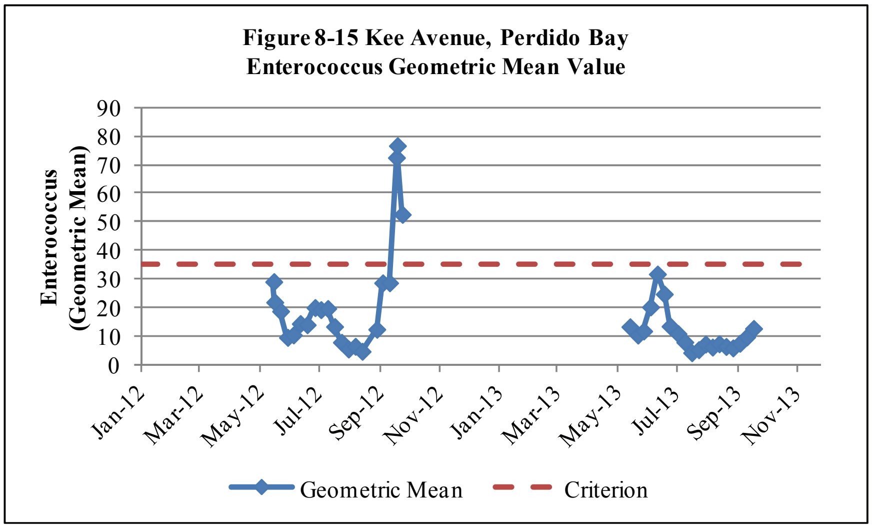


Figure 8-15 Kee Avenue, Perdido Bay
Enterococcus Geometric Mean Value
Enterococcus
(Geometric Mean)
90
80
70
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

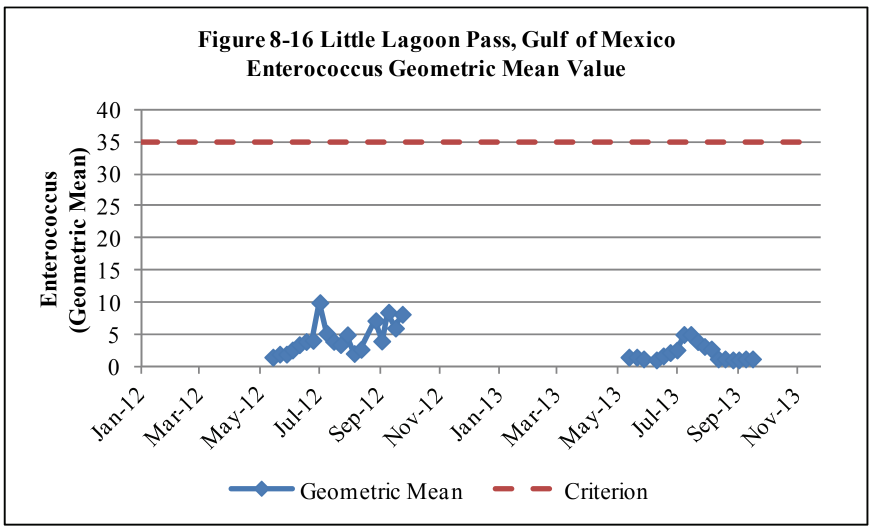


Figure 8-16 Little Lagoon Pass, Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus
(Geometric Mean)
40
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

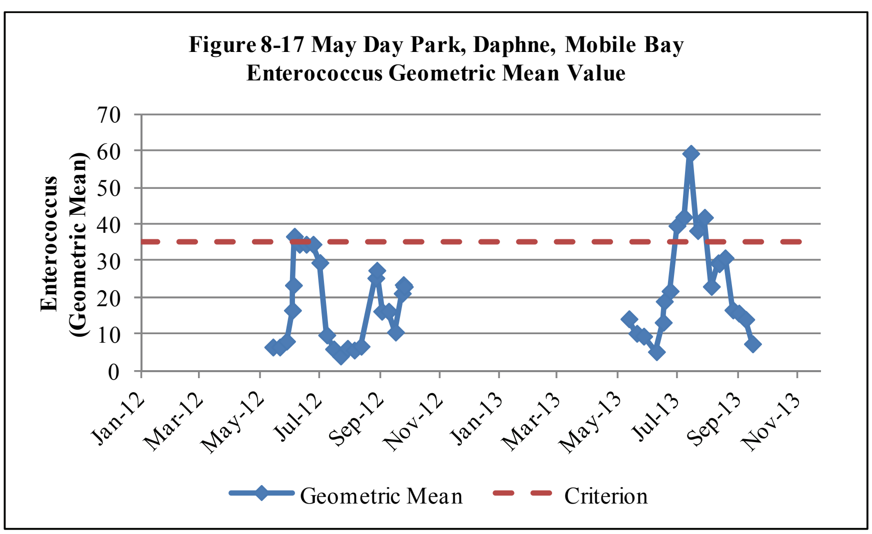


Figure 8-17 May Day Park, Daphne, Mobile Bay
Enterococcus Geometric Mean Value
Enterococcus
(Geometric Mean)
70
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

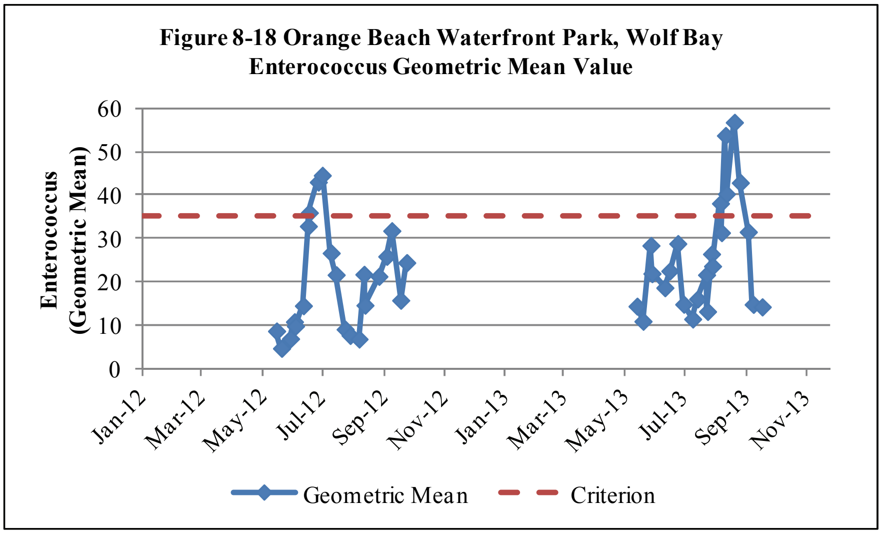


Figure 8-18 Orange Beach Waterfront Park, Wolf Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

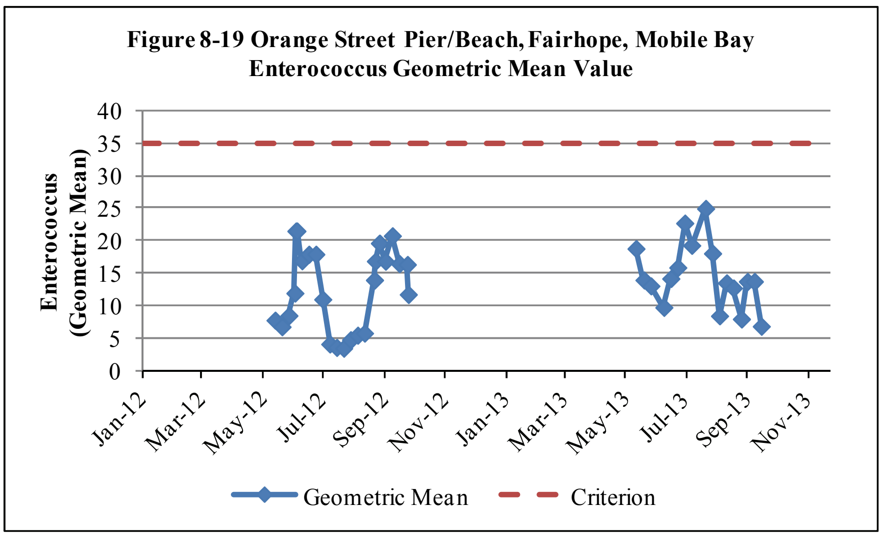


Figure 8-19 Orange Street Pier/Beach, Fairhope, Mobile Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

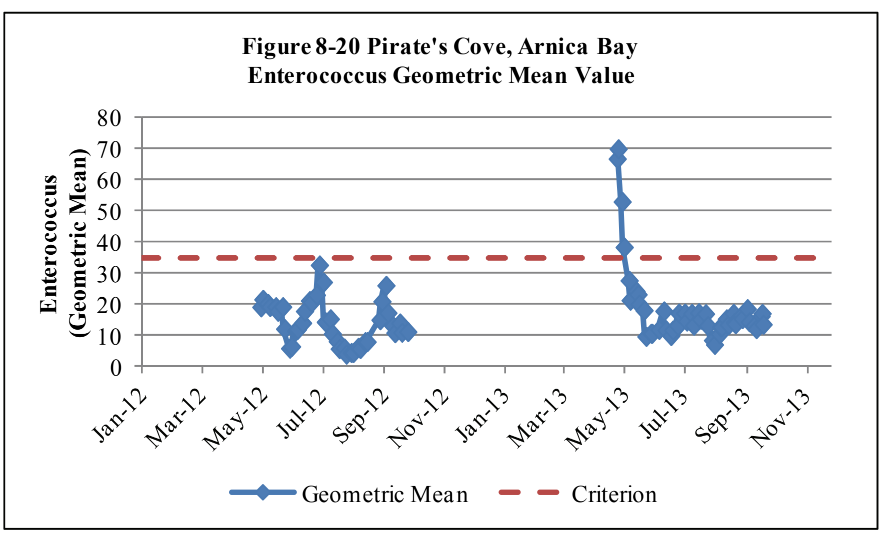


Figure 8-20 Pirate's Cove, Arnica Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
80
70
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

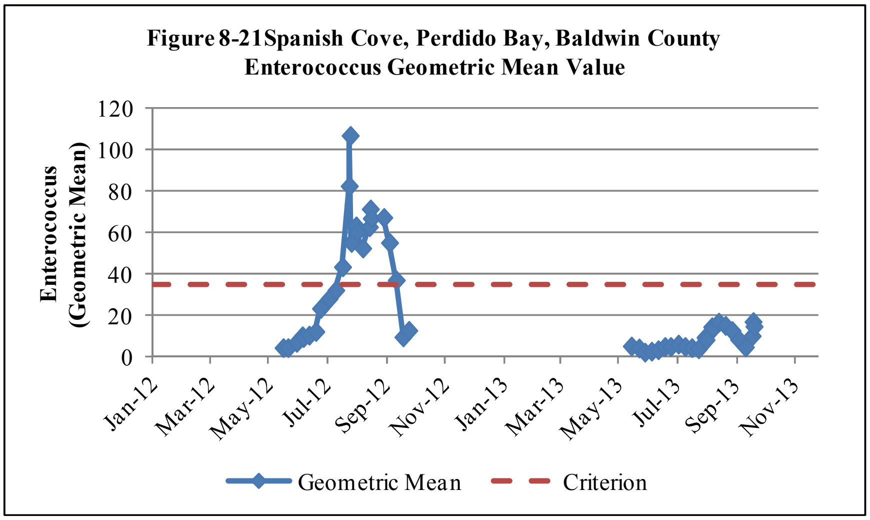


Figure 8-21Spanish Cove, Perdido Bay, Baldwin County
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
120
100
80
60
40
20
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
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Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

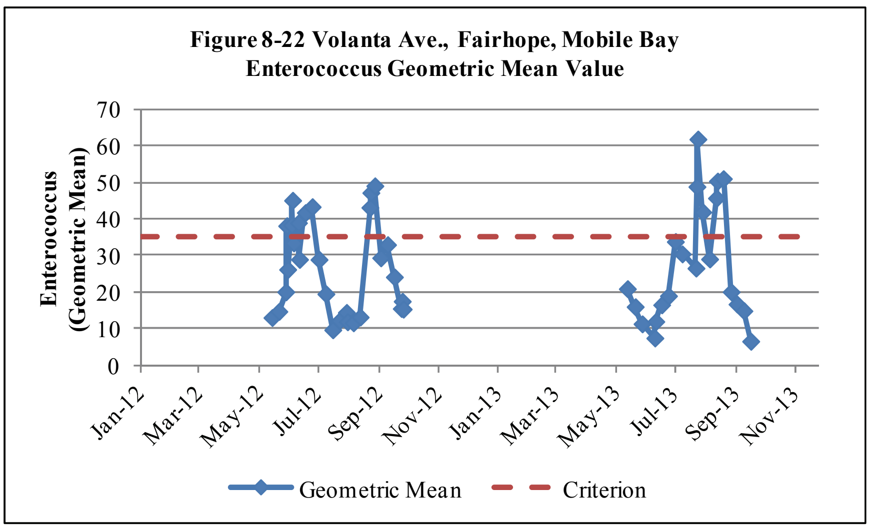


Figure 8-22 Volanta Ave., Fairhope, Mobile Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
70
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

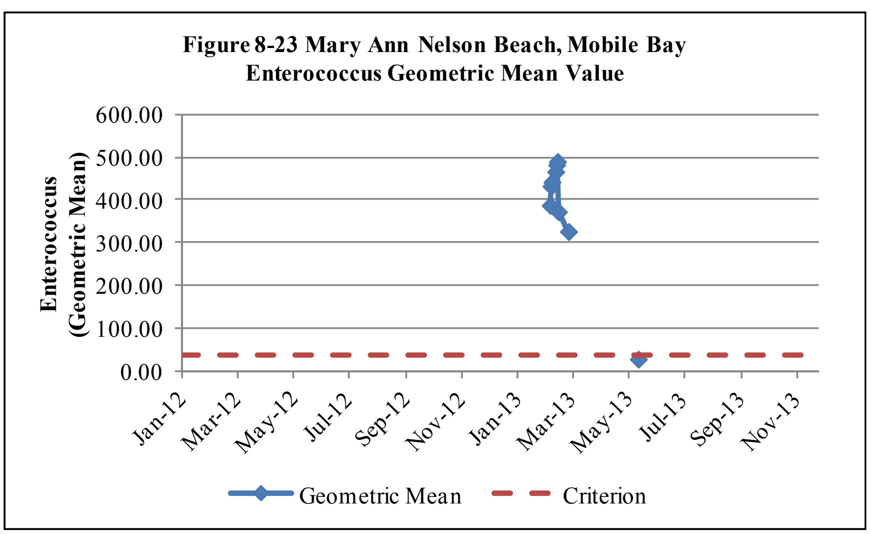


Figure 8-23 Mary Ann Nelson Beach, Mobile Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
600.00
500.00
400.00
300.00
200.00
100.00
0.00
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Geometric Mean
Criterion

Chapter 9 TMDL Program

9.1 TMDL Program

According to the code of federal regulations (CFR) §130.7(b) each state must determine the total maximum daily load (TMDL) for each pollutant causing impairment as identified on their 303(d) list of impaired waters. A total maximum daily load is defined in CFR §130.2 as the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.

Point sources include all sources subject to regulation under the National Pollutant Discharge Elimination System (NPDES) program. Nonpoint sources include all remaining sources of the pollutant as well as anthropogenic and national background sources. TMDLs must also account for seasonal variations in water quality, and include a margin of safety (MOS) to account for uncertainty in predicting how well pollutant reductions will result in meeting water quality standards. The TMDL calculates the maximum amount of a pollutant that a waterbody can receive and still meet applicable water quality standards.

The TMDL calculation is as follows:

$$\text{TMDL} = \sum \text{WLA} + \sum \text{LA} + \text{MOS}$$

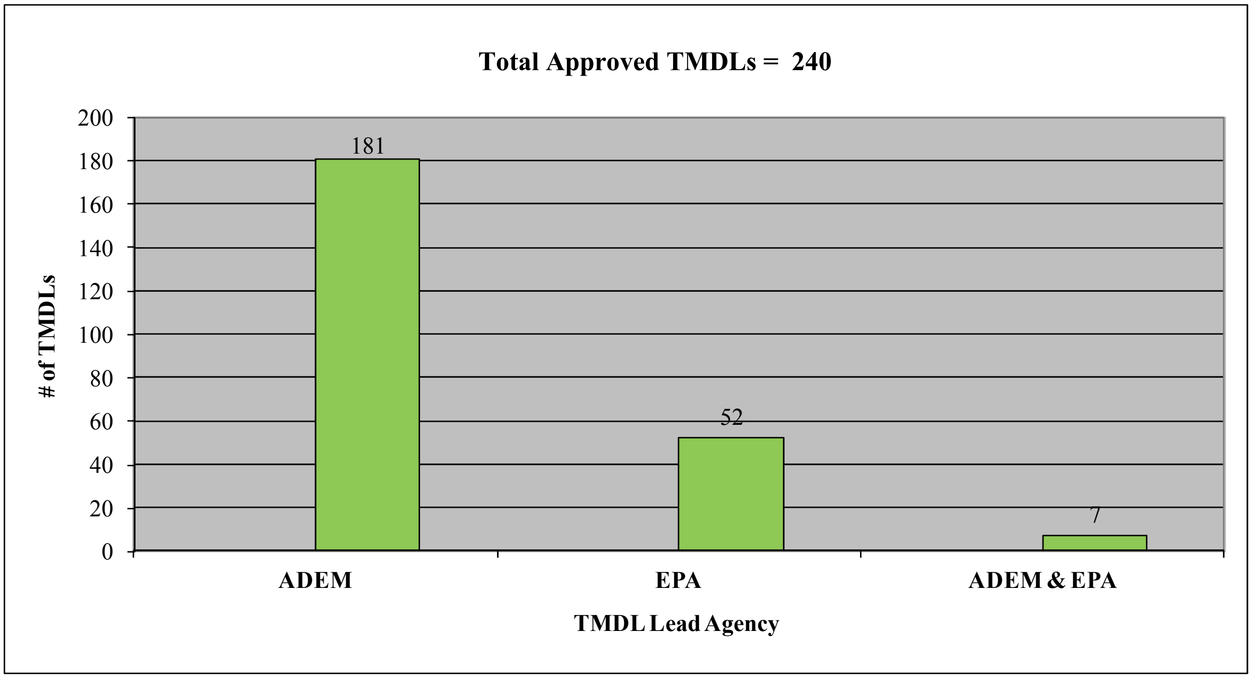
Where WLA = the sum of wasteload allocations (point sources)
LA = the sum of load allocations for nonpoint sources and background
MOS = the margin of safety

Typical modeling methods or approaches used by the Department to develop TMDLs are as follows:

Dynamic and steady-state models for organic enrichment (CBOD and NBOD).
Dynamic and steady-state water quality models for nutrients, siltation and pathogens.
Mass balance approach for toxic pollutants and pathogens.

Information used in development of the TMDL consists primarily of chemical, physical and biological data of the impaired waterbody to include its watershed characteristics such as land

Figure 9-1 Alabama's Appproved TMDLs in Alabama



use/cover, soil types, elevation data, point and nonpoint sources, census data, meteorological data, water withdrawals, flow data and various other types of information. Most data and information are stored in Departmental databases and can also be managed, analyzed and displayed using ArcView Geographic Information System (GIS), Microsoft Access, Microsoft Excel, Water Resources Database (WRDB) or other software. This information is collected and evaluated by the Water Quality Branch through planned water quality studies with ADEM's Field Operations Division (FOD) or is gathered from other sources (e.g. Federal Agencies, Universities, Other State Agencies, Volunteer Monitoring Groups) for evaluation by the Water Quality Branch.

Documentation of the TMDL is provided in the form of a written draft report. The draft TMDL report is provided to the EPA Regional Administrator and shall include, at minimum, the elements required under CFR §130.7. In conjunction with or following review by the Regional Administrator the draft TMDL is made available for public review and comment. The notice of availability of the draft TMDL report and request for comment is published on the Department's website, placed in the State's largest daily newspapers and distributed electronically to any person wishing to receive public notices from the Department.

Following public review and comment, TMDLs are finalized, incorporating any necessary changes as a result of information and comments received during the comment period. The final TMDLs are then submitted to EPA for formal review and approval. Implementation of the final TMDLs is accomplished through ADEM's National Pollutant Discharge Elimination System (NPDES) programs for regulated point sources which address waste load allocations (WLAs) and through ADEM's 319 nonpoint source program for nonpoint sources which address the load allocations (LAs). When the TMDL contains a WLA for point sources, any affected NPDES permits are modified to be consistent with the waste load allocation contained in the TMDL. The nonpoint source program uses a voluntary approach to address nonpoint source pollution. The program relies on best management practices, education and outreach, technology transfer, monitoring and assessments and resource assistance using a balanced statewide and watershed focused restoration approach. Local partnerships and citizen input are the primary implementation components. These partnerships are fostered through the Alabama Clean Water Partnership (ACWP). The ACWP plays a central role in implementation of TMDLs through the development of watershed restoration action strategies. These watershed restoration action strategies are the primary component of the watershed management plans being developed by each of the CWP basin groups to be incorporated into Alabama's Water Quality Management Plan (WQMP). In addition to the ACWP basin management plans, the WQMP consists of Alabama's Nonpoint Source Management Plan and the Coastal Zone Management Plan.

In FY2012 and FY2013 Alabama's TMDL Program had several accomplishments with respect to TMDL development, pollutant delistings, waterbody/watershed investigations and development of dynamic water quality models, all of which address impaired waters throughout Alabama. During the previous two fiscal years, the primary focus for TMDL development has been on addressing pathogen, nutrient and siltation impaired waters within the Black Warrior, Cahaba, Perdido-Escambia and Tennessee River Basins. A total of 13 TMDLs were developed by ADEM's Water Quality Branch and subsequently approved by EPA Region 4. Of the 13 TMDLs completed, 3 addressed pathogen impairments, 8 addressed siltation impairments and 2 addressed nutrient impairments. As of April 30, 2014 a total of 240 TMDLs have been developed for Alabama's waterbodies since the inception of the program which began in 1997. See Figure 9-1 for details. Figures 9-2 and 9-3 provide the number of TMDLs developed per major river basin and number of TMDLs developed per pollutant respectively. Table 9-1 provides a list of the approved TMDLs that were completed in FY12-13. Tables 9-2 and 9-3 provide the TMDL Development Schedule for FY2014 and FY2015 respectively. For the TMDL development schedule of all impaired waters (i.e. Category 5 waters) please refer to the 2014 303(d) List which is provided in the Appendix.

For more information about Alabama's TMDL Program, contact Mr. Chris Johnson in ADEM's Montgomery Office at (334) 271-7827 or cljohnson@adem.state.al.us

Figure 9-2 Alabama's Approved TMDLs by Major River Basin

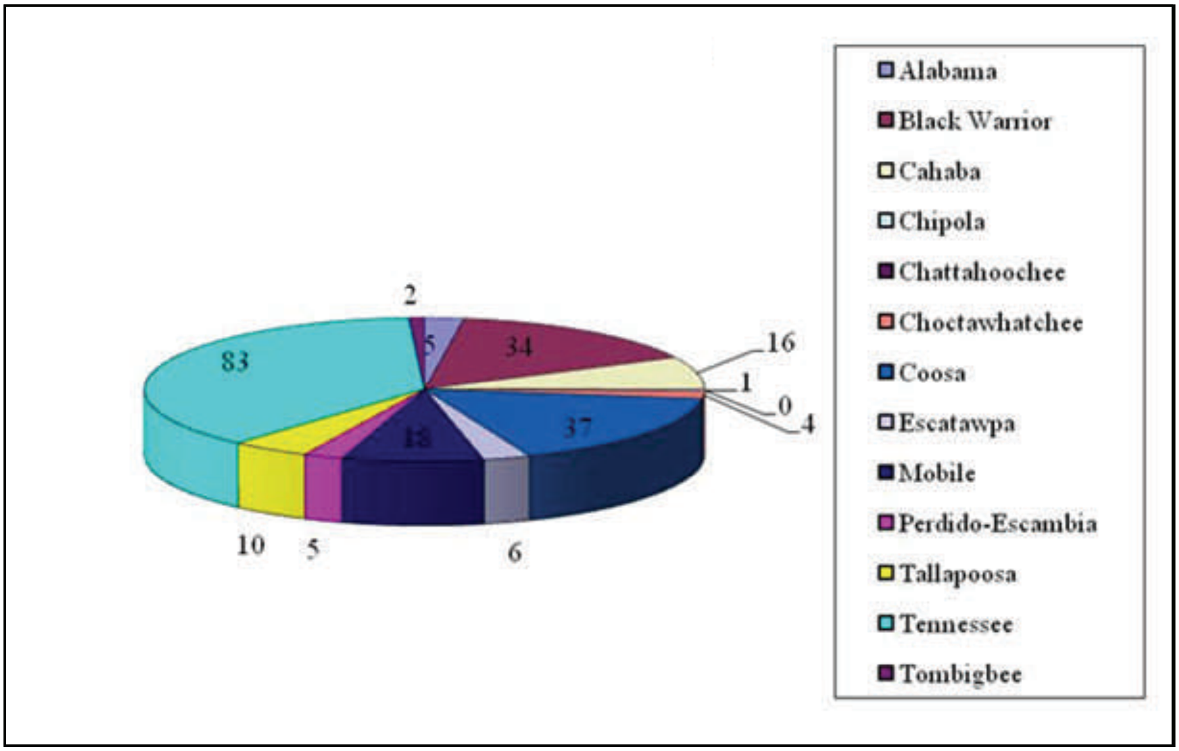


Figure 9-3 Alabama's Approved TMDLs by Pollutant

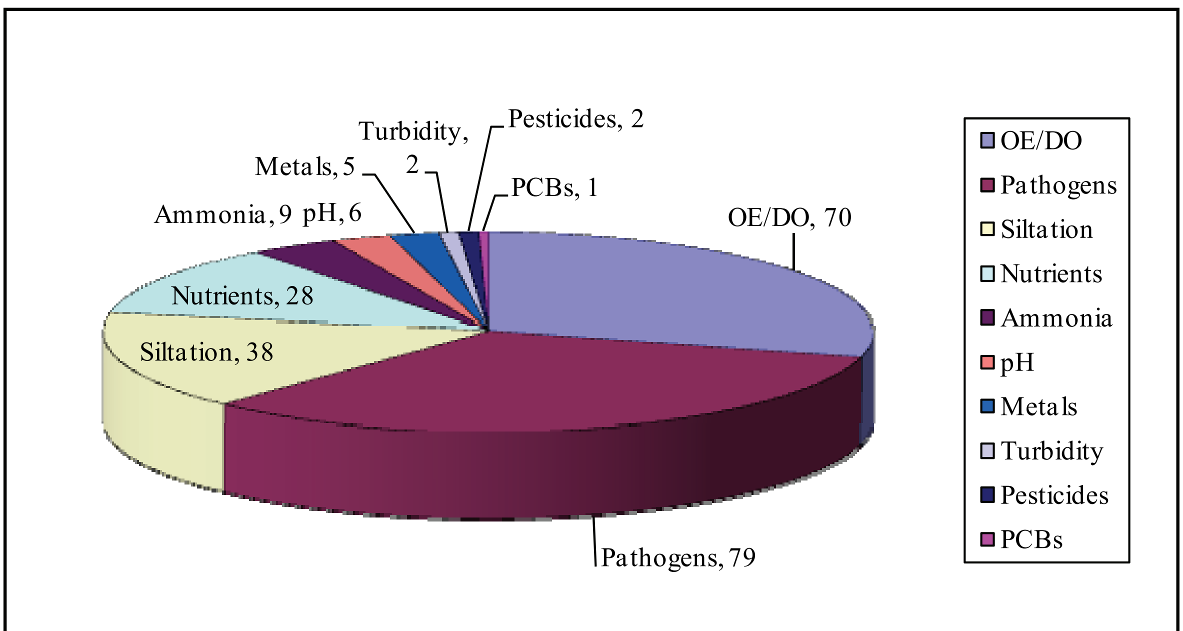


Table 9-1 TMDL Development for Fiscal Years 2012 & 2013

Waterbody Name	Waterbody ID	River Basin	County	Pollutant	Final TMDL Date (approval date)
Brindley Creek	AL03160109-0105-101	Black Warrior	Cullman	Nutrients	3/15/12
Brindley Creek	AL03160109-0105-102	Black Warrior	Cullman	Nutrients	3/15/12
UT to Jackson Lake	AL03140103-0102-700	Perdido-Escambia	Covington	Pathogens	9/27/2012
Guess Creek	AL06030002-0106-101	Tennessee	Jackson	Pathogens	9/27/2012
Goose Creek	AL06030002-0404-200	Tennessee	Madison	Pathogens	9/27/2012
Cahaba River	AL031550202-0503-102	Cahaba	Bibb	Siltation (Habitat	9/27/2013
Cahaba River	AL031550202-0407-100	Cahaba	Bibb	Siltation (Habitat	9/27/2013
Cahaba River	AL031550202-0206-101	Cahaba	Shelby	Siltation (Habitat	9/27/2013
Cahaba River	AL031550202-0206-102	Cahaba	Shelby	Siltation (Habitat	9/27/2013
Cahaba River	AL031550202-0204-101	Cahaba	Shelby	Siltation (Habitat	9/27/2013
Cahaba River	AL031550202-0204-102	Cahaba	Jefferson	Siltation (Habitat	9/27/2013
Cahaba River	AL031550202-0104-102	Cahaba	Jefferson St. Clair	Siltation (Habitat	9/27/2013
Cahaba River	AL031550202-0101-102	Cahaba	Jefferson	Siltation (Habitat	9/27/2013

Table 9-2 Final TMDL Development Schedule for FY 2013

FISCAL YEAR 2013				
Waterbody Name	**Waterbody ID (12-Digit HUC)**	**River Basin**	**County**	**Pollutant**
Factory Creek	AL03160106-0702-101	Upper Tombigbee	Sumter	Organic Enrichment (CBOD, NBOD)
Factory Creek	AL03160106-0702-101	Upper Tombigbee	Sumter	Nutrients
Mulberry Fork	AL03160109-0203-101	Black Warrior	Blount Cullman	Nutrients
Mulberry Fork	AL03160109-0203-102	Black Warrior	Blount Cullman	Nutrients
Locust Fork	AL03160111-0404-102	Black Warrior	Blount Jefferson	Nutrients
Locust Fork	AL03160111-0308-102	Black Warrior	Blount Jefferson	Nutrients
Locust Fork	AL03160111-0305-102	Black Warrior	Blount Jefferson	Nutrients
Cottonwood Creek	AL03160113-0704-100	Black Warrior	Hale Marengo Perry	Organic Enrichment (CBOD, NBOD) Nutrients
Bilbo Creek	AL03160203-1103-700	Lower Tombigbee	Washington	Organic enrichment (CBOD, NBOD)
Village Creek	AL03160111-0408-102	Black Warrior	Jefferson	Pathogens
Village Creek	AL03160111-0408-103	Black Warrior	Jefferson	Pathogens
Baker Branch	AL03160205-0202-500	Mobile	Baldwin	Organic enrichment (CBOD, NBOD)
Threemile Creek	AL03160204-0504-101	Mobile	Mobile	Pathogens
Threemile Creek	AL03160204-0504-102	Mobile	Mobile	Pathogens
Cahaba River	AL03150202-0206-101	Cahaba	Shelby	Pathogens
Cahaba River	AL03150202-0206-102	Cahaba	Shelby	Pathogens
Cahaba River	AL03150202-0204-101	Cahaba	Jefferson/Shelby	Pathogens
Fish River	AL03160205-0204-102	Mobile	Baldwin	Pathogens
Wahalak Creek	AL03160201-0904-101	Lower Tombigbee	Choctaw	Pathogens
Bilbo Creek	AL03160203-1103-700	Lower Tombigbee	Washington	Organic enrichment (CBOD, NBOD)
East Branch Luxapallila Creek	AL03160105-0101-200	Upper Tombigbee	Fayette Marion	Pathogens
Total Segments = 20 **Total Pollutants = 27**				

***NOTE: ADEM TMDL commitment to EPA for FY14 is 10 TMDLs. The 10 TMDLs that are planned will come from the above list.**

Table 9-3 Final TMDL Development Schedule for FY 2015

FISCAL YEAR 2015				
Waterbody Name	**Waterbody ID (12-Digit HUC)**	**River Basin**	**County**	**Pollutant**
AL06030002-0305-100	Beaverdam Creek	Tennessee	Madison	Siltation (habitat alteration)
AL06030002-0306-110	Brier Fork	Tennessee	Madison	Siltation (habitat alteration)
AL06030002-0403-112	Flint River	Tennessee	Madison	Turbidity
AL06030002-0503-102	Huntsville Spring Branch	Tennessee	Madison	Metals (Arsenic, Mercury)
AL06030001-0306-100	Little Coon Creek	Tennessee	Jackson	Siltation (habitat alteration)
AL06030001-0403-801	Warren Smith Creek	Tennessee	Jackson	Siltation (habitat alteration)
AL06030001-0202-500	Higdon Creek	Tennessee	DeKalb Jackson	Siltation (habitat alteration)
AL06030001-0904-101	Browns Creek (Lake Guntersville)	Tennessee	Marshall	Nutrients
AL06030001-0904-102	Browns Creek	Tennessee	Marshall	Nutrients Total dissolved solids
AL06030002-0603-600	Mill Pond Creek	Tennessee	Marshall	Siltation (habitat alteration)
AL06030006-0102-700	Little Dice Branch	Tennessee	Franklin	Siltation (habitat alteration)
AL06030006-0103-104	Bear Creek (Upper Bear Creek Reservoir)	Tennessee	Franklin Marion Winston	Organic enrichment (CBOD, NBOD)
AL06030006-0205-111	Little Bear Creek (Little Bear Creek Reservoir)	Tennessee	Franklin	Nutrients
AL06030005-0801-201	McKiernan Creek	Tennessee	Colbert	Nutrients Organic enrichment (CBOD, NBOD) Siltation (habitat alteration)
AL03170008-0502-800	Collins Creek	Escatawpa	Mobile	Metals (Arsenic)
AL06030002-0602-800	Widner Creek	Tennessee	Cullman Morgan	Organic enrichment (CBOD, NBOD)
AL06030002-0602-900	Fall Creek	Tennessee	Cullman Morgan	Organic enrichment (CBOD, NBOD)
AL06030002-1101-101	Swan Creek	Tennessee	Limestone	Nutrients
AL06030005-0802-100	Pond Creek	Tennessee	Colbert	Organic enrichment (CBOD, NBOD)
AL06030005-0802-100	Pond Creek	Tennessee	Colbert	Metals (Arsenic, Cyanide, Mer-cury)
AL06030004-0404-102	Anderson Creek	Tennessee	Lauderdale	Siltation (habitat alteration)
AL06030002-0601-300	Hughes Creek	Tennessee	Marshall Morgan	Siltation (habitat alteration)
AL06030005-0803-400	Sweetwater Creek	Tennessee	Lauderdale	Nutrients
AL06030002-0602-102	West Fork Cotaco Creek	Tennessee	Morgan	Siltation (habitat alteration)
Total Segments = 23 **Total Pollutants = 35**				

***NOTE: ADEM TMDL commitment to EPA for FY15 is to be determined. The TMDLs that will be planned will most likely come from the above list.**

Chapter 10 Concerns and Recommendations

In recognition of limited resources, efforts to protect water resources must be based on credible science and coordinated management of available resources. Continued cooperation and collaboration of all partners, education, and promotion and implementation of voluntary and mandatory compliance with best management practices (BMPs) remains a priority.

A declining trend in national and state funding of water quality programs, including funding of water quality monitoring activities, and ever increasing federal mandates will continue to provide challenges. EPA and Congress recognized the importance of water quality monitoring to track and document the effectiveness of management actions and included additional funding in the FY 2012 and FY 2013 federal budgets. However, given the considerable task of adequately monitoring the State's surface waters and the fact that EPA's budget continues to decline overall, especially in funding for the Section 319 program, efficiencies must be found to make the most of available resources. The Department is initiating several efforts to increase program efficiency through the effective use of technology to gather, store, and report data and information. In addition, EPA has placed a greater emphasis on measuring and reporting water quality changes resulting from implementation of management practices.

Implementation of management measures must be based on sufficiently detailed watershed protection plans with measurable goals. In Alabama, the Clean Water Partnership program promotes efficient and effective implementation of technically sound, environmentally protective, and economically achievable management measures using a grass-roots approach. The partnership is composed of a diverse and inclusive coalition of public and private interest groups and individuals who are working in collaboration to improve, protect, and preserve water resources and aquatic ecosystems in Alabama. Public and private funding is needed to institutionalize this successful endeavor and to ensure permanent facilitators in each basin or sub-basin to coordinate projects and programs and to enhance citizen interest and input into decision-making processes. Federal funding reductions for the Section 319 Nonpoint Source Program may jeopardize this very successful effort.

Watersheds provide logical geophysical boundaries for identifying and mitigating sources and causes of pollution. Watershed management is a better way to coordinate people, resources, programs, and information more efficiently. The state has instituted rotational river basin/watershed water quality monitoring approaches to identify nonpoint source impaired, threatened, and unimpaired waters. These approaches provide data and information that is essential to the development of holistic watershed protection plans. However, in order to better plan, develop and coordinate actual implementation of these plans, additional staff, time, expertise, and other resources are needed statewide.

Water quality assessment and resource protection efforts should emphasize shared decision-making processes, integrate diverse and inclusive partnerships, and provide a clear understanding of the many and varied problems impacting a waterbody. In Alabama, voluntary and enforceable mechanisms are in-place, are complementary, and are effective in assuring long-term protection of water quality. However, as competing demands for limited resources endure, additional information becomes available, priorities change, or complex issues emerge, watershed protection plans must be designed to be iterative, particularly as related to TMDL plan implementation. Stakeholders must be involved in the early stages of plan development, encouraged to assume ownership, and voluntarily accept responsibility for providing solutions. Certain elements and structure of the plans can be adapted to the entire watershed, or to specific sources or causes of impairment. However, it is recommended that all plans in Alabama be based on a similar format, especially if the impairments to be addressed are both point and nonpoint source related and/or the plan will serve as a TMDL implementation plan.

The Department's ability to efficiently gather, store, analyze, and report on water quality data and information is critical to making sound management decisions. While the Department has initiated several projects to address this issue, such as electronic reporting of Discharge Monitoring Reports by industrial and municipal wastewater treatment facilities, the NPDES Management System (NMS), the Alabama Water Quality Assessment & Monitoring Data Repository (ALAWADR), and the Assessment Database (ADB), data management remains a concern. The Department is dependent upon continued EPA assistance to complete the development and implementation of it water quality data management systems.

Alabama needs additional resources to enable its monitoring program to meet a growing list of the programmatic commitments. Development of EPA-mandated nutrient criteria for State waters and evaluation of TMDL implementation activities will require significant additional monitoring resources, including both personnel and laboratory facilities. Adequate data and information are required to make sound, scientifically based decisions related to development of new water quality criteria, designated uses, and use support status for Alabama's water resources. Additional funding for State monitoring programs is being proposed at the federal level. However, the additional funds may require additional State matching funds. Careful and thorough planning is needed to insure that any additional resources for monitoring State waters are used efficiently and as effectively as possible. To accomplish this goal, Alabama should establish a Water Quality Monitoring Council (AWQMC) made up of agencies and organizations involved in water quality monitoring activities. The AWQMC would facilitate a long-term, coordinated monitoring strategy for the state's waters and leverage resources to better assess both the quality and quantity of Alabama's water.

Appendix A

Alabama's Water Quality Assessment and Listing Methodology

Alabama Department of Environmental Management

Alabama's Water Quality Assessment and Listing Methodology

January 2014

Appendix A

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List of Acronyms

A&I	Agriculture and Industry water supply use classification
ADB	Assessment Database
ADEM	Alabama Department of Environmental Management
ADPH	Alabama Department of Public Health
AEMC	Alabama Environmental Management Commission
AWIC	Alabama Water Improvement Commission
$CaCO_3$	Calcium Carbonate
$CBOD_5$	Five-Day Carbonaceous Biochemical Oxygen Demand
Cl^{-1}	Chlorides
CWA	Clean Water Act
DO	Dissolved Oxygen
DBP	Disinfection By Products
DRP	Dissolved Reactive Phosphorus
EPA	Environmental Protection Agency
EPT	Ephemeroptera/Plecoptera/Trichoptera
F&W	Fish and Wildlife
GIS	Geographical Information System
GPS	Global Positioning System
IBI	Index of Biotic Integrity
IWQMAR	Integrated Water Quality & Monitoring
LWF	Limited Warmwater Fishery
MPL	Most Probable Number
MDL	Method Detection Limit
NH3-N	Ammonia Nitrogen
NHD	National Hydrography Dataset
NO3+ NO2-N	Nitrate + Nitrite Nitrogen
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
OAW	Outstanding Alabama Waters
ONRW	Outstanding National Resource Water
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
S	Swimming and Other Whole Body Water-Contact Sports
SH	Shellfish Harvesting
SOP/QCA	Standard Operating Procedures/Quality Control Assurance
SW	Surface Water
TAL	Treasured Alabama Lake
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
Total-P	Total Phosphorus
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WMB-EPT	Wadeable Multi-habitat Bioassessment - EPT Families
WMB-I	Intensive Wadeable Multi-habitat Bioassessment

Appendix A

1.0 Introduction

Alabama has long been recognized for its abundant water resources. With over 77,000 miles of perennial and intermittent streams and rivers, 481,757 acres of publicly-owned lakes and reservoirs, 610 square miles of estuaries, and 50 miles of coastal shoreline, the state is faced with a tremendous challenge to monitor and accurately report on the condition of its surface waters (ADEM, 2004).

Sections 305(b) and 303(d) of the federal Clean Water Act direct states to monitor and report the condition of their water resources. Guidance published by the Environmental Protection Agency (EPA) provides a basic framework that states may use to fulfill this reporting requirement. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* provide recommendations on the delineation of assessment units, reporting the status and progress towards comprehensive assessment of state waters, attainment of state water quality standards and the basis for making attainment decisions, schedules for additional monitoring, listing waters which do not fully support their designated uses (i.e. impaired waters), and schedules to address impaired waters (EPA, 2005).

Alabama's assessment and listing methodology establishes a process, consistent with EPA's guidance, to assess the status of surface waters in Alabama relative to the designated uses assigned to each waterbody. The methodology will also describe the procedure to assign the size or extent of assessed waterbodies. This methodology is not intended to limit the data or information that the State considers as it prepares an Alabama's Integrated Water Monitoring Report (IWQMAR). Rather, it is intended to establish a rational and consistent process for reporting the status of Alabama's surface waters relative to their designated uses.

2.0 Alabama's Water Quality Standards

State water quality standards are the yardstick by which the condition of the nation's waters is measured. They are intended to protect, restore and maintain the condition of the nation's waters. In Alabama, the Alabama Water Improvement Commission (AWIC) first adopted water quality standards in 1967. In 1982, the Alabama Department of Environmental Management (ADEM) was formed by merging AWIC with elements of the Alabama Department of Public Health (ADPH). Since first being adopted in 1967, Alabama's water quality standards have been amended on numerous occasions (ADEM, 2010). The Alabama Environmental Management Commission (AEMC), which is the board that oversees ADEM, has the authority to adopt revisions to the ADEM Administrative Code. The Designated Uses (ADEM Administrative Code r. 335-6-11) and the Water Quality Criteria (ADEM Administrative Code r. 335-6-10) are reviewed once every three years pursuant to EPA regulations at 40 CFR Part 131.20. Known as the triennial review, this process affords the public the opportunity to make comments and suggestions regarding Alabama's water quality standards. Any changes that ADEM may propose as a result of the review process are subject to further public comment before consideration by the AEMC.

Water quality standards consist of three components: designated uses, numeric and narrative criteria, and an antidegradation policy. These three components have been compared to the three legs of a stool which work together to provide water quality protection for the nation's surface waters.

Designated uses describe the best uses reasonably expected of waters. These uses should include such activities as recreation in and on the water, public water supply, agricultural and industrial water supply, and habitat for fish and wildlife. While not all waters may support all of these uses, the goal of the Clean Water Act is to provide protection of water quality consistent with "fishable/swimmable" uses, where attainable. In Alabama, waters can be assigned one or more of seven designated uses pursuant to ADEM Administrative Code r. 335-6-11. These uses include:

1. Outstanding Alabama Water (OAW)
2. Public Water Supply (PWS)
3. Shellfish Harvesting (SH)
4. Swimming and Other Whole Body Water-Contact Sports (S)
5. Fish and Wildlife (F&W)
6. Limited Warmwater Fishery (LWF)
7. Agricultural and Industrial Water Supply (A&I)

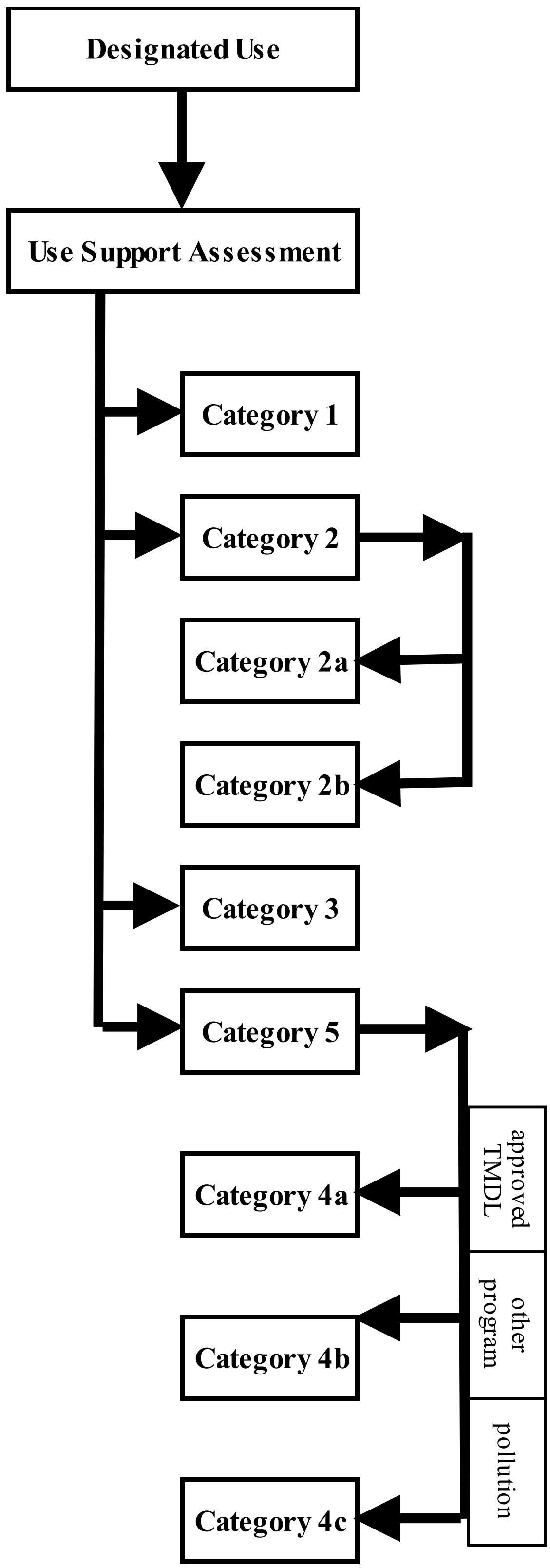
Designated uses 1 through 5 in the list above are considered by EPA to be consistent with the "fishable/swimmable" goal and, therefore, provide for protection of aquatic life and human health.

The State also has two special designations – Outstanding National Resource Water (ONRW) and Treasured Alabama Lake (TAL). These high quality waters are protected or require a thorough evaluation of discharges from new or expanded point sources of pollutants and may be assigned to any one of the first five designated uses in the list above.

Numeric and narrative criteria provide the means to measure the degree to which the quality of waters is consistent with their designated use or uses. The criteria are intended to provide protection of the water quality commensurate with the water's use, to include protection of human health. Narrative criteria generally describe minimum conditions necessary for all uses and may include certain restrictions for specific uses. Numeric criteria include pollutant concentrations or physical characteristics necessary to protect a specific designated use. Alabama's narrative and numeric criteria are defined in ADEM Administrative Code r. 335-6-10.

The state's antidegradation policy provides for the protection of high quality waters that constitute an outstanding national resource (Tier 3), waters whose quality exceeds the levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water (Tier 2), and existing instream water uses and the level of water quality necessary to protect the existing uses (Tier 1). In Tier 3 waters, ADEM Administrative Code r. 335-6-10-.10 prohibits new or expanded point source discharges. In Tier 2 waters, ADEM Administrative Code r. 335-6-10-.04 provides for new or expanded discharge of pollutants only after intergovernmental coordination, public participation, and a demonstration that the new or expanded discharge is necessary for important economic or social development. Alabama's water quality standards regulations (ADEM Administrative Code r. 335-6-10 and 335-6-11) may be found at the Departments web page at:
http://www.adem.state.al.us/alEnviroRegLaws/files/Division6Vol1.pdf

Figure 1: Alabama's Waterbody Assessment Process



3.0 Waterbody Categorization

The water quality assessment process begins with the collection, compilation, and evaluation of water quality data and information for the purpose of determining if a waterbody is supporting all of its designated uses. It is imperative that the data and information used in the process be of adequate quality and provide an accurate indication of the water quality conditions in the waterbody since decisions arising from the assessment process may have long-term consequences. Issues of data sufficiency and data quality must be addressed to ensure that use support decisions are based on accurate data and information. However, the minimum data requirements discussed in this methodology are not intended to exclude data and information from the assessment process, but are a guide for use in designing monitoring activities to assess the State's surface waters and to ensure that decisions are made using the best available data. The goal is to accurately describe the status of surface waters where possible and to identify waters where more information is needed to make use support decisions.

The use support assessment process considers all existing and readily available data and information with a goal of placing waterbodies in one of five separate categories. This process is specific to the highest designated use assigned to the waterbody and is described by the flow chart depicted in **Figure 1**.

3.1 Waterbody Categories

Waterbody data and information are evaluated using the use support assessment methodology and the waterbody is assigned to one of the following categories.

Category 1

Waters that are attaining all applicable water quality standards. This category also includes waterbodies with exceedances of water quality criteria determined to be the result of Non-anthropogenic Impacts (Natural Conditions). For a description of Non-anthropogenic Impacts (Natural Conditions) see Section 4.8.10.

Category 2

Waters for which existing and readily available data, which meets the State's requirements as described in Section 4.9, supports a determination that some water quality standards are met and there is insufficient data to determine if remaining water quality standards are met. Attainment status of the remaining standards is unknown because data is insufficient. Waters for which the minimum data requirements (as described later) have not been met will be placed in Category 2.

1. Category 2a
   For these waters, available data does not satisfy minimum data requirements but there is a high potential for use impairment based on the limited data. These waters will be given a higher priority for additional data collection.

2. Category 2b
   For these waters available data does not satisfy minimum data requirements but there is a low potential for use impairment based on the limited data. These waters will be included in future basin monitoring rotations as resources allow.

Category 3

Waters for which there is no data or information to determine if any applicable water quality standard is attained or impaired.   These waters will be considered unassessed.

Category 4

Waters in which one or more applicable water quality standards are not met but establishment of a TMDL is not required.

1. Category 4a

   Waters for which all TMDLs needed to result in attainment of all applicable WQSs have been approved or established by EPA.
2. Category 4b

   Waters for which other required control measures are expected to attain applicable water quality standards in a reasonable time. Adequate documentation is required to indicate that the proposed control mechanisms will address all major pollutant sources and should result in the issuance of more stringent effluent limitations required by either Federal, State, or local authority or the implementation of "other pollution control requirements (e.g., best management practices) required by local, state, or federal authority" that are stringent enough to implement applicable water quality standards. Waters will be evaluated on a -case-by-case basis to determine if the proposed control measures or activities under another program can be expected to address the cause of use impairment within a reasonable time. A reasonable time may vary depending on the degree of technical difficulty or extent of the modifications to existing measures needed to achieve water quality standards. EPA's 2006 assessment and listing guidance offers additional clarification of what might be expected of waters placed in Category 4b.
3. Category 4c

   Waters in which the impairment is not caused by a pollutant. This would include waters which are impaired due to specific pollution. A pollutant is defined in Section 502(6) of the Clean Water Act (CWA) as "spoil, solid waste, incinerator residue, sewerage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water." Pollution is defined as "the man-made or man-induced alteration of the chemical, physical, or radiological integrity of a waterbody." Invasive plants and animal species are considered pollution.

Category 5

Waters in which a pollutant has caused or is suspected of causing impairment. If an identified pollutant causes the impairment, the water should be placed in Category 5. All "existing and readily available data and information" will be used to determine when a water should be placed in Category 5. Waters in this category comprise the State's list of impaired waters or §303(d) list.

3.2 Evaluated or Monitored Assessments
When the information used to assess the waterbody consist primarily of observed conditions, (limited water quality data, water quality data older than six years, or estimated impacts from observed or suspected activities), the assessment is generally referred to as an evaluated assessment (Category 2). Evaluated assessments usually require the use of some degree of professional judgment by the person making the assessment and these assessments are not considered sufficient to place waters in or to remove waters from the impaired category (Category 5) or the fully supporting category (Category 1).

Monitored assessments (Categories 1 and 5) are based on existing and readily available chemical, physical, and/or biological data collected during the previous six years, using commonly accepted and well-documented methods. Existing and readily available data are data that have been collected or assembled by the Department or other groups or agencies and are available to the public. Data older than six years old may be used on a case-by-case basis when assessing waters that are not currently included in Category 1 or Category 5. (For example, older data could be used if conditions, such as land use, have not changed.) Much of the remainder of this document will pertain to the use of monitoring data to make use support determinations.

4.0 The Water Quality Assessment Process

The water quality assessment process is different for each of Alabama's seven designated uses, because each use is protected by specific numeric and narrative water quality criteria. As such, the methodology for assigning a given waterbody to one of the five categories may have different data requirements and thresholds for determining the waterbody's use support status. In addition, interpretation of narrative criteria may differ by classified use and waterbody type. Data and information that may be considered when assessing state waters could include water chemistry data such as chemical specific concentration data, land use or land cover data, physical data such as water temperature, and conductivity, and habitat evaluations; biological data such as macroinvertebrate and fish community assessments, and bacteriological data such as E. coli or enterococci counts. Waters classified as "Fish and Wildlife" or higher must provide protection of the aquatic life use. All classifications must provide protection of the human health use.

Alabama's designated uses embody a tiered approach to aquatic life protection. The assessment process recognizes this by allowing for different minimum data requirements and varying criteria exceedance thresholds. For example, in waters classified as OAW, Alabama's highest designated use, the assessment methodology requires less data and allows for fewer exceedances of a toxic criterion to be considered for inclusion in Category 5. The assessment process for waters classified as A&I, Alabama's lowest designated use, require more data and allows for slightly more exceedances of toxic criteria. This sliding scale assessment approach provides for existing differences in the aquatic communities and habitat conditions represented by streams with Alabama's various designated uses.

In order to ensure consistent and accurate assessment of a waterbody's support status and proper categorization of the waterbody, minimum data requirements must be defined that address data quality and data quantity. Data requirements will not only be dictated by the classified use of the waterbody, but also by the waterbody type to account for the different monitoring strategies that may be used for different waterbody types. The minimum data requirements are expected to guide future water quality monitoring activities and provide the basis for making use support decisions. However, in those cases where a data set may not include all of the elements specified by the minimum data requirements, a decision to include the water in Category 5 can still be made, provided the available data indicates a clear impairment and the cause of the impairment is evident. These decisions will be made on a case-by-case basis and the decision will be documented in the ADB.

In the assessment methodology, the terms "Level IV WMB-I", "Fish IBI", "habitat assessment", "conventional parameter samples", "pesticide/herbicide samples", "inorganic samples", "chlorophyll *a* samples", and "fish tissue analysis" are used. For the purposes of this assessment methodology, these terms will have the following meanings.

Level IV WMB-I:
- An intensive multi-habitat assessment of the macroinvertebrate community in a wadeable stream involving the collection of macroinvertebrates for identification and enumeration in a laboratory

Fish IBI:
- A multihabitat fish community assessment method developed by the Geological Survey of Alabama (O'Neil et al. 2006) and described in ADEM SOP # 6100 for streams in the southern plains (O'Neil and Shepard 2012), Tennessee Valley (O'Neil and Shepard 2010), Ridge and Valley/Piedmont (O'Neil and Shepard 2011a), Hills and Coastal Terraces (O'Neil and Shepard 2011b), and Plateau (O'Neil and Shepard 2011c) ichthyoregions (O'Neil and Shepard 2007).

Habitat assessment:
- An assessment of available aquatic habitat in a stream which evaluates habitat characteristics important to supporting a diverse and healthy aquatic community

Conventional parameter samples will include analyses for the following constituents:
- Air Temperature, °C
- Alkalinity, mg/l
- Ammonia Nitrogen (NH3-N), mg/l
- Collector Name
- Conductivity, µmhos/cm @ 25C
- Date (Month, Day, Year)
- Dissolved Oxygen (DO), mg/l
- Dissolved Reactive Phosphorus (DRP), mg/l (field filtered, separate bottle)
- Five-day Carbonaceous Biochemical Oxygen Demand (CBOD5), mg/l
- Hardness, mg/l
- Nitrate + Nitrite Nitrogen (NO3+ NO2-N), mg/l
- pH, s.u.
- Salinity, ppt (coastal waters only)

- Sample Collection Depth, ft. or m
- Stream Flow (where appropriate)
- Time (24 hr)
- Total Dissolved Solids (TDS), mg/l
- Total Kjeldahl Nitrogen (TKN), mg/l
- Total Phosphorus (Total-P), mg/l
- Total Stream Depth at Sampling Point, ft. or m
- Total Suspended Solids (TSS), mg/l
- Turbidity, NTU
- Water Temperature, °C
- Weather Conditions

Pesticide/Herbicide samples will include analyses for the following constituents:
- Atrazine by Immunoassay
- Chlorinated Herbicides by method SW8151
- Organochlorine Pesticides by method SW8081A
- Organophosphorus Pesticides by method SW8141

Inorganic (metals) samples will include analyses for the following constituents:
"Total" Aluminum (Al), ug/l
"Dissolved" Aluminum (Al), ug/l
"Dissolved" Antimony (Sb), ug/l
"Dissolved" Arsenic^{+3} (As^{+3}), ug/l
"Dissolved" Cadmium (Cd), ug/l
"Dissolved" Chromium^{+3} (Cr^{+3}), ug/l
"Dissolved" Copper (Cu), ug/l
"Total" Iron (Fe), ug/l
"Dissolved" Iron (Fe), ug/l
"Dissolved" Lead (Pb), ug/l
"Total" Manganese (Mn), ug/l
"Dissolved" Manganese (Mn), ug/l
"Total" Mercury (Hg), ug/l
"Dissolved" Nickel (Ni), ug/l
"Total" Selenium (Se), ug/l
"Dissolved" Selenium (Se), ug/l
"Dissolved" Silver (Ag), ug/l
"Dissolved" Thallium (Tl), ug/l
"Dissolved" Zinc (Zn), ug/l

Bacteriological Samples
- E. coli, colonies/100 ml in non-coastal waters
- Fecal coliform, colonies/100 ml in Shellfish Harvesting waters
- Enterococci, colonies/100 ml in coastal waters

Chlorophyll *a* samples will include the collection of photic zone composite water samples to be processed in accordance with ADEM SOP # 2063 Chlorophyll *a* Collection and Processing.

Fish tissue analysis will include collection and analyses of fish for the following constituents:

- 2,4-DDD
- 2,4-DDE
- 2,4-DDT
- 4,4-DDD
- 4,4-DDE
- 4,4-DDT
- Arochlor 1016
- Arochlor 1221
- Arochlor 1232
- Arochlor 1242
- Arochlor 1248
- Arochlor 1254
- Arochlor 1260
- Arsenic
- Cadmium
- Chlordane
- Chlorpyrifos
- Dieldrin
- Dioxin
- Endosulfan I
- Endosulfan II
- Endrin
- Heptachlor
- Heptachlor Epoxide
- Hexachlorobenzene
- Lindane
- Mercury
- Mirex
- Percent lipids
- Selenium
- Total PCBs.
- Toxaphene

Fish sampling and tissue preparation procedures are described in SOP #2300 Fish Tissue Monitoring Sample Collection and ADEM SOP #2301 Fish Tissue Monitoring Sample, Processing and Data Reporting Procedures

Chronic aquatic life criteria will be used to assess a waterbody's use support where the designated use specifies such criteria. In those cases where both human health criteria and chronic aquatic life criteria are included, the more stringent of the criteria will determine the waterbody's use support status. The assessment process, including minimum data requirements and the number of chronic criteria exceedances, is described for each designated use in the remainder of the document. The corresponding ADEM Standard Operating Procedures (SOPs) describing each of the methods required are listed in **Table 1**.

Table 1: ADEM Standard Operating Procedures (SOPs)

SOP#	Title
2040	Stream Flow Abbreviated Measurement Method
2041	Temperature Field Measurements
2042	pH Field Measurements
2043	Conductivity Field Measurements
2044	Turbidity Field Measurements
2045	SW Dissolved Oxygen Field Measurements
2046	Photic Zone Measurements and Visibility Determinations
2047	DataSonde Field Measurements
2048	Continuous Monitoring using Datasondes
2049	Time of Travel
2061	General Surface Water Sample Collection
2062	Dissolved Reactive Phosphorus (DRP) Collection & Processing
2063	Water Column Chlorophyll *a* Sample Collection
2064	Bacteriological Sample Collection
2065	Sediment Sample Collection
2066	Dissolved Metals Sample Collection and Processing
2067	Organic Sample Collection
2069	Cyanide Sample Collection and Processing
5700	Algal Growth Potential Testing (AGPT)
6000	Macroinvertebrate Sample Collection
6001	Macroinvertebrate Sample Processing
6002	Macroinvertebrate Organism Identification
6004	Macroinvertebrate Sample Data Analysis
6100	Fish Community Sample Collection
6300	Physical Characterization
6301	Habitat Assessment
9021	Field Quality Control Measurements and Samples
9025	Field Equipment Cleaning and Storage
9040	Station, Sample ID & Chain of Custody Procedures

4.1 Outstanding Alabama Waters (OAW)

The best usage of waters assigned this classification are those activities consistent with the natural characteristics of the waters. Waterbodies assigned the OAW use are high quality waters that constitute an outstanding Alabama resource, such as waters of state parks and wildlife refuges and waters of exceptional recreational or ecological significance. Beneficial uses encompassed within this classification include: aquatic life support and wildlife propagation, fish and shellfish harvesting and consumption, water contact recreation, agricultural irrigation, livestock watering and industrial cooling and process water supply.

4.1.1 Minimum Data Requirement for OAW Waters

For waters with the OAW classification, the available data must have been collected consistent with the following standard operating procedures (SOP) manuals listed in **Table 1**.

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. In addition, the minimum data requirement may change if pollutant sources upstream of the monitoring location are likely. Failure to meet the minimum data requirement for any waterbody type will place the waterbody in Category 2. The following list and **Figure 2** describe the minimum data requirements for assessing waters classified as OAW.

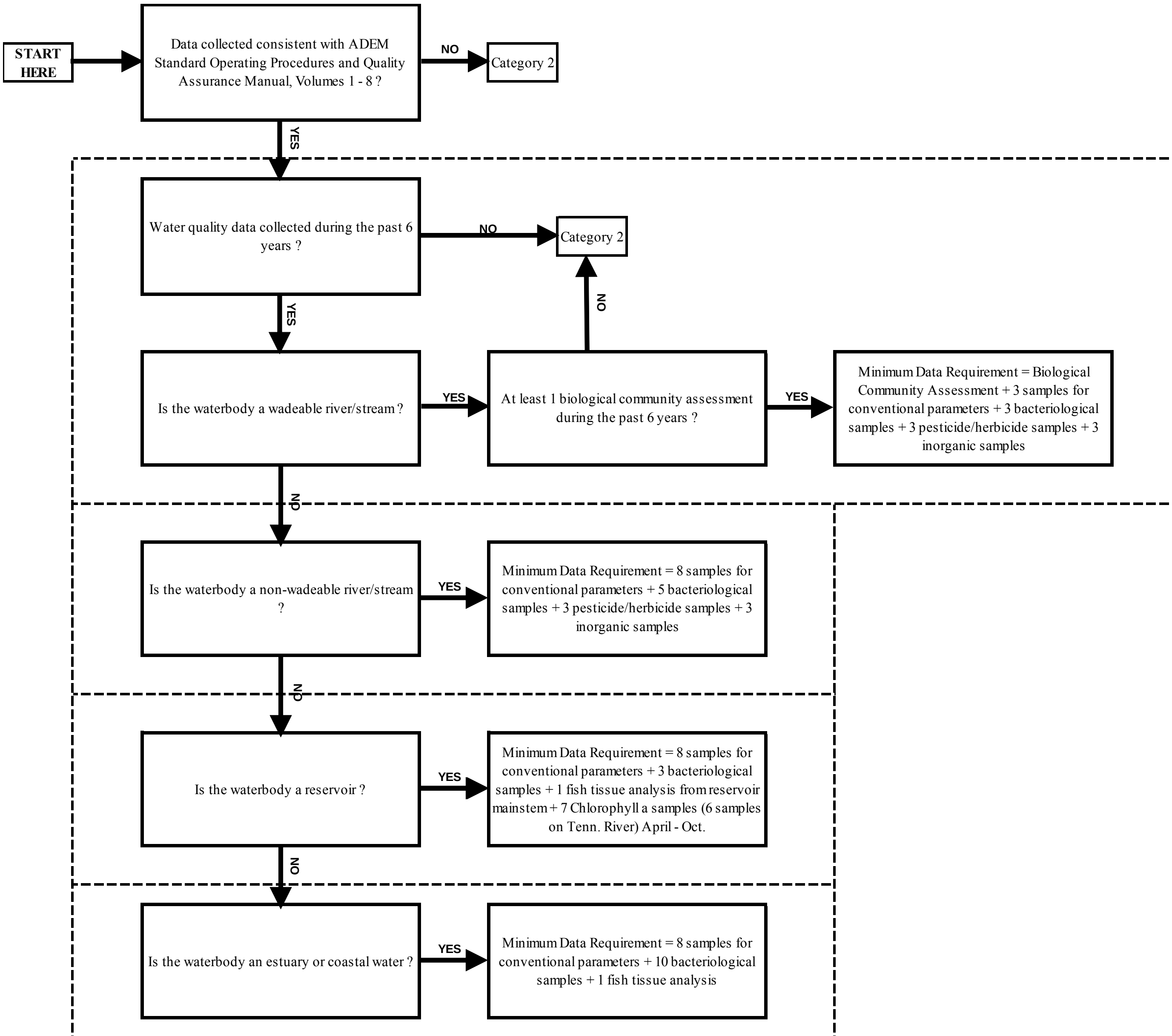
- Wadeable River or Stream
    - 1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)
    - 1 Habitat Assessment concurrent with biological assessment
    - 3 conventional parameter samples (including samples for nutrient analysis)
    - 3 bacteriological samples
    - 3 pesticide / herbicide samples
    - 3 inorganic samples

- Non-wadeable River or Stream
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 5 bacteriological samples (1 geometric mean)
    - 3 pesticide / herbicide samples
    - 3 inorganic samples

- Reservoirs and Embayments
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 3 bacteriological samples
    - 1 fish tissue analysis from the reservoir mainstem
    - 7 chlorophyll *a* samples collected between April and October (For the Tennessee River Basin: 6 chlorophyll *a* samples collected between April and September

- Estuary or Coastal Waters
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric means)
    - 1 fish tissue analysis

Figure 2: Minimum Data Requirements for the OAW Designated Use



Biological community assessment means:
1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)
Fish IBI results (when available) will be used as supplemental data.

4.1.2 Use Support Assessment for OAW Waters

Once the minimum data requirements have been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the OAW use (Category 1) or not fully supporting the OAW use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, shellfish harvesting closure notices, chemical specific data, bacteriological data, biological community assessments, habitat assessments, periphyton assessments, and toxicity evaluations. **Table 2** shows OAW Category 1 Requirements and **Table 3** shows OAW Category 5 Requirements. **Figure 3** illustrates the assessment process for OAW waters.

Table 2: OAW Category 1 Requirements

The OAW waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish/shellfish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment "good" or "excellent".[1] Fish IBI results (when available) will be used as supplemental data.
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has not been exceeded where such a criterion has been established.[2]
Toxic Pollutants	There is an exceedance of any toxic pollutant criterion for other than natural conditions in the previous six years.
Conventional Parameters[3]	No exceedance of conventional parameters, except due to natural conditions.[4]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml, and; **B.** 10% or less of single samples must be less than or equal to 235 colonies/100 ml.[4]
	Coastal Waters: **A.** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density must be less than or equal to 35 colonies/100 ml, and; **B.** 10% or less of single samples must be less than or equal to 104 colonies/100 ml.[4]

[1] Applicable to wadeable streams only.
[2] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.
[3] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[4] As determined by the binomial distribution function and Table 2.

Table 3: OAW Category 5 Requirements

The OAW waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory has been issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment less than "good".[5] Fish IBI results (when available) will be used as supplemental data.
Chlorophyll _a_ Data	Growing season mean chlorophyll _a_ criterion has been exceeded where such a criterion has been established.[6]
Toxic Pollutants	There is an exceedance of any toxic pollutant criterion for other than natural conditions in the previous six years.
Conventional Parameters[7]	There is an exceedance of conventional parameter for other than natural conditions.[8]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml, or; **B.** More than 10% of single samples are greater than 235 colonies/100 ml.[8]
	Coastal Waters: **A.** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; **B.** More than 10% of single samples are greater than 104 colonies/100 ml.[8]

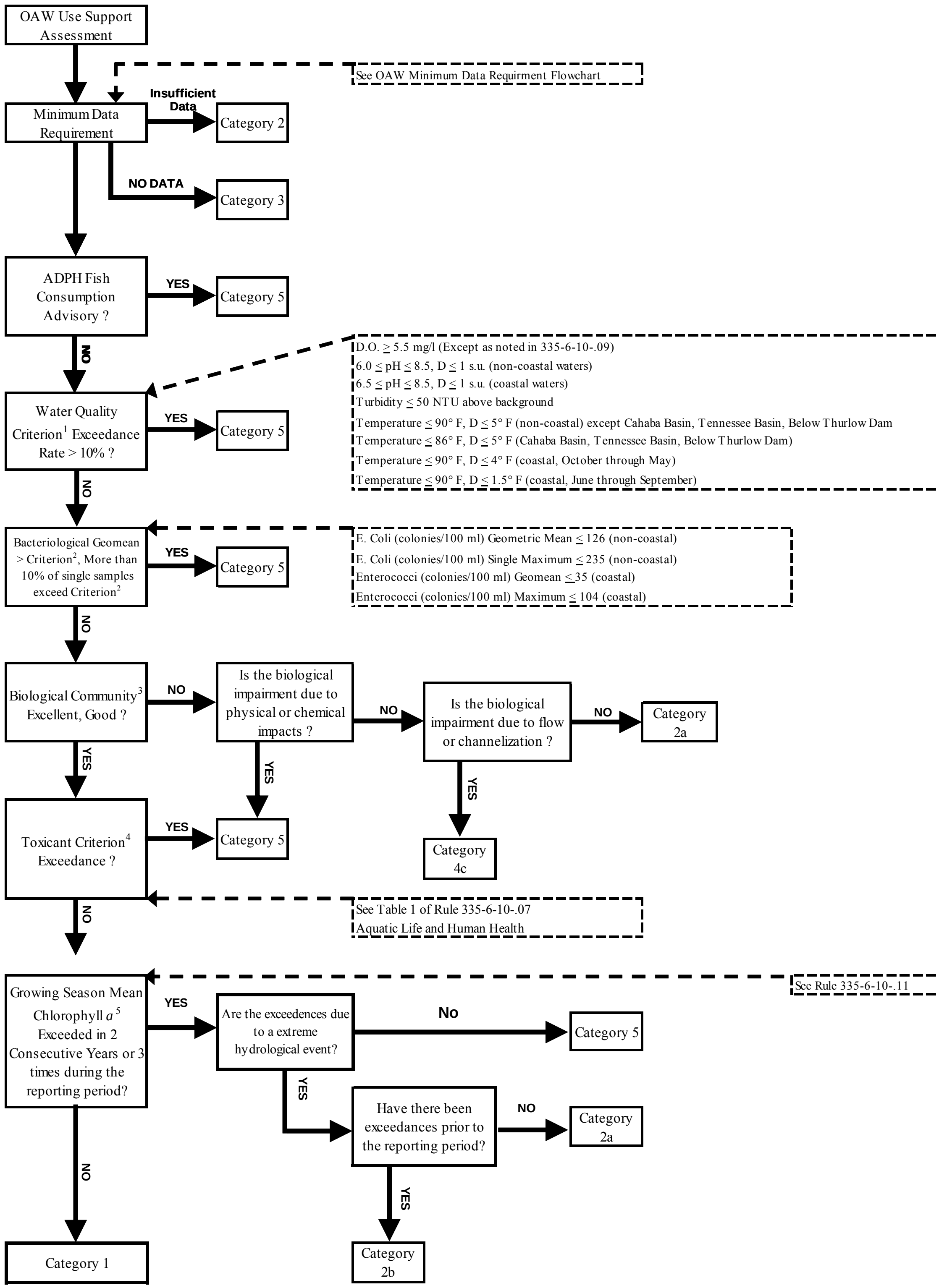
[5] Applicable to wadeable streams only. A potential anthropogenic cause for the degraded condition must be identified.

[6] Chlorophyll _a_ values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity. When a growing season mean chlorophyll _a_ value exceeds the criterion, the reservoir will be identified for re-sampling the following year and enough samples will be collected to ensure that the minimum data requirements necessary to calculate a growing season mean are met.

[7] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.

[8] As determined by the binomial distribution function and Table 2.

Figure 3: Outstanding Alabama Water (OAW) Assessment Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources
2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.1.2
3 Biological community refers to macroinvertebrates and/or fish in wadeable rivers/streams only (See Minimum Data Requirments)
4 Toxicant Criterion refers to toxics listed in 335-6-10-.07
5 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.2 Public Water Supply (PWS)
The best usage of waters assigned this classification is as a source of water supply for drinking or food-processing purposes after approved treatment. Waterbodies assigned the PWS use are considered safe for drinking or food-processing purposes if subjected to treatment approved by the Department equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to remove naturally present impurities. Beneficial uses encompassed within this classification include: aquatic life support and wildlife propagation, fish and shellfish harvesting and consumption, drinking and food-processing water supply, water contact recreation, agricultural irrigation, livestock watering and industrial cooling and process water supply.

4.2.1 Minimum Data Requirement for PWS Waters
For waters with the PWS classification the available data must have been collected consistent with the following standard operating procedures (SOP) manuals: listed in **Table 1**.

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 4** describe the minimum data requirement for assessing waters classified as PWS.

- Wadeable River or Stream
    - 1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)
    - 1 Habitat Assessment concurrent with biological assessment
    - 3 conventional parameter samples (including samples for nutrient analysis)
    - 3 bacteriological samples

    OR

    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)
    - 3 pesticide / herbicide samples
    - 3 inorganic samples

- Non-wadeable River or Stream
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)

- 3 pesticide / herbicide samples
- 3 inorganic samples

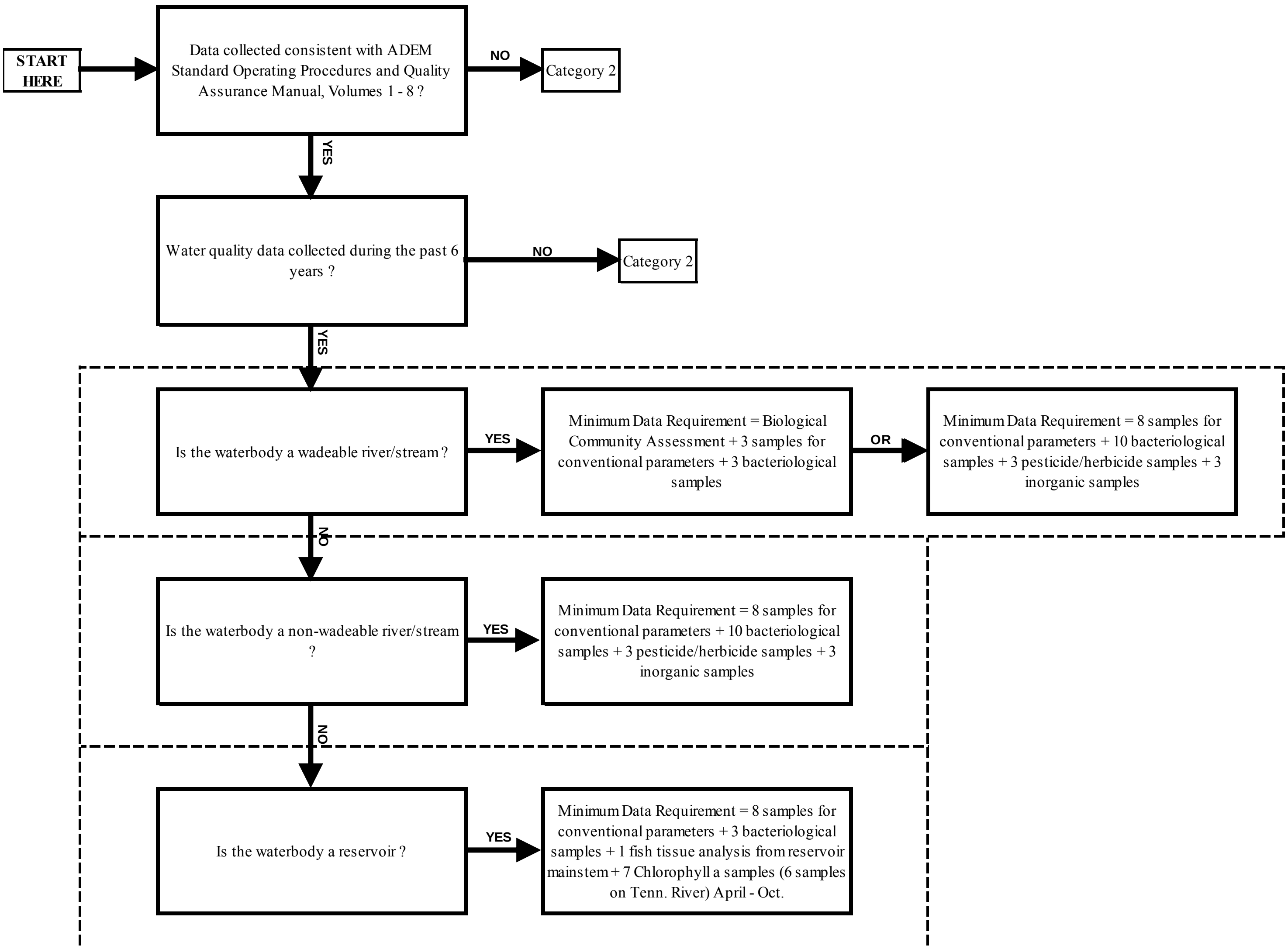
- Reservoirs and Embayments
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples
  - 1 fish tissue analysis from the reservoir mainstem
  - 7 chlorophyll _a_ samples collected between April and October (For the Tennessee River Basin: 6 chlorophyll _a_ samples collected between April and September).

- Estuary or Coastal Waters
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)
  - 1 fish tissue analysis

4.2.2 Use Support Assessment for PWS Waters

Once the minimum data requirement has been met, an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the PWS use (Category 1) or not fully supporting the PWS use (Category 5). The assessment process considers the available data, and may include any fish consumption advisories, shellfish harvesting closure notices, chemical specific data, bacteriological data, biological community assessments, habitat assessments, periphyton assessments, drinking water system compliance records, and toxicity evaluations. **Table 4** shows PWS Category 1 Requirements and **Table 5** shows PWS Category 5 Requirements. **Figure 5** illustrates the assessment process for PWS waters.

Figure 4: Minimum Data Requirements for the PWS Designated Use



Biological community assessment means:
1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)
Fish IBI results (when available) will be used as supplemental data.

Table 4: PWS Category 1 Requirements

The PWS waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish/shellfish consumption advisories issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment "fair", "good" or "excellent".[9] Fish IBI results (when available) will be used as supplemental data.
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has not been exceeded in two consecutive years where such a criterion has been established unless a drinking water system withdrawing from a waterbody does not comply with a DBP requirement.[10]
Toxic Pollutants	No more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional[11] Parameters	No more than a 10% exceedance rate for any given parameter.[12]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 487 colonies/100 ml E. coli (June – September) or greater than 2,507 colonies/100 ml E. coli (October – May) will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml (June – September) or less than or equal to 548 colonies/100 ml (October – May), and; **B.** 10% or less of single samples must be less than or equal to 487 colonies/100 ml (June – September) or less than or equal to 2,507 colonies/100 ml (October – May).[12]
	Coastal Waters: **A.** A single sample result greater than 158 colonies/100 ml enterococci (June – September) or greater than 275 colonies/100 ml enterococci (October – May) will require a follow-up geometric mean sampling event. The geometric mean enterococci density must be less than or equal to 35 colonies/100 ml, and; **B.** 10% or less of single samples must be less than or equal to 158 colonies/100 ml (June – September) or less than or equal to 275 colonies/100 ml (October – May).[12]

[9] Applicable to wadeable streams only.
[10] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75^{th} percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.
[11] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[12] As determined by the binomial distribution function and Table 2.

Table 5: PWS Category 5 Requirements

The PWS waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment less than "fair".[13] Fish IBI results (when available) will be used as supplemental data.
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has been exceeded in two consecutive years or three times during the previous six years where such a criterion has been established or after one exceedance if a drinking water system is out of compliance with the DBP requirements.[14]
Toxic Pollutants	There is more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[15]	There is more than a 10% exceedance rate for any given parameter.[16]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 487 colonies/100 ml E. coli (June – September) or greater than 2,507 colonies/100 ml E. coli (October – May) will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml (June – September) or is greater than 548 colonies/100 ml (October – May), or; ***B.*** More than 10% of single samples are greater than 487 colonies/100 ml (June – September) or greater than 2,507 colonies/100 ml (October – May).[16]
	Coastal Waters: ***A.*** A single sample result greater than 158 colonies/100 ml enterococci (June – September) or greater than 275 colonies/100 ml enterococci (October – May) will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 158 colonies/100 ml (June – September) or greater than 275 colonies/100 ml (October – May).[16]

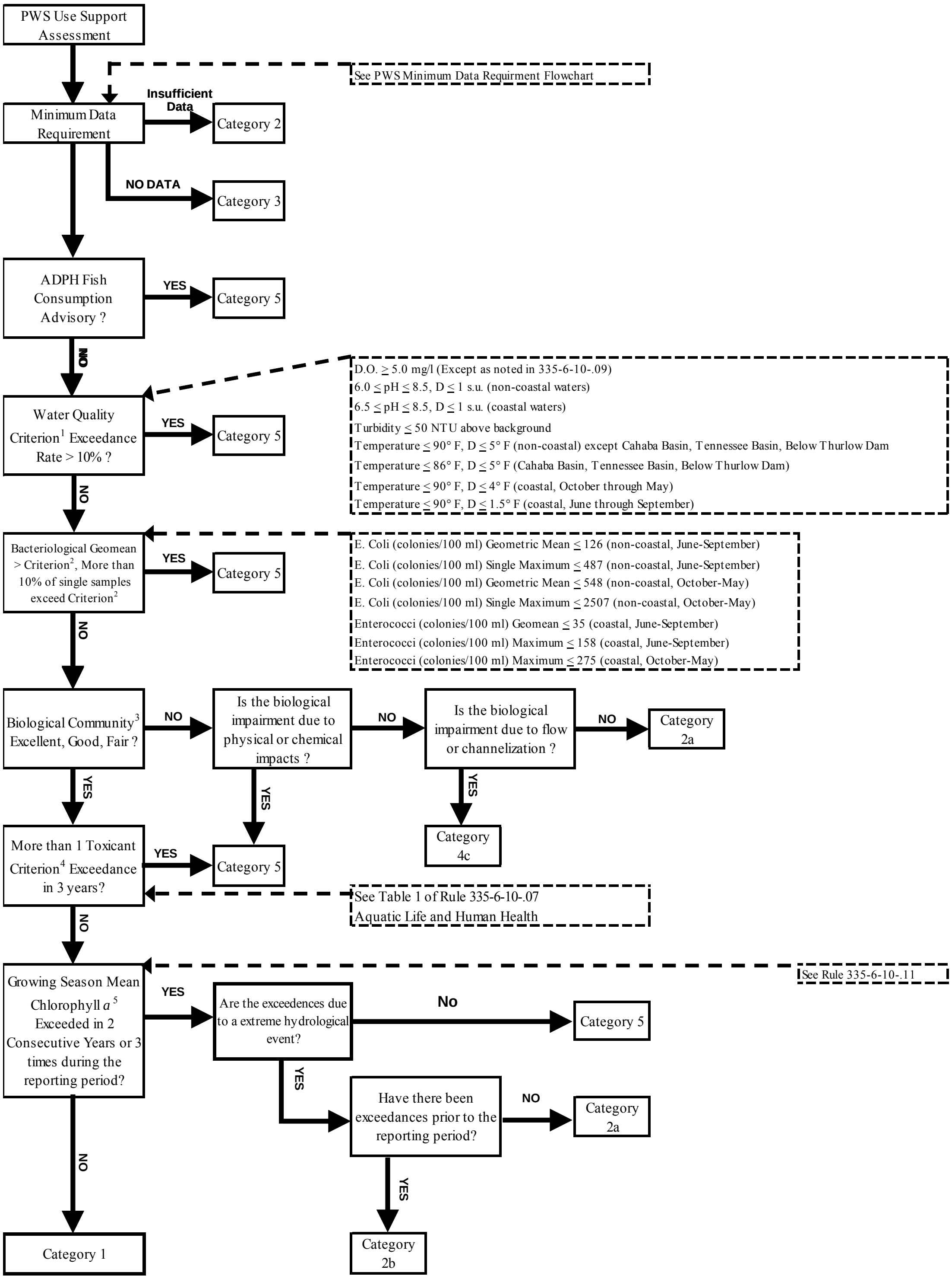
[13] Applicable to wadeable streams only. A potential anthropogenic cause for the degraded condition must be identified using observations made during the sampling events or from information contained in the Department's geographic information system.

[14] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity. However, once exceedance of the criterion may be sufficient justification for inclusion of a water in Category 5 when the exceedance is determined to be a result of increasing nutrient loading from anthropogenic sources. These determinations will be made on a case-by-case basis and the decision will be documented in the ADB.ADB In any case, when a growing season mean chlorophyll *a* value exceeds the criterion, the reservoir will be identified for re-sampling the following year and enough samples will be collected to ensure that the minimum data requirements necessary to calculate a growing season mean are met.

[15] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.

[16] As determined by the binomial distribution function and Table 2.

Figure 5: Public Water Supply (PWS) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources
2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.2.2
3 Biological community refers to macroinvertebrates and/or fish in wadeable rivers/streams only (See Minimum Data Requirments)
4 Toxicant Criterion refers to toxics listed in 335-6-10-.07
5 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.3 Swimming and Other Whole Body Water-Contact Sports (S)

The best usage of waters assigned this classification is for swimming and other whole body water-contact sports. Waterbodies assigned the S use, under proper sanitary supervision by the controlling health authorities, will meet accepted standards of water quality for outdoor swimming places and will be considered satisfactory for swimming and other whole body water-contact sports. Beneficial uses encompassed within this classification include: aquatic life support and wildlife propagation, fish and shellfish harvesting and consumption, water contact recreation, agricultural irrigation, livestock watering and industrial cooling and process water supply.

4.3.1 Minimum Data Requirement for S Waters

For waters with the S classification, the available data must have been collected consistent with the following standard operating procedures (SOP) manuals: listed in **Table 1**.

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 6** describe the minimum data requirement for assessing waters classified as S.

- Wadeable River or Stream
    - 1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)
    - 1 Habitat Assessment concurrent with biological assessment
    - 3 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)

    OR

    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)
    - 3 pesticide / herbicide samples

- Non-wadeable River or Stream
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)
    - 3 pesticide / herbicide samples
    - 3 inorganic samples

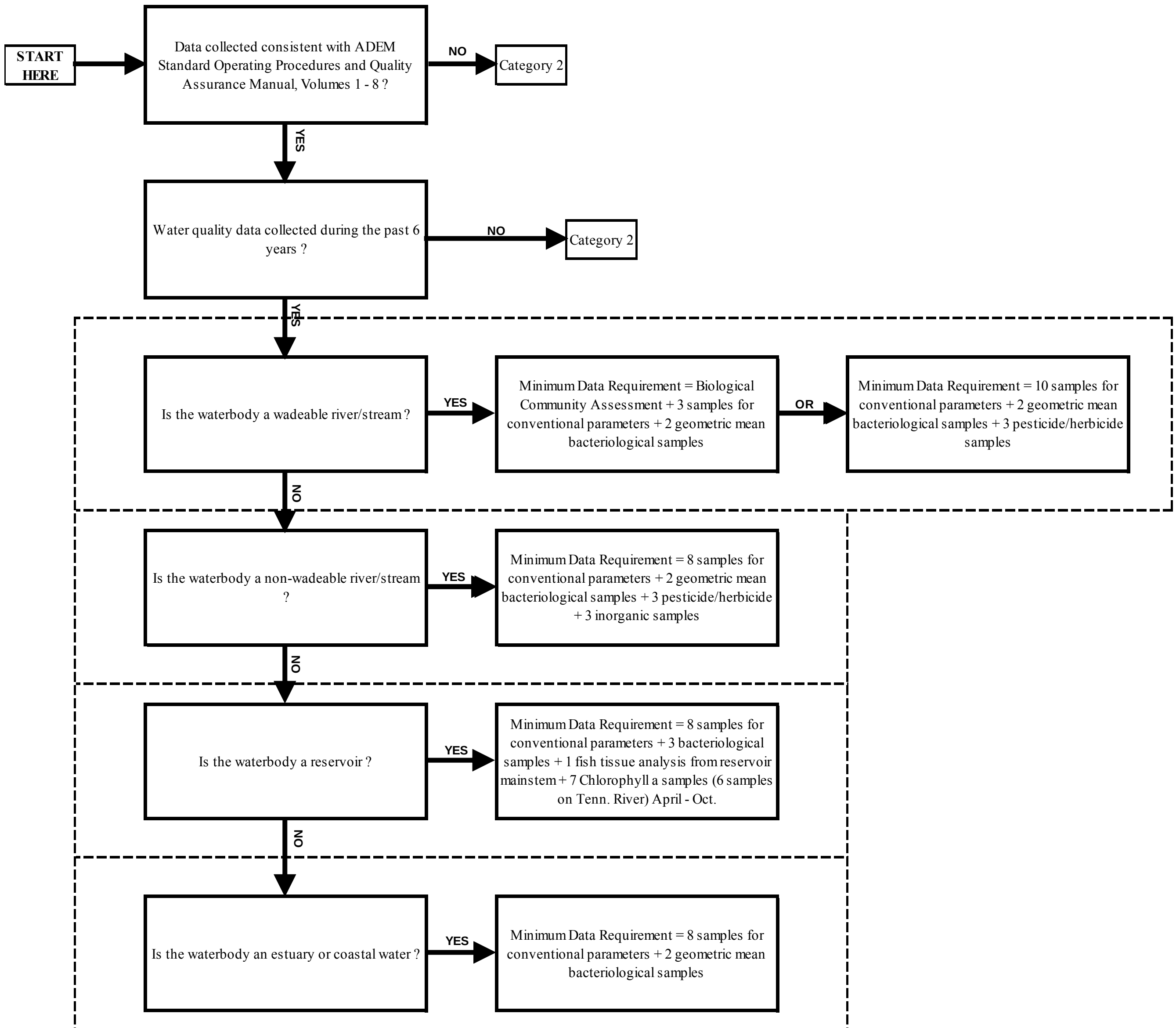
- Reservoirs and Embayments
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples
  - 1 fish tissue analysis from the reservoir mainstem
  - 7 chlorophyll a samples collected between April and October (For the Tennessee River Basin: 6 chlorophyll a samples collected between April and September).

- Estuary or Coastal Waters
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)

4.3.2 Use Support Assessment for S Waters

Once the minimum data requirement has been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the S use (Category 1) or not fully supporting the S use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, shellfish harvesting closure notices, chemical specific data, bacteriological data, biological community assessments, habitat assessments, periphyton assessments, beach closure notices and toxicity evaluations. **Table 6** shows S Category 1 Requirements and **Table 7** shows S Category 5 Requirements. **Figure 7** illustrates the assessment process for S waters.

Figure 6: Minimum Data Requirements for the S Designated Use



Biological community assessment means:
1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)
Fish IBI results (when available) will be used as supplemental data.

Table 6: S Category 1 Requirements

The S waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish/shellfish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment "fair", "good" or "excellent".[17] Fish IBI results (when available) will be used as supplemental data.
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has not been exceeded in two consecutive years where such a criterion has been established.[18]
Toxic Pollutants	No more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[19]	No more than a 10% exceedance rate for any given parameter.[20]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result in excess of 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml, and; **B.** 10% or less of single samples must be less than or equal to 235 colonies/100 ml.[20]
	Coastal Waters: **A.** A single sample result in excess of 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density must be less than 35 colonies/100 ml, and; **B.** 10% or less of single samples must be less than or equal to 104 colonies/100 **ml**.[20]

[17] Applicable to wadeable streams only.
[18] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.
[19] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[20] As determined by the binomial distribution function and Table 2.

Table 7: S Category 5 Requirements

The S waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	There is a fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment less than "fair".[21] Fish IBI results (when available) will be used as supplemental data.
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has been exceeded in two consecutive years or three times during the previous six years.[22]
Toxic Pollutants	There is more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[23]	There is more than a 10% exceedance rate for any given parameter.[24]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 235 colonies/100 ml.[24]
	Coastal Waters: ***A.*** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 104 colonies/100 ml.[24]

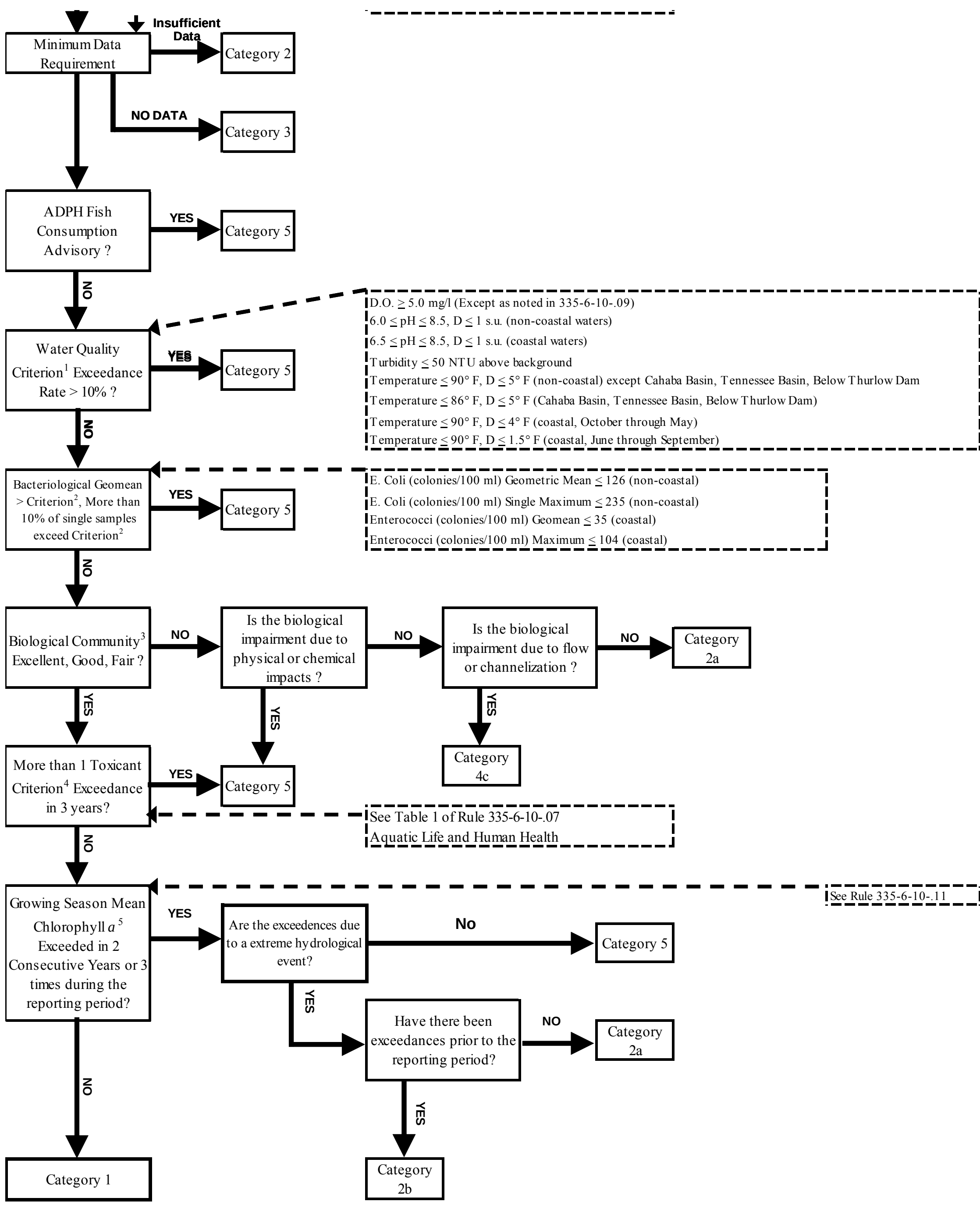
[21] Applicable to wadeable streams only. A potential anthropogenic cause for the degraded condition must be identified using observations made during the sampling events or from information contained in the Department's geographic information system.

[22] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity. However, once exceedance of the criterion may be sufficient justification for inclusion of a water in Category 5 when the exceedance is determined to be a result of increasing nutrient loading from anthropogenic sources. These determinations will be made on a case-by-case basis and the decision will be documented in the ADB.ADB In any case, when a growing season mean chlorophyll *a* value exceeds the criterion, the reservoir will be identified for re-sampling the following year and enough samples will be collected to ensure that the minimum data requirements necessary to calculate a growing season mean are met.

[23] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.

[24] As determined by the binomial distribution function and Table 2.

Figure 7: Swimming and Other Whole Body Water-Contact Sports (S) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.3.2

3 Biological community refers to macroinvertebrates and/or fish in wadeable rivers/streams only (See Minimum Data Requirments)

4 Toxicant Criterion refers to toxics listed in 335-6-10-.07

5 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.4 Shellfish Harvesting (SH)

The best usage of waters assigned this classification is the propagation and harvesting of shellfish (oysters) for sale or for use as a food product. Waterbodies assigned the SH use will meet the sanitary and bacteriological standards included in the *National Shellfish Sanitation Program Model Ordinance, 1999, Chapter IV*, published by the Food and Drug Administration, U.S. Department of Health and Human Services and the requirements of the Alabama Department of Public Health. The waters will also be of a quality suitable for the propagation of fish and other aquatic life, including shrimp and crabs. Beneficial uses encompassed within this classification include: aquatic life support and wildlife propagation, fish and shellfish harvesting and consumption, water contact recreation, agricultural irrigation, livestock watering and industrial cooling and process water supply.

4.4.1 Minimum Data Requirement for SH Waters

For waters with the SH classification the available data must have been collected consistent with the following standard operating procedures (SOP) manuals listed in **Table 1**.

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. The following list and **Figure 8** describe the minimum data requirement for assessing waters classified as SH.

- 8 conventional parameter samples (including samples for nutrient analysis)
- 10 bacteriological samples (2 geometric mean samples)
- 3 inorganic samples
- 3 pesticide/herbicide samples
- Summary of ADPH shellfish harvesting closure notices for Areas I, II, and III

4.4.2 Use Support Assessment for SH Waters

Once the minimum data requirement has been met, an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the SH use (Category 1) or not fully supporting the SH use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, shellfish harvesting closure notices, chemical specific data, bacteriological data, and toxicity evaluations. . **Table 8** shows SH Category 1 Requirements and **Table 9** shows SH Category 5 Requirements. **Figure 9** illustrates the assessment process for SH waters.

Figure 8: Minimum Data Requirements for the SH Designated Use

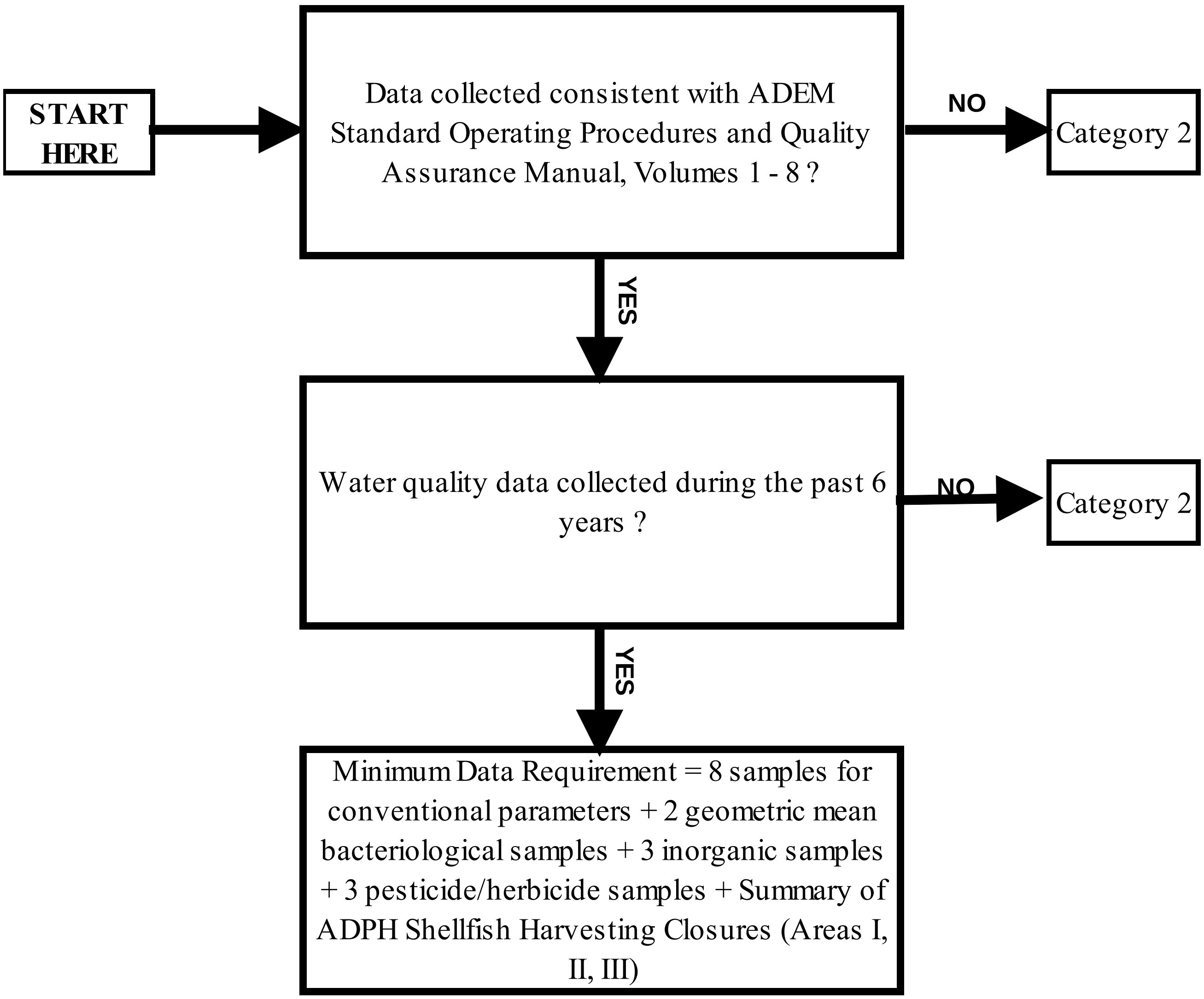


Table 8: SH Category 1 Requirements

The SH waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish/shellfish consumption advisories issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	No more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[25]	No more than a 10% exceedance rate for any given parameter.[26]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml, and; **B.** 10% or less of single samples must be less than or equal to 235 colonies/100 ml.[26]
	Coastal Waters: **A.** A single sample result greater than or equal to 43 colonies /100 ml fecal coliform or a geometric mean greater than or equal to 14 colonies /100 ml fecal coliform. **B.** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density must be less than 35 colonies/100 ml and; **C.** 10% or less of single samples must be less than or equal to 104 colonies/100 ml.[26]

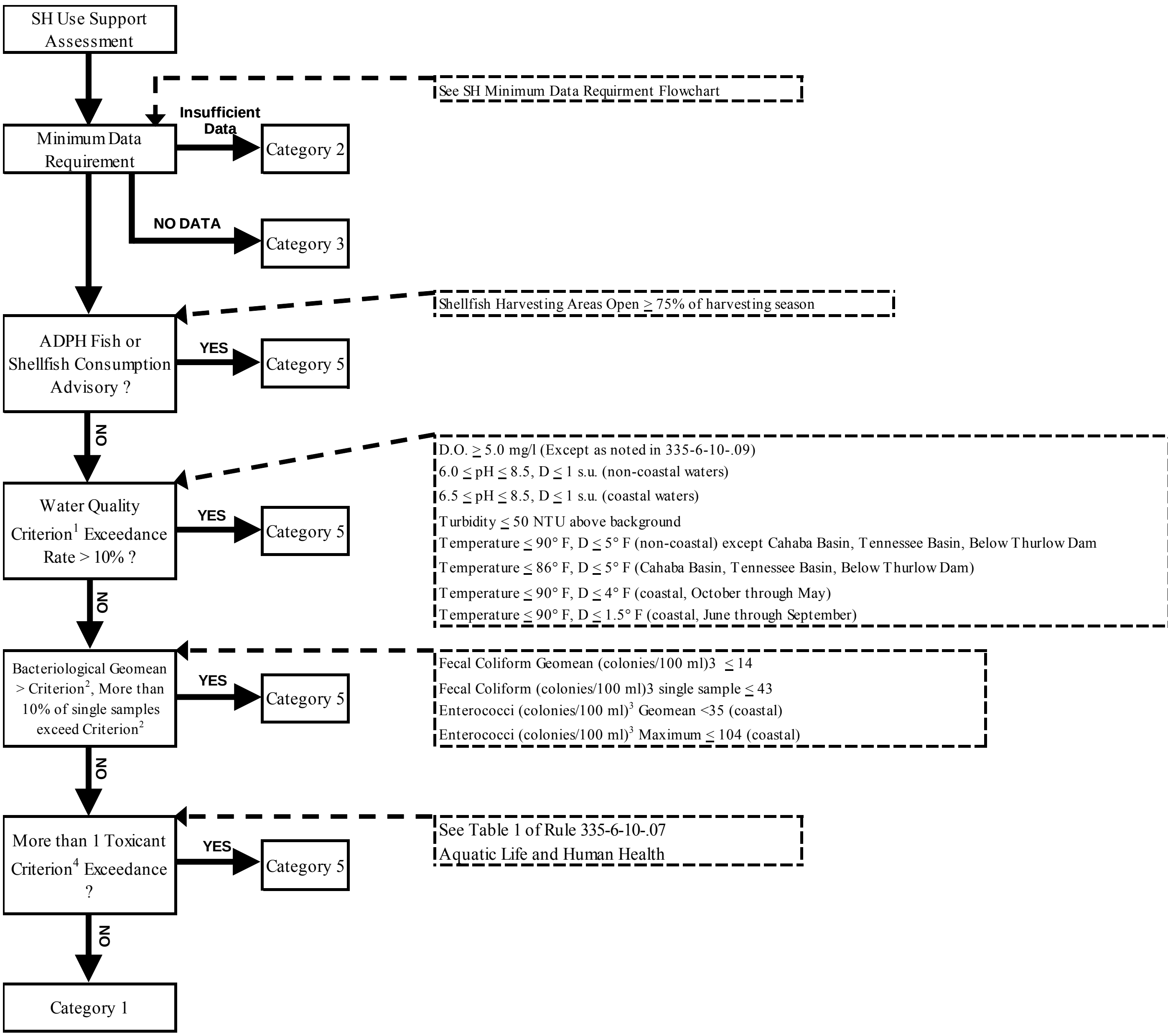
[25] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[26] As determined by the binomial distribution function and Table 2.

Table 9: SH Category 5 Requirements

The SH waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	There is a fish consumption advisory issued by the Alabama Department of Public Health (ADPH) or the shellfish growing areas are "conditionally approved" or "conditionally restricted".
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	There is more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[27]	There is more than a 10% exceedance rate for any given parameter.[28]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml, or; **B.** More than 10% of single samples exceed 235 colonies/100 ml.[28]
	Coastal Waters: **A.** A single sample result greater than or equal to 43 colonies /100 ml fecal coliform or a geometric mean greater than or equal to 14 colonies /100 ml fecal coliform. **B.** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; **C.** More than 10% of single samples exceed 104 colonies/100 ml enterococci.[28]

[27] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[28] As determined by the binomial distribution function and Table 2.

Figure 9: Shellfish Harvesting (SH) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean

3 Not to exceed the limits specified in the latest edition of the National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish: 2007 Revision, published by the Food and Drug Administration, U.S. Department of Health and Human Services.

4 Toxicant Criterion refers to toxics listed in 335-6-10-.07

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.5 Fish and Wildlife (F&W)

The best usage of waters assigned this classification includes fishing, the propagation of fish, aquatic life, and wildlife, and any other usage except swimming and water-contact sports or as a source of water supply for drinking or food-processing purposes. Waterbodies assigned the F&W classification are suitable for fish, aquatic life and wildlife propagation. The quality of salt and estuarine waters to which this classification is assigned will also be suitable for the propagation of shrimp and crabs. In addition, it is recognized that these waters may be used for incidental water contact and recreation during June through September, except in the vicinity of wastewater discharges or other conditions beyond the control of the ADPH. Under proper sanitary supervision by the controlling health authorities, these waters will meet accepted standards of water quality for outdoor swimming places and will be considered satisfactory for swimming and other whole body water-contact sports during the months of June through September.

4.5.1 Minimum Data Requirement for F&W Waters

For waters with the F&W classification the available data must have been collected consistent with the following standard operating procedures (SOP) manuals listed in **Table 1**.

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 10** describe the minimum data requirement for assessing waters classified as F&W.

- Wadeable River or Stream
    - 1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)
    - 1 Habitat Assessment concurrent with biological assessment
    - 3 conventional parameter samples (including samples for nutrient analysis)
    - 3 bacteriological samples

    OR

    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)
    - 3 pesticide / herbicide samples
    - 3 inorganic samples

- Non-wadeable River or Stream

- 8 conventional parameter samples (including samples for nutrient analysis)
- 10 bacteriological samples (2 geometric mean samples)
- 3 pesticide / herbicide samples
- 3inorganic samples

Reservoirs and Embayments

- 8 conventional parameter samples (including samples for nutrient analysis)
- 3 bacteriological samples
- 1 fish tissue analysis from the reservoir mainstem
- 7 chlorophyll a samples collected between April and October (For the Tennessee River Basin: 6 chlorophyll a samples collected between April and September).

- Estuary or Coastal Waters
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)
  - 1 fish tissue analysis

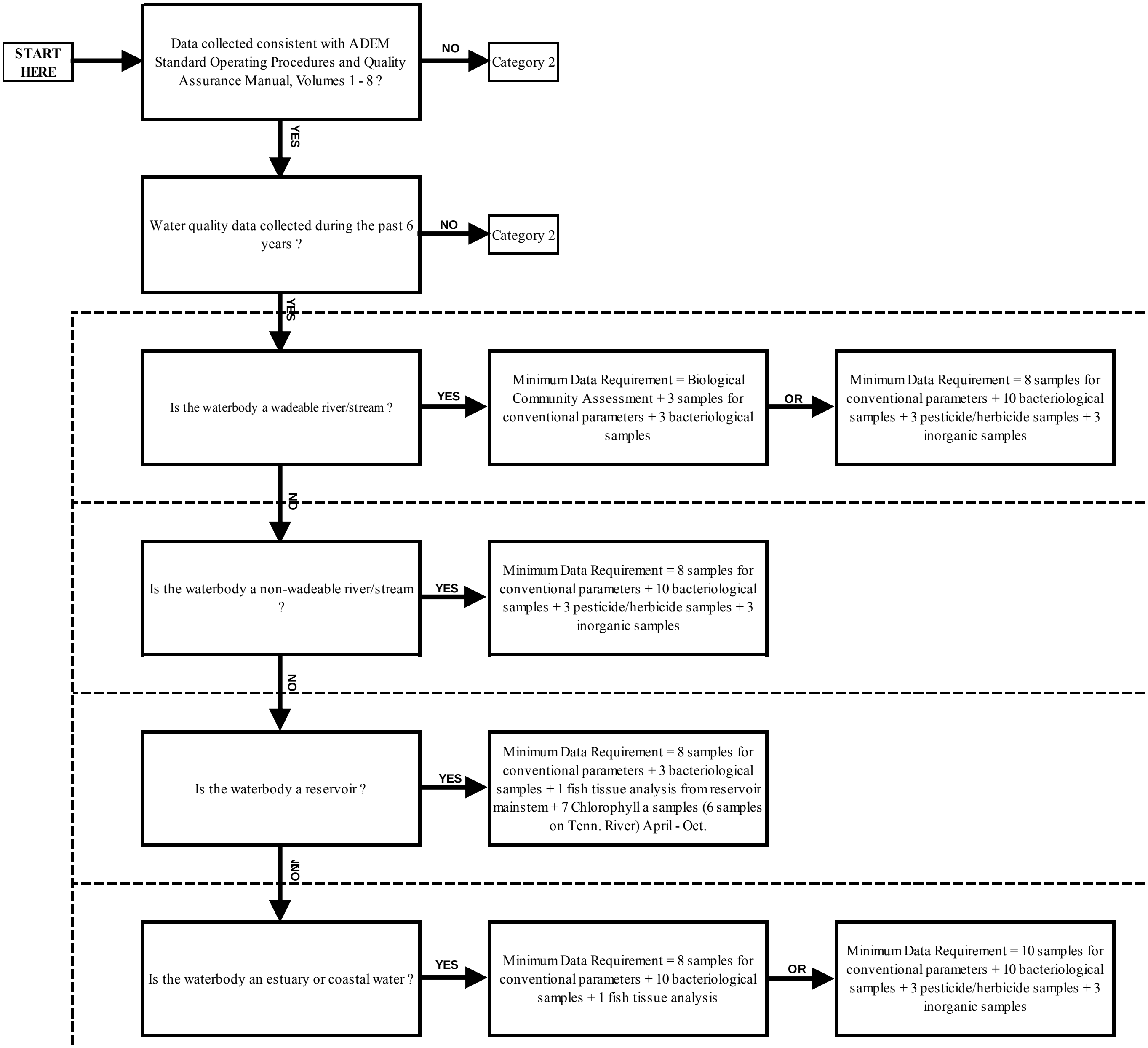
OR

- 8 conventional parameter samples (including samples for nutrient analysis)
- 10 bacteriological samples (2 geometric mean samples)
- 3 pesticide/herbicide samples
- 3 inorganic samples

4.5.2 Use Support Assessment for F&W Waters

Once the minimum data requirement has been met, an assessment of the data can be completed, resulting in the categorization of the waterbody as either fully supporting the F&W use (Category 1) or not fully supporting the F&W use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, chemical specific data, biological community assessments, bacteriological data, beach closure notices and toxicity evaluations. **Figure 11** illustrates the assessment process for F&W waters.

Figure 10: Minimum Data Requirements for the F&W Designated Use



Biological community assessment means:
1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)
Fish IBI results (when available) will be used as supplemental data.

Table 10: F&W Category 1 Requirements

The F&W waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment "fair", "good" or "excellent".[29] Fish IBI results (when available) will be used as supplemental data.
Chlorophyll <u>a</u> Data	Growing season mean chlorophyll <u>a</u> criterion has not been exceeded in two consecutive years where such a criterion has been established.[30]
Toxic Pollutants	No more than two exceedances of a particular toxic pollutant criterion in previous six years or more than one in a 3-year period.
Conventional Parameters[31]	No more than a 10% exceedance rate for any given parameter.[32]
Bacteriological Data	**<u>Non-Coastal Waters:</u>** **A.** A single sample result greater than 487 colonies/100 ml E. coli (June – September) or greater than 2,507 colonies/100 ml E. coli (October – May) will require a follow-up geomean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml (June – September) or less than or equal to 548 colonies/100 ml (October – May), and; **B.** 10% or less of single samples must be less than or equal to 487 colonies/100 ml (June – September) or less than or equal to 2,507 colonies/100 ml (October – May).[32]
	<u>Coastal Waters:</u> **A.** A single sample result greater than 158 colonies/100 ml E. coli (June – September) or greater than 275 colonies/100 ml E. coli (October – May) will require a follow-up geomean sampling event. The geometric mean enterococci density must be less than or equal to 35 colonies/100 ml (June – September), and; **B.** 10% or less of single samples must be less than or equal to 158 colonies/100 ml (June – September) or less than or equal to 275 colonies/100 ml (October – May).[32]

[29] Applicable to wadeable streams only.
[30] Chlorophyll <u>a</u> values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.
[31] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[32] As determined by the binomial distribution function in Table 2.

Table 11: F&W Category 5 Requirements

The F&W waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV assessment less than "fair".[33] Fish IBI results (when available) will be used as supplemental data.
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has been exceeded in two consecutive years or three times during the previous six years.[34]
Toxic Pollutants	More than two exceedances of a particular toxic pollutant criterion in previous six years or more than one in a 3-year period.
Conventional Parameters[35]	More than a 10% exceedance rate for any given parameter.[36]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 487 colonies/100 ml E. coli (June – September) or greater than 2,507 colonies/100 ml E. coli (October – May) will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml (June – September) or greater than 548 colonies/100 ml (October – May), or; ***B.*** More than 10% of single samples are greater than 487 colonies/100 ml (June – September) or greater than 2507 colonies/100 ml (October – May).[36]
	Coastal Waters: ***A.*** A single sample result greater than 158 colonies/100 ml E. coli (June – September) or greater than 275 colonies/100 ml E. coli (October – May) will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 158 colonies/100 ml (June – September) or greater than 275 colonies/100 ml (October – May).[36]

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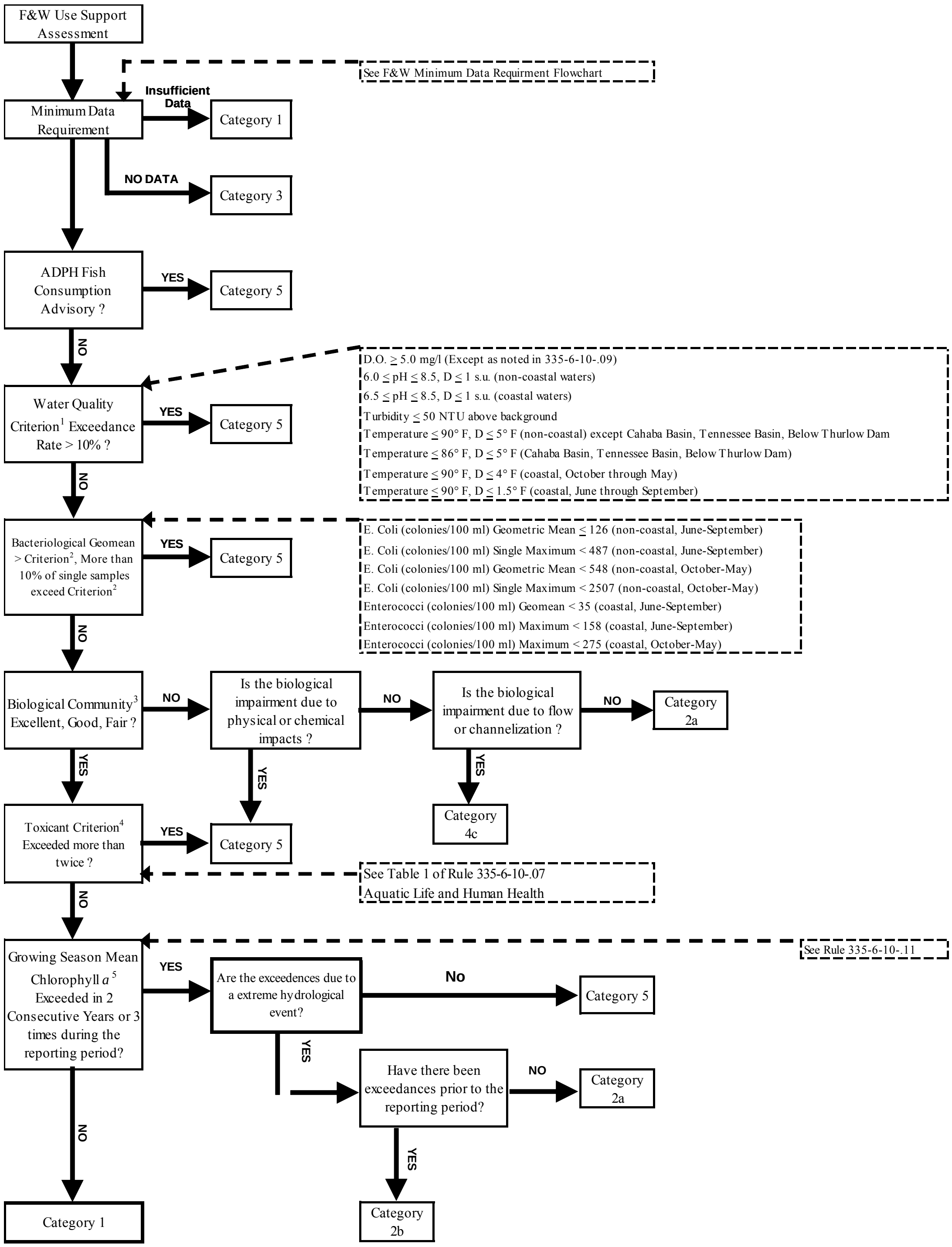
[33] Applicable to wadeable streams only.

[34] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity. One exceedance of the chlorophyll *a* criterion may be sufficient justification for inclusion of a water in Category 5 when the exceedance is determined to be the result of increasing nutrient loading from anthropogenic sources. These determinations will be made on a case-by-case basis and the decision will be documented in the ADB. When a growing season mean chlorophyll *a* value exceeds the criterion, the reservoir will be identified for re-sampling the following year and enough samples will be collected to ensure that the minimum data requirements necessary to calculate a growing season mean are met.

[35] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.

[36] As determined by the binomial distribution function in Table 2.

Figure 11: Fish and Wildlife (F&W) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources
2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.5.2
3 Biological community refers to macroinvertebrates and/or fish in wadeable rivers/streams only (See Minimum Data Requirments)
4 Toxicant Criterion refers to toxics listed in 335-6-10-.07
5 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.6 Limited Warmwater Fishery (LWF)
For the months of December through April, the best usage of waters assigned this classification includes fishing, the propagation of fish, aquatic life, and wildlife, and any other usage except swimming and water-contact sports or as a source of water supply for drinking or food-processing purposes. May through November the quality of waters to which this classification is assigned will be suitable for agricultural irrigation, livestock watering, industrial cooling and process water supplies, and any other usage, except fishing, bathing, recreational activities, including water-contact sports, or as a source of water supply for drinking or food-processing purposes.

4.6.1 Minimum Data Requirement for LWF Waters
For waters with the LWF classification, the available data must have been collected consistent with the following standard operating procedures (SOP) manuals: listed in **Table 1**.

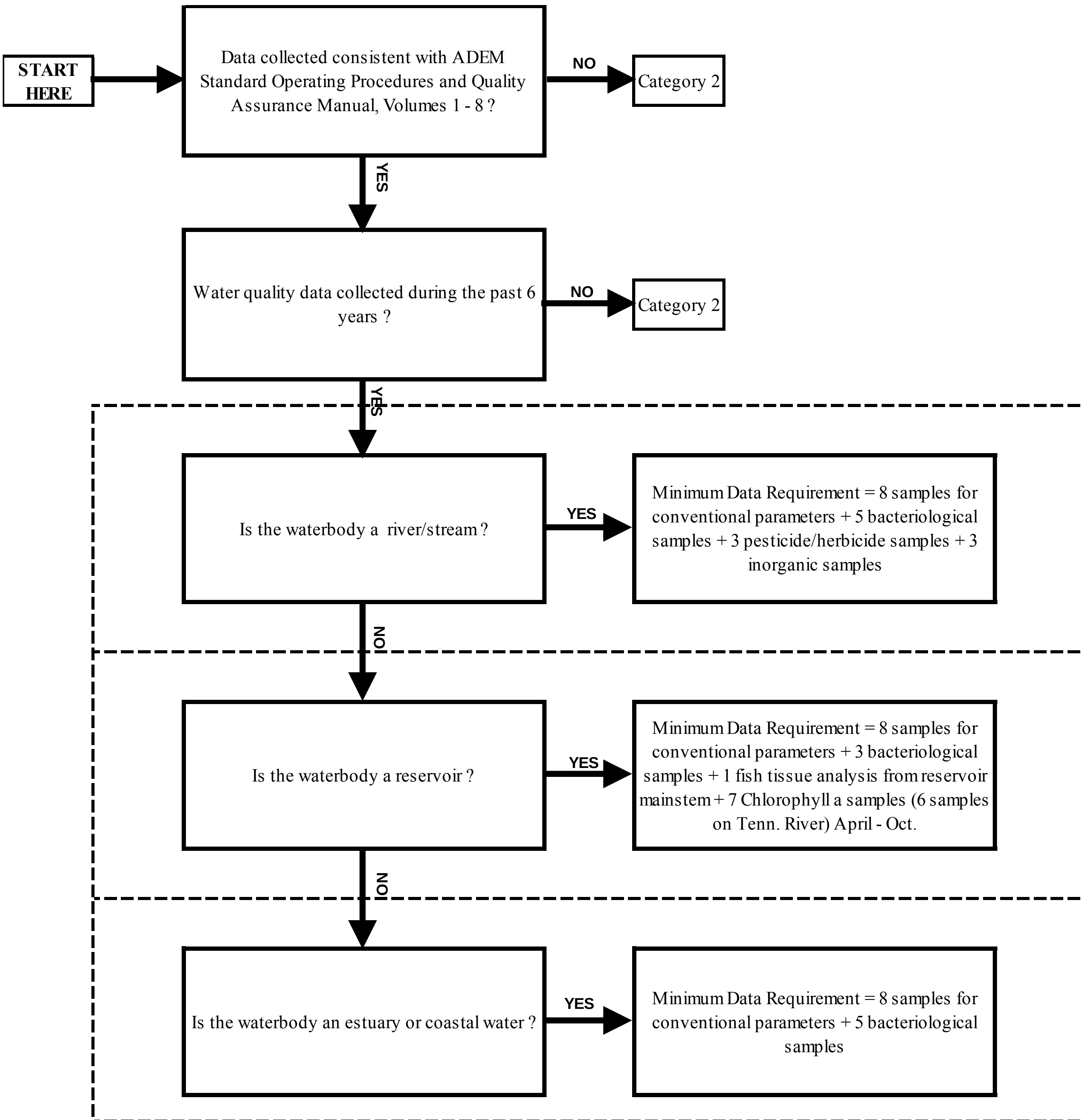
In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 12** describe the minimum data requirements for assessing waters classified as LWF.

- River or Stream (Wadeable and Non-wadeable)
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 5 bacteriological samples (1 geometric mean sample)
    - 3 pesticide / herbicide samples
    - 3 inorganic samples

- Reservoirs and Embayments
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 3 bacteriological samples
    - 1 fish tissue analysis from the reservoir mainstem

- Estuary or Coastal Waters
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 5 bacteriological samples (1 geometric mean sample)

Figure 12: Minimum Data Requirements for the LWF Designated Use



4.6.2 Use Support Assessment for LWF Waters

Once the minimum data requirement has been met, an assessment of the data can be completed, resulting in the categorization of the waterbody as either fully supporting the LWF use (Category 1) or not fully supporting the LWF use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, chemical specific data, bacteriological data, and toxicity evaluations. However, at the present time there is no available protocol for use of biological assessment results to assess use support in LWF-classified waters. The Department's current SOP for conducting biological assessments employs the use of reference sites located in least impacted watersheds and is intended to assess the "fishable" use. . **Table 12** shows LWF Category 1 Requirements and **Table 13** shows LWF Category 5 Requirements. **Figure 13** illustrates the assessment process for LWF waters.

Table 12: LWF Category 1 Requirements

The LWF waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	No more than one exceedance of a particular toxic pollutant acute criterion (May – November) in previous six years. No more than one exceedance of a particular toxic pollutant chronic criterion (December – April).
Conventional Parameters[37]	No more than a 10% exceedance rate for any given parameter.[38]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 2,507 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 548 colonies/100 ml, and; **B.** 10% or less of single samples must be less than or equal to 2,507 colonies/100 ml.[38]
	Coastal Waters: **A.** 10% or less of single samples must be less than 275 colonies/100 ml Enterococci.[38]

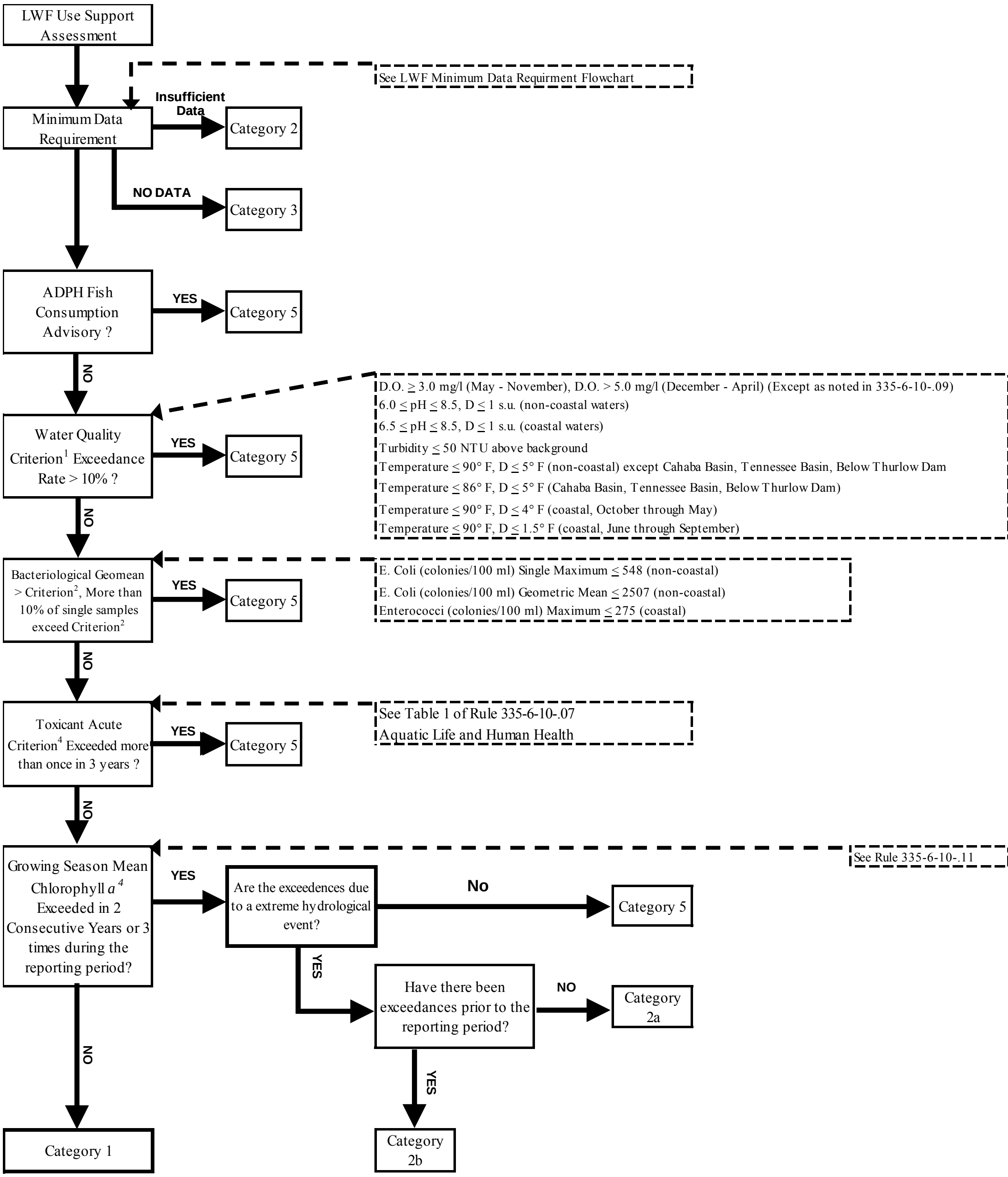
[37] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[38] As determined by the binomial distribution function in Table 2.

Table 13: LWF Category 5 Requirements

The LWF waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	Two or more exceedances of a particular toxic pollutant acute criterion (May – November) during the previous six years or more than one in a 3 year period. Two or more exceedances of a particular toxic pollutant chronic criterion (December – April) during previous six years or more than one in a 3 year period.
Conventional Parameters[39]	More than a 10% exceedance rate for any given parameter.[40]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 2,507 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 548 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 2,507 colonies/100 ml.[40]
	Coastal Waters: ***A.*** More than 10% of single samples are greater than 275 colonies/100 ml Enterococci.[40]

[39] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[40] As determined by the binomial distribution function in Table 2.

Figure 13: Limited Warmwater Fishery (LWF) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.6.2

3 Toxicant Criterion refers to toxics listed in 335-6-10-.07

4 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.7 Agricultural and Industrial Water Supply (A&I)

Best usage of waters assigned this classification include agricultural irrigation, livestock watering, industrial cooling and process water supplies, and any other usage, except fishing, bathing, recreational activities, including water-contact sports, or as a source of water supply for drinking or food-processing purposes. The waters, except for the natural impurities that may be present, will be suitable for agricultural irrigation, livestock watering, industrial cooling waters, and fish survival. The waters will be usable after special treatment, as may be needed under each particular circumstance, for industrial process water supplies. This classification includes watercourses in which natural flow is intermittent and non-existent during droughts and which may, of necessity, receive treated waste from existing municipalities and industries, both now and in the future.

4.7.1 Minimum Data Requirement for A&I Waters

For waters with the A&I classification, the available data must have been collected consistent with the following standard operating procedures (SOP) manuals listed in **Table 1**.

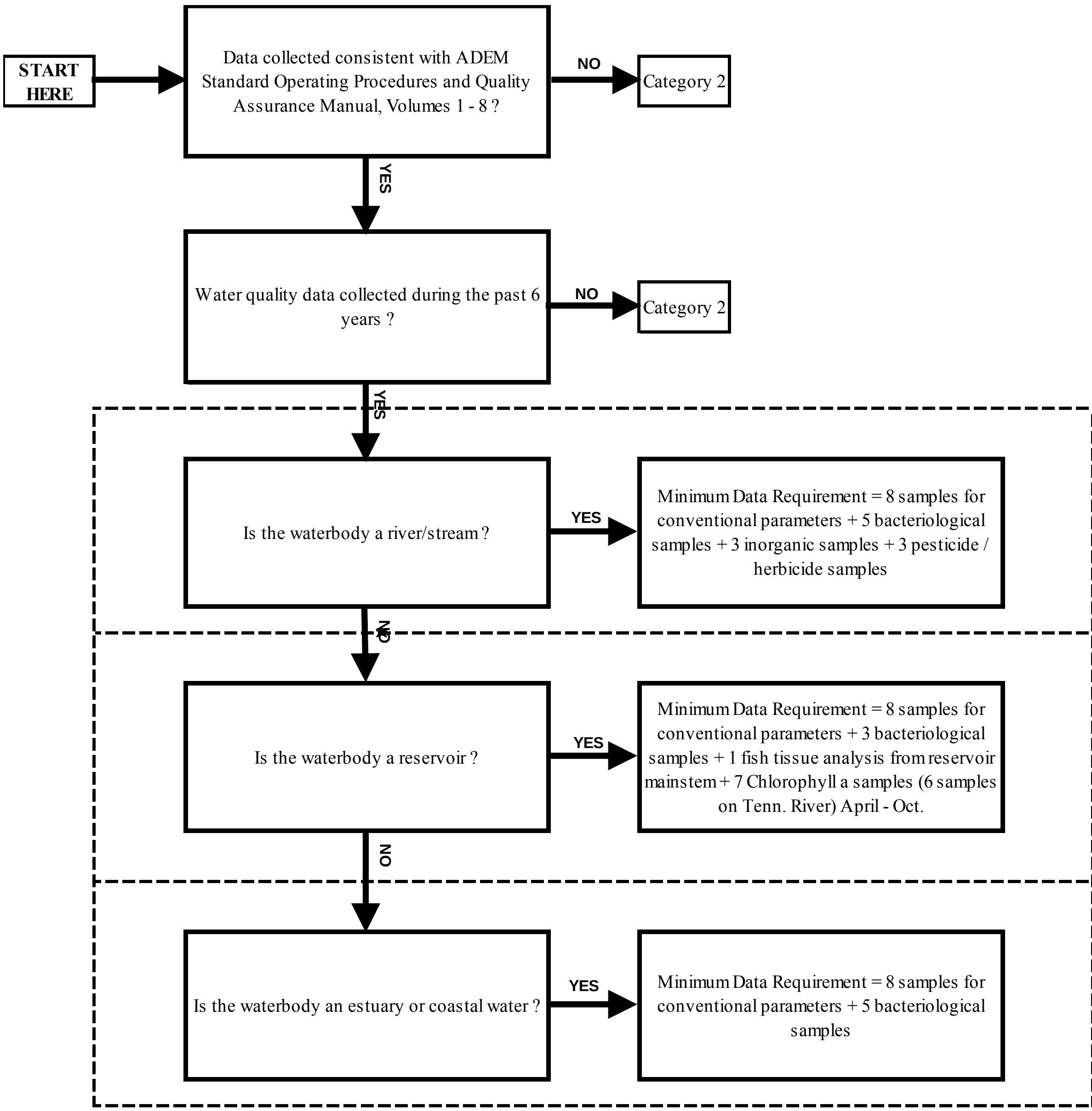
In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 14** describe the minimum data requirement for assessing waters classified as A&I.

- River or Stream
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 5 bacteriological samples (1 geometric mean sample)
  - 3 inorganic samples
  - 3 pesticide / herbicide samples

- Reservoirs and Embayments
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples
  - 1 fish tissue analysis from the reservoir mainstem

- Estuary or Coastal Waters
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 5 bacteriological samples (1 geometric mean sample)

Figure 14: Minimum Data Requirements for the A&I Designated Use



4.7.2 *Use Support Assessment for A&I Waters*

Once the minimum data requirement has been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the A&I use (Category 1) or not fully supporting the A&I use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, chemical specific data, biological community assessments, bacteriological data, beach closure notices and toxicity evaluations. **Table 14** shows A&I Category 1 Requirements and **Table 15** shows A&I Category 5 Requirements. **Figure 15** illustrates the assessment process for A&I waters.

Table 14: A&I Category 1 Requirements

The A&I waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	No more than two exceedances of a particular toxic pollutant acute criterion in previous six years or more than one in a 3-year period.
Conventional Parameters[41]	No more than a 10% exceedance rate for any given parameter.[42]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 3,200 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 700 colonies/100 ml, and; **B.** 10% or less of single samples must be less than or equal to 3,200 colonies/100 ml.[42]
	Coastal Waters: **A.** 10% or less of single samples must be less than or equal to 500 colonies/100 ml.[42]

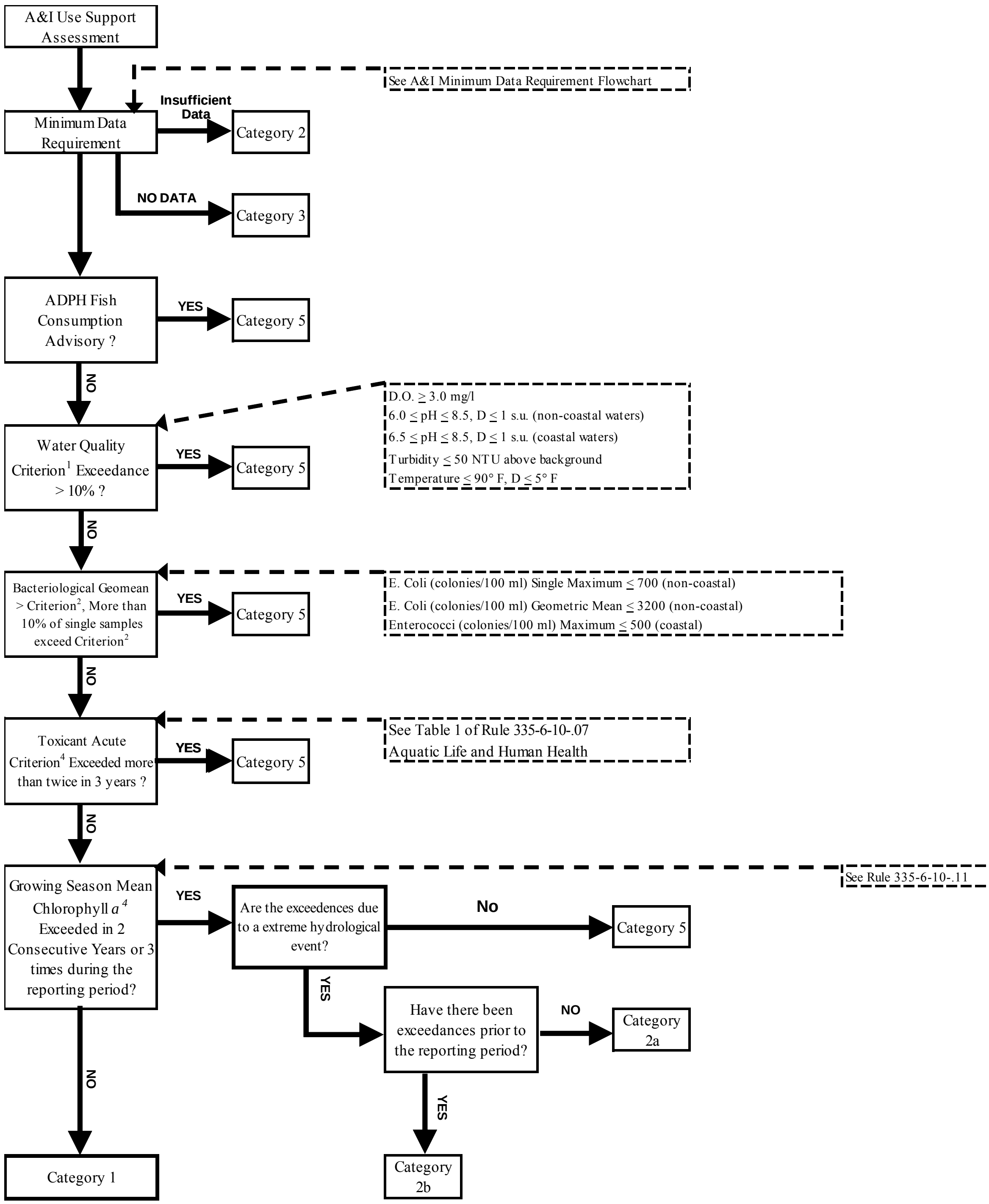
[41] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[42] As determined by the binomial distribution function in Table 2.

Table 15: A&I Category 5 Requirements

The A&I waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll a Data	NA
Toxic Pollutants	More than two exceedances of a particular toxic pollutant acute criterion in previous six years or more than one in a 3-year period.
Conventional Parameters[43]	More than a 10% exceedance rate for any given parameter.[44]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 3,200 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 700 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 3,200 colonies/100 ml.[44]
	Coastal Waters: ***A.*** More than 10% of single samples are greater than 500 colonies/100 ml.[44]

[43] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[44] As determined by the binomial distribution function and Table 2.

Figure 15: Agricultural and Industrial Water Supply (A&I) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.7.2

3 Toxicant Criterion refers to toxics listed in 335-6-10-.07

4 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.8 Other Data considerations and Requirements

4.8.1 Use of the 10% Rule

Seasonal variation in water quality conditions, non-anthropogenic impacts (natural conditions), sampling frequency and number of samples collected, and the temporal and spatial sampling coverage of the waterbody must be considered when evaluating water quality data to determine whether a waterbody is fully supporting its designated uses. Most states, including Alabama, determine a waterbody's use support status based on the percent of measured values exceeding a given water quality criterion. Based on USEPA guidance, 10 percent is commonly used as the maximum percent of measurements that may exceed the criterion for waters fully supporting their designated uses. For any given set of samples, the percent exceedance indicated by the number of samples exceeding a given criterion is only an estimate of the true percent exceedance for the waterbody segment. As a result, it is important that a level of confidence be assigned to the estimate of percent exceedance for a given set of samples.

Hypothesis testing can be used to make this estimate. When making a decision about whether a water should be included in Category 5 on the basis of data for conventional pollutants, the null hypothesis is that the water is not impaired and sufficient data must be collected to minimize the probability that this assumption is incorrect (Type I error). For the purpose of this methodology, a 90% confidence level will be used so that we can say, for a given sample size with a given number of criterion exceedances, we are 90% confident that the true exceedance percentage is greater than 0.1 (10%). Using the binomial distribution, it is possible to determine the number of exceedances out of a given number of samples that will result in a greater than 10 percent exceedance rate at approximately the 90% confidence level. This is the number of exceedances needed to reject the null hypothesis.

When making a decision about whether a water in Category 5 should be removed to Category 1 for a particular conventional pollutant, the null hypothesis is that the water is impaired and sufficient data must be collected to minimize the probability that this assumption is incorrect. Again, a 90% confidence level will be used in the binomial distribution function to estimate the number of samples required to be 90% confident that the water is truly not impaired.

4.8.2 Use of Data Older than Six Years

More recent data shall take precedence over older data if:

- The newer data indicates a change in water quality and the change is related to changes in pollutant loading to the watershed or improved pollution control mechanisms in the watershed contributing to the assessed area.

OR

The Department determines that the older data do not meet the data quality requirements of this methodology or are no longer representative of the water quality of the segment.

Data older than six years will generally not be considered valid, for the purpose of initially placing a waterbody in Category 1 or Category 5, except that data and information older than six years will be considered in the assessment process when such data/information is determined to be reliable. Data older than six years may be used to demonstrate that a waterbody was placed in the wrong category (Category 1 or Category 5) when the original water quality assessment was completed. In addition, data older than six years may be used if the data was not considered during a previous reporting cycle and there is evidence that conditions affecting water quality have not changed since the original data was collected. Waterbodies will not be removed from Category 5 based on the age of data. However, if there is evidence that water quality conditions are likely to have changed since the water was originally placed in Category 1, waterbodies may be removed from Category 1 to Category 2, based on the age of the data.

4.8.3 Use of Accurate Location Data

Accurate location data is required to ensure the appropriate use classification is applied, as well as to confirm that sampling stations are located outside of regulatory mixing zones where water quality criteria do not apply. The monitoring data is acceptable if the locations are correct to within 200 feet. Digital spatial data (GIS or GPS) or latitude/longitude information obtained from USGS 7.5 minute quadrangle maps are acceptable methods of providing location information.

4.8.4 Use of Temporally Independent Samples and Data from Continuous Monitoring

When relying solely on chemical data to determine designated use support, at least ten temporally independent samples of chemical and physical conditions obtained during a time period are needed. That includes conditions considered critical for the particular pollutant of interest. Independent samples, for the purpose of parameters other than bacteria and in-situ water quality measurements, will have been collected at least four days apart. Samples collected at the same location less than four days apart shall be considered as one sample for the purpose of determining compliance with toxic pollutant criteria, with the mean value used to represent the sampling period.

For conventional parameters measured using continuous monitoring instruments, such as multi-probe datasondes, compliance with the applicable criteria will be determined at the regulatory depth established for dissolved oxygen measurements. This depth is five feet in water that is ten feet or more in total depth or is at mid-depth in water that is less than ten feet in total depth. Hourly measurements of dissolved oxygen, temperature, and pH data collected using continuous monitoring equipment will be assessed using the same binomial distribution function used for discrete sampling of these parameters. When measurements are made more frequently than hourly, the hourly values will be calculated as the mean of the measured values within each hour.

4.8.5 Use of Fish / Shellfish Consumption Advisories and Shellfish Growing Area Classifications

In October 2000, EPA issued guidance to states regarding the use of fish and shellfish consumption advisories (EPA, 2000). The guidance recommended that states consider certain information when determining if designated uses were impaired, including consumption advisories for fish and shellfish and certain shellfish growing area classifications. The following is an excerpt from the EPA guidance.

> "*Certain shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired waterbodies. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The States review these NSSP classifications every three years. There are certain NSSP classifications that are not appropriate to consider, and certain data and information that should not be considered independently of the classification (unless the data and information were not used in the development or review of the classification). These instances are: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status."*

The ADPH, Seafood Program, regulates shellfish harvesting in coastal waters of Alabama. The ADPH has designated four areas in Mobile Bay and adjacent coastal waters and classifies shellfish harvesting waters within these areas as "conditionally approved", "conditionally restricted", "restricted", "unclassified", and "prohibited". Area I waters comprise most of Mobile Bay south of East Fowl River and west of Bon Secour Bay and including Mississippi Sound. Area II waters include Grand Bay and Portersville Bay with exceptions near wastewater discharges. Area III waters are located in Bon Secour Bay and east of a line drawn from Fort Morgan to Mullet Point. Area IV is located in approximately the northern half of Mobile Bay.

Most of the waters designated as Shellfish Harvesting are classified as "conditionally approved". These harvesting areas are closed when the river stage on the Mobile River at Barry Steam Plant in Bucks, Alabama reaches a river stage of 8.0 feet above mean sea level and a public notice announcing the closure is published. These procedures are described in detail in the Conditional Area Management Plan developed by ADPH (ADPH, 2001). and the 2007 Comprehensive Sanitary Survey of Alabama's Growing Waters in Mobile and Baldwin Counties Area I, Area II and Area III (ADPH, 2008) which can be found at http://adph.org/foodsafety/index.asp?ID=1141

For purposes of making use support decisions relative to the SH designated use, the Department will consider "conditionally approved" and "conditionally restricted" waters as impaired and will include these water in Category 5. In "prohibited" and "unclassified" waters the Department will use water column bacteria sampling results to determine use support. When the applicable bacteria criterion is exceeded in more than 10% of the samples as determined using the binomial distribution function and **Table 17**, these waters will be included in Category 5.

The October 2000 EPA guidance concerning the use of fish and shellfish consumption advisories for protection of human health also recommended that state's include waters in Category 5 when there was a consumption advisory which suggested either limited consumption or no consumption of fish due to the presence of toxics in fish tissue. The following is an excerpt from the guidance.

> *"When deciding whether to identify a water as impaired, States, Territories, and authorized Tribes need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, States, Territories, and authorized Tribes are required to consider all existing and readily available data and information to identify impaired waterbodies on their section 303(d) lists. For purposes of determining whether a waterbody is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:*
>
> > *1. the advisory is based on fish and shellfish tissue data,*
> > *2. a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard)*
> > *3. the data are collected from the specific waterbody in question and*
> > *4. the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the State, Territory, or authorized Tribal water quality standards."*

This listing and assessment methodology will consider fish consumption advisories issued by the ADPH as an indication of impaired use in all State waters. However, there may be circumstances under which these waters could be placed in a category other than Category 5. For example, it may be appropriate to place certain waters in Category 4b when activities are ongoing under another restoration program, with the goal of restoring the water to fully supporting its uses. These decisions will be made on a case-by-case basis and documented in the ADB.

4.8.6 Use of Biological Assessments

Biological assessments compare data from biological surveys and other direct measurements of resident biota in surface waters to established biological criteria and assess the waterbody's degree of use support. Alabama has not established numeric biological criteria (except in the case of chlorophyll *a* in reservoirs) and, as a result, biological data are used as a means of applying narrative criteria contained in Alabama's water quality criteria document (ADEM Administrative Code r. 335-6-10). ADEM has been gathering biological assessment data for streams across Alabama since the 1970s. In the early 1990's the Department began assessing the biological health of wadeable streams using the USEPA Rapid Bioassessment Protocol (Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT)) and the Intensive Wadeable Multi-habitat Bioassessment (Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)). USEPA has offered the following technical considerations when using biological data to make use support determinations.

- A waterbody's use support should be based on a comparison of site-specific biological data to a reference condition established for the ecoregion in which the waterbody is located.
- A multimetric approach to bioassessment is recommended.
- The use of a standardized index or sampling period is recommended.
- Standard operation procedures and a quality assurance program should be established.
- A determination of the performance characteristics of the bioassessment methodology is suggested.
- An identification of the appropriate number of sampling sites that are representative of the waterbody is also recommended.

Biological assessment data will be used in combination with other surface water quality data or information to arrive at an overall use support determination. However, EPA recommends that biological data should be weighted more heavily than other types of data since biological data provide a more direct indication of the condition of the aquatic community. Alabama's assessment methodology has weighted biological data more heavily by requiring at least one biological assessment for certain use classifications and stream types and by reducing the number of water quality samples needed when a biological assessment is available. However, the biological assessment must include a habitat assessment conducted at the time of the biological sampling. When available, periphyton assessment data and algal growth potential tests results will be used to refine stressor identification.

In this methodology, several bioassessment methodologies can be used to assess aquatic life use support. One Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) is sufficient for assessing aquatic life use support. These methodologies are described in detail in the Department's SOPs referenced earlier. Macroinvertebrate and fish assessment results may vary significantly due to varying sensitivities to stressors between the communities. For these reasons, it may be appropriate to place the waterbody in Category 5 when only 1 assessment indicates impairment. These decisions will be made on a case-by-case basis in consultation with the biologist(s) responsible for conducting the assessment and will be documented in the ADB.

4.8.7 <u>Use of Data Collected by Others</u>

Data collected by other agencies, industry or industry groups, neighboring states, and watershed groups will be considered and evaluated provided the data meet the minimum data requirements specified for each designated use and comply with the quality control and quality assurance requirements discussed in Section 4.9. Examples of other agencies and groups collecting water quality data in Alabama include, but are not limited to, the following agencies and groups:

- USGS
- USEPA
- Tennessee Valley Authority
- National Oceanic and Atmospheric Administration
- United States Fish and Wildlife Service
- Mobile Bay National Estuary Program
- Dauphin Island Sea Lab
- Geological Survey of Alabama
- Natural Resources Conservation Service
- Soil and Water Conservation Districts
- Alabama Department of Conservation and Natural Resources
- Alabama Clean Water Partnership
- Alabama Department of Public Health
- Alabama Department of Transportation
- Citizen and Watershed Groups
- Industries and municipalities conducting river monitoring pursuant to NPDES or CWA Section 401 requirements

Data submitted by third parties for consideration should include documentation describing the data, including a study plan or SOP, and certification that the data were (or were not) collected consistent with the requirements presented in this methodology.

4.8.8 Use of Bacteria Data
Waterbody segments are sampled for bacteria either as part of a special study, routine ambient monitoring, or as part of the Department's Beach Monitoring Program. Bacteria of the E. coli group are currently used as indicators of the possible presence of pathogens in non-coastal waters. In coastal waters, bacteria of the enterococci group are used as indicators of the possible presence of pathogens. Alabama's bacteria criteria are summarized for each designated use in **Table 16**.

When assessing the geometric means of bacteria sample results, one excursion will generally be sufficient to determine impairment as long as the total number of geometric means is less than eight. However, if eight or more geometric means are available for assessment, impairment will be determined using Table 2. If the number of individual samples is less than eight and there is enough data to calculate a geomean, both the geometric mean and single sample maximum criteria must be met to determine impairment. If there are eight or more individual samples and a geomean is unable to be calculated with the data, **Table 17** will be used to determine impairment based on exceedances of the single sample criterion.

Bacteria data from the Beach Monitoring Program will be assessed by calculating the geometric mean on a monthly basis. More than one geomean exceedance, in this case, will be sufficient to determine impairment. Impairment can be also be determined if the single sample maximum criteria is exceeded (Independent of geomean exceedances).

Table 16: Alabama's Bacteria Criteria

	Non-Coastal Waters	**Coastal Water**
Outstanding Alabama Water (OAW)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 126 • Single Sample Max ≤ 235	*Enterococci (colonies/100 ml)* • Geometric Mean ≤ 35 • Single Sample Max ≤ 104
Public Water Supply (PWS)	*E. Coli (colonies/100 ml)* June through September • Geometric Mean ≤ 126 • Single Sample Max ≤ 487 October through May • Geometric Mean ≤ 548 • Single Sample Max ≤ 2507	*Enterococci (colonies/100 ml)* June through September • Geometric Mean ≤ 35 • Single Sample Max ≤ 158 October through May • Single Sample Max ≤ 275
Swimming and Other Whole Body Water-Contact Sports (S)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 126 • Single Sample Max ≤ 235	*Enterococci (colonies/100 ml)* • Geometric Mean ≤ 35 • Single Sample Max ≤ 104
Shellfish Harvesting (SH)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 126 • Single Sample Max ≤ 235	*Fecal Coliform (colonies/100 ml)* • Geometric Mean ≤ 14 • Single Sample Max ≤ 43 *Enterococci (colonies/100 ml)*[13] • Geometric Mean ≤ 35 • Single Sample Max ≤ 104
Fish and Wildlife (F&W)	*E. Coli (colonies/100 ml)* June through September • Geometric Mean ≤ 126 • Single Sample Max ≤ 487 October through May • Geometric Mean ≤ 548 • Single Sample Max ≤ 2507	*Enterococci (colonies/100 ml)* June through September • Geometric Mean ≤ 35 • Single Sample Max ≤ 158 October through May • Single Sample Max ≤ 275
Limited Warmwater Fishery (LWF)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 548 • Single Sample Max ≤ 2507	*Enterococci (colonies/100 ml)* • Single Sample Max ≤ 275
Agricultural and Industrial Water Supply (A&I)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 700 • Single Sample Max ≤ 3200	*Enterococci (colonies/100 ml)* • Single Sample Max ≤ 500

[13] Not to exceed the limits specified in the latest edition of the *National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish: 2007 Revision*, published by the Food and Drug Administration, U.S. Department of Health and Human Services.

4.8.9 Consideration of Stream Flow and Method Detection Limits
During toxicant sampling in rivers or streams the measured flow must be at or above the 7Q10 value for that location. In cases where the applicable water quality criterion is less than the method detection limit (MDL) for a particular pollutant and the concentration for the pollutant is reported as less than detection (<MDL), the Department will evaluate the data consistent with EPA guidance provided in "*Guidance for Data Quality Assessment*", EPA QA/G-9, QA00 UPDATE, EPA, July 2000 and will use the approach that is appropriate for the data set.

These requirements are intended to ensure that existing water quality conditions are accurately portrayed, do not characterize transitional conditions, and that obsolete or inaccurate data are not used. In addition, the minimum data requirements may change on a case-by-case basis if pollutant sources upstream of the monitoring locations are likely. This determination will be made using information obtained from the Department's geographic information system or other databases. Failure to meet the minimum data requirements for any waterbody type will place the waterbody in Category 2.

4.8.10 Non-anthropogenic Impacts (Natural Conditions)
In the absence of known point and non-point sources or influences, ADEM will investigate if natural conditions [ADEM Administrative Code r. 335-6-10-.05(4)] are responsible for the deviation from water quality criteria. A determination that natural conditions are responsible will be made by examining all readily available sources of supporting data including the following: water quality data from ecoregion reference stations, land use, geology, biology, soils, hydrology, wildlife density, site visits and any other relevant data. If the deviation from water quality criteria are naturally occurring then the waterbody(s) will be placed into Category 1. When comparing measured ambient water quality data to data collected at ecoregion stations for the purpose of establishing natural conditions as the sole reason for criterion exceedances, the ambient water quality results will generally be compared to the 90th percentile of the data measured at one or more ecoregion stations, except in the case of bacteria data.

4.8.11 Application of Hardness Based Metals Criteria
For purposes of assessing compliance with the freshwater aquatic life criteria for metals calculated using the equations in ADEM Administrative Code r. 335-6-10-.07(1)(a), ambient in situ hardness measurements will be used to compute the aquatic life criteria. When hardness values are less than 25 mg/l and the measured hardness-dependent metal concentration exceeds the applicable aquatic life criterion, the ambient in situ hardness and metal concentrations will be compared to the ecoregion/unimpacted reference site hardness and metal concentration. If the mean ambient hardness concentration is statistically similar ($p < 0.05$) to the mean ecoregion/unimpacted reference site and the metal concentration is statistically similar ($p < 0.05$) to the mean ecoregion/unimpacted reference site, the exceedance of the aquatic life criterion for the hardness-dependent metal will be considered natural in the absence of potential anthropogenic sources.

4.9 Quality Control / Quality Assurance Requirements
Collection and analyses of all data (including chemical, physical, and biological) should be collected and analyzed consistent with the SOPs presented earlier. Study plans should reference

the SOP appropriate for the type of data being collected and should discuss how data quality will be documented. This should include a discussion of the quality control procedures followed during sample collection and analysis. These procedures should describe the number and type of field and laboratory quality control samples for the project, if appropriate for the type of sampling being conducted, field blanks, equipment blanks, split samples, duplicate samples, the name of the laboratory performing the analyses, name of the laboratory contact person, and the number and type of laboratory quality control samples.

While the Department will consider any existing and readily available data and information, the Department reserves the right to reject data or information in making use support decisions that do not comply with the minimum data requirements presented in this document. The decision not to use certain data will be documented in the ADB. The Department applies best professional judgment when considering datasets smaller than the specified minimum data requirements. In such instances, use support decisions are made on a case-by-case basis in consideration of ancillary data and information such as watershed characteristics, known pollutant sources, water quality trends or other environmental indicators.

4.10 Minimum Sample Size and Allowable Number of Water Quality Criterion Exceedances

Table 17 shows the allowable number of exceedances for various samples sizes up to 199 samples. The Department's annual sampling plans and available resources generally allow for at least eight samples per sampling location except in reservoirs where fewer samples (i.e. 3 samples) may be collected due to sample holding time and resource constraints. The number of exceedances in each range of sample sizes was calculated using the binomial distribution function. This number is the number of exceedances of a particular water quality criterion needed to say with 90% confidence that the criterion is exceeded in more than 10% of the population represented by the available samples. This table will be used to determine the number of exceedances of Alabama numeric water quality criteria listed in ADEM Administrative Code r. 335-6-10 (for dissolved oxygen, temperature, turbidity, pH, and bacteria), consistent with the assessment methodology for each use discussed earlier, necessary to establish that a waterbody segment is not fully supporting its designated uses. This approach is consistent with ADEM Administrative Code r. 335-6-10, which recognizes that natural conditions may cause sporadic excursions of numeric water quality criteria, and with EPA's 1997 305(b) guidance. For conventional water quality parameters, there must be at least eight temporally independent samples collected during the previous six-year period to be considered adequate for making use support determinations, except where fewer samples are determined to be adequate as discussed earlier. As used in this context, temporally independent means that the samples were collected at an interval appropriate to capture the expected variation in the parameter. For example, dissolved oxygen, temperature and pH measurements should capture the normal diurnal variation that occurs in the parameters and temporal independence may occur in several hours (i.e. morning versus afternoon). Measurements for turbidity and bacteria should typically be at least 24 hours apart.

It is the intent of the methodology to ensure that an adequate number of samples are available for use in the assessment process and for developing future monitoring plans. Smaller sample sizes may be appropriate in certain circumstances where there is a clear indication that exceedances of the criteria are not due to natural conditions. For example, a data set comprised of fewer than the required minimum number of samples collected monthly may be sufficient to determine that a waterbody is not supporting its use when a significant number (more than two) exceed a particular criterion. Conversely, a data set with fewer than the required minimum number of samples collected monthly may be sufficient to determine that a waterbody is fully supporting its use if none of the samples exceed any of the criteria and there is sufficient supporting information to support this conclusion (i.e. biological assessment indicates full use support). The decision to use smaller data sets for making use support decisions will be made on a case-by-case basis using best professional judgment. The basis for these decisions will be documented in the ADB.

Table 17: Minimum Number of Samples Exceeding the Numeric Criterion Necessary for Listing*

Sample Size	Number of Exceedances	Sample Size	Number of Exceedances
8 thru 11	2	97 thru 104	14
12 thru 18	3	105 thru 113	15
19 thru 25	4	114 thru 121	16
26 thru 32	5	122 thru 130	17
33 thru 40	6	131 thru 138	18
41 thru 47	7	139 thru 147	19
48 thru 55	8	148 thru 156	20
56 thru 63	9	157 thru 164	21
64 thru 71	10	165 thru 173	22
72 thru 79	11	174 thru 182	23
80 thru 88	12	183 thru 191	24
89 thru 96	13	192 thru 199	25

* - For conventional parameters, including bacteria, at the 90 percent confidence level

5.0 Removing a Waterbody from Category 5

Waterbodies may be removed from a 303(d) list (category 5) for various reasons, including:

- Assessment of more recent water quality data demonstrates that the waterbody is meeting all applicable water quality standards. (Move to Category 1)
- A review of the original listing decision demonstrates that the waterbody should not have been included in Category 5. (Move to Category 1 or Category 2)
- TMDL has been completed. (Move to Category 4a)
- Other pollution control requirements are reasonably expected to result in the attainment of the water quality standards in the near future. These requirements must be specifically applicable to the particular water quality problem. (Move to Category 4b)
- Impairment is not caused by a pollutant. (Move to Category 4c)
- Natural causes – When it can be demonstrated the exceedance of a numeric water quality criterion is due to natural conditions and not to human disturbance activities. (Move to Category 1)

Table 18 shows the allowable number of exceedances of criteria for conventional pollutants for various sample sizes and a 90% confidence level. This table will be used to determine the number of allowable exceedances of Alabama numeric water quality criteria for pollutants listed in ADEM Administrative Code r. 335-6-10, with the exception of chlorophyll *a* criteria and the toxics criteria listed in the appendix to ADEM Administrative Code r. 335-6-10, for the waterbody to be removed from a 303(d) list for a specific pollutant (move to Category 1). In addition, the original basis for listing the waterbody will be considered as a part of the delisting process. Included in this evaluation will be a review of pollutant sources to determine which ones may have been removed or remediated, changes in land practices or uses, installation of new treatment facilities or best management practices, and changes in stream hydrology or morphology.

Table 18: Maximum Number of Samples Exceeding the Numeric Criterion Necessary for Delisting*

Sample Size	Number of Exceedances	Sample Size	Number of Exceedances
8 thru 21	0	104 thru 115	7
22 thru 37	1	116 thru 127	8
38 thru 51	2	128 thru 139	9
52 thru 64	3	140 thru 151	10
65 thru 77	4	152 thru 163	11
78 thru 90	5	164 thru 174	12
91 thru 103	6	175 thru 186	13

* - For conventional parameters, including bacteria, at the 90 percent confidence level

When a waterbody has been included in Category 5 due to a fish consumption advisory, the waterbody will be moved to Category 1 when subsequent fish tissue results indicate that pollutant concentrations have declined and a fish consumption advisory is no longer needed. The determination that a fish consumption advisory is no longer needed is made by the Alabama Department of Public Health.

For waters originally placed in Category 5 due to a specific toxic pollutant or specific toxic pollutants, there should be no violations of the appropriate criteria in a minimum of eight samples collected over a three-year period before the cause of impairment is removed or the water is placed in Category 1.

6.0 Estimating the Size of the Assessed Waterbody

Waterbodies are assessed based on assessment units. Assessment units vary in size, depending on the waterbody type, watershed characteristics, designated use, and the location of monitoring stations. Individual assessments will lie completely within a designated use or a segment with multiple designated uses. For example, an assessment unit will not be partially within one designated use and partially within a different designated use. However, assessment units may be assigned more than one designated use as listed in ADEM Administrative Code r. 335-6-11. For example, an assessment unit may have classified uses of both Fish and Wildlife and Public Water Supply provided both uses are assigned to the entire assessment unit. An assessment unit may be defined as a stream, the mainstem of a river, embayment, portion of a lake or reservoir, or a part of an estuary or coastal water.

A monitoring unit is defined as the watershed draining to, a sampling location and is generally made up of many assessment units (individual reaches). A monitoring unit will generally have a drainage area of more than 5 square miles. When it is necessary to better characterize assessment units within the larger monitoring units, new monitoring units can be delineated based on the location of the additional sampling location or locations. Water quality data and information gathered at a sampling location, which defines a monitoring unit, will be the primary means for assigning a use support status to assessment units within the monitoring unit.

The spatial extent of each monitoring unit will be determined using information contained in the Department's Geographic Information System (GIS). Specifically, stream coverage contained within the National Hydrography Dataset (NHD) will be the basis for determining the size of assessed waters. This database of natural and constructed surface waters is a comprehensive set of digital spatial data that contains information about surface water features, such as lakes, ponds, streams, rivers, springs and wells. Within the NHD, surface water features are combined to form "reaches", which provide the framework for linking water-related data to the NHD surface drainage network. These linkages enable the analysis and display of these water-related data in upstream and downstream order. Characteristics such as stream length or reservoir area can be aggregated within a monitoring unit to estimate the size of assessed waters.

7.0 Ranking and Prioritizing Impaired Waters

Section 303(d)(1) of the Clean Water Act requires each state to establish a priority ranking for waters it identifies on the 303(d) list (i.e. Category 5 waters) taking into account the severity of pollution and the designated uses of such waters.

The State of Alabama is to establish Total Maximum Daily Loads (TMDLs) in accordance with its priority ranking strategy; however, states are given considerable flexibility in establishing their ranking method based on their particular circumstances and available resources. Alabama has implemented a basin rotation approach when it comes to monitoring waters and establishing TMDLs. In general, the Draft TMDL date follows the basin rotation monitoring schedule because the availability of water quality data is the primary driver in the TMDL development process. See *8.0 Schedule for Assessing State Waters.*

All waters placed on the 303(d) list will be given an estimated TMDL development date. The ranking of waters on the 303(d) list is determined by these estimated dates. This date will be determined based on criteria which can include:

- TMDL complexity
- Pollutants of concern
- Need for additional data and information
- Sources of the pollutants
- Severity of the impairment

- Pending rules and regulations
- Spatial extent of impairment
- General watershed management activities (e.g. 319 grant activities and watershed management planning)
- Existence of endangered and sensitive aquatic species
- Degree of public interest and support for particular waterbodies.

Waters which are currently listed in Category 5 will typically have their TMDL developed within 8 to 13 years unless they become eligible for delisting.

Alabama's IWQMAR will include proposed schedules (both long term and annually) for the development of TMDLs.

The Department will communicate with bordering states concerning the status of shared waters. When requested, the state will provide data concerning shared waters to the adjacent state.

8.0 Schedule for Assessing State Waters

The State has developed a Watershed Management Schedule and has been operating under the rotating basin plan since 1997. This schedule has the state divided into 5 river basin groups that are sampled on a five-year rotating basis. **Table 19** shows the rotating basin schedule.

Table 19: Watershed Management Schedule

River Basin Group	Year to be Monitored
Tennessee	2013
Chattahoochee / Chipola / Choctawhatchee / Perdido-Escambia	2014
Alabama / Coosa / Tallapoosa	2015
Escatawpa / Mobile / Lower Tombigbee / Upper Tombigbee	2016
Black Warrior / Cahaba	2017

Alabama's IWQMAR will include a comprehensive monitoring and assessment plan that describes the state's proposed schedule for the following two years. Elements of this plan include a description of the sampling approach (i.e. rotating basin and fixed ambient) and a list of the parameters to be collected (i.e. physical, chemical, and biological). The report will also include a schedule (both long term and annually) for collecting data and information for basic assessments and for TMDLs.

9.0 Public Participation

Alabama's IWQMAR will combine the Water Quality Inventory Report (§305(b)) with the Impaired Waterbodies (§303(d)) listing. Category 5 in the IWQMAR is considered the Impaired Waterbodies list. The remaining categories are considered the Water Quality Inventory. This methodology lays out the framework for assessing data and determining which of the five categories the waterbody will be assigned. The entire Integrated List will follow the same public process as the §303(d) listing but Categories 1 through 4 and the monitoring schedule will be provided for informational purposes only since these schedules are subject to change as resources allow.

The Department will solicit the submittal of data and information for use in developing the IWQMAR. The public notice requesting data will be published in four major newspapers in the state and on the Department's Website. The time period for submitting data will be specified in the public notice. The data must be received by the Department by October 31 in the year prior to the report being due to EPA. Data submitted after the specified period will be considered in the development of subsequent IWQMAR Reports. The Department reviews all existing and readily available data and is committed to using only data with acceptable quality assurance to develop the IWQMAR. Only electronic data or data available in published reports are considered "readily available". Typically, the Department uses Microsoft databases (i.e., Excel, Access) or the Water Resources Database (WRDB) for database management and retrieval.

The Department will publish notice of the availability of the Integrated Water Quality Monitoring and Assessment Methodology and Draft Integrated Report in four major newspapers of general circulation throughout the State and on the Department Website. Adjacent states, federal agencies and interstate agencies shall also be noticed as necessary. The Department will coordinate with neighboring states during the development of the IWQMAR, as needed. The comment period on a proposed Category 5 (§303(d)) list will be a minimum of 30 days.

The IWQMAR, which will include the integrated list, expected monitoring schedules, TMDL schedules, as well as any other information usually included in the §305(b) Report, will be submitted to the USEPA as required by §305(b) of the Clean Water Act. The Department will post the availability of the IWQMAR on its web page at that time.

10.0 References

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Appendix B

Categorization of Alabama Waters

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
Category 1 - Rivers and Streams									
AL03150201-1207-101	Alabama River	Alabama	S/F&W	Cahaba River	Six Mile Creek	1	5.36	miles	
AL03150201-1207-102	Alabama River	Alabama	F&W	Sixmile Creek	Robert F. Henry Lock and	1	42.43	miles	
AL03150201-0104-301	Three Mile Branch	Alabama	F&W	Galbraith Mill Creek	Lower Wetumpka Rd	1	0.24	miles	
AL03150201-0203-101	Autauga Creek	Alabama	F&W	Alabama River	Matthews Branch	1	7.28	miles	
AL03150201-0203-102	Autauga Creek	Alabama	S/F&W	Matthews Branch	Its source	1	26.87	miles	
AL03150201-0201-100	Bridge Creek	Alabama	F&W	Autauga Creek	Its source	1	12.03	miles	
AL03150201-0603-100	Swift Creek	Alabama	S/F&W	Alabama River	Its source	1	41.03	miles	
AL03150201-0602-100	White Water Creek	Alabama	F&W	Swift Creek	Its source	1	9.40	miles	
AL03150201-0807-100	Big Swamp Creek	Alabama	S/F&W	Alabama River	Its source	1	56.45	miles	
AL03150201-1006-101	Mulberry Creek	Alabama	S/F&W	Alabama River	Harris Branch	1	22.07	miles	
AL03150201-1006-102	Mulberry Creek	Alabama	F&W	Harris Branch	Its source	1	23.95	miles	
AL03150201-1001-100	Benson Creek	Alabama	F&W	Mulberry Creek	Its source	1	11.38	miles	
AL03150201-1005-100	Buck Creek	Alabama	F&W	Mulberry Creek	Its source	1	21.39	miles	
AL03150201-1102-101	Valley Creek	Alabama	F&W	Alabama River	Selma-Summerfield Road	1	7.27	miles	
AL03150201-1102-102	Valley Creek	Alabama	S/F&W	Selma-Summerfield Road	Valley Creek Lake	1	15.22	miles	
AL03150201-1101-103	Valley Creek	Alabama	S/F&W	Valley Creek Lake	Its source	1	6.07	miles	
AL03150201-1203-100	Soapstone Creek	Alabama	F&W	Alabama River	Its source	1	17.52	miles	
AL03150203-0505-102	Alabama River	Alabama	S/F&W	Chilatchee Creek	Cahaba River	1	29.96	miles	
AL03150203-0209-100	Cedar Creek	Alabama	S/F&W	Alabama River	Its source	1	63.33	miles	
AL03150203-0203-100	Wolf Creek	Alabama	F&W	Cedar Creek	Its source	1	21.94	miles	
AL03150203-0106-110	Chaney Creek	Alabama	F&W	Bogue Chitto Creek	Its source	1	17.17	miles	
AL03150203-0408-100	Pine Barren Creek	Alabama	S/F&W	Alabama River	Its source	1	68.71	miles	
AL03150203-0404-100	Turkey Creek	Alabama	F&W	Pine Barren Creek	Its source	1	18.84	miles	
AL03150203-0605-200	Cub Creek	Alabama	F&W	Beaver Creek	Its source	1	12.94	miles	
AL03150204-0705-110	Alabama River	Alabama	F&W	Mobile River	Pigeon Creek	1	68.50	miles	
AL03150204-0101-100	Tallatchee Creek	Alabama	F&W	Alabama River	Its source	1	23.94	miles	
AL03150204-0104-100	Silver Creek	Alabama	F&W	Alabama River	Its source	1	13.42	miles	
AL03150204-0206-500	Holly Mill Creek	Alabama	F&W	Big Flat Creek	Its source	1	9.05	miles	
AL03150204-0205-210	Bear Creek	Alabama	F&W	Big Flat Creek	Its source	1	8.75	miles	
AL03150204-0302-200	Walkers Creek	Alabama	F&W	Limestone Creek	Its source	1	8.24	miles	
AL03150204-0302-300	Brushy Creek	Alabama	F&W	Limestone Creek	Its source	1	8.08	miles	
AL03160109-0202-110	Marriott Creek	Black Warrior	F&W	Mulberry Fork	Its source	1	14.10	miles	
AL03160109-0205-500	Rice Creek	Black Warrior	F&W	Mulberry Fork	Its source	1	8.60	miles	
AL03160109-0404-101	Cane Creek (Oakman)	Black Warrior	F&W	Lost Creek	Dixie Springs Road	1	7.15	miles	
AL03160109-0404-102	Cane Creek (Oakman)	Black Warrior	LWF	Dixie Springs Road	Alabama Highway 69	1	3.49	miles	
AL03160109-0404-103	Cane Creek (Oakman)	Black Warrior	F&W	Alabama Highway 69	Its source	1	7.38	miles	
AL03160109-0401-100	Mill Creek	Black Warrior	F&W	Lost Creek	Its source	1	11.44	miles	
AL03160109-0601-901	Town Creek	Black Warrior	LWF	Cane Creek	100 yards upstream of Southern Railway crossing	1	1.10	miles	
AL03160109-0601-101	Cane Creek	Black Warrior	LWF	Mulberry Fork	Town Creek	1	10.58	miles	
AL03160110-0507-101	Sipsey Fork	Black Warrior	PWS/F&W	Mulberry Fork	Lewis Smith Dam	1	13.92	miles	
AL03160110-0104-102	Sipsey Fork	Black Warrior	F&W	Grindstone Creek	Sandy Creek	1	0.89	miles	
AL03160110-0104-103	Sipsey Fork	Black Warrior	F&W	Sandy Creek	Its source	1	21.23	miles	ONRW
AL03160110-0104-500	Sandy Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	10.83	miles	
AL03160110-0103-105	unnamed tributaries to Sipsey Fork	Black Warrior	F&W	Sipsey Fork	Their source	1	28.32	miles	ONRW
AL03160110-0102-115	unnamed tributaries to Sipsey Fork	Black Warrior	F&W	Sipsey Fork	Their source	1	9.69	miles	ONRW
AL03160110-0103-200	Payne Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	3.89	miles	ONRW
AL03160110-0103-205	unnamed tributaries to Payne Creek	Black Warrior	F&W	Payne Creek	Their source	1	6.11	miles	ONRW
AL03160110-0103-300	Caney Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	4.66	miles	ONRW
AL03160110-0103-305	unnamed tributaries to Caney Creek	Black Warrior	F&W	Caney Creek	Their source	1	10.21	miles	ONRW
AL03160110-0103-400	Hurricane Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	2.29	miles	ONRW
AL03160110-0103-405	unnamed tributaries to Hurricane Creek	Black Warrior	F&W	Hurricane Creek	Their source	1	2.56	miles	ONRW

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160110-0103-500	Davis Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	2.83	miles	ONRW
AL03160110-0103-505	unnamed tributaries to Davis Creek	Black Warrior	F&W	Davis Creek	Their source	1	8.94	miles	ONRW
AL03160110-0103-600	North Fork Caney Creek	Black Warrior	F&W	Caney Creek	Its source	1	6.38	miles	ONRW
AL03160110-0103-605	unnamed tributaries to North Fork Caney Creek	Black Warrior	F&W	North Fork Caney Creek	Their source	1	19.65	miles	ONRW
AL03160110-0103-700	South Fork Caney Creek	Black Warrior	F&W	Caney Creek	Its source	1	5.04	miles	ONRW
AL03160110-0103-705	unnamed tributaries to South Fork Caney Creek	Black Warrior	F&W	South Fork Caney Creek	Their source	1	8.69	miles	ONRW
AL03160110-0103-800	Lloyds Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	1.11	miles	ONRW
AL03160110-0103-805	unnamed tributaries to Lloyds Creek	Black Warrior	F&W	Lloyds Creek	Their source	1	0.62	miles	ONRW
AL03160110-0103-900	Sweetwater Creek	Black Warrior	F&W	Caney Creek	Its source	1	1.23	miles	ONRW
AL03160110-0103-905	unnamed tributaries to Sweetwater Creek	Black Warrior	F&W	Sweetwater Creek	Their source	1	0.70	miles	ONRW
AL03160110-0101-100	Borden Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	16.61	miles	ONRW
AL03160110-0101-116	unnamed tributaries to Borden Creek	Black Warrior	F&W	Borden Creek	Their source	1	23.35	miles	ONRW
AL03160110-0101-210	Braziel Creek	Black Warrior	F&W	Borden Creek	Its source	1	5.69	miles	ONRW
AL03160110-0101-215	unnamed tributaries to Braziel Creek	Black Warrior	F&W	Braziel Creek	Their source	1	13.77	miles	ONRW
AL03160110-0101-310	Flannagin Creek	Black Warrior	F&W	Borden Creek	Its source	1	9.99	miles	ONRW
AL03160110-0101-315	unnamed tributaries to Flannagin Creek	Black Warrior	F&W	Flannagin Creek	Their source	1	15.49	miles	ONRW
AL03160110-0101-410	Horse Creek	Black Warrior	F&W	Borden Creek	Its source	1	1.76	miles	ONRW
AL03160110-0101-415	unnamed tributaries to Horse Creek	Black Warrior	F&W	Horse Creek	Their source	1	2.30	miles	ONRW
AL03160110-0101-510	Montgomery Creek	Black Warrior	F&W	Borden Creek	Its source	1	3.99	miles	ONRW
AL03160110-0101-515	unnamed tributaries to Montgomery Creek	Black Warrior	F&W	Montgomery Creek	Their source	1	8.99	miles	ONRW
AL03160110-0101-610	Hagood Creek	Black Warrior	F&W	Braziel Creek	Its source	1	4.23	miles	ONRW
AL03160110-0101-615	unnamed tributaries to Hagood Creek	Black Warrior	F&W	Hagood Creek	Their source	1	7.57	miles	ONRW
AL03160110-0101-710	Dry Creek	Black Warrior	F&W	Flannagin Creek	Its source	1	2.17	miles	ONRW
AL03160110-0101-715	unnamed tributaries to Dry Creek	Black Warrior	F&W	Dry Creek	Their source	1	2.80	miles	ONRW
AL03160110-0102-210	Fall Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	2.06	miles	ONRW
AL03160110-0102-215	unnamed tributaries to Fall Creek	Black Warrior	F&W	Fall Creek	Their source	1	0.70	miles	ONRW
AL03160110-0102-310	Bee Branch	Black Warrior	F&W	Sipsey Fork	Its source	1	2.09	miles	ONRW
AL03160110-0102-315	unnamed tributaries to Bee Branch	Black Warrior	F&W	Bee Branch	Their source	1	2.95	miles	ONRW
AL03160110-0102-410	Thompson Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	8.59	miles	ONRW
AL03160110-0102-415	unnamed tributaries to Thompson Creek	Black Warrior	F&W	Thompson Creek	Their source	1	15.29	miles	ONRW
AL03160110-0102-510	Hubbard Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	6.59	miles	ONRW
AL03160110-0102-515	unnamed tributaries to Hubbard Creek	Black Warrior	F&W	Hubbard Creek	Their source	1	5.30	miles	ONRW
AL03160110-0102-610	Tedford Creek	Black Warrior	F&W	Thompson Creek	Its source	1	3.68	miles	ONRW
AL03160110-0102-615	unnamed tributaries to Tedford Creek	Black Warrior	F&W	Tedford Creek	Their source	1	10.40	miles	ONRW
AL03160110-0102-710	Mattox Creek	Black Warrior	F&W	Thompson Creek	Its source	1	3.26	miles	ONRW
AL03160110-0102-715	unnamed tributaries to Mattox Creek	Black Warrior	F&W	Mattox Creek	Their source	1	7.73	miles	ONRW
AL03160110-0102-800	Ross Branch	Black Warrior	F&W	Tedford Creek	Its source	1	2.06	miles	ONRW
AL03160110-0102-805	unnamed tributaries to Ross Branch	Black Warrior	F&W	Ross Branch	Their source	1	2.07	miles	ONRW
AL03160110-0102-900	Quillan Creek	Black Warrior	F&W	Hubbard Creek	Its source	1	3.77	miles	ONRW
AL03160110-0102-905	unnamed tributaries to Quillan Creek	Black Warrior	F&W	Quillan Creek	Their source	1	6.68	miles	ONRW
AL03160110-0102-110	Parker Branch	Black Warrior	F&W	Hubbard Creek	Its source	1	3.82	miles	ONRW
AL03160110-0102-114	unnamed tributaries to Parker Branch	Black Warrior	F&W	Parker Branch	Their source	1	3.35	miles	ONRW
AL03160110-0102-120	Whitman Creek	Black Warrior	F&W	Hubbard Creek	Its source	1	3.73	miles	ONRW
AL03160110-0102-125	unnamed tributaries to Whitman Creek	Black Warrior	F&W	Whitman Creek	Their source	1	4.53	miles	ONRW
AL03160110-0102-130	Maxwell Creek	Black Warrior	F&W	Hubbard Creek	Its source	1	2.02	miles	ONRW
AL03160110-0102-135	unnamed tributaries to Maxwell Creek	Black Warrior	F&W	Maxwell Creek	Their source	1	1.55	miles	ONRW
AL03160110-0102-140	Basin Creek	Black Warrior	F&W	Hubbard Creek	Its source	1	2.81	miles	ONRW
AL03160110-0102-145	unnamed tributaries to Basin Creek	Black Warrior	F&W	Basin Creek	Their source	1	4.39	miles	ONRW
AL03160110-0102-150	Dunn Branch	Black Warrior	F&W	Maxwell Creek	Its source	1	1.33	miles	ONRW
AL03160110-0102-160	Natural Well Branch	Black Warrior	F&W	Maxwell Creek	Its source	1	1.45	miles	ONRW
AL03160110-0102-165	unnamed tributary to Natural Well Branch	Black Warrior	F&W	Natural Well Branch	Its source	1	0.60	miles	ONRW
AL03160110-0102-170	White Oak Branch	Black Warrior	F&W	Thompson Creek	Its source	1	1.69	miles	ONRW
AL03160110-0102-175	unnamed tributaries to White Oak Branch	Black Warrior	F&W	White Oak Branch	Their source	1	0.61	miles	ONRW
AL03160110-0102-180	Wolf Pen Branch	Black Warrior	F&W	Sipsey Fork	Its source	1	1.00	miles	ONRW

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160110-0102-190	Ugly Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	3.05	miles	ONRW
AL03160110-0102-195	unnamed tributaries to Ugly Creek	Black Warrior	F&W	Ugly Creek	Their source	1	4.46	miles	ONRW
AL03160110-0203-102	Brushy Creek	Black Warrior	PWS/F&W	Lewis Smith Lake	Highway 278	1	1.13	miles	
AL03160110-0201-200	Rush Creek	Black Warrior	F&W	Brushy Creek	Its source	1	9.06	miles	
AL03160110-0202-200	Capsey Creek	Black Warrior	F&W	Brushy Creek	Its source	1	13.47	miles	
AL03160110-0203-110	Inman Creek	Black Warrior	F&W	Brushy Creek	Its source	1	5.79	miles	
AL03160110-0402-100	Rock Creek	Black Warrior	F&W	Blevens Creek	Its source	1	14.43	miles	
AL03160110-0407-201	White Oak Creek	Black Warrior	F&W	Rock Creek	extent of reservoir	1	3.21	miles	
AL03160110-0407-202	White Oak Creek	Black Warrior	F&W	Lewis Smith Lake	Its source	1	7.72	miles	
AL03160111-0202-102	Locust Fork	Black Warrior	F&W	Blount County Road 30	Its source	1	42.64	miles	
AL03160111-0207-100	Little Warrior River	Black Warrior	F&W	Locust Fork	Its source	1	6.98	miles	
AL03160111-0206-101	Calvert Prong	Black Warrior	F&W	Little Warrior River	Whited Creek	1	13.05	miles	
AL03160111-0206-102	Calvert Prong	Black Warrior	PWS	Whited Creek	Its source	1	14.30	miles	
AL03160111-0207-300	Blackburn Fork	Black Warrior	F&W	Little Warrior River	Inland Lake Dam	1	11.63	miles	
AL03160111-0204-102	Blackburn Fork	Black Warrior	PWS	Inland Lake	Highland Lake Dam	1	3.33	miles	
AL03160111-0204-104	Blackburn Fork	Black Warrior	PWS	Highland Lake	Its source	1	6.42	miles	
AL03160111-0207-900	Hendrick Mill Branch	Black Warrior	F&W	Blackburn Fork	Its source	1	3.91	miles	
AL03160111-0304-100	Gurley Creek	Black Warrior	F&W	Locust Fork	Its source	1	23.07	miles	
AL03160111-0411-100	Short Creek	Black Warrior	F&W	Locust Fork	Its source	1	9.34	miles	
AL03160112-0105-101	Mud Creek	Black Warrior	F&W	Valley Creek	Big Branch	1	14.12	miles	
AL03160112-0301-100	Blue Creek	Black Warrior	F&W	Black Warrior River	Its source	1	18.49	miles	
AL03160112-0410-100	Binion Creek	Black Warrior	F&W	North River	Its source	1	18.07	miles	
AL03160112-0409-100	Barbee Creek	Black Warrior	F&W	Binion Creek	Its source	1	10.29	miles	
AL03160112-0406-100	Bear Creek	Black Warrior	F&W	North River	Its source	1	11.12	miles	
AL03160112-0404-100	Tyro Creek	Black Warrior	F&W	North River	Its source	1	12.67	miles	
AL03160112-0501-103	Yellow Creek	Black Warrior	PWS	Little Yellow Creek	Its source	1	10.47	miles	
AL03160113-0103-100	South Sandy Creek	Black Warrior	F&W	Big Sandy Creek	Its source	1	14.86	miles	
AL03160113-0401-103	Fivemile Creek	Black Warrior	F&W	Payne Lake	Its source	1	5.04	miles	
AL03150202-0902-100	Cahaba River	Cahaba	OAW/S	Alabama River	Alabama Highway 82	1	89.50	miles	
AL03150202-0103-101	Little Cahaba River	Cahaba	PWS	Cahaba River	Purdy Lake dam	1	4.82	miles	
AL03150202-0103-103	Little Cahaba River	Cahaba	F&W	Head of Purdy Lake	Its source	1	13.75	miles	
AL03150202-0204-800	Little Shades Creek	Cahaba	F&W	Cahaba River	Its source	1	7.40	miles	
AL03150202-0203-112	Buck Creek	Cahaba	LWF	Cahaba Valley Creek	Shelby County Road 44	1	6.02	miles	
AL03150202-0205-100	Piney Woods Creek	Cahaba	F&W	Cahaba River	Its source	1	7.64	miles	
AL03150202-0302-101	Mud Creek	Cahaba	F&W	Shades Creek	Tannehill Iron Works	1	3.68	miles	
AL03150202-0405-110	Little Cahaba River	Cahaba	OAW/F&W	Cahaba River	Its source	1	16.54	miles	
AL03150202-0405-200	Fourmile Creek	Cahaba	F&W	Little Cahaba River	Its source	1	5.64	miles	
AL03150202-0403-200	Mayberry Creek	Cahaba	F&W	Shoal Creek	Its source	1	8.51	miles	
AL03150202-0603-200	Goose Creek	Cahaba	F&W	Cahaba River	Its source	1	7.67	miles	
AL03150202-0703-400	Silver Creek	Cahaba	F&W	Cahaba River	Its source	1	3.76	miles	
AL03150202-0802-700	Holsombech Creek	Cahaba	F&W	Oakmulgee Creek	Its source	1	5.55	miles	
AL03150202-0804-100	Little Oakmulgee Creek	Cahaba	S	Oakmulgee Creek	Its source	1	18.69	miles	
AL03130002-0908-101	Chattahoochee River	Chattahoochee	F&W	Johnson Island	West Point Manufacturing Company water supply intake at Lanett	1	12.56	miles	
AL03130002-0908-102	Chattahoochee River	Chattahoochee	PWS	West Point Manufacturing Company water supply intake at Lanett	West Point Dam	1	4.20	miles	
AL03130002-0806-102	Wehadkee Creek	Chattahoochee	F&W	Alabama-Georgia state line	Its source	1	24.66	miles	
AL03130002-0903-400	Barrow Creek	Chattahoochee	F&W	Oseligee Creek	Its source	1	7.54	miles	
AL03130002-0901-100	Wells Creek	Chattahoochee	F&W	Oseligee Creek	Its source	1	12.60	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03130002-0902-200	Finley Creek	Chattahoochee	F&W	Oseligee Creek	Its source	1	4.72	miles	
AL03130002-1105-100	Osanippa Creek	Chattahoochee	F&W	Chattahoochee River	Its source	1	29.20	miles	
AL03130002-1104-100	Wildcat Creek	Chattahoochee	F&W	Osanippa Creek	Its source	1	7.15	miles	
AL03130002-1104-200	Snapper Creek	Chattahoochee	F&W	Wildcat Creek	Its source	1	13.10	miles	
AL03130002-1108-100	Halawakee Creek	Chattahoochee	PWS/F&W	Chattahoochee River	Three miles upstream of County Road 79	1	8.53	miles	
AL03130003-0502-110	Adams Branch	Chattahoochee	F&W	Uchee Creek	Its source	1	6.62	miles	
AL03130003-0804-100	Hatchechubbee Creek	Chattahoochee	S/F&W	Chattahoochee River	Russell County Highway 4	1	14.79	miles	
AL03130003-0803-102	Hatchechubbee Creek	Chattahoochee	F&W	Russell County Highway 4	Its source	1	17.12	miles	
AL03130003-1204-100	South Fork Cowikee Creek	Chattahoochee	S/F&W	Cowikee Creek	Its source	1	32.51	miles	
AL03130003-1205-200	North Fork Cowikee Creek	Chattahoochee	F&W	Cowikee Creek	Its source	1	43.85	miles	
AL03130003-1003-100	Middle Fork Cowikee Creek	Chattahoochee	S/F&W	North Fork Cowikee Creek	Its source	1	48.33	miles	
AL03130003-1304-100	Leak Creek	Chattahoochee	F&W	Barbour Creek	Its source	1	11.02	miles	
AL03130004-0104-100	McRae Mill Creek	Chattahoochee	F&W	Chattahoochee River	Its source	1	7.62	miles	
AL03130004-0602-201	Poplar Spring Branch	Chattahoochee	F&W	Omusee Creek	Ross Clark Circle	1	2.13	miles	
AL03130004-0701-100	Cedar Creek	Chattahoochee	F&W	Chattahoochee River	Its source	1	11.51	miles	
AL03140201-0208-100	East Fork Choctawhatchee River	Choctawhatchee	F&W	Choctawhatchee River	Blackwood Creek	1	7.34	miles	
AL03140201-0207-110	East Fork Choctawhatchee River	Choctawhatchee	S/F&W	Blackwood Creek	Its source	1	47.03	miles	
AL03140201-0208-300	Seabes Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	1	7.16	miles	
AL03140201-0304-110	Judy Creek	Choctawhatchee	F&W	West Fork Choctawhatchee River	Its source	1	23.64	miles	
AL03140201-0502-110	Bear Creek	Choctawhatchee	F&W	Little Choctawhatchee River	Its source	1	11.41	miles	
AL03140202-0205-300	Dry Creek	Choctawhatchee	F&W	Pea River	Its source	1	6.29	miles	
AL03140202-0503-100	Clearwater Creek	Choctawhatchee	F&W	Pea River	Its source	1	10.07	miles	
AL03140202-0409-100	Whitewater Creek	Choctawhatchee	F&W	Pea River	Its source	1	41.95	miles	
AL03140202-0401-101	Walnut Creek	Choctawhatchee	F&W	Whitewater Creek	Pike County Road 3304	1	3.58	miles	
AL03140202-0401-103	Walnut Creek	Choctawhatchee	F&W	US Highway 231	Its source	1	6.14	miles	
AL03140202-0407-100	Big Creek	Choctawhatchee	F&W	Whitewater Creek	Its source	1	26.05	miles	
AL03150105-0206-600	UT to Ballplay Creek	Coosa	F&W	Ballplay Creek	Its source	1	5.29	miles	
AL03150105-0502-100	Mills Creek	Coosa	F&W	Chattooga River	Alabama-Georgia state line	1	21.59	miles	
AL03150105-0806-100	Little River	Coosa	PWS/S/F&W	Coosa River	Its source	1	22.19	miles	ONRW
AL03150105-0802-115	unnamed tributaries to Little River	Coosa	PWS/S/F&W	Little River	Their source	1	29.23	miles	ONRW
AL03150105-0806-105	unnamed tributaries to Little River	Coosa	PWS/S/F&W	Little River	Their source	1	42.86	miles	ONRW
AL03150105-0705-110	East Fork Little River	Coosa	PWS/S/F&W	Little River	Its source	1	9.55	miles	ONRW
AL03150105-0705-115	unnamed tributaries to East Fork Little River	Coosa	PWS/S/F&W	East Fork Little River	Their source	1	19.75	miles	ONRW
AL03150105-0702-101	Middle Fork Little River	Coosa	PWS/S/F&W	East Fork Little River	Alabama-Georgia state line	1	2.44	miles	ONRW
AL03150105-0702-105	unnamed tributaries to Middle Fork Little River	Coosa	PWS/S/F&W	Middle Fork Little River	Their source	1	2.91	miles	ONRW
AL03150105-0702-200	Brush Creek	Coosa	PWS/S/F&W	Middle Fork Little River	Its source	1	3.04	miles	ONRW
AL03150105-0702-205	unnamed tributaries to Brush Creek	Coosa	PWS/S/F&W	Brush Creek	Their source	1	5.79	miles	ONRW
AL03150105-0702-300	Anna Branch	Coosa	PWS/S/F&W	Middle Fork Little River	Its source	1	2.18	miles	ONRW
AL03150105-0702-305	unnamed tributaries to Anna Branch	Coosa	PWS/S/F&W	Anna Branch	Their source	1	1.62	miles	ONRW
AL03150105-0702-400	Blalock Branch	Coosa	PWS/S/F&W	Anna Branch	Its source	1	3.46	miles	ONRW
AL03150105-0702-405	unnamed tributaries to Blalock Branch	Coosa	PWS/S/F&W	Blalock Branch	Their source	1	2.15	miles	ONRW
AL03150105-0702-500	Stillhouse Branch	Coosa	PWS/S/F&W	Blalock Branch	Its source	1	1.09	miles	ONRW
AL03150105-0702-505	unnamed tributaries to Stillhouse Branch	Coosa	PWS/S/F&W	Stillhouse Branch	Their source	1	0.79	miles	ONRW

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150105-0705-210	Laurel Creek	Coosa	PWS/S/F&W	East Fork Little River	Its source	1	3.97	miles	ONRW
AL03150105-0705-215	unnamed tributaries to Laurel Creek	Coosa	PWS/S/F&W	Laurel Creek	Their source	1	4.43	miles	ONRW
AL03150105-0705-310	Gilbert Branch	Coosa	PWS/S/F&W	East Fork Little River	Its source	1	1.83	miles	ONRW
AL03150105-0705-315	unnamed tributaries to Gilbert Branch	Coosa	PWS/S/F&W	Gilbert Branch	Their source	1	1.66	miles	ONRW
AL03150105-0705-410	Shrader Branch	Coosa	PWS/S/F&W	Laurel Creek	Its source	1	1.95	miles	ONRW
AL03150105-0705-405	unnamed tributaries to Shrader Branch	Coosa	PWS/S/F&W	Shrader Branch	Their source	1	1.33	miles	ONRW
AL03150105-0705-500	Armstrong Branch	Coosa	PWS/S/F&W	Laurel Creek	Its source	1	1.75	miles	ONRW
AL03150105-0705-505	unnamed tributaries to Armstrong Branch	Coosa	PWS/S/F&W	Armstrong Branch	Their source	1	4.13	miles	ONRW
AL03150105-0704-100	West Fork Little River	Coosa	PWS/S/F&W	Little River	Alabama-Georgia state line	1	18.87	miles	ONRW
AL03150105-0704-105	unnamed tributaries to West Fork Little River	Coosa	PWS/S/F&W	West Fork Little River	Their source	1	41.51	miles	ONRW
AL03150105-0703-201	East Fork West Fork Little River	Coosa	PWS/S/F&W	West Fork Little River	Alabama-Georgia state line	1	0.47	miles	ONRW
AL03150105-0704-200	Straight Creek	Coosa	PWS/S/F&W	West Fork Little River	Its source	1	4.45	miles	ONRW
AL03150105-0704-205	unnamed tributaries to Straight Creek	Coosa	PWS/S/F&W	Straight Creek	Their source	1	3.77	miles	ONRW
AL03150105-0704-300	Sharp Branch	Coosa	PWS/S/F&W	West Fork Little River	Its source	1	1.39	miles	ONRW
AL03150105-0704-305	unnamed tributaries to Sharp Branch	Coosa	PWS/S/F&W	Sharp Branch	Its source	1	0.67	miles	ONRW
AL03150105-0704-400	Seymour Branch	Coosa	PWS/S/F&W	West Fork Little River	Its source	1	2.48	miles	ONRW
AL03150105-0802-210	Hurricane Creek	Coosa	PWS/S/F&W	Little River	Its source	1	6.67	miles	ONRW
AL03150105-0802-215	unnamed tributaries to Hurricane Creek	Coosa	PWS/S/F&W	Hurricane Creek	Their source	1	11.69	miles	ONRW
AL03150105-0801-100	Yellow Creek	Coosa	PWS/S/F&W	Little River	Its source	1	7.06	miles	ONRW
AL03150105-0801-115	unnamed tributaries to Yellow Creek	Coosa	PWS/S/F&W	Yellow Creek	Their source	1	14.96	miles	ONRW
AL03150105-0801-210	Straight Creek	Coosa	PWS/S/F&W	Yellow Creek	Its source	1	3.03	miles	ONRW
AL03150105-0801-215	unnamed tributaries to Straight Creek	Coosa	PWS/S/F&W	Straight Creek	Their source	1	4.54	miles	ONRW
AL03150105-0803-100	Bear Creek	Coosa	PWS/S/F&W	Little River	Its source	1	8.67	miles	ONRW
AL03150105-0803-105	unnamed tributaries to Bear Creek	Coosa	PWS/S/F&W	Bear Creek	Their source	1	11.94	miles	ONRW
AL03150105-0803-200	Falls Branch	Coosa	PWS/S/F&W	Bear Creek	Its source	1	2.47	miles	ONRW
AL03150105-0803-205	unnamed tributaries to Falls Branch	Coosa	PWS/S/F&W	Falls Branch	Their source	1	1.67	miles	ONRW
AL03150105-0803-300	Hicks Creek	Coosa	PWS/S/F&W	Bear Creek	Its source	1	3.42	miles	ONRW
AL03150105-0803-305	unnamed tributaries to Hicks Creek	Coosa	PWS/S/F&W	Hicks Creek	Their source	1	2.00	miles	ONRW
AL03150105-0804-100	Johnnies Creek	Coosa	PWS/S/F&W	Little River	Its source	1	11.63	miles	ONRW
AL03150105-0804-105	unnamed tributaries to Johnnies Creek	Coosa	PWS/S/F&W	Johnnies Creek	Their source	1	24.92	miles	ONRW
AL03150105-0804-200	Camprock Creek	Coosa	PWS/S/F&W	Johnnies Creek	Its source	1	3.40	miles	ONRW
AL03150105-0804-205	unnamed tributaries to Camprock Creek	Coosa	PWS/S/F&W	Camprock Creek	Their source	1	2.65	miles	ONRW
AL03150105-0804-300	Dry Creek	Coosa	PWS/S/F&W	Johnnies Creek	Its source	1	2.37	miles	ONRW
AL03150105-0804-305	unnamed tributaries to Dry Creek	Coosa	PWS/S/F&W	Dry Creek	Their source	1	3.29	miles	ONRW
AL03150105-0805-100	Wolf Creek	Coosa	PWS/S/F&W	Little River	Its source	1	9.51	miles	ONRW
AL03150105-0805-105	unnamed tributaries to Wolf Creek	Coosa	PWS/S/F&W	Wolf Creek	Their source	1	36.20	miles	ONRW
AL03150105-0806-200	Brooks Branch	Coosa	PWS/S/F&W	Little River	Its source	1	1.68	miles	ONRW
AL03150105-0806-205	unnamed tributary to Brooks Branch	Coosa	PWS/S/F&W	Brooks Branch	Its source	1	0.74	miles	ONRW
AL03150105-0907-300	Wolf Branch	Coosa	F&W	Hurricane Creek	Its source	1	2.61	miles	
AL03150105-0909-100	Terrapin Creek	Coosa	F&W	Coosa River	US Highway 278	1	24.28	miles	
AL03150105-0906-102	Terrapin Creek	Coosa	PWS/F&W	US Highway 278	Calhoun County Road 70	1	3.58	miles	
AL03150105-0906-103	Terrapin Creek	Coosa	F&W	Calhoun County Road 70	Alabama-Georgia state line	1	21.07	miles	
AL03150105-0901-100	South Fork Terrapin Creek	Coosa	F&W	Terrapin Creek	Its source	1	11.36	miles	
AL03150105-0905-100	Nances Creek	Coosa	F&W	Terrapin Creek	Its source	1	13.48	miles	
AL03150105-0907-100	Hurricane Creek	Coosa	F&W	Terrapin Creek	Its source	1	15.85	miles	
AL03150106-0109-100	Big Wills Creek	Coosa	F&W	Coosa River	100 yards below Allen Branch	1	80.09	miles	
AL03150106-0101-102	Big Wills Creek	Coosa	PWS/F&W	100 yards below Allen Branch	Its source	1	7.51	miles	
AL03150106-0106-100	Little Wills Creek	Coosa	F&W	Big Wills Creek	Its source	1	21.65	miles	
AL03150106-0306-100	Big Canoe Creek	Coosa	F&W	Coosa River	Its source	1	57.29	miles	
AL03150106-0304-100	Little Canoe Creek	Coosa	F&W	Big Canoe Creek	Its source	1	19.88	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150106-0601-100	Trout Creek	Coosa	F&W	Coosa River	Its source	1	13.69	miles	
AL03150106-0504-101	Choccolocco Creek	Coosa	PWS/F&W	Hillabee Creek	Egoniaga Creek	1	8.18	miles	
AL03150106-0504-102	Choccolocco Creek	Coosa	F&W	Egoniaga Creek	Its source	1	29.96	miles	
AL03150106-0503-101	Hillabee Creek	Coosa	F&W	Choccolocco Creek	Hillabee Lake dam	1	1.14	miles	
AL03150106-0503-103	Hillabee Creek	Coosa	F&W	Hillabee Lake	Its source	1	10.85	miles	
AL03150106-0506-200	Coldwater Spring	Coosa	PWS/F&W			1	0.10	miles	
AL03150106-0508-100	Salt Creek	Coosa	F&W	Choccolocco Creek	Its source	1	15.43	miles	
AL03150106-0502-700	Dry Creek	Coosa	F&W	Choccolocco Creek	Its source	1	4.03	miles	
AL03150106-0501-111	Shoal Creek	Coosa	S/F&W	Choccolocco Creek	Whitesides Mill Lake	1	1.55	miles	
AL03150106-0501-103	Shoal Creek	Coosa	S/F&W	Whitesides Mill Lake	Highrock Lake	1	3.45	miles	
AL03150106-0501-105	Shoal Creek	Coosa	S/F&W	Highrock Lake	Sweetwater Lake	1	6.31	miles	
AL03150106-0501-107	Shoal Creek	Coosa	F&W	Sweetwater Lake	Its source	1	5.71	miles	
AL03150106-0511-100	Cheaha Creek	Coosa	S/F&W	Choccolocco Creek	Lake Chinnabee	1	17.67	miles	
AL03150106-0509-103	Cheaha Creek	Coosa	F&W	Lake Chinnabee	Its source	1	4.86	miles	
AL03150106-0703-100	Talladega Creek	Coosa	F&W	Coosa River	Drivers Branch	1	30.62	miles	
AL03150106-0702-102	Talladega Creek	Coosa	PWS/F&W	Drivers Branch	Mump Creek	1	6.67	miles	
AL03150106-0701-102	Talladega Creek	Coosa	F&W	Mump Creek	Its source	1	23.21	miles	
AL03150107-0907-100	Coosa River	Coosa	F&W	Tallapoosa River	Jordan Dam	1	12.96	miles	
AL03150107-0102-103	Tallaseehatchee Creek	Coosa	PWS/F&W	Lake Howard	Lake Virginia dam	1	0.60	miles	
AL03150107-0102-105	Tallaseehatchee Creek	Coosa	PWS/F&W	Lake Virginia	Its source	1	5.83	miles	
AL03150107-0205-200	Fourmile Creek	Coosa	F&W	Yellowleaf Creek	Its source	1	10.90	miles	
AL03150107-0502-110	Paint Creek	Coosa	F&W	Coosa River	Its source	1	19.31	miles	
AL03150107-0803-300	Cargle Creek	Coosa	F&W	Coosa River	Its source	1	10.29	miles	
AL03150107-0801-800	Turkey Creek	Coosa	F&W	Yellow Leaf Creek	Its source	1	5.17	miles	
AL03150107-0802-110	Walnut Creek	Coosa	F&W	Coosa River	Its source	1	18.12	miles	
AL03150107-0709-100	Hatchet Creek	Coosa	OAW/S/F&W	Coosa River	Wildcat Creek	1	43.20	miles	
AL03150107-0706-102	Hatchet Creek	Coosa	OAW/PWS/S/F&W	Wildcat Creek	Its source	1	18.87	miles	
AL03150107-0603-110	Weogufka Creek	Coosa	S/F&W	Hatchet Creek	Its source	1	49.05	miles	
AL03150107-0701-300	East Fork Hatchet Creek	Coosa	OAW/F&W	Hatchet Creek	Its source	1	5.30	miles	
AL03150107-0701-400	West Fork Hatchet Creek	Coosa	OAW/F&W	Hatchet Creek	Its source	1	7.71	miles	
AL03150107-0705-100	Socapatoy Creek	Coosa	F&W	Hatchet Creek	Its source	1	16.17	miles	
AL03150107-0704-100	Jacks Creek	Coosa	F&W	Socapatoy Creek	Its source	1	10.51	miles	
AL03150107-0708-300	Jones Creek	Coosa	F&W	Hatchet Creek	Its source	1	5.22	miles	
AL03150107-0901-110	Chestnut Creek	Coosa	F&W	Coosa River	Its source	1	22.10	miles	
AL03150107-0904-100	Weoka Creek	Coosa	S/F&W	Coosa River	Its source	1	27.54	miles	
AL03150107-0905-102	Sofkahatchee Creek	Coosa	F&W	Coosa River (Lake Jordan)	Its source	1	12.71	miles	
AL03150107-0906-800	Pinchoulee Creek	Coosa	F&W	Coosa River	Its source	1	9.03	miles	
AL03170008-0205-101	Puppy Creek	Escatawpa	F&W	Escatawpa River	Alabama Highway 217	1	5.68	miles	
AL03170008-0603-100	Big Creek	Escatawpa	F&W	Alabama-Mississippi state line	Big Creek Reservoir	1	14.55	miles	
AL03170008-0501-100	Big Creek	Escatawpa	PWS/F&W	Collins Creek	Its source	1	13.33	miles	
AL03170008-0502-200	Hamilton Creek	Escatawpa	F&W	Big Creek	Its source	1	7.78	miles	
AL03170008-0601-200	Pasture Creek	Escatawpa	F&W	Big Creek	Its source	1	8.47	miles	
AL03170008-0602-110	Miller Creek	Escatawpa	F&W	Big Creek	Its source	1	14.15	miles	
AL03170008-0602-400	Deakle Creek	Escatawpa	F&W	Miller Creek	Its source	1	6.37	miles	
AL03170008-0701-100	Jackson Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	1	14.03	miles	
AL03170008-0702-100	Franklin Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	1	9.46	miles	
AL03160204-0505-100	Mobile River	Mobile	LWF	Mobile Bay	Spanish River	1	7.61	miles	
AL03160204-0104-100	Halls Creek	Mobile	F&W	Tensaw Lake	Its source	1	11.93	miles	
AL03160204-0401-100	Gunnison Creek	Mobile	S/F&W	Bayou Sara	Its source	1	7.62	miles	
AL03160204-0304-104	Eightmile Creek	Mobile	F&W	Highpoint Boulevard	Its source	1	2.56	miles	
AL03160204-0502-100	Whitehouse Creek	Mobile	F&W	Bay Minette Creek	Its source	1	13.10	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160205-0201-200	Caney Branch	Mobile	F&W	Fish River	Its source	1	5.25	miles	
AL03160205-0201-400	Perone Branch	Mobile	F&W	Fish River	Its source	1	7.06	miles	
AL03160205-0208-200	Intracoastal Waterway	Mobile	F&W	Bon Secour Bay	Alabama Highway 59	1	3.35	miles	
AL03160205-0203-120	UT to Magnolia River	Mobile	F&W	Magnolia River	Its source	1	3.65	miles	
AL03140103-0301-100	Indian Creek	Perdido-Escambia	F&W	Yellow River	Its source	1	10.86	miles	
AL03140103-0203-200	Pond Creek	Perdido-Escambia	F&W	Five Runs Creek	Its source	1	4.71	miles	
AL03140103-0203-400	Bay Branch	Perdido-Escambia	F&W	Five Runs Creek	Its source	1	7.58	miles	
AL03140103-0102-800	UT to Lake Frank Jackson 2-S	Perdido-Escambia	F&W	Lake Frank Jackson	Its source	1	1.77	miles	
AL03140104-0103-100	Bear Creek	Perdido-Escambia	F&W	Panther Creek	Its source	1	10.70	miles	
AL03140106-0503-100	Hollinger Creek	Perdido-Escambia	F&W	Styx River	Its source	1	23.10	miles	
AL03140107-0204-100	Intracoastal Waterway	Perdido-Escambia	F&W	Alabama Highway 59	Wolf Bay	1	5.08	miles	
AL03140301-0503-100	Conecuh River	Perdido-Escambia	F&W	Sepulga River	Point A Dam	1	34.68	miles	
AL03140302-0401-100	Pond Creek	Perdido-Escambia	F&W	Patsaliga Creek	Its source	1	7.97	miles	
AL03140302-0502-100	Piney Woods Creek	Perdido-Escambia	F&W	Patsaliga Creek	Its source	1	14.15	miles	
AL03140304-0505-700	Mayo Mill Creek	Perdido-Escambia	F&W	Conecuh River	Its source	1	5.81	miles	
AL03150108-0404-101	Cahulga Creek	Tallapoosa	F&W	Tallapoosa River	US Highway 78	1	4.50	miles	
AL03150108-0404-102	Cahulga Creek	Tallapoosa	PWS/F&W	US Highway 78	Cahulga Reservoir dam	1	0.47	miles	
AL03150108-0404-104	Cahulga Creek	Tallapoosa	PWS/F&W	Cahulga Reservoir	Its source	1	2.99	miles	
AL03150108-1003-100	Ketchepedrakee Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	26.66	miles	
AL03150108-0905-102	Little Tallapoosa River	Tallapoosa	PWS/S/F&W	US Highway 431	Wolf Creek	1	4.91	miles	
AL03150108-0902-100	Bear Creek	Tallapoosa	F&W	Little Tallapoosa River	Its source	1	12.78	miles	
AL03150109-0302-100	Caty Creek	Tallapoosa	F&W	High Pine Creek	Its source	1	11.93	miles	
AL03150109-0304-100	Chikasanoxee Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	21.56	miles	
AL03150109-0103-100	Crooked Creek	Tallapoosa	F&W	Tallapoosa River	Alabama Highway 9	1	21.08	miles	
AL03150109-0102-102	Crooked Creek	Tallapoosa	PWS/F&W	Alabama Highway 9	Its source	1	2.17	miles	
AL03150109-0102-400	Horsetrough Creek	Tallapoosa	F&W	Crooked Creek	Its source	1	8.40	miles	
AL03150109-0701-102	Oakachoy Creek	Tallapoosa	F&W	Tallapoosa River (Lake Martin)	Its source	1	6.14	miles	
AL03150109-0801-100	Timbergut Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	14.19	miles	
AL03150109-0104-100	Cornhouse Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	19.53	miles	
AL03150109-0106-400	Hurricane Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	11.67	miles	
AL03150109-0308-100	Emuckfaw Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	23.51	miles	
AL03150109-0307-100	Little Emuckfaw Creek	Tallapoosa	F&W	Emuckfaw Creek	Its source	1	9.23	miles	
AL03150109-0202-100	Little Chatahospee Creek	Tallapoosa	F&W	Chatahospee Creek	Its source	1	14.20	miles	
AL03150109-0803-302	Sugar Creek	Tallapoosa	F&W	Lake Martin	Its source	1	4.64	miles	
AL03150110-0101-300	Little Loblockee Creek	Tallapoosa	F&W	Loblockee Creek	Its source	1	9.94	miles	
AL03150110-0101-400	UT to Loblockee Creek	Tallapoosa	F&W	Loblockee Creek	Its source	1	2.26	miles	
AL03150110-0402-102	Channahatchee Creek	Tallapoosa	F&W	Yates Lake	Its source	1	17.31	miles	
AL03150110-0204-100	Chewacla Creek	Tallapoosa	F&W	Uphapee Creek	Moores Mill Creek	1	23.20	miles	
AL03150110-0202-102	Chewacla Creek	Tallapoosa	PWS/F&W	Moores Mill Creek	Its source	1	14.92	miles	
AL03150110-0204-300	Long Branch	Tallapoosa	F&W	Chewacla Creek	Its source	1	12.26	miles	
AL03150110-0504-102	Calebee Creek	Tallapoosa	F&W	Macon County Road 9	Its source	1	36.95	miles	
AL03150110-0802-102	Line Creek	Tallapoosa	F&W	Panther Creek	Its source	1	34.78	miles	
AL03150110-0902-100	Chubbehatchee Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	23.11	miles	
AL03150110-0905-200	Harwell Mill Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	7.70	miles	
AL06030001-0203-102	Long Island Creek	Tennessee	PWS/S/F&W	Guntersville Lake	Miller Creek	1	1.85	miles	
AL06030001-0203-103	Long Island Creek	Tennessee	S/F&W	Miller Creek	Its source	1	2.43	miles	
AL06030001-0403-100	Coon Creek	Tennessee	F&W	Tennessee River	Its source	1	7.38	miles	
AL06030001-0403-600	Dry Creek	Tennessee	F&W	Coon Creek	Its source	1	4.21	miles	
AL06030001-0402-110	Flat Rock Creek	Tennessee	F&W	Coon Creek	Its source	1	9.22	miles	
AL06030001-0402-300	Hogue Creek	Tennessee	F&W	Flat Rock Creek	Its source	1	3.48	miles	
AL06030001-0403-140	Rocky Branch	Tennessee	F&W	Warren Smith Creek	Its source	1	2.00	miles	
AL06030001-0405-110	Mud Creek	Tennessee	F&W	Tennessee River	Its source	1	24.97	miles	
AL06030001-0406-100	Bryant Creek	Tennessee	F&W	Jones Creek	Its source	1	12.96	miles	
AL06030001-0505-100	South Sauty Creek	Tennessee	S/F&W	Tennessee River	Its source	1	39.65	miles	
AL06030001-0604-100	North Sauty Creek	Tennessee	PWS	Guntersville Lake	Its source	1	8.91	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL06030001-0806-100	Short Creek	Tennessee	PWS/F&W	Tennessee River	Scarham Creek	1	5.21	miles	
AL06030001-0805-110	Short Creek	Tennessee	F&W	Scarham Creek	Its source	1	24.81	miles	
AL06030002-0101-100	Hurricane Creek	Tennessee	OAW/F&W	Paint Rock River	Alabama-Tennessee state line	1	10.89	miles	
AL06030002-0103-200	Estil Fork	Tennessee	OAW/F&W	Paint Rock River	Alabama-Tennessee state line	1	8.00	miles	
AL06030002-0405-100	Flint River	Tennessee	F&W	Tennessee River	Big Cove Creek	1	21.53	miles	
AL06030002-0404-102	Flint River	Tennessee	PWS/F&W	Big Cove Creek	Hurricane Creek	1	8.04	miles	
AL06030002-0403-111	Flint River	Tennessee	F&W	Hurricane Creek	Alabama Highway 72	1	7.14	miles	
AL06030002-0307-102	Flint River	Tennessee	F&W	Mountain Fork	Alabama-Tennessee state line	1	16.99	miles	
AL06030002-0402-102	Hurricane Creek	Tennessee	F&W	Gurley Pike Road	Its source	1	18.11	miles	
AL06030002-0404-300	Big Cove Creek	Tennessee	F&W	Flint River	Its source	1	8.19	miles	
AL06030002-0703-111	Limestone Creek	Tennessee	F&W	Wheeler Lake	US Highway 72	1	15.62	miles	
AL06030002-0702-102	Limestone Creek	Tennessee	F&W	Leslie Branch	Alabama-Tennessee state line	1	19.21	miles	
AL06030002-0803-100	Piney Creek	Tennessee	F&W	Limestone Creek	Its source	1	43.75	miles	
AL06030002-1014-101	Flint Creek	Tennessee	F&W	Tennessee River	Alabama Highway 67	1	3.32	miles	
AL06030002-1003-710	Rock Creek	Tennessee	F&W	Flint Creek	Its source	1	5.23	miles	
AL06030002-1012-202	McDaniel Creek	Tennessee	F&W	Alabama Highway 36	Its source	1	3.83	miles	
AL06030002-1101-200	Town Creek	Tennessee	F&W	Swan Creek	Its source	1	7.28	miles	
AL06030002-1202-100	First Creek	Tennessee	F&W	Tennessee River	Its source	1	14.48	miles	
AL06030002-1204-101	Second Creek	Tennessee	S/F&W	Tennessee River	First bridge upstream from US Highway 72	1	5.71	miles	
AL06030002-1204-102	Second Creek	Tennessee	F&W	First bridge upstream from US Highway 72	Lauderdale County Road 76	1	2.34	miles	
AL06030004-0403-102	Elk River	Tennessee	PWS/F&W	Alabama Highway 99	Alabama-Tennessee state line	1	12.89	miles	
AL06030004-0405-900	Big Creek	Tennessee	F&W	Elk River	Its source	1	9.15	miles	
AL06030005-0304-100	Town Creek	Tennessee	F&W	Tennessee River	Its source	1	49.97	miles	
AL06030005-0509-800	Indiancamp Creek	Tennessee	F&W	Shoal Creek	Its source	1	5.98	miles	
AL06030005-0901-100	Bumpass Creek	Tennessee	F&W	Second Creek	Alabama-Tennessee state line	1	6.78	miles	
AL06030006-0103-103	Bear Creek	Tennessee	S/F&W	Mill Creek	Upper Bear Creek Dam	1	3.00	miles	
AL06030006-0203-112	Cedar Creek	Tennessee	PWS/S/F&W	Cedar Creek Lake	Alabama Highway 24	1	3.01	miles	
AL03160101-0503-100	Hurricane Creek	Tombigbee (Upper)	F&W	Alabama-Mississippi state line	Its source	1	10.14	miles	
AL03160101-0502-100	Bull Mountain Creek	Tombigbee (Upper)	F&W	Alabama-Mississippi state line	Its source	1	24.98	miles	
AL03160103-0306-101	Buttahatchee River	Tombigbee (upper)	F&W	Alabama-Mississippi state line	U.S. Highway 278 one mile east of junction of U.S. Highways 43 and 78 in Hamilton	1	41.85	miles	
AL03160103-0303-200	Cantrell Mill Creek	Tombigbee (Upper)	F&W	Buttahatchee River	Its source	1	7.40	miles	
AL03160103-0301-100	Woods Creek	Tombigbee (Upper)	F&W	Buttahatchee River	Its source	1	13.95	miles	
AL03160103-0201-201	Purgatory Creek	Tombigbee (Upper)	F&W	Beaver Creek	Wickett Creek	1	0.50	miles	
AL03160103-0201-202	Purgatory Creek	Tombigbee (Upper)	F&W	Wickett Creek	US Highway 278	1	1.86	miles	
AL03160103-0201-203	Purgatory Creek	Tombigbee (Upper)	PWS/F&W	US Highway 278	Its source	1	1.28	miles	
AL03160103-0401-200	Boardtree Creek	Tombigbee (Upper)	F&W	Sipsey Creek	Its source	1	10.87	miles	
AL03160105-0303-100	Hells Creek	Tombigbee (Upper)	F&W	Yellow Creek	Its source	1	25.20	miles	
AL03160106-0703-100	Jones Creek	Tombigbee (Upper)	F&W	Tombigbee River	Its source	1	15.28	miles	
AL03160106-0407-100	Bear Creek	Tombigbee (Upper)	F&W	Lubbub Creek	Its source	1	33.40	miles	
AL03160106-0405-200	Little Bear Creek	Tombigbee (Upper)	F&W	Bear Creek	Its source	1	7.82	miles	
AL03160107-0306-102	Sipsey River	Tombigbee (Upper)	F&W	Gainesville Reservoir	Tuscaloosa county line	1	40.86	miles	
AL03160107-0203-100	Bear Creek	Tombigbee (Upper)	F&W	Sipsey River	Its source	1	10.64	miles	
AL03160201-0109-100	Chickasaw Bogue	Tombigbee (Lower)	F&W	Tombigbee River	Its source	1	42.64	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160201-0102-100	Dry Creek	Tombigbee (Lower)	F&W	Chickasaw Bogue	Its source	1	13.84	miles	
AL03160201-0103-300	Poplar Creek	Tombigbee (Lower)	F&W	Chickasaw Bogue	Its source	1	8.87	miles	
AL03160201-0201-100	Little Kinterbish Creek	Tombigbee (Lower)	F&W	Kinterbish Creek	Its source	1	8.54	miles	
AL03160201-0506-110	Tuckabum Creek	Tombigbee (Lower)	F&W	Tombigbee River	Alabama-Mississippi state line	1	48.25	miles	
AL03160201-0504-200	Clear Creek	Tombigbee (Lower)	F&W	Yantley Creek	Its source	1	17.25	miles	
AL03160201-0602-100	Sweetwater Creek	Tombigbee (Lower)	F&W	Horse Creek	Its source	1	18.59	miles	
AL03160201-0702-100	Tallahatta Creek	Tombigbee (Lower)	F&W	Bashi Creek	Its source	1	20.97	miles	
AL03160201-0908-110	Turkey Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	1	18.15	miles	
AL03160201-0807-100	Okatuppa Creek	Tombigbee (Lower)	F&W	Tombigbee River	Alabama-Mississippi state line	1	48.47	miles	
AL03160203-0903-102	Tombigbee River	Tombigbee (Lower)	F&W	Bassetts Creek	1/2 mile downstream of Southern Railway Crossing	1	7.83	miles	
AL03160203-0302-200	Ulcanush Creek	Tombigbee (Lower)	F&W	Tombigbee River	Its source	1	9.33	miles	
AL03160203-0205-100	Salitpa Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	1	43.34	miles	
AL03160203-0203-100	Harris Creek	Tombigbee (Lower)	F&W	Salitpa Creek	Its source	1	12.35	miles	
AL03160203-0201-110	Wells Creek	Tombigbee (Lower)	F&W	Salitpa Creek	Its source	1	14.71	miles	
AL03160203-0401-100	Tattilaba Creek	Tombigbee (Lower)	F&W	Jackson Creek	Its source	1	23.68	miles	
AL03160203-0902-100	Salt Creek	Tombigbee (Lower)	F&W	Tombigbee River	Its source	1	9.96	miles	
Category 1 - Lakes and Reservoirs									
AL03150201-0706-100	Alabama River	Alabama	S/F&W	Robert F. Henry Lock and Dam	Pintlalla Creek	1	6,156.78	acres	Woodruff Lake
AL03150201-0501-100	Alabama River	Alabama	F&W	Pintlala Creek	Autauga Creek	1	1,702.40	acres	Woodruff Lake
AL03150201-0107-100	Alabama River	Alabama	F&W	Autauga Creek	Its source	1	6,258.78	acres	Woodruff Lake
AL03150201-1101-102	Valley Creek Lake	Alabama	S/F&W	Within Paul M. Grist State Park		1	64.00	acres	Valley Creek Lake
AL03150203-0701-100	Alabama River	Alabama	S/F&W	Millers Ferry Lock and Dam	Chilatchee Creek	1	11,564.75	acres	Dannelly Reservoir
AL03160109-0604-101	Mulberry Fork	Black Warrior	PWS/S/F&W	Black Warrior River	Baker Creek	1	1,357.57	acres	Bankhead Reservoir
AL03160110-0507-102	Sipsey Fork	Black Warrior	PWS/S/F&W	Lewis Smith Dam	three miles upstream from Lewis Smith Dam	1	1,269.96	acres	Lewis Smith Lake
AL03160110-0507-103	Sipsey Fork	Black Warrior	S/F&W	three miles upstream from Lewis Smith Dam	County Road 41	1	2,870.56	acres	Lewis Smith Lake
AL03160110-0105-100	Sipsey Fork	Black Warrior	S/F&W	Brushy Creek	Grindstone Creek	1	2,280.57	acres	Lewis Smith Lake
AL03160110-0203-101	Brushy Creek	Black Warrior	S/F&W	Sipsey Fork	extent of reservoir	1	1,280.10	acres	Lewis Smith Lake
AL03160110-0302-102	Clear Creek	Black Warrior	PWS	City of Haleyville water supply reservoir dam	Its source	1	21.30	acres	
AL03160110-0404-100	Rock Creek	Black Warrior	S/F&W	Crooked Creek	extent of reservoir	1	843.72	acres	Lewis Smith Lake
AL03160110-0407-100	Crooked Creek	Black Warrior	S/F&W	Rock Creek	extent of reservoir	1	1,075.93	acres	Lewis Smith Lake
AL03160110-0505-102	Ryan Creek	Black Warrior	S/F&W	Doctor Harris Spring Branch	Coon Creek	1	887.65	acres	Lewis Smith Lake
AL03160111-0204-111	Blackburn Fork	Black Warrior	PWS	Inland Lake Dam	extent of reservoir	1	1,389.78	acres	Inland Lake
AL03160111-0204-103	Blackburn Fork	Black Warrior	PWS	Highland Lake Dam	extent of reservoir	1	315.81	acres	Highland Lake
AL03160112-0505-101	Black Warrior River	Black Warrior	F&W	Oliver Lock and Dam	Hurricane Creek	1	556.93	acres	Oliver Reservoir
AL03160112-0505-102	Black Warrior River	Black Warrior	S/F&W	Hurricane Creek	Holt Lock and Dam	1	57.98	acres	Oliver Reservoir
AL03160112-0306-100	Black Warrior River	Black Warrior	S/F&W	Holt Lock and Dam	Bankhead Lock and Dam	1	3,149.63	acres	Holt Reservoir
AL03160112-0203-100	Black Warrior River	Black Warrior	PWS/S/F&W	Bankhead Lock and Dam	Its source	1	3,663.30	acres	Bankhead Reservoir
AL03160113-0806-100	Black Warrior River	Black Warrior	S/F&W	Tombigbee River	Five miles upstream of Big Prarie Creek	1	2,074.06	acres	Demopolis Lake
AL03160113-0804-102	Black Warrior River	Black Warrior	PWS/S/F&W	Five miles upstream of Big Prarie Creek	Eight miles upstream of Big Prarie Creek	1	131.02	acres	Demopolis Lake

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160113-0804-103	Black Warrior River	Black Warrior	S/F&W	Eight miles upstream of Big Prarie Creek	Warrior Lock and Dam	1	1,451.33	acres	Demopolis Lake
AL03160113-0607-100	Black Warrior River	Black Warrior	F&W	Warrior Lock and Dam	Oliver Lock and Dam	1	5,583.16	acres	Warrior Lake
AL03160113-0401-102	Fivemile Creek	Black Warrior	S	Payne Lake		1	111.54	acres	Payne Lake
AL03150202-0103-102	Little Cahaba River	Cahaba	PWS	Purdy Lake dam	Head of Purdy Lake	1	961.95	acres	Purdy Lake
AL03150202-0202-110	Oak Mountain State Park Lakes	Cahaba	PWS	Within Oak Mountain State Park		1	166.73	acres	
AL03130002-1306-101	Chattahoochee River	Chattahoochee	PWS/S/F&W	Oliver Dam	Goat Rock Dam	1	334.30	acres	Oliver Lake
AL03130002-1306-102	Chattahoochee River	Chattahoochee	PWS/S/F&W	Goat Rock Dam	Bartletts Ferry Dam	1	131.20	acres	Oliver Lake
AL03130002-1109-101	Chattahoochee River	Chattahoochee	PWS/S/F&W	Bartletts Ferry Dam	Osanippa Creek	1	2,327.29	acres	Harding Lake
AL03130002-1109-102	Chattahoochee River	Chattahoochee	F&W	Osanippa Creek	Johnson Island	1	200.89	acres	Harding Lake
AL03130002-0808-101	Chattahoochee River	Chattahoochee	S/F&W	West Point Dam	West Point Lake Limits in Alabama	1	2,201.43	acres	West Point Reservoir
AL03130003-1600-100	Chattahoochee River	Chattahoochee	S/F&W	Walter F. George Lock and Dam	Cowikee Creek	1	10,069.40	acres	Walter F. George Reservoir
AL03130003-0905-100	Chattahoochee River	Chattahoochee	F&W	Cowikee Creek	Cliatt Branch	1	3,761.02	acres	Walter F. George Reservoir
AL03150106-0503-102	Hillabee Creek	Coosa	PWS/S/F&W	Hillabee Lake		1	180.88	acres	Hillabee Lake
AL03150106-0501-112	Shoal Creek	Coosa	PWS/S/F&W	Whitesides Mill Lake		1	251.75	acres	Whitesides Mill Lake
AL03150106-0501-104	Shoal Creek	Coosa	S/F&W	Highrock Lake		1	13.95	acres	Highrock Lake
AL03150106-0501-106	Shoal Creek	Coosa	PWS/S/F&W	Sweetwater Lake		1	54.97	acres	Sweetwater Lake
AL03150106-0501-400	Coleman Lake	Coosa	S/F&W	Coleman Lake		1	19.46	acres	Coleman Lake
AL03150106-0508-400	Salt Creek Lake	Coosa	S/F&W	Salt Creek Lake		1	1.73	acres	Salt Creek Lake
AL03150106-0509-102	Cheaha Creek	Coosa	S/F&W	Lake Chinnabee		1	13.94	acres	Lake Chinnabee
AL03150107-0906-100	Coosa River	Coosa	S/F&W	Jordan Dam	Mitchell Dam	1	5,285.38	acres	Lake Jordan
AL03150201-0101-300	Coosa River	Coosa	PWS/S/F&W	Bouldin Dam	Alabama Highway 111	1	758.51	acres	Lake Jordan
AL03150107-0102-102	Tallaseehatchee Creek	Coosa	PWS/F&W	City of Sylacauga's water supply dam	extent of reservoir	1	135.97	acres	Lake Howard
AL03150107-0102-104	Tallaseehatchee Creek	Coosa	PWS/F&W	Lake Virginia dam	extent of reservoir	1	126.74	acres	Lake Virginia
AL03140107-0204-200	Shelby Lakes	Perdido-Escambia	S/F&W	Within Gulf State Park		1	802.00	acres	
AL03150108-1006-110	Tallapoosa River	Tallapoosa	S/F&W	Little Tallapoosa River	4 miles upstream of Randolph County Road 88	1	2,151.73	acres	Harris Lake
AL03150108-0404-103	Cahulga Creek	Tallapoosa	PWS/F&W	Cahulga Reservoir dam	extent of reservoir	1	82.04	acres	Cahulga Reservoir
AL03150108-0906-100	Little Tallapoosa River	Tallapoosa	S/F&W	Tallapoosa River	US Highway 431	1	3,042.57	acres	Harris Lake
AL03150109-0805-100	Tallapoosa River	Tallapoosa	S/F&W	Martin Dam	US Highway 280	1	34,400.04	acres	Lake Martin, TAL
AL03150109-0802-102	Tallapoosa River	Tallapoosa	PWS/S/F&W	US Highway 280	Hillabee Creek	1	2,025.57	acres	Lake Martin, TAL
AL03150109-0105-102	Tallapoosa River	Tallapoosa	S/F&W	R. L. Harris Dam	Little Tallapoosa River	1	5,356.95	acres	Harris Lake
AL03150109-0703-201	Little Kowaliga Creek	Tallapoosa	PWS/S/F&W	embayed portion of Little Kowaliga Creek		1	2,634.38	acres	Lake Martin, TAL
AL03150109-0804-201	Manoy Creek	Tallapoosa	PWS/S/F&W	embayed portion of Manoy Creek		1	618.88	acres	Lake Martin, TAL
AL06030001-0906-100	Tennessee River	Tennessee	PWS/S/F&W	Guntersville Dam	upper end of Buck Island	1	13,327.79	acres	Guntersville Lake
AL06030001-0901-102	Tennessee River	Tennessee	S/F&W	upper end of Buck Island	Roseberry Creek	1	26,975.10	acres	Guntersville Lake
AL06030001-0606-103	Tennessee River	Tennessee	PWS/S/F&W	Roseberry Creek	Pump Spring Branch	1	13,162.18	acres	Guntersville Lake
AL06030001-0203-101	Long Island Creek	Tennessee	PWS/S/F&W	embayed portion of Long Island Creek		1	210.31	acres	Guntersville Lake
AL06030001-0605-100	North Sauty Creek	Tennessee	PWS	embayed portion of North Sauty Creek		1	2,999.46	acres	Guntersville Lake
AL06030004-0405-102	Elk River	Tennessee	S/F&W	Anderson Creek	Alabama Highway 99	1	3,114.40	acres	Wheeler Lake
AL06030005-0801-100	Tennessee River	Tennessee	PWS/S/F&W	Wilson Dam	Wheeler Dam	1	15,310.76	acres	Wilson Lake
AL06030006-0102-102	Bear Creek	Tennessee	PWS/S/F&W	Pretty Branch	Alabama Highway 243	1	249.44	acres	Upper Bear Creek Reservoir
AL03160106-0709-100	Tombigbee River	Tombigbee (Upper)	S/F&W	Black Warrior River	Cobb Creek	1	1,859.82	acres	Demopolis Lake
AL03160106-0706-100	Tombigbee River	Tombigbee (Upper)	F&W	Cobb Creek	Heflin Lock and Dam	1	2,078.31	acres	Demopolis Lake
AL03160106-0609-102	Tombigbee River	Tombigbee (Upper)	S/F&W	Heflin Lock and Dam	Bevill Lock and Dam	1	5,152.69	acres	Gainesville Reservoir

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160201-0909-100	Tombigbee River	Tombigbee (Lower)	S/F&W	Coffeeville Lock and Dam	Beach Bluff (RM 141)	1	2,461.03	acres	Coffeeville Reservoir
AL03160201-0907-102	Tombigbee River	Tombigbee (Lower)	F&W	Beach Bluff (RM 141)	1/2 mile downstream from Alabama Highway 114	1	2,077.05	acres	Coffeeville Reservoir
AL03160201-0408-102	Tombigbee River	Tombigbee (Lower)	PWS/F&W	1/2 mile downstream from Alabama Highway 114	3 miles upstream from Alabama Highway 114	1	196.10	acres	Coffeeville Reservoir
AL03160201-0408-104	Tombigbee River	Tombigbee (Lower)	F&W	3 miles upstream from Alabama Highway 114	Sucarnoochee River	1	1,337.70	acres	Coffeeville Reservoir
AL03160201-0401-102	Tombigbee River	Tombigbee (Lower)	S/F&W	Demopolis Lock and Dam	Black Warrior River	1	545.48	acres	Demopolis Lake
Category 1 - Estuaries and Oceans									
AL03170009-0201-200	Portersville Bay	Escatawpa	SH/S/F&W	1000 feet west of outfall	Bayou la Batre Utilities outfall	1	18.81	square miles	
AL03170009-0201-300	Grand Bay	Escatawpa	SH/S/F&W	Grand Bay		1	30.73	square miles	
AL03160205-0300-300	Mobile Bay	Mobile	F&W	West of a line drawn due south from the western shore of Chacaloochee Bay (30.67981, -087.99561)	North of a line due east from a point at the mouth of Dog River (30.56478, -088.08758)	1	31.56	square miles	
AL03160205-0300-102	Mobile Bay	Mobile	SH/F&W	All except out to 1000 feet offshore from Mullet Po		1	168.29	square miles	
AL03160205-0300-400	Mobile Bay	Mobile	S/F&W	South of a line drawn due east from the mouth of Dog River (30.56478, -088.08758)	North of the segment classified for shellfish harvesting	1	54.93	square miles	
AL03160205-0300-502	Mobile Bay	Mobile	S/F&W	East of a line drawn due south from the western shore of Chacaloochee Bay (30.67981, -087.99561) except an area 1000 feet offshore from Ragged Point to the mouth of Yancey Branch	North of a line due east of a point at the mouth of Dog River (30.56478, -088.08758)	1	35.80	square miles	
AL03160205-0300-202	Bon Secour Bay	Mobile	SH/S/F&W	All except out to 1000 feet offshore from Fish Rive		1	102.96	square miles	
AL03160205-0204-111	Weeks Bay	Mobile	S/F&W	Bon Secour Bay	Fish River	1	3.04	square miles	ONRW
AL03160205-0208-100	Oyster Bay	Mobile	SH/F&W	Oyster Bay		1	0.95	square miles	
AL03140107-0205-101	Little Lagoon	Perdido-Escambia	SH/S/F&W	west of Little Lagoon Pass		1	2.64	square miles	
Category 2 - Rivers and Streams									
AL03150201-0309-300	Whites Slough	Alabama	F&W	Catoma Creek	Its source	2A	8.22	miles	
AL03150201-0407-100	Pintlala Creek	Alabama	S/F&W	Alabama River	Pinchony Creek	2A	24.91	miles	
AL03150201-0801-200	Lake Creek	Alabama	F&W	Fort Deposit Creek	Its source	2A	8.79	miles	
AL03150203-0101-100	Washington Creek	Alabama	F&W	Bogue Chitto Creek	Its source	2A	17.28	miles	
AL03150203-0105-100	Mud Creek	Alabama	F&W	Bogue Chitto Creek	Its source	2A	20.87	miles	
AL03150203-0801-100	Gravel Creek	Alabama	F&W	Pursley Creek	Its source	2A	18.45	miles	
AL03150204-0203-100	Robinson Creek	Alabama	F&W	Big Flat Creek	Its source	2A	24.35	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160109-0206-100	Mulberry Fork	Black Warrior	F&W	Sipsey Fork	Marriott Creek	2A	23.34	miles	
AL03160109-0101-700	Warrior Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	4.28	miles	
AL03160109-0109-900	Pan Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	10.67	miles	
AL03160109-0103-100	Duck River	Black Warrior	F&W	Mulberry Fork	Its source	2A	19.28	miles	
AL03160109-0107-110	Blue Springs Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	13.97	miles	
AL03160109-0108-102	Mud Creek	Black Warrior	F&W	Alabama Highway 31	Its source	2A	4.66	miles	
AL03160109-0204-100	Dorsey Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	18.04	miles	
AL03160109-0206-510	Sloan Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	5.62	miles	
AL03160109-0309-100	Blackwater Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	70.05	miles	
AL03160109-0307-300	Charlies Creek	Black Warrior	F&W	Blackwater Creek	Its source	2A	6.67	miles	
AL03160109-0604-700	Lost Creek	Black Warrior	F&W	Mulberry Fork	Two miles upstream from Wolf Creek	2A	5.92	miles	
AL03160109-0403-200	Burton Creek	Black Warrior	F&W	Lost Creek	Its source	2A	4.16	miles	
AL03160109-0601-102	Cane Creek	Black Warrior	F&W	Town Creek	Its source	2A	10.34	miles	
AL03160110-0203-103	Brushy Creek	Black Warrior	F&W	Highway 278	Its source	2A	29.85	miles	
AL03160110-0302-200	Little Clear Creek	Black Warrior	F&W	Clear Creek	Its source	2A	11.53	miles	
AL03160110-0301-100	Right Fork Clear Creek	Black Warrior	F&W	Clear Creek	Its source	2A	15.61	miles	
AL03160110-0303-200	Widows Creek	Black Warrior	F&W	Clear Creek	Its source	2A	7.35	miles	
AL03160110-0305-203	Clear Creek	Black Warrior	F&W	Caney Creek	City of Haleyville water supply reservoir dam	2A	35.34	miles	
AL03160110-0401-100	Blevens Creek	Black Warrior	F&W	Rock Creek	Its source	2A	19.14	miles	
AL03160111-0302-100	Longs Branch	Black Warrior	F&W	Locust Fork	Its source	2A	7.87	miles	
AL03160111-0307-100	Turkey Creek	Black Warrior	F&W	Locust Fork	Its source	2A	25.34	miles	
AL03160111-0413-600	Coal Creek	Black Warrior	F&W	Locust Fork	Its source	2A	4.79	miles	
AL03160111-0603-200	Little Buck Creek	Black Warrior	F&W	Buck Creek	Its source	2A	8.99	miles	
AL03160112-0106-100	Valley Creek	Black Warrior	F&W	Black Warrior River	Blue Creek	2A	30.75	miles	
AL03160112-0102-100	Valley Creek	Black Warrior	LWF	Blue Creek	19th Street North (Bessemer)	2A	10.80	miles	
AL03160112-0101-101	Valley Creek	Black Warrior	LWF	19th Street North (Bessemer)	Opossum Creek	2A	0.90	miles	
AL03160112-0101-200	Opossum Creek	Black Warrior	A&I	Valley Creek	Its source	2A	7.45	miles	
AL03160112-0105-102	Mud Creek	Black Warrior	F&W	Big Branch	Its source	2A	7.70	miles	
AL03160112-0201-500	Little Yellow Creek	Black Warrior	F&W	Big Yellow Creek	Its source	2A	10.65	miles	
AL03160112-0301-400	Jock Creek	Black Warrior	F&W	Blue Creek	Its source	2A	2.21	miles	
AL03160112-0503-100	Cottondale Creek	Black Warrior	F&W	Hurricane Creek	Its source	2A	9.58	miles	
AL03160113-0201-100	Mill Creek	Black Warrior	F&W	Black Warrior River (Warrior Lake)	Its source	2A	10.36	miles	
AL03160113-0503-110	Polecat Creek	Black Warrior	F&W	Big Brush Creek	Its source	2A	14.02	miles	
AL03160113-0708-100	Big Prairie Creek	Black Warrior	F&W	Black Warrior River	Its source	2A	44.16	miles	
AL03150202-0202-200	Dry Brook	Cahaba	F&W	Cahaba Valley Creek	Its source	2A	3.49	miles	
AL03150202-0406-100	Caffee Creek	Cahaba	F&W	Cahaba River	Its source	2A	17.88	miles	
AL03150202-0407-800	Cane Creek	Cahaba	F&W	Cahaba River	Its source	2A	10.38	miles	
AL03130003-1101-100	Hurtsboro Creek	Chattahoochee	F&W	North Fork Cowikee Creek	Its source	2A	19.41	miles	
AL03130004-0206-100	Bennett Mill Creek	Chattahoochee	F&W	Chattahoochee River	Its source	2A	5.88	miles	
AL03140201-0204-200	Deal Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	2A	6.57	miles	
AL03140202-0301-200	Buckhorn Creek	Choctawhatchee	F&W	Pea River	Its source	2A	15.97	miles	
AL03140202-0303-200	Richland Creek	Choctawhatchee	F&W	Pea River	Its source	2A	15.90	miles	
AL03140202-0601-200	Patrick Creek	Choctawhatchee	F&W	Beaverdam Creek	Its source	2A	5.18	miles	
AL03150105-0605-102	Chattooga River	Coosa	F&W	Gaylesville	Alabama-Georgia state line	2A	8.57	miles	
AL03150105-0908-200	Mill Creek	Coosa	F&W	Terrapin Creek	Its source	2A	8.79	miles	
AL03150106-0107-100	Black Creek	Coosa	F&W	Coosa River	Its source	2A	29.10	miles	
AL03150106-0305-200	Gulf Creek	Coosa	F&W	Big Canoe Creek	Its source	2A	9.17	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150106-0307-100	Beaver Creek	Coosa	F&W	Coosa River	Its source	2A	29.37	miles	
AL03150106-0406-100	Ohatchee Creek	Coosa	S/F&W	Coosa River	Its source	2A	27.22	miles	
AL03150106-0408-100	Cane Creek	Coosa	F&W	Coosa River	Its source	2A	31.82	miles	
AL03150107-0203-100	Weewoka Creek	Coosa	F&W	Tallaseehatchee Creek	Its source	2A	18.32	miles	
AL03150107-0907-500	Fourmile Creek	Coosa	F&W	Taylor Creek	Its source	2A	5.67	miles	
AL03160204-0106-103	Mobile River	Mobile	PWS/F&W	Barry Steam Plant	Tensaw River	2A	10.29	miles	
AL03160205-0105-200	North Fork Deer River	Mobile	F&W	Deer River	Its source	2A	1.81	miles	
AL03160205-0204-400	Turkey Branch	Mobile	S/F&W	Fish River	Its source	2A	13.38	miles	
AL03160205-0204-510	Waterhole Branch	Mobile	F&W	Fish River	Its source	2A	7.22	miles	
AL03160205-0203-400	Weeks Creek	Mobile	F&W	Magnolia River	Its source	2A	3.58	miles	
AL03160205-0203-500	Schoolhouse Branch	Mobile	F&W	Magnolia River	Its source	2A	3.83	miles	
AL03140103-0303-110	Clear Creek	Perdido-Escambia	F&W	Yellow River	Its source	2A	13.99	miles	
AL03140107-0201-100	Wolf Creek	Perdido-Escambia	F&W	Wolf Bay	Its source	2A	8.91	miles	
AL03140107-0201-200	Sandy Creek	Perdido-Escambia	S/F&W	Wolf Creek	Its source	2A	7.57	miles	
AL03140107-0202-101	Miflin Creek	Perdido-Escambia	S/F&W	Wolf Bay	limit of tidal effects	2A	3.39	miles	
AL03140303-0703-102	Sepulga River	Perdido-Escambia	F&W	Robinson Mill Creek	Its source	2A	46.99	miles	
AL03140304-0501-200	Folley Creek	Perdido-Escambia	F&W	Conecuh River	Its source	2A	3.68	miles	
AL03150108-0405-102	Tallapoosa River	Tallapoosa	OAW/F&W	Cane Creek	Alabama-Georgia state line	2A	31.60	miles	
AL03150110-0104-102	Sougahatchee Creek	Tallapoosa	F&W	Yates Lake	Sougahatchee Lake dam	2A	47.35	miles	
AL03150110-0102-103	Sougahatchee Creek	Tallapoosa	PWS/F&W	Sougahatchee Lake	Its source	2A	4.95	miles	
AL03150110-0304-100	Uphapee Creek	Tallapoosa	F&W	Tallapoosa River	Its source	2A	21.16	miles	
AL03150110-0803-110	Johnsons Creek	Tallapoosa	F&W	Line Creek	Its source	2A	16.77	miles	
AL03150110-0903-300	Goodwater Creek	Tallapoosa	F&W	Tallapoosa River	Its source	2A	7.28	miles	
AL06030001-0305-100	Big Coon Creek	Tennessee	F&W	Coon Creek	Its source	2A	12.64	miles	
AL06030001-0502-100	Kirby Creek	Tennessee	F&W	South Sauty Creek	Its source	2A	12.52	miles	
AL06030002-0204-100	Paint Rock River	Tennessee	F&W	Tennessee River (Wheeler Lake)	Its source	2A	58.71	miles	
AL06030002-1101-103	Swan Creek	Tennessee	F&W	Town Creek	Its source	2A	10.83	miles	
AL06030002-1202-200	Neeley Branch	Tennessee	F&W	First Creek	Its source	2A	3.61	miles	
AL06030005-0102-101	Muddy Fork	Tennessee	A&I	Big Nance Creek	Crow Branch	2A	11.14	miles	
AL06030005-0102-700	Crow Branch	Tennessee	A&I	Muddy Fork	Its source	2A	4.73	miles	
AL06030005-0301-200	Chandelower Creek	Tennessee	F&W	Rock Creek	Its source	2A	5.95	miles	
AL06030006-0304-500	Rock Creek	Tennessee	F&W	Bear Creek	Its source	2A	20.74	miles	
AL03160103-0303-600	Clark Creek	Tombigbee (Upper)	F&W	Buttahatchee River	Its source	2A	3.96	miles	
AL03160106-0701-100	Toms Creek	Tombigbee (upper)	F&W	Factory Creek	Its source	2A	12.17	miles	
AL03160106-0506-110	Blubber Creek	Tombigbee (Upper)	F&W	Lubbub Creek	Its source	2A	20.12	miles	
AL03160107-0102-100	New River	Tombigbee (Upper)	F&W	Sipsey River	Its source	2A	24.41	miles	
AL03160108-1102-100	Noxubee River	Tombigbee (upper)	F&W	Tombigbee River	Alabama-Mississippi state line	2A	23.99	miles	
AL03160108-1005-100	Bodka Creek	Tombigbee (upper)	F&W	Noxubee River	Alabama-Mississippi state line	2A	17.45	miles	
AL03160201-0105-100	Powell Creek	Tombigbee (Lower)	F&W	Chickasaw Bogue	Its source	2A	18.92	miles	
AL03160201-0203-100	Kinterbish Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Alabama-Mississippi state line	2A	52.74	miles	
AL03160201-0504-100	Yantley Creek	Tombigbee (Lower)	F&W	Tuckabum Creek	Alabama-Mississippi state line	2A	37.28	miles	
AL03160201-0904-102	Wahalak Creek	Tombigbee (Lower)	F&W	Spear Creek	Its source	2A	11.42	miles	
AL03160202-0404-101	Sucarnoochee River	Tombigbee (Lower)	PWS/S/F&W	US Highway 11	Miuka Creek	2A	6.07	miles	
AL03150201-0103-100	Mortar Creek	Alabama	F&W	Alabama River	Its source	2B	23.99	miles	
AL03150201-0105-500	Pierce Creek	Alabama	F&W	Mill Creek	Its source	2B	3.42	miles	
AL03150201-0308-100	Catoma Creek	Alabama	F&W	Ramer Creek	Its source	2B	21.50	miles	
AL03150201-0304-110	Little Catoma Creek	Alabama	F&W	Catoma Creek	Its source	2B	28.99	miles	
AL03150201-0306-110	Waller Creek	Alabama	F&W	Ramer Creek	Its source	2B	12.16	miles	
AL03150201-0501-200	Noland Creek	Alabama	F&W	Alabama River	Its source	2B	9.99	miles	
AL03150201-0502-100	Tallawassee Creek	Alabama	F&W	Alabama River	Its source	2B	16.93	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150201-0601-400	Indian Creek	Alabama	F&W	Swift Creek	Its source	2B	4.77	miles	
AL03150201-0704-100	Beaver Creek	Alabama	F&W	Alabama River	Its source	2B	10.19	miles	
AL03150201-0705-100	Ivy Creek	Alabama	F&W	Alabama River	Its source	2B	15.51	miles	
AL03150201-0802-500	Cherry Creek	Alabama	F&W	Big Swamp Creek	Its source	2B	7.71	miles	
AL03150201-0801-100	Fort Deposit Creek	Alabama	F&W	Big Swamp Creek	Its source	2B	13.52	miles	
AL03150201-1002-100	Little Mulberry Creek	Alabama	F&W	Mulberry Creek	Its source	2B	4.92	miles	
AL03150201-1002-300	Morgan Creek	Alabama	F&W	Little Mulberry Creek	Its source	2B	6.66	miles	
AL03150203-0206-100	Dry Cedar Creek	Alabama	F&W	Cedar Creek	Its source	2B	28.26	miles	
AL03150203-0206-300	Sullivan Branch	Alabama	F&W	Dry Cedar Creek	Its source	2B	8.63	miles	
AL03150203-0208-100	Mush Creek	Alabama	F&W	Cedar Creek	Its source	2B	24.58	miles	
AL03150203-0104-100	Brush Creek	Alabama	F&W	Mud Creek	Its source	2B	15.51	miles	
AL03150203-0109-200	Tatum Creek	Alabama	F&W	Bogue Chitto Creek	Its source	2B	11.92	miles	
AL03150203-0108-110	Bear Creek	Alabama	F&W	Bogue Chitto Creek	Its source	2B	16.60	miles	
AL03150203-0505-200	Chilatchee Creek	Alabama	S/F&W	Alabama River	Its source	2B	41.61	miles	
AL03150203-0502-100	Rogers Creek	Alabama	F&W	Chilatchee Creek	Its source	2B	14.05	miles	
AL03150203-0501-100	Sand Creek	Alabama	F&W	Chilatchee Creek	Its source	2B	13.39	miles	
AL03150203-0501-200	Glover Creek	Alabama	F&W	Sand Creek	Its source	2B	4.70	miles	
AL03150203-0504-100	Little Chilatchee Creek	Alabama	F&W	Chilatchee Creek	Its source	2B	12.30	miles	
AL03150203-0405-100	Bear Creek	Alabama	F&W	Pine Barren Creek	Its source	2B	27.35	miles	
AL03150203-0606-100	Beaver Creek	Alabama	F&W	Alabama River	Its source	2B	32.96	miles	
AL03150203-0606-200	Red Creek	Alabama	F&W	Beaver Creek	Its source	2B	21.96	miles	
AL03150204-0403-110	Randons Creek	Alabama	F&W	Lovetts Creek	Its source	2B	16.14	miles	
AL03150204-0404-110	Lovetts Creek	Alabama	F&W	Alabama River	Its source	2B	16.34	miles	
AL03150204-0403-300	Bear Creek	Alabama	F&W	Randons Creek	Its source	2B	9.78	miles	
AL03150204-0602-400	Baileys Creek	Alabama	F&W	Alabama River	Its source	2B	9.25	miles	
AL03150204-0601-100	Wallers Creek	Alabama	F&W	Alabama River	Its source	2B	15.40	miles	
AL03150204-0604-400	Shomo Creek	Alabama	F&W	Alabama River	Its source	2B	11.04	miles	
AL03150204-0503-100	Little River	Alabama	S/F&W	Alabama River	Its source	2B	33.49	miles	
AL03150204-0502-300	Butterfork Creek	Alabama	F&W	Little River	Its source	2B	7.70	miles	
AL03150204-0502-501	Chitterling Creek	Alabama	F&W	Little River	Little River Lake	2B	0.34	miles	
AL03150204-0502-503	Chitterling Creek	Alabama	F&W	Little River Lake	Its source	2B	4.69	miles	
AL03160109-0603-102	Mulberry Fork	Black Warrior	PWS/F&W	Frog Ague Creek	Sipsey Fork	2B	13.54	miles	
AL03160109-0109-103	Mulberry Fork	Black Warrior	F&W	Blount County Road 6	Its source	2B	14.74	miles	
AL03160109-0108-101	Mud Creek	Black Warrior	F&W	Mulberry Fork	Alabama Highway 31	2B	4.34	miles	
AL03160109-0205-200	Sullivan Creek	Black Warrior	F&W	Mulberry Fork	Its source	2B	8.20	miles	
AL03160109-0306-100	Spring Creek	Black Warrior	F&W	Blackwater Creek	Its source	2B	7.90	miles	
AL03160109-0301-110	Splunge Creek	Black Warrior	F&W	Blackwater Creek	Its source	2B	20.11	miles	
AL03160109-0405-103	Lost Creek	Black Warrior	F&W	Cane Creek	Alabama Highway 69 at Oakman	2B	14.52	miles	
AL03160109-0403-102	Lost Creek	Black Warrior	F&W	Mill dam at Cedrum	US Highway 78 north of Cedrum	2B	1.23	miles	
AL03160109-0402-102	Lost Creek	Black Warrior	F&W	US Highway 78 at Carbon Hill	Its source	2B	8.99	miles	
AL03160109-0502-102	Wolf Creek	Black Warrior	F&W	Alabama Highway 102	Its source	2B	5.28	miles	
AL03160109-0403-140	Baker Branch	Black Warrior	F&W	Burton Creek	Its source	2B	1.98	miles	
AL03160110-0506-100	Mill Creek	Black Warrior	F&W	Sipsey Fork	Its source	2B	12.99	miles	
AL03160110-0506-200	Little Mill Creek	Black Warrior	F&W	Mill Creek	Its source	2B	6.01	miles	
AL03160111-0410-100	Locust Fork	Black Warrior	F&W	Village Creek	Jefferson County Road 77	2B	23.26	miles	
AL03160111-0101-100	Bristow Creek	Black Warrior	F&W	Locust Fork	Its source	2B	9.51	miles	
AL03160111-0103-100	Clear Creek	Black Warrior	F&W	Locust Fork	Its source	2B	16.40	miles	
AL03160111-0106-100	Slab Creek	Black Warrior	F&W	Locust Fork	Its source	2B	24.98	miles	
AL03160111-0106-110	Little Reedbrake Creek	Black Warrior	F&W	Slab Creek	Its source	2B	2.92	miles	
AL03160111-0201-100	Wynnville Creek	Black Warrior	F&W	Locust Fork	Its source	2B	5.98	miles	
AL03160111-0303-200	Sand Valley Creek	Black Warrior	F&W	Gurley Creek	Its source	2B	5.55	miles	
AL03160111-0304-201	Self Creek	Black Warrior	F&W	Gurley Creek	Alabama Highway 79	2B	8.55	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160111-0304-202	Self Creek	Black Warrior	PWS	Alabama Highway 79	Its source	2B	4.14	miles	
AL03160111-0401-100	Crooked Creek	Black Warrior	F&W	Locust Fork	Its source	2B	10.03	miles	
AL03160111-0404-500	Ward Creek	Black Warrior	F&W	Locust Fork	Its source	2B	6.65	miles	
AL03160112-0101-102	Valley Creek	Black Warrior	LWF	Opossum Creek	Its source	2B	13.53	miles	
AL03160112-0104-400	Lick Creek	Black Warrior	F&W	Valley Creek	Its source	2B	8.13	miles	
AL03160112-0202-200	Clifty Creek	Black Warrior	F&W	Big Yellow Creek	Its source	2B	4.91	miles	
AL03160112-0301-300	Little Bear Creek	Black Warrior	F&W	Blue Creek	Its source	2B	3.48	miles	
AL03160112-0303-110	Davis Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	39.00	miles	
AL03160112-0303-400	Prudes Creek	Black Warrior	F&W	Davis Creek	Its source	2B	3.78	miles	
AL03160112-0303-120	Hanna Mill Creek	Black Warrior	F&W	Davis Creek	Its source	2B	4.62	miles	
AL03160112-0413-101	North River	Black Warrior	F&W	Black Warrior River	Lake Tuscaloosa dam	2B	1.60	miles	
AL03160112-0402-102	North River	Black Warrior	F&W	Ellis Creek	Its source	2B	16.39	miles	
AL03160112-0401-101	Clear Creek	Black Warrior	F&W	North River	Bugs Lake dam	2B	3.82	miles	
AL03160112-0401-103	Clear Creek	Black Warrior	PWS	Bugs Lake	Its source	2B	7.66	miles	
AL03160112-0403-200	Cedar Creek	Black Warrior	F&W	North River	Its source	2B	13.97	miles	
AL03160112-0407-100	Cripple Creek	Black Warrior	F&W	North River	Its source	2B	10.45	miles	
AL03160112-0412-100	Carroll Creek	Black Warrior	F&W	North River	Its source	2B	15.12	miles	
AL03160112-0501-101	Yellow Creek	Black Warrior	F&W	Black Warrior River	Lake Harris dam	2B	2.88	miles	
AL03160113-0202-200	Big Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	12.12	miles	
AL03160113-0105-100	Big Sandy Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	37.36	miles	
AL03160113-0302-110	Elliotts Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	23.83	miles	
AL03160113-0402-100	Fivemile Creek	Black Warrior	F&W	Black Warrior River	Payne Lake	2B	34.00	miles	
AL03160113-0506-100	Big Brush Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	29.65	miles	
AL03160113-0502-110	Sparks Creek	Black Warrior	F&W	Big Brush Creek	Its source	2B	10.06	miles	
AL03160113-0501-100	Brush Creek	Black Warrior	F&W	Big Brush Creek	Its source	2B	17.35	miles	
AL03160113-0601-100	Grant Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	11.18	miles	
AL03160113-0602-300	Carthage Branch	Black Warrior	F&W	Black Warrior River	Its source	2B	3.98	miles	
AL03160113-0604-200	Gabriel Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	17.00	miles	
AL03160113-0604-300	Millians Creek	Black Warrior	F&W	Gabriel Creek	Its source	2B	16.91	miles	
AL03160113-0603-100	Buck Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	12.97	miles	
AL03160113-0606-100	Minter Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	16.82	miles	
AL03160113-0702-100	Dry Creek	Black Warrior	F&W	Big Prairie Creek	Its source	2B	15.28	miles	
AL03160113-0707-110	Big German Creek	Black Warrior	F&W	Big Prairie Creek	Its source	2B	15.21	miles	
AL03160113-0802-110	Hines Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	9.87	miles	
AL03150202-0203-103	Buck Creek	Cahaba	F&W	Shelby County Road 44	Its source	2B	8.35	miles	
AL03150202-0403-600	Spring Creek	Cahaba	F&W	Shoal Creek	Its source	2B	9.38	miles	
AL03150202-0503-200	Sandy Creek	Cahaba	F&W	Cahaba River	Its source	2B	16.29	miles	
AL03150202-0504-100	Haysop Creek	Cahaba	F&W	Cahaba River	Its source	2B	26.81	miles	
AL03150202-0505-100	Affonee Creek	Cahaba	S	Cahaba River	Its source	2B	18.51	miles	
AL03150202-0507-100	Blue Girth Creek	Cahaba	S	Cahaba River	Its source	2B	15.08	miles	
AL03150202-0506-200	Walton Creek	Cahaba	F&W	Cahaba River	Its source	2B	5.45	miles	
AL03150202-0506-300	Gully Creek	Cahaba	F&W	Cahaba River	Its source	2B	7.72	miles	
AL03150202-0601-200	Wallace Creek	Cahaba	F&W	Cahaba River	Its source	2B	8.94	miles	
AL03150202-0601-300	Potato Patch Creek	Cahaba	F&W	Cahaba River	Its source	2B	7.54	miles	
AL03150202-0601-400	Taylor Creek	Cahaba	F&W	Cahaba River	Its source	2B	8.77	miles	
AL03150202-0602-200	Old Town Creek	Cahaba	S	Cahaba River	Its source	2B	12.66	miles	
AL03150202-0603-300	Mill Creek	Cahaba	F&W	Cahaba River	Its source	2B	11.35	miles	
AL03150202-0701-100	Rice Creek	Cahaba	F&W	Cahaba River	Its source	2B	14.87	miles	
AL03150202-0702-210	Waters Creek	Cahaba	S	Cahaba River	Its source	2B	9.93	miles	
AL03150202-0702-300	Wells Creek	Cahaba	F&W	Cahaba River	Its source	2B	5.36	miles	
AL03150202-0703-200	Possum Creek	Cahaba	F&W	Cahaba River	Its source	2B	8.97	miles	
AL03150202-0805-100	Oakmulgee Creek	Cahaba	S	Cahaba River	Its source	2B	56.67	miles	
AL03150202-0801-100	Beaverdam Creek	Cahaba	F&W	Oakmulgee Creek	Its source	2B	13.49	miles	
AL03150202-0902-501	Dry Creek	Cahaba	F&W	Cahaba River	Dallas County Road 201	2B	4.50	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03130003-0903-102	Chattahoochee River	Chattahoochee	F&W	Cliatt Branch	14th Street Bridge between Columbus and Phenix City	2B	41.77	miles	
AL03130003-0104-102	Chattahoochee River	Chattahoochee	PWS/S/F&W	14th Street Bridge between Columbus and Phenix City	Oliver Dam	2B	3.15	miles	
AL03130003-0505-102	Uchee Creek	Chattahoochee	PWS/S/F&W	County Road 39	Island Creek	2B	11.59	miles	
AL03130003-0503-100	Uchee Creek	Chattahoochee	S/F&W	Island Creek	Its source	2B	22.59	miles	
AL03130003-0403-100	Little Uchee Creek	Chattahoochee	F&W	Uchee Creek	Its source	2B	36.54	miles	
AL03130003-0501-200	Snake Creek	Chattahoochee	F&W	Uchee Creek	Its source	2B	11.40	miles	
AL03130004-0801-100	Chattahoochee River	Chattahoochee	F&W	Alabama-Florida state line	Woods Branch	2B	14.14	miles	
AL03130004-0403-110	Peterman Creek	Chattahoochee	F&W	Abbie Creek	Its source	2B	12.43	miles	
AL03130004-0607-100	Omusee Creek	Chattahoochee	F&W	Chattahoochee River	Its source	2B	28.05	miles	
AL03130004-0604-100	Spivey Mill Creek	Chattahoochee	F&W	Omusee Creek	Its source	2B	8.07	miles	
AL03130004-0602-202	Poplar Spring Branch	Chattahoochee	F&W	Ross Clark Circle	Its source	2B	3.46	miles	
AL03130012-0106-100	Buck Creek	Chipola	F&W	Alabama-Florida state line	Its source	2B	11.11	miles	
AL03130012-0106-202	Boggy Creek	Chipola	F&W	Cottondale WWTP	Its source	2B	6.72	miles	
AL03140201-0201-200	Jack Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	2B	5.83	miles	
AL03140201-0203-200	Panther Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	2B	7.63	miles	
AL03140201-0407-100	West Fork Choctawhatchee River	Choctawhatchee	F&W	Choctawhatchee River	Its source	2B	39.45	miles	
AL03140201-0303-300	Blacks Creek	Choctawhatchee	F&W	Judy Creek	Its source	2B	5.62	miles	
AL03140201-1004-400	Cox Mill Creek	Choctawhatchee	F&W	Hurricane Creek	Its source	2B	2.53	miles	
AL03140201-1004-800	Sandy Branch	Choctawhatchee	F&W	Hurricane Creek	Its source	2B	2.34	miles	
AL03140201-0501-202	Beaver Creek	Choctawhatchee	F&W	Dothan WWTP	Its source	2B	4.54	miles	
AL03140201-1202-200	Providence Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	2B	1.70	miles	
AL03140201-1203-110	Adams Creek	Choctawhatchee	F&W	Rocky Creek	Its source	2B	1.97	miles	
AL03140201-1103-100	Tight Eye Creek	Choctawhatchee	F&W	Double Bridges Creek	Its source	2B	14.69	miles	
AL03140202-0201-200	Johnson Creek	Choctawhatchee	F&W	Pea River	Its source	2B	9.51	miles	
AL03140202-0204-110	Big Sandy Creek	Choctawhatchee	F&W	Pea River	Its source	2B	11.32	miles	
AL03140202-0206-200	Double Creek	Choctawhatchee	F&W	Mill Creek	Its source	2B	9.30	miles	
AL03140202-0407-400	Cowpen Creek	Choctawhatchee	F&W	Big Creek	Its source	2B	4.19	miles	
AL03140202-0407-500	Sweetwater Creek	Choctawhatchee	F&W	Big Creek	Its source	2B	6.82	miles	
AL03140202-0803-100	Flat Creek	Choctawhatchee	F&W	Pea River	Eightmile Creek	2B	4.72	miles	
AL03140202-0702-110	Flat Creek	Choctawhatchee	S/F&W	Eightmile Creek	Its source	2B	24.26	miles	
AL03140202-0701-100	Panther Creek	Choctawhatchee	F&W	Flat Creek	Its source	2B	10.81	miles	
AL03140202-0905-110	Sandy Creek	Choctawhatchee	F&W	Pea River	Its source	2B	10.91	miles	
AL03140203-0701-100	Holmes Creek	Choctawhatchee	F&W	Alabama-Florida state line	Its source	2B	6.72	miles	
AL03150106-0509-200	Fayne Creek	Coosa	F&W	Cheaha Creek	Its source	2B	11.10	miles	
AL03170002-0604-100	Red Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	2B	15.95	miles	
AL03170008-0201-100	Little Creek	Escatawpa	F&W	Escatawpa River	Its source	2B	12.05	miles	
AL03170008-0201-600	Long Branch	Escatawpa	F&W	Pond Creek	Its source	2B	3.45	miles	
AL03170008-0203-100	Bennett Creek	Escatawpa	F&W	Escatawpa River	Its source	2B	11.79	miles	
AL03170008-0601-400	Pierce Creek	Escatawpa	F&W	Big Creek	Its source	2B	10.23	miles	
AL03170009-0102-200	Carls Creek	Escatawpa	F&W	Bayou la Batre	Its source	2B	2.93	miles	
AL03160205-0101-102	Dog River	Mobile	F&W	Moore Creek	Its source	2B	5.50	miles	
AL03160205-0103-402	Rabbit Creek	Mobile	F&W	Alabama Highway 163	Its source	2B	8.20	miles	
AL03160205-0206-701	UT to Bon Secour River	Mobile	F&W	Bon Secour River	Baldwin County Road 65	2B	0.61	miles	
AL03140103-0305-102	Yellow River	Perdido-Escambia	F&W	North Creek	Its source	2B	35.05	miles	
AL03140106-0701-102	Perdido River	Perdido-Escambia	F&W	Jacks Branch	Its source	2B	43.48	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03140106-0302-102	Brushy Creek	Perdido-Escambia	F&W	Boggy Branch	Its source	2B	9.12	miles	
AL03140106-0302-203	Boggy Branch	Perdido-Escambia	F&W	Masland Carpets WWTP	Its source	2B	0.95	miles	
AL03140106-0603-102	Blackwater River	Perdido-Escambia	F&W	Narrow Gap Creek	Its source	2B	27.30	miles	
AL03140301-0201-100	Mannings Creek	Perdido-Escambia	F&W	Conecuh River	Its source	2B	18.99	miles	
AL03140302-0506-102	Patsaliga Creek	Perdido-Escambia	F&W	Buck Creek	Its source	2B	83.17	miles	
AL03140303-0201-102	Rocky Creek	Perdido-Escambia	F&W	County road north of Chapman	Its source	2B	12.64	miles	
AL03140304-0502-100	Silas Creek	Perdido-Escambia	F&W	Conecuh River	Its source	2B	1.57	miles	
AL03140304-0601-100	Little Escambia Creek	Perdido-Escambia	F&W	Wild Fork Creek	Its source	2B	15.31	miles	
AL03140305-0206-102	Big Escambia Creek	Perdido-Escambia	F&W	Big Spring Creek	Its source	2B	27.55	miles	
AL03150108-1004-115	Tallapoosa River	Tallapoosa	F&W	Cleburne County Road 19	Cane Creek	2B	5.85	miles	
AL03150109-0802-103	Tallapoosa River	Tallapoosa	F&W	Hillabee Creek	Alabama Highway 77	2B	40.75	miles	
AL03150110-0905-101	Tallapoosa River	Tallapoosa	F&W	Alabama River	US Highway 231	2B	6.47	miles	
AL03150110-0904-102	Tallapoosa River	Tallapoosa	PWS/F&W	Jenkins Creek	Thurlow dam	2B	30.00	miles	
AL03150110-0501-100	Persimmon Creek	Tallapoosa	F&W	Calebee Creek	Its source	2B	13.87	miles	
AL03150110-0801-100	Panther Creek	Tallapoosa	F&W	Line Creek	Its source	2B	20.57	miles	
AL03150110-0702-100	Bughall Creek	Tallapoosa	F&W	Old Town Creek	Its source	2B	31.44	miles	
AL06030002-0302-100	West Fork Flint River	Tennessee	F&W	Flint River	Its source	2B	1.76	miles	
AL06030002-0505-102	Indian Creek	Tennessee	F&W	Martin Road (Redstone Arsenal)	US Highway 72	2B	10.37	miles	
AL06030002-0606-100	Cotaco Creek	Tennessee	S/F&W	Tennessee River	Guyer Branch	2B	14.12	miles	
AL06030002-0602-103	West Fork Cotaco Creek	Tennessee	F&W	Frost Creek	Its source	2B	2.93	miles	
AL06030002-1012-102	West Flint Creek	Tennessee	F&W	McDaniel Creek	Its source	2B	24.32	miles	
AL06030005-0801-202	McKiernan Creek	Tennessee	F&W	Tennessee River (Wilson Lake)	Its source	2B	3.71	miles	
AL06030005-0806-100	Sinking Creek	Tennessee	F&W	Tennessee River	Its source	2B	16.38	miles	
AL06030006-0102-103	Bear Creek	Tennessee	F&W	Alabama Highway 243	Its source	2B	10.97	miles	
AL06030006-0101-102	Little Bear Creek	Tennessee	PWS/S/F&W	Bear Creek (Upper Bear Creek reservoir)	Its source	2B	9.95	miles	
AL06030006-0207-100	Cedar Creek	Tennessee	F&W	Alabama-Mississippi state line	Cedar Creek Lake dam	2B	18.75	miles	
AL06030006-0206-101	Little Bear Creek	Tennessee	S/F&W	Cedar Creek	Little Bear Creek dam	2B	11.88	miles	
AL06030006-0205-104	Little Bear Creek	Tennessee	S/F&W	Alabama Highway 187	Its source	2B	14.01	miles	
AL06030006-0305-100	Buzzard Roost Creek	Tennessee	F&W	Bear Creek (Pickwick Lake)	Its source	2B	21.80	miles	
AL03160103-0101-600	Moore Creek	Tombigbee (Upper)	F&W	West Branch Buttahatchee River	Its source	2B	3.47	miles	
AL03160105-0204-102	Luxapallila Creek	Tombigbee (upper)	F&W	Alabama-Mississippi state line	Fayette County Road 37	2B	25.25	miles	
AL03160106-0702-102	Factory Creek	Tombigbee (Upper)	F&W	Demopolis Lake	Its source	2B	18.81	miles	
AL03160107-0303-102	Sipsey River	Tombigbee (Upper)	F&W	Tuscaloosa county line	US Highway 43	2B	74.42	miles	
AL03160107-0201-102	Sipsey River	Tombigbee (Upper)	PWS/F&W	US Highway 43	Alabama Highway 102	2B	12.61	miles	
AL03160107-0201-103	Sipsey River	Tombigbee (Upper)	F&W	Alabama Highway 102	Its source	2B	20.17	miles	
AL03160201-0601-100	Mill Creek	Tombigbee (Lower)	F&W	Horse Creek	Its source	2B	14.15	miles	
Category 2 - Lakes and Reservoirs									
AL03160110-0305-202	Clear Creek	Black Warrior	S/F&W	Coon Creek	Caney Creek	2A	782.08	acres	Lewis Smith Lake
AL03160112-0202-100	Big Yellow Creek	Black Warrior	S/F&W	Black Warrior River	extent of reservoir	2A	445.51	acres	Bankhead Lake
AL03150110-0102-102	Sougahatchee Creek	Tallapoosa	PWS/F&W	Sougahatchee Lake dam	extent of reservoir	2A	346.36	acres	Sougahatchee Lake
AL03150203-0703-102	Alabama River	Alabama	PWS	Rockwest Creek	Millers Ferry Lock and Dam	2B	454.40	acres	Claiborne Reservoir
AL03150204-0502-502	Chitterling Creek	Alabama	S/F&W	within Little River State Forest		2B	33.01	acres	Little River Lake
AL03160110-0504-500	Simpson Creek	Black Warrior	S/F&W	Ryan Creek	extent of reservoir	2B	1,319.43	acres	Lewis Smith Lake
AL03160112-0401-112	Clear Creek	Black Warrior	PWS	Bugs Lake dam	extent of reservoir	2B	63.96	acres	Bugs Lake

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160112-0501-102	Yellow Creek	Black Warrior	PWS	Lake Harris dam	Little Yellow Creek	2B	450.31	acres	
AL03150110-0406-103	Tallapoosa River	Tallapoosa	PWS/S/F&W	Yates dam	Martin Dam	2B	1,595.89	acres	Yates Lake
Category 2 - Estuaries and Oceans									
AL03140107-0204-301	Perdido Bay	Perdido-Escambia	SH/S/F&W	Gulf of Mexico	Suarez Point	2B	11.85	square miles	
AL03140107-0204-500	Bay la Launch	Perdido-Escambia	SH/S/F&W	Arnica Bay	Wolf Bay	2B	1.48	square miles	
AL03140107-0204-600	Wolf Bay	Perdido-Escambia	OAW/SH/S/F&W	Bay la Launch	Moccasin Bayou	2B	4.65	square miles	
AL03140107-0203-102	Wolf Bay	Perdido-Escambia	SH/S/F&W	Moccasin Bayou	Its source	2B	0.22	square miles	
Category 3 - Rivers and Streams									
AL03150201-1003-400	Gale Creek	Alabama	F&W	Mulberry Creek	Its source	3	7.39	miles	
AL03150201-1003-600	Charlotte Creek	Alabama	F&W	Gale Creek	Its source	3	4.14	miles	
AL03150203-0301-100	Big Swamp Creek	Alabama	F&W	Alabama River	Its source	3	18.67	miles	
AL03150203-0102-200	Sand Creek	Alabama	F&W	Bogue Chitto Creek	Its source	3	7.91	miles	
AL03150203-0603-100	Turkey Creek	Alabama	F&W	Beaver Creek	Its source	3	29.98	miles	
AL03150203-0703-300	Rockwest Creek	Alabama	F&W	Alabama River	Its source	3	12.69	miles	
AL03150203-0703-900	UT to Rockwest Creek	Alabama	F&W	Rockwest Creek	Its source	3	3.80	miles	
AL03150204-0206-100	Big Flat Creek	Alabama	S/F&W	Alabama River	Its source	3	63.53	miles	
AL03150204-0304-100	Limestone Creek	Alabama	F&W	Alabama River	Its source	3	28.16	miles	
AL03150204-0303-110	Double Branch Creek	Alabama	F&W	Limestone Creek	Its source	3	7.37	miles	Local Name
AL03150204-0302-500	Hudson Branch	Alabama	F&W	Limestone Creek	Its source	3	3.54	miles	Local Name
AL03160109-0604-102	Mulberry Fork	Black Warrior	PWS/S/F&W	Baker Creek	Burnt Cane Creek	3	8.60	miles	
AL03160109-0603-101	Mulberry Fork	Black Warrior	PWS/F&W	Burnt Cane Creek	Frog Ague Creek	3	8.60	miles	
AL03160109-0102-800	Wolf Creek	Black Warrior	F&W	Duck River	Its source	3	4.31	miles	
AL03160109-0104-201	Bridge Creek	Black Warrior	F&W	Eightmile Creek	Cullman water supply reservoir dam	3	4.41	miles	
AL03160109-0104-800	Adams Branch	Black Warrior	PWS	Bridge Creek	Its source	3	1.96	miles	
AL03160109-0104-900	Pope Creek	Black Warrior	PWS	Bridge Creek	Its source	3	2.84	miles	
AL03160109-0603-200	Burnt Cane Creek	Black Warrior	F&W	Mulberry Fork	Its source	3	10.31	miles	
AL03160109-0405-102	Lost Creek	Black Warrior	PWS/F&W	Two miles upstream from Wolf Creek	Cane Creek	3	4.92	miles	
AL03160109-0405-500	Indian Creek	Black Warrior	F&W	Lost Creek	Its source	3	7.10	miles	
AL03160109-0503-400	Indian Creek	Black Warrior	F&W	Wolf Creek	Its source	3	11.50	miles	
AL03160109-0601-902	Town Creek	Black Warrior	F&W	100 yards upstream of Southern Railway crossing	Its source	3	6.27	miles	
AL03160109-0603-700	Frog Ague Creek	Black Warrior	F&W	Mulberry Fork	Its source	3	4.46	miles	
AL03160110-0104-701	Curtis Mill Creek	Black Warrior	F&W	Sandy Creek	Town of Double Springs water supply reservoir dam	3	3.67	miles	
AL03160110-0503-100	Rock Creek	Black Warrior	F&W	Ryan Creek	Its source	3	12.39	miles	
AL03160111-0201-600	Whippoorwill Creek	Black Warrior	F&W	Wynnville Creek	Its source	3	6.98	miles	
AL03160111-0206-500	Chitwood Creek	Black Warrior	F&W	Calvert Prong	Its source	3	2.78	miles	
AL03160111-0206-800	Mill Creek	Black Warrior	F&W	Chitwood Creek	Its source	3	6.39	miles	
AL03160111-0206-700	Whited Creek	Black Warrior	F&W	Calvert Prong	Its source	3	4.19	miles	
AL03160111-0307-200	Cunningham Creek	Black Warrior	F&W	Turkey Creek	Its source	3	11.60	miles	
AL03160112-0301-200	Lick Creek	Black Warrior	F&W	Blue Creek	Its source	3	2.99	miles	
AL03160113-0203-110	Cypress Creek	Black Warrior	F&W	Black Warrior River	Its source	3	14.63	miles	
AL03160113-0607-400	Pole Bridge Branch	Black Warrior	F&W	Big Brush Creek	Its source	3	8.39	miles	
AL03160113-0505-110	Colwell Creek	Black Warrior	F&W	Big Brush Creek	Its source	3	11.79	miles	
AL03160113-0504-200	Little Brush Creek	Black Warrior	F&W	Big Brush Creek	Its source	3	10.76	miles	
AL03160113-0604-400	Martin Creek	Black Warrior	F&W	Gabriel Creek	Its source	3	1.20	miles	
AL03160113-0803-900	White Creek	Black Warrior	F&W	Black Warrior River	Its source	3	8.38	miles	
AL03160113-0801-100	Dollarhide Creek	Black Warrior	F&W	Black Warrior River	Its source	3	8.59	miles	
AL03150202-0101-103	Cahaba River	Cahaba	OAW/F&W	I-59	Its source	3	2.22	miles	
AL03150202-0201-100	Peavine Creek	Cahaba	F&W	Buck Creek	Its source	3	10.01	miles	
AL03150202-0202-300	UT to Cahaba Valley Creek	Cahaba	F&W	Cahaba Valley Creek	Its source	3	2.31	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150202-0303-800	Little Shades Creek	Cahaba	F&W	Shades Creek	Its source	3	8.99	miles	
AL03150202-0403-110	Shoal Creek	Cahaba	F&W	Little Cahaba River	Its source	3	19.09	miles	
AL03150202-0402-100	Mahan Creek	Cahaba	F&W	Little Cahaba River	Its source	3	15.47	miles	
AL03150202-0404-110	Sixmile Creek	Cahaba	S	Little Cahaba River	Its source	3	27.27	miles	
AL03150202-0502-100	Schultz Creek	Cahaba	S	Cahaba River	Its source	3	16.39	miles	
AL03130002-0805-102	Veasey Creek	Chattahoochee	F&W	Alabama-Georgia state line	Its source	3	10.51	miles	
AL03130002-0805-400	Finley Creek	Chattahoochee	F&W	Stroud Creek	Its source	3	4.98	miles	
AL03130002-0804-100	Guss Creek	Chattahoochee	F&W	Wehadkee Creek	Its source	3	6.63	miles	
AL03130002-0804-400	Gladney Mill Branch	Chattahoochee	F&W	Guss Creek	Its source	3	3.17	miles	
AL03130002-0903-200	Oseligee Creek	Chattahoochee	F&W	Alabama-Georgia state line	Its source	3	18.71	miles	
AL03130002-0902-300	Allen Creek	Chattahoochee	F&W	Oseligee Creek	Its source	3	4.89	miles	
AL03130002-0902-400	Kellem Hill Creek	Chattahoochee	F&W	Oseligee Creek	Its source	3	4.69	miles	
AL03130002-0903-300	Hardley Creek	Chattahoochee	F&W	Alabama-Georgia state line	Its source	3	10.22	miles	
AL03130003-1301-100	Chewalla Creek	Chattahoochee	S/F&W	Chattahoochee River	Its source	3	15.48	miles	
AL03130003-1310-100	Cheneyhatchee Creek	Chattahoochee	S/F&W	Chattahoochee River	Its source	3	13.78	miles	
AL03130004-0703-102	Chattahoochee River	Chattahoochee	S/F&W	Woods Branch	Walter F. George Lock and Dam	3	36.04	miles	
AL03130004-0405-100	Abbie Creek	Chattahoochee	F&W	Chattahoochee River	Its source	3	42.53	miles	
AL03130004-0304-200	Vann Mill Creek	Chattahoochee	F&W	Abbie Creek	Its source	3	3.04	miles	
AL03130004-0303-100	Skippers Creek	Chattahoochee	F&W	Abbie Creek	Its source	3	6.71	miles	
AL03130012-0203-110	Cowarts Creek	Chipola	F&W	Alabama-Florida state line	Its source	3	21.72	miles	
AL03130012-0203-200	Gum Slough	Chipola	F&W	Alabama-Florida state line	Its source	3	6.74	miles	
AL03130012-0201-210	Mill Creek	Chipola	F&W	Cowarts Creek	Its source	3	9.43	miles	
AL03130012-0201-310	Webb Creek	Chipola	F&W	Cowarts Creek	Its source	3	10.22	miles	
AL03130012-0201-410	Cooper Creek	Chipola	F&W	Cowarts Creek	Its source	3	3.13	miles	
AL03130012-0203-300	Guy Branch	Chipola	F&W	Cowarts Creek	Its source	3	4.48	miles	
AL03130012-0203-400	Bazemores Mill Branch	Chipola	F&W	Cowarts Creek	Its source	3	1.38	miles	
AL03130012-0202-100	Rocky Creek	Chipola	F&W	Cowarts Creek	Its source	3	11.70	miles	
AL03130012-0202-210	Bruners Gin Creek	Chipola	F&W	Rocky Creek	Its source	3	5.43	miles	
AL03130012-0202-310	Little Rocky Creek	Chipola	F&W	Rocky Creek	Its source	3	5.14	miles	
AL03130012-0104-100	Marshall Creek	Chipola	F&W	Alabama-Florida state line	Its source	3	3.80	miles	
AL03130012-0104-200	Big Creek	Chipola	F&W	Marshall Creek	Its source	3	16.45	miles	
AL03130012-0101-100	Limestone Creek	Chipola	F&W	Big Creek	Its source	3	10.80	miles	
AL03130012-0101-210	Harkin Branch	Chipola	F&W	Limestone Creek	Its source	3	3.31	miles	
AL03130012-0101-310	Chipola Creek	Chipola	F&W	Limestone Creek	Its source	3	6.41	miles	
AL03130012-0102-210	Coopers Bay Creek	Chipola	F&W	Big Creek	Its source	3	3.17	miles	
AL03130012-0102-400	Big Branch	Chipola	F&W	Coopers Bay Creek	Its source	3	3.22	miles	
AL03130012-0102-310	Chestnut Branch	Chipola	F&W	Big Creek	Its source	3	2.36	miles	
AL03130012-0103-110	Double Bridges Creek	Chipola	F&W	Big Creek	Its source	3	9.22	miles	
AL03130012-0105-100	Spring Creek	Chipola	F&W	Big Creek	Its source	3	13.68	miles	
AL03130012-0107-100	Freeman Branch	Chipola	F&W	Alabama-Florida state line	Its source	3	3.83	miles	
AL03140201-0102-100	Piney Woods Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	3	9.23	miles	
AL03140201-0102-200	Little Piney Woods Creek	Choctawhatchee	F&W	Piney Woods Creek	Its source	3	3.64	miles	
AL03140201-0202-100	Poor Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	3	10.71	miles	
AL03140201-0206-100	Blackwood Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	3	11.33	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03140201-0401-100	Lindsey Creek	Choctawhatchee	F&W	West Fork Choctawhatchee River	Its source	3	12.48	miles	
AL03140201-0403-110	Sikes Creek	Choctawhatchee	F&W	West Fork Choctawhatchee River	Its source	3	13.07	miles	
AL03140201-0302-110	Little Judy Creek	Choctawhatchee	F&W	Judy Creek	Its source	3	14.99	miles	
AL03140201-1002-100	Pates Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	8.51	miles	
AL03140201-1004-200	Spann Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	2.09	miles	
AL03140201-1004-300	Hurricane Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	15.66	miles	
AL03140201-1004-900	Caney Creek	Choctawhatchee	F&W	Hurricane Creek	Its source	3	2.36	miles	
AL03140201-0504-100	Little Choctawhatchee River	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	24.02	miles	
AL03140201-0501-100	Newton Creek	Choctawhatchee	F&W	Little Choctawhatchee River	Its source	3	11.05	miles	
AL03140201-0904-100	Claybank Creek	Choctawhatchee	F&W	Choctawhatchee River	Lake Tholocco dam	3	20.52	miles	
AL03140201-0702-100	Claybank Creek	Choctawhatchee	F&W	Lake Tholocco	Its source	3	11.64	miles	
AL03140201-1106-100	Double Bridges Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	38.28	miles	
AL03140201-1105-120	Beaverdam Creek	Choctawhatchee	F&W	Double Bridges Creek	Its source	3	12.37	miles	
AL03140201-1105-200	Brushy Branch	Choctawhatchee	F&W	Beaverdam Creek	Its source	3	3.07	miles	
AL03140202-0202-110	Spring Creek	Choctawhatchee	F&W	Pea River	Its source	3	11.13	miles	
AL03140202-0203-110	Little Indian Creek	Choctawhatchee	F&W	Pea River	Its source	3	12.56	miles	
AL03140202-0205-200	Bogue Chitta Creek	Choctawhatchee	F&W	Pea River	Its source	3	7.19	miles	
AL03140202-0206-100	Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	5.01	miles	
AL03140202-0207-200	Connors Creek	Choctawhatchee	F&W	Pea River	Its source	3	4.35	miles	
AL03140202-0104-100	Pea Creek	Choctawhatchee	F&W	Pea River	Its source	3	22.85	miles	
AL03140202-0101-100	Stinking Creek	Choctawhatchee	F&W	Pea Creek	Its source	3	9.89	miles	
AL03140202-0103-100	Hurricane Creek	Choctawhatchee	F&W	Pea Creek	Its source	3	10.34	miles	
AL03140202-0302-100	Big Creek	Choctawhatchee	F&W	Pea River	Its source	3	8.29	miles	
AL03140202-0501-100	Bowden Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	8.78	miles	
AL03140202-0505-200	Halls Creek	Choctawhatchee	F&W	Pea River	Its source	3	5.54	miles	
AL03140202-0409-200	Pea Creek	Choctawhatchee	F&W	Whitewater Creek	Its source	3	10.84	miles	
AL03140202-0403-600	Mims Creek	Choctawhatchee	F&W	Whitewater Creek	Its source	3	7.82	miles	
AL03140202-0406-110	Bluff Creek	Choctawhatchee	F&W	Big Creek	Its source	3	10.13	miles	
AL03140202-0601-100	Beaverdam Creek	Choctawhatchee	F&W	Pea River	Its source	3	11.33	miles	
AL03140202-0603-200	Helms Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	4.46	miles	
AL03140202-0602-100	Bucks Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	10.35	miles	
AL03140202-0604-100	Hays Creek	Choctawhatchee	F&W	Pea River	Its source	3	8.10	miles	
AL03140202-0607-100	Cripple Creek	Choctawhatchee	F&W	Pea River	Its source	3	8.75	miles	
AL03140202-0608-100	Holley Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	4.66	miles	
AL03140202-0610-200	Samson Branch	Choctawhatchee	F&W	Pea River	Its source	3	6.06	miles	
AL03140202-0803-400	Eightmile Creek	Choctawhatchee	F&W	Flat Creek	Alabama-Florida state line	3	8.61	miles	
AL03140202-0802-110	Corner Creek	Choctawhatchee	F&W	Eightmile Creek	Its source	3	16.35	miles	
AL03140203-0103-200	Spring Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	13.72	miles	
AL03140203-0103-300	Ice Factory Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	1.45	miles	
AL03140203-0103-400	Wheeler Mill Branch	Choctawhatchee	F&W	Spring Creek	Its source	3	2.73	miles	
AL03140203-0103-500	Blue Branch	Choctawhatchee	F&W	Spring Creek	Its source	3	2.31	miles	
AL03140203-0103-600	Negro Church Branch	Choctawhatchee	F&W	Spring Creek	Its source	3	3.15	miles	
AL03140203-0103-700	Hathaway Branch	Choctawhatchee	F&W	Spring Creek	Its source	3	2.79	miles	
AL03140203-0105-210	Wide Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	3.65	miles	
AL03140203-0105-300	Flowers Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	2.40	miles	
AL03140203-0105-400	Smith Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	1.77	miles	
AL03140203-0105-500	Whitewater Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	0.70	miles	
AL03140203-0105-600	John Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	1.21	miles	
AL03140203-0105-700	Boggy Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	1.57	miles	

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AL03140203-0101-100	Justice Mill Creek	Choctawhatchee	F&W	Spring Creek	Its source	3	7.51	miles	
AL03140203-0104-110	Hand Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	0.55	miles	
AL03140203-0201-100	Wrights Creek	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	8.96	miles	
AL03140203-0201-200	Gully Branch	Choctawhatchee	F&W	Wrights Creek	Its source	3	3.58	miles	
AL03140203-0201-300	Grant Branch	Choctawhatchee	F&W	Wrights Creek	Its source	3	3.57	miles	
AL03140203-0201-400	Davis Mill Creek	Choctawhatchee	F&W	Wrights Creek	Its source	3	3.43	miles	
AL03140203-0201-500	Lighter Snag Creek	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	4.50	miles	
AL03140203-0201-600	Mill Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	2.27	miles	
AL03140203-0201-700	Tindil Branch	Choctawhatchee	F&W	Davis Mill Creek	Its source	3	3.55	miles	
AL03140203-0701-200	Kirkland Branch	Choctawhatchee	F&W	Holmes Creek	Its source	3	3.19	miles	
AL03140203-0701-300	Boggy Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	2.31	miles	
AL03140203-0701-400	Big Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	1.78	miles	
AL03140203-0203-100	Tenmile Creek	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	3.18	miles	
AL03140203-0203-200	Poplar Creek	Choctawhatchee	F&W	Tenmile Creek	Its source	3	2.03	miles	
AL03140203-0203-300	Cannon Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	2.46	miles	
AL03150105-0206-200	Ballplay Creek	Coosa	F&W	Coosa River	Its source	3	9.20	miles	
AL03150105-0304-100	Spring Creek	Coosa	F&W	Coosa River	Alabama-Georgia state line	3	15.29	miles	
AL03150105-0605-101	Chattooga River	Coosa	S/F&W	Coosa River	Gaylesville	3	9.98	miles	
AL03150105-0906-200	Ladiga Creek	Coosa	PWS	Terrapin Creek	Terrapin Creek	3	2.91	miles	
AL03150106-0101-401	Allen Branch	Coosa	F&W	Big Wills Creek	Ft. Payne public water supply dam	3	0.31	miles	
AL03150106-0406-210	Tallasseehatchee Creek	Coosa	F&W	Ohatchee Creek	Its source	3	35.97	miles	
AL03150106-0402-200	UT to Tallasseehatchee Creek	Coosa	F&W	Tallasseehatchee Creek	Its source	3	5.97	miles	
AL03150106-0407-200	Cave Creek	Coosa	F&W	Cane Creek	Its source	3	6.23	miles	
AL03150106-0605-210	Dye Creek	Coosa	F&W	Coosa River	Its source	3	6.46	miles	
AL03150106-0507-200	Snows Branch	Coosa	F&W	Choccolocco Creek	Its source	3	2.76	miles	
AL03150106-0506-100	Coldwater Spring Branch	Coosa	F&W	Choccolocco Creek	Its source	3	10.39	miles	
AL03150106-0611-100	Eastaboga Creek	Coosa	F&W	Choccolocco Creek	Its source	3	6.85	miles	
AL03150106-0510-100	Kelly Creek	Coosa	F&W	Cheaha Creek	Its source	3	12.25	miles	
AL03150106-0510-200	Brecon Branch	Coosa	F&W	Kelly Creek	Its source	3	3.68	miles	
AL03150106-0701-201	Mump Creek	Coosa	F&W	Talladega Creek	City of Talladega's water supply dam	3	0.85	miles	
AL03150106-0701-203	Mump Creek	Coosa	PWS/F&W	Mump Creek Reservoir	Its source	3	4.31	miles	
AL03150106-0808-100	Kelly Creek	Coosa	S/F&W	Coosa River	Its source	3	34.11	miles	
AL03150201-0101-100	Bouldin tailrace canal	Alabama	F&W	Coosa River	Bouldin Dam	3	4.74	miles	
AL03150107-0205-100	Yellowleaf Creek	Coosa	S/F&W	Coosa River	Its source	3	20.67	miles	
AL03150107-0406-100	Waxahatchee Creek	Coosa	F&W	Coosa River	Its source	3	21.58	miles	
AL03150107-0403-500	UT to Waxahatchee Creek	Coosa	F&W	Waxahatchee Creek	Its source	3	4.02	miles	
AL03170002-0602-100	Turkey Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	6.66	miles	
AL03170002-0602-200	Sandy Creek	Escatawpa	F&W	Turkey Creek	Its source	3	4.72	miles	
AL03170002-0604-200	Whiskey Creek	Escatawpa	F&W	Red Creek	Its source	3	2.17	miles	
AL03170002-0604-300	Buck Creek	Escatawpa	F&W	Red Creek	Its source	3	2.05	miles	
AL03170002-0605-400	Little Red Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	3.53	miles	
AL03170002-0605-500	Savannah Branch	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	3.15	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03170003-0204-100	Byrd Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	0.21	miles	
AL03170008-0105-100	Brushy Creek	Escatawpa	F&W	Escatawpa River	Alabama-Mississippi state line	3	8.98	miles	
AL03170008-0104-100	Pine Barren Creek	Escatawpa	F&W	Escatawpa River	Its source	3	5.82	miles	
AL03170008-0104-300	West Pine Barren Creek	Escatawpa	F&W	Pine Barren Creek	Its source	3	8.27	miles	
AL03170008-0104-400	East Pine Barren Creek	Escatawpa	F&W	Pine Barren Creek	Its source	3	3.28	miles	
AL03170008-0201-200	Pond Creek	Escatawpa	F&W	Little Creek	Its source	3	10.84	miles	
AL03170008-0404-100	Flat Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	5.86	miles	
AL03170009-0103-200	West Fowl River	Escatawpa	S/F&W	Fowl River bay	Its source	3	5.84	miles	
AL03170009-0103-600	Bayou Coden	Escatawpa	F&W	Portersville Bay	Its source	3	2.30	miles	
AL03170009-0101-100	Little River	Escatawpa	F&W	Portersville Bay	Its source	3	2.54	miles	
AL03160204-0203-900	Martin Branch	Mobile	F&W	Red Hill Creek	Its source	3	5.52	miles	
AL03160204-0105-112	Cold Creek	Mobile	PWS/F&W	Dam 1 1/2 miles west of US Highway 43	Its source	3	5.05	miles	
AL03160204-0402-101	Bayou Sara	Mobile	S/F&W	Mobile River	Gunnison Creek	3	4.51	miles	
AL03160204-0402-103	Bayou Sara	Mobile	S/F&W	Norton Creek	US Highway 43	3	1.26	miles	
AL03160204-0402-104	Bayou Sara	Mobile	F&W	US Highway 43	Its source	3	14.95	miles	
AL03160204-0401-200	Steele Creek	Mobile	S/F&W	Gunnison Creek	Its source	3	3.45	miles	
AL03160204-0402-502	Norton Creek	Mobile	F&W	Saraland WWTP	Its source	3	3.74	miles	
AL03160204-0304-101	Eightmile Creek	Mobile	F&W	Chickasaw Creek	City of Prichard's water supply intake	3	2.19	miles	
AL03160204-0304-102	Eightmile Creek	Mobile	PWS/F&W	City of Prichard's water supply intake	US Highway 45	3	1.73	miles	
AL03160204-0305-300	Hog Bayou	Mobile	F&W	Chickasaw Creek	Its source	3	0.85	miles	
AL03160205-0103-300	Alligator Bayou	Mobile	F&W	Dog River	Its source	3	4.47	miles	
AL03160205-0101-300	Robinson Bayou	Mobile	F&W	Dog River	Its source	3	1.97	miles	
AL03160205-0101-110	Eslava Creek	Mobile	F&W	Bolton Branch	Its source	3	3.02	miles	
AL03160205-0103-500	Rattlesnake Bayou	Mobile	F&W	Rabbit Creek	Its source	3	1.49	miles	
AL03160205-0104-210	East Fowl River	Mobile	S/F&W	Fowl River	Its source	3	5.38	miles	
AL03160205-0205-300	Point Clear Creek	Mobile	F&W	Mobile Bay	Its source	3	4.45	miles	
AL03160205-0205-700	Fly Creek	Mobile	S/F&W	Mobile Bay	Its source	3	4.57	miles	
AL03160205-0205-800	Rock Creek	Mobile	F&W	Mobile Bay	Its source	3	4.01	miles	
AL03160205-0201-300	Corn Branch	Mobile	F&W	Fish River	Its source	3	5.14	miles	
AL03160205-0206-300	Boggy Branch	Mobile	S/F&W	Bon Secour River	Its source	3	3.47	miles	
AL03140103-0103-100	Lightwood Knot Creek	Perdido-Escambia	F&W	Yellow River	Frank Jackson Lake dam	3	6.13	miles	
AL03140103-0102-103	Lightwood Knot Creek	Perdido-Escambia	F&W	Lake Frank Jackson	Its source	3	14.56	miles	
AL03140103-0102-300	Cameron Creek	Perdido-Escambia	F&W	Lightwood Knot Creek	Its source	3	3.57	miles	
AL03140103-0203-100	Five Runs Creek	Perdido-Escambia	F&W	Yellow River	Its source	3	30.72	miles	
AL03140103-0402-300	Big Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	5.26	miles	
AL03140103-0601-100	Pond Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	2.85	miles	
AL03140103-0601-200	Fleming Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	3.15	miles	
AL03140103-0602-100	Horsehead Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	4.59	miles	
AL03140104-0104-200	Boggy Hollow Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	7.45	miles	
AL03140104-0105-110	Rock Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	1.98	miles	
AL03140104-0301-100	Sweetwater Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	4.23	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03140104-0303-100	Big Jumiper Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	0.49	miles	
AL03140104-0402-100	Dixon Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	0.77	miles	
AL03140106-0101-100	Perdido Creek	Perdido-Escambia	F&W	Perdido River	Its source	3	9.61	miles	
AL03140106-0203-100	Dyas Creek	Perdido-Escambia	S/F&W	Perdido River	Its source	3	18.34	miles	
AL03140106-0601-100	Negro Creek	Perdido-Escambia	F&W	Blackwater River	Its source	3	11.77	miles	
AL03140106-0602-500	Rock Creek	Perdido-Escambia	F&W	Blackwater River	Its source	3	8.22	miles	
AL03140107-0104-200	Palmetto Creek	Perdido-Escambia	S/F&W	Perdido Bay	Its source	3	4.79	miles	
AL03140107-0104-300	Soldier Creek	Perdido-Escambia	S/F&W	Perdido Bay	Its source	3	8.77	miles	
AL03140107-0104-600	Spring Branch	Perdido-Escambia	S/F&W	Palmetto Creek	Its source	3	3.04	miles	
AL03140107-0202-102	Miflin Creek	Perdido-Escambia	F&W	limit of tidal effects	Its source	3	4.98	miles	
AL03140107-0203-201	Hammock Creek	Perdido-Escambia	S/F&W	Wolf Bay	limit of tidal effects	3	3.69	miles	
AL03140107-0203-202	Hammock Creek	Perdido-Escambia	F&W	limit of tidal effects	Its source	3	2.50	miles	
AL03140301-0404-103	Conecuh River	Perdido-Escambia	F&W	Hornet Creek	Broadhead Creek	3	35.36	miles	
AL03140301-0105-100	Conecuh River	Perdido-Escambia	F&W	Mannings Creek	Its source	3	39.63	miles	
AL03140301-0501-300	Prestwood Creek	Perdido-Escambia	F&W	Conecuh River	Its source	3	6.01	miles	
AL03140301-0501-500	UT to Conecuh River	Perdido-Escambia	F&W	Conecuh River	Its source	3	2.22	miles	
AL03140301-0402-500	Double Branch	Perdido-Escambia	F&W	Conecuh River	Its source	3	6.59	miles	
AL03140302-0303-100	Little Patsaliga Creek	Perdido-Escambia	S/F&W	Patsaliga Creek	Its source	3	32.00	miles	
AL03140303-0504-100	Pigeon Creek	Perdido-Escambia	F&W	Sepulga River	Its source	3	79.41	miles	
AL03140303-0402-500	UT to Pigeon Creek	Perdido-Escambia	F&W	Pigeon Creek	Its source	3	3.83	miles	
AL03140303-0204-100	Persimmon Creek	Perdido-Escambia	F&W	Sepulga River	Its source	3	55.01	miles	
AL03140304-0505-110	Conecuh River	Perdido-Escambia	F&W	Mantle Branch	Sepulga River	3	33.57	miles	
AL03140304-0403-100	Murder Creek	Perdido-Escambia	F&W	Cedar Creek	Its source	3	59.39	miles	
AL03140304-0106-100	Mill Creek	Perdido-Escambia	F&W	Murder Creek	Its source	3	10.88	miles	
AL03140304-0106-200	Sandy Creek	Perdido-Escambia	F&W	Mill Creek	Its source	3	5.76	miles	
AL03140304-0305-102	Burnt Corn Creek	Perdido-Escambia	S/F&W	Sevenmile Creek	Its source	3	38.44	miles	
AL03140305-0102-100	Sizemore Creek	Perdido-Escambia	S/F&W	Big Escambia Creek	Its source	3	14.28	miles	
AL03140305-0101-100	Wet Weather Creek	Perdido-Escambia	F&W	Sizemore Creek	Its source	3	13.46	miles	
AL03140305-0401-100	Canoe Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	3.85	miles	
AL03140305-0401-300	Reedy Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	1.83	miles	
AL03140305-0501-100	Pine Barren Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	2.62	miles	
AL03140305-0501-200	Beaverdam Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	3.99	miles	
AL03150108-1004-112	Tallapoosa River	Tallapoosa	F&W	4 miles upstream of Randolph County Road 88	dam at Cleburne County Road 36	3	5.77	miles	
AL03150109-0106-102	Tallapoosa River	Tallapoosa	F&W	Cedar Creek	R. L. Harris Dam	3	10.68	miles	
AL03150109-0301-102	High Pine Creek	Tallapoosa	PWS	Highway 431 crossing	High Pine Creek Lake #2 dam	3	0.09	miles	
AL03150109-0301-104	High Pine Creek	Tallapoosa	PWS	High Pine Creek Lake #2	High Pine creek Lake #1 dam	3	3.98	miles	
AL03150109-0301-106	High Pine Creek	Tallapoosa	PWS	High Pine Creek Lake #1	Its source	3	4.07	miles	
AL03150109-0301-201	Jones Creek	Tallapoosa	PWS	High Pine Creek	Roanoke City Lake dam	3	0.20	miles	
AL03150109-0301-203	Jones Creek	Tallapoosa	PWS	Roanoke City Lake	High Pine Creek Lake #4 dam	3	5.54	miles	
AL03150109-0301-205	Jones Creek	Tallapoosa	PWS	High Pine Creek Lake #4	Its source	3	2.15	miles	
AL03150109-0301-501	UT to Jones Creek	Tallapoosa	PWS	Jones Creek	Crystal Lake dam	3	1.95	miles	
AL03150109-0301-503	UT to Jones Creek	Tallapoosa	PWS	Crystal Lake	Its source	3	2.30	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150109-0201-201	Finley Creek	Tallapoosa	PWS/F&W	Mill Creek	Lafayette Reservoir dam	3	1.04	miles	
AL03150109-0201-203	Finley Creek	Tallapoosa	PWS/F&W	Lafayette Reservoir	Its source	3	4.01	miles	
AL03150109-0405-101	Hillabee Creek	Tallapoosa	PWS/F&W	Oaktasasi Creek	County Road bridge 3 miles east of Hackneyville	3	5.83	miles	
AL03150109-0405-500	Hackney Creek	Tallapoosa	PWS/F&W	Town Creek	Its source	3	6.92	miles	
AL03150109-0501-102	Little Sandy Creek	Tallapoosa	PWS/F&W	Central of Georgia RR	Its source	3	2.09	miles	
AL03150109-0803-101	Elkahatchee Creek	Tallapoosa	PWS/F&W	Alabama Highway 63	Alabama Highway 22	3	4.42	miles	
AL03150110-0304-400	Bulger Creek	Tallapoosa	PWS/F&W	Uphapee Creek	Its source	3	7.52	miles	
AL03150110-0102-600	Head Creek	Tallapoosa	F&W	Sougahatchee Creek	Its source	3	4.00	miles	
AL03150110-0704-100	Old Town Creek	Tallapoosa	F&W	Line Creek	Its source	3	40.26	miles	
AL06030002-0203-401	Cole Spring Branch	Tennessee	F&W	Paint Rock River	Bridge at Jones farm	3	0.99	miles	
AL06030002-0203-403	Cole Spring Branch	Tennessee	F&W	Jeep trail crossing	Its source	3	3.29	miles	
AL06030002-0204-301	Little Paint Rock Creek	Tennessee	F&W	Paint Rock River	Merril Road Bridge	3	1.20	miles	
AL06030002-0204-303	Little Paint Rock Creek	Tennessee	F&W	Jeep trail crossing	Its source	3	1.93	miles	
AL06030002-0403-301	Chase Creek	Tennessee	F&W	Flint River	Acuff Spring	3	0.78	miles	
AL06030002-0403-303	Chase Creek	Tennessee	F&W	Alabama Highway 72	Its source	3	2.14	miles	
AL06030002-0502-100	Huntsville Spring Branch	Tennessee	F&W	Broglan Branch	Its source	3	1.85	miles	
AL06030002-0603-100	Cotaco Creek	Tennessee	S/F&W	West Fork Cotaco Creek	Its source	3	14.08	miles	
AL06030002-0602-101	West Fork Cotaco Creek	Tennessee	F&W	Cotaco Creek	Alabama Highway 67	3	1.56	miles	
AL06030002-1008-102	No Business Creek	Tennessee	F&W	Johnson Chapel Creek	Its source	3	6.81	miles	
AL06030002-1009-111	Elam Creek	Tennessee	F&W	West Flint Creek	Rocky Branch	3	2.01	miles	
AL06030002-1014-701	Village Branch	Tennessee	F&W	West Flint Creek	Moss Spring Branch	3	2.94	miles	
AL06030004-0404-101	Anderson Creek	Tennessee	F&W	Elk River	Snake Road bridge	3	4.69	miles	
AL06030005-0103-301	Sinking Creek	Tennessee	PWS/F&W	Clear Fork	Sinking Creek Lake dam	3	0.61	miles	
AL06030005-0103-303	Sinking Creek	Tennessee	PWS/F&W	Sinking Creek Lake	Its source	3	2.09	miles	
AL06030005-0103-401	Turkey Creek	Tennessee	PWS/F&W	Clear Fork	Moulton City Lake dam	3	1.57	miles	
AL06030005-0103-403	Turkey Creek	Tennessee	PWS/F&W	Moulton City Lake	Its source	3	5.28	miles	
AL06030005-0605-102	Cypress Creek	Tennessee	PWS/F&W	City of Florence Water Treatment Plant	Little Cypress Creek	3	1.94	miles	
AL06030006-0202-102	Cedar Creek	Tennessee	F&W	Alabama Highway 24	Its source	3	24.60	miles	
AL06030006-0205-103	Little Bear Creek	Tennessee	PWS/S/F&W	Scott Branch	Alabama Highway 187	3	2.97	miles	
AL03160103-0302-102	Buttahatchee River	Tombigbee (Upper)	PWS/F&W	U.S. Hwy. 278 one mile east of junction of U.S Highways 43 and 78 in Hamilton	U.S. Hwy. 278 seven miles east of junction of U.S. Highways 43 and 78 in Hamilton	3	9.05	miles	
AL03160103-0107-102	Buttahatchee River	Tombigbee (upper)	F&W	U.S. Highway 278 one mile east of junction of U.S. Highways 43 and 78 in Hamilton	Lake Buttahatchee dam	3	16.36	miles	
AL03160103-0102-103	Buttahatchee River	Tombigbee (upper)	F&W	Lake Buttahatchee	Its source	3	9.94	miles	
AL03160103-0201-102	Beaver Creek	Tombigbee (Upper)	PWS/F&W	U.S. Highway 78	Its source	3	6.91	miles	
AL03160105-0204-101	Luxapallila Creek	Tombigbee (Upper)	PWS	at Alabama-Mississippi state line		3	0.18	miles	
AL03160105-0201-102	Luxapallila Creek	Tombigbee (Upper)	PWS/F&W	Fayette County Road 37	County road crossing approximately 6 miles upstream from Alabama Highway 18	3	8.19	miles	
AL03160105-0201-103	Luxapallila Creek	Tombigbee (upper)	F&W	County road crossing approximately 6 miles upstream from Alabama Highway 18	U.S. Highway 78	3	10.52	miles	
AL03160105-0101-102	Luxapallila Creek	Tombigbee (Upper)	PWS/F&W	US Highway 78	Its source	3	9.53	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160105-0404-101	Yellow Creek	Tombigbee (Upper)	PWS	at Alabama-Mississippi state line		3	0.25	miles	
AL03160106-0505-200	Owl Creek	Tombigbee (Upper)	F&W	Tombigbee River	Alabama-Mississippi state line	3	4.02	miles	
AL03160201-0108-200	Sycamore Creek	Tombigbee (Lower)	F&W	Chickasaw Bogue	Its source	3	8.02	miles	
AL03160201-0302-100	Beaver Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	41.86	miles	
AL03160201-0604-100	Horse Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	45.44	miles	
AL03160201-0704-100	Bashi Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	35.12	miles	
AL03160201-0904-200	Tishlarka Creek	Tombigbee (Lower)	F&W	Wahalak Creek	Its source	3	11.58	miles	
AL03160201-0804-100	Bogueloosa Creek	Tombigbee (Lower)	F&W	Okatuppa Creek	Its source	3	22.73	miles	
AL03160202-0703-100	Sucarnoochee River	Tombigbee (Lower)	F&W	Tombigbee River	US Highway 11	3	33.41	miles	
AL03160202-0404-102	Sucarnoochee River	Tombigbee (Lower)	F&W	Miuka Creek	Alabama-Mississippi state line	3	19.44	miles	
AL03160202-0604-100	Alamuchee Creek	Tombigbee (Lower)	F&W	Sucarnoochee River	Alabama-Mississippi state line	3	37.58	miles	
AL03160202-0502-101	Toomsuba Creek	Tombigbee (Lower)	F&W	Alamuchee Creek	AT&N Railroad	3	1.14	miles	
AL03160202-0502-102	Toomsuba Creek	Tombigbee (Lower)	PWS/F&W	AT&N Railroad	Alabama-Mississippi state line	3	9.90	miles	
AL03160202-0502-201	UT to Toomsuba Creek	Tombigbee (Lower)	PWS	Toomsuba Creek	Lake Louise dam	3	1.91	miles	
AL03160203-1103-103	Tombigbee River	Tombigbee (Lower)	F&W	Olin Basin canal	Bassetts Creek	3	21.37	miles	
AL03160203-0901-112	Tombigbee River	Tombigbee (Lower)	PWS/S/F&W	1/2 mile downstream of Southern Railway Crossing	Smiths Creek	3	8.83	miles	
AL03160203-0502-102	Tombigbee River	Tombigbee (Lower)	F&W	Smiths Creek	Coffeeville Lock and Dam	3	18.45	miles	
AL03160203-0104-100	Santa Bogue Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	26.44	miles	
AL03160203-0403-100	Jackson Creek	Tombigbee (Lower)	F&W	Tombigbee River	Its source	3	23.33	miles	
AL03160203-0607-100	Bassett Creek	Tombigbee (Lower)	F&W	Tombigbee River	Little Bassett Creek	3	39.26	miles	
AL03160203-0603-200	James Creek	Tombigbee (Lower)	F&W	Bassett Creek	Its source	3	6.86	miles	
AL03160203-0705-100	Bassetts Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	43.22	miles	
AL03160203-0701-100	Little Bassetts Creek	Tombigbee (Lower)	F&W	Bassetts Creek	Its source	3	13.54	miles	
AL03160203-0702-700	Miles Creek	Tombigbee (Lower)	F&W	Bassetts Creek	Its source	3	5.21	miles	
AL03160203-0802-100	Lewis Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	12.28	miles	
AL03160203-1001-100	Bates Creek	Tombigbee (Lower)	S/F&W	Bilbo Creek	Its source	3	25.30	miles	
Category 3 - Lakes and Reservoirs									
AL03160109-0104-202	Bridge Creek	Black Warrior	PWS	Cullman water supply reser	Its source	3	159.21	acres	
AL03160110-0104-702	Curtis Mill Creek	Black Warrior	PWS	Town of Double Springs wa	Its source	3	2.20	acres	
AL03140201-0703-100	Claybank Creek	Choctawhatchee	S/F&W	Lake Tholocco dam	extent of reservoir	3	679.39	acres	Lake Tholocco
AL03150106-0101-402	Allen Branch	Coosa	PWS/F&W	Ft. Payne public water supp	Its source	3	53.63	acres	
AL03150106-0701-202	Mump Creek	Coosa	PWS/F&W	City of Talladega's water su	extent of reservoir	3	36.40	acres	Mump Creek Reservoir
AL03160204-0106-400	Briar Lake	Mobile	OAW/F&W	Junction of Tensaw River	Junction of Tensaw Lake	3	169.36	acres	
AL03160204-0106-500	Tensaw Lake	Mobile	OAW/F&W	Junction of Tensaw River	Bryant Landing	3	436.74	acres	
AL03140103-0203-502	Blue Lake	Perdido-Escambia	S/F&W	Within Conecuh National Forest		3	41.37	acres	
AL03140103-0401-180	Open Pond	Perdido-Escambia	S/F&W	Within Conecuh National Forest		3	34.76	acres	
AL03140103-0401-190	Dowdy Pond	Perdido-Escambia	S/F&W	Within Conecuh National Forest		3	12.73	acres	
AL03150109-0301-103	High Pine Creek	Tallapoosa	PWS	High Pine creek Lake #2 da	extent of reservoir	3	60.46	acres	High Pine Creek Lake #2
AL03150109-0301-105	High Pine Creek	Tallapoosa	PWS	High Pine creek Lake #1 da	extent of reservoir	3	10.36	acres	High Pine Creek Lake #1
AL03150109-0301-202	Jones Creek	Tallapoosa	PWS	Roanoke City Lake dam	extent of reservoir	3	39.79	acres	Roanoke City Lake
AL03150109-0301-204	Jones Creek	Tallapoosa	PWS	High Pine Creek Lake #4 da	extent of reservoir	3	17.40	acres	High Pine Creek Lake #4
AL03150109-0301-502	UT to Jones Creek	Tallapoosa	PWS	Crystal Lake dam	extent of reservoir	3	54.26	acres	Crystal Lake
AL03150109-0201-202	Finley Creek	Tallapoosa	PWS/F&W	Lafayette Reservoir dam	extent of reservoir	3	96.25	acres	Lafayette Reservoir

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL06030005-0103-302	Sinking Creek	Tennessee	PWS/F&W	Sinking Creek Lake dam	extent of reservoir	3	147.26	acres	Sinking Creek Lake
AL06030005-0103-402	Turkey Creek	Tennessee	PWS/F&W	Moulton City Lake dam	extent of reservoir	3	72.73	acres	Moulton City Lake
AL06030005-0703-300	Big Spring (Tuscumbia)	Tennessee	PWS	Spring Creek	Its source	3	1.53	acres	
AL03160103-0102-102	Buttahatchee River	Tombigbee (upper)	S	Lake Buttahatchee dam	extent of reservoir	3	145.82	acres	Lake Buttahatchee
AL03160202-0502-202	UT to Toomsuba Creek	Tombigbee (Lower)	PWS	Lake Louise		3	47.39	acres	Lake Louise
Category 4 - Rivers and Streams									
AL03150201-0311-100	Catoma Creek	Alabama	F&W	Alabama River	Ramer Creek	4A	23.19	miles	
AL03150201-0304-200	UT to Little Catoma Creek	Alabama	F&W	Little Catoma Creek	Its source	4A	6.27	miles	
AL03150201-0307-100	Ramer Creek	Alabama	F&W	Catoma Creek	Its source	4A	22.37	miles	
AL03150201-0404-100	Pintlala Creek	Alabama	S/F&W	Pinchony Creek	Its source	4A	26.45	miles	
AL03150203-0802-100	Pursley Creek	Alabama	F&W	Alabama River	Its source	4A	26.11	miles	
AL03150203-0802-400	Town Branch	Alabama	F&W	Pursley Creek	Its source	4A	4.35	miles	Local Name
AL03160109-0102-910	Duck Creek	Black Warrior	F&W	Duck River	Its source	4A	5.76	miles	
AL03160109-0102-150	Long Branch	Black Warrior	F&W	Wolf Creek	Its source	4A	2.04	miles	
AL03160109-0106-100	Broglen River	Black Warrior	F&W	Mulberry Fork	Its source	4A	12.40	miles	
AL03160109-0106-500	Eightmile Creek	Black Warrior	F&W	Broglen River	Cullman water supply reservoir dam	4A	8.15	miles	
AL03160109-0104-103	Eightmile Creek	Black Warrior	PWS	Moody Branch	Its source	4A	7.60	miles	
AL03160109-0105-101	Brindley Creek	Black Warrior	PWS	Broglen River	State Highway 69	4A	7.17	miles	
AL03160109-0105-102	Brindley Creek	Black Warrior	PWS	State Highway 69	Its source	4A	9.89	miles	
AL03160109-0201-100	Thacker Creek	Black Warrior	F&W	Mulberry Fork	Its source	4A	9.98	miles	
AL03160110-0403-102	Rock Creek	Black Warrior	F&W	Lewis Smith Lake	Blevens Creek	4A	8.82	miles	
AL03160110-0406-100	Crooked Creek	Black Warrior	F&W	Lewis Smith Lake	Its source	4A	30.47	miles	
AL03160110-0502-102	Ryan Creek	Black Warrior	F&W	Rock Creek	Its source	4A	16.12	miles	
AL03160111-0202-200	Graves Creek	Black Warrior	F&W	Locust Fork	Its source	4A	9.79	miles	
AL03160111-0408-300	Camp Branch	Black Warrior	F&W	Bayview Lake	Its source	4A	4.93	miles	
AL03160112-0504-100	Hurricane Creek	Black Warrior	F&W	Black Warrior River	Its source	4A	31.50	miles	
AL03160112-0502-200	Little Hurricane Creek	Black Warrior	F&W	Hurricane Creek	Its source	4A	10.19	miles	
AL03160112-0502-300	North Fork Hurricane Creek	Black Warrior	F&W	Hurricane Creek	Its source	4A	6.53	miles	
AL03150202-0503-102	Cahaba River	Cahaba	OAW/S	Alabama Highway 82	lower Little Cahaba River	4A	10.58	miles	
AL03150202-0407-100	Cahaba River	Cahaba	OAW/F&W	lower Little Cahaba River	Shades Creek	4A	13.51	miles	
AL03150202-0206-101	Cahaba River	Cahaba	OAW/F&W	Shades Creek	Shelby County Road 52	4A	23.61	miles	
AL03150202-0206-102	Cahaba River	Cahaba	F&W	Shelby County Road 52	Buck Creek	4A	3.62	miles	
AL03150202-0204-101	Cahaba River	Cahaba	F&W	Buck Creek	Dam near US Highway 280	4A	17.46	miles	
AL03150202-0204-102	Cahaba River	Cahaba	OAW/PWS	Dam near US Highway 280	Grant's Mill Road	4A	13.45	miles	
AL03150202-0104-102	Cahaba River	Cahaba	F&W	Grant's Mill Road	US Highway 11	4A	21.11	miles	
AL03150202-0101-102	Cahaba River	Cahaba	OAW/F&W	US Highway 11	I-59	4A	3.13	miles	
AL03150202-0102-100	Big Black Creek	Cahaba	F&W	Cahaba River	Its source	4A	16.45	miles	
AL03150202-0103-300	Lee Branch	Cahaba	F&W	Purdy Lake	Its source	4A	2.87	miles	
AL03150202-0204-500	Patton Creek	Cahaba	F&W	Cahaba River	Its source	4A	8.84	miles	
AL03150202-0203-111	Buck Creek	Cahaba	F&W	Cahaba River	Cahaba Valley Creek	4A	2.92	miles	
AL03150202-0202-100	Cahaba Valley Creek	Cahaba	F&W	Buck Creek	Its source	4A	14.98	miles	
AL03150202-0303-100	Shades Creek	Cahaba	F&W	Cahaba River	Its source	4A	56.38	miles	
AL03150202-0302-102	Mud Creek	Cahaba	F&W	Tannehill Iron Works	Its source	4A	4.08	miles	
AL03150202-0302-200	Mill Creek	Cahaba	F&W	Mud Creek	Its source	4A	6.65	miles	
AL03150202-0302-400	Cooley Creek	Cahaba	F&W	Mill Creek	Its source	4A	2.83	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150202-0902-502	Dry Creek	Cahaba	F&W	Dallas County Road 201	Its source	4A	4.98	miles	
AL03130012-0106-201	Boggy Creek	Chipola	F&W	Buck Creek	Cottondale WWTP	4A	3.48	miles	
AL03140201-0601-100	Hurricane Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	4A	9.39	miles	
AL03140202-0401-102	Walnut Creek	Choctawhatchee	F&W	Pike County Road 3304	US Highway 231	4A	3.30	miles	
AL03150105-0807-102	Spring Creek	Coosa	F&W	Coosa River	Mud Creek	4A	5.39	miles	
AL03150105-0807-103	Spring Creek	Coosa	F&W	Mud Creek	Its source	4A	9.88	miles	
AL03150105-0807-200	Mud Creek	Coosa	F&W	Spring Creek	Its source	4A	5.24	miles	
AL03150106-0102-300	Little Wills Creek	Coosa	F&W	Big Wills Creek	Its source	4A	6.08	miles	
AL03150107-0405-100	Buxahatchee Creek	Coosa	F&W	Waxahatchee Creek	Its source	4A	14.00	miles	
AL03150107-0404-100	Watson Creek	Coosa	F&W	Buxahatchee Creek	Its source	4A	12.37	miles	
AL03170008-0205-102	Puppy Creek	Escatawpa	F&W	Alabama Highway 217	Its source	4A	11.32	miles	
AL03170008-0501-210	Juniper Creek	Escatawpa	F&W	Big Creek	Its source	4A	6.67	miles	
AL03170009-0102-100	Bayou La Batre	Escatawpa	F&W	Portersville Bay	Its source	4A	5.46	miles	
AL03160204-0402-102	Bayou Sara	Mobile	S/F&W	Gunnison Creek	Norton Creek	4A	2.76	miles	
AL03160204-0402-501	Norton Creek	Mobile	F&W	Bayou Sara	Saraland WWTP	4A	0.95	miles	
AL03160204-0304-103	Eightmile Creek	Mobile	F&W	US Highway 45	Highpoint Boulevard	4A	3.32	miles	
AL03160204-0304-200	Gum Tree Branch	Mobile	F&W	Eightmile Creek	Its source	4A	2.27	miles	
AL03160204-0504-101	Threemile Creek	Mobile	A&I	Mobile River	Toulmins Spring Branch	4A	2.04	miles	
AL03160204-0504-102	Threemile Creek	Mobile	A&I	Toulmins Spring Branch	Mobile Street	4A	4.34	miles	
AL03160204-0504-103	Threemile Creek	Mobile	A&I	Mobile Street	Its source	4A	8.85	miles	
AL03160204-0504-200	Industrial Canal	Mobile	A&I	Threemile Creek	Its source	4A	2.32	miles	
AL03160205-0102-101	Dog River	Mobile	S/F&W	Mobile Bay	Halls Mill Creek	4A	2.79	miles	
AL03160205-0101-101	Dog River	Mobile	F&W	Halls Mill Creek	Moore Creek	4A	1.38	miles	
AL03160205-0101-200	Moore Creek	Mobile	F&W	Dog River	Its source	4A	3.95	miles	
AL03160205-0101-400	Bolton Branch	Mobile	F&W	Dog River	Its source	4A	2.44	miles	
AL03160205-0101-500	Eslava Creek	Mobile	F&W	Dog River	Its source	4A	3.17	miles	
AL03160205-0101-600	Bolton Branch	Mobile	F&W	Moore Creek	Its source	4A	5.69	miles	
AL03160205-0103-401	Rabbit Creek	Mobile	F&W	Halls Mill Creek	Alabama Highway 163	4A	2.28	miles	
AL03160205-0206-702	UT to Bon Secour River	Mobile	F&W	Baldwin County Road 65	Its source	4A	1.64	miles	
AL03140301-0405-102	Conecuh River	Perdido-Escambia	S/F&W	Point A Reservoir	Gantt Dam	4A	2.26	miles	
AL03140301-0404-112	Conecuh River	Perdido-Escambia	F&W	Gantt Reservoir	Hornet Creek	4A	4.55	miles	
AL03140301-0302-102	Conecuh River	Perdido-Escambia	F&W	Broadhead Creek	Mannings Creek	4A	24.53	miles	
AL03150108-1004-113	Tallapoosa River	Tallapoosa	F&W	dam at Cleburne County Road 36	1/2 mile upstream of Cleburne County Road 36	4A	0.44	miles	
AL03150108-1004-104	Tallapoosa River	Tallapoosa	PWS/F&W	1/2 mile upstream of Cleburne County Road 36	Cleburne County Road 19	4A	3.82	miles	
AL03150110-0102-700	Pepperell Branch	Tallapoosa	F&W	Sougahatchee Creek	Its source	4A	6.67	miles	
AL03150110-0202-200	Parkerson Mill Creek	Tallapoosa	F&W	Chewacla Creek	Its source	4A	6.85	miles	
AL06030001-0705-100	Town Creek	Tennessee	F&W	Tennessee River	Its source	4A	69.39	miles	
AL06030001-0805-200	Scarham Creek	Tennessee	F&W	Short Creek	Its source	4A	23.42	miles	
AL06030002-0203-402	Cole Spring Branch	Tennessee	F&W	Bridge at Jones farm	Jeep trail crossing	4A	1.80	miles	
AL06030002-0204-302	Little Paint Rock Creek	Tennessee	F&W	Merril Road Bridge	Jeep trail crossing	4A	2.17	miles	
AL06030002-0303-100	Mountain Fork	Tennessee	F&W	Flint River	Its source	4A	14.90	miles	
AL06030002-0303-500	Hester Creek	Tennessee	F&W	Mountain Fork	Alabama-Tennessee state line	4A	7.27	miles	
AL06030002-0403-302	Chase Creek	Tennessee	F&W	Acuff Spring	Alabama Highway 72	4A	2.14	miles	
AL06030002-0402-101	Hurricane Creek	Tennessee	F&W	Flint River	Gurley Pike Road	4A	7.31	miles	
AL06030002-0404-200	Goose Creek	Tennessee	F&W	Flint River	Its source	4A	8.89	miles	
AL06030002-0405-300	Yellow Bank Creek	Tennessee	F&W	Flint River	Its source	4A	5.33	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL06030002-0501-110	Indian Creek	Tennessee	F&W	US Highway 72	Its source	4A	6.49	miles	
AL06030002-0605-102	Cotaco Creek	Tennessee	S/F&W	Guyer Branch	West Fork Cotaco Creek	4A	5.38	miles	
AL06030002-0604-100	Town Creek	Tennessee	F&W	Cotaco Creek	Its source	4A	8.66	miles	
AL06030002-0902-200	Cane Creek	Tennessee	F&W	Tennessee River	Its source	4A	7.92	miles	
AL06030002-0903-100	Aldridge Creek	Tennessee	F&W	Tennessee River	Its source	4A	11.80	miles	
AL06030002-0703-102	Limestone Creek	Tennessee	F&W	US Highway 72	Leslie Branch	4A	10.79	miles	
AL06030002-0802-201	French Mill Creek	Tennessee	F&W	Piney Creek	unnamed tributary in Pine Swamp	4A	5.21	miles	
AL06030002-1014-102	Flint Creek	Tennessee	F&W	Alabama Highway 67	L&N Raiload	4A	5.06	miles	
AL06030002-1014-104	Flint Creek	Tennessee	LWF	Alabama Highway 36	Shoal Creek	4A	10.00	miles	
AL06030002-1007-102	Flint Creek	Tennessee	F&W	Shoal Creek	Its source	4A	13.39	miles	
AL06030002-1003-112	Robinson Creek	Tennessee	F&W	Flint Creek	Its source	4A	6.69	miles	
AL06030002-1003-510	Indian Creek	Tennessee	F&W	Flint Creek	Its source	4A	4.22	miles	
AL06030002-1001-100	East Fork Flint Creek	Tennessee	F&W	Flint Creek	Its source	4A	15.32	miles	
AL06030002-1006-100	Crowdabout Creek	Tennessee	F&W	Flint Creek	Its source	4A	16.11	miles	
AL06030002-1006-200	Herrin Creek	Tennessee	F&W	Crowdabout Creek	Its source	4A	6.21	miles	
AL06030002-1007-500	Mack Creek	Tennessee	F&W	Flint Creek	Its source	4A	5.91	miles	
AL06030002-1005-100	Shoal Creek	Tennessee	F&W	Flint Creek	Its source	4A	12.59	miles	
AL06030002-1004-100	Cedar Creek	Tennessee	F&W	Flint Creek	Its source	4A	9.54	miles	
AL06030002-1005-200	Town Branch	Tennessee	F&W	Shoal Creek	Its source	4A	1.90	miles	
AL06030002-1005-150	unnamed tributary to Town Branch	Tennessee	F&W	Town Branch	Its source	4A	1.25	miles	
AL06030002-1008-101	No Business Creek	Tennessee	F&W	Flint Creek	Johnson Chapel Creek	4A	7.28	miles	
AL06030002-1013-100	West Flint Creek	Tennessee	F&W	Flint Creek	McDaniel Creek	4A	23.12	miles	
AL06030002-1009-112	Elam Creek	Tennessee	F&W	Rocky Branch	Its source	4A	12.08	miles	
AL06030002-1012-201	McDaniel Creek	Tennessee	F&W	West Flint Creek	Alabama Highway 36	4A	4.16	miles	
AL06030002-1011-100	Big Shoal Creek	Tennessee	F&W	West Flint Creek	Its source	4A	14.47	miles	
AL06030002-1013-900	Flat Creek	Tennessee	F&W	West Flint Creek	Its source	4A	7.78	miles	
AL06030002-1014-702	Village Branch	Tennessee	F&W	Moss Spring Branch	Its source	4A	6.47	miles	
AL06030002-1101-102	Swan Creek	Tennessee	A&I	Alabama Highway 24	Town Creek	4A	2.80	miles	
AL06030002-1103-202	Round Island Creek	Tennessee	F&W	Browns Ferry Road	Beauchamp Branch	4A	3.52	miles	
AL06030002-1106-100	Mallard Creek	Tennessee	F&W	Tennessee River	Its source	4A	14.05	miles	
AL06030002-1204-103	Second Creek	Tennessee	F&W	Lauderdale County Road 76	Alabama-Tennessee state line	4A	13.00	miles	
AL06030004-0401-100	Shoal Creek	Tennessee	F&W	Elk River	Alabama-Tennessee state line	4A	7.47	miles	
AL06030006-0201-900	Harris Creek	Tennessee	F&W	Mud Creek	Its source	4A	5.99	miles	
AL03160105-0101-200	East Branch Luxapallila Creek	Tombigbee (Upper)	PWS/F&W	Luxapallila Creek	Its source	4A	11.18	miles	
AL03160201-0904-101	Wahalak Creek	Tombigbee (Lower)	F&W	Tombigbee River	Spear Creek	4A	14.83	miles	
AL03160203-0602-100	Bassett Creek	Tombigbee (Lower)	F&W	Little Bassett Creek	Its source	4A	14.47	miles	
AL03160111-0407-100	Fivemile Creek	Black Warrior	F&W	Locust Fork	Its source	4B	44.57	miles	
AL03140201-0206-300	Dunham Creek	Choctawhatchee	F&W	Blackwood Creek	Its source	4B	4.27	miles	
AL06030002-0505-101	Indian Creek	Tennessee	F&W	Tennessee River	Martin Road (Redstone Arsenal)	4B	7.69	miles	
AL06030002-0503-101	Huntsville Spring Branch	Tennessee	F&W	Indian Creek	Johnson Road (Huntsville Field)	4B	11.08	miles	
AL03150105-1003-200	Coosa River	Coosa	F&W	Weiss dam powerhouse	Weiss dam	4C	19.62	miles	
AL03150109-0107-102	Tallapoosa River	Tallapoosa	F&W	Alabama Highway 77	Cedar Creek	4C	3.15	miles	
Category 4 - Lakes and Reservoirs									
AL03160109-0104-102	Eightmile Creek	Black Warrior	PWS	Cullman water supply reservoir dam	Moody Branch	4A	527.25	acres	
AL03160111-0408-101	Village Creek	Black Warrior	LWF	Bayview Lake Dam	Second Creek	4A	412.49	acres	Bayview Lake
AL03150105-1003-102	Coosa River	Coosa	PWS/S/F&W	Weiss dam powerhouse	Spring Creek	4A	17,829.20	acres	Weiss Lake
AL03150105-1002-102	Coosa River	Coosa	S/F&W	Spring Creek	Alabama-Georgia state line	4A	7,689.78	acres	Weiss Lake

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150106-0309-101	Coosa River	Coosa	S/F&W	Neely Henry Dam	McCardney's Ferry	4A	5,487.94	acres	Lake Neely Henry
AL03150106-0309-102	Coosa River	Coosa	F&W	McCardney's Ferry	Big Wills Creek	4A	3,502.52	acres	Lake Neely Henry
AL03150107-0803-100	Coosa River	Coosa	PWS/S/F&W	Mitchell Dam	Lay Dam	4A	5,400.33	acres	Lake Mitchell
AL03150110-0104-101	Sougahatchee Creek	Tallapoosa	PWS/S/F&W	embayed portion of Sougahatchee Creek		4A	203.78	acres	Yates Lake
AL03160106-0308-101	Tombigbee River	Tombigbee (Upper)	S/F&W	Bevill Lock and Dam	Alabama-Mississippi state line	4A	2,291.85	acres	Aliceville Reservoir
Category 4 - Estuaries and Oceans									
AL03160205-0300-101	Mobile Bay	Mobile	SH/F&W	out to 1000 feet offshore from Mullet Point to Rag		4A	2.31	square miles	
AL03160205-0300-201	Bon Secour Bay	Mobile	SH/S/F&W	out to 1000 feet offshore from Fish River Point to M		4A	0.88	square miles	
AL03140107-0103-100	Perdido Bay	Perdido-Escambia	SH/S/F&W	Lillian Bridge	Its source	4A	4.21	square miles	
AL03140107-0205-102	Little Lagoon	Perdido-Escambia	SH/S/F&W	east of Little Lagoon Pass		4A	1.32	square miles	
Category 5 - Rivers and Streams									
AL03150201-0101-200	Callaway Creek	Alabama	F&W	Bouldin tailrace canal	Its source	5	13.02	miles	
AL03150201-0104-302	Three Mile Branch	Alabama	F&W	Lower Wetumpka Rd	Its source	5	7.65	miles	
AL03150201-0105-300	Mill Creek	Alabama	F&W	Still Creek	Its source	5	8.71	miles	
AL03150201-1207-301	Sixmile Creek	Alabama	F&W	Alabama River	Fourmile Creek	5	1.23	miles	
AL03150203-0103-200	Coffee Creek	Alabama	F&W	Tayloe Creek	Its source	5	7.67	miles	
AL03150203-0110-100	Bogue Chitto Creek	Alabama	F&W	Alabama River	Its source	5	60.49	miles	
AL03150204-0405-102	Alabama River	Alabama	F&W	Pigeon Creek	Claiborne Lock and Dam	5	12.35	miles	
AL03160109-0203-101	Mulberry Fork	Black Warrior	F&W	Marriott Creek	Mill Creek	5	2.52	miles	
AL03160109-0203-102	Mulberry Fork	Black Warrior	F&W	Mill Creek	Broglen River	5	17.27	miles	
AL03160109-0109-102	Mulberry Fork	Black Warrior	F&W	Broglen River	Blount County Road 6	5	18.23	miles	
AL03160109-0101-600	Tibb Creek	Black Warrior	F&W	Mulberry Fork	Its source	5	5.13	miles	
AL03160109-0101-150	Riley Maze Creek	Black Warrior	F&W	Tibb Creek	Its source	5	4.13	miles	
AL03160109-0404-500	Black Branch	Black Warrior	F&W	Cane Creek	Its source	5	4.11	miles	
AL03160109-0405-104	Lost Creek	Black Warrior	F&W	Alabama Highway 69 at Oa	Mill dam at Cedrum	5	17.33	miles	
AL03160109-0403-103	Lost Creek	Black Warrior	F&W	US Highway 78 north of Ce	US Highway 78 at Carbon H	5	6.53	miles	
AL03160109-0503-100	Wolf Creek	Black Warrior	F&W	Lost Creek	Alabama Highway 102	5	38.40	miles	
AL03160109-0602-601	Old Town Creek	Black Warrior	F&W	Mulberry Fork	Pinhook Creek	5	2.71	miles	
AL03160109-0604-900	Baker Creek	Black Warrior	F&W	Mulberry Fork	Its source	5	7.01	miles	
AL03160111-0413-101	Locust Fork	Black Warrior	PWS/S/F&W	Junction of Locust and Mul	Jefferson County Highway 6	5	6.88	miles	
AL03160111-0413-112	Locust Fork	Black Warrior	F&W	Jefferson County Highway (	Village Creek	5	13.06	miles	
AL03160111-0404-102	Locust Fork	Black Warrior	F&W	Jefferson County Road 77	US Highway 31	5	14.25	miles	
AL03160111-0308-102	Locust Fork	Black Warrior	PWS/F&W	US Highway 31	county road between Hayde	5	14.86	miles	
AL03160111-0305-102	Locust Fork	Black Warrior	F&W	county road between Hayde	Little Warrior River	5	18.15	miles	
AL03160111-0208-101	Locust Fork	Black Warrior	F&W	Little Warrior River	Blount County Road 30	5	27.18	miles	
AL03160111-0203-100	Dry Creek	Black Warrior	F&W	Locust Fork	Its source	5	12.00	miles	
AL03160111-0307-400	Black Creek	Black Warrior	F&W	Cunningham Creek	Its source	5	6.36	miles	
AL03160111-0405-101	Newfound Creek	Black Warrior	F&W	Fivemile Creek	Newfound Creek Lake dam	5	2.76	miles	
AL03160111-0409-100	Village Creek	Black Warrior	F&W	Locust Fork	Bayview Lake Dam	5	17.90	miles	
AL03160111-0408-102	Village Creek	Black Warrior	LWF	Second Creek	Woodlawn Bridge	5	12.60	miles	
AL03160111-0408-103	Village Creek	Black Warrior	LWF	Woodlawn Bridge	Its source	5	4.04	miles	
AL03160112-0201-102	Big Yellow Creek	Black Warrior	S/F&W	Black Warrior River (Bankh	Its source	5	14.59	miles	
AL03160112-0304-110	Pegues Creek	Black Warrior	F&W	Black Warrior River	Its source	5	4.23	miles	
AL03160112-0305-110	Daniel Creek	Black Warrior	F&W	Black Warrior River	Its source	5	10.42	miles	
AL03160112-0411-102	North River	Black Warrior	F&W	Lake Tuscaloosa	Ellis Creek	5	43.48	miles	
AL03160113-0704-100	Cottonwood Creek	Black Warrior	F&W	Big Prairie Creek	Its source	5	11.42	miles	
AL03160113-0801-200	Needham Creek	Black Warrior	F&W	Dollarhide Creek	Its source	5	8.96	miles	
AL03150202-0901-100	Childers Creek	Cahaba	F&W	Cahaba River	Its source	5	18.79	miles	
AL03130002-0907-100	Moores Creek	Chattahoochee	F&W	Chattahoochee River	Its source	5	11.40	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03130002-1107-110	Halawakee Creek	Chattahoochee	F&W	Three miles upstream of Co	Its source	5	16.57	miles	
AL03130003-0505-101	Uchee Creek	Chattahoochee	S/F&W	Chattahoochee River	County Road 39	5	10.36	miles	
AL03130003-0605-100	Ihagee Creek	Chattahoochee	S/F&W	Chattahoochee River	Its source	5	15.73	miles	
AL03130003-1307-100	Barbour Creek	Chattahoochee	F&W	Chattahoochee River	Its source	5	27.23	miles	
AL03130003-0101-100	Mill Creek	Chattahoochee	F&W	Chattahoochee River	Its source	5	9.93	miles	
AL03130004-0602-500	Cedar Creek	Chattahoochee	F&W	Omusee Creek	Its source	5	4.04	miles	
AL03130012-0101-410	Cypress Creek	Chipola	F&W	Limestone Creek	Its source	5	8.11	miles	
AL03140201-1203-101	Choctawhatchee River	Choctawhatchee	S/F&W	Pea River	Alabama Highway 12	5	29.07	miles	
AL03140201-1003-102	Choctawhatchee River	Choctawhatchee	F&W	Alabama Highway 12	Brooking Mill Creek	5	6.45	miles	
AL03140201-0603-100	Choctawhatchee River	Choctawhatchee	S/F&W	Brooking Mill Creek	Its source	5	10.83	miles	
AL03140201-1004-600	Dowling Branch	Choctawhatchee	F&W	Cox Mill Creek	Its source	5	2.10	miles	
AL03140201-0501-201	Beaver Creek	Choctawhatchee	F&W	Newton Creek	Dothan WWTP	5	2.09	miles	
AL03140201-0901-100	Harrand Creek	Choctawhatchee	F&W	Claybank Creek	Its source	5	9.71	miles	
AL03140201-0901-200	Indian Camp Creek	Choctawhatchee	F&W	Harrand Creek	Its source	5	3.98	miles	
AL03140201-1102-500	Blanket Creek	Choctawhatchee	F&W	Double Bridges Creek	Its source	5	5.71	miles	
AL03140202-0906-100	Pea River	Choctawhatchee	F&W	Choctawhatchee River	Its source	5	157.23	miles	
AL03140203-0105-100	Choctawhatchee River	Choctawhatchee	F&W	Alabama-Florida state line	Pea River	5	4.45	miles	
AL03150106-0514-100	Choccolocco Creek	Coosa	F&W	Coosa River	UT from Boiling Spring	5	39.85	miles	
AL03150106-0507-102	Choccolocco Creek	Coosa	PWS/F&W	UT from Boiling Spring	Hillabee Creek	5	2.37	miles	
AL03150106-0602-100	Broken Arrow Creek	Coosa	F&W	Coosa River	Its source	5	21.37	miles	
AL03150106-0806-100	Wolf Creek	Coosa	F&W	Kelly Creek	Its source	5	16.70	miles	
AL03150107-0304-700	UT to Dry Branch	Coosa	F&W	Dry Branch	Its source	5	1.58	miles	
AL03150107-0106-100	Tallaseehatchee Creek	Coosa	F&W	Coosa River	City of Sylacauga's water su	5	17.51	miles	
AL03150107-0104-100	Shirtee Creek	Coosa	F&W	Tallaseehatchee Creek	Its source	5	4.94	miles	
AL03150107-0801-100	Yellow Leaf Creek	Coosa	F&W	Coosa River	Its source	5	31.27	miles	
AL03170008-0402-110	Escatawpa River	Escatawpa	S/F&W	AL-MS state line	Its source	5	70.66	miles	
AL03170008-0502-600	Boggy Branch	Escatawpa	F&W	Big Creek Reservoir	Its source	5	4.58	miles	
AL03170008-0502-800	Collins Creek	Escatawpa	F&W	Big Creek	Its source	5	5.15	miles	
AL03160204-0403-112	Mobile River	Mobile	F&W	Spanish River	Cold Creek	5	20.90	miles	
AL03160204-0106-112	Mobile River	Mobile	F&W	Cold Creek	Barry Steam Plant	5	2.37	miles	
AL03160204-0103-100	Mobile River	Mobile	F&W	Tensaw River	Its source	5	5.72	miles	
AL03160204-0505-201	Tensaw River	Mobile	F&W	Mobile Bay	Junction of Tensaw and Apa	5	6.51	miles	
AL03160204-0505-202	Tensaw River	Mobile	OAW/S/F&W	Junction of Tensaw and Apa	Junction of Briar Lake	5	21.73	miles	
AL03160204-0106-302	Tensaw River	Mobile	OAW/F&W	Junction of Briar Lake	Junction of Tensaw Lake	5	2.93	miles	
AL03160204-0106-303	Tensaw River	Mobile	F&W	Junction of Tensaw Lake	Mobile River	5	10.98	miles	
AL03160204-0202-200	Middle River	Mobile	F&W	Tensaw River (RM 20.6)	Tensaw River (RM 37.7)	5	9.72	miles	
AL03160204-0105-111	Cold Creek	Mobile	F&W	Mobile River	Dam 1 1/2 miles west of US	5	4.21	miles	
AL03160204-0305-101	Chickasaw Creek	Mobile	LWF	Mobile River	US Highway 43	5	4.43	miles	
AL03160204-0305-102	Chickasaw Creek	Mobile	F&W	US Highway 43	Mobile College	5	6.64	miles	
AL03160204-0303-100	Chickasaw Creek	Mobile	S/F&W	Mobile College	Its source	5	26.82	miles	
AL03160204-0503-102	Bay Minette Creek	Mobile	F&W	Bay Minette	Its source	5	18.15	miles	
AL03160204-0504-300	Toulmins Spring Branch	Mobile	F&W	Threemile Creek	Its source	5	3.22	miles	
AL03160204-0504-500	UT to Threemile Creek	Mobile	F&W	Threemile Creek	Its source	5	1.04	miles	
AL03160204-0505-500	D'Olive Creek	Mobile	F&W	D'Olive Bay	Its source	5	4.89	miles	
AL03160204-0505-505	UT to D'Olive Creek	Mobile	F&W	D'Olive Creek	Its source	5	1.22	miles	
AL03160204-0505-800	Joes Branch	Mobile	F&W	D'Olive Creek	Its source	5	1.57	miles	
AL03160204-0505-900	Tiawasee Creek	Mobile	F&W	D'Olive Creek	Its source	5	3.54	miles	
AL03160204-0505-905	UT to Tiawasee Creek	Mobile	F&W	Tiawasee Creek	Its source	5	1.87	miles	
AL03160205-0102-110	Halls Mill Creek	Mobile	F&W	Dog River	Its source	5	11.30	miles	
AL03160205-0105-100	Middle Fork Deer River	Mobile	F&W	Mobile Bay	Its source	5	3.51	miles	
AL03160205-0104-110	Fowl River	Mobile	S/F&W	Mobile Bay	Its source	5	20.56	miles	
AL03160205-0204-112	Fish River	Mobile	S/F&W	Weeks Bay	Its source	5	30.01	miles	
AL03160205-0202-210	Polecat Creek	Mobile	S/F&W	Fish River	Its source	5	7.89	miles	
AL03160205-0202-510	Baker Branch	Mobile	F&W	Polecat Creek	Its source	5	6.15	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160205-0204-700	Cowpen Creek	Mobile	S/F&W	Fish River	Its source	5	7.12	miles	
AL03160205-0206-101	Bon Secour River	Mobile	S/F&W	Bon Secour Bay	One mile upstream from firs	5	9.12	miles	
AL03160205-0206-102	Bon Secour River	Mobile	S/F&W	One mile upstream from firs	Its source	5	4.38	miles	
AL03160205-0203-110	Magnolia River	Mobile	OAW/S/F&W	Weeks Bay	Its source	5	12.41	miles	
AL03140103-0402-100	Yellow River	Perdido-Escambia	F&W	Alabama-Florida state line	North Creek	5	14.87	miles	
AL03140103-0102-700	UT to Lake Frank Jackson 3-C	Perdido-Escambia	F&W	Lake Frank Jackson	Its source	5	1.05	miles	
AL03140104-0104-100	Blackwater River	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	5	2.78	miles	
AL03140106-0703-100	Perdido River	Perdido-Escambia	F&W	Perdido Bay	Jacks Branch	5	21.93	miles	
AL03140106-0302-101	Brushy Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Boggy Branch	5	0.22	miles	
AL03140106-0302-201	Boggy Branch	Perdido-Escambia	F&W	Brushy Creek	Atmore WWTP	5	1.54	miles	
AL03140106-0302-202	Boggy Branch	Perdido-Escambia	F&W	Atmore WWTP	Masland Carpets WWTP	5	0.22	miles	
AL03140106-0507-100	Styx River	Perdido-Escambia	F&W	Perdido River	Hollinger Creek	5	18.52	miles	
AL03140106-0504-100	Styx River	Perdido-Escambia	S/F&W	Hollinger Creek	Its source	5	22.72	miles	
AL03140106-0603-101	Blackwater River	Perdido-Escambia	F&W	Perdido River	Narrow Gap Creek	5	3.11	miles	
AL03140303-0704-100	Sepulga River	Perdido-Escambia	F&W	Conecuh River	Robinson Mill Creek	5	14.48	miles	
AL03140303-0201-101	Rocky Creek	Perdido-Escambia	F&W	Persimmon Creek	County road north of Chapn	5	9.23	miles	
AL03140304-0506-100	Conecuh River	Perdido-Escambia	F&W	Alabama-Florida state line	Mantle Branch	5	12.70	miles	
AL03140304-0404-101	Murder Creek	Perdido-Escambia	F&W	Conecuh River	Cedar Creek	5	8.45	miles	
AL03140304-0305-101	Burnt Corn Creek	Perdido-Escambia	S/F&W	Murder Creek	Sevenmile Creek	5	5.03	miles	
AL03140304-0605-100	Little Escambia Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Wild Fork Creek	5	12.21	miles	
AL03140305-0302-100	Big Escambia Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Big Spring Creek	5	17.03	miles	
AL03150108-0905-103	Little Tallapoosa River	Tallapoosa	F&W	Wolf Creek	Alabama-Georgia state line	5	30.78	miles	
AL03150108-0905-400	Wolf Creek	Tallapoosa	F&W	Little Tallapoosa River	Its source	5	5.53	miles	
AL03150110-0905-112	Tallapoosa River	Tallapoosa	PWS/F&W	US Highway 231	Jenkins Creek	5	10.07	miles	
AL03150110-0406-200	Mill Creek	Tallapoosa	F&W	Tallapoosa River	Its source	5	9.16	miles	
AL03150110-0202-300	Moores Mill Creek	Tallapoosa	S/F&W	Chewacla Creek	Its source	5	10.51	miles	
AL03150110-0504-101	Calebee Creek	Tallapoosa	F&W	Tallapoosa River	Macon County Road 9	5	10.26	miles	
AL03150110-0604-100	Cubahatchee Creek	Tallapoosa	S/F&W	Tallapoosa River	Coon Hop Creek	5	22.07	miles	
AL03150110-0603-102	Cubahatchee Creek	Tallapoosa	S/F&W	Coon Hop Creek	Its source	5	22.37	miles	
AL03150110-0804-101	Line Creek	Tallapoosa	F&W	Tallapoosa River	Johnsons Creek	5	10.29	miles	
AL03150110-0804-102	Line Creek	Tallapoosa	F&W	Johnsons Creek	Panther Creek	5	5.51	miles	
AL03150110-0904-300	Jenkins Creek	Tallapoosa	F&W	Tallapoosa River	Its source	5	13.48	miles	
AL06030001-0202-500	Higdon Creek	Tennessee	F&W	Miller Creek	Alabama-Georgia state line	5	4.16	miles	
AL06030001-0204-101	Widows Creek	Tennessee	S/F&W	Tennessee River	Alabama Highway 277	5	4.98	miles	
AL06030001-0306-100	Little Coon Creek	Tennessee	F&W	Coon Creek	Alabama-Tennessee state lir	5	16.30	miles	
AL06030001-0403-801	Warren Smith Creek	Tennessee	F&W	Dry Creek	Ross Branch	5	1.96	miles	
AL06030001-0904-102	Browns Creek	Tennessee	F&W	Guntersville Lake	Its source	5	11.86	miles	
AL06030002-0106-101	Guess Creek	Tennessee	F&W	Paint Rock River	Bee Branch	5	11.08	miles	
AL06030002-0403-112	Flint River	Tennessee	F&W	Alabama Highway 72	Mountain Fork	5	15.32	miles	
AL06030002-0306-110	Brier Fork	Tennessee	F&W	Flint River	Alabama-Tennessee state lir	5	21.89	miles	
AL06030002-0305-100	Beaverdam Creek	Tennessee	F&W	Brier Fork	Its source	5	22.14	miles	
AL06030002-0503-102	Huntsville Spring Branch	Tennessee	F&W	Johnson Road (Huntsville F	Broglan Branch	5	1.98	miles	
AL06030002-0601-300	Hughes Creek	Tennessee	F&W	Cotaco Creek	Its source	5	2.87	miles	
AL06030002-0603-600	Mill Pond Creek	Tennessee	F&W	Hog Jaw Creek	Its source	5	1.29	miles	
AL06030002-0602-102	West Fork Cotaco Creek	Tennessee	F&W	Alabama Highway 67	Frost Creek	5	8.12	miles	
AL06030002-0602-200	Mud Creek	Tennessee	F&W	West Fork Cotaco Creek	Its source	5	3.42	miles	
AL06030002-0602-800	Widner Creek	Tennessee	F&W	Mud Creek	Its source	5	6.79	miles	
AL06030002-0602-900	Fall Creek	Tennessee	F&W	Mud Creek	Its source	5	3.62	miles	
AL06030002-1014-103	Flint Creek	Tennessee	PWS/F&W	L&N Railroad	Alabama Highway 36	5	9.10	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL06030002-1101-101	Swan Creek	Tennessee	F&W	Tennessee River	Alabama Highway 24	5	8.97	miles	
AL06030004-0403-800	Sulphur Creek	Tennessee	F&W	Elk River	Its source	5	8.34	miles	
AL06030004-0404-102	Anderson Creek	Tennessee	F&W	Snake Road bridge	Its source	5	9.31	miles	
AL06030005-0105-100	Big Nance Creek	Tennessee	F&W	Tennessee River	Its source	5	27.31	miles	
AL06030005-0802-100	Pond Creek	Tennessee	A&I	Tennessee River	Its source	5	12.43	miles	
AL06030005-0803-400	Sweetwater Creek	Tennessee	F&W	Tennessee River (Florence Canal)	Its source	5	4.41	miles	
AL06030006-0104-102	Bear Creek	Tennessee	S/F&W	Alabama Highway 187	Mill Creek	5	22.31	miles	
AL06030006-0102-700	Little Dice Branch	Tennessee	F&W	Bear Creek	Its source	5	3.83	miles	
AL03160106-0504-100	Bogue Chitto	Tombigbee (upper)	F&W	Tombigbee River	Alabama-Mississippi state li	5	5.42	miles	
AL03160106-0702-101	Factory Creek	Tombigbee (Upper)	F&W	Tombigbee River	extent of reservoir	5	1.86	miles	
AL03160203-1103-101	Tombigbee River	Tombigbee (Lower)	F&W	Mobile River	Upper end of Bilbo Island	5	11.89	miles	
AL03160203-1103-102	Tombigbee River	Tombigbee (Lower)	F&W	Upper end of Bilbo Island	Olin Basin canal	5	3.75	miles	
AL03160203-1103-700	Bilbo Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	5	30.74	miles	
Category 5 - Lakes and Reservoirs									
AL03150203-0805-101	Alabama River	Alabama	S/F&W	McCalls Creek	Bear Creek	5	844.79	acres	Claiborne Reservoir
AL03150203-0805-102	Alabama River	Alabama	S/F&W	Bear Creek	Frisco Railroad Crossing	5	358.40	acres	Claiborne Reservoir
AL03150203-0805-103	Alabama River	Alabama	F&W	Frisco Railroad Crossing	Pursley Creek	5	563.20	acres	Claiborne Reservoir
AL03150203-0805-104	Alabama River	Alabama	F&W	Pursley Creek	River Mile 131	5	627.20	acres	Claiborne Reservoir
AL03150203-0805-105	Alabama River	Alabama	PWS	River Mile 131	Beaver Creek	5	128.00	acres	Claiborne Reservoir
AL03150203-0703-101	Alabama River	Alabama	PWS	Beaver Creek	Rockwest Creek	5	467.20	acres	Claiborne Reservoir
AL03150204-0105-100	Alabama River	Alabama	S/F&W	Claiborne Lock and Dam	McCalls Creek	5	2,438.39	acres	Claiborne Reservoir
AL03160110-0306-201	Sipsey Fork	Black Warrior	S/F&W	County Road 41	Brushy Creek	5	1,321.71	acres	Lewis Smith Lake
AL03160110-0305-201	Clear Creek	Black Warrior	S/F&W	Sipsey Fork	Coon Creek	5	346.47	acres	Lewis Smith Lake
AL03160110-0306-901	Butler Branch	Black Warrior	S/F&W	embayed portion of Butler Branch		5	119.74	acres	Lewis Smith Lake
AL03160110-0408-110	Rock Creek	Black Warrior	S/F&W	Sipsey Fork	Crooked Creek	5	1,946.62	acres	Lewis Smith Lake
AL03160110-0505-103	Ryan Creek	Black Warrior	S/F&W	Coon Creek	Rock Creek	5	4,547.96	acres	Lewis Smith Lake
AL03160112-0413-102	North River	Black Warrior	PWS/S	Lake Tuscaloosa dam	Binion Creek	5	3,840.14	acres	Lake Tuscaloosa
AL03160112-0411-101	North River	Black Warrior	F&W	Binion Creek	extent of reservoir	5	1,235.32	acres	Lake Tuscaloosa
AL03130003-1205-100	Cowikee Creek	Chattahoochee	S/F&W	embayed portion of Cowikee Creek		5	1,739.13	acres	Walter F. George Reservoir
AL03150106-0810-102	Coosa River	Coosa	PWS/S/F&W	River Mile 89	Logan Martin Dam	5	698.25	acres	Lay Lake
AL03150106-0803-100	Coosa River	Coosa	S/F&W	Logan Martin Dam	Broken Arrow Creek	5	14,415.70	acres	Logan Martin Lake
AL03150106-0603-111	Coosa River	Coosa	PWS/S/F&W	Broken Arrow Creek	Trout Creek	5	1,450.26	acres	Logan Martin Lake
AL03150106-0603-112	Coosa River	Coosa	S/F&W	Trout Creek	Neely Henry Dam	5	820.38	acres	Logan Martin Lake
AL03150106-0204-101	Coosa River	Coosa	F&W	Big Wills Creek	City of Gadsden water supply intake	5	245.39	acres	Lake Neely Henry
AL03150106-0204-102	Coosa River	Coosa	PWS/F&W	City of Gadsden water supply intake	Weiss dam powerhouse	5	1,897.43	acres	Lake Neely Henry
AL03150107-0503-110	Coosa River	Coosa	PWS/S/F&W	Lay Dam	Southern RR Bridge	5	11,806.34	acres	Lay Lake
AL03150107-0301-102	Coosa River	Coosa	S/F&W	Southern RR Bridge	River Mile 89	5	862.40	acres	Lay Lake
AL03170008-0502-110	Big Creek	Escatawpa	PWS/F&W	Big Creek Reservoir	Collins Creek	5	3,309.31	acres	Big Creek Reservoir
AL03140103-0102-102	Lightwood Knot Creek	Perdido-Escambia	F&W	Lake Frank Jackson dam	extent of reservoir	5	956.26	acres	Lake Frank Jackson
AL03140103-0601-300	Lake Jackson	Perdido-Escambia	S/F&W	Within Florala and north of AL-FL state line		5	415.46	acres	
AL03140301-0405-101	Conecuh River	Perdido-Escambia	S/F&W	Point A Dam	extent of reservoir	5	610.56	acres	Point A Reservoir
AL03140301-0404-111	Conecuh River	Perdido-Escambia	S/F&W	Gantt Dam	extent of reservoir	5	1,817.43	acres	Gantt Reservoir
AL03140302-0506-101	Patsaliga Creek	Perdido-Escambia	F&W	Conecuh River	Buck Creek	5	154.43	acres	Point A Reservoir

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150109-0803-301	Sugar Creek	Tallapoosa	S/F&W	embayed portion of Sugar Creek		5	58.93	acres	Lake Martin, TAL
AL03150110-0406-102	Tallapoosa River	Tallapoosa	PWS/S/F&W	Thurlow dam	Yates dam	5	538.60	acres	Thurlow Reservoir
AL03150110-0402-101	Channahatchee Creek	Tallapoosa	PWS/S/F&W	embayed portion of Channahatchee Creek		5	62.63	acres	Yates Lake
AL06030001-0205-102	Tennessee River	Tennessee	PWS/S/F&W	Pump Spring Branch	Alabama-Tennessee state line	5	2,708.77	acres	Guntersville Lake
AL06030001-0904-101	Browns Creek	Tennessee	PWS/S/F&W	embayed portion of Browns Creek		5	4,976.95	acres	Guntersville Lake
AL06030002-1205-100	Tennessee River	Tennessee	PWS/S/F&W	Wheeler Dam	five miles upstream of Elk River (RM 289.3)	5	15,168.18	acres	Wheeler Lake
AL06030002-1107-102	Tennessee River	Tennessee	S/F&W	five miles upstream of Elk River (RM 289.3)	US Highway 31	5	20,633.11	acres	Wheeler Lake
AL06030002-1102-102	Tennessee River	Tennessee	PWS/S/F&W	US Highway 31	Flint Creek	5	2,587.33	acres	Wheeler Lake
AL06030002-1102-103	Tennessee River	Tennessee	S/F&W	Flint Creek	Cotaco Creek	5	7,385.35	acres	Wheeler Lake
AL06030002-0906-102	Tennessee River	Tennessee	PWS/S/F&W	Cotaco Creek	Indian Creek	5	334.49	acres	Wheeler Lake
AL06030002-0904-100	Tennessee River	Tennessee	PWS/F&W	Indian Creek	Flint River	5	3,531.35	acres	Wheeler Lake
AL06030002-0902-100	Tennessee River	Tennessee	S/F&W	Flint River	Guntersville Dam	5	1,345.77	acres	Wheeler Lake
AL06030002-0906-600	Limestone Creek	Tennessee	S/F&W	embayed portion of Limestone Creek		5	1,543.22	acres	Wheeler Lake
AL06030004-0405-101	Elk River	Tennessee	S/F&W	Tennessee River	Anderson Creek	5	1,569.21	acres	Wheeler Lake
AL06030005-1203-100	Tennessee River	Tennessee	PWS/S/F&W	Alabama-Tennessee state line	lower end of Seven Mile Island	5	25,902.67	acres	Pickwick Lake
AL06030005-0808-103	Tennessee River	Tennessee	F&W	lower end of Seven Mile Island	Sheffield water intake	5	2,424.33	acres	Pickwick Lake
AL06030005-0808-104	Tennessee River	Tennessee	PWS/F&W	Sheffield water intake	Wilson Dam	5	1,170.03	acres	Pickwick Lake
AL06030005-0801-201	McKiernan Creek	Tennessee	PWS/S/F&W	embayed portion of McKiernan Creek		5	212.45	acres	Wilson Lake
AL06030006-0104-101	Bear Creek	Tennessee	PWS/S/F&W	Bear Creek Reservoir dam	Alabama Highway 187	5	653.54	acres	Bear Creek Reservoir
AL06030006-0103-104	Bear Creek	Tennessee	PWS/S/F&W	Upper Bear Creek Dam	Pretty Branch	5	1,462.58	acres	Upper Bear Creek Reservoir
AL06030006-0203-101	Cedar Creek	Tennessee	PWS/S/F&W	Cedar Creek Lake dam	extent of reservoir	5	4,063.07	acres	Cedar Creek Lake
AL06030006-0205-111	Little Bear Creek	Tennessee	PWS/S/F&W	Little Bear Creek Dam	Scott Branch	5	1,435.05	acres	Little Bear Creek Reservoir
AL03160107-0306-101	Sipsey River	Tombigbee (Upper)	F&W	Tombigbee River	extent of reservoir	5	554.29	acres	Gainesville Reservoir
AL03160201-0401-103	Tombigbee River	Tombigbee (Lower)	F&W	Sucarnoochee River	Demopolis Lock and Dam	5	668.76	acres	Coffeeville Reservoir
AL03160203-1103-800	Olin Basin	Tombigbee (Lower)	F&W	Olin Basin		5	85.73	acres	
Category 5 - Estuaries and Oceans									
AL03170009-0201-100	Mississippi Sound	Escatawpa	SH/S/F&W	Mississippi Sound		5	94.62	square miles	
AL03160204-0202-300	Mifflin Lake	Mobile	F&W	Tensaw River	Its source	5	0.73	square miles	
AL03160205-0300-501	Mobile Bay	Mobile	S/F&W	1000 feet offshore from Ragged Point to the mouth		5	1.08	square miles	
AL-Gulf-of-Mexico	Gulf of Mexico	Mobile	SH/S/F&W	Mississippi	Florida	5	201.02	square miles	
AL03140107-0204-302	Perdido Bay	Perdido-Escambia	SH/S/F&W	Suarez Point	Lillian Bridge	5	1.29	square miles	
AL03140107-0204-400	Arnica Bay	Perdido-Escambia	SH/S/F&W	Perdido Bay	Bay la Launch	5	1.27	square miles	

Appendix C

Alabama's 2014 § 303(d) List Fact Sheet

Alabama's 2014 §303(d) List
Fact Sheet

Background

Section 303(d) of the Clean Water Act requires that each state identify those waters that do not currently support designated uses, and to establish a priority ranking of these waters by taking into account the severity of the pollution and the designated uses of such waters. For each waterbody on the list, the state is required to establish a total maximum daily load (TMDL) for the pollutant or pollutants of concern at a level necessary to implement the applicable water quality standards. Guidance issued in August 1997 by the Environmental Protection Agency (EPA) suggested that states also include a schedule for TMDL development. The TMDL schedule included as part of Alabama's 2014 List provides the expected date the specific TMDL will be drafted and submitted for public notice and comment.

Alabama's 2014 §303(d) List

Alabama's 2014 §303(d) List includes segments of rivers, streams, lakes, reservoirs, and estuaries that do not fully support their currently designated use or uses. Most of the waterbodies on the 2014 §303(d) List also appeared on Alabama's 2012 §303(d) List as submitted to EPA in April 2012. The Department has attempted to obtain and evaluate all existing and readily available water quality-related data and information. The notice soliciting information is included in **Appendix A**. The notice was published in Alabama's four major daily newspapers, appeared on the Department's web page, and was mailed to the Department's general mailing list. Data in the Department's multiple databases, information from §319 nonpoint assessments, special watershed studies, other federal and state agencies, industries, and watershed initiatives were evaluated as the 2014 §303(d) List was compiled. Any individual or organization may submit additional data or information during the advertised comment period relative to water quality impairment in waterbodies in Alabama. Chemical, physical, and biological data collected primarily during the previous six years have been considered in the preparation of the draft §303(d) List, consistent with the Department's water quality assessment and listing methodology. Comments on the methodology were solicited in the public notice included in **Appendix A**. Alabama's water quality assessment and listing methodology may be found at the Departments web page at: http://www.adem.alabama.gov/programs/water/wquality/2014WAM.pdf.
Data sources include the Alabama Department of Environmental Management, the Alabama Department of Public Health, the Geological Survey of Alabama, the United States Geological Survey, the Tennessee Valley Authority, other public agencies, universities, county and municipal governments, and industries.

The list contains information such as the waterbody name, county(s) in which the listed segment is located, dates when the data on which the listing is based were collected, cause(s) for the use impairment, the source(s) of the pollutant(s) causing the impairment, the size of the impaired segment, and the location of the listed waterbody.

Changes since the 2012 §303(d) List

A number of differences exist between the 2014 §303(d) List and the Final Approved 2012 §303(d) List. Some of the changes were to correct errors or omissions in the 2012 List and to provide additional or updated information about waterbodies on the list. Other significant changes since 2012 include the addition and deletion of waterbodies. **Table 1** shows the new waterbody/pollutant combinations that are being added to Alabama's §303(d) List and the justification for the additions. **Table 2** provides the waterbody/pollutant combinations that are being removed from the list and placed in a different category and the corresponding justification for each removal.

Changes have also been proposed to the TMDL completion schedule since the Final 2012 §303(d) List. The changes reflect the pace of TMDL development that can reasonably be expected given ADEM's current funding and staffing levels. The TMDL schedule provides the expected date the specific TMDL will be drafted and submitted for public notice and comment. Where more than one TMDL is required for a segment, TMDLs for specific pollutants may be developed in advance of the expected date shown on the list. A notice of availability will be published on the Department's web page as draft TMDLs are completed and offered for public review and comment.

Table 3 provides a listing of other changes appearing on the 2014 §303(d) List. Most of these changes result from corrections to Assessment Unit numbers, corrections to causes and sources and updates to the draft TMDL development schedule.

Table 4 provides a listing of waterbody/pollutant combinations for which natural conditions are the cause for exceedance of numeric criteria. Waterbodies will be listed in this table when natural conditions result in ambient water quality characteristics which exceed numeric criteria established for the waterbody' s designated use, consistent with ADEM Administrative Rule Chapter 335-6-10-.05.

Table 5 provides a listing of waterbody/pollutant combinations which are not being proposed for category 5 for specific pollutants.

Table 6 provides revisions made between the draft 2014 §303(d) List and the final 2014 §303(d) List submitted to EPA. These revisions were made to the list as a result of comments received during the public notice period or as a result of errors identified by ADEM staff since the draft 2014 §303(d) List was public noticed.

Table 1
Alabama's 2014 §303(d) List
New Waterbody/Pollutant Combinations Appearing on the 2014 List

The waterbody/pollutant combinations listed in the following table are proposed for addition to Alabama's 2014 §303(d) List for the reasons presented in the table.

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL03160111-0307-400	Black Creek	Black Warrior	Jefferson	pH	Records at ADEM station BLKJ-2 from 2012 show that the pH criterion was exceeded in 5 out of 9 samples.	ADEM 2012
AL03160112-0305-110	Daniel Creek	Black Warrior	Tuscaloosa	Siltation	A Macroinvertebrate Assessment at ADEM station DNCT-2 on 5/7/2012 had a Poor WMB-I score. Habitat information for this station noted that sand and silt were 92% of the substrate. At upstream station DNC-1 sand and silt were 47% of the substrate.	ADEM 2012
AL03160112-0305-110	Daniel Creek	Black Warrior	Tuscaloosa	Total dissolved solids	Records at ADEM station DNCT-2 from 2012 show that there are highly elevated levels of total solids at this site. The median value for these records was 903 mg/L, which is substantially higher than the 90th percentile value for this ecoregion (68) of 97 mg/L.	ADEM 2012
AL03160113-0801-200	Needham Creek	Black Warrior	Greene	Total dissolved solids	Records at ADEM station NEDG-2 from 2007 and 2012 show that there are highly elevated levels of total dissolved solids at this site. The median value for these records was 2128 mg/L, which is substantially higher than the 90th percentile value for this sub-ecoregion (65a) of 163 mg/L.	ADEM 2007 2012
AL03160204-0106-112	Mobile River	Mobile	Mobile	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2012 based on records from ADEM station MOBM-5.	ADPH 2011

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL03160204-0103-100	Mobile River	Mobile	Baldwin Mobile	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2012 based on records from ADEM station MOBM-6.	ADPH 2011
AL03160204-0503-102	Bay Minette Creek	Mobile	Mobile	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2012 based on records from ADEM station BMCB-1.	ADPH 2011
AL03160204-0202-200	Middle River	Mobile	Baldwin Mobile	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2012 based on records from ADEM station MDRM-1.	ADPH 2011
AL03160204-0202-300	Mifflin Lake	Mobile	Baldwin	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2012 based on records from ADEM station MFFB-1.	ADPH 2011
AL03160205-0203-110	Magnolia River	Mobile	Baldwin	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2012 based on records from ADEM station MGRB-8.	ADPH 2011
AL03140304-0404-101	Murder Creek	Perdido-Escambia	Escambia	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2013 based on records from ADEM station MRDE-1.	ADPH 2012
AL03150108-0905-400	Wolf Creek	Tallapoosa	Randolph	pH	Records at ADEM station WOLF-3 from 2012 show that the pH criterion was exceeded in 3 out of 10 samples.	ADEM 2012
AL06030002-0902-100	Tennessee River (Wheeler Lake)	Tennessee	Madison Marshall	Nutrients	The chlorophyll *a* mean growing season criterion for Wheeler Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions.	TVA 2010-2011

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL06030002-0904-100	Tennessee River (Wheeler Lake)	Tennessee	Madison Marshall Morgan	Nutrients	The chlorophyll a mean growing season criterion for Wheeler Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions.	TVA 2010-2011
AL06030002-0906-102	Tennessee River (Wheeler Lake)	Tennessee	Madison Morgan	Nutrients	The chlorophyll a mean growing season criterion for Wheeler Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions.	TVA 2010-2011
AL06030002-1102-102	Tennessee River (Wheeler Lake)	Tennessee	Limestone Morgan	Nutrients	The chlorophyll a mean growing season criterion for Wheeler Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions.	TVA 2010-2011
AL06030002-1102-103	Tennessee River (Wheeler Lake)	Tennessee	Limestone Madison Morgan	Nutrients	The chlorophyll a mean growing season criterion for Wheeler Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions.	TVA 2010-2011
AL06030002-1107-102	Tennessee River (Wheeler Lake)	Tennessee	Lawrence Limestone Morgan	Nutrients	The chlorophyll a mean growing season criterion for Wheeler Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions.	TVA 2010-2011
AL06030002-1107-102	Tennessee River (Wheeler Lake)	Tennessee	Lawrence Limestone Morgan	PFOS	Fish consumption advisories issued by the Alabama Department of Public Health in 2012 and 2013 based on records from ADEM stations WHEL-11 and TENR-300.	ADPH 2008-2012
AL06030002-1205-100	Tennessee River (Wheeler Lake)	Tennessee	Lauderdale Limestone Morgan	Nutrients	The chlorophyll a mean growing season criterion for Wheeler Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions.	TVA 2010-2011

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL06030005-0808-103	Tennessee River (Pickwick Lake)	Tennessee	Colbert Lauderdale	Nutrients	The chlorophyll *a* mean growing season criterion for Pickwick Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions. .	TVA 2010-2011
AL06030005-0808-104	Tennessee River (Pickwick Lake)	Tennessee	Colbert Lauderdale	Nutrients	The chlorophyll *a* mean growing season criterion for Pickwick Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions. .	TVA 2010-2011
AL06030005-1203-100	Tennessee River (Pickwick Lake)	Tennessee	Colbert Lauderdale	Nutrients	The chlorophyll *a* mean growing season criterion for Pickwick Lake was exceeded in 2010 and 2011 and the exceedances were not the result of unusual or extreme hydrologic conditions. .	TVA 2010-2011
AL06030006-0104-102	Bear Creek	Tennessee	Franklin Marion	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2013 based on records from ADEM station BERF-4.	ADPH 2012
AL03160106-0504-100	Bogue Chitto	Tombigbee (upper)	Pickens	Nutrients	Records at ADEM station BCTP-1 from 2008 through 2013 show that the pH criterion was exceeded in 6 out of 18 samples. The median Total Nitrogen value for these records was 2.421 mg/L, which is substantially higher than the 90th percentile value for this sub-ecoregion (65a) of 1.16 mg/L.	ADEM 2008-2013

Table 2
Alabama's 2014 §303(d) List
Waterbody/Pollutants Removed from the 2012 List

The waterbody/pollutant combinations listed in the following table are listed on Alabama's 2012 §303(d) List and are proposed for removal from Alabama's 2014 §303(d) List for the reasons presented. Waterbody/pollutant combinations for which EPA has approved a TMDL will be included in Category 4A of the 2014 Integrated Water Quality Report.

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
AL03160109-0101-150	Riley Maze Creek	Black Warrior	Cullman Marshall	Siltation	Available data for Riley Maze Creek indicates that impairment for siltation does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0101-600	Tibb Creek	Black Warrior	Cullman Marshall	Siltation	Available data for Tibb Creek indicates that impairment for siltation does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-101	Cane Creek (Oakman)	Black Warrior	Walker	Metals (Aluminum, Iron)	Available data for Cane Creek indicates that impairment for Aluminum and Iron does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-101	Cane Creek (Oakman)	Black Warrior	Walker	Nutrients	Available data for Cane Creek indicates that impairment for nutrients does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-101	Cane Creek (Oakman)	Black Warrior	Walker	Organic Enrichment (CBOD,	Available data for Cane Creek indicates that impairment for organic enrichment/dissolved oxygen does not currently exist. Therefore, ADEM will not develop a TMDL due to "more

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
				NBOD)	recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-101	Cane Creek (Oakman)	Black Warrior	Walker	pH	Available data for Cane Creek indicates that impairment for pH does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-101	Cane Creek (Oakman)	Black Warrior	Walker	Siltation (habitat alteration)	Available data for Cane Creek indicates that impairment for siltation does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-102	Cane Creek (Oakman)	Black Warrior	Walker	Metals (Aluminum, Iron)	Available data for Cane Creek indicates that impairment for Aluminum and Iron does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-102	Cane Creek (Oakman)	Black Warrior	Walker	Nutrients	Available data for Cane Creek indicates that impairment for nutrients does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-102	Cane Creek (Oakman)	Black Warrior	Walker	Organic Enrichment (CBOD, NBOD)	Available data for Cane Creek indicates that impairment for organic enrichment/dissolved oxygen (OE/DO) does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-102	Cane Creek (Oakman)	Black Warrior	Walker	pH	Available data for Cane Creek indicates that impairment for pH does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-102	Cane Creek (Oakman)	Black Warrior	Walker	Siltation (habitat	Available data for Cane Creek indicates that impairment for siltation does not currently exist. Therefore, ADEM will not

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
				alteration)	develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-103	Cane Creek (Oakman)	Black Warrior	Walker	Metals (Aluminum, Iron)	Available data for Cane Creek indicates that impairment for Aluminum and Iron does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-103	Cane Creek (Oakman)	Black Warrior	Walker	Nutrients	Available data for Cane Creek indicates that impairment for nutrients does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-103	Cane Creek (Oakman)	Black Warrior	Walker	Organic Enrichment (CBOD, NBOD)	Available data for Cane Creek indicates that impairment for organic enrichment/dissolved oxygen (OE/DO) does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-103	Cane Creek (Oakman)	Black Warrior	Walker	Siltation (habitat alteration)	Available data for Cane Creek indicates that impairment for siltation does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-103	Cane Creek (Oakman)	Black Warrior	Walker	pH	Available data for Cane Creek indicates that impairment for pH does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-500	Black Branch	Black Warrior	Walker	Metals (Iron)	Available data for Black Branch indicates that impairment for Iron does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0404-500	Black Branch	Black Warrior	Walker	Siltation	Available data for Black Branch indicates that impairment for siltation does not currently exist. Therefore, ADEM will not

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					develop a TMDL due to “more recent data” which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160111-0408-102	Village Creek	Black Warrior	Jefferson	Pesticides (Dieldrin)	Available data for Village Creek indicates that impairment for dieldrin does not currently exist. These waterbodies were originally listed as impaired in response to the USGS Water Quality Investigation in 2000. This investigation revealed dieldrin levels in the water column at detectable levels and in one whole fish tissue sample. Records from ADEM stations VLGJ-1, VLGJ-2, VLGJ-3, VLGJ-4, VLGJ-7, and VLGJ-10 show that all of the 48 samples collected in 2012 were below the MDL of 0.0028 µg/L. Fish tissue concentrations measured in 2010 from Bayview Lake just downstream of these waterbodies were also below the minimum detection limit of 0.01 µg/g, which is well below the current action level of 0.3 µg/g. Therefore, ADEM will not develop a TMDL due to “more recent data” which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160111-0408-103	Village Creek	Black Warrior	Jefferson	Pesticides (Dieldrin)	Available data for Village Creek indicates that impairment for dieldrin does not currently exist. These waterbodies were originally listed as impaired in response to the USGS Water Quality Investigation in 2000. This investigation revealed dieldrin levels in the water column at detectable levels and in one whole fish tissue sample. Records from ADEM stations VLGJ-1, VLGJ-2, VLGJ-3, VLGJ-4, VLGJ-7, and VLGJ-10 show that all of the 48 samples collected in 2012 were below the MDL of 0.0028 µg/L. Fish tissue concentrations measured in 2010 from Bayview Lake just downstream of these waterbodies were also below the minimum detection limit of 0.01 µg/g, which is well below the current action level of 0.3 µg/g. Therefore, ADEM will not develop a TMDL due to “more recent data” which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160112-0101-101	Valley Creek	Black Warrior	Jefferson	Metals (Mercury)	Based on data from ADEM station VALJ-9, the Alabama Department of Public Health (ADPH) has determined that no

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					restrictions on consumption of fish are necessary. See the ADPH Alabama Fish Consumption Advisory list for 2013.
AL03160112-0101-200	Opossum Creek	Black Warrior	Jefferson	Metals (Mercury)	Based on data from ADEM station OPOJ-2, the Alabama Department of Public Health (ADPH) has determined that no restrictions on consumption of fish are necessary. See the ADPH Alabama Fish Consumption Advisory list for 2013.
AL03160112-0105-101	Mud Creek	Black Warrior	Jefferson	pH	Available data for Mud Creek indicates that impairment for pH does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160112-0105-101	Mud Creek	Black Warrior	Jefferson	Siltation	Available data for Mud Creek indicates that impairment for siltation does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160112-0305-110	Daniel Creek	Black Warrior	Tuscaloosa	Metals Chromium, Lead)	Available data for Daniel Creek indicates that impairment for Chromium and Lead does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160112-0411-102	North River	Black Warrior	Fayette Tuscaloosa	Nutrients	Available data for North River indicates that impairment for nutrients does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160112-0411-102	North River	Black Warrior	Fayette Tuscaloosa	Siltation	Available data for North River indicates that impairment for siltation does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03150202-0503-102	Cahaba River	Cahaba	Bibb	Siltation (habitat alteration)	TMDL approved by EPA on 08/14/2013.
AL03150202-0407-100	Cahaba River	Cahaba	Bibb	Siltation (habitat	TMDL approved by EPA on 08/14/2013.

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
				alteration)	
AL03150202-0206-101	Cahaba River	Cahaba	Shelby	Siltation (habitat alteration)	TMDL approved by EPA on 08/14/2013.
AL03150202-0206-101	Cahaba River	Cahaba	Shelby	Pathogens	TMDL approved by EPA on 11/21/2013.
AL03150202-0206-102	Cahaba River	Cahaba	Shelby	Siltation (habitat alteration)	TMDL approved by EPA on 08/14/2013.
AL03150202-0206-102	Cahaba River	Cahaba	Shelby	Pathogens	TMDL approved by EPA on 11/21/2013.
AL03150202-0204-101	Cahaba River	Cahaba	Jefferson Shelby	Siltation (habitat alteration)	TMDL approved by EPA on 08/14/2013.
AL03150202-0204-101	Cahaba River	Cahaba	Jefferson Shelby	Pathogens	TMDL approved by EPA on 11/21/2013.
AL03150202-0204-102	Cahaba River	Cahaba	Jefferson	Siltation (habitat alteration)	TMDL approved by EPA on 08/14/2013.
AL03150202-0104-102	Cahaba River	Cahaba	Jefferson St. Clair	Siltation (habitat alteration)	TMDL approved by EPA on 08/14/2013.
AL03150202-0101-102	Cahaba River	Cahaba	Jefferson	Siltation (habitat alteration)	TMDL approved by EPA on 08/14/2013.
AL03170008-0502-600	Boggy Branch	Escatawpa	Mobile	Metals (Iron)	Available data for Boggy Branch indicates that impairment for Iron does not currently exist. Therefore, ADEM will not develop a TMDL due to “more recent data” which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03170009-0201-100	Mississippi Sound	Escatawpa	Mobile	Pathogens	A TMDL is not needed for this waterbody/pollutant combination since public health protection and management in shellfish harvesting waters is co-regulated by another state regulatory program within the Alabama Department of Public Health (ADPH). These waters were originally listed as impaired in response to EPA guidance issued in October 2000 concerning the use of fish and shellfish consumption

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					advisories and closure notices. These waters are currently classified as "Conditionally Approved" shellfish harvesting areas by ADPH and are periodically closed to shellfish harvesting when the elevation of the Mobile River at Bucks, Alabama exceeds 8 feet MSL. Decisions regarding the opening and closing of shellfish harvesting areas are made by ADPH consistent with the National Shellfish Sanitation Program and ADPH regulations. The ADPH periodically conducts comprehensive sanitary surveys in coastal drainages to identify potential pollutant sources. These comprehensive sanitary surveys are the basis for assigning the "Conditionally Approved" classification and for management actions that may be appropriate. Available bacteria data collected by both ADPH and ADEM within these areas demonstrates compliance with Alabama's water quality criteria for waters classified as "Shellfish Harvesting" and additional pollution control measures are not necessary.
AL03170009-0201-200	Portersville Bay	Escatawpa	Mobile	Pathogens	A TMDL is not needed for this waterbody/pollutant combination since public health protection and management in shellfish harvesting waters is co-regulated by another state regulatory program within the Alabama Department of Public Health (ADPH). These waters were originally listed as impaired in response to EPA guidance issued in October 2000 concerning the use of fish and shellfish consumption advisories and closure notices. These waters are currently classified as "Conditionally Approved" shellfish harvesting areas by ADPH and are periodically closed to shellfish harvesting when the elevation of the Mobile River at Bucks, Alabama exceeds 8 feet MSL. Decisions regarding the opening and closing of shellfish harvesting areas are made by ADPH consistent with the National Shellfish Sanitation Program and ADPH regulations. The ADPH periodically conducts comprehensive sanitary surveys in coastal drainages to identify potential pollutant sources. These comprehensive sanitary surveys are the basis for assigning the "Conditionally Approved" classification and for management actions that may be appropriate. Available bacteria data collected by both

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					ADPH and ADEM within these areas demonstrates compliance with Alabama's water quality criteria for waters classified as "Shellfish Harvesting" and additional pollution control measures are not necessary.
AL03170009-0201-300	Grand Bay	Escatawpa	Mobile	Pathogens	A TMDL is not needed for this waterbody/pollutant combination since public health protection and management in shellfish harvesting waters is co-regulated by another state regulatory program within the Alabama Department of Public Health (ADPH). These waters were originally listed as impaired in response to EPA guidance issued in October 2000 concerning the use of fish and shellfish consumption advisories and closure notices. These waters are currently classified as "Conditionally Approved" shellfish harvesting areas by ADPH and are periodically closed to shellfish harvesting when the elevation of the Mobile River at Bucks, Alabama exceeds 8 feet MSL. Decisions regarding the opening and closing of shellfish harvesting areas are made by ADPH consistent with the National Shellfish Sanitation Program and ADPH regulations. The ADPH periodically conducts comprehensive sanitary surveys in coastal drainages to identify potential pollutant sources. These comprehensive sanitary surveys are the basis for assigning the "Conditionally Approved" classification and for management actions that may be appropriate. Available bacteria data collected by both ADPH and ADEM within these areas demonstrates compliance with Alabama's water quality criteria for waters classified as "Shellfish Harvesting" and additional pollution control measures are not necessary.
AL03160204-0505-100	Mobile River	Mobile	Mobile	Metals (Mercury)	Based on data from ADEM station MOBM-2, the Alabama Department of Public Health (ADPH) has determined that no restrictions on consumption of fish are necessary. See the ADPH Alabama Fish Consumption Advisory list for 2012.
AL03160204-0504-101	Threemile Creek	Mobile	Mobile	Pathogens	TMDL approved by EPA on 11/21/2013.
AL03160204-0504-102	Threemile Creek	Mobile	Mobile	Pathogens	TMDL approved by EPA on 11/21/2013.
AL03160204-0504-300	Toulmins Spring Branch	Mobile	Mobile	Ammonia	Available data for Toulmins Spring Branch indicates that impairment for ammonia does not currently exist. Therefore,

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					ADEM will not develop a TMDL due to “more recent data” which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160205-0300-102	Mobile Bay	Mobile	Mobile	Pathogens	A TMDL is not needed for this waterbody/pollutant combination since public health protection and management in shellfish harvesting waters is co-regulated by another state regulatory program within the Alabama Department of Public Health (ADPH). These waters were originally listed as impaired in response to EPA guidance issued in October 2000 concerning the use of fish and shellfish consumption advisories and closure notices. These waters are currently classified as “Conditionally Approved” shellfish harvesting areas by ADPH and are periodically closed to shellfish harvesting when the elevation of the Mobile River at Bucks, Alabama exceeds 8 feet MSL. Decisions regarding the opening and closing of shellfish harvesting areas are made by ADPH consistent with the National Shellfish Sanitation Program and ADPH regulations. The ADPH periodically conducts comprehensive sanitary surveys in coastal drainages to identify potential pollutant sources. These comprehensive sanitary surveys are the basis for assigning the “Conditionally Approved” classification and for management actions that may be appropriate. Available bacteria data collected by both ADPH and ADEM within these areas demonstrates compliance with Alabama’s water quality criteria for waters classified as “Shellfish Harvesting” and additional pollution control measures are not necessary.
AL03160205-0300-202	Bon Secour Bay	Mobile	Baldwin	Pathogens	A TMDL is not needed for this waterbody/pollutant combination since public health protection and management in shellfish harvesting waters is co-regulated by another state regulatory program within the Alabama Department of Public Health (ADPH). These waters were originally listed as impaired in response to EPA guidance issued in October 2000 concerning the use of fish and shellfish consumption advisories and closure notices. These waters are currently classified as “Conditionally Approved” shellfish harvesting

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					areas by ADPH and are periodically closed to shellfish harvesting when the elevation of the Mobile River at Bucks, Alabama exceeds 8 feet MSL. Decisions regarding the opening and closing of shellfish harvesting areas are made by ADPH consistent with the National Shellfish Sanitation Program and ADPH regulations. The ADPH periodically conducts comprehensive sanitary surveys in coastal drainages to identify potential pollutant sources. These comprehensive sanitary surveys are the basis for assigning the “Conditionally Approved” classification and for management actions that may be appropriate. Available bacteria data collected by both ADPH and ADEM within these areas demonstrates compliance with Alabama’s water quality criteria for waters classified as “Shellfish Harvesting” and additional pollution control measures are not necessary.
AL03160205-0208-100	Oyster Bay	Mobile	Baldwin	Pathogens	A TMDL is not needed for this waterbody/pollutant combination since public health protection and management in shellfish harvesting waters is co-regulated by another state regulatory program within the Alabama Department of Public Health (ADPH). These waters were originally listed as impaired in response to EPA guidance issued in October 2000 concerning the use of fish and shellfish consumption advisories and closure notices. These waters are currently classified as “Conditionally Approved” shellfish harvesting areas by ADPH and are periodically closed to shellfish harvesting when the elevation of the Mobile River at Bucks, Alabama exceeds 8 feet MSL. Decisions regarding the opening and closing of shellfish harvesting areas are made by ADPH consistent with the National Shellfish Sanitation Program and ADPH regulations. The ADPH periodically conducts comprehensive sanitary surveys in coastal drainages to identify potential pollutant sources. These comprehensive sanitary surveys are the basis for assigning the “Conditionally Approved” classification and for management actions that may be appropriate. Available bacteria data collected by both ADPH and ADEM within these areas demonstrates compliance with Alabama’s water quality criteria for waters

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					classified as "Shellfish Harvesting" and additional pollution control measures are not necessary.
AL03160205-0300-502	Mobile Bay (Northeast)	Mobile	Baldwin	Pathogens	Available data for Mobile Bay (Northeast) indicates that impairment for pathogens does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160205-0204-112	Fish River	Mobile	Baldwin	Pathogens	TMDL approved by EPA on 11/21/2013.
AL03140103-0102-700	UT to Jackson Lake 3-C	Perdido-Escambia	Covington	Pathogens	TMDL approved by EPA on 9/27/2012.
AL03140103-0102-800	UT to Jackson Lake 2-S	Perdido-Escambia	Covington	Organic enrichment (CBOD, NBOD)	Available data for UT to Jackson Lake 2-S indicates that impairment for organic enrichment/dissolved oxygen does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03140103-0102-800	UT to Jackson Lake 2-S	Perdido-Escambia	Covington	Pathogens	Available data for UT to Jackson Lake 2-S indicates that impairment for pathogens does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03150110-0104-101	Sougahatchee Creek (Yates Lake)	Tallapoosa	Tallapoosa	Metals (Mercury)	Based on data from ADEM station YATE-2, the Alabama Department of Public Health (ADPH) has determined that no restrictions on consumption of fish are necessary. See the ADPH Alabama Fish Consumption Advisory list for 2012.
AL06030002-0106-101	Guess Creek	Tennessee	Jackson	Pathogens	TMDL approved by EPA on 9/27/2012.
AL06030002-0303-500	Hester Creek	Tennessee	Madison	Nutrients	Available data for Hester Creek indicates that impairment for nutrients does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL06030002-0404-200	Goose Creek	Tennessee	Madison	Pathogens	TMDL approved by EPA on 9/27/2012.
AL06030006-0103-103	Bear Creek	Tennessee	Marion	Metals	Available data for Bear Creek indicates that impairment for

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
				(Aluminum)	Aluminum does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160203-0903-102	Tombigbee River	Tombigbee (lower)	Clarke Washington	Metals (Mercury)	Based on data from ADEM station TOMW-4, the Alabama Department of Public Health (ADPH) has determined that no restrictions on consumption of fish are necessary. See the ADPH Alabama Fish Consumption Advisory list for 2012.
AL03160105-0101-200	East Branch Luxapallila Creek	Tombigbee (upper)	Fayette Marion	Pathogens	TMDL approved by EPA on 11/21/2013.
AL03160201-0904-101	Wahalak Creek	Tombigbee (lower)	Choctaw	Pathogens	TMDL approved by EPA on 11/21/2013.

Table 3
List of Other Changes Appearing on Alabama's 2014 §303(d) List

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03150201-1207-301	Sixmile Creek	Alabama	Dallas	The draft TMDL due date was changed to 2020.
AL03150203-0805-101	Alabama River (Claiborne Reservoir)	Alabama	Clarke Monroe Wilcox	The draft TMDL due date was changed to 2020.
AL03150203-0805-102	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2017.
AL03150203-0805-103	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2017.
AL03150203-0805-104	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2017.
AL03150203-0805-105	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2017.
AL03150203-0703-101	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2017.
AL03150204-0405-102	Alabama River	Alabama	Clarke Monroe	The draft TMDL due date was changed to 2020.
AL03150204-0105-100	Alabama River (Claiborne Reservoir)	Alabama	Clarke Monroe	The draft TMDL due date was changed to 2020.
AL03160109-0203-101	Mulberry Fork	Black Warrior	Blount Cullman	The draft TMDL due date was changed to 2016.
AL03160109-0203-102	Mulberry Fork	Black Warrior	Blount Cullman	The draft TMDL due date was changed to 2016.
AL03160109-0109-102	Mulberry Fork	Black Warrior	Blount Cullman	The draft TMDL due date was changed to 2016.
AL03160109-0101-150	Riley Maze Creek	Black Warrior	Cullman Marshall	The draft TMDL due date was changed to 2019.
AL03160109-0101-150	Riley Maze Creek	Black Warrior	Cullman Marshall	Based on data collected in 2012 at ADEM station RMA-3, the cause of the impairment was changed from toxicity to total dissolved solids (TDS). Records from this station for total dissolved solids taken during this time period ranged from 171 mg/L to 558 mg/L with an average of 328 mg/L. The Riley Maze WWTP has passed all of its recent Whole Effluent Toxicity tests.

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03160109-0101-600	Tibb Creek	Black Warrior	Cullman Marshall	The draft TMDL due date was changed to 2019.
AL03160109-0101-600	Tibb Creek	Black Warrior	Cullman Marshall	Based on data collected in 2012 at ADEM station TIBC-1, the cause of the impairment was changed from toxicity to total dissolved solids (TDS). Records from this station for total dissolved solids taken during this time period ranged from 140 mg/L to 358 mg/L with an average of 240 mg/L. The Riley Maze WWTP has passed all of its recent Whole Effluent Toxicity tests.
AL03160109-0403-103	Lost Creek	Black Warrior	Walker	The draft TMDL due date was changed to 2019.
AL03160109-0404-500	Black Branch	Black Warrior	Walker	The draft TMDL due date was changed to 2019.
AL03160109-0405-104	Lost Creek	Black Warrior	Walker	The draft TMDL due date was changed to 2016.
AL03160109-0503-100	Wolf Creek	Black Warrior	Walker	The draft TMDL due date was changed to 2016.
AL03160109-0602-601	Old Town Creek	Black Warrior	Walker	The draft TMDL due date was changed to 2016.
AL03160109-0604-900	Baker Creek	Black Warrior	Walker	The draft TMDL due date was changed to 2016.
AL03160110-0305-201	Clear Creek (Lewis Smith Lake)	Black Warrior	Winston	The draft TMDL due date was changed to 2016.
AL03160110-0306-201	Sipsey Fork (Lewis Smith Lake)	Black Warrior	Winston	The draft TMDL due date was changed to 2020.
AL03160110-0306-901	Butler Branch (Lewis Smith Lake)	Black Warrior	Winston	The draft TMDL due date was changed to 2020.
AL03160110-0408-110	Rock Creek (Lewis Smith Lake)	Black Warrior	Cullman Winston	The draft TMDL due date was changed to 2020.
AL03160110-0505-103	Ryan Creek (Lewis Smith Lake)	Black Warrior	Cullman	The draft TMDL due date was changed to 2020.
AL03160111-0413-101	Locust Fork	Black Warrior	Jefferson	The draft TMDL due date was changed to 2016.
AL03160111-0413-112	Locust Fork	Black Warrior	Jefferson	The draft TMDL due date was changed to 2016.
AL03160111-0404-102	Locust Fork	Black Warrior	Blount Jefferson	The draft TMDL due date was changed to 2016.
AL03160111-0308-102	Locust Fork	Black Warrior	Blount Jefferson	The draft TMDL due date was changed to 2016.
AL03160111-0305-102	Locust Fork	Black Warrior	Blount Jefferson	The draft TMDL due date was changed to 2016.

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Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03160111-0208-101	Locust Fork	Black Warrior	Blount	The draft TMDL due date was changed to 2016.
AL03160111-0203-100	Dry Creek	Black Warrior	Blount	The draft TMDL due date was changed to 2016.
AL03160111-0405-101	Newfound Creek	Black Warrior	Jefferson	The draft TMDL due date was changed to 2019.
AL03160112-0201-102	Big Yellow Creek	Black Warrior	Tuscaloosa	The draft TMDL due date was changed to 2016.
AL03160112-0304-110	Pegues Creek	Black Warrior	Tuscaloosa	The draft TMDL due date was changed to 2016.
AL03160112-0411-102	North River	Black Warrior	Fayette Tuscaloosa	The draft TMDL due date was changed to 2020.
AL03160112-0413-102	North River (Lake Tuscaloosa)	Black Warrior	Tuscaloosa	The draft TMDL due date was changed to 2020.
AL03160112-0411-101	North River (Lake Tuscaloosa)	Black Warrior	Tuscaloosa	The draft TMDL due date was changed to 2020.
AL03160113-0704-100	Cottonwood Creek	Black Warrior	Hale Marengo Perry	The draft TMDL due date was changed to 2016.
AL03150202-0901-100	Childers Creek	Cahaba	Dallas	The draft TMDL due date was changed to 2019.
AL03150106-0514-100	Choccolocco Creek	Coosa	Talladega Calhoun	The draft TMDL due date was changed to 2020.
AL03150106-0507-102	Choccolocco Creek	Coosa	Calhoun	The draft TMDL due date was changed to 2020.
AL03150106-0810-102	Coosa River (Lay Lake)	Coosa	Talladega Shelby St. Clair	The draft TMDL due date was changed to 2020.
AL03150107-0301-102	Coosa River (Lay Lake)	Coosa	Talladega Shelby	The draft TMDL due date was changed to 2020.
AL03170008-0502-600	Boggy Branch	Escatawpa	Mobile	The draft TMDL due date was changed to 2018.
AL03170008-0402-110	Escatawpa River	Escatawpa	Mobile	The draft TMDL due date was changed to 2020.
AL03170008-0502-110	Big Creek (Big Creek Reservoir)	Escatawpa	Mobile	The draft TMDL due date was changed to 2020.
AL03170008-0502-800	Collins Creek	Escatawpa	Mobile	The draft TMDL due date was changed to 2018.
AL03160204-0403-112	Mobile River	Mobile	Baldwin Mobile	The draft TMDL due date was changed to 2020.
AL03160204-0105-111	Cold Creek	Mobile	Mobile	The draft TMDL due date was changed to 2020.

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Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03160204-0305-101	Chickasaw Creek	Mobile	Mobile	The draft TMDL due date was changed to 2020.
AL03160204-0305-102	Chickasaw Creek	Mobile	Mobile	The draft TMDL due date was changed to 2020.
AL03160204-0303-100	Chickasaw Creek	Mobile	Mobile	The draft TMDL due date was changed to 2020.
AL03160204-0504-300	Toulmins Spring Branch	Mobile	Mobile	The draft TMDL due date was changed to 2021.
AL03160204-0504-500	UT to Threemile Creek	Mobile	Mobile	The draft TMDL due date was changed to 2018.
AL03160204-0505-201	Tensaw River	Mobile	Baldwin	The draft TMDL due date was changed to 2020.
AL03160204-0505-202	Tensaw River	Mobile	Baldwin	The draft TMDL due date was changed to 2020.
AL03160204-0505-500	D'Olive Creek	Mobile	Baldwin	The draft TMDL due date was changed to 2018.
AL03160204-0505-800	Joes Branch	Mobile	Baldwin	The draft TMDL due date was changed to 2018.
AL03160204-0505-900	Tiawasee Creek	Mobile	Baldwin	The draft TMDL due date was changed to 2018.
AL03160204-0505-905	UT to Tiawasee Creek	Mobile	Baldwin	The draft TMDL due date was changed to 2018.
AL03160204-0505-505	UT to D'Olive Creek	Mobile	Baldwin	The draft TMDL due date was changed to 2018.
AL03160204-0106-302	Tensaw River	Mobile	Baldwin	The draft TMDL due date was changed to 2020.
AL03160204-0106-303	Tensaw River	Mobile	Baldwin Mobile	The draft TMDL due date was changed to 2020.
AL03160205-0105-100	Middle Fork Deer River	Mobile	Mobile	The draft TMDL due date was changed to 2018.
AL03160205-0104-110	Fowl River	Mobile	Mobile	The draft TMDL due date was changed to 2020.
AL03160205-0202-210	Polecat Creek	Mobile	Baldwin	The draft TMDL due date was changed to 2020.
AL03160205-0202-510	Baker Branch	Mobile	Baldwin	The draft TMDL due date was changed to 2018.
AL03160205-0204-112	Fish River	Mobile	Baldwin	The draft TMDL due date was changed to 2020.
AL03160205-0204-700	Cowpen Creek	Mobile	Baldwin	The draft TMDL due date was changed to 2020.
AL03160205-0206-101	Bon Secour River	Mobile	Baldwin	The draft TMDL due date was changed to 2020.
AL03160205-0206-102	Bon Secour River	Mobile	Baldwin	The draft TMDL due date was changed to 2020.

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03160205-0300-500	Mobile Bay (Northeast)	Mobile	Baldwin	The Assessment Unit AL03160205-0300-500 was split into two Assessment Units, AL03160205-0300-501 and AL03160205-0300-502. AL03160205-0300-502 is being delisted from the 2014 303(d) list.
AL-Gulf-of-Mexico	Gulf of Mexico	Mobile	Baldwin Mobile	The draft TMDL due date was changed to 2020.
AL03140103-0102-700	UT to Jackson Lake 3-C	Perdido-Escambia	Covington	The draft TMDL due date was changed to 2020.
AL03140106-0302-201	Boggy Branch	Perdido-Escambia	Escambia	The draft TMDL due date was changed to 2016.
AL03140106-0302-202	Boggy Branch	Perdido-Escambia	Escambia	The draft TMDL due date was changed to 2016.
AL03140107-0204-400	Arnica Bay	Perdido-Escambia	Baldwin	The draft TMDL due date was changed to 2016.
AL03140107-0204-302	Perdido Bay	Perdido-Escambia	Baldwin	The draft TMDL due date was changed to 2016.
AL03150110-0406-102	Tallapoosa River (Thurlow Reservoir)	Tallapoosa	Elmore Tallapoosa	The draft TMDL due date was changed to 2020.
AL03150110-0905-112	Tallapoosa River	Tallapoosa	Elmore Montgomery	The draft TMDL due date was changed to 2020.
AL06030001-0204-101	Widows Creek	Tennessee	Jackson	The draft TMDL due date was changed to 2020.
AL06030001-0205-102	Tennessee River (Lake Guntersville)	Tennessee	Jackson	The draft TMDL due date was changed to 2020.
AL06030002-0106-101	Guess Creek	Tennessee	Jackson	The draft TMDL due date was changed to 2016.
AL06030002-0906-600	Limestone Creek (Wheeler Lake)	Tennessee	Limestone	The draft TMDL due date was changed to 2020.
AL06030002-1014-103	Flint Creek	Tennessee	Morgan	The draft TMDL due date was changed to 2020.
AL06030005-0105-100	Big Nance Creek	Tennessee	Lawrence	The draft TMDL due date was changed to 2020.
AL06030006-0104-101	Bear Creek (Bear Creek Reservoir)	Tennessee	Franklin	The draft TMDL due date was changed to 2020.
AL06030006-0103-104	Bear Creek (Upper Bear Creek Reservoir)	Tennessee	Franklin Marion Winston	The draft TMDL due date was changed to 2020.
AL06030006-0203-101	Cedar Creek (Cedar Creek Lake)	Tennessee	Franklin	The draft TMDL due date was changed to 2020.
AL06030006-0205-111	Little Bear Creek (Little Bear Creek Reservoir)	Tennessee	Franklin	The draft TMDL due date was changed to 2020.

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Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03160106-0702-101	Factory Creek	Tombigbee (upper)	Sumter	The draft TMDL due date was changed to 2018.
AL03160107-0306-101	Sipsey River (Gainesville Reservoir)	Tombigbee (upper)	Greene Pickens	The draft TMDL due date was changed to 2020.
AL03160201-0401-103	Tombigbee River (Coffeeville Reservoir)	Tombigbee (lower)	Marengo Sumter	The draft TMDL due date was changed to 2020.
AL03160203-1103-101	Tombigbee River	Tombigbee (lower)	Baldwin Clarke Mobile Washington	The draft TMDL due date was changed to 2020.
AL03160203-1103-102	Tombigbee River	Tombigbee (lower)	Clarke Washington	The draft TMDL due date was changed to 2020.
AL03160203-1103-700	Bilbo Creek	Tombigbee (lower)	Washington	The draft TMDL due date was changed to 2020.
AL03160203-1103-800	Olin Basin	Tombigbee (lower)	Washington	The draft TMDL due date was changed to 2020.

Table 4
Alabama's 2014 §303(d) List
Waterbody/Pollutant Combinations Affected By Natural Causes

The waterbody/pollutant combinations listed in the following table are not being listed in Category 5 for the specified parameter.

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
AL03160110-0203-110	Inman Creek	Black Warrior	Winston	Silver	Records at ADEM station INMW-1 from 2013 show that the silver freshwater acute criterion was exceeded in 2 out of 13 samples. This criterion is based on the hardness of the sampled waterbody. The measured hardness for these samples range from 6.98 to 11.6 mg/L. This is lower than 25 mg/L, which requires a statistical comparison to the ecoregional value to see if they are similar. Calculations show that the values are similar. There are no permitted discharges in the watershed. Therefore, Inman Creek is not impaired due to silver based on available data and information.
AL03160113-0103-100	South Sandy Creek	Black Warrior	Bibb Tuscaloosa	pH	Records at ADEM station SSB-1 from 2007-2012 show that 5 out of 11 values were less than the pH criterion of 6.0. Values range from 5.2 to 7.3. South Sandy Creek is located in the sub-ecoregion 65i (Fall Line Hills). Some waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that South Sandy Creek is a blackwater stream. Therefore, South Sandy Creek is not impaired due to pH based on available data and information.
AL03160113-0302-110	Elliotts Creek	Black Warrior	Hale	pH	Records at ADEM station ELLH-1 from 2012 show that 2 out of 8 values were less than the pH criterion of 6. Values range from 5.4 to 7.1. Elliotts Creek is primarily located in the sub-ecoregion 65p (Southeastern Floodplains

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
					and Low Terraces). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Elliotts Creek is a blackwater stream. Therefore, Elliotts Creek is not impaired due to pH based on available data and information.
AL03150202-0506-200	Walton Creek	Cahaba	Bibb Perry	pH	Records at ADEM station WLTB-1 from 2012 show that 2 out of 9 values were less than the pH criterion of 6. Values range from 5.0 to 6.3. Elliotts Creek is primarily located in the sub-ecoregion 65i (Fall Line Hills). Some waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy and loamy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Walton Creek is a blackwater stream. Therefore, Walton Creek is not impaired due to pH based on available data and information.
AL03140201-1004-600	Dowling Branch	Choctaw- hatchee	Geneva	pH	Records at ADEM station DOWG-1 from 2008 - 2012 show that 10 out of 19 values were less than the pH criterion of 6.0. Values range from 5.3 to 6.5. Dowling Branch is primarily located in the sub-ecoregion 65g (Dougherty Plain). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
					visits confirm that Dowling Branch is a blackwater stream. Therefore, Dowling Branch is not impaired due to pH based on available data and information.
AL03150106-0305-200	Gulf Creek	Coosa	St. Clair	Biology	A Macroinvertebrate Assessment at ADEM station GLFS-25 on 5/20/2005 had a Poor WMB-I score
AL03170008-0402-110	Escatawpa River	Escatawpa	Mobile Washington	pH	Records at ADEM station E-1 from 2007 - 2013 show that 14 out of 25 values were less than the pH criterion of 6.0. Values range from 4.5 to 6.6. Escatawpa River is primarily located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Escatawpa River is a blackwater stream. Therefore, Escatawpa River is not impaired due to pH based on available data and information.
AL03170008-0502-600	Boggy Branch	Escatawpa	Mobile	pH	Records at ADEM station BGYM-1 from 2007 and 2011 show that 7 out of 10 values were less than the pH criterion of 6.0. Values range from 5.0 to 6.4. Boggy Branch is located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Boggy Branch is a blackwater stream. Therefore, Boggy Branch is not impaired due to pH based on available data and information.
AL03170008-0502-800	Collins Creek	Escatawpa	Mobile	pH	Records at ADEM station CLNM-1 from 2007 and 2011 show that 6 out of 10 values were less than the pH criterion of 6.0. Values range from 4.9 to 7.2. Collins Creek is located in the sub-ecoregion 65f (Southern Pine Plains and

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
					Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Collins Creek is a blackwater stream. Therefore, Collins Creek is not impaired due to pH based on available data and information.
AL03170009-0102-200	Carls Creek	Escatawpa	Mobile	pH	Records at ADEM station HMC-1 from 2011 show that 2 out of 8 values were less than the pH criterion of 6. Values range from 5.0 to 6.6. Carls Creek is located in the sub-ecoregion 75a (Gulf Coast Flatwoods). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Carls Creek is a blackwater stream. Therefore, Carls Creek is not impaired due to pH based on available data and information.
AL03160204-0303-100	Chickasaw Creek	Mobile	Mobile	pH	Records at ADEM station CKSM-3 from 2007 - 2013 show that 12 out of 21 values were less than the pH criterion of 6.0. Values range from 5.3 to 6.6. Chickasaw Creek is primarily located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Chickasaw Creek is a blackwater stream.

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
					Therefore, Chickasaw Creek is not impaired due to pH based on available data and information.
AL03160205-0104-110	Fowl River	Mobile	Mobile	pH	Records at ADEM station FWLM-2 from 2011 - 2013 show that 4 out of 23 values were less than the pH criterion of 6. Values range from 5.3 to 7.6. Fowl River is located in the sub-ecoregions 75a (Gulf Coast Flatwoods) and 65f (Southern Pine Plains and Hills). Many waterbodies in these sub-ecoregions are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Fowl River is a blackwater stream. Therefore, Fowl River is not impaired due to pH based on available data and information.
AL03160205-0105-100	Middle Fork Deer River	Mobile	Mobile	pH	Records at ADEM station MFDM-2 from 2011 show that 3 out of 10 values were less than the pH criterion of 6. Values range from 5.2 to 6.9. Middle Fork Deer River is located in the sub-ecoregion 75a (Gulf Coast Flatwoods). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Middle Fork Deer River is a blackwater stream. Therefore, Middle Fork Deer River is not impaired due to pH based on available data and information.
AL03160205-0202-510	Baker Branch	Mobile	Baldwin	pH	Records at ADEM station BAKB-1 from 2011 show that 3 out of 8 values were less than the pH criterion of 6.0. Values range from 5.6 to 7.5. Baker Branch is located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
					Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Baker Branch is a blackwater stream. Therefore, Baker Branch is not impaired due to pH based on available data and information.
AL03160205-0203-110	Magnolia River	Mobile	Baldwin	pH	Records at ADEM station MGNB-101 from 2008-2013 show that 17 out of 42 values were less than the pH criterion of 6. Values range from 5.3 to 7.6. Magnolia River is located in the sub-ecoregions 75a (Gulf Coast Flatwoods) and 65f (Southern Pine Plains and Hills). Many waterbodies in these sub-ecoregions are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Magnolia River is a blackwater stream. Therefore, Magnolia River is not impaired due to pH based on available data and information.
AL03160205-0204-112	Fish River	Mobile	Baldwin	pH	Records at ADEM station FI-1 from 2007 - 2012 show that 13 out of 50 values were less than the pH criterion of 6.0. Values range from 5.4 to 7.8. Fish River is primarily located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Fish River is a blackwater stream. Therefore, Fish River is not impaired due to pH based on available data and information.

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
AL03160205-0204-700	Cowpen Creek	Mobile	Baldwin	pH	Records at ADEM station CWPB-100 from 2007 - 2013 show that 11 out of 11 assessable values were less than the pH criterion of 6.0. Values range from 5.2 to 5.8. Cowpen Creek is located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Cowpen Creek is a blackwater stream. Therefore, Cowpen Creek is not impaired due to pH based on available data and information.
AL03140104-0104-100	Blackwater River	Perdido-Escambia	Escambia	pH	Records at ADEM station BKRE-1 from 2007 - 2013 show that 38 out of 38 values were less than the pH criterion of 6.0. Values range from 4.0 to 5.6. Blackwater River is primarily located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Blackwater River is a blackwater stream. Therefore, Blackwater River is not impaired due to pH based on available data and information.
AL03140106-0507-100	Styx River	Perdido-Escambia	Baldwin	pH	Records at ADEM station STXB-3 from 2007 - 2013 show that 14 out of 20 values were less than the pH criterion of 6.0. Values range from 4.9 to 6.8. Styx River is primarily located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal.

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
					Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Styx River is a blackwater stream. Therefore, Styx River is not impaired due to pH based on available data and information.
AL03140106-0703-100	Perdido River	Perdido-Escambia	Baldwin Escambia	pH	Records at ADEM station PDBB-4 from 2008 show that 6 out of 10 values were less than the pH criterion of 6. Values range from 4.7 to 6.4. Perdido River is located in the sub-ecoregions 75a (Gulf Coast Flatwoods) and 65f (Southern Pine Plains and Hills). Many waterbodies in these sub-ecoregions are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Perdido River is a blackwater stream. Therefore, Perdido River is not impaired due to pH based on available data and information.
AL03140301-0201-100	Mannings Creek	Perdido-Escambia	Bullock Pike	pH	Records at ADEM station MANP-1 from 2013 show that 2 out of 8 values were less than the pH criterion of 6.0. Values range from 5.4 to 6.6. Mannings Creek is primarily located in the sub-ecoregion 65d (Southern Hilly Gulf Coastal Plain). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Mannings Creek is a blackwater stream. Therefore, Mannings Creek is not impaired due to pH based on available data and information.

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
AL03140305-0302-100	Big Escambia Creek	Perdido-Escambia	Escambia	pH	Records at ADEM station BEC-1 from 2007 - 2013 show that 9 out of 45 values were less than the pH criterion of 6.0. Values range from 5.3 to 6.9. Big Escambia Creek is primarily located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Big Escambia Creek is a blackwater stream. Therefore, Big Escambia Creek is not impaired due to pH based on available data and information.
AL03160204-0503-102	Bay Minette Creek	Perdido-Escambia	Baldwin	pH	Records at ADEM station BMCB-3 from 2011-2013 show that 6 out of 12 values were less than the pH criterion of 6.0. Values range from 4.2 to 7.4. Bay Minette Creek is primarily located in the sub-ecoregion 65f (Southern Pine Plains and Hills). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Bay Minette Creek is a blackwater stream. Therefore, Bay Minette Creek is not impaired due to pH based on available data and information.
AL06030002-0601-300	Hughes Creek	Tennessee	Morgan	pH	Records at ADEM station HGSM-27 from 2012 show that 2 out of 8 values were greater than the pH criterion of 8.5. Hughes Creek is fed by a spring (Hughes Spring), which comes out the Bangor Limestone formation. The spring is approximately 1 mile above the sampling point (HGSM-27). During low rainfall periods, the spring water is the primary source for stream flow, which can create higher than normal pH values as the spring water tends to be more alkaline. Therefore Hughes Creek is not impaired due to pH based on available data and information

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
AL06030005-0901-100	Bumpass Creek	Tennessee	Lauderdale	pH	Records at ADEM station BMPL-2 from 2009 - 2013 show that 4 out of 14 values were less than the pH criterion of 6.0. Values range from 5.2 to 6.7. Bumpass Creek is located in the sub-ecoregion 65j (Transition Hills). Some waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Bumpass Creek is a blackwater stream. Therefore, Bumpass Creek is not impaired due to pH based on available data and information.
AL03160203-1103-700	Bilbo Creek	Tombigbee (lower)	Washington	Dissolved Oxygen pH	Records at ADEM station BLBW-1 from 2011 show that 10 out of 10 values were less than the pH criterion of 6.0. Values range from 4.1 to 5.2. The records also show that 7 out of 10 dissolved oxygen values were below the Fish and Wildlife criterion of 5.0 mg/L. Values for dissolved oxygen ranged from 1.9 mg/L to 8.4 mg/L. Bilbo Creek is located in the sub-ecoregion 65f (Southern Pine Plains and Hills). It can be categorized as a braided wetland stream. These streams are similar to blackwater streams in that they are affected by similar soils and tannin producing flora. However, due to a low channel gradient Bilbo Creek is a much slower moving stream with braided, shallow channels. The slow moving nature of the stream allows more organic matter build up resulting in higher oxygen demand. While the tannins and acidic soil tend to make the water pH more acidic, the higher oxygen demand tends to depress the dissolved oxygen values. As a result, dissolved oxygen and pH levels may be lower than applicable numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Bilbo Creek is a braided wetland stream. Therefore, Bilbo Creek is not impaired due to pH or dissolved oxygen based on available data and information.
AL03160201-0203-100	Kinterbish Creek	Tombigbee (upper)	Choctaw Sumter	pH	Records at ADEM station KNBS-1 from 2011-2013 show that 3 out of 12 values were less than the pH criterion of 6. Values range from 4.7 to 6.9. Kinterbish Creek is primarily located in the sub-ecoregion 65d (Southern Hilly Gulf Coastal Plains). Many waterbodies in this sub-ecoregion are blackwater streams. Blackwater streams flow through primarily sandy soils, which tend to be more acidic than upland soils, and are surrounded by trees

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Natural Cause
					which produce tannins, such as Pines, Cedars, and Oaks. These streams also tend to be located in flatland areas, which can cause stream velocity to be slower than normal. Blackwater streams appear dark in color, although they are also generally very clear. The tannins and acidic soil tend to make the water pH more acidic, where it may be lower than numeric criteria at times. This is, however, its natural state and does not indicate use impairment. Observations from site visits confirm that Kinterbish Creek is a blackwater stream. Therefore, Bay Minette Creek is not impaired due to pH based on available data and information.

Table 5
Alabama's 2014 §303(d) List
Waterbody/Pollutant Combinations Not Listed in Category 5

The waterbody/pollutant combinations listed in the following table are not being proposed for addition to Category 5 due to the listed reasons, however the Department will continue to collect and assess data to properly categorize them.

Assessment Unit	Waterbody Name	River Basin	County	Causes	Justification for Not Listing
AL03160204-0503-102	Bay Minette Creek	Mobile	Baldwin	Cadmium	Records at ADEM station BMCB-3 from 2011-2013 show that the Cadmium freshwater chronic criterion was exceeded in 2 out of 3 samples. This criterion is based on hardness. The measured hardness for these samples ranged from 4.26 to 5.13 mg/L. This is lower than 25 mg/L, which requires a comparison of the ecoregional values to see if they are similar. Although we do have a reference value for cadmium in this ecoregion (65f), all of the values the reference value was calculated from were below minimum detection limits (MDL). A reasonable value is difficult to determine. In addition, the MDLs we were able to achieve for the samples at BMCB-3 during the sampling time period were an order of magnitude less than the reference value MDLs. Bay Minette Creek is already being listed in Category

Assessment Unit	Waterbody Name	River Basin	County	Causes	Justification for Not Listing
					5 for Mercury (fish tissue data). At this time, we will continue to monitor Bay Minette Creek but will not add cadmium as a cause.
AL03150204-0102-300	Beaver Creek	Alabama	Baldwin	**Nickel**	Records at ADEM station BRRM-1 from 2013 show that the Nickel freshwater chronic criterion was exceeded in 2 out of 5 samples. This criterion is based on hardness. The measured hardness for these samples ranged from 28.6 to 38 mg/L. This is comparable to the median ecoregional reference value of 34.6 mg/L for its primary ecoregion, 65q. Although we do have enough exceedances to list Beaver Creek, it is a heavily forested, with little activity in the watershed. There do not appear to be any sources for Nickel in this area. We will place Beaver Creek in Category 2A and continue to monitor it.
AL06030005-0301-200	Chandelower Creek	Tennessee	Colbert	Dissolved Oxygen	Records at ADEM station CHLC-1 from 2009 and 2013 show that 2 out of 11 dissolved oxygen values were less than the Fish and Wildlife criterion of 5.0 mg/L. However, measured stream flows at the time of the low dissolved oxygen measurements were less than .5 cubic feet per second. These events occurred in July and August of 2009. Station visit comments during these visits indicated there was minimal flow in the stream. Station visits from 2013 indicated that there was ponding due to the presence of a beaver dam. The most likely causes of low dissolved oxygen values are naturally occurring, so we will not list Chandelower Creek at this time.
AL06030002-0503-101	Huntsville Spring Branch	Tennessee	Madison	Dissolved Oxygen	Records at ADEM station HSBM-240 from 2009 and 2013 show that 3 out of 14 dissolved oxygen values were less than the Fish and Wildlife criterion of 5.0 mg/L. A careful examination of other water quality data did not indicate what the cause of these exceedances could be. Further sampling and habitat study will be necessary to determine if an impairment exists.

Table 6
Additional Revisions made between the Draft 2014 §303(d) List and the Final 2014 §303(d) List

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03160110-0305-201	Clear Creek (Lewis Smith Lake)	Black Warrior	Winston	The draft TMDL date was changed to 2020.
AL03160111-0408-102	Village Creek	Black Warrior	Jefferson	The draft TMDL date was changed to 2016.
AL03160111-0408-103	Village Creek	Black Warrior	Jefferson	The draft TMDL date was changed to 2016.
AL03150202-0503-102	Cahaba River	Cahaba	Bibb	The TMDL approval date was changed to 08/14/2013.
AL03150202-0407-100	Cahaba River	Cahaba	Bibb	The TMDL approval date was changed to 08/14/2013.
AL03150202-0206-101	Cahaba River	Cahaba	Shelby	The TMDL approval date was changed to 08/14/2013.
AL03150202-0206-102	Cahaba River	Cahaba	Shelby	The TMDL approval date was changed to 08/14/2013.
AL03150202-0204-101	Cahaba River	Cahaba	Jefferson Shelby	The TMDL approval date was changed to 08/14/2013.
AL03150202-0204-102	Cahaba River	Cahaba	Jefferson	The TMDL approval date was changed to 08/14/2013.
AL03150202-0104-102	Cahaba River	Cahaba	Jefferson St. Clair	The TMDL approval date was changed to 08/14/2013.
AL03150202-0101-102	Cahaba River	Cahaba	Jefferson	The TMDL approval date was changed to 08/14/2013.
AL03140201-1203-101	Choctawhatchee River	Choctawhatchee	Dale Geneva Houston	This segment was created from AL03140201-1203-100 to add Swimming as a use classification to a portion of the segment. Also, Houston County was added as an affected county and the waterbody size was changed to 29.07 miles.
AL03140201-1003-102	Choctawhatchee River	Choctawhatchee	Dale Houston	This segment was created from AL03140201-1203-100 to account for a use classification change.
AL03140201-0603-100	Choctawhatchee River	Choctawhatchee	Dale	This segment was created from AL03140201-1203-100 to add Swimming as a use classification to a portion of the segment.
AL03140203-0105-100	Choctawhatchee River	Choctawhatchee	Geneva	Swimming was added to this segment's use classification.
AL03170009-0201-100	Mississippi Sound	Escatawpa	Mobile	The waterbody size was changed to 94.62 square miles.
AL03160205-0204-700	Cowpen Creek	Mobile	Baldwin	The waterbody size was changed to 7.12 miles.
AL03140103-0102-700	UT to Jackson Lake 3-	Perdido-Escambia	Covington	The TMDL approved date was changed to 09/27/2012.

Appendix C

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
	C			
AL03150109-0803-301	Sugar Creek (Lake Martin)	Tallapoosa	Tallapoosa	The draft TMDL date was changed 2020.
AL06030001-0403-801	Warren Smith Creek	Tennessee	Jackson	The waterbody size was changed to 3.44 miles.
AL06030001-0904-101	Browns Creek (Guntersville Lake)	Tennessee	Marshall	The waterbody size was changed to 5167.97 acres.
AL06030002-0106-101	Guess Creek	Tennessee	Jackson	The TMDL approved date was changed to 09/27/2012.
AL06030002-0404-200	Goose Creek	Tennessee	Madison	The TMDL approved date was changed to 09/27/2012.
AL06030002-0601-300	Hughes Creek	Tennessee	Morgan	The waterbody size was changed to 2.87 miles.
AL06030002-0602-200	Mud Creek	Tennessee	Morgan	The draft TMDL date was changed to 2016.
AL06030004-0405-101	Elk River (Wheeler Lake)	Tennessee	Lauderdale Limestone	The draft TMDL date was changed to 2018.
AL06030004-0405-101	Sulphur Creek	Tennessee	Limestone	The draft TMDL date was changed to 2018.
AL06030005-0801-201	McKiernan Creek (Wilson Lake)	Tennessee	Colbert	The waterbody size was changed to 212.45 acres.

APPENDIX A

Public Notice Soliciting Available Data and Information for Preparation of Alabama's Draft 2014 303(d) List

Public Notice - 210

Alabama Department of Environmental Management

Notice of Requesting Data and Information for Preparation of Alabama's Draft 2014 Section 303(d) List of Impaired Waters and Comments on Alabama's Draft Water Assessment and Listing Methodology

Section 303(d) of the Clean Water Act requires that each state identify those waters that do not currently support designated uses and establish a priority ranking of the waters, taking into account the severity of the pollution and the uses to be made of the waters. For each water on the list, the state is required to establish the total maximum daily load (TMDL) at a level necessary to implement the applicable water quality standards.

At this time, ADEM has begun development of the 2014 Section 303(d) list and is soliciting data and information for consideration during preparation of the list. Also, the Department is soliciting comments on Alabama's Water Assessment and Listing Methodology which will be used to develop the 2014 Section 303(d) list. The methodology has been prepared to assist the Department in the development of the 303(d) list and establishes minimum data requirements and listing criteria. In order to be fully considered in this process, persons wishing to offer a submittal, should do so in an electronic format.

While the Department will consider all data submitted, we reserve the right to incorporate only those data that meet minimum quality standards. The Department is not bound by interpretations provided by data submitters. It should also be noted that the Department is unable to pay a fee for the use of data. Data, information, and comments should be submitted to Joseph Roy, Water Division, Alabama Department of Environmental Management, P.O. Box 301463, Montgomery, Alabama 36130-1463 (street address: 1400 Coliseum Boulevard, Montgomery, Alabama 36110-2059). Mr. Roy's phone number is 334-270-5635. His email address is jtr@adem.state.al.us. **Data, information, and comments must be received by the Department prior to 5:00 p.m. on September 30, 2013.**

An electronic copy of the Draft 2013 Water Assessment and Listing Methodology is available on ADEM's website under the Public Notice section at the following address: www.adem.state.al.us.

This notice is hereby given this **1st day of September 2013** by authorization of the Alabama Department of Environmental Management.

Lance LeFleur
Director

Appendix D

Alabama's 2014 §303(d) List

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03150201-0101-200	Callaway Creek	R	Alabama	Elmore	Fish & Wildlife	Nutrients	Agriculture Municipal	2005	13.02 miles	Bouldin tailrace canal / Its source	2010	2017
AL03150201-0104-302	Three Mile Branch	R	Alabama	Montgomery	Fish & Wildlife	Pesticides (Dieldrin)	Unknown source	1999	7.65 miles	Lower Wetumpka Road / Its source	2002	2017
AL03150201-0104-302	Three Mile Branch	R	Alabama	Montgomery	Fish & Wildlife	Pathogens Siltation (habitat alteration)	Urban development	2005	7.65 miles	Lower Wetumpka Road / Its source	2010	2017
AL03150201-0105-300	Mill Creek	R	Alabama	Autauga Elmore	Fish & Wildlife	Siltation (habitat alteration)	Urban development	2005	8.71 miles	Still Creek / Its source	2010	2017
AL03150201-1207-301	Sixmile Creek	R	Alabama	Dallas	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	1.23 miles	Alabama River / Fourmile Creek	2012	2020
AL03150203-0103-200	Coffee Creek	R	Alabama	Dallas Perry	Fish & Wildlife	Nutrients Pathogens Siltation (habitat alteration)	Pasture grazing	2005	7.67 miles	Tayloe Creek / Its source	2010	2017
AL03150203-0805-101	Alabama River (Claiborne Reservoir)	L	Alabama	Clarke Monroe Wilcox	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	844.79 acres	McCalls Creek / Bear Creek	2008	2020
AL03150203-0805-102	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Swimming Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1991 1995-99	358.40 acres	Bear Creek / Frisco Railroad Crossing	1996	2017
AL03150203-0805-103	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1991 1995-99	563.20 acres	Frisco Railroad Crossing / Pursley Creek	1996	2017
AL03150203-0805-104	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1995-99	627.20 acres	Pursley Creek / River Mile 131	2000	2017
AL03150203-0805-105	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Public Water Supply	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1995-99	128.00 acres	River Mile 131 / Beaver Creek	2000	2017
AL03150203-0703-101	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Public Water Supply	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1991	467.20 acres	Beaver Creek / Rockwest Creek	1996	2017
AL03150203-0110-100	Bogue Chitto Creek	R	Alabama	Dallas Perry	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Pasture grazing	2005	60.49 miles	Alabama River / Its source	2010	2017
AL03150204-0405-102	Alabama River	R	Alabama	Clarke Monroe	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	12.35 miles	Pigeon Creek / Claiborne Lock and Dam	2012	2020
AL03150204-0105-100	Alabama River (Claiborne Reservoir)	L	Alabama	Clarke Monroe	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	2438.39 acres	Claiborne Lock and Dam / McCalls Creek	2008	2020
AL03160109-0203-101	Mulberry Fork	R	Black Warrior	Blount Cullman	Fish & Wildlife	Nutrients	Agriculture Industrial Municipal	1972-83 1988 1996	2.52 miles	Marriott Creek / Mill Creek	1998	2016
AL03160109-0203-102	Mulberry Fork	R	Black Warrior	Blount Cullman	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Agriculture Industrial Municipal	1972-83 1988 1996	17.27 miles	Mill Creek / Broglen River	1998	2016
AL03160109-0109-102	Mulberry Fork	R	Black Warrior	Blount Cullman	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1974-83	18.23 miles	Broglen River / Blount County Road 6	1998	2016
AL03160109-0101-150	Riley Maze Creek	R	Black Warrior	Cullman Marshall	Fish & Wildlife	Total Dissolved Solids	Municipal	1998	4.13 miles	Tibb Creek / Its source	2006	2019
AL03160109-0101-600	Tibb Creek	R	Black Warrior	Cullman Marshall	Fish & Wildlife	Total Dissolved Solids	Municipal	1998	5.13 miles	Mulberry Fork / Its source	2006	2019
AL03160109-0403-103	Lost Creek	R	Black Warrior	Walker	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1987	6.53 miles	US Highway 78 north of Cedrum / US Highway 78 at Carbon Hill	1998	2019
AL03160109-0404-500	Black Branch	R	Black Warrior	Walker	Fish & Wildlife	Metals (Aluminum) pH	Surface mining-abandoned	1996-97	4.11 miles	Cane Creek / Its source	1998	2019
AL03160109-0405-104	Lost Creek	R	Black Warrior	Walker	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1987	17.33 miles	Alabama Highway 69 at Oakman / Mill dam at Cedrum	1998	2016
AL03160109-0503-100	Wolf Creek	R	Black Warrior	Walker	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1996	38.40 miles	Lost Creek / Alabama Highway 102	1998	2016
AL03160109-0602-601	Old Town Creek	R	Black Warrior	Walker	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Surface mining-abandoned	2002	2.71 miles	Mulberry Fork / Pinhook Creek	2006	2016
AL03160109-0604-900	Baker Creek	R	Black Warrior	Walker	Fish & Wildlife	Siltation (habitat alteration)	Unknown source	2002	7.01 miles	Mulberry Fork / Its source	2006	2016
AL03160110-0305-201	Clear Creek (Lewis Smith Lake)	L	Black Warrior	Winston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	346.47 acres	Sipsey Fork / Coon Creek	2010	2020
AL03160110-0306-201	Sipsey Fork (Lewis Smith Lake)	L	Black Warrior	Winston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	1321.71 acres	County Road 41 / Brushy Creek	2010	2020

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03160110-0306-901	Butler Branch (Lewis Smith Lake)	L	Black Warrior	Winston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	119.74 acres	embayed portion of Butler Branch	2010	2020
AL03160110-0408-110	Rock Creek (Lewis Smith Lake)	L	Black Warrior	Cullman Winston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	1946.62 acres	Sipsey Fork / Crooked Creek	2010	2020
AL03160110-0505-103	Ryan Creek (Lewis Smith Lake)	L	Black Warrior	Cullman	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	4547.96 acres	Coon Creek / Rock Creek	2010	2020
AL03160111-0413-101	Locust Fork	R	Black Warrior	Jefferson	Public Water Supply Swimming Fish & Wildlife	Nutrients	Industrial Municipal Urban runoff/storm sewers	2005-2011	6.88 miles	Junction of Locust and Mulberry Forks / Jefferson County Hwy 61	2012	2016
AL03160111-0413-112	Locust Fork	R	Black Warrior	Jefferson	Fish & Wildlife	Nutrients	Industrial Municipal Urban runoff/storm sewers	2005-2011	13.06 miles	Jefferson County Hwy 61 / Village Creek	2012	2016
AL03160111-0404-102	Locust Fork	R	Black Warrior	Blount Jefferson	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Agriculture Surface mining-abandoned	1998	14.25 miles	Jefferson County Road 77 / US Highway 31	1998	2016
AL03160111-0308-102	Locust Fork	R	Black Warrior	Blount Jefferson	Public Water Supply Fish & Wildlife	Nutrients Siltation (habitat alteration)	Agriculture Surface mining-abandoned	1998	14.86 miles	US Highway 31 / County road between Hayden and County Line	1998	2016
AL03160111-0305-102	Locust Fork	R	Black Warrior	Blount Jefferson	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Agriculture Surface mining-abandoned	1998	18.15 miles	County road between Hayden and County Line / Little Warrior River	1998	2016
AL03160111-0208-101	Locust Fork	R	Black Warrior	Blount	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining-abandoned	1987 1998	27.18 miles	Little Warrior River / Blount County Road 30	1998	2016
AL03160111-0203-100	Dry Creek	R	Black Warrior	Blount	Fish & Wildlife	Nutrients Organic enrichment (CBOD, NBOD)	Municipal Pasture grazing	1988 1991	12.00 miles	Locust Fork / Its source	1998	2016
AL03160111-0307-400	Black Creek	R	Black Warrior	Jefferson	Fish & Wildlife	pH	Surface mining - abandoned	2012	6.36 miles	Cunningham Creek / Its source	2014	2020
AL03160111-0405-101	Newfound Creek	R	Black Warrior	Jefferson	Fish & Wildlife	Siltation (habitat alteration)	Urban runoff/storm sewers	1986 2002	2.76 miles	Fivemile Creek / Impoundment	1998	2019
AL03160111-0409-100	Village Creek	R	Black Warrior	Jefferson	Fish & Wildlife	Nutrients	Industrial Municipal Urban runoff/storm sewers	2005-2011	17.9 miles	Locust Fork / Bayview Lake dam	2012	2019
AL03160111-0408-102	Village Creek	R	Black Warrior	Jefferson	Limited Warmwater Fishery	Pathogens	Collection system failure Urban runoff/storm sewers	2000 2001 2002 2004	12.60 miles	Second Creek / Woodlawn Bridge	2006	2016
AL03160111-0408-103	Village Creek	R	Black Warrior	Jefferson	Limited Warmwater Fishery	Pathogens	Collection system failure Urban runoff/storm sewers	2000 2001 2002 2004	4.04 miles	Woodlawn Bridge / Its source	2006	2016
AL03160112-0201-102	Big Yellow Creek	R	Black Warrior	Tuscaloosa	Swimming Fish & Wildlife	Metals (Chromium, Lead)	Surface mining-abandoned	1979-85 1988	14.59 miles	Bankhead Lake / Its source	1998	2016
AL03160112-0304-110	Pegues Creek	R	Black Warrior	Tuscaloosa	Fish & Wildlife	Metals (Chromium, Lead) Siltation (habitat alteration)	Surface mining-abandoned	2002	4.23 miles	Black Warrior River / Its source	2006	2016
AL03160112-0305-110	Daniel Creek	R	Black Warrior	Tuscalooosa	Fish & Wildlife	Siltation (habitat alteration) Total dissolved solids	Surface mining - abandoned	2012	10.42 miles	Black Warrior River / Its source	2014	2020
AL03160112-0411-102	North River	R	Black Warrior	Fayette Tuscaloosa	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007	43.48 miles	Lake Tuscaloosa / Ellis Creek	2010	2020
AL03160112-0413-102	North River (Lake Tuscaloosa)	L	Black Warrior	Tuscaloosa	Public Water Supply Swimming	Metals (Mercury)	Atmospheric deposition	2007 2008	3840.14 acres	City of Tuscaloosa water supply reservoir dam / Binion Creek	2010	2020
AL03160112-0411-101	North River (Lake Tuscaloosa)	L	Black Warrior	Tuscaloosa	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	1235.32 acres	Binion Creek / extent of reservoir	2010	2020
AL03160113-0704-100	Cottonwood Creek	R	Black Warrior	Hale Marengo Perry	Fish & Wildlife	Organic Enrichment (CBOD, NBOD) Siltation (habitat alteration) Nutrients	Municipal Pasture grazing	2002	11.42 miles	Big Prairie Creek / Its source	2006	2016
AL03160113-0801-200	Needham Creek	R	Black Warrior	Greene	Fish & Wildlife	Total dissolved solids	Aquaculture	2007 2012	8.96 miles	Dollarhide Creek / Its source	2014	2020
AL03150202-0901-100	Childers Creek	R	Cahaba	Dallas	Fish & Wildlife	Siltation (habitat alteration)	Pasture grazing	2002	18.79 miles	Cahaba River / Its source	2006	2019
AL03130002-0907-100	Moores Creek	R	Chattahoochee	Chambers	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	11.4 miles	Chattahoochee River / Its source	2012	2020
AL03130002-1107-110	Halawakee Creek	R	Chattahoochee	Chambers Lee	Fish & Wildlife	Siltation (habitat alteration)	Land development	2008	16.57 miles	Three miles upstream of County Road 79 / Its source	2012	2020
AL03130003-0101-100	Mill Creek	R	Chattahoochee	Lee Russell	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Urban development	1999 2008	9.93 miles	Chattahoochee River / Its source	2006	2015
AL03130003-0505-101	Uchee Creek	R	Chattahoochee	Russell	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	10.36 miles	Chattahoochee River / County Road 39	2010	2020

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03130003-0605-100	Ihagee Creek	R	Chattahoochee	Russell	Swimming Fish & Wildlife	Siltation (habitat alteration)	Land development Silviculture activities	2005 2008	15.73 miles	Chattahoochee River / Its source	2012	2020
AL03130003-1205-100	Cowikee Creek (Walter F. George Reservoir)	L	Chattahoochee	Barbour	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	1739.13 acres	embayed portion of Cowikee Creek	2010	2020
AL03130003-1307-100	Barbour Creek	R	Chattahoochee	Barbour	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1987	27.23 miles	Chattahoochee River / Its source	1998	2015
AL03130004-0602-500	Cedar Creek	R	Chattahoochee	Henry Houston	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	4.04 miles	Omusee Creek / Its source	2008	2020
AL03130012-0101-410	Cypress Creek	R	Chipola	Houston	Fish & Wildlife	Nutrients Organic enrichment (CBOD, NBOD)	Municipal Urban runoff/storm sewers	1984 1986	8.11 miles	Limestone Creek / Its source	1998	2015
AL03140201-0501-201	Beaver Creek	R	Choctawhatchee	Houston	Fish & Wildlife	Nutrients	Municipal Urban runoff/storm sewers	1977-86	2.09 miles	Newton Creek / Dothan WWTP	1998	2015
AL03140201-0501-201	Beaver Creek	R	Choctawhatchee	Houston	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Municipal Urban runoff/storm sewers	1977-86	2.09 miles	Newton Creek / Dothan WWTP	1998	2015
AL03140201-1004-600	Dowling Branch	R	Choctawhatchee	Geneva	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Agriculture Municipal Urban runoff/storm sewers	1991	2.10 miles	Cox Mill Creek / Its source	1998	2015
AL03140201-0901-100	Harrand Creek	R	Choctawhatchee	Coffee Dale	Fish & Wildlife	Siltation (habitat alteration)	Urban runoff/storm sewers	1999	9.71 miles	Claybank Creek / Its source	2006	2015
AL03140201-0901-200	Indian Camp Creek	R	Choctawhatchee	Coffee	Fish & Wildlife	Siltation (habitat alteration)	Land development Urban runoff/storm sewers	1999	3.98 miles	Harrand Creek / Its source	2004	2015
AL03140201-1203-101	Choctawhatchee River	R	Choctawhatchee	Dale Geneva Houston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	29.07 miles	Pea River / Alabama Highway 12	2010	2020
AL03140201-1003-102	Choctawhatchee River	R	Choctawhatchee	Dale Houston	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	6.45 miles	Alabama Highway 12 / Brooking Mill Creek	2010	2020
AL03140201-0603-100	Choctawhatchee River	R	Choctawhatchee	Dale	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	10.83 miles	Brooking Mill Creek / Its source	2010	2020
AL03140201-1102-500	Blanket Creek	R	Choctawhatchee	Coffee	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Municipal	2008	5.71 miles	Double Bridges Creek / Its source	2010	2020
AL03140202-0906-100	Pea River	R	Choctawhatchee	Barbour Bullock Coffee Dale Geneva Pike	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	157.23 miles	Choctawhatchee River / Its source	2010	2020
AL03140203-0105-100	Choctawhatchee River	R	Choctawhatchee	Geneva	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	4.45 miles	AL-FL state line / Pea River	2010	2020
AL03150106-0803-100	Coosa River (Logan Martin Lake)	L	Coosa	St. Clair Talladega	Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1996	14415.70 acres	Logan Martin Dam / Broken Arrow Creek	1998	*
AL03150106-0603-111	Coosa River (Logan Martin Lake)	L	Coosa	St. Clair Talladega Calhoun	Public Water Supply Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1996	1450.26 acres	Broken Arrow Creek / Trout Creek	1998	*
AL03150106-0603-112	Coosa River (Logan Martin Lake)	L	Coosa	St. Clair Calhoun	Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1996	820.38 acres	Trout Creek / Neely Henry Dam	1998	*
AL03150106-0204-101	Coosa River (Lake Neely Henry)	L	Coosa	Etowah	Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	2001-02	245.39 acres	Big Wills Creek / City of Gadsden water supply intake	2002	*
AL03150106-0204-102	Coosa River (Lake Neely Henry)	L	Coosa	Etowah Cherokee	Public Water Supply Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	2001-02	1897.43 acres	City of Gadsden water supply intake / Weiss Dam powerhouse	2002	*
AL03150106-0602-100	Broken Arrow Creek	R	Coosa	St. Clair	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Pasture grazing	2005	21.37 miles	Coosa River / Its source	2010	2017
AL03150106-0514-100	Choccolocco Creek	R	Coosa	Talladega Calhoun	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007	39.85 miles	Coosa River / UT from Boiling Spring	2010	2020
AL03150106-0514-100	Choccolocco Creek	R	Coosa	Talladega Calhoun	Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1994	39.85 miles	Coosa River / UT from Boiling Spring	1996	*
AL03150106-0507-102	Choccolocco Creek	R	Coosa	Calhoun	Public Water Supply Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007	2.37 miles	UT from Boiling Spring / Hillabee Creek	2010	2020
AL03150106-0507-102	Choccolocco Creek	R	Coosa	Calhoun	Public Water Supply Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1994	2.37 miles	UT from Boiling Spring / Hillabee Creek	1996	*
AL03150106-0806-100	Wolf Creek	R	Coosa	Shelby St. Clair	Fish & Wildlife	Siltation (habitat alteration) Turbidity	Surface mining Urban development	2005	16.70 miles	Kelly Creek / Its source	2010	2017
AL03150107-0106-100	Tallaseehatchee Creek	R	Coosa	Talladega	Fish & Wildlife	Total dissolved solids	Industrial Municipal	2005	17.51 miles	Coosa River / City of Sylacauga's water supply dam	2010	2017

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03150107-0104-100	Shirtee Creek	R	Coosa	Talladega	Fish & Wildlife	Total dissolved solids	Industrial Municipal	2005	4.94 miles	Tallaseehatchee Creek / Its source	2010	2017
AL03150107-0503-110	Coosa River (Lay Lake)	L	Coosa	Talladega Chilton Coosa Shelby	Public Water Supply Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1990-91 1992-97	11806.34 acres	Lay Dam / Southern RR Bridge	1996	*
AL03150107-0301-102	Coosa River (Lay Lake)	L	Coosa	Talladega Shelby	Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1990-91 1992-97	862.40 acres	Southern RR Bridge / River Mile 89	1996	*
AL03150107-0301-102	Coosa River (Lay Lake)	L	Coosa	Talladega Shelby	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	862.40 acres	Southern RR Bridge / River Mile 89	2010	2020
AL03150106-0810-102	Coosa River (Lay Lake)	L	Coosa	Talladega Shelby St. Clair	Public Water Supply Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1990-91 1992-97	698.25 acres	River Mile 89 / Logan Martin Dam	1996	*
AL03150106-0810-102	Coosa River (Lay Lake)	L	Coosa	Talladega Shelby St. Clair	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006 2008	698.25 acres	River Mile 89 / Logan Martin Dam	2010	2020
AL03150107-0801-100	Yellow Leaf Creek	R	Coosa	Chilton	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	2005	31.27 miles	Coosa River / Its source	2010	2017
AL03150107-0304-700	UT to Dry Branch	R	Coosa	Shelby	Fish & Wildlife	Nutrients	Municipal Urban runoff/storm sewers	1991	1.58 miles	Dry Branch / Its source	1996	2017
AL03170008-0402-110	Escatawpa River	R	Escatawpa	Mobile	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	70.66 miles	AL-MS state line / Its source	2002	2020
AL03170008-0502-110	Big Creek (Big Creek Reservoir)	L	Escatawpa	Mobile	Public Water Supply Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	3309.31 acres	Big Creek Reservoir / Collins Creek	2008	2020
AL03170008-0502-600	Boggy Branch	R	Escatawpa	Mobile	Fish & Wildlife	Metals (Lead)	Natural Wet weather discharge	1996-99 2007	4.58 miles	Big Creek Reservoir / Its source	1998	2018
AL03170008-0502-800	Collins Creek	R	Escatawpa	Mobile	Fish & Wildlife	Metals (Arsenic)	Unknown source	2001 2002	5.15 miles	Big Creek / Its source	2006	2018
AL03170009-0201-100	Mississippi Sound	E	Escatawpa	Mobile	Shellfish Harvesting Swimming Fish & Wildlife	Metals (Thallium)	Industrial	2005-07	94.62 square miles	Segment classified for shellfish harvesting	2010	2018
AL03160204-0403-112	Mobile River	R	Mobile	Baldwin Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2000	20.90 miles	Spanish River / Cold Creek	2000	2020
AL03160204-0106-112	Mobile River	R	Mobile	Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2011	2.37 miles	Cold Creek / Barry Steam Plant	2014	2020
AL03160204-0103-100	Mobile River	R	Mobile	Baldwin Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2011	5.72 miles	Tensaw River / Its source	2014	2020
AL03160204-0105-111	Cold Creek	R	Mobile	Mobile	Fish & Wildlife	Metals (Mercury)	Contaminated sediments	1993	4.21 miles	Mobile River / Dam 1 1/2 miles west of US Highway 43	1996	2020
AL03160204-0305-101	Chickasaw Creek	R	Mobile	Mobile	Limited Warmwater Fishery	Metals (Mercury)	Atmospheric deposition	2000	4.43 miles	Mobile River / US Highway 43	2000	2020
AL03160204-0305-102	Chickasaw Creek	R	Mobile	Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2000	6.64 miles	US Highway 43 / Mobile College	2000	2020
AL03160204-0303-100	Chickasaw Creek	R	Mobile	Mobile	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2000	26.82 miles	Mobile College / Its source	2000	2020
AL03160204-0503-102	Bay Minette Creek	R	Mobile	Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2011	18.15 miles	Bay Minette / Its source	2014	2020
AL03160204-0504-300	Toulmins Spring Branch	R	Mobile	Mobile	Fish & Wildlife	Nutrients	Urban runoff/storm sewers	2000-01	3.22 miles	Threemile Creek / Its source	2008	2021
AL03160204-0504-500	UT to Threemile Creek	R	Mobile	Mobile	Fish & Wildlife	Nutrients	Urban runoff/storm sewers	2000-01	1.04 miles	Threemile Creek / Its source	2008	2018
AL03160204-0505-201	Tensaw River	R	Mobile	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	6.51 miles	Mobile Bay / Junction of Tensaw and Apalachee Rivers	2002	2020
AL03160204-0505-202	Tensaw River	R	Mobile	Baldwin	Outstanding Alabama Water Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	21.73 miles	Junction of Tensaw and Apalachee Rivers / Junction of Briar Lake	2002	2020
AL03160204-0505-500	D'Olive Creek	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	4.89 miles	D'Olive Bay / Its source	2008	2018
AL03160204-0505-800	Joes Branch	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	1.57 miles	D'Olive Creek / Its source	2008	2018
AL03160204-0505-900	Tiawasee Creek	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	3.54 miles	D'Olive Creek / Its source	2008	2018
AL03160204-0505-905	UT to Tiawasee Creek	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	1.87 miles	Tiawasee Creek / Its source	2008	2018

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AL03160204-0505-505	UT to D'Olive Creek	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	1.22 miles	D'Olive Creek / Its source	2008	2018
AL03160204-0106-302	Tensaw River	R	Mobile	Baldwin	Outstanding Alabama Water Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	2.93 miles	Junction of Briar Lake / Junction of Tensaw Lake	2002	2020
AL03160204-0106-303	Tensaw River	R	Mobile	Baldwin Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	10.98 miles	Junction of Tensaw Lake / Mobile River	2002	2020
AL03160204-0202-200	Middle River	R	Mobile	Baldwin Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2011	9.72 miles	Tensaw River (RM 20.6) / Tensaw River (RM 37.7)	2014	2020
AL03160204-0202-300	Mifflin Lake	E	Mobile	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2011	.73 square miles	Tensaw River / Its source	2014	2020
AL03160205-0203-110	Magnolia River	R	Mobile	Baldwin	Outstanding Alabama Water Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2011	12.41 miles	Weeks Bay / Its source	2014	2020
AL03160205-0300-501	Mobile Bay	E	Mobile	Baldwin	Swimming Fish & Wildlife	Pathogens	Urban runoff/storm sewers	2008-09	1.08 square miles	1000 feet offshore from Ragged Point to the mouth of Yancey Branch	2010	2016
AL03160205-0102-110	Halls Mill Creek	R	Mobile	Mobile	Fish & Wildlife	Siltation (habitat alteration)	Land development	2006	11.30 miles	Dog River / its source	2012	2018
AL03160205-0105-100	Middle Fork Deer River	R	Mobile	Mobile	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Collection system failure Urban runoff/storm sewers	2003-05	3.51 miles	Mobile Bay / Its source	2006	2018
AL03160205-0104-110	Fowl River	R	Mobile	Mobile	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2000	20.56 miles	Mobile Bay / Its source	2000	2020
AL03160205-0202-210	Polecat Creek	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	7.89 miles	Fish River / Its source	2006	2020
AL03160205-0202-510	Baker Branch	R	Mobile	Baldwin	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Pasture grazing	2001	6.15 miles	Polecat Creek / Its source	2006	2018
AL03160205-0204-112	Fish River	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	1996	30.01 miles	Weeks Bay / Its source	1998	2020
AL03160205-0204-700	Cowpen Creek	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	7.12 miles	Fish River / Its source	2008	2020
AL03160205-0206-101	Bon Secour River	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	9.12 miles	Bon Secour Bay / One mile upstream from first bridge above its mouth	2006	2020
AL03160205-0206-102	Bon Secour River	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	4.38 miles	One mile upstream from first bridge above its mouth / Its source	2006	2020
AL-Gulf-of-Mexico	Gulf of Mexico	E	Mobile	Baldwin Mobile	Shellfish Harvesting Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	1996-97	201.02 square miles	Mississippi / Florida	1998	2020
AL03140103-0102-102	Lightwood Knot Creek (Lake Frank Jackson)	L	Perdido-Escambia	Covington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	956.26 acres	Lake Frank Jackson Dam / extent of reservoir	2010	2020
AL03140103-0102-700	UT to Jackson Lake 3-C	R	Perdido-Escambia	Covington	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Feedlots Pasture grazing	1996-97	1.05 miles	Lake Frank Jackson / Its source	1998	2020
AL03140103-0402-100	Yellow River	R	Perdido-Escambia	Covington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	14.87 miles	AL-FL state line / North Creek	2004	2020
AL03140103-0601-300	Lake Jackson	L	Perdido-Escambia	Covington	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	415.46 acres	Within Florala and north of the Alabama-Florida stste line	2010	2020
AL03140104-0104-100	Blackwater River	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	2.78 miles	AL-FL state line / Its source	2004	2020
AL03140106-0302-101	Brushy Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Industrial Municipal Urban runoff/storm sewers	1999	0.22 miles	AL-FL state line / Boggy Branch	2000	2015
AL03140106-0302-101	Brushy Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Lead)	Industrial Municipal	2004 2005	0.22 miles	AL-FL state line / Boggy Branch	2006	2015
AL03140106-0302-201	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Pathogens Metals (Copper, Lead)	Industrial Municipal	2004	1.54 miles	Brushy Creek / Atmore WWTP	2006	2015
AL03140106-0302-201	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Industrial Municipal	2004	1.54 miles	Brushy Creek / Atmore WWTP	2008	2016
AL03140106-0302-202	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Organic Enrichment (CBOD, NBOD) Metals (Zinc) Chlorides	Industrial	1996 1997	0.22 miles	Atmore WWTP / Masland Carpets WWTP	1998	2015
AL03140106-0302-202	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Industrial	1996 1997	0.22 miles	Atmore WWTP / Masland Carpets WWTP	2008	2016
AL03140106-0302-202	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Ammonia	Industrial Municipal	2004 2005	0.22 miles	Atmore WWTP / Masland Carpets WWTP	1998	2015

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AL03140106-0504-100	Styx River	R	Perdido-Escambia	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	22.72 miles	Hollinger Creek / Its source	2002	2020
AL03140106-0507-100	Styx River	R	Perdido-Escambia	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	18.52 miles	Perdido River / Hollinger Creek	2002	2020
AL03140106-0603-101	Blackwater River	R	Perdido-Escambia	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	3.11 miles	Perdido River / Narrow Gap Creek	2004	2020
AL03140106-0703-100	Perdido River	R	Perdido-Escambia	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	21.93 miles	Perdido Bay / Jacks Branch	2006	2020
AL03140107-0204-400	Arnica Bay	E	Perdido-Escambia	Baldwin	Shellfish Harvesting Swimming Fish & Wildlife	Pathogens	On-site wastewater systems	2010	1.27 square miles	Perdido Bay / Bay la launch	2012	2016
AL03140107-0204-302	Perdido Bay	E	Perdido-Escambia	Baldwin	Shellfish Harvesting Swimming Fish & Wildlife	Pathogens	Collection system failure On-site wastewater systems	2010	1.29 square miles	Suarez Point / Lillian Bridge	2012	2016
AL03140301-0404-111	Conecuh River (Gantt Reservoir)	L	Perdido-Escambia	Covington	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	1817.43 acres	Gantt Dam / extent of reservoir	2010	2020
AL03140301-0405-101	Conecuh River (Point A Reservoir)	L	Perdido-Escambia	Covington	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	610.56 acres	Point A Dam / extent of reservoir	2010	2020
AL03140302-0506-101	Patsaliga Creek (Point A Reservoir)	L	Perdido-Escambia	Covington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	154.43 acres	Conecuh River / Buck Creek	2010	2020
AL03140303-0201-101	Rocky Creek	R	Perdido-Escambia	Butler	Fish & Wildlife	Pathogens	Unknown source	2008	9.23 miles	Persimmon Creek / County Road north of Chapman	1998	2015
AL03140303-0704-100	Sepulga River	R	Perdido-Escambia	Conecuh	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007	14.48 miles	Conecuh River / Robinson Mill Creek	2010	2020
AL03140304-0506-100	Conecuh River	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	12.70 miles	AL-FL state line / Mantle Branch	2004	2020
AL03140304-0404-101	Murder Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2012	8.45 miles	Conecuh River / Cedar Creek	2014	2020
AL03140304-0305-101	Burnt Corn Creek	R	Perdido-Escambia	Escambia	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	5.03 miles	Murder Creek / Sevenmile Creek	2010	2020
AL03140304-0605-100	Little Escambia Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	12.21 miles	AL-FL state line / Wild Fork Creek	2004	2020
AL03140305-0302-100	Big Escambia Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	17.03 miles	AL-FL state line / Big Spring Creek	2004	2020
AL03150108-0905-103	Little Tallapoosa River	R	Tallapoosa	Cleburne Randolph	Fish & Wildlife	Pathogens	Pasture grazing Sources outside state	2005-2009	30.78 miles	Wolf Creek / AL-GA state line	2010	2017
AL03150108-0905-400	Wolf Creek	R	Tallapoosa	Randolph	Fish & Wildlife	pH	Agriculture	2012	5.53 miles	Tombigbee River / AL-MS state line	2014	2020
AL03150109-0803-301	Sugar Creek (Lake Martin)	L	Tallapoosa	Tallapoosa	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	58.93 acres	embayed portion of Sugar Creek	2012	2020
AL03150110-0402-101	Channahatchee Creek (Yates Lake)	L	Tallapoosa	Elmore	Public Water Supply Swimming Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Nonpoint source runoff	2005 2010	62.63 acres	embayed portion of Channahatchee Creek	2012	2017
AL03150110-0202-300	Moores Mill Creek	R	Tallapoosa	Lee	Swimming Fish & Wildlife	Siltation (habitat alteration)	Land development Urban runoff/storm sewers	1998	10.51 miles	Chewacla Creek / Its source	2000	2017
AL03150110-0406-102	Tallapoosa River (Thurlow Reservoir)	L	Tallapoosa	Elmore Tallapoosa	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	538.60 acres	Thurlow dam / Yates dam	2012	2020
AL03150110-0406-200	Mill Creek	R	Tallapoosa	Macon Tallapoosa	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Pasture grazing	2005	9.16 miles	Tallapoosa River / Its source	2010	2017
AL03150110-0504-101	Calebee Creek	R	Tallapoosa	Macon	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	10.26 miles	Tallapoosa River / Macon County Road 9	1998	2017
AL03150110-0604-100	Cubahatchee Creek	R	Tallapoosa	Macon	Swimming Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	22.07 miles	Tallapoosa River / Coon Hop Creek	1998	2017
AL03150110-0603-102	Cubahatchee Creek	R	Tallapoosa	Bullock Macon	Swimming Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	22.37 miles	Coon Hop Creek / Its source	1998	2017
AL03150110-0804-101	Line Creek	R	Tallapoosa	Macon Montgomery	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	10.29 miles	Tallapoosa River / Johnsons Creek	1998	2017
AL03150110-0804-102	Line Creek	R	Tallapoosa	Macon Montgomery	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	5.51 miles	Johnsons Creek / Panther Creek	1998	2017
AL03150110-0905-112	Tallapoosa River	R	Tallapoosa	Elmore Montgomery	Public Water Supply Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	10.07 miles	US Highway 231 / Jenkins Creek	2012	2020
AL03150110-0904-300	Jenkins Creek	R	Tallapoosa	Montgomery	Fish & Wildlife	Siltation (habitat alteration)	Urban development	2005	13.48 miles	Tallapoosa River / Its source	2010	2017
AL06030001-0204-101	Widows Creek	R	Tennessee	Jackson	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009 2010	4.98 miles	Tennesse River / Alabama Highway 277	2012	2020

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AL06030001-0205-102	Tennessee River (Guntersville Lake)	L	Tennessee	Jackson	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	2708.77 acres	Pump Spring Branch / AL-TN state line	2012	2020
AL06030001-0306-100	Little Coon Creek	R	Tennessee	Jackson	Fish & Wildlife	Siltation (habitat alteration)	Non-irrigated crop production Pasture grazing	2009	16.30 miles	Coon Creek / AL-TN state line	2012	2016
AL06030001-0403-801	Warren Smith Creek	R	Tennessee	Jackson	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1986 1987	3.44 miles	Dry Creek / Ross Branch	1998	2016
AL06030001-0202-500	Higdon Creek	R	Tennessee	DeKalb Jackson	Fish & Wildlife	Siltation (habitat alteration)	Pasture grazing Silviculture activities	2009	4.16 miles	Miller Creek / AL-GA state line	2012	2016
AL06030001-0904-101	Browns Creek (Guntersville Lake)	L	Tennessee	Marshall	Public Water Supply Swimming Fish & Wildlife	Nutrients	Agriculture	2009	5176.97 acres	embayed portion of Browns Creek	2012	2016
AL06030001-0904-102	Browns Creek	R	Tennessee	Marshall	Fish & Wildlife	Nutrients Total dissolved solids	Agriculture Mining	2009	11.86 miles	Guntersville Lake / Its source	2012	2016
AL06030002-0106-101	Guess Creek	R	Tennessee	Jackson	Fish & Wildlife	Organic enrichment (CBOD, NBOD) Unknown toxicity	Pasture grazing Unknown source	1997	11.08 miles	Paint Rock River / Bee Branch	1998	2016
AL06030002-0305-100	Beaverdam Creek	R	Tennessee	Madison	Fish & Wildlife	Siltation (habitat alteration)	Land development Non-irrigated crop production	1994-95	22.14 miles	Brier Fork / Its source	1998	2016
AL06030002-0306-110	Brier Fork	R	Tennessee	Madison	Fish & Wildlife	Siltation (habitat alteration)	Land development Non-irrigated crop production	1994-95	21.89 miles	Flint River / AL-TN state line	1998	2016
AL06030002-0403-112	Flint River	R	Tennessee	Madison	Fish & Wildlife	Turbidity	Agriculture Land development	1999-2004	15.32 miles	Alabama Highway 72 / Mountain Fork	2006	2016
AL06030002-0503-102	Huntsville Spring Branch	R	Tennessee	Madison	Fish & Wildlife	Metals (Arsenic, Mercury)	Urban runoff/storm sewers	1994-95	1.98 miles	Johnson Road (Huntsville Field) / Broglan Branch	2006	2016
AL06030002-0601-300	Hughes Creek	R	Tennessee	Marshall Morgan	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1995	2.87 miles	Cotaco Creek / Its source	1998	2016
AL06030002-0603-600	Mill Pond Creek	R	Tennessee	Marshall	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1994-95	1.29 miles	Hog Jaw Creek / Its source	1998	2016
AL06030002-0602-102	West Fork Cotaco Creek	R	Tennessee	Morgan	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1997	8.12 miles	Alabama Highway 67 / Frost Creek	1998	2016
AL06030002-0602-200	Mud Creek	R	Tennessee	Morgan	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Agriculture	2004 2005	3.42 miles	West Fork Cotaco Creek / Its source	2006	2016
AL06030002-0602-800	Widner Creek	R	Tennessee	Cullman Morgan	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Pasture grazing	2009	6.79 miles	Mud Creek / Its source	2012	2016
AL06030002-0602-900	Fall Creek	R	Tennessee	Cullman Morgan	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Pasture grazing	2009	3.62 miles	Mud Creek / Its source	2012	2016
AL06030002-0902-100	Tennessee River (Wheeler Lake)	L	Tennessee	Madison Marshall	Swimming Fish & Wildlife	Nutrients	Agriculture	2010-2011	1345.77 acres	Flint River / Guntersville dam	2014	2020
AL06030002-0904-100	Tennessee River (Wheeler Lake)	L	Tennessee	Madison Marshall Morgan	Public Water Supply Fish & Wildlife	Nutrients	Agriculture	2010-2011	3531.35 acres	Indian Creek / Flint River	2014	2020
AL06030002-0906-102	Tennessee River (Wheeler Lake)	L	Tennessee	Madison Marshall	Public Water Supply Swimming Fish & Wildlife	Nutrients	Agriculture	2010-2011	334.49 acres	Cotaco Creek / Indian Creek	2014	2020
AL06030002-1102-102	Tennessee River (Wheeler Lake)	L	Tennessee	Limestone Morgan	Public Water Supply Swimming Fish & Wildlife	Nutrients	Agriculture	2010-2011	2587.33 acres	US Highway 31 / Flint Creek	2014	2020
AL06030002-1102-103	Tennessee River (Wheeler Lake)	L	Tennessee	Limestone Madison Morgan	Swimming Fish & Wildlife	Nutrients	Agriculture	2010-2011	7385.35 acres	Flint Creek / Cotaco Creek	2014	2020
AL06030002-1107-102	Tennessee River (Wheeler Lake)	L	Tennessee	Lawrence Limestone Morgan	Swimming Fish & Wildlife	Nutrients	Agriculture	2010-2011	20633.11 acres	five miles upstream of Elk River / US Highway 31	2014	2020
AL06030002-1205-100	Tennessee River (Wheeler Lake)	L	Tennessee	Lawrence Limestone Morgan	Public Water Supply Swimming Fish & Wildlife	Nutrients	Agriculture	2010-2011	15168.18 acres	Wheeler dam / five miles upstream of Elk River	2014	2020
AL06030002-1107-102	Tennessee River (Wheeler Lake)	L	Tennessee	Lawrence Limestone Morgan	Swimming Fish & Wildlife	PFOS	Industrial	2008-2012	20633.11 acres	five miles upstream of Elk River / US Highway 31	2014	2020

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AL06030002-0906-600	Limestone Creek (Wheeler Lake)	L	Tennessee	Limestone	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	1543.22 acres	embayed portion of Limestone Creek	2012	2020
AL06030002-1014-103	Flint Creek	R	Tennessee	Morgan	Public Water Supply Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	9.10 miles	L&N Railroad / Alabama Highway 36	2012	2020
AL06030002-1101-101	Swan Creek	R	Tennessee	Limestone	Fish & Wildlife	Nutrients	Agriculture Municipal Urban runoff/storm sewers	2006	8.97 miles	Tennessee River / Alabama Highway 24	2008	2016
AL06030004-0404-102	Anderson Creek	R	Tennessee	Lauderdale	Fish & Wildlife	Siltation (habitat alteration)	Non-irrigated crop production Pasture grazing	1994-95	9.31 miles	Snake Road bridge / Its source	1998	2016
AL06030004-0405-101	Elk River (Wheeler Lake)	L	Tennessee	Lauderdale Limestone	Swimming Fish & Wildlife	pH	Non-irrigated crop production Pasture grazing	1990-91	1569.21 acres	Tennessee River / Anderson Creek	1996	2018
AL06030004-0405-101	Elk River (Wheeler Lake)	L	Tennessee	Lauderdale Limestone	Swimming Fish & Wildlife	Nutrients	Non-irrigated crop production Pasture grazing	1999-02	1569.21 acres	Tennessee River / Anderson Creek	2004	2018
AL06030004-0403-800	Sulphur Creek	R	Tennessee	Limestone	Fish & Wildlife	Nutrients	Agriculture Industrial	2004-06	8.34 miles	Elk River / Its source	2008	2018
AL06030005-0105-100	Big Nance Creek	R	Tennessee	Lawrence	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	27.31 miles	Tennessee River / its source	2012	2020
AL06030005-0801-201	McKiernan Creek (Wilson Lake)	L	Tennessee	Colbert	Public Water Supply Swimming Fish & Wildlife	Nutrients Organic enrichment (CBOD, NBOD) Siltation (habitat alteration)	Agriculture	1988	212.45 acres	embayed portion of McKiernan Creek	1998	2015
AL06030005-0802-100	Pond Creek	R	Tennessee	Colbert	Agricultural & Industrial	Organic enrichment (CBOD, NBOD)	Non-irrigated crop production Urban runoff/storm sewers	1991	12.43 miles	Tennessee River / Its source	1996	2015
AL06030005-0802-100	Pond Creek	R	Tennessee	Colbert	Agricultural & Industrial	Metals (Arsenic, Cyanide, Mercury)	Non-irrigated crop production Urban runoff/storm sewers Natural	1991	12.43 miles	Tennessee River / Its source	2006	2016
AL06030005-0803-400	Sweetwater Creek	R	Tennessee	Lauderdale	Fish & Wildlife	Nutrients	Urban runoff/storm sewers	2009	4.41 miles	Tennessee River (Florence Canal) / Its source	2012	2016
AL06030005-0808-103	Tennessee River (Pickwick Lake)	L	Tennessee	Colbert Lauderdale	Fish & Wildlife	Nutrients	Agriculture	2010-2011	2424.33 acres	lower end of Seven Mile Island / Sheffield Water Intake	2014	2020
AL06030005-0808-104	Tennessee River (Pickwick Lake)	L	Tennessee	Colbert Lauderdale	Public Water Supply Fish & Wildlife	Nutrients	Agriculture	2010-2011	1170.03 acres	Sheffield Water Intake / Wilson Dam	2014	2020
AL06030005-1203-100	Tennessee River (Pickwick Lake)	L	Tennessee	Colbert Lauderdale	Public Water Supply Swimming Fish & Wildlife	Nutrients	Agriculture	2010-2011	25902.67 acres	AL-TN state line / lower end of Seven Mile Island	2014	2020
AL06030006-0102-700	Little Dice Branch	R	Tennessee	Franklin	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1982	3.83 miles	Bear Creek / Its source	1998	2016
AL06030006-0104-101	Bear Creek (Bear Creek Reservoir)	L	Tennessee	Franklin	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	653.54 acres	Bear Creek Reservoir Dam / Alabama Highway 187	2006	2020
AL06030006-0104-102	Bear Creek	R	Tennessee	Franklin Marion	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2012	22.31 miles	Alabama Highway 187 / Mill Creek	2014	2020
AL06030006-0103-104	Bear Creek (Upper Bear Creek Reservoir)	L	Tennessee	Franklin Marion Winston	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	1462.58 acres	Upper Bear Creek Dam / Pretty Branch	2008	2020
AL06030006-0103-104	Bear Creek (Upper Bear Creek Reservoir)	L	Tennessee	Franklin Marion Winston	Public Water Supply Swimming Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Agriculture	2003-2009	1462.58 acres	Upper Bear Creek Dam / Pretty Branch	2010	2016
AL06030006-0203-101	Cedar Creek (Cedar Creek Lake)	L	Tennessee	Franklin	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	4063.07 acres	Cedar Creek Lake dam / extent of reservoir	2012	2020
AL06030006-0205-111	Little Bear Creek (Little Bear Creek Reservoir)	L	Tennessee	Franklin	Public Water Supply Swimming Fish & Wildlife	Nutrients	Unknown source	1994-2005	1435.05 acres	Little Bear Creek Dam / Scott Branch	2006	2016
AL06030006-0205-111	Little Bear Creek (Little Bear Creek Reservoir)	L	Tennessee	Franklin	Public Water Supply Swimming	Metals (Mercury)	Atmospheric deposition	2009	1435.05 acres	Little Bear Creek Dam / Scott Branch	2012	2020
AL03160106-0504-100	Bogue Chitto	R	Tombigbee (upper)	Pickens	Fish & Wildlife	Nutrients	Agriculture	2008-2013	5.42 miles	Tombigbee River / AL-MS state line	2014	2020
AL03160106-0702-101	Factory Creek	R	Tombigbee (upper)	Sumter	Fish & Wildlife	Organic Enrichment (CBOD, NBOD) Nutrients	Agriculture	2001	1.86 miles	Tombigbee River / end of embayment	2004	2018
AL03160107-0306-101	Sipsey River (Gainesville Reservoir)	L	Tombigbee (upper)	Greene Pickens	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	554.29 acres	Tombigbee River / extent of reservoir	2010	2020
AL03160201-0401-103	Tombigbee River (Coffeeville Reservoir)	L	Tombigbee (lower)	Marengo Sumter	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	668.76 acres	Sucarnoochee River / Demopolis Lock and Dam	2012	2020

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03160203-1103-101	Tombigbee River	R	Tombigbee (lower)	Baldwin Clarke Mobile Washington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	11.89 miles	Mobile River / upper end of Bilbo Island	2012	2020
AL03160203-1103-102	Tombigbee River	R	Tombigbee (lower)	Clarke Washington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition Contaminated sediments	2001-02 2009	3.75 miles	Upper end of Bilbo Island / Olin Basin canal	2004	2020
AL03160203-1103-700	Bilbo Creek	R	Tombigbee (lower)	Washington	Swimming Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Unknown source	2001-02	30.74 miles	Tombigbee River / Its source	2004	2018
AL03160203-1103-700	Bilbo Creek	R	Tombigbee (lower)	Washington	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	30.74 miles	Tombigbee River / Its source	2008	2020
AL03160203-1103-800	Olin Basin	L	Tombigbee (lower)	Washington	Fish & Wildlife	Pesticides (DDT)	Contaminated sediments	1993	85.73 acres	All of Olin Basin	1996	*
AL03160203-1103-800	Olin Basin	L	Tombigbee (lower)	Washington	Fish & Wildlife	Metals (Mercury)	Contaminated sediments	1993	85.73 acres	All of Olin Basin	1996	2020

* TMDL development for this pollutant is to be determined based upon ongoing RCRA/CERCLA program activities.

Appendix E

2014 Summary of Alabama's Active Trend Stations (Ambient Monitoring)

Ambient Trend Stations

Currently, there are 105 stations in ADEM's ambient trend station network. Three new trend stations (CHTH-1, CNRC-2, and SF-6) have been included since the 2012 report, and one (FM-1) was removed. Sampling frequency occurs three times a year during the months of June, August, and October or May, July, and September. Selected sites are sampled more frequently.

Ambient Trend Chart (Pages 7-13)

The Ambient Trend Chart includes information about each trend station, including the Station ID, Waterbody, River Basin, County, Latitude and Longitude, Sample Protocol (wadeable or non-wadeable), and Use Classification. Stations are listed based on the river basin in which they are located.

Trend Station Network Map (Page 14)

The Trend Station Network map displays the location of each individual trend station while also showing waterbodies throughout the state and the boundary of each river basin.

River Basin Maps (Pages 15-27)

Included in this report are individual river basin maps. These maps show the name and location of each trend station. Also, they include the waterbodies contained in each river basin.

Ambient Data Summaries (Pages 28-48) and Trend Graphs (Pages 49-363)

The data summaries are based on nine parameters for each station. Parameters for each station include Temperature (˚C), pH (su), Dissolved Oxygen (mg/L), Specific Conductance (µmhos), Turbidity (NTU), Total Suspended Solids (mg/L), Nitrate + Nitrite Nitrogen (mg/L), Total Nitrogen (mg/L), and Total Phosphorus (mg/L). The time frame varies for each trend station, but each dataset contains the entire life of that station. Older stations include data from 1978, and most stations include data through 2013. The statistics for each trend station include the number of samples (N), the minimum (Min) and maximum (Max) values, the median (Med), the average (Avg), and the standard deviation (SD).

Each of the nine parameters is also represented in the trend graphs. For those nine parameters, each data point represents the yearly median. The initial graph for each station displays temperature, pH, dissolved oxygen, and specific conductance. It is then followed by individual graphs which display the remaining five parameters.

River Basins

Alabama River Basin

Drainage Area	6,012 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Coosa River, Tallapoosa River, Cahaba River
Physiography	East Gulf Coast Plain
Major Population Area	Montgomery
Ambient Monitoring Stations	CATM-3A, MULD-1, WDFA-2A

Black Warrior River Basin

Drainage Area	6,274 square miles
Major Land Uses	Forest, agriculture, urban, open land
Major Tributaries	Mulberry Fork, Locust Fork, Sipsey Fork
Physiography	Cumberland Plateau, Alabama Valley and Ridge, East Gulf Coastal Plain
Major Population Area	Metropolitan Birmingham, Tuscaloosa
Ambient Monitoring Stations	FM-2, FMCJ-1B, H-1, LFKJ-6, LOSW-7, MBFB-1, NRRT-1, SF-2, SF-6, VA-1, VALJ-8, VC-5, VI-3, VLGJ-5

Cahaba River Basin

Drainage Area	1,822 square miles
Major Land Uses	Forest, agriculture, urban
Major Tributaries	Little Cahaba River, Buck Creek, Shades Creek, Shoal Creek
Physiography	Alabama Valley and Ridge, East Gulf Coastal Plain

Major Population Area	Metropolitan Birmingham
Ambient Monitoring Stations	B-1, C-1, C-2, C-3, CABB-1, CABJ-8, CAHS-1, LC-1, SH-1A

Chattahoochee River Basin

Drainage Area	2,571 square miles
Major Land Uses	Forest, agriculture
Major Tributaries	Uchee Creek, Cowikee Creek, Abbie Creek, Omussee Creek
Physiography	Southern Piedmont, East Gulf Coastal Plain
Major Population Area	Opelika, Phenix City
Ambient Monitoring Stations	CHTH-1, SFCB-1

Choctawhatchee River Basin

Drainage Area	3,121 square miles
Major Land Uses	Forest, agriculture, urban, open land
Major Tributaries	Pea River
Physiography	East Gulf Coastal Plain
Major Population Area	Dothan
Ambient Monitoring Stations	CHO-9, PEAG-2

Coosa River Basin

Drainage Area	5,394 square miles
Major Land Uses	Forest, agriculture, open land, urban

Major Tributaries	Chattooga River, Terapin Creek, Big Wills Creek, Choccolocco Creek
Physiography	Alabama Valley and Ridge, East Gulf Coastal Plain
Major Population Area	Gadsden, Anniston
Ambient Monitoring Stations	BWCE-1, CHAC-1, CHOC-10, CHOT-1, CO-12, COSE-1, HATC-1, SHRT-1, TERC-1, TH-1, WEIC-12

Escatawpa River Basin

Drainage Area	1,010 square miles
Major Land Uses	Forest, agriculture
Major Tributaries	Big Creek
Physiography	East Gulf Coastal Plain
Major Population Area	Portion of Citronelle
Ambient Monitoring Stations	BLB-1, BLBM-1, E-1, MB-1A

Lower Tombigbee River Basin

Drainage Area	4,041 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Sucarnoochee River, Okatuppa Creek, Bassetts Creek
Physiography	East Gulf Coastal Plain
Major Population Area	Demopolis, Jackson
Ambient Monitoring Stations	LT-12, SUCS-1

Mobile River Basin

Drainage Area	1,840 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Chickasaw Creek, Bayou Sara, Cedar Creek
Physiography	East Gulf Coastal Plain
Major Population Area	Mobile
Ambient Monitoring Stations	BS-1, CHANNEL-1A, CHANNEL-2, CKSM-3, CS-1, CS-2, DGRM-1, DR-1, FI-1, FR-1, MB-2A, MB-3A, MO-1A- MO-2, MOBM-1, TC-1, TENB-2, TM-1, TMCM-3, WB-1

Perdido-Escambia River Basin

Drainage Area	5,332 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Yellow River, Blackwater River, Conecuh River
Physiography	East Gulf Coastal Plain
Major Population Area	Andalusia, Greenville
Ambient Monitoring Stations	BEC-1, BKRE-1, CNR-1A, CNRC-2, CONE-2, IC-1A, PALC-2, PDBB-0, PDBB-5, SPLC-3, STXB-3, WO-1A, YERC-3

Tallapoosa River Basin

Drainage Area	4,037 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Little Tallapoosa River, Hillabee Creek, Sougahatchee Creek, Uphapee Creek
Physiography	Southern Piedmont, East Gulf Coastal Plain

Major Population Area	Auburn, Opelika
Ambient Monitoring Stations	HILT-2, LTRR-1, PPLL-2, SOGL-1, TA-1, TA-2, TARE-1, UPHM-3

Tennessee River Basin

Drainage Area	6,821 square miles
Major Land Uses	Agriculture, forest, open land, urban
Major Tributaries	Bear Creek, Town Creek, Elk River, Flint River, Paint Rock River
Physiography	East Gulf Coastal Plain, Highland Rim, Cumberland Plateau
Major Population Area	Huntsville, Decatur, Florence
Ambient Monitoring Stations	BERM-2, BGNL-1, FLIM-2A, FTCM-6, INDM-249, LIML-300, PRRJ-1, SCRL-2, SSCD-1A, TENR-417, TN-4A

Upper Tombigbee River Basin

Drainage Area	3,652 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Buttahatchee River, Sipsey River
Physiography	East Gulf Coastal Plain, Cumberland Plateau
Major Population Area	Fayette, Hamilton
Ambient Monitoring Stations	BCTP-1, BDKS-48, BUTL-2A, LUXL-1, NXBS-50, SPYG-3

Ambient Trend Stations

Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Class
CATM-3A	Catoma Creek	Alabama R	Montgomery	32.30736	-86.29941	WADEABLE-BIOASSESSMENTS	F&W
MULD-1	Mulberry Creek	Alabama R	Dallas	32.58278	-86.90361	WADEABLE-BIOASSESSMENTS	S/F&W
WDFA-2A	Woodruff Reservoir	Alabama R	Elmore	32.41142	-86.40836	NONWADEABLE BOAT	F&W
FM-2	Five Mile Creek	Black Warrior R	Jefferson	33.611111	-86.885556	WADEABLE-BIOASSESSMENTS	F&W
FMCJ-1B	Five Mile Creek	Black Warrior R	Jefferson	33.60191	-86.75527	WADEABLE-BIOASSESSMENTS	F&W
H-1	Hurricane Creek	Black Warrior R	Tuscaloosa	33.229826	-87.46181	WADEABLE-BIOASSESSMENTS	F&W
LFKJ-6	Locust Fork	Black Warrior R	Jefferson	33.587257	-87.109325	NONWADEABLE BOAT	F&W
LOSW-7	Lost Creek	Black Warrior R	Walker	33.742472	-87.326722	WADEABLE-BIOASSESSMENTS	F&W
MBFB-1	Mulberry Fork	Black Warrior R	Blount	33.872403	-86.923778	WADEABLE-BIOASSESSMENTS	F&W
NRRT-1	North River	Black Warrior R	Tuscaloosa	33.4798	-87.596806	WADEABLE-BIOASSESSMENTS	F&W
SF-2	Sipsey Fork	Black Warrior R	Winston	34.218096	-87.368906	WADEABLE-BIOASSESSMENTS	F&W
SF-6	Sipsey Fork	Black Warrior R	Cullman	33.908644	-87.082258	NONWADEABLE GRAB-SHALLOW	PWS/F&W
VA-1	Valley Creek	Black Warrior R	Jefferson	33.38775	-87.05874	WADEABLE-BIOASSESSMENTS	LWF
VALJ-8	Valley Creek	Black Warrior R	Jefferson	33.44722	-87.12222	WADEABLE-BIOASSESSMENTS	F&W

Appendix E

Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Class
VC-5	Valley Creek	Black Warrior R	Jefferson	33.420027	-86.963056	WADEABLE-BIOASSESSMENTS	LWF
VI-3	Village Creek	Black Warrior R	Jefferson	33.547974	-86.925667	WADEABLE-BIOASSESSMENTS	LWF
VLGJ-5	Village Creek	Black Warrior R	Jefferson	33.627286	-87.053335	WADEABLE-BIOASSESSMENTS	F&W
B-1	Buck Creek	Cahaba R	Shelby	33.296944	-86.842639	WADEABLE-BIOASSESSMENTS	F&W
C-1	Cahaba River	Cahaba R	St Clair	33.60503	-86.54924	WADEABLE-BIOASSESSMENTS	F&W
C-2	Cahaba River	Cahaba R	Shelby	33.41546	-86.74002	WADEABLE-BIOASSESSMENTS	F&W
C-3	Cahaba River	Cahaba R	Shelby	33.284	-86.88193	WADEABLE-BIOASSESSMENTS	OAW/F&W
CABB-1	Cahaba River	Cahaba R	Bibb	32.94456	-87.139827	WADEABLE-BIOASSESSMENTS	OAW/S
CABJ-8	Cahaba River	Cahaba R	Jefferson	33.62283	-86.60007	WADEABLE-BIOASSESSMENTS	OAW/F&W
CAHS-1	Cahaba River	Cahaba R	Shelby	33.3635	-86.8132	WADEABLE-BIOASSESSMENTS	F&W
LC-1	Little Cahaba River	Cahaba R	Jefferson	33.52444	-86.575277	WADEABLE-BIOASSESSMENTS	F&W
SH-1A	Shades Creek	Cahaba R	Jefferson	33.355278	-86.890556	WADEABLE-BIOASSESSMENTS	F&W
CHTH-1	Chattahoochee River	Chattahoochee R	Houston	31.038392	-85.008617	NONWADEABLE BOAT	F&W
SFCB-1	South Fork of Cowikee Creek	Chattahoochee R	Barbour	32.0175	-85.29583	WADEABLE-BIOASSESSMENTS	S/F&W
CHO-9	Choctawhatchee River	Choctawhatchee R	Geneva	31.15917	-85.78472	NONWADEABLE GRAB-SHALLOW	F&W
PEAG-2	Pea River	Choctawhatchee R	Geneva	31.112002	-86.09937	NONWADEABLE GRAB-SHALLOW	F&W

Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Class
BWCE-1	Big Wills Creek	Coosa R	Etowah	34.09805	-86.03809	WADEABLE-BIOASSESSMENTS	F&W
CHAC-1	Chattooga River	Coosa R	Cherokee	34.290278	-85.509167	NONWADEABLE GRAB-SHALLOW	F&W
CHOC-10	Choccolocco Creek	Coosa R	Calhoun	33.606111	-85.790111	WADEABLE-BIOASSESSMENTS	PWS/F&W
CHOT-1	Choccolocco Creek	Coosa R	Talladega	33.54818	-86.0966	NONWADEABLE GRAB-SHALLOW	F&W
CO-12	Little River	Coosa R	Cherokee	34.28186	-85.67244	WADEABLE-BIOASSESSMENTS	PWS/S/F&W
COSE-1	Coosa River	Coosa R	Elmore	32.61396	-86.25498	NONWADEABLE BOAT	F&W
HATC-1	Hatchet Creek	Coosa R	Coosa	32.91821	-86.26938	WADEABLE-BIOASSESSMENTS	OAW/S/F&W
SHRT-1	Shirtee Creek	Coosa R	Talladega	33.21202	-86.27324	WADEABLE-BIOASSESSMENTS	F&W
TERC-1	Terrapin Creek	Coosa R	Cherokee	34.06294	-85.61227	NONWADEABLE GRAB-SHALLOW	F&W
TH-1	Tallasseehatchee Creek	Coosa R	Talladega	33.255339	-86.259666	WADEABLE-BIOASSESSMENTS	F&W
WEIC-12	Coosa River	Coosa R	Cherokee	34.202441	-85.452402	NONWADEABLE BOAT	S/F&W
BLB-1	Bayou La Batre	Escatawpa R	Mobile	30.4059	-88.2481	NONWADEABLE BOAT	F&W
BLBM-1	Bayou La Batre	Escatawpa R	Mobile	30.3867	-88.27	NONWADEABLE BOAT	F&W
E-1	Escatawpa River	Escatawpa R	Mobile	30.862741	-88.417868	NONWADEABLE GRAB-SHALLOW	S/F&W
MB-1A	Intracoastal Waterway	Escatawpa R	Mobile	30.27308	-88.17317	NONWADEABLE BOAT	SH/F&W

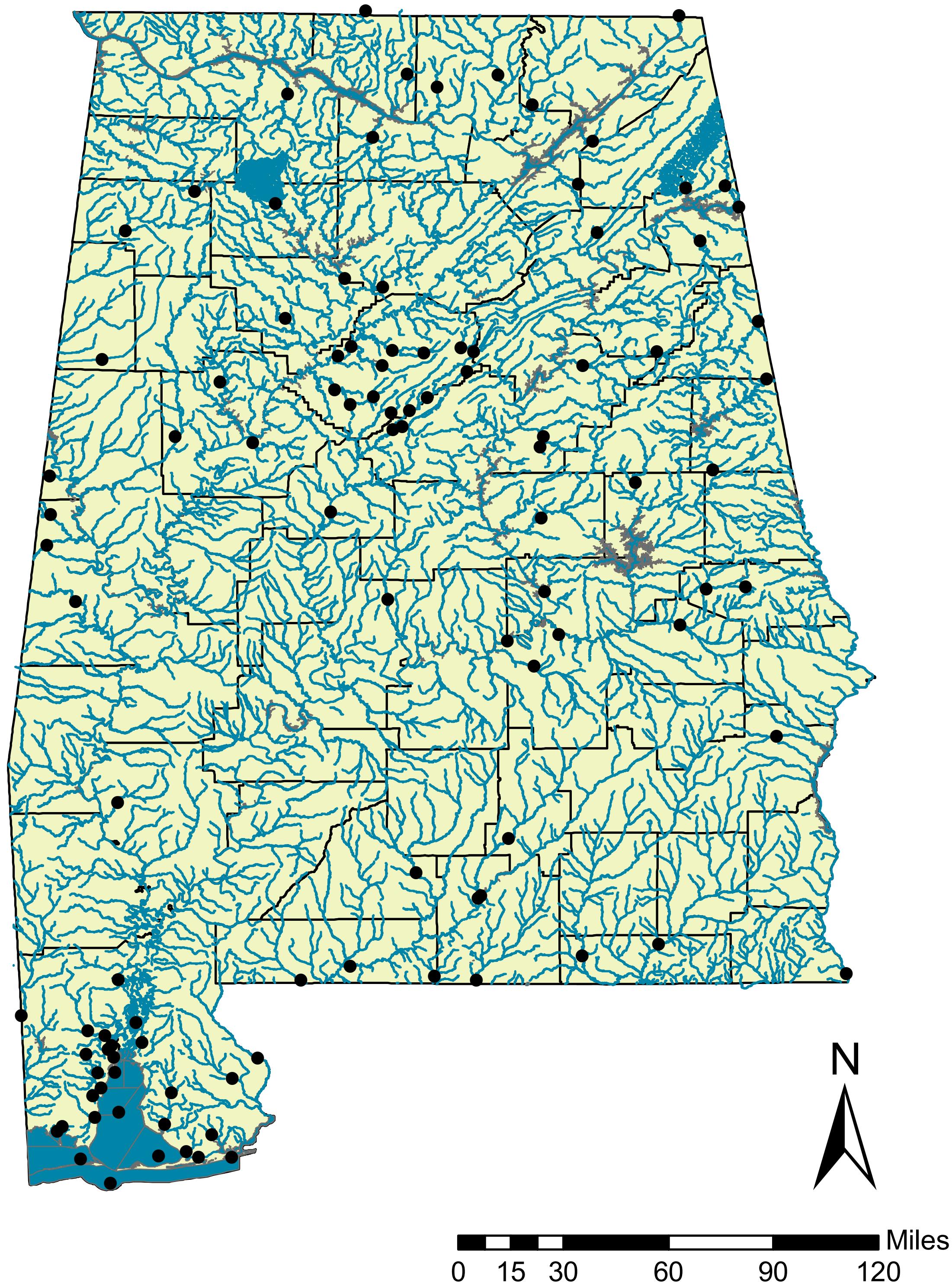
Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Class
LT-12	Satilpa Creek	Lower Tombigbee R	Clarke	31.74444	-88.02133	WADEABLE-BIOASSESSMENTS	S/F&W
SUCS-1	Sucarnoochee River	Lower Tombigbee R	Sumter	32.5739	-88.1942	WADEABLE-BIOASSESSMENTS	PWS/S/F&W
BS-1	Bon Secour River	Mobile R	Baldwin	30.30221	-87.73575	NONWADEABLE BOAT	S/F&W
CHANNEL-1A	Mobile Ship Channel	Mobile R	Mobile	30.62973	-88.03263	NONWADEABLE BOAT	F&W
CHANNEL-2	Mobile Ship Channel	Mobile R	Mobile	30.46437	-88.01577	NONWADEABLE BOAT	S/F&W
CKSM-3	Chickasaw Creek	Mobile R	Mobile	30.80297	-88.14334	WADEABLE-BIOASSESSMENTS	S/F&W
CS-1	Chickasaw Creek	Mobile R	Mobile	30.78224	-88.072481	NONWADEABLE BOAT	LWF
CS-2	Chickasaw Creek	Mobile R	Mobile	30.73925	-88.04571	NONWADEABLE BOAT	LWF
DGRM-1	Dog River	Mobile R	Mobile	30.5651	-88.0878	NONWADEABLE BOAT	S/F&W
DR-1	Dog River	Mobile R	Mobile	30.62845	-88.10166	NONWADEABLE BOAT	F&W
FI-1	Fish River	Mobile R	Baldwin	30.5458	-87.7983	WADEABLE-BIOASSESSMENTS	S/F&W
FR-1	Fowl River	Mobile R	Mobile	30.444166	-88.113056	NONWADEABLE BOAT	S/F&W
MB-2A	Mobile Ship Channel	Mobile R	Baldwin	30.1718	-88.04895	NONWADEABLE BOAT	SH/S/F&W
MB-3A	Intracoastal Waterway	Mobile R	Baldwin	30.28407	-87.85137	NONWADEABLE BOAT	SH/S/F&W
MO-1A	Mobile River	Mobile R	Baldwin	30.8364	-87.94406	NONWADEABLE BOAT	F&W
MO-2	Mobile River	Mobile R	Mobile	30.69137	-88.03646	NONWADEABLE BOAT	LWF

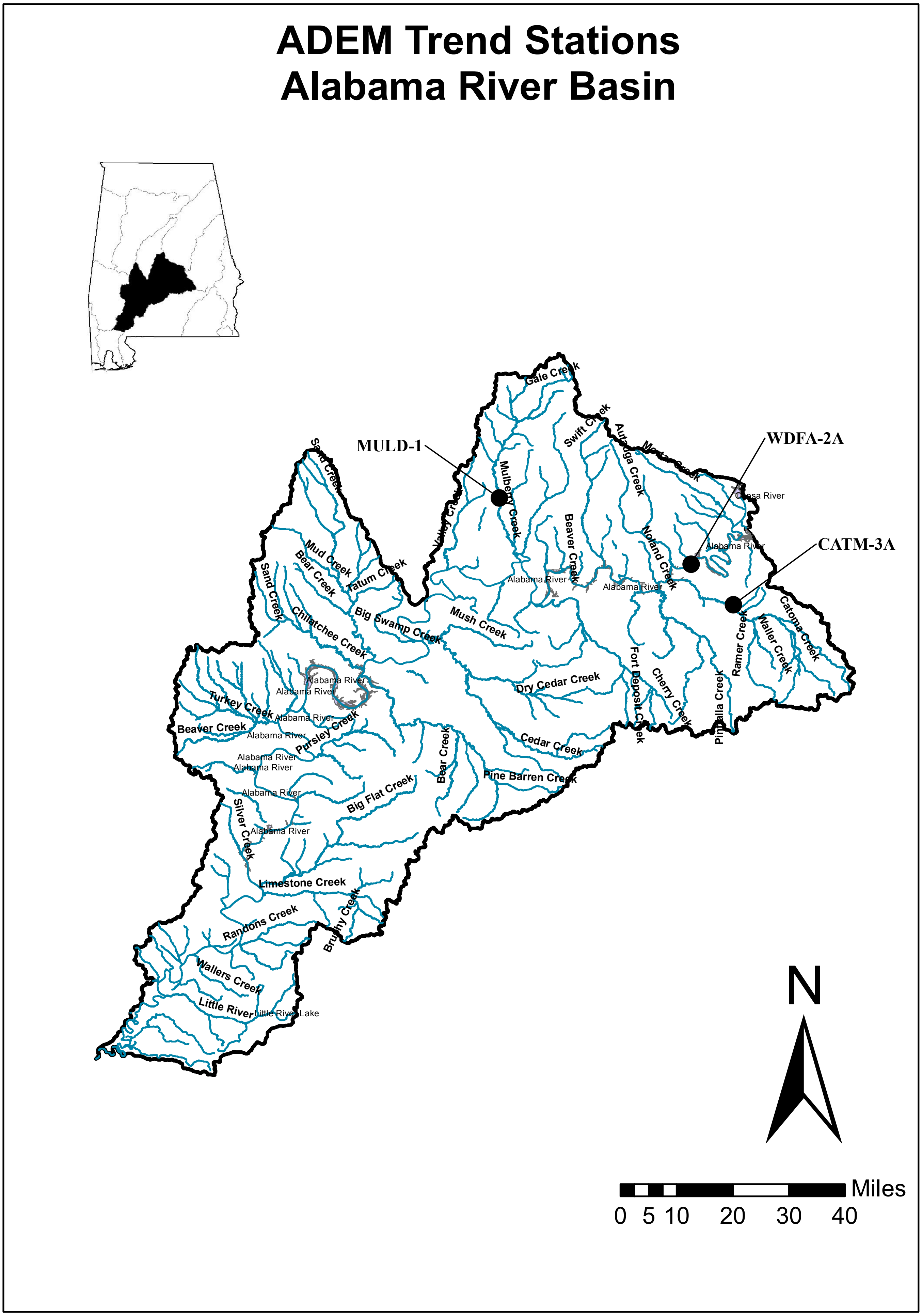
Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Class
MOBM-1	Mobile River	Mobile R	Mobile	31.0137	-88.01853	NONWADEABLE BOAT	PWS/F&W
TC-1	Theodore	Mobile R	Mobile	30.533333	-88.123889	NONWADEABLE BOAT	F&W
TENB-2	Tensaw River	Mobile R	Baldwin	30.75291	-87.91987	NONWADEABLE BOAT	OAW/S/F&W
TM-1	Three Mile Creek	Mobile R	Mobile	30.723983	-88.059119	NONWADEABLE BOAT	A&I
TMCM-3	Threemile Creek	Mobile R	Mobile	30.7063	-88.15111	WADEABLE-WATER QUALITY SAMPLING	A&I
WB-1	Weeks Bay	Mobile R	Baldwin	30.41469	-87.82583	NONWADEABLE BOAT	S/F&W
BEC-1	Big Escambia Creek	Perdido-Escambia R	Escambia	31.0106	-87.2629	WADEABLE-BIOASSESSMENTS	F&W
BKRE-1	Blackwater River	Perdido-Escambia R	Escambia	31.026555	-86.710005	NONWADEABLE GRAB-SHALLOW	F&W
CNR-1A	Conecuh River	Perdido-Escambia R	Covington	31.36128	-86.51968	WADEABLE-BIOASSESSMENTS	F&W
CNRC-2	Conecuh River	Perdido-Escambia R	Covington	31.348369	-86.529417	NONWADEABLE BOAT	F&W
CONE-2	Conecuh River	Perdido-Escambia R	Escambia	31.068271	-87.058419	NONWADEABLE BOAT	F&W
IC-1A	Intracoastal	Perdido-Escambia R	Baldwin	30.2793	-87.687	NONWADEABLE BOAT	F&W
PALC-2	Patsaliga Creek	Perdido-Escambia R	Crenshaw	31.5959	-86.40407	NONWADEABLE GRAB-SHALLOW	F&W
PDBB-0	Perdido Bay	Perdido-Escambia R	Baldwin	30.27968	-87.54948	NONWADEABLE BOAT	SH/S/F&W
PDBB-5	Perdido River	Perdido-Escambia R	Baldwin	30.69047	-87.44026	NONWADEABLE GRAB-SHALLOW	F&W

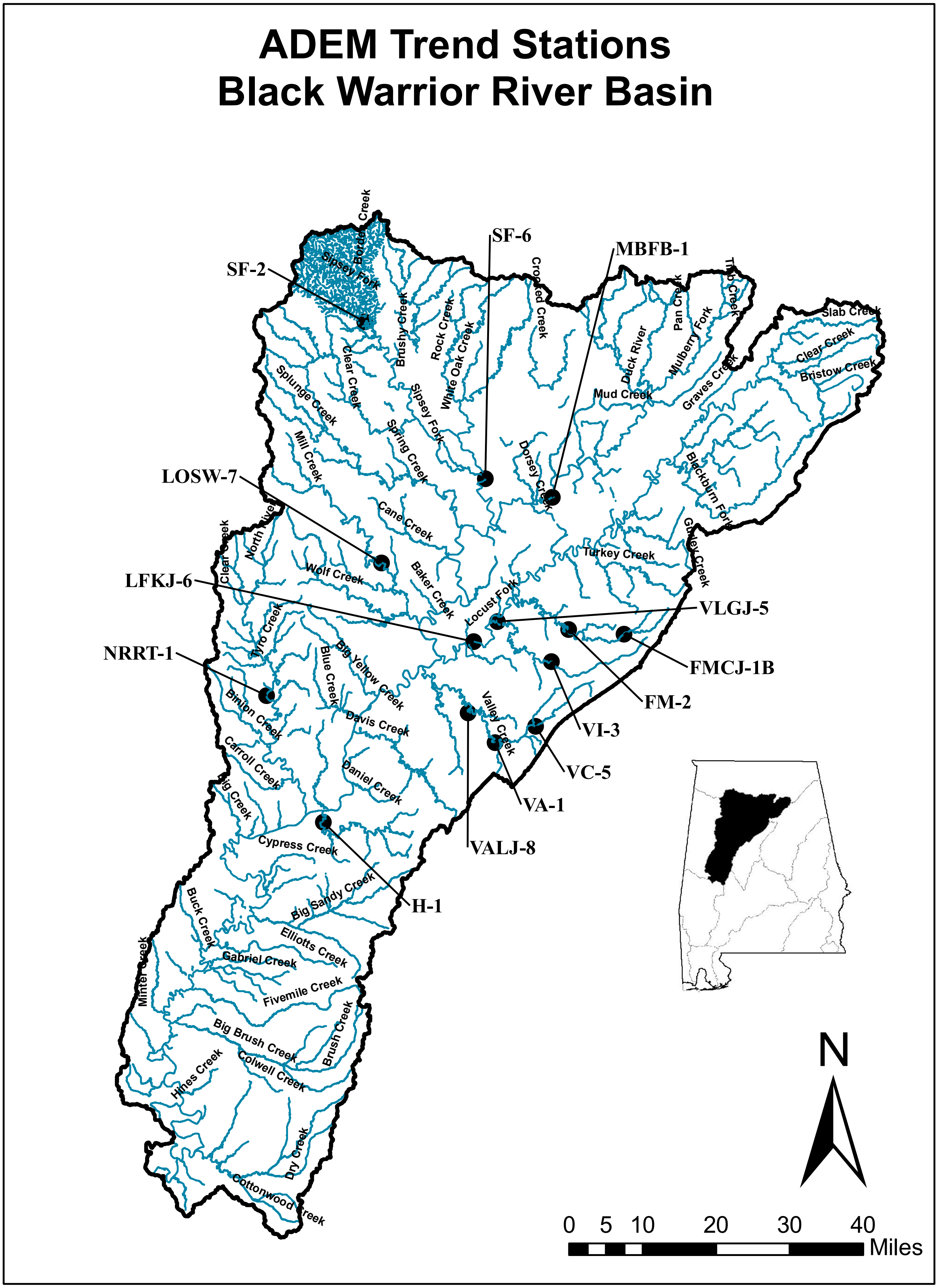
Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Class
SPLC-3	Sepulga River	Perdido-Escambia R	Conecuh	31.45362	-86.7868	NONWADEABLE GRAB-SHALLOW	F&W
STXB-3	Styx River	Perdido-Escambia R	Baldwin	30.60532	-87.547	WADEABLE-WATER QUALITY	F&W
WO-1A	Wolf Creek	Perdido-Escambia R	Baldwin	30.371668	-87.630556	NONWADEABLE GRAB-SHALLOW	F&W
YERC-3	Yellow River	Perdido-Escambia R	Covington	31.0107	-86.5375	NONWADEABLE GRAB-SHALLOW	F&W
HILT-2	Hillabee Creek	Tallapoosa R	Tallapoosa	33.06635	-85.87993	WADEABLE-BIOASSESSMENTS	F&W
LTRR-1	Little Tallapoosa River	Tallapoosa R	Randolph	33.49466	-85.33788	NONWADEABLE GRAB-SHALLOW	F&W
PPLL-2	Pepperell Branch	Tallapoosa R	Lee	32.6347	-85.4254	WADEABLE-BIOASSESSMENTS	F&W
SOGL-1	Sougahatchee Creek	Tallapoosa R	Lee	32.6267	-85.588	WADEABLE-BIOASSESSMENTS	F&W
TA-1	Tallapoosa River	Tallapoosa R	Randolph	33.118007	-85.560152	NONWADEABLE GRAB-SHALLOW	F&W
TA-2	Tallapoosa River	Tallapoosa R	Cleburne	33.732723	-85.372167	WADEABLE-BIOASSESSMENTS	F&W
TARE-1	Tallapoosa River	Tallapoosa R	Montgomery	32.43972	-86.19556	NONWADEABLE BOAT	PWS/F&W
UPHM-3	Uphapee Creek	Tallapoosa R	Macon	32.47751	-85.69554	WADEABLE-BIOASSESSMENTS	F&W
BERM-2	Bear Creek	Tennessee R	Marion	34.266831	-87.702577	WADEABLE-BIOASSESSMENTS	S/F&W
BGNL-1	Big Nance Creek	Tennessee R	Lawrence	34.67	-87.31722	NONWADEABLE GRAB-SHALLOW	F&W
FLIM-2A	Flint River	Tennessee R	Madison	34.74926	-86.44666	NONWADEABLE GRAB-SHALLOW	F&W
FTCM-6	Flint Creek	Tennessee R	Morgan	34.491139	-86.965389	NONWADEABLE BOAT	PWS/F&W

Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Class
INDM-249	Indian Creek	Tennessee R	Madison	34.69731	-86.7	WADEABLE-BIOASSESSMENTS	F&W
LIML-300	Limestone Creek	Tennessee R	Limestone	34.7521	-86.8232	WADEABLE-BIOASSESSMENTS	F&W
PRRJ-1	Paint Rock River	Tennessee R	Jackson	34.62417	-86.30639	NONWADEABLE GRAB-SHALLOW	F&W
SCRL-2	Scarham Creek	Tennessee R	Marshall	34.29843	-86.11664	WADEABLE-BIOASSESSMENTS	F&W
SSCD-1A	South Sauty Creek	Tennessee R	Jackson	34.47602	-86.05689	WADEABLE-BIOASSESSMENTS	S/F&W
TENR-417	Tennessee River	Tennessee R	Jackson	34.994014	-85.698327	NONWADEABLE BOAT	PWS/S/F&W
TN-4A	Elk River	Tennessee R	Giles	35.01415	-86.99465	NONWADEABLE BOAT	PWS/F&W
BCTP-1	Bogue Chitto Creek	Upper Tombigbee R	Pickens	33.09222	-88.300641	WADEABLE-BIOASSESSMENTS	F&W
BDKS-48	Bodka Creek	Upper Tombigbee R	Sumter	32.806787	-88.312129	WADEABLE-BIOASSESSMENTS	F&W
BUTL-2A	Buttahatchee River	Upper Tombigbee R	Marion	34.10597	-87.98869	WADEABLE-WATER QUALITY SAMPLING	F&W
LUXL-1	Luxapallila Creek	Upper Tombigbee R	Lamar	33.575	-88.0834	WADEABLE-BIOASSESSMENTS	F&W
NXBS-50	Noxubee Creek	Upper Tombigbee R	Sumter	32.932681	-88.297789	WADEABLE-BIOASSESSMENTS	F&W
SPYG-3	Sipsey River	Upper Tombigbee R	Tuscaloosa	33.256764	-87.781692	NONWADEABLE GRAB-SHALLOW	F&W

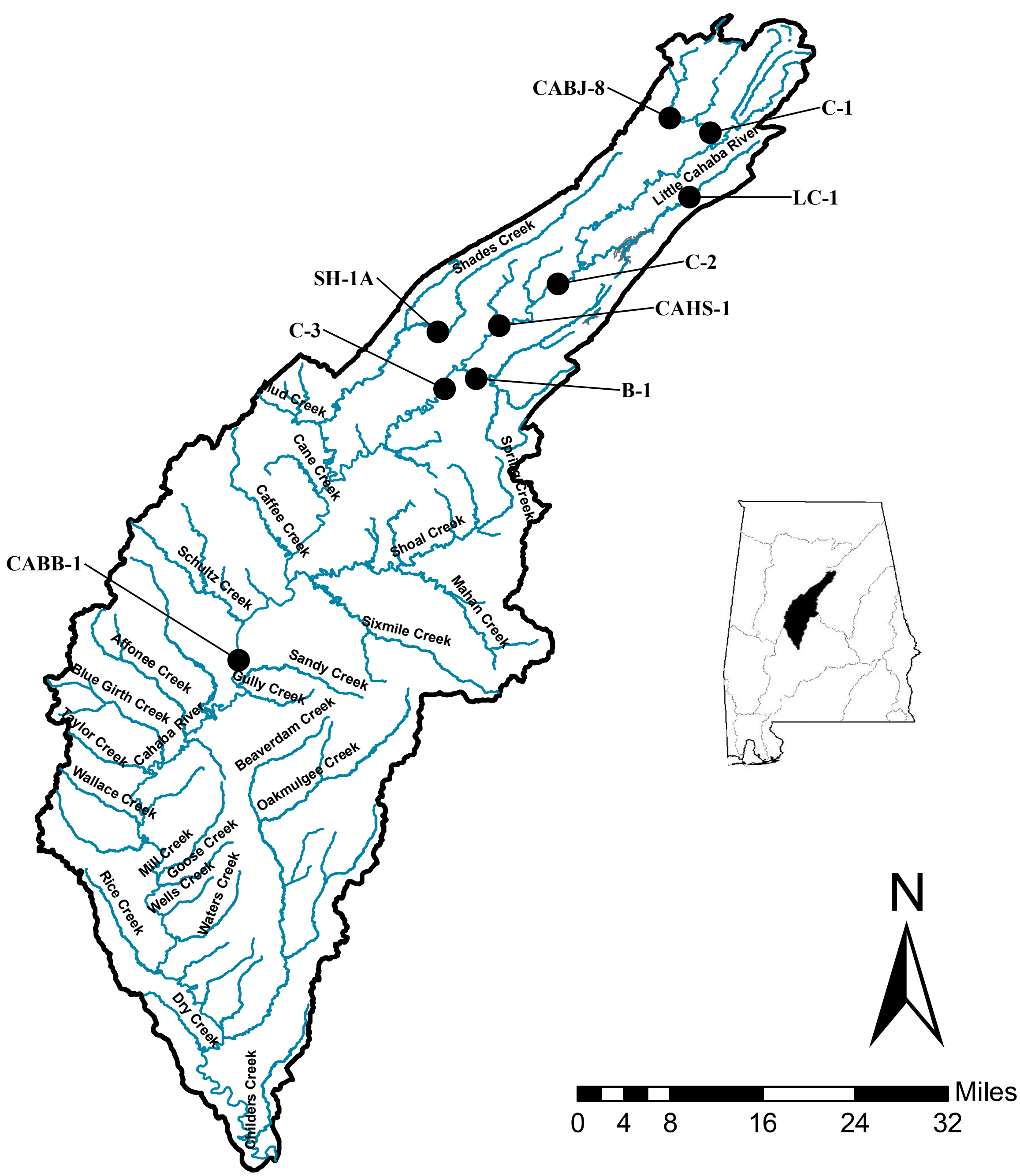
ADEM Trend Station Network



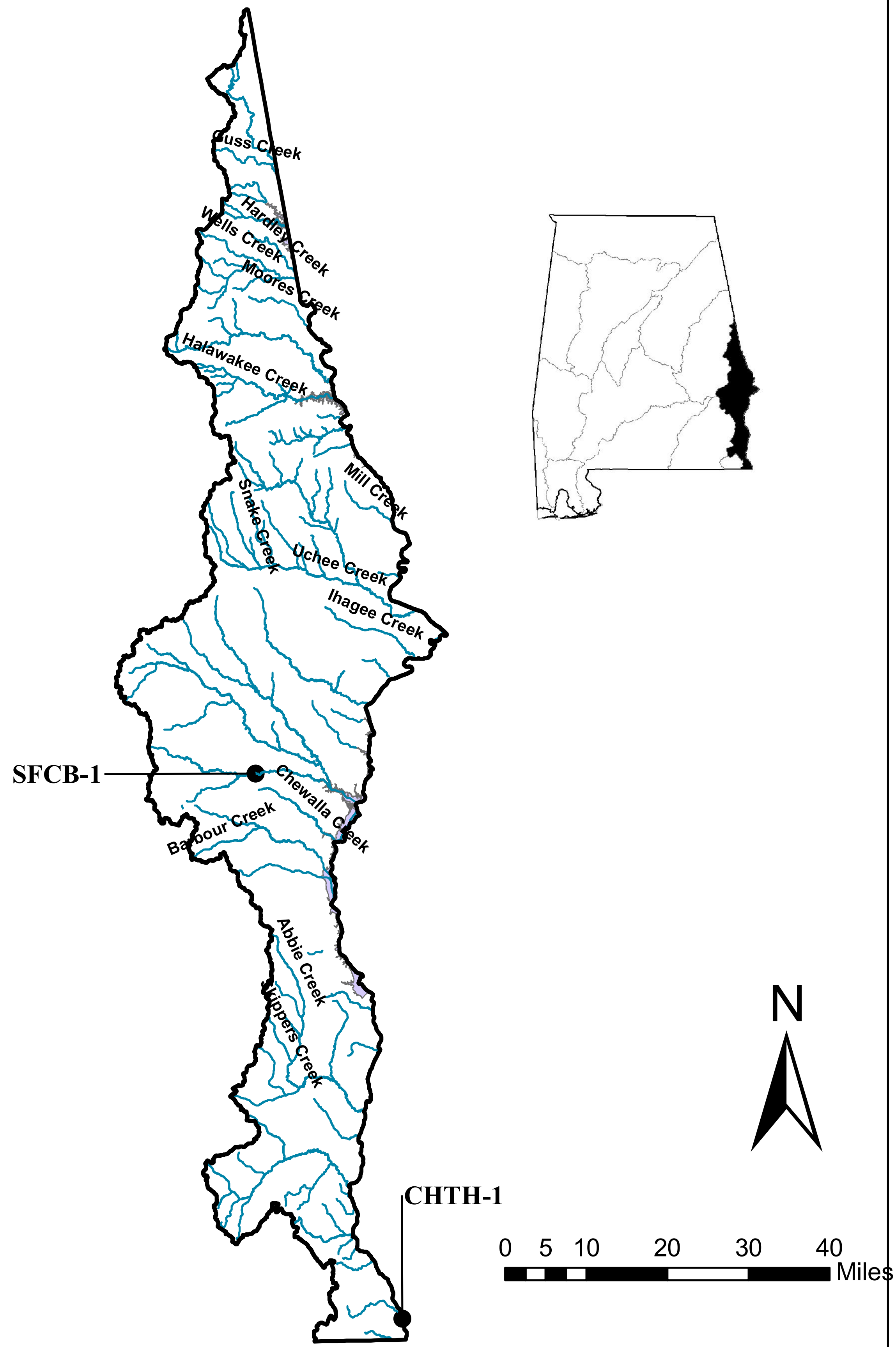

ADEM Trend Stations
Alabama River Basin
MULD-1
WDFA-2A
CATM-3A
Gale Creek
Swift Creek
Autauga Creek
Mortar Creek
Coosa River
Alabama River
Mulberry Creek
Valley Creek
Sand Creek
Mud Creek
Bear Creek
Tatum Creek
Beaver Creek
Noland Creek
Big Swamp Creek
Mush Creek
Chilatchee Creek
Catoma Creek
Waller Creek
Ramer Creek
Dry Cedar Creek
Fort Deposit Creek
Cherry Creek
Pintlalla Creek
Turkey Creek
Pursley Creek
Cedar Creek
Pine Barren Creek
Big Flat Creek
Silver Creek
Limestone Creek
Randons Creek
Brushy Creek
Wallers Creek
Little River
Little River Lake
N
Miles
0 5 10 20 30 40


ADEM Trend Stations
Black Warrior River Basin
SF-2
SF-6
MBFB-1
LOSW-7
LFKJ-6
NRRT-1
VLGJ-5
FMCJ-1B
FM-2
VI-3
VC-5
VA-1
VALJ-8
H-1
Sipsey Fork
Brushy Creek
Rock Creek
White Oak Creek
Crooked Creek
Pan Creek
Mulberry Fork
Duck River
Mud Creek
Graves Creek
Slab Creek
Clear Creek
Bristow Creek
Splunge Creek
Clear Creek
Sipsey Fork
Spring Creek
Mill Creek
Dorsey Creek
Blackburn Fork
Cane Creek
Turkey Creek
North River
Clear Creek
Wolf Creek
Baker Creek
Locust Fork
Tyro Creek
Big Yellow Creek
Blue Creek
Binion Creek
Davis Creek
Valley Creek
Carroll Creek
Daniel Creek
Big Creek
Cypress Creek
Big Sandy Creek
Buck Creek
Elliotts Creek
Gabriel Creek
Minter Creek
Fivemile Creek
Big Brush Creek
Brush Creek
Hines Creek
Colwell Creek
Dry Creek
Cottonwood Creek
N
0 5 10 20 30 40
Miles

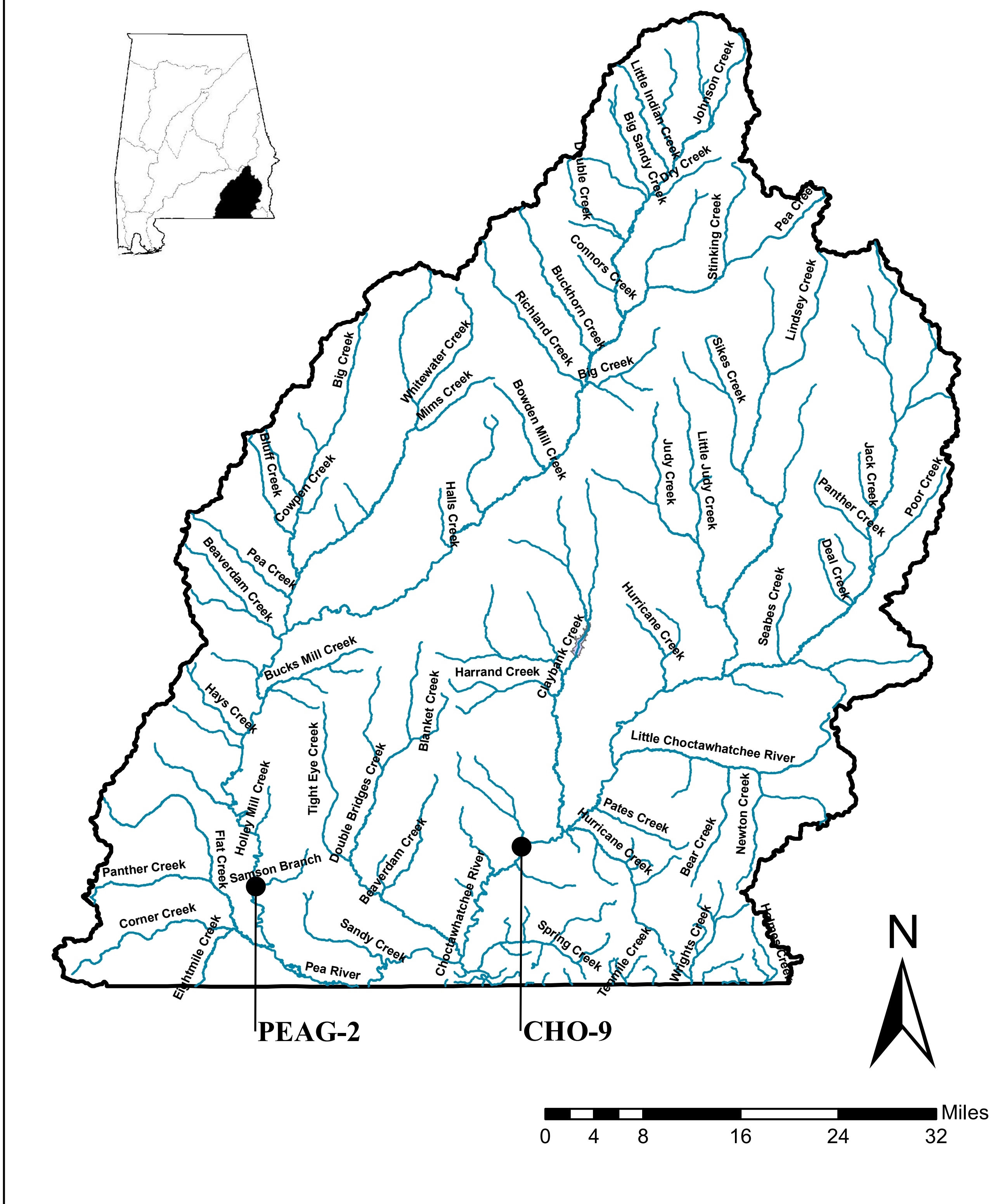
ADEM Trend Stations
Cahaba River Basin

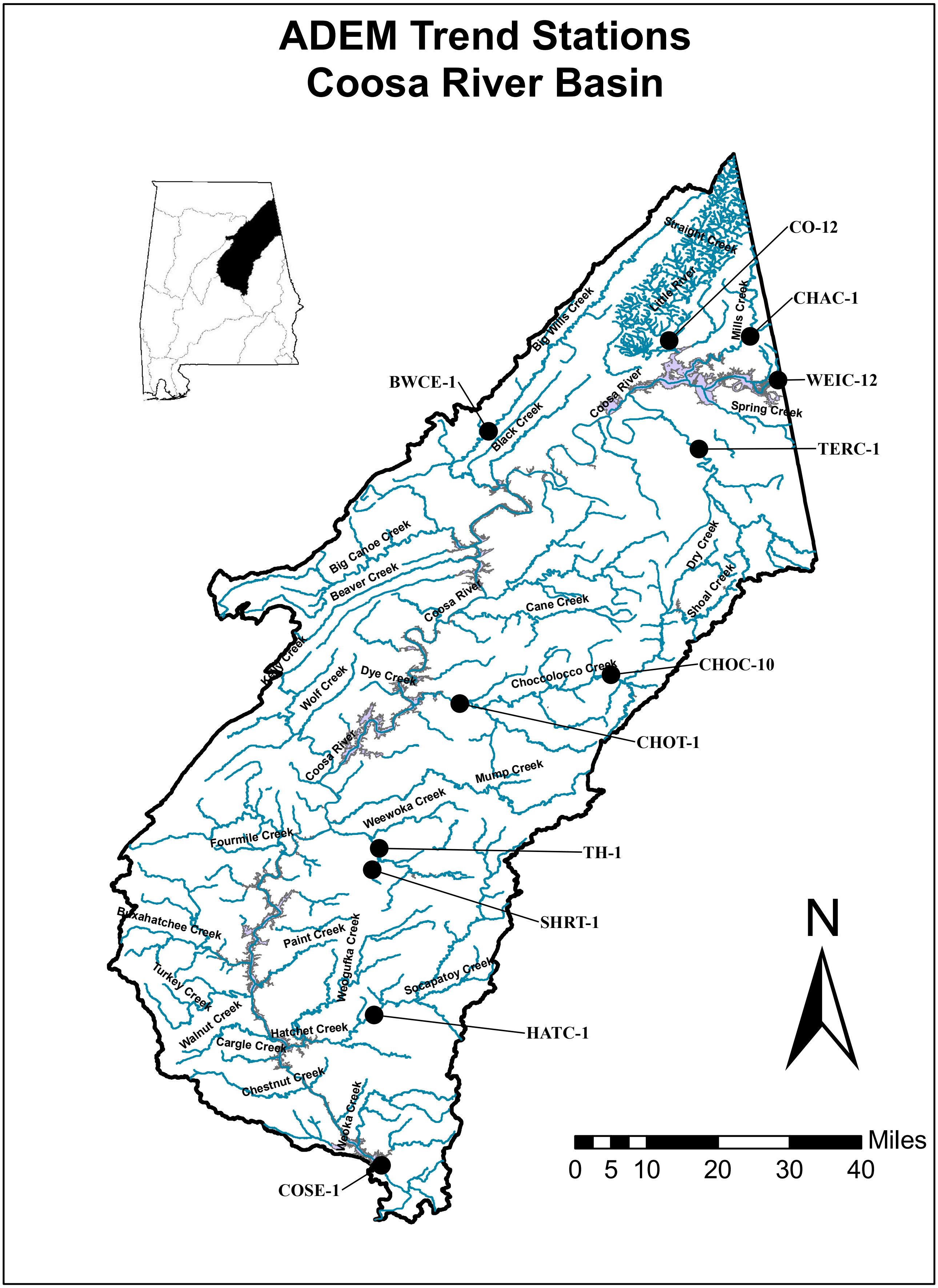


ADEM Trend Stations
Chattahoochee River Basin

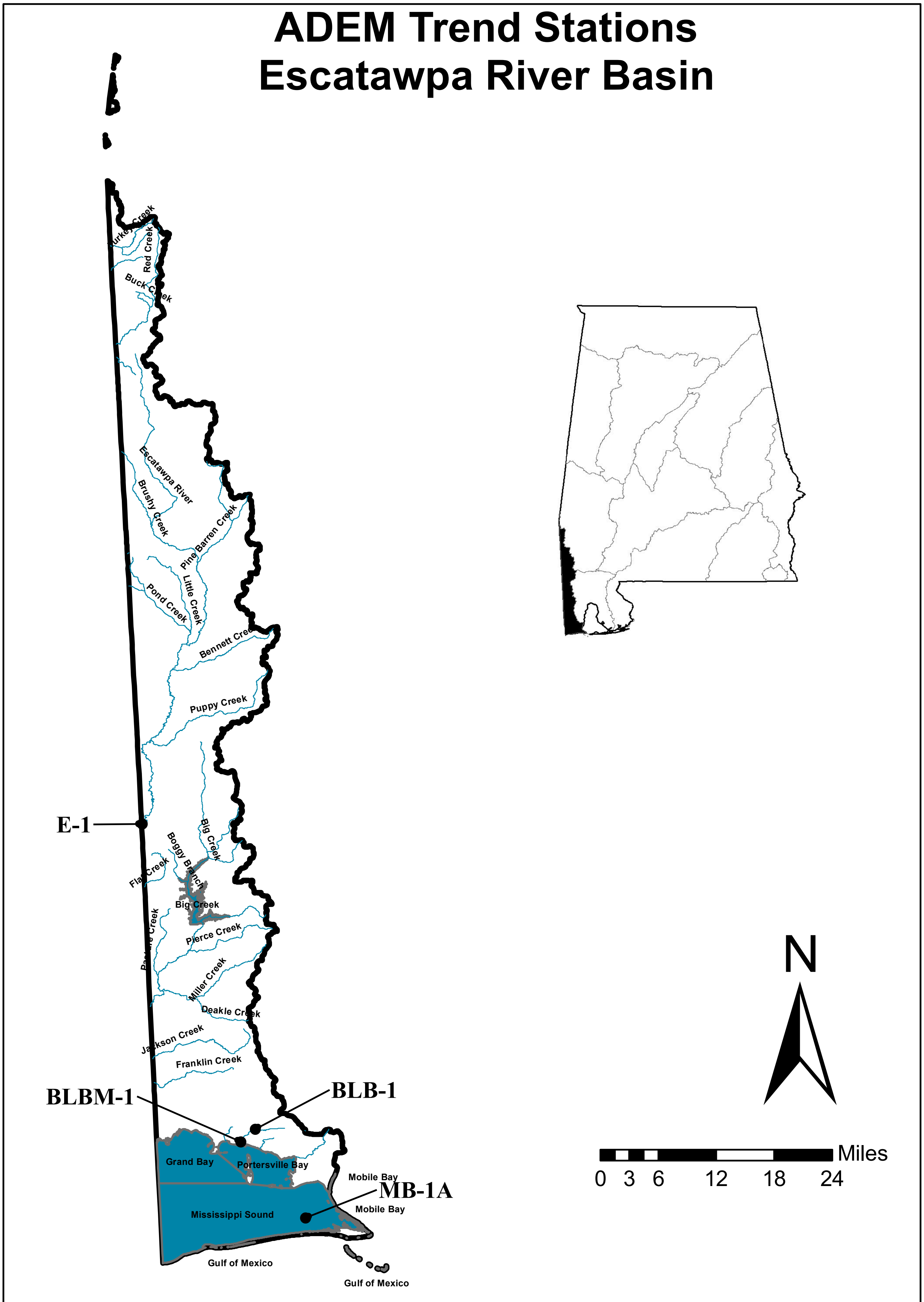


ADEM Trend Stations
Choctawhatchee River Basin



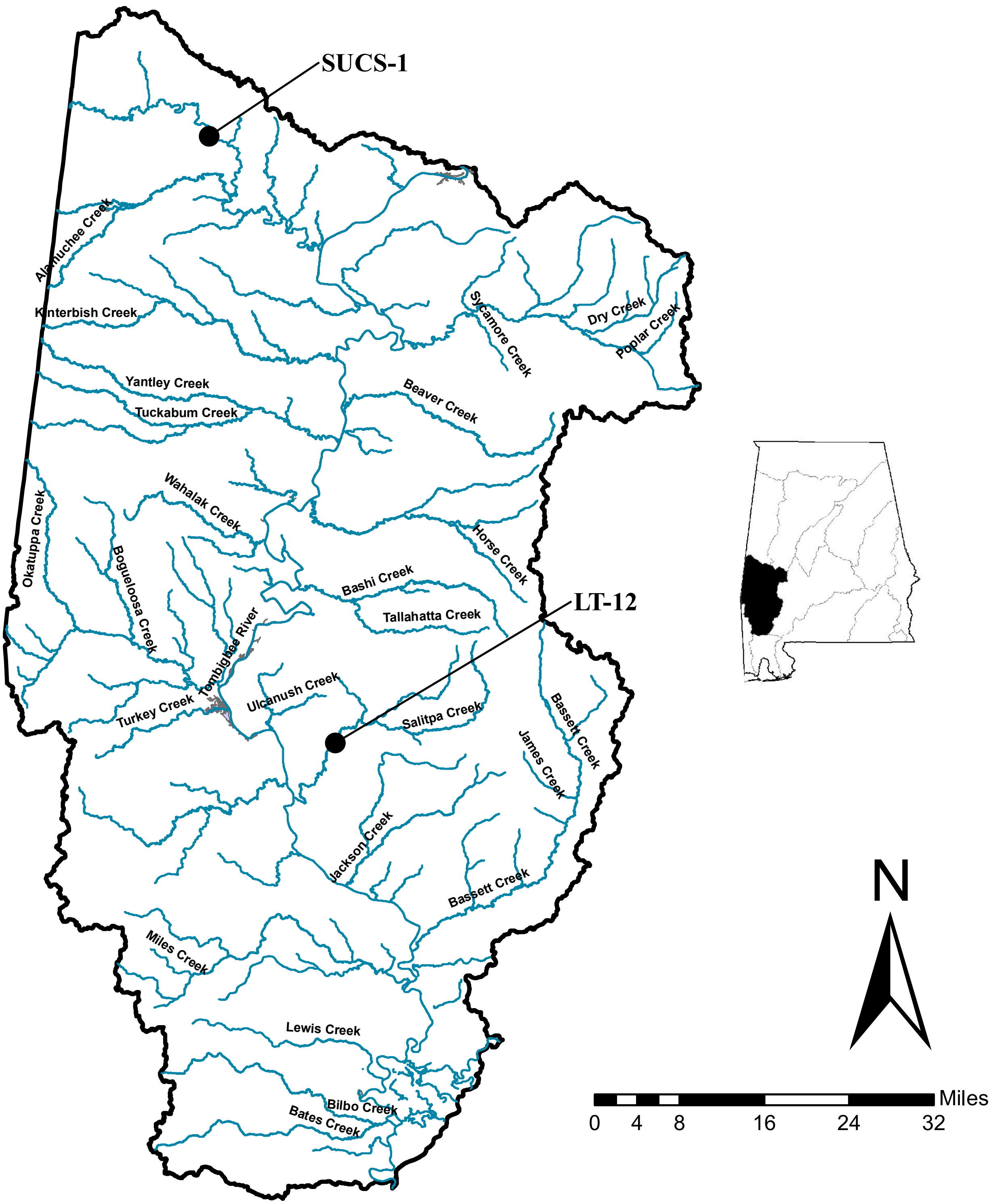


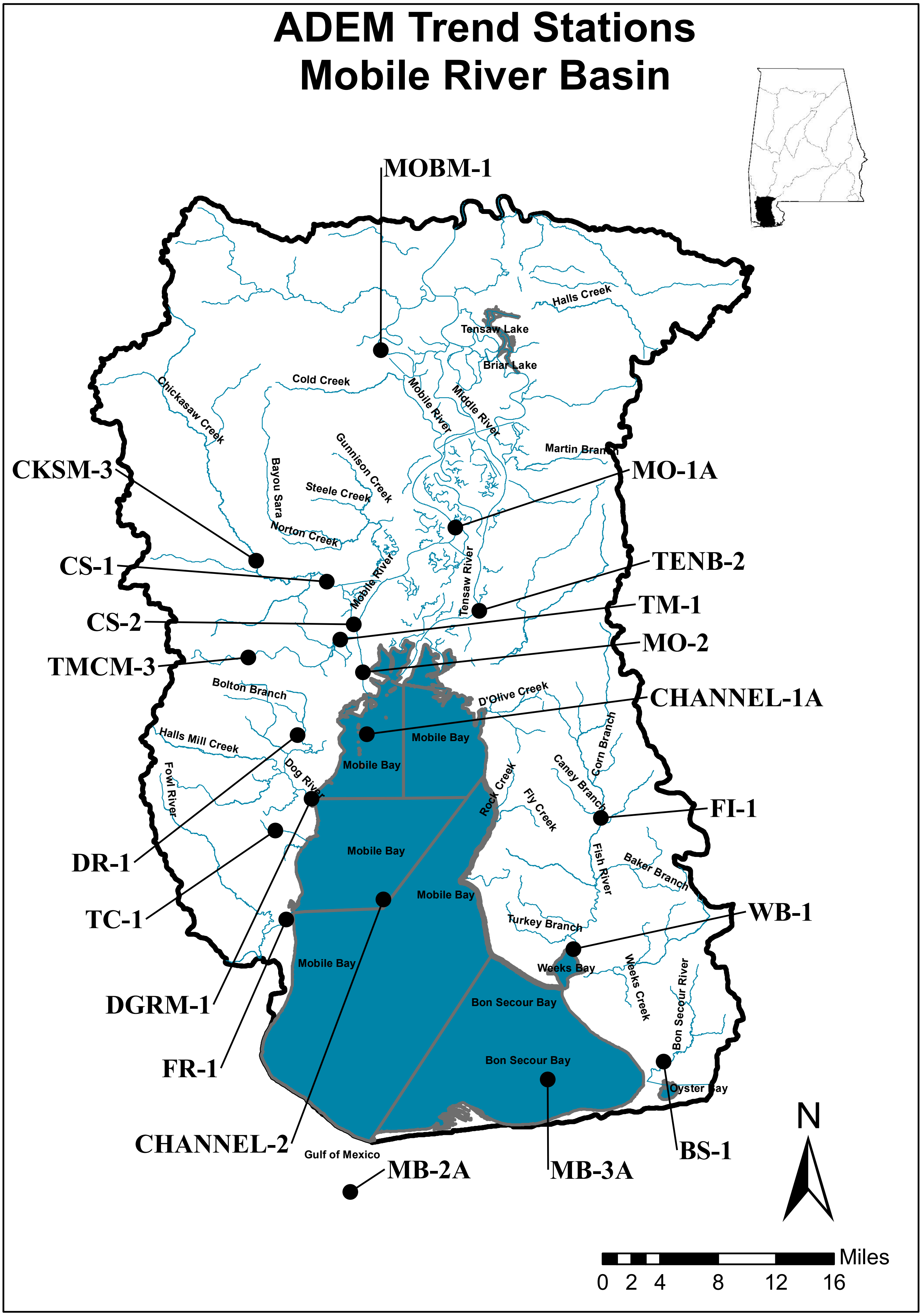
ADEM Trend Stations
Coosa River Basin
CO-12
CHAC-1
WEIC-12
TERC-1
BWCE-1
CHOC-10
CHOT-1
TH-1
SHRT-1
HATC-1
COSE-1
Straight Creek
Little River
Mills Creek
Big Wills Creek
Black Creek
Coosa River
Spring Creek
Big Canoe Creek
Beaver Creek
Dry Creek
Shoal Creek
Cane Creek
Kelly Creek
Wolf Creek
Dye Creek
Choccolocco Creek
Mump Creek
Weewoka Creek
Fourmile Creek
Buxahatchee Creek
Paint Creek
Weogufka Creek
Turkey Creek
Socapatoy Creek
Walnut Creek
Hatchet Creek
Cargle Creek
Chestnut Creek
Weoka Creek
N
0 5 10 20 30 40
Miles



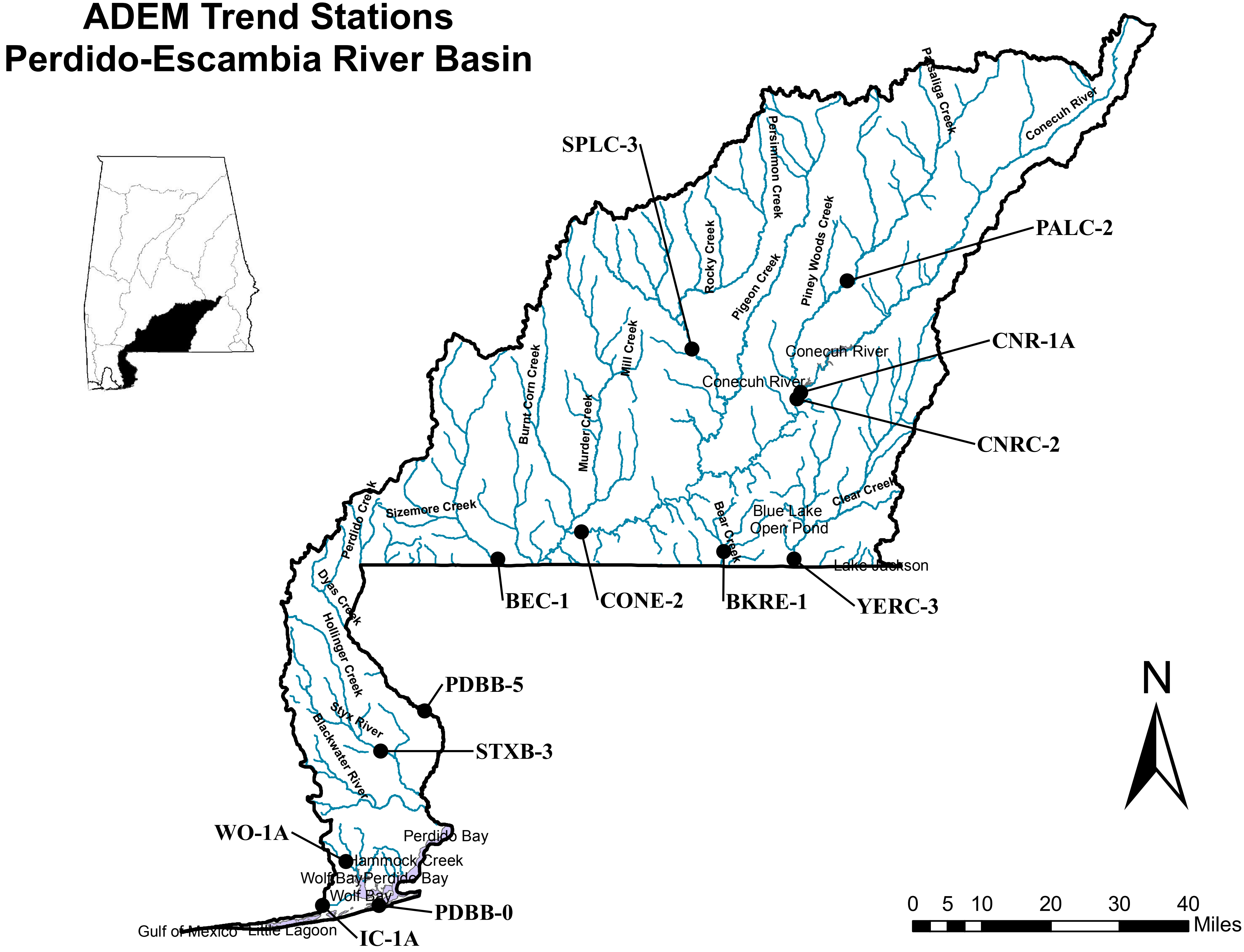
ADEM Trend Stations
Escatawpa River Basin
Red Creek
Buck Creek
Escatawpa River
Brushy Creek
Pine Barren Creek
Pond Creek
Little Creek
Bennett Creek
Puppy Creek
E-1
Big Creek
Boggy Branch
Big Creek
Pierce Creek
Miller Creek
Deakle Creek
Jackson Creek
Franklin Creek
BLBM-1
BLB-1
Grand Bay
Portersville Bay
Mobile Bay
MB-1A
Mississippi Sound
Mobile Bay
Gulf of Mexico
Gulf of Mexico
N
Miles
0 3 6 12 18 24

ADEM Trend Stations
Lower Tombigbee River Basin

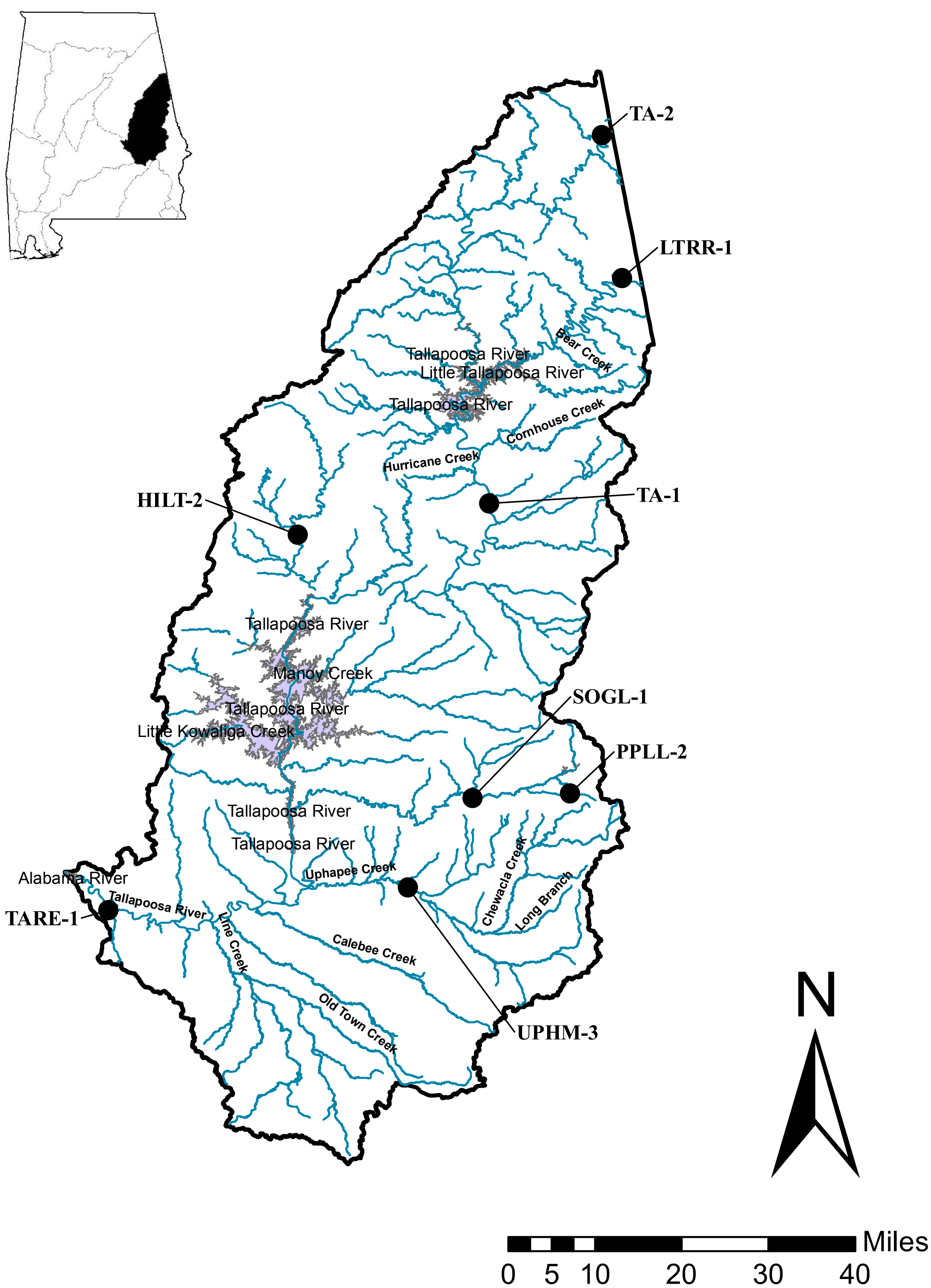


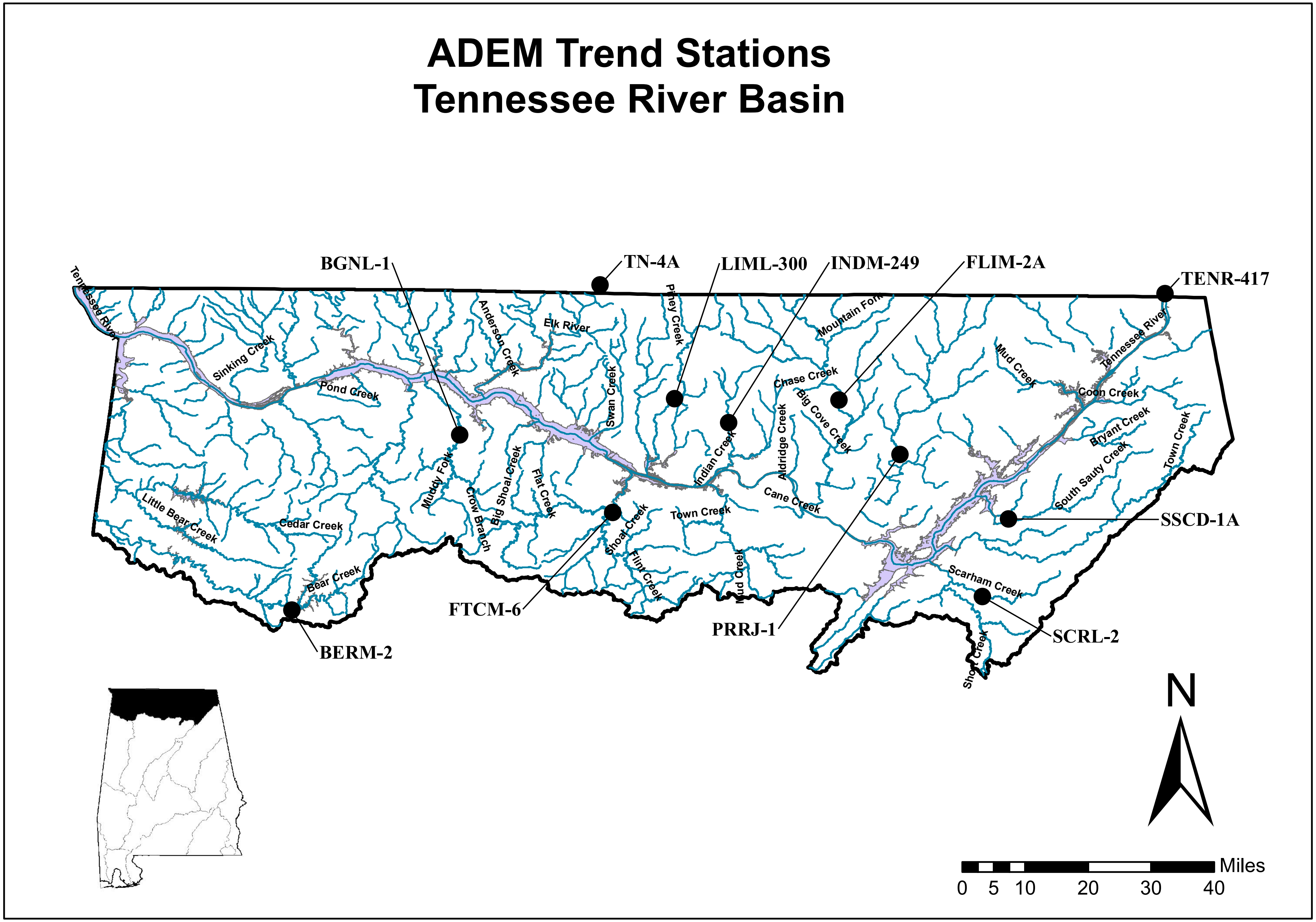

ADEM Trend Stations
Mobile River Basin
MOBM-1
CKSM-3
CS-1
CS-2
TMCM-3
MO-1A
TENB-2
TM-1
MO-2
CHANNEL-1A
FI-1
DR-1
TC-1
WB-1
DGRM-1
FR-1
CHANNEL-2
MB-2A
MB-3A
BS-1
Halls Creek
Tensaw Lake
Briar Lake
Cold Creek
Chickasaw Creek
Mobile River
Middle River
Martin Branch
Gunnison Creek
Bayou Sara
Steele Creek
Norton Creek
Tensaw River
Bolton Branch
D'Olive Creek
Halls Mill Creek
Mobile Bay
Corn Branch
Fowl River
Dog River
Caney Branch
Rock Creek
Fly Creek
Fish River
Baker Branch
Turkey Branch
Weeks Bay
Weeks Creek
Bon Secour River
Bon Secour Bay
Oyster Bay
Gulf of Mexico
N
Miles
0 2 4 8 12 16

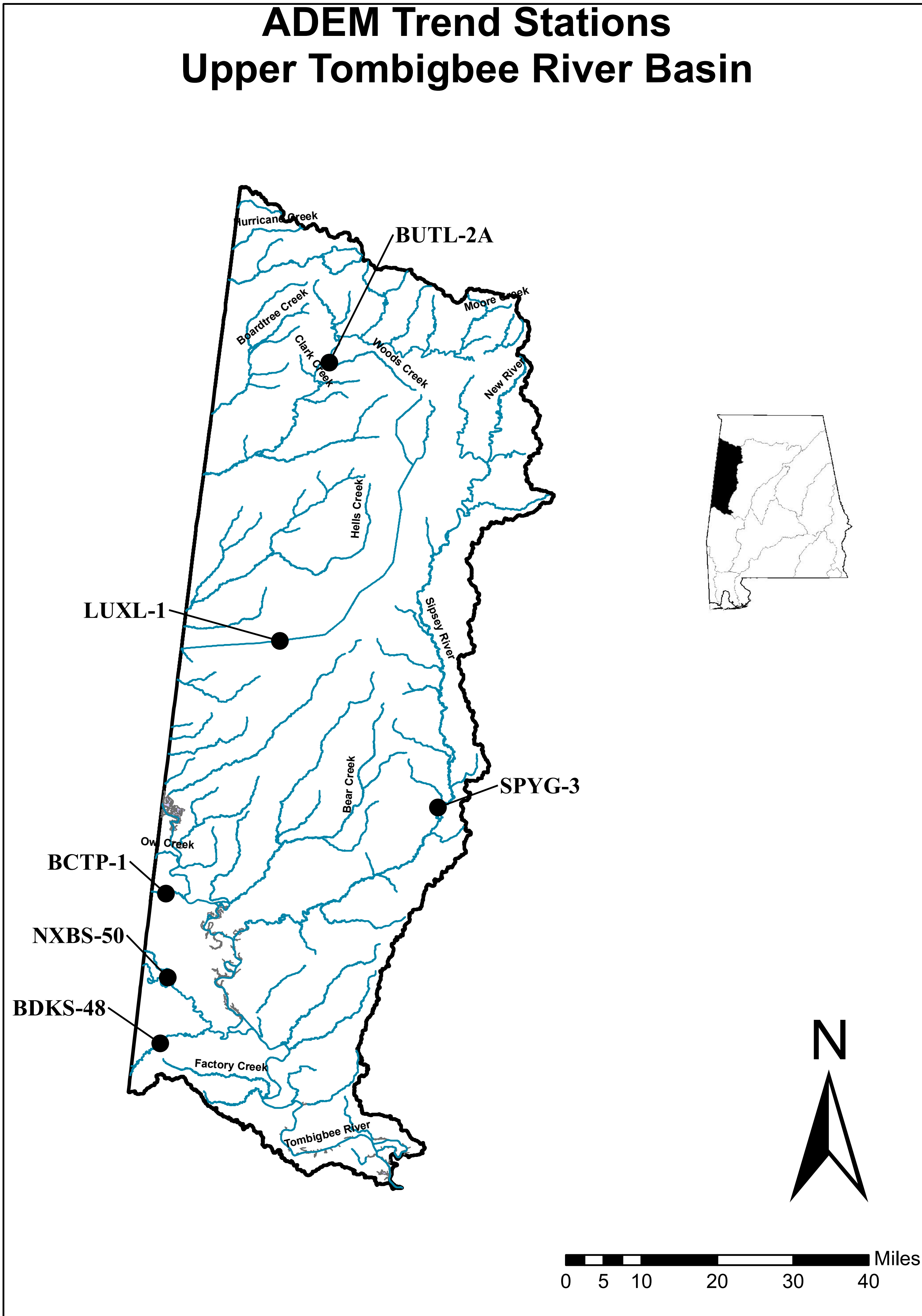
ADEM Trend Stations
Perdido-Escambia River Basin



ADEM Trend Stations
Tallapoosa River Basin




ADEM Trend Stations
Tennessee River Basin
BGNL-1
TN-4A
LIML-300
INDM-249
FLIM-2A
TENR-417
SSCD-1A
SCRL-2
PRRJ-1
FTCM-6
BERM-2
Tennessee River
Sinking Creek
Pond Creek
Anderson Creek
Elk River
Piney Creek
Swan Creek
Mountain Fork
Chase Creek
Big Cove Creek
Aldridge Creek
Indian Creek
Mud Creek
Coon Creek
Bryant Creek
South Sauty Creek
Town Creek
Muddy Fork
Crow Branch
Big Shoal Creek
Flat Creek
Little Bear Creek
Cedar Creek
Bear Creek
Shoal Creek
Flint Creek
Cane Creek
Scarham Creek
N
Miles
0 5 10 20 30 40


ADEM Trend Stations
Upper Tombigbee River Basin
Hurricane Creek
BUTL-2A
Boardtree Creek
Clark Creek
Moore Creek
Woods Creek
New River
Hells Creek
LUXL-1
Sipsey River
Bear Creek
SPYG-3
Owl Creek
BCTP-1
NXBS-50
BDKS-48
Factory Creek
Tombigbee River
N
Miles
0 5 10 20 30 40

Ambient Trend Station Data Summaries

B-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	219		6.0	30.0	21.4	19.8	5.3
pH (su)	219		6.0	9.1	7.9	7.8	0.4
Dissolved Oxygen (mg/L)	145		7.4	13.6	9.4	9.7	1.5
Specific Conductance (µmhos)	144		5.0	683.0	374.5	369.6	110.6
Turbidity (NTU)	114		0.8	289.0	7.4	20.2	40.6
Total Suspended Solids (mg/L)	190	<	0.3	572.0	8.0	21.2	55.1
Nitrate+Nitrite Nitrogen (mg/L)	184		0.019	16.780	1.598	2.136	2.260
Total Nitrogen (mg/L)	141	<	0.019	16.855	1.819	2.556	2.462
Total Phosphorus (mg/L)	158	<	0.018	1.980	0.260	0.399	0.403

BCTP-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	28		13.1	36.5	28.8	27.3	6.3
pH (su)	28		6.9	9.0	8.3	8.3	0.4
Dissolved Oxygen (mg/L)	27		5.6	17.0	10.7	11.1	2.7
Specific Conductance (µmhos)	28		114.8	606.0	410.4	381.2	100.6
Turbidity (NTU)	27		3.4	957.0	12.6	76.7	221.1
Total Suspended Solids (mg/L)	27		1.0	2470.0	10.0	145.7	489.4
Nitrate+Nitrite Nitrogen (mg/L)	26	<	0.002	5.495	0.016	0.823	1.354
Total Nitrogen (mg/L)	24	<	0.003	6.151	1.844	2.337	1.588
Total Phosphorus (mg/L)	24	<	0.006	0.793	0.057	0.149	0.231

BDKS-48	N		Min	Max	Med	Avg	SD
Temperature (°C)	35		12.3	30.1	25.4	23.7	4.8
pH (su)	35		6.9	8.2	7.6	7.6	0.2
Dissolved Oxygen (mg/L)	33		3.6	14.0	6.6	6.9	2.1
Specific Conductance (µmhos)	33		88.4	555.0	275.5	277.7	106.6
Turbidity (NTU)	33		2.7	249.0	9.0	23.6	47.2
Total Suspended Solids (mg/L)	34		2.0	161.0	8.0	17.3	28.9
Nitrate+Nitrite Nitrogen (mg/L)	33	<	0.002	1.617	0.029	0.158	0.387
Total Nitrogen (mg/L)	31	<	0.021	2.820	0.768	0.990	0.712
Total Phosphorus (mg/L)	31	<	0.045	0.245	0.070	0.088	0.048

BEC-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	52		10.2	29.0	21.8	20.4	5.7
pH (su)	52		5.3	7.3	6.2	6.2	0.4
Dissolved Oxygen (mg/L)	45		7.7	12.6	9.2	9.4	1.2
Specific Conductance (µmhos)	45		26.1	41.0	31.9	32.2	2.6
Turbidity (NTU)	44		1.0	87.3	4.2	7.7	13.8
Total Suspended Solids (mg/L)	49	<	1.0	123.0	3.0	7.7	18.1
Nitrate+Nitrite Nitrogen (mg/L)	52		0.089	0.879	0.354	0.380	0.147
Total Nitrogen (mg/L)	52	<	0.254	1.534	0.590	0.657	0.253
Total Phosphorus (mg/L)	51	<	0.005	0.047	0.013	0.015	0.008

BERM-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	44		5.7	25.2	17.2	16.8	6.1
pH (su)	44		7.1	8.4	7.5	7.6	0.3
Dissolved Oxygen (mg/L)	44		7.5	11.9	9.6	9.6	1.3
Specific Conductance (µmhos)	44		8.0	102.0	73.5	72.6	14.9
Turbidity (NTU)	44		1.6	29.5	3.6	6.7	6.8
Total Suspended Solids (mg/L)	44	<	0.3	21.0	4.0	4.9	4.6
Nitrate+Nitrite Nitrogen (mg/L)	44	<	0.011	90.417	0.153	2.319	13.593
Total Nitrogen (mg/L)	24	<	0.044	90.417	0.876	0.871	0.432
Total Phosphorus (mg/L)	25		0.009	0.125	0.026	0.030	0.024

BGNL-1	N	Min	Max	Med	Avg	SD
Temperature (°C)	33	12.9	37.4	21.7	21.3	4.4
pH (su)	33	7.2	9.3	7.5	7.6	0.4
Dissolved Oxygen (mg/L)	33	4.1	10.5	6.4	6.6	1.5
Specific Conductance (µmhos)	33	129.0	396.0	311.0	294.5	74.4
Turbidity (NTU)	33	0.9	393.0	3.9	21.8	68.9
Total Suspended Solids (mg/L)	32	< 0.3	116.0	3.0	10.5	23.3
Nitrate+Nitrite Nitrogen (mg/L)	30	< 0.003	92.400	1.846	4.809	16.602
Total Nitrogen (mg/L)	20	< 0.002	92.400	2.301	2.273	0.726
Total Phosphorus (mg/L)	20	< 0.006	0.335	0.054	0.076	0.089

BKRE-1	N	Min	Max	Med	Avg	SD
Temperature (°C)	53	10.9	25.0	22.2	20.5	4.2
pH (su)	53	4.0	5.6	4.7	4.7	0.5
Dissolved Oxygen (mg/L)	53	6.1	10.4	8.0	8.2	1.0
Specific Conductance (µmhos)	52	0.0	46.7	22.2	22.3	10.9
Turbidity (NTU)	52	1.1	18.5	2.2	3.2	2.9
Total Suspended Solids (mg/L)	53	< 1.0	25.0	1.0	3.7	4.6
Nitrate+Nitrite Nitrogen (mg/L)	53	0.008	0.329	0.178	0.159	0.088
Total Nitrogen (mg/L)	53	< 0.106	0.901	0.442	0.457	0.175
Total Phosphorus (mg/L)	53	0.005	0.064	0.010	0.016	0.014

BLB-1	N	Min	Max	Med	Avg	SD
Temperature (°C)	287	5.0	32.1	23.0	22.0	6.0
pH (su)	287	4.2	8.0	6.6	6.6	0.7
Dissolved Oxygen (mg/L)	59	0.3	9.6	3.0	3.6	2.3
Specific Conductance (µmhos)	57	28.0	50356.0	29645.0	24690.2	16007.3
Turbidity (NTU)	56	2.0	20.1	5.0	5.9	3.5
Total Suspended Solids (mg/L)	276	< 1.0	124.0	7.0	9.6	11.2
Nitrate+Nitrite Nitrogen (mg/L)	285	< 0.004	0.430	0.140	0.144	0.096
Total Nitrogen (mg/L)	189	< 0.040	6.002	0.605	0.714	0.619
Total Phosphorus (mg/L)	289	< 0.005	0.390	0.040	0.048	0.045

BLBM-1	N	Min	Max	Med	Avg	SD
Temperature (°C)	45	15.0	32.1	27.9	26.6	4.4
pH (su)	44	6.0	8.4	7.5	7.3	0.6
Dissolved Oxygen (mg/L)	37	1.8	10.4	5.7	5.6	1.8
Specific Conductance (µmhos)	35	23558.1	48378.7	37146.0	36613.7	6375.6
Turbidity (NTU)	33	4.3	22.5	8.8	9.2	3.5
Total Suspended Solids (mg/L)	41	< 5.0	44.0	17.0	19.0	10.2
Nitrate+Nitrite Nitrogen (mg/L)	41	< 0.004	0.213	0.023	0.034	0.042
Total Nitrogen (mg/L)	41	< 0.040	5.518	0.653	0.775	0.823
Total Phosphorus (mg/L)	41	0.025	0.170	0.048	0.057	0.030

BS-1	N	Min	Max	Med	Avg	SD
Temperature (°C)	317	6.5	33.0	23.0	23.1	6.3
pH (su)	315	5.8	8.9	7.7	7.6	0.5
Dissolved Oxygen (mg/L)	102	2.7	13.1	7.4	7.6	2.5
Specific Conductance (µmhos)	92	3694.0	36002.9	23355.0	22269.4	8142.9
Turbidity (NTU)	84	3.0	42.0	12.0	12.9	5.7
Total Suspended Solids (mg/L)	316	2.0	68.0	20.0	22.8	11.6
Nitrate+Nitrite Nitrogen (mg/L)	309	< 0.001	1.670	0.081	0.148	0.186
Total Nitrogen (mg/L)	204	< 0.052	5.560	1.133	1.341	0.822
Total Phosphorus (mg/L)	315	< 0.020	4.500	0.100	0.180	0.343

BUTL-2A	N	Min	Max	Med	Avg	SD
Temperature (°C)	31	9.6	31.2	24.5	23.4	4.6

pH (su)	32		5.9	8.6	7.2	7.3	0.5
Dissolved Oxygen (mg/L)	26		6.9	11.0	8.4	8.5	0.8
Specific Conductance (µmhos)	25		30.7	67.0	37.0	39.0	7.1
Turbidity (NTU)	26		2.8	38.0	6.3	8.5	7.5
Total Suspended Solids (mg/L)	27	<	1.0	53.0	4.0	7.6	11.2
Nitrate+Nitrite Nitrogen (mg/L)	30	<	0.003	1.731	0.266	0.328	0.360
Total Nitrogen (mg/L)	26	<	0.180	2.010	0.499	0.596	0.396
Total Phosphorus (mg/L)	26	<	0.006	0.100	0.018	0.026	0.019

BWCE-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	34		11.8	26.0	22.1	20.4	4.2
pH (su)	34		7.2	8.0	7.8	7.7	0.2
Dissolved Oxygen (mg/L)	34		5.7	11.4	7.5	7.8	1.2
Specific Conductance (µmhos)	33		40.0	582.0	343.0	333.5	138.5
Turbidity (NTU)	27		5.8	55.5	21.5	20.6	10.8
Total Suspended Solids (mg/L)	34		5.0	182.0	20.0	26.8	31.3
Nitrate+Nitrite Nitrogen (mg/L)	34		0.243	2.810	1.168	1.254	0.563
Total Nitrogen (mg/L)	31	<	0.609	3.231	1.554	1.616	0.634
Total Phosphorus (mg/L)	31		0.097	1.490	0.652	0.669	0.369

C-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	196		2.6	31.1	19.0	18.2	6.8
pH (su)	196		3.8	9.0	7.8	7.8	0.5
Dissolved Oxygen (mg/L)	123		6.1	16.7	9.8	10.2	2.1
Specific Conductance (µmhos)	125		95.0	1852.0	206.0	230.6	165.3
Turbidity (NTU)	109		1.1	440.0	6.2	22.8	60.1
Total Suspended Solids (mg/L)	193	<	0.3	295.0	5.0	11.7	28.3
Nitrate+Nitrite Nitrogen (mg/L)	190	<	0.003	13.150	1.112	1.625	1.645
Total Nitrogen (mg/L)	93	<	0.002	7.505	1.343	1.757	1.346
Total Phosphorus (mg/L)	162	<	0.002	5.950	0.192	0.328	0.532

C-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	198		3.4	31.0	21.1	19.9	7.1
pH (su)	197		6.5	8.7	7.7	7.6	0.3
Dissolved Oxygen (mg/L)	124		6.2	15.9	9.0	9.3	1.9
Specific Conductance (µmhos)	126		75.0	435.0	223.0	234.9	75.1
Turbidity (NTU)	110		1.8	225.0	7.5	14.2	24.6
Total Suspended Solids (mg/L)	179	<	0.3	220.0	6.0	10.8	20.6
Nitrate+Nitrite Nitrogen (mg/L)	177	<	0.003	5.530	0.540	1.033	1.173
Total Nitrogen (mg/L)	131	<	0.002	48.930	0.912	1.878	4.367
Total Phosphorus (mg/L)	149	<	0.010	1.640	0.120	0.299	0.380

C-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	239		4.2	30.6	22.0	20.2	6.4
pH (su)	239		6.0	8.7	7.8	7.7	0.4
Dissolved Oxygen (mg/L)	165		6.0	15.6	8.6	9.2	2.0
Specific Conductance (µmhos)	165		123.0	463.0	265.0	270.8	80.5
Turbidity (NTU)	128		1.4	354.0	7.6	25.2	52.3
Total Suspended Solids (mg/L)	203	<	0.3	1540.0	9.0	31.0	117.3
Nitrate+Nitrite Nitrogen (mg/L)	199		0.233	23.097	1.040	1.574	1.912
Total Nitrogen (mg/L)	155	<	0.369	23.097	1.494	1.870	1.152
Total Phosphorus (mg/L)	172	<	0.034	1.160	0.206	0.278	0.243

CABB-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	96		4.8	29.2	19.7	19.3	6.8
pH (su)	96		6.5	8.8	7.9	7.9	0.4
Dissolved Oxygen (mg/L)	93		6.2	15.3	9.4	9.5	1.8

	N		Min	Max	Med	Avg	SD
Specific Conductance (µmhos)	95		113.0	345.0	236.0	235.1	61.1
Turbidity (NTU)	94		2.3	378.0	8.0	26.1	50.0
Total Suspended Solids (mg/L)	94	<	0.3	262.0	8.0	24.0	43.5
Nitrate+Nitrite Nitrogen (mg/L)	90	<	0.003	1.009	0.310	0.320	0.166
Total Nitrogen (mg/L)	63	<	0.002	2.566	0.528	0.654	0.448
Total Phosphorus (mg/L)	64	<	0.002	0.371	0.050	0.055	0.053

CABJ-8	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	102		4.4	26.3	17.1	16.8	5.8
pH (su)	102		6.2	9.3	7.7	7.6	0.4
Dissolved Oxygen (mg/L)	101		2.8	15.4	9.6	9.3	2.5
Specific Conductance (µmhos)	102		72.0	596.0	177.0	198.1	103.9
Turbidity (NTU)	85		1.4	157.0	5.9	13.5	26.4
Total Suspended Solids (mg/L)	101	<	0.3	116.0	5.0	9.6	16.5
Nitrate+Nitrite Nitrogen (mg/L)	99	<	0.003	1.892	0.260	0.268	0.234
Total Nitrogen (mg/L)	69	<	0.002	5.828	0.499	0.684	0.744
Total Phosphorus (mg/L)	70	<	0.002	0.100	0.019	0.026	0.022

CAHS-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	155		3.6	29.0	22.1	20.2	6.5
pH (su)	154		6.1	8.5	7.7	7.6	0.3
Dissolved Oxygen (mg/L)	152		3.3	14.7	8.2	8.8	2.1
Specific Conductance (µmhos)	151		118.0	462.0	243.0	260.4	86.4
Turbidity (NTU)	122		1.9	400.0	7.4	22.3	46.9
Total Suspended Solids (mg/L)	120	<	0.3	398.0	9.0	22.5	50.3
Nitrate+Nitrite Nitrogen (mg/L)	117	<	0.003	7.850	0.658	1.081	1.322
Total Nitrogen (mg/L)	88	<	0.002	7.925	1.354	1.858	1.519
Total Phosphorus (mg/L)	89	<	0.028	1.900	0.168	0.340	0.394

CATM-3A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	26		13.0	33.8	27.0	25.3	5.5
pH (su)	26		6.8	8.3	7.5	7.4	0.4
Dissolved Oxygen (mg/L)	26		2.9	9.1	6.2	6.2	1.7
Specific Conductance (µmhos)	26		85.0	314.7	243.2	233.4	58.3
Turbidity (NTU)	26		2.6	249.0	12.2	31.0	51.0
Total Suspended Solids (mg/L)	25	<	1.0	411.0	12.0	38.9	83.0
Nitrate+Nitrite Nitrogen (mg/L)	25	<	0.002	0.572	0.016	0.055	0.117
Total Nitrogen (mg/L)	25	<	0.088	1.774	0.624	0.697	0.399
Total Phosphorus (mg/L)	25	<	0.012	0.428	0.086	0.111	0.089

CHAC-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	97		4.8	28.3	17.5	17.0	6.3
pH (su)	97		6.5	8.4	7.8	7.7	0.3
Dissolved Oxygen (mg/L)	97		4.9	14.3	8.3	8.6	1.8
Specific Conductance (µmhos)	96		34.8	877.9	384.4	424.6	189.2
Turbidity (NTU)	98		1.7	297.0	9.2	16.9	41.1
Total Suspended Solids (mg/L)	100	<	0.3	103.0	9.5	12.0	12.8
Nitrate+Nitrite Nitrogen (mg/L)	100		0.043	2.120	0.469	0.516	0.262
Total Nitrogen (mg/L)	94	<	0.130	2.700	0.876	0.928	0.377
Total Phosphorus (mg/L)	94	<	0.006	0.797	0.197	0.236	0.154

CHANNEL-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	173		7.3	31.0	27.9	25.9	5.0
pH (su)	247		5.3	8.2	7.7	7.6	0.4
Dissolved Oxygen (mg/L)	748		1.5	11.4	5.8	5.8	1.3
Specific Conductance (µmhos)	1413		10.8	40341.7	23528.0	21541.6	7684.5
Turbidity (NTU)	77		4.7	75.7	11.3	16.7	13.5

Total Suspended Solids (mg/L)	80	<	1.0	70.0	13.0	15.5	10.4
Nitrate+Nitrite Nitrogen (mg/L)	80	<	0.005	0.614	0.100	0.143	0.128
Total Nitrogen (mg/L)	72	<	0.060	7.820	0.754	0.879	0.925
Total Phosphorus (mg/L)	80		0.019	0.120	0.052	0.055	0.021

CHANNEL-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	78		6.3	31.0	25.0	22.8	6.5
pH (su)	79		6.8	8.7	8.0	7.9	0.4
Dissolved Oxygen (mg/L)	79		0.0	12.6	8.0	8.4	1.8
Specific Conductance (µmhos)	69		1530.0	37838.5	18860.0	17867.5	10950.6
Turbidity (NTU)	87		2.9	98.0	9.0	13.9	14.4
Total Suspended Solids (mg/L)	90	<	2.0	53.0	11.5	13.0	7.8
Nitrate+Nitrite Nitrogen (mg/L)	90	<	0.002	0.370	0.038	0.091	0.107
Total Nitrogen (mg/L)	82	<	0.052	2.710	0.624	0.678	0.426
Total Phosphorus (mg/L)	90		0.014	0.168	0.043	0.048	0.029

CHO-9	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	31		13.4	29.6	26.1	24.6	4.4
pH (su)	31		5.4	8.2	7.1	7.1	0.5
Dissolved Oxygen (mg/L)	26		0.3	9.7	7.5	7.4	1.7
Specific Conductance (µmhos)	26		40.9	127.8	89.4	87.7	20.6
Turbidity (NTU)	27		5.6	32.6	13.6	15.2	7.7
Total Suspended Solids (mg/L)	27	<	1.0	33.0	10.0	11.8	9.4
Nitrate+Nitrite Nitrogen (mg/L)	30		0.082	1.158	0.600	0.567	0.245
Total Nitrogen (mg/L)	30	<	0.375	1.736	0.920	0.946	0.275
Total Phosphorus (mg/L)	30		0.017	0.135	0.056	0.058	0.025

CHOC-10	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	27		14.9	27.6	23.6	22.2	3.8
pH (su)	27		7.0	8.0	7.6	7.6	0.2
Dissolved Oxygen (mg/L)	27		6.0	9.8	7.8	7.8	1.0
Specific Conductance (µmhos)	27		50.7	188.3	145.8	136.5	35.6
Turbidity (NTU)	27		4.0	120.0	8.3	13.7	21.8
Total Suspended Solids (mg/L)	27	<	1.0	93.0	8.0	12.5	17.6
Nitrate+Nitrite Nitrogen (mg/L)	27		0.011	0.269	0.170	0.165	0.066
Total Nitrogen (mg/L)	24	<	0.086	0.914	0.298	0.355	0.204
Total Phosphorus (mg/L)	24	<	0.004	0.137	0.038	0.043	0.030

CHOT-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	35		15.8	27.8	23.7	22.4	3.9
pH (su)	35		6.3	8.3	7.8	7.7	0.4
Dissolved Oxygen (mg/L)	35		6.6	10.2	8.5	8.4	0.8
Specific Conductance (µmhos)	34		102.5	320.0	222.0	207.6	52.2
Turbidity (NTU)	34		5.0	45.6	9.2	11.9	9.5
Total Suspended Solids (mg/L)	35	<	1.0	31.0	7.0	9.3	7.4
Nitrate+Nitrite Nitrogen (mg/L)	35		0.308	1.206	0.719	0.682	0.227
Total Nitrogen (mg/L)	32	<	0.485	6.401	1.092	1.257	1.058
Total Phosphorus (mg/L)	32	<	0.043	0.206	0.098	0.104	0.043

CHTH-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	22		14.3	30.2	25.5	23.9	4.7
pH (su)	22		6.4	7.6	7.0	7.0	0.2
Dissolved Oxygen (mg/L)	22		3.3	10.6	7.5	7.7	1.6
Specific Conductance (µmhos)	22		0.1	164.6	90.8	75.1	57.7
Turbidity (NTU)	22		2.1	20.6	6.6	7.8	4.4
Total Suspended Solids (mg/L)	22	<	1.0	14.0	6.0	5.6	4.0
Nitrate+Nitrite Nitrogen (mg/L)	22		0.177	0.585	0.422	0.394	0.121

Total Nitrogen (mg/L)	22	<	0.373	1.113	0.778	0.764	0.215
Total Phosphorus (mg/L)	22		0.012	0.071	0.042	0.042	0.016

CKSM-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	27		15.0	28.0	23.8	23.3	3.0
pH (su)	27		5.2	6.7	5.9	6.0	0.4
Dissolved Oxygen (mg/L)	27		7.4	10.2	7.8	8.0	0.6
Specific Conductance (µmhos)	27		25.0	35.0	31.0	30.9	2.8
Turbidity (NTU)	27		2.0	29.0	4.5	6.0	5.4
Total Suspended Solids (mg/L)	25	<	5.0	45.0	6.0	7.4	8.8
Nitrate+Nitrite Nitrogen (mg/L)	25	<	0.006	0.237	0.053	0.065	0.053
Total Nitrogen (mg/L)	25	<	0.101	0.904	0.445	0.469	0.224
Total Phosphorus (mg/L)	25	<	0.004	0.038	0.016	0.017	0.009

CNR-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	39		7.5	31.0	24.9	22.6	6.7
pH (su)	39		6.4	8.6	6.9	7.0	0.4
Dissolved Oxygen (mg/L)	39		2.8	12.0	7.2	7.7	2.0
Specific Conductance (µmhos)	39		50.1	110.6	79.0	78.7	16.6
Turbidity (NTU)	39		3.8	30.5	11.1	12.4	6.5
Total Suspended Solids (mg/L)	39	<	1.0	30.0	5.0	5.5	5.7
Nitrate+Nitrite Nitrogen (mg/L)	39	<	0.003	0.356	0.092	0.115	0.090
Total Nitrogen (mg/L)	39	<	0.087	1.213	0.526	0.540	0.208
Total Phosphorus (mg/L)	39	<	0.004	0.050	0.022	0.024	0.011

CNRC-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	22		5.9	29.0	20.9	20.8	6.8
pH (su)	22		6.8	7.8	7.0	7.1	0.3
Dissolved Oxygen (mg/L)	22		4.9	12.3	7.1	7.5	2.0
Specific Conductance (µmhos)	22		51.8	92.0	73.8	74.7	12.5
Turbidity (NTU)	20		3.0	23.8	7.7	10.4	6.3
Total Suspended Solids (mg/L)	19	<	1.0	7.0	1.0	2.2	2.2
Nitrate+Nitrite Nitrogen (mg/L)	20		0.010	0.190	0.104	0.106	0.042
Total Nitrogen (mg/L)	20		0.185	1.247	0.598	0.587	0.225
Total Phosphorus (mg/L)	20		0.010	0.042	0.026	0.026	0.010

CO-12	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	106		3.8	30.9	17.2	17.0	7.6
pH (su)	106		4.8	8.6	7.1	7.1	0.6
Dissolved Oxygen (mg/L)	101		6.2	12.8	9.5	9.6	1.6
Specific Conductance (µmhos)	101		23.1	82.0	37.0	38.9	10.4
Turbidity (NTU)	100		0.3	37.3	1.4	2.8	5.5
Total Suspended Solids (mg/L)	99	<	0.3	42.0	1.0	2.8	5.4
Nitrate+Nitrite Nitrogen (mg/L)	102	<	0.003	4.760	0.132	0.232	0.497
Total Nitrogen (mg/L)	96	<	0.049	4.790	0.302	0.410	0.523
Total Phosphorus (mg/L)	96	<	0.002	0.232	0.007	0.016	0.029

CONE-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	59		5.5	31.5	23.4	21.8	7.0
pH (su)	61		6.3	8.9	7.2	7.2	0.4
Dissolved Oxygen (mg/L)	60		6.2	12.2	8.0	8.4	1.4
Specific Conductance (µmhos)	60		0.1	125.7	91.9	79.6	38.8
Turbidity (NTU)	58		2.3	41.5	9.8	12.6	9.6
Total Suspended Solids (mg/L)	57	<	1.0	55.0	5.0	10.8	13.0
Nitrate+Nitrite Nitrogen (mg/L)	58		0.008	0.512	0.142	0.158	0.087
Total Nitrogen (mg/L)	58	<	0.076	1.130	0.454	0.485	0.265
Total Phosphorus (mg/L)	58		0.006	0.074	0.022	0.026	0.016

COSE-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	98		5.6	31.5	21.7	20.5	7.1
pH (su)	98		6.7	8.1	7.3	7.3	0.3
Dissolved Oxygen (mg/L)	98		4.6	12.2	7.9	8.2	2.0
Specific Conductance (µmhos)	98		53.1	259.9	141.8	152.1	42.1
Turbidity (NTU)	98		0.9	21.0	3.7	5.0	3.9
Total Suspended Solids (mg/L)	98	<	1.0	10.0	3.0	3.1	2.5
Nitrate+Nitrite Nitrogen (mg/L)	98		0.014	0.359	0.132	0.145	0.086
Total Nitrogen (mg/L)	98	<	0.190	0.948	0.493	0.506	0.177
Total Phosphorus (mg/L)	98	<	0.004	0.104	0.033	0.035	0.014

CS-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	282		6.0	33.0	22.9	21.1	6.2
pH (su)	283		4.7	7.9	6.2	6.3	0.5
Dissolved Oxygen (mg/L)	42		2.4	11.1	5.3	5.8	1.1
Specific Conductance (µmhos)	40		45.0	29382.9	609.0	5007.1	7780.0
Turbidity (NTU)	43		2.0	23.0	4.9	6.9	4.7
Total Suspended Solids (mg/L)	283	<	1.0	84.0	6.0	7.5	9.4
Nitrate+Nitrite Nitrogen (mg/L)	287	<	0.003	0.774	0.131	0.150	0.093
Total Nitrogen (mg/L)	286	<	0.059	4.360	0.624	0.708	0.502
Total Phosphorus (mg/L)	288	<	0.005	1.650	0.040	0.053	0.112

CS-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	265		8.0	33.0	24.2	22.9	6.8
pH (su)	266		4.4	7.9	6.9	6.9	0.5
Dissolved Oxygen (mg/L)	48		2.6	11.3	5.8	6.3	2.0
Specific Conductance (µmhos)	46		179.7	33841.5	4754.8	8250.2	8677.4
Turbidity (NTU)	43		2.0	111.0	8.5	14.7	20.6
Total Suspended Solids (mg/L)	280	<	2.0	94.0	13.0	16.4	12.7
Nitrate+Nitrite Nitrogen (mg/L)	277	<	0.005	0.717	0.166	0.184	0.131
Total Nitrogen (mg/L)	261	<	0.094	4.574	0.910	1.017	0.562
Total Phosphorus (mg/L)	279	<	0.005	0.600	0.080	0.102	0.080

DGRM-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	26		14.2	31.2	26.8	25.6	5.1
pH (su)	26		6.2	9.0	7.8	7.6	0.6
Dissolved Oxygen (mg/L)	18		5.1	10.0	7.0	7.0	1.2
Specific Conductance (µmhos)	18		3171.7	25960.0	12368.0	12842.0	7326.4
Turbidity (NTU)	18		7.0	26.0	12.6	13.5	5.2
Total Suspended Solids (mg/L)	26		5.0	37.0	14.0	15.7	6.4
Nitrate+Nitrite Nitrogen (mg/L)	26	<	0.002	0.173	0.022	0.044	0.053
Total Nitrogen (mg/L)	26	<	0.338	2.005	0.675	0.739	0.340
Total Phosphorus (mg/L)	26		0.027	0.086	0.052	0.054	0.015

DR-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	278		7.0	34.0	24.0	23.2	6.3
pH (su)	281		4.6	8.4	7.0	6.9	0.5
Dissolved Oxygen (mg/L)	51		0.9	15.0	5.6	5.9	2.9
Specific Conductance (µmhos)	48		76.0	21431.0	2777.4	4437.0	5532.1
Turbidity (NTU)	42		5.0	131.0	8.9	11.9	19.1
Total Suspended Solids (mg/L)	284	<	1.0	94.0	12.0	14.1	10.3
Nitrate+Nitrite Nitrogen (mg/L)	279	<	0.001	1.800	0.100	0.160	0.243
Total Nitrogen (mg/L)	172	<	0.052	4.220	0.954	1.023	0.525
Total Phosphorus (mg/L)	285	<	0.005	0.900	0.100	0.128	0.094

E-1	N		Min	Max	Med	Avg	SD

Temperature (°C)	299		3.0	31.0	20.8	19.9	6.0
pH (su)	301		3.2	8.3	5.3	5.3	0.8
Dissolved Oxygen (mg/L)	56		6.3	10.7	7.9	8.2	1.0
Specific Conductance (µmhos)	55		21.0	345.0	31.0	38.5	43.6
Turbidity (NTU)	59		2.5	62.0	8.2	11.4	12.1
Total Suspended Solids (mg/L)	298	<	1.0	163.0	9.0	13.7	17.0
Nitrate+Nitrite Nitrogen (mg/L)	302	<	0.003	1.290	0.120	0.128	0.118
Total Nitrogen (mg/L)	66	<	0.211	2.176	0.561	0.668	0.382
Total Phosphorus (mg/L)	306	<	0.001	0.380	0.025	0.035	0.039

FI-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	190		11.7	25.0	20.6	19.7	3.3
pH (su)	190		5.3	7.8	6.0	6.1	0.5
Dissolved Oxygen (mg/L)	102		6.4	12.6	8.1	8.3	0.8
Specific Conductance (µmhos)	103		36.0	125.0	57.0	57.2	14.2
Turbidity (NTU)	95		1.0	159.0	4.0	9.6	20.1
Total Suspended Solids (mg/L)	163	<	1.0	73.0	5.0	9.0	11.4
Nitrate+Nitrite Nitrogen (mg/L)	167		0.012	2.730	1.330	1.316	0.529
Total Nitrogen (mg/L)	167	<	0.210	3.800	1.740	1.723	0.530
Total Phosphorus (mg/L)	166	<	0.005	0.317	0.056	0.068	0.053

FLIM-2A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	93		6.4	27.8	17.0	17.5	5.9
pH (su)	93		6.8	8.7	7.8	7.8	0.3
Dissolved Oxygen (mg/L)	93		6.6	12.4	9.5	9.3	1.5
Specific Conductance (µmhos)	93		74.0	231.0	175.0	171.8	28.2
Turbidity (NTU)	93		0.9	421.0	6.6	16.2	46.0
Total Suspended Solids (mg/L)	93	<	0.3	225.0	6.0	12.5	28.3
Nitrate+Nitrite Nitrogen (mg/L)	92	<	0.003	5.150	1.666	1.735	0.800
Total Nitrogen (mg/L)	64	<	0.002	5.356	1.975	2.115	0.796
Total Phosphorus (mg/L)	64	<	0.002	0.384	0.050	0.061	0.068

FM-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	121		6.8	31.0	21.9	20.3	5.6
pH (su)	121		6.0	8.3	7.8	7.8	0.4
Dissolved Oxygen (mg/L)	47		7.4	15.2	9.3	9.7	1.7
Specific Conductance (µmhos)	47		279.0	643.0	544.0	530.1	73.5
Turbidity (NTU)	32		2.1	139.0	3.8	11.8	27.2
Total Suspended Solids (mg/L)	119	<	0.3	476.0	4.0	18.7	64.3
Nitrate+Nitrite Nitrogen (mg/L)	117	<	0.040	14.328	2.918	3.176	1.764
Total Nitrogen (mg/L)	43	<	0.593	14.328	3.849	3.827	1.379
Total Phosphorus (mg/L)	110		0.090	2.570	0.380	0.522	0.446

FMCJ-1B	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	25		16.8	25.2	22.1	21.6	2.2
pH (su)	25		7.7	8.5	8.2	8.1	0.2
Dissolved Oxygen (mg/L)	25		8.4	12.6	10.1	10.2	0.9
Specific Conductance (µmhos)	25		250.0	376.0	357.0	345.0	30.7
Turbidity (NTU)	25		1.0	20.1	1.8	3.6	4.8
Total Suspended Solids (mg/L)	24	<	0.3	12.0	2.0	2.6	2.5
Nitrate+Nitrite Nitrogen (mg/L)	23		0.346	4.252	0.929	1.062	0.782
Total Nitrogen (mg/L)	15	<	0.604	4.252	1.125	1.169	0.349
Total Phosphorus (mg/L)	15	<	0.002	0.100	0.010	0.022	0.021

FR-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	194		6.0	33.0	24.4	23.1	6.6
pH (su)	194		5.6	8.6	7.4	7.4	0.5

Dissolved Oxygen (mg/L)	57		0.6	12.0	6.4	6.6	2.2
Specific Conductance (µmhos)	54		1765.0	33289.8	13738.4	15100.0	8704.6
Turbidity (NTU)	48		6.0	40.3	14.4	16.4	7.1
Total Suspended Solids (mg/L)	192	<	1.0	74.0	15.5	18.5	10.9
Nitrate+Nitrite Nitrogen (mg/L)	190	<	0.001	1.165	0.033	0.065	0.106
Total Nitrogen (mg/L)	182	<	0.041	4.982	0.664	0.745	0.523
Total Phosphorus (mg/L)	193	<	0.005	0.502	0.045	0.051	0.047

FTCM-6	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	45		6.5	28.0	18.0	18.2	6.5
pH (su)	45		6.9	7.9	7.4	7.4	0.2
Dissolved Oxygen (mg/L)	45		2.7	10.0	5.8	5.9	2.2
Specific Conductance (µmhos)	45		120.0	314.0	228.0	224.8	42.1
Turbidity (NTU)	43		6.3	40.2	12.3	14.4	7.2
Total Suspended Solids (mg/L)	43	<	0.3	32.0	11.0	12.7	6.7
Nitrate+Nitrite Nitrogen (mg/L)	43	<	0.004	1.770	0.362	0.465	0.408
Total Nitrogen (mg/L)	23	<	0.002	2.087	0.949	1.074	0.409
Total Phosphorus (mg/L)	24		0.039	0.309	0.057	0.092	0.073

H-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	152		2.0	32.0	20.0	19.4	7.0
pH (su)	152		4.5	8.9	7.4	7.3	0.6
Dissolved Oxygen (mg/L)	82		0.2	24.8	9.7	9.9	2.6
Specific Conductance (µmhos)	83		97.0	1218.0	293.0	365.3	214.4
Turbidity (NTU)	81		0.9	258.0	6.5	21.8	45.0
Total Suspended Solids (mg/L)	151	<	0.3	1133.0	4.0	34.4	115.9
Nitrate+Nitrite Nitrogen (mg/L)	146	<	0.003	2.510	0.180	0.228	0.274
Total Nitrogen (mg/L)	125	<	0.002	2.772	0.390	0.532	0.436
Total Phosphorus (mg/L)	139	<	0.002	0.790	0.019	0.056	0.118

HATC-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	119		4.8	31.3	19.4	18.8	7.0
pH (su)	119		6.0	8.6	7.2	7.2	0.3
Dissolved Oxygen (mg/L)	119		6.6	12.8	9.2	9.3	1.5
Specific Conductance (µmhos)	117		23.2	63.8	42.0	41.4	7.1
Turbidity (NTU)	119		1.6	185.0	4.8	11.2	25.8
Total Suspended Solids (mg/L)	112	<	0.5	197.0	2.0	9.0	24.9
Nitrate+Nitrite Nitrogen (mg/L)	112	<	0.002	1.630	0.010	0.036	0.154
Total Nitrogen (mg/L)	112	<	0.022	3.060	0.164	0.259	0.402
Total Phosphorus (mg/L)	112	<	0.004	0.107	0.015	0.026	0.023

HILT-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	33		14.4	29.4	23.8	22.9	3.1
pH (su)	33		5.8	7.6	6.9	6.8	0.4
Dissolved Oxygen (mg/L)	33		5.4	9.5	7.8	7.7	0.9
Specific Conductance (µmhos)	33		19.4	49.5	36.6	36.2	5.8
Turbidity (NTU)	32		5.2	272.0	7.9	26.4	50.6
Total Suspended Solids (mg/L)	29	<	1.0	152.0	3.8	15.6	31.2
Nitrate+Nitrite Nitrogen (mg/L)	29		0.010	0.198	0.088	0.085	0.052
Total Nitrogen (mg/L)	29	<	0.072	0.973	0.328	0.379	0.259
Total Phosphorus (mg/L)	29	<	0.011	0.170	0.017	0.032	0.033

IC-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	74		6.1	32.6	25.4	23.7	6.4
pH (su)	74		6.0	8.5	7.7	7.5	0.5
Dissolved Oxygen (mg/L)	74		2.7	12.6	6.5	6.9	1.9
Specific Conductance (µmhos)	64		25.6	37034.0	27933.6	25810.8	7726.2

Turbidity (NTU)	74	1.0	29.0	12.4	12.9	6.1
Total Suspended Solids (mg/L)	75	7.0	42.0	18.0	19.5	7.0
Nitrate+Nitrite Nitrogen (mg/L)	75	< 0.004	0.492	0.035	0.076	0.104
Total Nitrogen (mg/L)	68	< 0.058	3.116	0.843	0.883	0.478
Total Phosphorus (mg/L)	75	0.017	0.400	0.067	0.074	0.050

INDM-249	N	Min	Max	Med	Avg	SD
Temperature (°C)	52	12.1	27.8	22.2	20.8	4.4
pH (su)	52	7.0	8.7	7.8	7.8	0.2
Dissolved Oxygen (mg/L)	52	4.4	12.5	7.4	7.7	1.8
Specific Conductance (µmhos)	52	104.7	288.0	243.0	238.4	35.6
Turbidity (NTU)	52	1.4	76.0	7.4	11.5	14.5
Total Suspended Solids (mg/L)	37	< 0.3	60.0	6.0	8.2	10.2
Nitrate+Nitrite Nitrogen (mg/L)	36	0.167	1.724	0.888	0.869	0.338
Total Nitrogen (mg/L)	30	< 0.502	1.847	1.204	1.224	0.366
Total Phosphorus (mg/L)	30	< 0.006	0.175	0.038	0.048	0.037

LC-1	N	Min	Max	Med	Avg	SD
Temperature (°C)	192	7.6	30.3	18.4	18.1	4.8
pH (su)	191	6.3	8.7	7.7	7.6	0.3
Dissolved Oxygen (mg/L)	114	5.9	14.8	9.0	9.1	1.7
Specific Conductance (µmhos)	114	40.0	466.0	384.5	368.2	68.0
Turbidity (NTU)	107	1.1	152.0	3.7	8.4	18.2
Total Suspended Solids (mg/L)	183	< 0.3	117.0	5.0	7.5	12.9
Nitrate+Nitrite Nitrogen (mg/L)	184	< 0.003	5.570	1.380	1.559	0.964
Total Nitrogen (mg/L)	84	< 0.002	5.835	2.032	2.250	1.136
Total Phosphorus (mg/L)	156	< 0.004	8.000	0.060	0.148	0.643

LFKJ-6	N	Min	Max	Med	Avg	SD
Temperature (°C)	92	5.2	34.0	22.0	21.6	7.3
pH (su)	92	6.4	9.3	7.6	7.7	0.6
Dissolved Oxygen (mg/L)	46	4.6	18.8	9.6	9.6	2.7
Specific Conductance (µmhos)	45	141.0	569.0	363.3	352.6	124.5
Turbidity (NTU)	39	4.4	92.4	7.7	16.7	21.7
Total Suspended Solids (mg/L)	94	< 1.0	54.0	8.0	11.4	10.5
Nitrate+Nitrite Nitrogen (mg/L)	93	< 0.003	16.410	0.840	1.112	1.782
Total Nitrogen (mg/L)	67	< 0.394	16.410	1.398	1.417	0.404
Total Phosphorus (mg/L)	85	< 0.004	0.670	0.059	0.080	0.089

LIML-300	N	Min	Max	Med	Avg	SD
Temperature (°C)	36	12.6	29.3	22.6	21.6	4.2
pH (su)	36	6.8	8.1	7.6	7.6	0.3
Dissolved Oxygen (mg/L)	33	6.7	10.2	8.1	8.1	0.9
Specific Conductance (µmhos)	33	92.7	156.0	129.0	125.6	17.5
Turbidity (NTU)	33	1.7	61.5	4.4	7.6	10.3
Total Suspended Solids (mg/L)	35	< 0.3	37.0	3.0	4.9	6.7
Nitrate+Nitrite Nitrogen (mg/L)	34	< 0.015	1.352	0.908	0.894	0.251
Total Nitrogen (mg/L)	28	< 0.754	2.396	1.280	1.300	0.305
Total Phosphorus (mg/L)	28	< 0.005	0.159	0.054	0.069	0.035

LOSW-7	N	Min	Max	Med	Avg	SD
Temperature (°C)	27	7.4	28.6	21.1	18.8	6.6
pH (su)	27	7.3	9.0	8.0	8.0	0.3
Dissolved Oxygen (mg/L)	27	6.6	10.8	8.1	8.4	1.4
Specific Conductance (µmhos)	27	285.1	2004.0	992.3	995.2	490.8
Turbidity (NTU)	27	1.9	51.4	5.6	12.5	14.1
Total Suspended Solids (mg/L)	27	< 1.0	115.0	6.0	15.1	24.1

Nitrate+Nitrite Nitrogen (mg/L)	27	<	0.002	0.443	0.095	0.120	0.109
Total Nitrogen (mg/L)	21	<	0.004	0.908	0.303	0.344	0.248
Total Phosphorus (mg/L)	21		0.008	0.042	0.015	0.018	0.010

LT-12	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	35		15.1	28.0	24.4	23.6	3.3
pH (su)	35		6.3	7.8	7.2	7.2	0.4
Dissolved Oxygen (mg/L)	30		6.7	10.1	7.6	7.8	0.8
Specific Conductance (µmhos)	30		46.2	175.6	133.6	124.2	33.0
Turbidity (NTU)	30		5.0	113.2	11.0	21.9	28.5
Total Suspended Solids (mg/L)	31	<	1.0	120.0	8.0	16.4	26.2
Nitrate+Nitrite Nitrogen (mg/L)	32		0.012	0.740	0.098	0.139	0.154
Total Nitrogen (mg/L)	32	<	0.074	2.690	0.446	0.598	0.574
Total Phosphorus (mg/L)	32		0.010	0.115	0.022	0.038	0.033

LTRR-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	47		11.8	27.5	23.8	22.9	3.5
pH (su)	47		6.2	8.1	7.0	7.0	0.4
Dissolved Oxygen (mg/L)	47		5.1	10.8	7.0	7.0	1.2
Specific Conductance (µmhos)	47		46.4	120.0	72.0	73.2	15.9
Turbidity (NTU)	48		9.3	425.0	17.0	31.5	64.4
Total Suspended Solids (mg/L)	37	<	1.0	231.0	10.0	22.8	45.8
Nitrate+Nitrite Nitrogen (mg/L)	37		0.171	0.678	0.313	0.331	0.103
Total Nitrogen (mg/L)	34	<	0.253	1.313	0.725	0.770	0.211
Total Phosphorus (mg/L)	34	<	0.032	0.381	0.054	0.074	0.065

LUXL-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	42		6.2	29.6	22.9	21.9	5.1
pH (su)	42		5.8	8.6	6.9	6.9	0.5
Dissolved Oxygen (mg/L)	29		7.4	10.4	8.3	8.3	0.7
Specific Conductance (µmhos)	29		26.7	47.6	38.3	38.3	4.8
Turbidity (NTU)	32		5.3	500.0	10.8	38.3	97.9
Total Suspended Solids (mg/L)	36	<	1.0	236.0	7.5	18.8	39.8
Nitrate+Nitrite Nitrogen (mg/L)	38		0.075	1.800	0.281	0.307	0.266
Total Nitrogen (mg/L)	38	<	0.167	3.110	0.516	0.630	0.570
Total Phosphorus (mg/L)	38	<	0.002	0.218	0.020	0.031	0.039

MB-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	84		6.8	31.9	25.6	23.6	6.3
pH (su)	85		5.4	8.4	8.0	7.9	0.5
Dissolved Oxygen (mg/L)	84		3.5	12.2	7.5	7.7	1.7
Specific Conductance (µmhos)	75		32.2	51664.2	35799.4	34681.7	9532.2
Turbidity (NTU)	73		4.3	30.1	11.1	12.5	5.0
Total Suspended Solids (mg/L)	76		8.0	39.0	18.5	19.3	7.0
Nitrate+Nitrite Nitrogen (mg/L)	76	<	0.004	0.955	0.026	0.064	0.125
Total Nitrogen (mg/L)	69	<	0.052	1.469	0.472	0.484	0.332
Total Phosphorus (mg/L)	76		0.012	0.790	0.036	0.052	0.095

MB-2A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	74		10.3	31.0	24.5	23.6	5.5
pH (su)	73		6.9	8.3	8.0	8.0	0.3
Dissolved Oxygen (mg/L)	74		2.0	10.9	7.4	7.2	1.5
Specific Conductance (µmhos)	65		23470.1	52565.5	45098.8	45211.2	5291.2
Turbidity (NTU)	72		0.1	32.5	2.9	4.1	4.3
Total Suspended Solids (mg/L)	76	<	5.0	58.0	14.0	15.1	7.0
Nitrate+Nitrite Nitrogen (mg/L)	76	<	0.004	0.603	0.038	0.075	0.115
Total Nitrogen (mg/L)	69	<	0.038	2.808	0.379	0.526	0.589

Total Phosphorus (mg/L)	76	<	0.004	0.200	0.026	0.030	0.029

MB-3A	N		Min	Max	Med	Avg	SD
Temperature (°C)	84		4.2	31.6	25.6	23.2	6.8
pH (su)	84		5.9	8.3	8.0	7.8	0.5
Dissolved Oxygen (mg/L)	84		3.8	13.4	7.5	7.8	1.8
Specific Conductance (µmhos)	74		7492.2	43491.1	28208.9	26767.5	9746.6
Turbidity (NTU)	76		2.4	75.7	11.9	16.3	13.2
Total Suspended Solids (mg/L)	78		7.0	85.0	20.0	22.9	13.3
Nitrate+Nitrite Nitrogen (mg/L)	78	<	0.004	1.130	0.024	0.076	0.154
Total Nitrogen (mg/L)	71	<	0.052	2.629	0.642	0.739	0.535
Total Phosphorus (mg/L)	78		0.023	1.200	0.050	0.067	0.132

MBFB-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	51		9.3	30.7	24.5	23.4	6.1
pH (su)	51		7.0	9.1	7.5	7.6	0.4
Dissolved Oxygen (mg/L)	45		5.0	11.6	7.9	8.2	1.7
Specific Conductance (µmhos)	45		88.0	357.9	193.0	192.1	68.7
Turbidity (NTU)	45		4.2	137.0	11.0	16.8	22.8
Total Suspended Solids (mg/L)	45	<	1.0	185.0	12.0	20.0	32.3
Nitrate+Nitrite Nitrogen (mg/L)	44		0.038	4.433	1.212	1.336	0.886
Total Nitrogen (mg/L)	36		0.312	4.871	1.942	1.988	0.893
Total Phosphorus (mg/L)	36		0.008	0.570	0.192	0.249	0.150

MO-1A	N		Min	Max	Med	Avg	SD
Temperature (°C)	340		7.0	35.0	23.6	22.3	7.4
pH (su)	336		5.1	8.1	7.1	7.1	0.5
Dissolved Oxygen (mg/L)	92		1.9	12.3	6.9	7.4	2.1
Specific Conductance (µmhos)	83		106.8	24774.0	288.1	2464.5	4803.8
Turbidity (NTU)	94		3.0	132.0	18.5	29.8	28.7
Total Suspended Solids (mg/L)	352	<	1.0	317.0	18.5	33.4	39.6
Nitrate+Nitrite Nitrogen (mg/L)	348	<	0.005	35.000	0.227	0.335	1.869
Total Nitrogen (mg/L)	338	<	0.058	35.540	0.770	0.950	1.965
Total Phosphorus (mg/L)	350	<	0.010	0.631	0.070	0.089	0.070

MO-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	313		7.0	32.0	23.0	21.8	7.0
pH (su)	314		5.3	8.9	7.2	7.1	0.5
Dissolved Oxygen (mg/L)	87		2.2	12.1	6.4	7.1	2.1
Specific Conductance (µmhos)	78		144.6	37441.4	6359.2	10680.8	10077.0
Turbidity (NTU)	88		2.0	78.0	12.0	16.7	16.8
Total Suspended Solids (mg/L)	328	<	1.0	82.0	12.0	17.0	14.4
Nitrate+Nitrite Nitrogen (mg/L)	324	<	0.005	0.800	0.200	0.204	0.125
Total Nitrogen (mg/L)	308	<	0.082	4.400	0.780	0.819	0.406
Total Phosphorus (mg/L)	326	<	0.015	0.573	0.066	0.077	0.049

MOBM-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	110		5.5	34.1	23.3	22.3	7.6
pH (su)	109		5.2	8.1	7.0	6.9	0.6
Dissolved Oxygen (mg/L)	108		5.3	12.8	8.0	8.3	1.8
Specific Conductance (µmhos)	100		108.1	5190.9	196.6	250.6	502.3
Turbidity (NTU)	113		3.0	198.0	19.0	29.0	28.7
Total Suspended Solids (mg/L)	118		6.0	227.0	16.5	26.7	32.9
Nitrate+Nitrite Nitrogen (mg/L)	118	<	0.005	1.340	0.208	0.210	0.158
Total Nitrogen (mg/L)	111	<	0.197	4.462	0.806	0.845	0.454
Total Phosphorus (mg/L)	118		0.026	0.370	0.069	0.078	0.047

MULD-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	28		15.1	29.9	24.0	23.8	3.8
pH (su)	28		6.2	7.5	6.8	6.8	0.4
Dissolved Oxygen (mg/L)	28		7.5	9.7	8.3	8.4	0.6
Specific Conductance (µmhos)	28		0.0	526.0	40.2	56.0	92.6
Turbidity (NTU)	28		3.1	274.0	12.5	33.8	56.9
Total Suspended Solids (mg/L)	29	<	1.0	276.0	13.0	34.7	57.3
Nitrate+Nitrite Nitrogen (mg/L)	29	<	0.002	0.218	0.146	0.129	0.051
Total Nitrogen (mg/L)	28	<	0.022	0.695	0.258	0.297	0.158
Total Phosphorus (mg/L)	29	<	0.004	0.100	0.023	0.030	0.020

NRRT-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	60		8.1	31.0	23.7	21.7	6.0
pH (su)	61		6.5	8.9	8.0	7.9	0.6
Dissolved Oxygen (mg/L)	61		5.8	13.4	8.5	8.8	1.6
Specific Conductance (µmhos)	60		74.0	4595.0	359.0	882.1	1177.6
Turbidity (NTU)	60		1.9	254.0	5.9	20.8	47.4
Total Suspended Solids (mg/L)	57	<	1.0	308.0	5.0	20.2	52.2
Nitrate+Nitrite Nitrogen (mg/L)	57	<	0.003	0.883	0.124	0.169	0.171
Total Nitrogen (mg/L)	56	<	0.076	1.801	0.422	0.563	0.429
Total Phosphorus (mg/L)	56	<	0.006	0.210	0.030	0.036	0.031

NXBS-50	N		Min	Max	Med	Avg	SD
Temperature (°C)	27		14.1	32.0	26.4	25.4	4.8
pH (su)	27		6.7	8.6	8.0	7.9	0.5
Dissolved Oxygen (mg/L)	26		5.0	8.8	7.0	7.1	1.0
Specific Conductance (µmhos)	27		55.1	204.0	144.6	145.3	26.5
Turbidity (NTU)	28		13.6	548.0	35.6	90.9	134.2
Total Suspended Solids (mg/L)	28	<	1.0	410.0	31.5	84.0	114.3
Nitrate+Nitrite Nitrogen (mg/L)	27	<	0.003	2.940	0.172	0.347	0.562
Total Nitrogen (mg/L)	25	<	0.002	3.543	0.815	1.148	0.874
Total Phosphorus (mg/L)	25	<	0.049	0.441	0.092	0.129	0.108

PALC-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	31		8.8	30.0	25.0	24.0	4.2
pH (su)	31		6.4	8.2	7.5	7.4	0.4
Dissolved Oxygen (mg/L)	28		5.8	10.7	7.6	7.6	0.9
Specific Conductance (µmhos)	28		41.8	219.8	133.7	129.7	45.3
Turbidity (NTU)	28		2.8	49.6	8.8	12.7	11.8
Total Suspended Solids (mg/L)	27	<	1.0	29.0	2.5	6.5	8.2
Nitrate+Nitrite Nitrogen (mg/L)	30	<	0.003	0.291	0.147	0.145	0.076
Total Nitrogen (mg/L)	30	<	0.086	1.373	0.462	0.490	0.283
Total Phosphorus (mg/L)	30	<	0.004	0.061	0.024	0.025	0.014

PDBB-0	N		Min	Max	Med	Avg	SD
Temperature (°C)	27		18.2	31.1	27.4	26.2	4.0
pH (su)	25		6.2	8.1	8.0	7.8	0.4
Dissolved Oxygen (mg/L)	26		5.4	8.9	6.9	6.9	0.9
Specific Conductance (µmhos)	27		27371.6	54860.6	47558.6	45637.0	7486.6
Turbidity (NTU)	23		0.0	11.0	1.7	2.2	2.3
Total Suspended Solids (mg/L)	26		7.0	33.0	13.0	14.0	5.8
Nitrate+Nitrite Nitrogen (mg/L)	26	<	0.004	0.083	0.006	0.020	0.025
Total Nitrogen (mg/L)	26	<	0.038	2.102	0.159	0.402	0.504
Total Phosphorus (mg/L)	26	<	0.003	0.061	0.026	0.026	0.017

PDBB-5	N		Min	Max	Med	Avg	SD
Temperature (°C)	24		19.0	27.0	23.3	23.5	2.1

pH (su)	24	4.5	6.5	5.7	5.5	0.6
Dissolved Oxygen (mg/L)	24	7.0	9.3	8.0	8.0	0.5
Specific Conductance (µmhos)	23	24.2	39.0	27.0	27.6	3.0
Turbidity (NTU)	27	1.5	15.6	3.0	3.9	2.8
Total Suspended Solids (mg/L)	27	< 5.0	15.0	2.5	4.4	3.1
Nitrate+Nitrite Nitrogen (mg/L)	27	0.167	0.835	0.273	0.304	0.144
Total Nitrogen (mg/L)	27	< 0.329	1.605	0.619	0.705	0.306
Total Phosphorus (mg/L)	27	0.008	0.064	0.021	0.025	0.014

PEAG-2	**N**	**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	27	13.2	30.0	25.2	25.1	4.1
pH (su)	27	6.3	9.1	7.3	7.3	0.6
Dissolved Oxygen (mg/L)	27	6.7	9.9	7.8	7.9	0.8
Specific Conductance (µmhos)	27	55.1	165.2	113.3	112.9	30.9
Turbidity (NTU)	27	1.8	157.0	8.8	19.6	29.9
Total Suspended Solids (mg/L)	27	< 1.0	82.0	4.0	15.7	21.4
Nitrate+Nitrite Nitrogen (mg/L)	27	0.029	0.748	0.390	0.411	0.187
Total Nitrogen (mg/L)	27	< 0.276	1.266	0.853	0.822	0.264
Total Phosphorus (mg/L)	27	0.007	0.133	0.029	0.040	0.032

PPLL-2	**N**	**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	105	6.2	31.8	24.0	22.2	5.0
pH (su)	106	6.0	9.1	7.6	7.5	0.6
Dissolved Oxygen (mg/L)	75	1.3	12.0	6.3	6.5	1.8
Specific Conductance (µmhos)	75	53.2	2424.0	222.7	510.3	499.2
Turbidity (NTU)	75	2.3	650.0	8.2	24.0	78.4
Total Suspended Solids (mg/L)	81	< 1.0	340.0	10.0	20.8	49.0
Nitrate+Nitrite Nitrogen (mg/L)	78	< 0.015	15.000	0.339	0.705	1.887
Total Nitrogen (mg/L)	61	< 0.120	19.875	1.654	3.785	4.463
Total Phosphorus (mg/L)	78	0.016	10.380	0.334	0.893	1.701

PRRJ-1	**N**	**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	27	12.1	27.3	22.4	21.5	3.7
pH (su)	27	7.4	8.2	7.6	7.6	0.2
Dissolved Oxygen (mg/L)	27	4.5	9.5	6.2	6.3	1.2
Specific Conductance (µmhos)	27	236.0	403.0	309.0	309.4	38.0
Turbidity (NTU)	27	1.3	69.3	7.2	12.3	15.3
Total Suspended Solids (mg/L)	27	3.0	40.0	6.0	8.6	8.3
Nitrate+Nitrite Nitrogen (mg/L)	27	0.275	1.330	0.491	0.538	0.222
Total Nitrogen (mg/L)	21	< 0.350	2.540	0.937	0.990	0.529
Total Phosphorus (mg/L)	21	< 0.006	0.100	0.024	0.028	0.017

SCRL-2	**N**	**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	30	8.1	27.4	21.8	19.9	5.5
pH (su)	30	6.1	8.7	7.4	7.4	0.6
Dissolved Oxygen (mg/L)	30	4.4	10.4	8.3	8.2	1.6
Specific Conductance (µmhos)	30	67.7	131.0	92.7	96.3	15.8
Turbidity (NTU)	30	0.6	102.0	2.2	8.6	20.5
Total Suspended Solids (mg/L)	27	< 0.3	141.0	2.0	11.7	29.2
Nitrate+Nitrite Nitrogen (mg/L)	26	0.014	4.484	0.328	0.847	1.168
Total Nitrogen (mg/L)	19	0.014	5.271	1.276	1.367	1.186
Total Phosphorus (mg/L)	19	< 0.006	0.277	0.050	0.053	0.057

SF-2	**N**	**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	21	6.4	29.7	19.2	19.2	7.3
pH (su)	21	7.0	8.1	7.6	7.6	0.2
Dissolved Oxygen (mg/L)	21	5.5	11.7	8.8	8.9	1.6

Specific Conductance (µmhos)	21		50.0	115.0	70.7	74.2	16.3
Turbidity (NTU)	20		1.1	8.4	2.0	2.8	1.9
Total Suspended Solids (mg/L)	18	<	0.3	401.0	2.5	25.0	93.9
Nitrate+Nitrite Nitrogen (mg/L)	18	<	0.004	0.100	0.026	0.028	0.029
Total Nitrogen (mg/L)	11	<	0.002	0.586	0.312	0.267	0.192
Total Phosphorus (mg/L)	11	<	0.007	0.116	0.012	0.022	0.032

SF-6	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	17		9.5	16.8	14.5	14.0	2.4
pH (su)	17		6.4	8.3	7.0	7.2	0.6
Dissolved Oxygen (mg/L)	17		5.1	10.5	7.5	7.4	1.6
Specific Conductance (µmhos)	17		47.0	320.8	80.6	109.1	88.6
Turbidity (NTU)	17		1.0	17.8	2.2	3.7	4.0
Total Suspended Solids (mg/L)	17	<	1.0	7.0	0.5	2.3	2.5
Nitrate+Nitrite Nitrogen (mg/L)	17		0.185	0.428	0.273	0.285	0.065
Total Nitrogen (mg/L)	17	<	0.332	1.122	0.452	0.526	0.214
Total Phosphorus (mg/L)	17	<	0.004	0.020	0.007	0.008	0.005

SFCB-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	28		9.0	32.1	24.9	23.8	5.3
pH (su)	28		7.0	9.1	8.0	8.0	0.5
Dissolved Oxygen (mg/L)	28		7.3	12.9	8.8	9.3	1.3
Specific Conductance (µmhos)	28		71.7	222.8	131.8	137.6	40.8
Turbidity (NTU)	28		1.3	30.4	5.9	9.9	9.2
Total Suspended Solids (mg/L)	27	<	1.0	26.0	4.0	6.2	7.2
Nitrate+Nitrite Nitrogen (mg/L)	27		0.004	0.284	0.060	0.074	0.066
Total Nitrogen (mg/L)	27	<	0.100	1.234	0.361	0.461	0.272
Total Phosphorus (mg/L)	27		0.019	0.057	0.034	0.037	0.012

SH-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	144		0.5	29.0	18.6	18.2	6.7
pH (su)	143		6.2	9.0	7.8	7.7	0.4
Dissolved Oxygen (mg/L)	113		5.4	16.5	9.0	9.6	2.3
Specific Conductance (µmhos)	115		122.0	398.0	250.0	253.8	60.1
Turbidity (NTU)	115		1.2	156.0	5.7	16.1	29.8
Total Suspended Solids (mg/L)	131	<	0.3	233.0	4.0	15.9	37.2
Nitrate+Nitrite Nitrogen (mg/L)	127	<	0.003	2.660	0.314	0.335	0.321
Total Nitrogen (mg/L)	81	<	0.002	2.660	0.740	0.808	0.438
Total Phosphorus (mg/L)	99	<	0.002	0.230	0.039	0.041	0.040

SHRT-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	65		5.0	27.0	22.4	21.5	4.2
pH (su)	68		7.3	8.5	7.9	7.8	0.2
Dissolved Oxygen (mg/L)	41		5.7	10.5	7.9	8.0	1.0
Specific Conductance (µmhos)	42		106.7	1303.0	392.4	509.4	260.6
Turbidity (NTU)	42		1.2	154.0	3.7	8.4	23.3
Total Suspended Solids (mg/L)	61	<	0.3	925.0	7.0	23.1	118.0
Nitrate+Nitrite Nitrogen (mg/L)	61		0.301	6.190	2.743	2.816	1.181
Total Nitrogen (mg/L)	43	<	1.018	7.019	3.283	3.564	1.215
Total Phosphorus (mg/L)	58		0.037	15.400	0.929	2.342	3.076

SOGL-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	65		5.8	31.0	22.7	21.0	5.5
pH (su)	65		6.6	9.8	7.3	7.4	0.5
Dissolved Oxygen (mg/L)	49		6.0	10.9	7.4	7.7	1.2
Specific Conductance (µmhos)	49		58.5	1376.0	218.0	270.0	211.2
Turbidity (NTU)	50		2.8	340.0	10.3	22.5	48.3
Total Suspended Solids (mg/L)	61	<	1.0	450.0	9.0	22.9	59.4

	N	Min	Max	Med	Avg	SD
Nitrate+Nitrite Nitrogen (mg/L)	57	0.003	9.106	1.971	2.621	2.257
Total Nitrogen (mg/L)	57	< 0.491	9.678	3.239	3.575	2.317
Total Phosphorus (mg/L)	57	0.004	1.870	0.385	0.500	0.439

SPLC-3	N	Min	Max	Med	Avg	SD
Temperature (°C)	28	16.0	32.0	25.0	24.5	3.8
pH (su)	28	6.4	8.3	7.1	7.1	0.4
Dissolved Oxygen (mg/L)	25	5.5	8.3	7.2	7.2	0.7
Specific Conductance (µmhos)	25	29.0	179.7	73.5	82.7	34.4
Turbidity (NTU)	26	1.6	60.9	10.8	15.4	13.7
Total Suspended Solids (mg/L)	26	< 1.0	93.0	3.0	11.6	20.7
Nitrate+Nitrite Nitrogen (mg/L)	29	0.006	0.429	0.057	0.081	0.086
Total Nitrogen (mg/L)	29	< 0.076	0.986	0.411	0.472	0.247
Total Phosphorus (mg/L)	29	< 0.004	0.058	0.025	0.026	0.014

SPYG-3	N	Min	Max	Med	Avg	SD
Temperature (°C)	41	4.0	30.3	22.8	22.0	6.5
pH (su)	41	6.0	8.0	7.0	7.0	0.5
Dissolved Oxygen (mg/L)	30	5.5	10.5	7.2	7.4	0.9
Specific Conductance (µmhos)	27	52.0	189.4	116.5	114.7	37.0
Turbidity (NTU)	34	2.3	61.1	18.4	18.8	9.2
Total Suspended Solids (mg/L)	45	1.0	47.0	13.0	14.6	9.1
Nitrate+Nitrite Nitrogen (mg/L)	44	0.005	1.304	0.112	0.140	0.192
Total Nitrogen (mg/L)	44	< 0.092	1.857	0.472	0.521	0.296
Total Phosphorus (mg/L)	44	< 0.004	0.100	0.040	0.037	0.020

SSCD-1A	N	Min	Max	Med	Avg	SD
Temperature (°C)	8	6.0	24.0	15.8	15.4	7.1
pH (su)	8	6.1	8.0	7.6	7.4	0.6
Dissolved Oxygen (mg/L)	6	8.3	12.5	11.0	10.6	1.6
Specific Conductance (µmhos)	6	17.0	106.0	84.2	78.1	32.0
Turbidity (NTU)	6	1.3	500.0	2.3	85.2	203.2
Total Suspended Solids (mg/L)	9	1.0	689.0	4.0	80.0	228.4
Nitrate+Nitrite Nitrogen (mg/L)	9	0.025	4.488	1.180	1.971	1.685
Total Nitrogen (mg/L)	9	< 0.805	4.563	1.489	2.545	1.633
Total Phosphorus (mg/L)	9	0.014	0.679	0.030	0.106	0.215

STXB-3	N	Min	Max	Med	Avg	SD
Temperature (°C)	25	19.0	27.0	23.0	23.1	2.1
pH (su)	25	4.9	6.8	5.6	5.6	0.4
Dissolved Oxygen (mg/L)	25	8.0	9.4	8.3	8.4	0.4
Specific Conductance (µmhos)	24	30.0	44.0	34.0	34.7	3.5
Turbidity (NTU)	28	2.1	29.5	5.1	7.1	5.6
Total Suspended Solids (mg/L)	27	< 5.0	48.0	6.0	7.8	9.1
Nitrate+Nitrite Nitrogen (mg/L)	27	0.165	0.704	0.502	0.469	0.136
Total Nitrogen (mg/L)	27	< 0.378	1.492	0.860	0.884	0.242
Total Phosphorus (mg/L)	27	0.005	0.071	0.022	0.025	0.015

SUCS-1	N	Min	Max	Med	Avg	SD
Temperature (°C)	44	5.3	30.0	24.8	22.9	6.3
pH (su)	44	5.7	8.2	7.2	7.2	0.5
Dissolved Oxygen (mg/L)	28	6.6	9.6	7.4	7.8	0.8
Specific Conductance (µmhos)	28	46.0	96.1	63.8	65.5	13.4
Turbidity (NTU)	28	10.1	211.0	26.4	45.6	51.1
Total Suspended Solids (mg/L)	44	3.0	259.7	23.5	40.4	54.5
Nitrate+Nitrite Nitrogen (mg/L)	43	< 0.003	0.400	0.068	0.077	0.064
Total Nitrogen (mg/L)	41	< 0.004	1.947	0.305	0.474	0.413

Total Phosphorus (mg/L)	41	<	0.002	0.140	0.050	0.057	0.036

TA-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	40		12.3	29.7	24.2	23.2	4.5
pH (su)	40		6.1	7.9	7.0	7.0	0.4
Dissolved Oxygen (mg/L)	38		6.6	10.8	8.0	8.2	1.1
Specific Conductance (µmhos)	38		29.6	53.2	40.3	40.9	5.8
Turbidity (NTU)	38		0.3	193.0	3.4	10.3	31.0
Total Suspended Solids (mg/L)	37	<	0.8	103.0	0.8	6.7	17.6
Nitrate+Nitrite Nitrogen (mg/L)	39	<	0.003	0.365	0.132	0.138	0.068
Total Nitrogen (mg/L)	38	<	0.125	1.251	0.336	0.394	0.244
Total Phosphorus (mg/L)	38	<	0.009	0.200	0.016	0.029	0.038

TA-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	147		-1.8	34.0	20.8	19.1	6.6
pH (su)	148		5.7	8.7	7.0	7.0	0.5
Dissolved Oxygen (mg/L)	60		6.0	12.6	8.6	8.8	1.4
Specific Conductance (µmhos)	60		28.4	85.0	45.8	46.2	8.4
Turbidity (NTU)	61		5.2	458.0	11.6	29.0	61.6
Total Suspended Solids (mg/L)	148	<	1.0	292.0	9.5	22.7	38.6
Nitrate+Nitrite Nitrogen (mg/L)	148	<	0.003	0.570	0.140	0.138	0.074
Total Nitrogen (mg/L)	76	<	0.095	9.460	0.352	0.600	1.197
Total Phosphorus (mg/L)	140	<	0.004	2.210	0.040	0.069	0.194

TARE-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	95		5.6	30.1	19.1	18.9	6.0
pH (su)	95		5.9	10.0	7.0	6.9	0.5
Dissolved Oxygen (mg/L)	94		6.6	11.8	8.9	9.0	1.2
Specific Conductance (µmhos)	95		36.1	85.5	50.5	51.9	9.2
Turbidity (NTU)	93		2.7	232.0	9.5	19.7	35.4
Total Suspended Solids (mg/L)	96	<	1.0	122.0	8.0	17.0	23.1
Nitrate+Nitrite Nitrogen (mg/L)	96		0.059	0.385	0.169	0.176	0.068
Total Nitrogen (mg/L)	96	<	0.143	1.986	0.366	0.438	0.245
Total Phosphorus (mg/L)	96	<	0.004	0.176	0.022	0.034	0.034

TC-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	198		6.0	37.0	26.0	23.9	6.3
pH (su)	198		6.0	9.4	7.7	7.7	0.6
Dissolved Oxygen (mg/L)	61		2.3	12.4	7.0	7.2	2.6
Specific Conductance (µmhos)	58		3035.0	38639.9	20295.6	20257.2	9697.4
Turbidity (NTU)	60		3.0	104.0	6.9	10.8	15.1
Total Suspended Solids (mg/L)	198	<	3.0	9420.0	13.0	64.6	668.4
Nitrate+Nitrite Nitrogen (mg/L)	195	<	0.005	5.160	0.121	0.489	0.858
Total Nitrogen (mg/L)	182	<	0.038	5.760	1.048	1.392	1.074
Total Phosphorus (mg/L)	198	<	0.012	3.350	0.138	0.232	0.324

TENB-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	72		7.9	33.2	24.7	23.3	6.7
pH (su)	72		6.7	7.9	7.4	7.4	0.2
Dissolved Oxygen (mg/L)	71		4.6	12.2	7.6	7.9	1.8
Specific Conductance (µmhos)	62		97.1	6814.0	394.6	1482.5	1912.6
Turbidity (NTU)	76		3.0	66.0	11.8	15.0	11.6
Total Suspended Solids (mg/L)	75	<	1.0	69.0	9.0	11.7	9.6
Nitrate+Nitrite Nitrogen (mg/L)	75	<	0.002	0.443	0.138	0.143	0.105
Total Nitrogen (mg/L)	74	<	0.114	2.082	0.669	0.722	0.328
Total Phosphorus (mg/L)	75		0.017	0.140	0.051	0.055	0.022

TENR-417	N		Min	Max	Med	Avg	SD
Temperature (°C)	55		5.7	30.5	20.4	19.0	7.6
pH (su)	55		7.2	8.9	7.6	7.7	0.3
Dissolved Oxygen (mg/L)	55		4.4	13.1	8.1	8.2	2.5
Specific Conductance (µmhos)	55		129.3	232.0	187.0	186.2	22.3
Turbidity (NTU)	55		2.5	44.9	5.6	7.6	6.6
Total Suspended Solids (mg/L)	55	<	0.3	44.0	5.0	5.9	6.4
Nitrate+Nitrite Nitrogen (mg/L)	55		0.092	2.110	0.277	0.374	0.304
Total Nitrogen (mg/L)	31	<	0.137	2.295	0.631	0.693	0.378
Total Phosphorus (mg/L)	31		0.015	0.170	0.035	0.041	0.030

TERC-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	39		13.0	27.8	23.3	21.8	4.2
pH (su)	39		6.7	8.9	7.8	7.8	0.5
Dissolved Oxygen (mg/L)	34		6.2	10.4	8.0	8.2	1.0
Specific Conductance (µmhos)	34		27.0	300.0	197.4	181.0	60.4
Turbidity (NTU)	27		1.3	21.4	4.5	5.8	4.5
Total Suspended Solids (mg/L)	35	<	1.0	165.0	4.0	10.0	28.3
Nitrate+Nitrite Nitrogen (mg/L)	38		0.023	0.418	0.246	0.240	0.101
Total Nitrogen (mg/L)	35	<	0.142	0.952	0.401	0.440	0.181
Total Phosphorus (mg/L)	35	<	0.004	0.224	0.022	0.032	0.039

TH-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	111		6.0	29.0	21.0	19.3	5.9
pH (su)	113		6.4	8.6	7.7	7.6	0.4
Dissolved Oxygen (mg/L)	35		6.1	9.6	7.3	7.4	0.8
Specific Conductance (µmhos)	34		40.1	712.0	314.4	326.3	152.6
Turbidity (NTU)	36		2.6	17.7	6.0	6.9	3.4
Total Suspended Solids (mg/L)	109	<	1.0	293.0	7.0	13.4	30.0
Nitrate+Nitrite Nitrogen (mg/L)	109		0.031	4.989	0.994	1.345	1.031
Total Nitrogen (mg/L)	90	<	0.197	5.260	1.414	1.794	1.186
Total Phosphorus (mg/L)	106	<	0.004	7.830	0.330	0.858	1.440

TM-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	315		8.0	33.0	24.0	23.0	6.0
pH (su)	316		5.8	8.8	6.8	6.8	0.4
Dissolved Oxygen (mg/L)	97		1.7	12.8	5.3	5.5	2.3
Specific Conductance (µmhos)	89		191.1	32922.4	4625.0	8193.0	8648.1
Turbidity (NTU)	102		2.8	30.4	7.0	8.3	5.3
Total Suspended Solids (mg/L)	317	<	1.0	214.0	13.0	16.8	18.8
Nitrate+Nitrite Nitrogen (mg/L)	319	<	0.005	8.150	0.867	1.395	1.381
Total Nitrogen (mg/L)	315	<	0.170	10.460	3.350	3.702	1.851
Total Phosphorus (mg/L)	321		0.092	5.240	0.510	0.702	0.597

TMCM-3	N		Min	Max	Med	Avg	SD
Temperature (°C)	75		10.0	33.0	25.7	23.1	6.2
pH (su)	75		5.0	10.1	7.1	6.8	1.0
Dissolved Oxygen (mg/L)	73		6.7	11.7	8.2	8.6	1.2
Specific Conductance (µmhos)	75		0.0	109.0	74.0	68.5	25.8
Turbidity (NTU)	76		1.0	96.0	4.0	9.0	14.4
Total Suspended Solids (mg/L)	72	<	5.0	19.0	2.5	3.9	3.3
Nitrate+Nitrite Nitrogen (mg/L)	72	<	0.005	0.692	0.143	0.164	0.127
Total Nitrogen (mg/L)	72	<	0.114	1.859	0.556	0.613	0.306
Total Phosphorus (mg/L)	72		0.005	0.130	0.022	0.027	0.019

TN-4A	N		Min	Max	Med	Avg	SD
Temperature (°C)	97		5.0	29.9	16.8	17.3	6.6

pH (su)	98		6.7	9.0	7.9	8.0	0.3
Dissolved Oxygen (mg/L)	100		3.8	13.1	9.2	9.1	1.7
Specific Conductance (µmhos)	93		214.0	326.0	267.0	266.0	30.3
Turbidity (NTU)	102		0.5	271.0	12.1	19.1	28.9
Total Suspended Solids (mg/L)	102		1.0	206.0	14.0	22.4	26.8
Nitrate+Nitrite Nitrogen (mg/L)	102	<	0.004	7.930	0.795	1.089	1.052
Total Nitrogen (mg/L)	68	<	0.147	7.930	1.280	1.391	0.754
Total Phosphorus (mg/L)	68	<	0.002	1.100	0.156	0.187	0.146

UPHM-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	33		11.1	31.7	25.5	24.0	5.1
pH (su)	33		6.5	8.3	7.4	7.4	0.4
Dissolved Oxygen (mg/L)	33		6.7	10.7	8.4	8.4	1.0
Specific Conductance (µmhos)	33		38.0	247.7	170.8	156.5	60.5
Turbidity (NTU)	33		0.6	121.0	5.3	15.9	26.2
Total Suspended Solids (mg/L)	32	<	1.0	107.0	3.5	13.6	25.1
Nitrate+Nitrite Nitrogen (mg/L)	32		0.057	1.816	0.678	0.733	0.449
Total Nitrogen (mg/L)	32	<	0.366	2.017	0.962	1.015	0.458
Total Phosphorus (mg/L)	32	<	0.004	0.116	0.020	0.030	0.028

VA-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	124		8.7	32.0	21.6	21.0	5.1
pH (su)	125		6.2	8.2	7.6	7.6	0.4
Dissolved Oxygen (mg/L)	30		6.4	10.5	8.2	8.2	0.9
Specific Conductance (µmhos)	30		201.0	505.0	445.5	432.7	67.1
Turbidity (NTU)	30		1.0	116.0	2.6	8.1	21.4
Total Suspended Solids (mg/L)	123	<	0.3	471.0	2.0	9.7	45.4
Nitrate+Nitrite Nitrogen (mg/L)	123	<	0.003	13.040	3.980	4.359	2.470
Total Nitrogen (mg/L)	31	<	0.838	13.040	6.430	5.903	2.156
Total Phosphorus (mg/L)	115	<	0.040	3.250	0.478	0.606	0.482

VALJ-8	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	27		14.7	29.5	24.9	24.1	3.5
pH (su)	27		7.4	8.4	8.2	8.1	0.3
Dissolved Oxygen (mg/L)	27		6.9	13.0	8.8	8.9	1.4
Specific Conductance (µmhos)	27		453.0	1295.0	825.0	804.0	200.4
Turbidity (NTU)	27		1.2	149.0	3.8	11.8	28.4
Total Suspended Solids (mg/L)	27	<	0.3	185.0	4.0	14.0	36.4
Nitrate+Nitrite Nitrogen (mg/L)	27	<	0.003	8.680	4.330	4.301	2.438
Total Nitrogen (mg/L)	18	<	0.808	8.680	4.864	4.768	2.220
Total Phosphorus (mg/L)	18	<	0.100	0.910	0.431	0.441	0.230

VC-5	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	50		11.8	28.6	23.3	22.3	3.8
pH (su)	50		6.2	8.3	7.8	7.7	0.4
Dissolved Oxygen (mg/L)	26		5.0	11.3	8.3	8.4	1.5
Specific Conductance (µmhos)	26		131.0	497.2	419.0	387.3	103.3
Turbidity (NTU)	26		0.9	59.1	2.6	5.6	11.2
Total Suspended Solids (mg/L)	45	<	0.3	58.0	3.0	4.6	8.7
Nitrate+Nitrite Nitrogen (mg/L)	47		0.008	6.120	0.680	0.924	1.145
Total Nitrogen (mg/L)	23	<	0.458	6.120	1.054	1.058	0.325
Total Phosphorus (mg/L)	38	<	0.004	0.158	0.029	0.035	0.031

VI-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	51		13.6	28.2	24.4	23.4	3.5
pH (su)	51		6.6	8.2	7.6	7.5	0.3
Dissolved Oxygen (mg/L)	32		5.0	10.5	7.4	7.4	1.4

Specific Conductance (µmhos)	32		120.0	486.0	438.0	410.5	76.4
Turbidity (NTU)	32		1.9	33.8	4.1	7.3	7.7
Total Suspended Solids (mg/L)	51	<	1.0	54.0	5.0	8.5	11.0
Nitrate+Nitrite Nitrogen (mg/L)	51		0.020	22.411	4.790	5.960	4.391
Total Nitrogen (mg/L)	29	<	0.652	22.411	5.850	6.226	2.602
Total Phosphorus (mg/L)	42		0.203	1.820	0.688	0.727	0.359

VLGJ-5	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	44		9.3	29.5	24.6	22.6	5.3
pH (su)	44		7.3	9.2	8.2	8.3	0.4
Dissolved Oxygen (mg/L)	44		7.4	14.8	9.4	9.8	1.7
Specific Conductance (µmhos)	44		362.0	724.0	551.5	566.9	100.3
Turbidity (NTU)	44		1.2	30.2	4.6	6.3	5.1
Total Suspended Solids (mg/L)	44	<	1.0	49.0	6.0	8.2	8.2
Nitrate+Nitrite Nitrogen (mg/L)	44		0.763	14.247	2.240	2.770	2.266
Total Nitrogen (mg/L)	35		0.953	14.247	3.190	3.234	1.080
Total Phosphorus (mg/L)	35		0.029	0.517	0.235	0.220	0.123

WB-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	238		9.0	32.6	24.0	23.3	5.7
pH (su)	238		5.3	8.8	7.1	7.2	0.7
Dissolved Oxygen (mg/L)	93		3.8	12.4	7.1	7.5	1.9
Specific Conductance (µmhos)	94		98.0	31377.4	9503.2	10753.6	7853.8
Turbidity (NTU)	79		2.4	48.2	10.0	13.1	9.6
Total Suspended Solids (mg/L)	208	<	1.0	70.0	12.0	14.7	11.2
Nitrate+Nitrite Nitrogen (mg/L)	210	<	0.006	1.940	0.456	0.471	0.265
Total Nitrogen (mg/L)	202	<	0.349	5.184	1.222	1.339	0.636
Total Phosphorus (mg/L)	210	<	0.005	0.310	0.054	0.059	0.044

WDFA-2A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	99		6.8	32.3	21.4	20.9	7.2
pH (su)	99		6.6	8.6	7.5	7.4	0.4
Dissolved Oxygen (mg/L)	99		6.5	12.6	9.2	9.2	1.2
Specific Conductance (µmhos)	99		65.2	222.5	117.9	123.4	31.2
Turbidity (NTU)	99		3.6	42.1	7.0	10.2	7.2
Total Suspended Solids (mg/L)	98	<	1.0	62.0	7.5	9.3	8.7
Nitrate+Nitrite Nitrogen (mg/L)	99		0.003	0.361	0.139	0.141	0.084
Total Nitrogen (mg/L)	99	<	0.080	0.982	0.540	0.537	0.196
Total Phosphorus (mg/L)	99	<	0.004	0.114	0.034	0.038	0.016

WEIC-12	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	234		5.6	33.7	21.4	20.9	7.4
pH (su)	234		5.8	9.0	7.5	7.5	0.5
Dissolved Oxygen (mg/L)	116		4.2	11.9	8.4	8.5	1.6
Specific Conductance (µmhos)	116		0.1	246.8	168.7	147.1	69.6
Turbidity (NTU)	114		6.7	237.0	12.8	19.4	25.0
Total Suspended Solids (mg/L)	229	<	1.0	213.0	11.0	17.1	22.5
Nitrate+Nitrite Nitrogen (mg/L)	233	<	0.007	5.309	0.383	0.404	0.354
Total Nitrogen (mg/L)	180	<	0.065	1.612	0.741	0.766	0.262
Total Phosphorus (mg/L)	228	<	0.004	0.990	0.098	0.123	0.109

WO-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	264		8.0	30.0	21.0	20.5	3.9
pH (su)	263		4.5	8.4	6.3	6.3	0.5
Dissolved Oxygen (mg/L)	45		0.1	9.3	7.2	6.8	2.0
Specific Conductance (µmhos)	44		84.0	23383.0	107.9	1292.0	4555.0
Turbidity (NTU)	47		0.0	15.0	3.2	4.2	3.2

Total Suspended Solids (mg/L)	249	<	1.0	54.0	3.0	4.7	6.7
Nitrate+Nitrite Nitrogen (mg/L)	272		0.220	6.240	1.500	1.563	0.624
Total Nitrogen (mg/L)	267	<	0.319	6.570	1.930	2.015	0.692
Total Phosphorus (mg/L)	271	<	0.018	2.000	0.203	0.248	0.199

YERC-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	57		10.0	27.6	22.7	20.8	5.3
pH (su)	58		5.9	7.8	7.1	7.1	0.4
Dissolved Oxygen (mg/L)	59		6.2	10.6	8.3	8.3	1.1
Specific Conductance (µmhos)	58		0.0	167.9	96.8	84.6	44.3
Turbidity (NTU)	55		2.1	60.8	5.8	9.0	9.3
Total Suspended Solids (mg/L)	56	<	1.0	53.0	3.0	7.2	10.2
Nitrate+Nitrite Nitrogen (mg/L)	56		0.022	0.244	0.112	0.120	0.049
Total Nitrogen (mg/L)	56	<	0.118	1.001	0.374	0.389	0.206
Total Phosphorus (mg/L)	56	<	0.005	0.092	0.018	0.025	0.019

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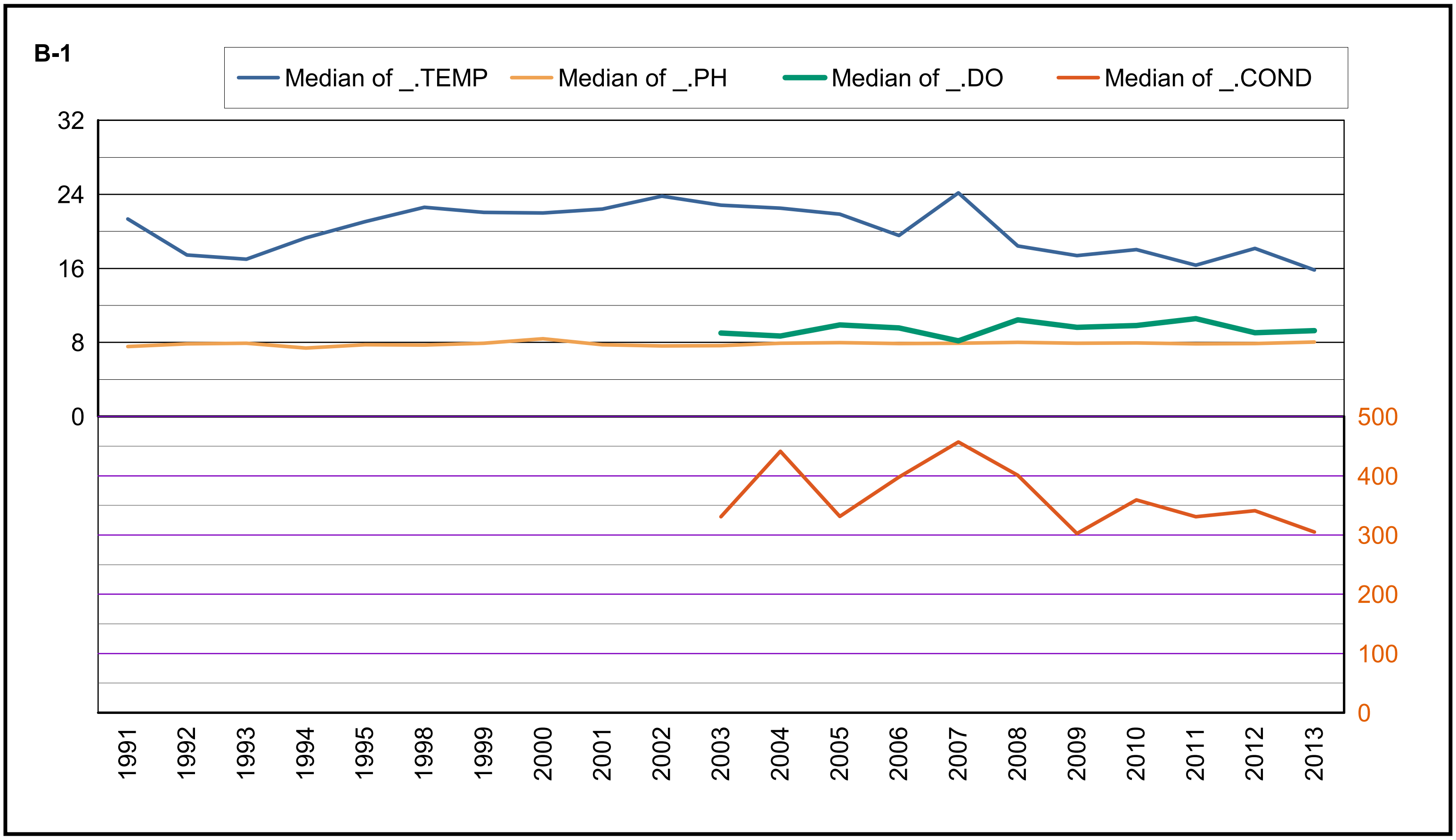

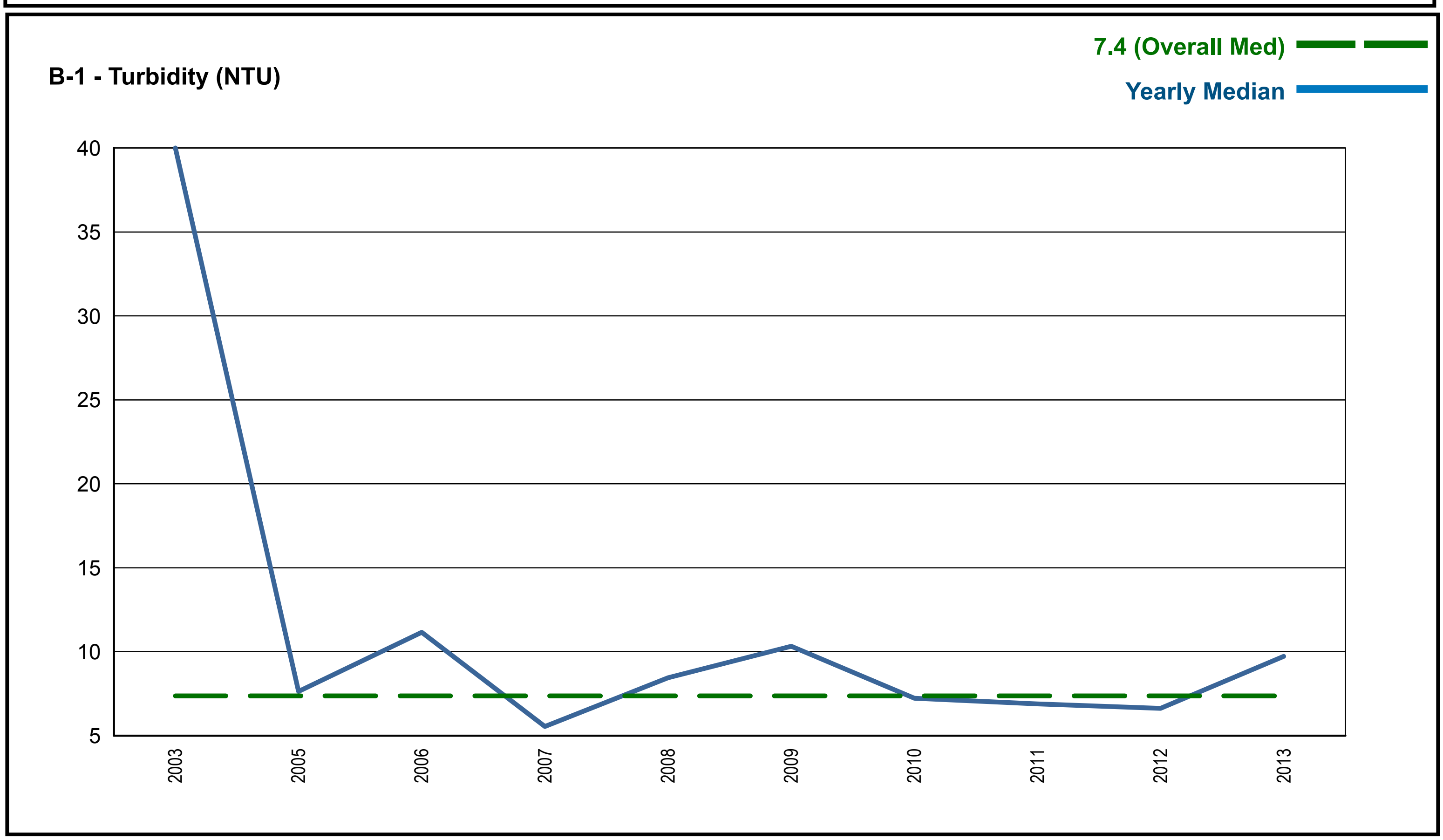

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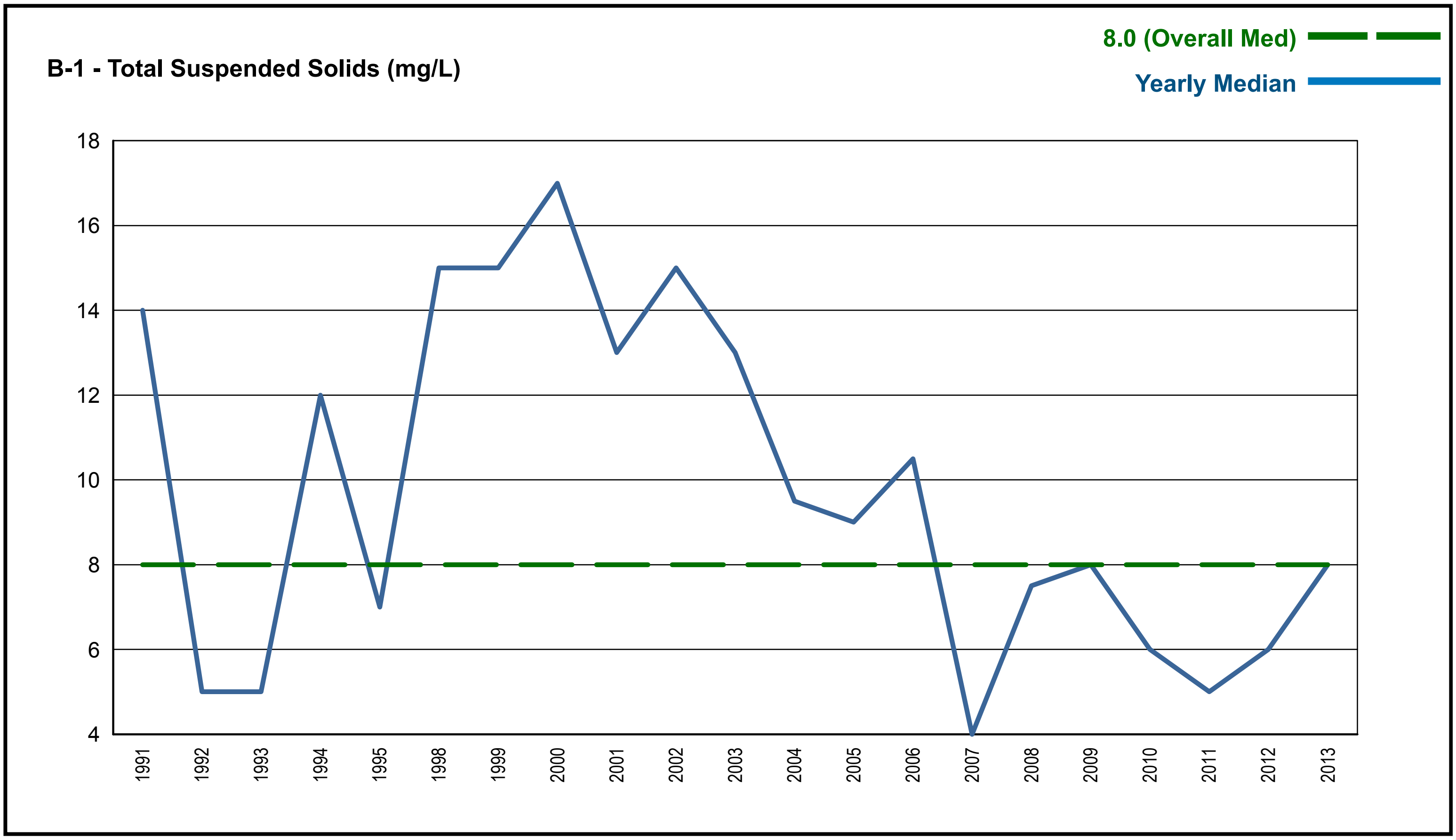

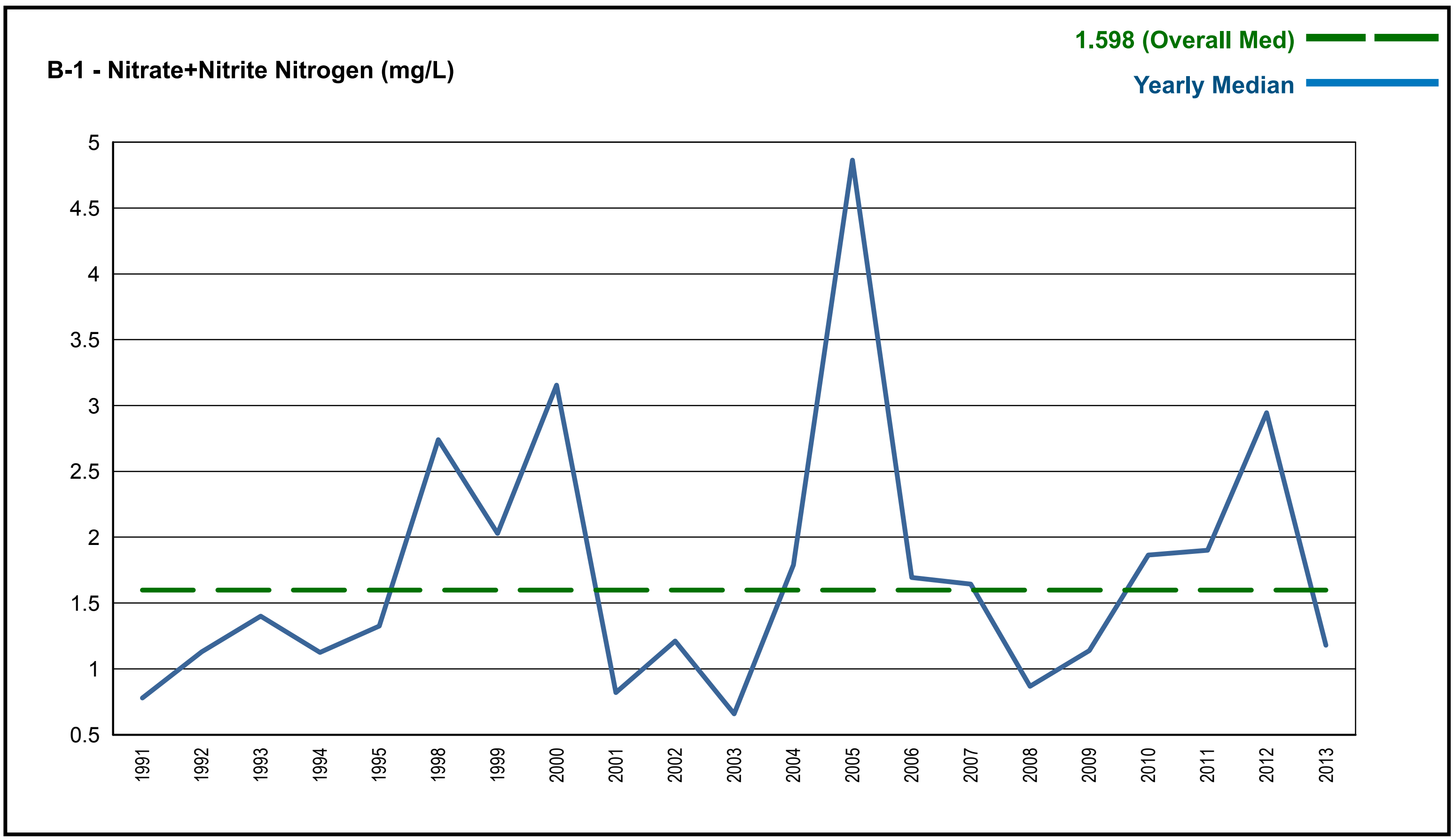

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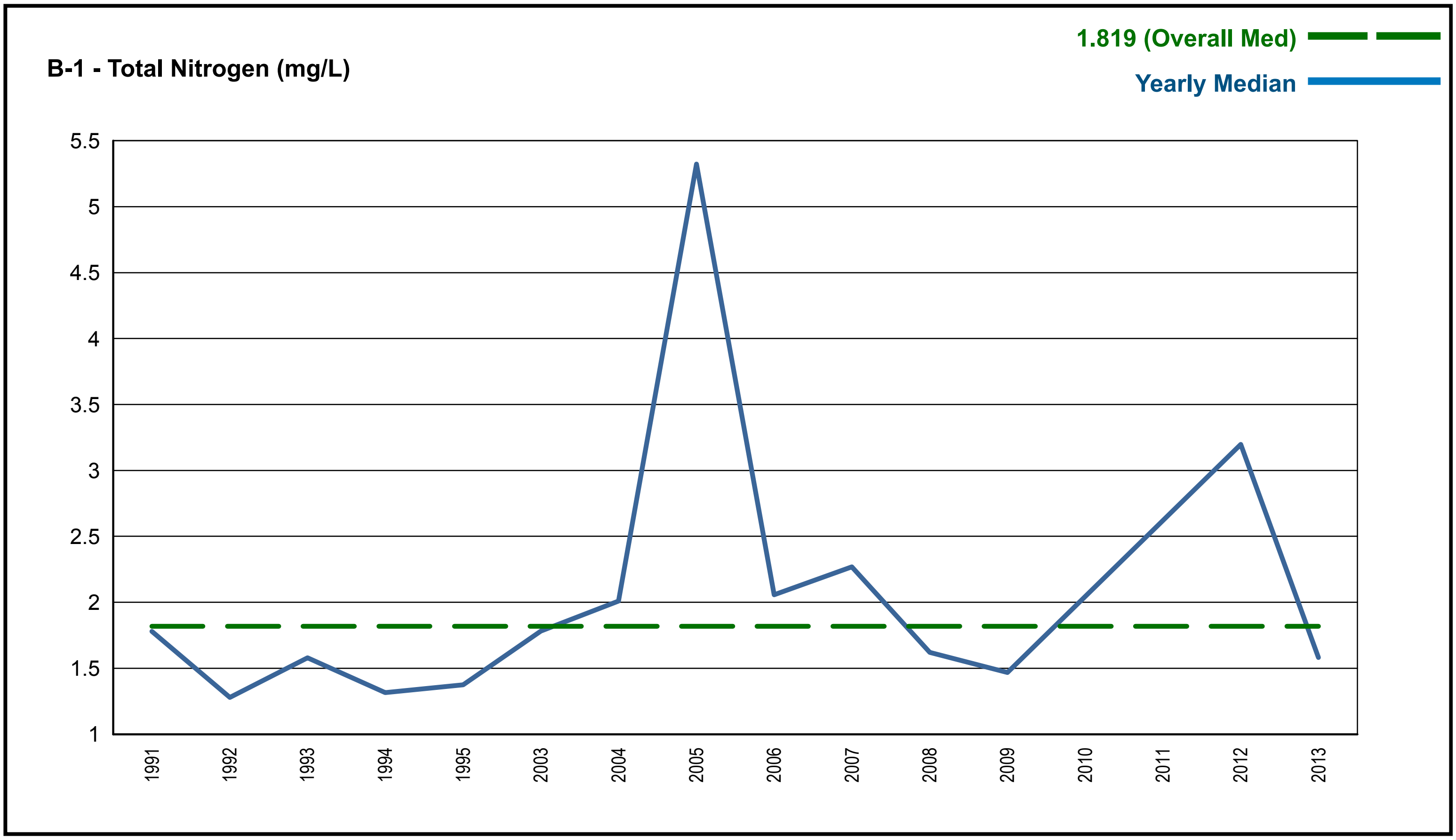

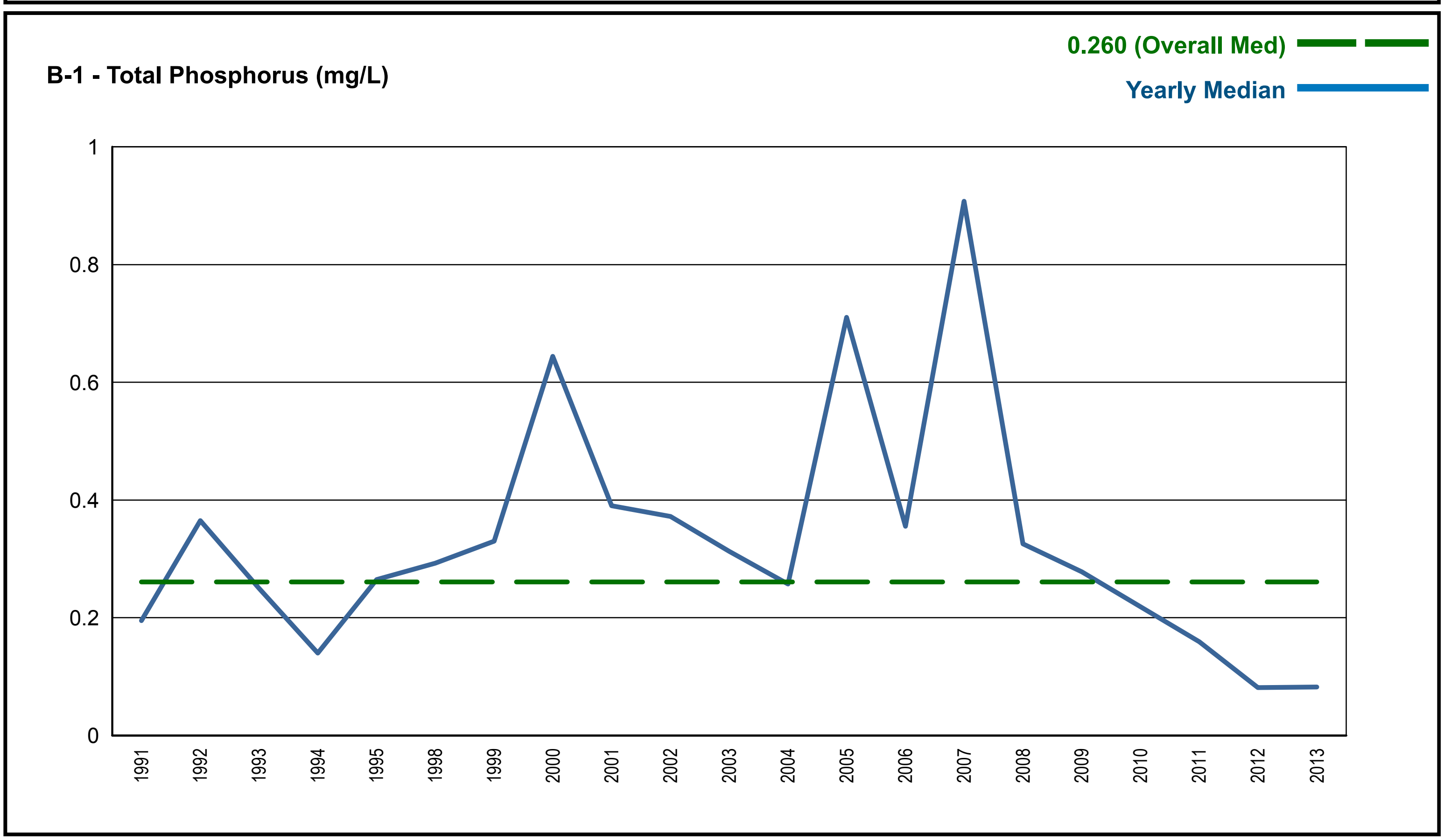

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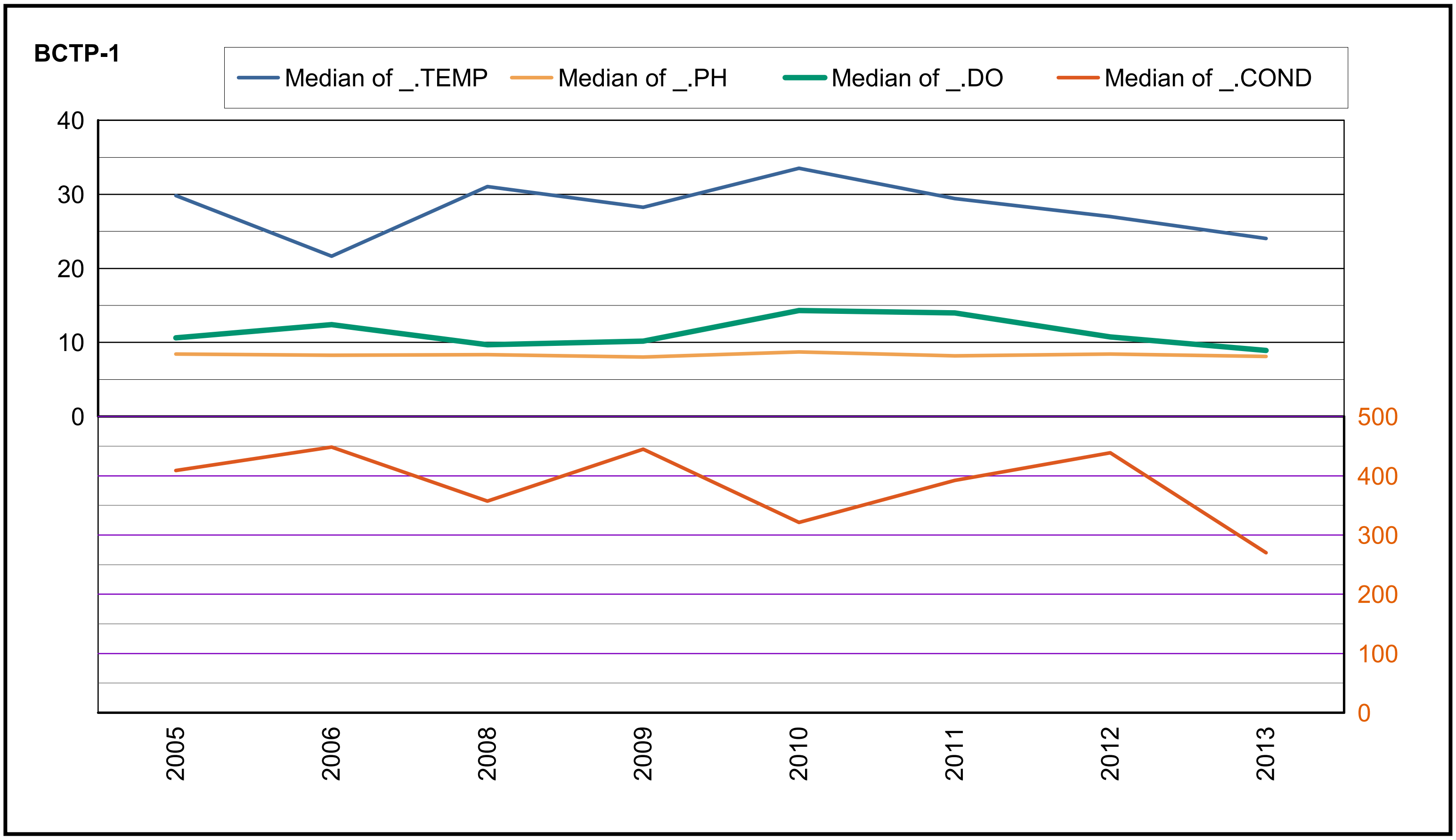

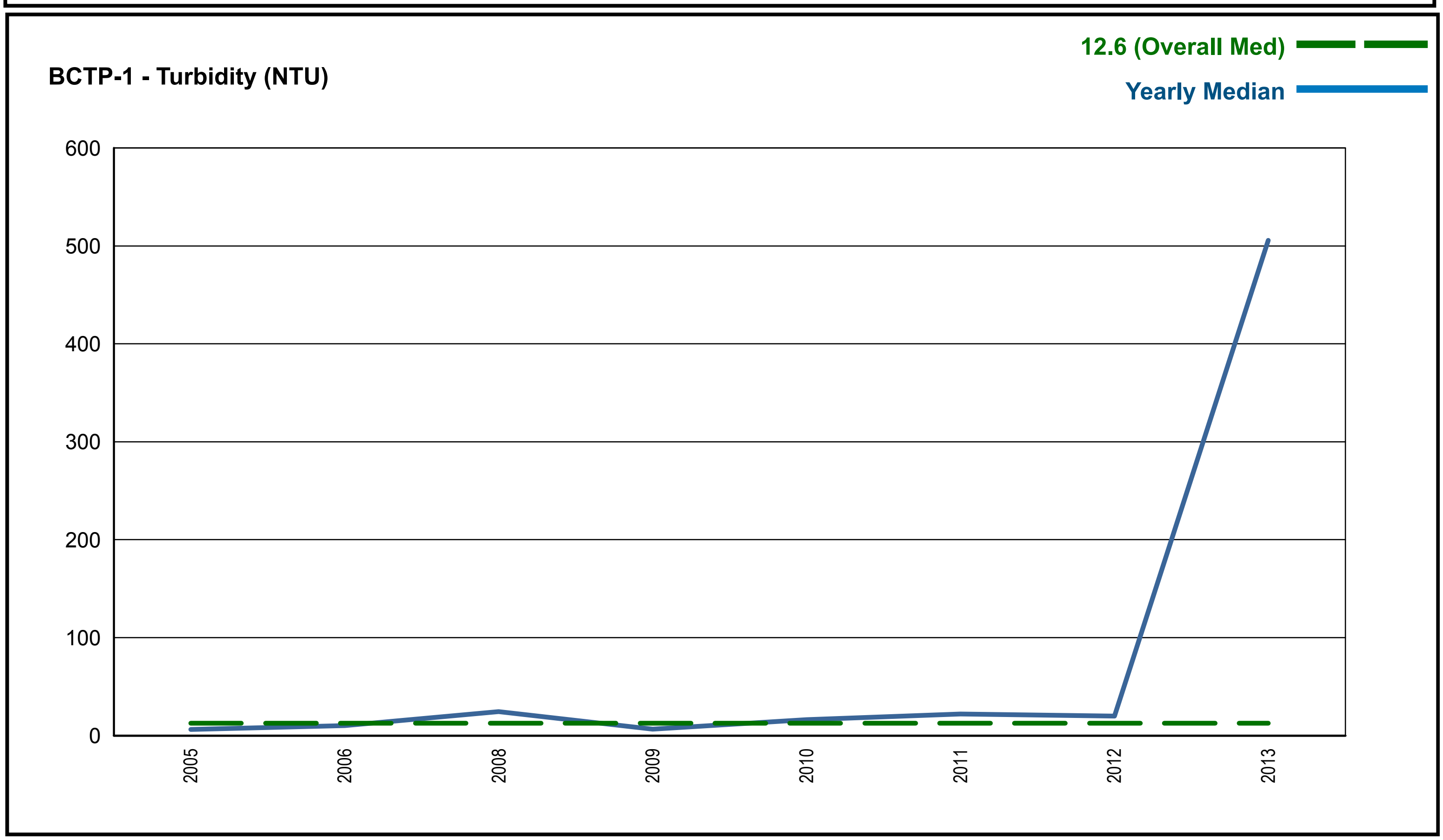

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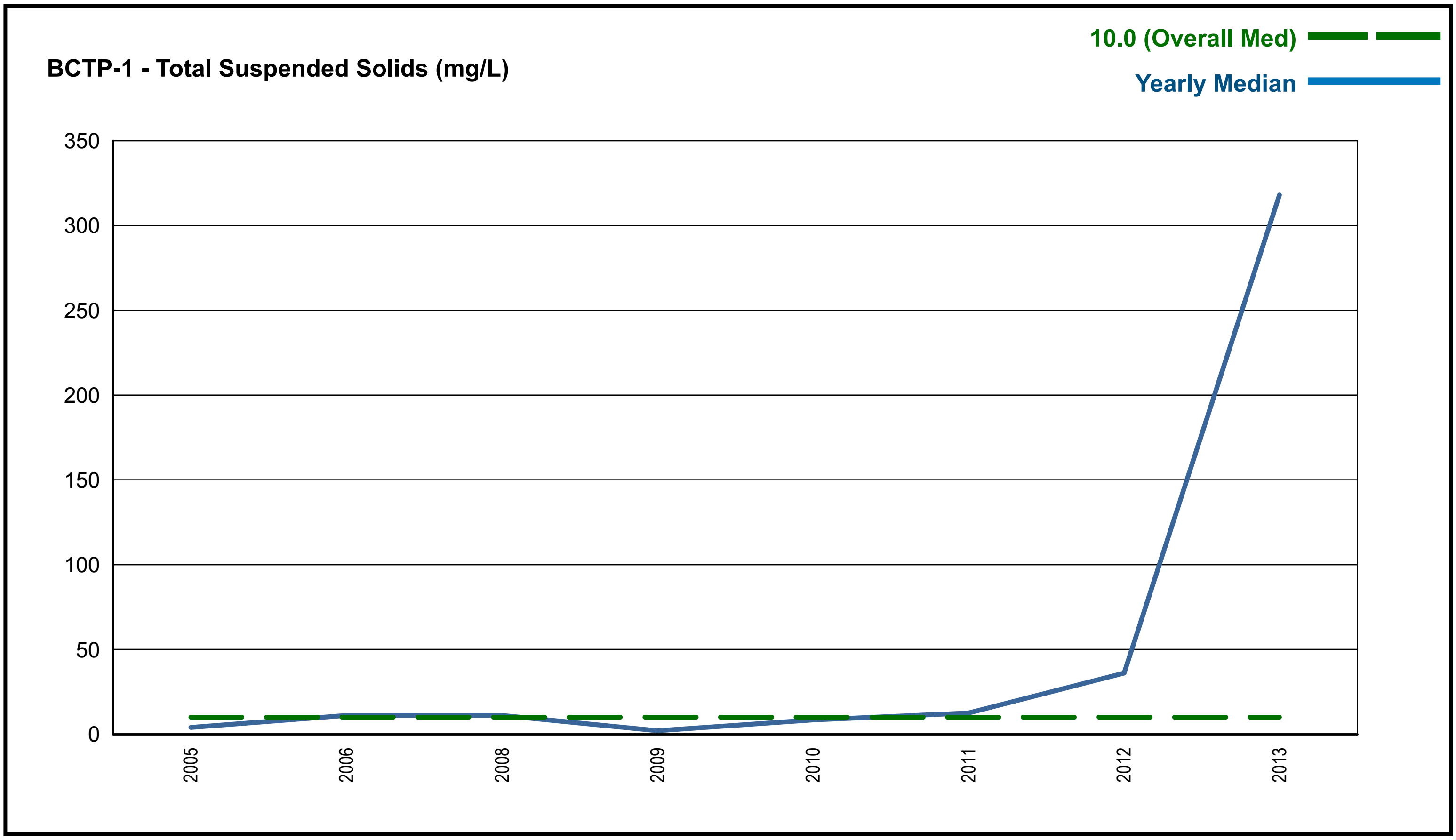

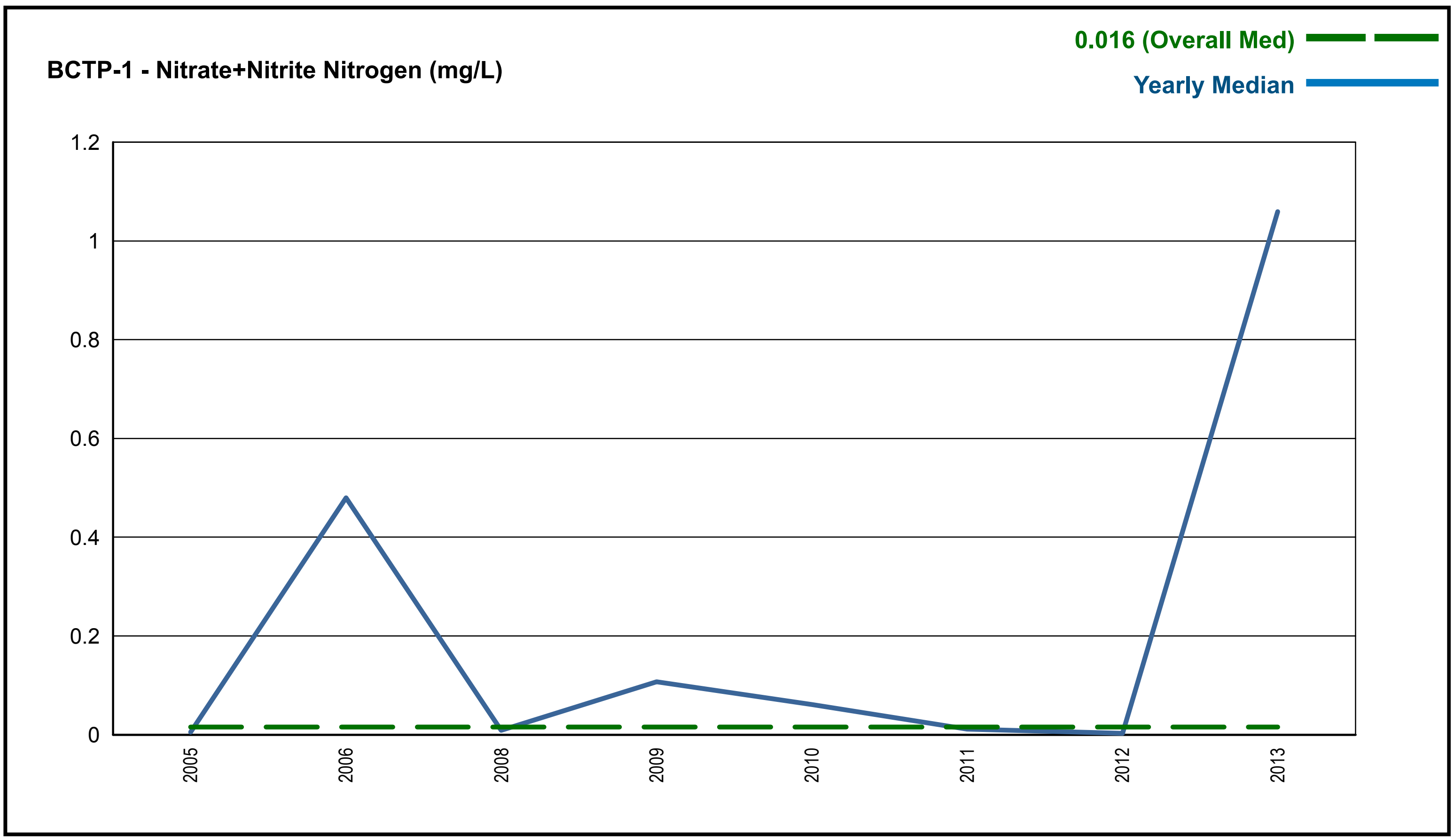

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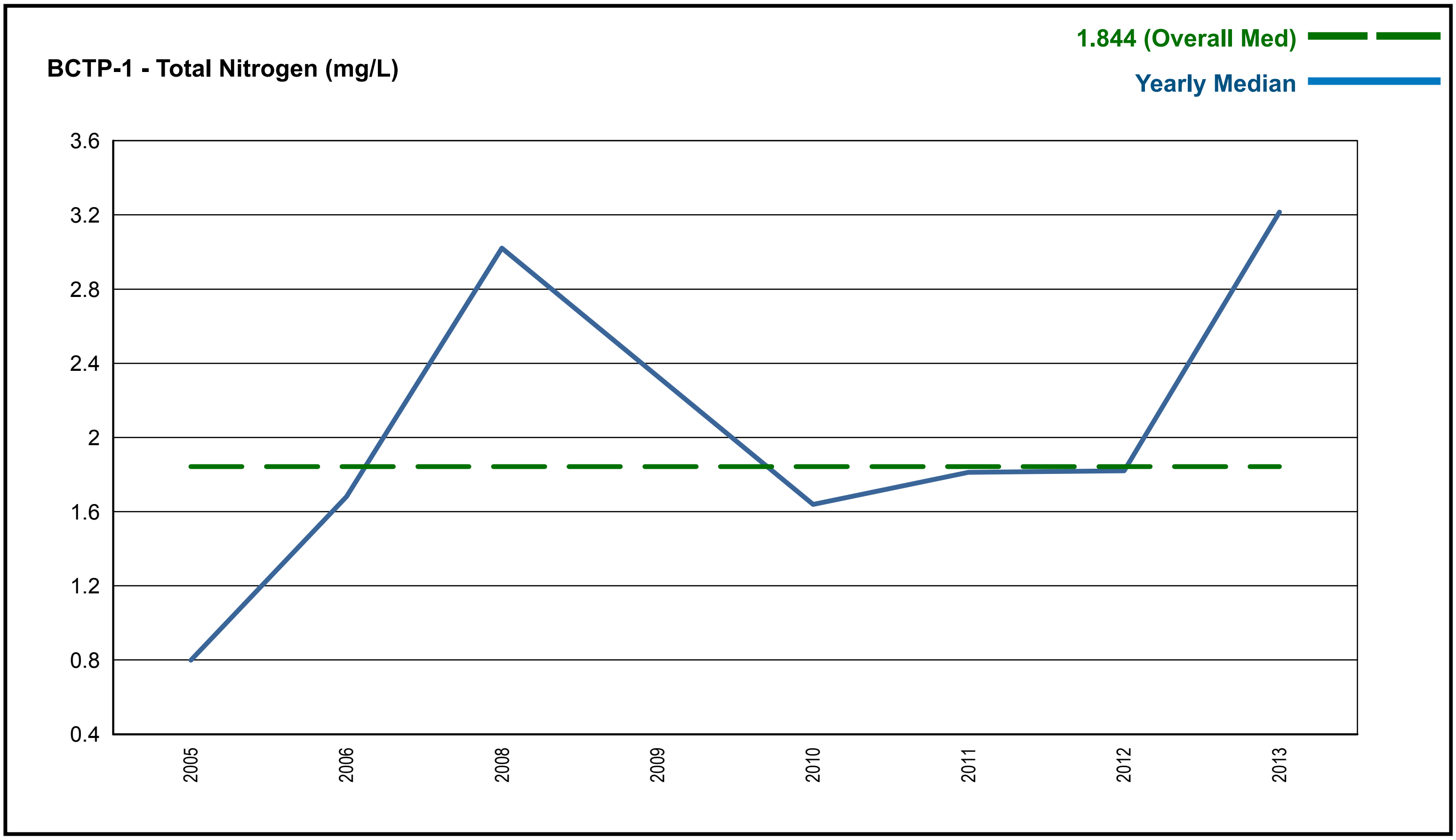

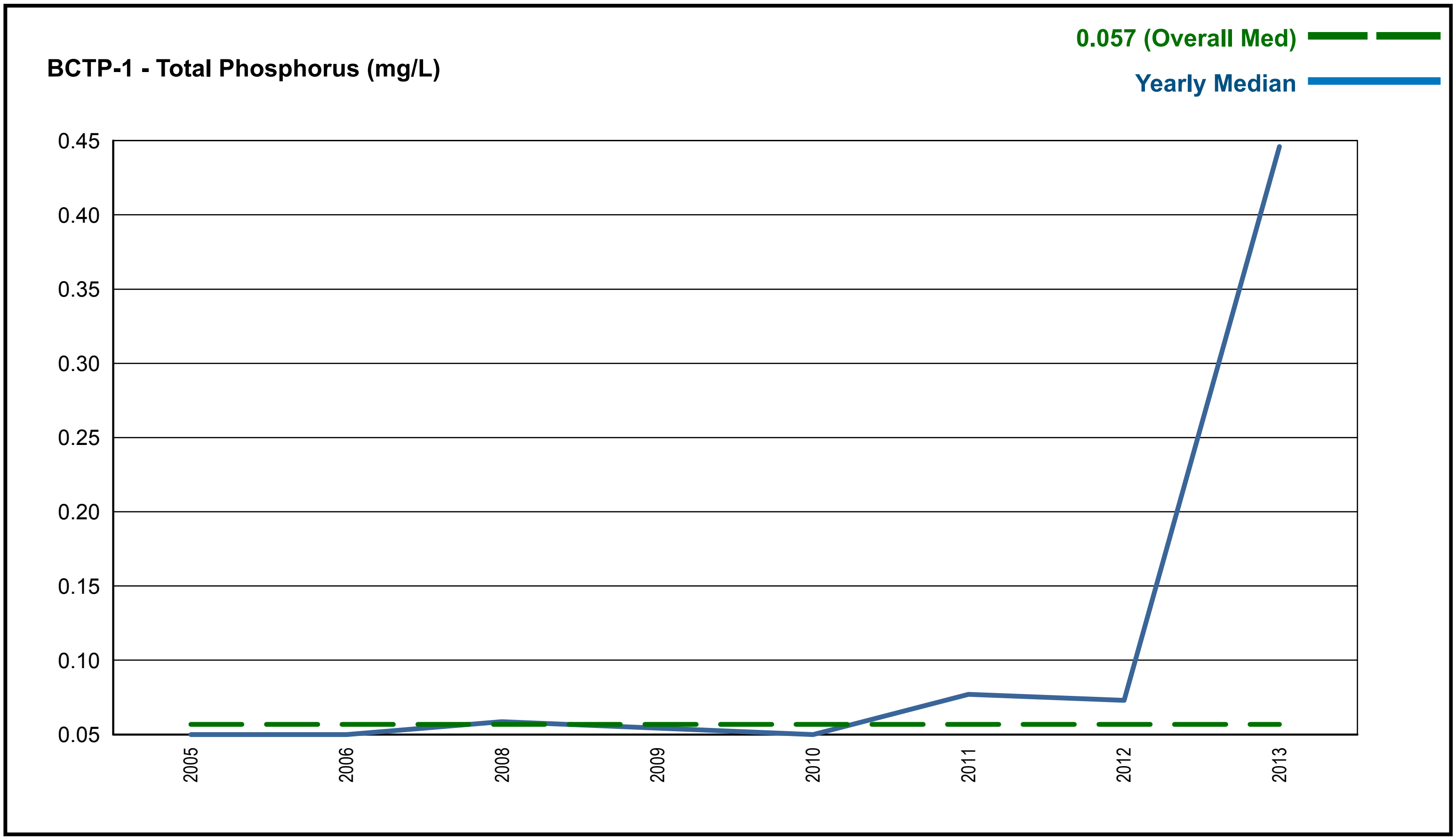

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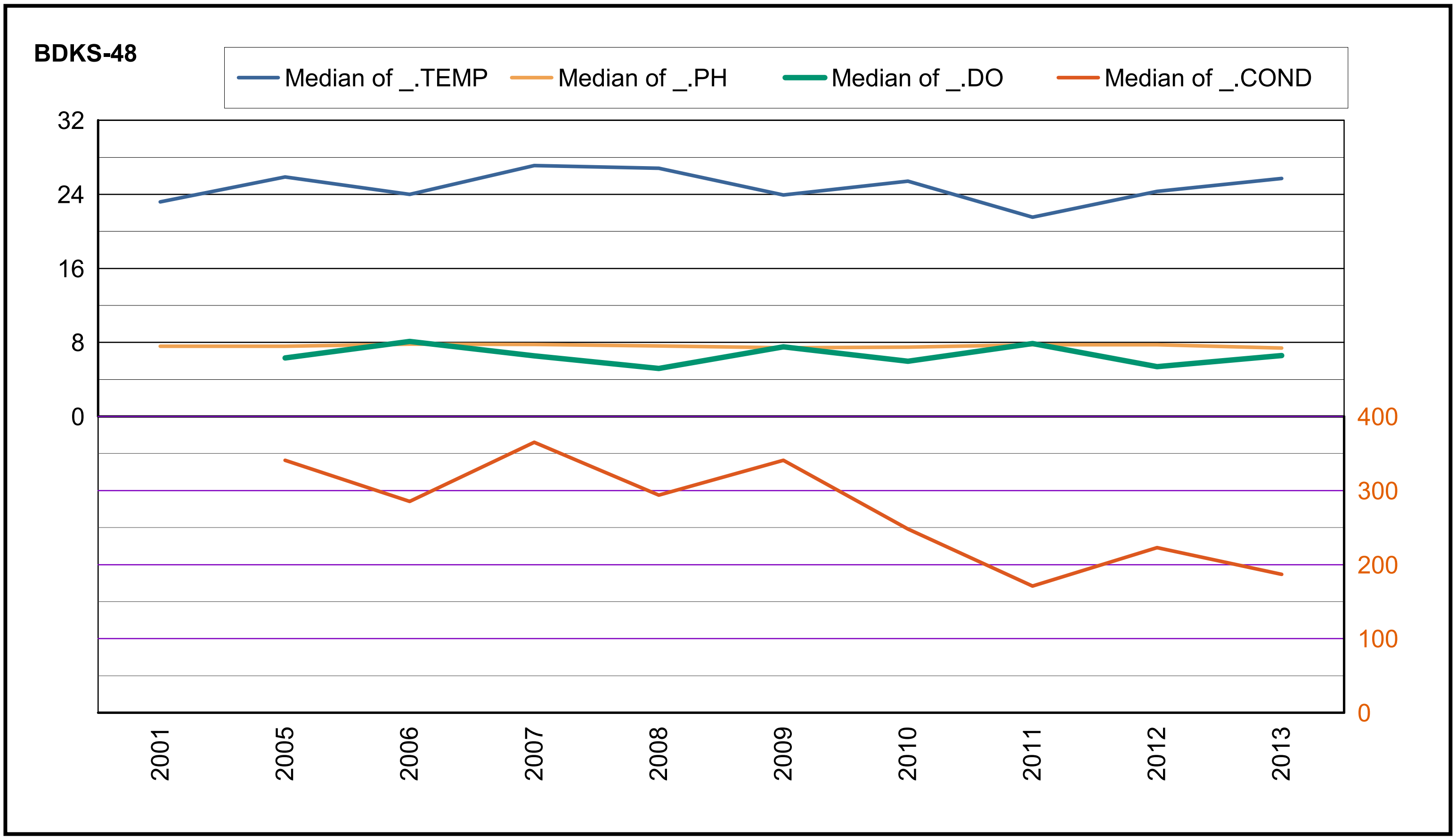

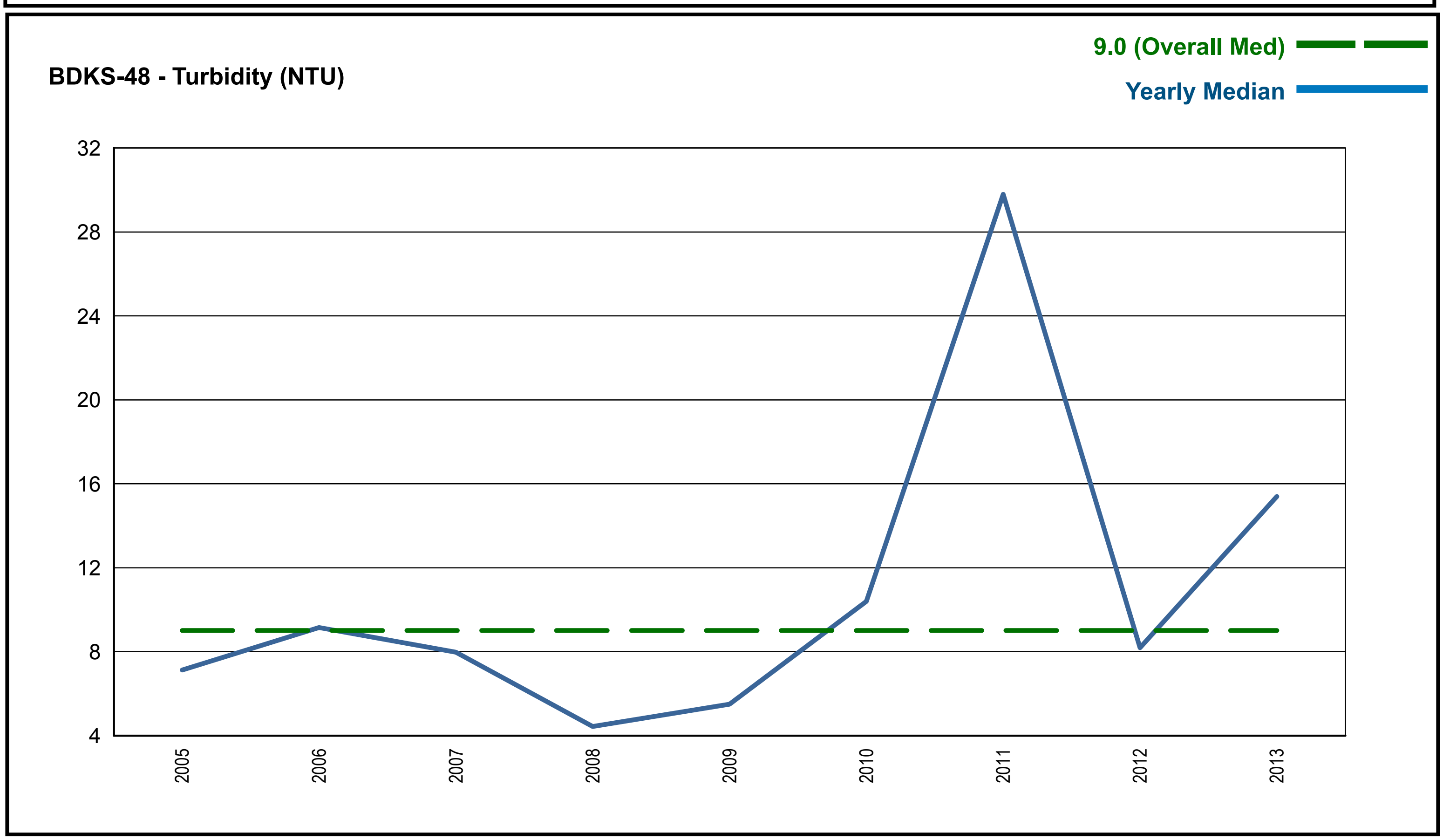

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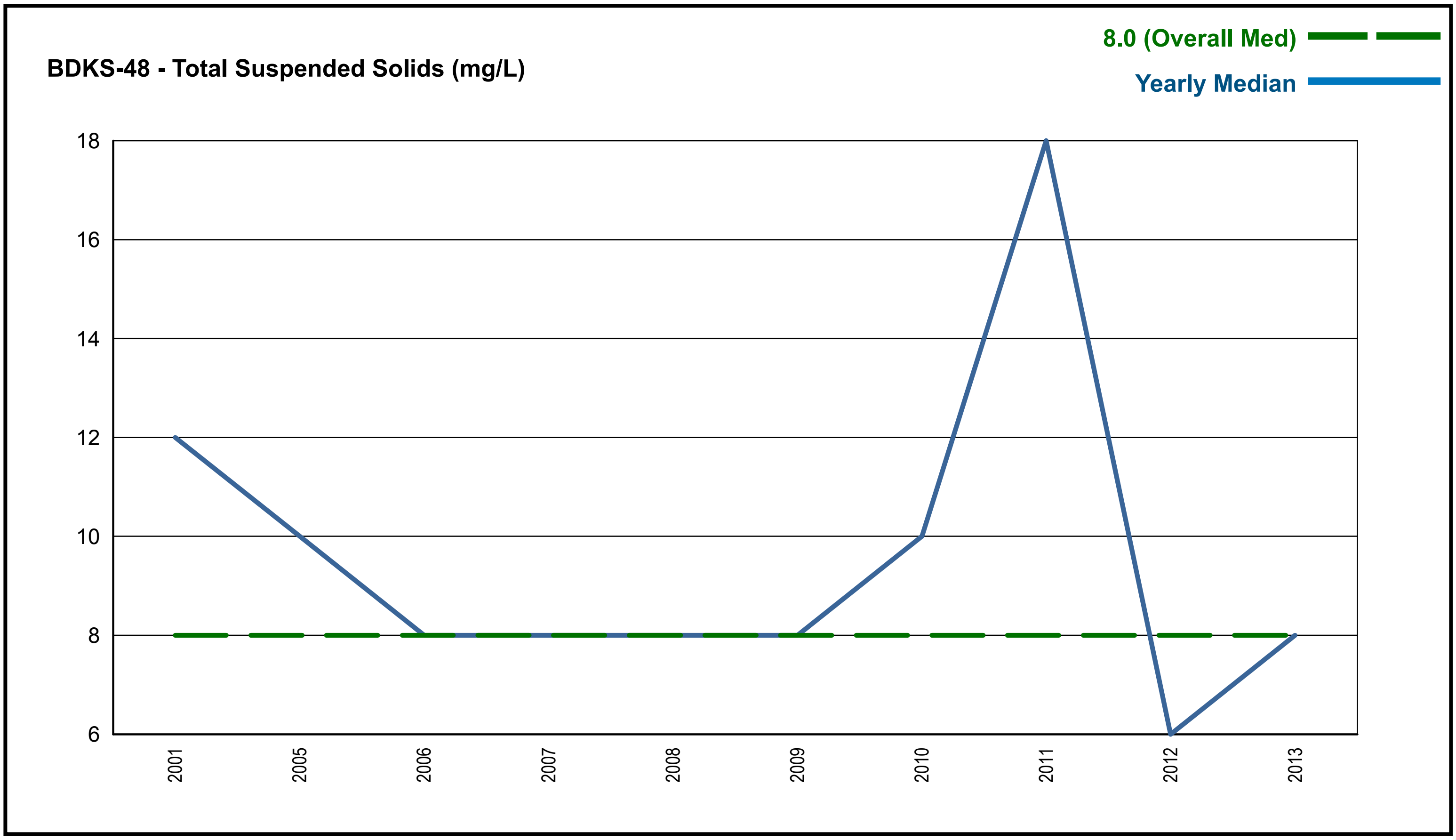

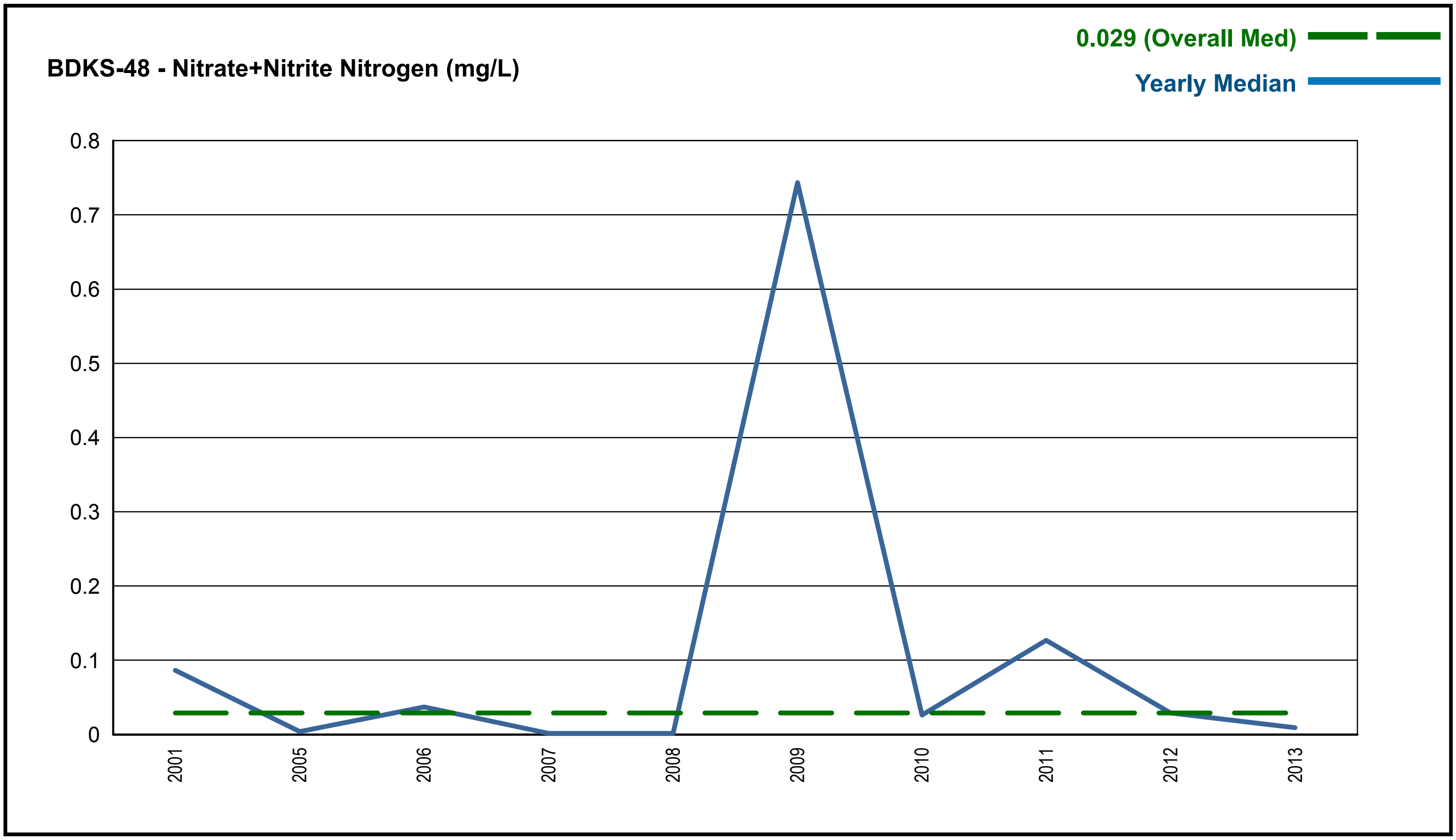

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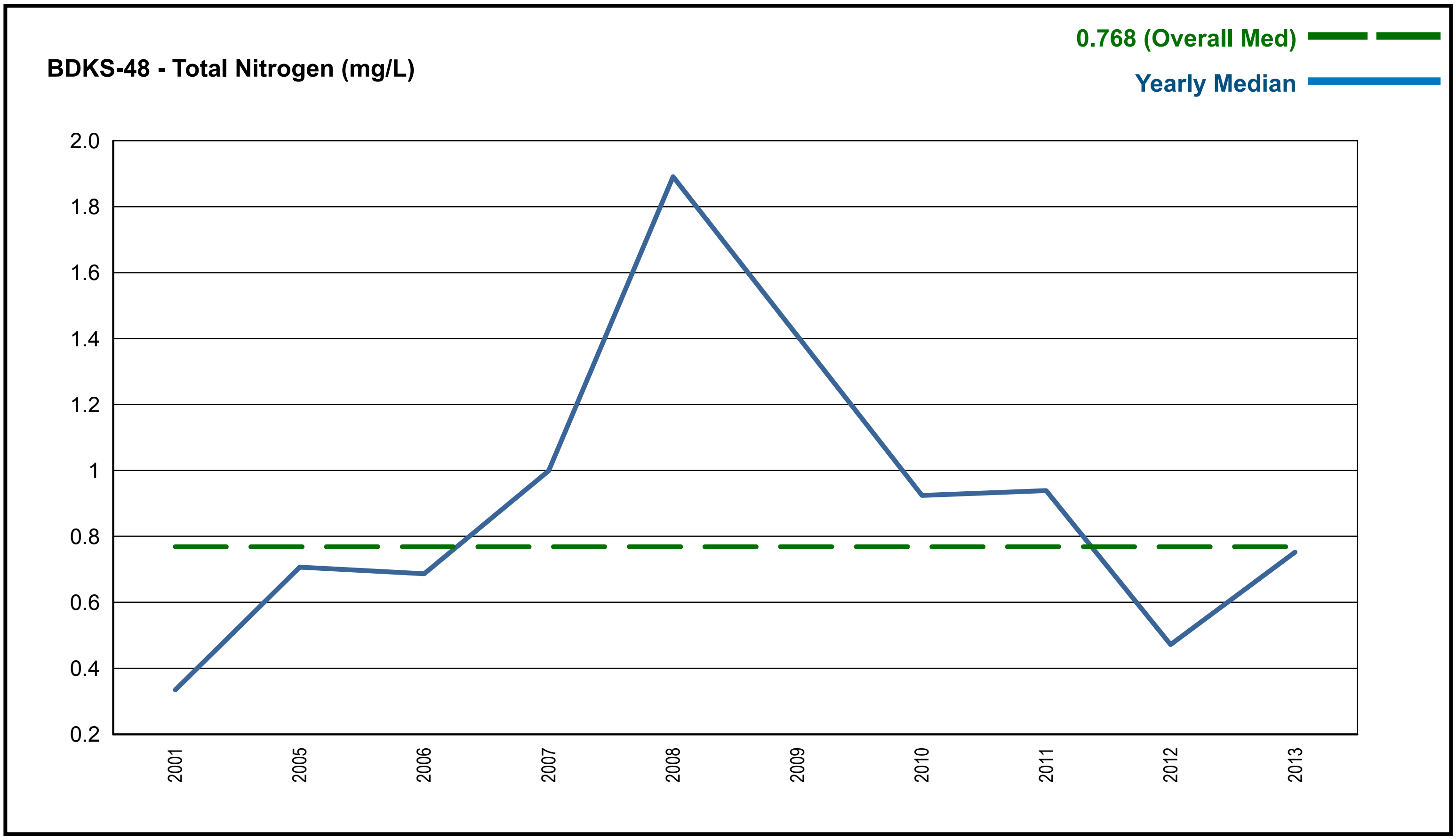

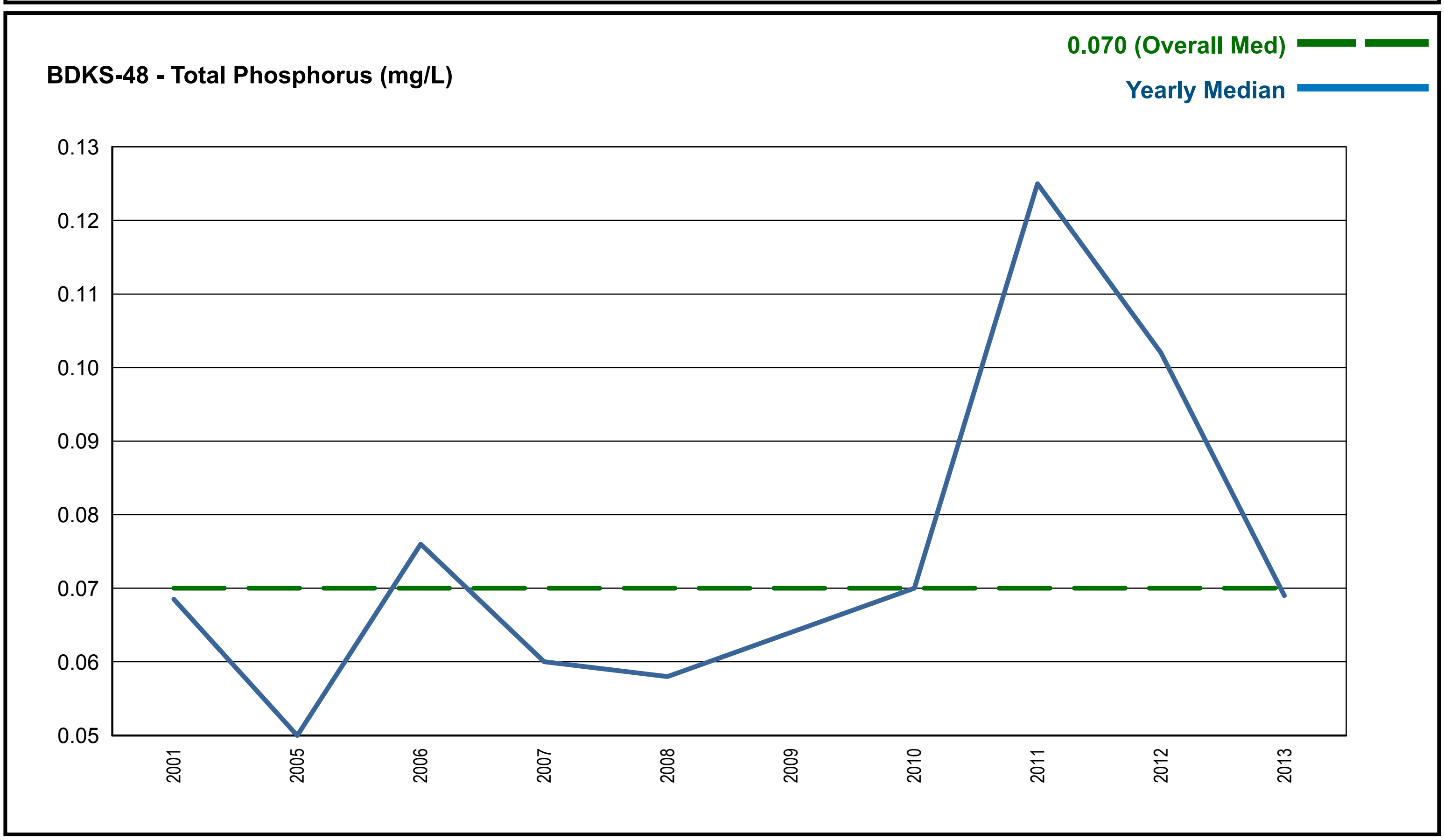

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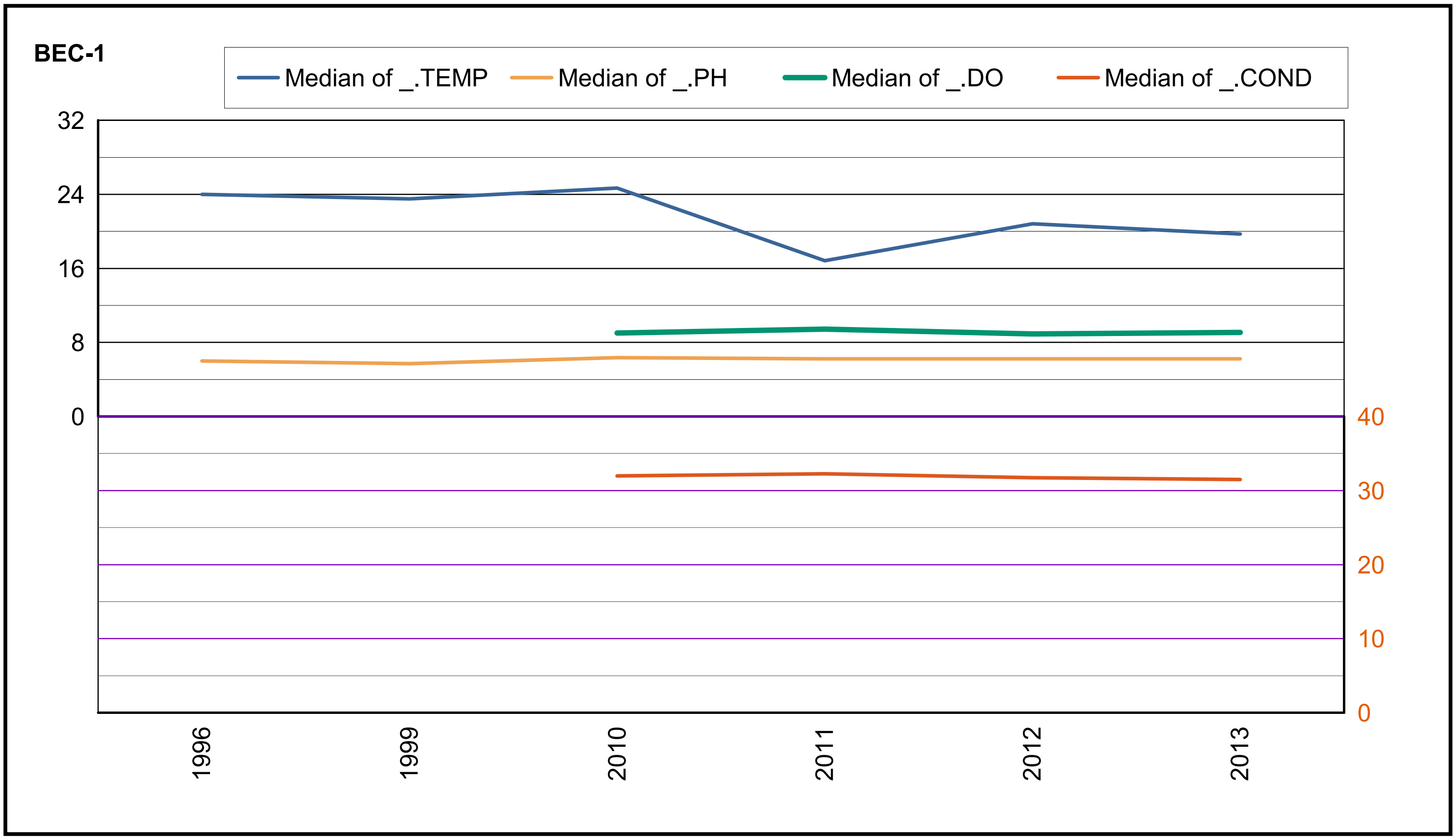

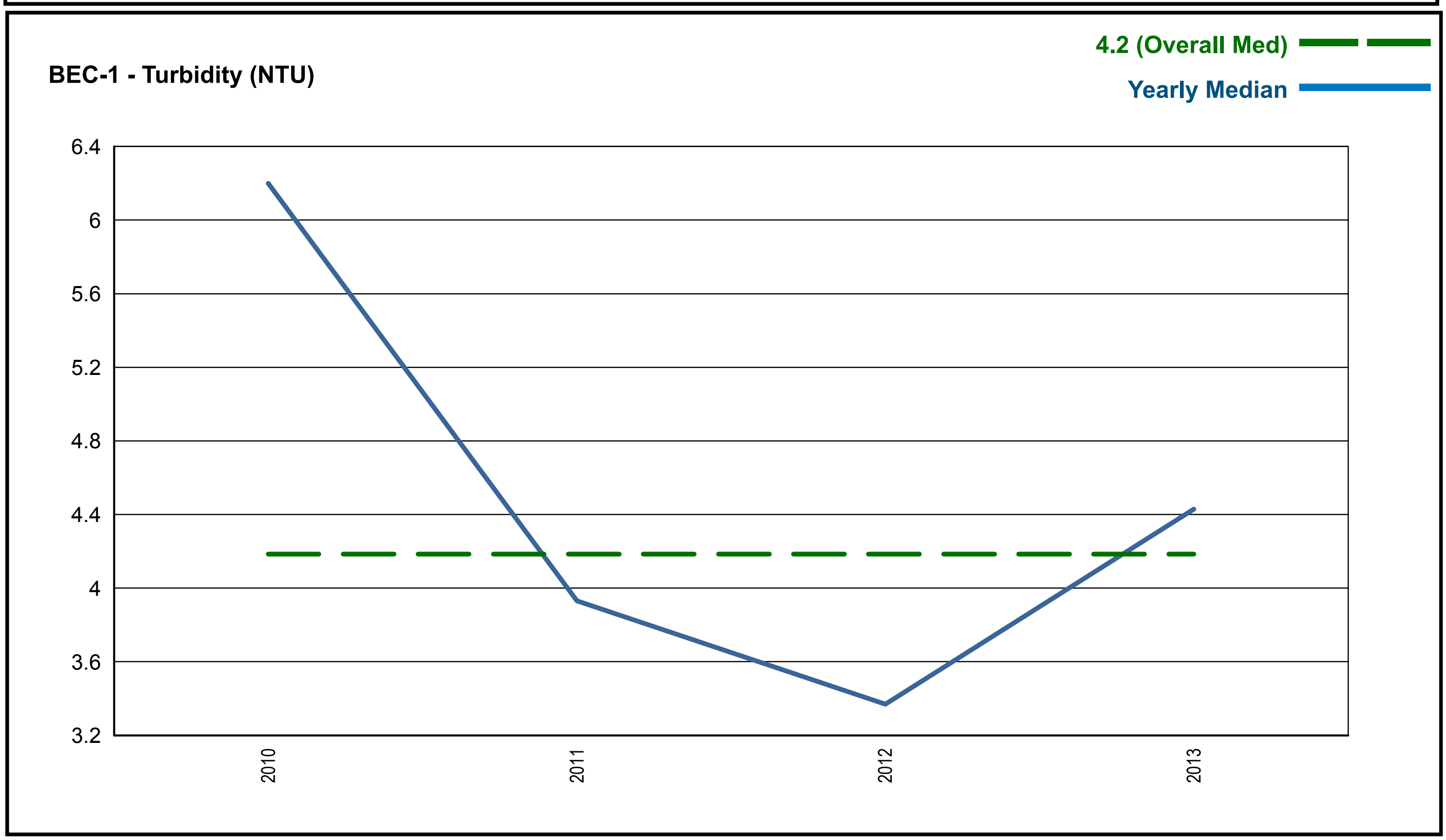

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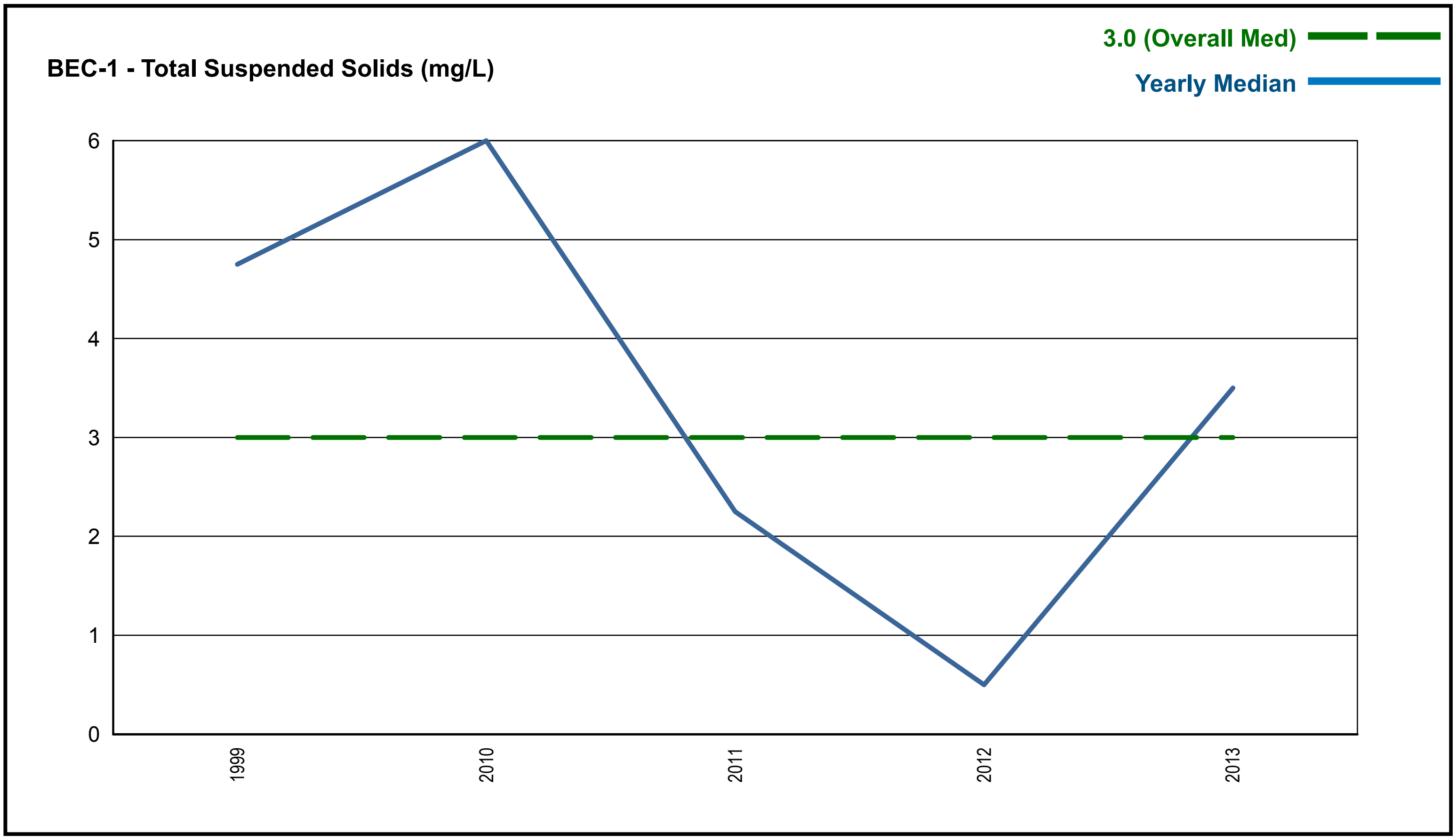

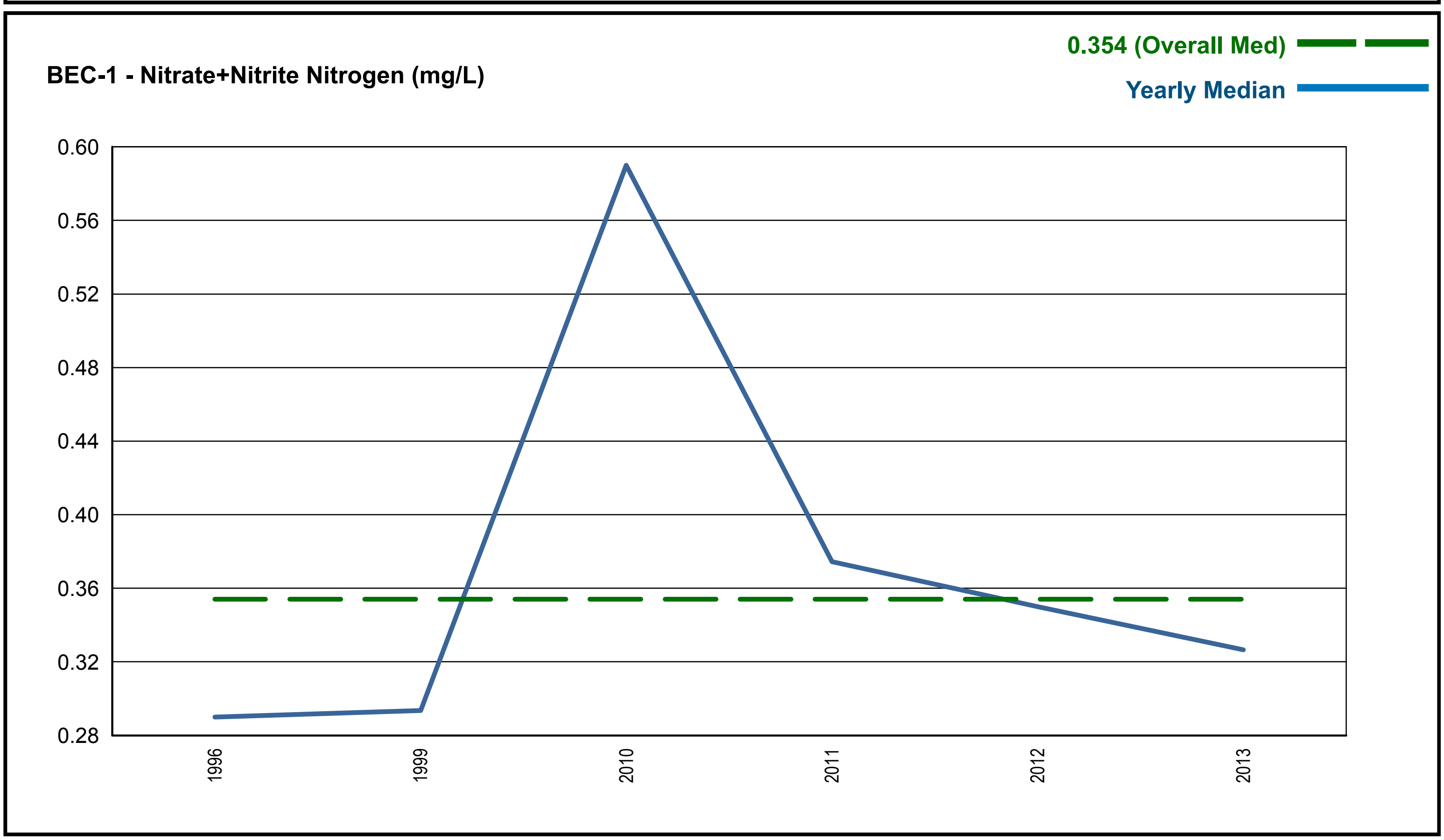

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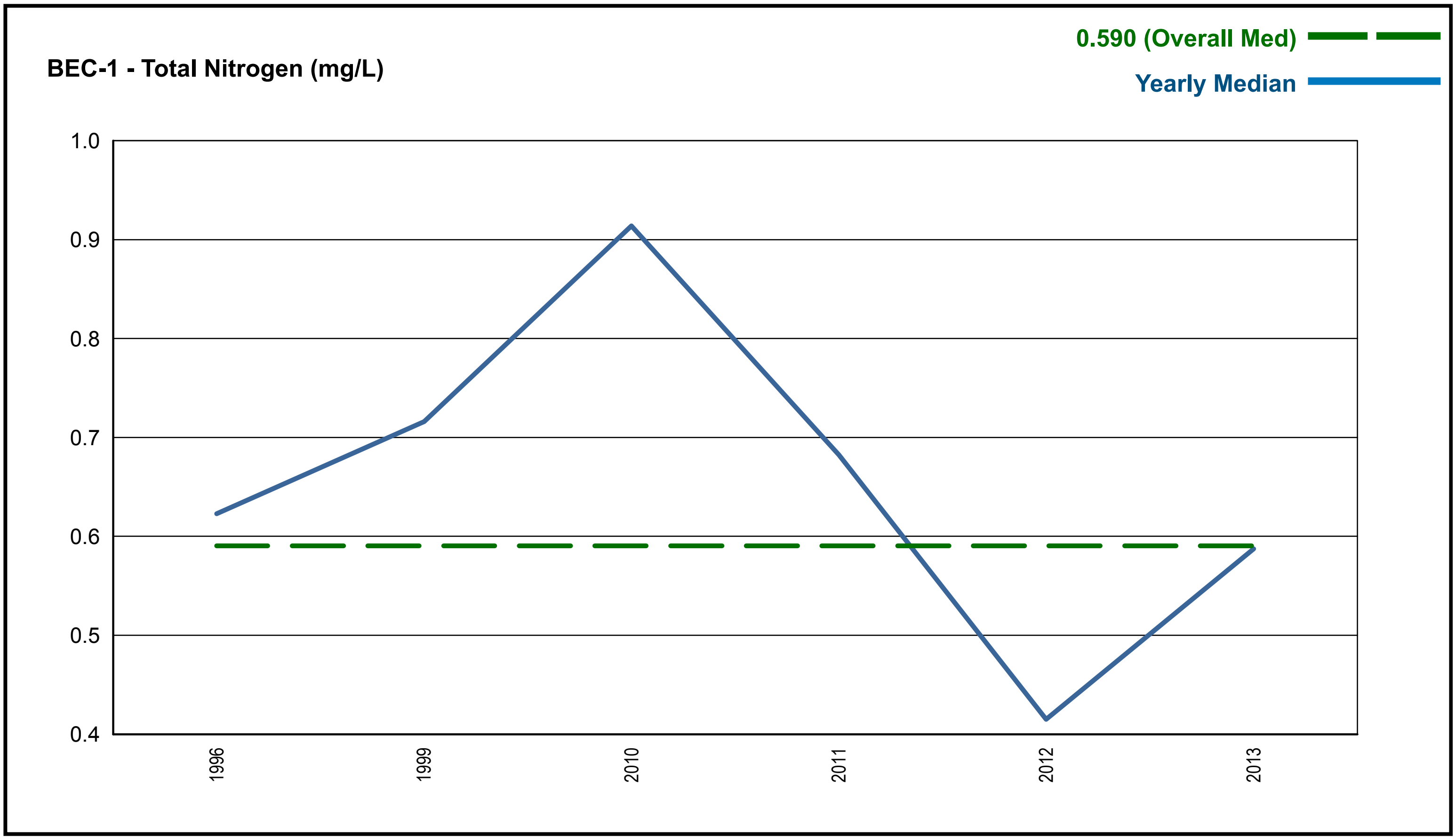

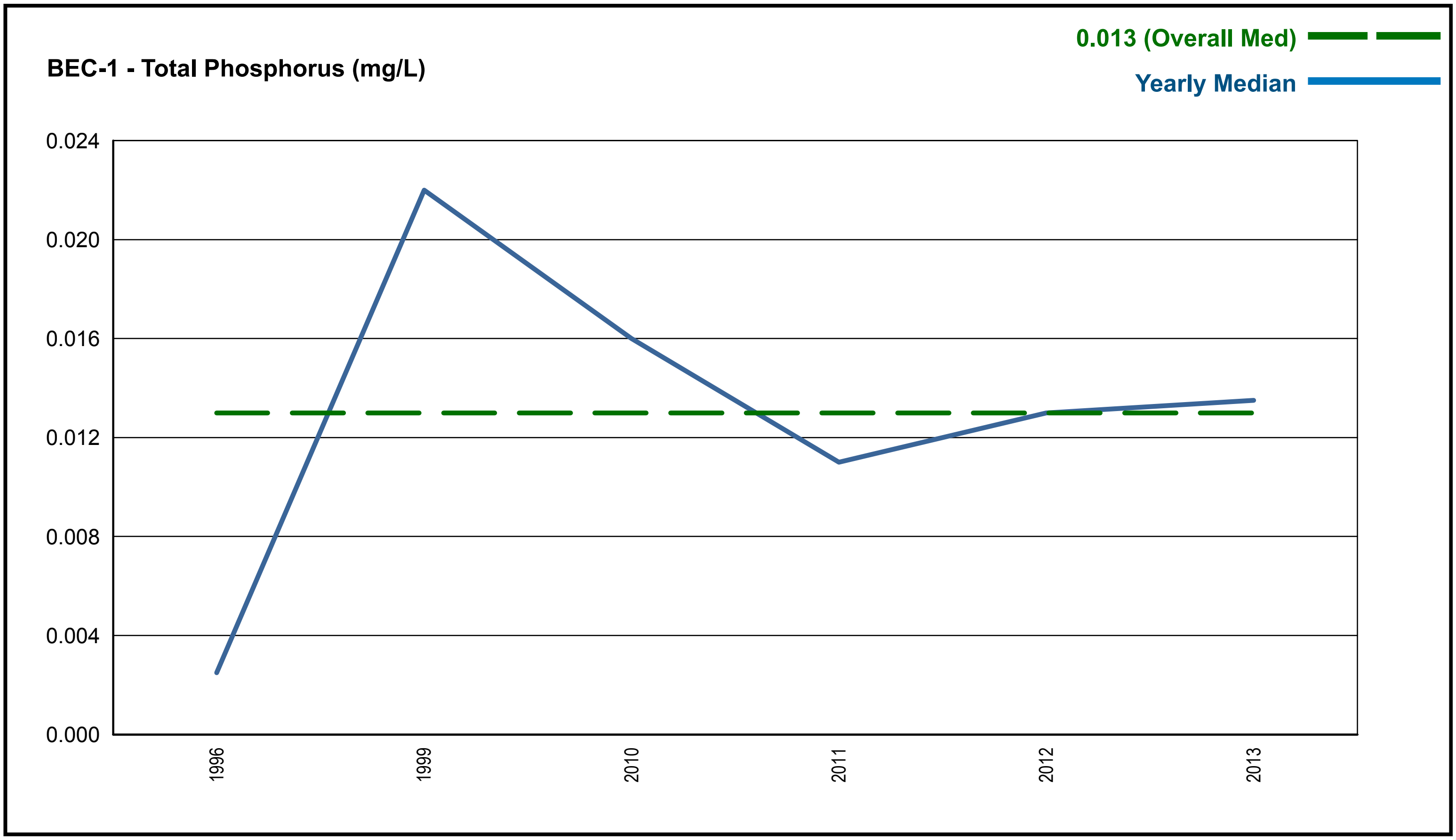

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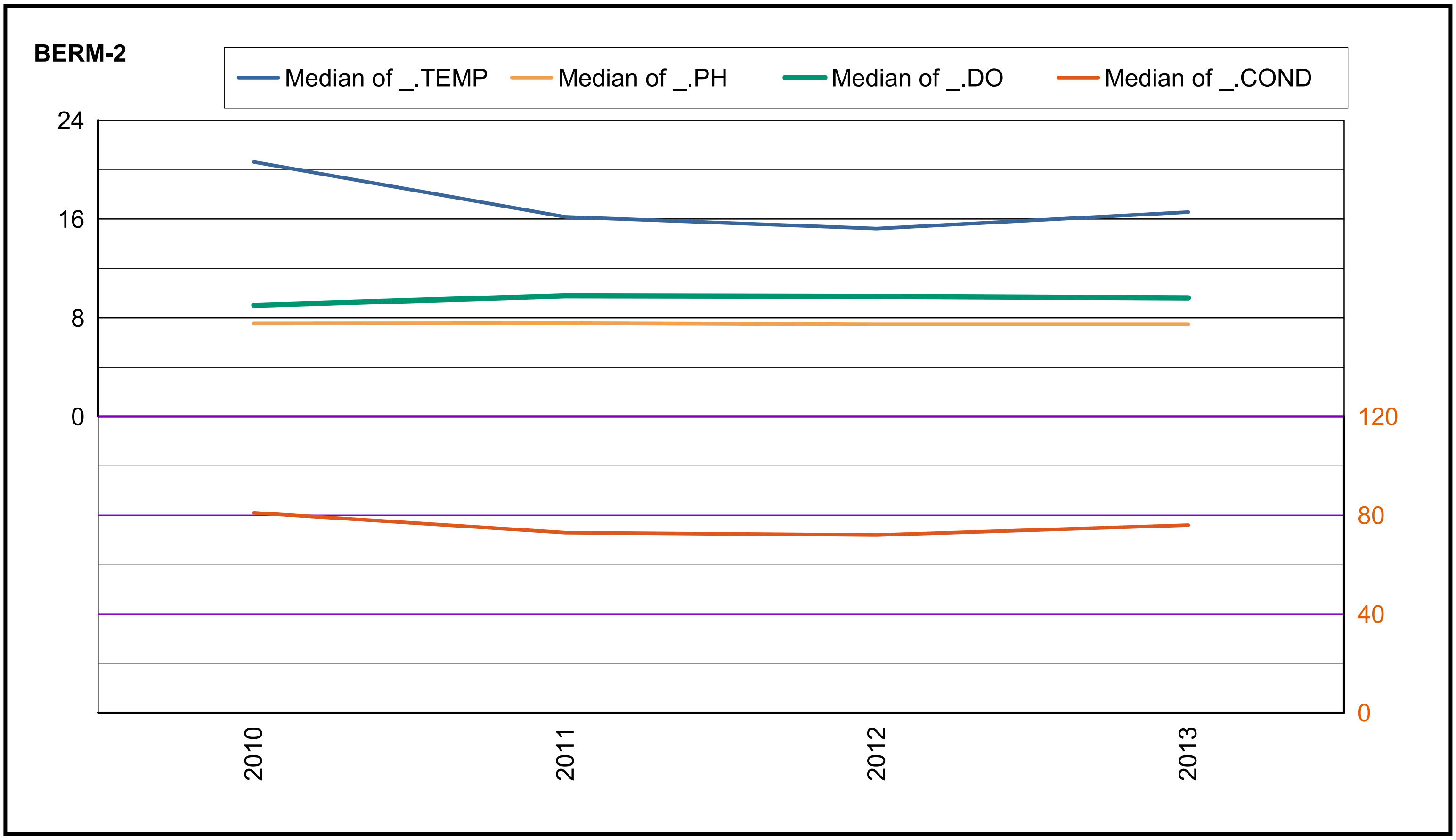

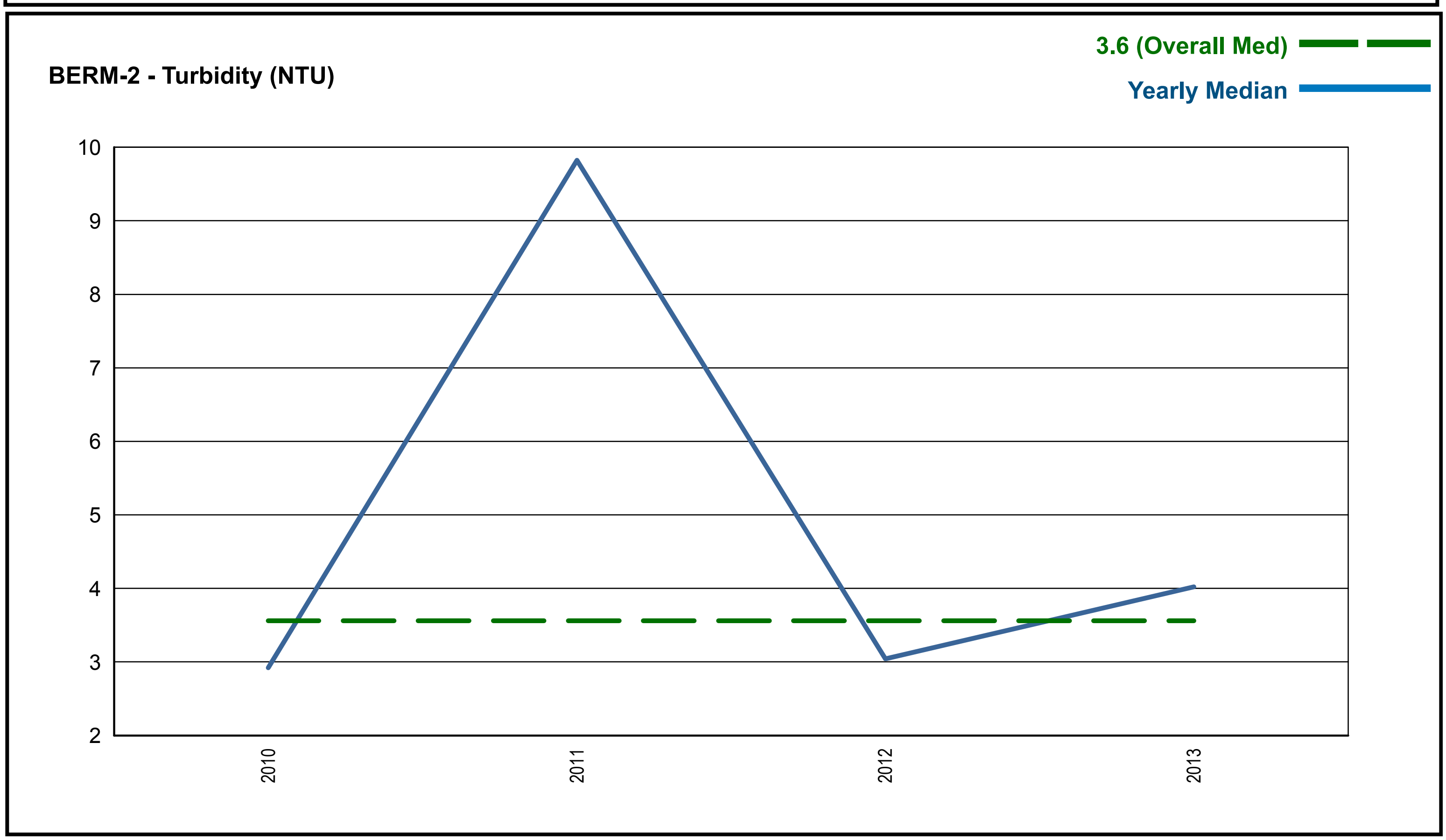

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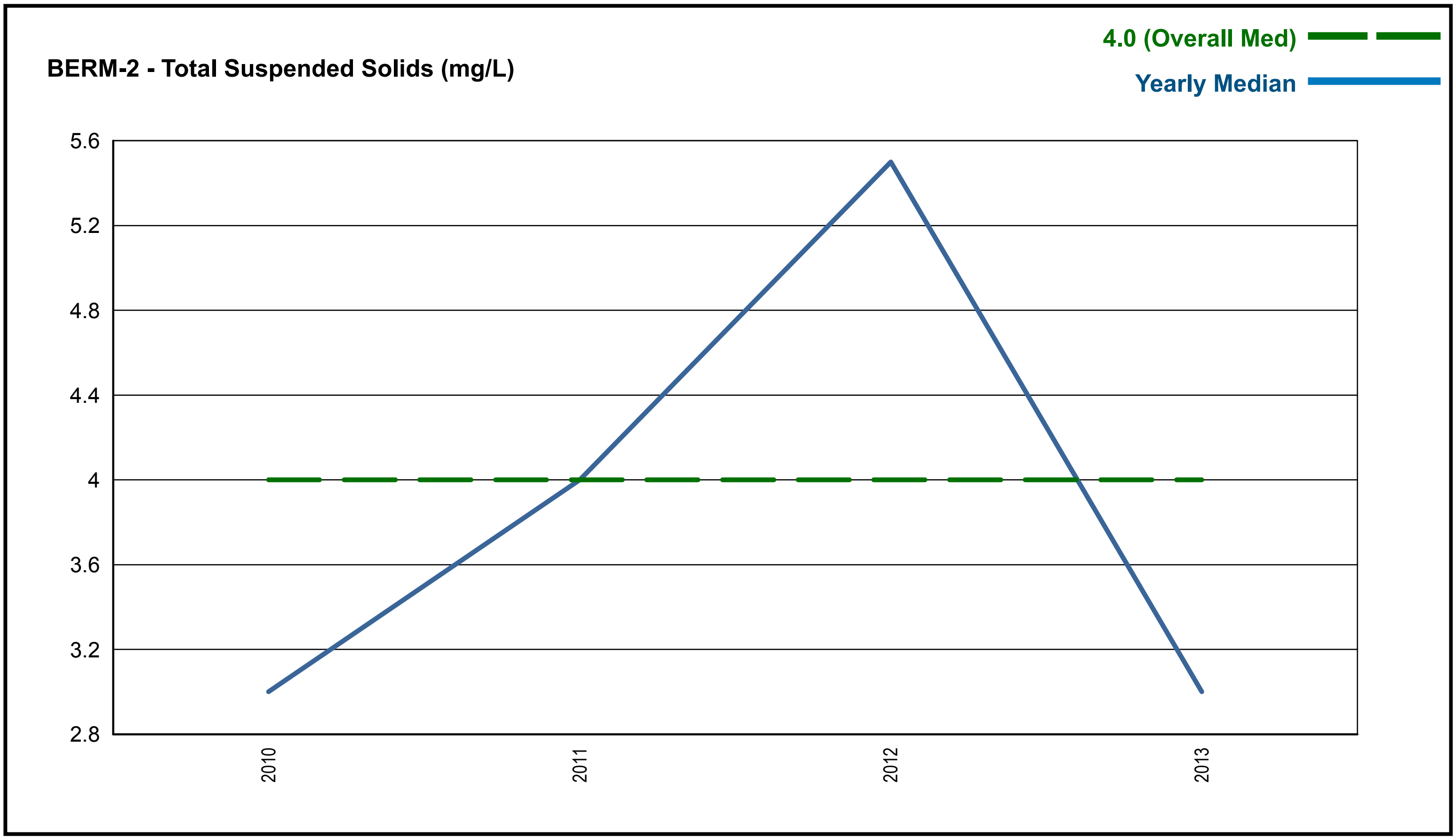

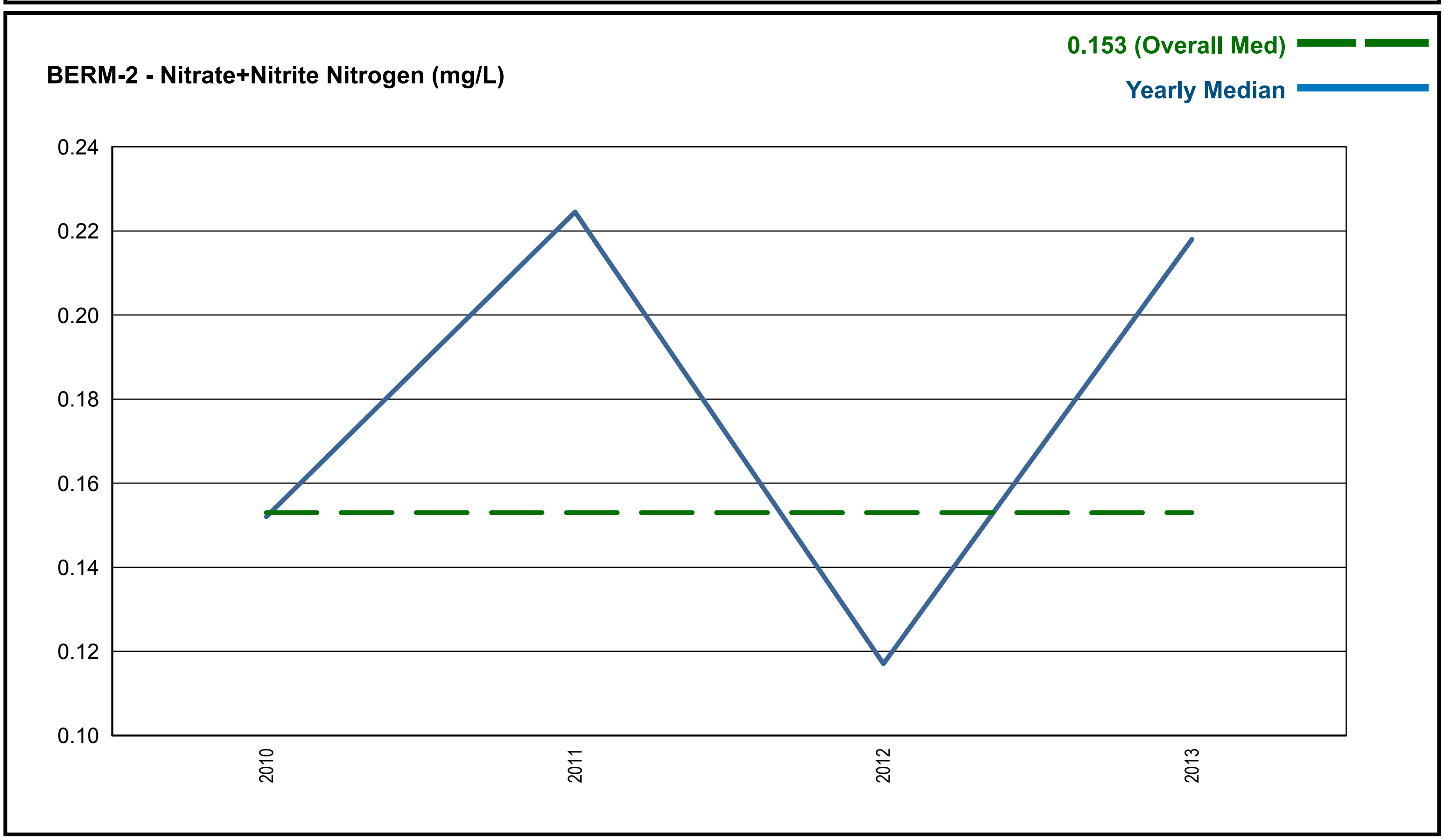

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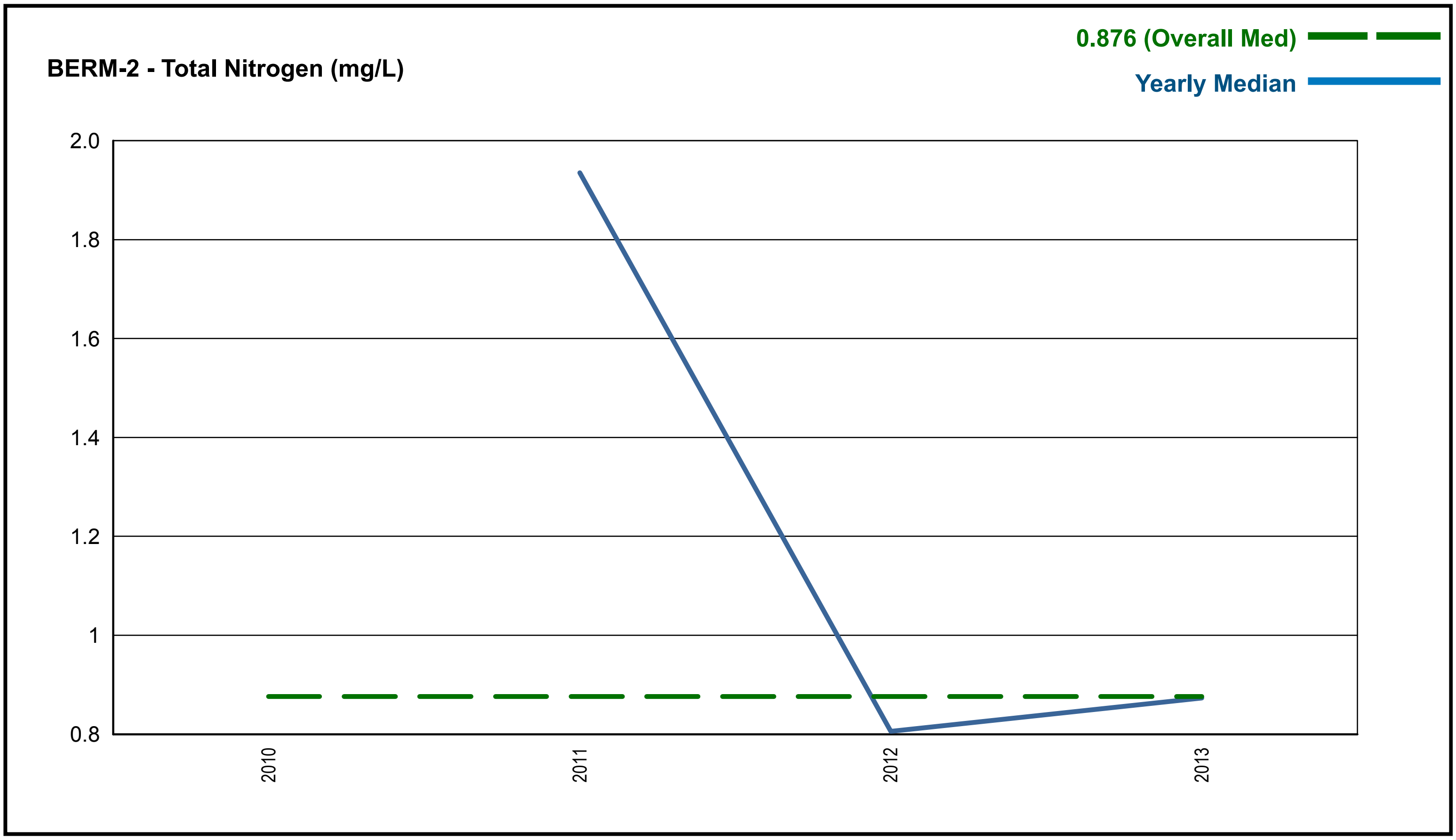

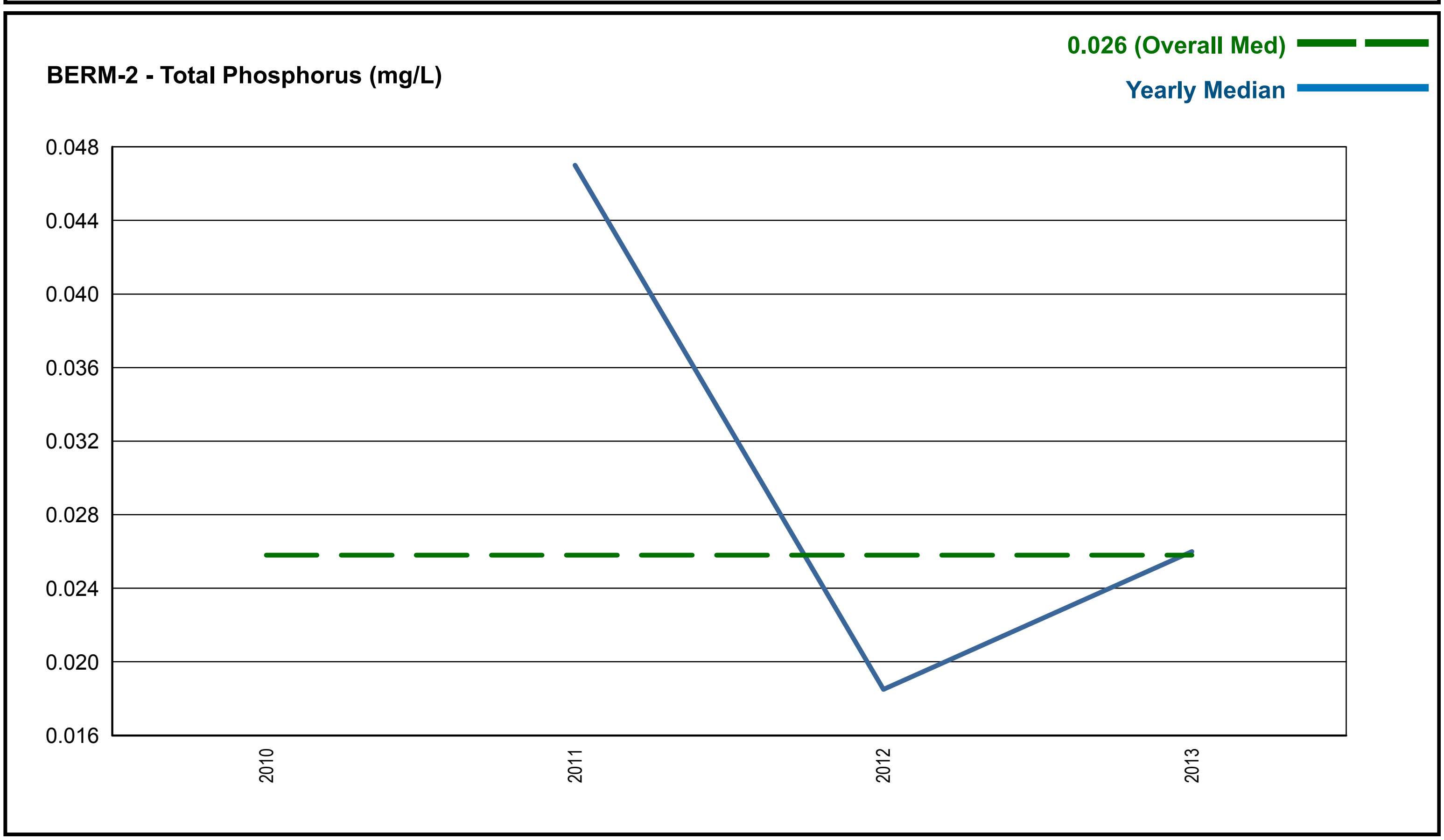

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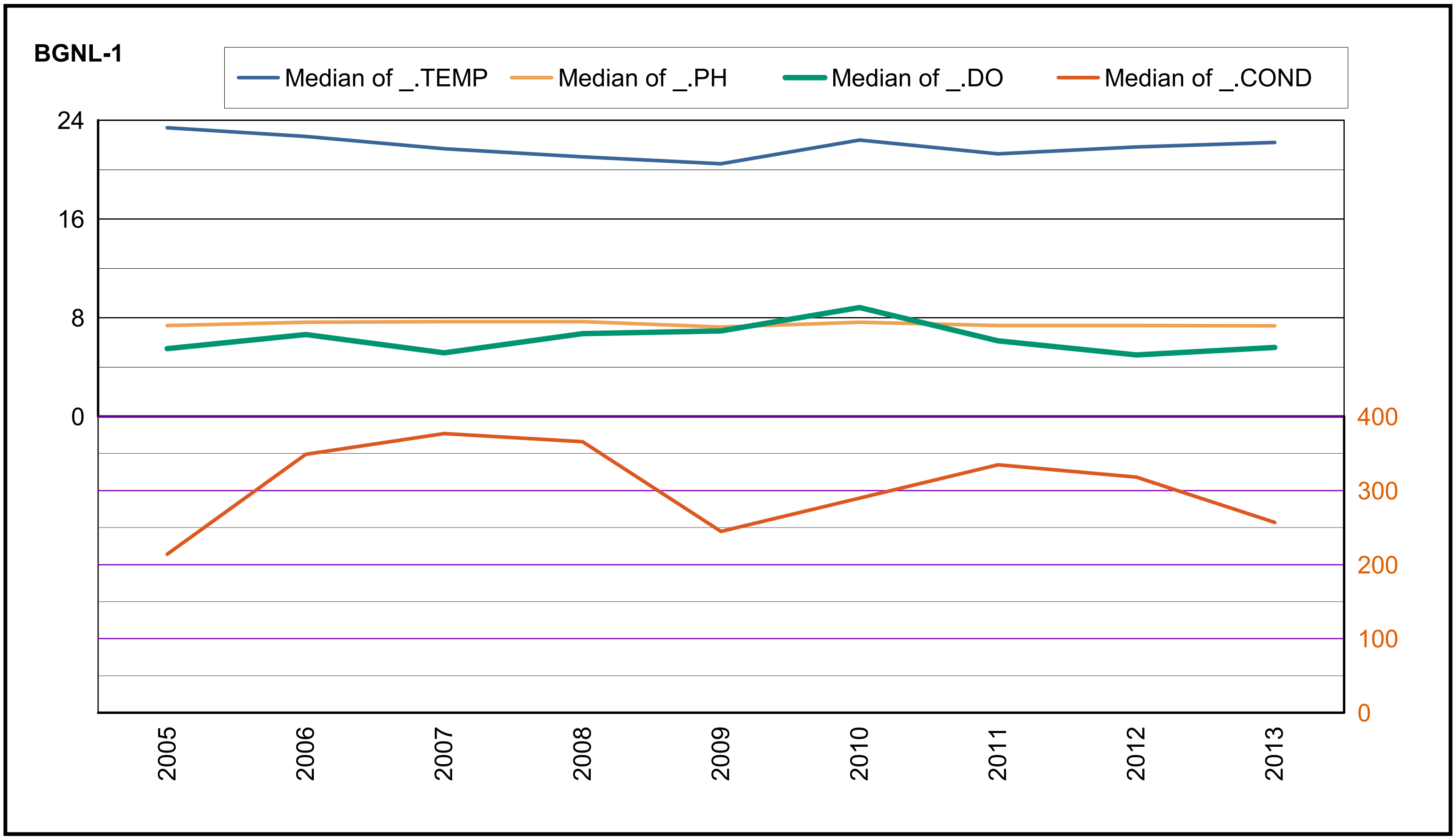

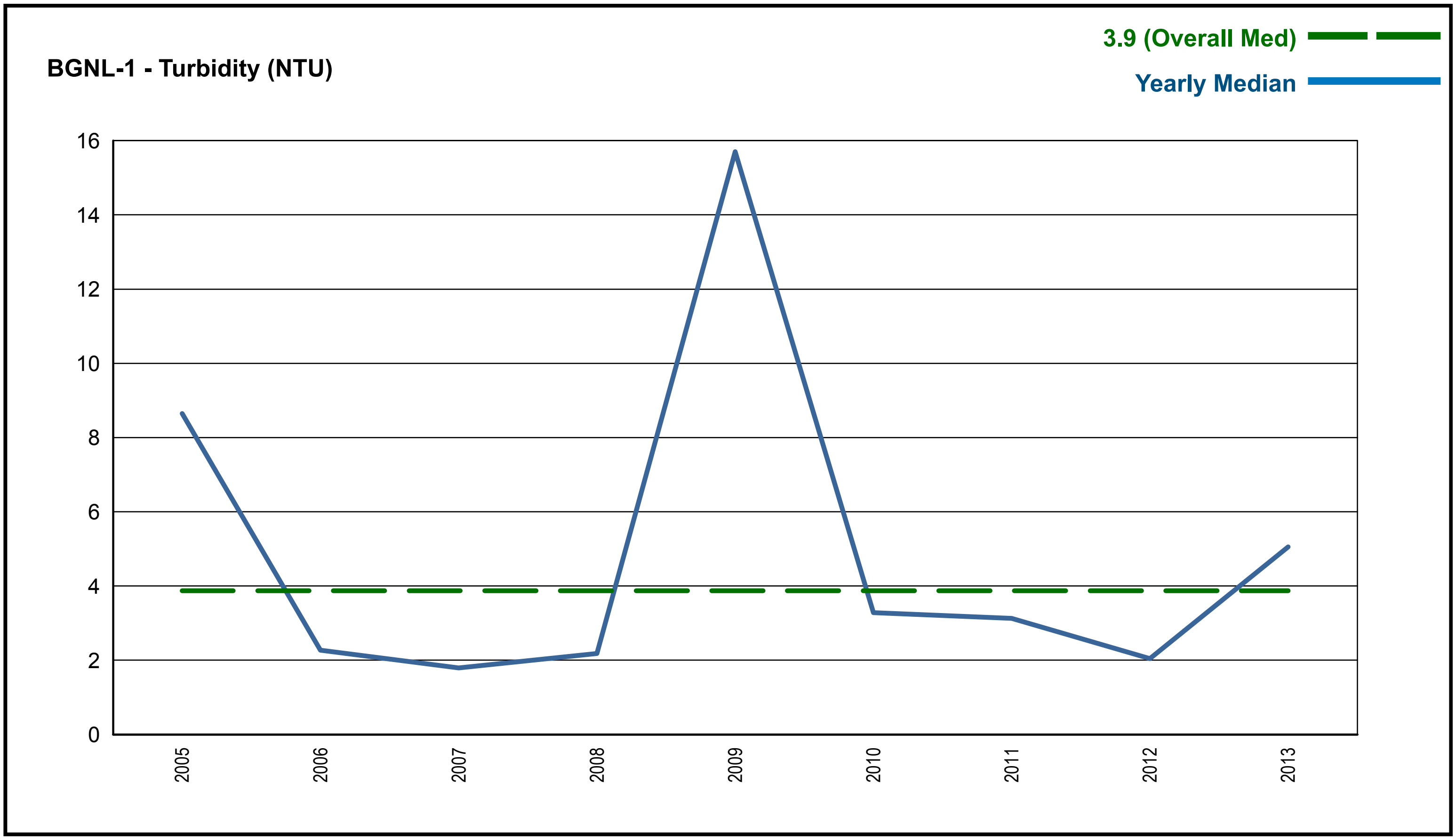

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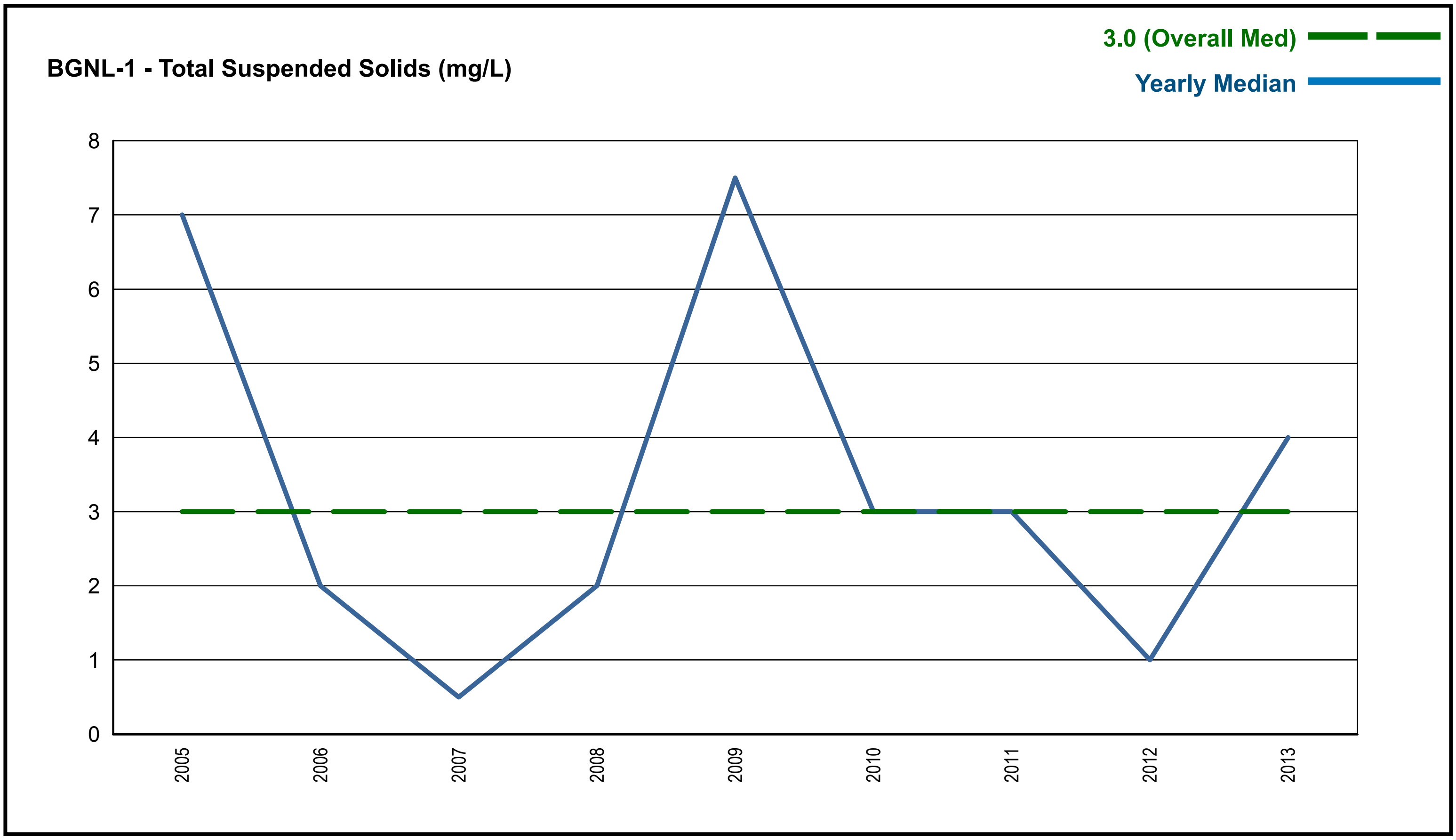

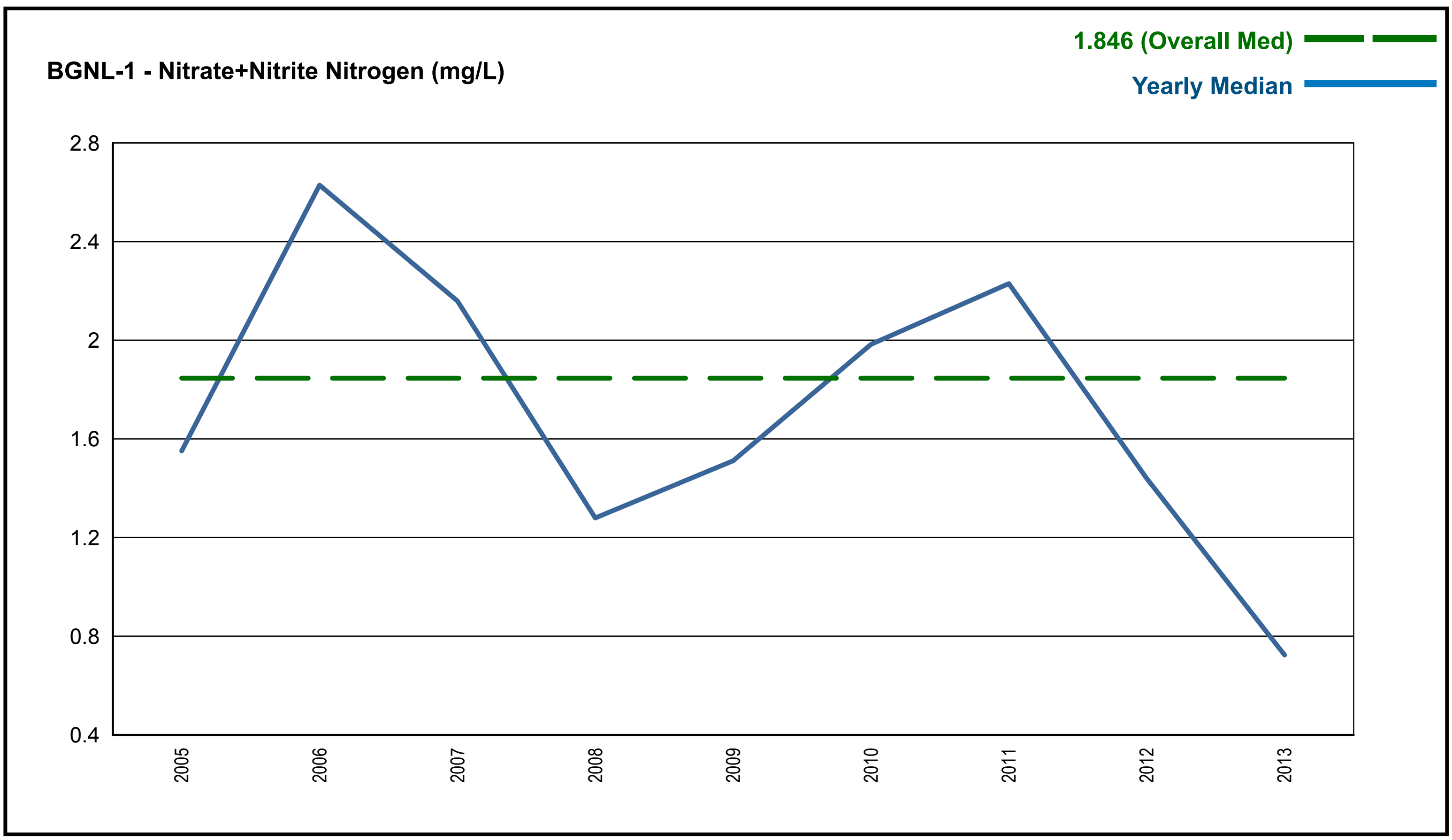

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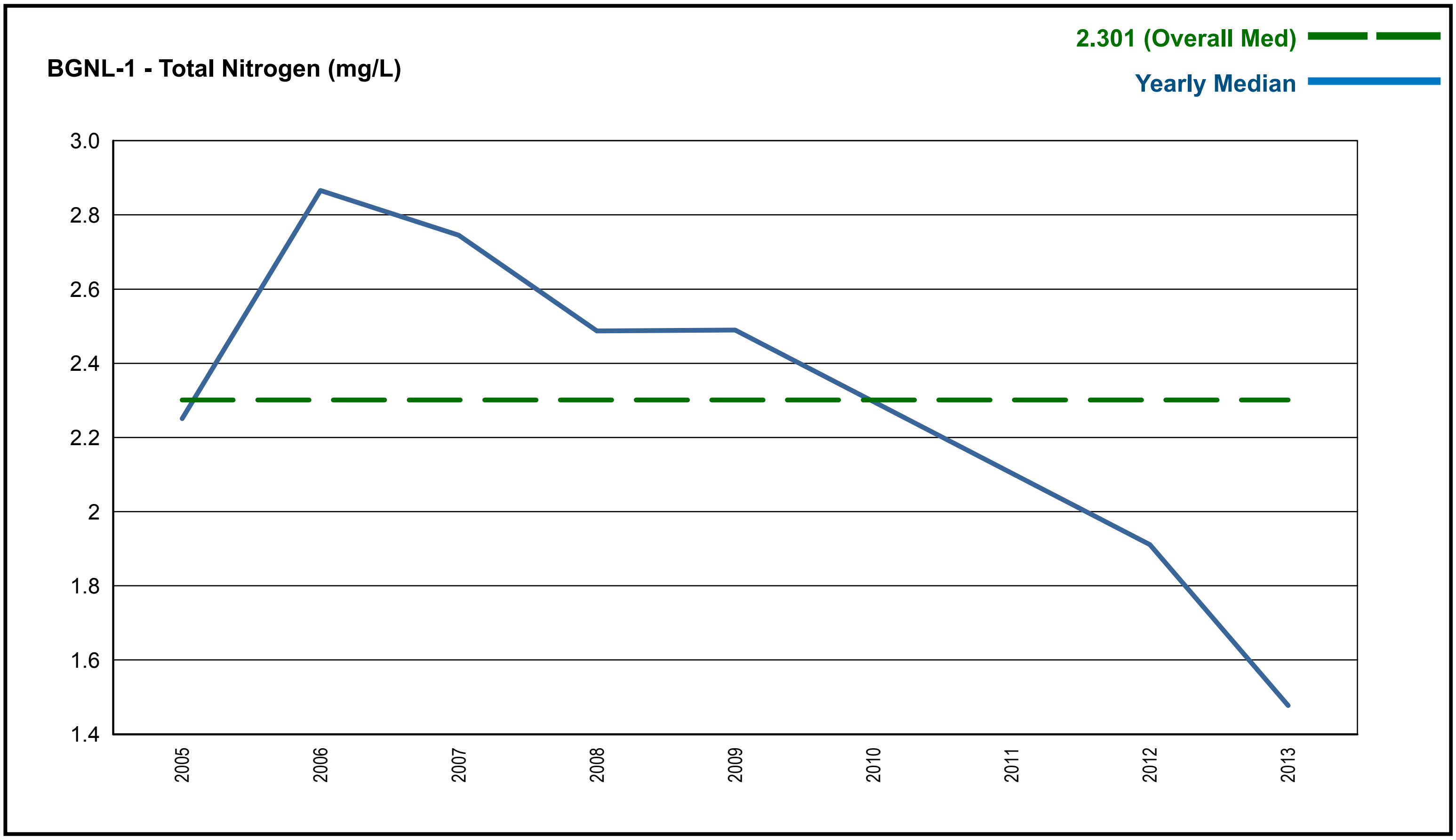

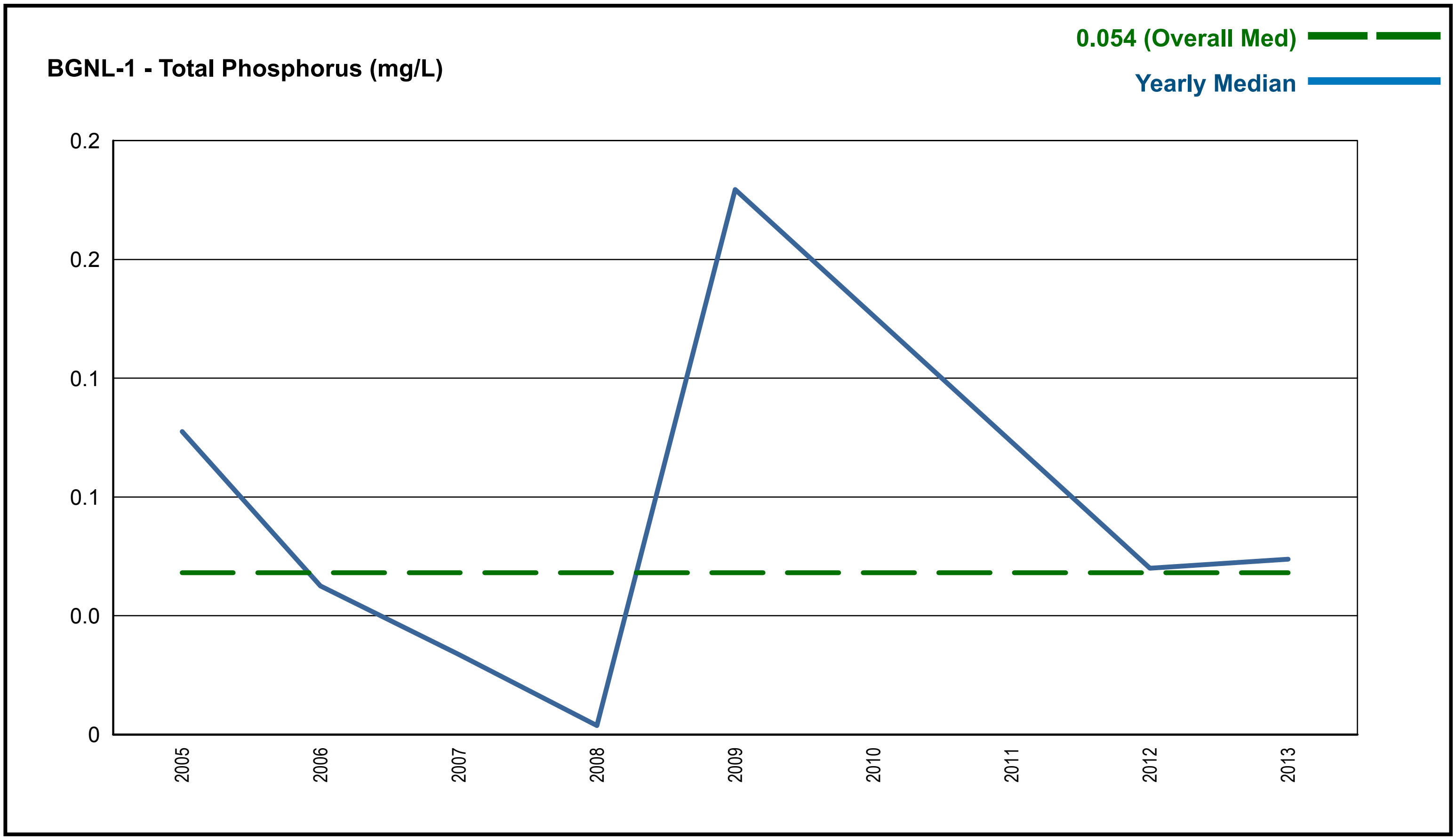

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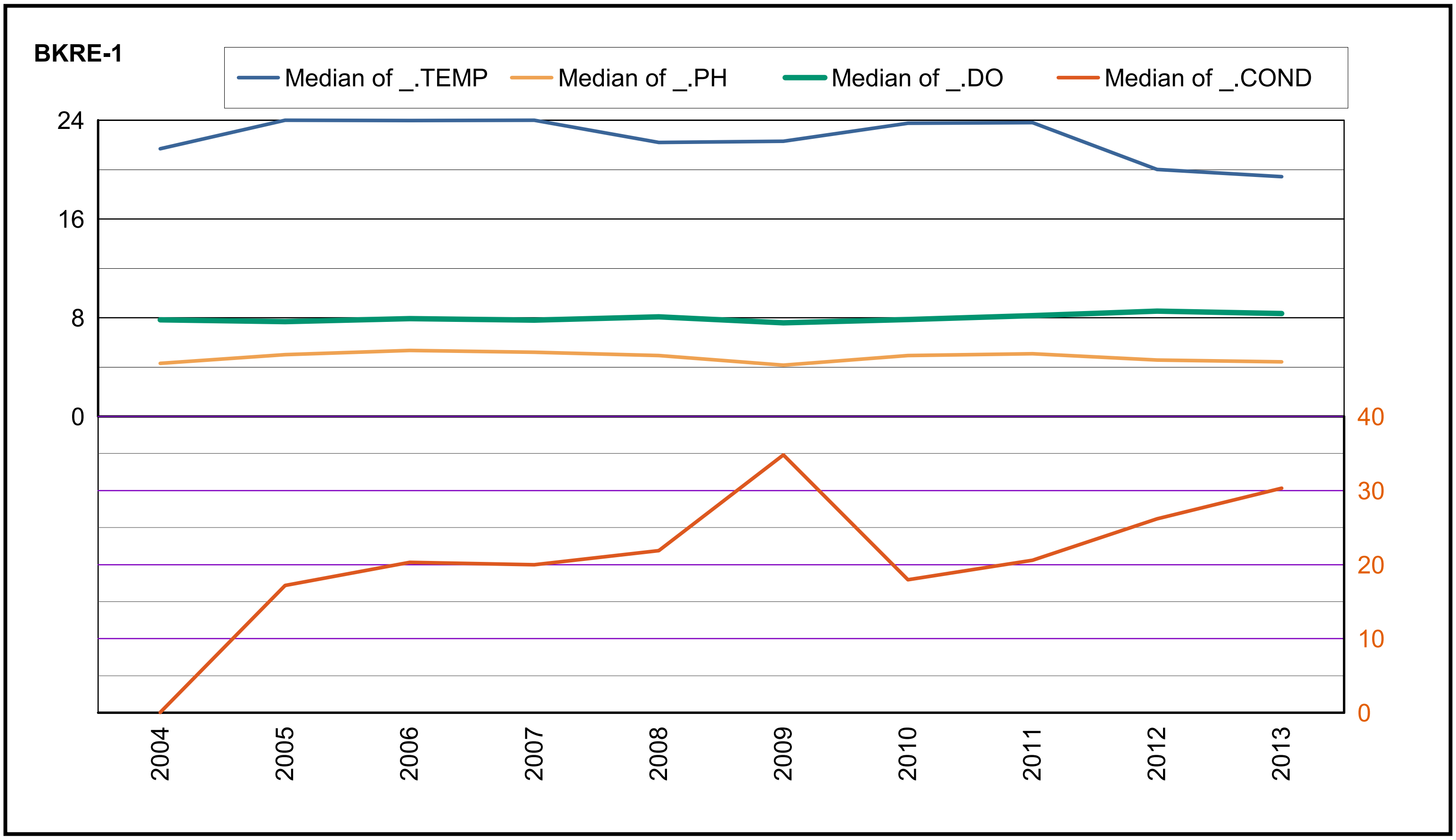

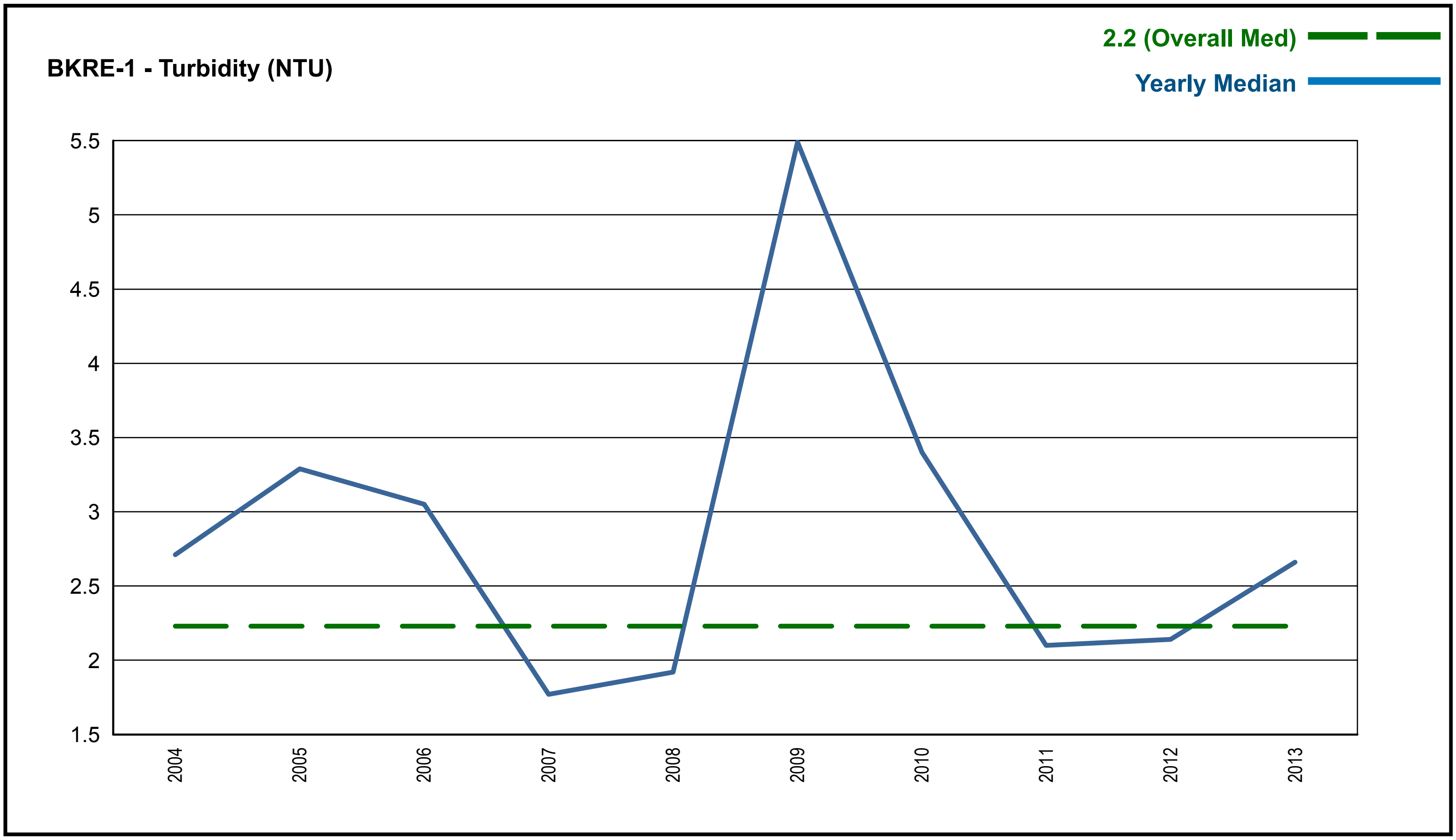

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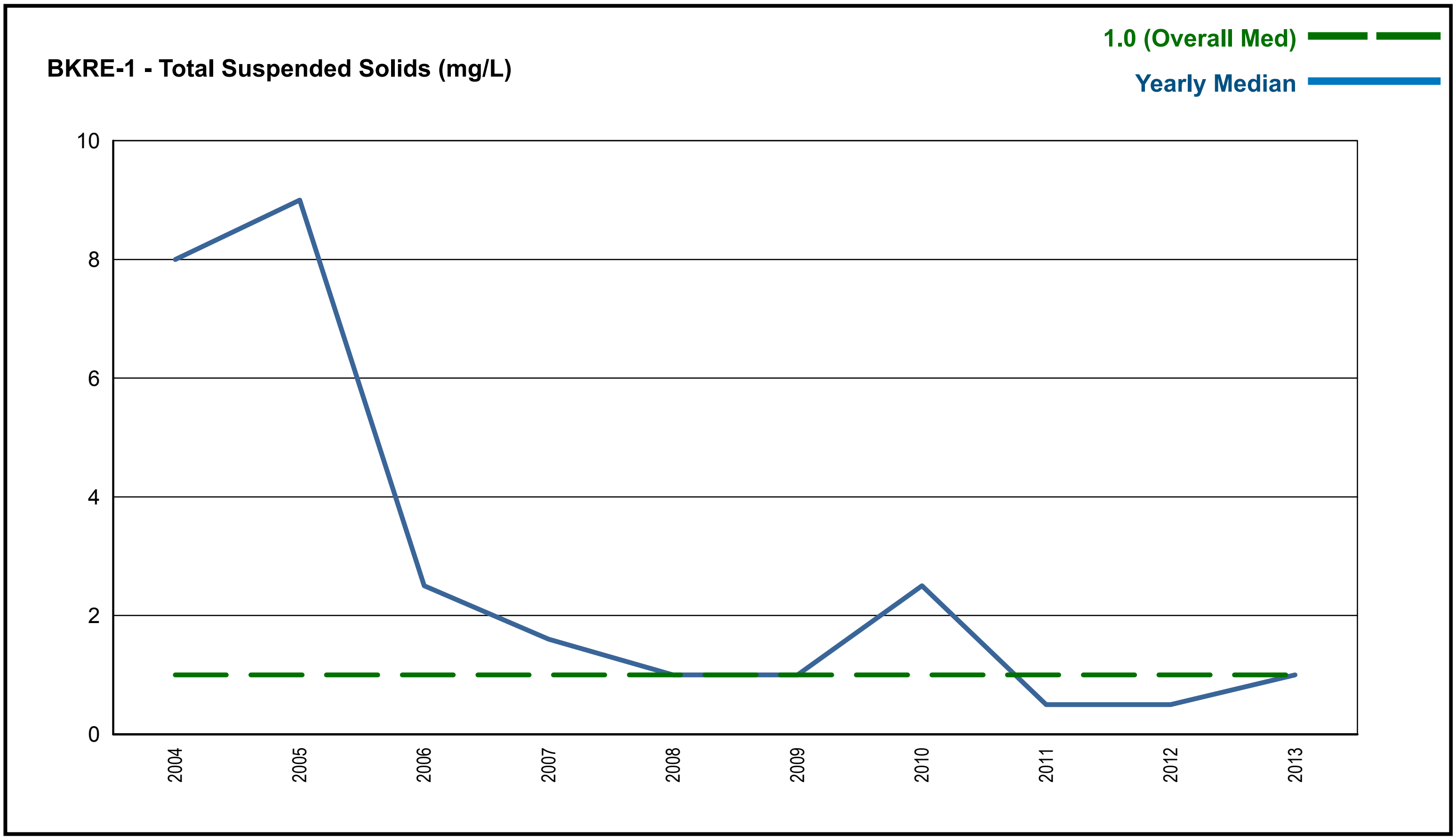

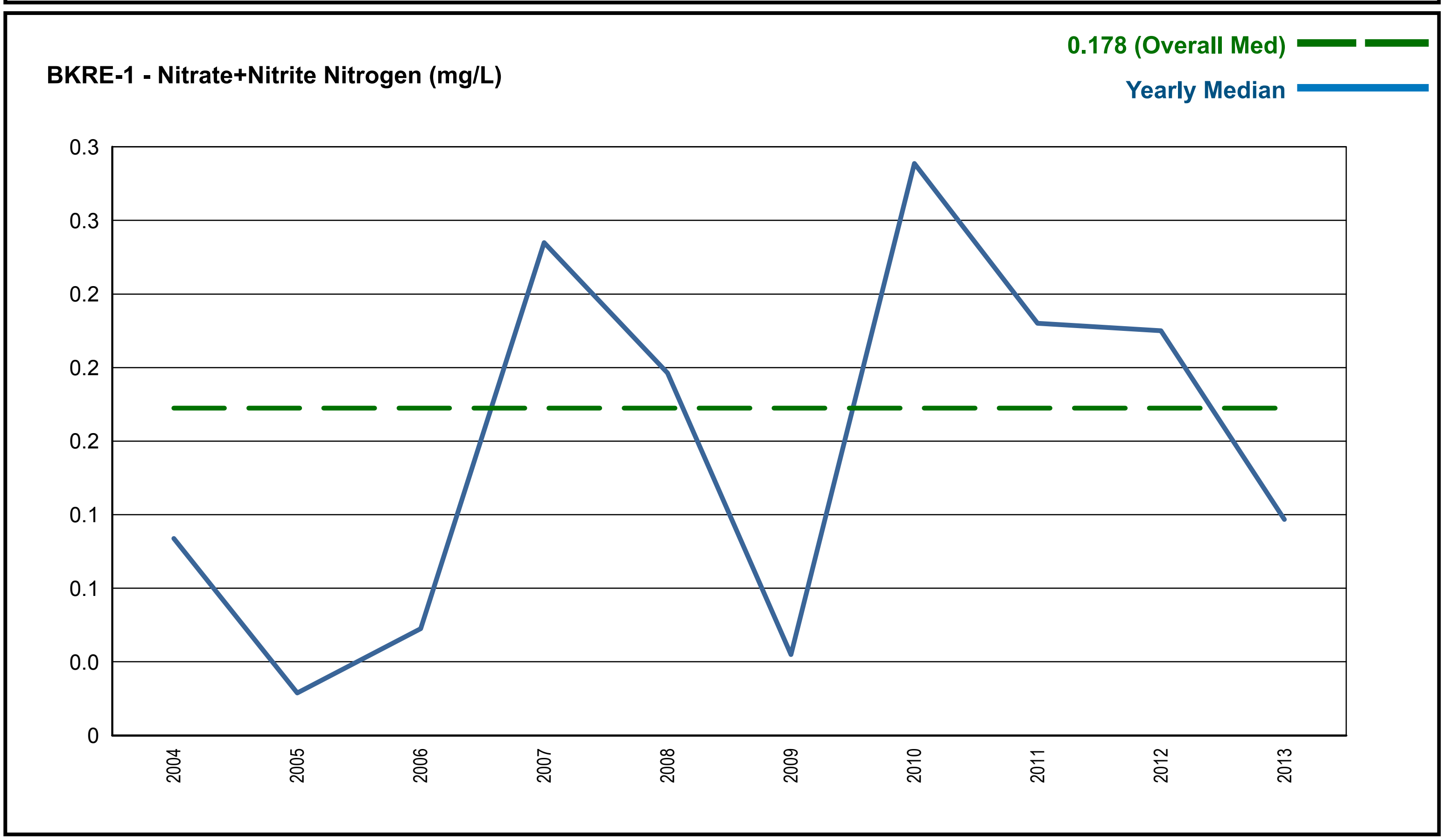

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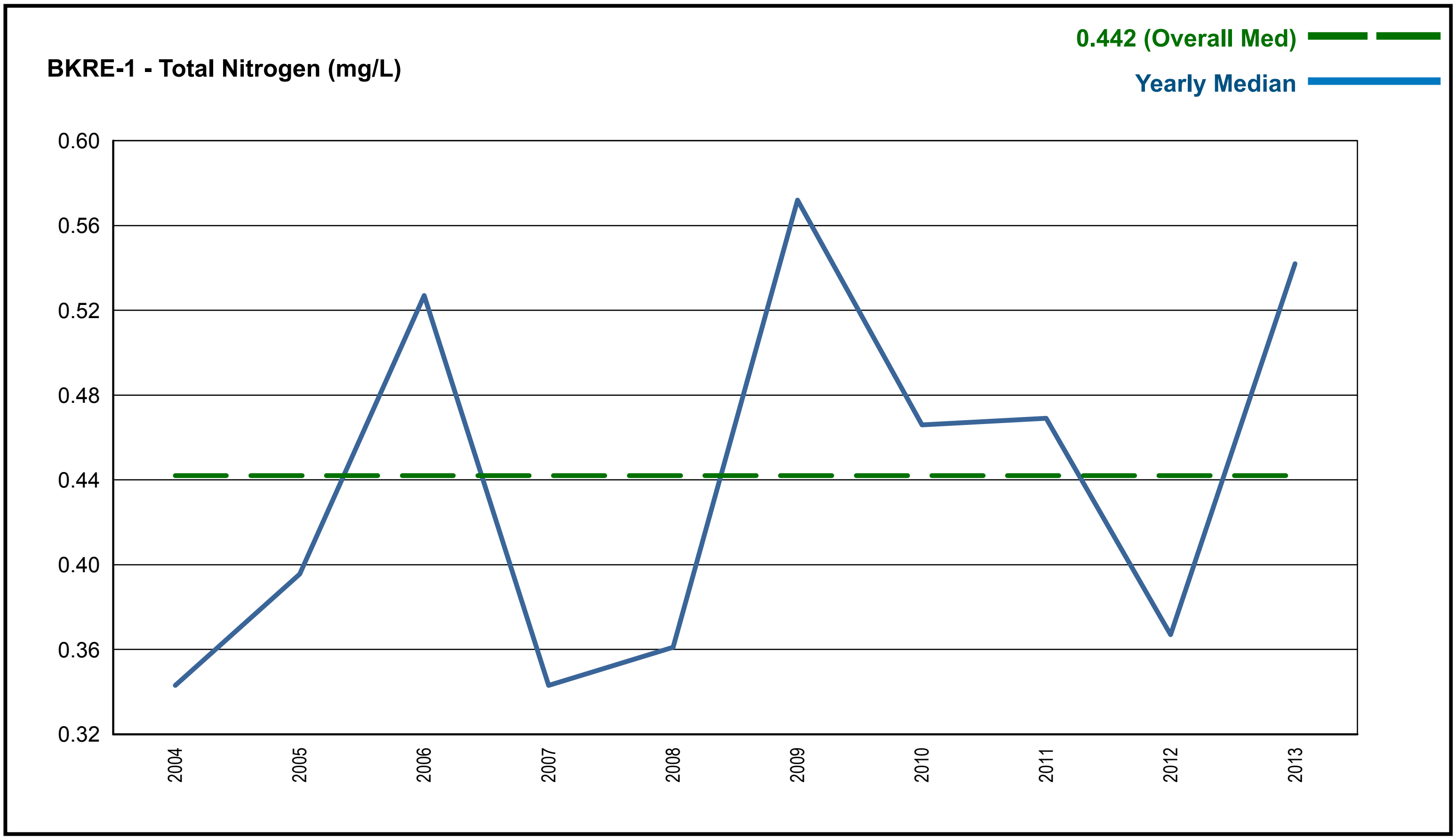

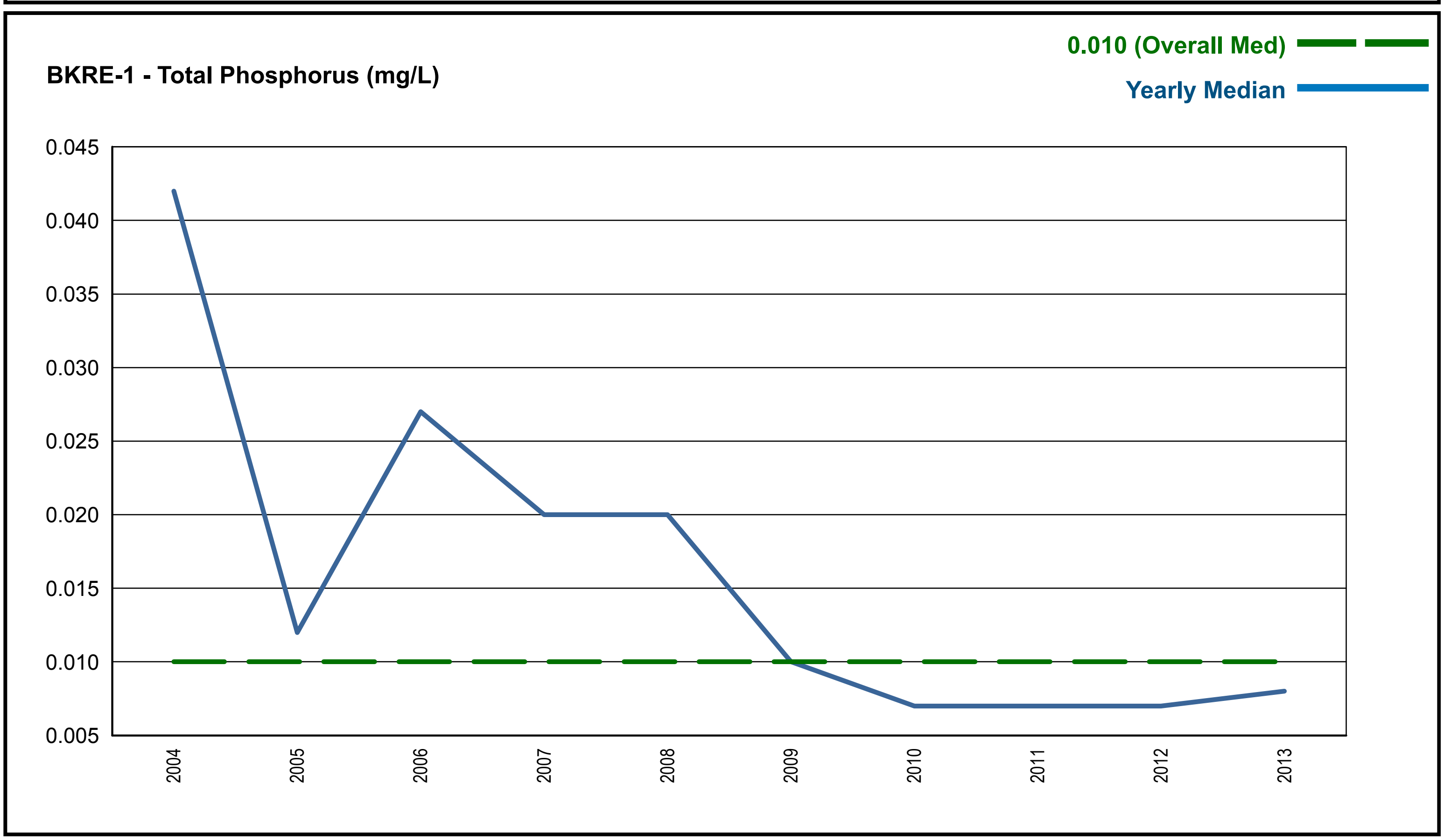

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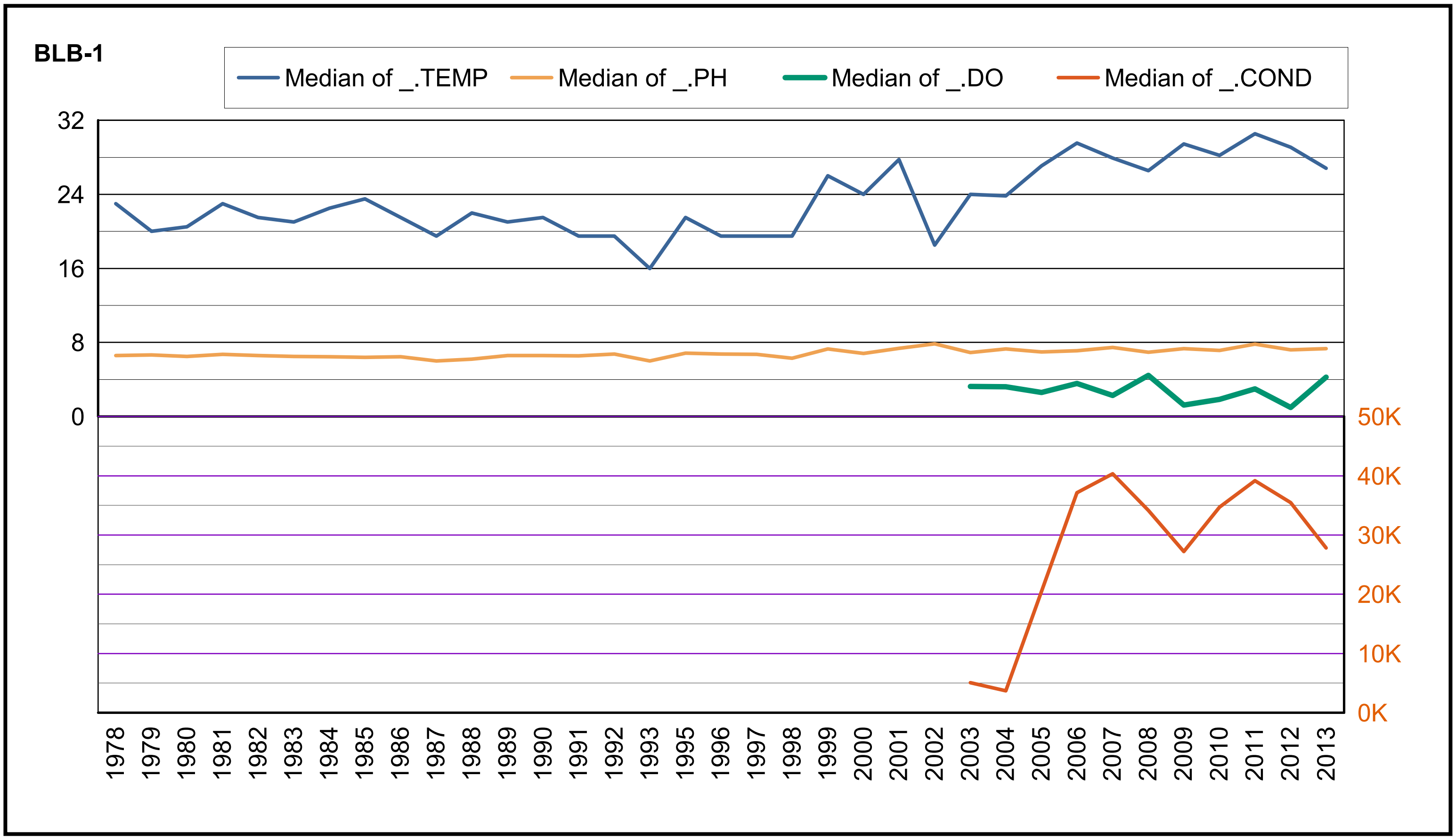

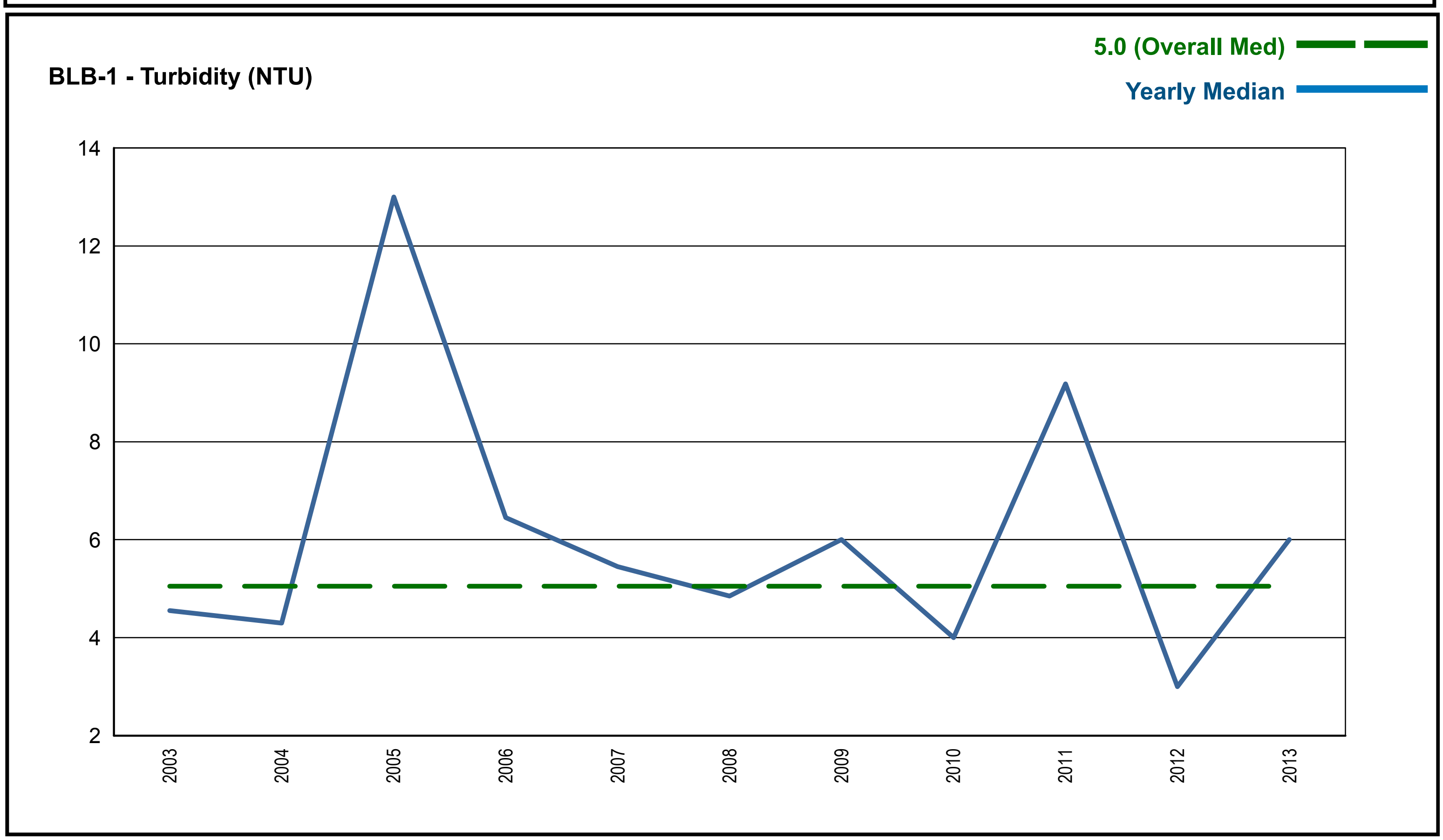

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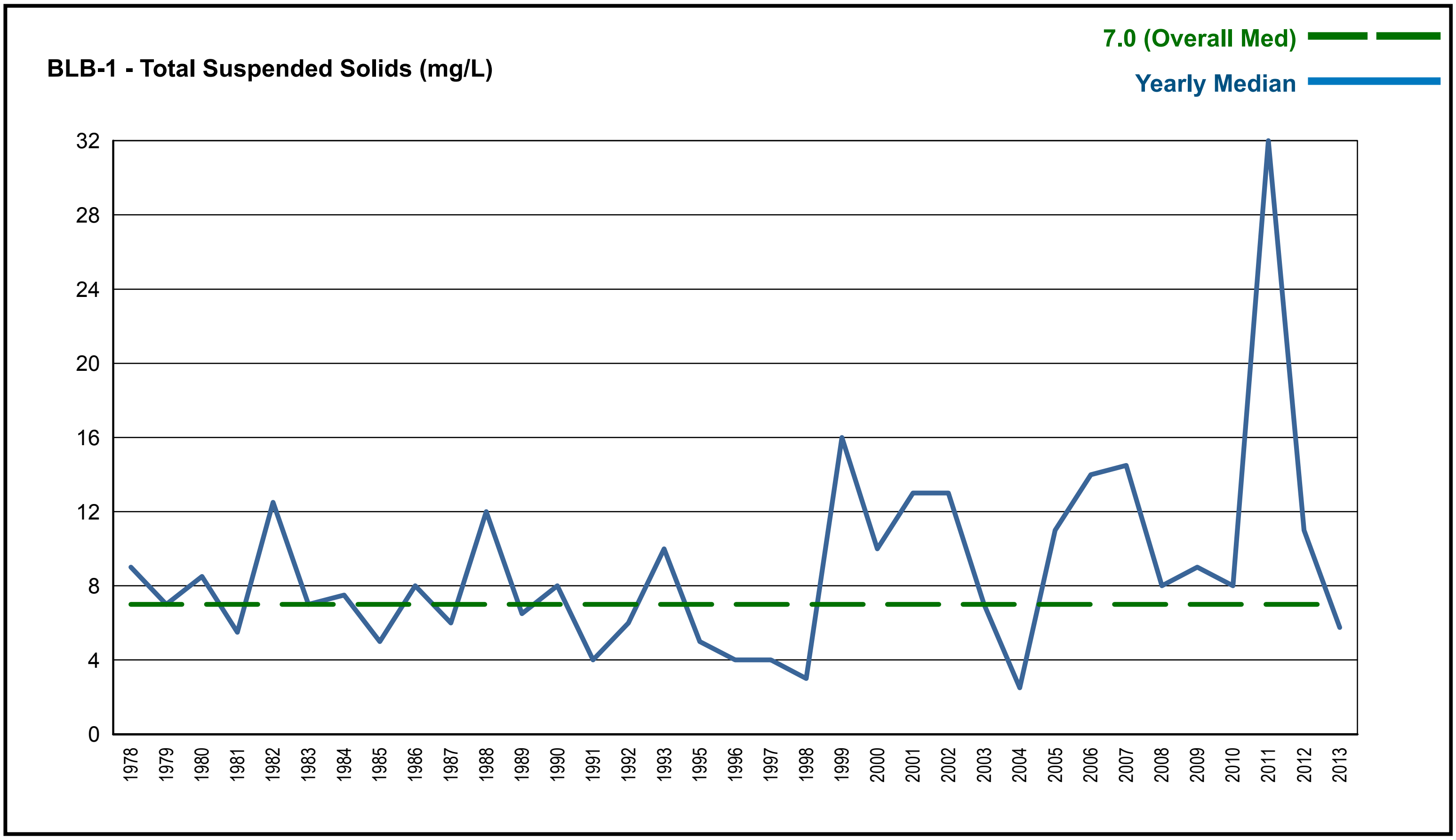

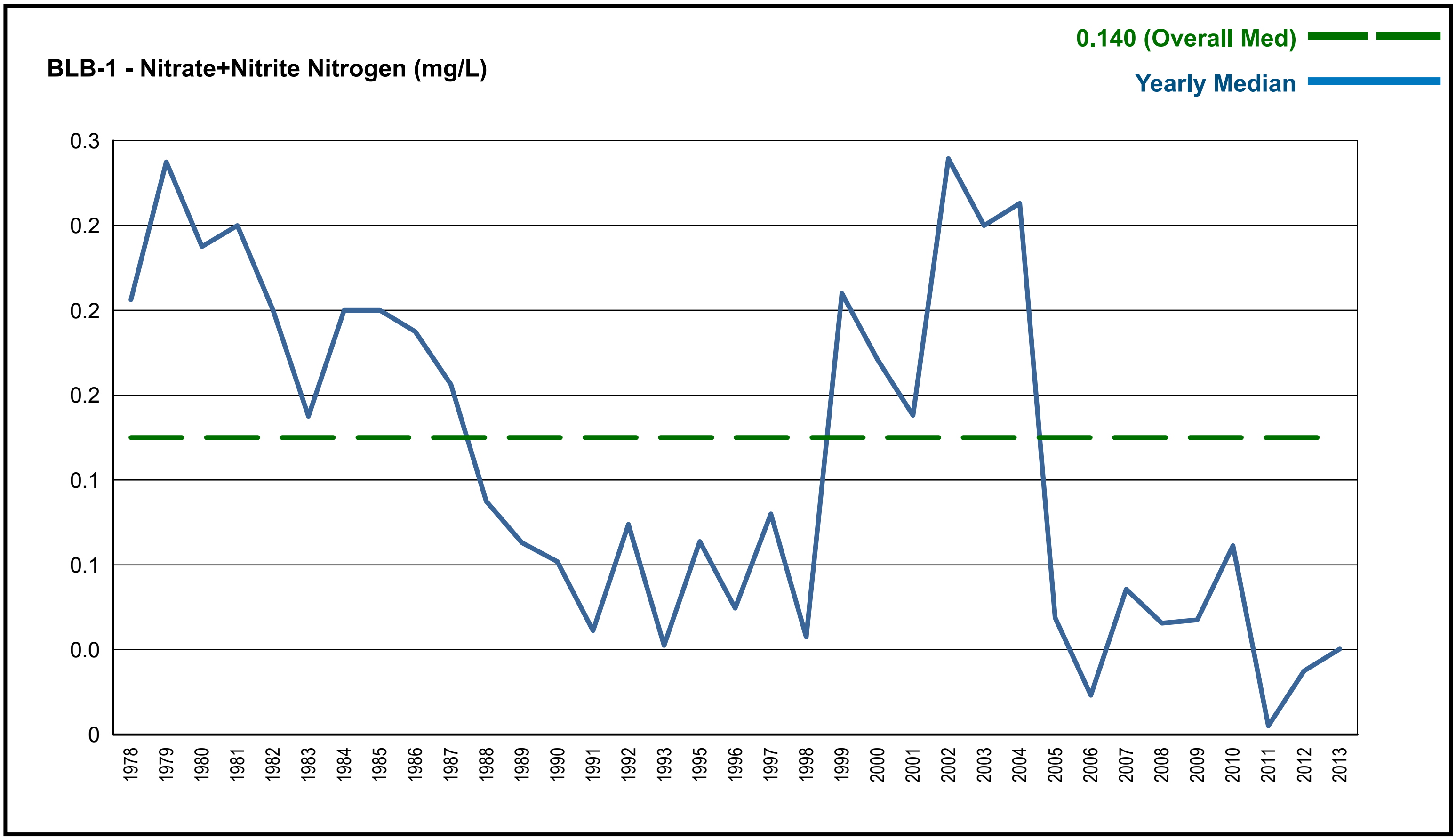

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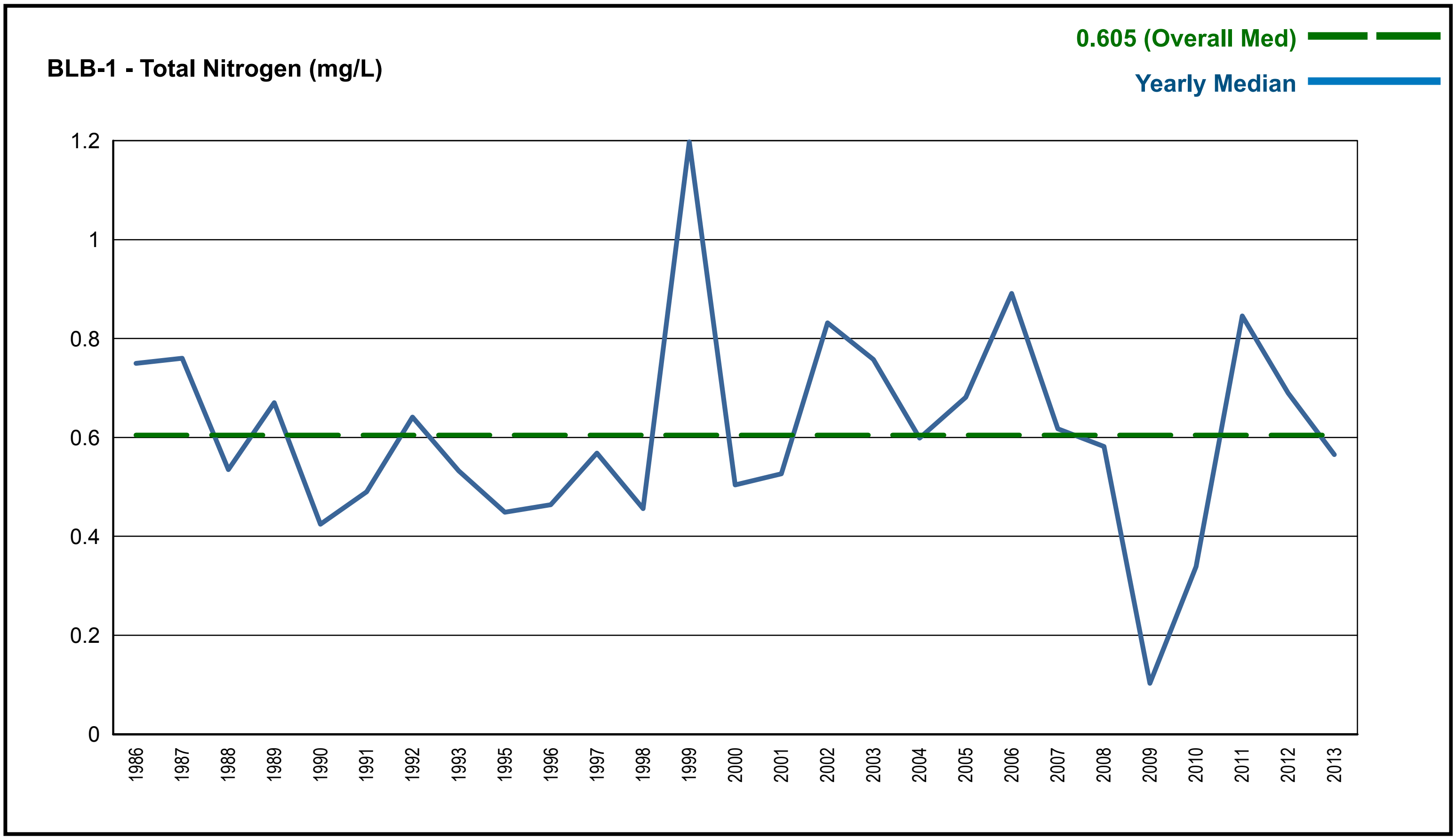

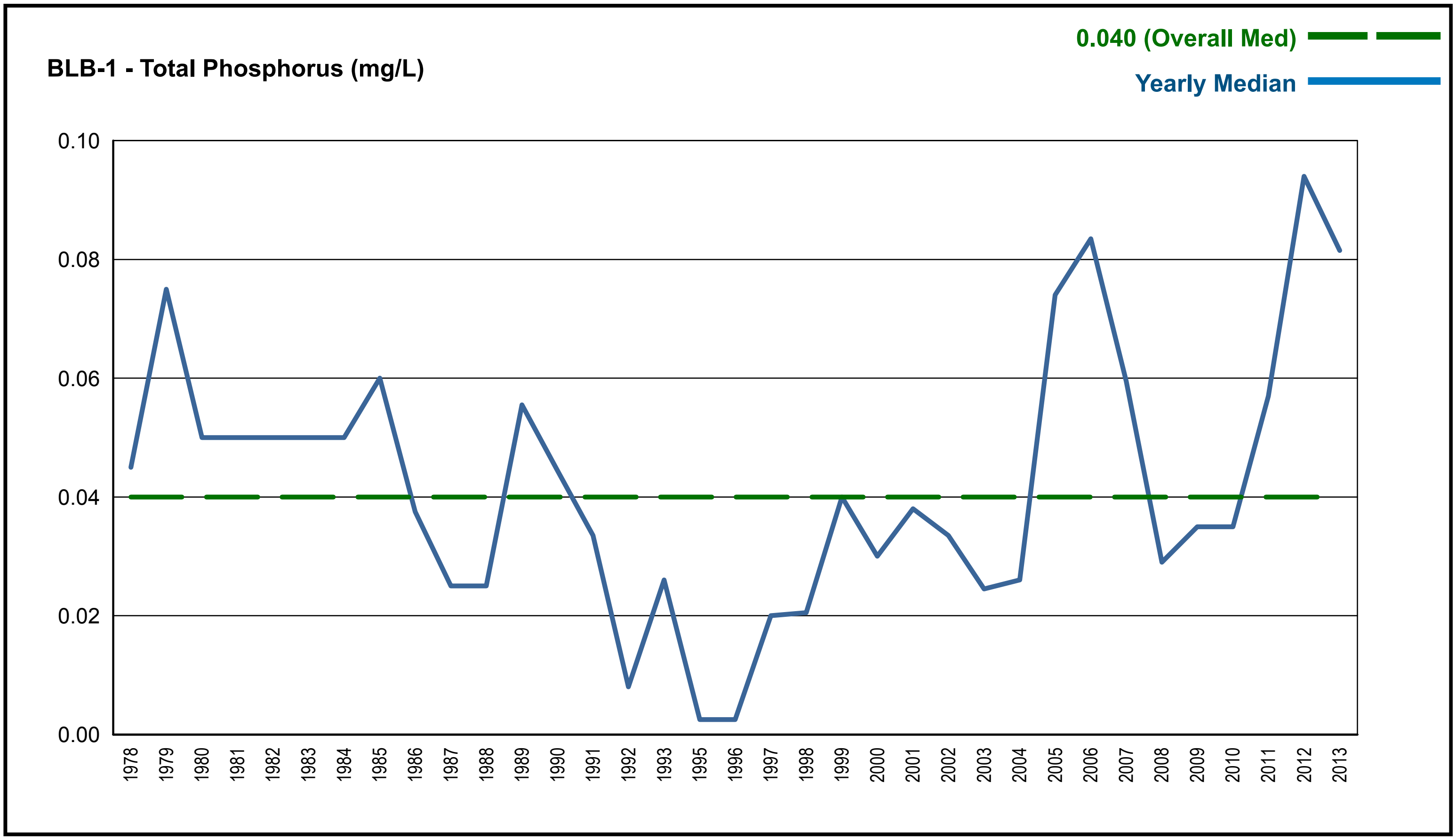

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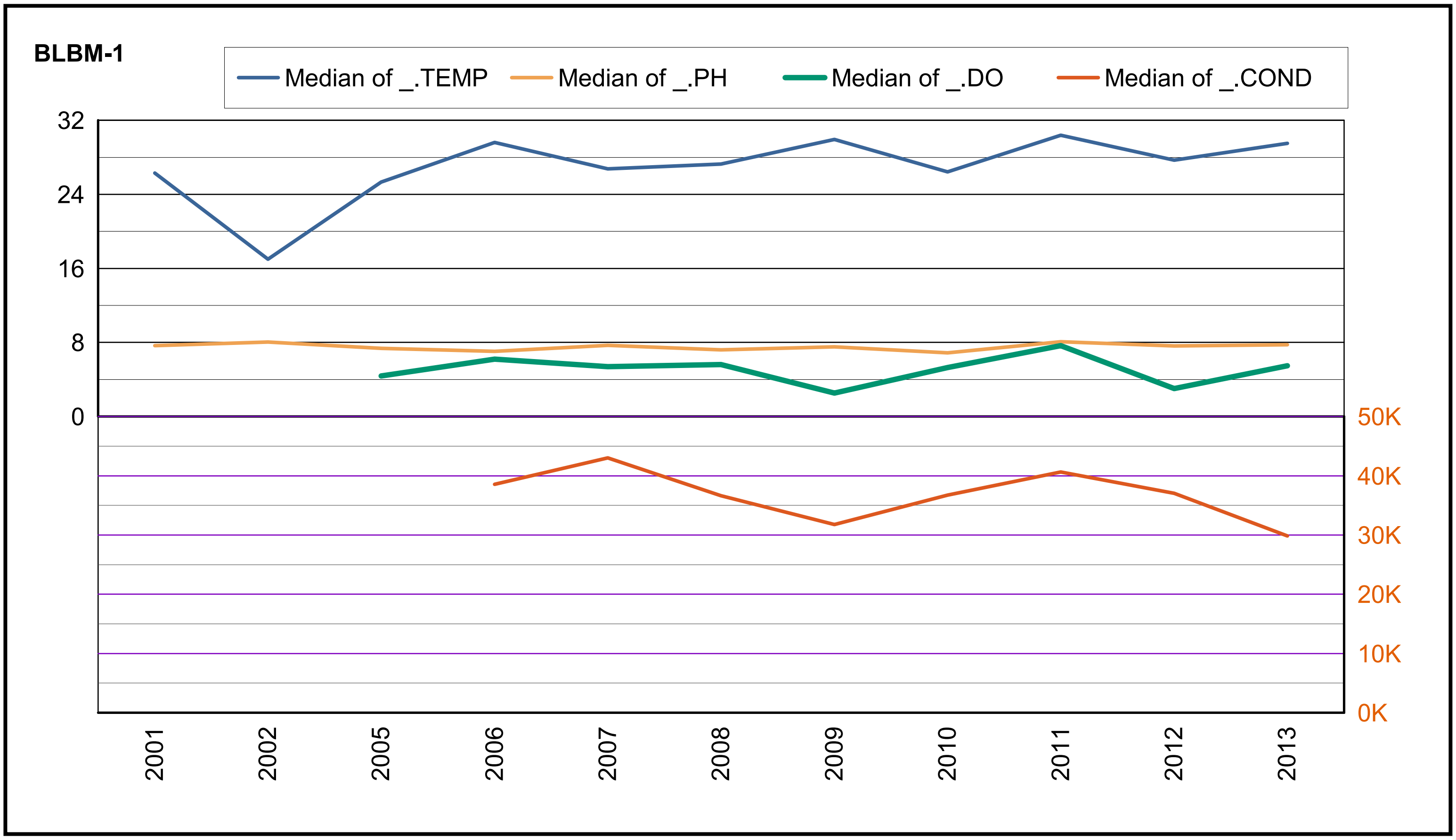

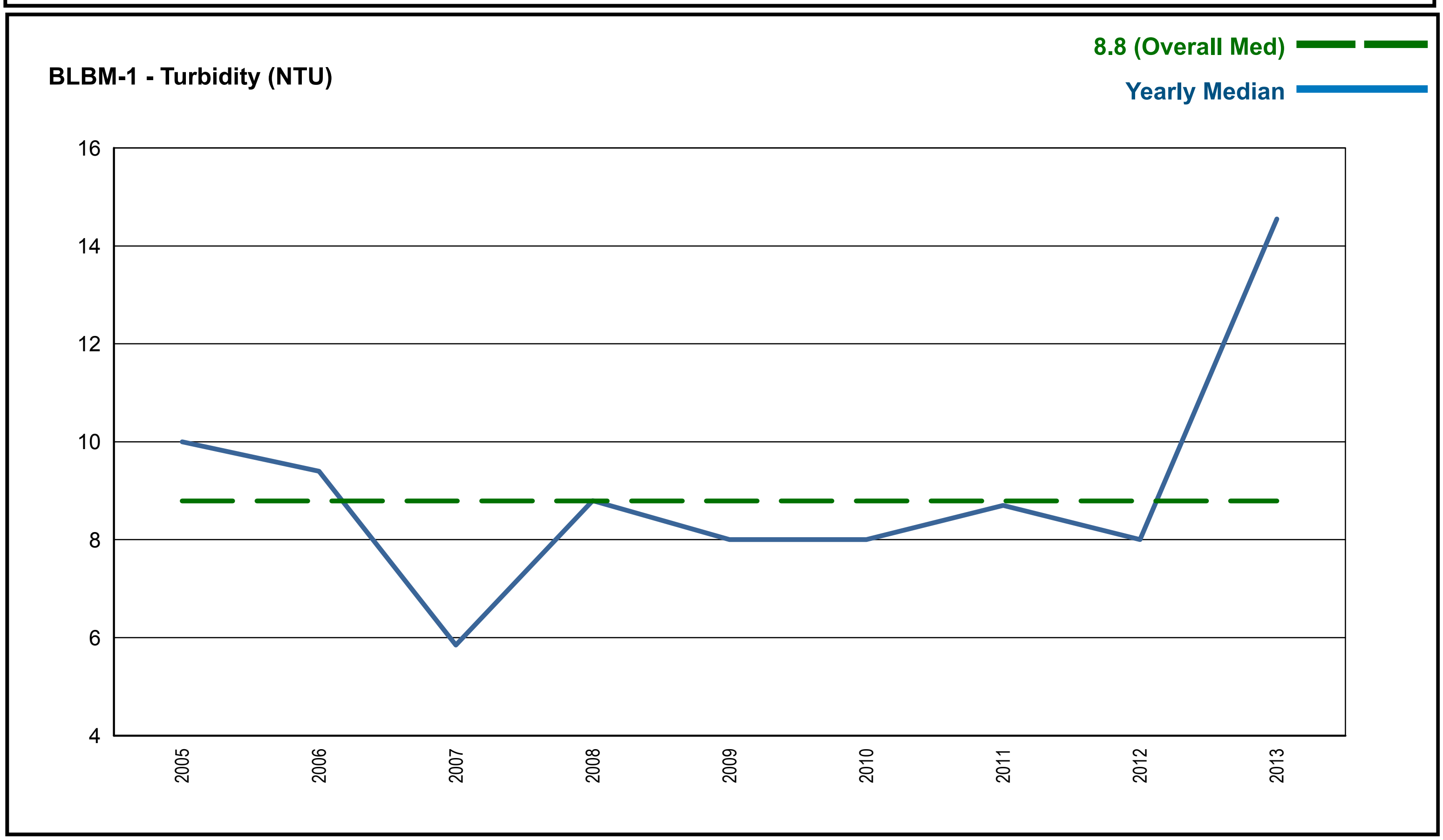

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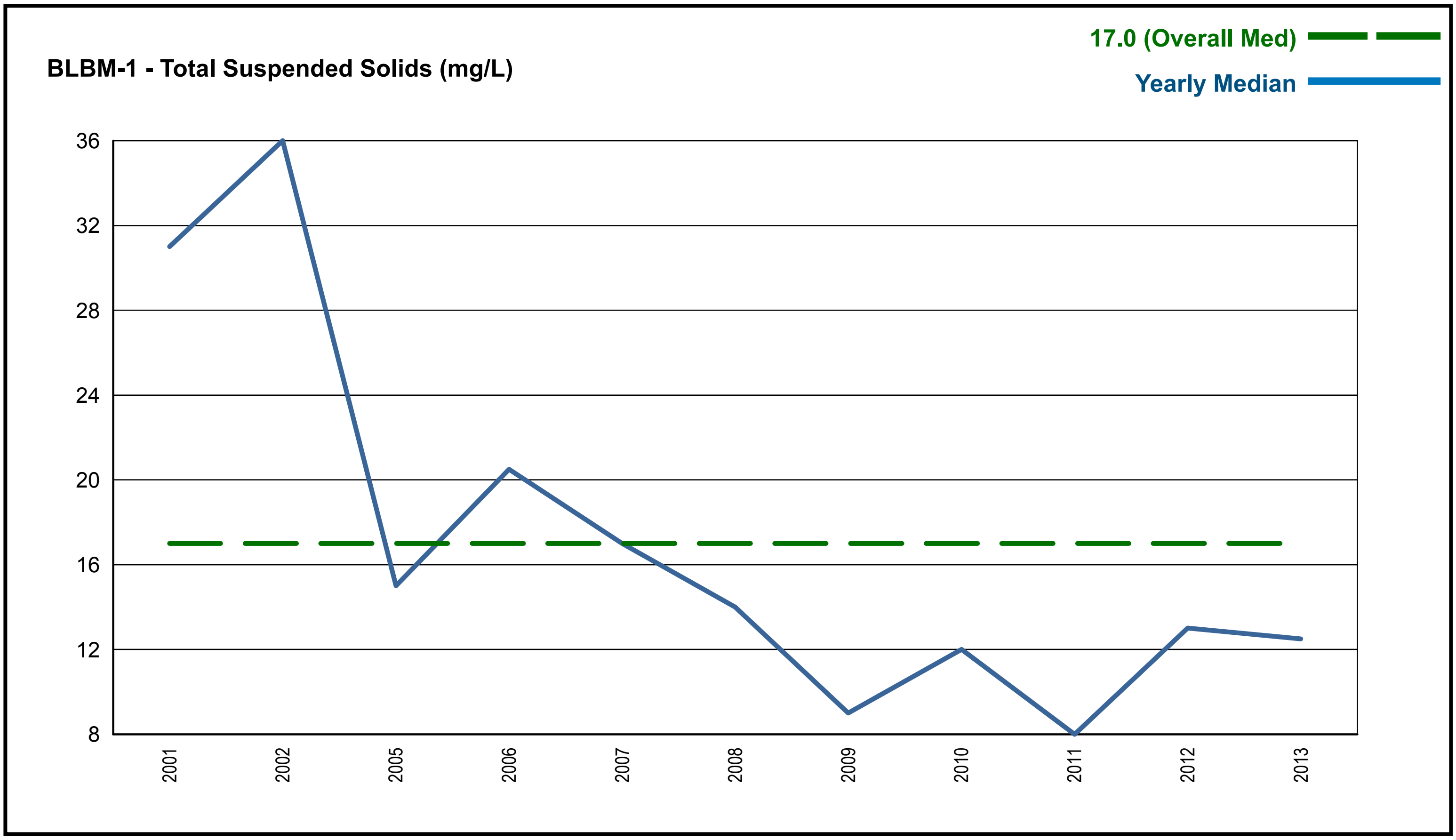

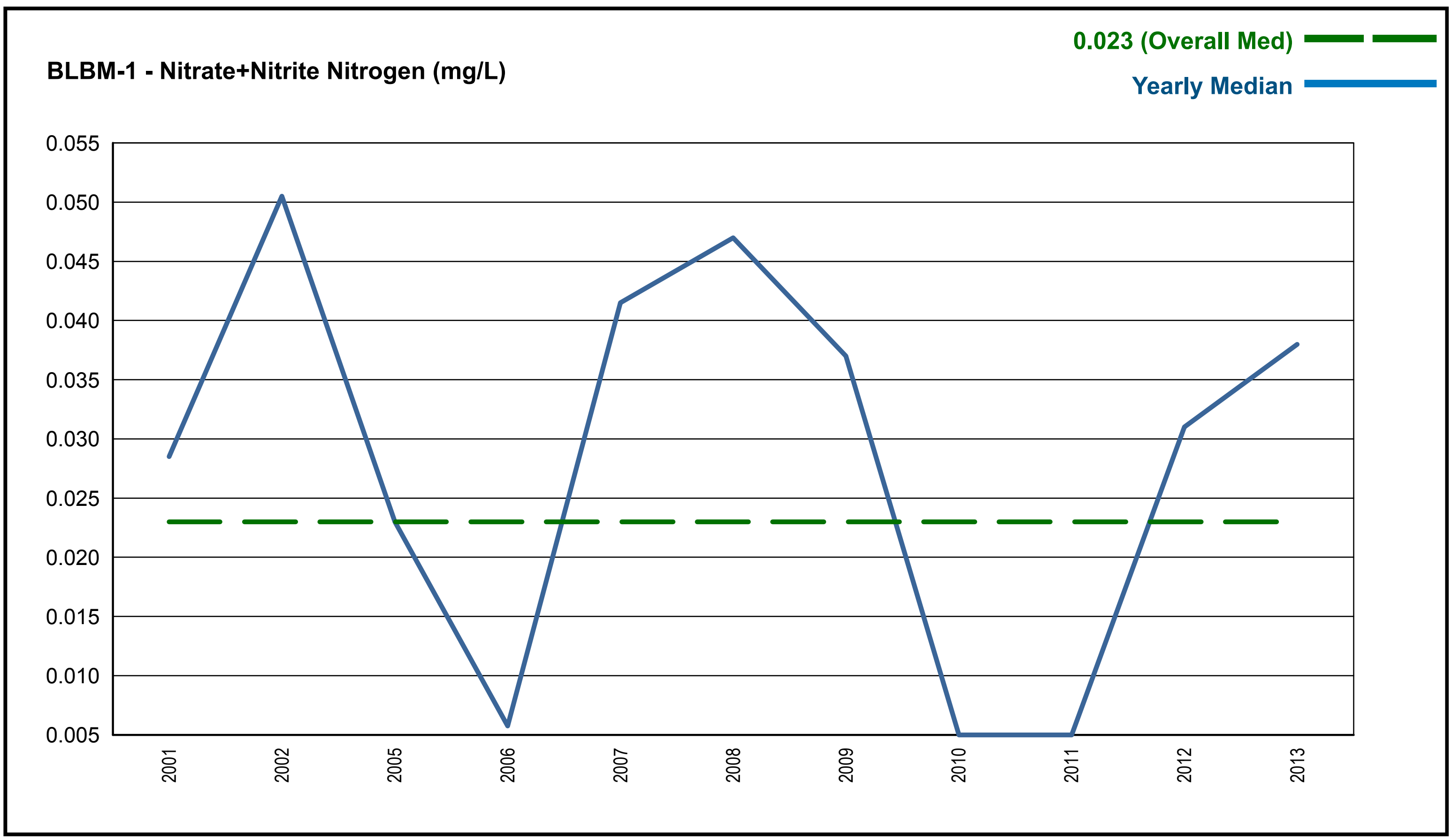

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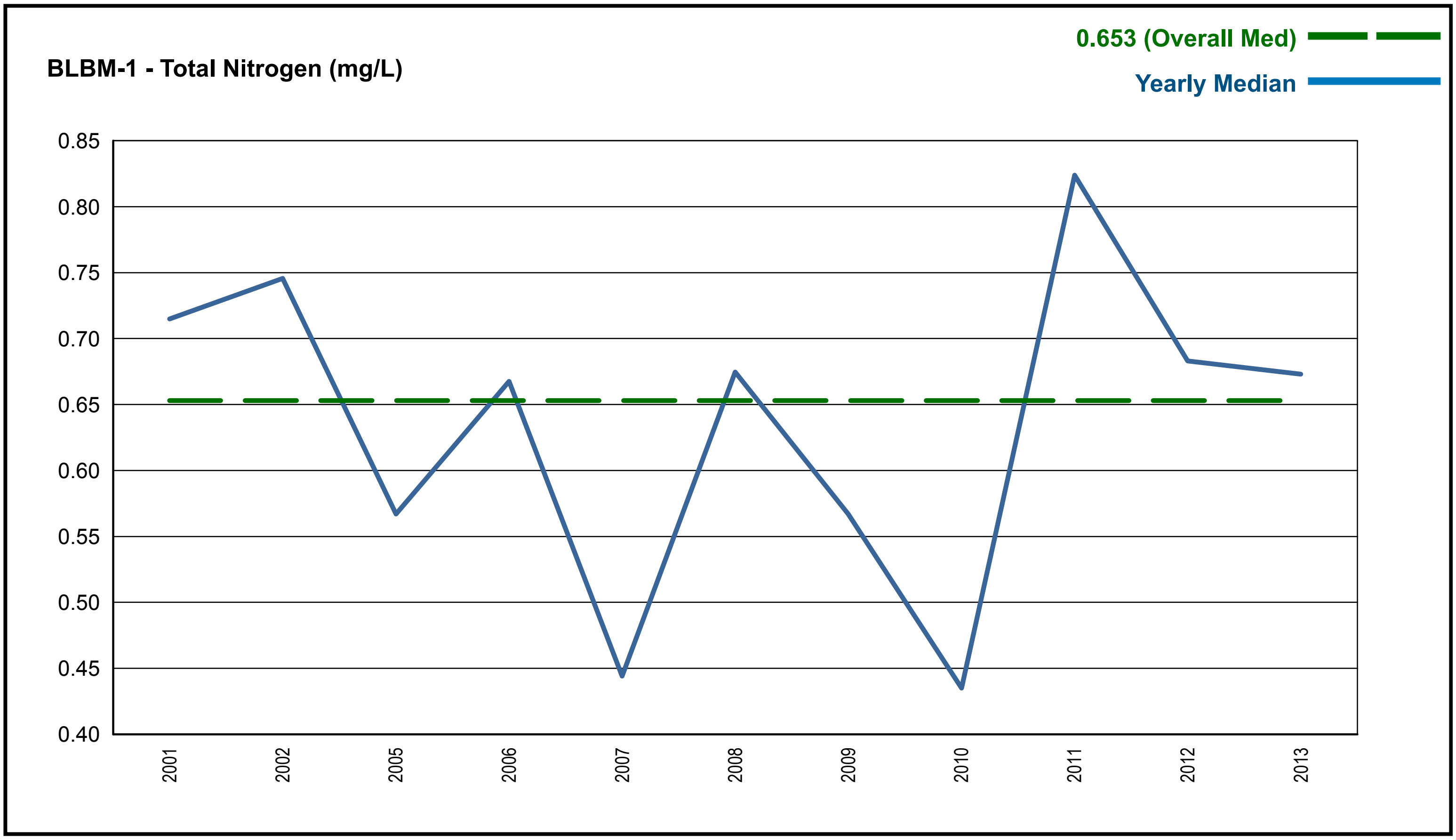

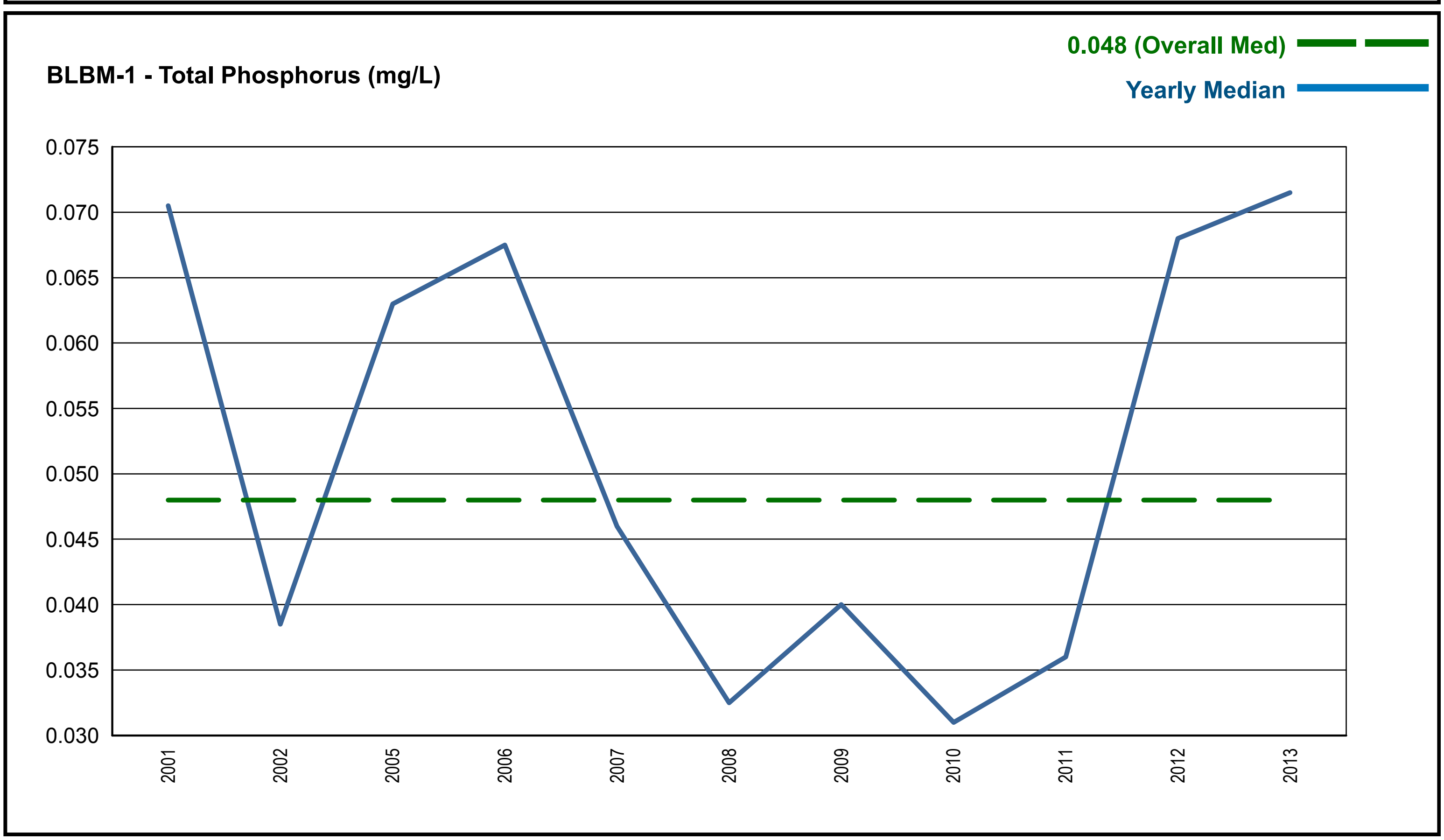

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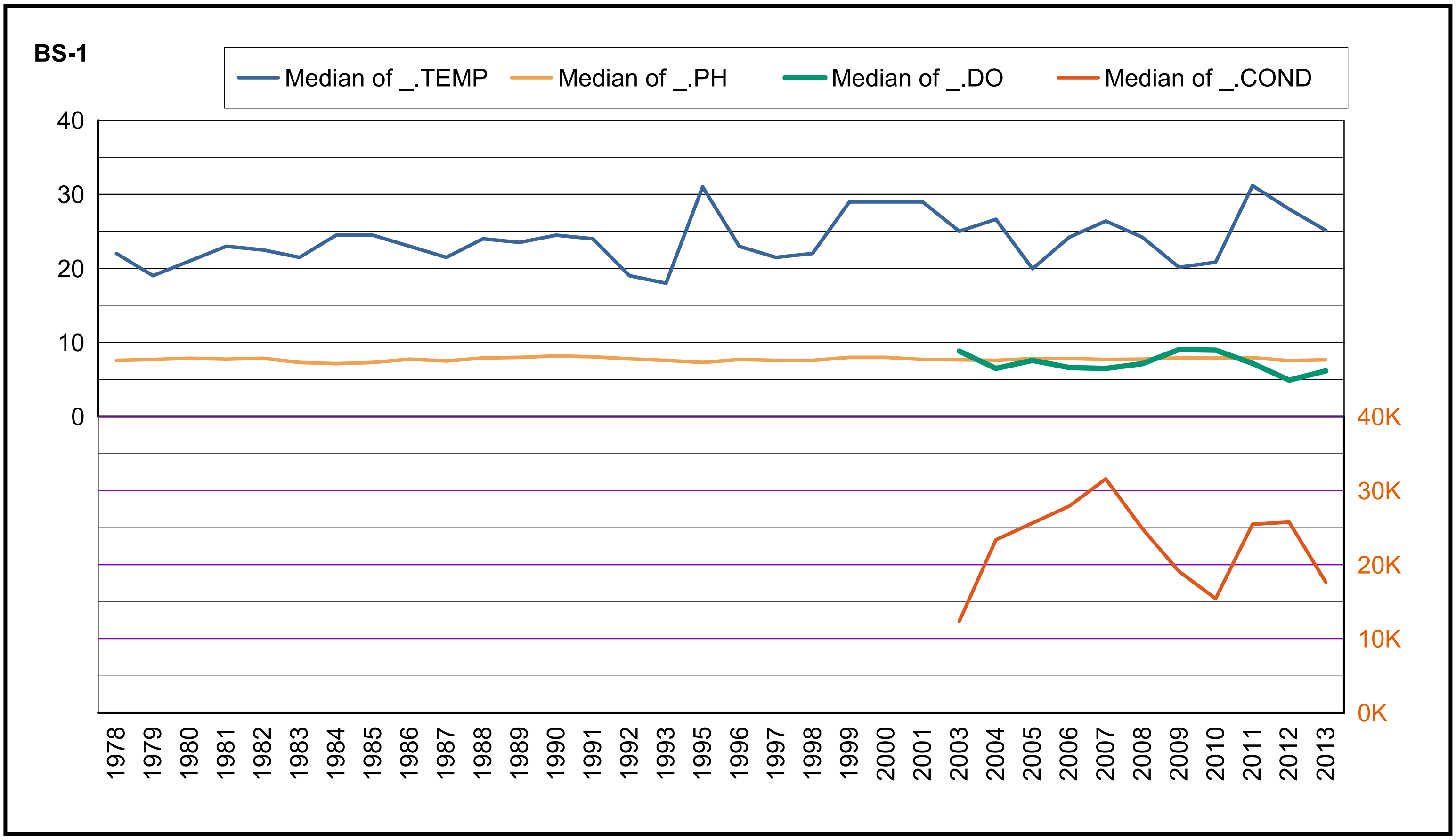

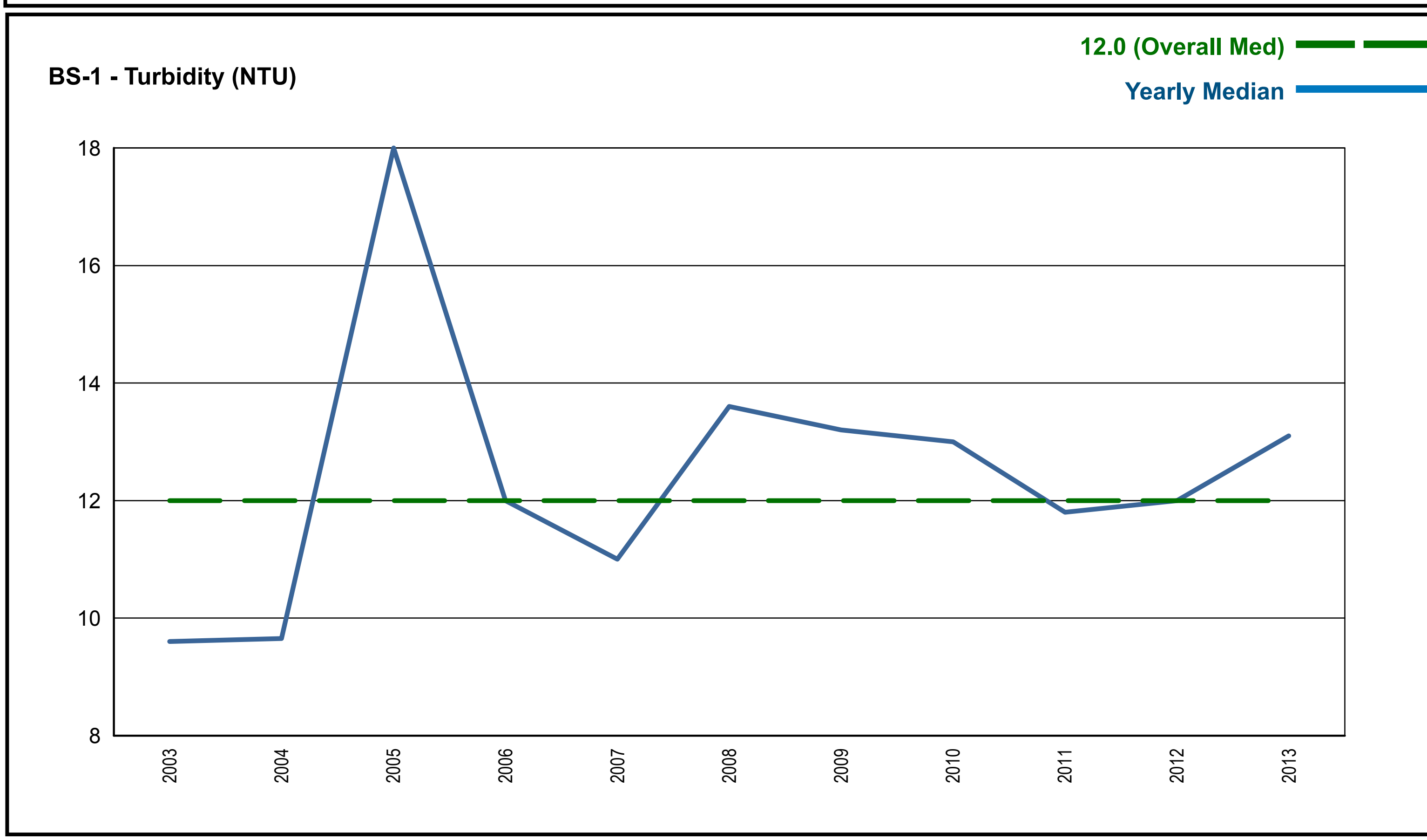

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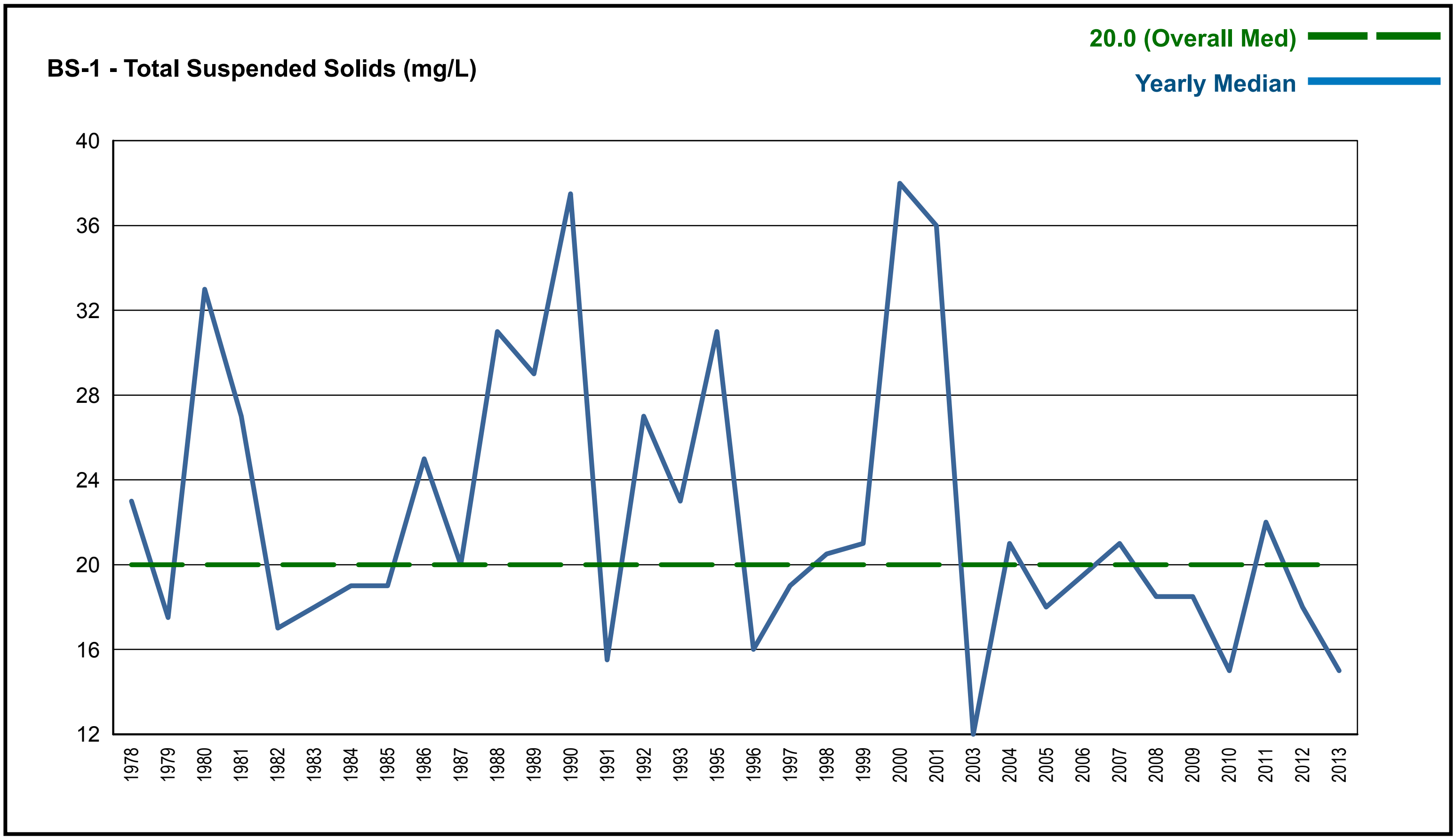

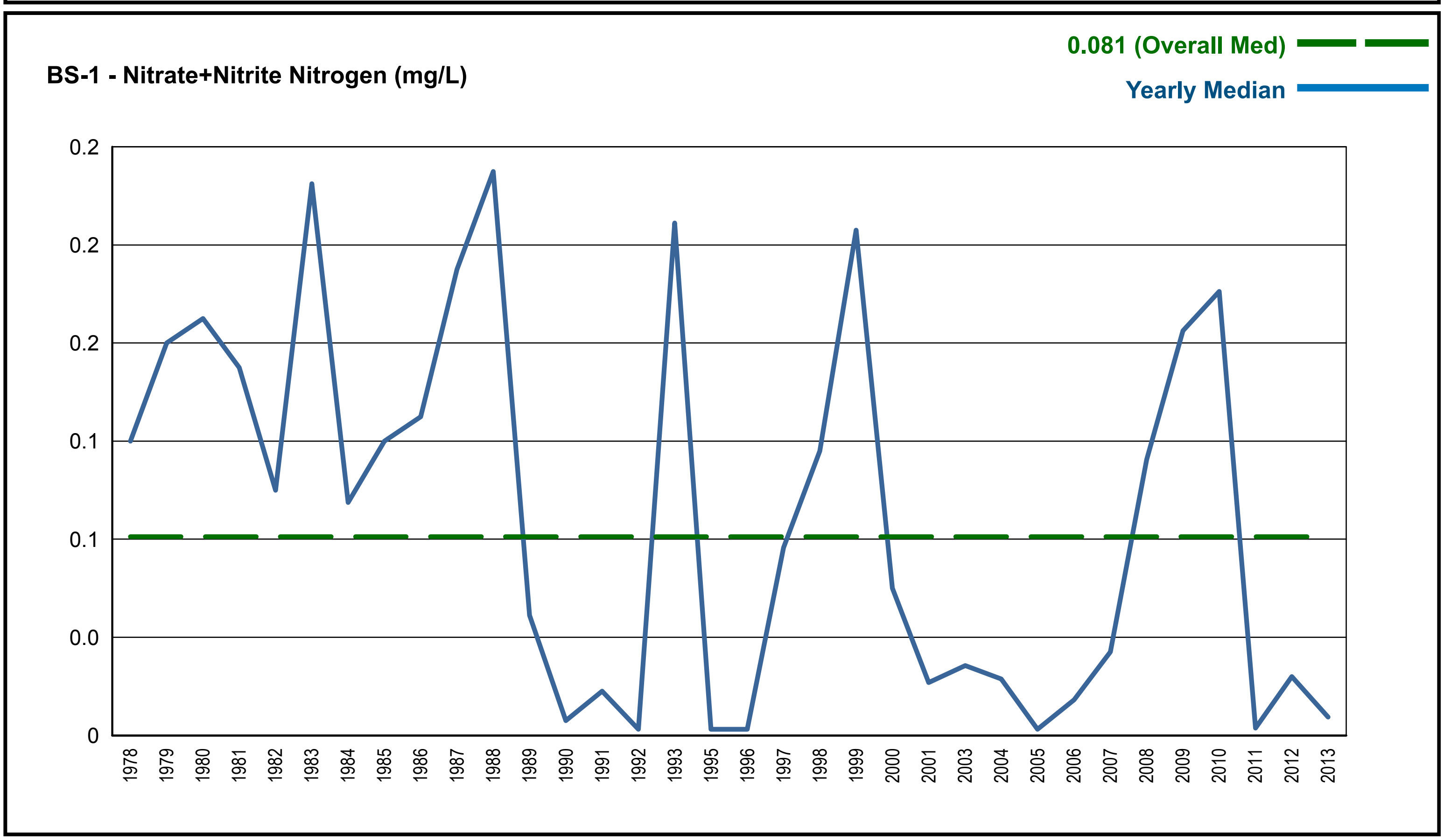

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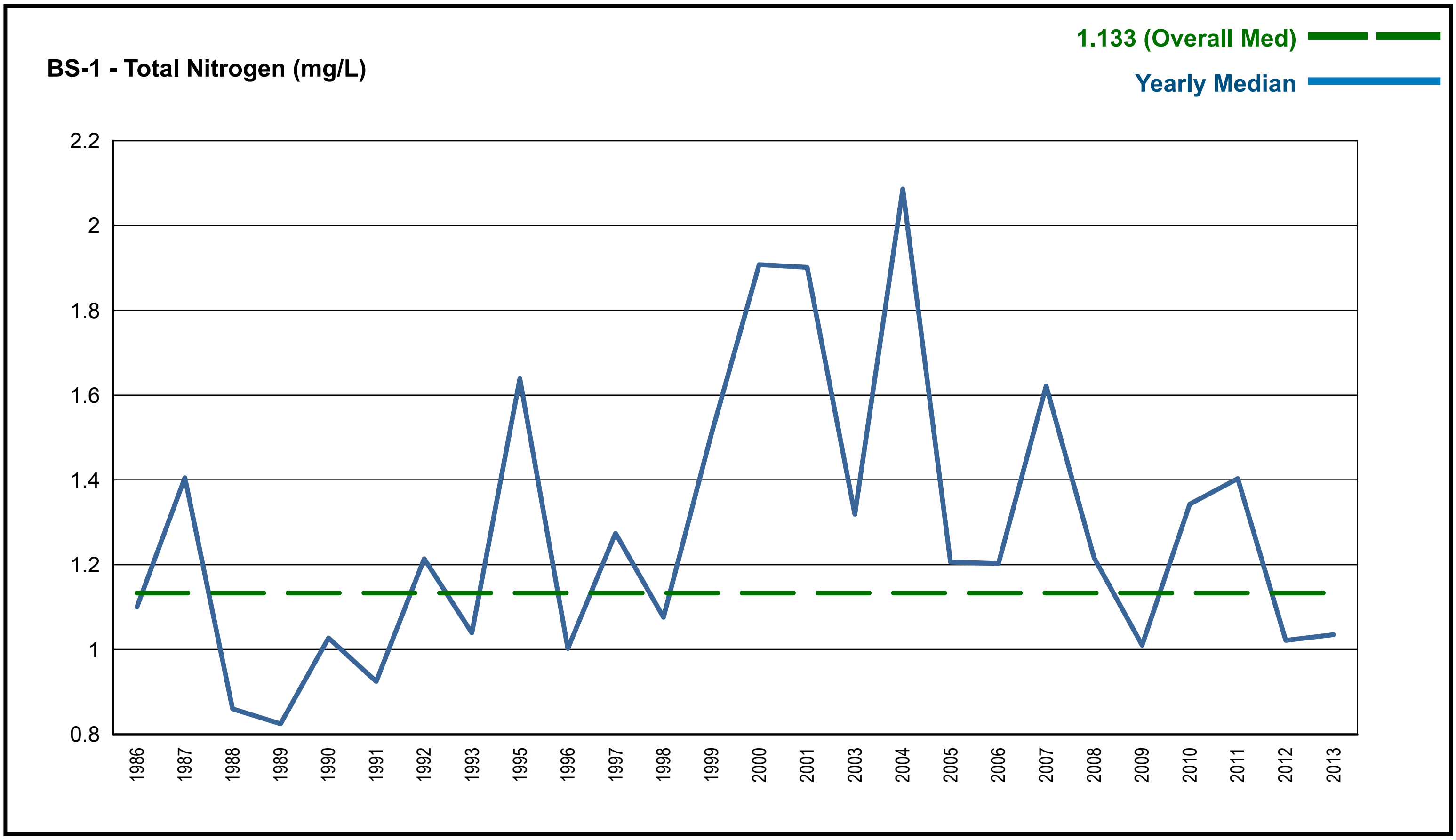

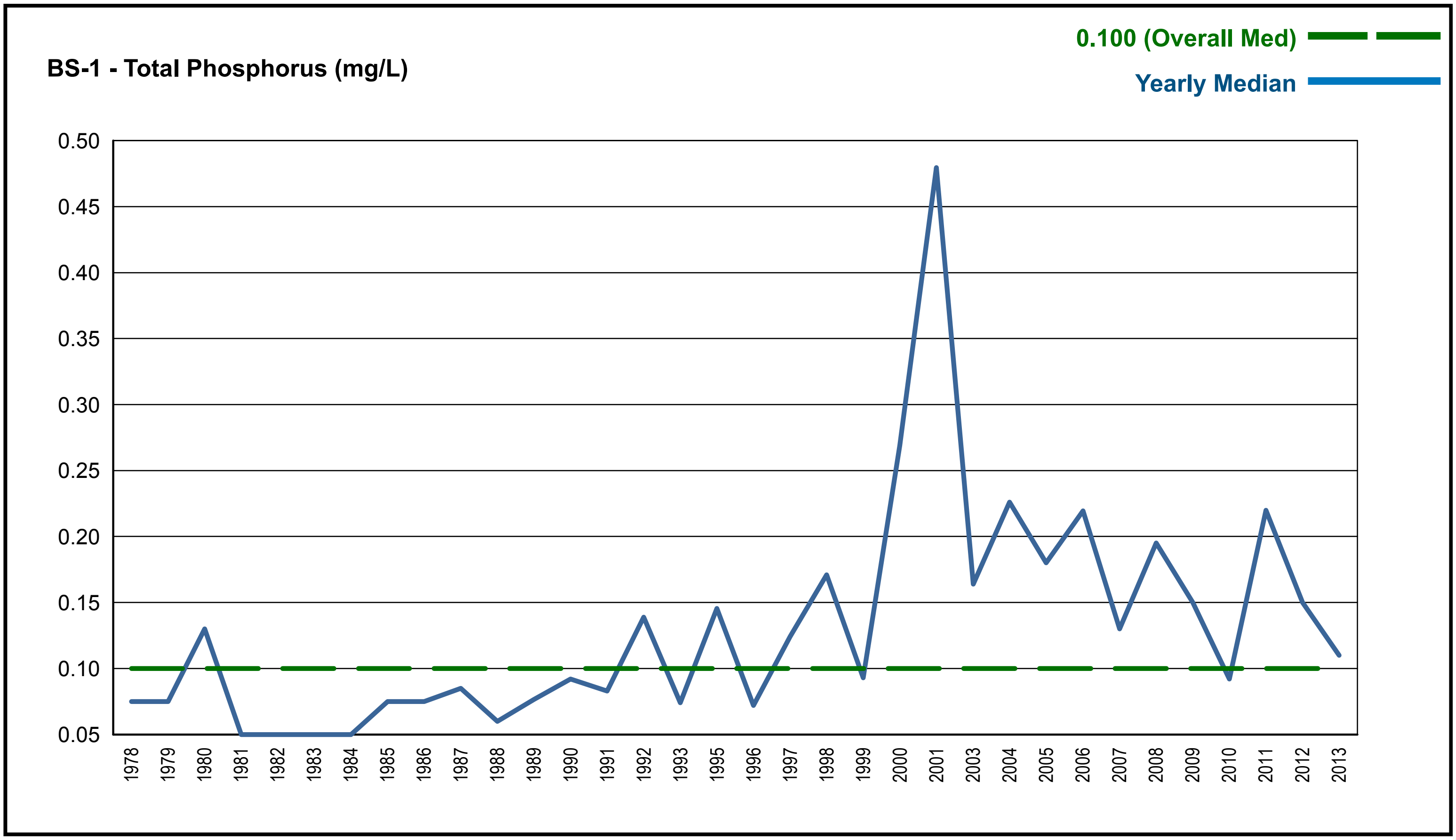

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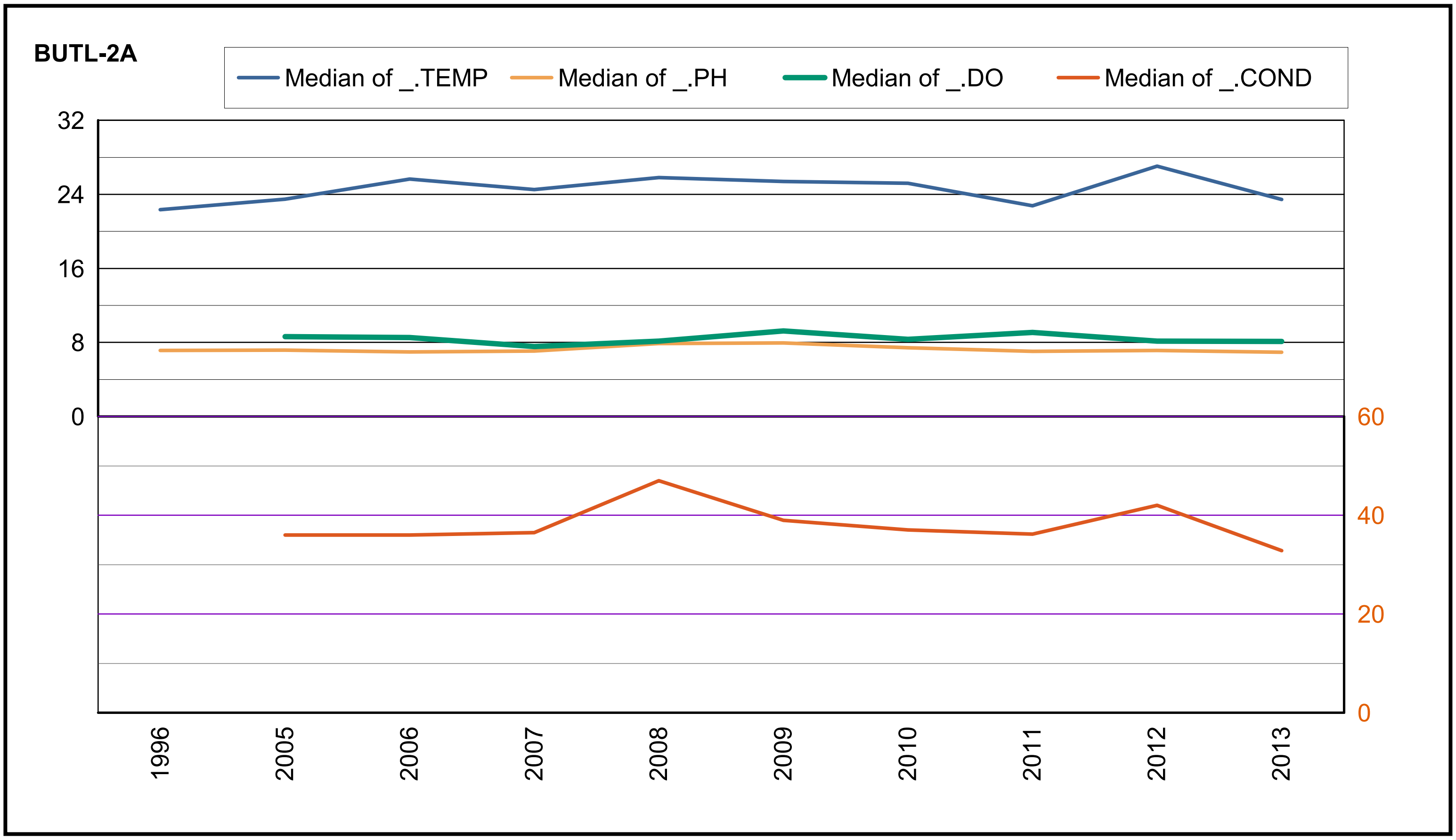

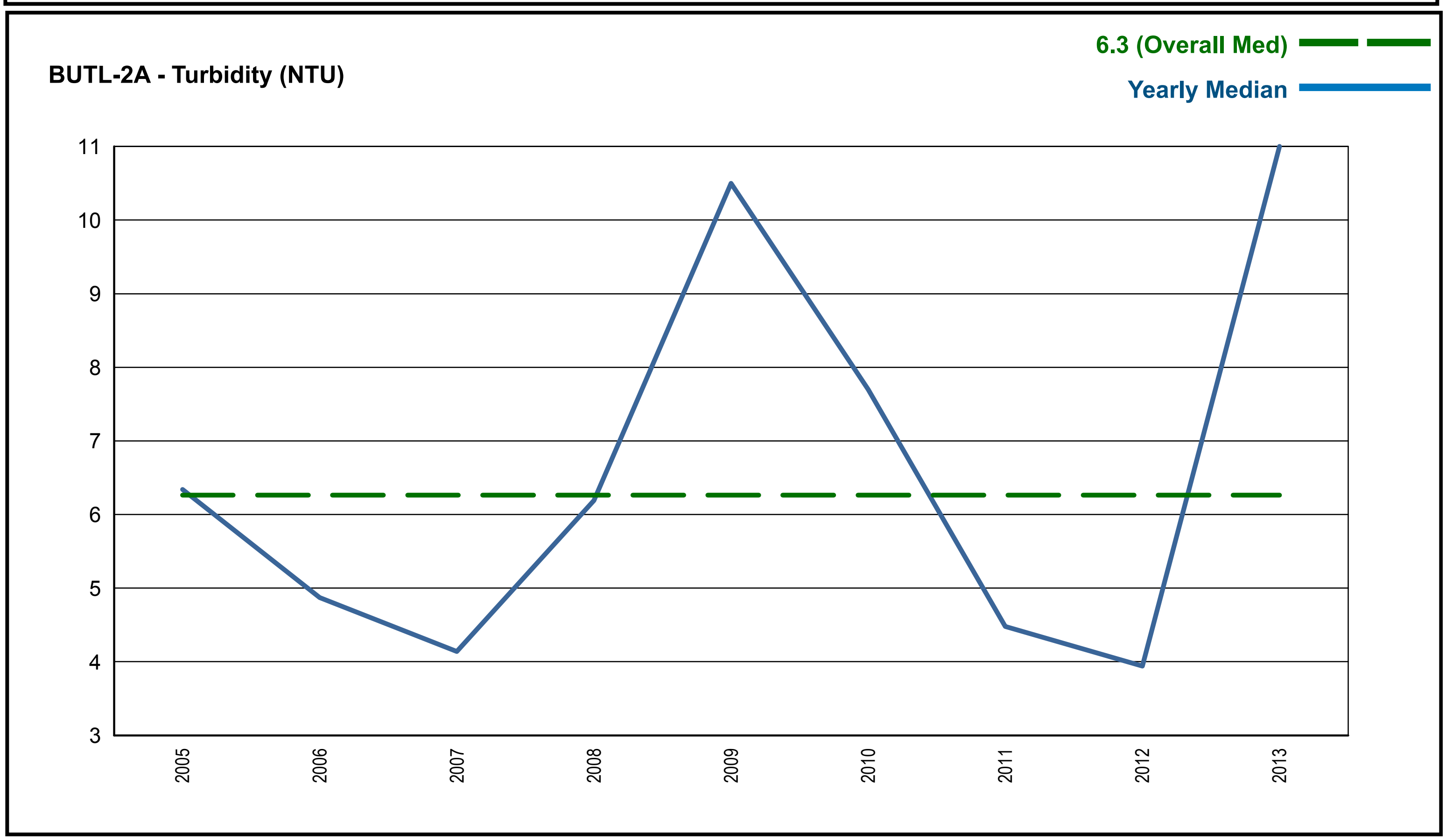

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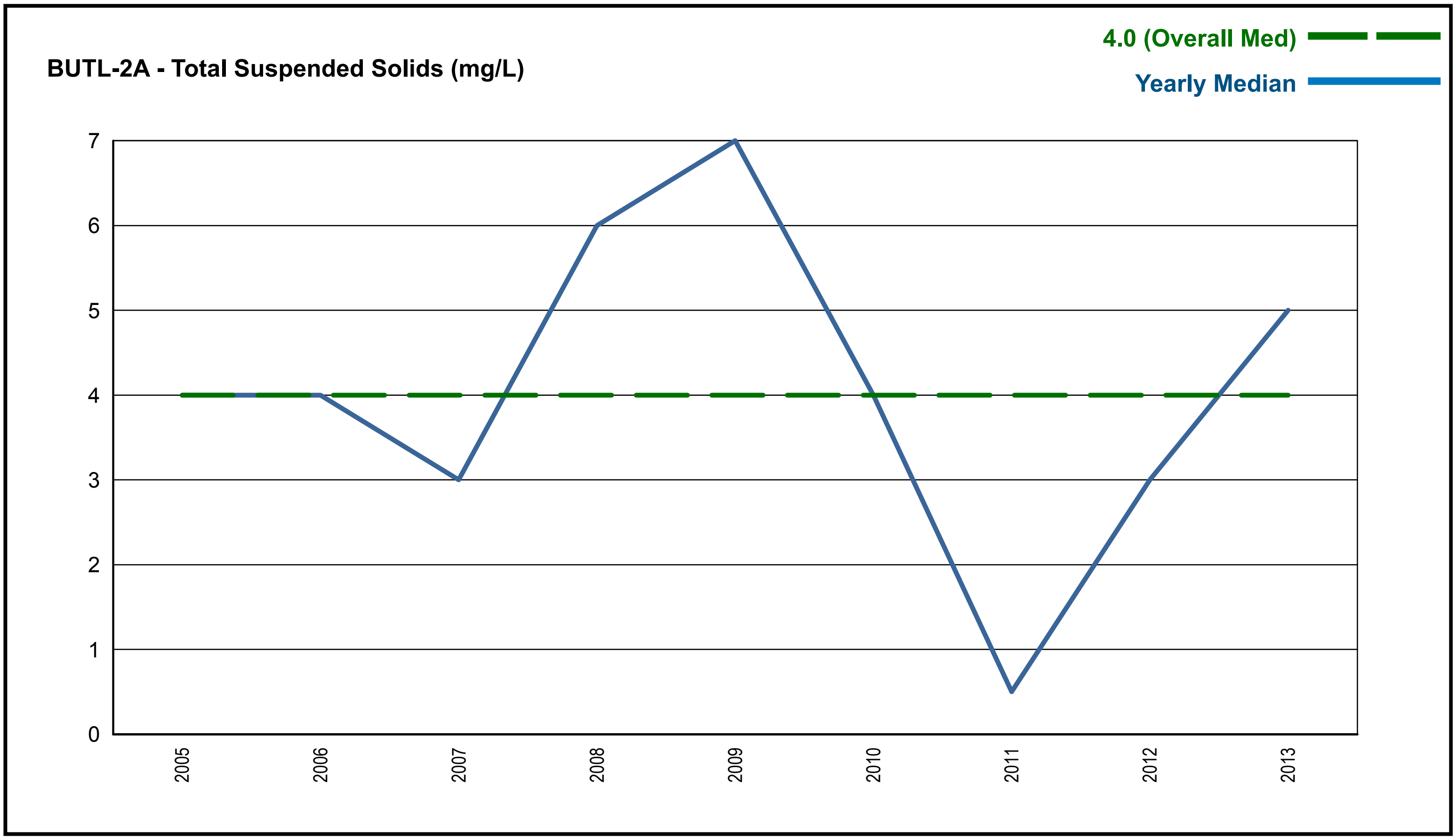

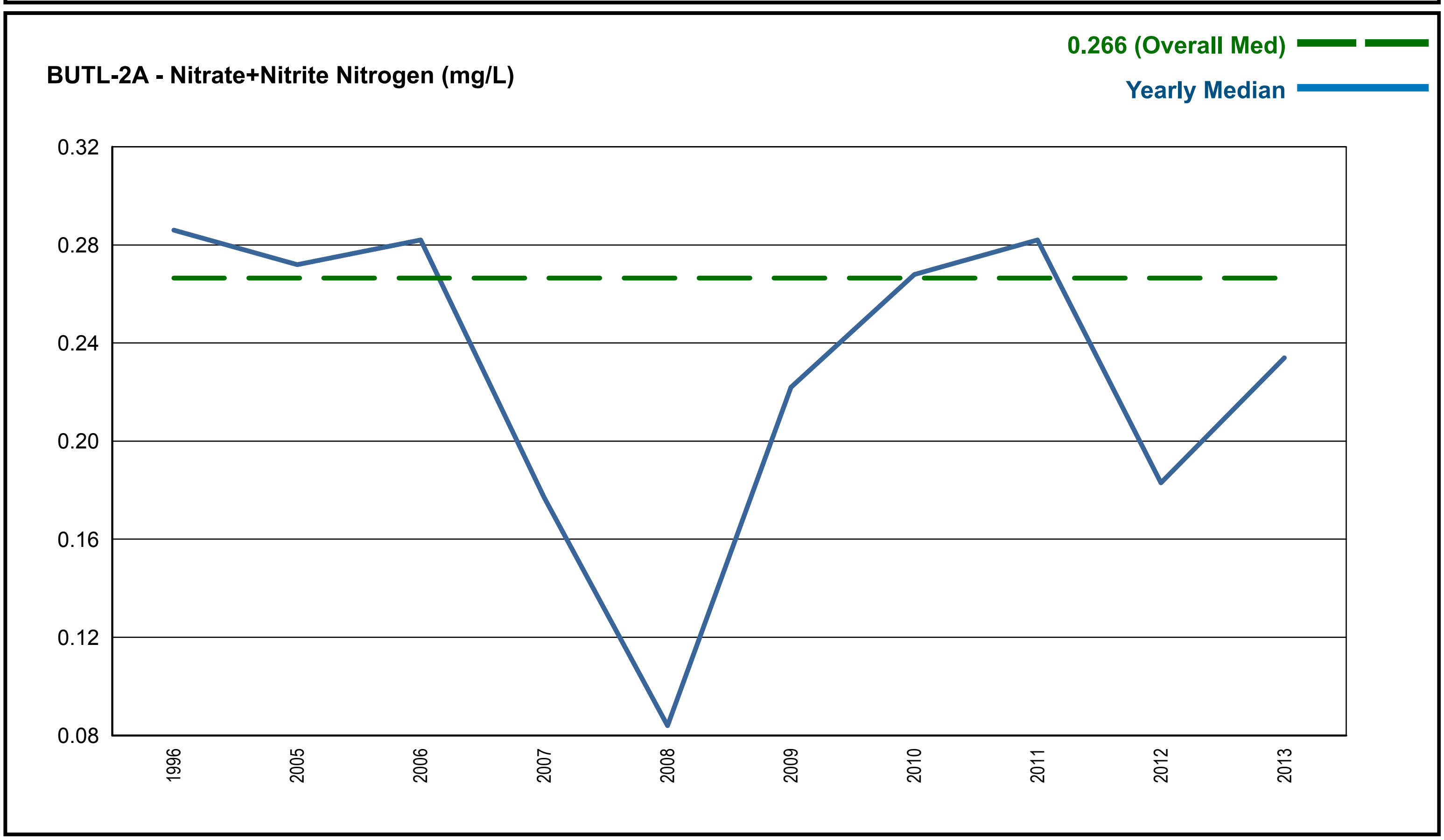

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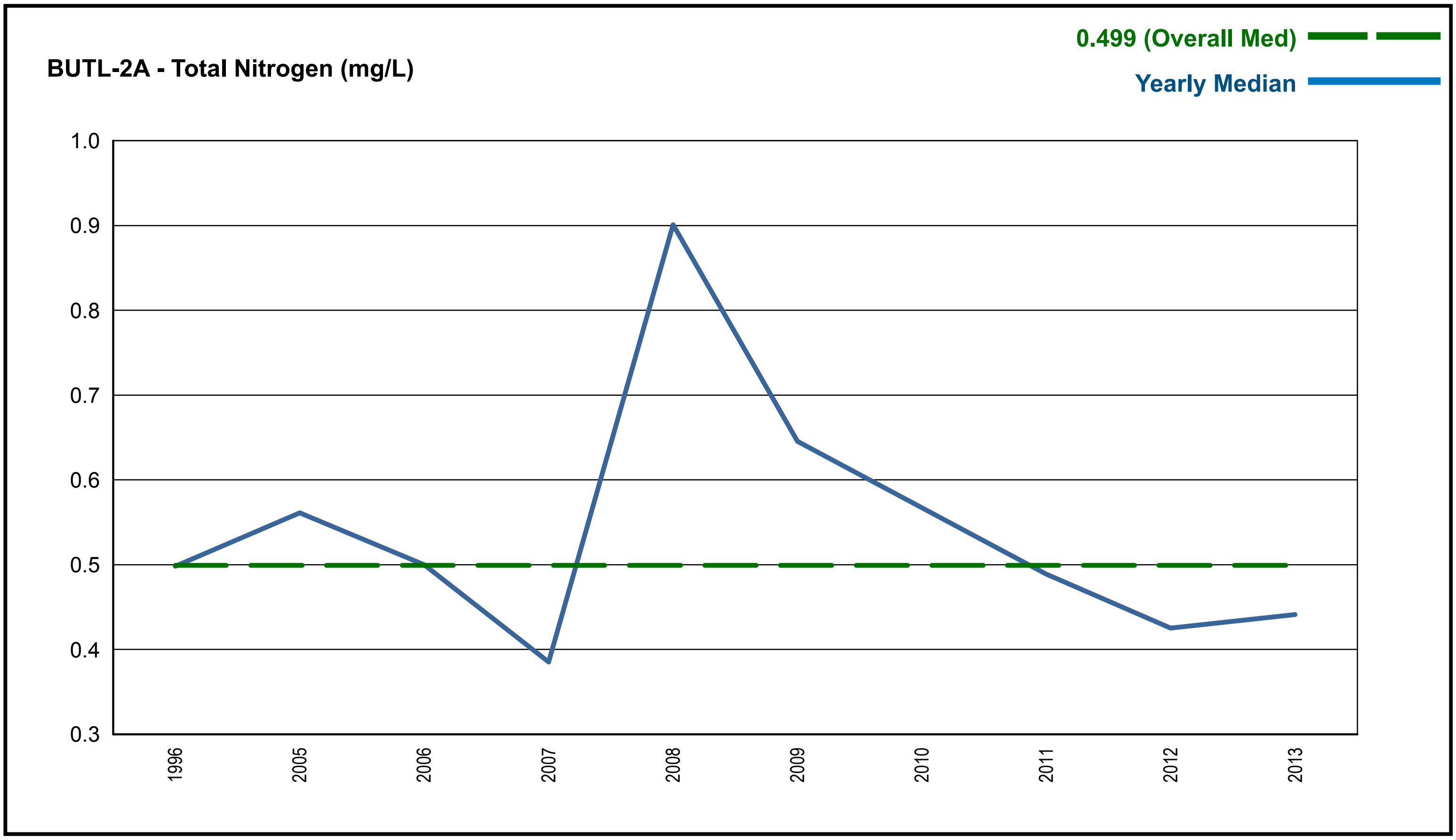

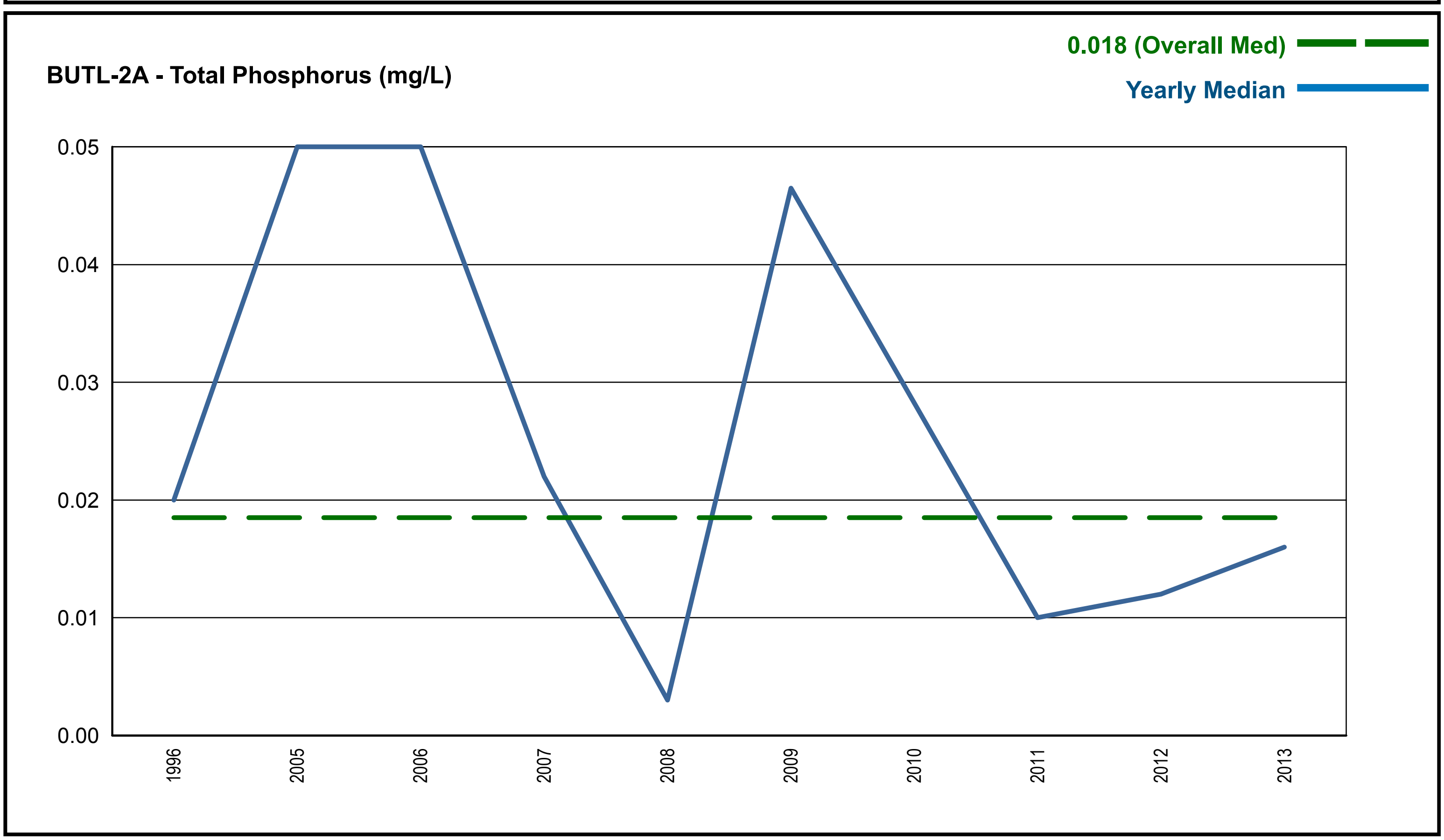

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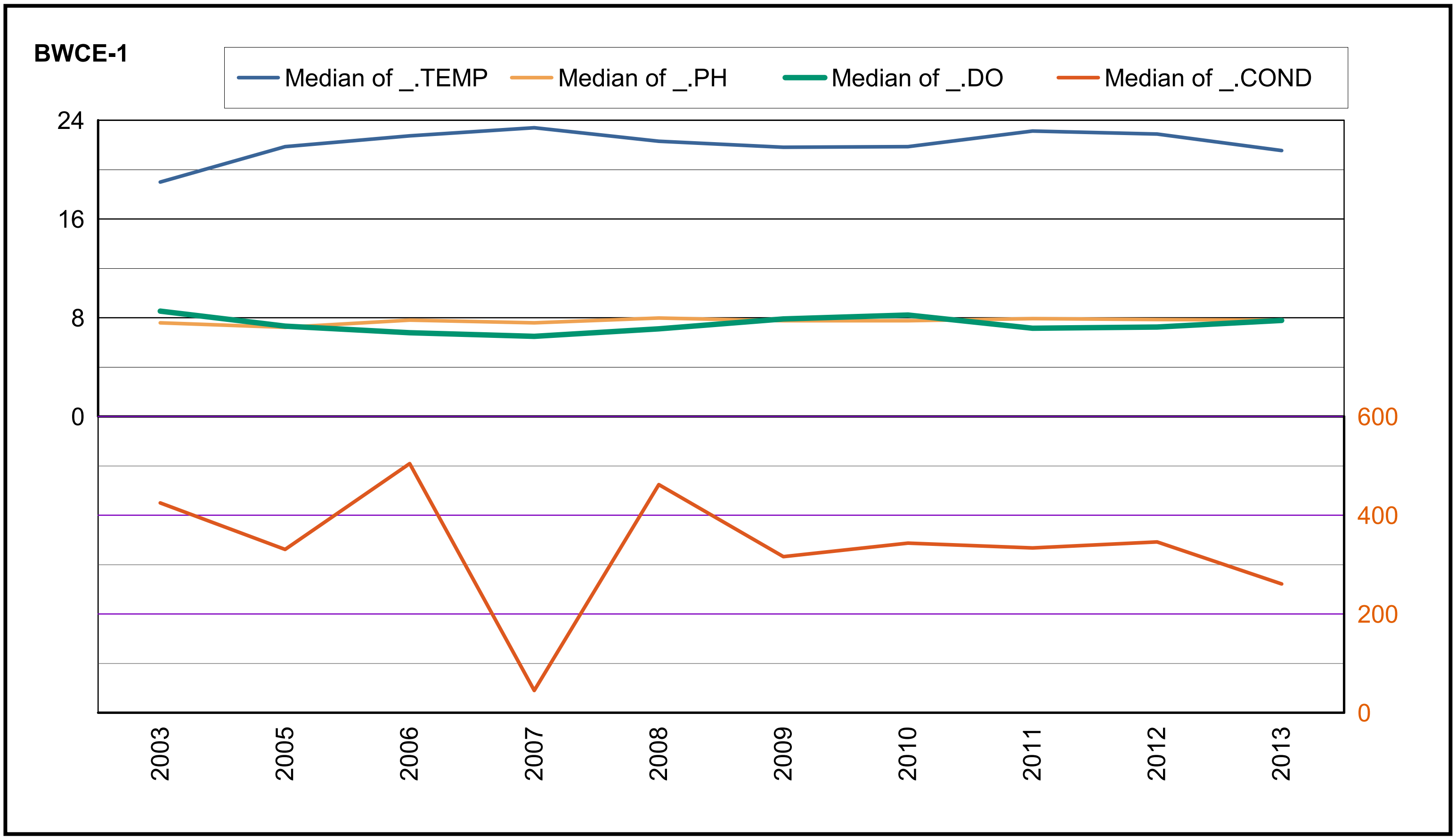

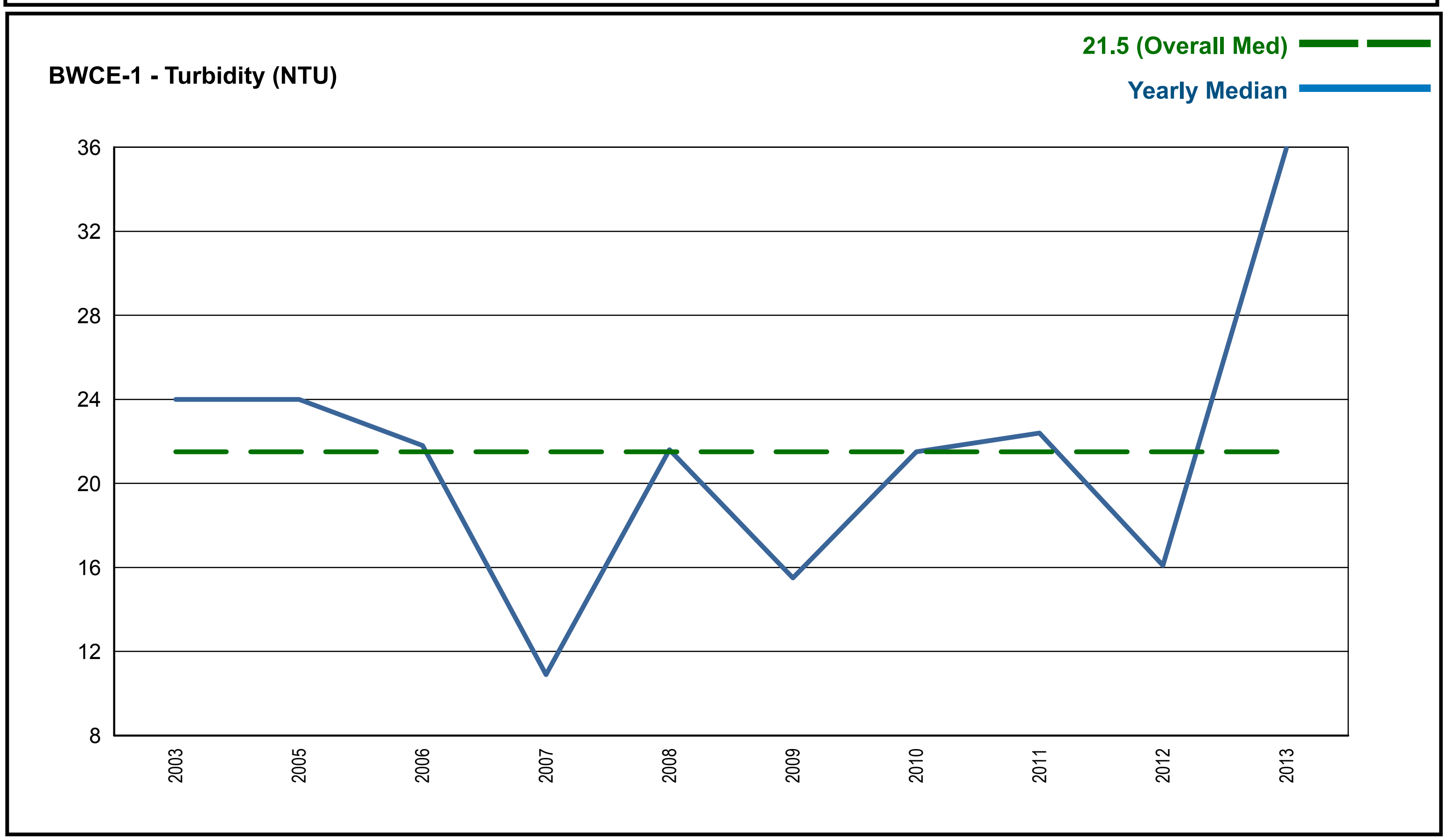

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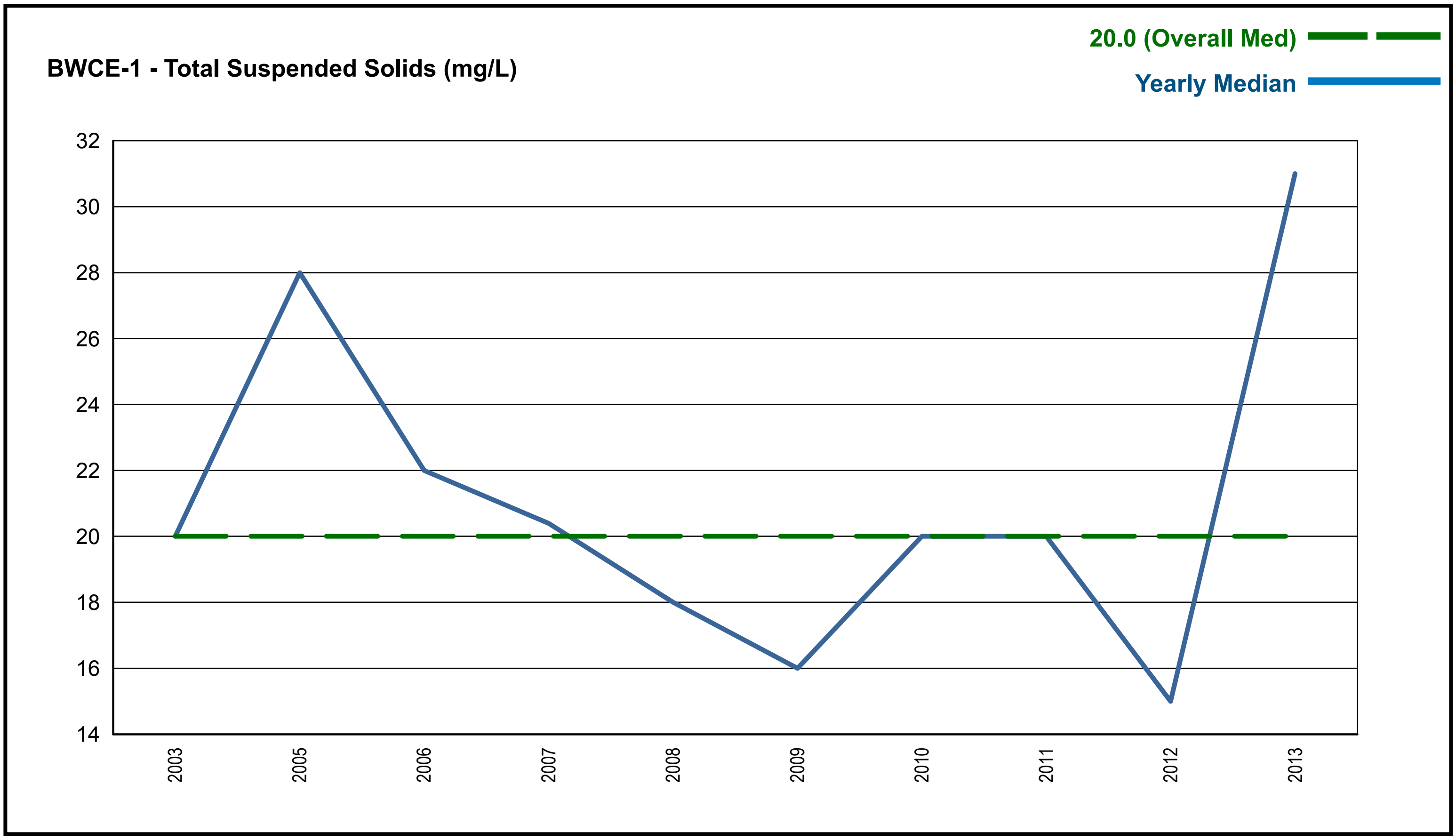

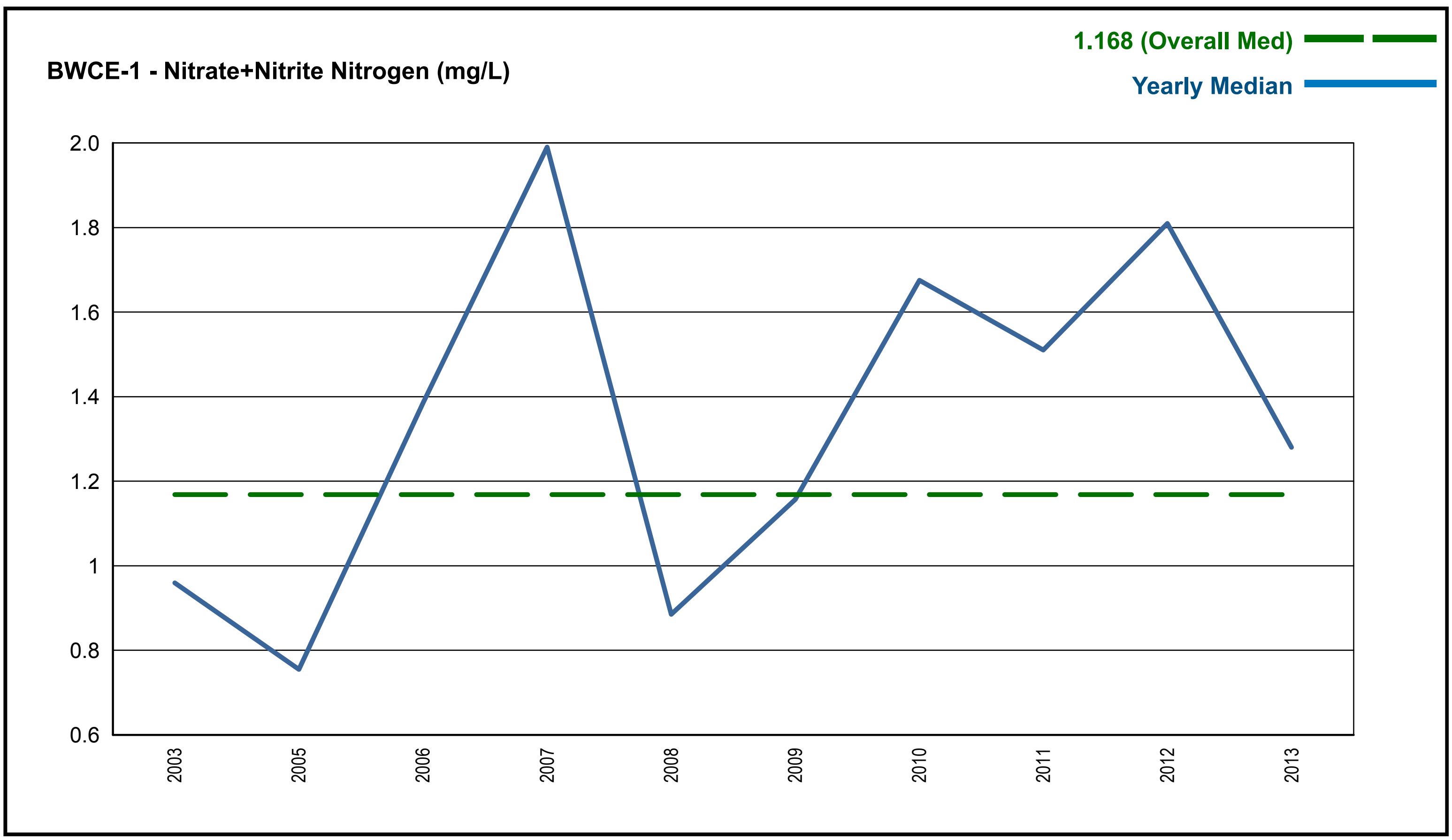

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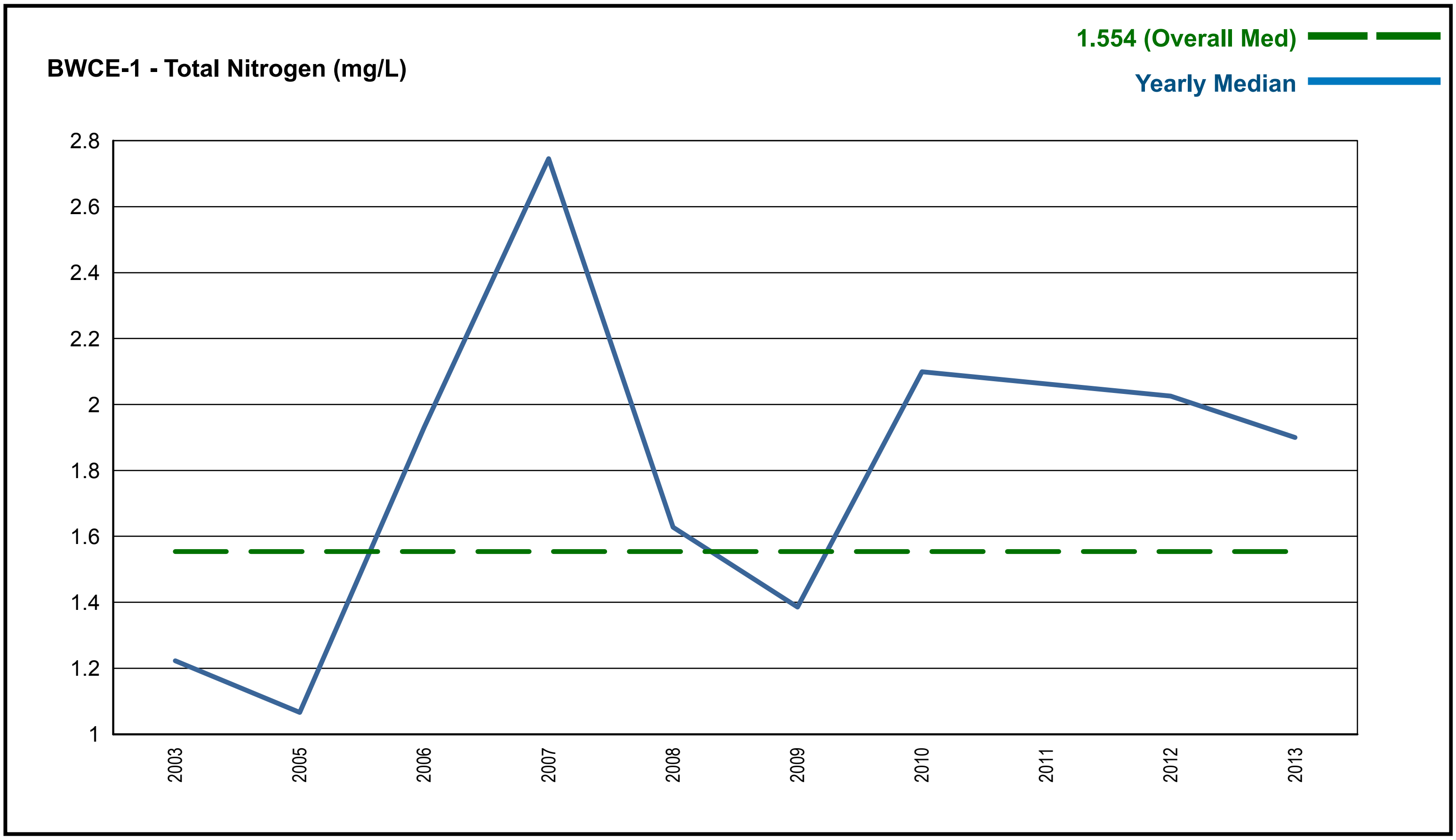

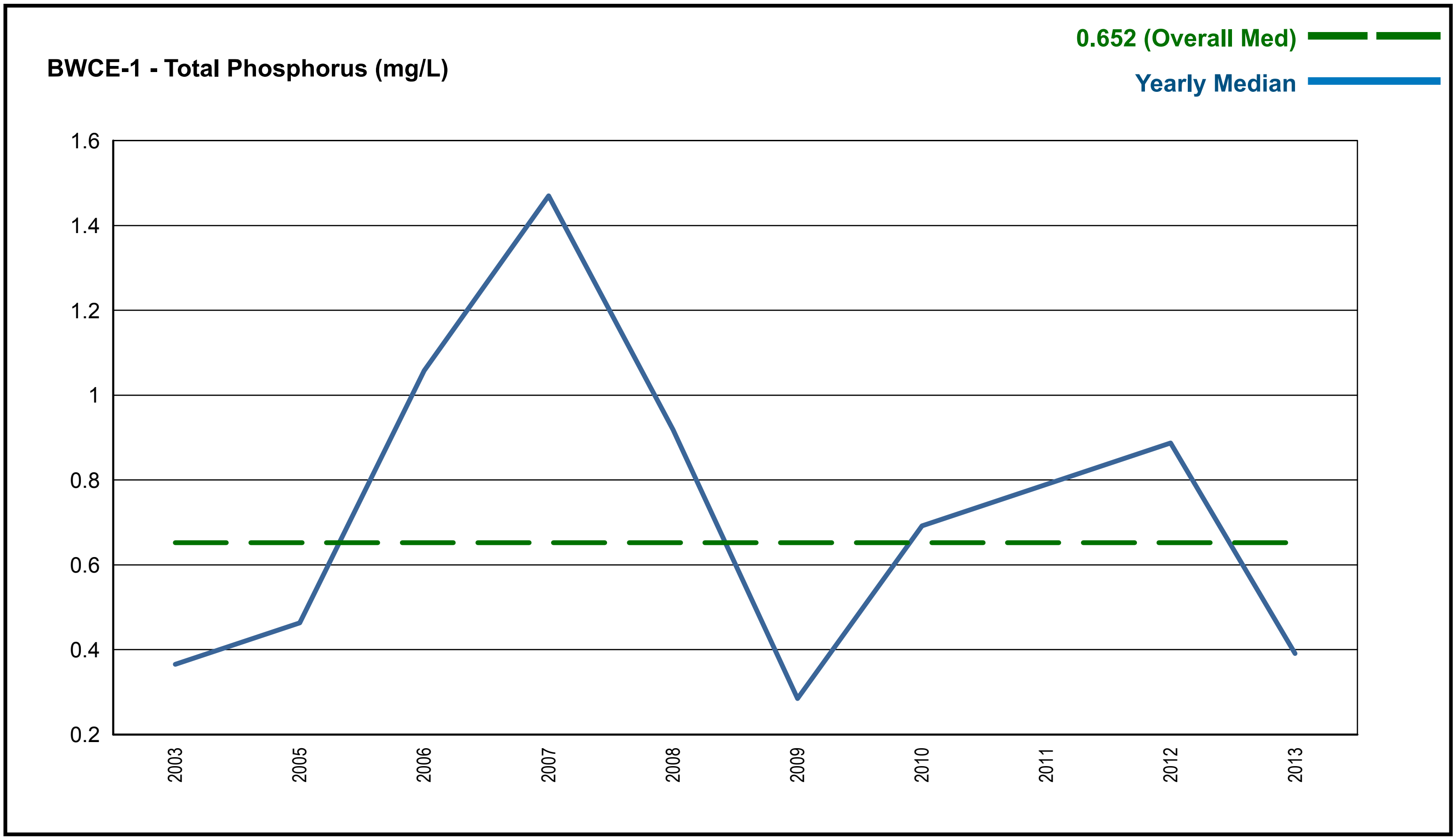

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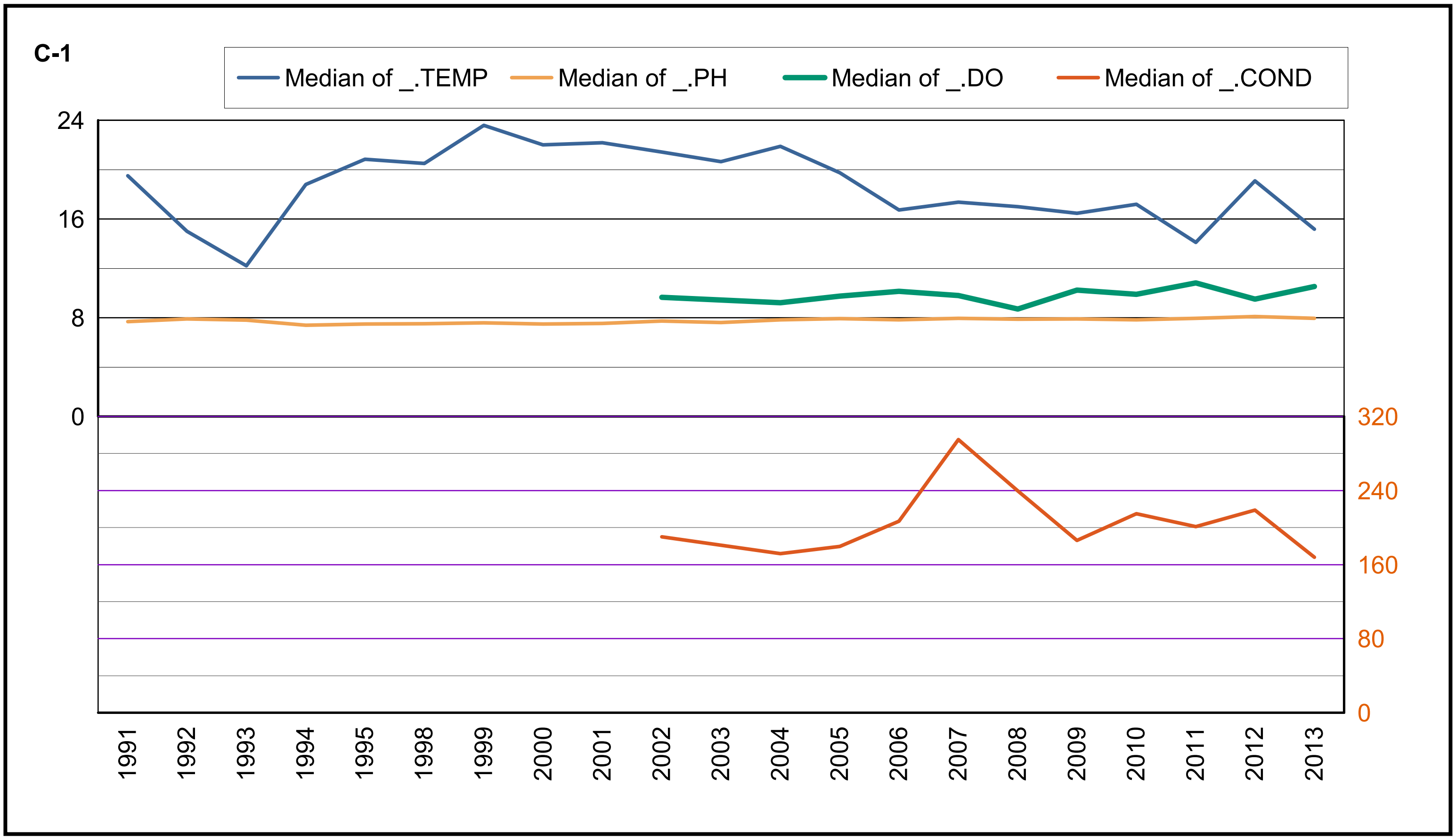

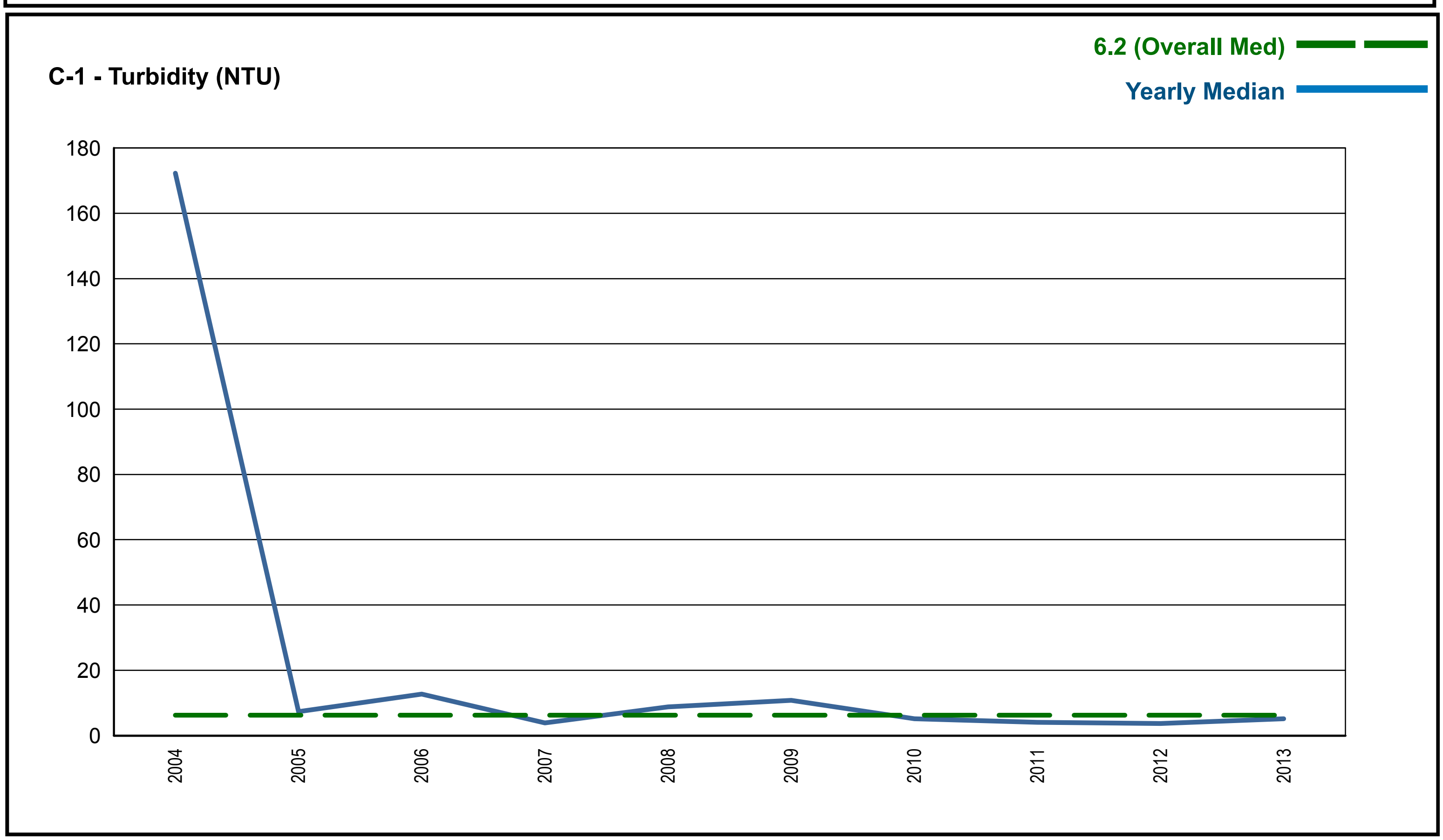

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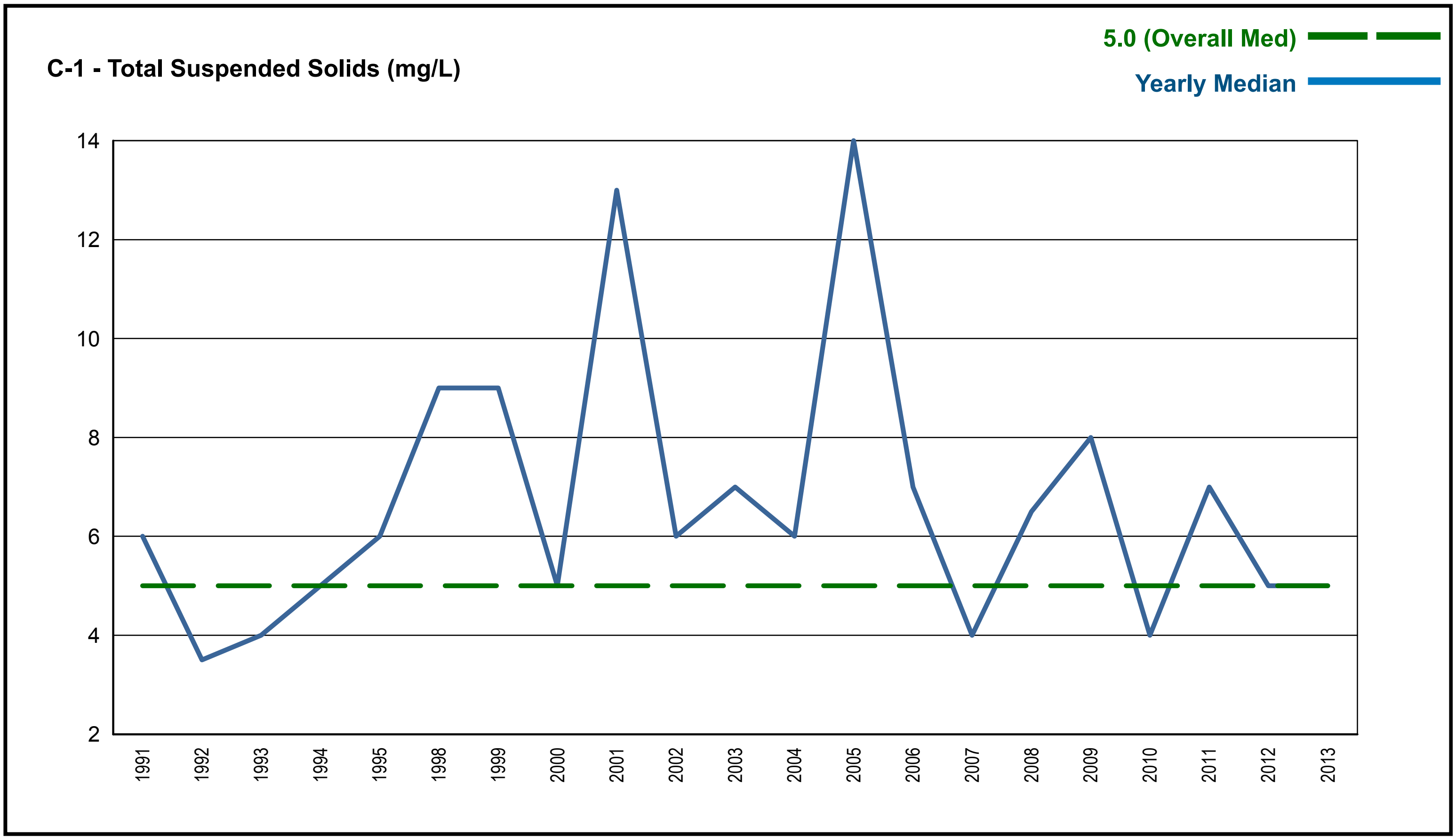

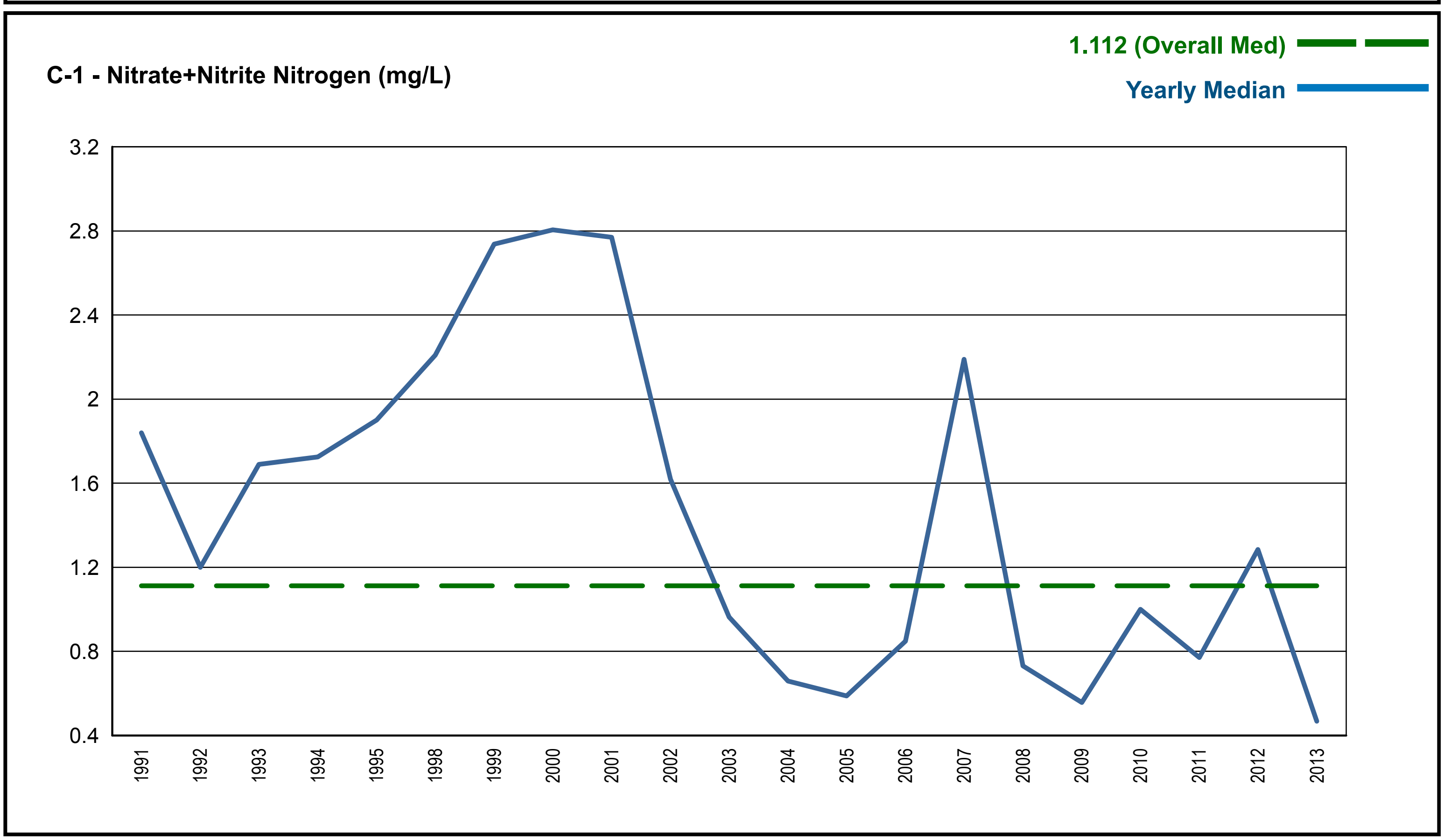

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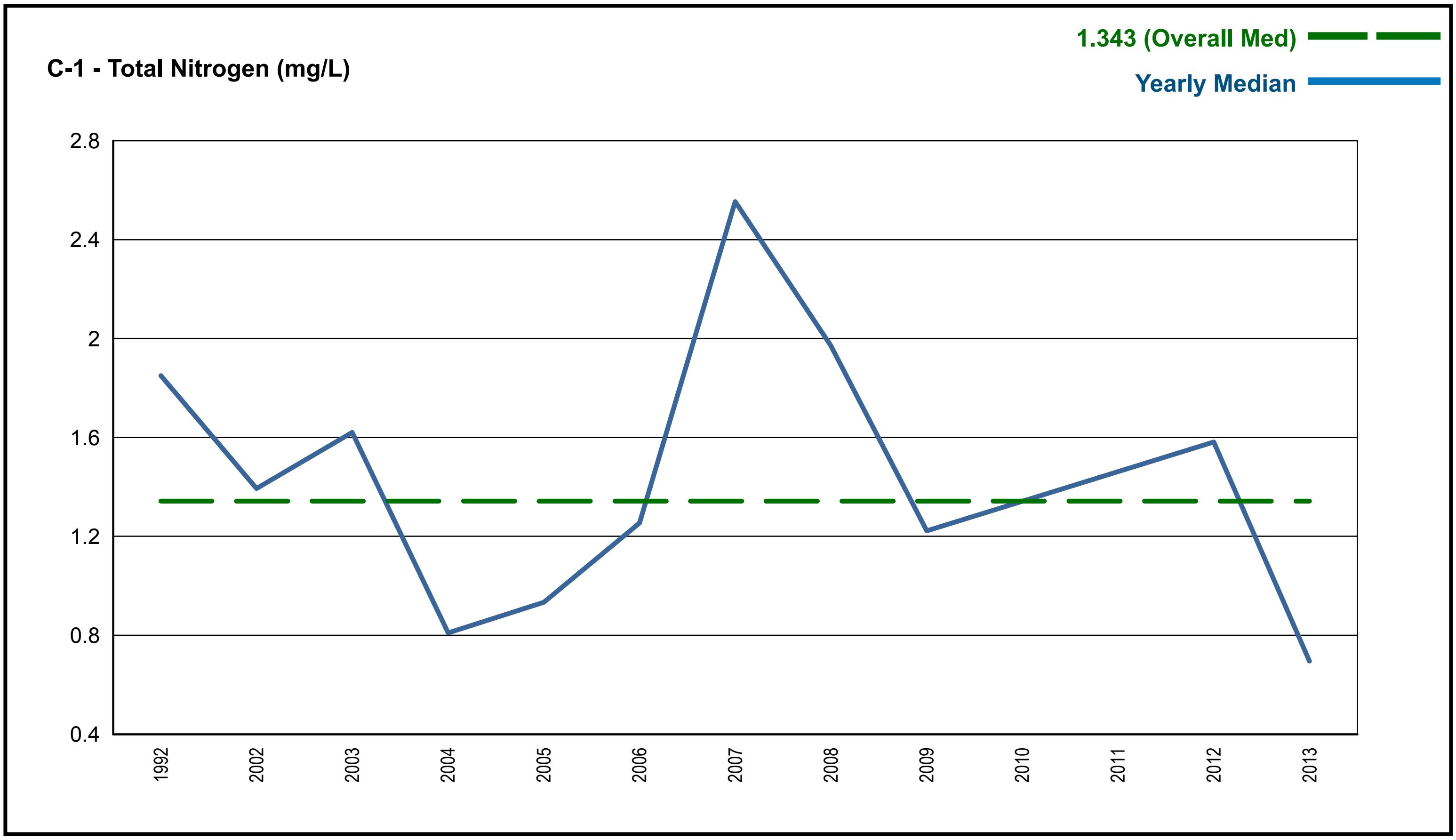

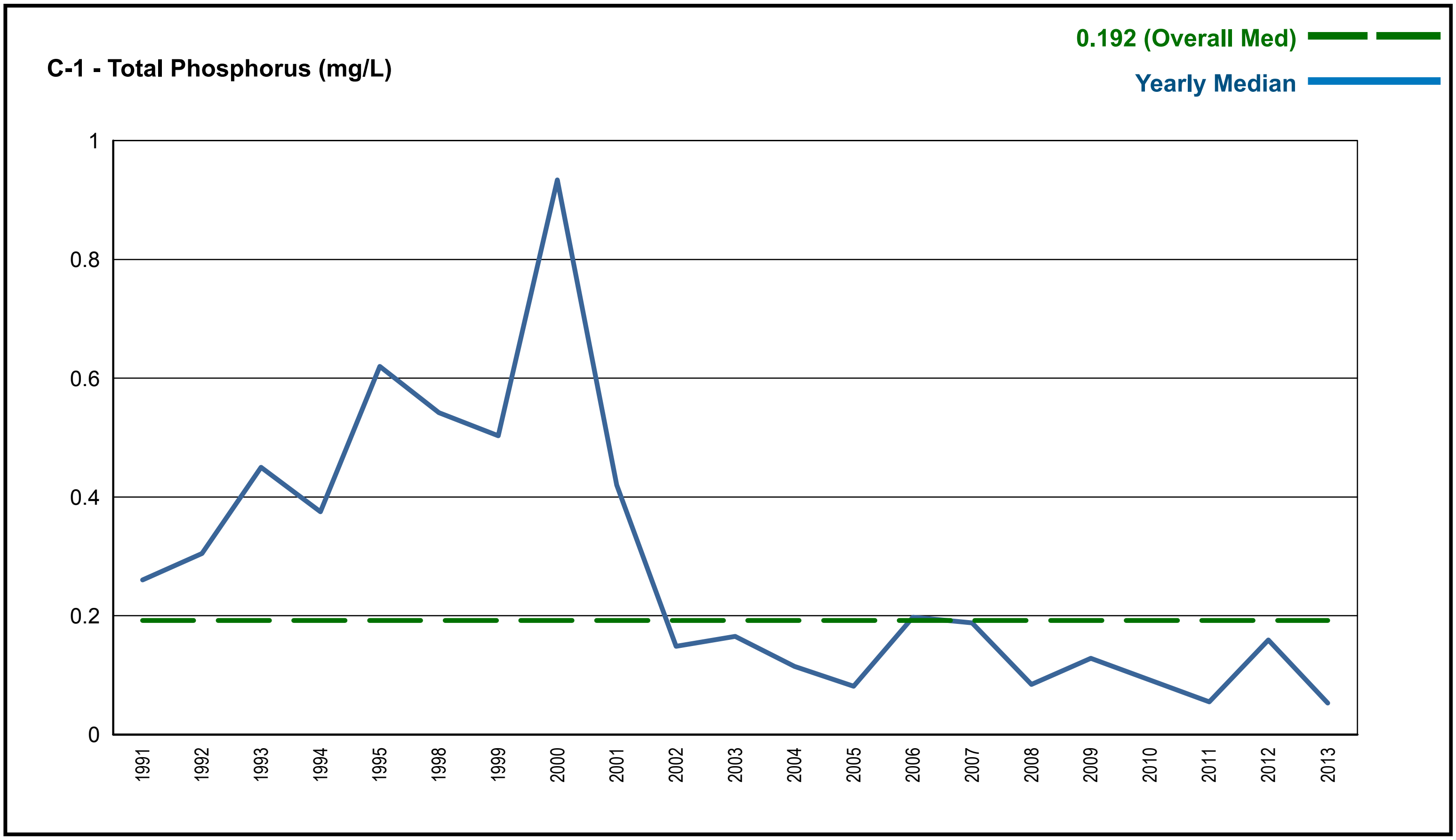

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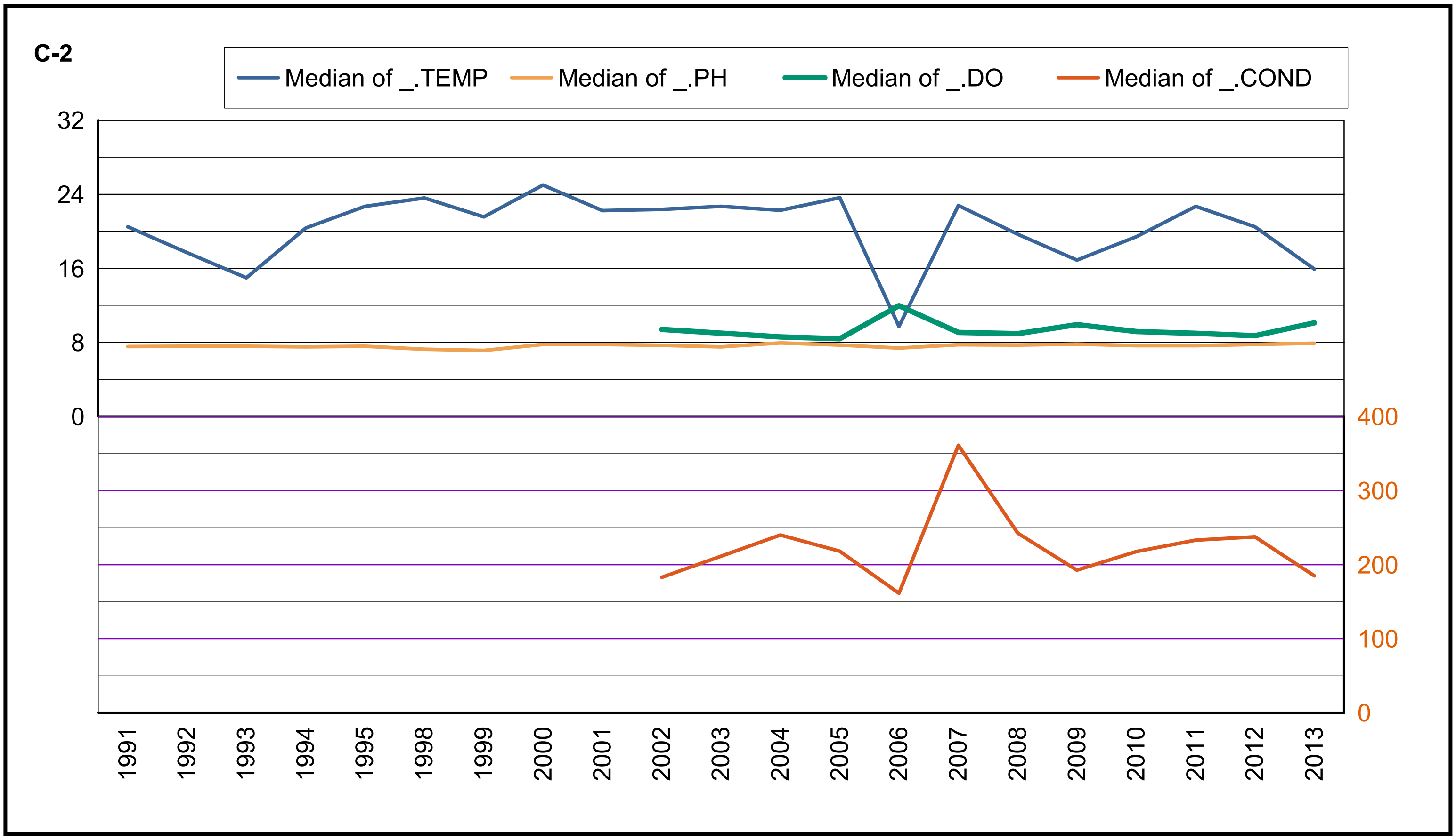

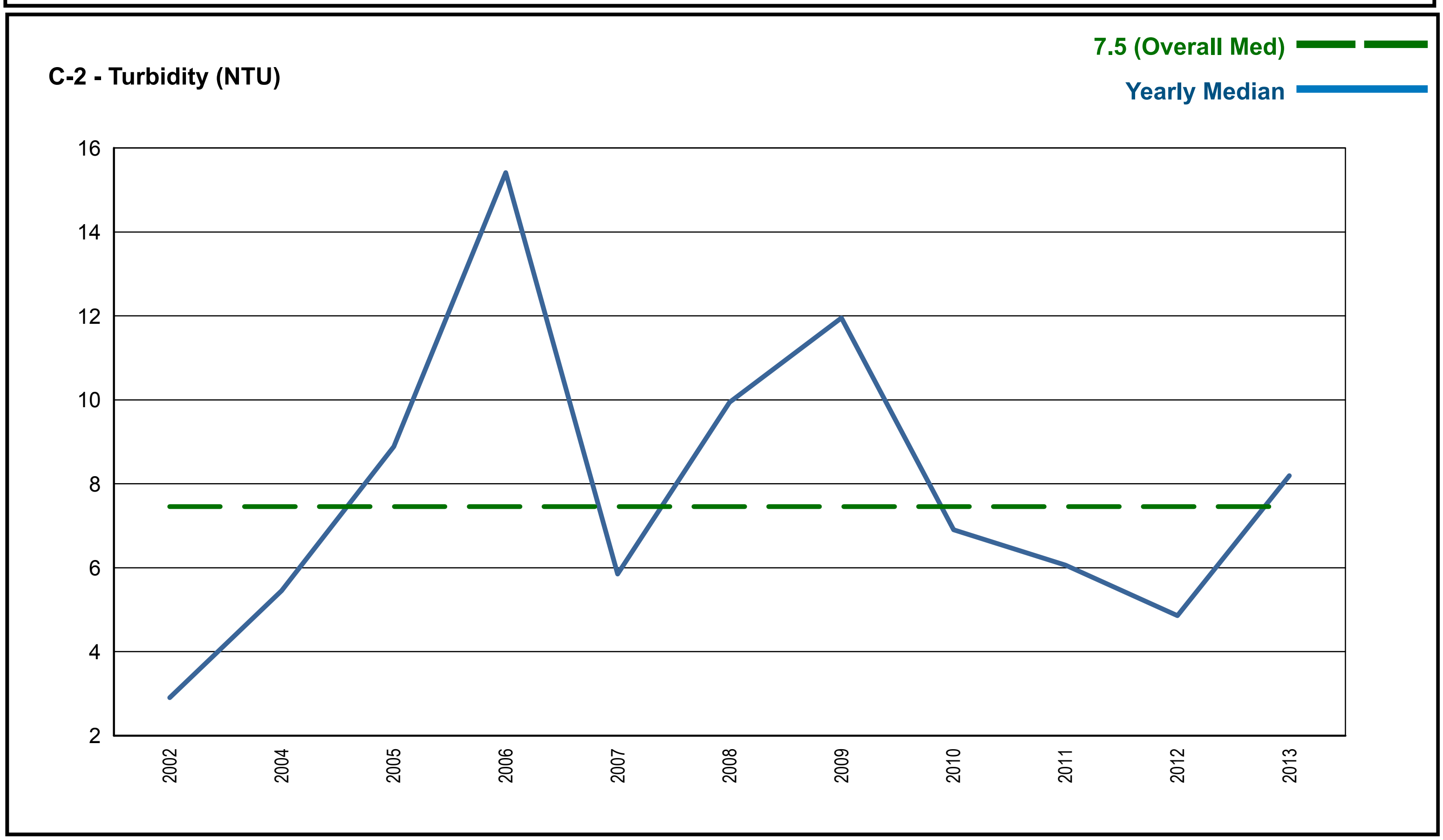

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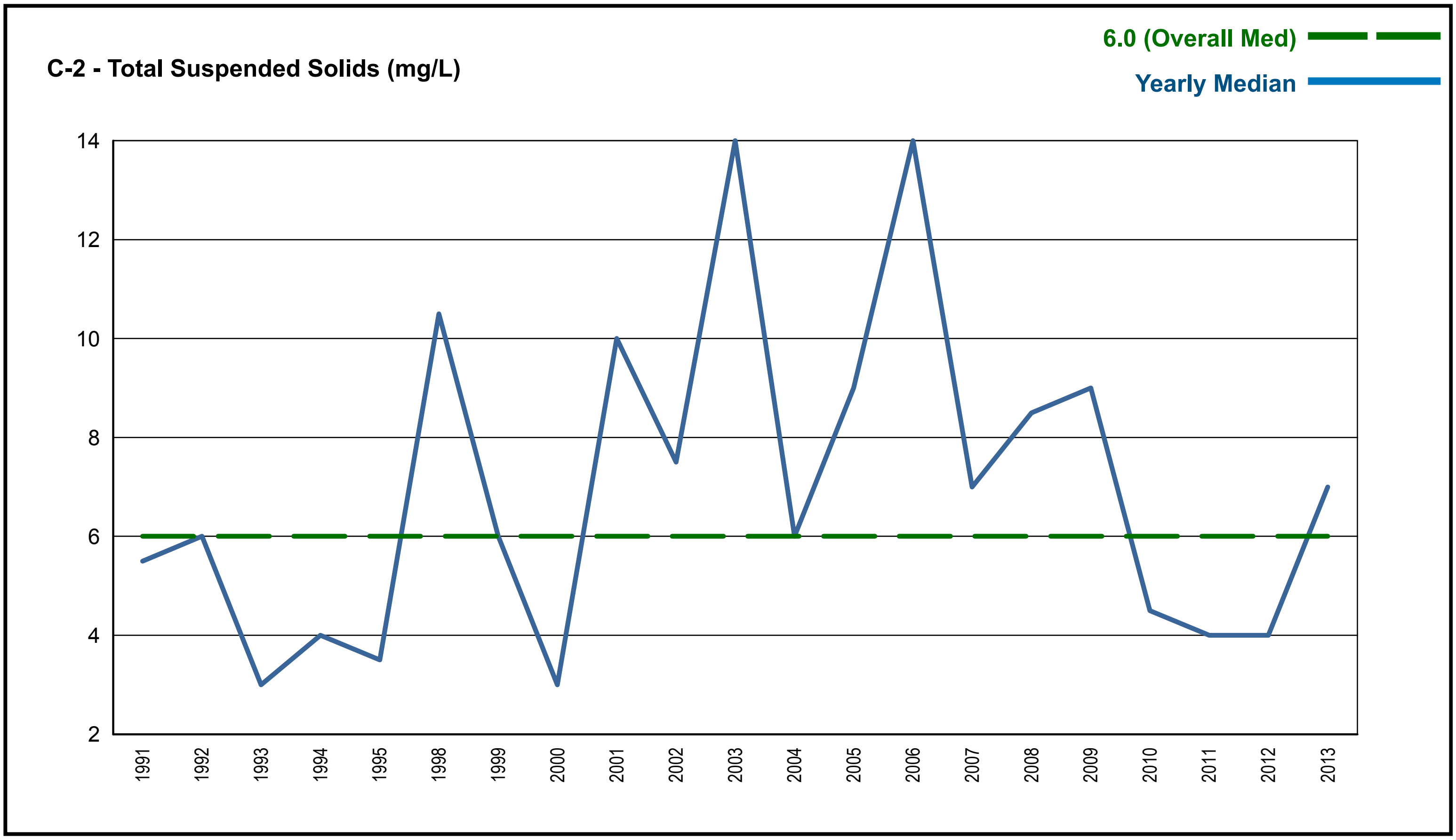

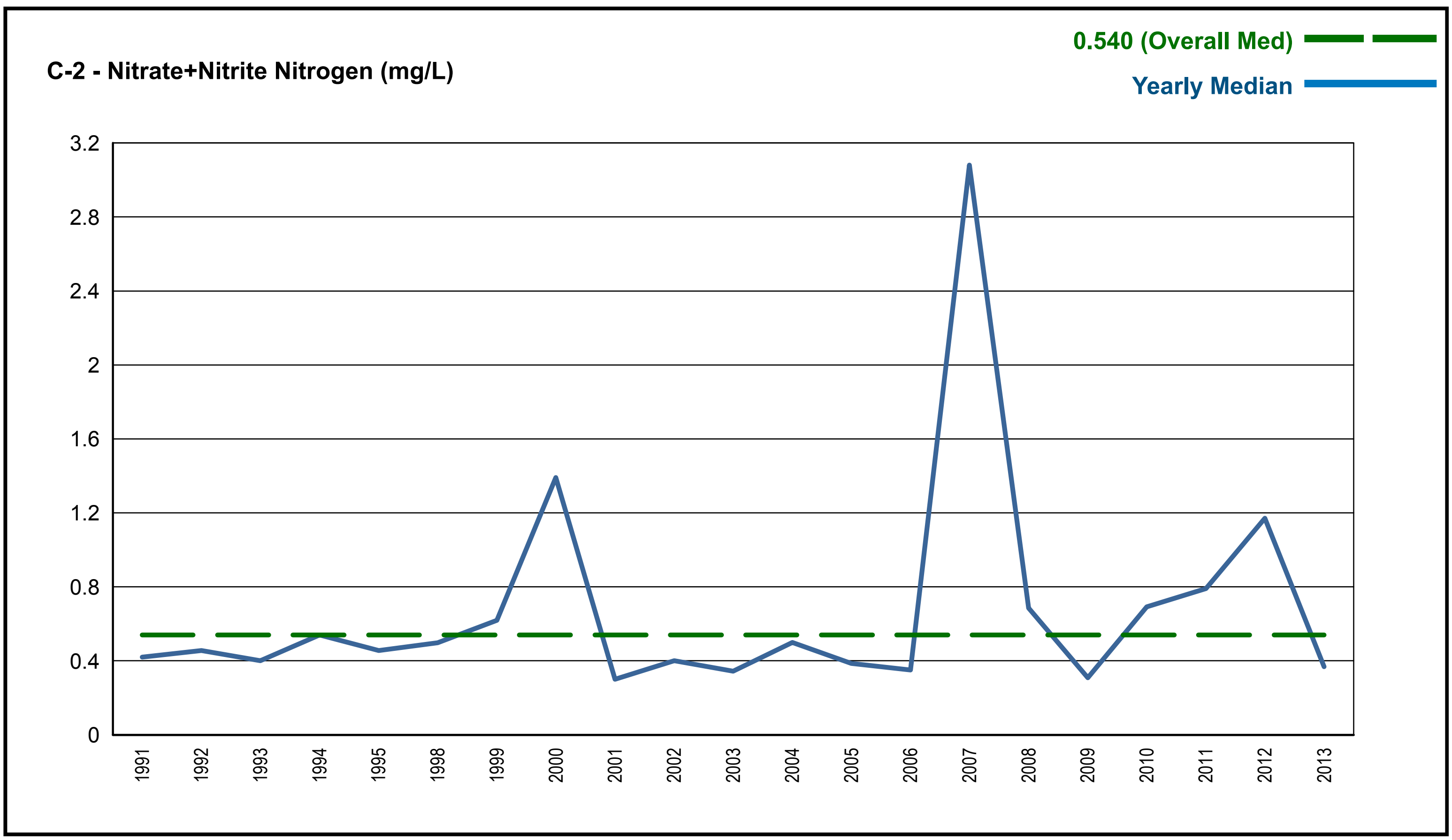

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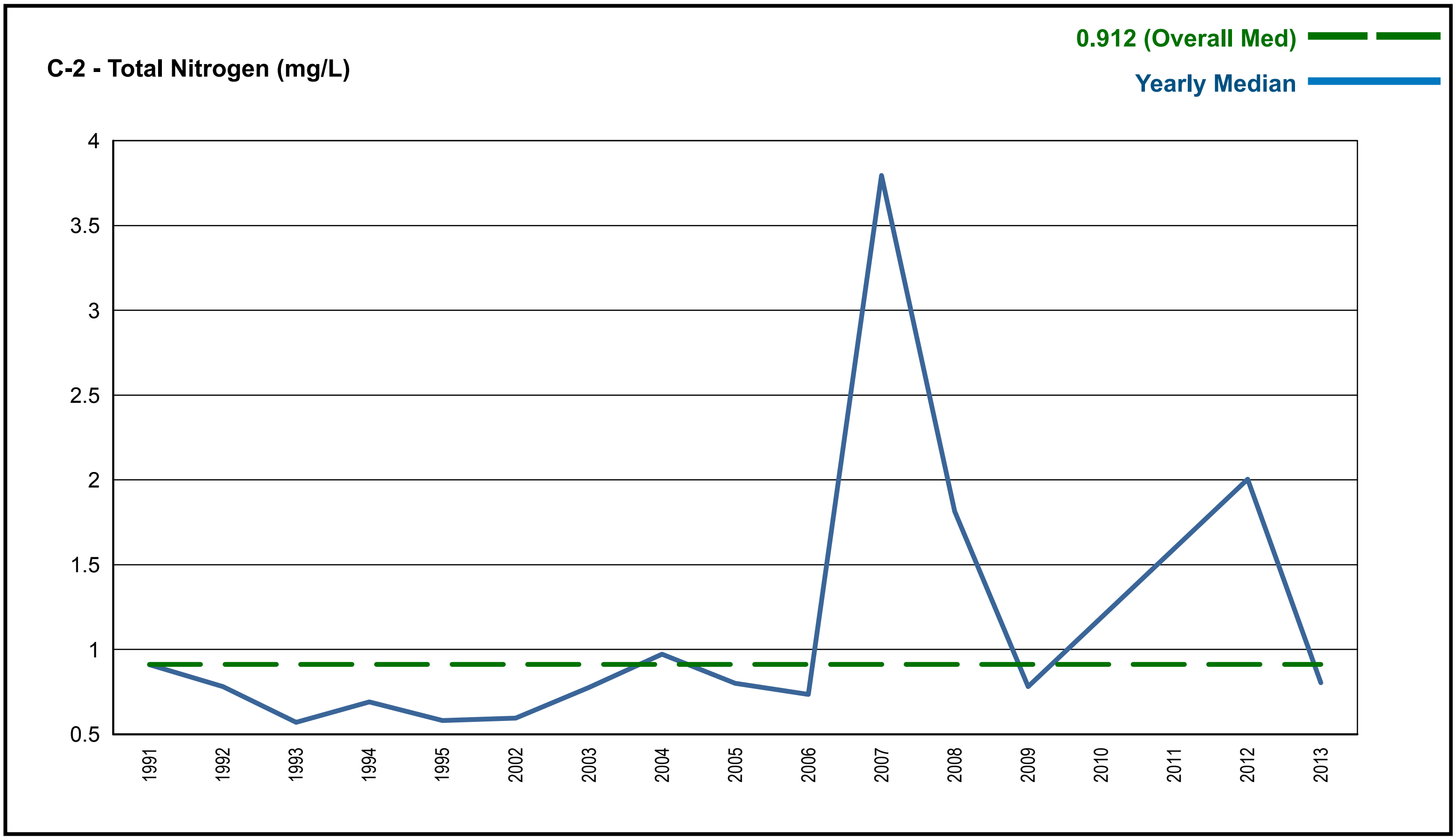

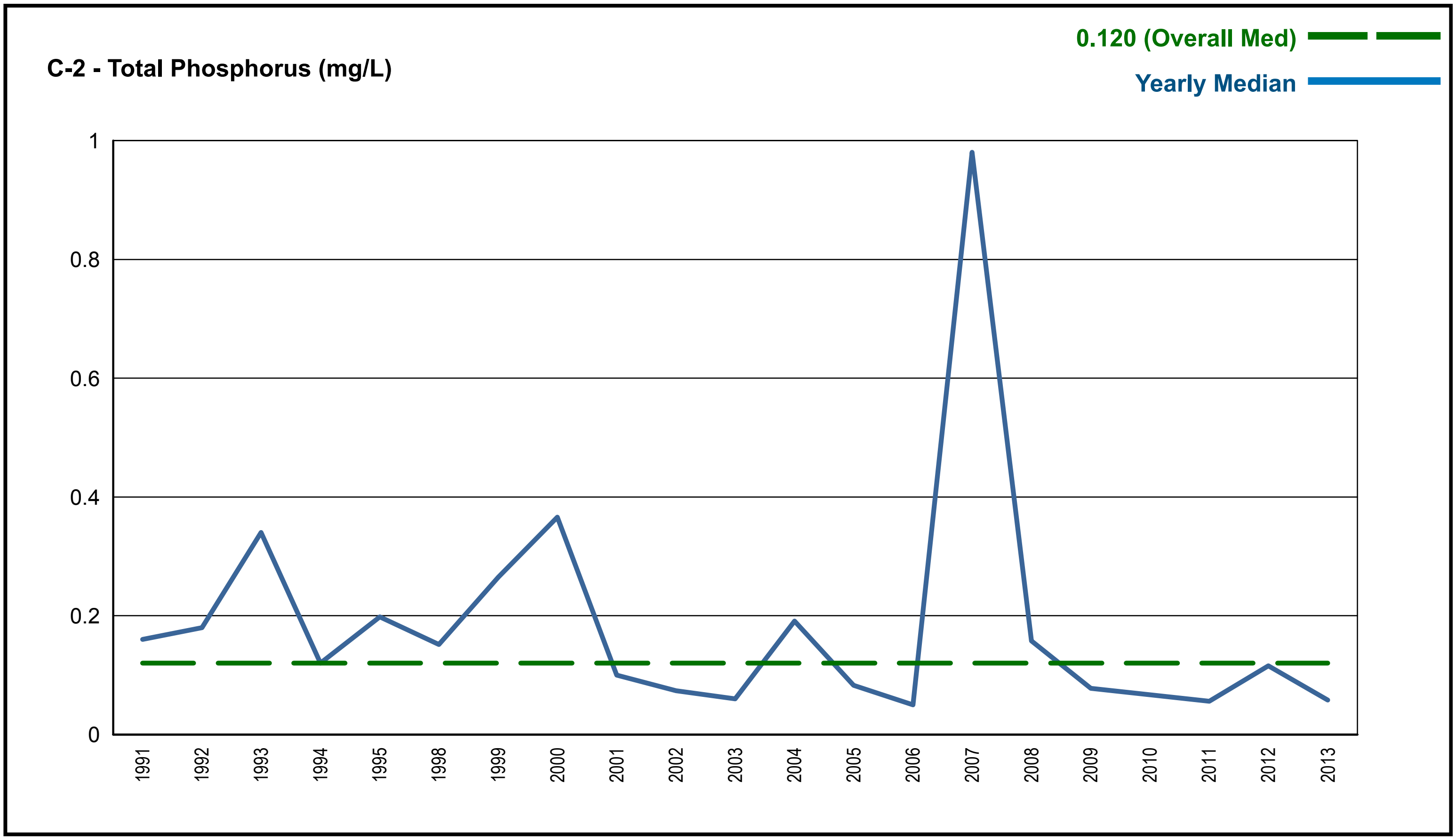

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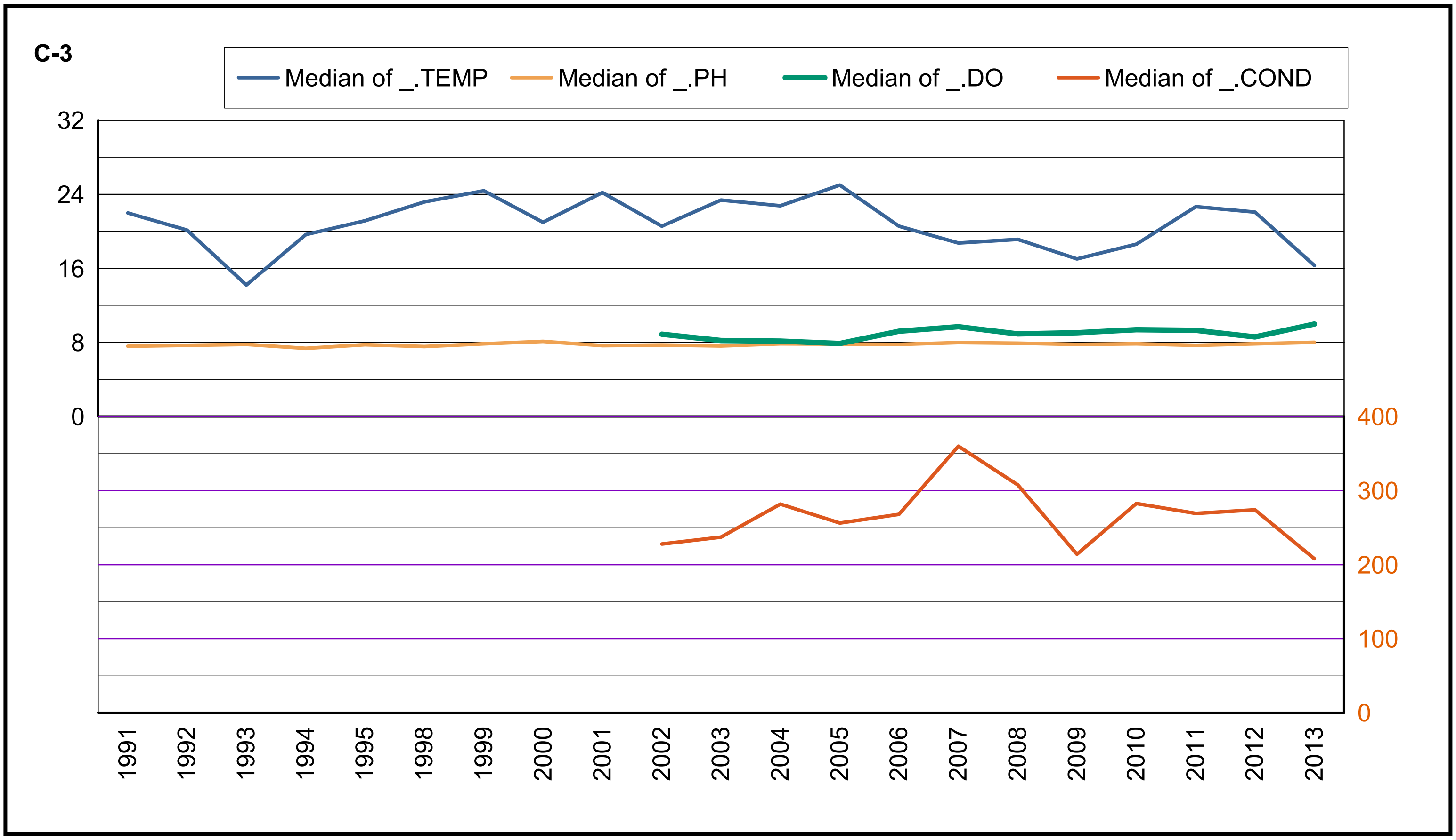

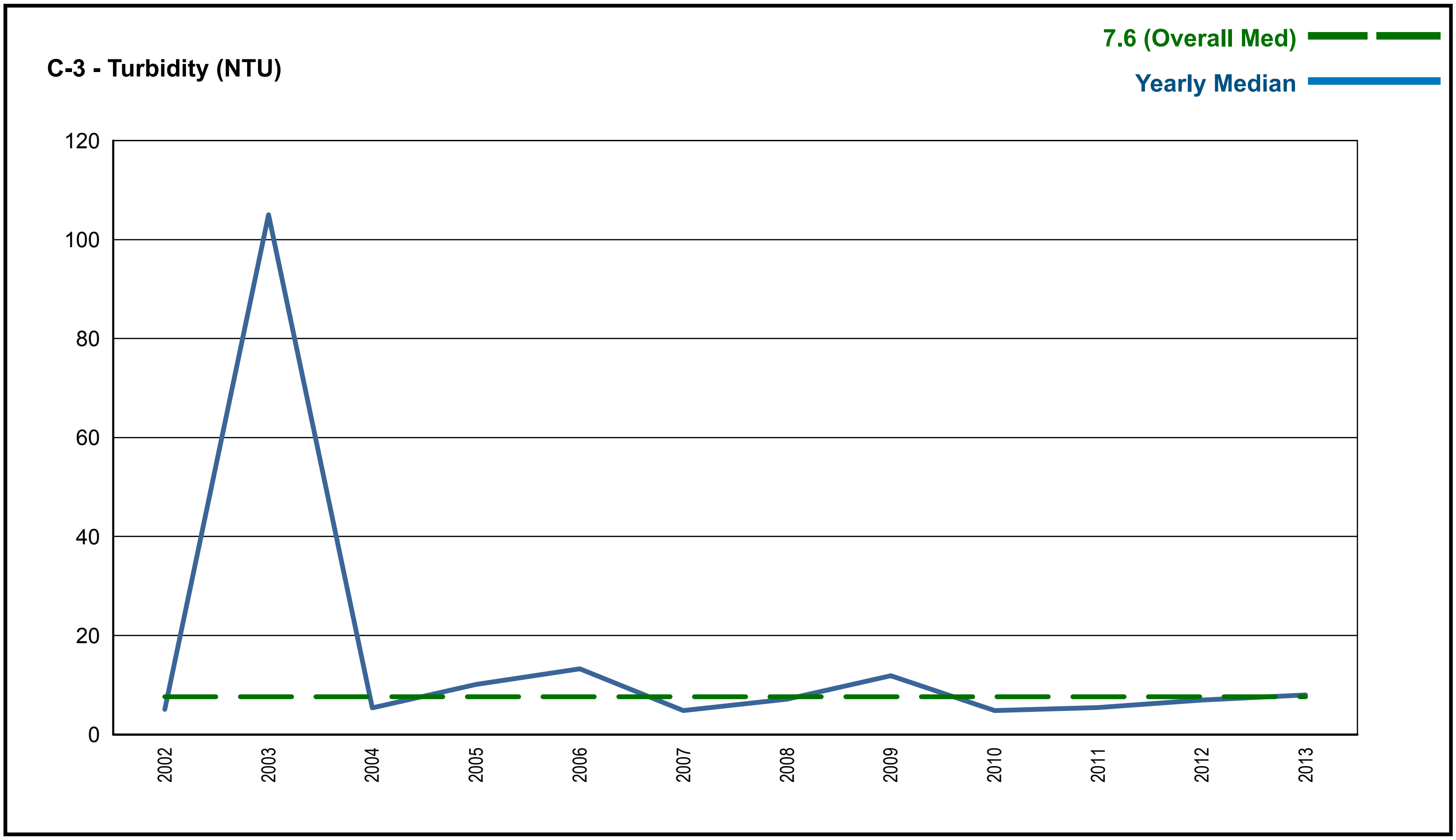

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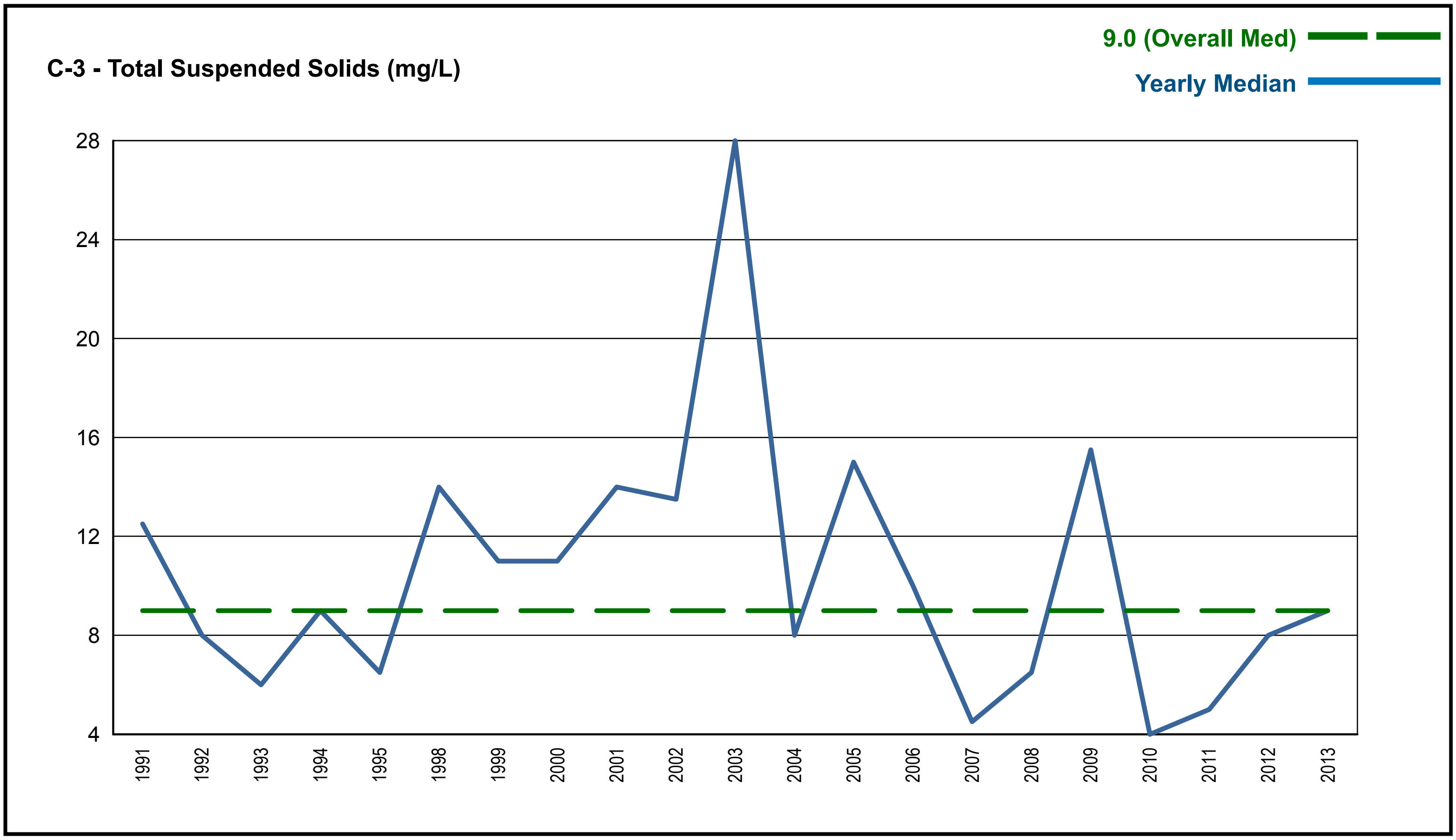

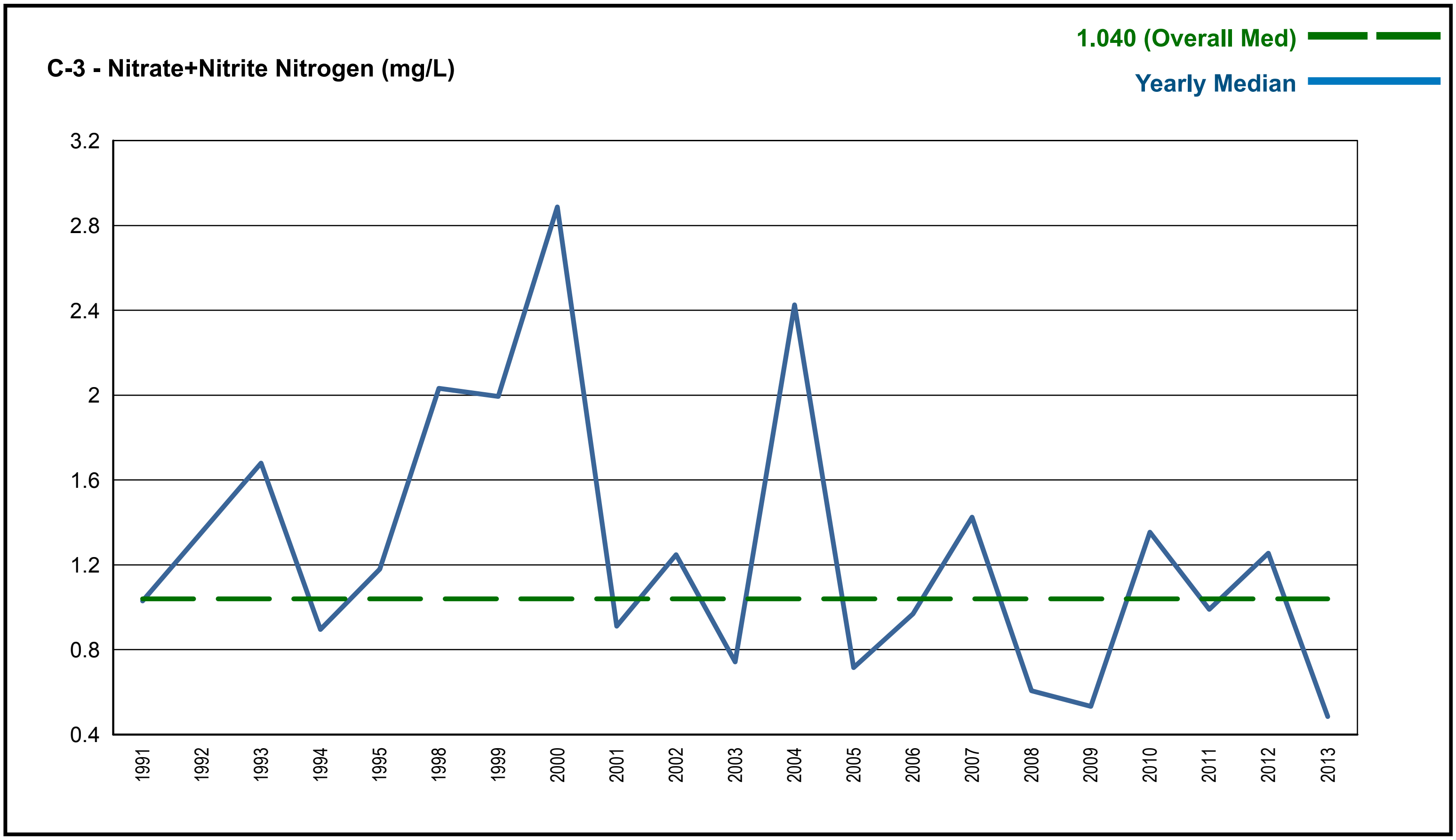

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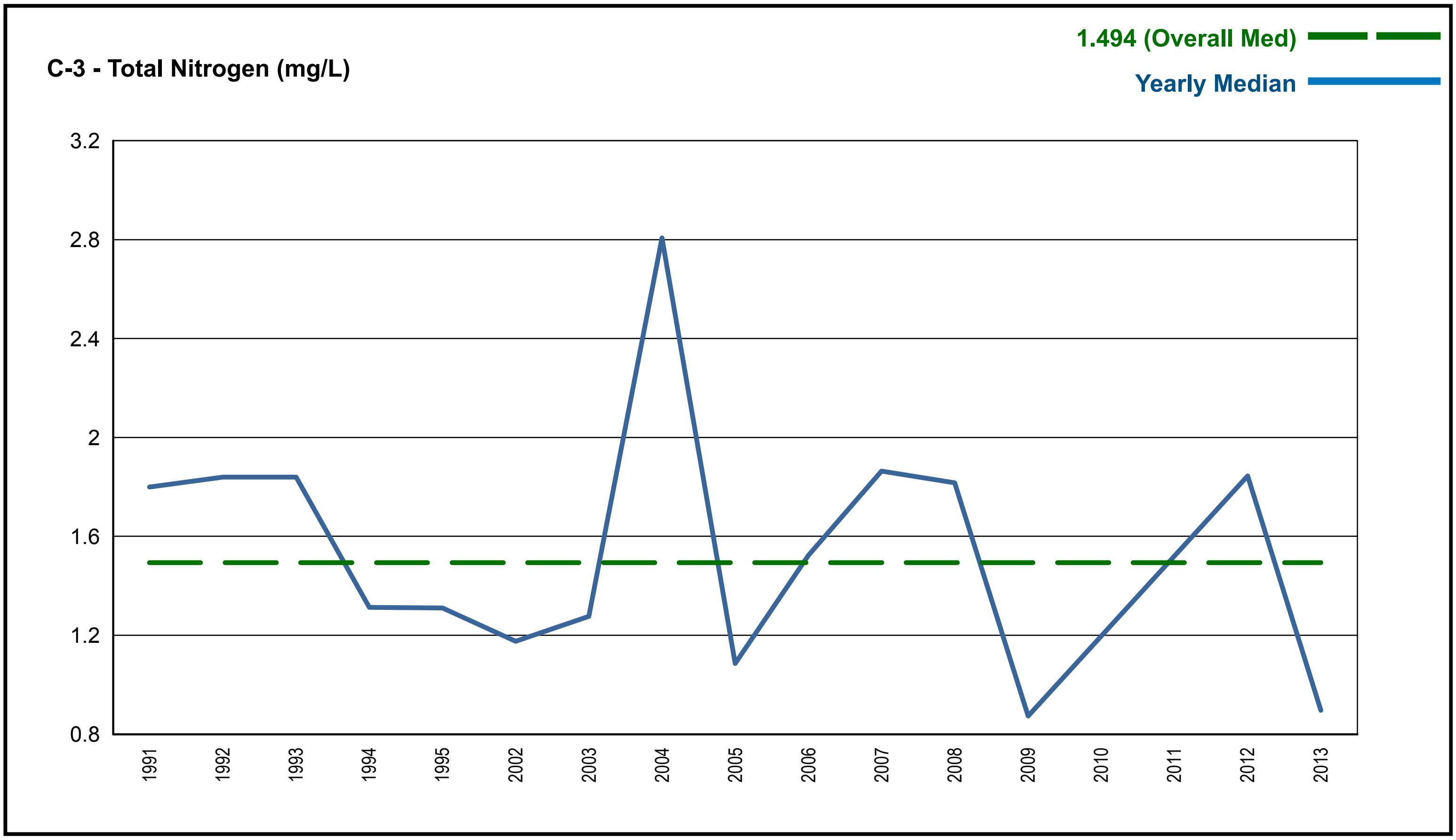

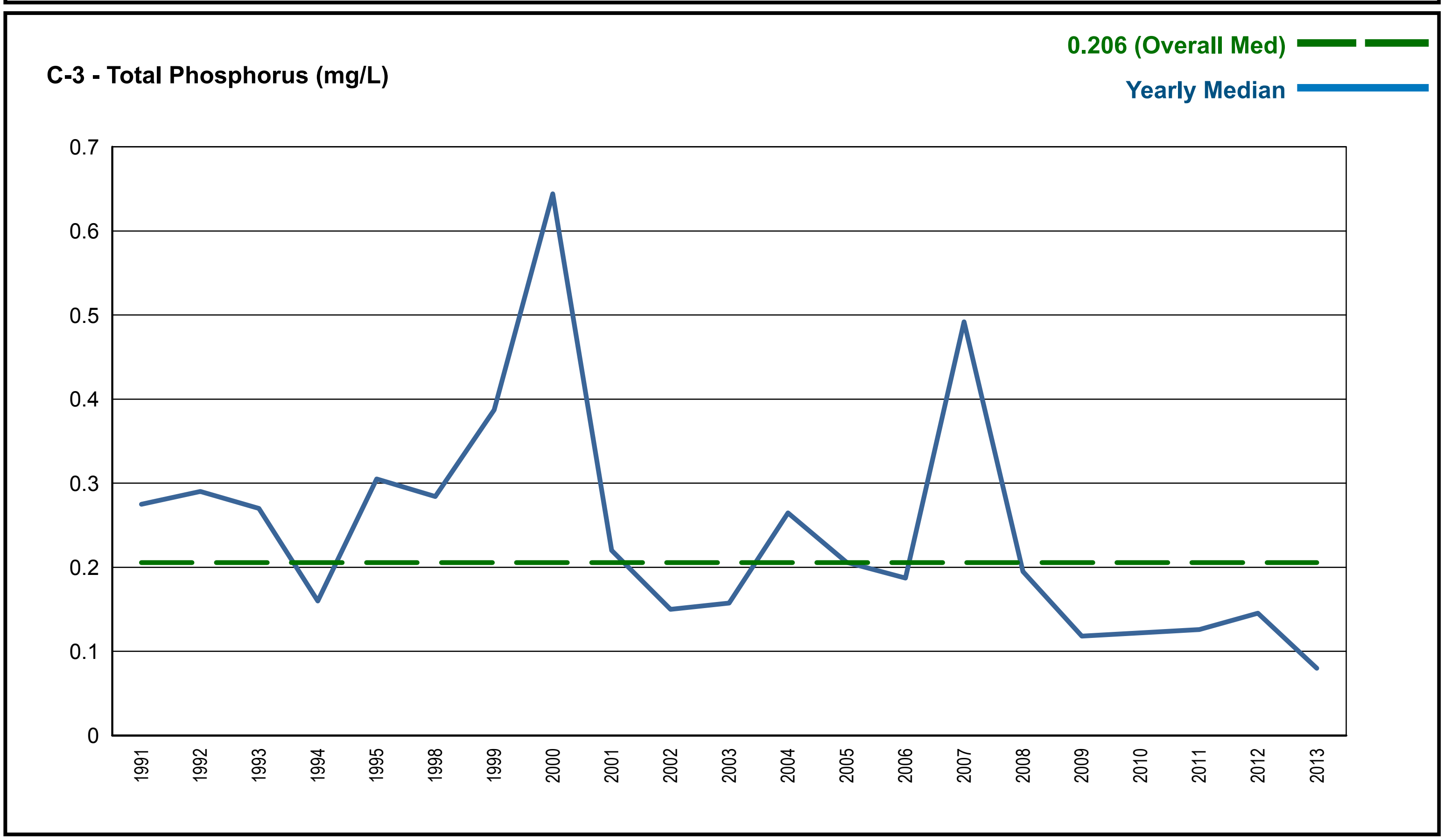

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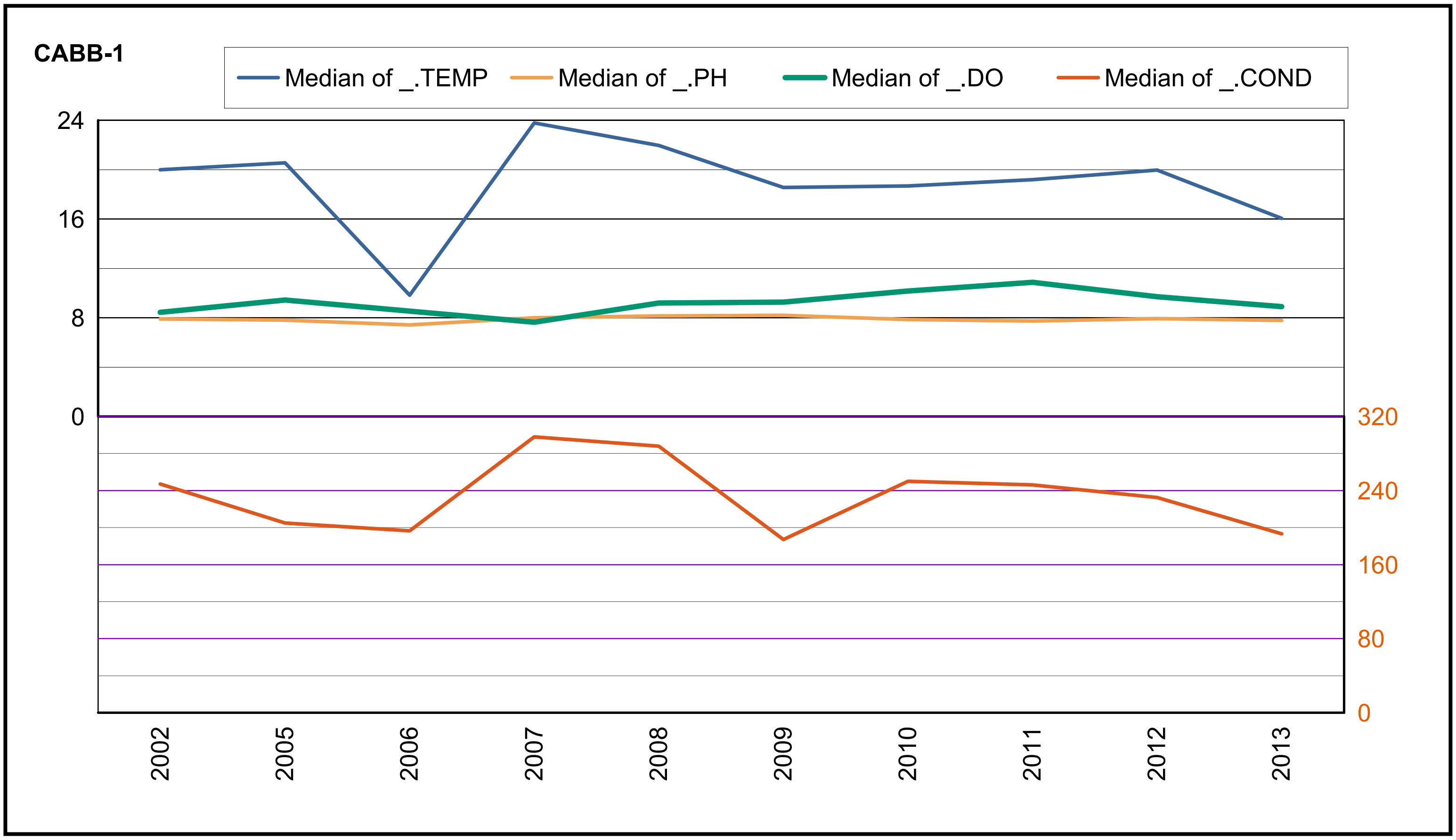

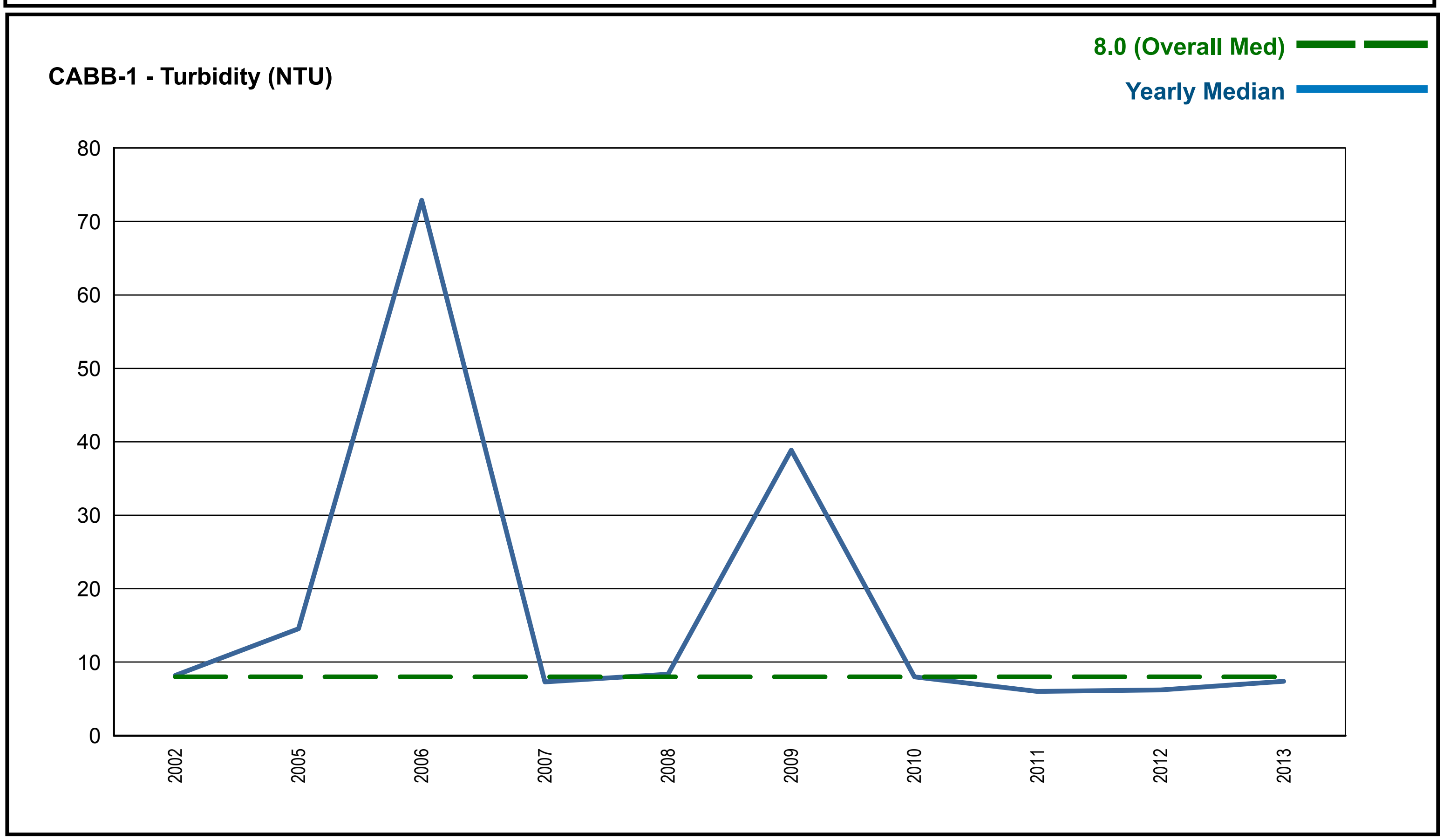

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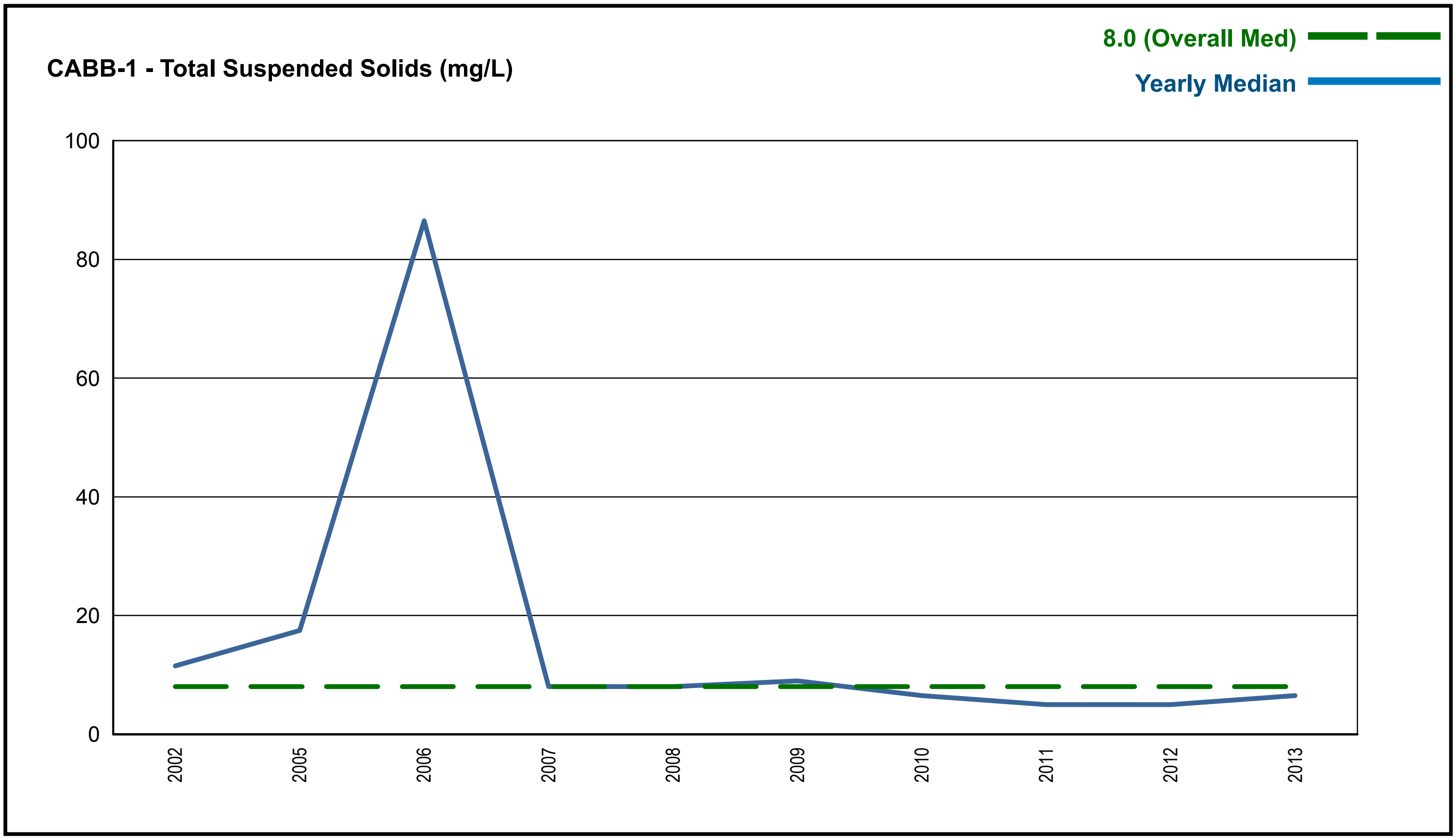

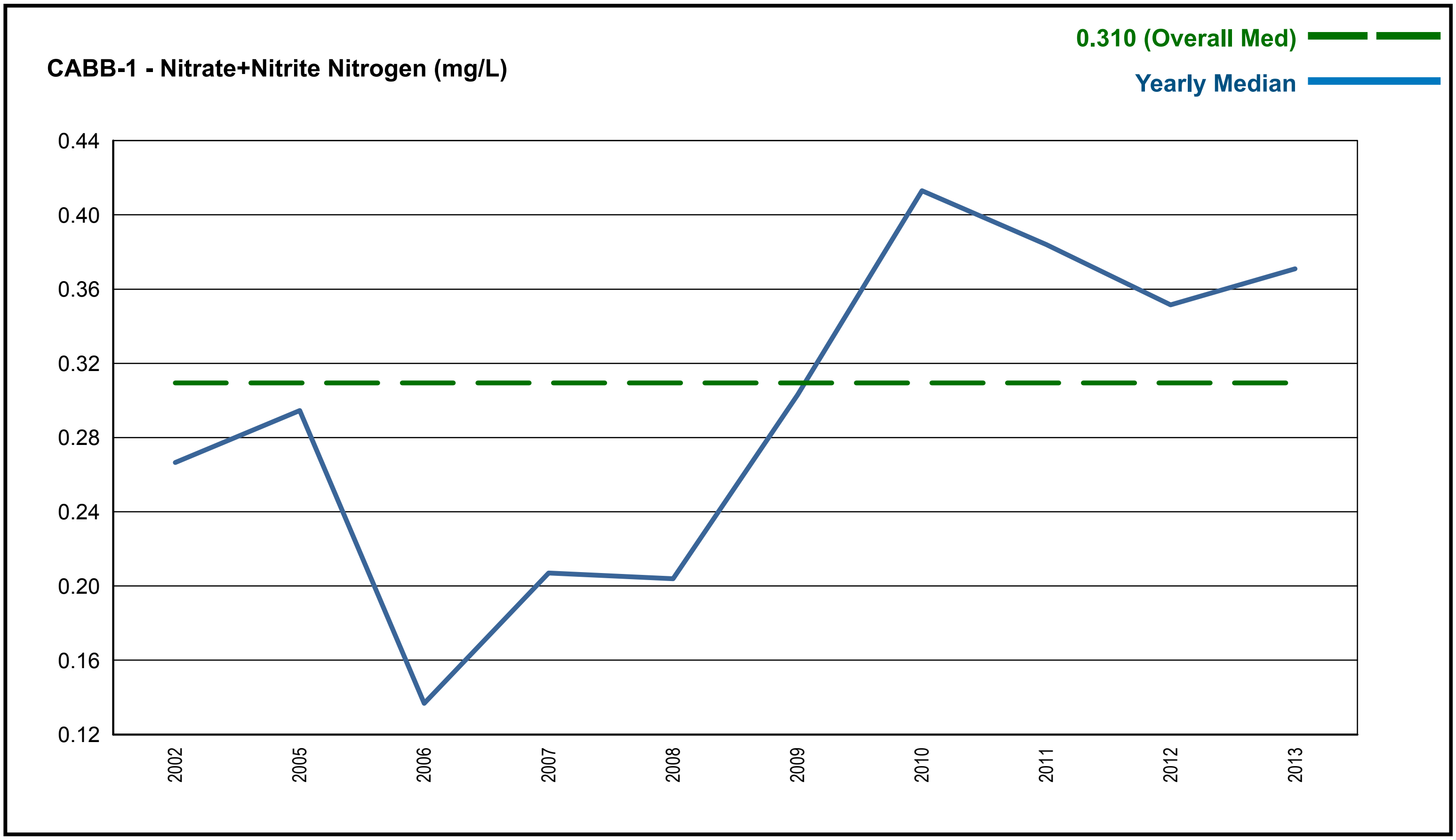

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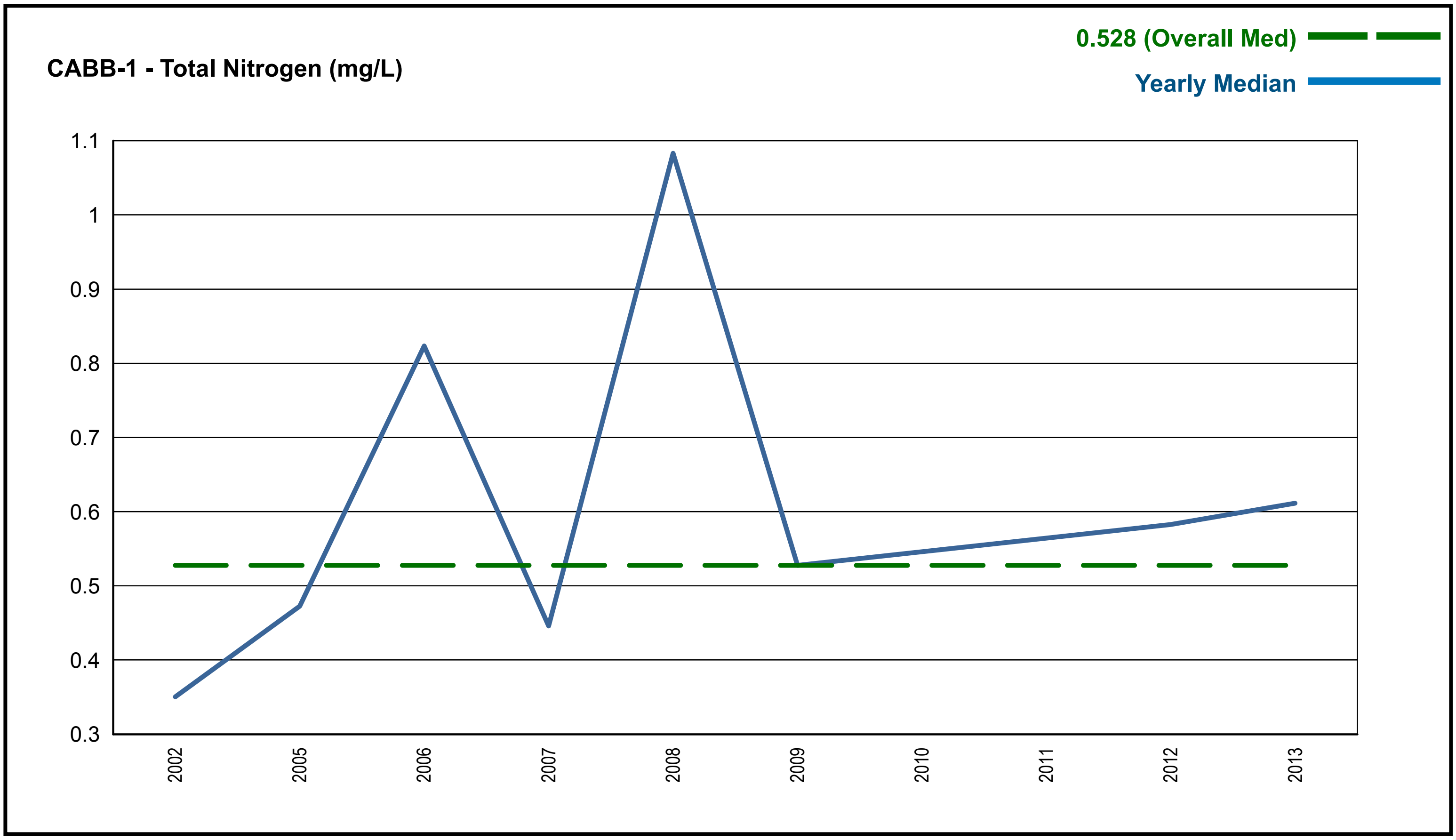

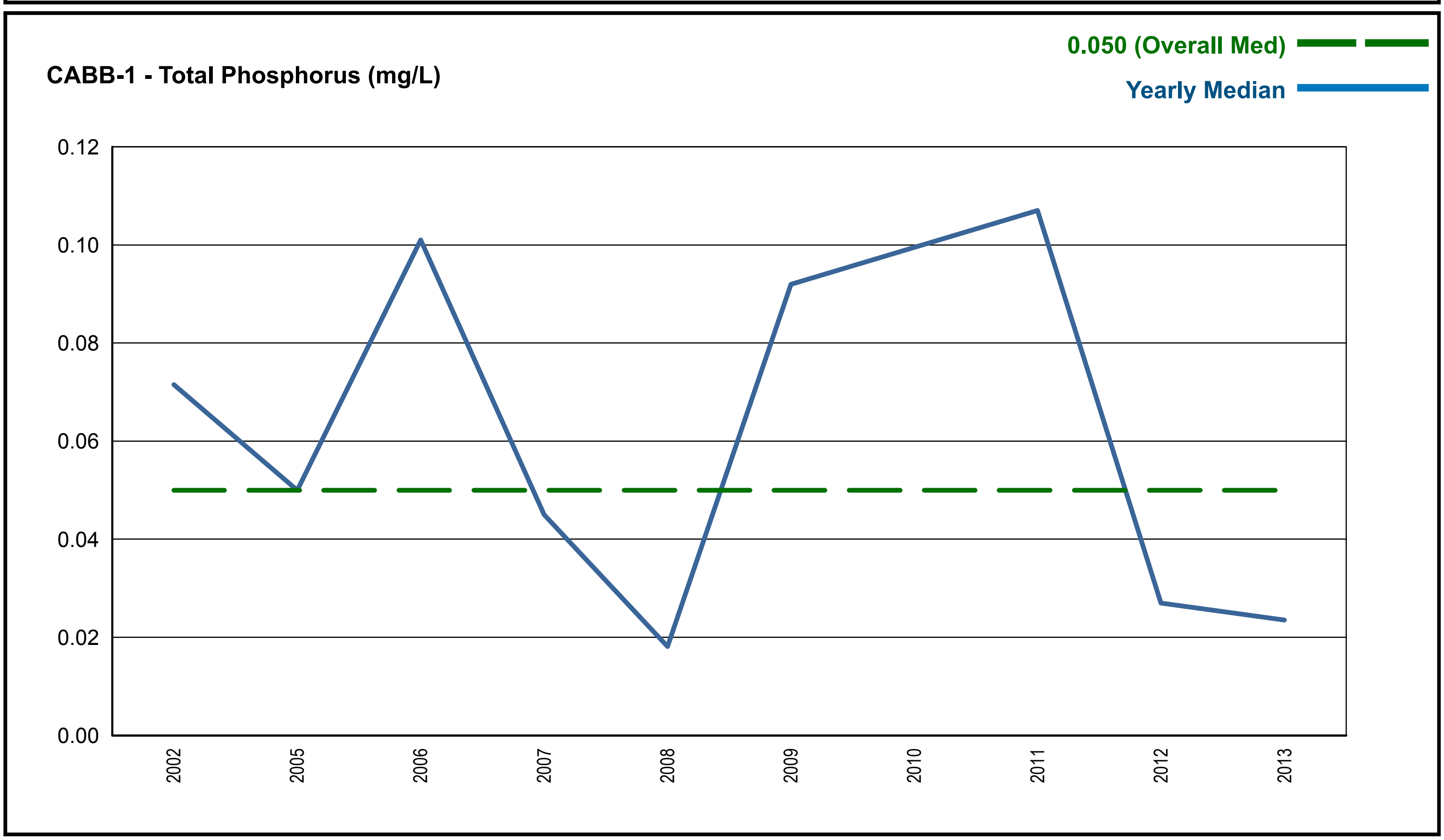

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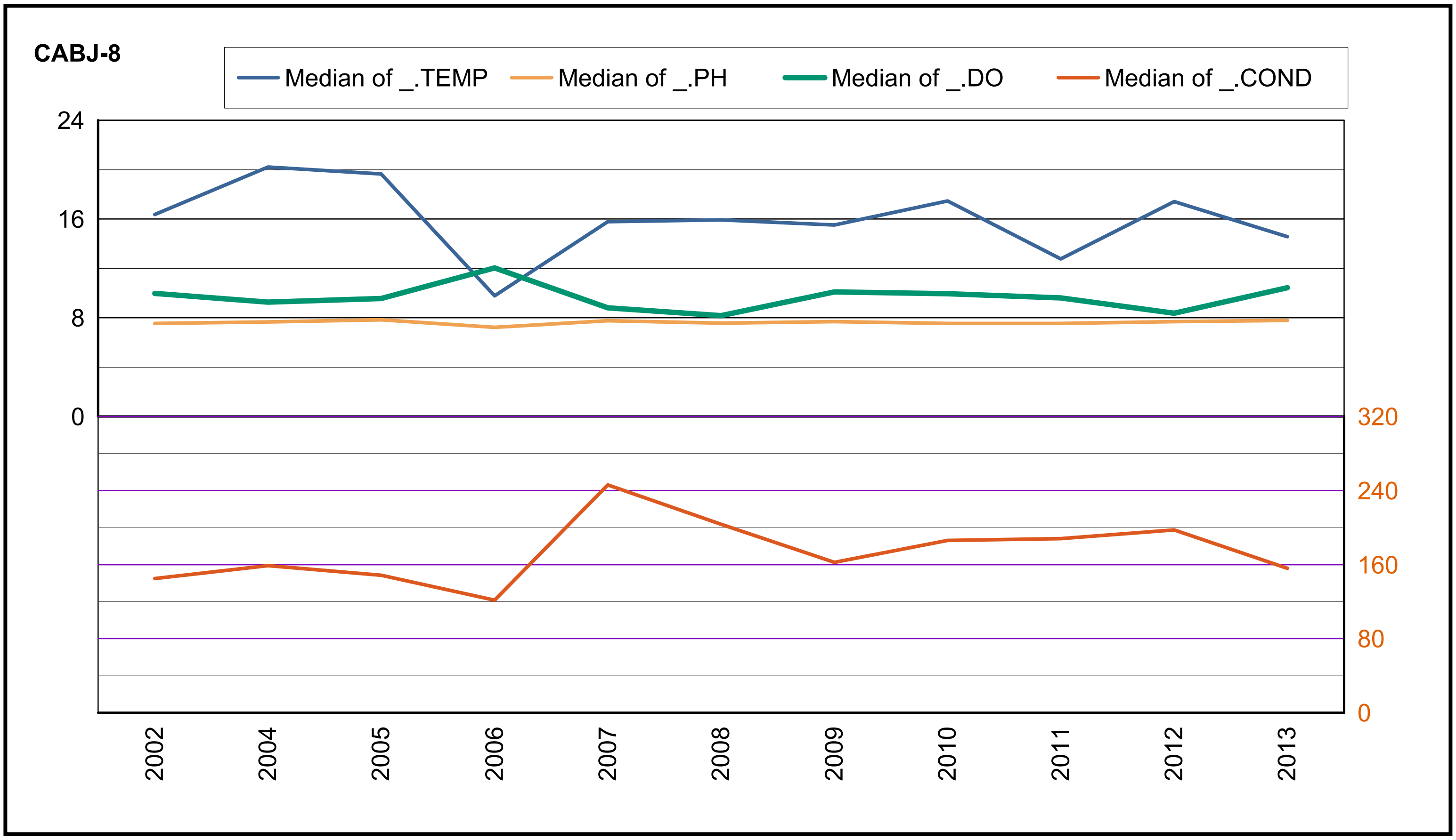

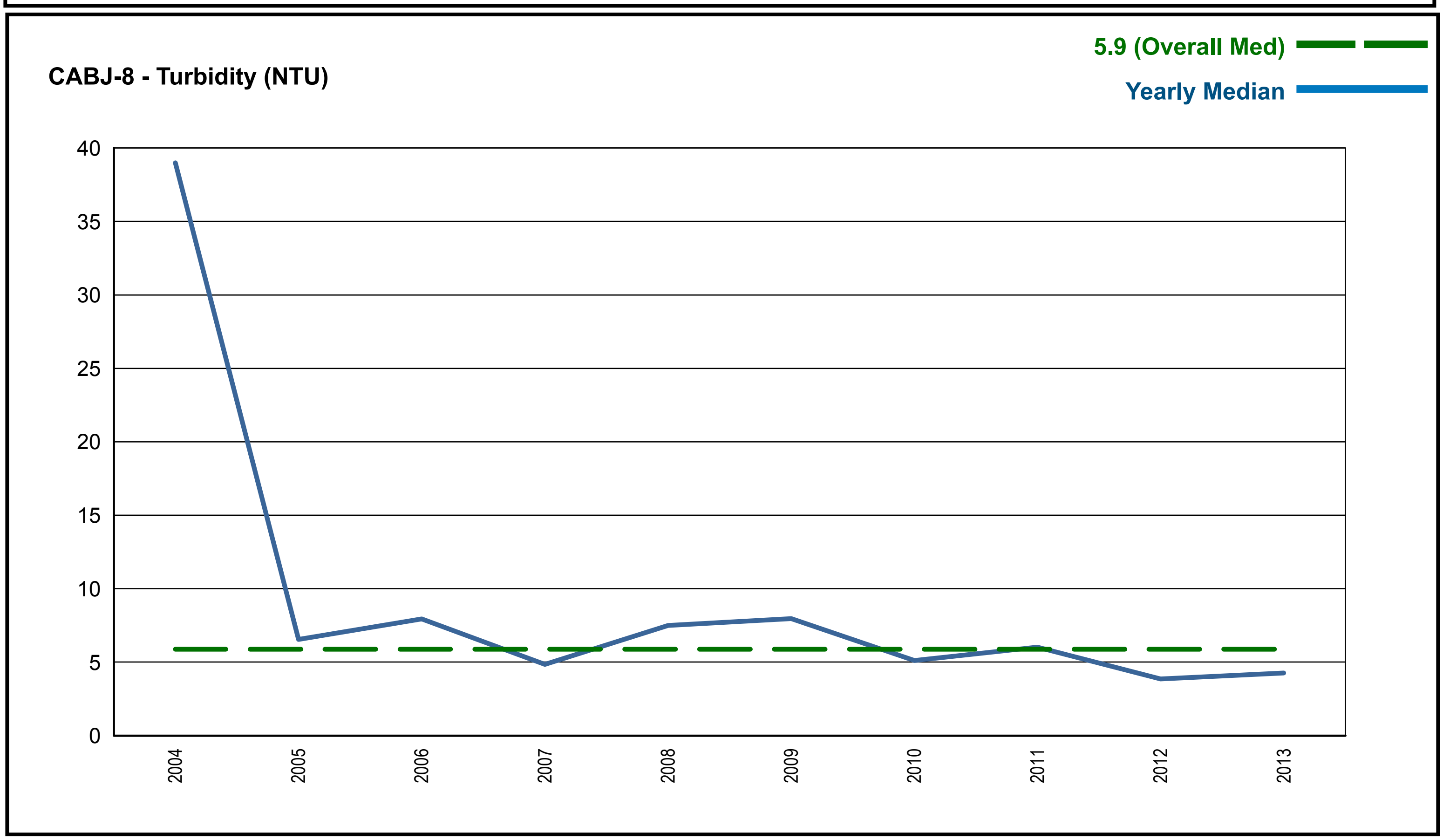

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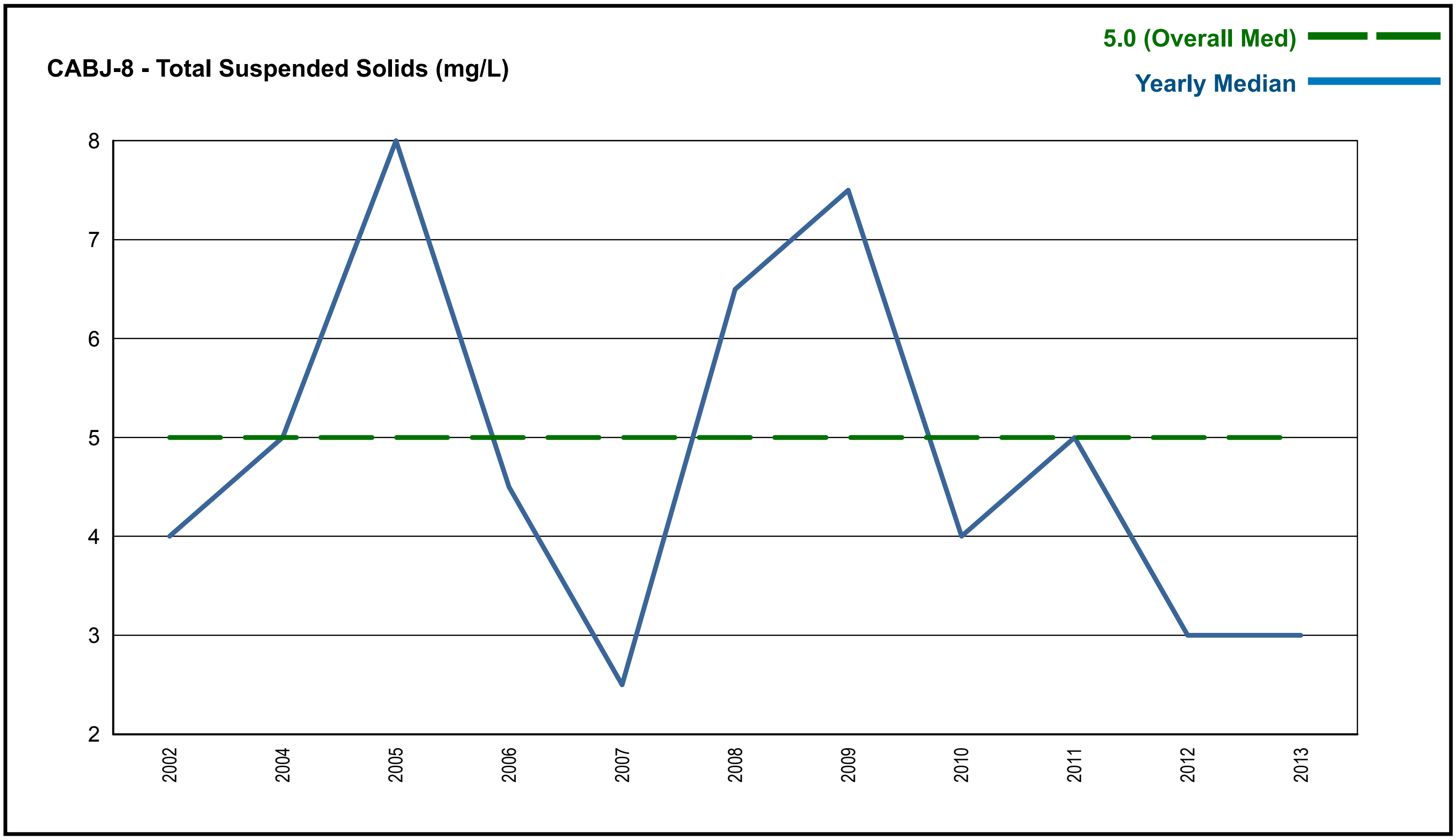

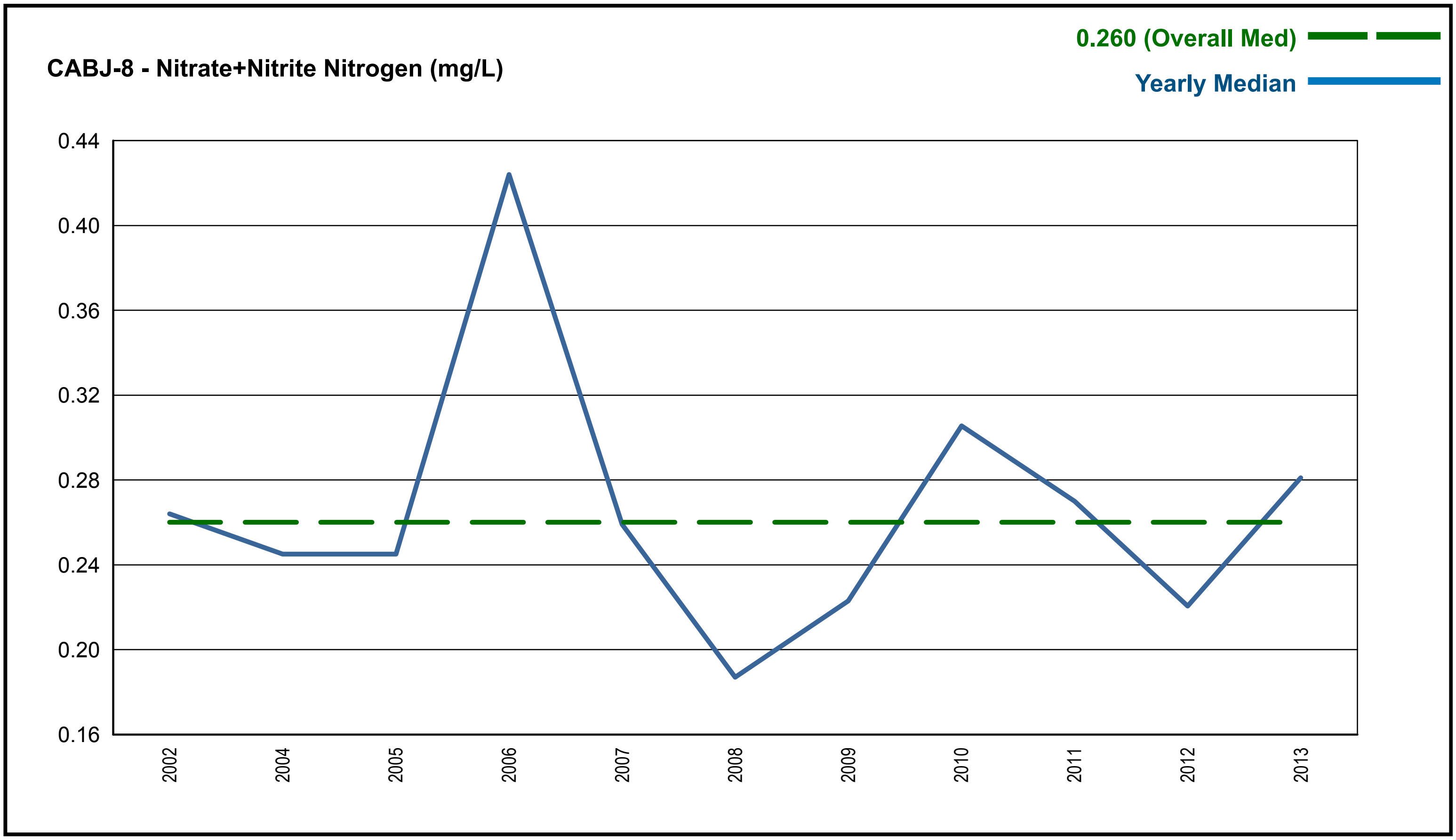

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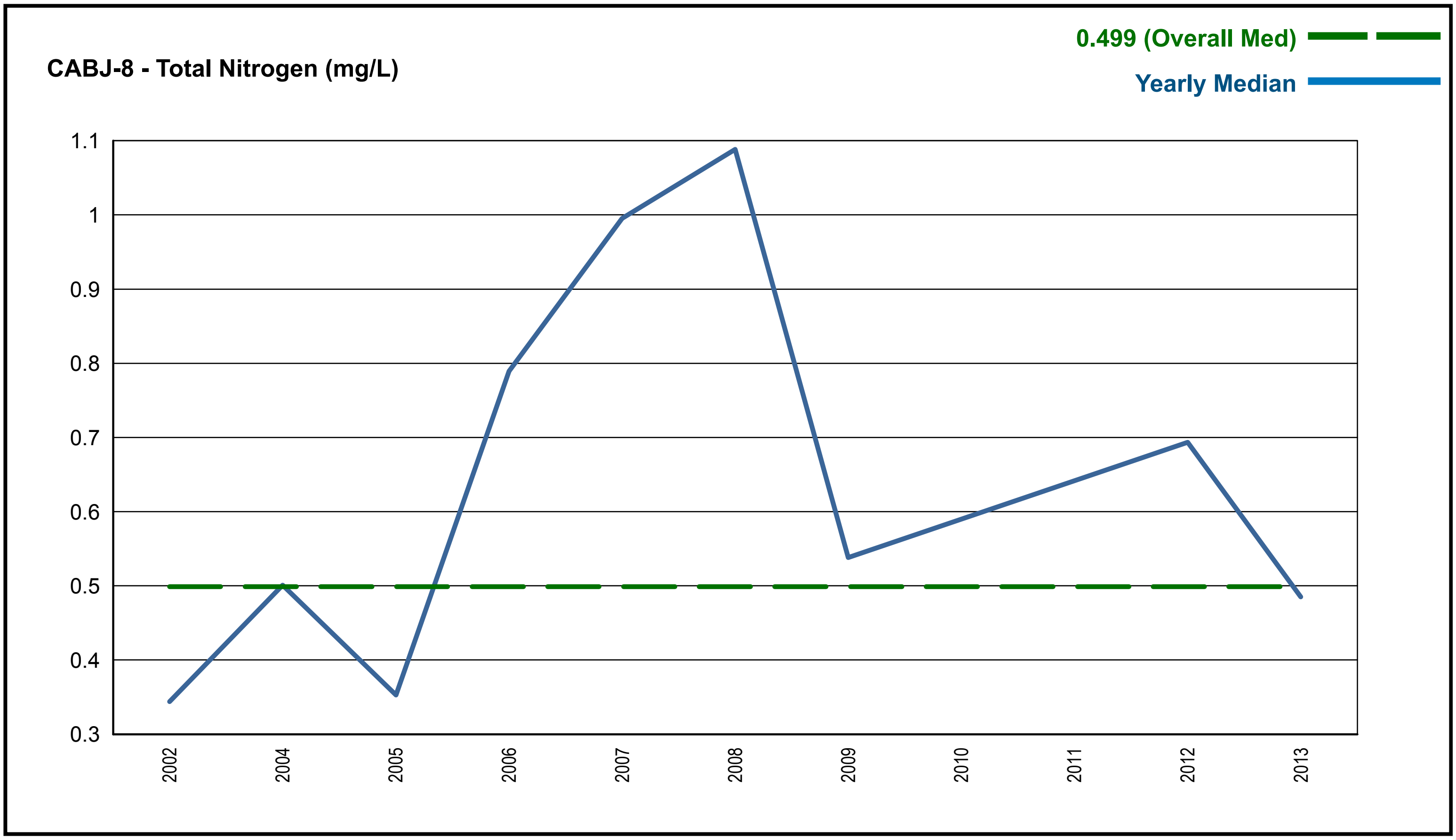

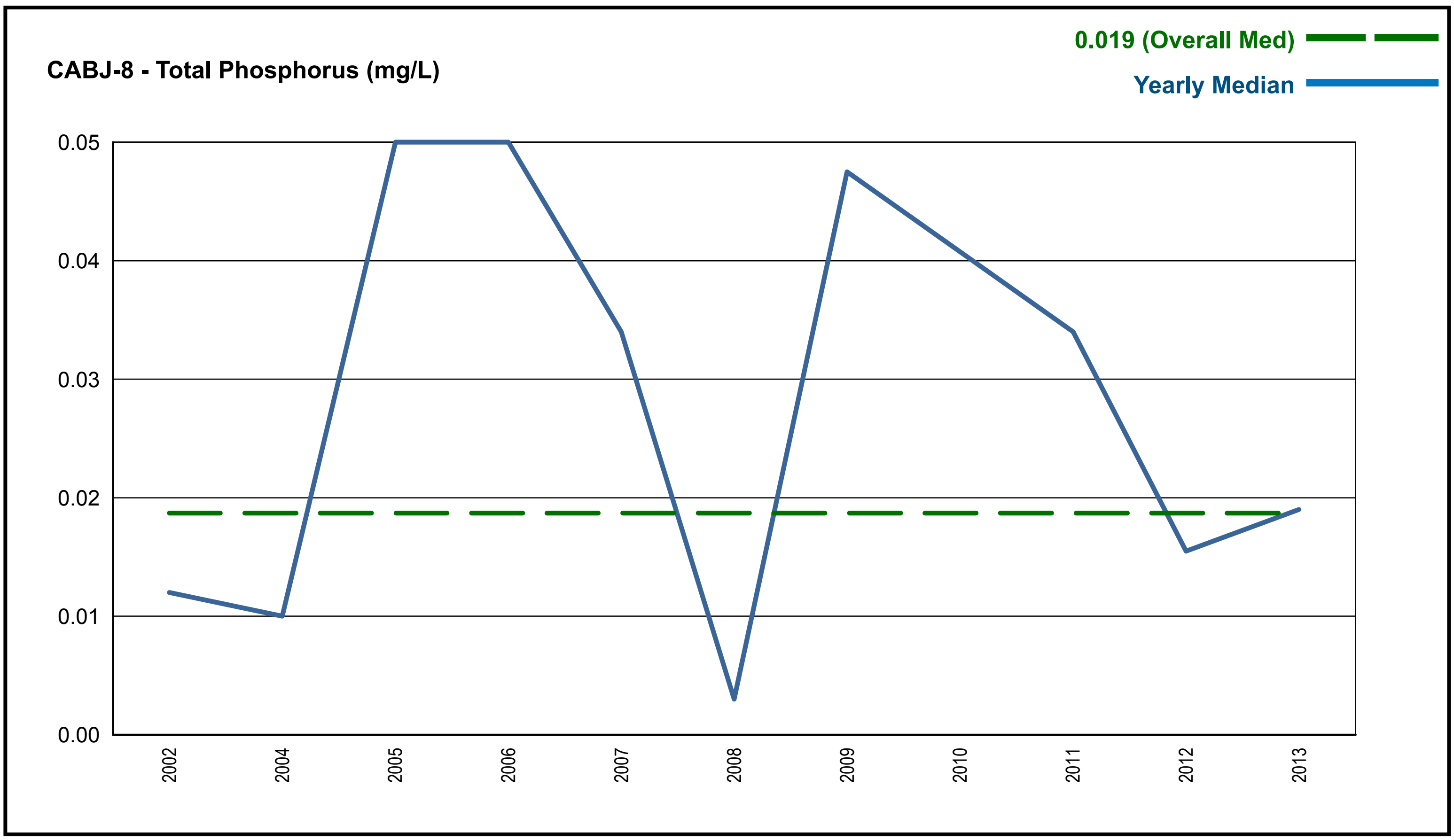

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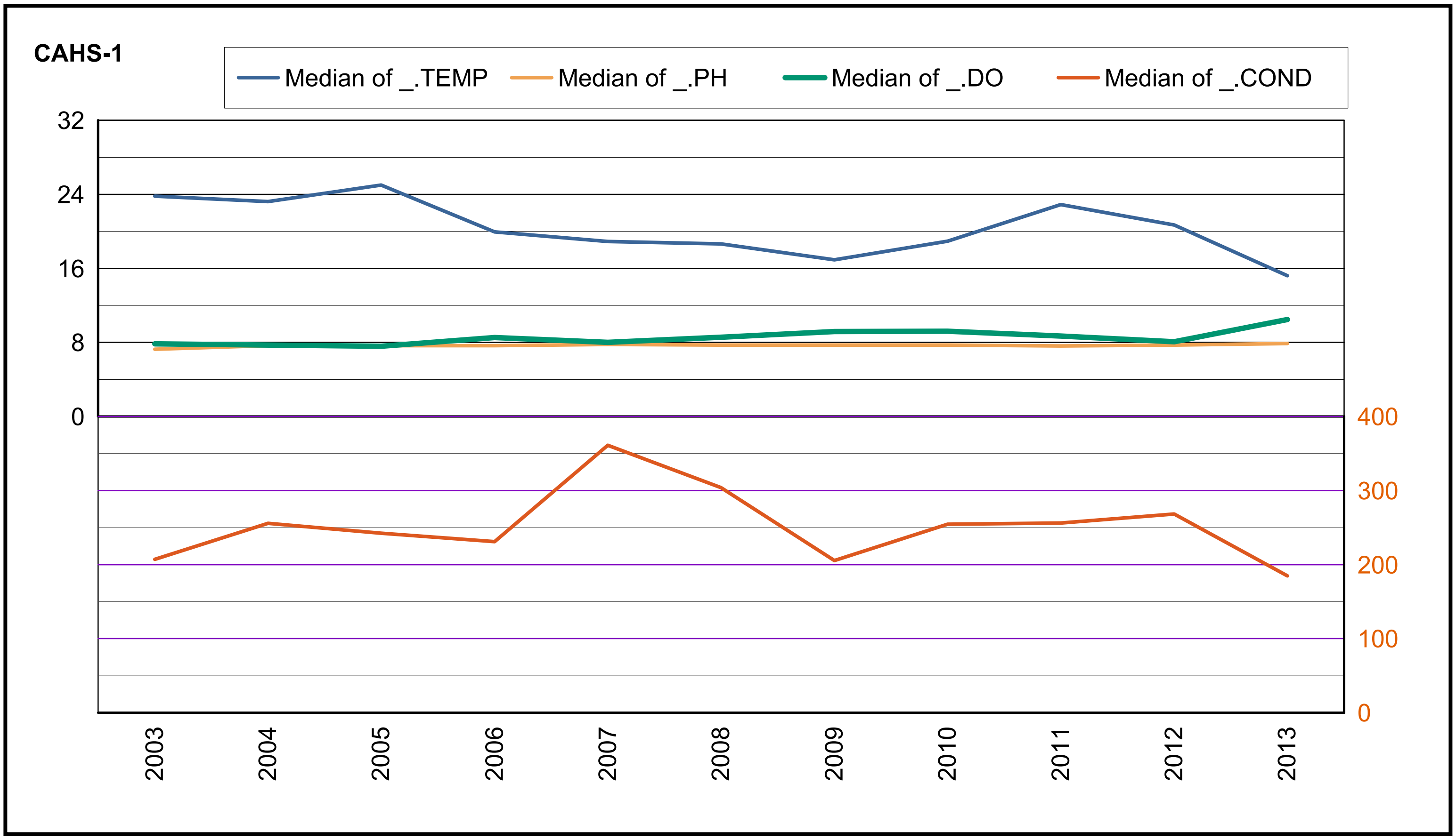

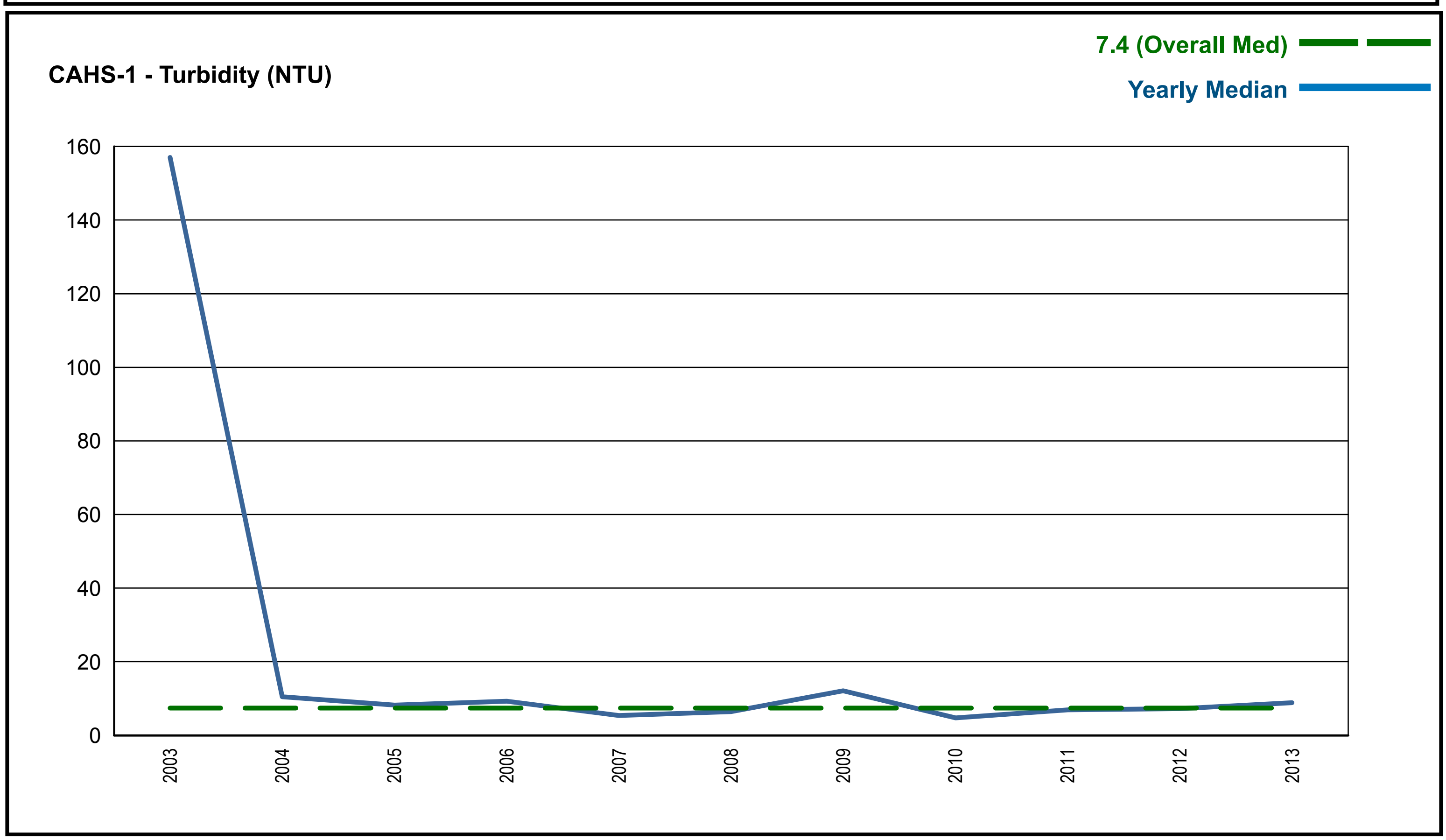

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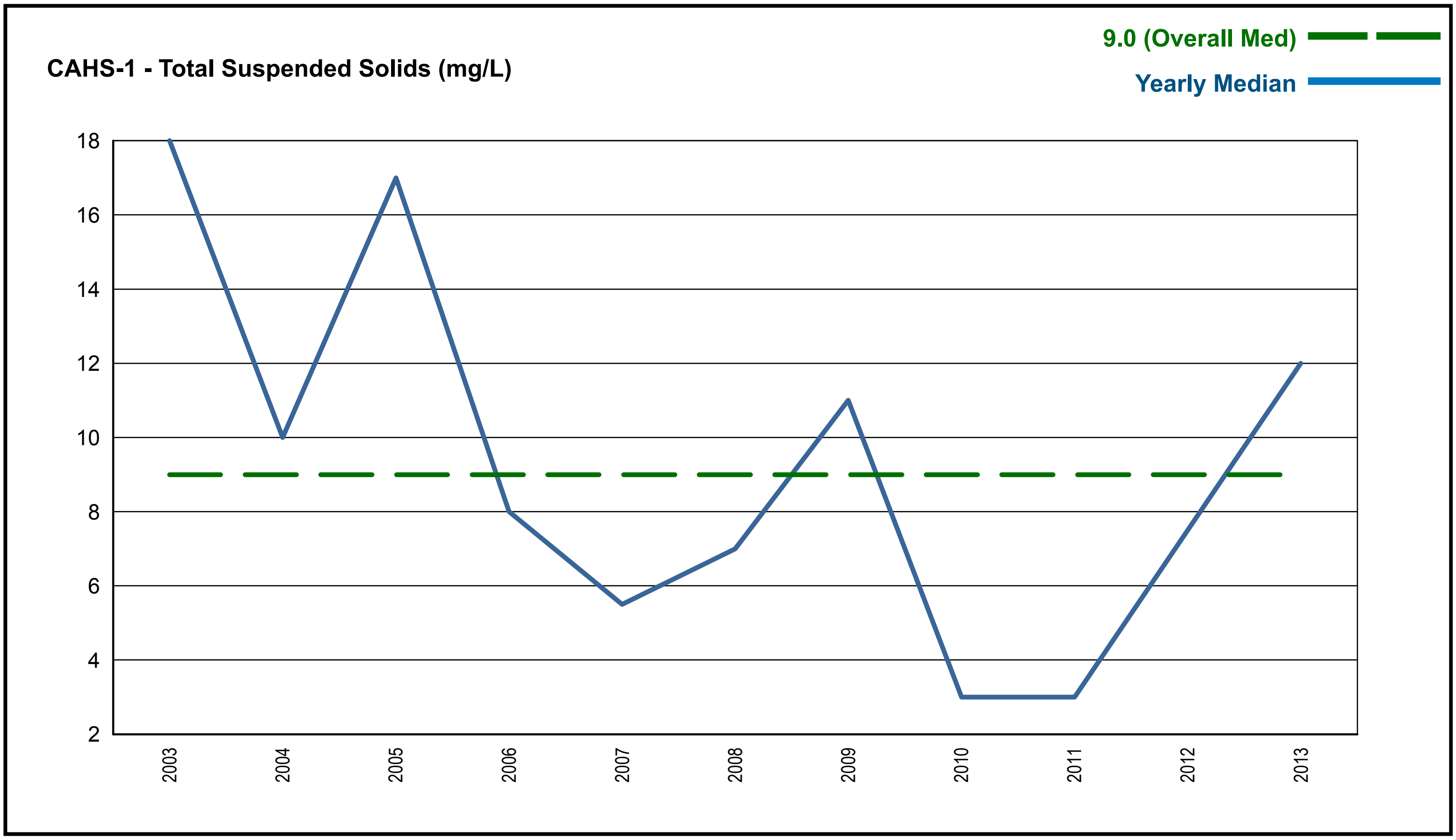

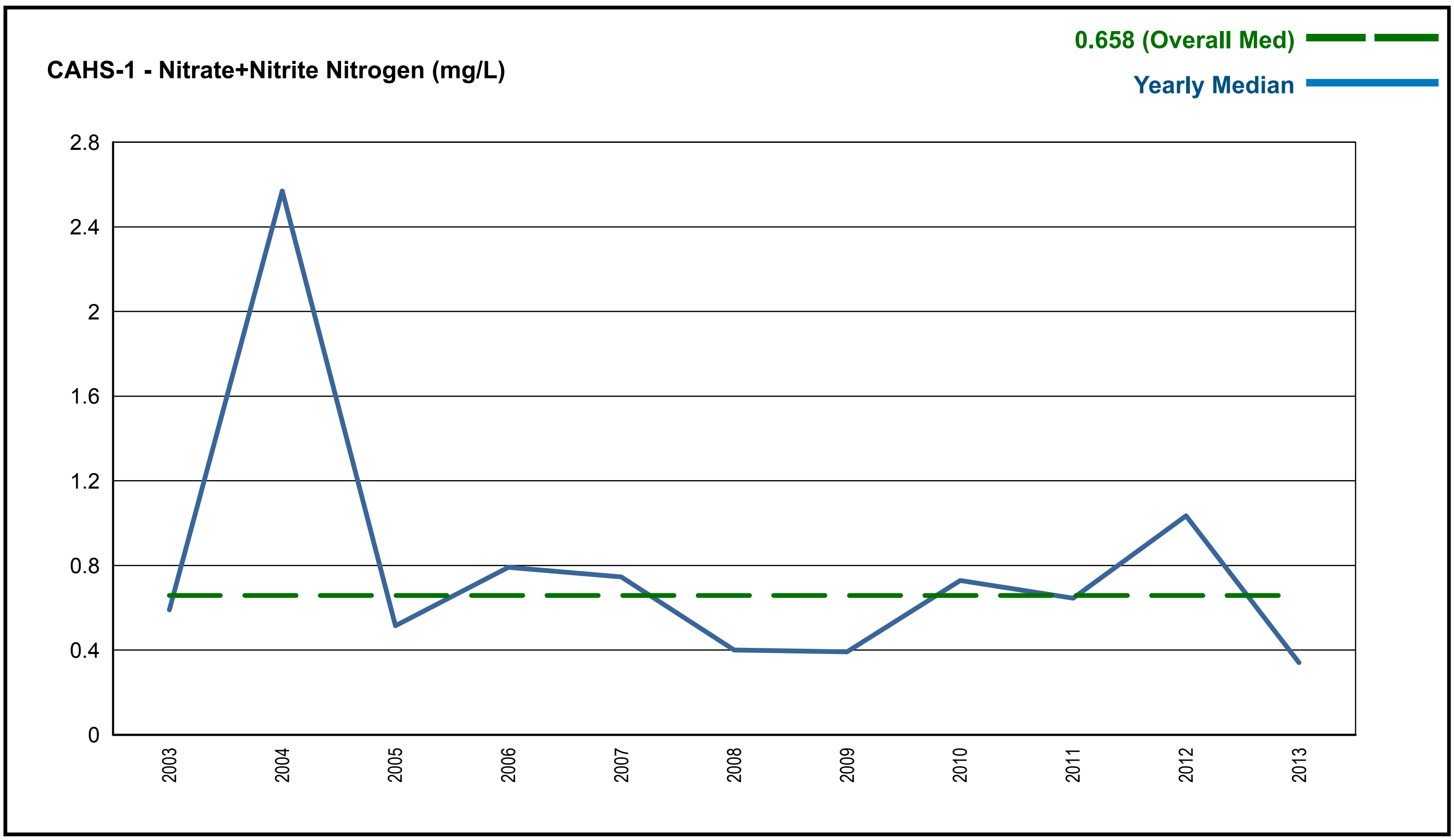

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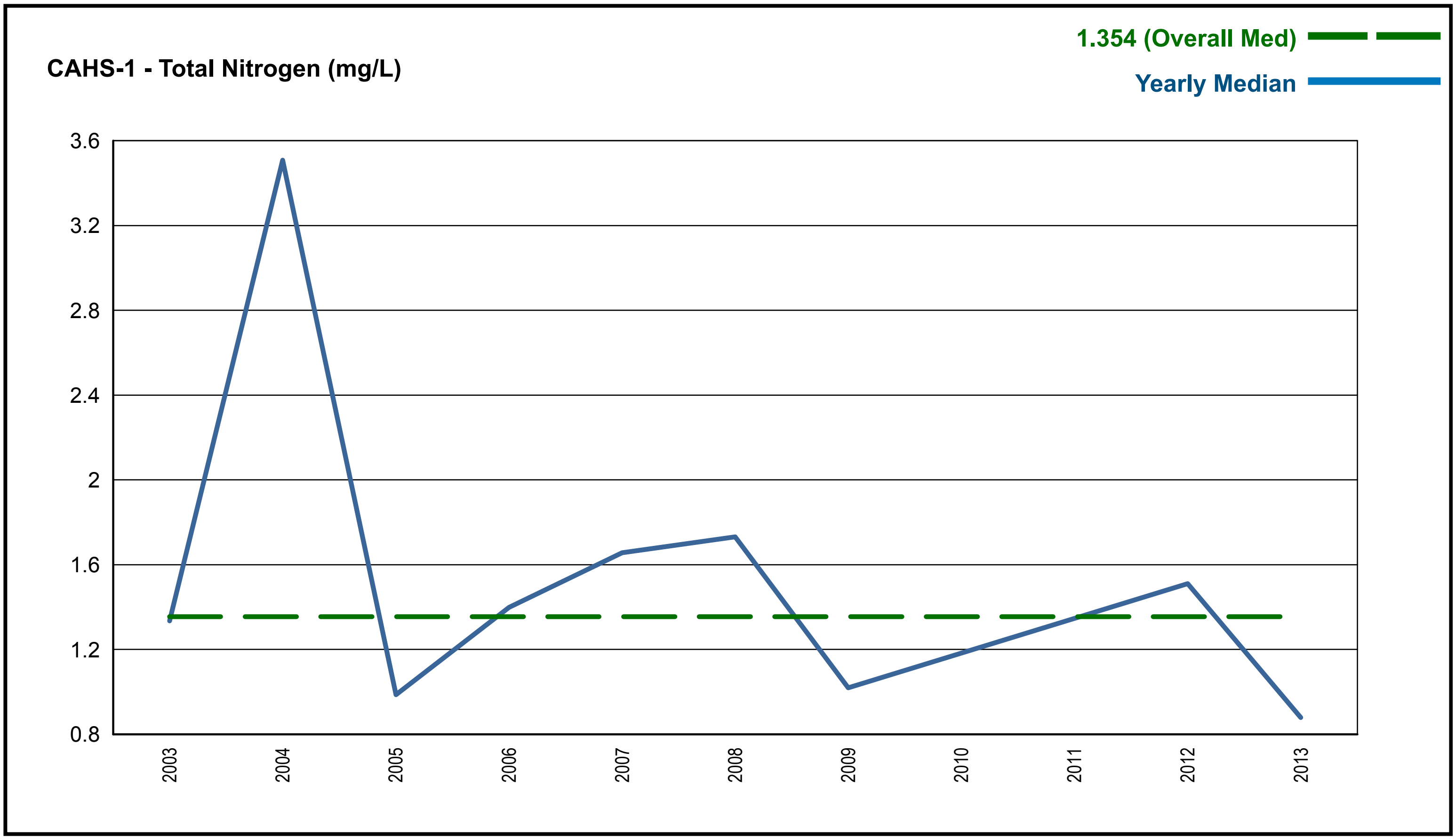

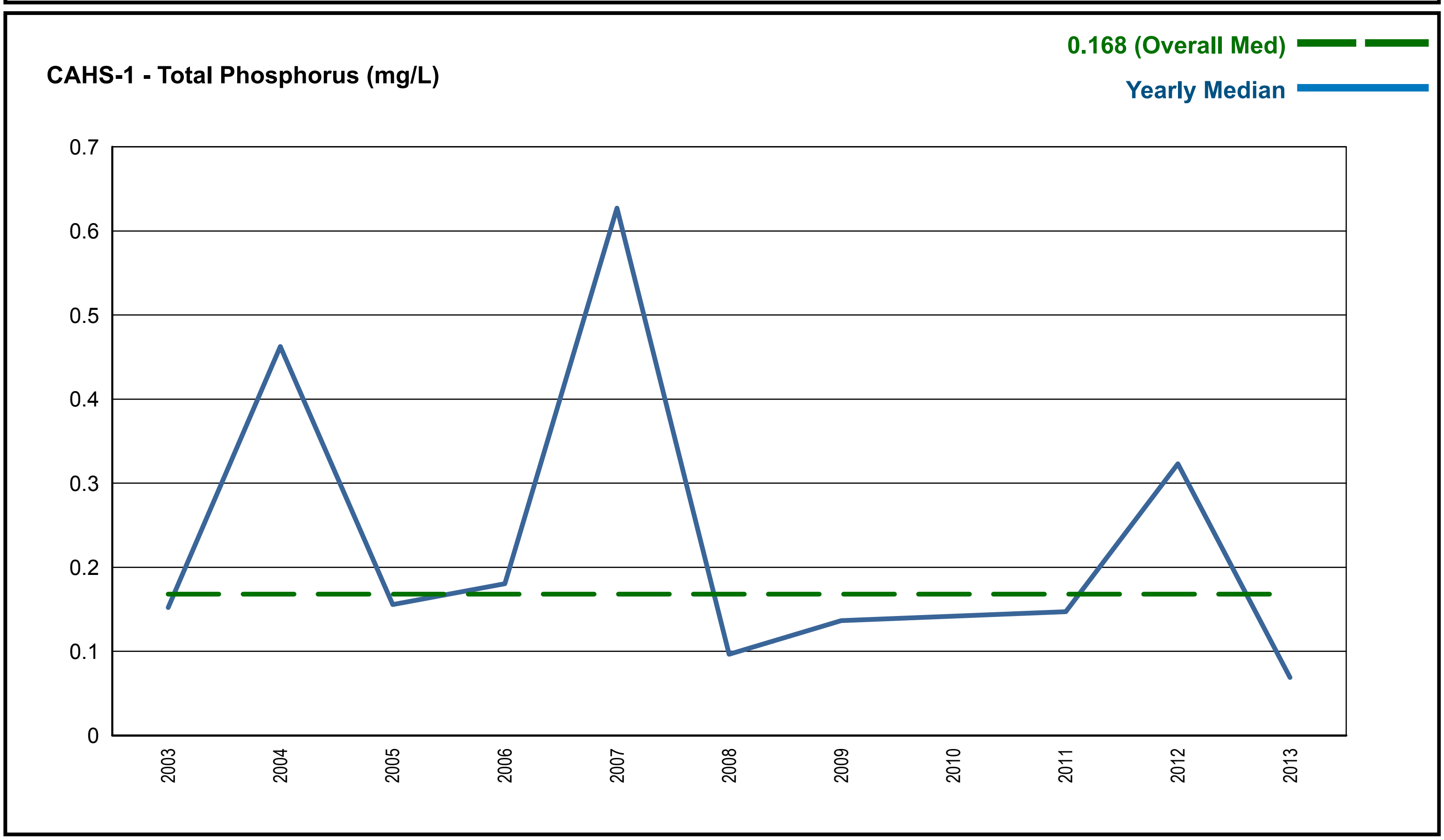

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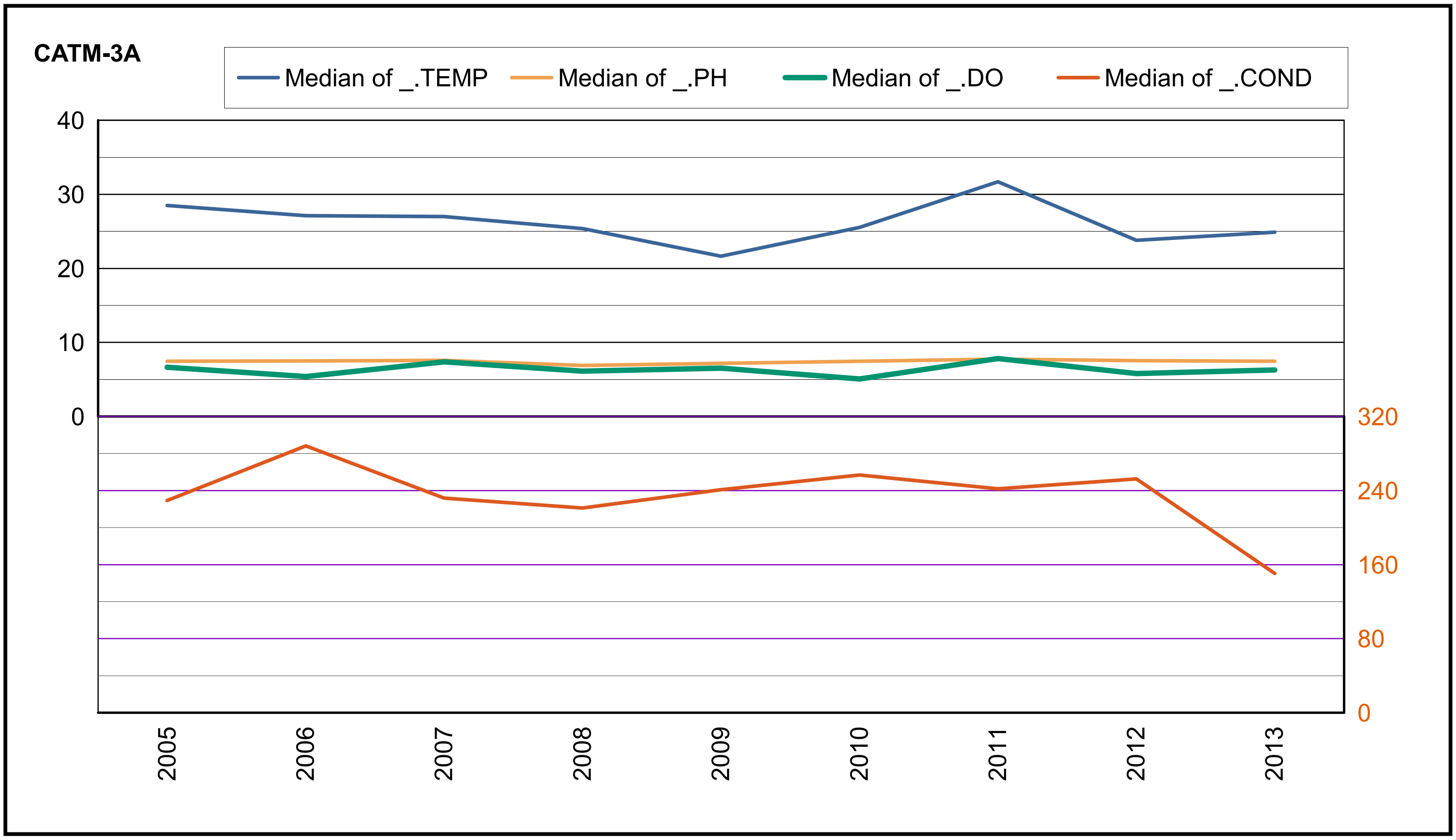

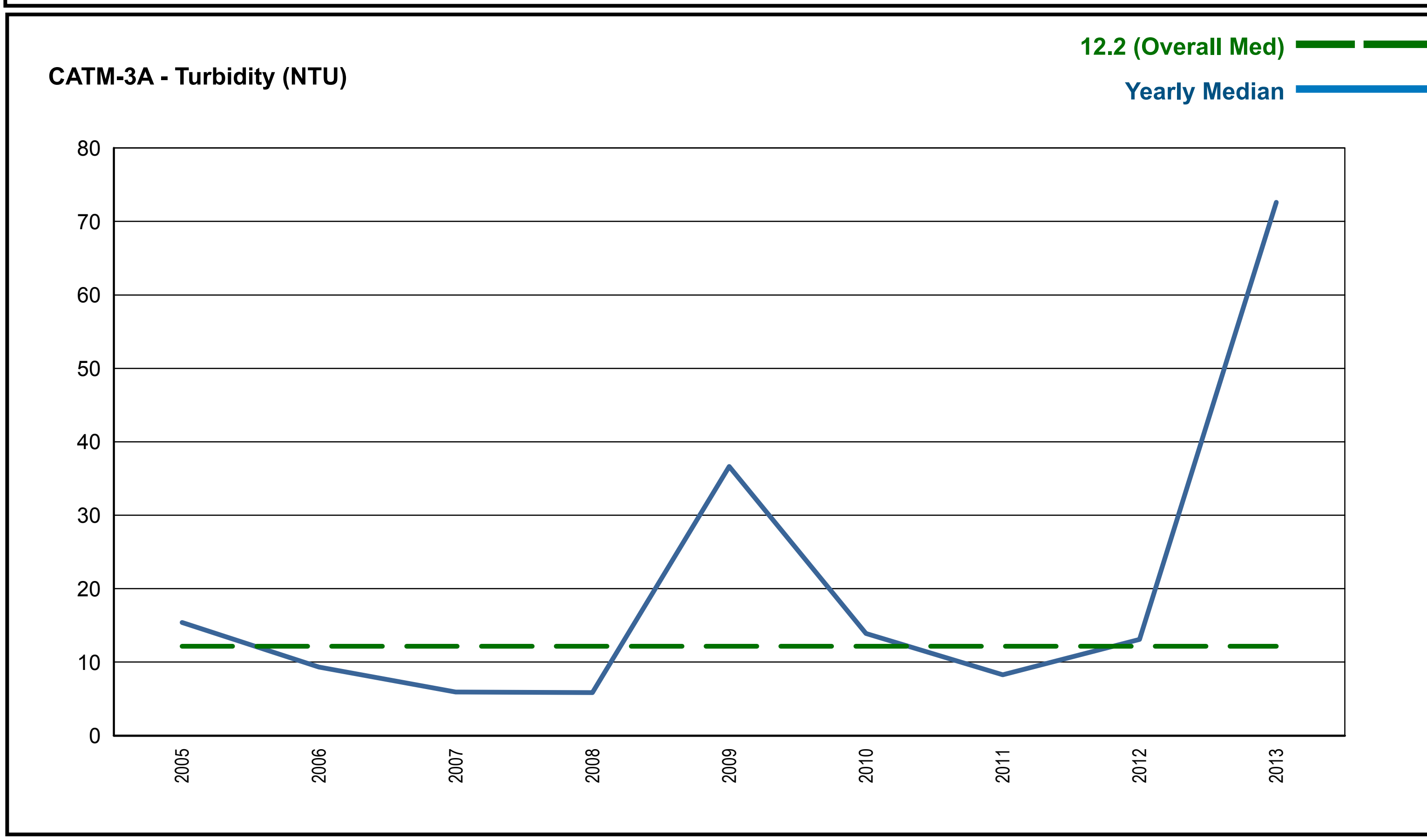

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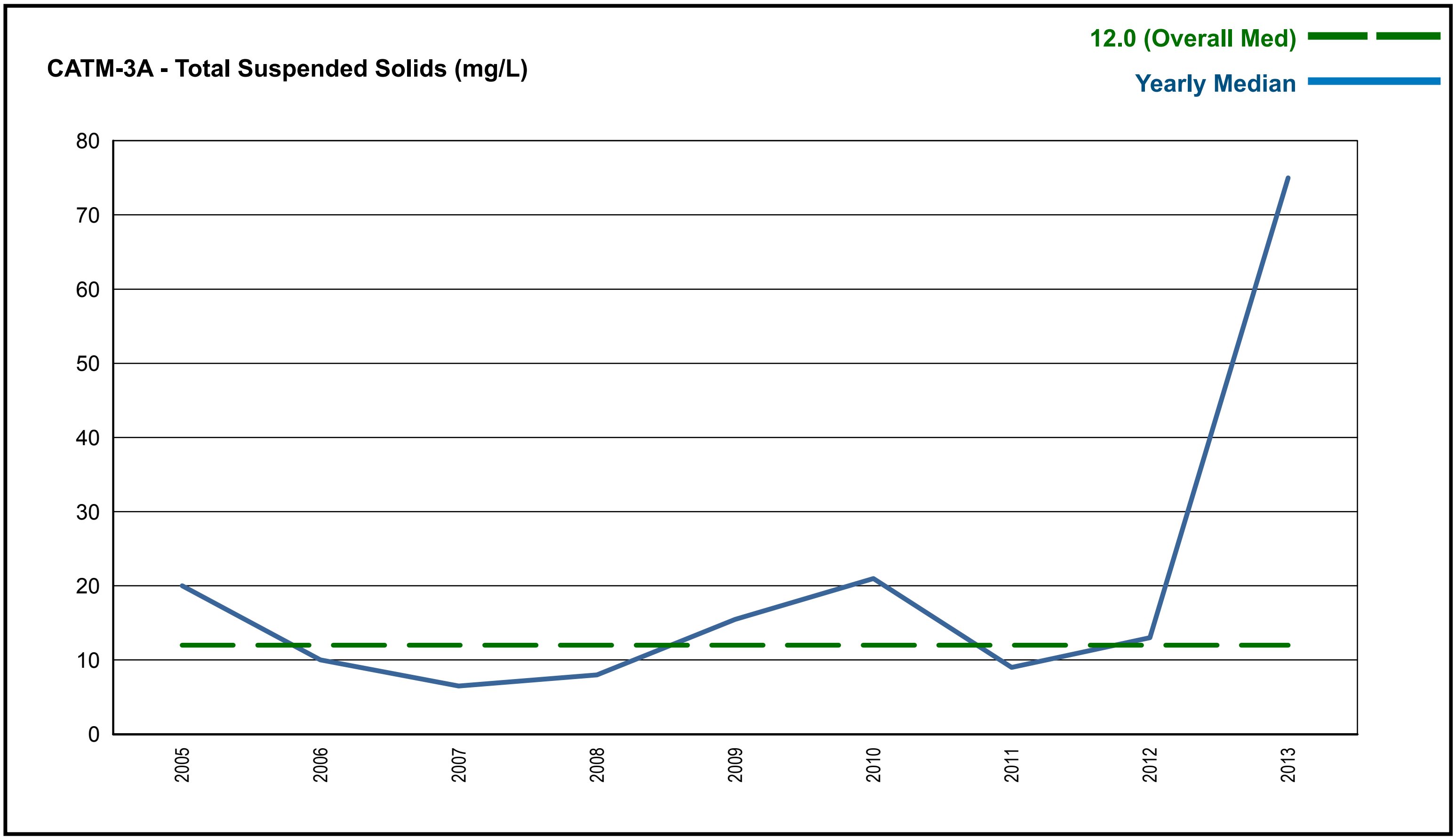

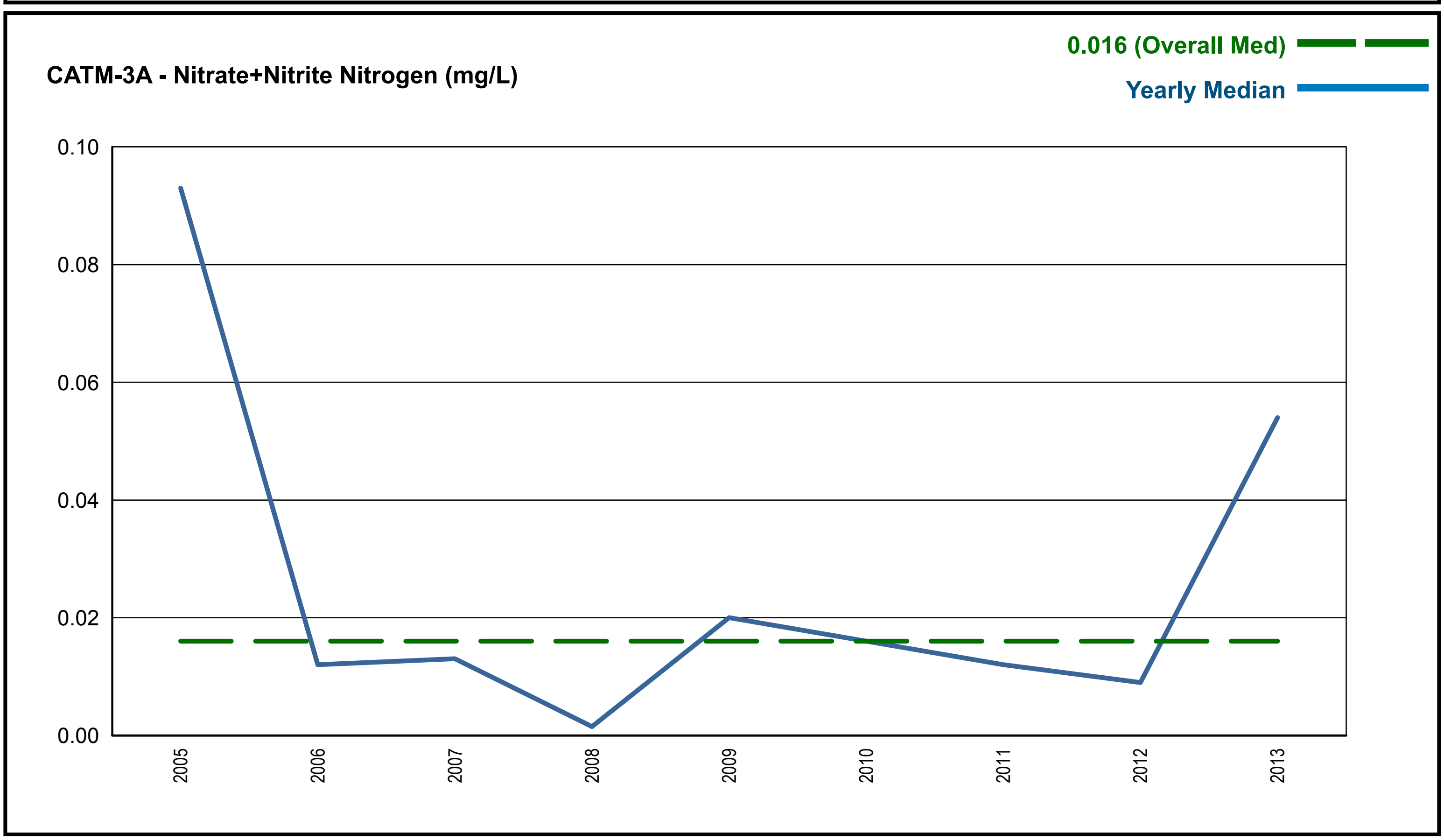

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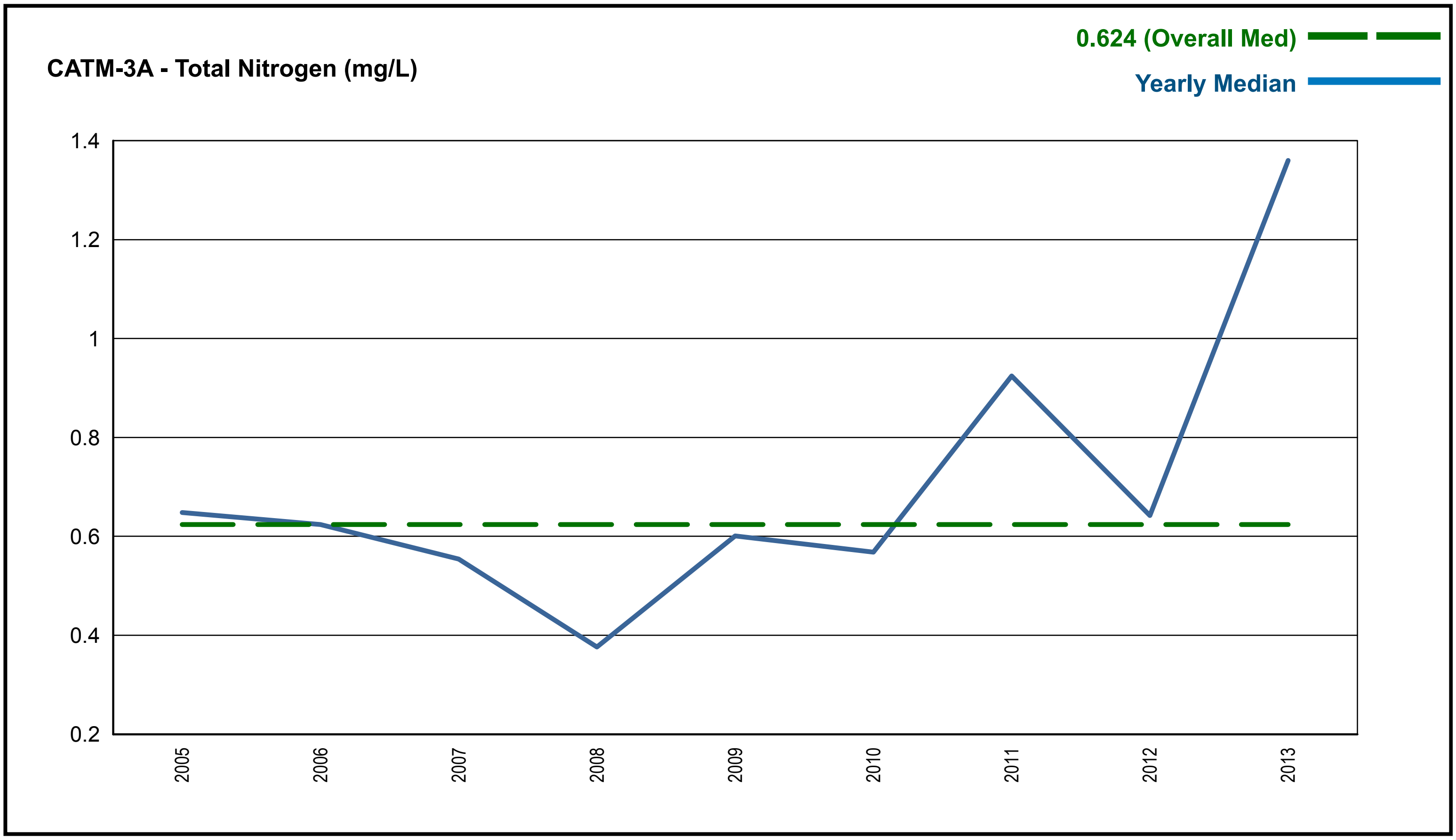

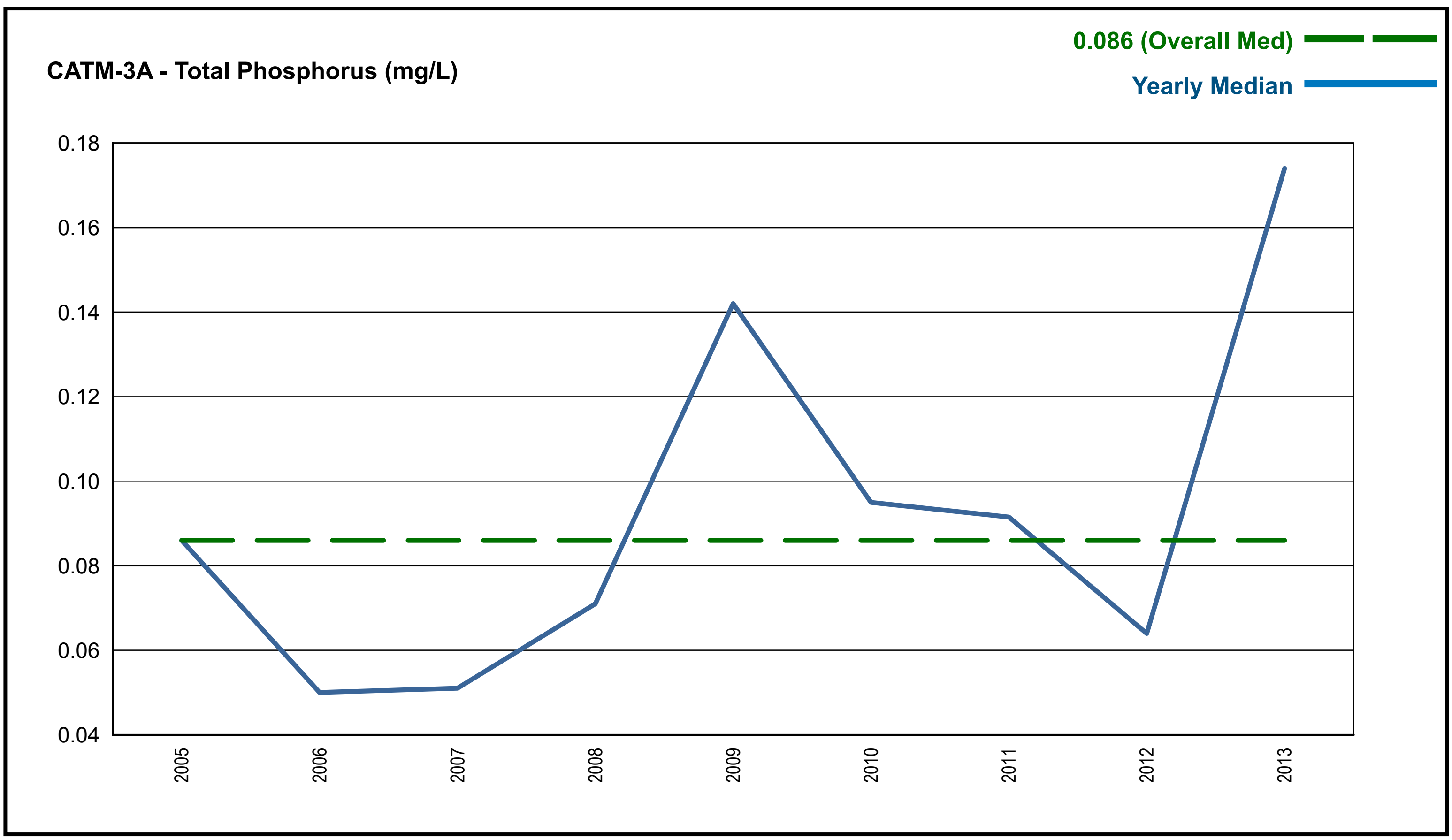

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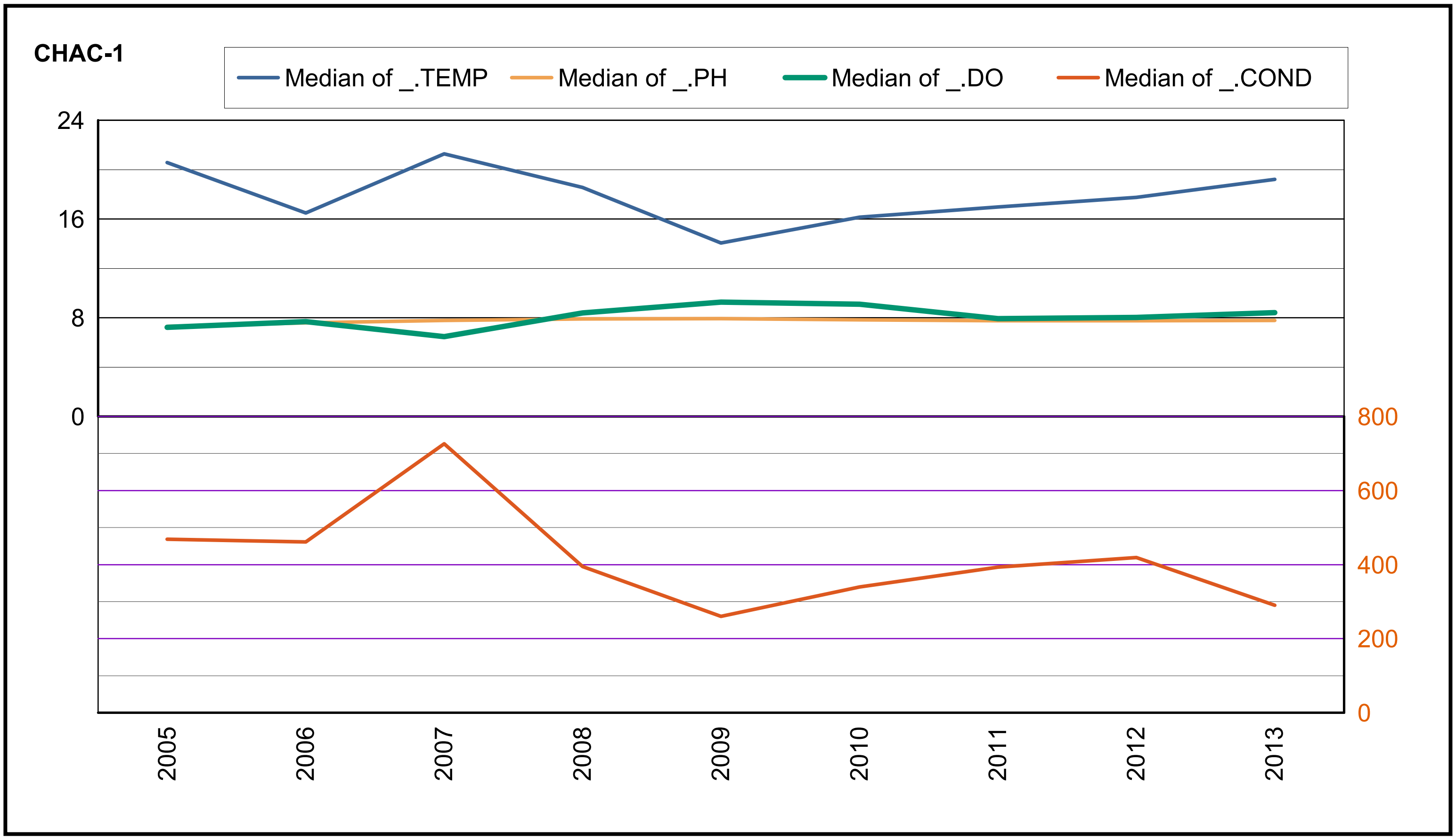

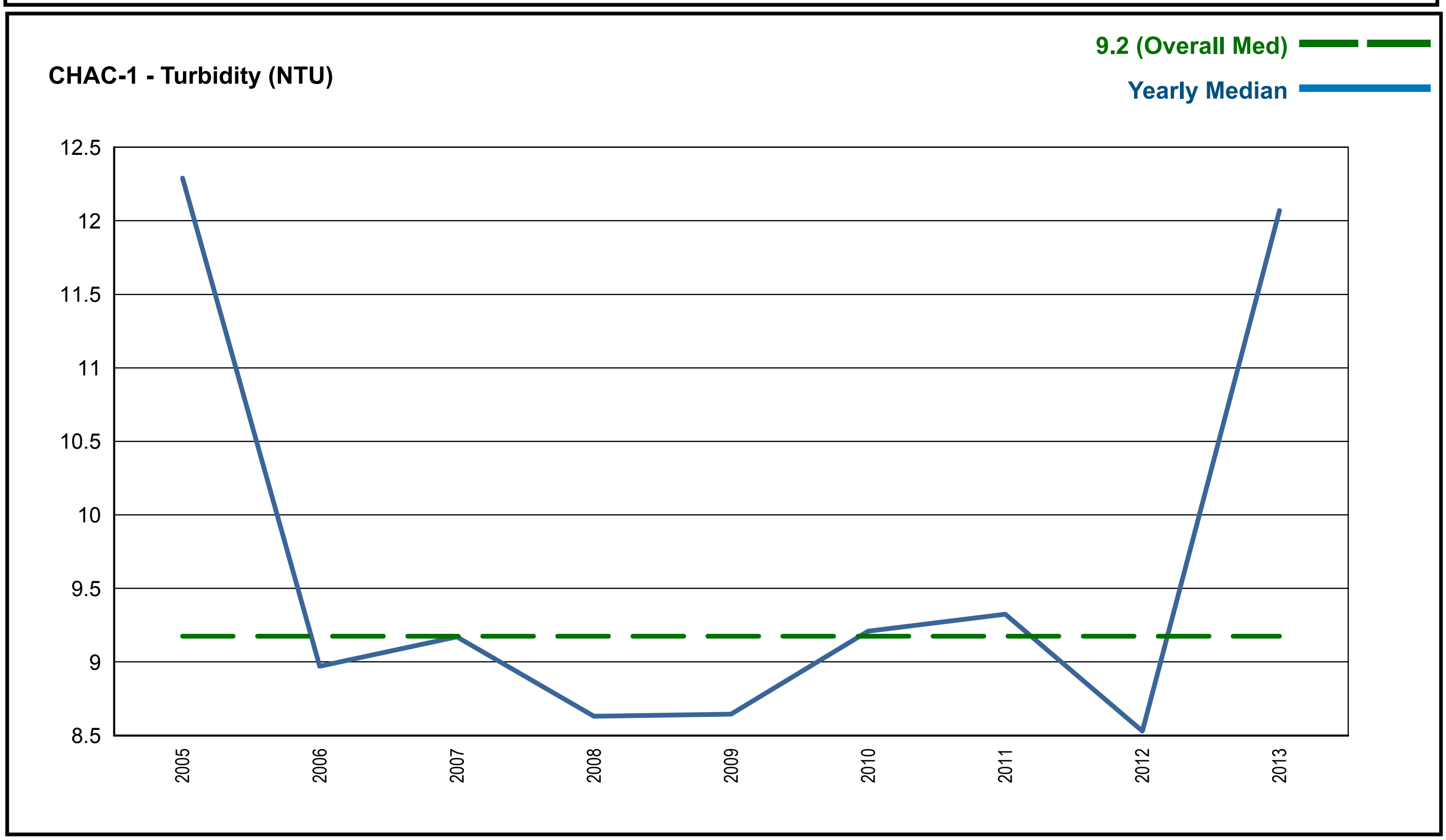

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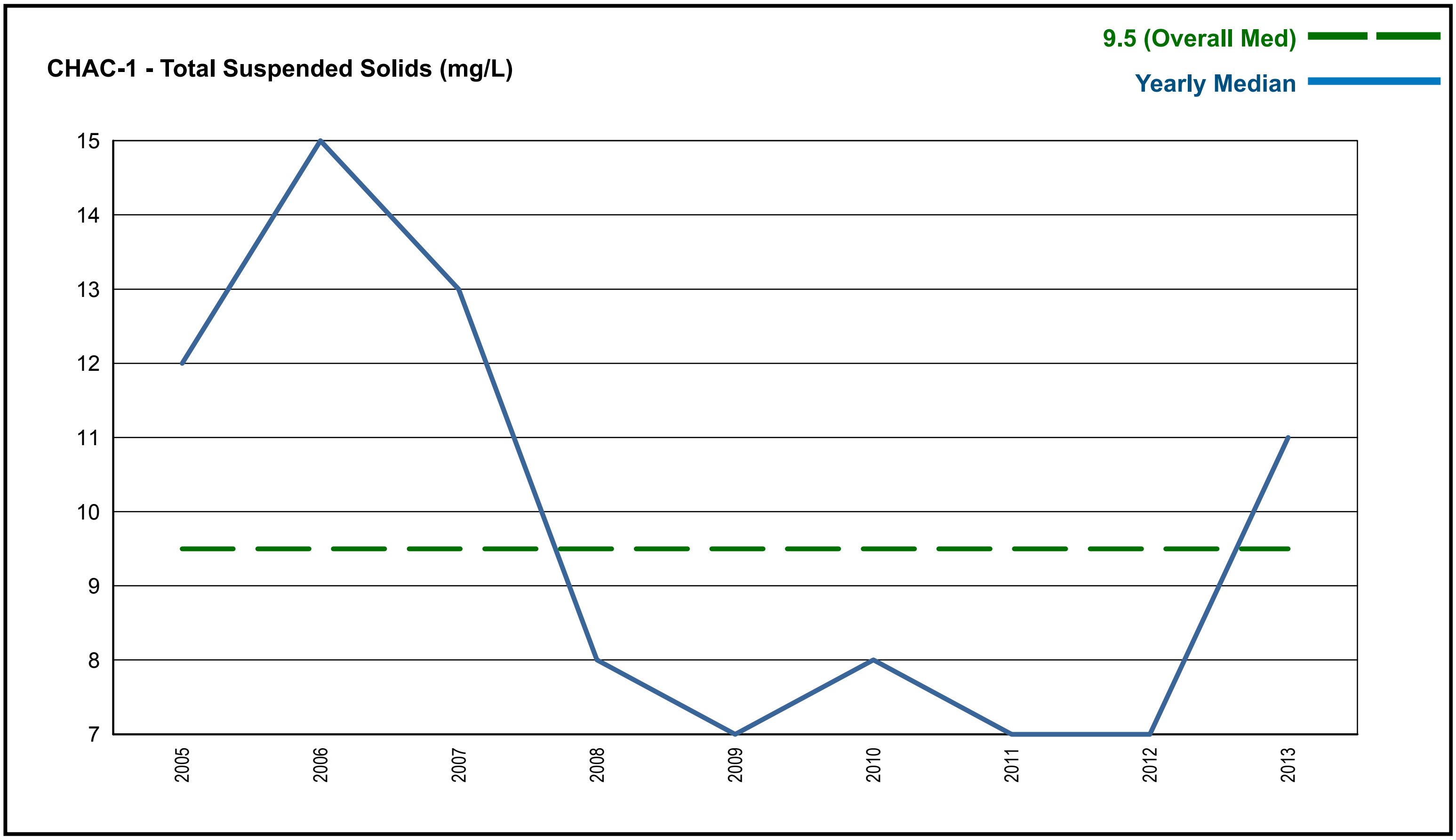

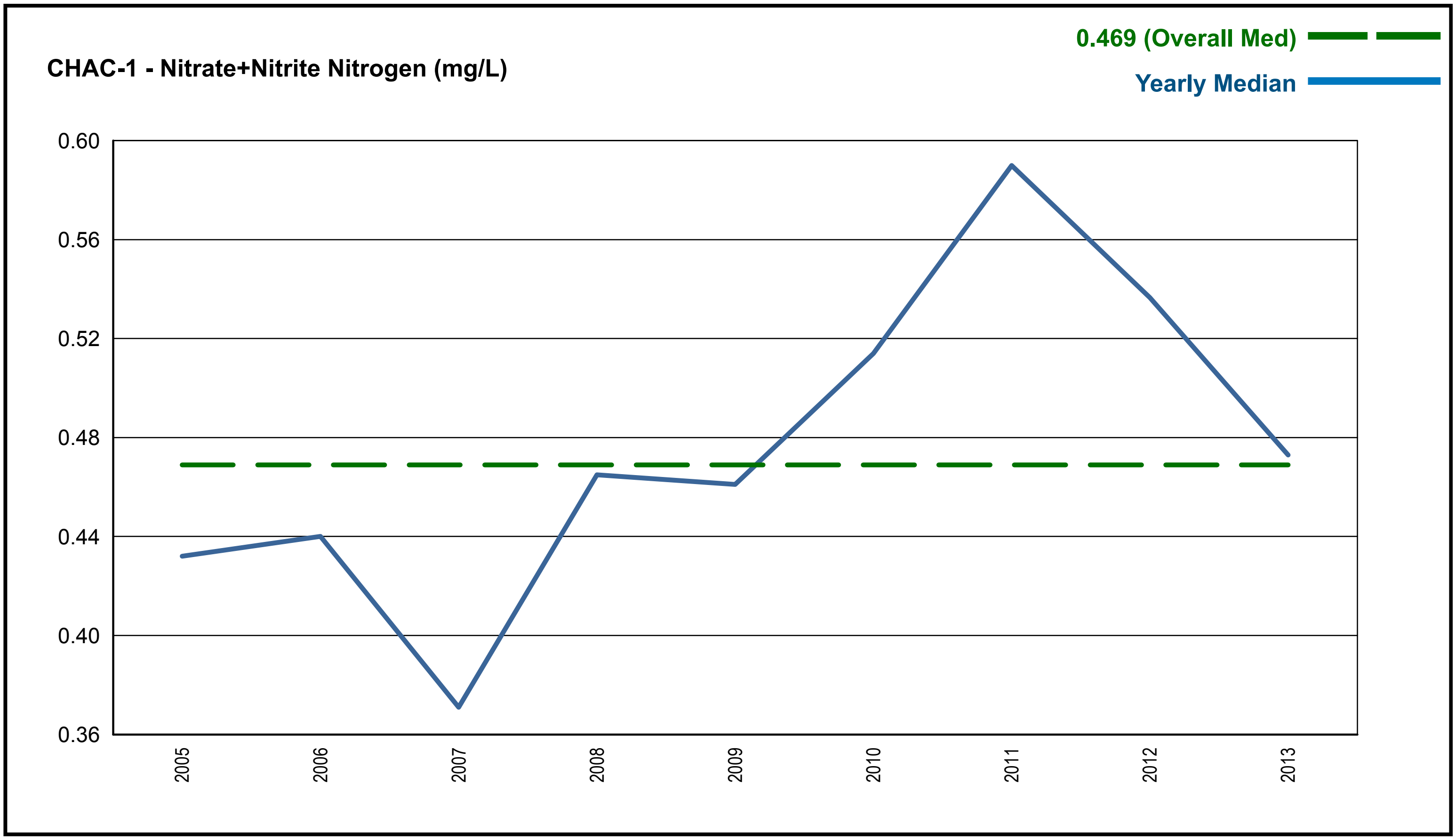

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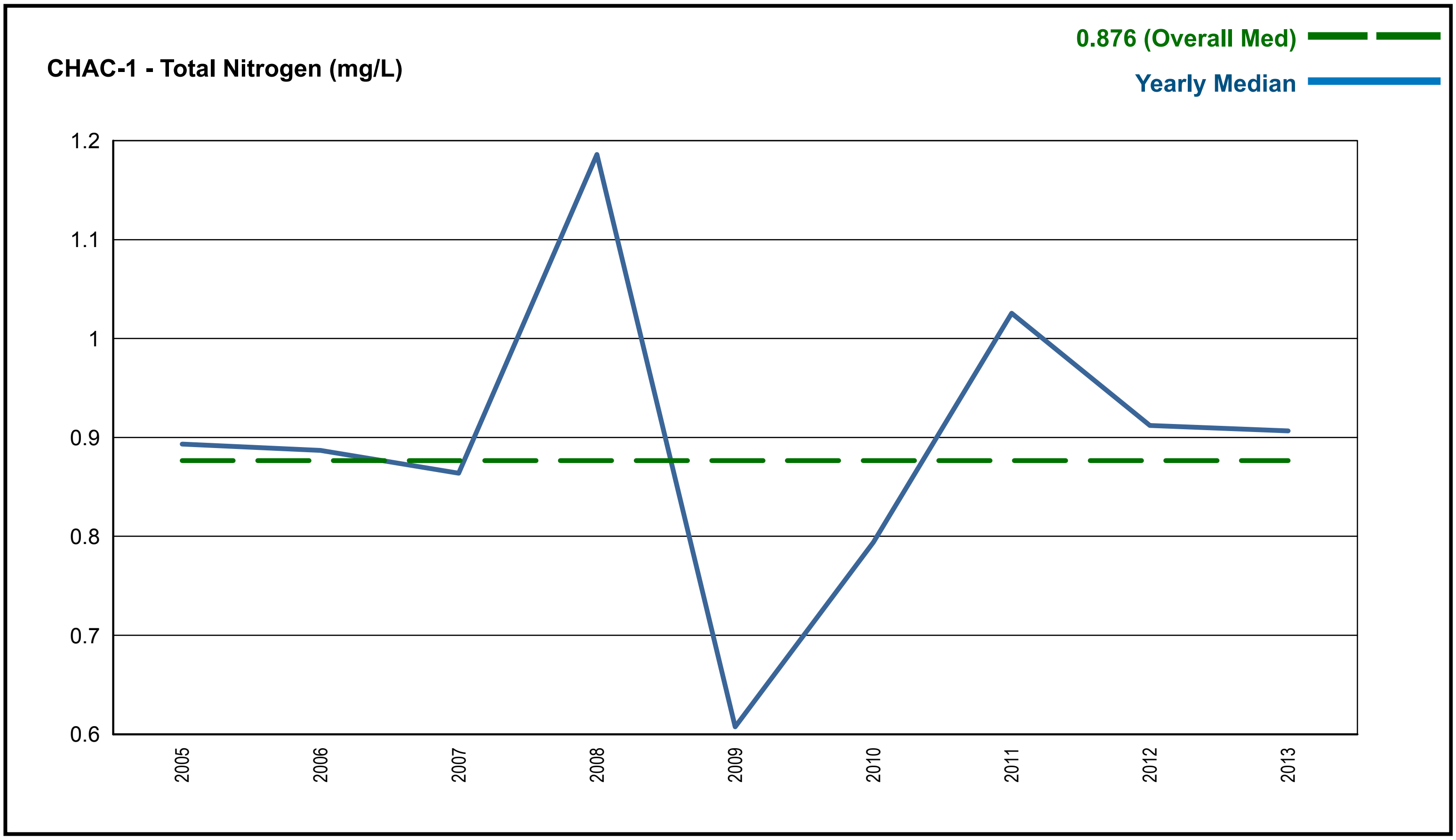

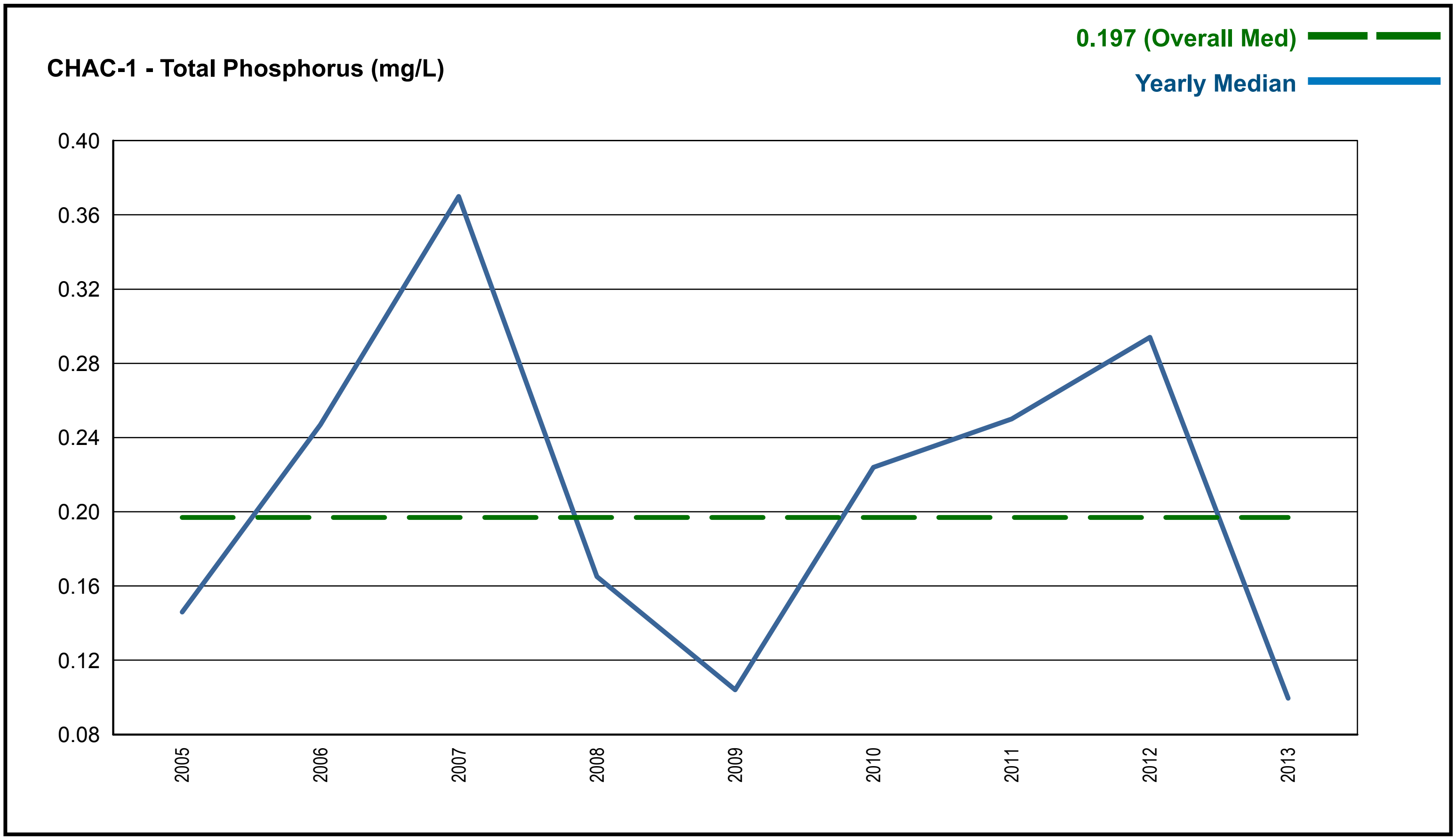

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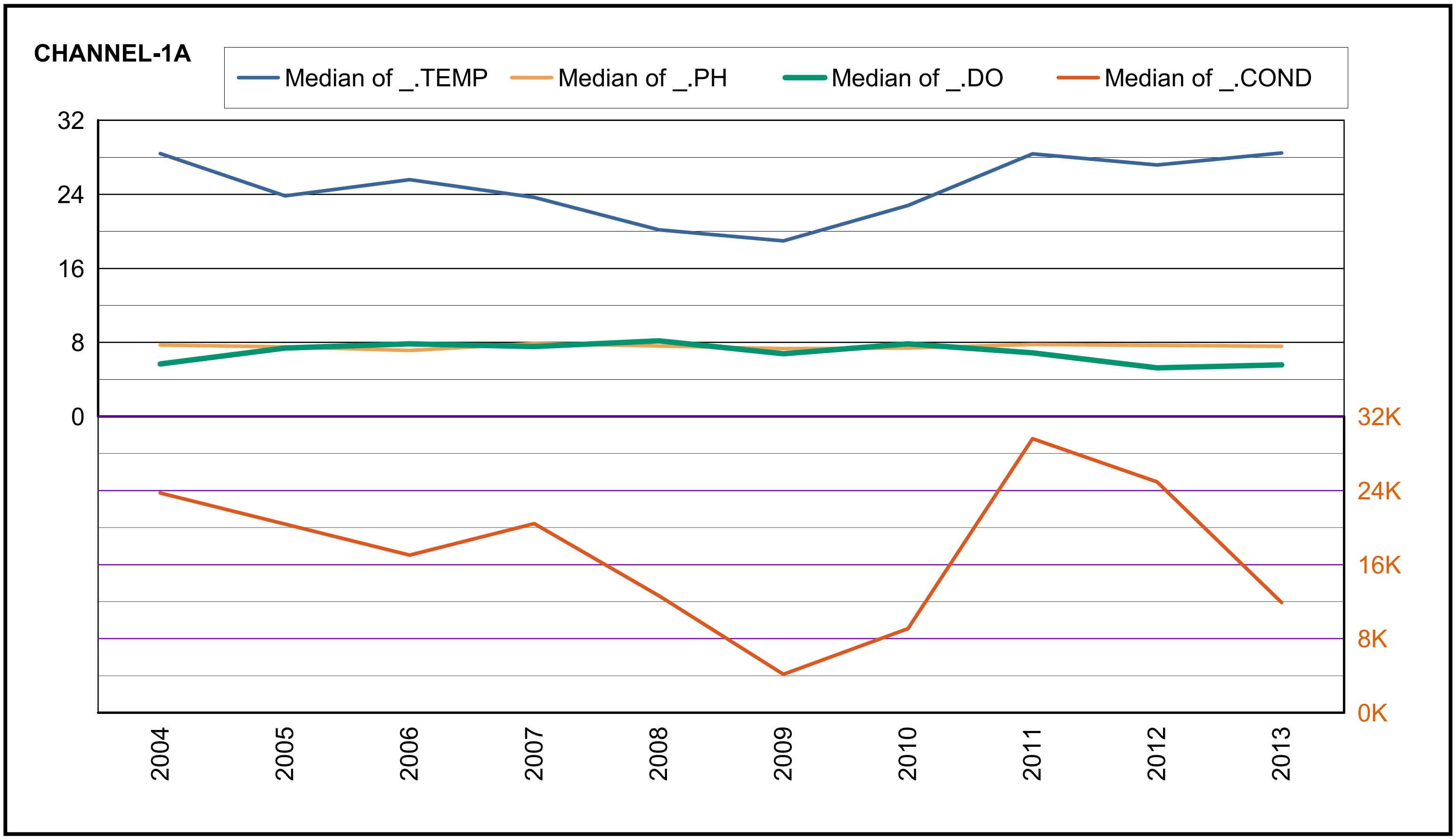

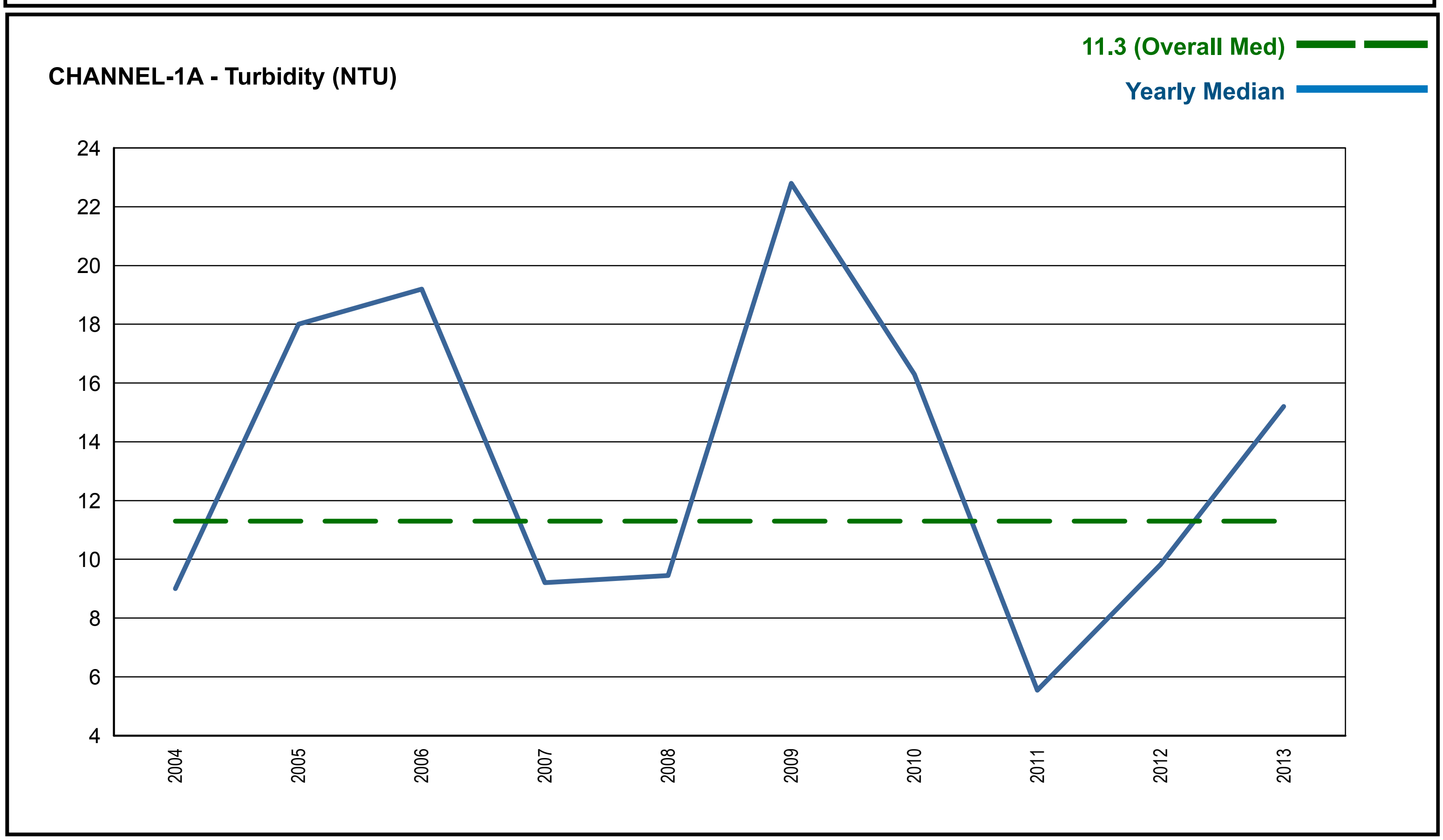

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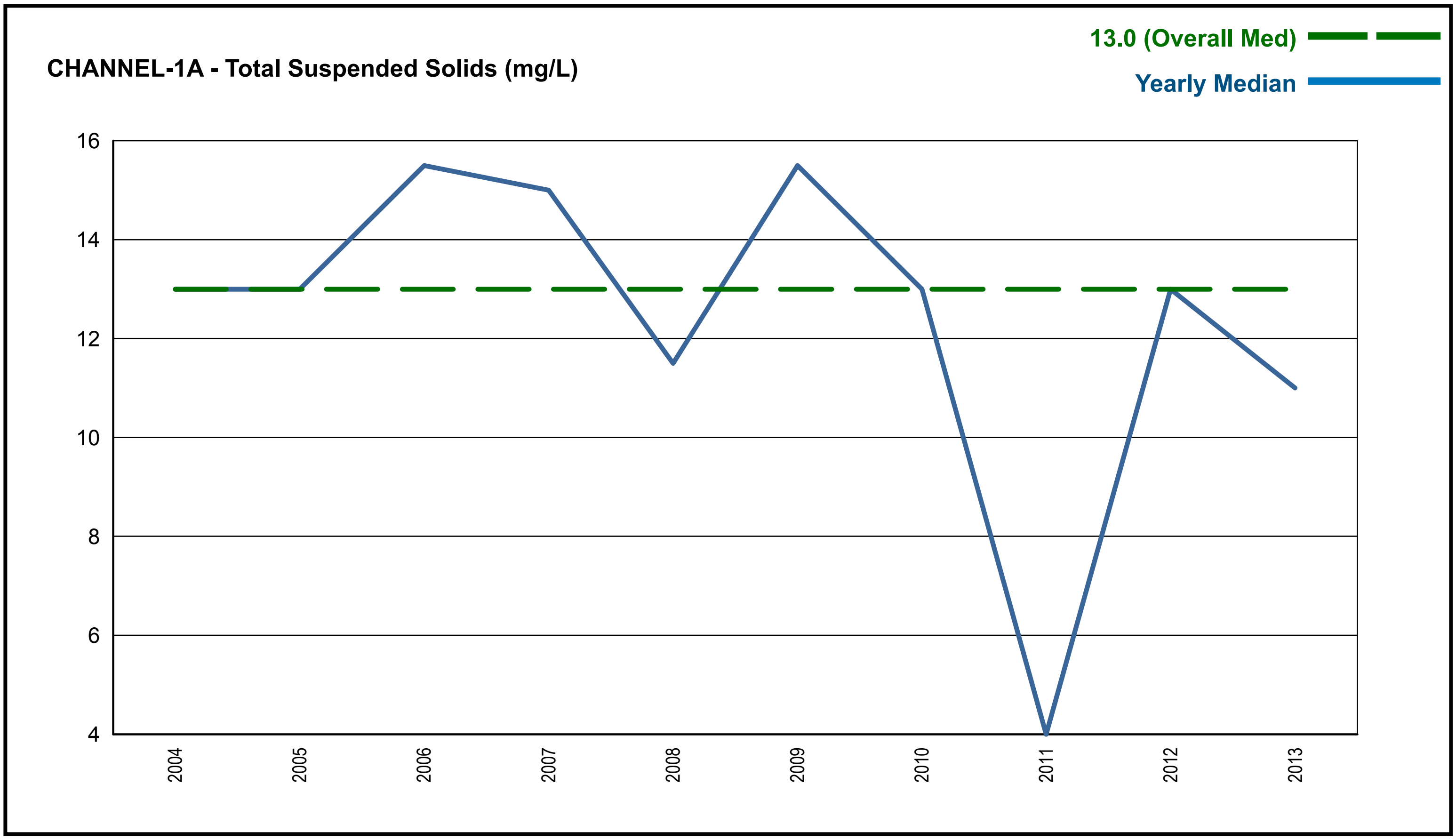

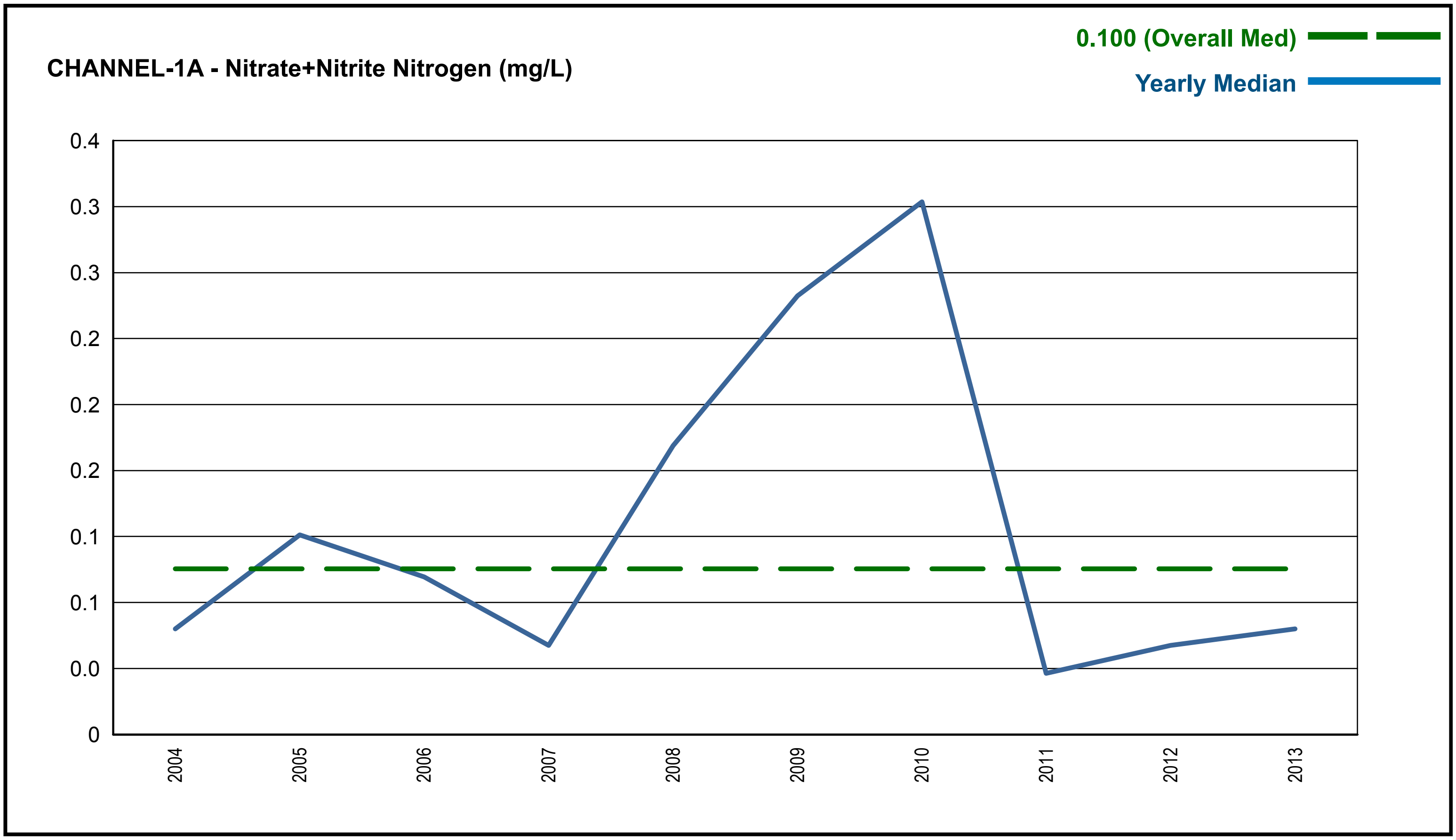

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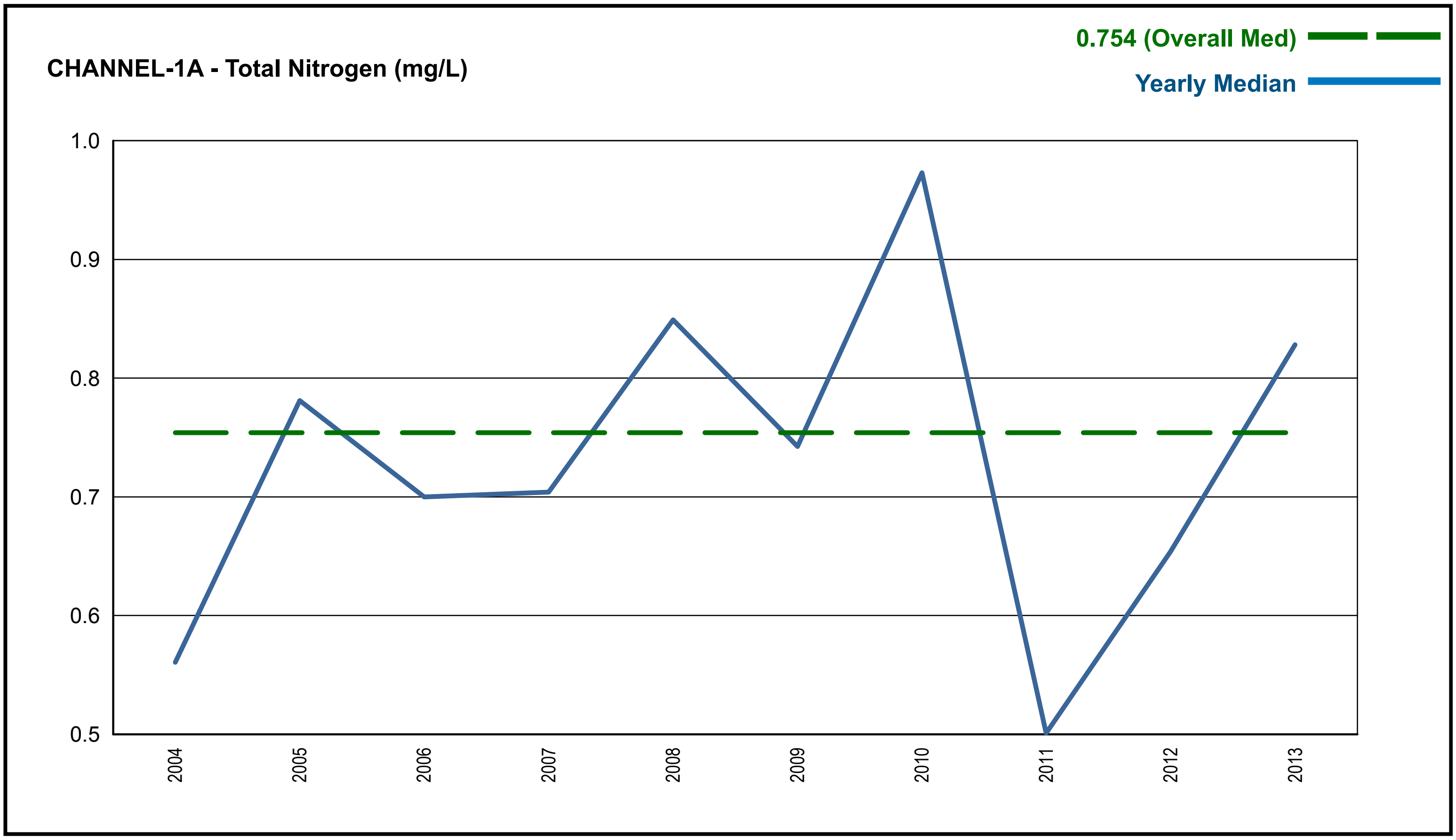

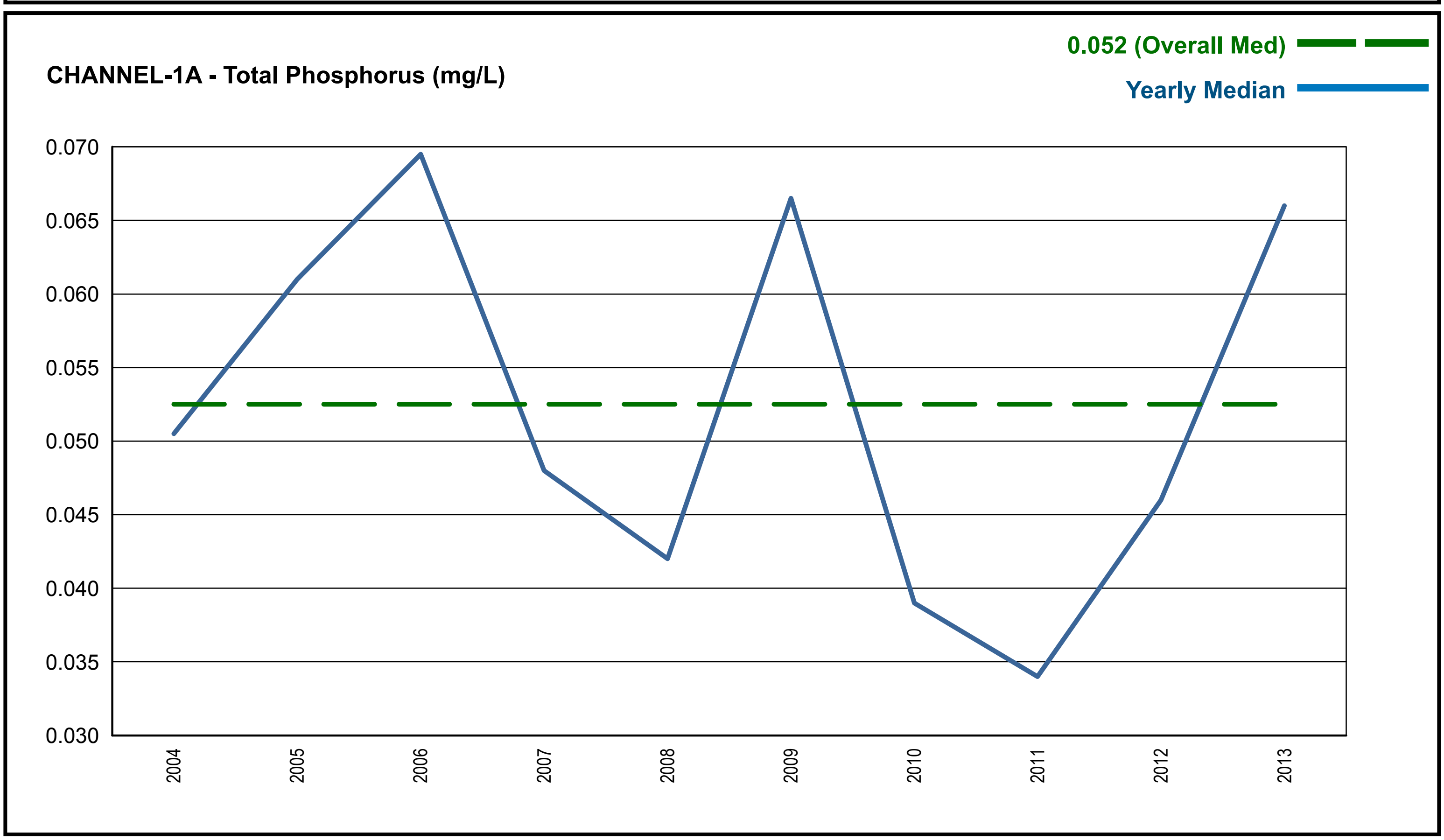

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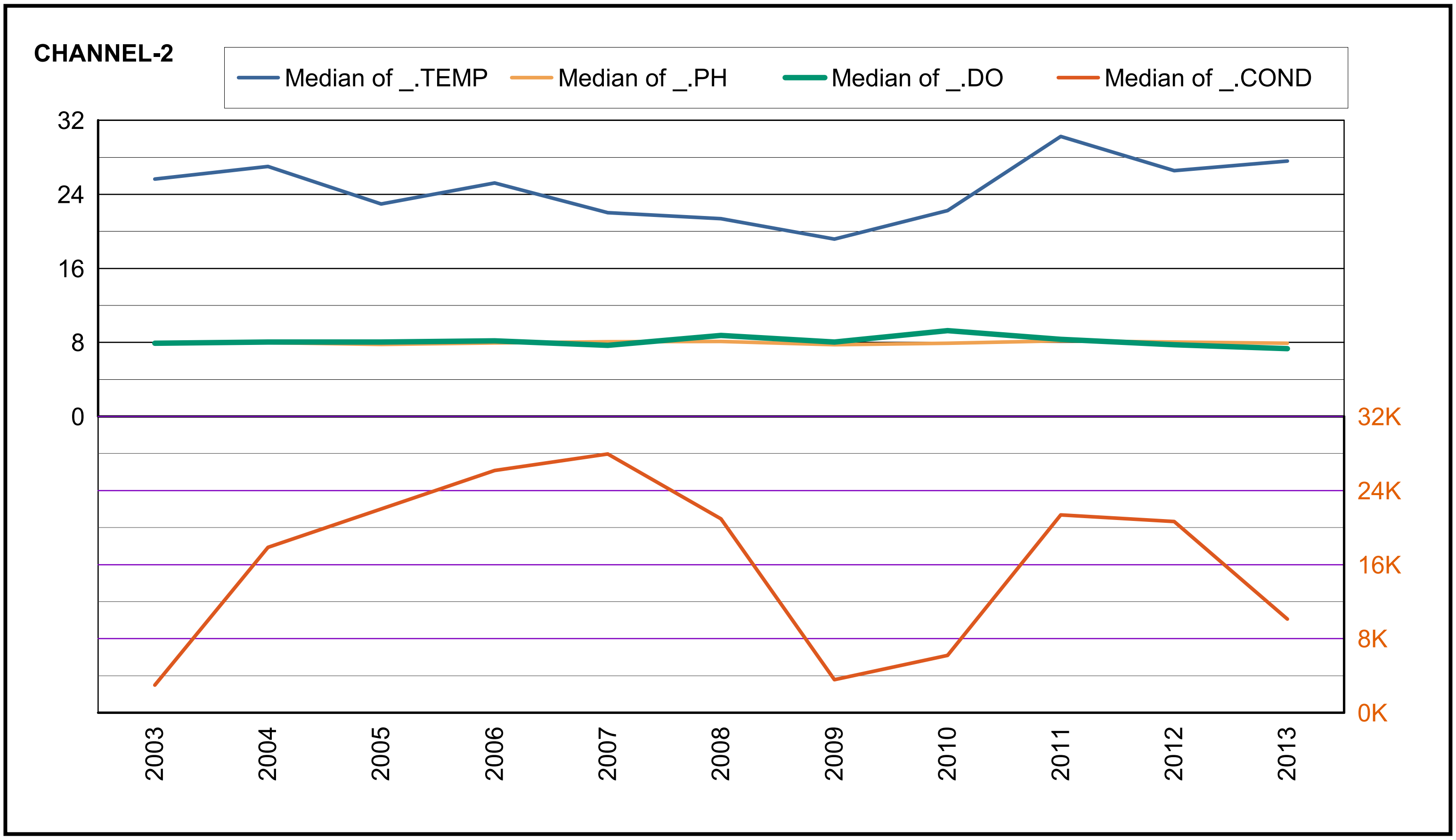

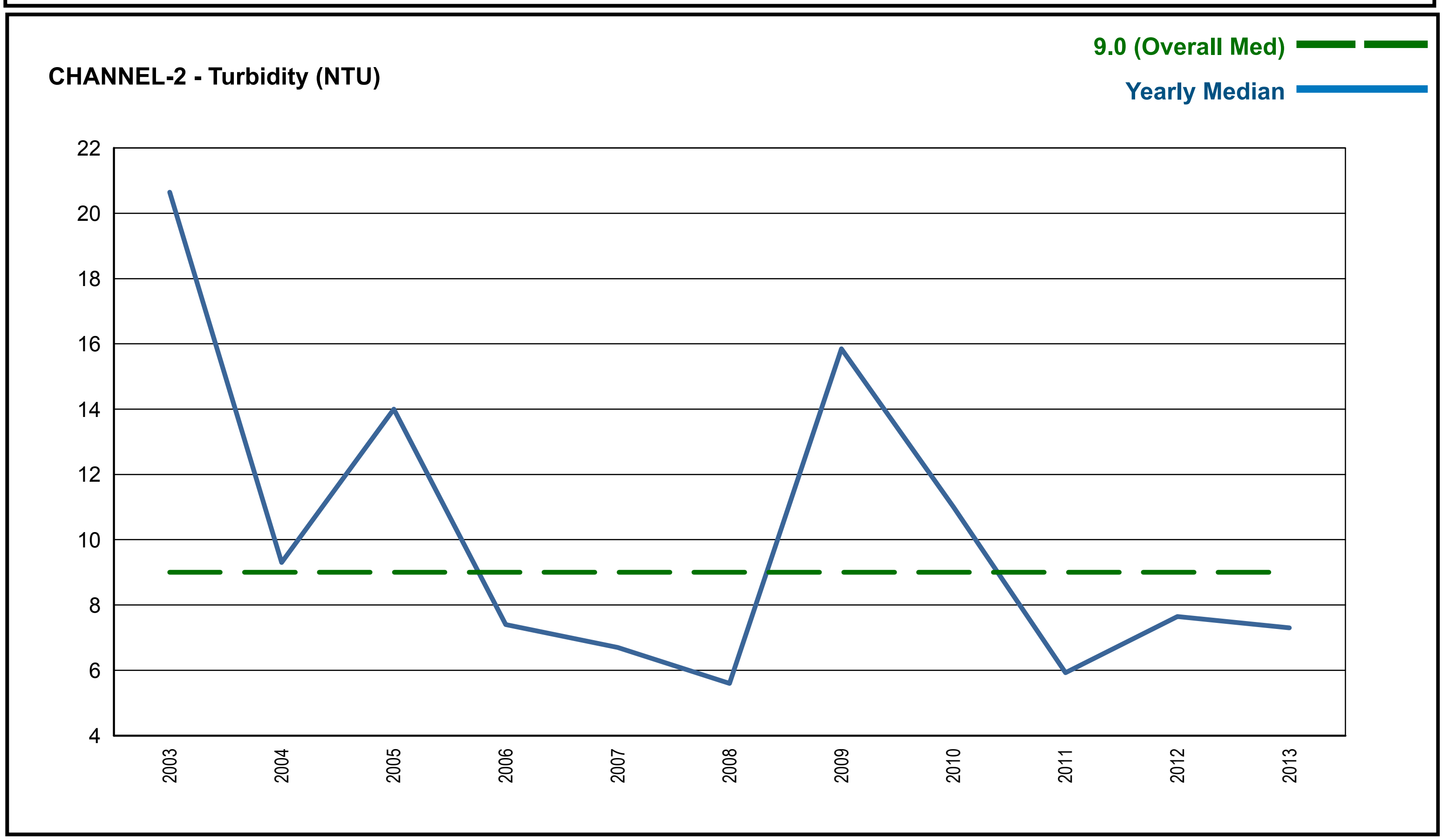

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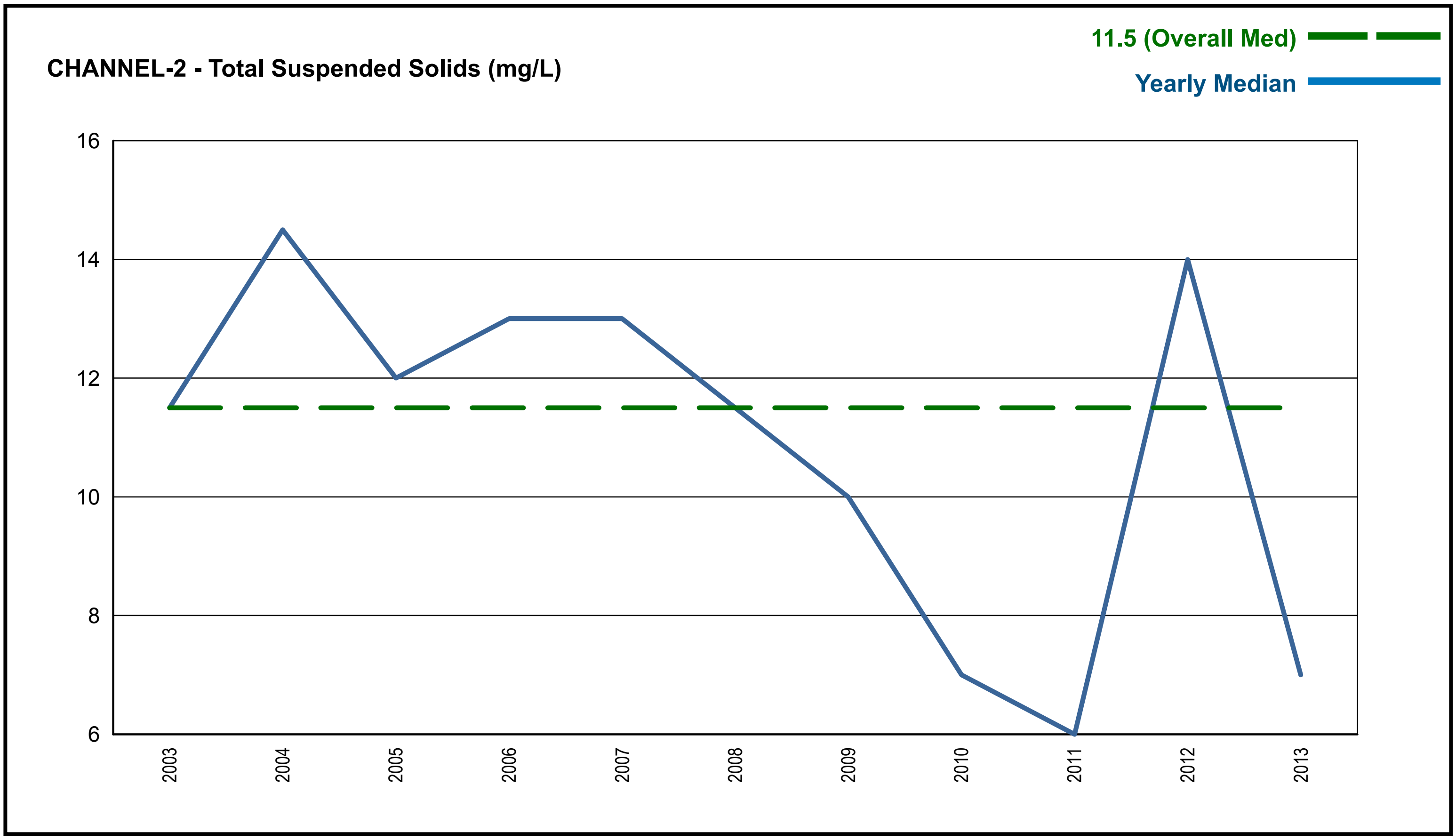

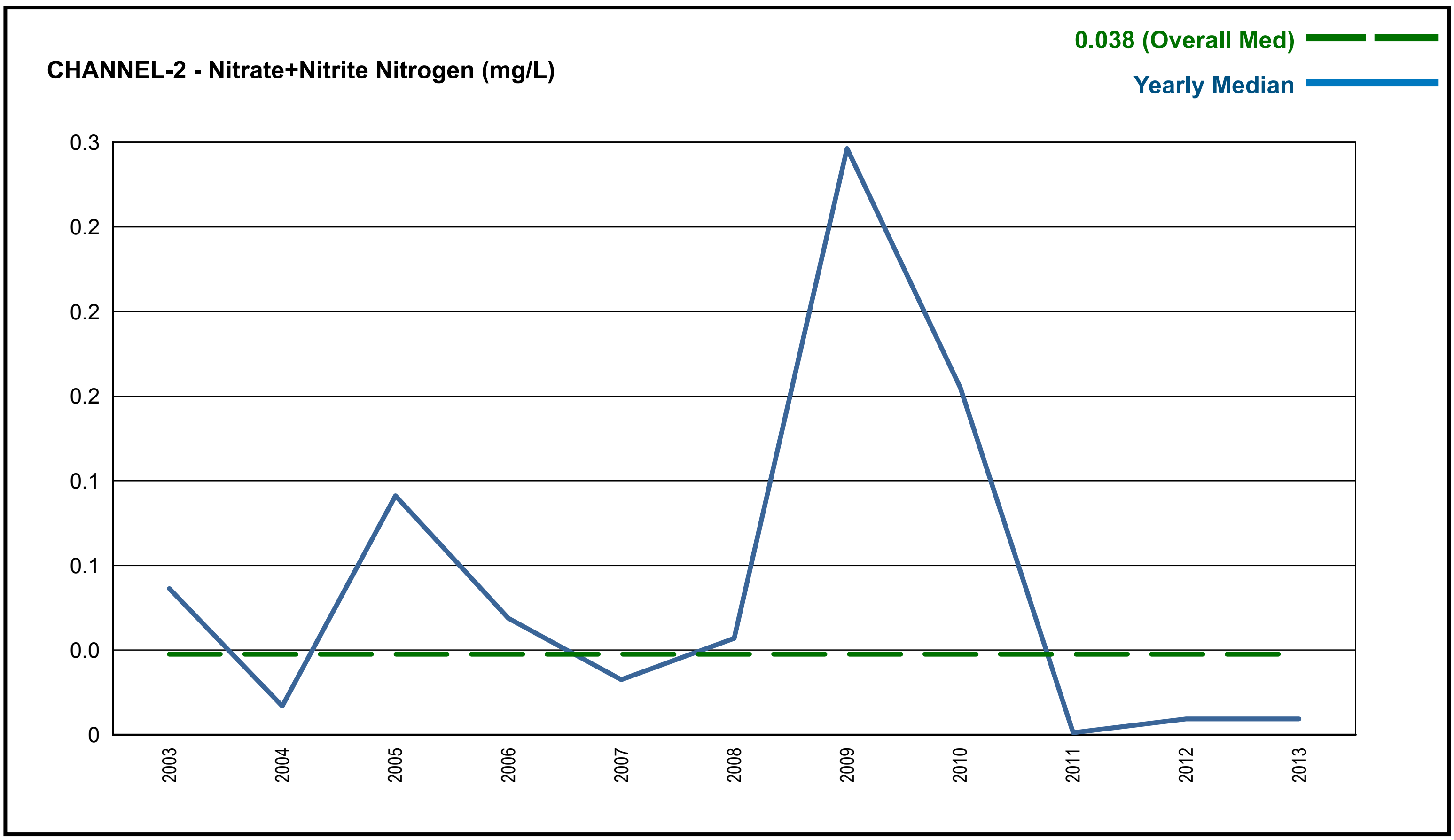

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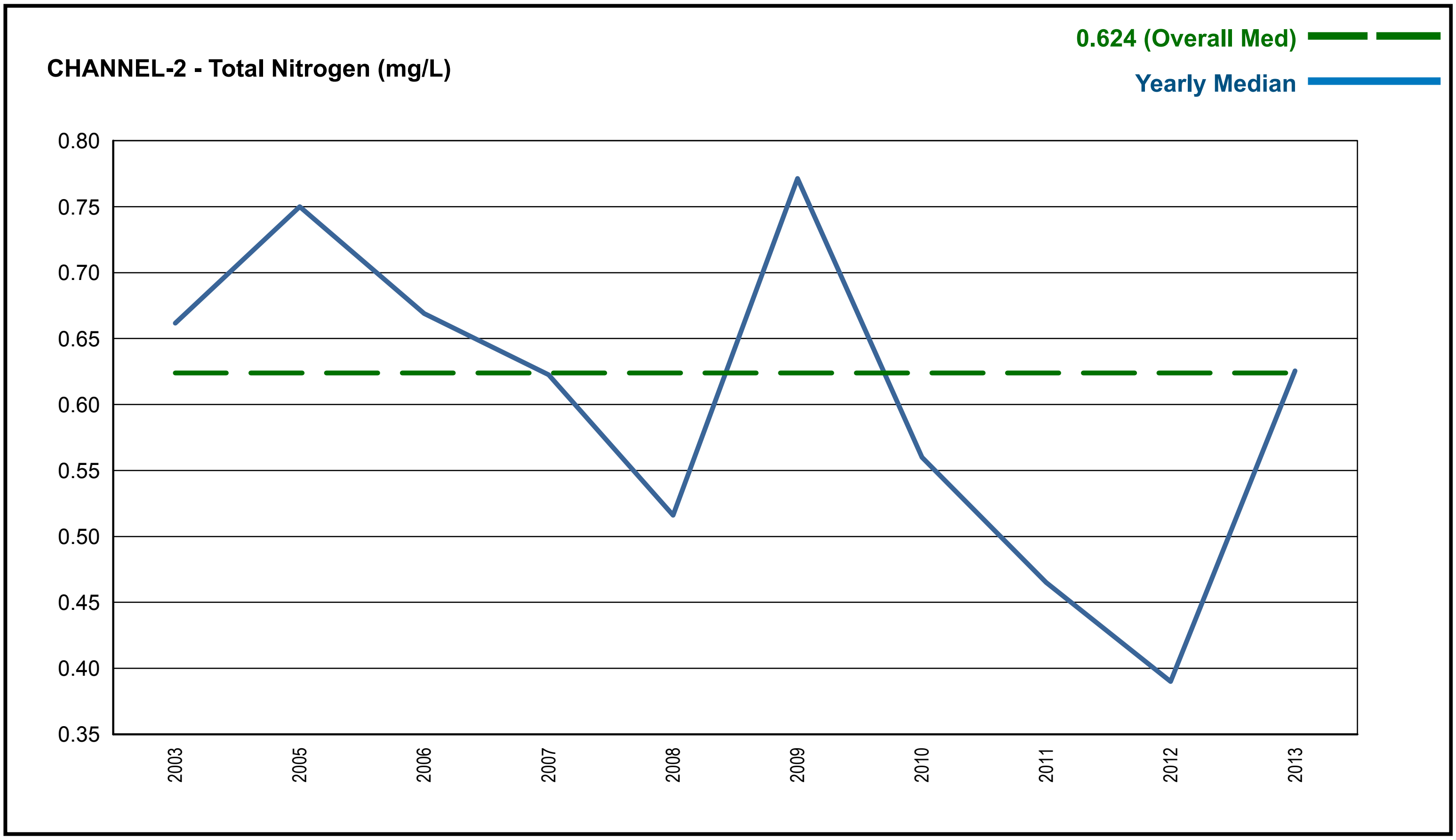

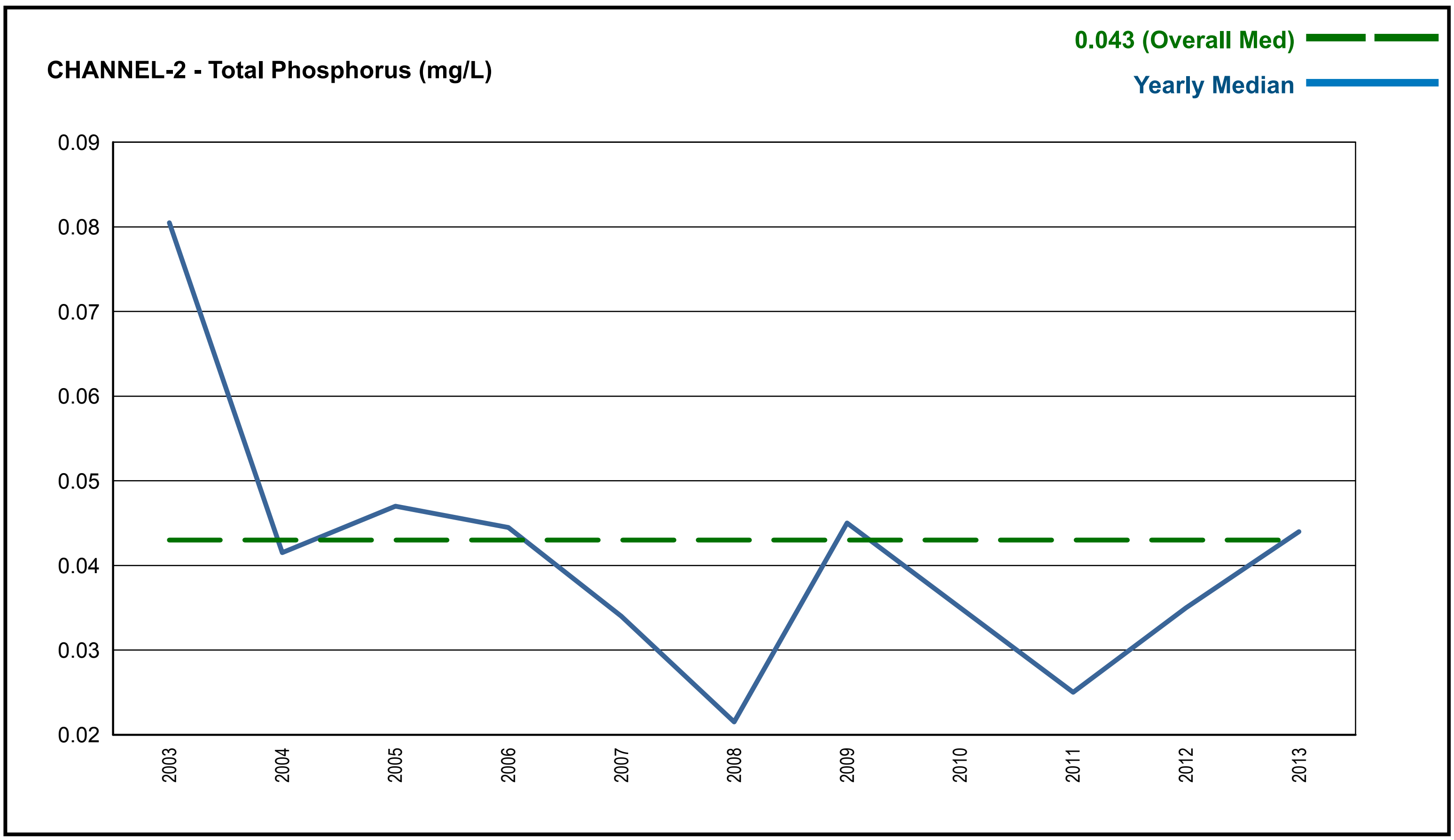

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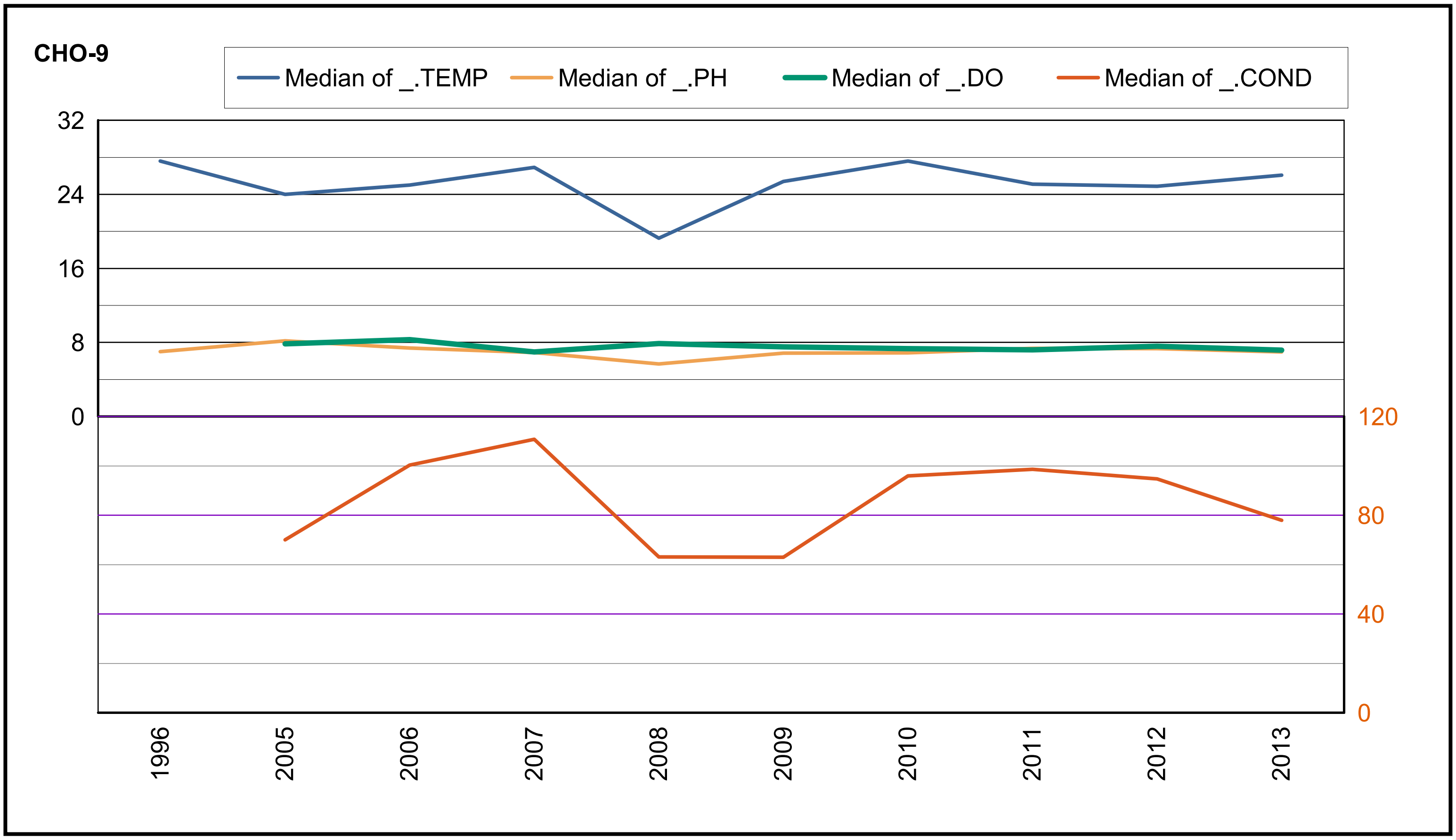

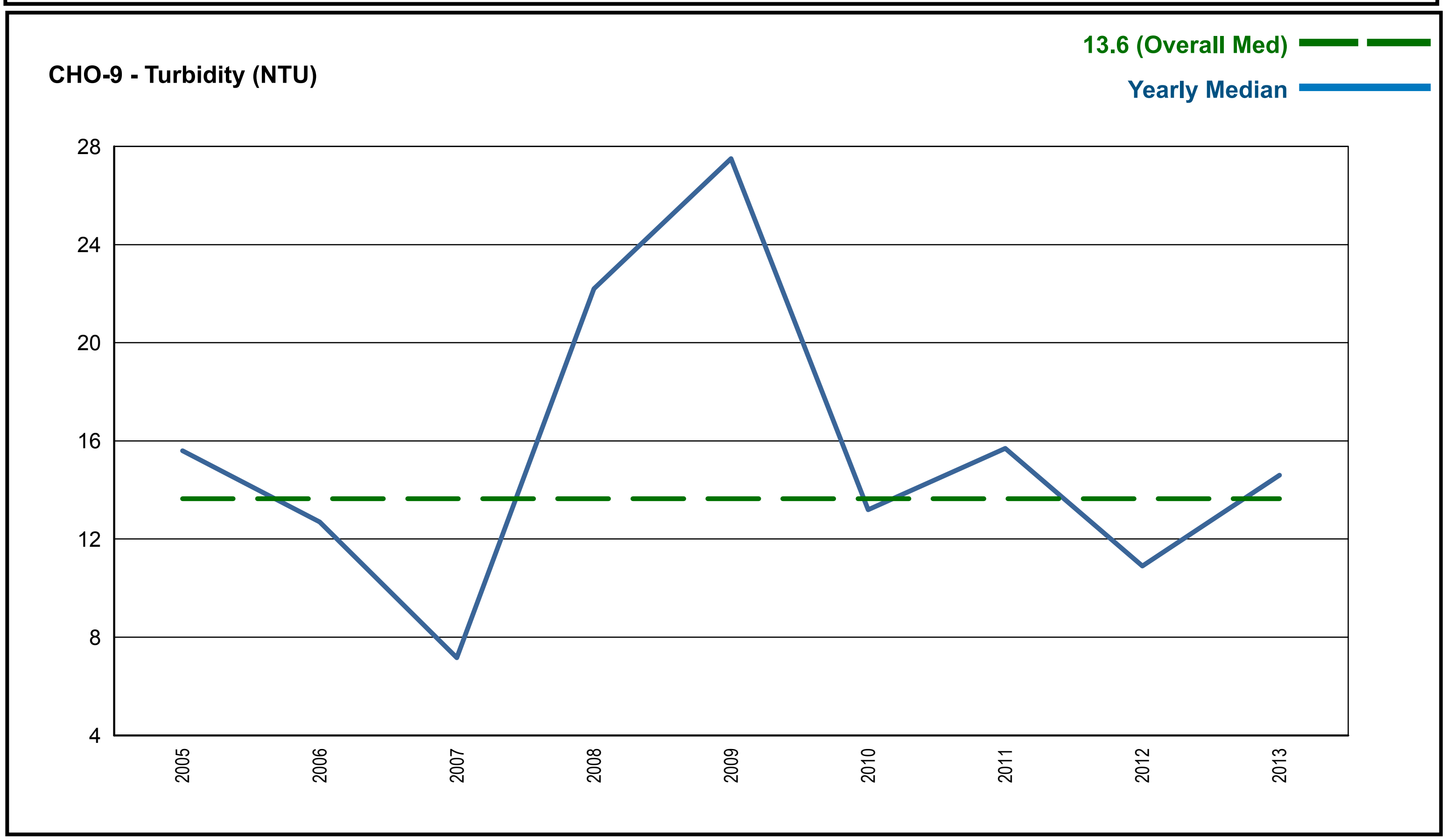

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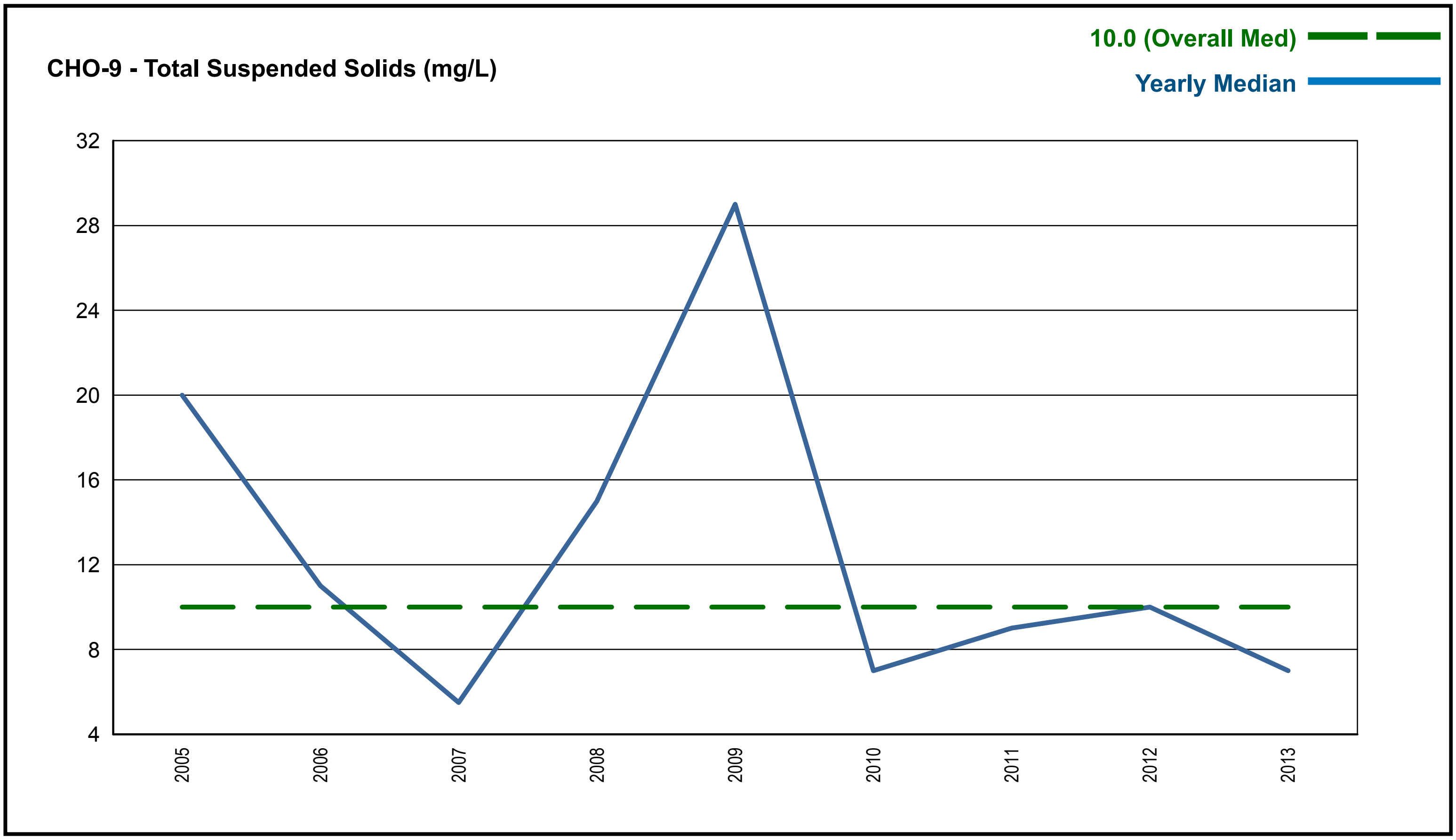

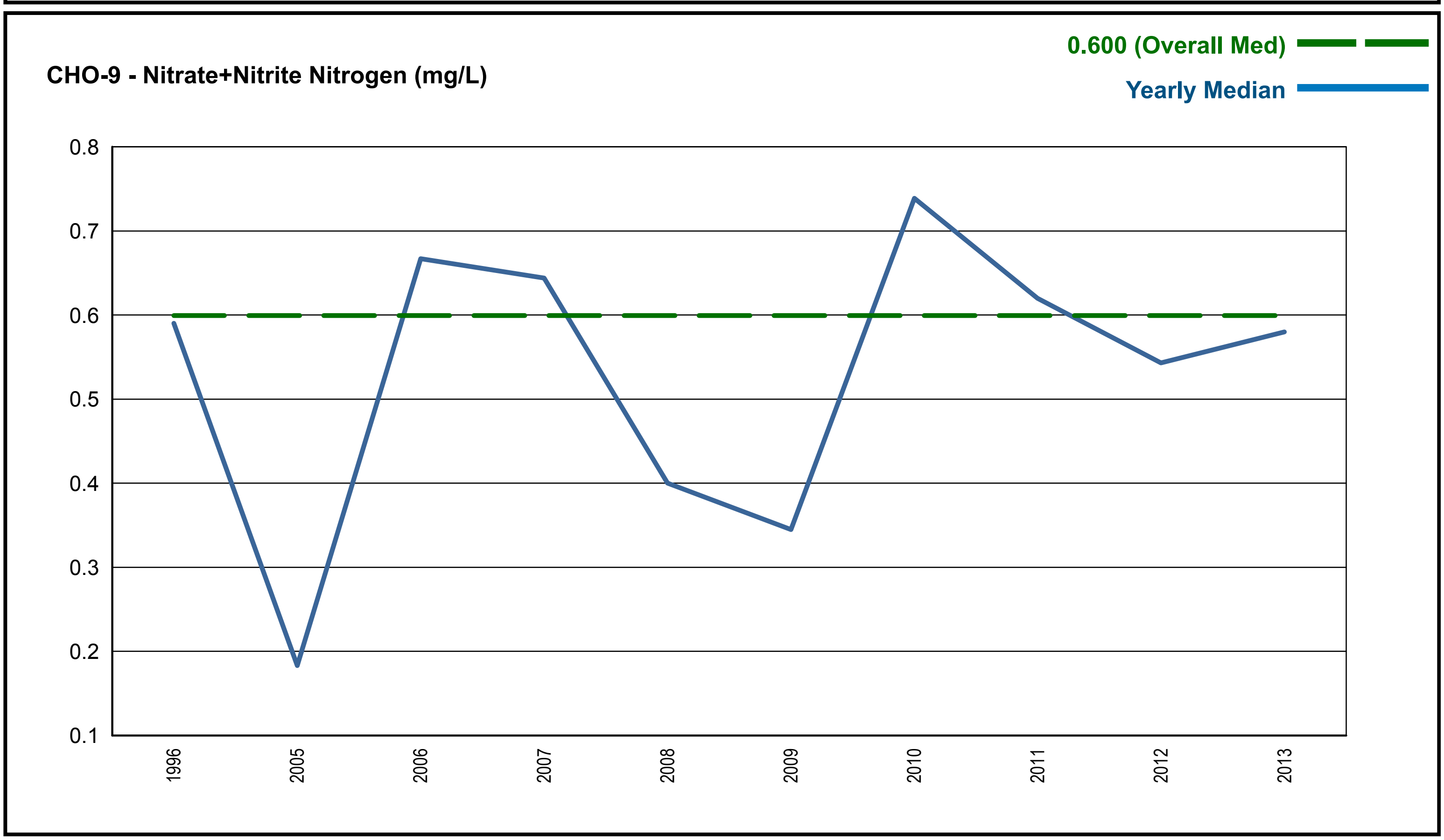

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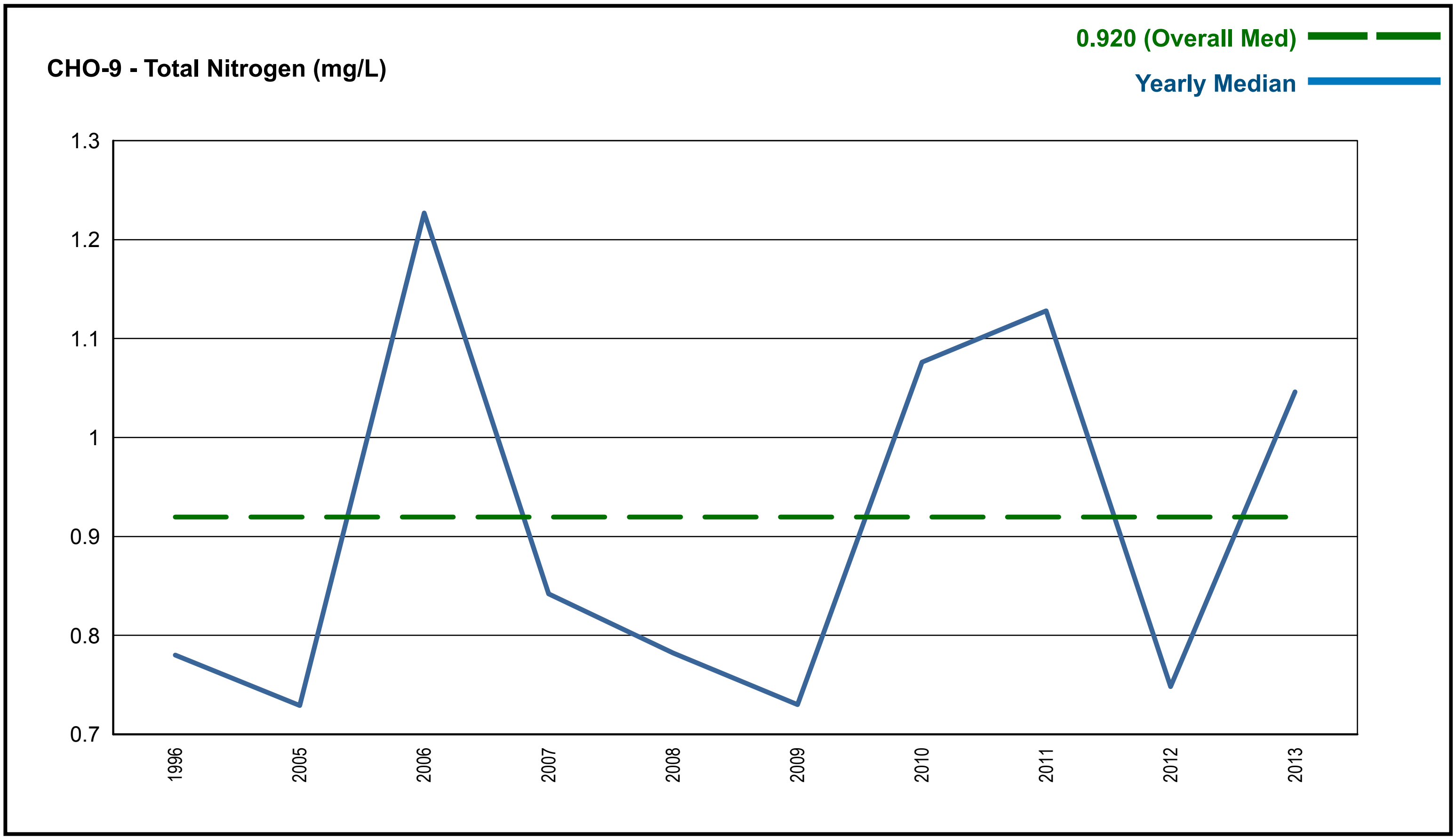

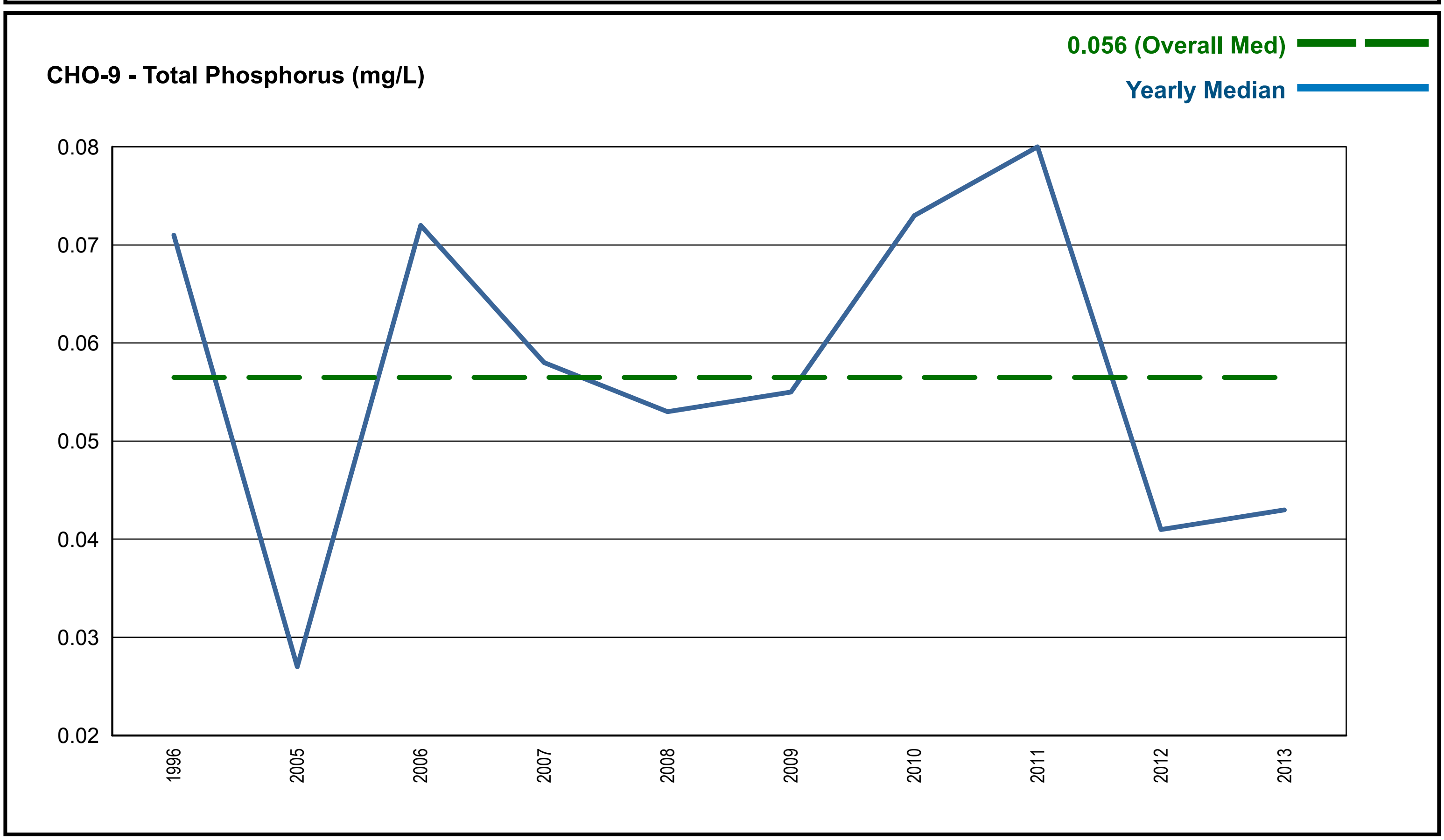

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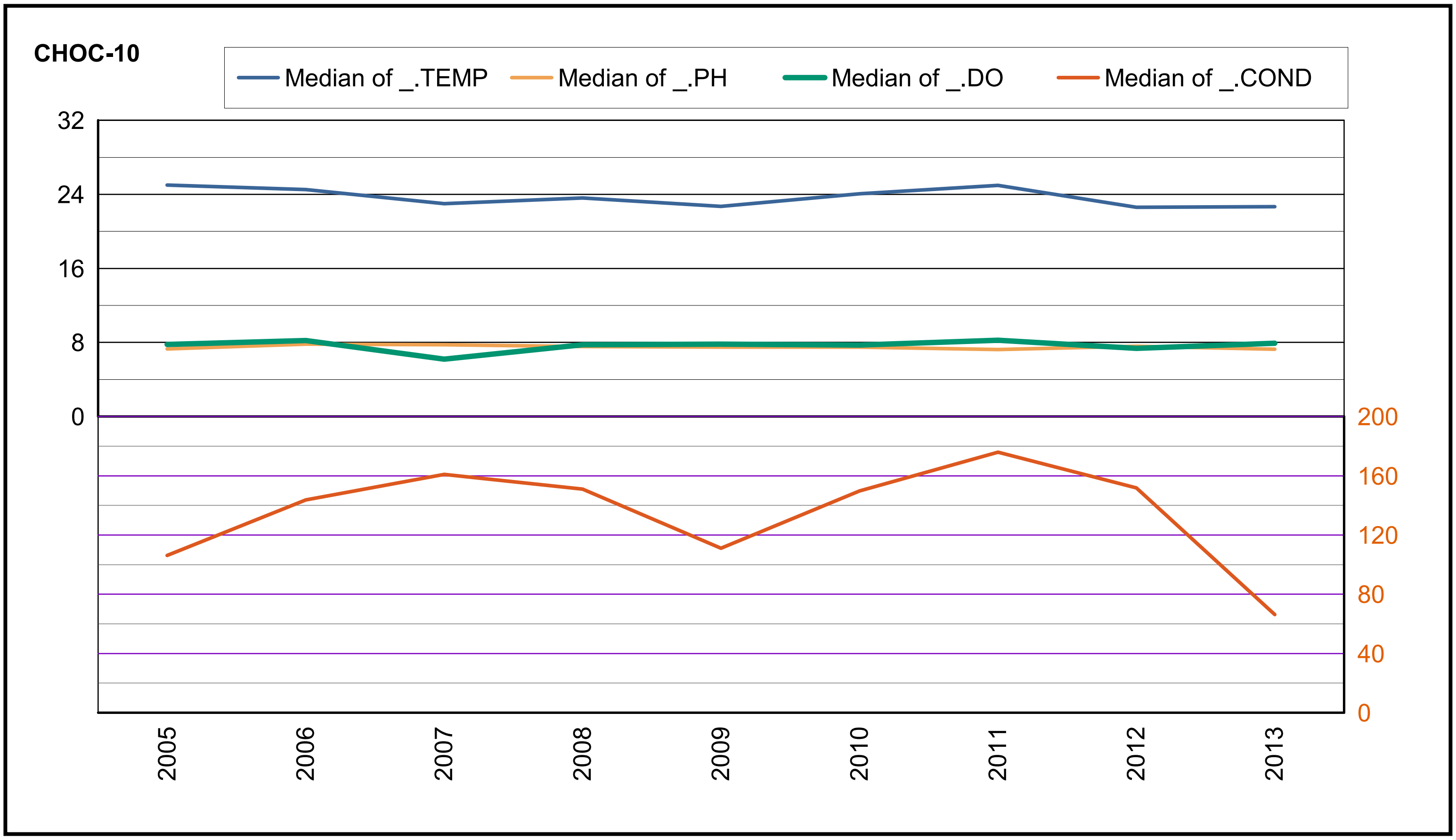

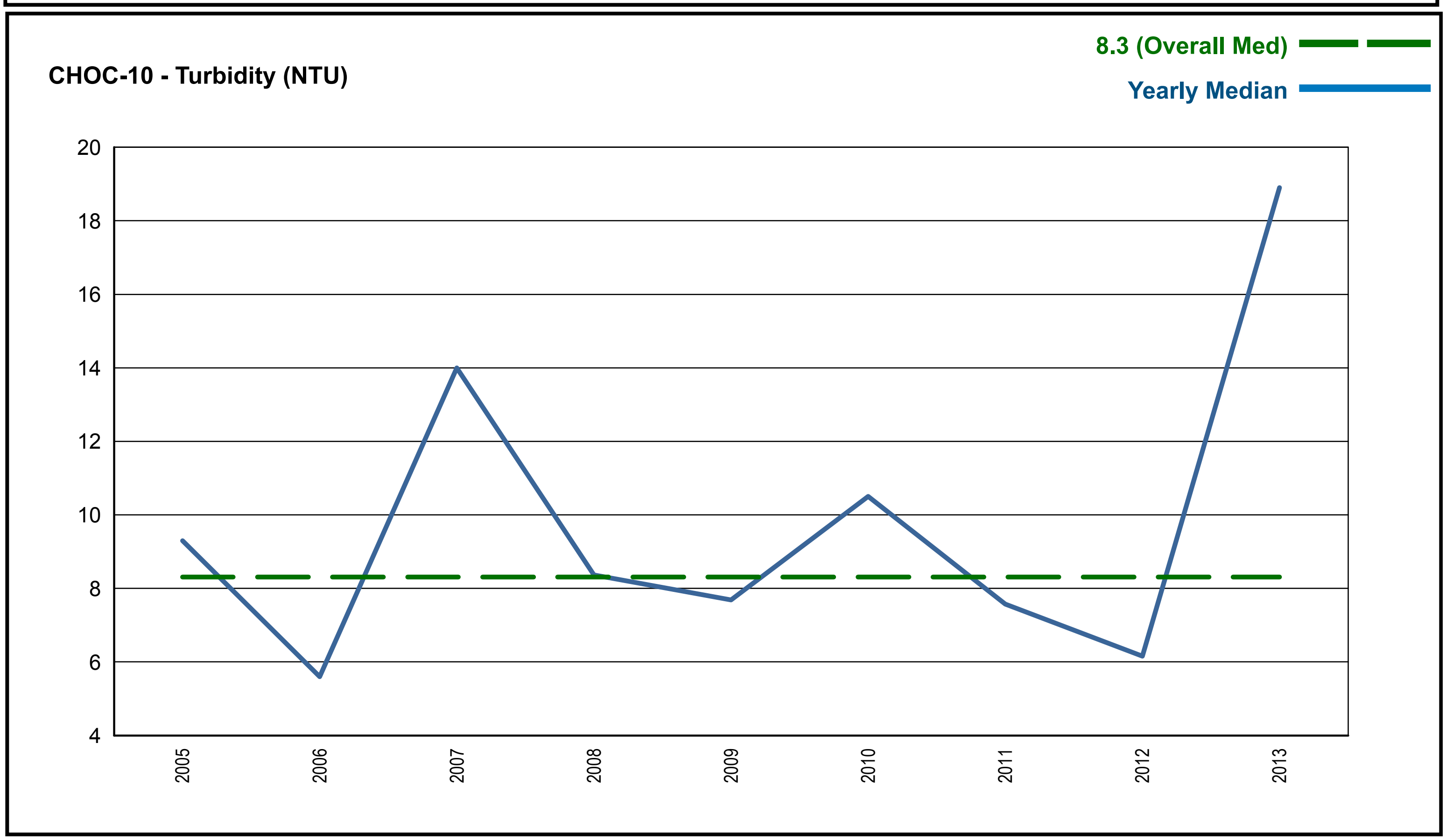

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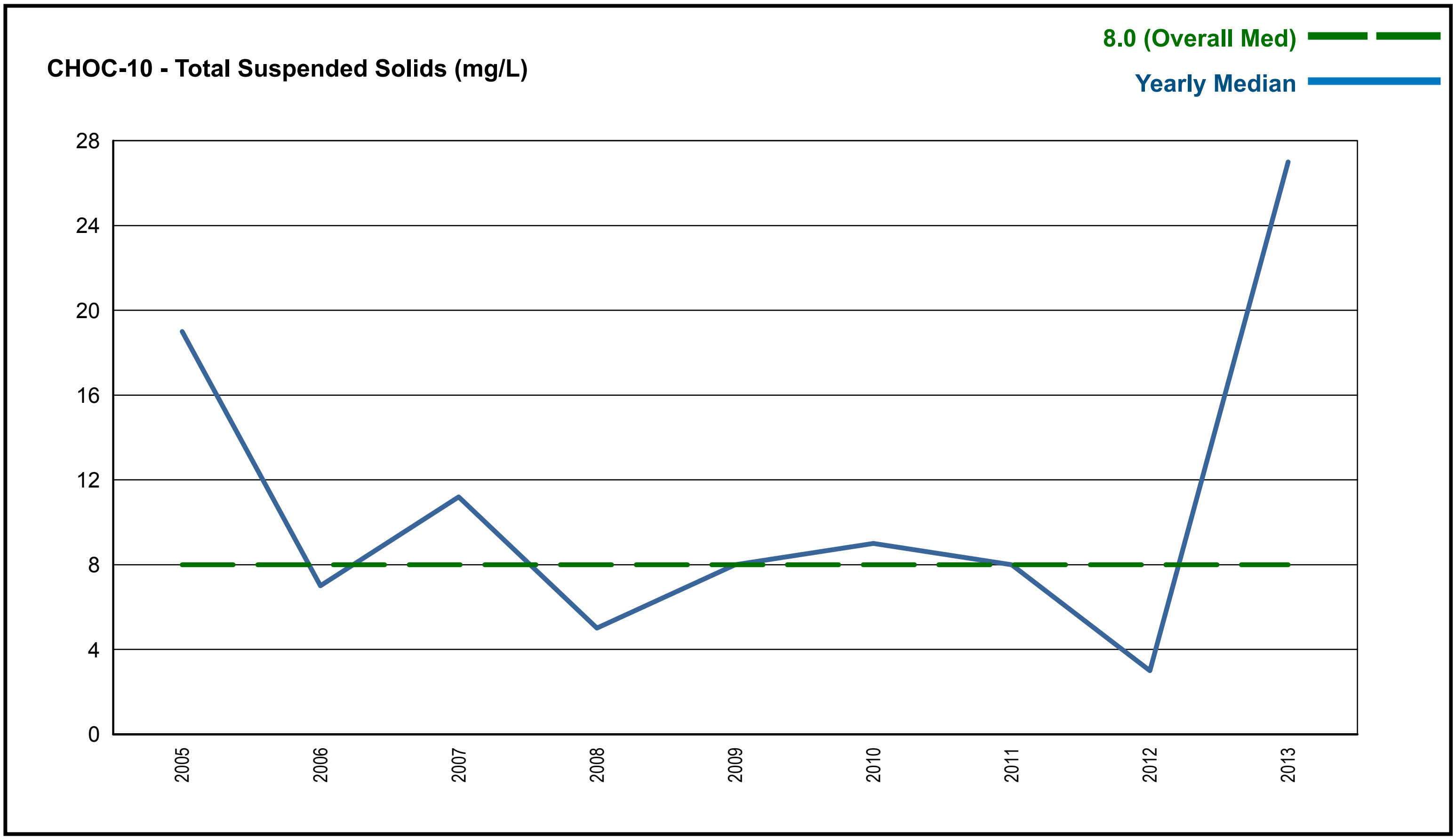

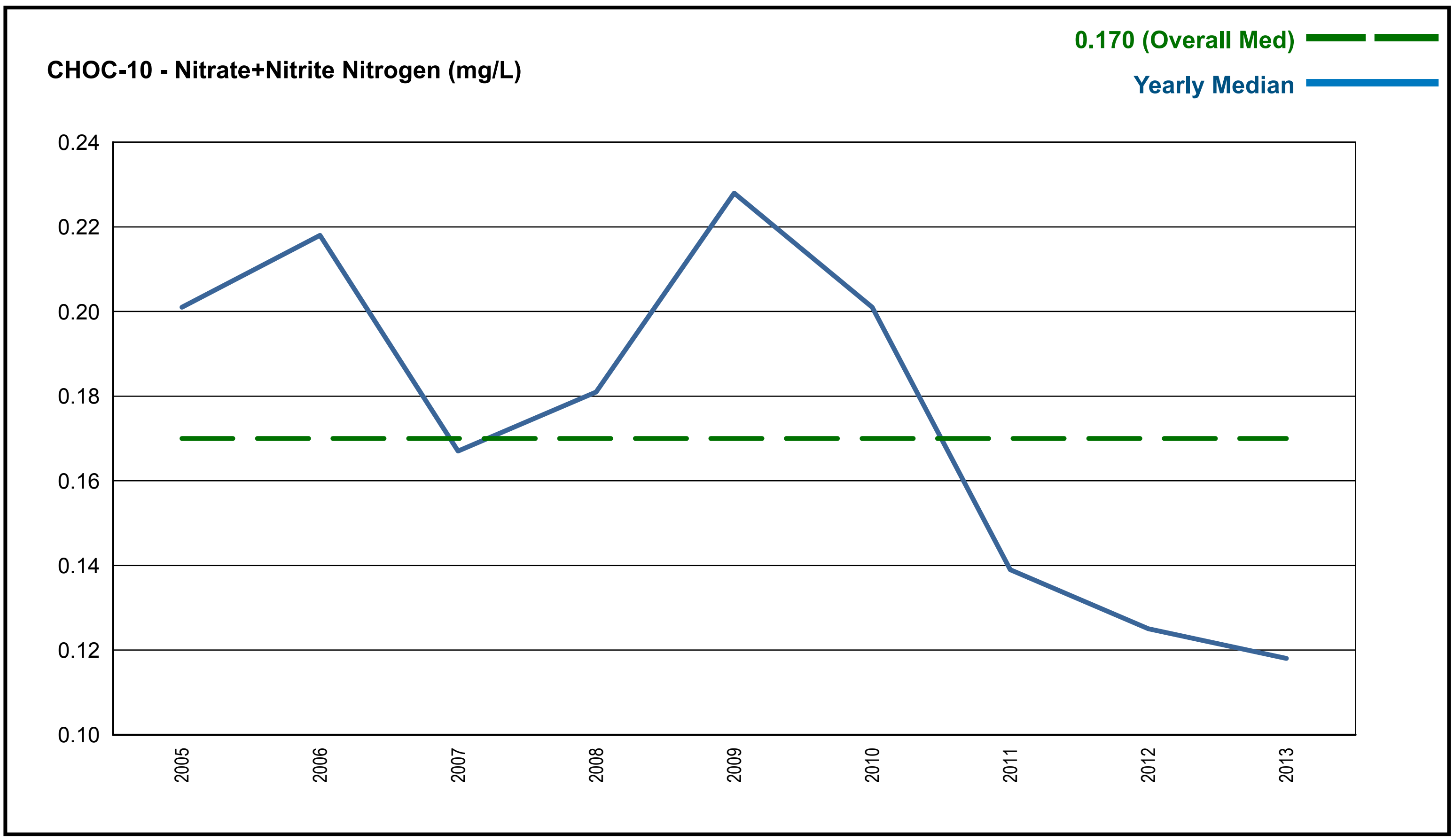

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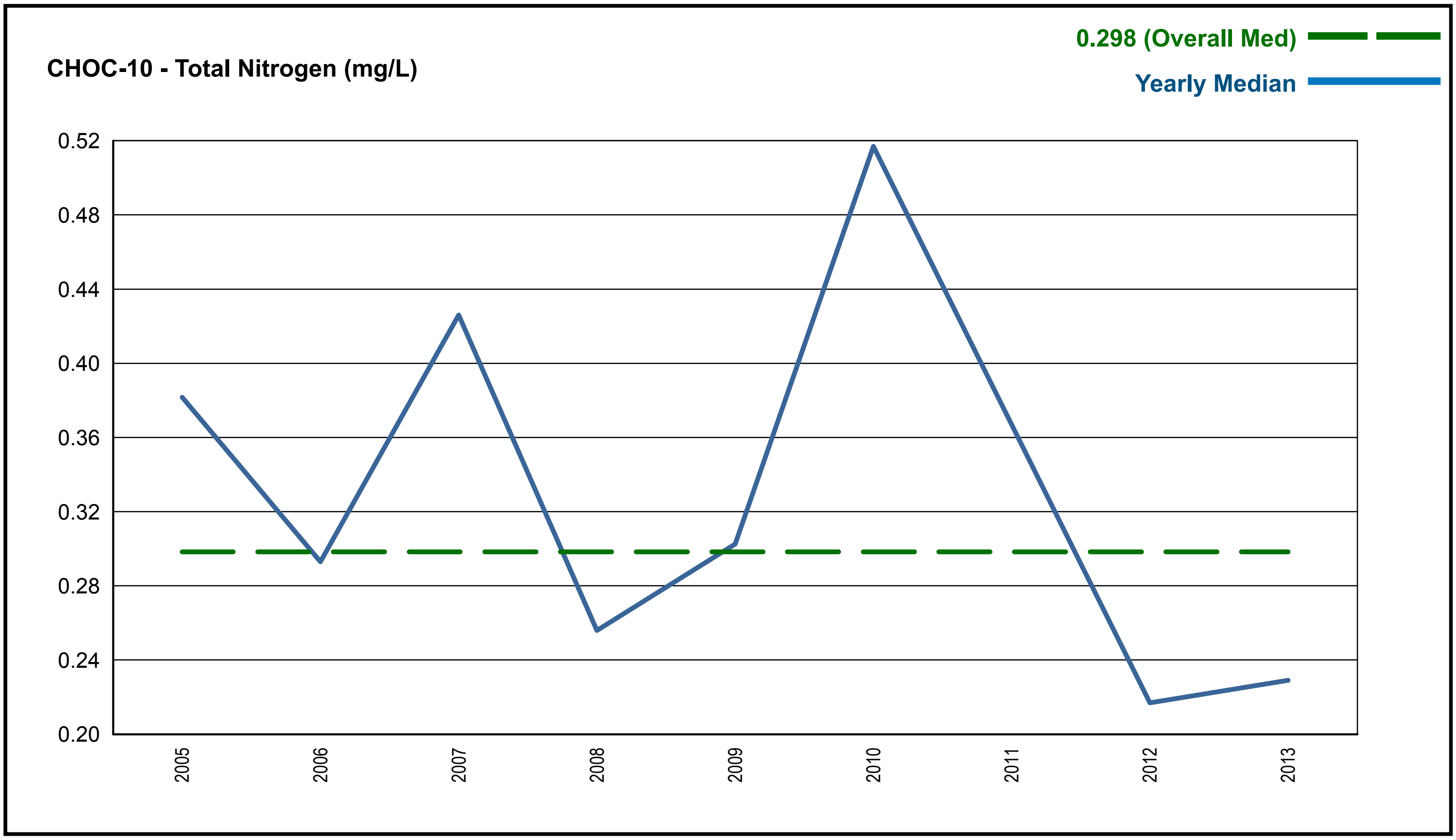

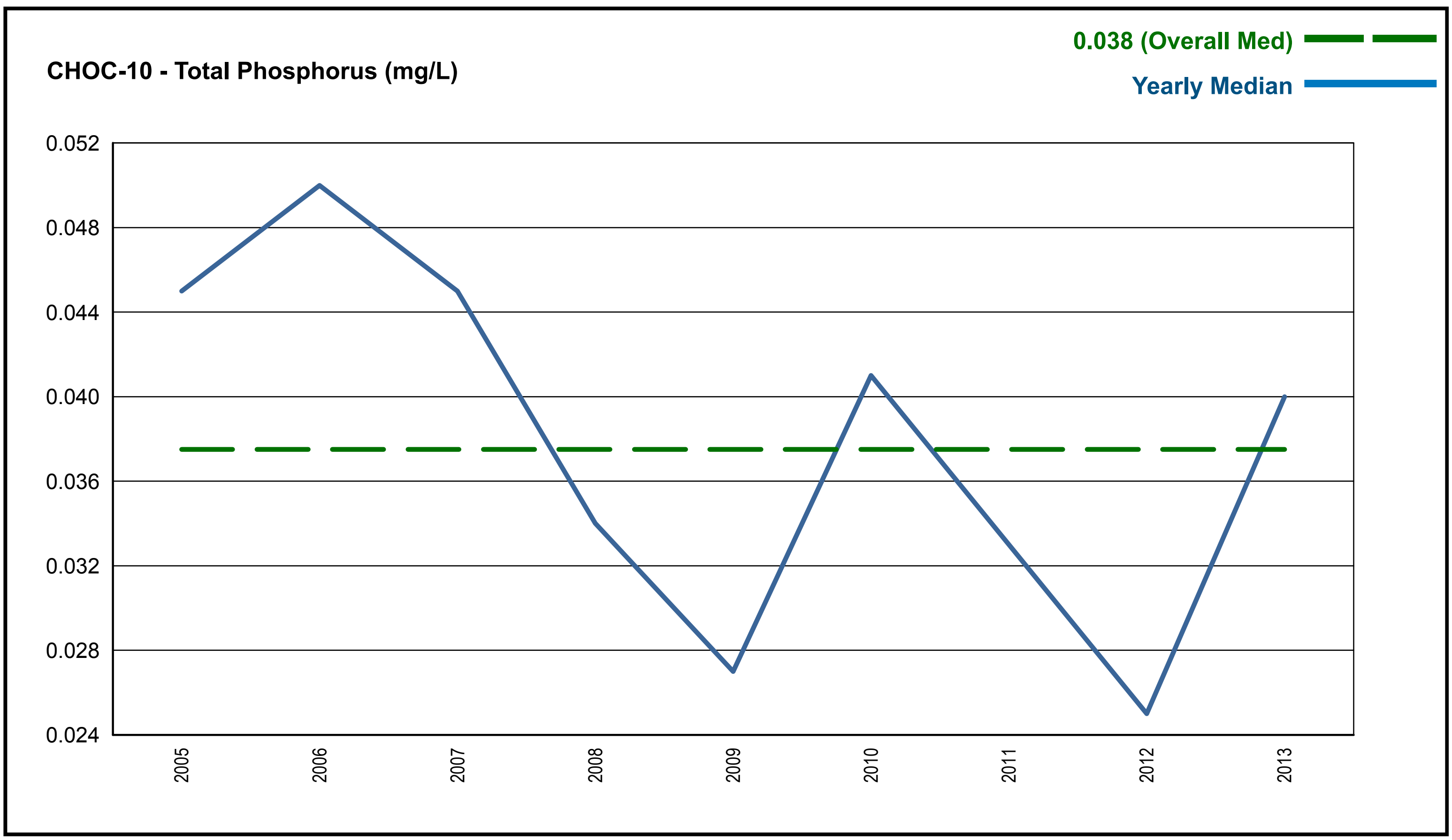

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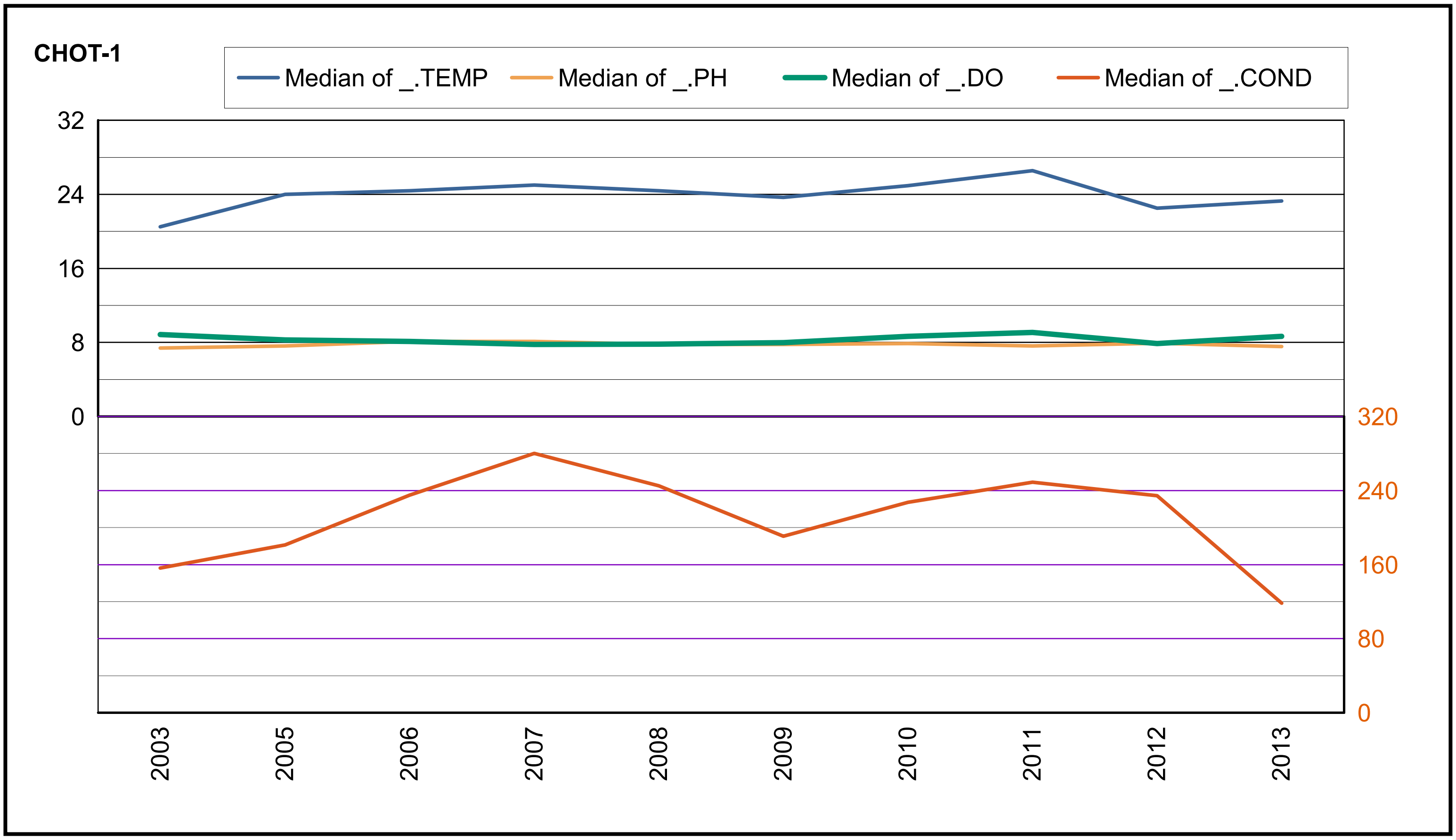

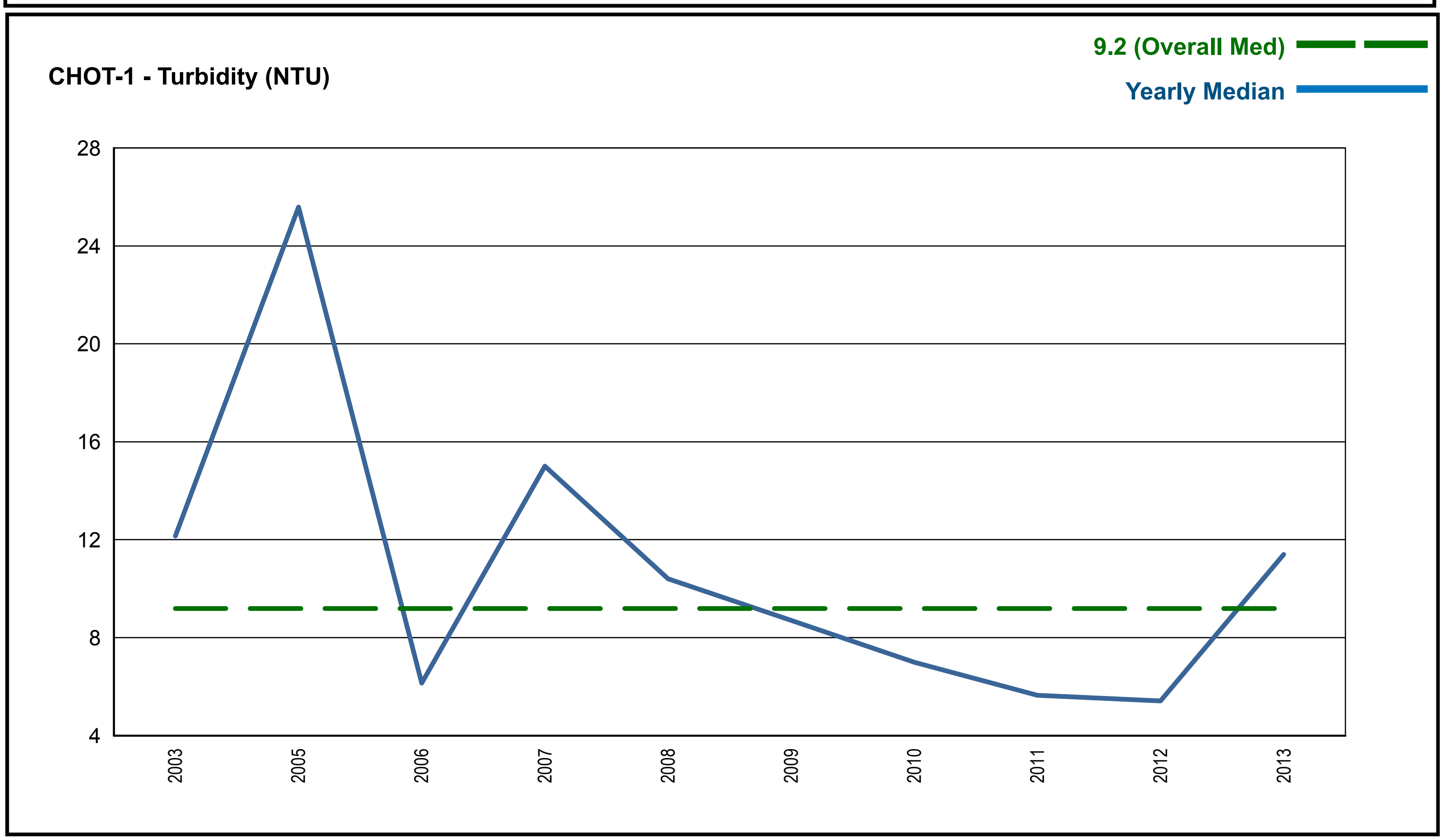

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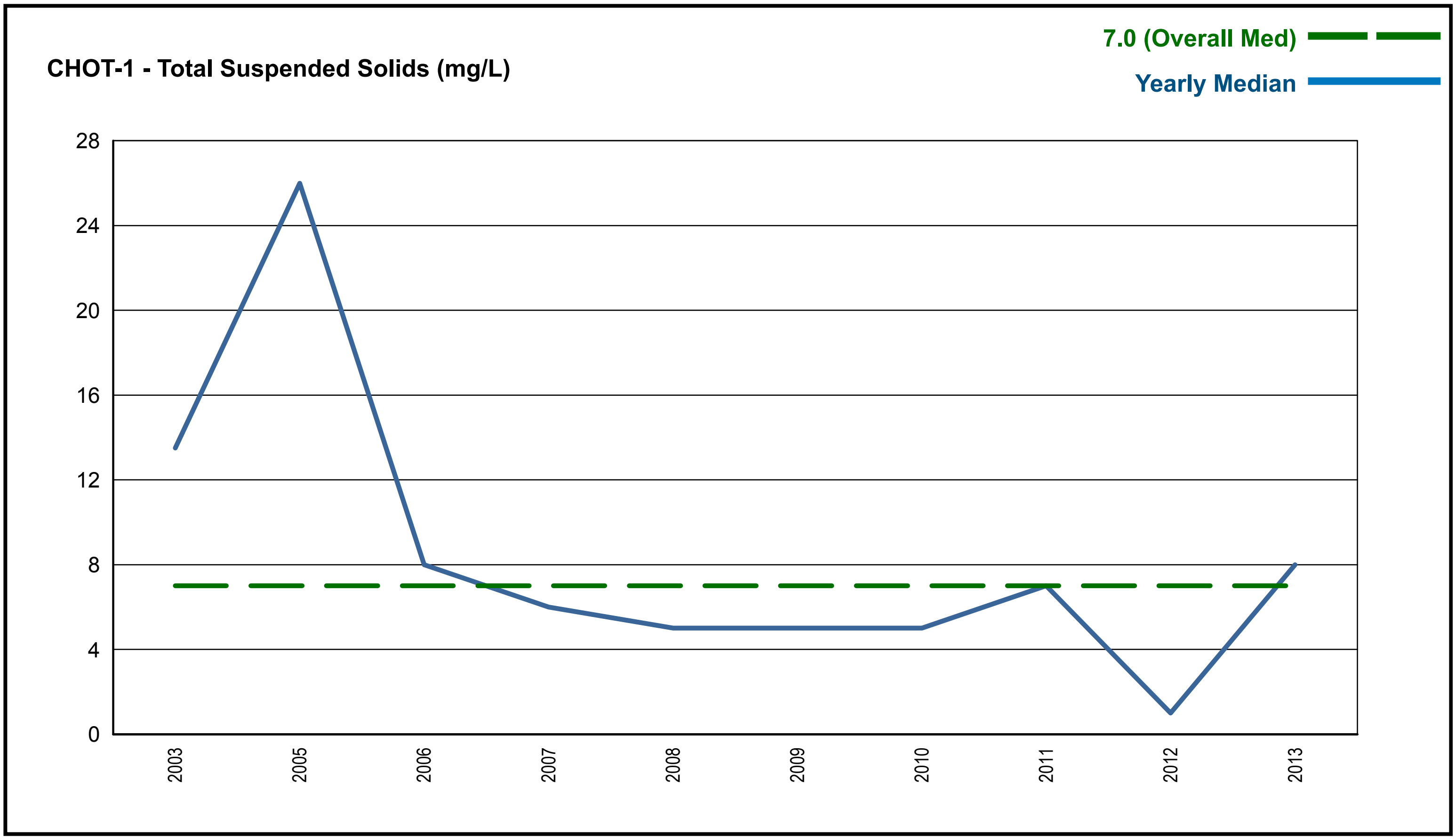

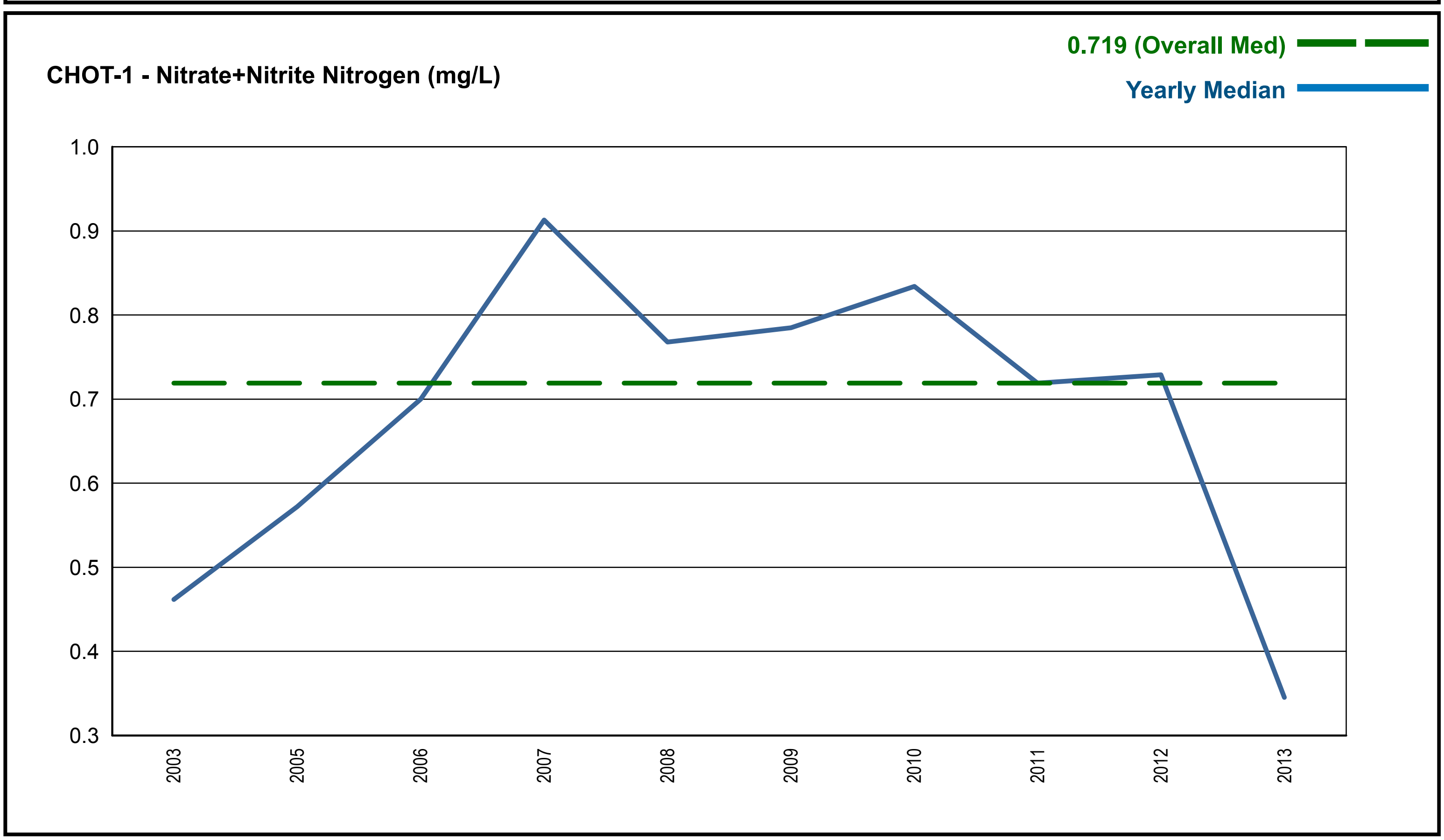

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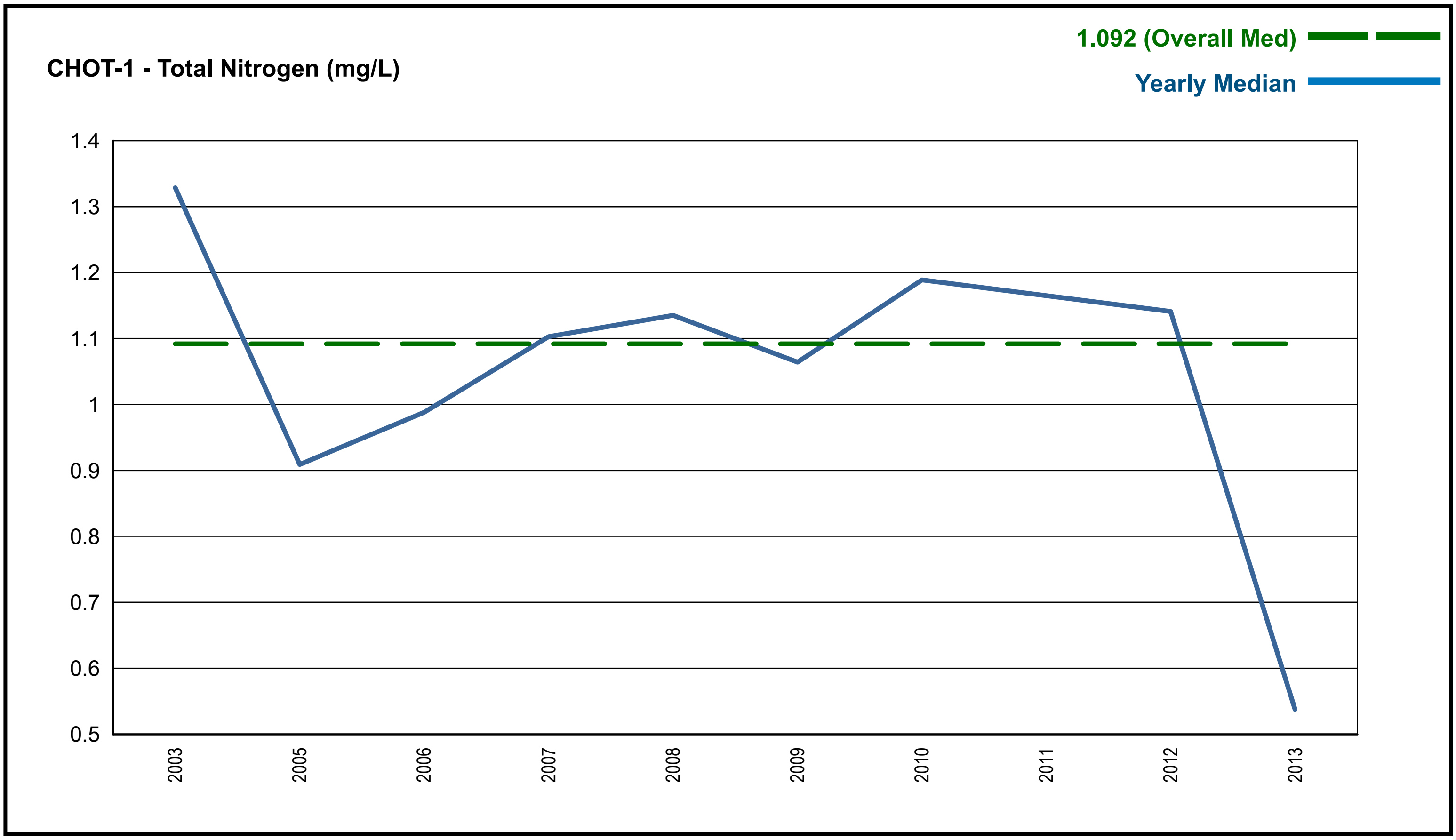

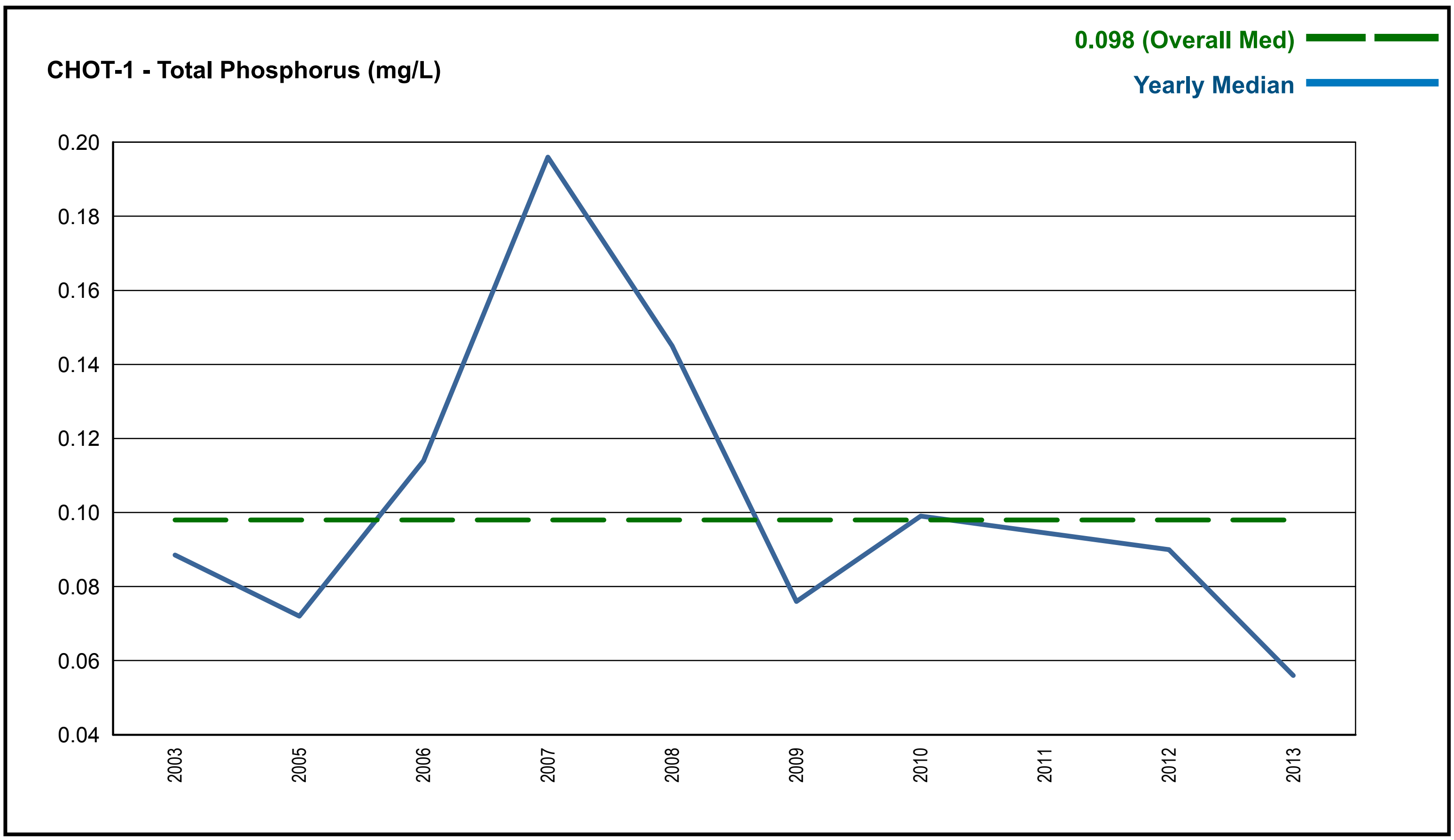

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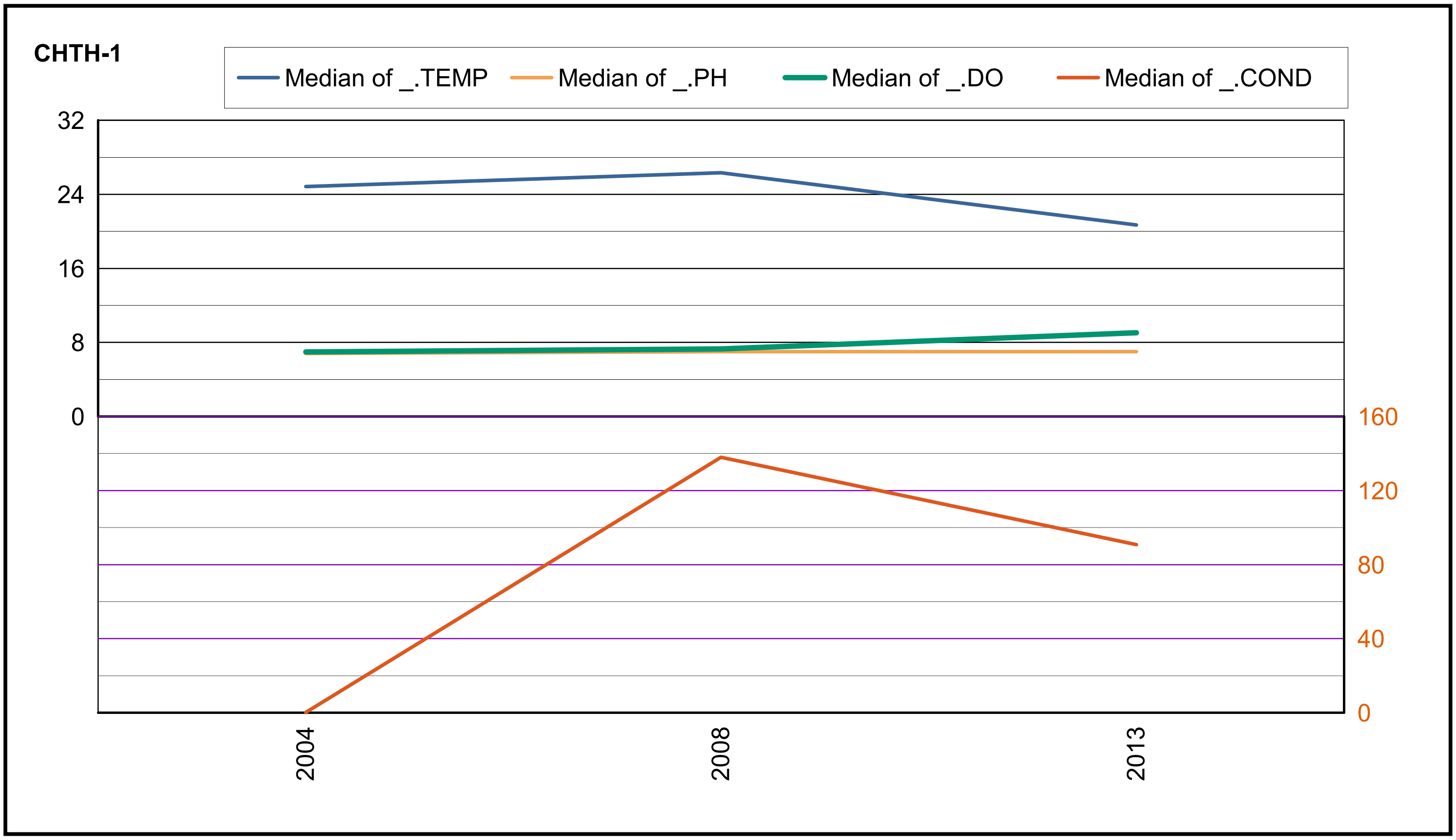

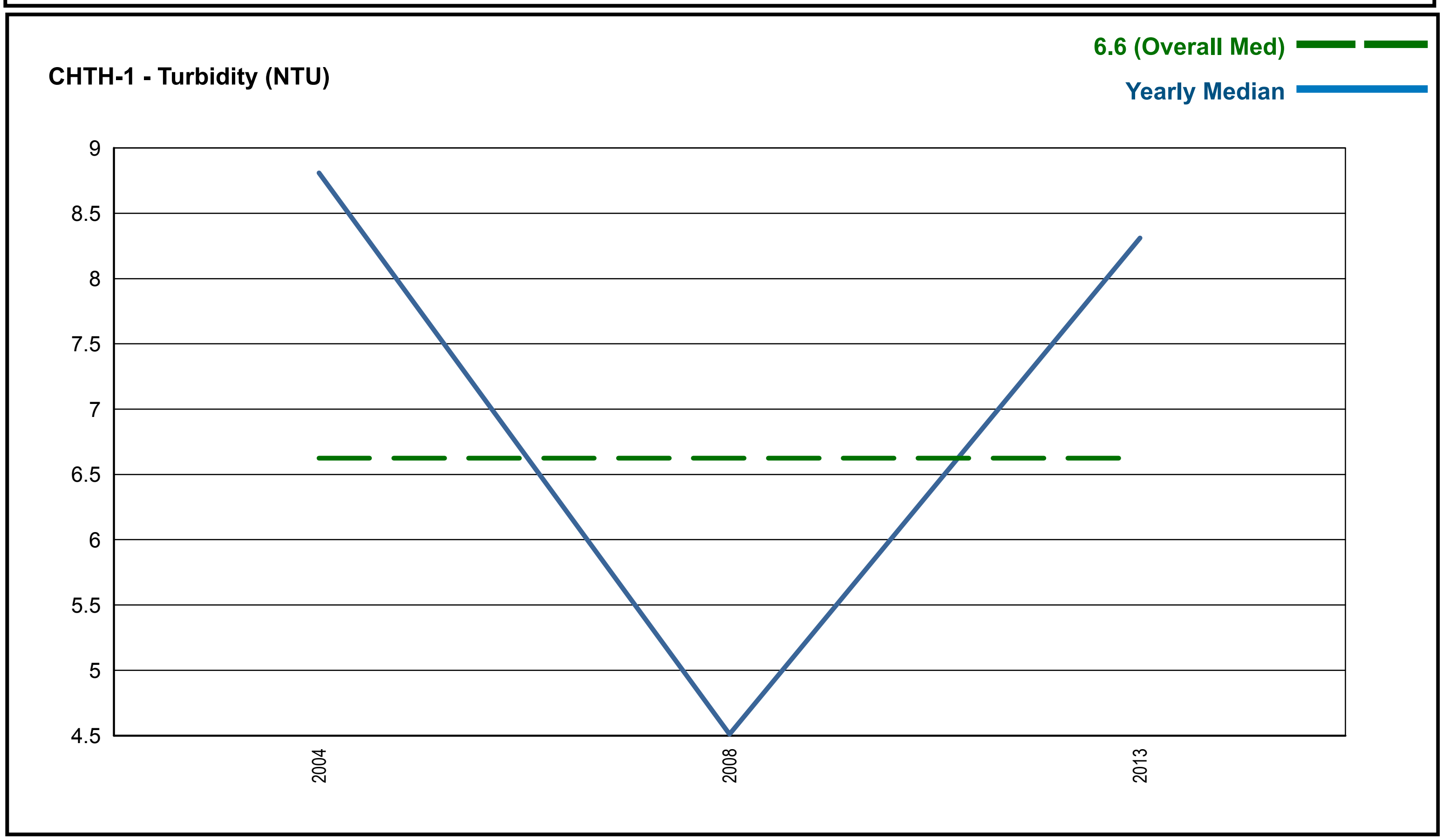

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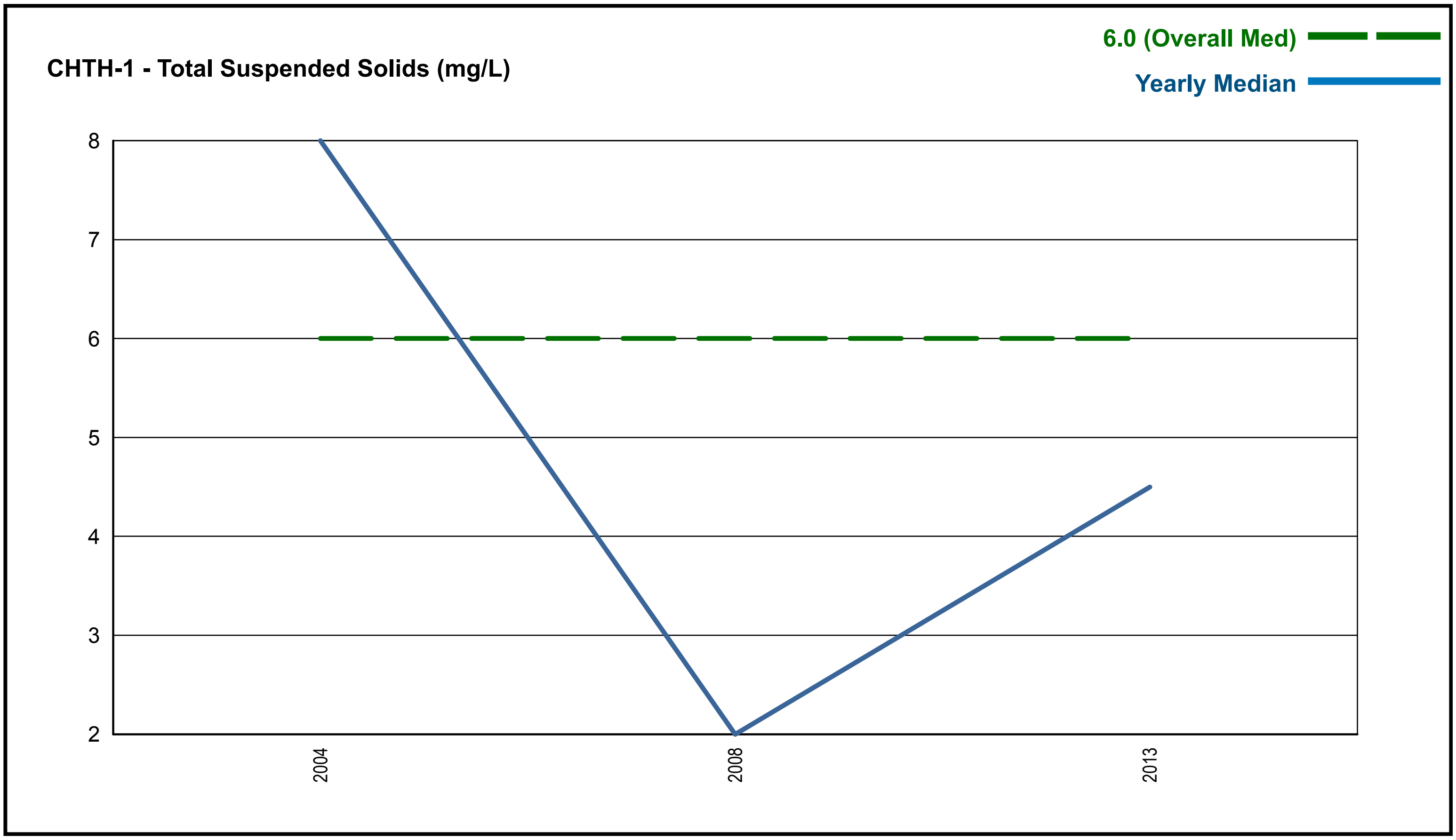

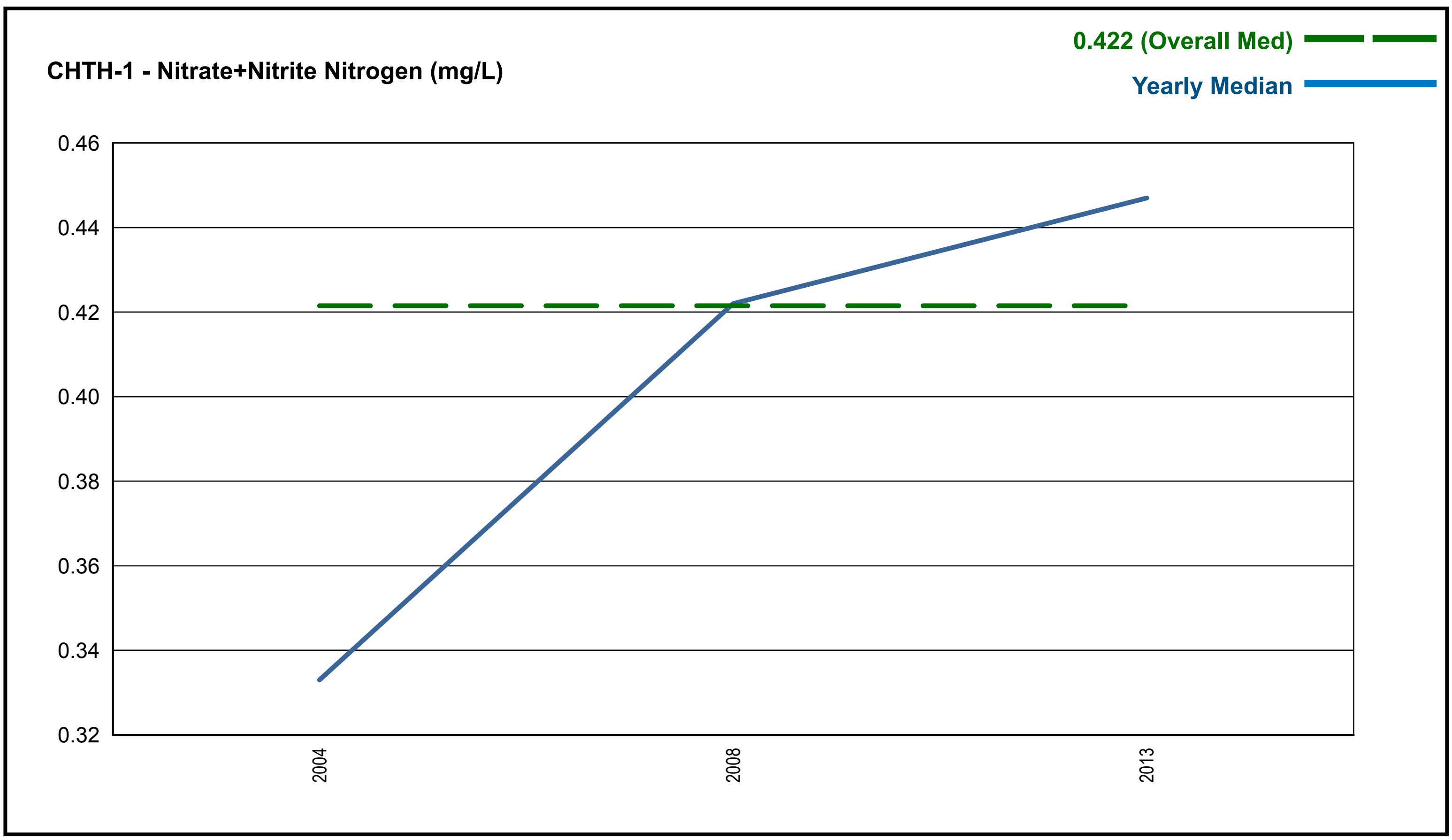

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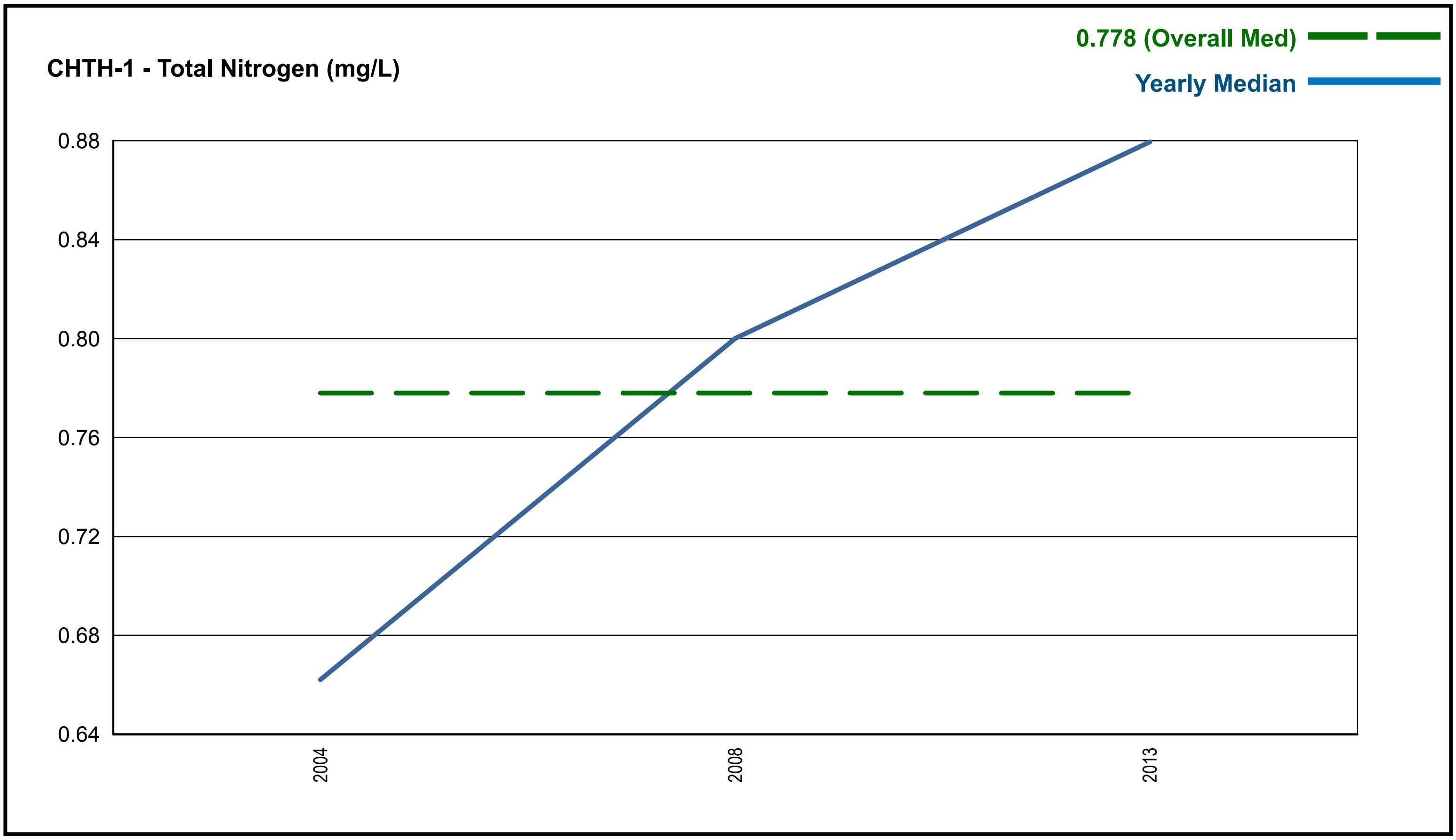

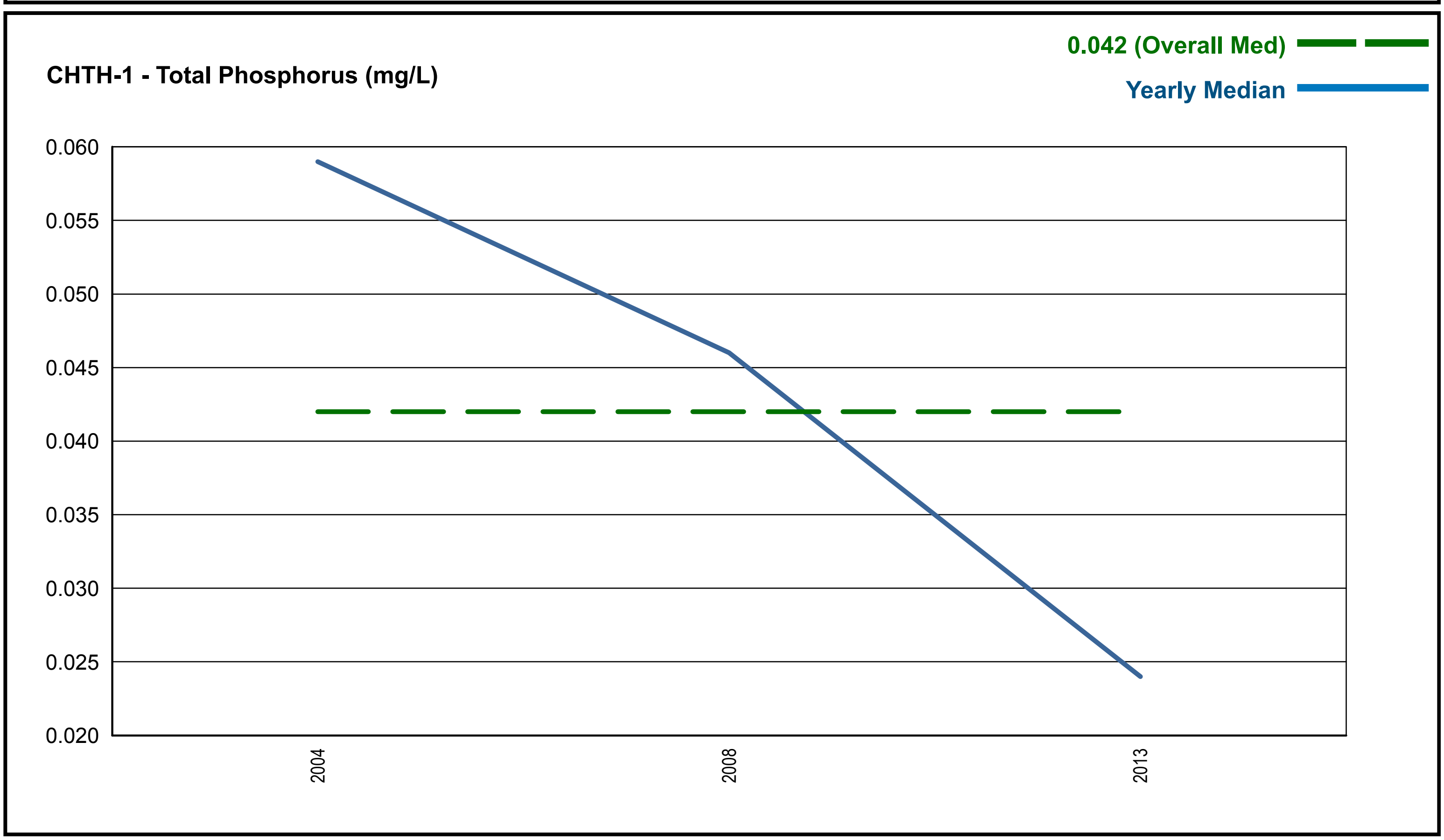

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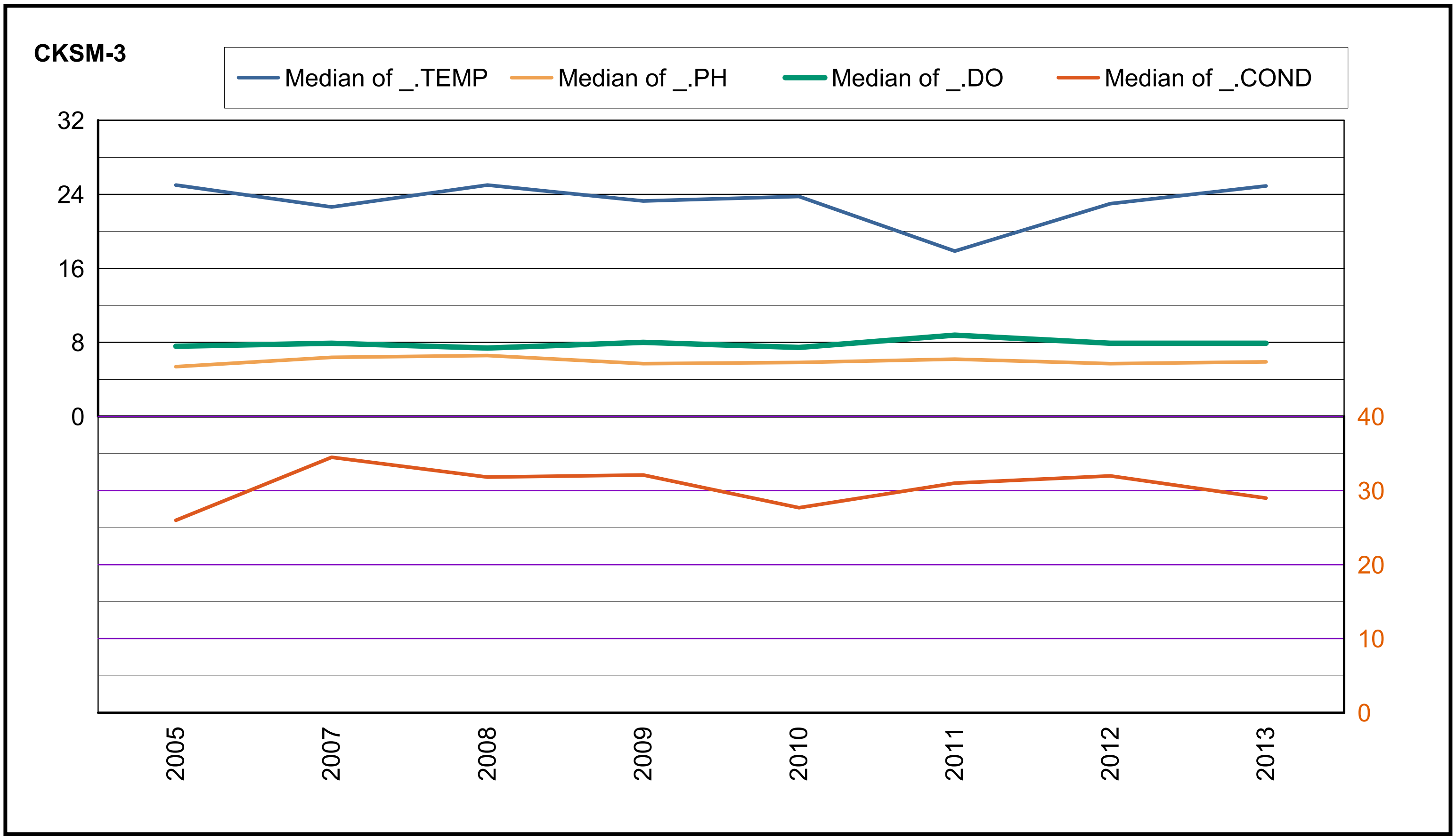

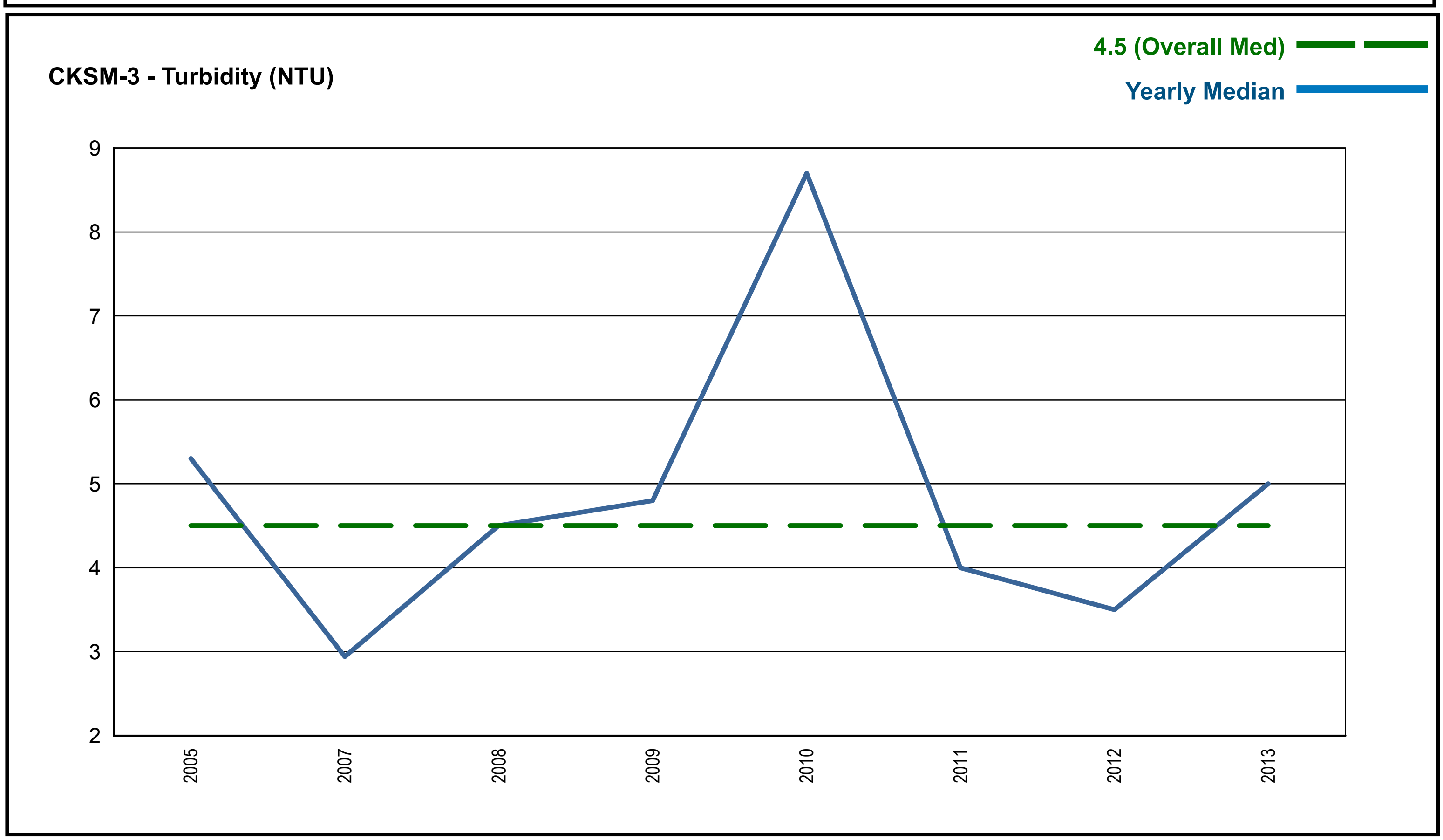

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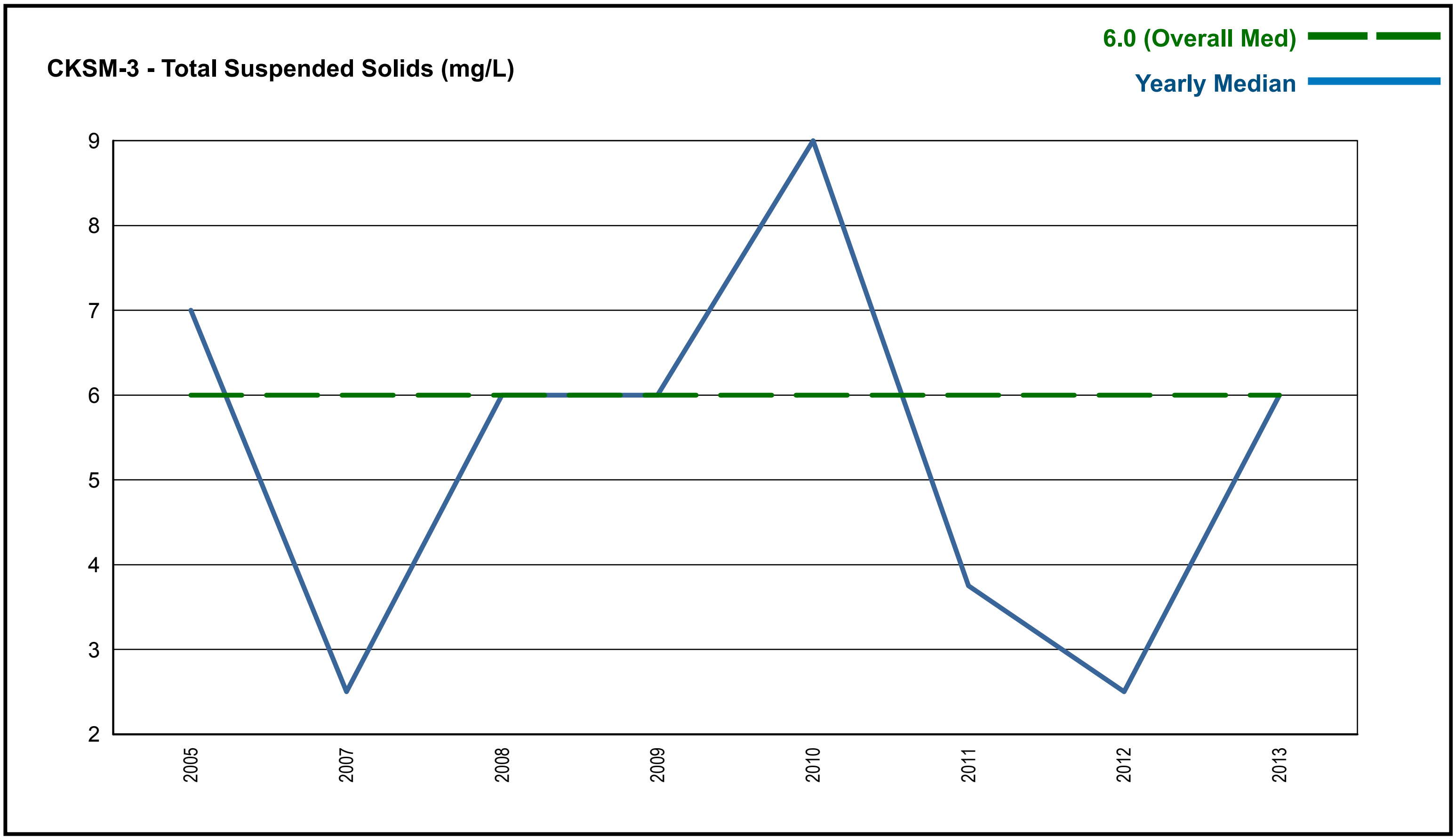

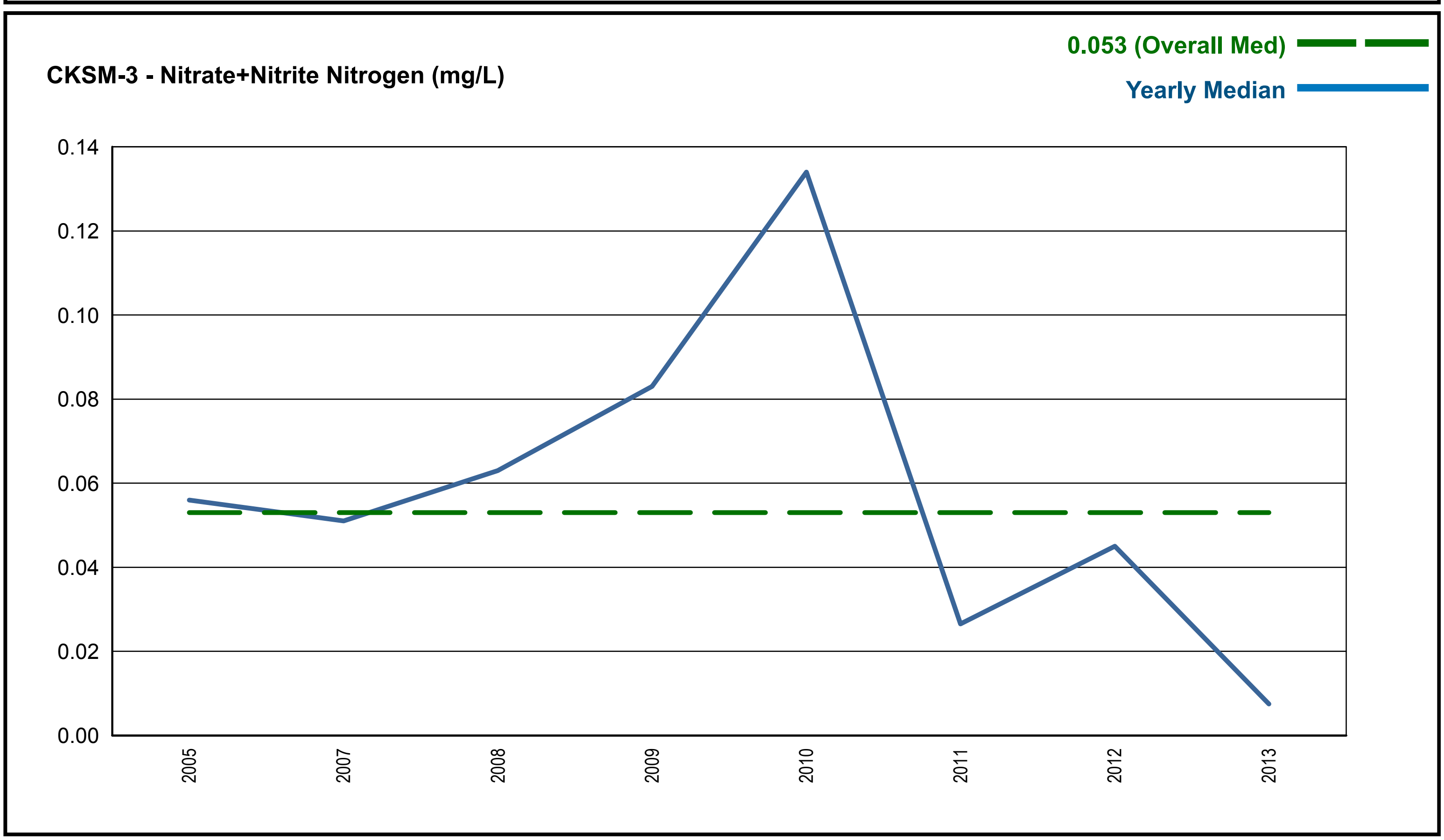

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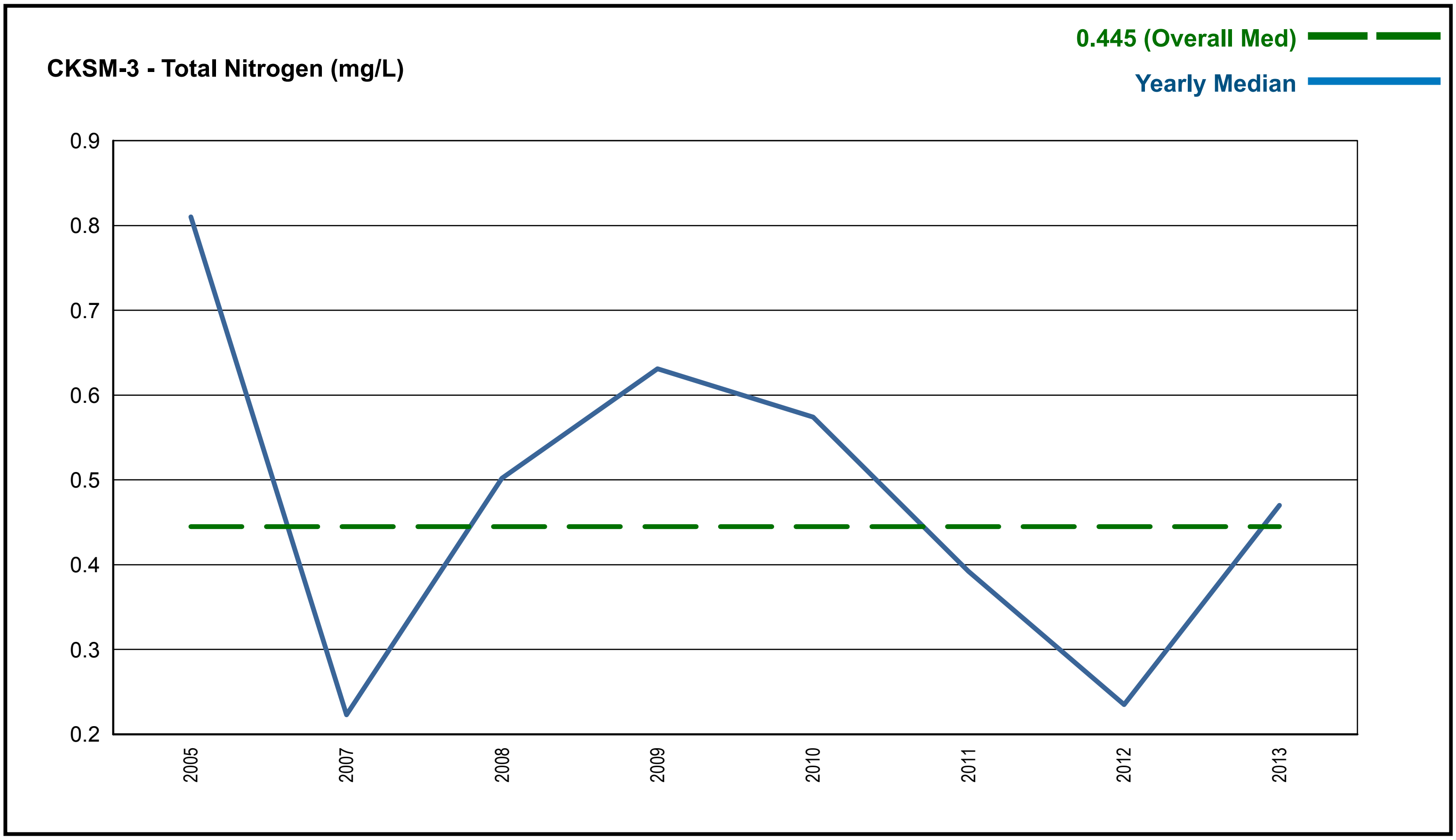

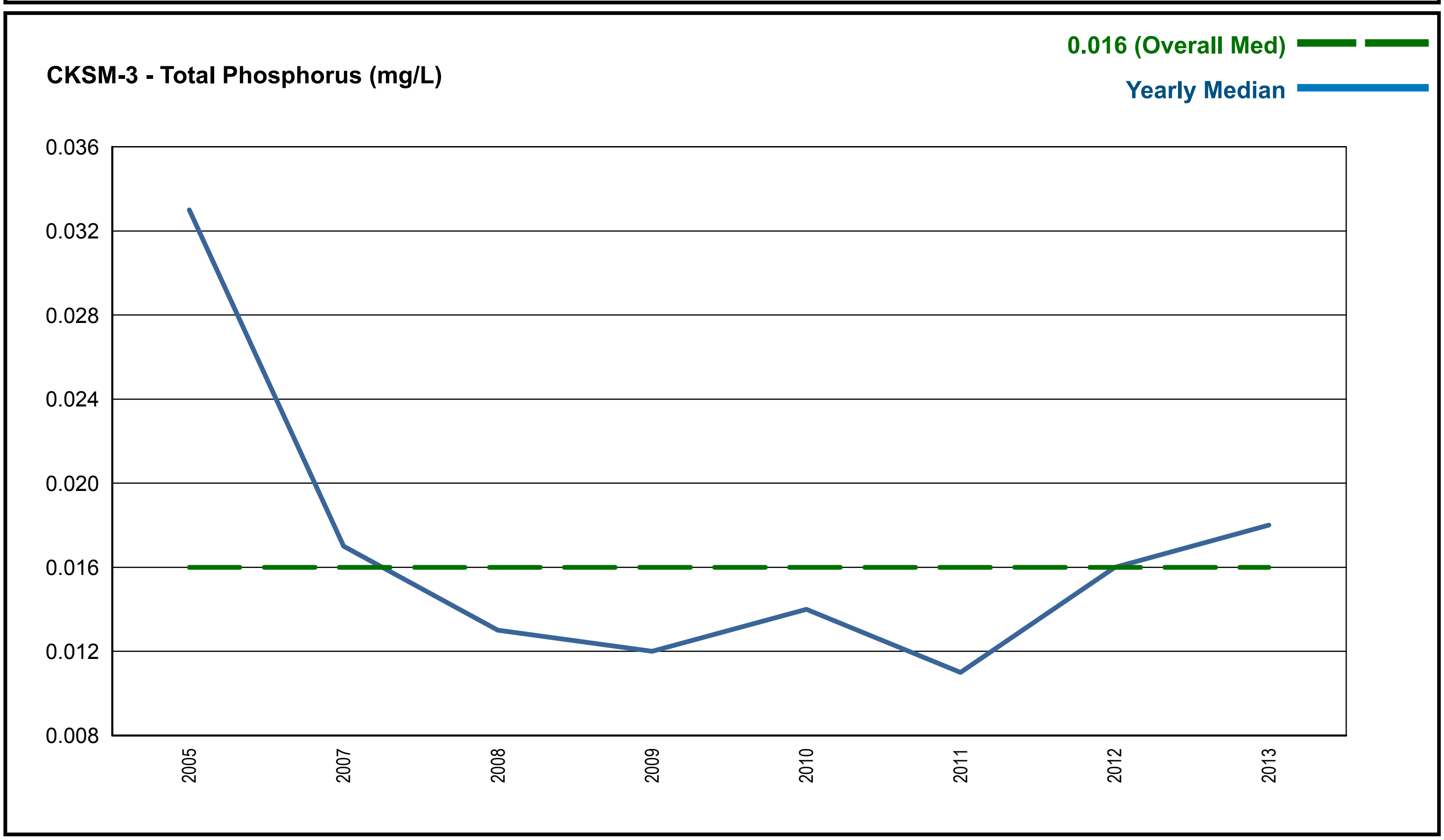

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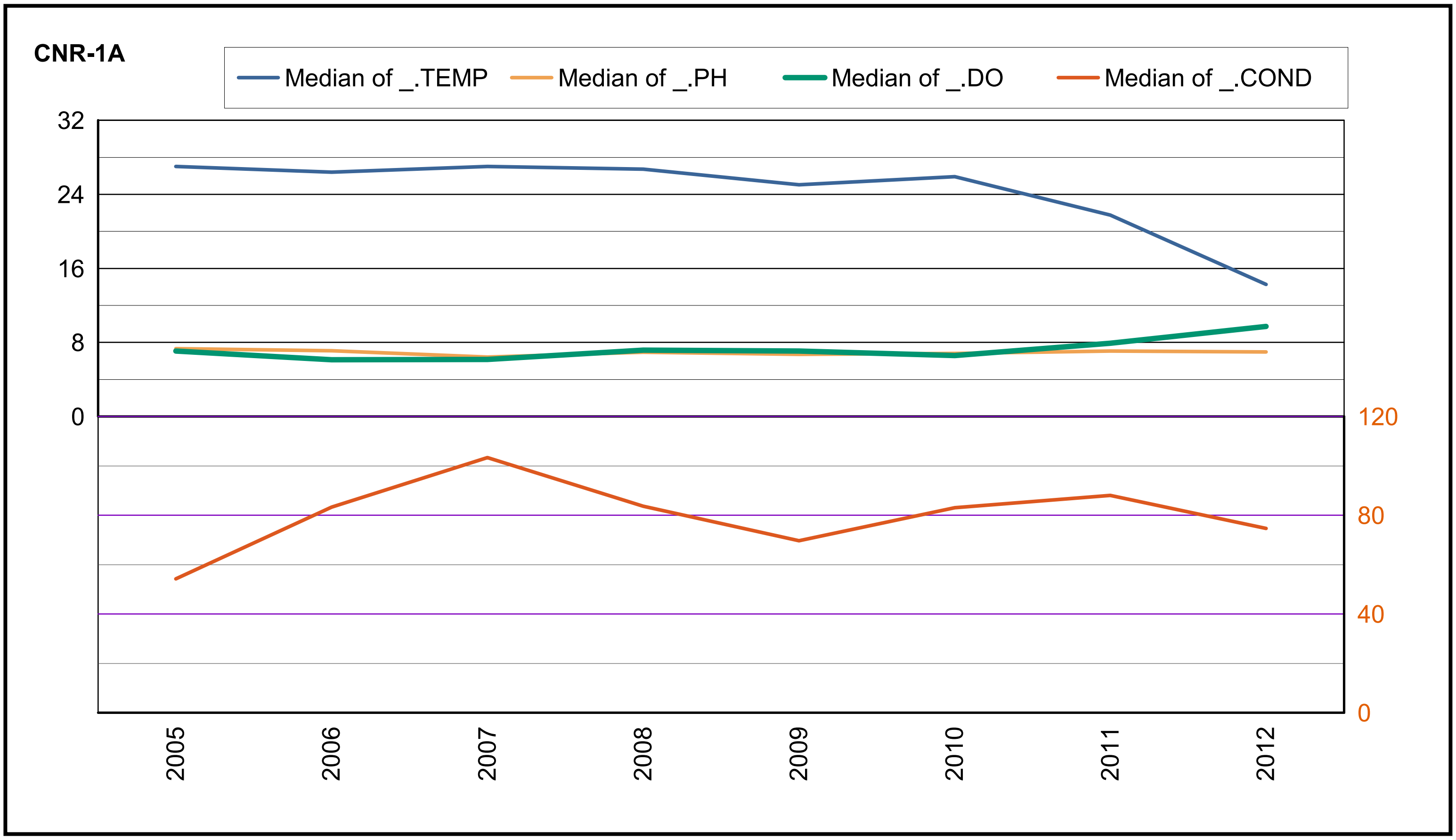

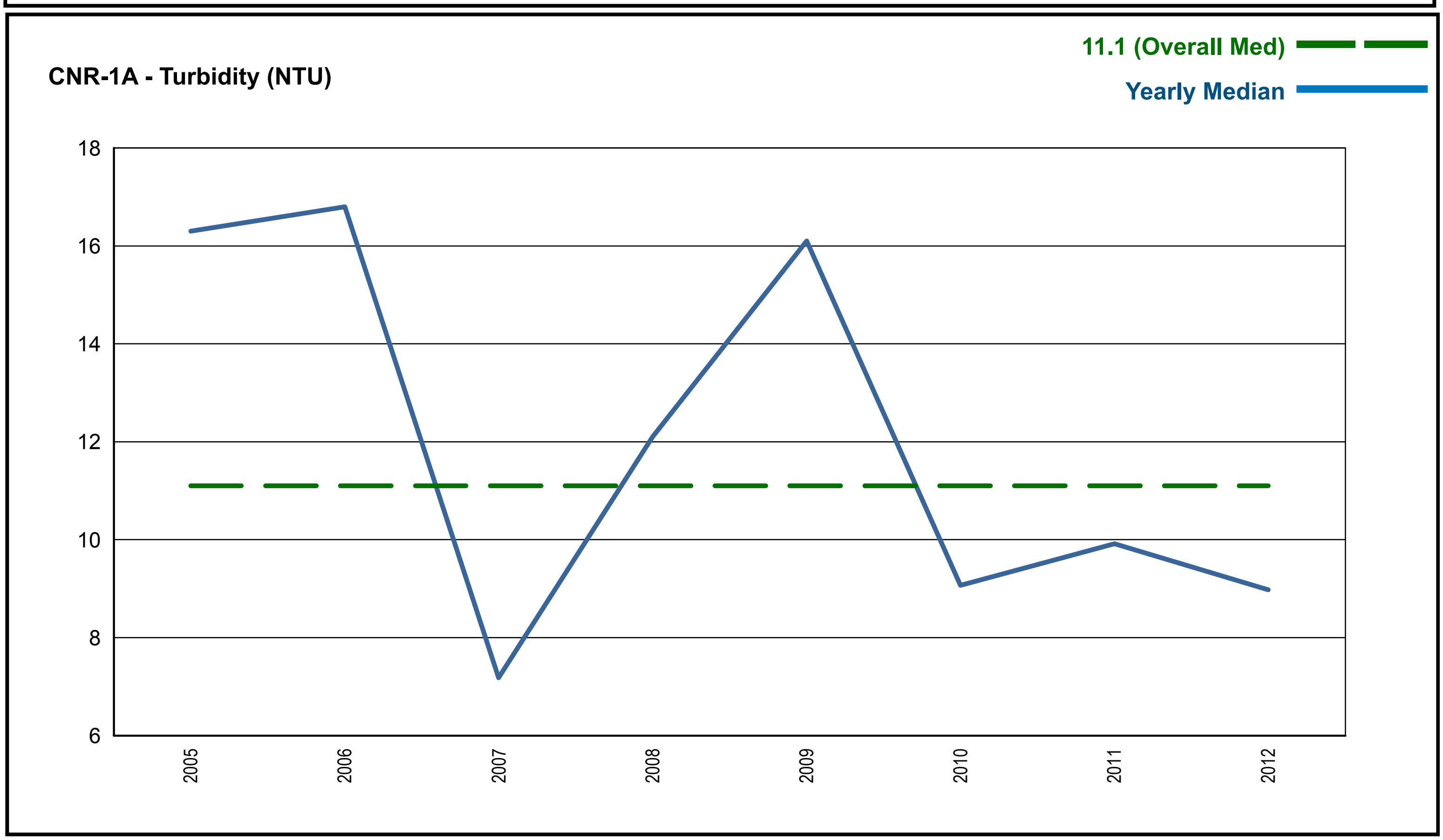

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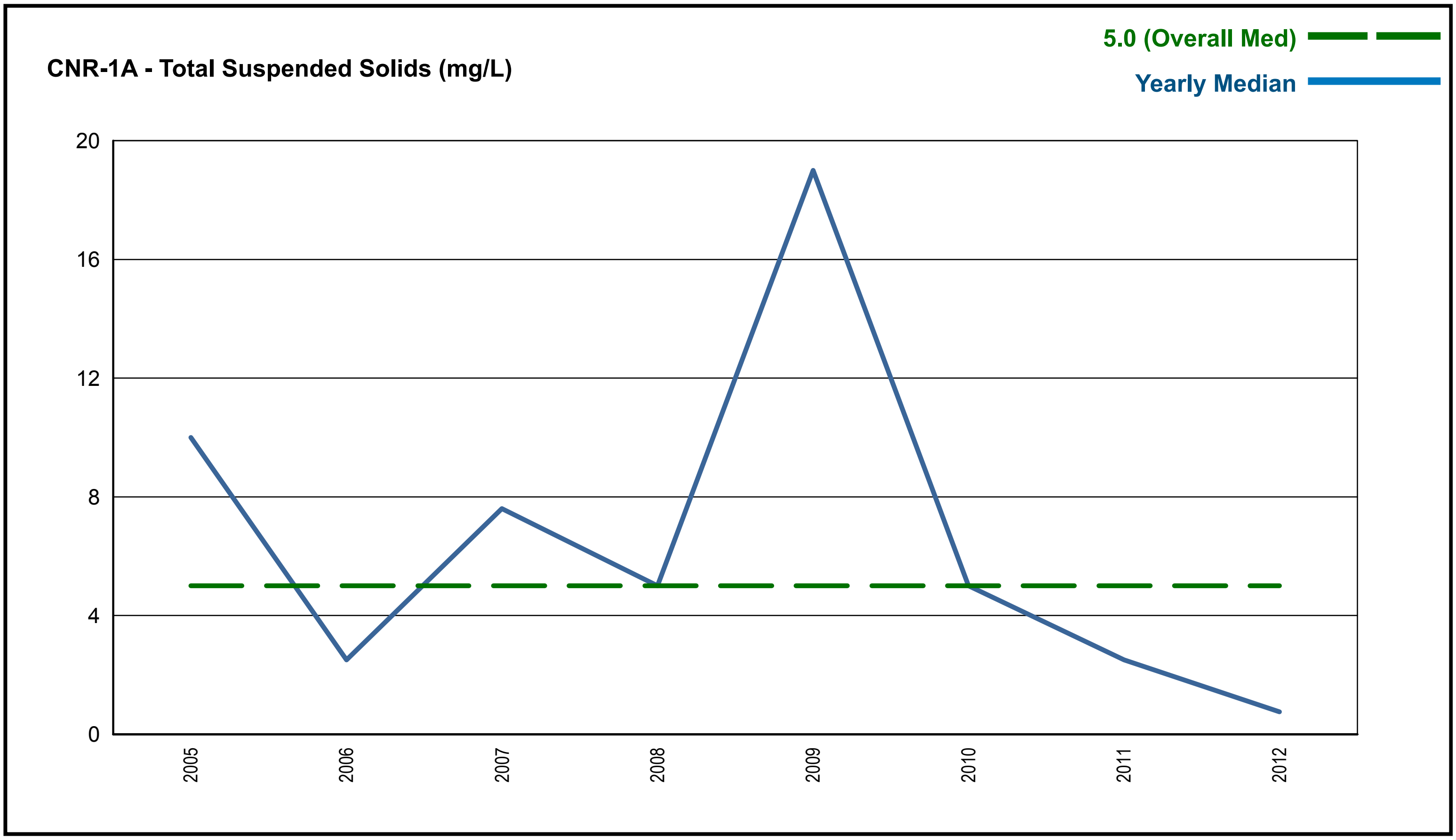

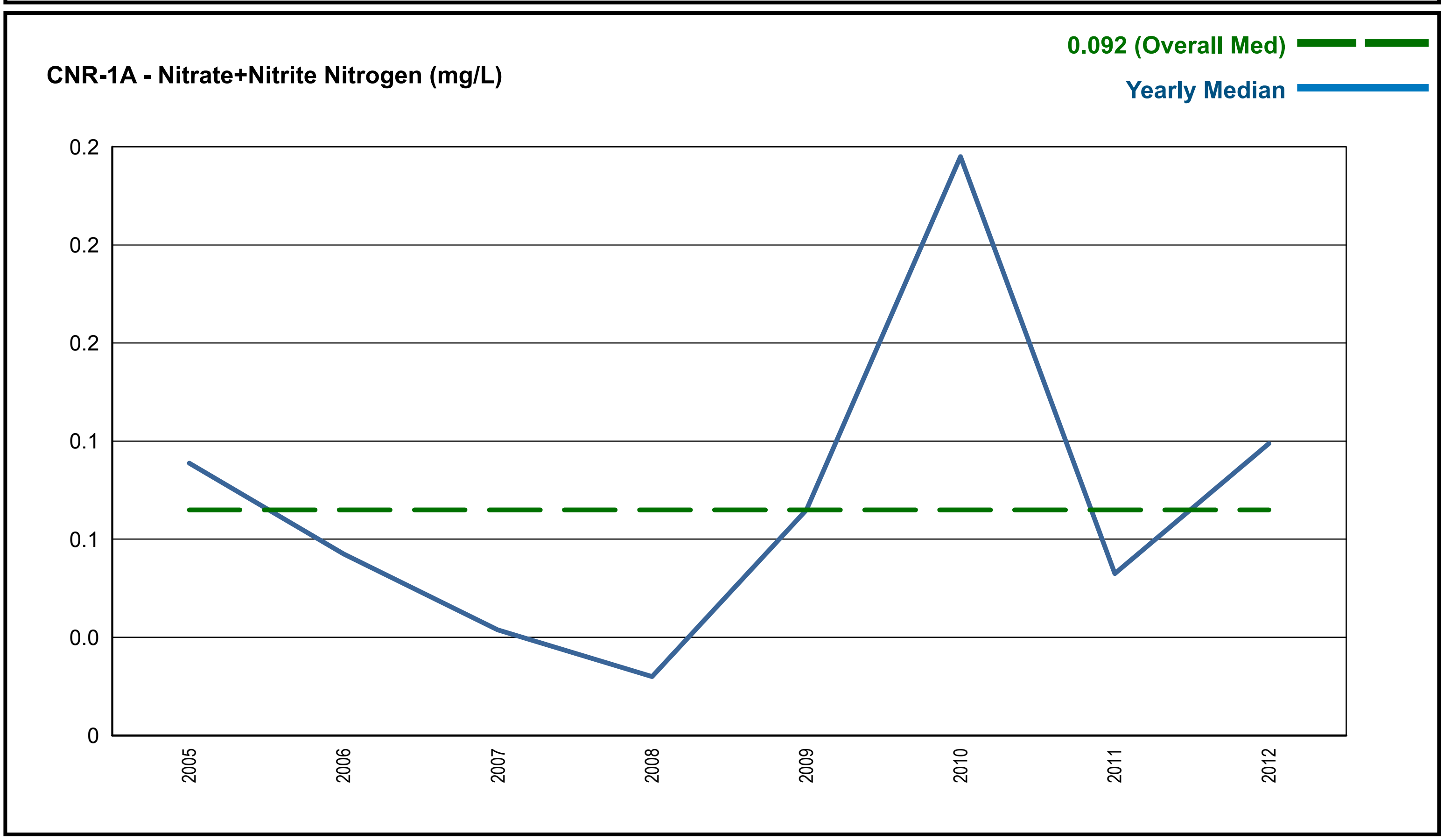

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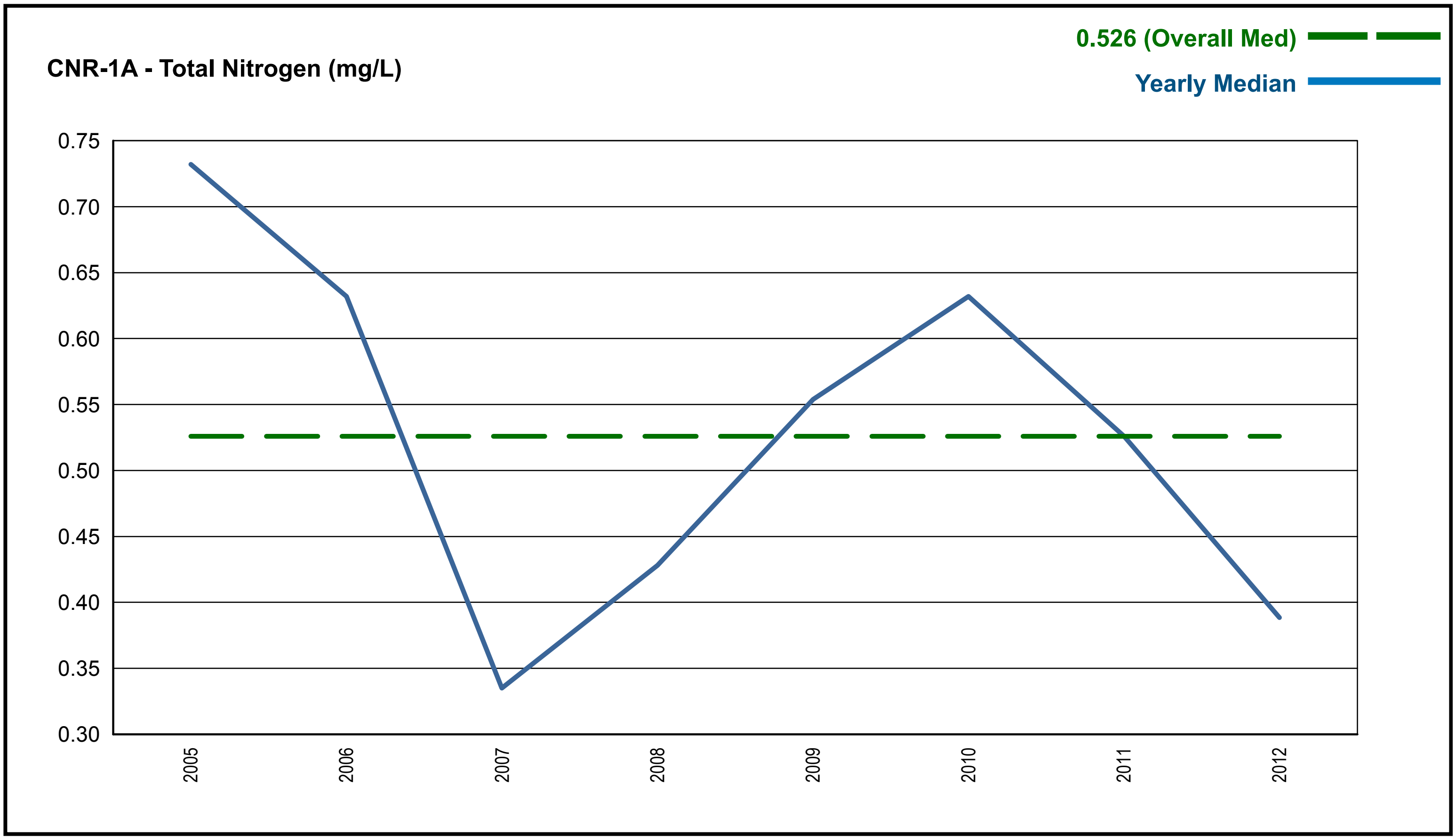

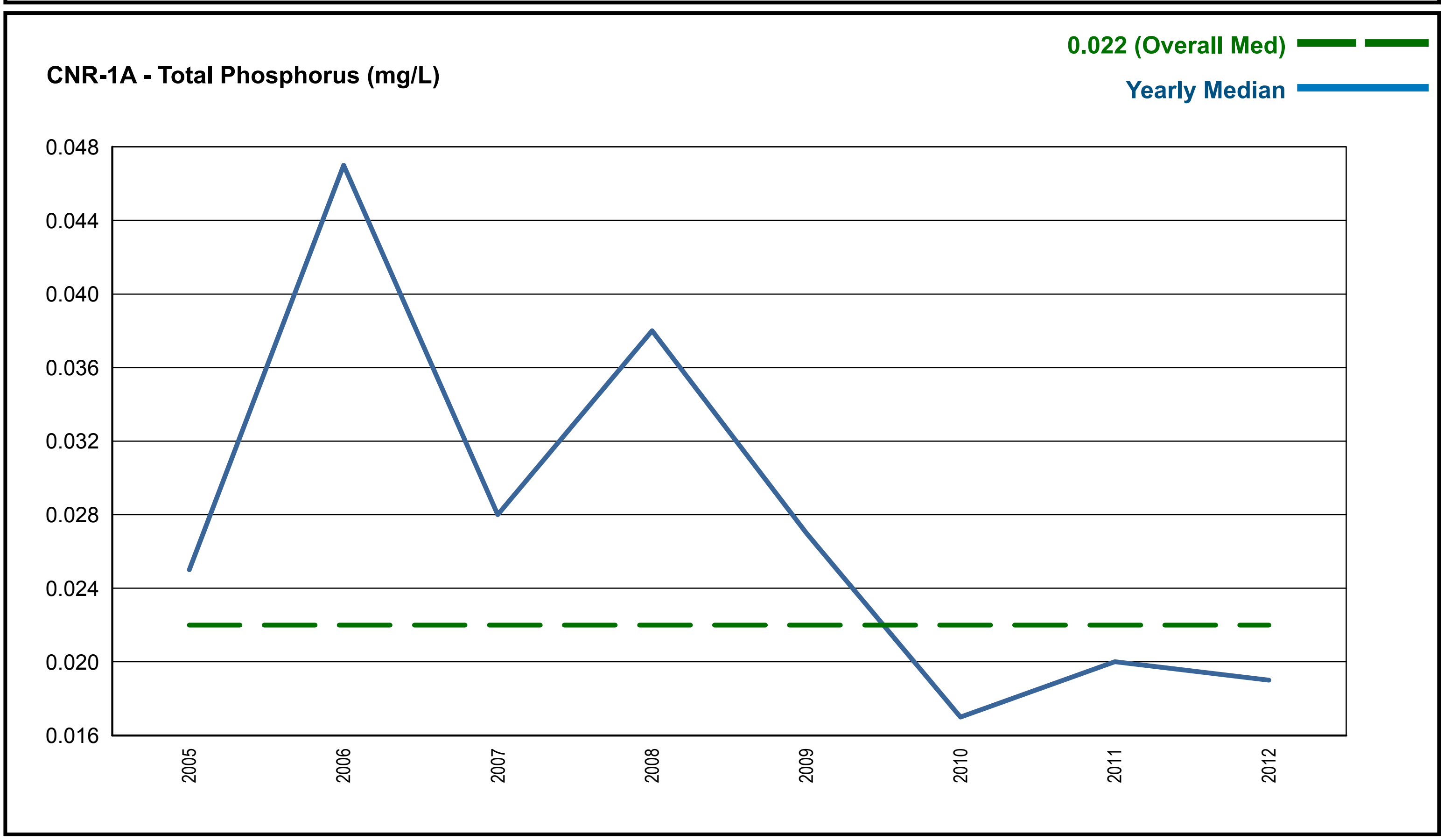

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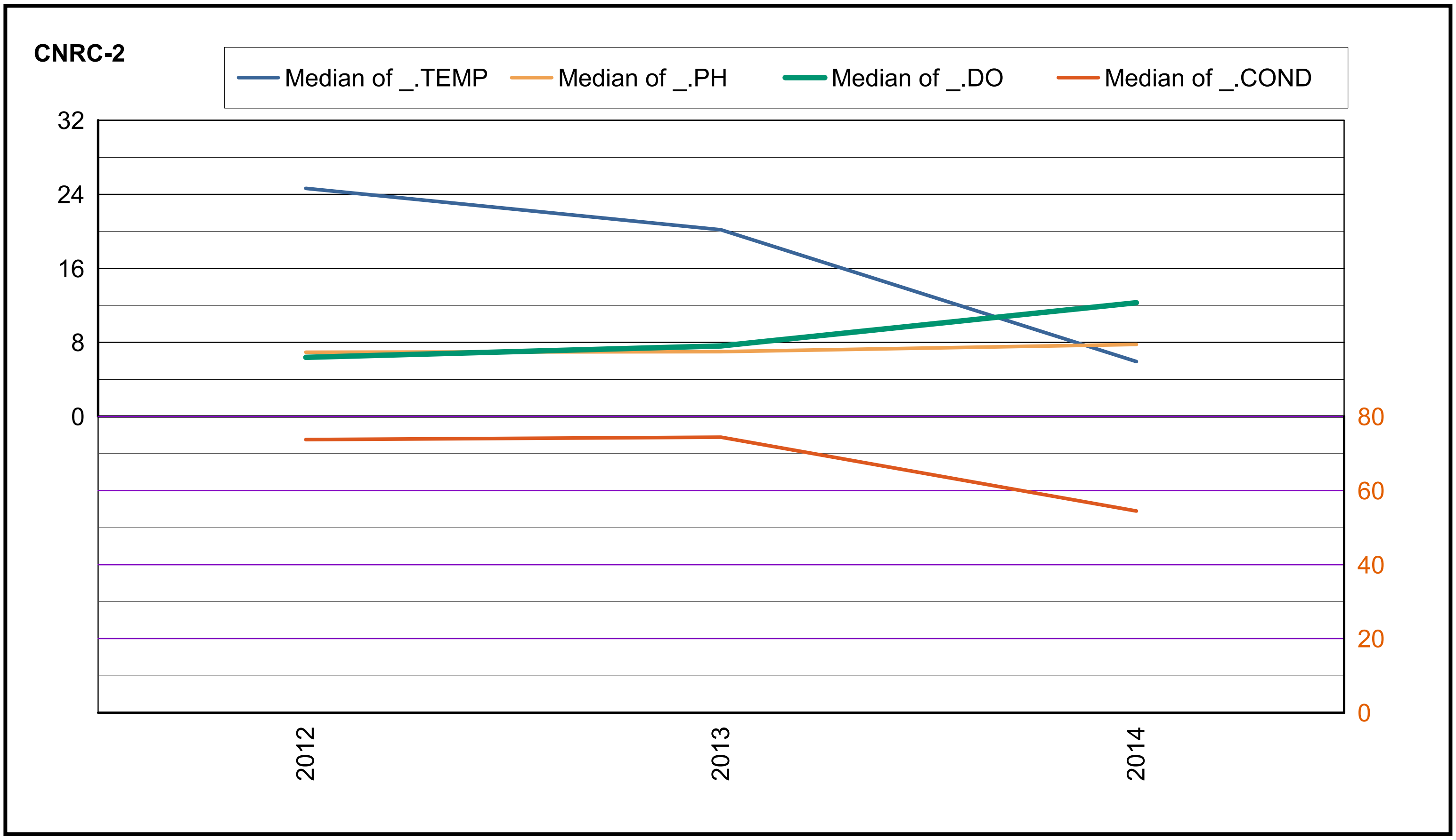

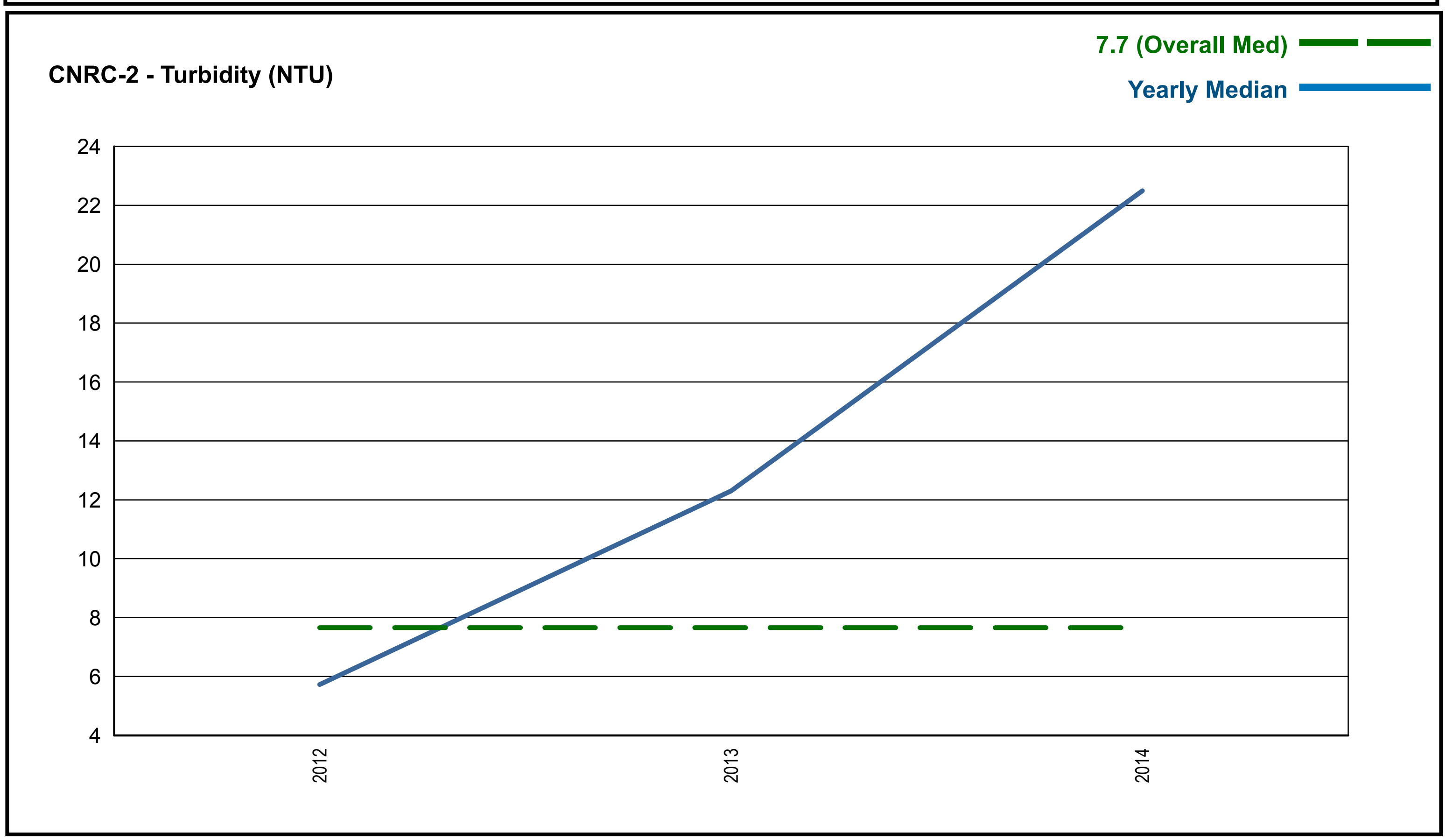

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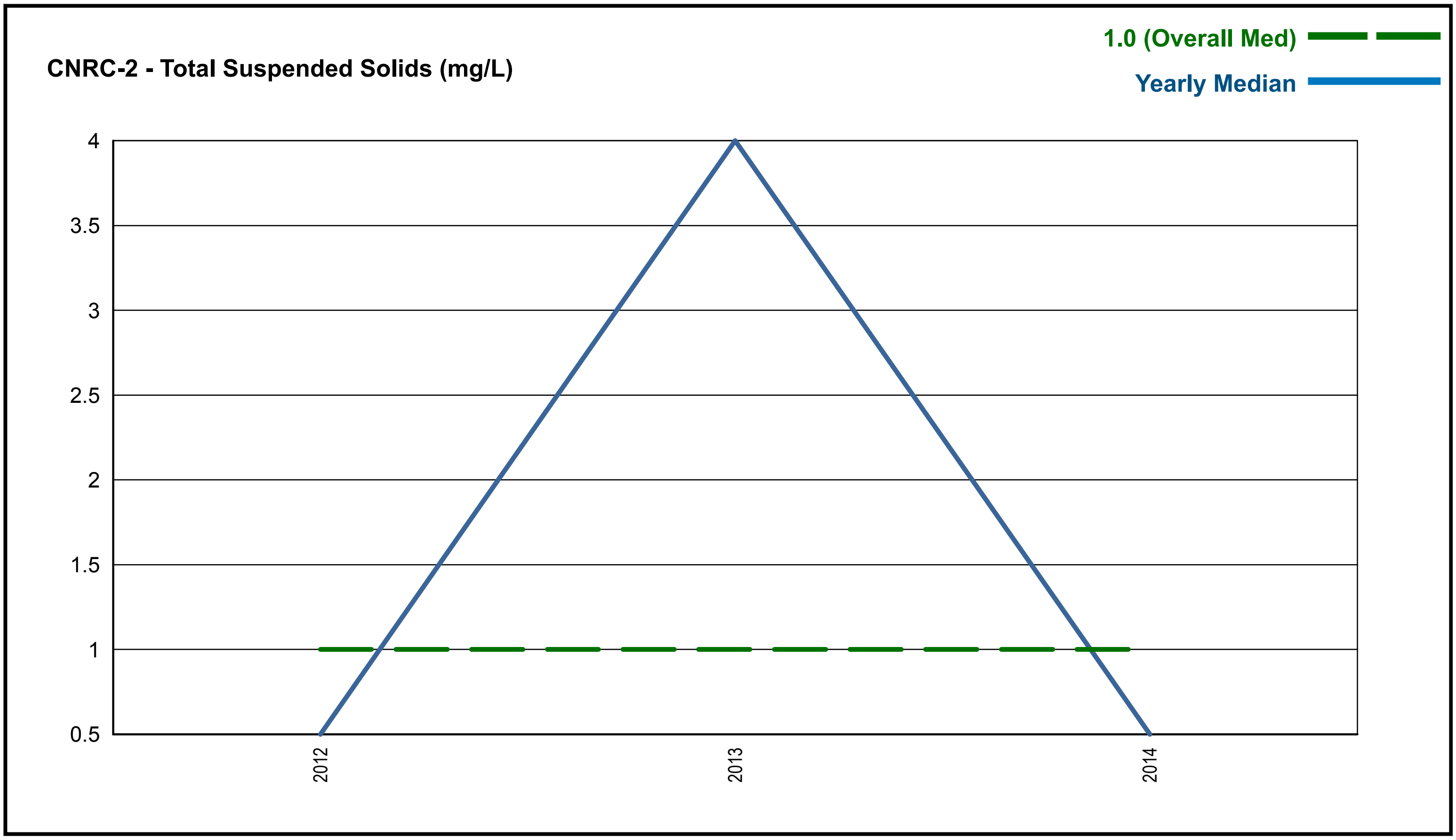

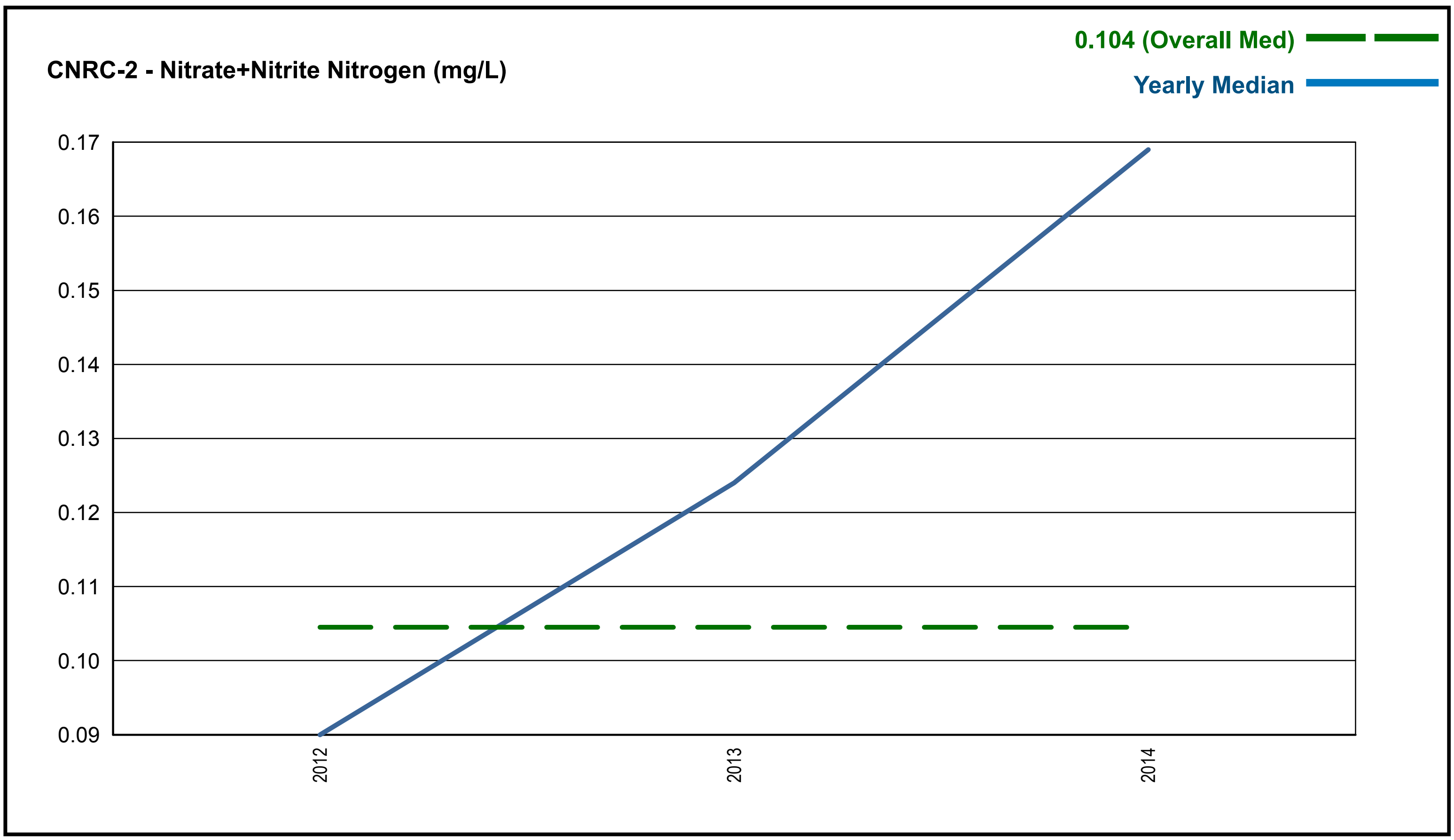

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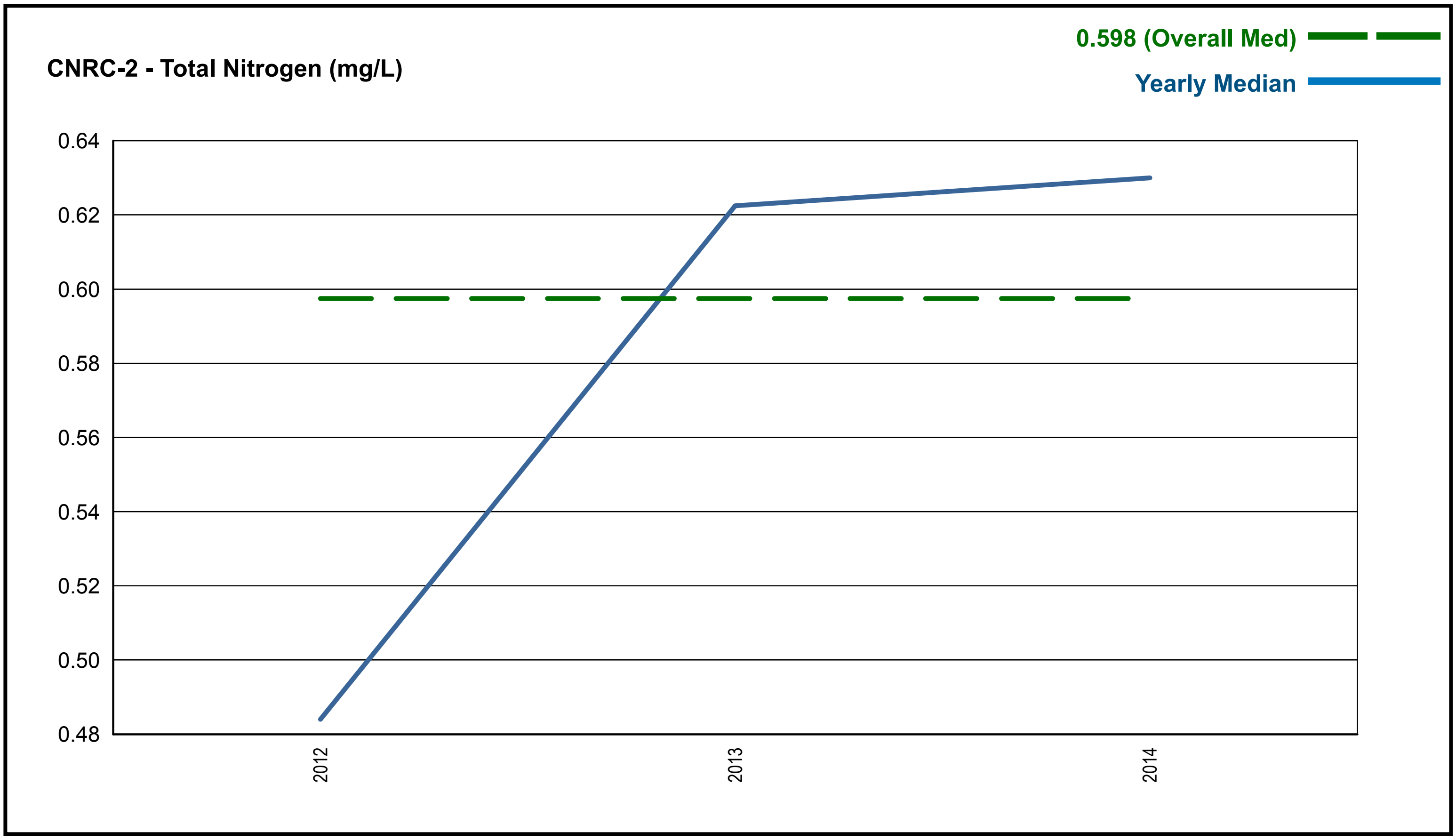

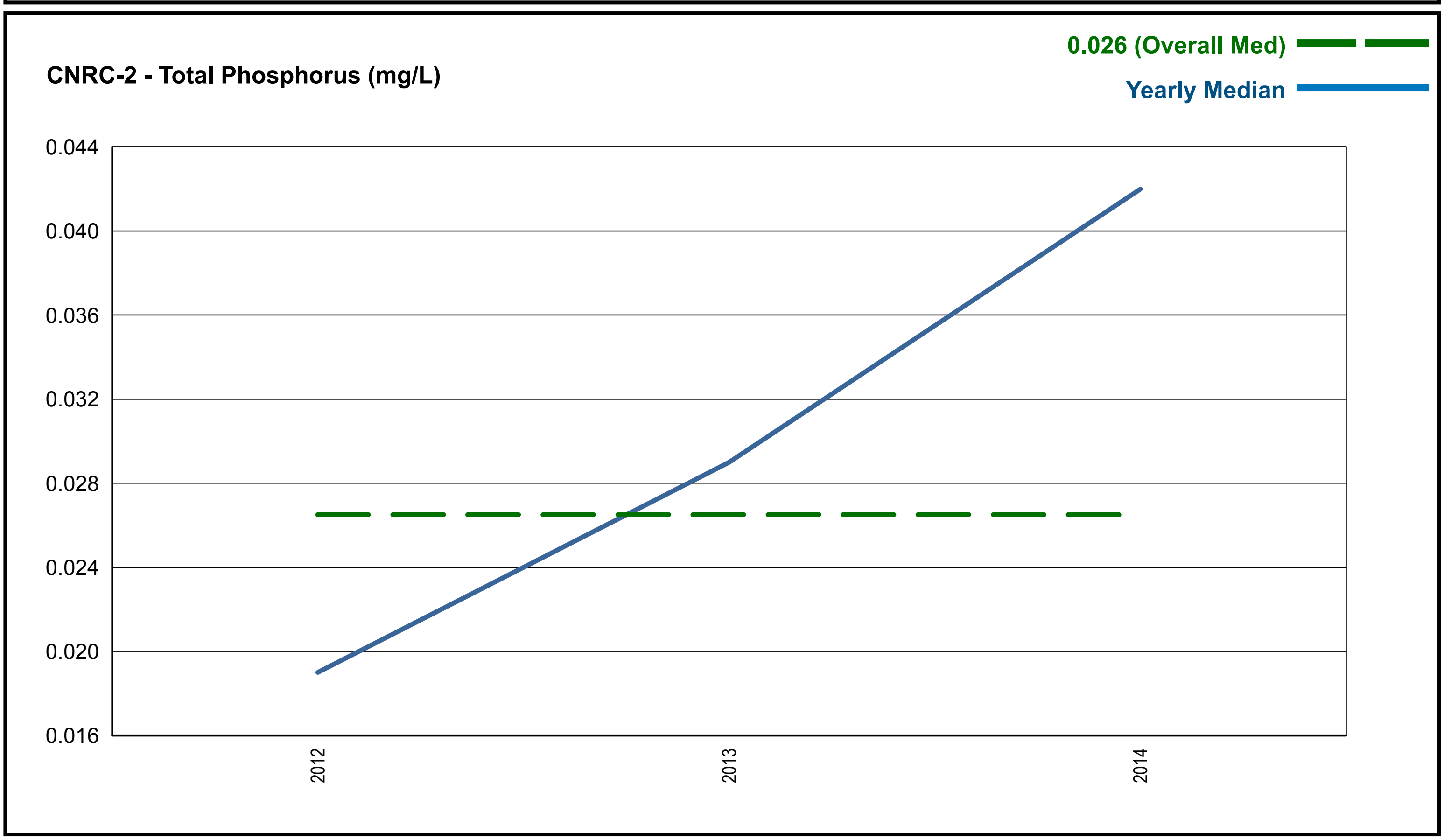

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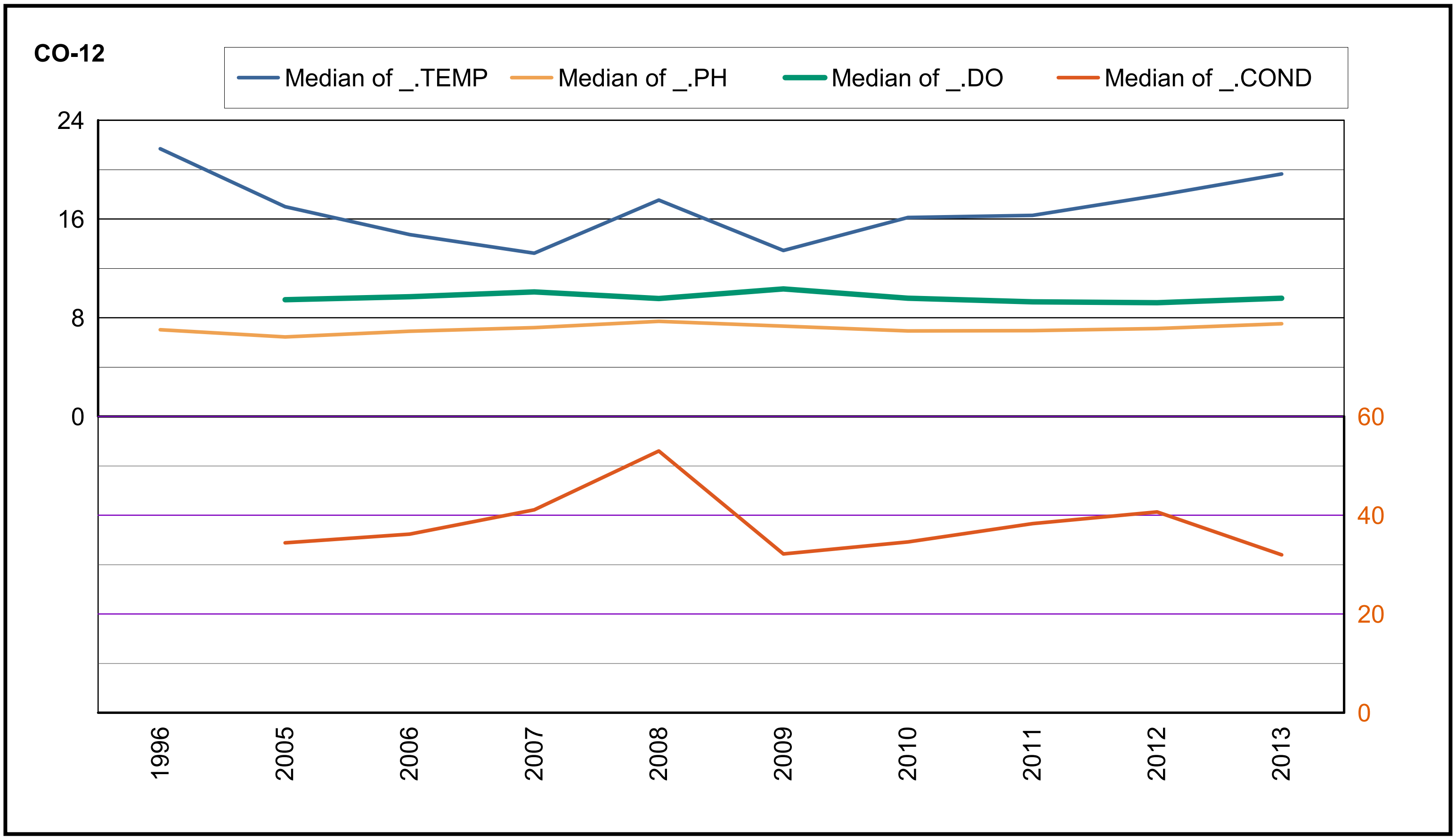

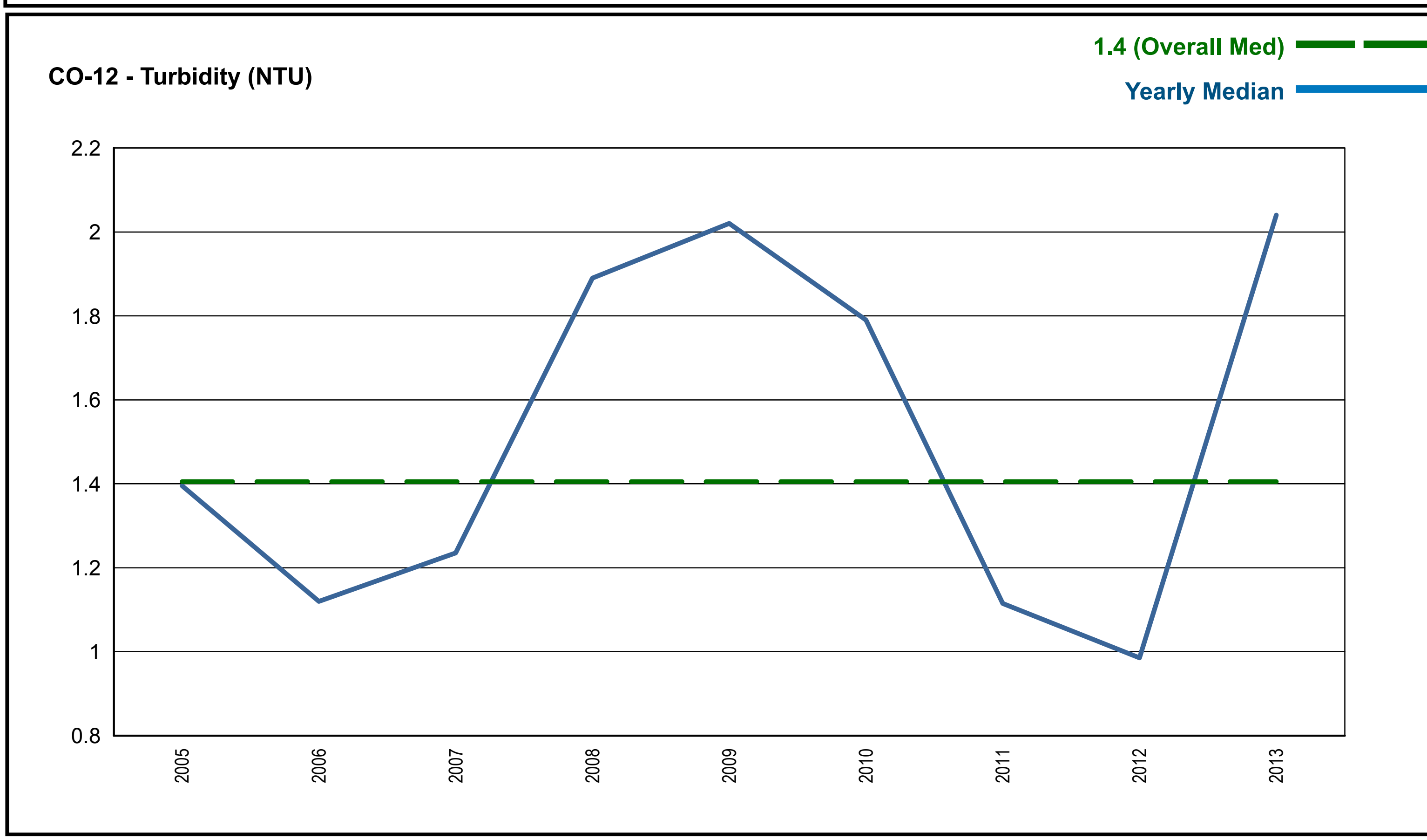

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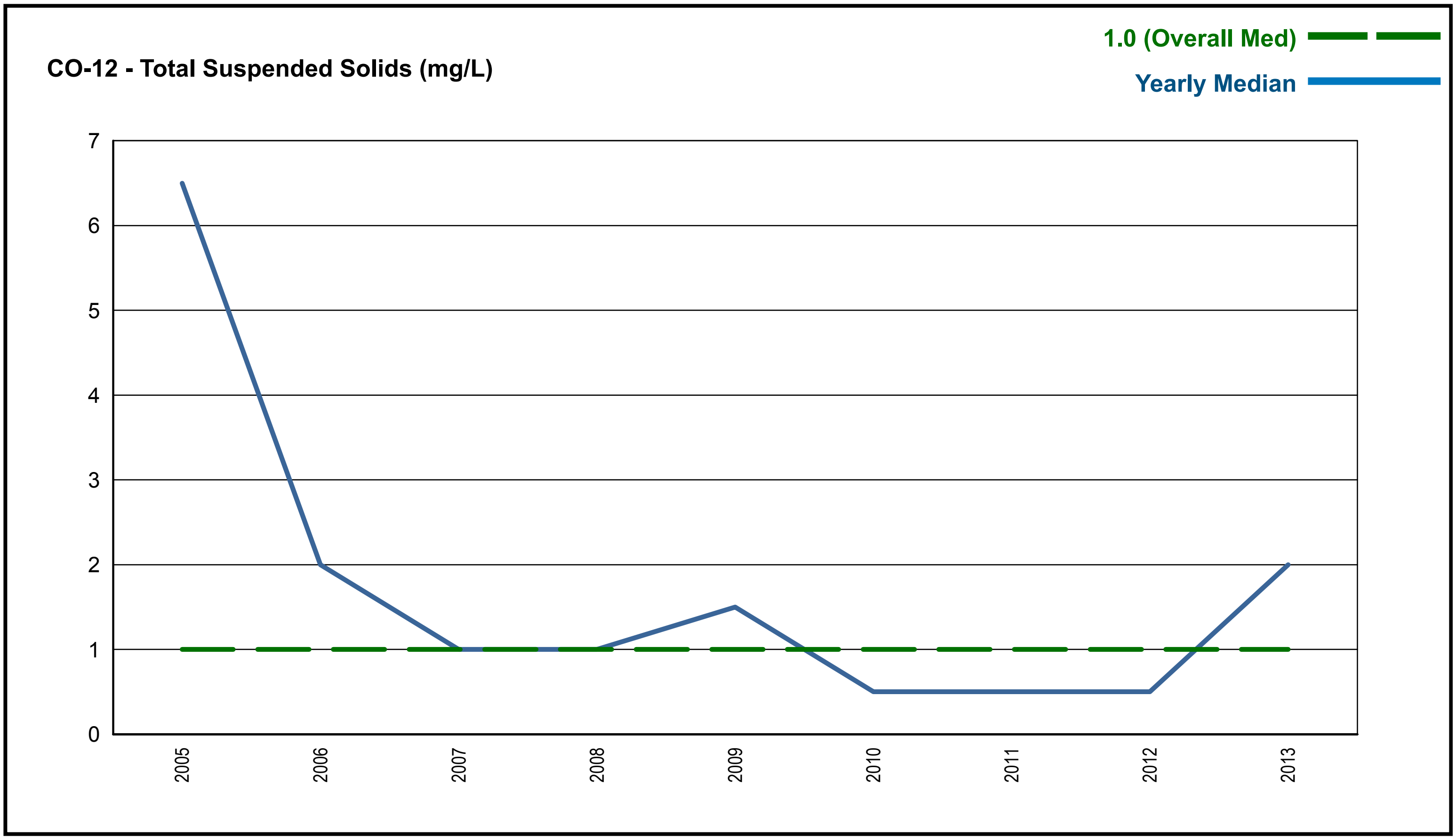

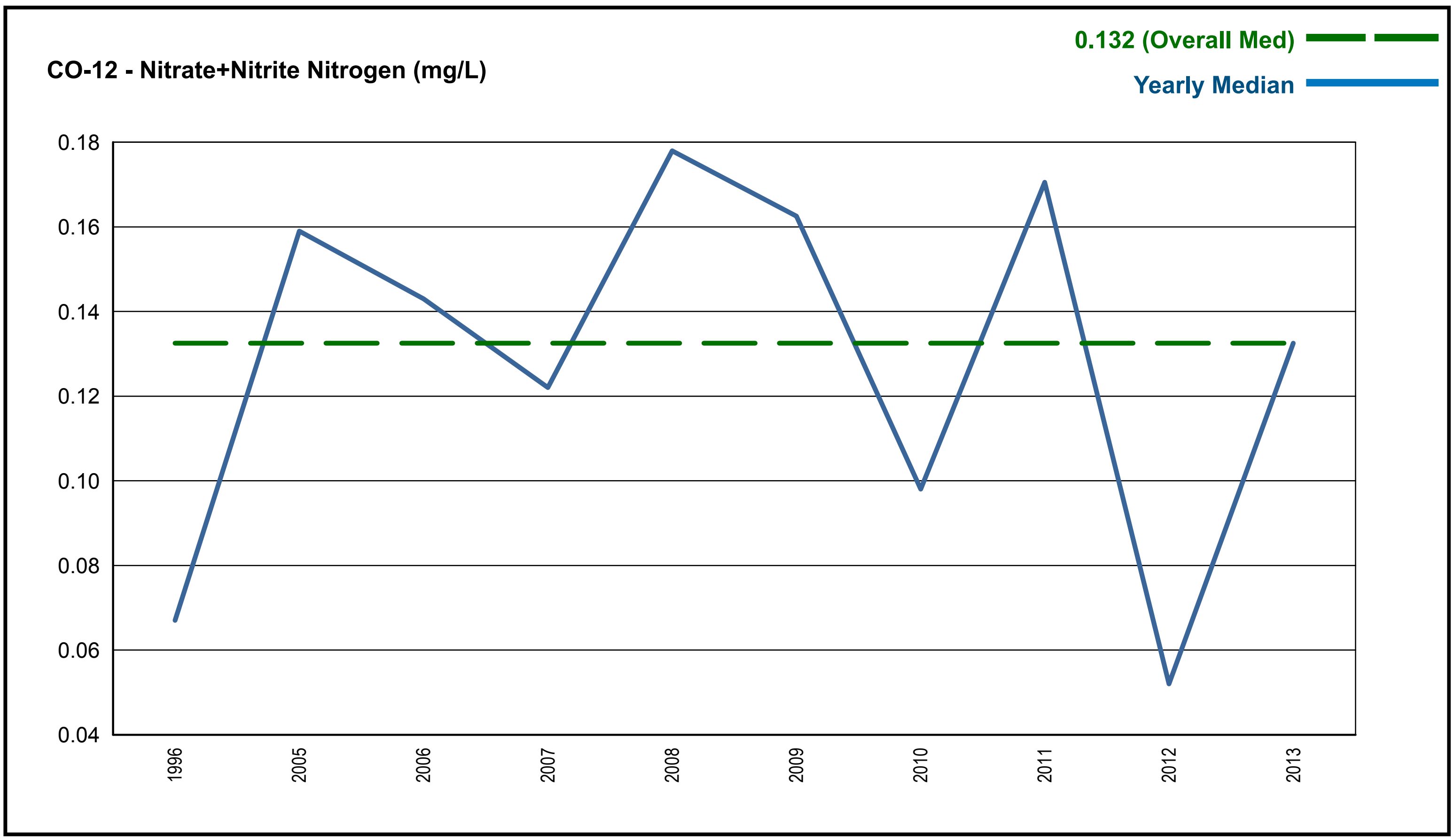

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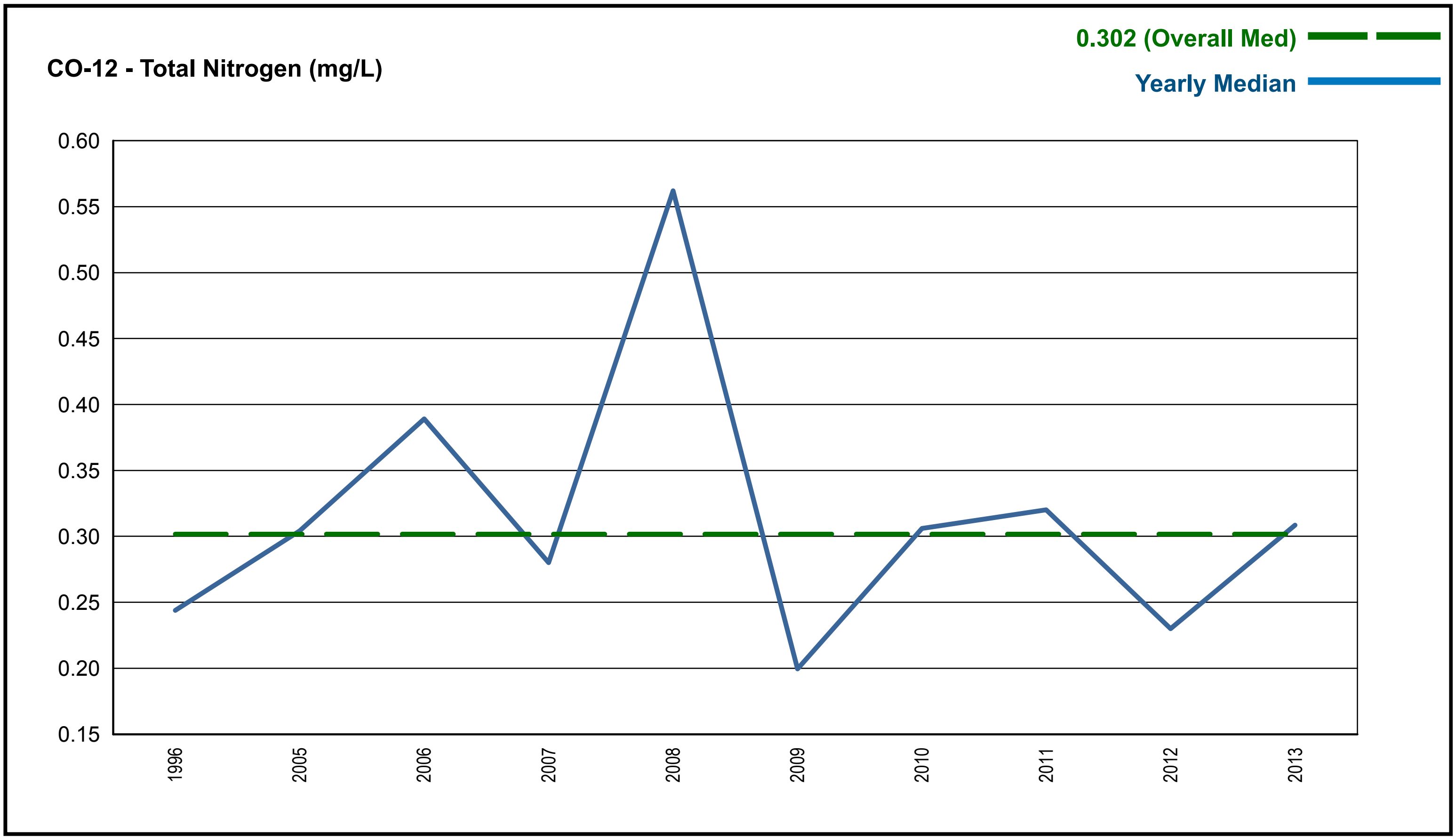

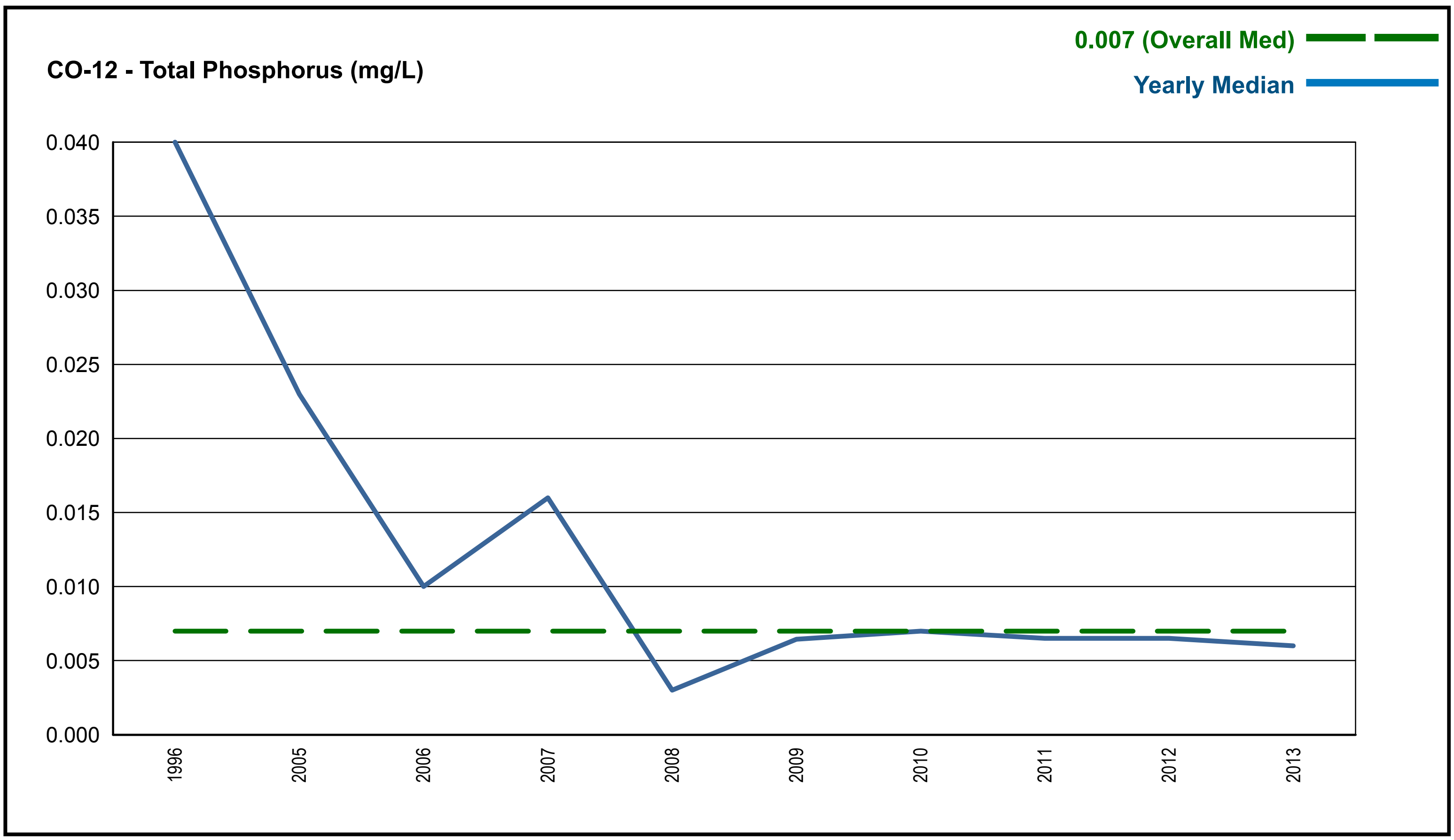

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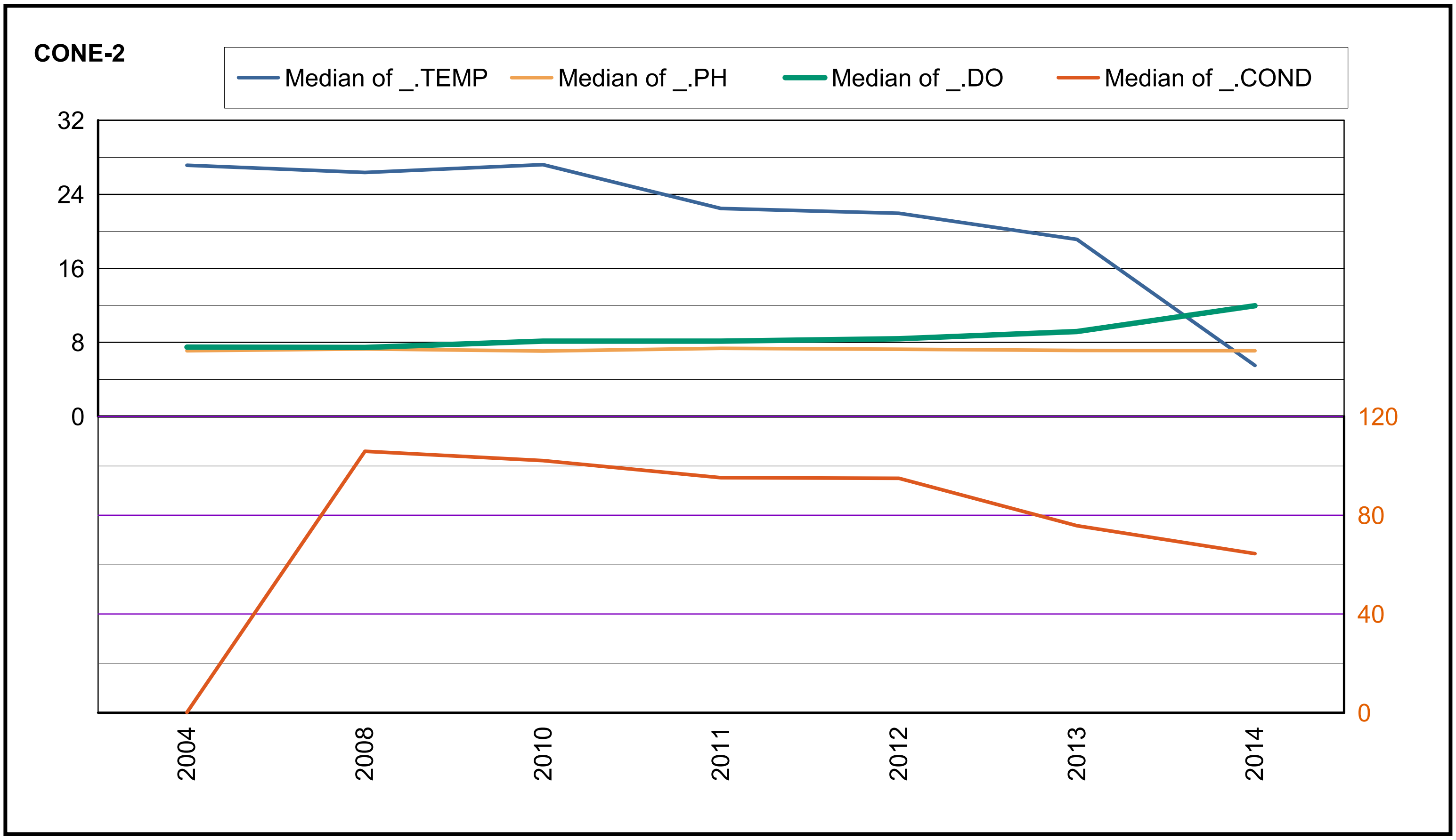

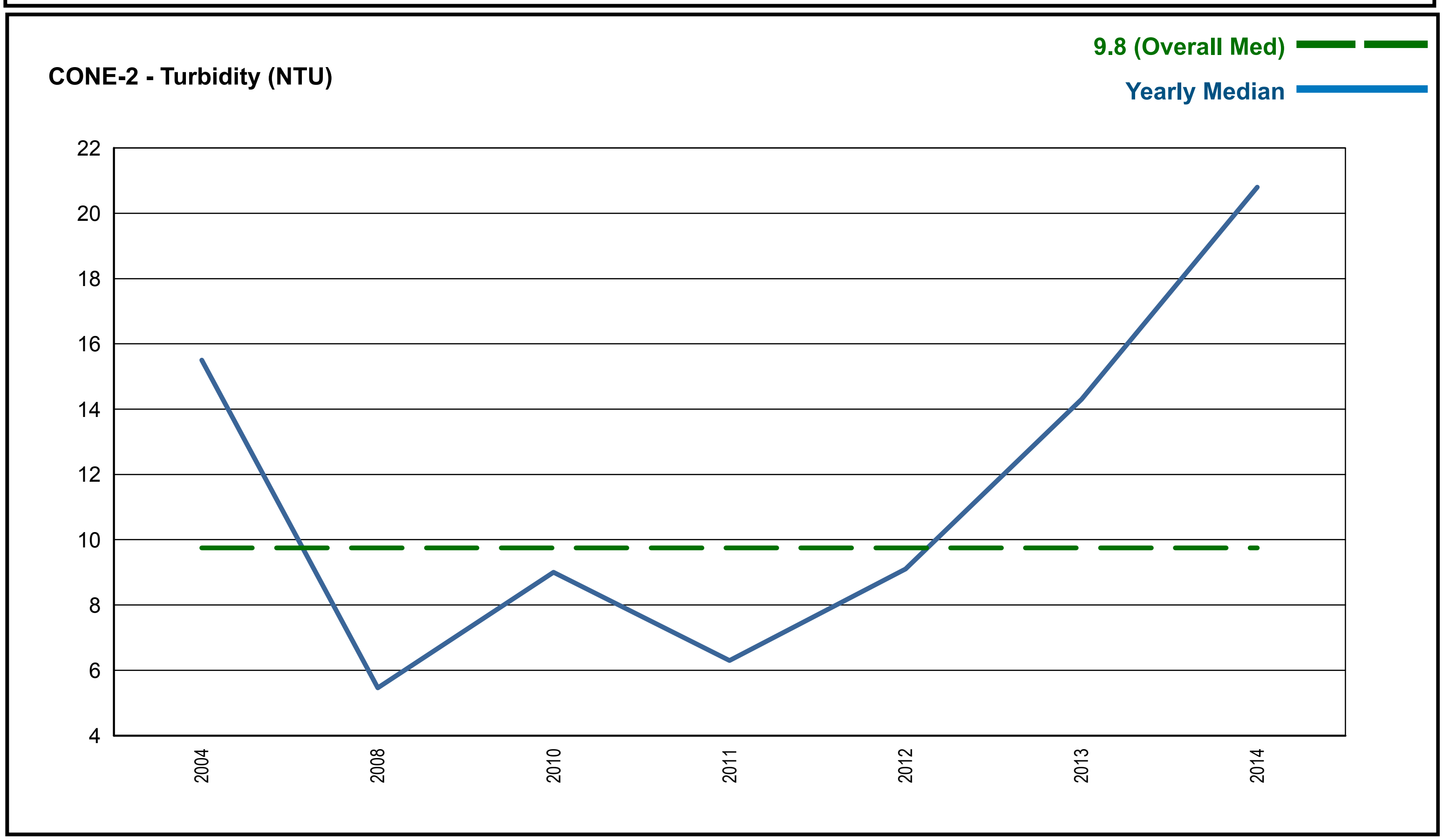

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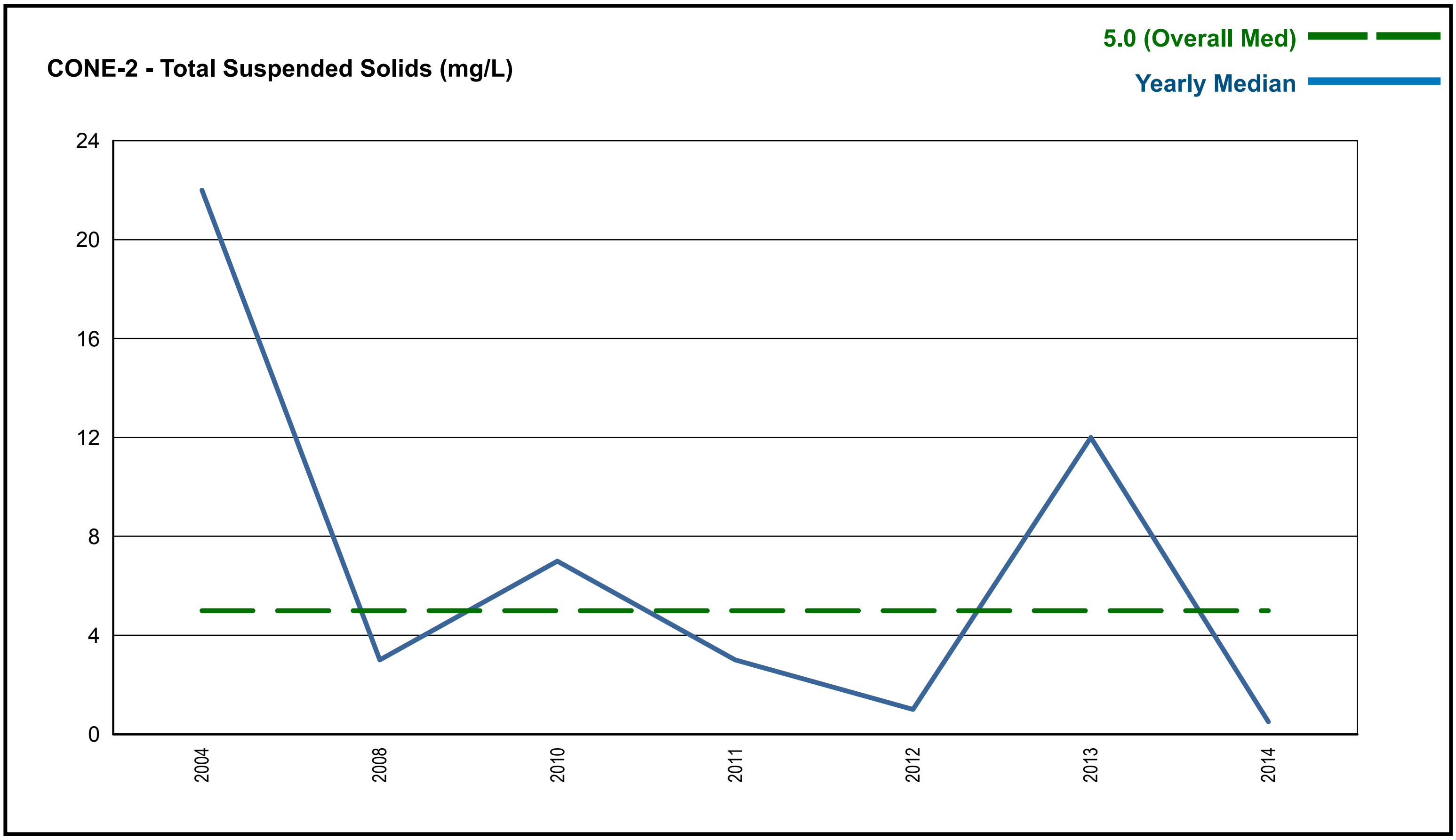

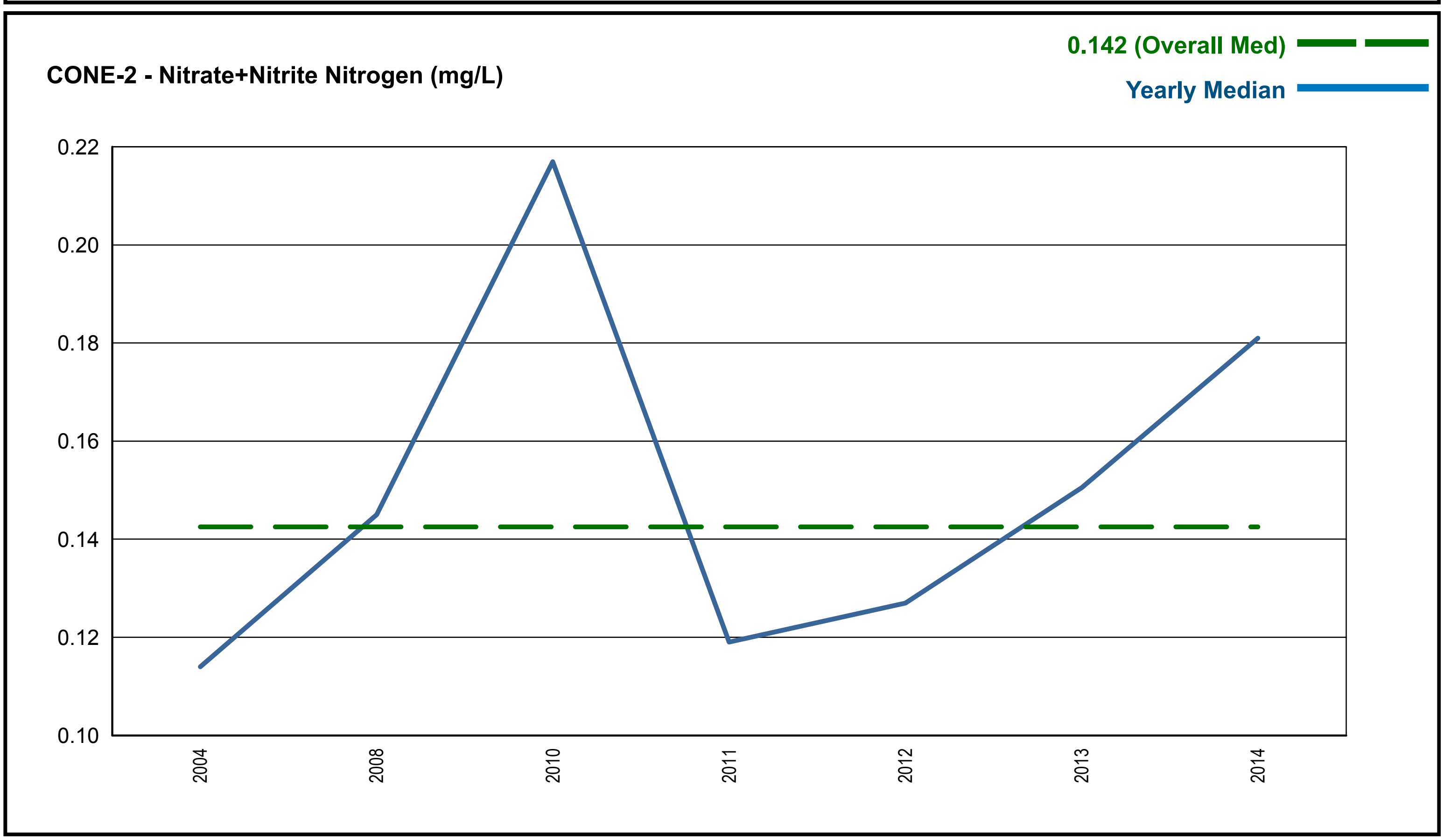

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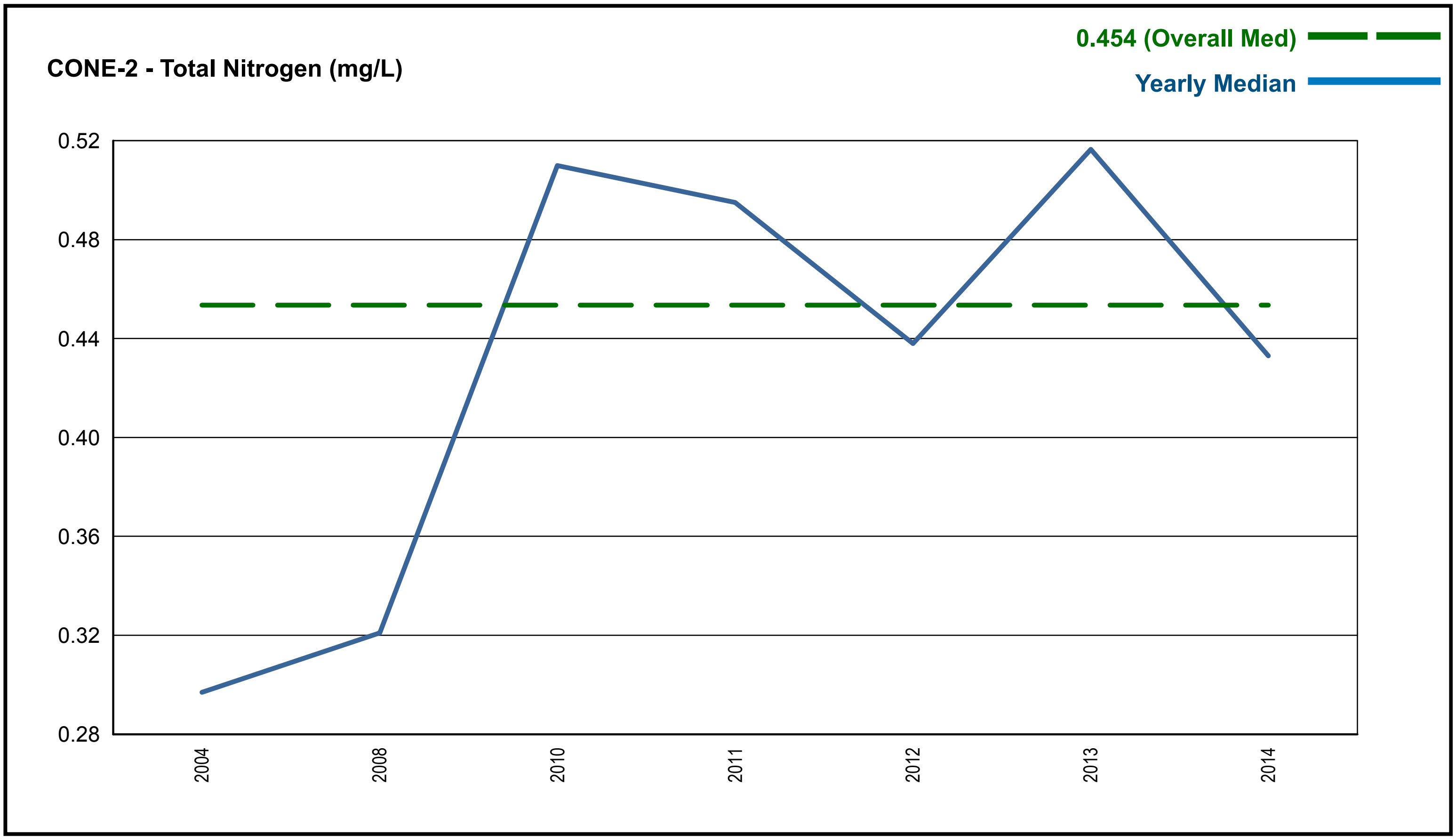

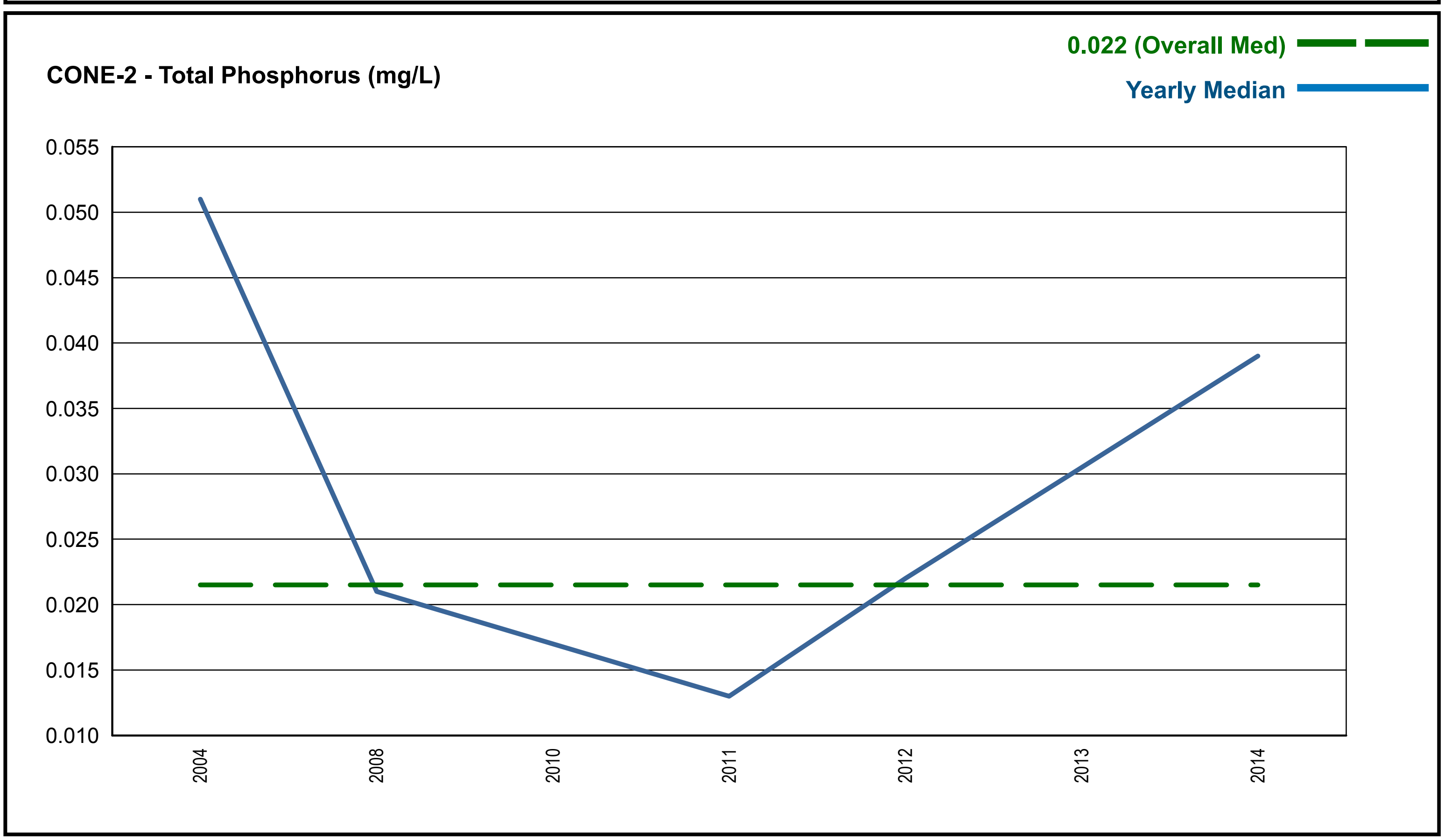

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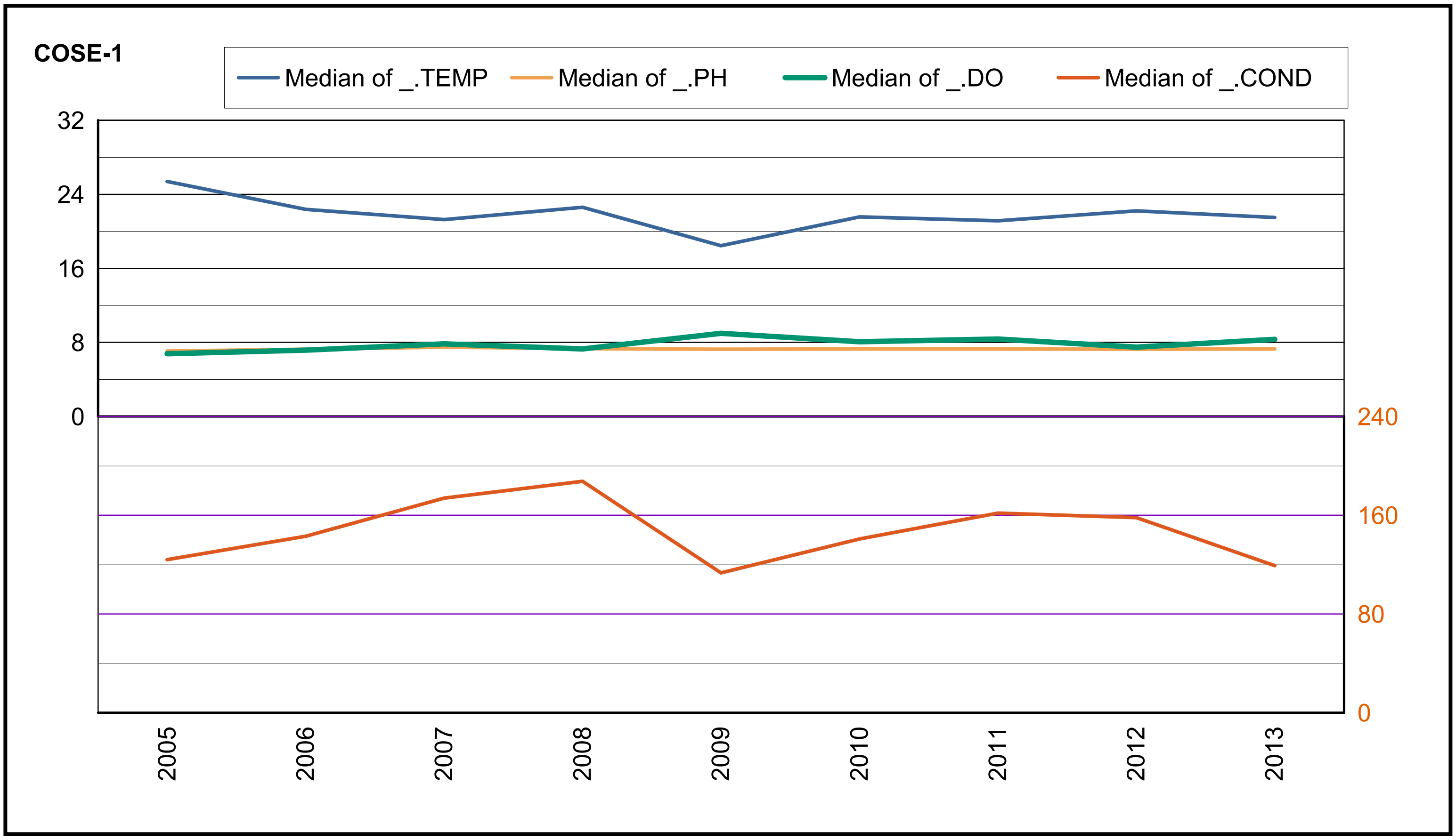

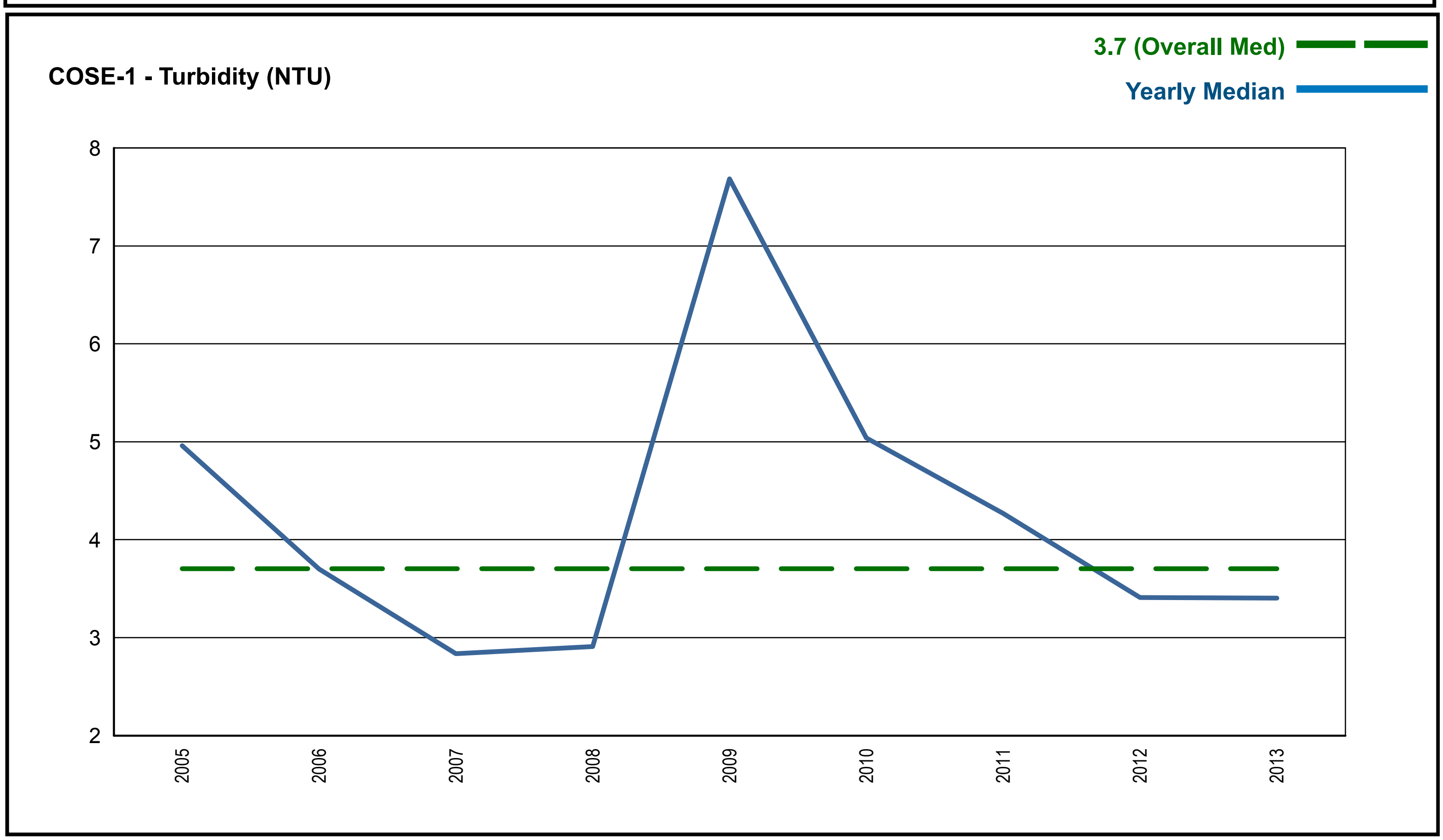

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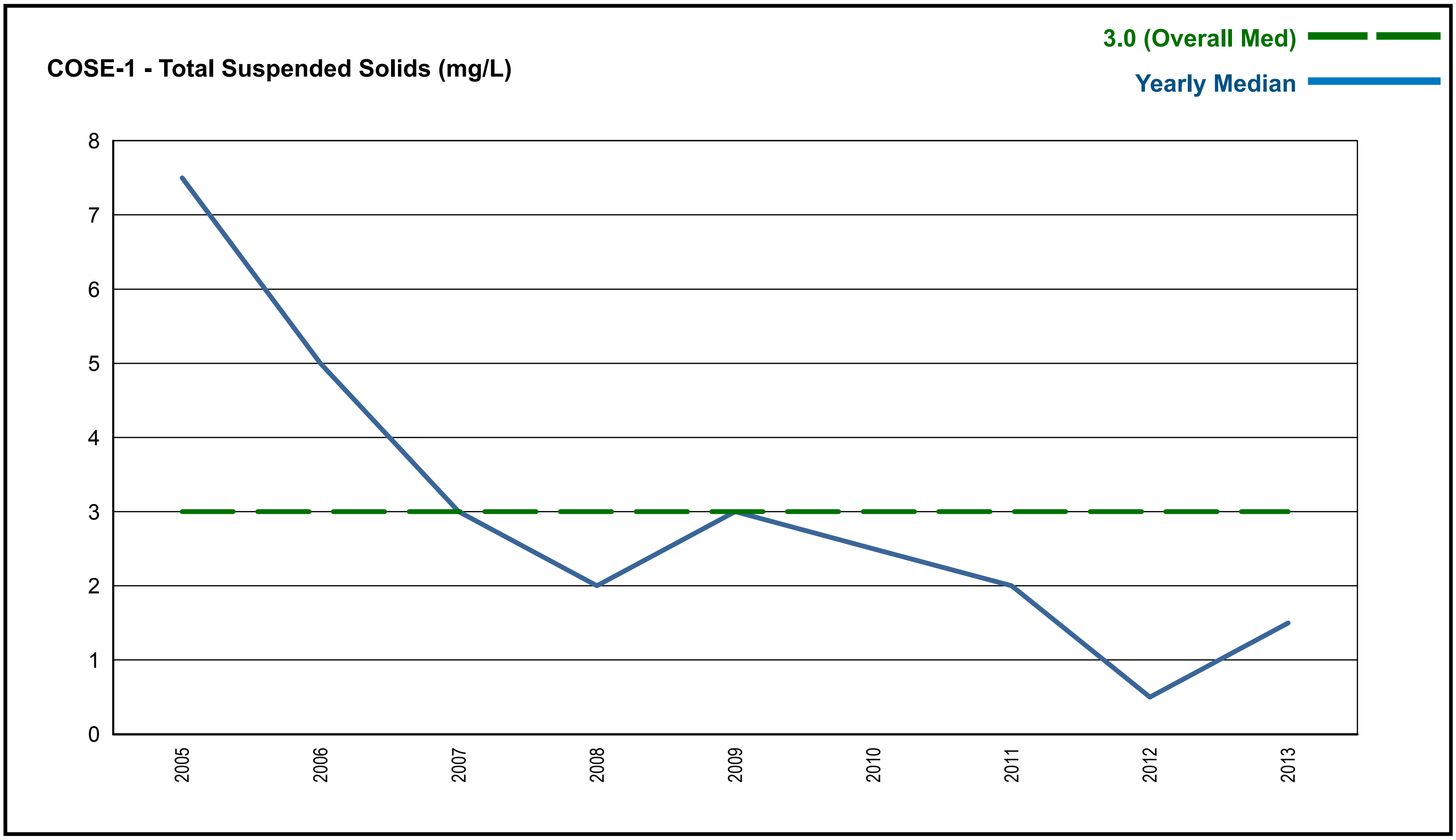

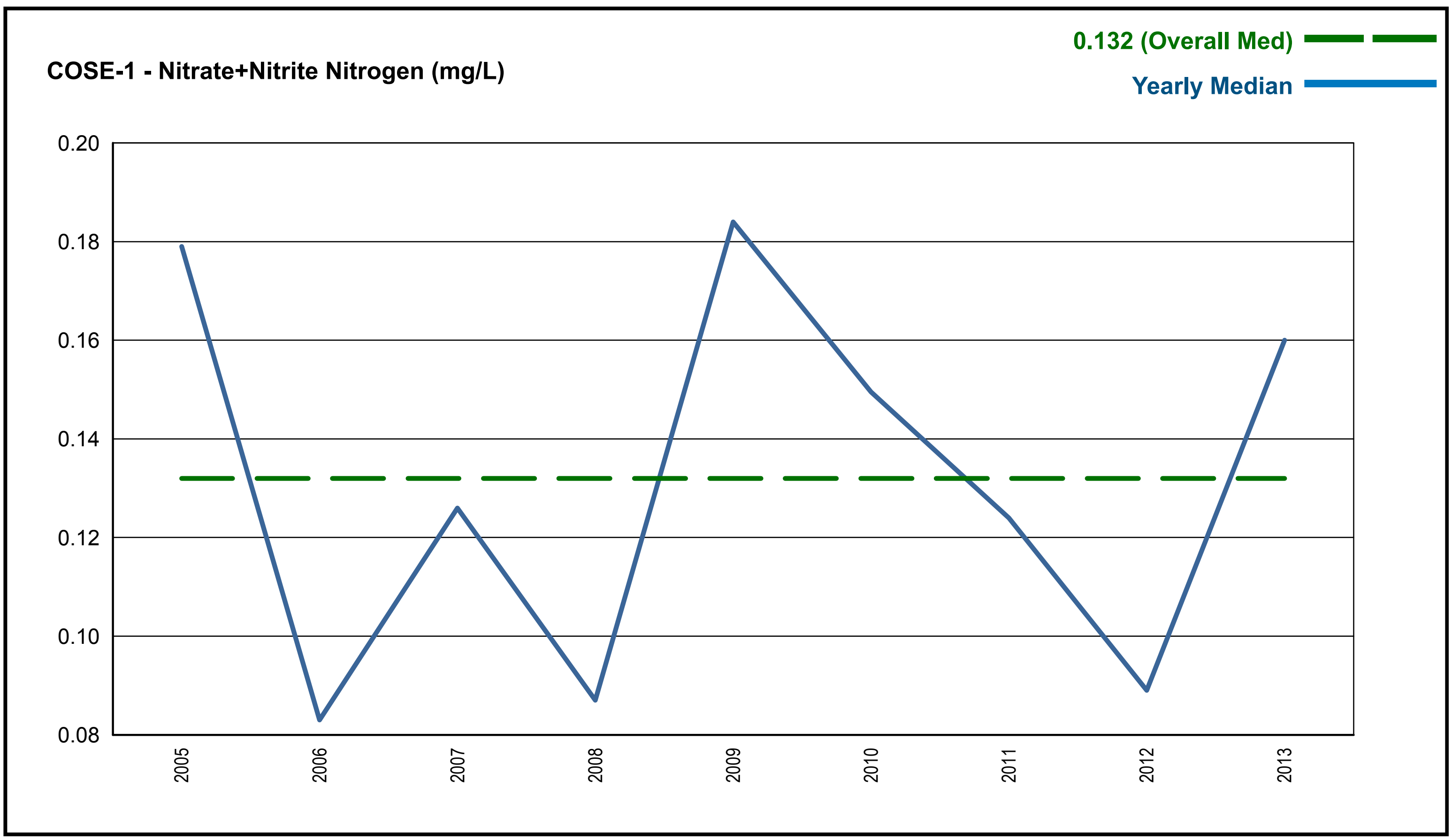

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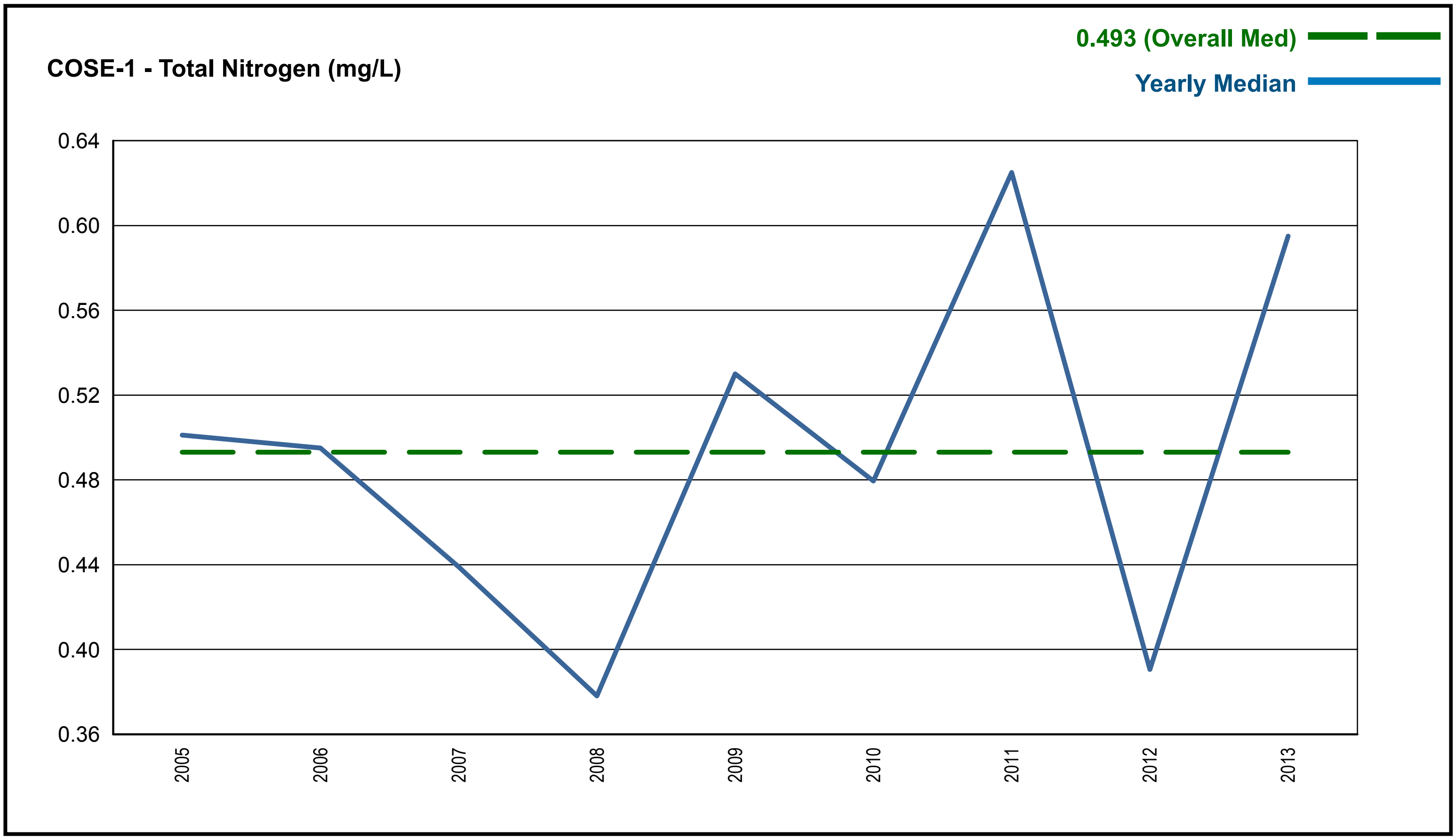

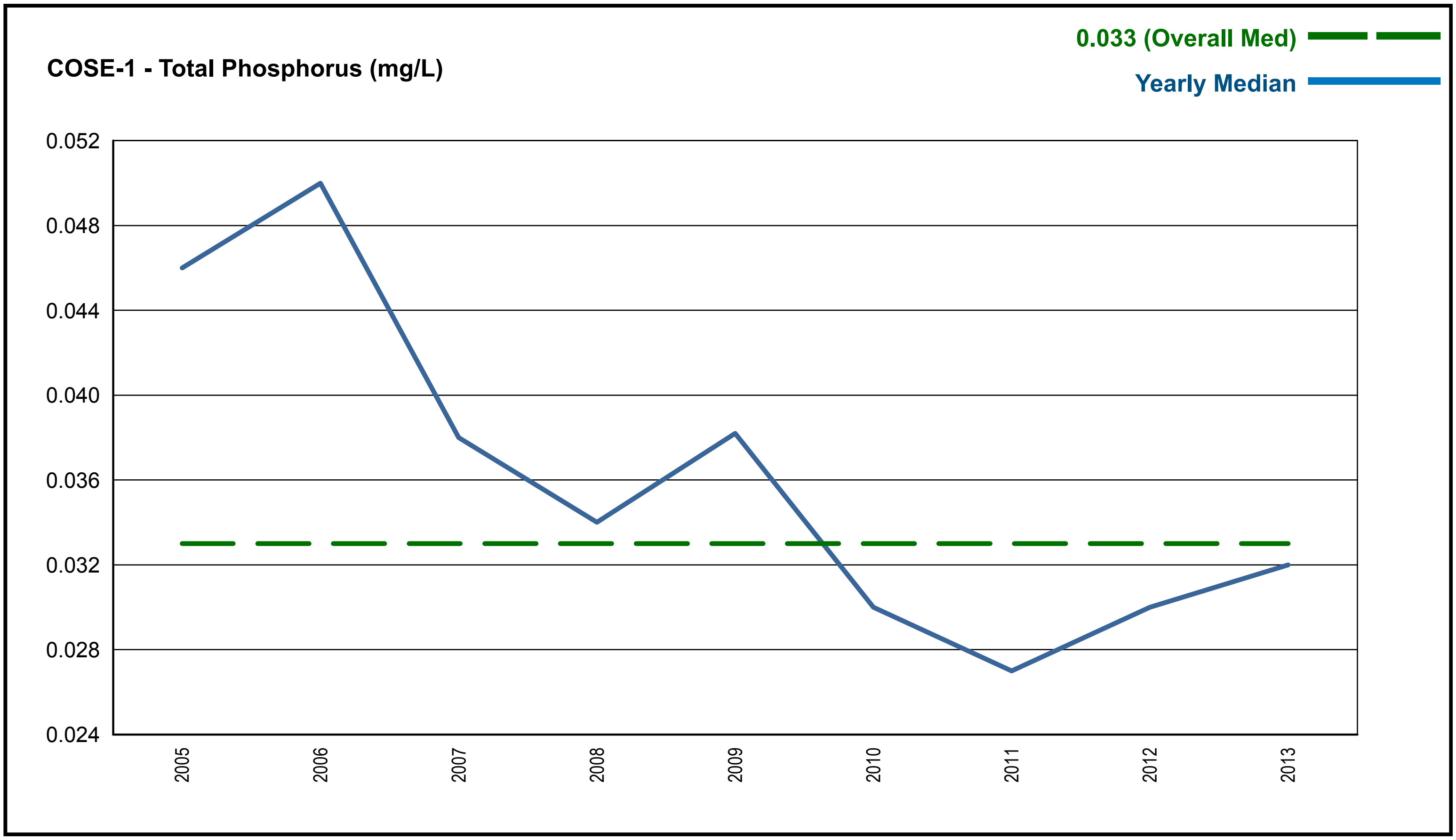

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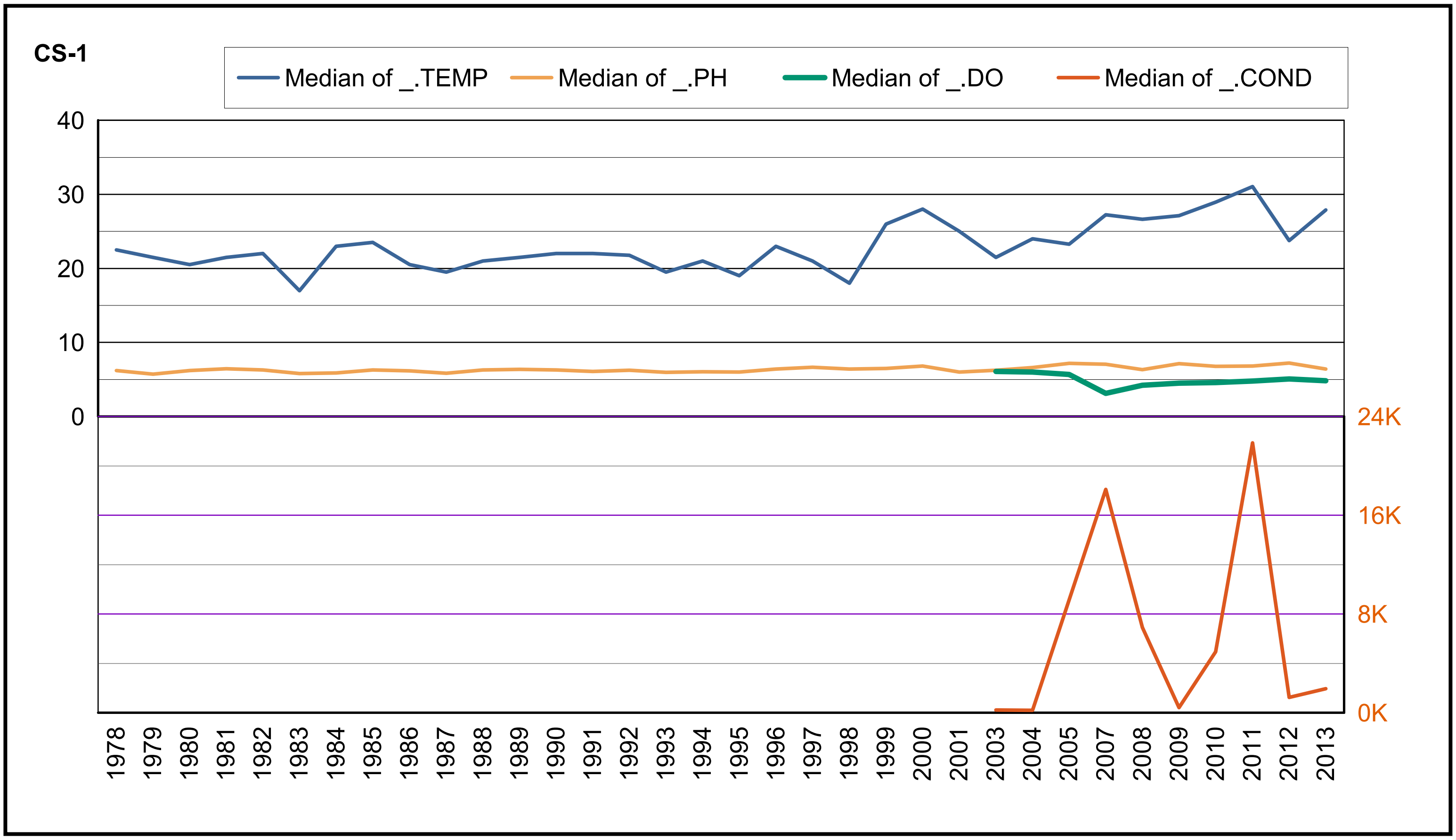

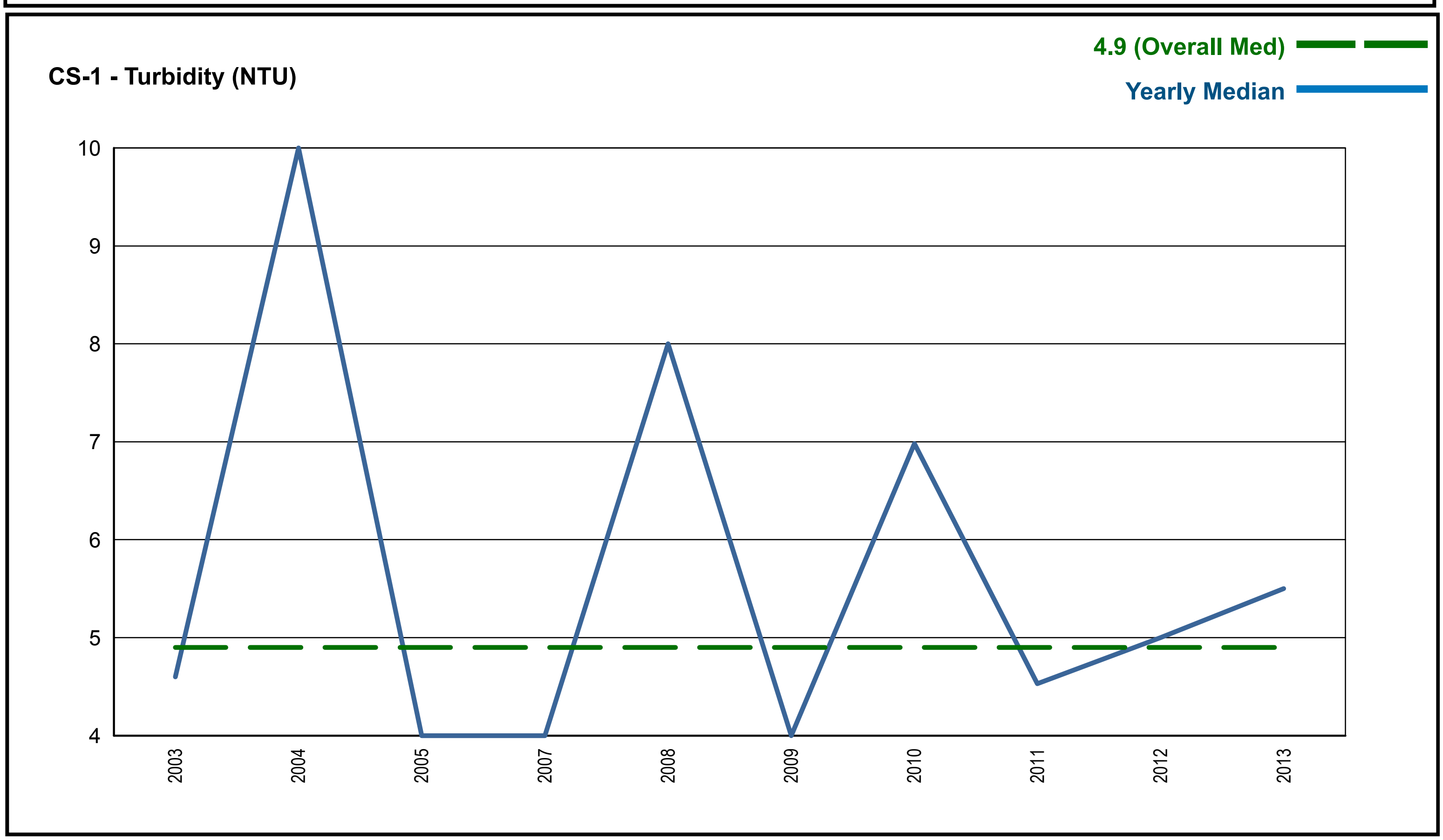

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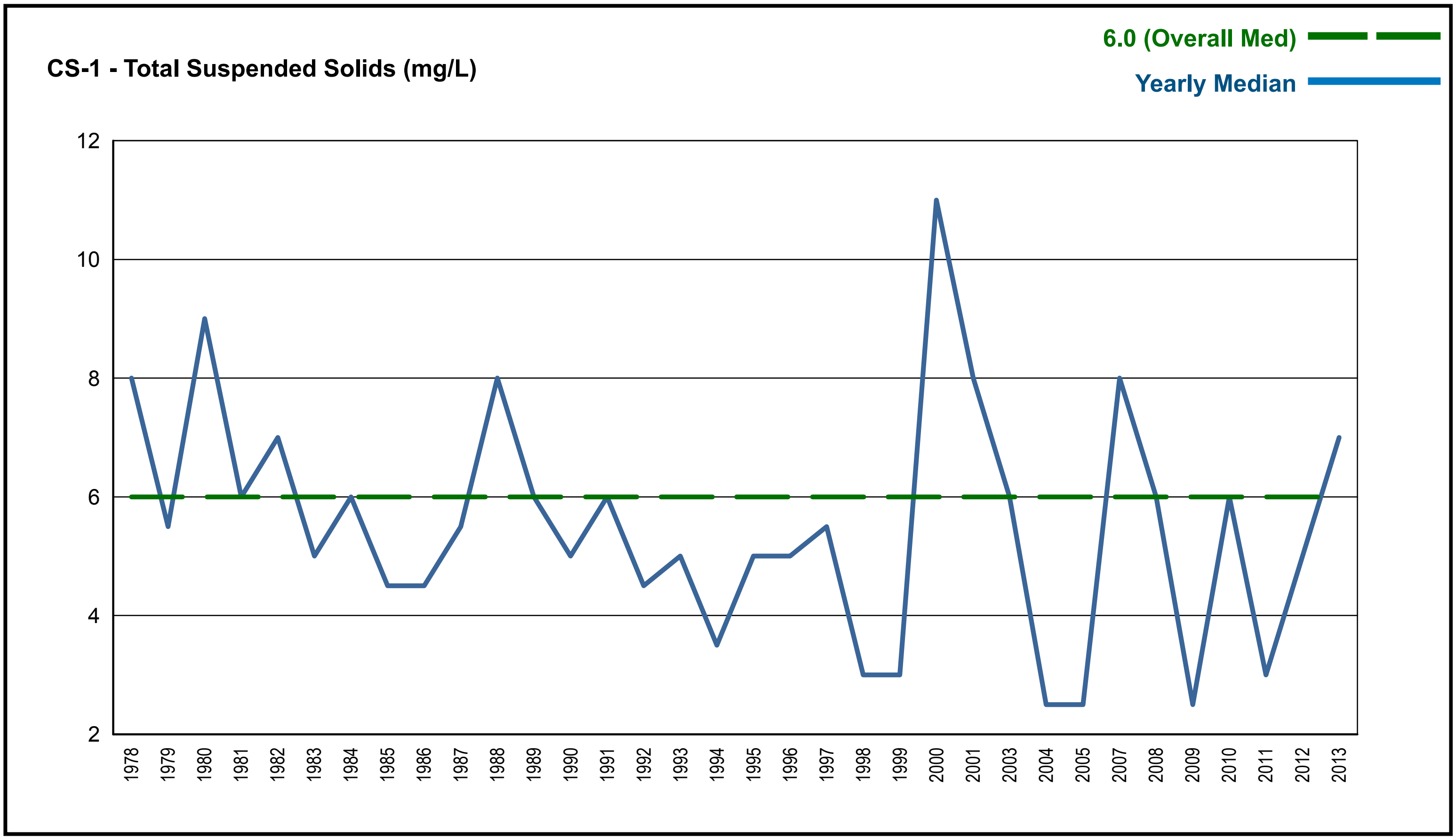

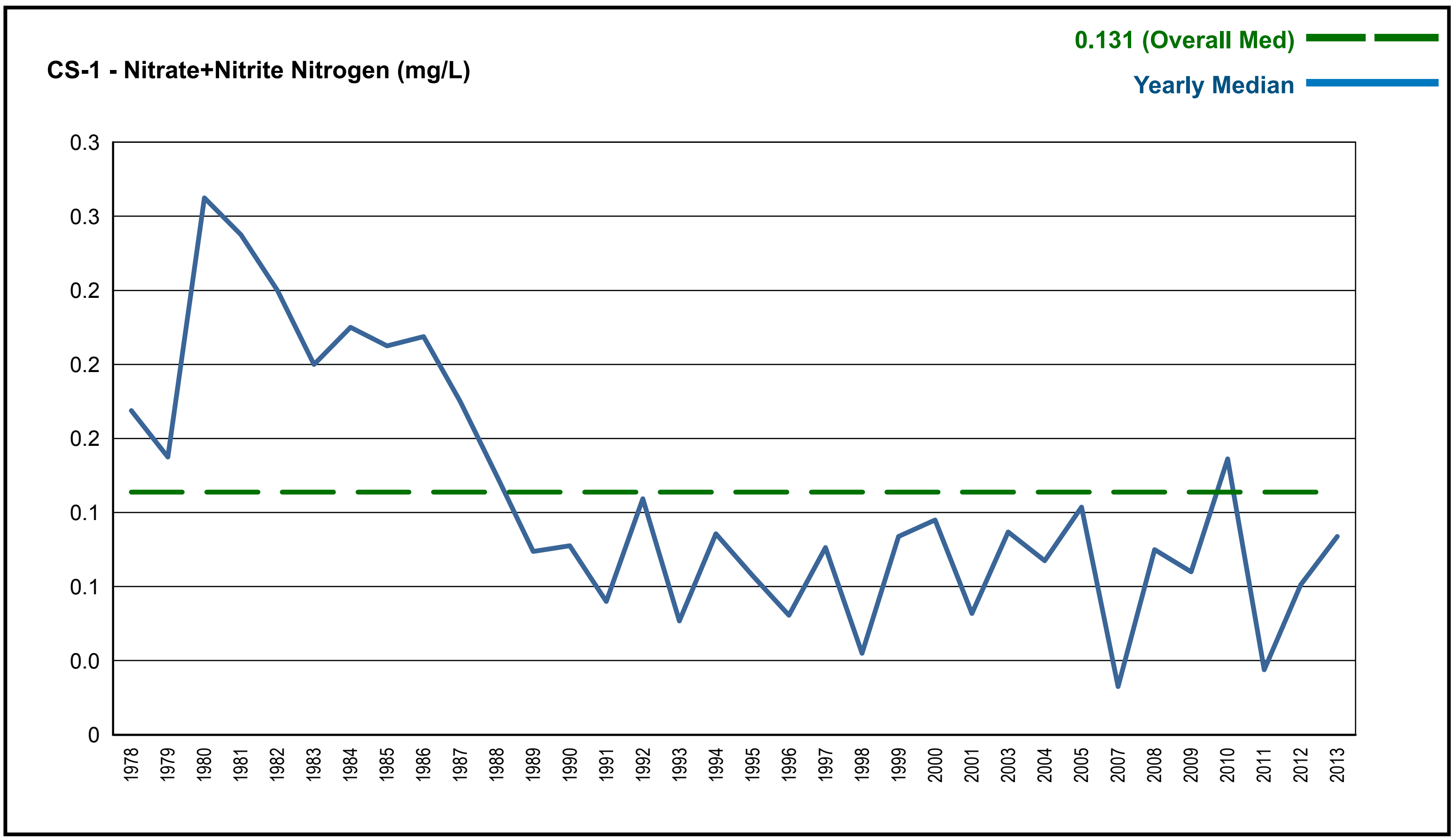

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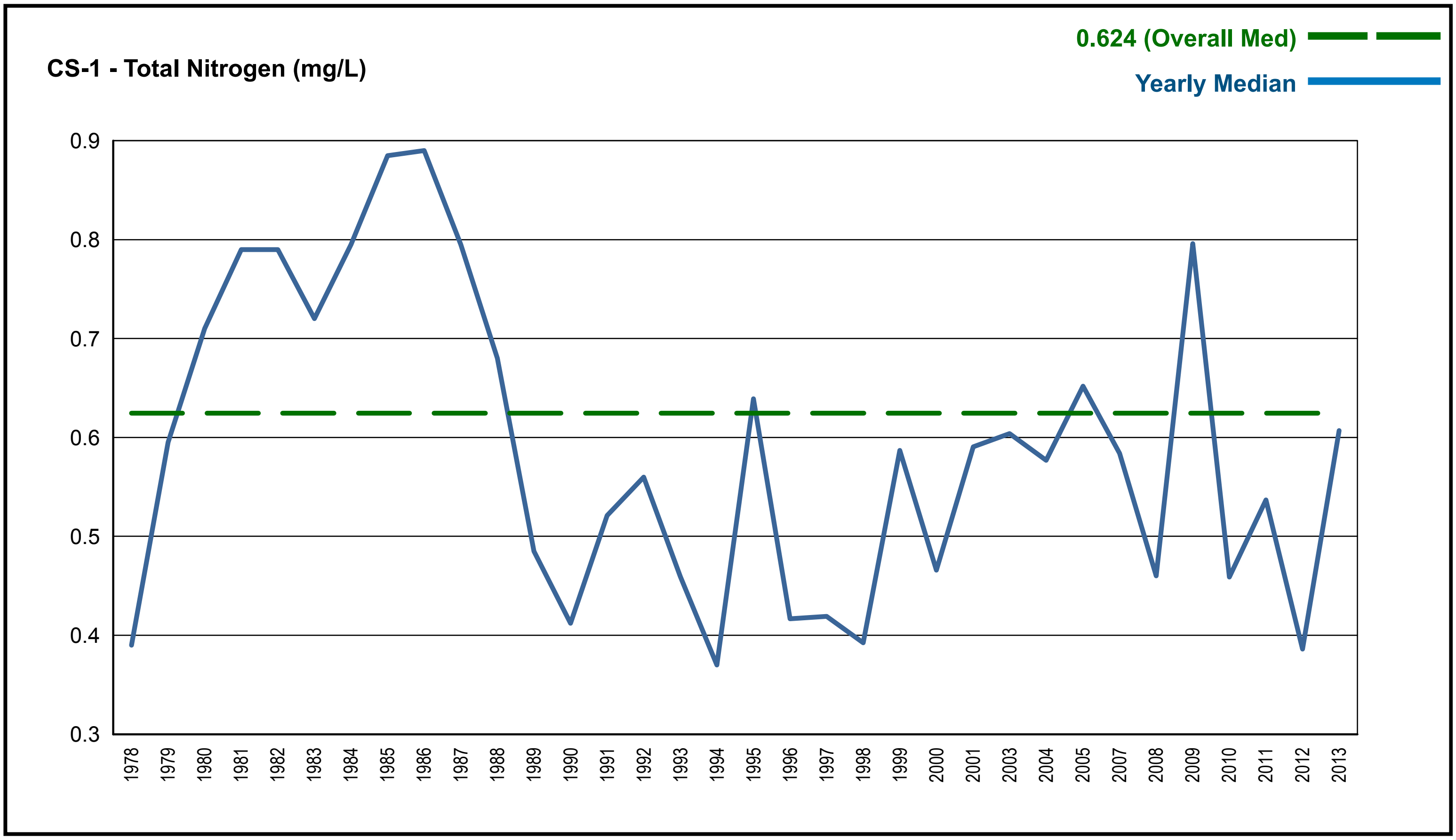

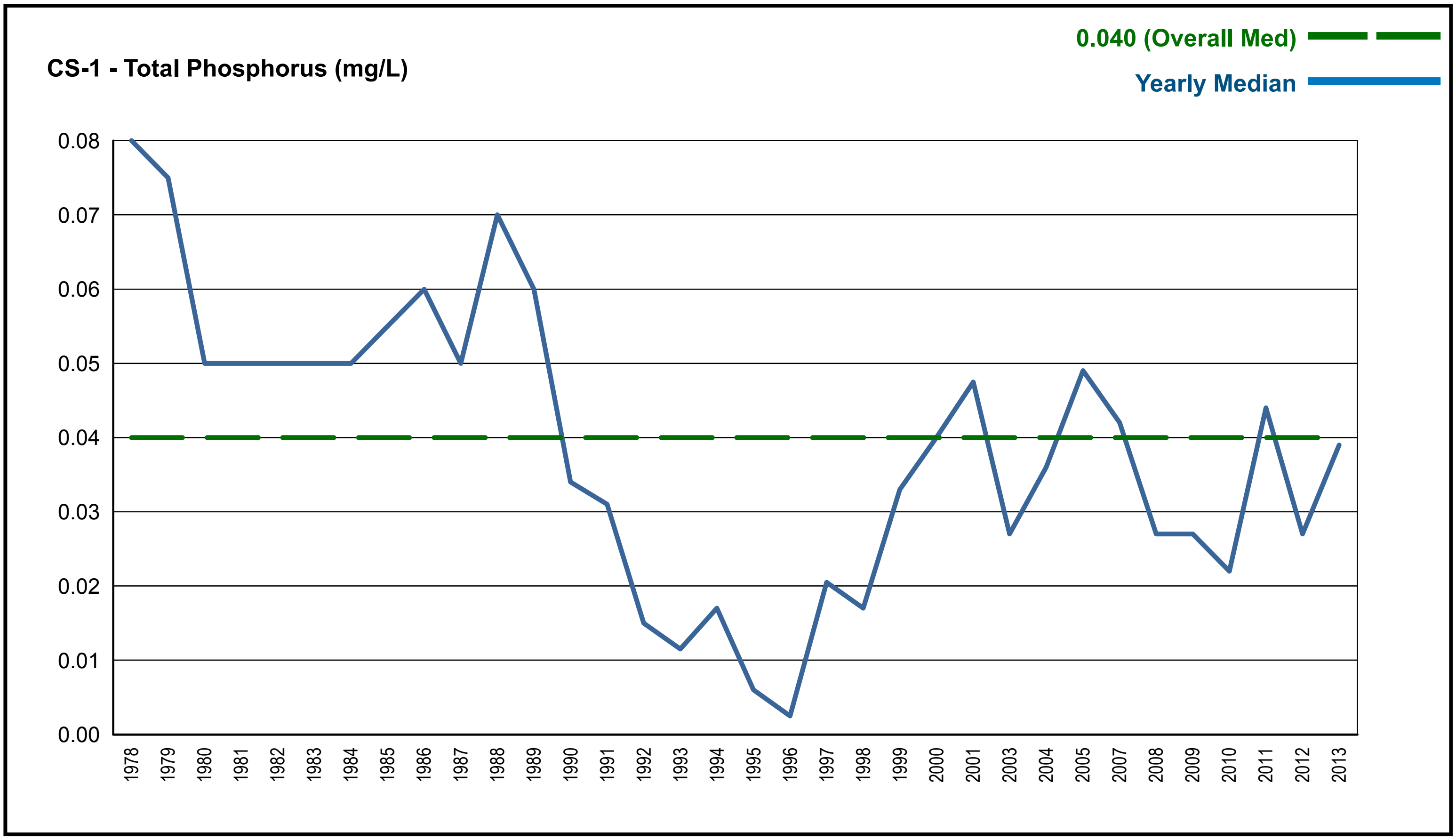

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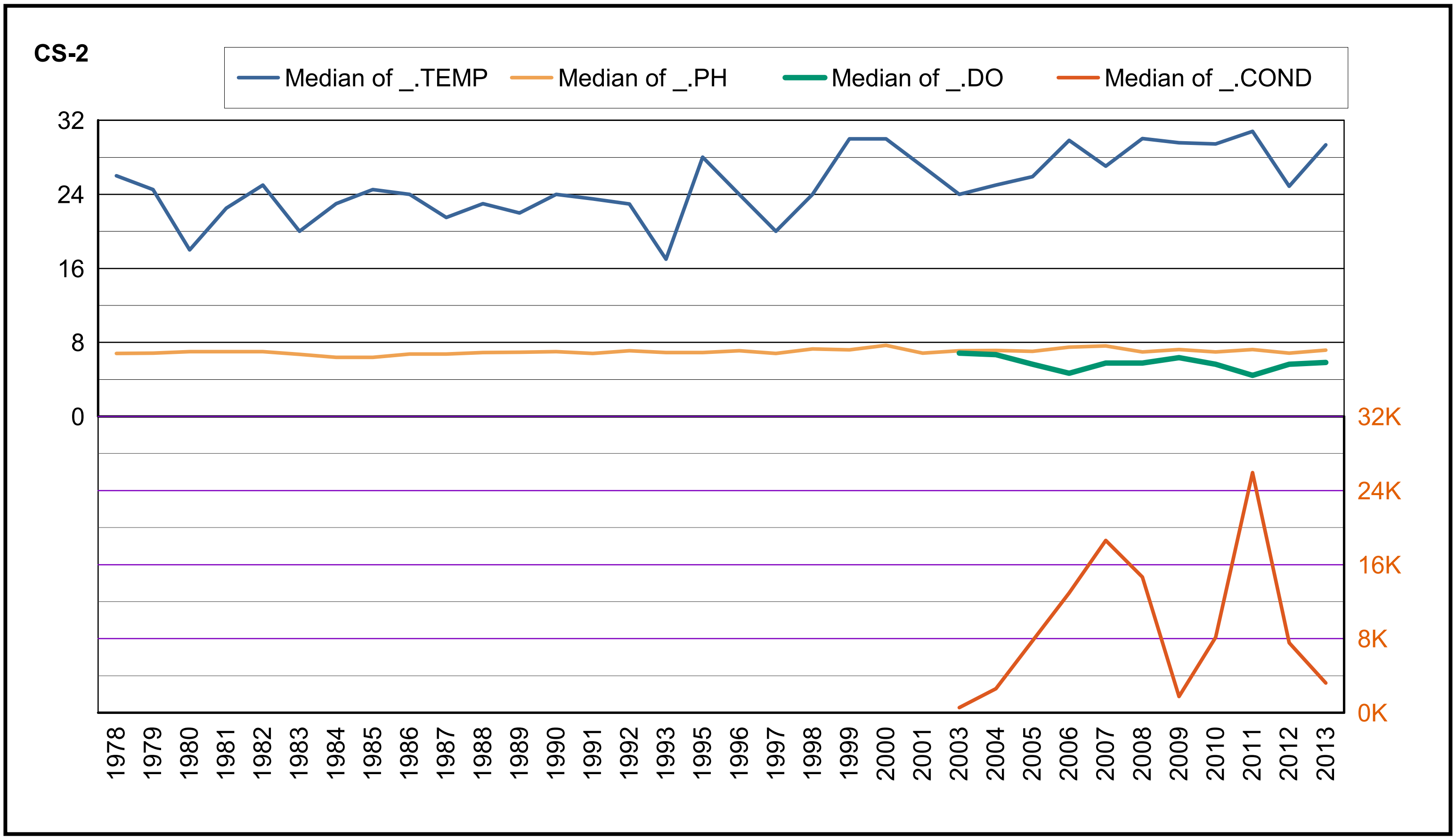

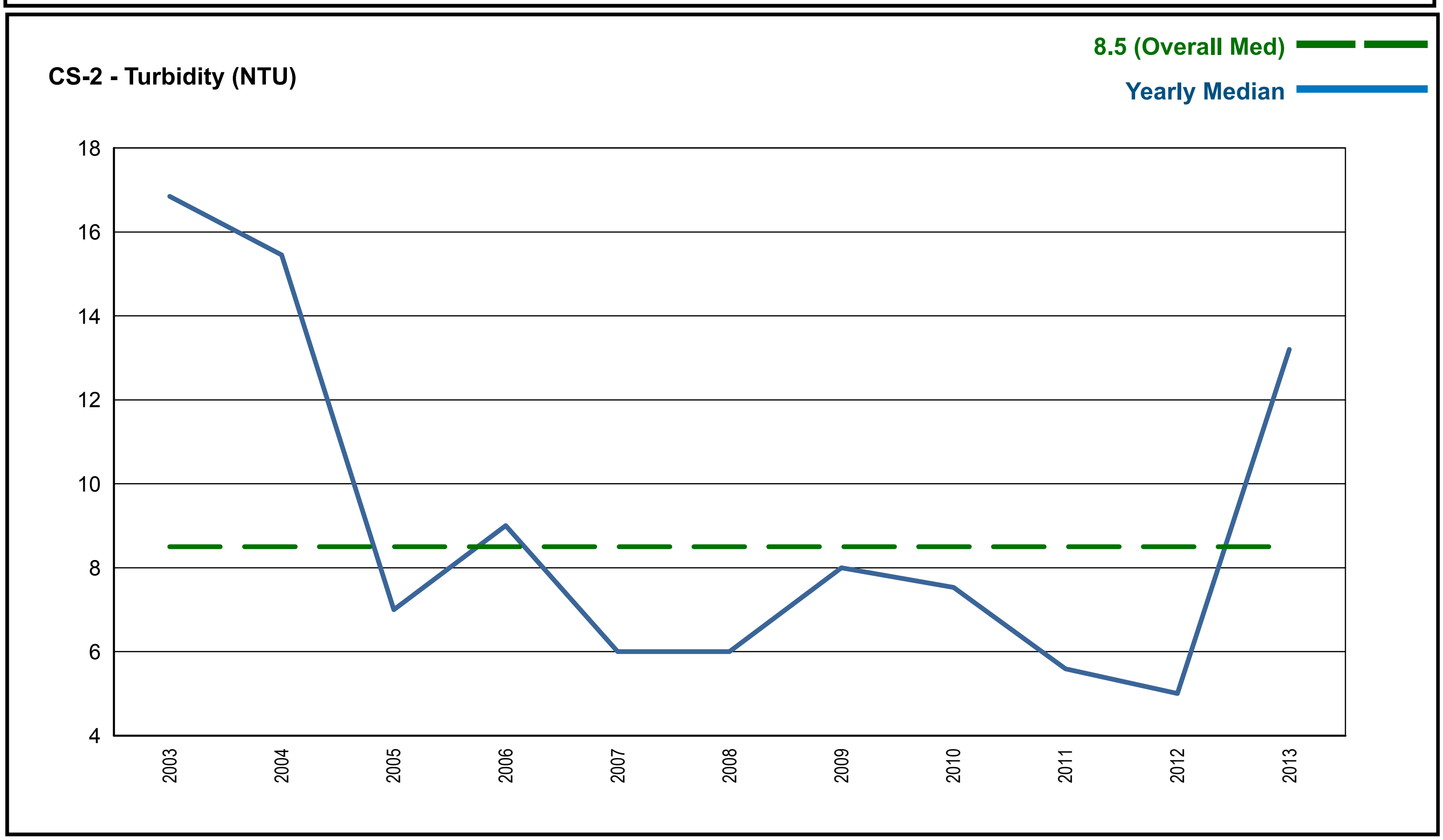

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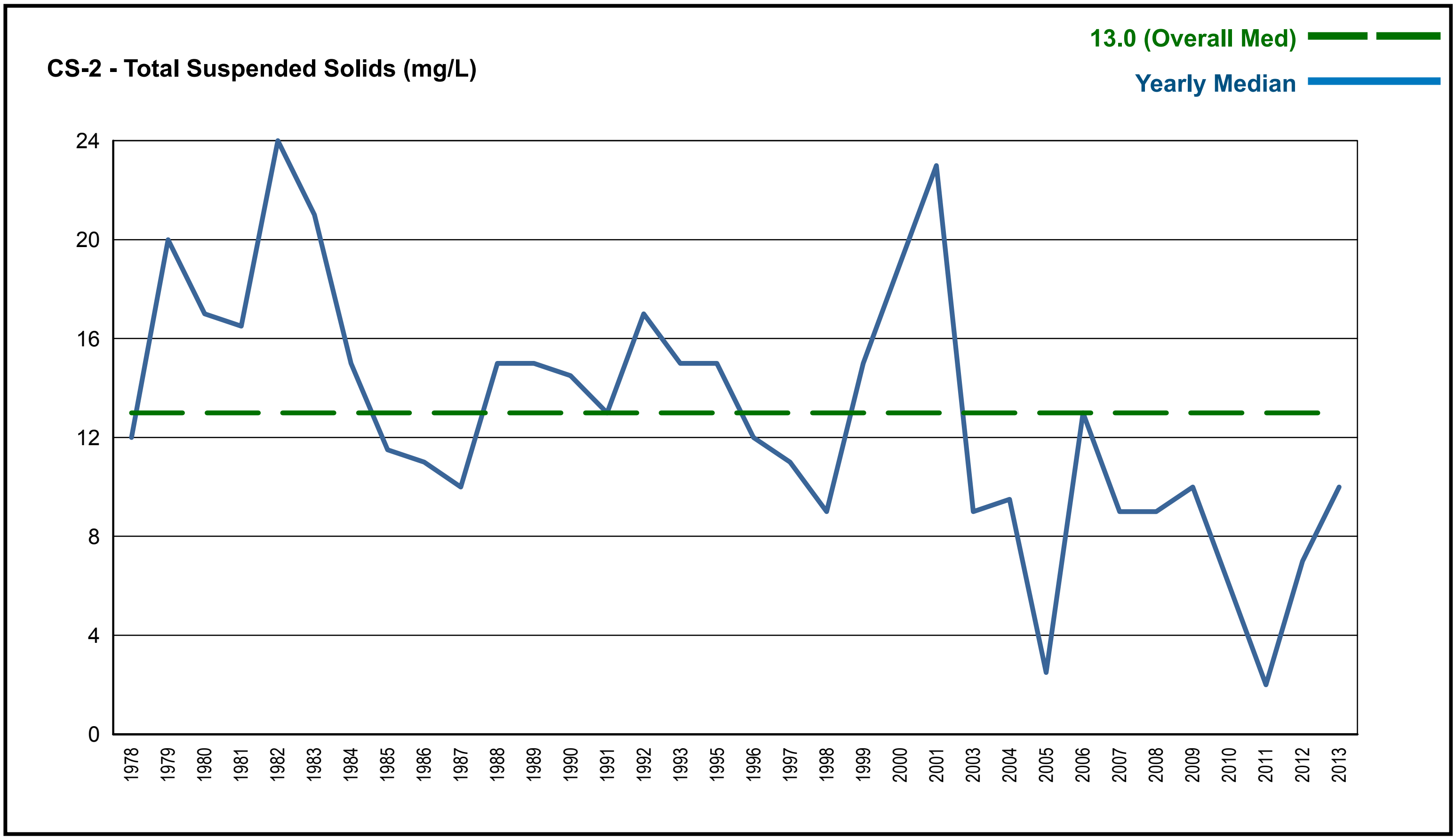

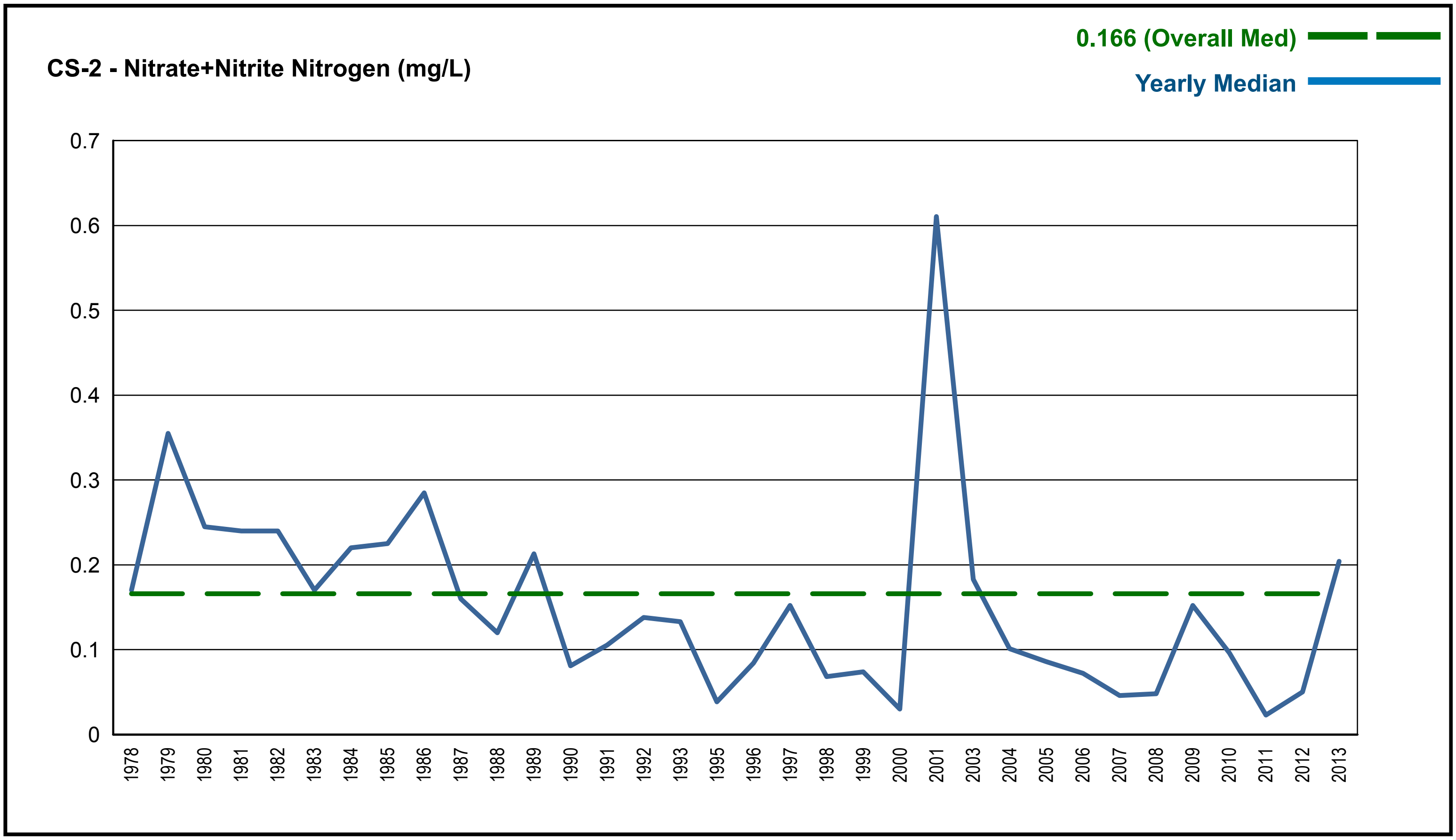

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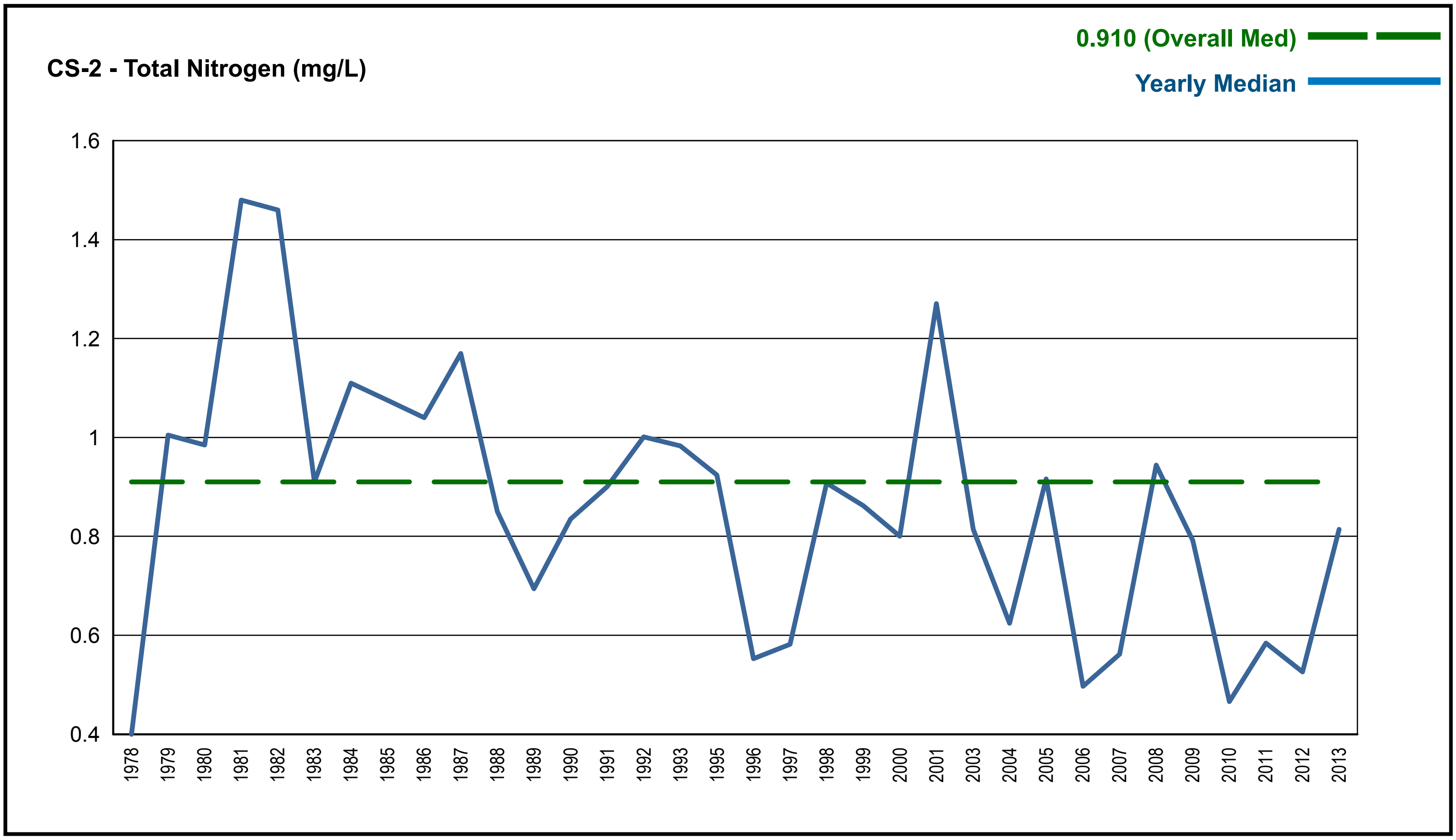

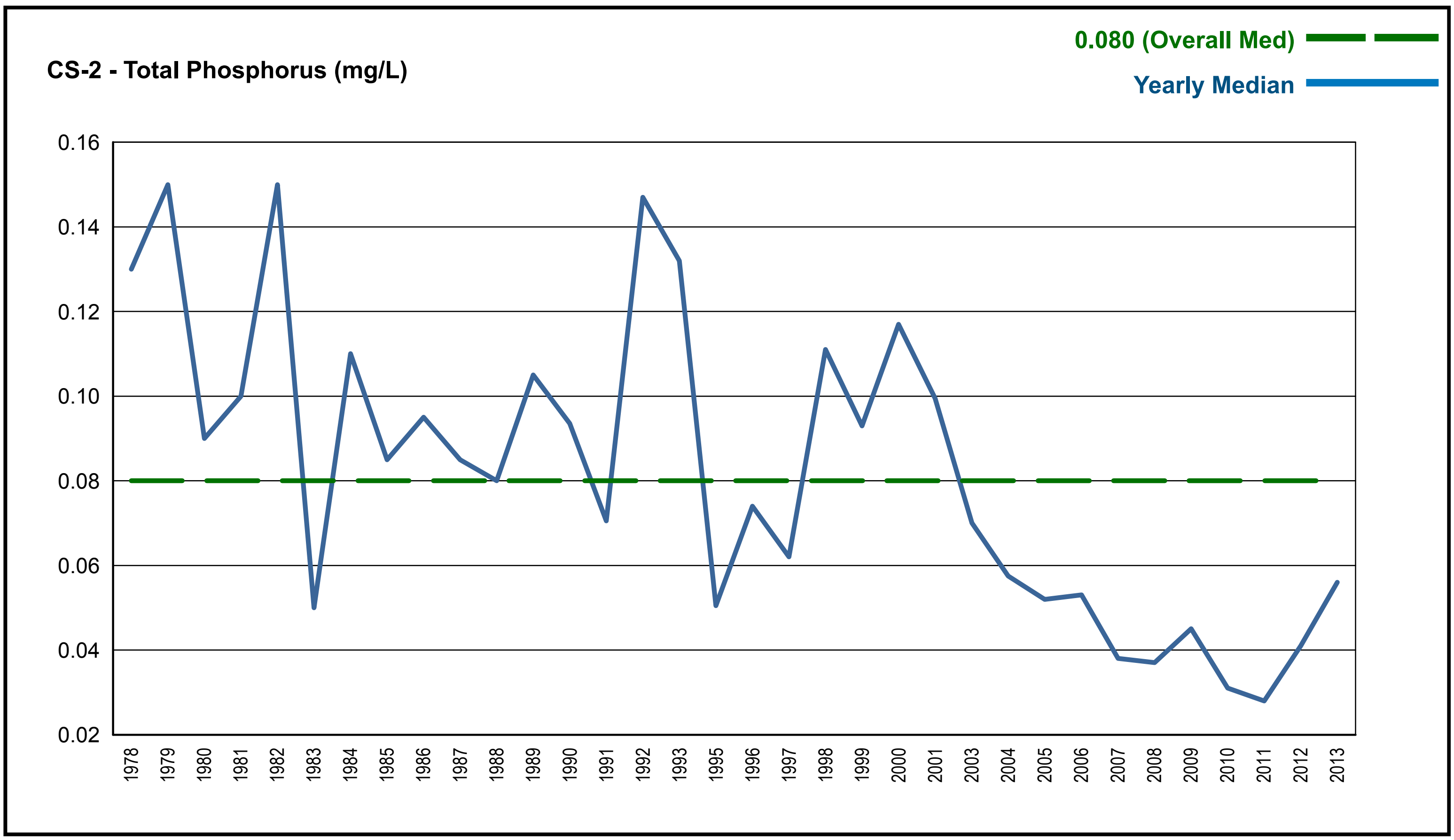

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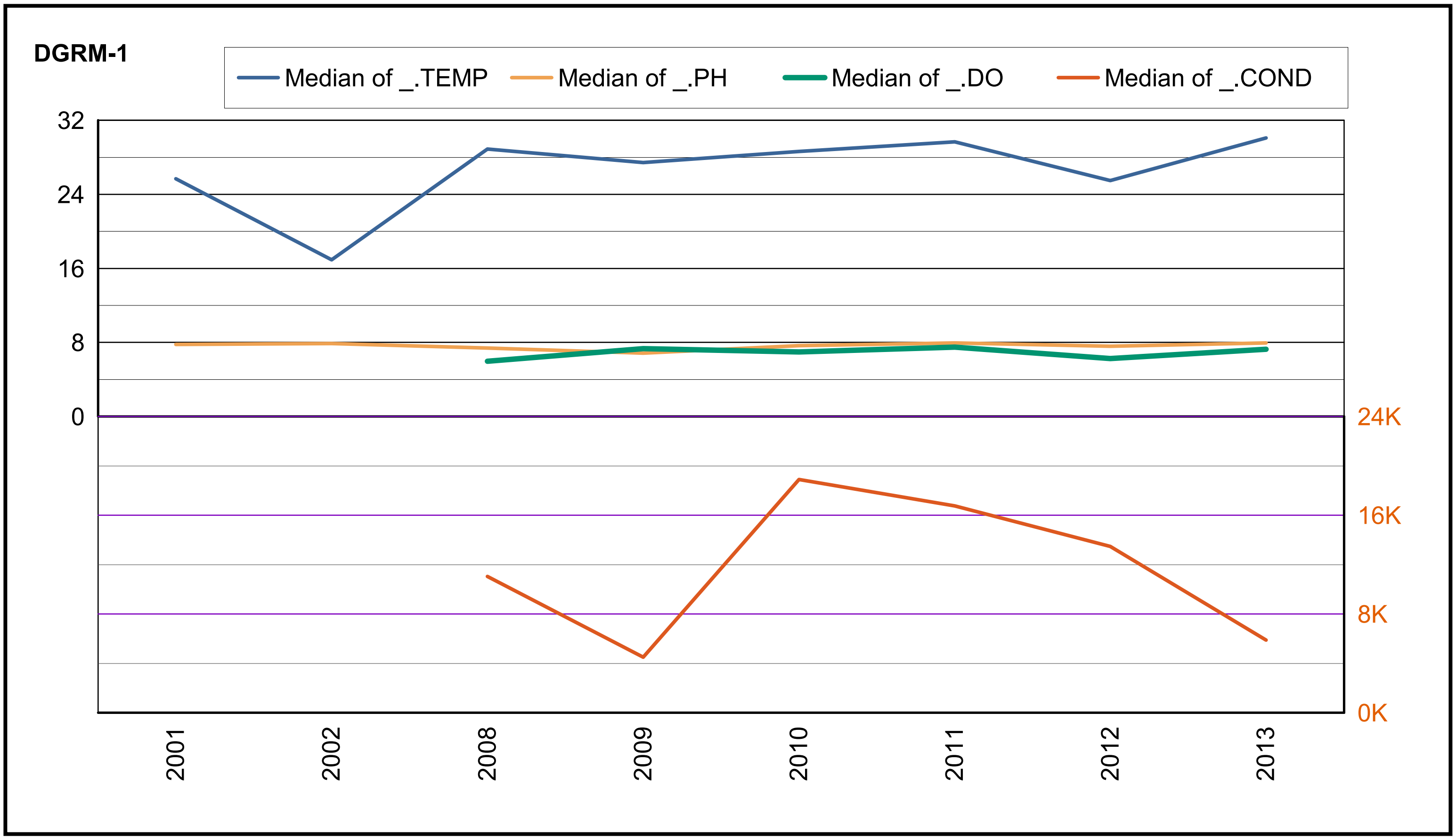

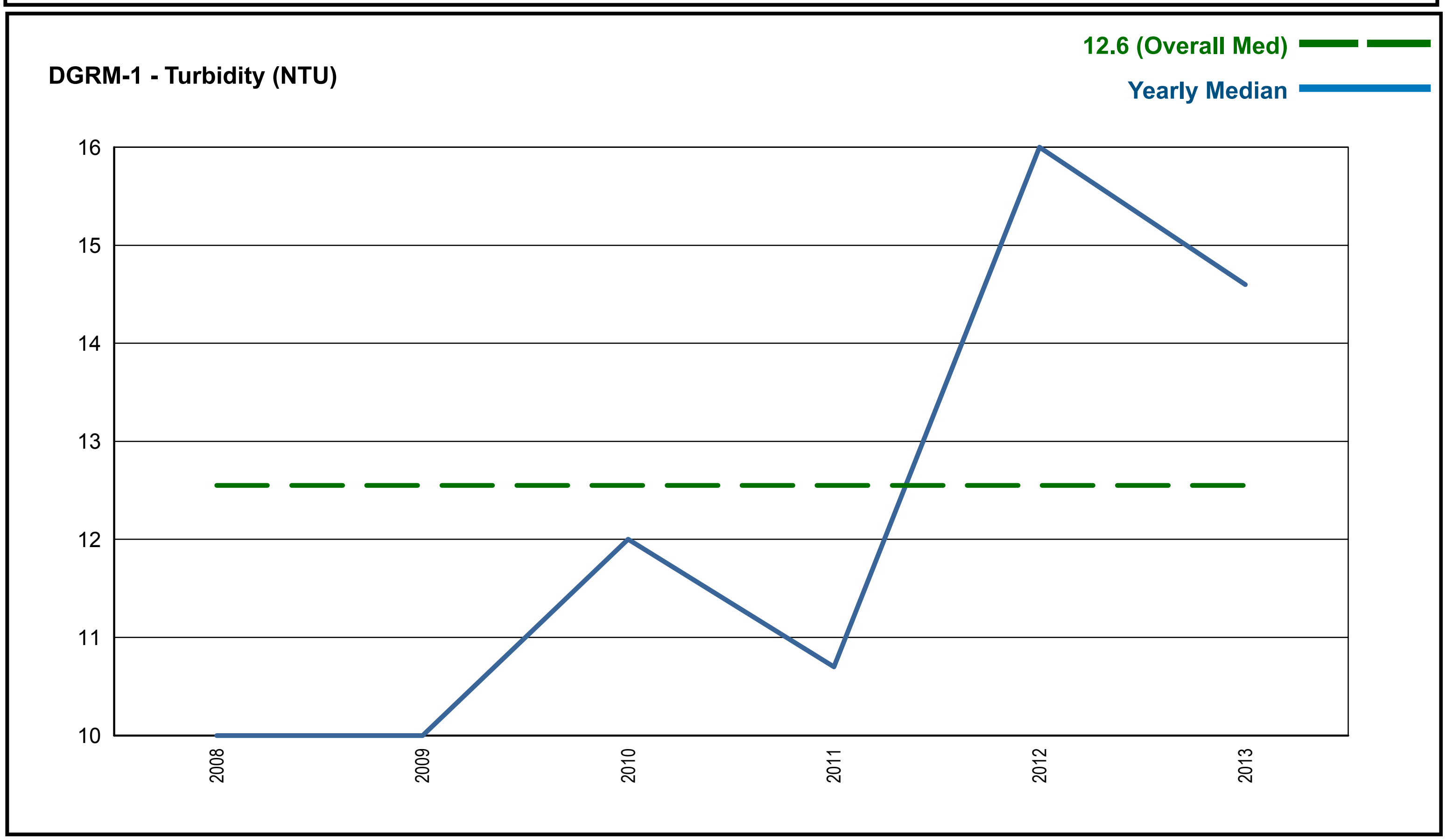

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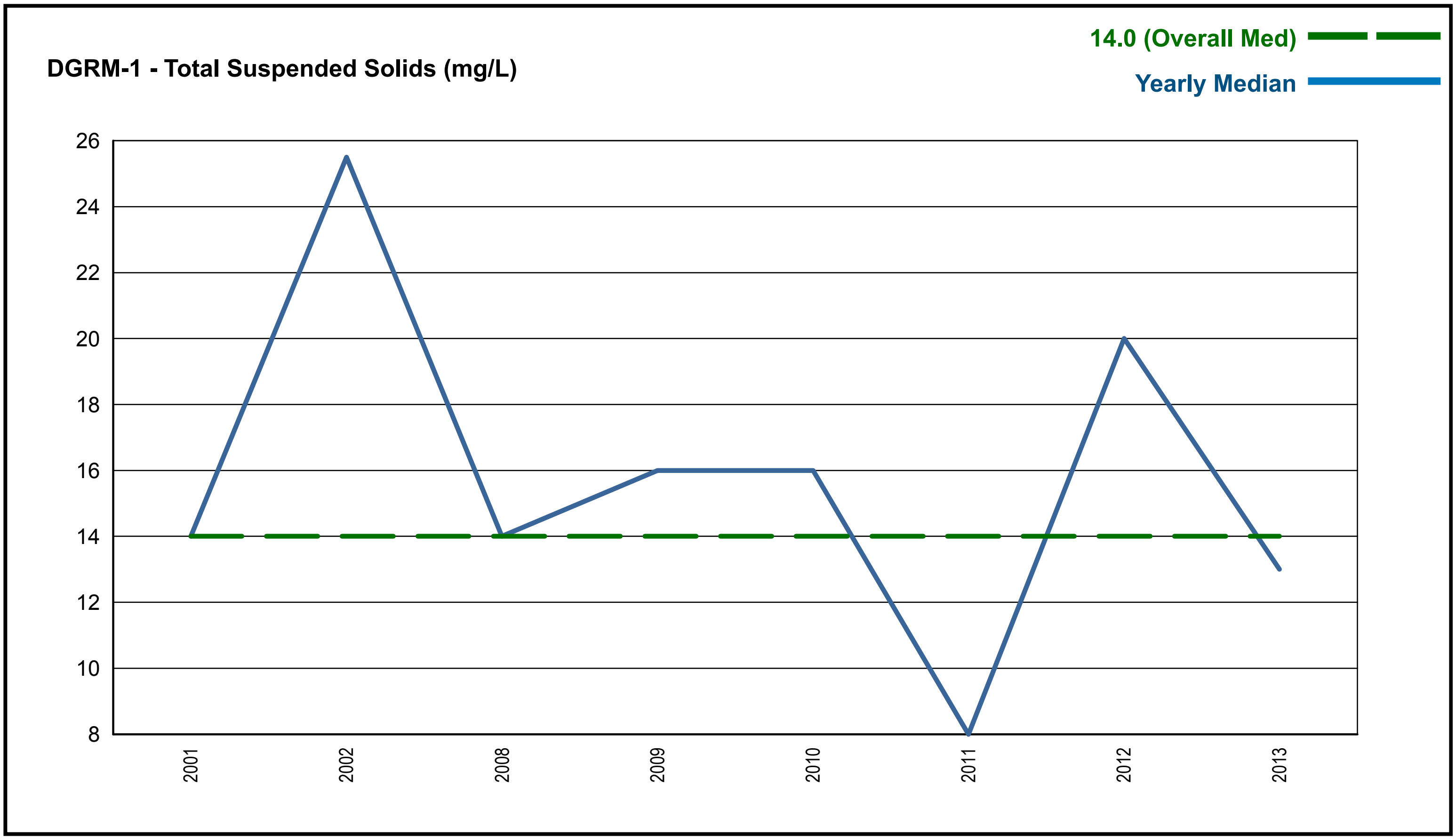

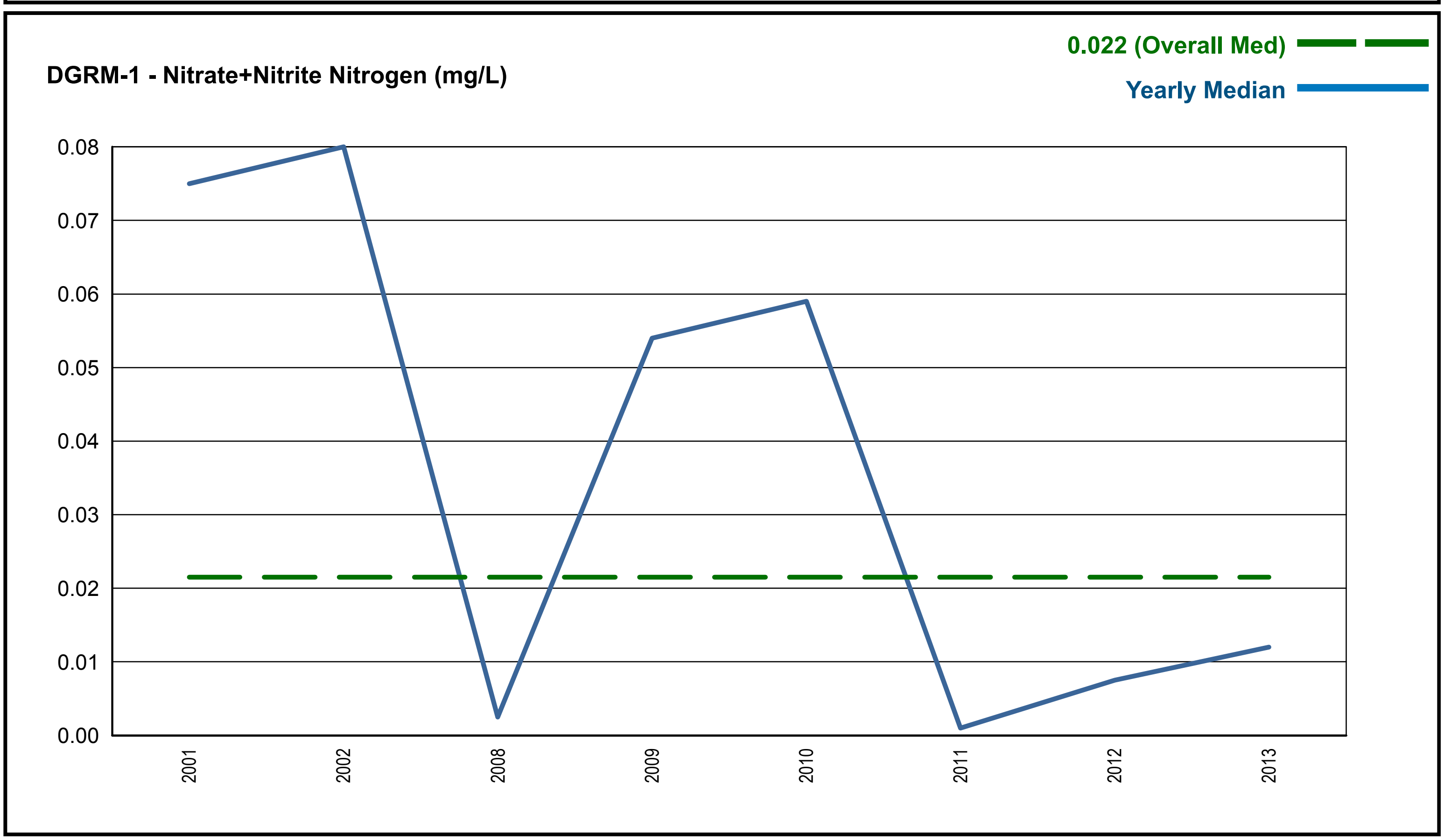

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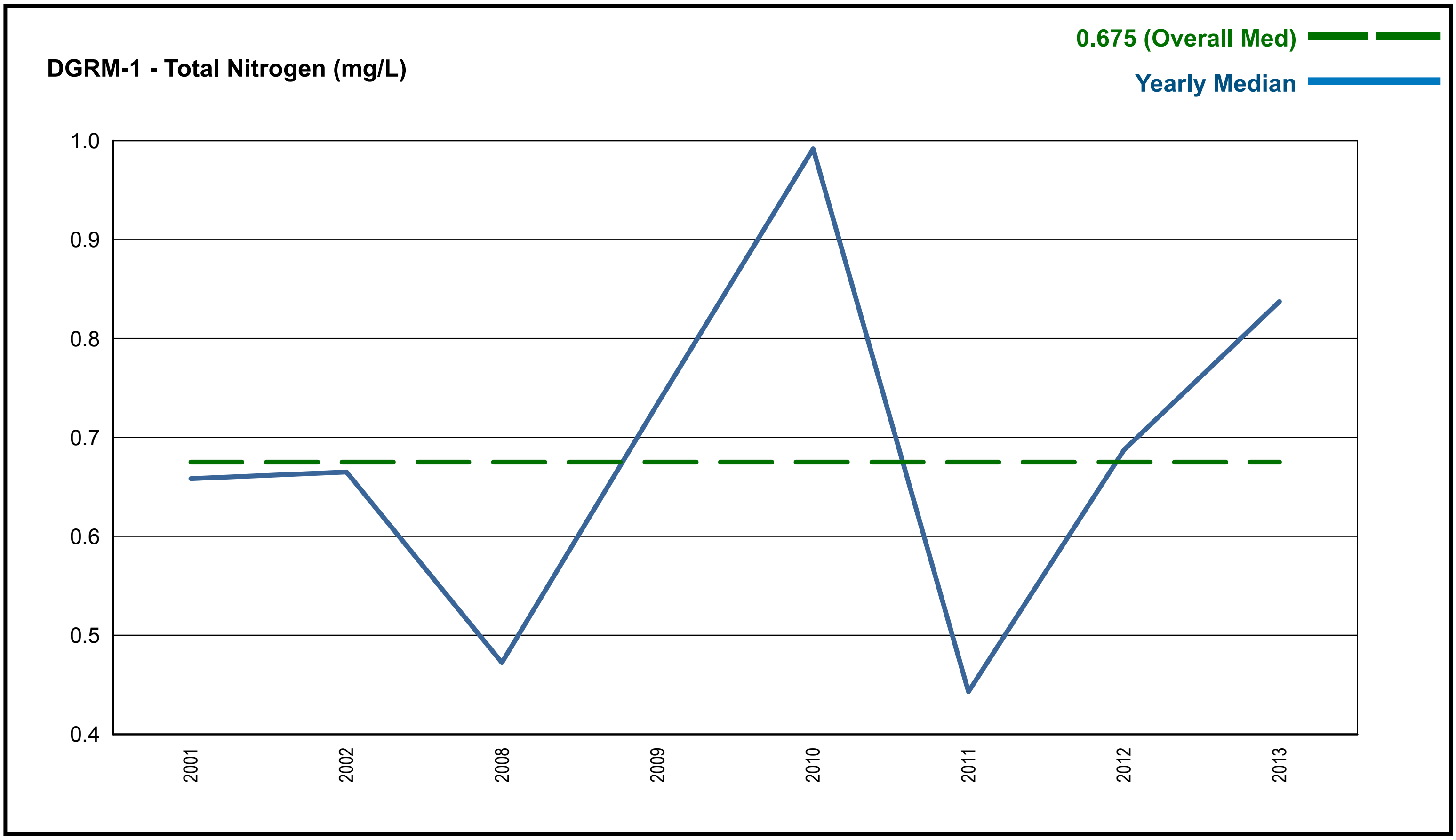

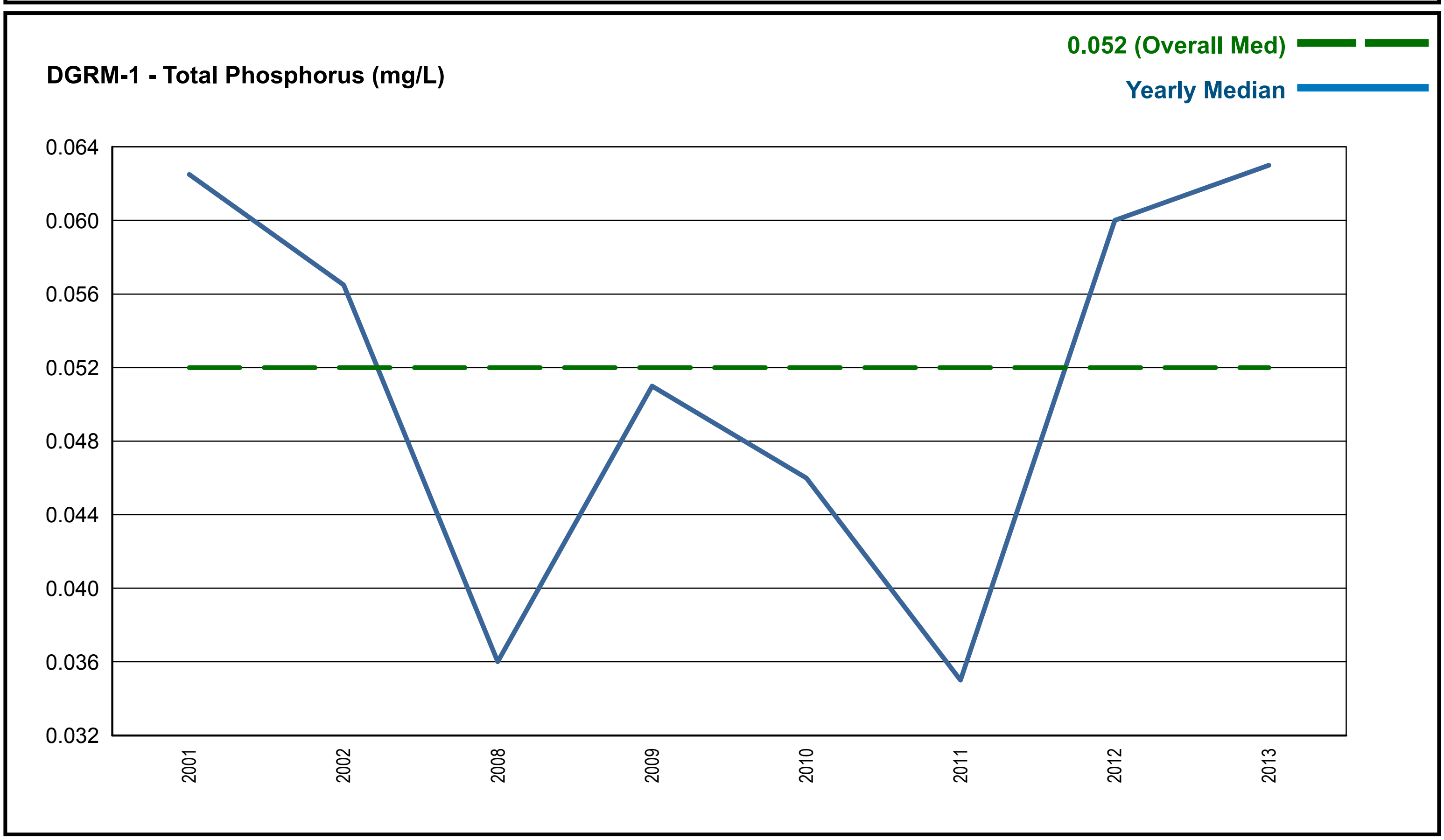

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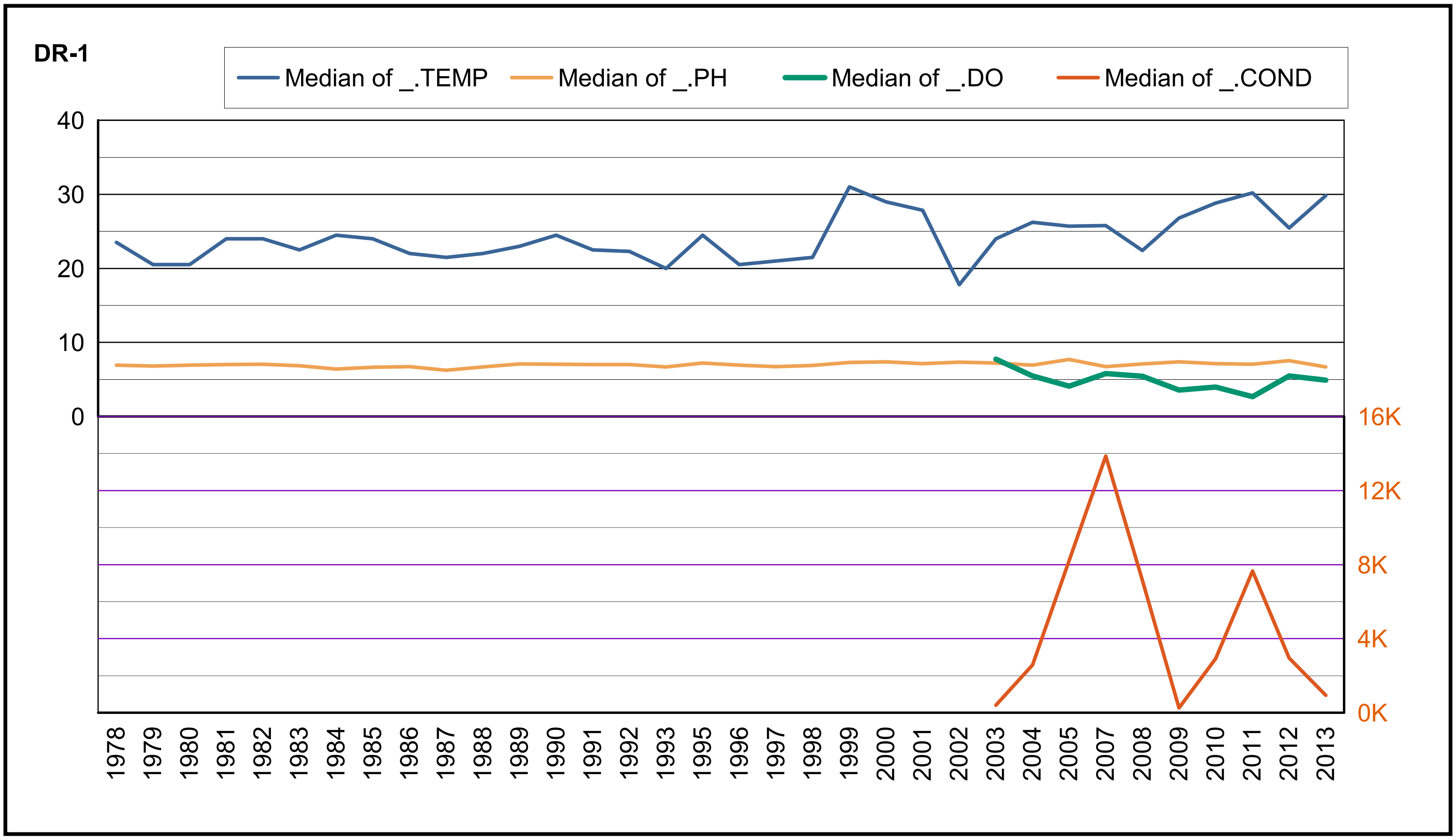

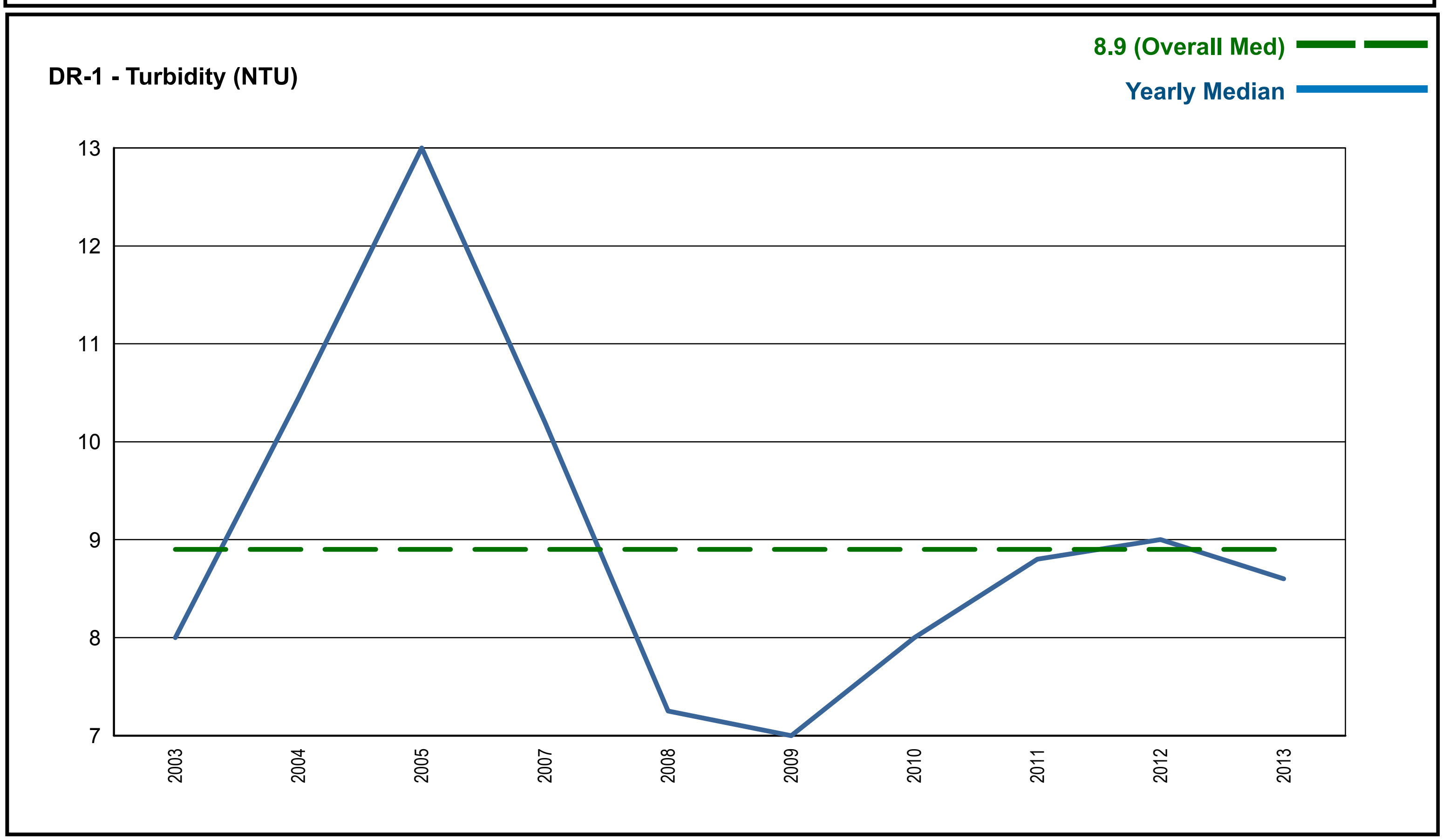

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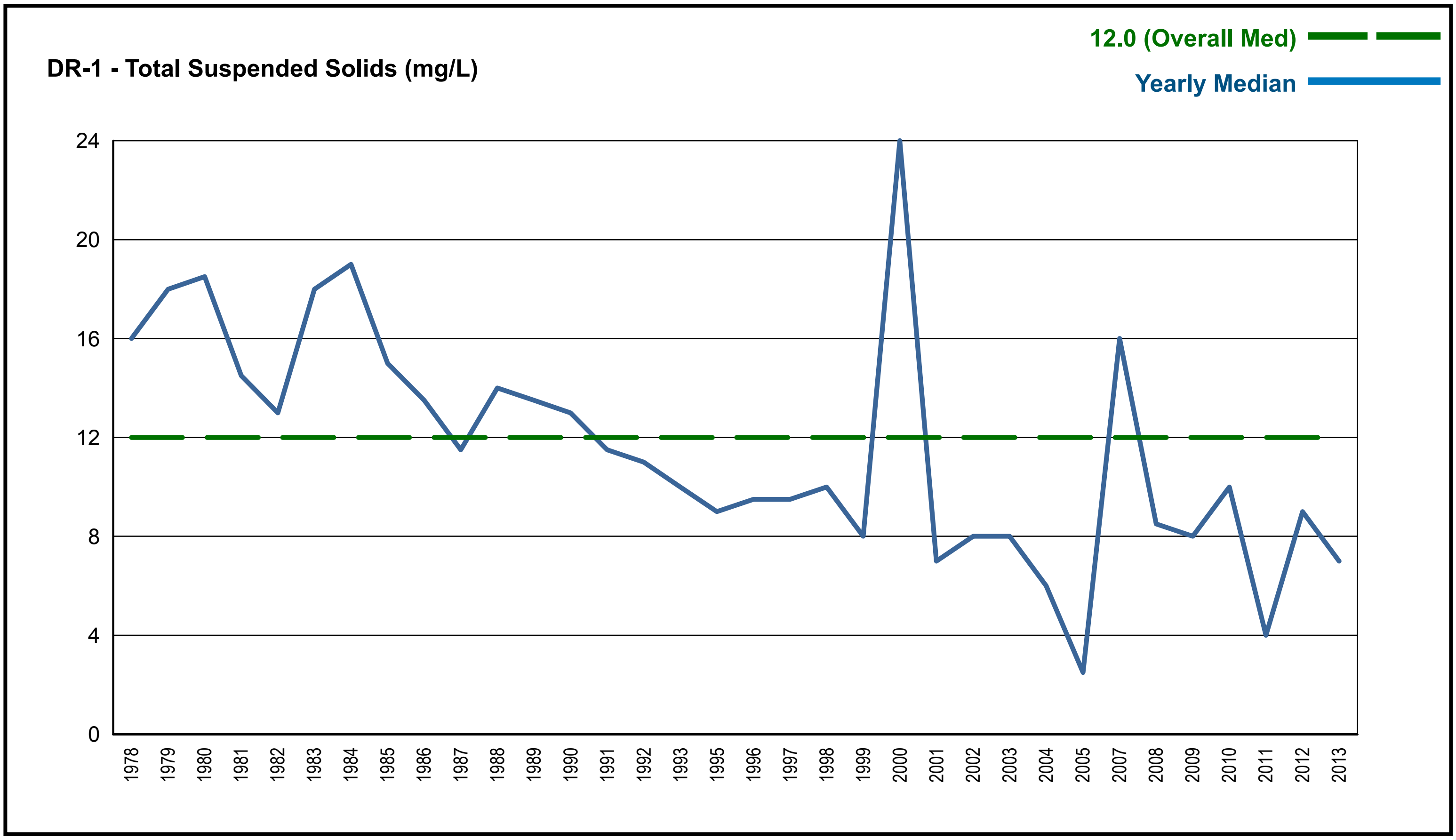

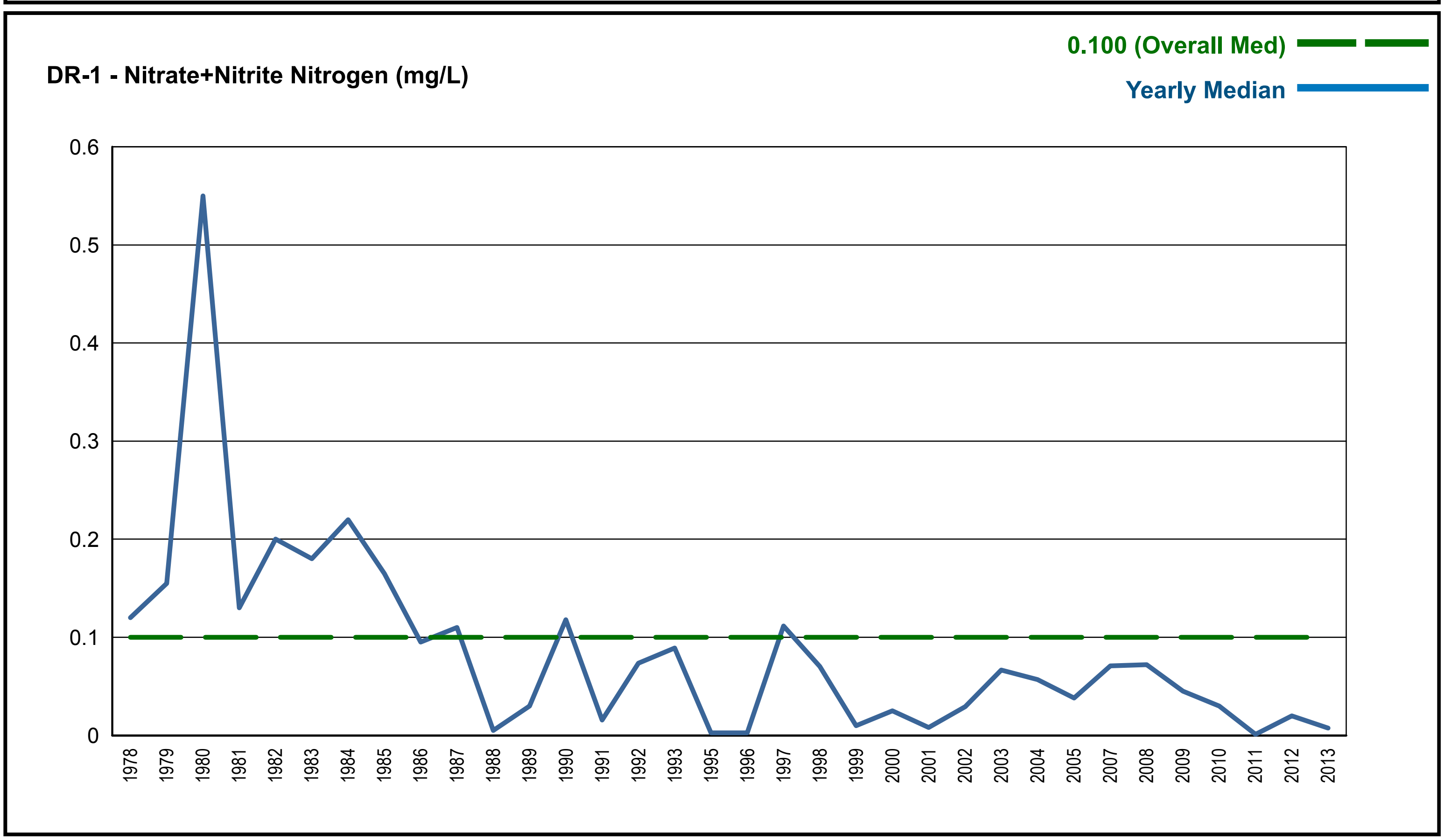

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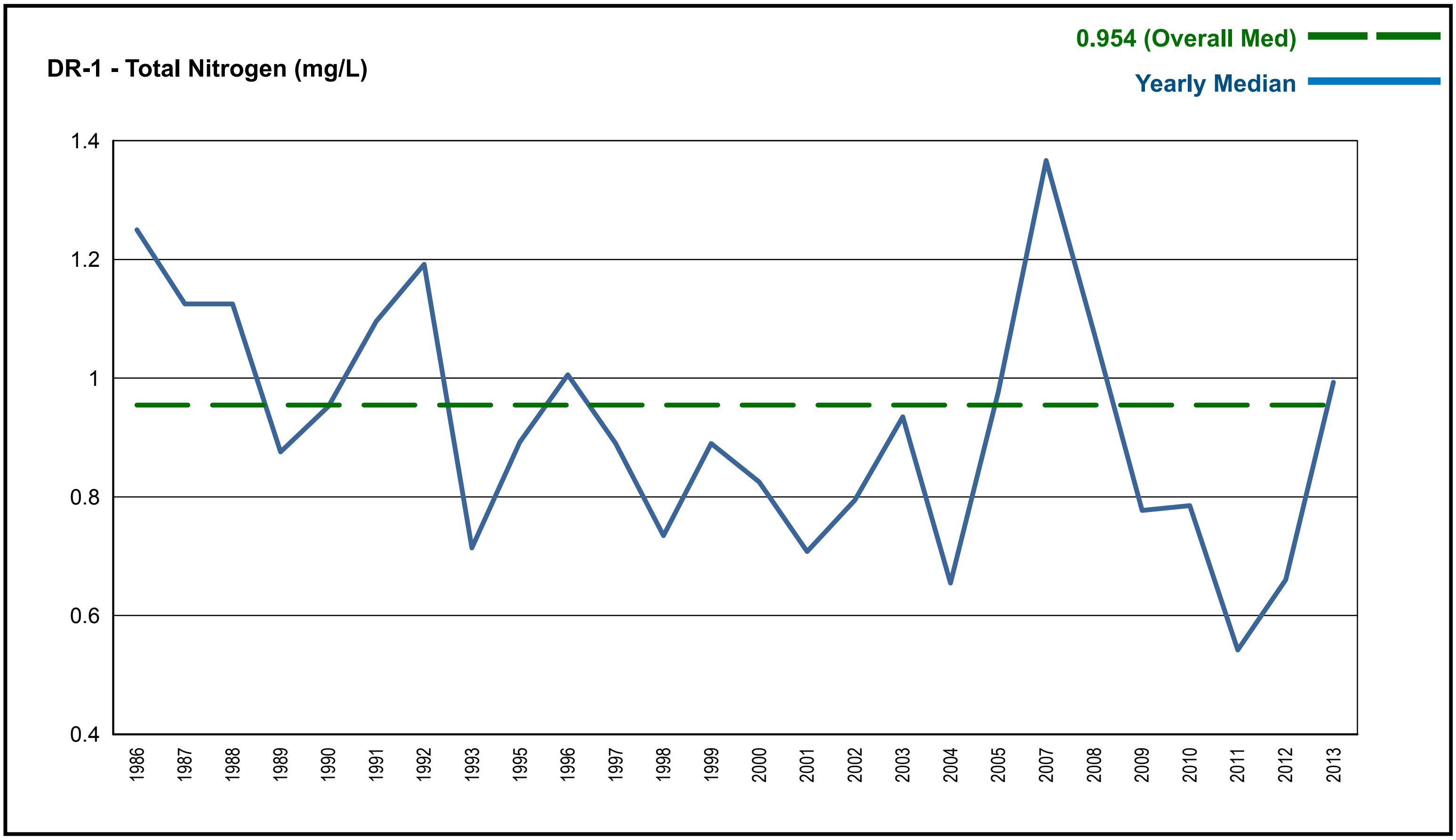

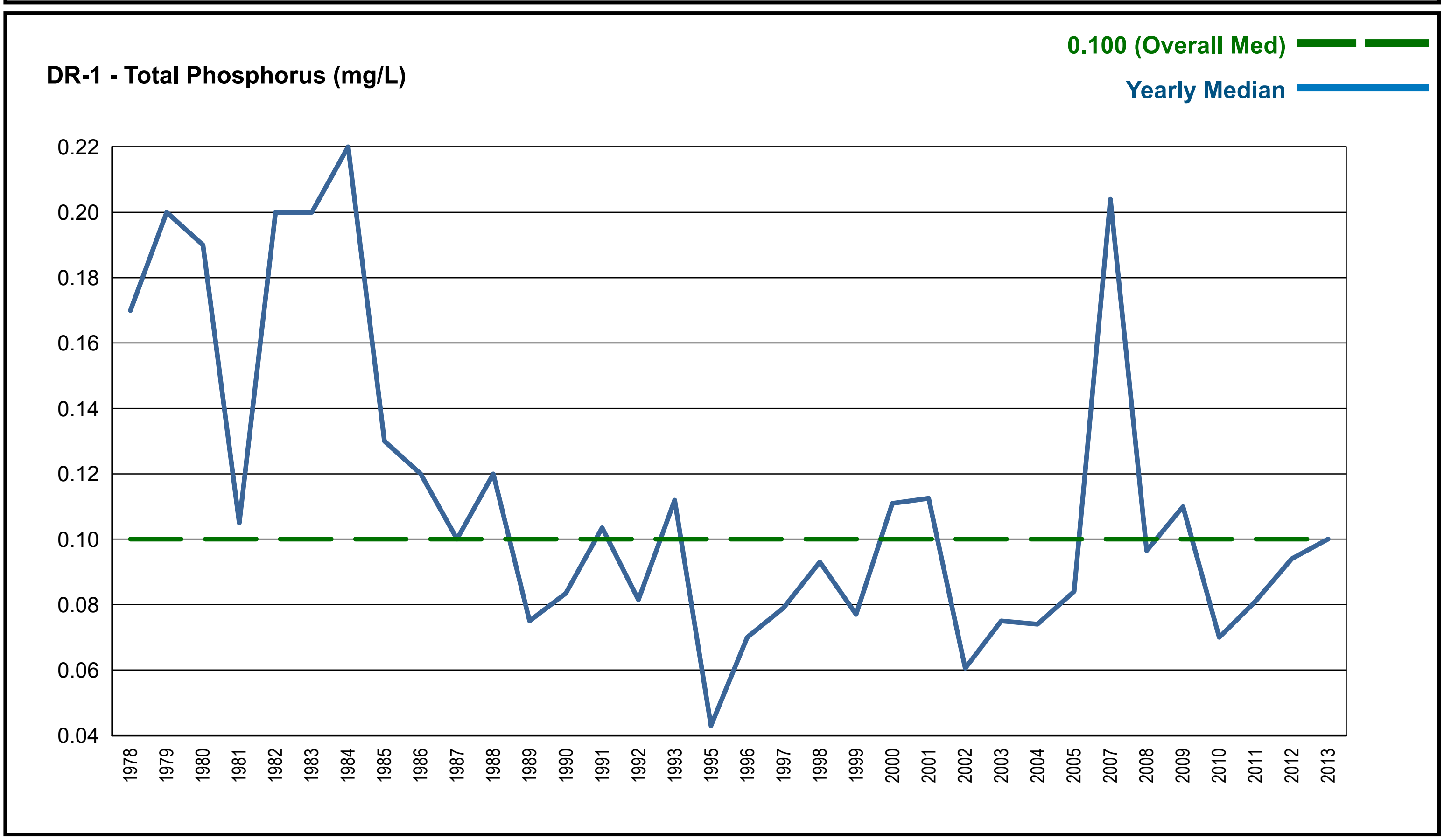

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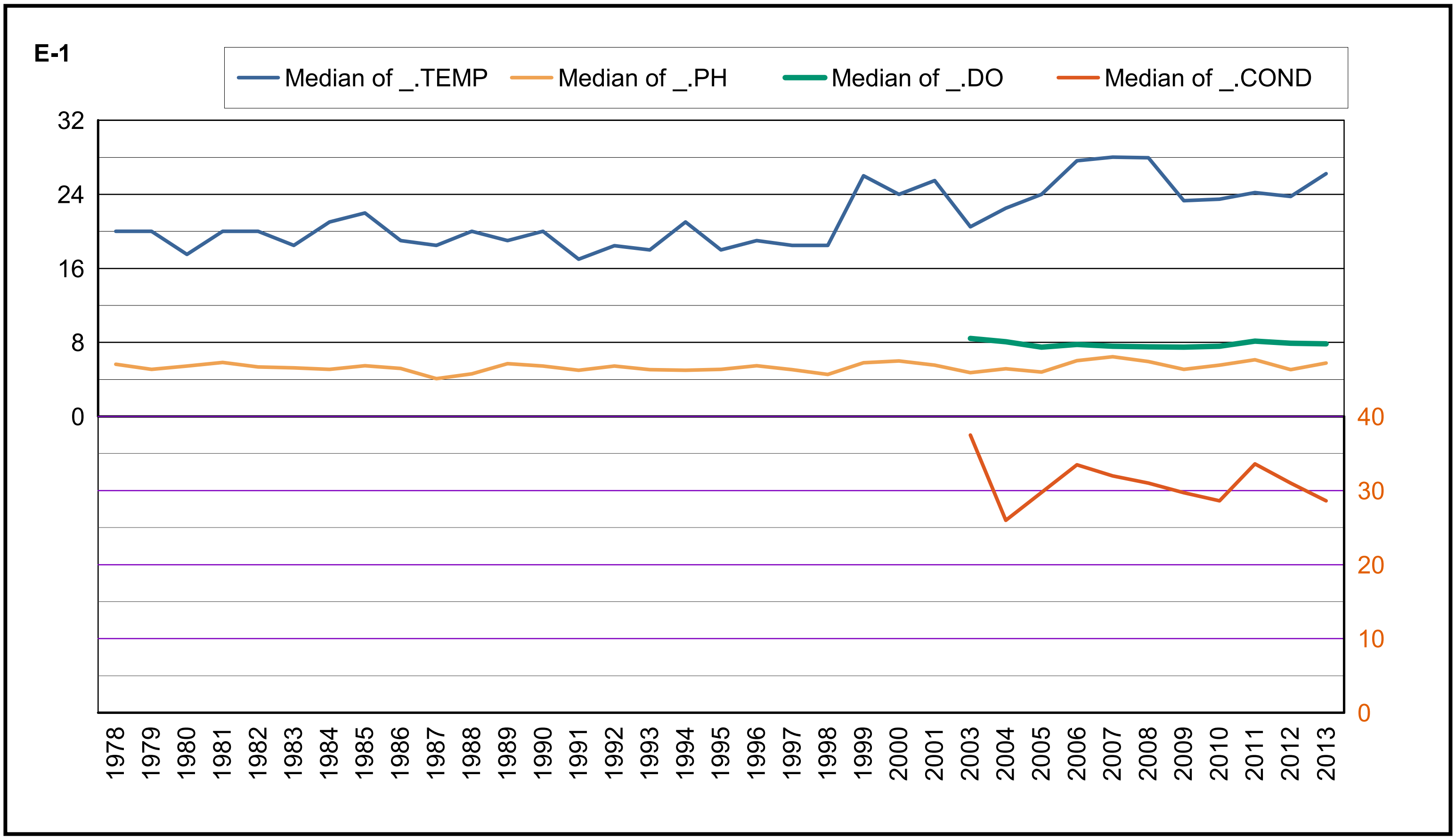

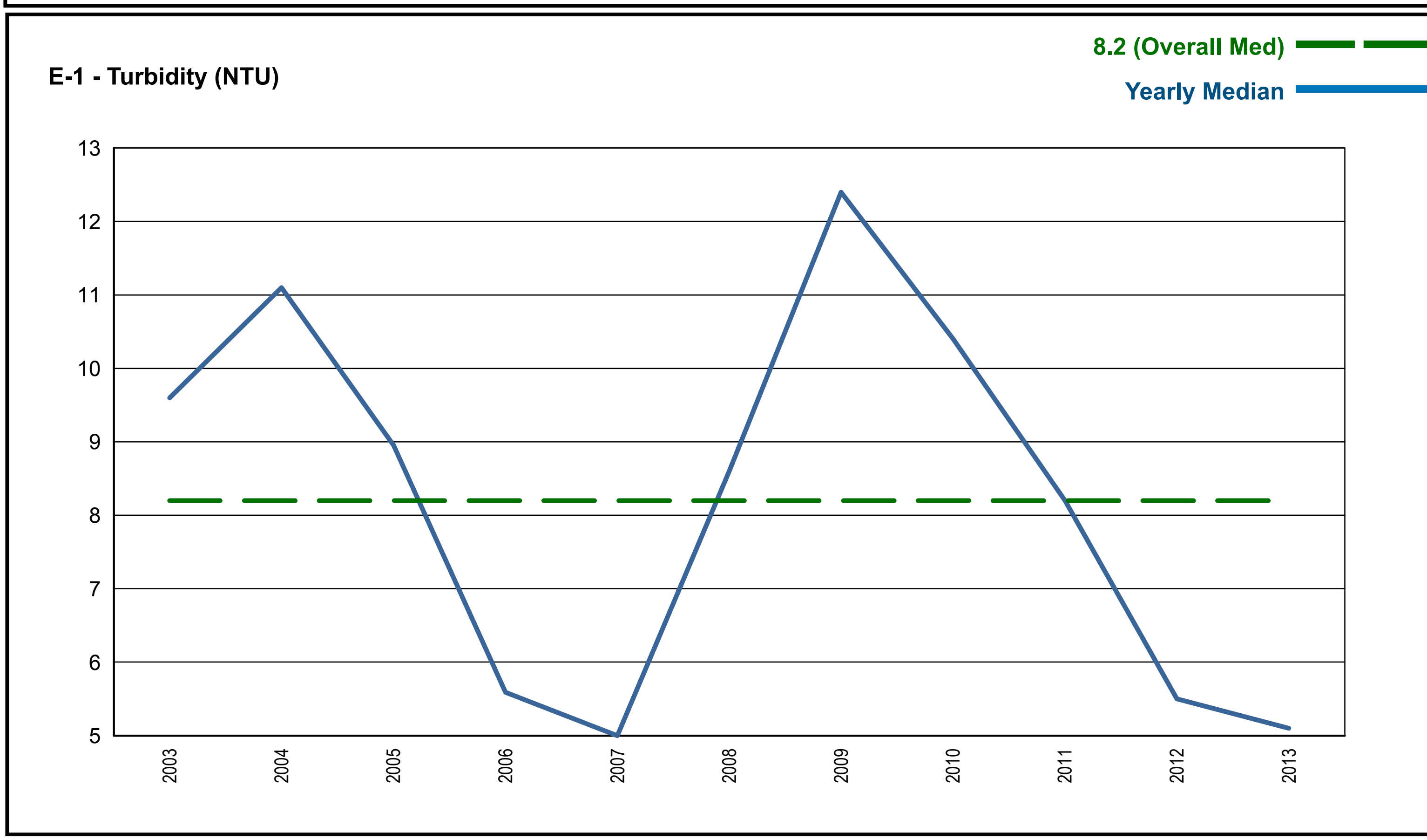

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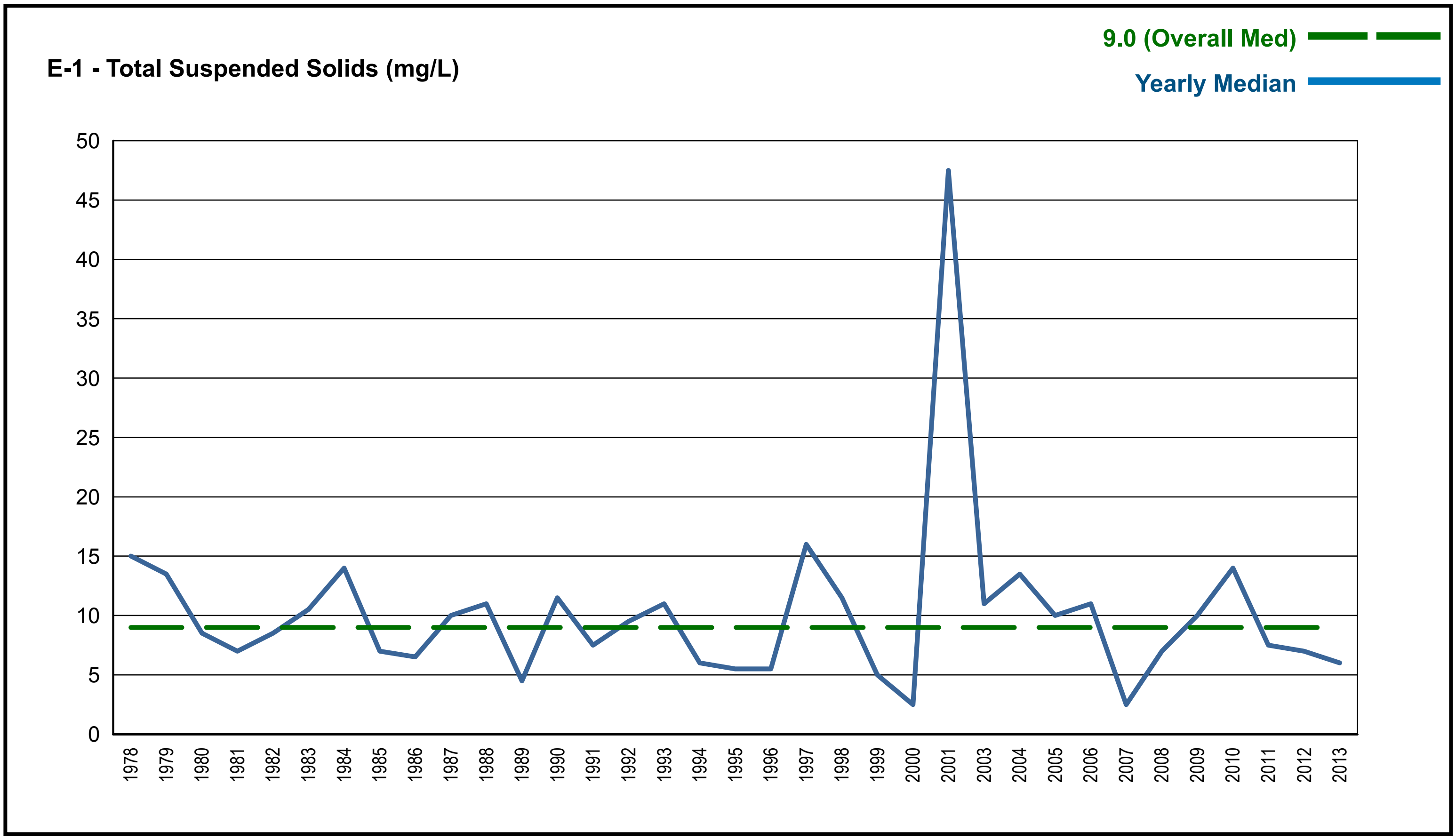

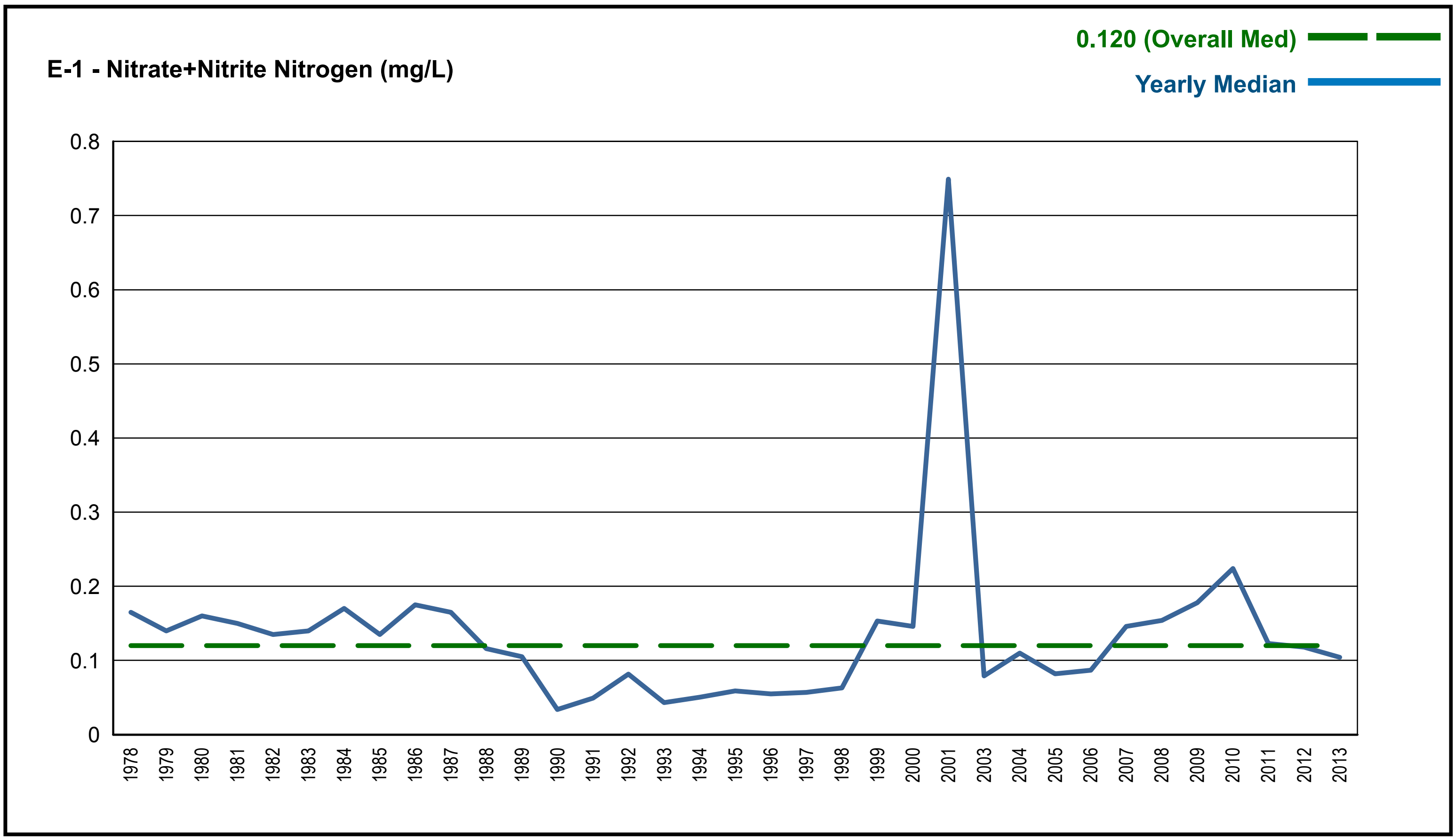

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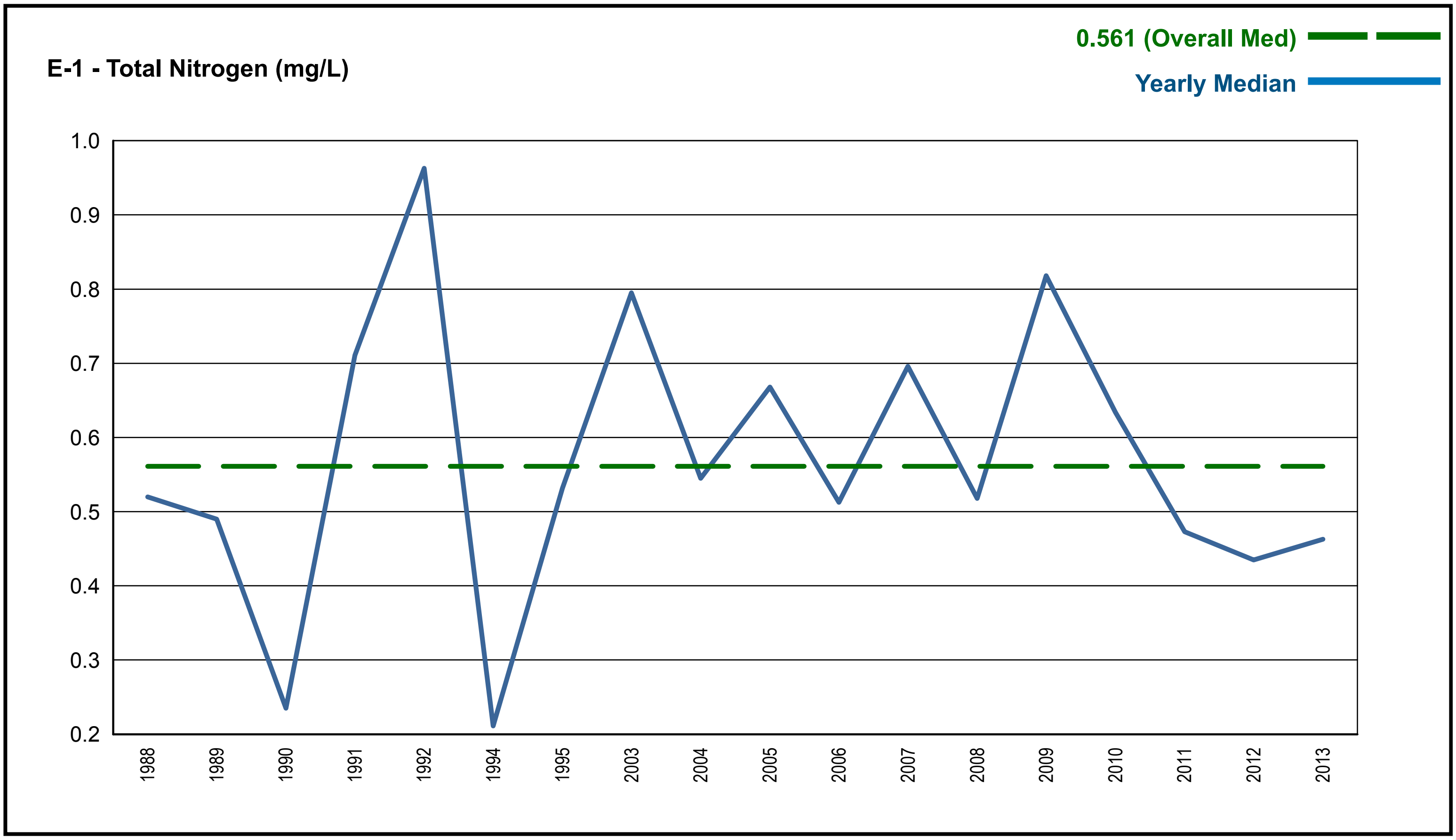

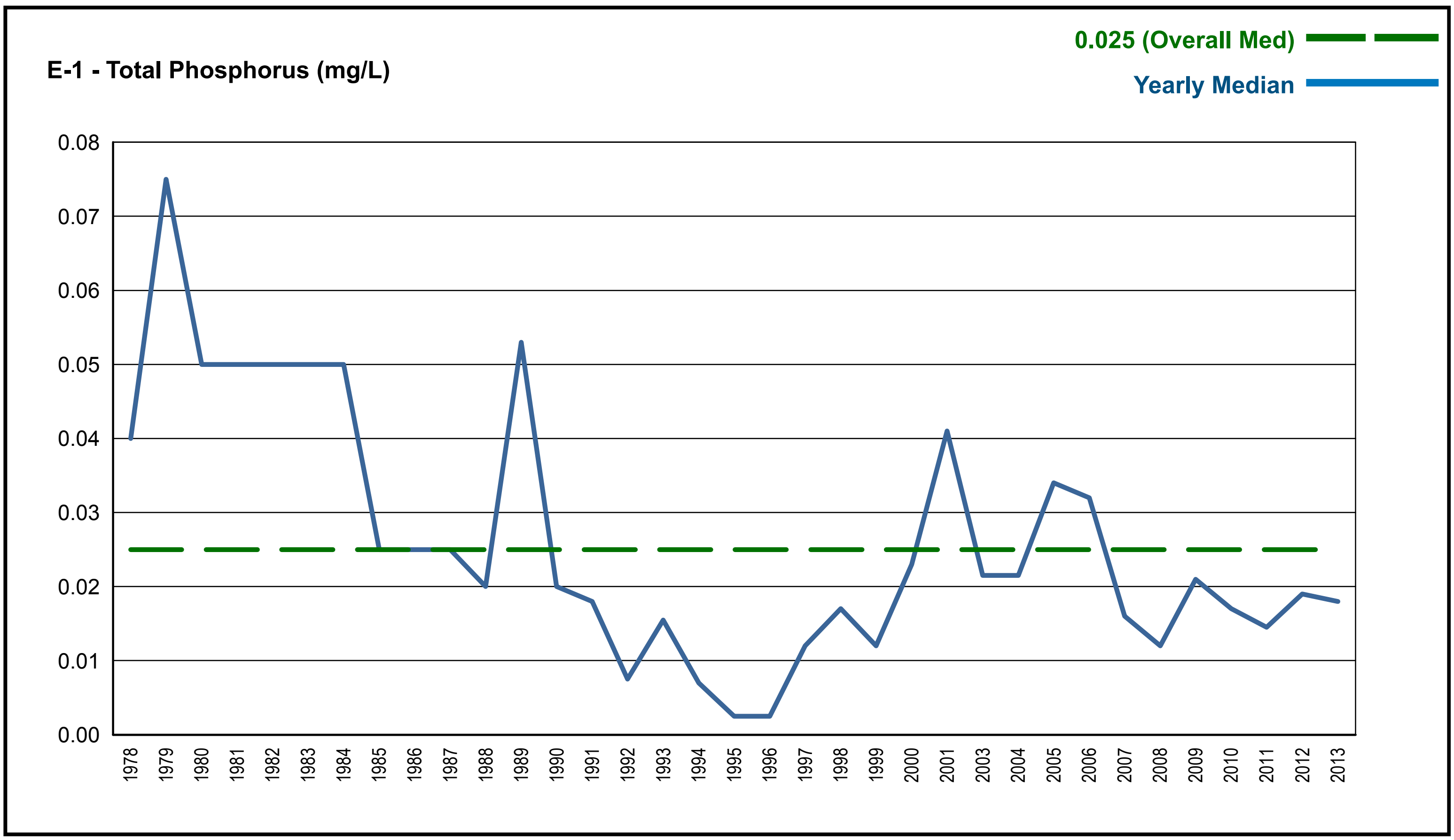

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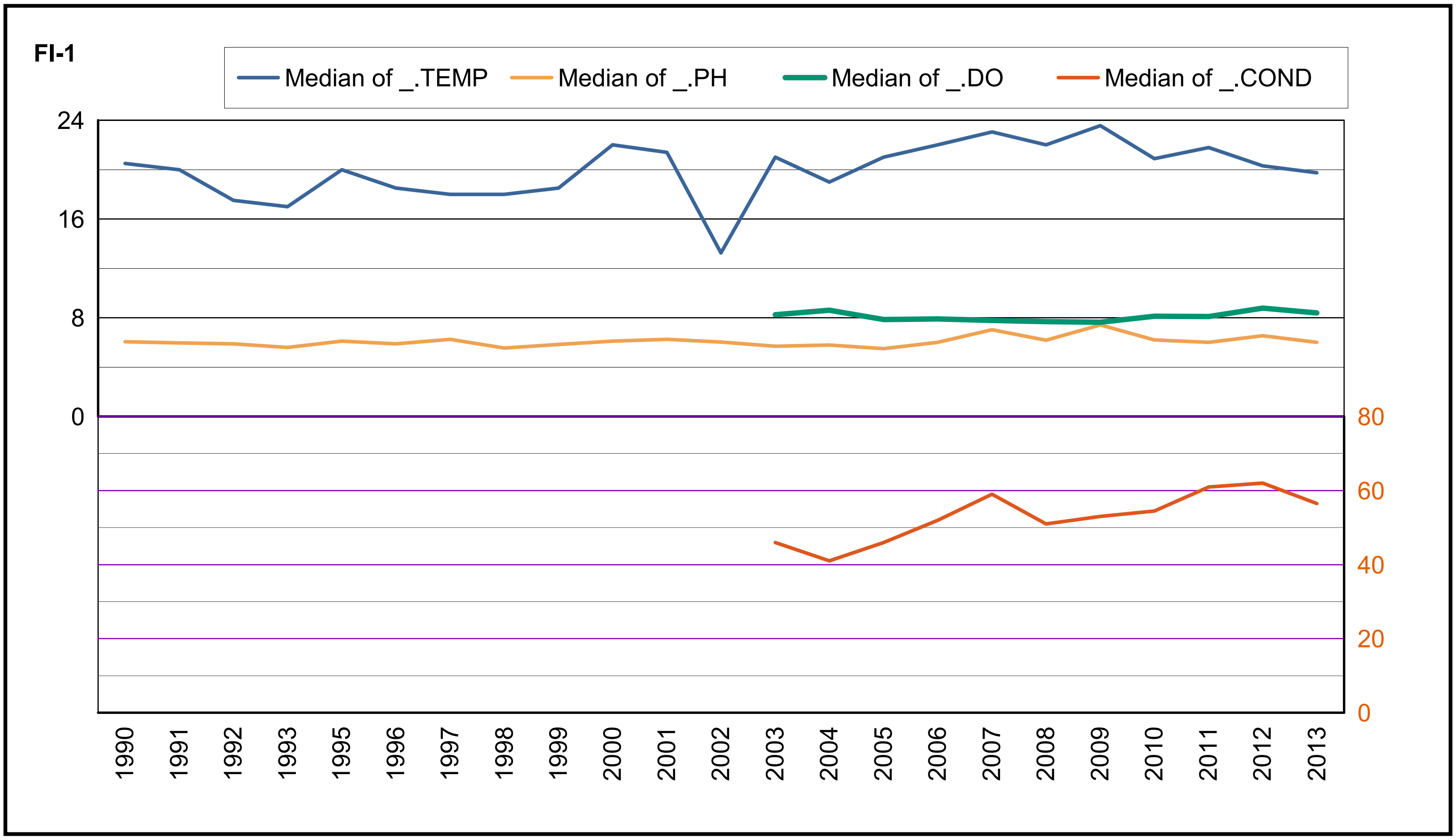

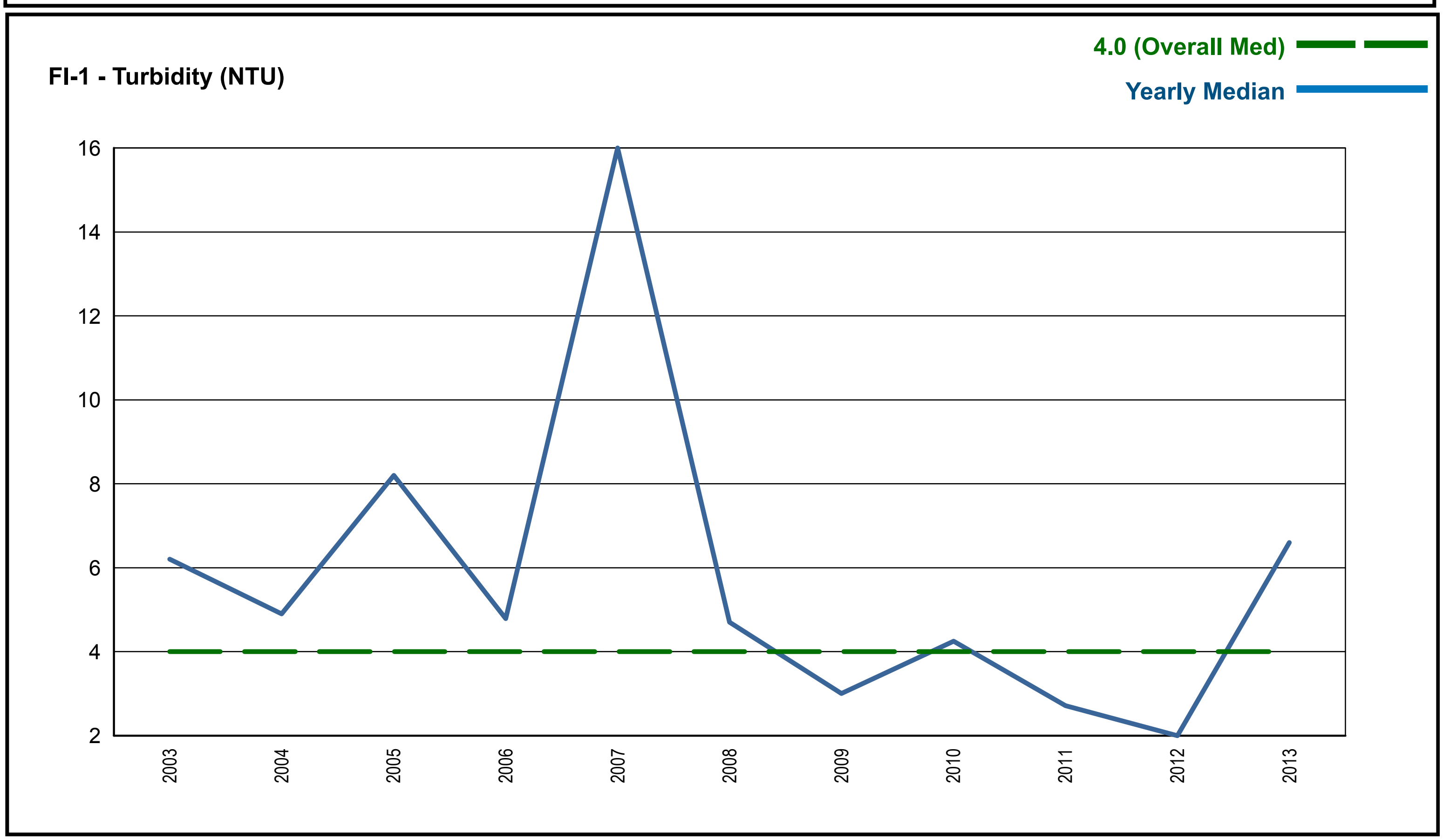

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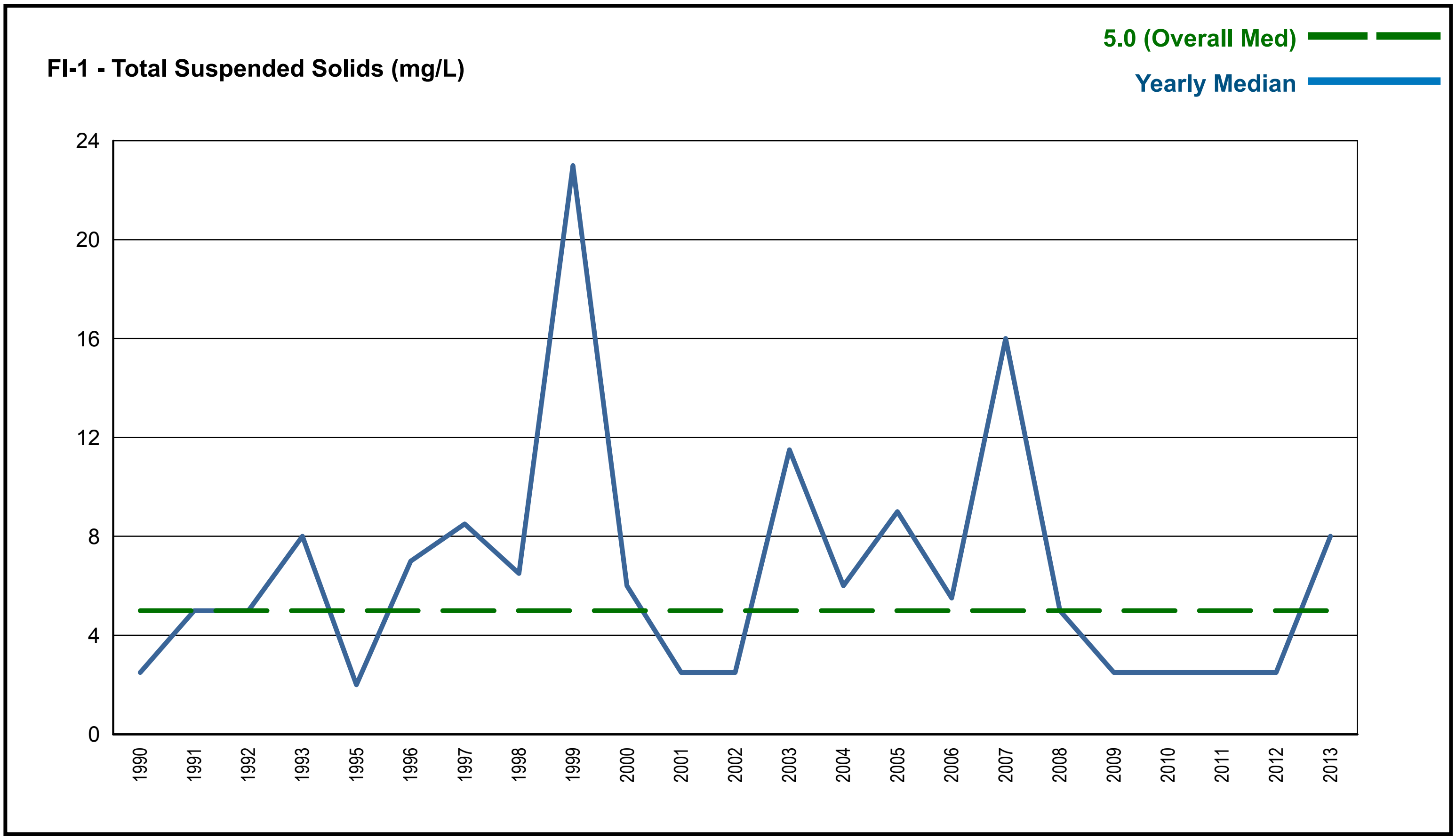

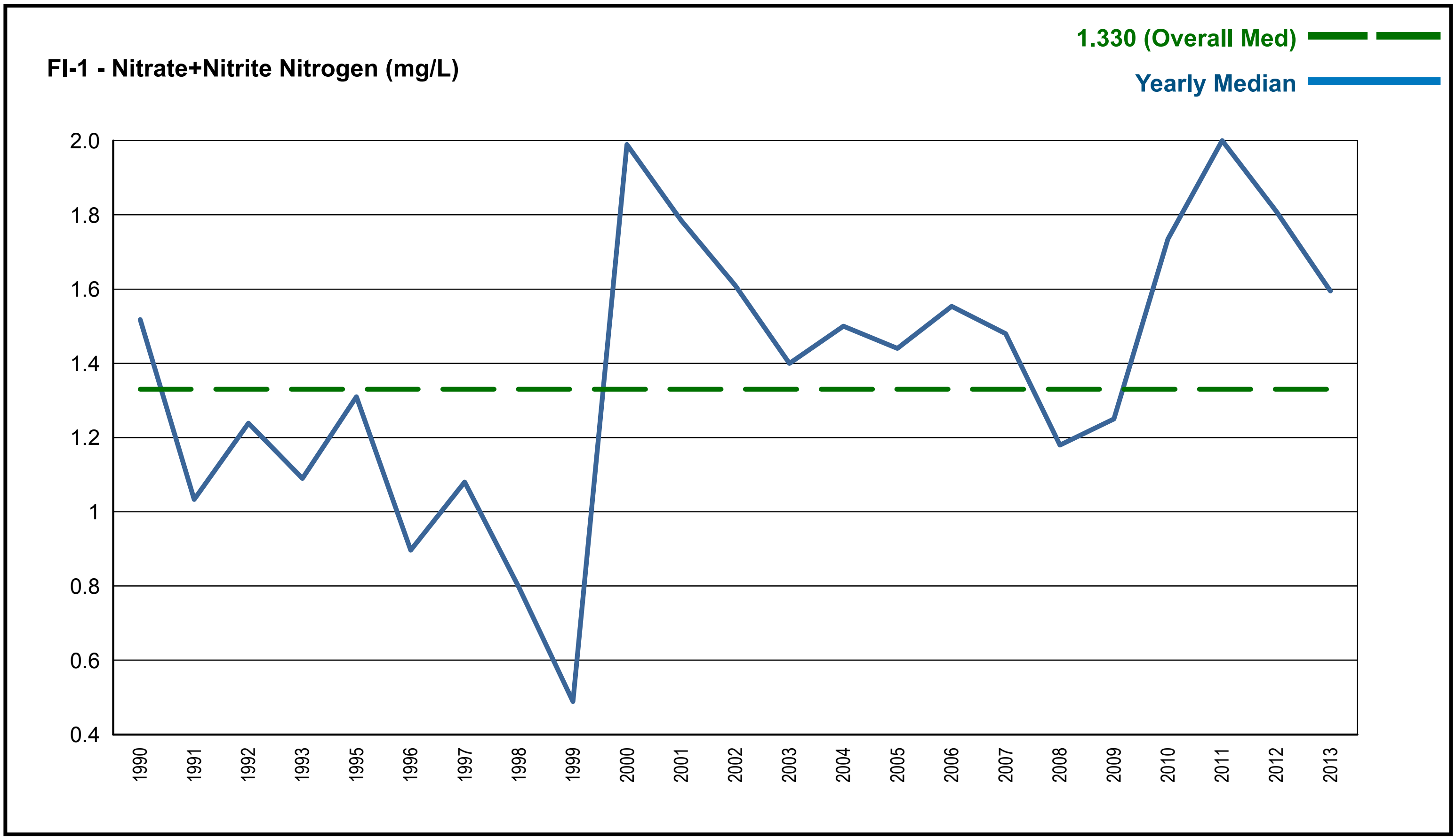

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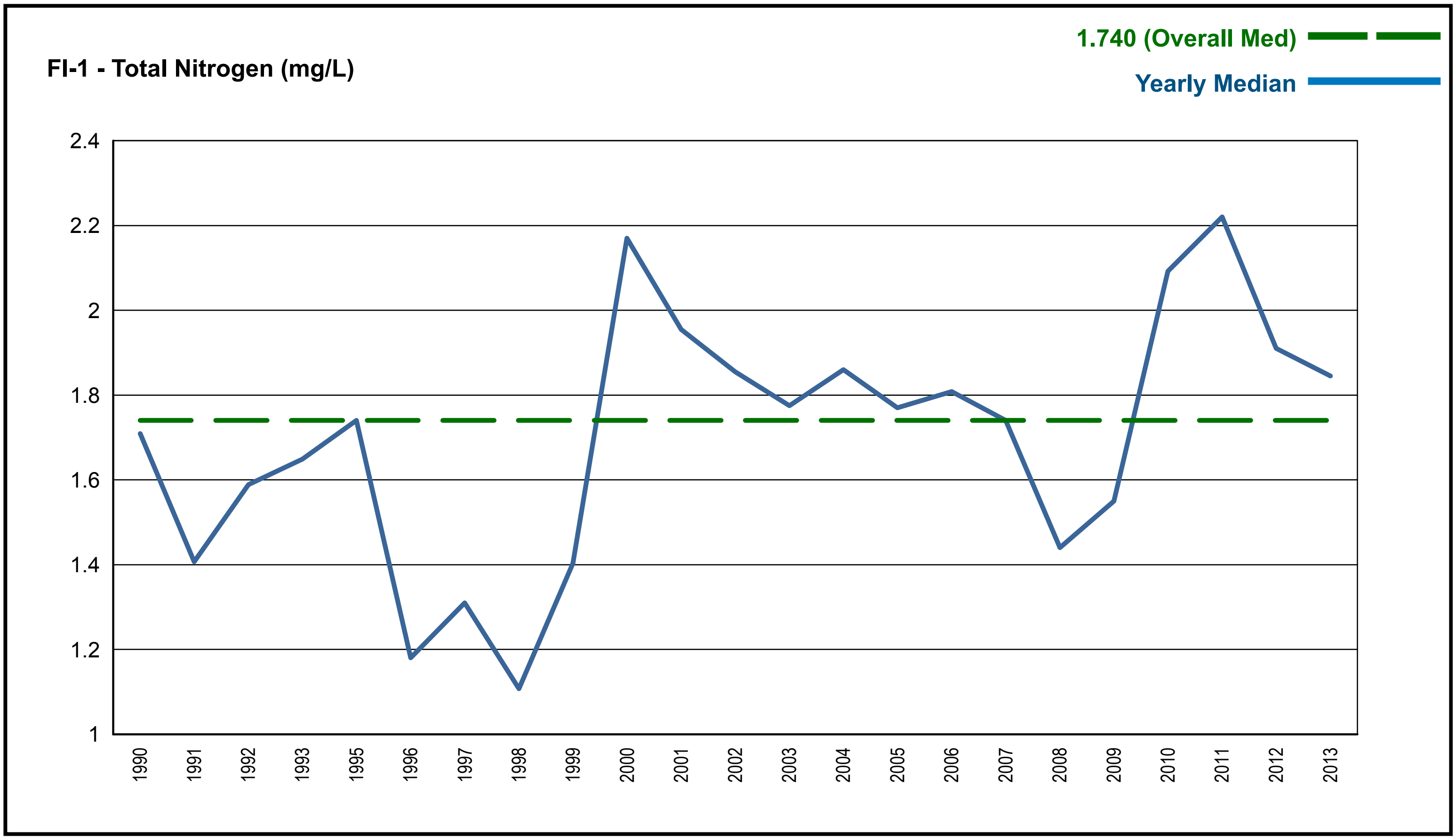

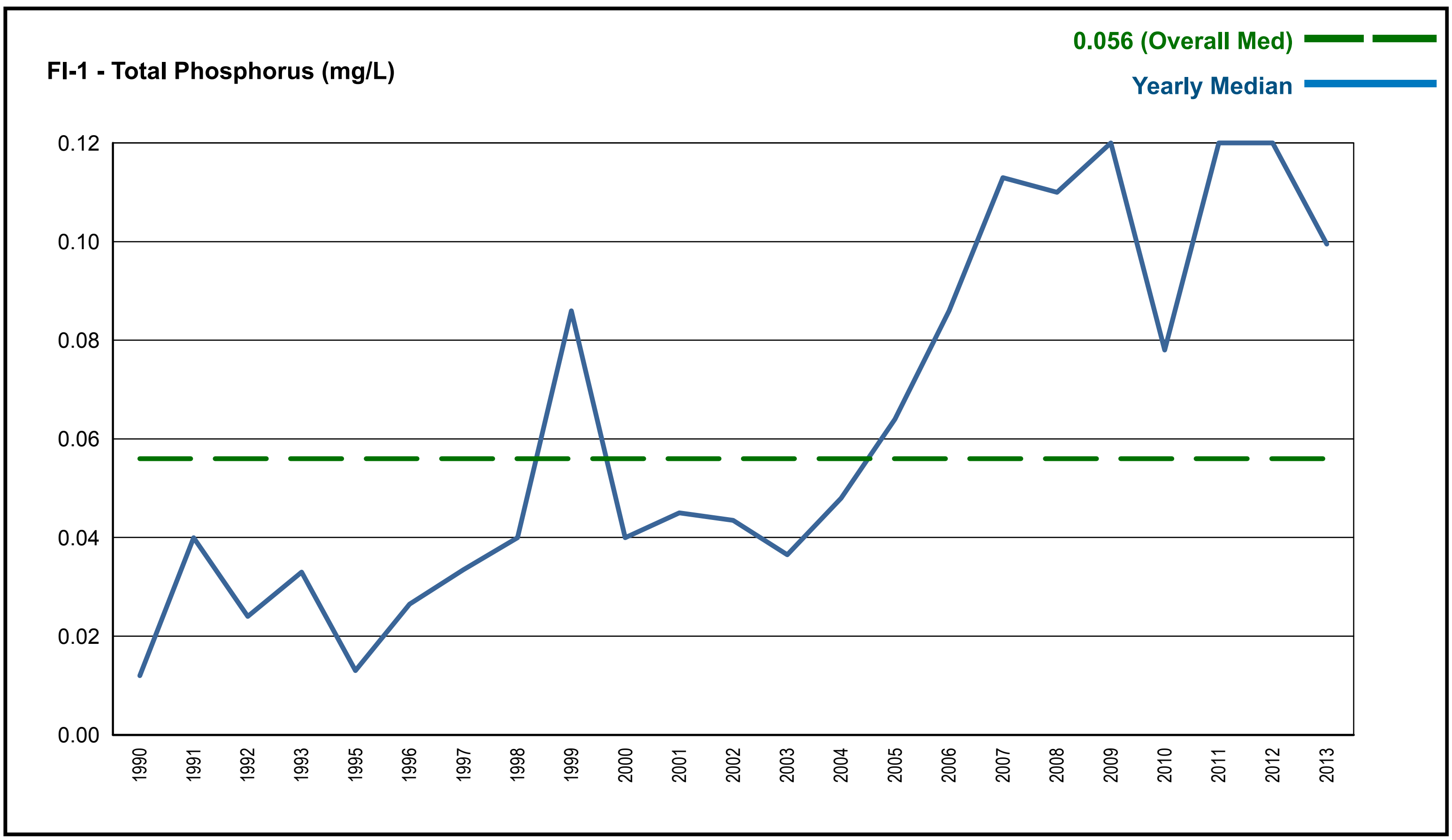

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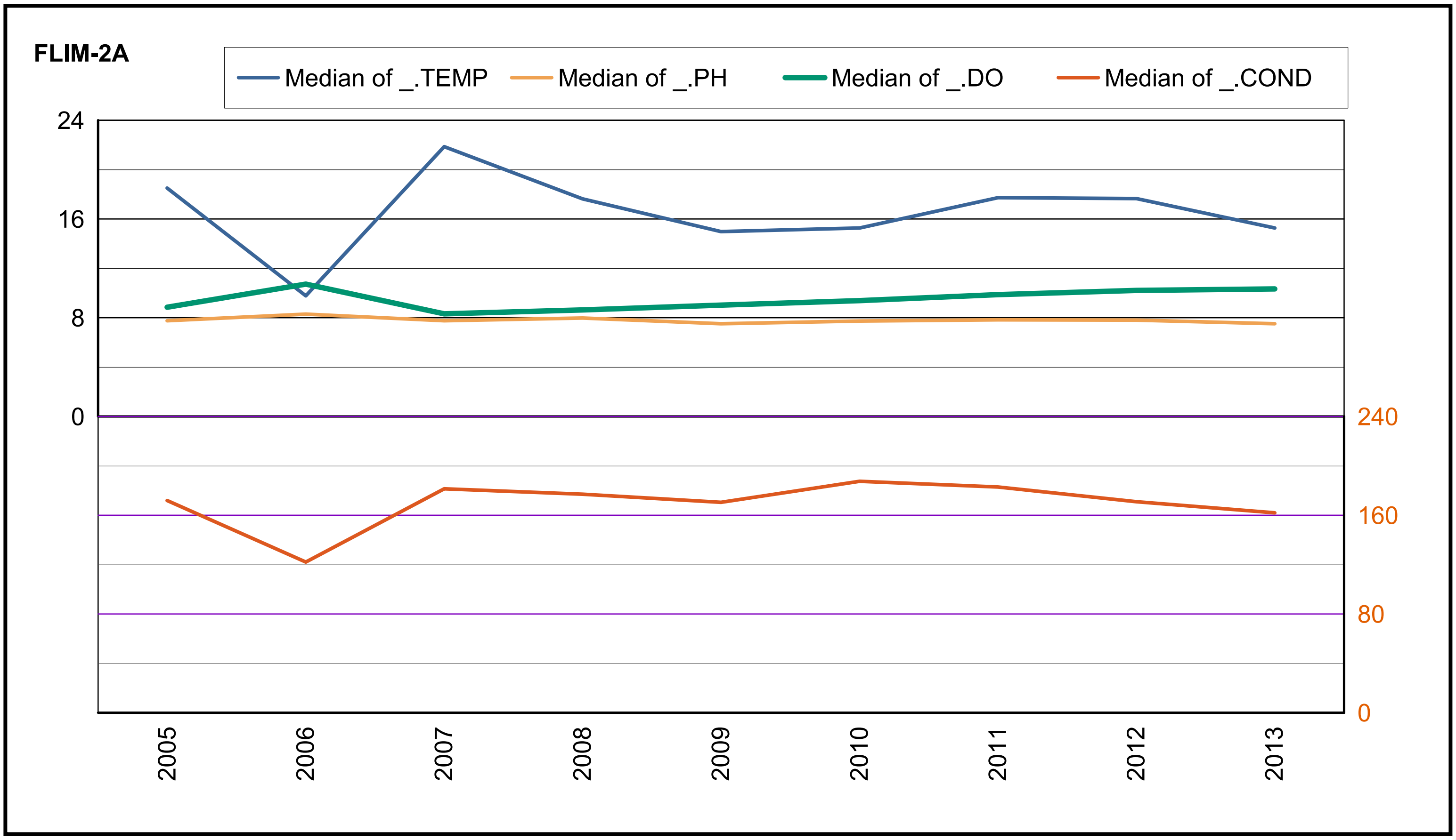

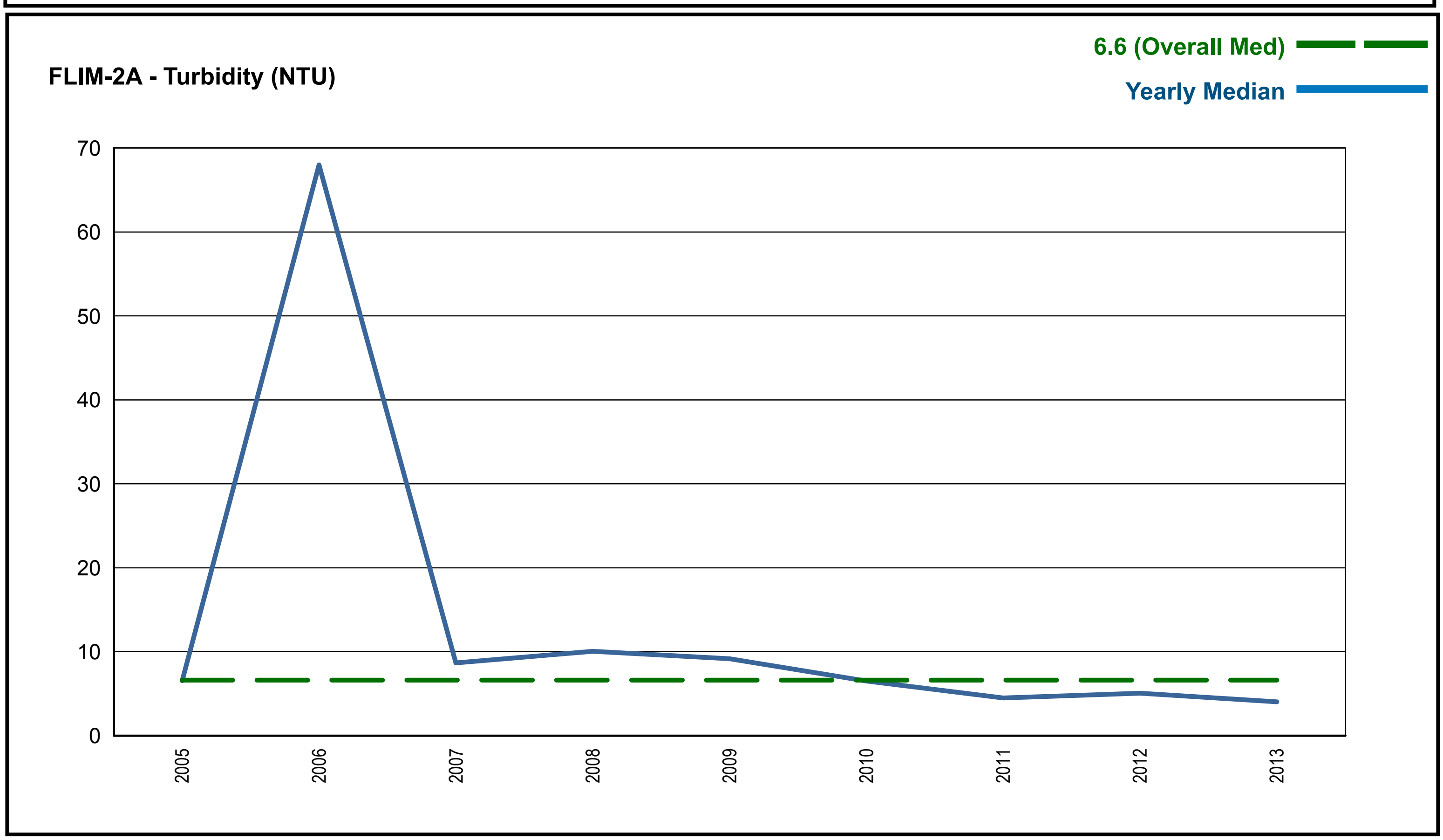

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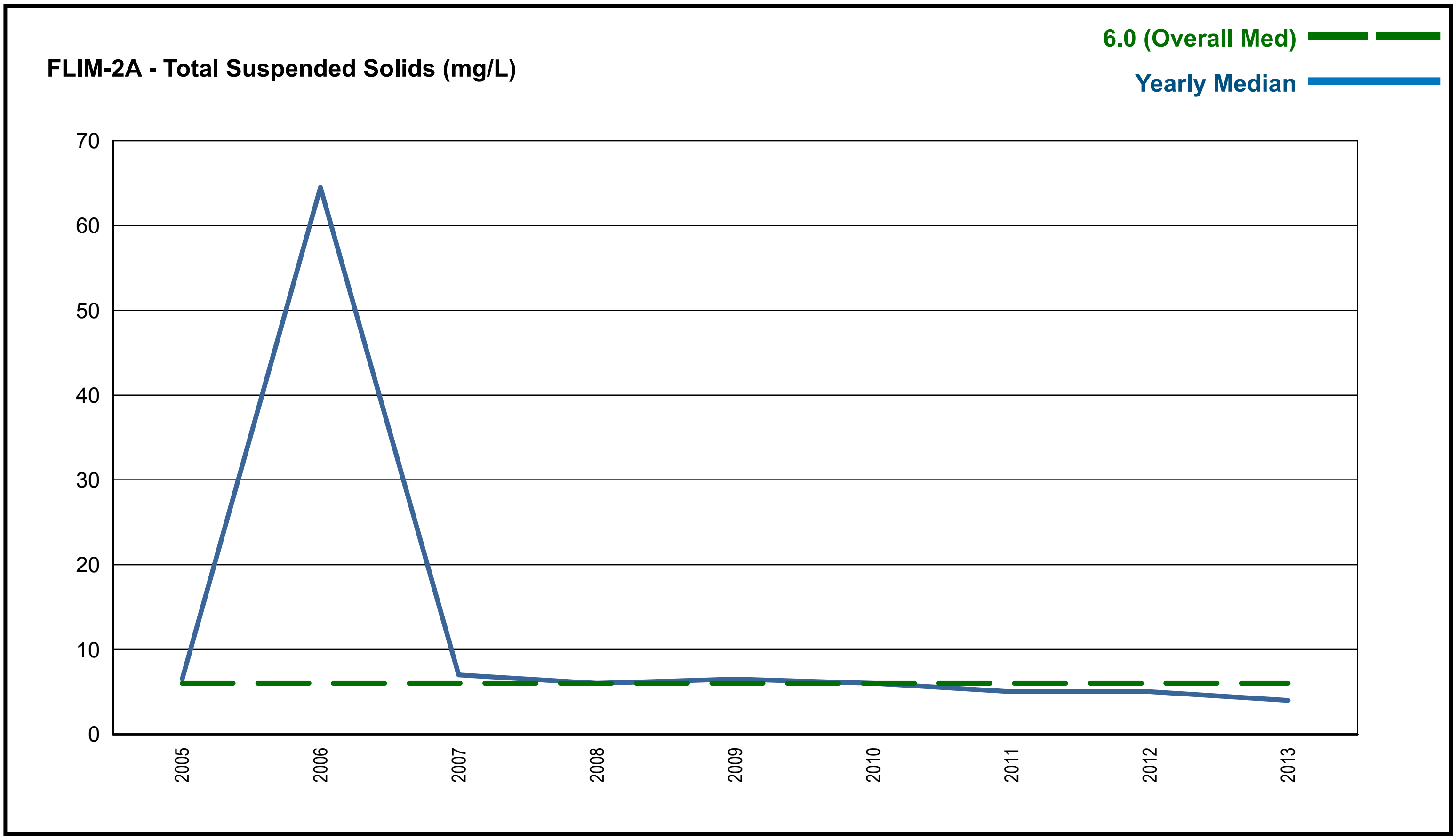

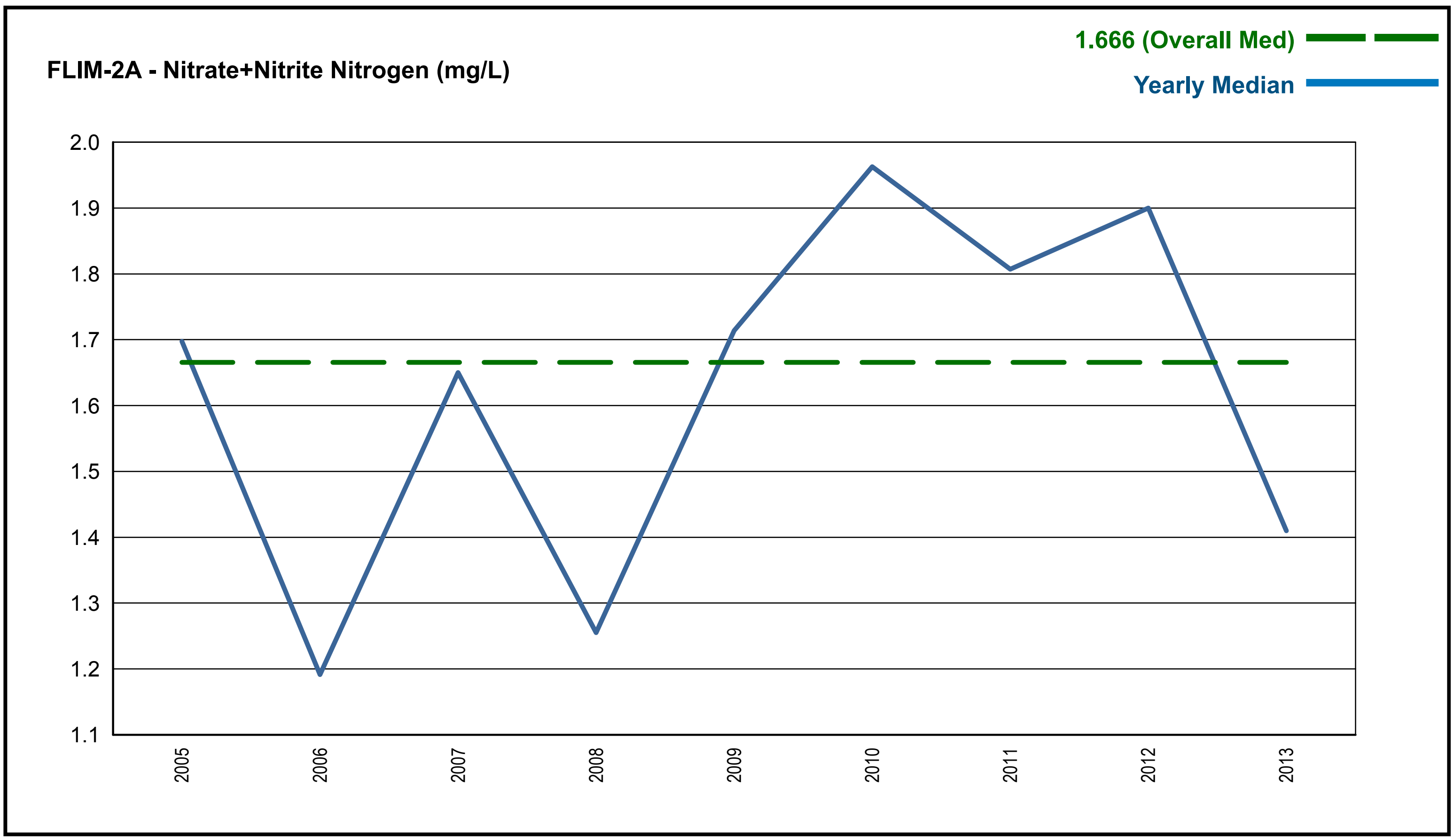

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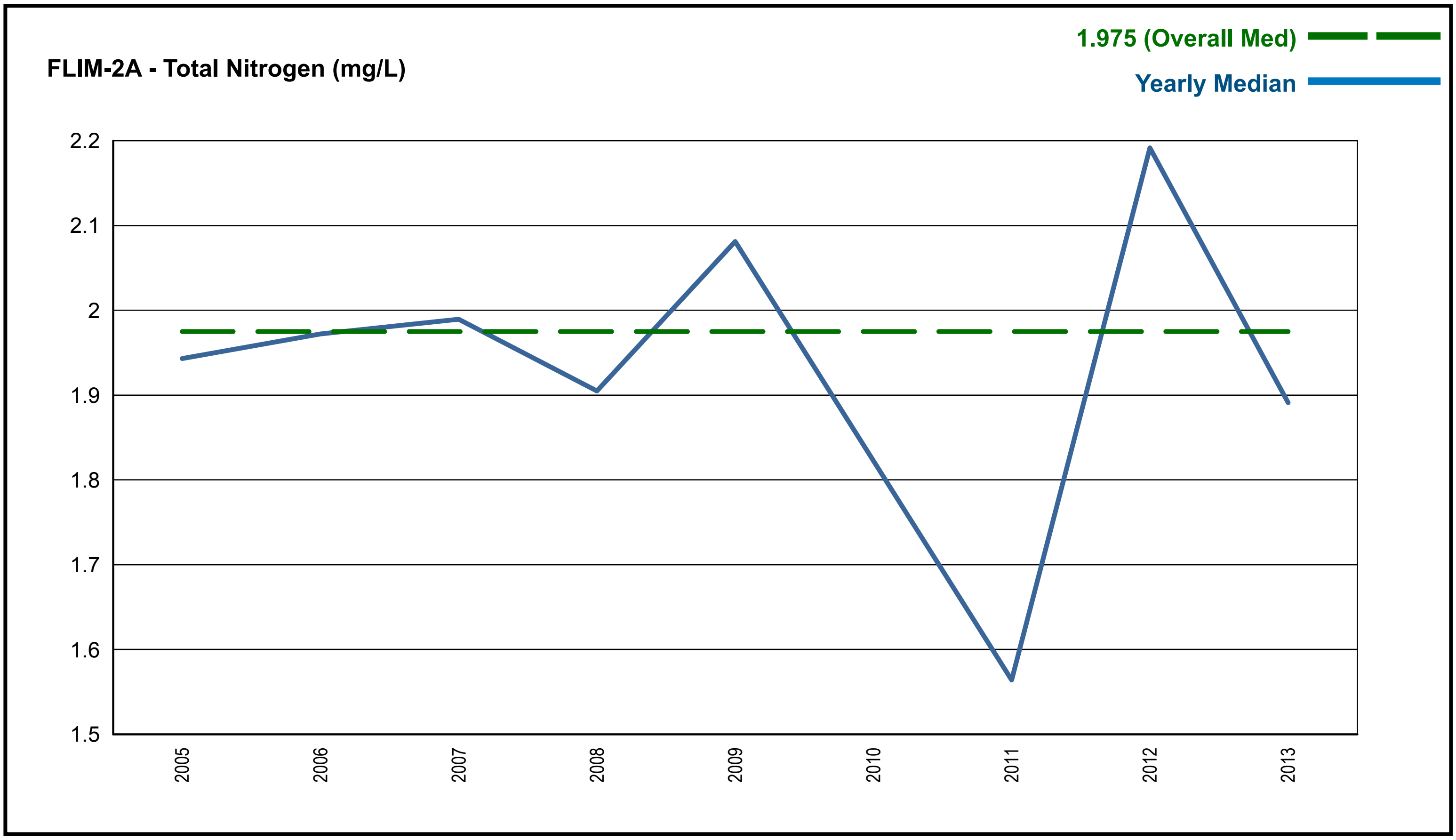

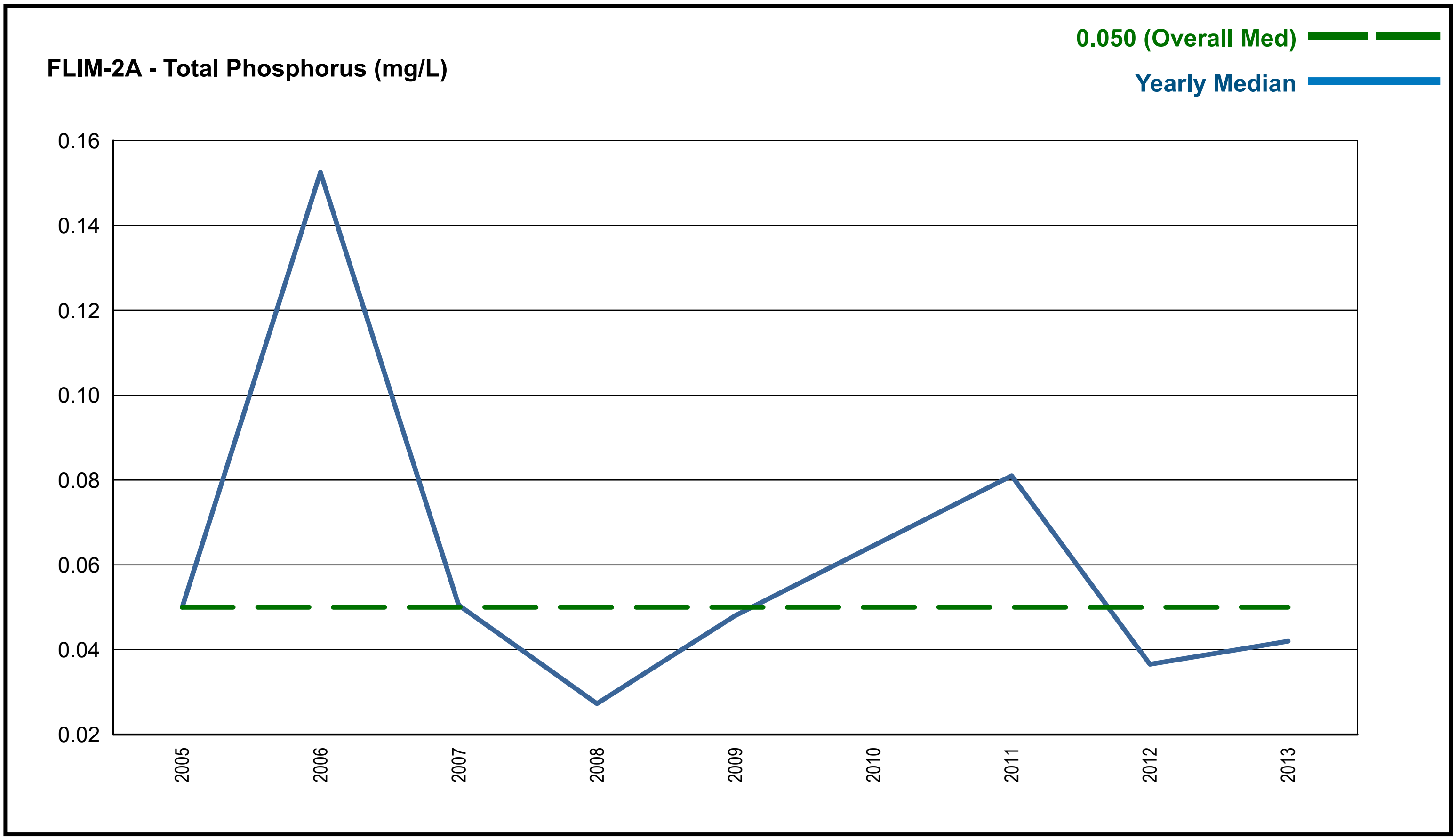

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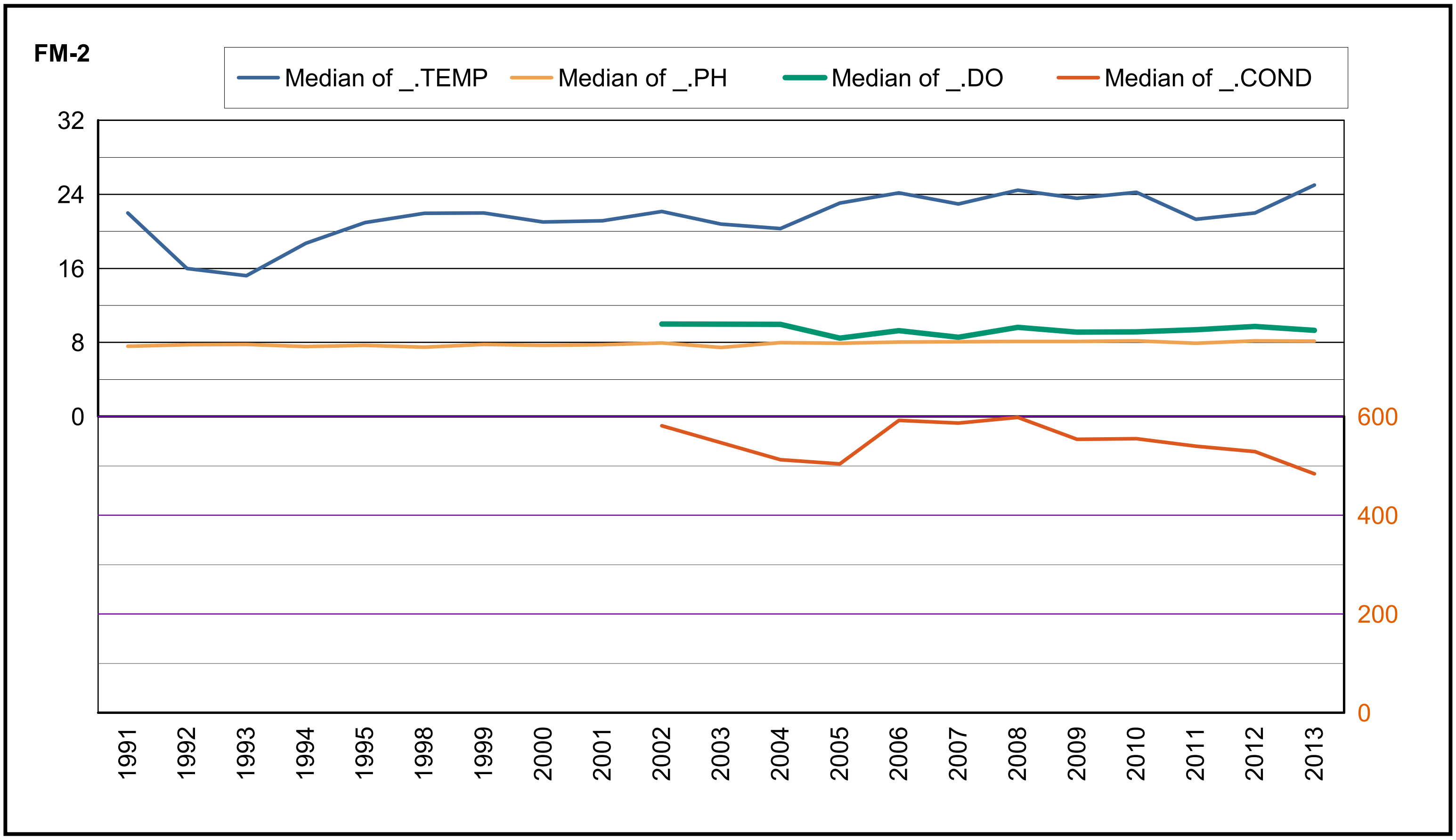

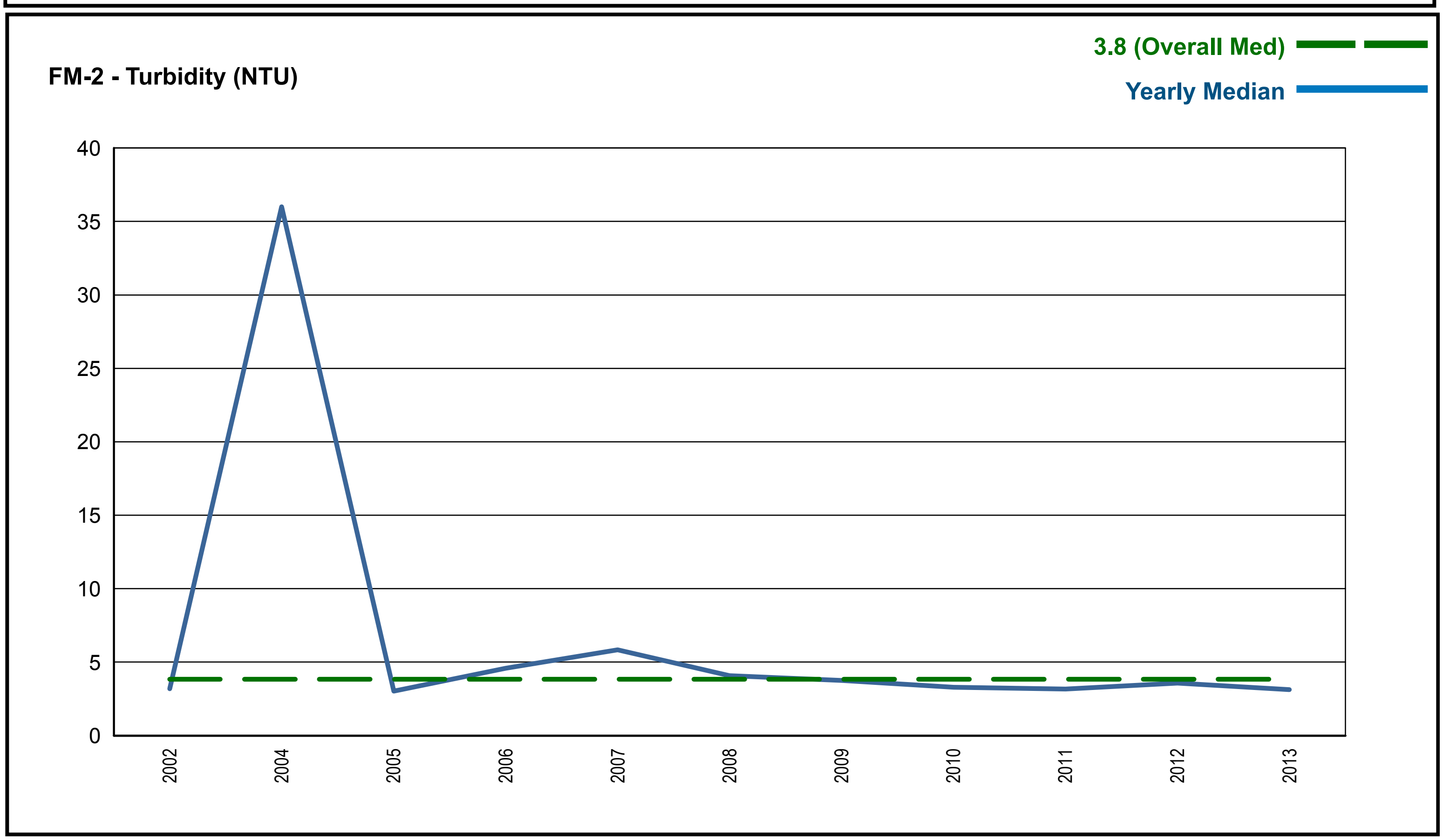

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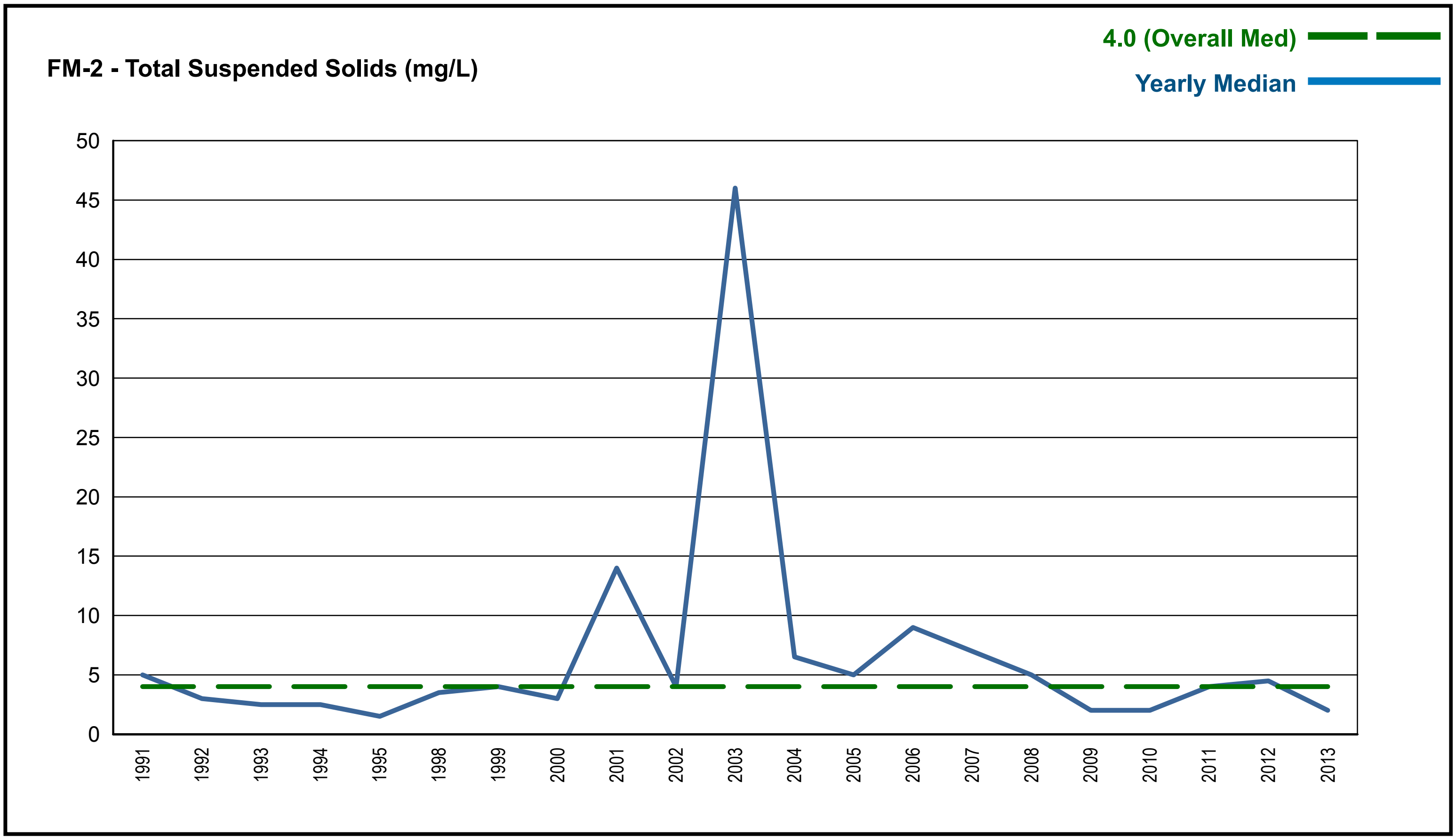

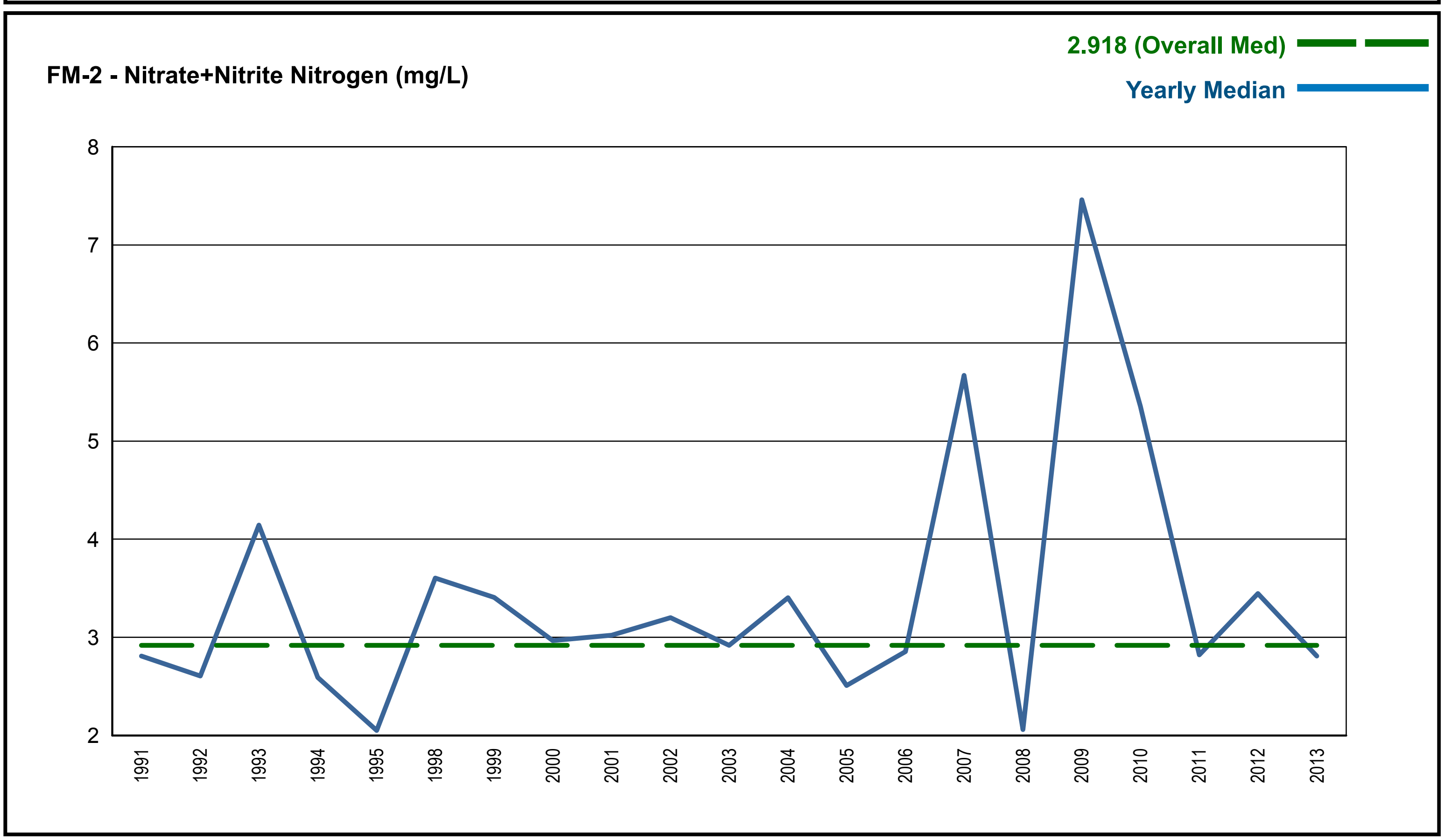

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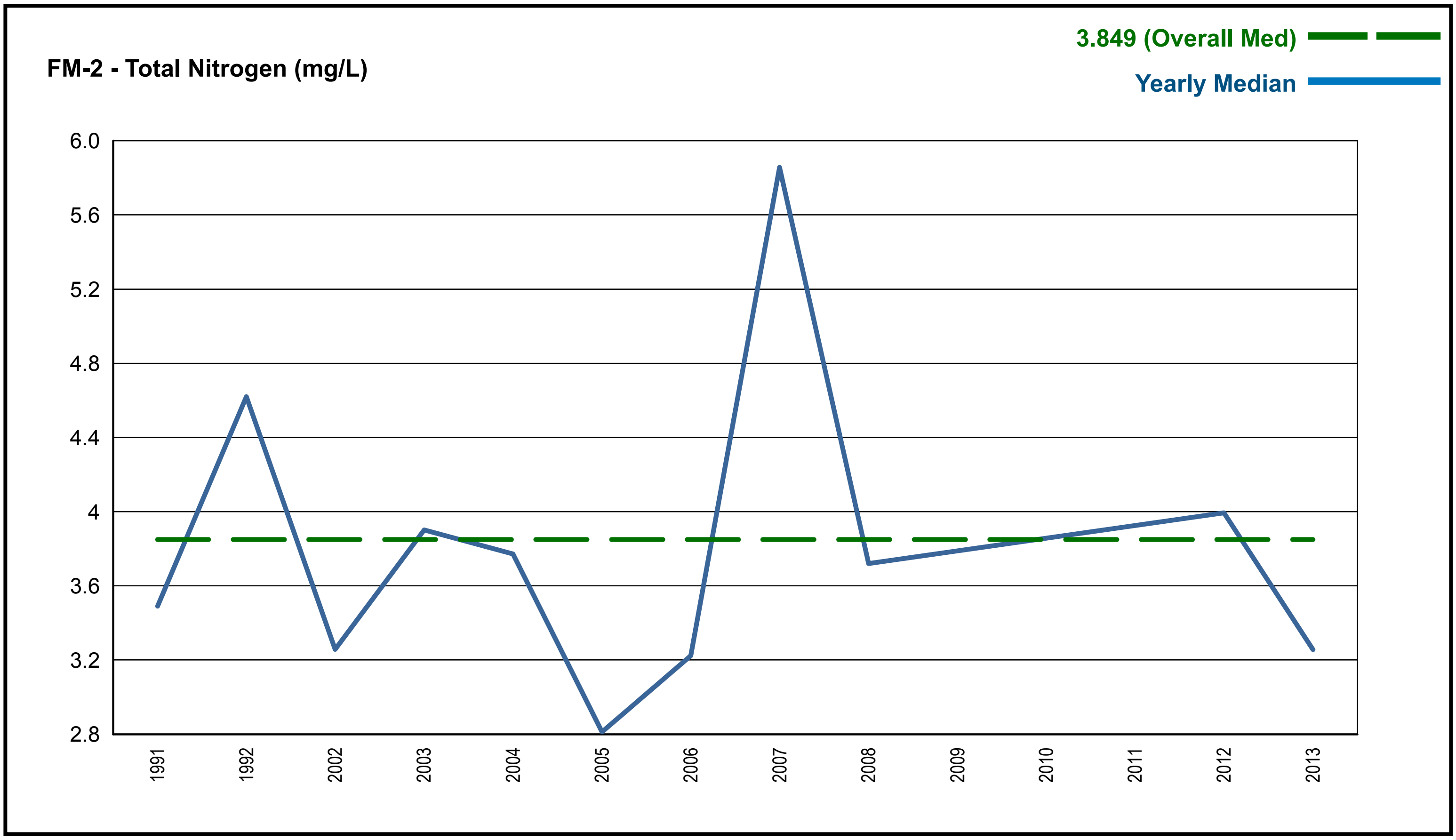

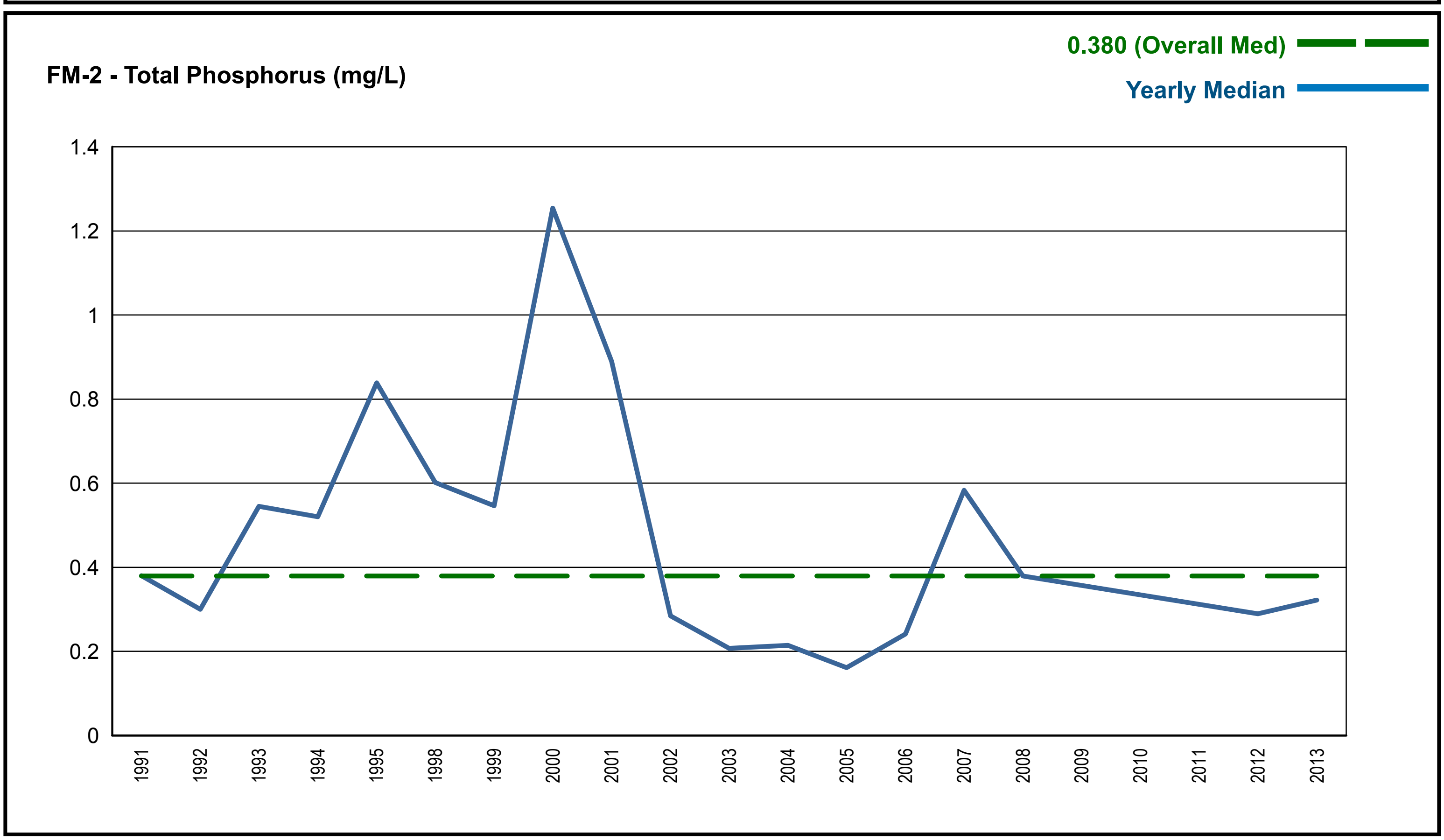

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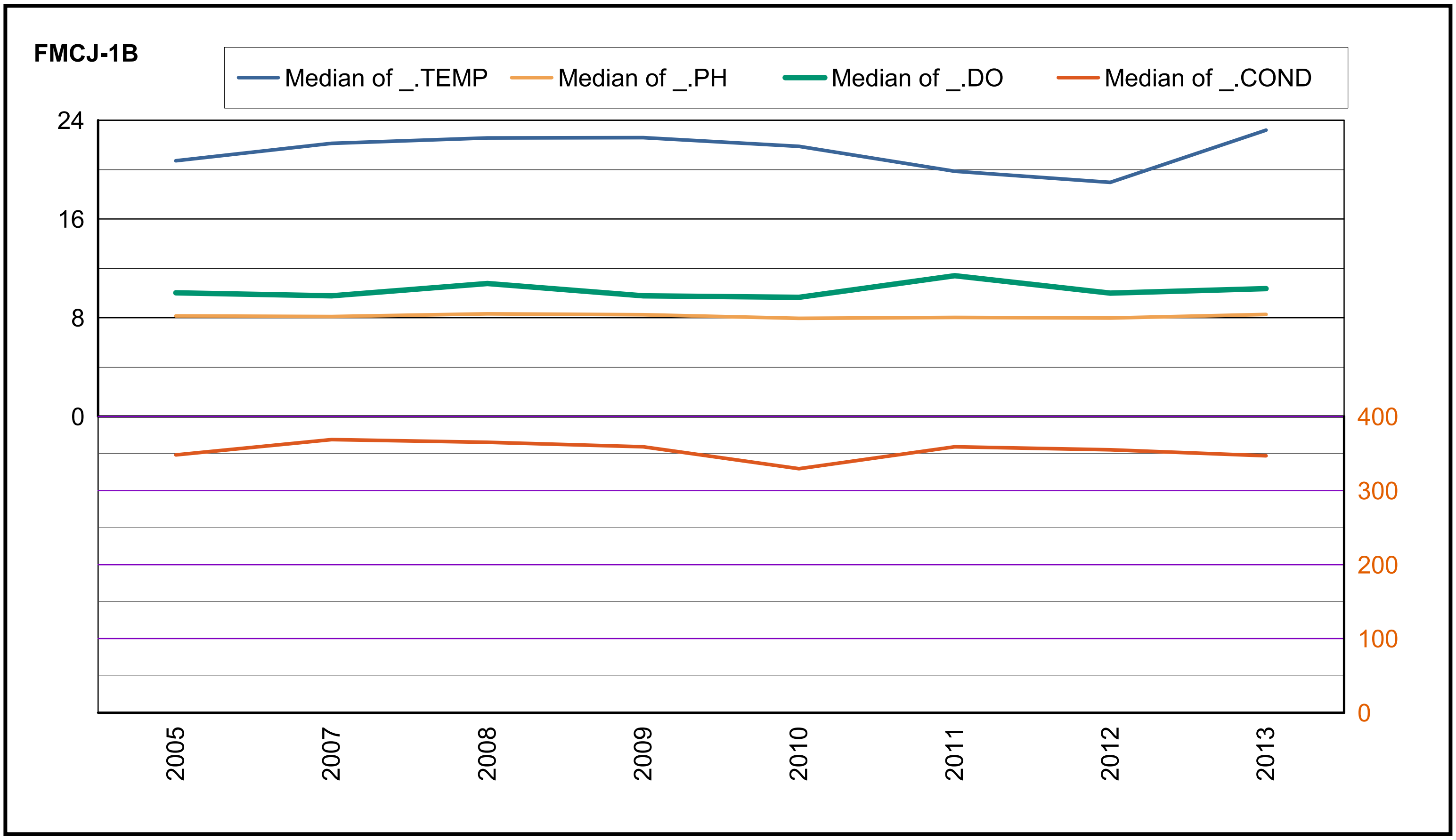

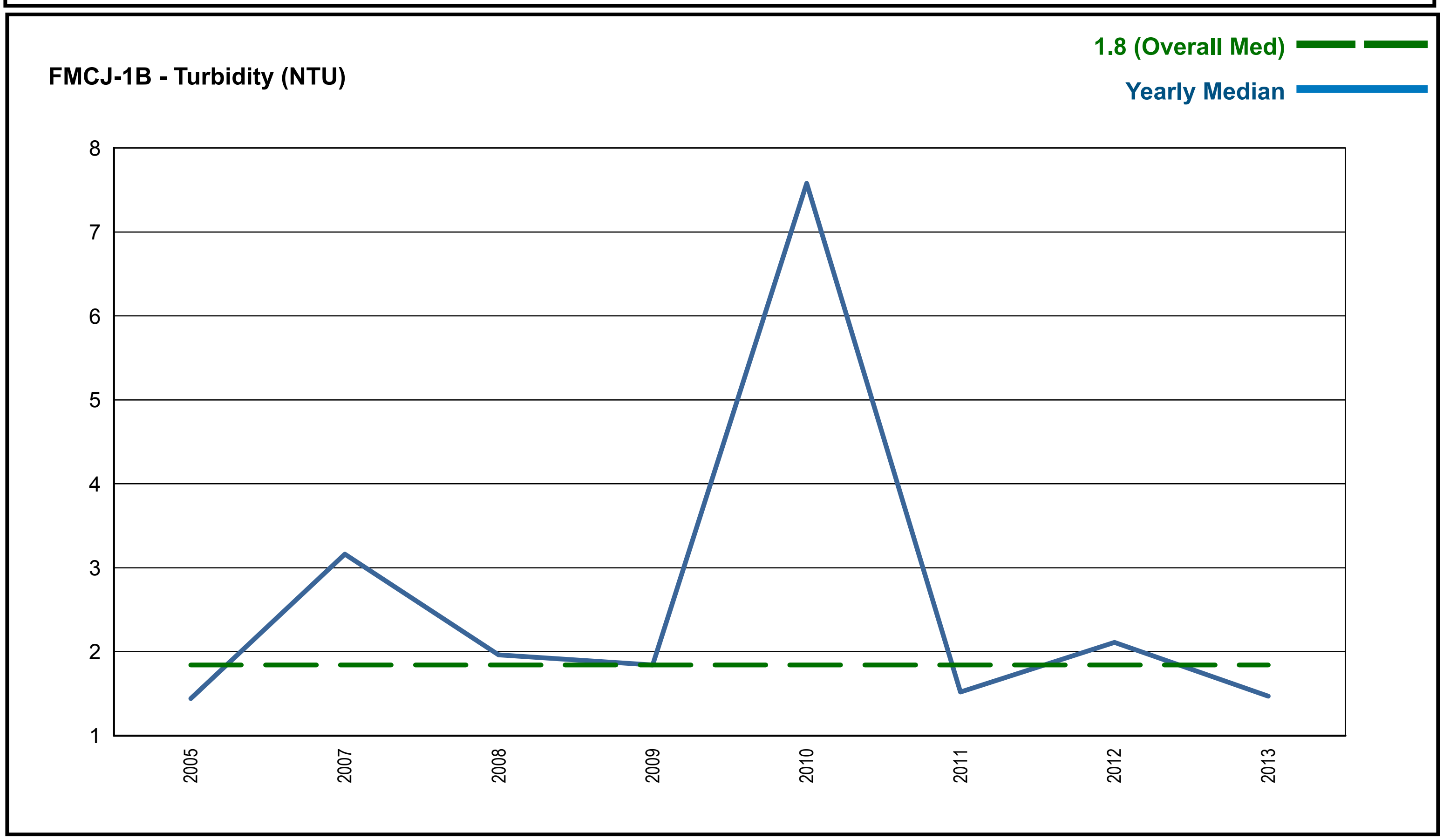

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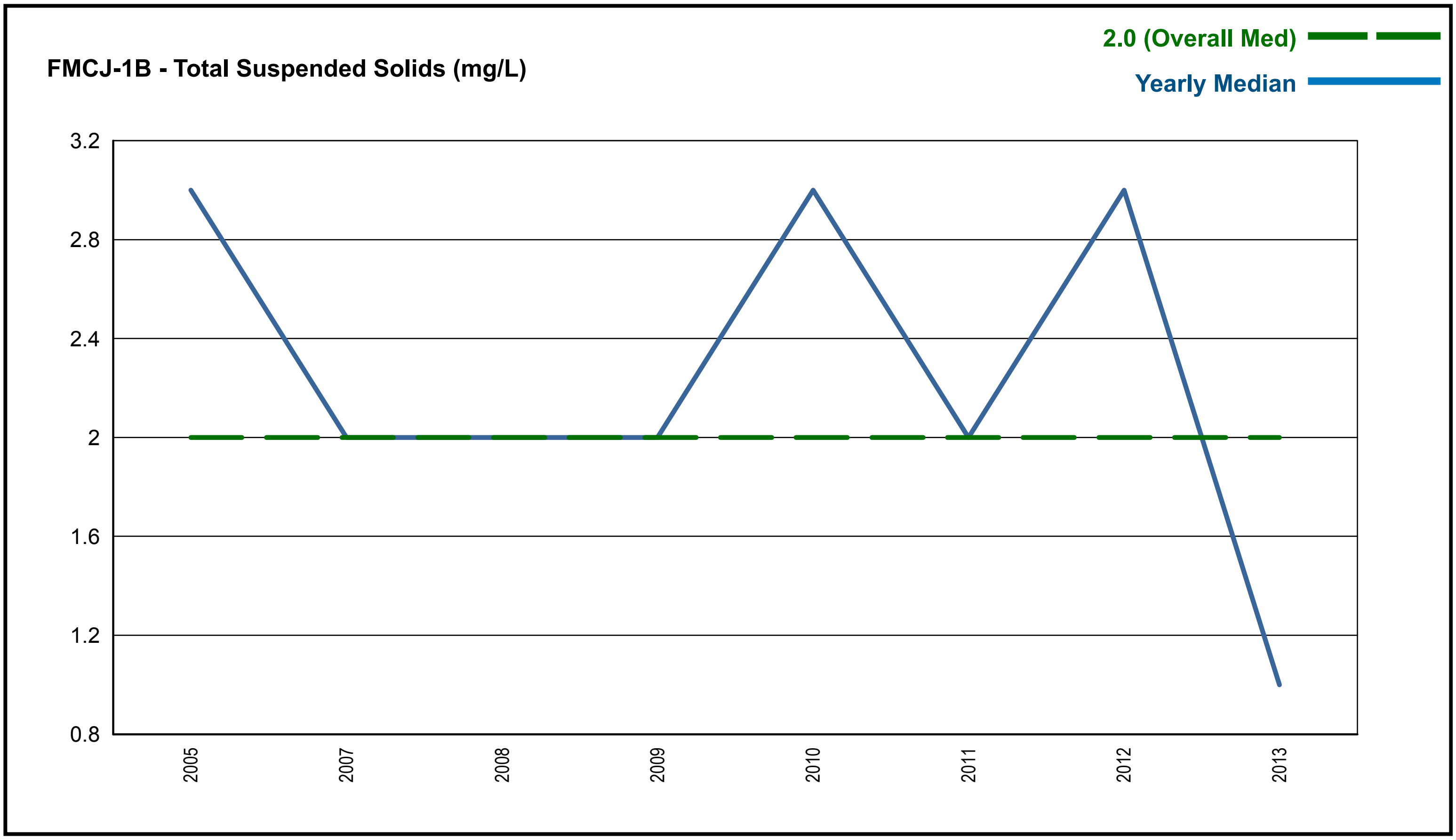

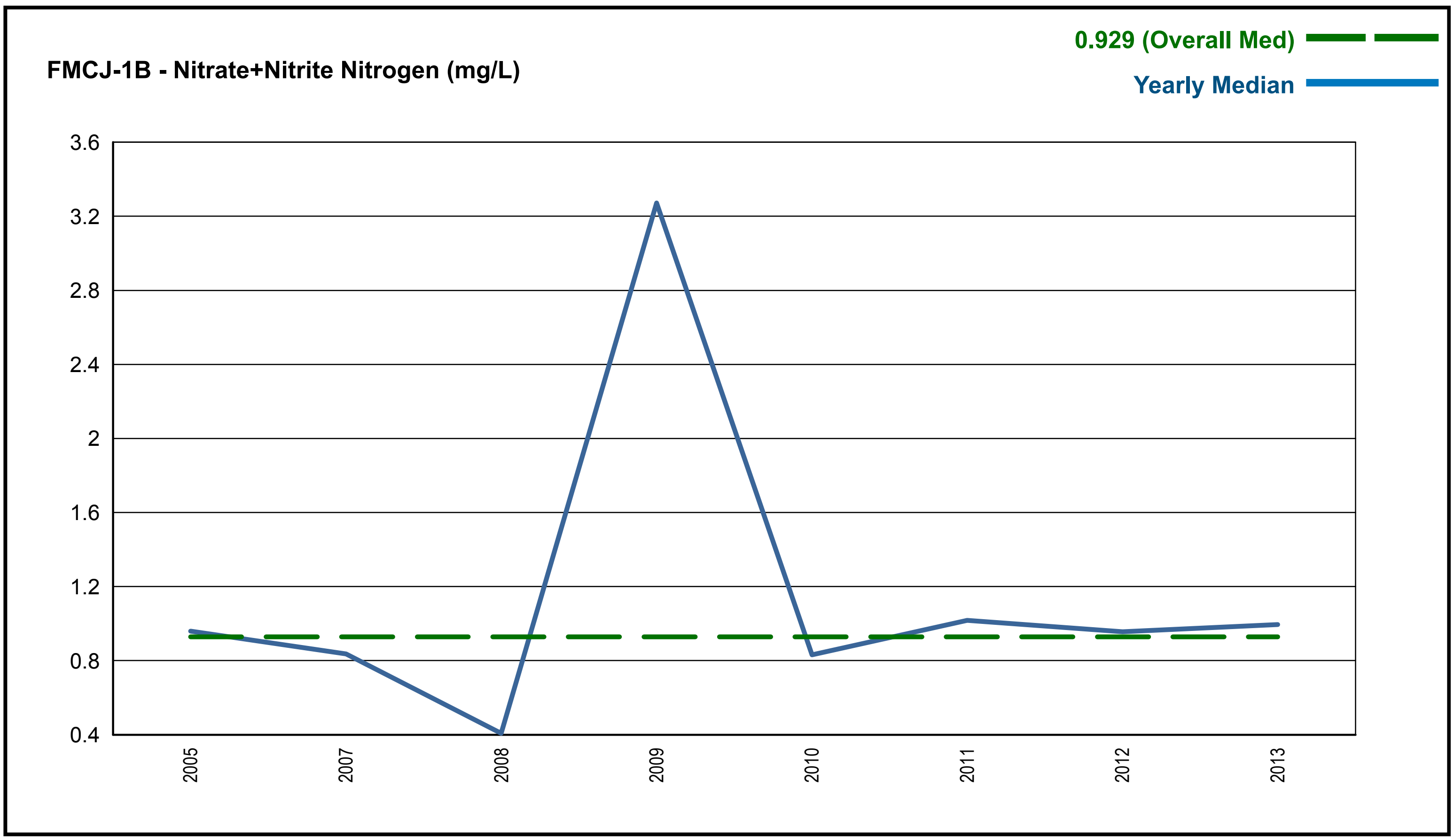

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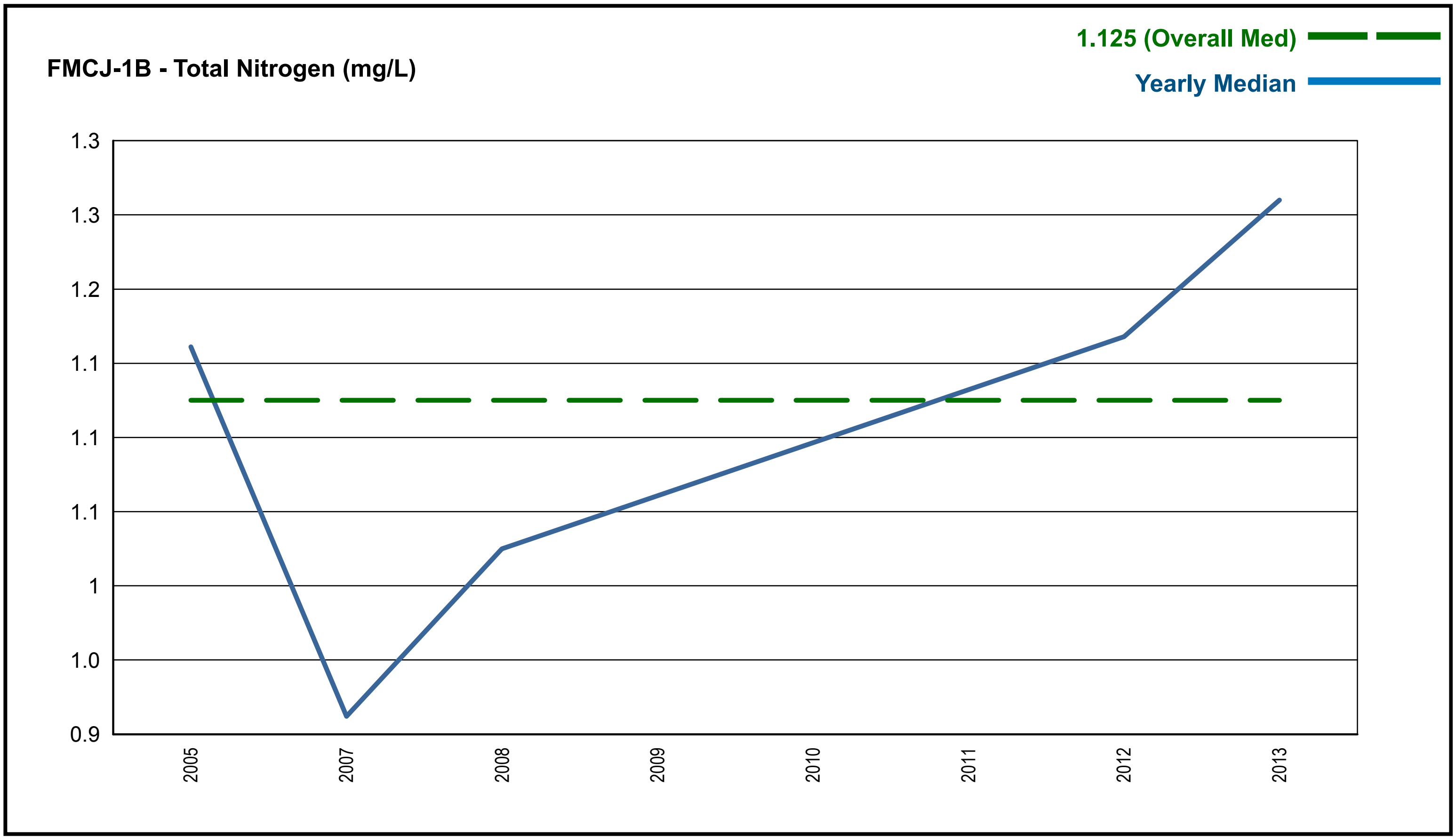

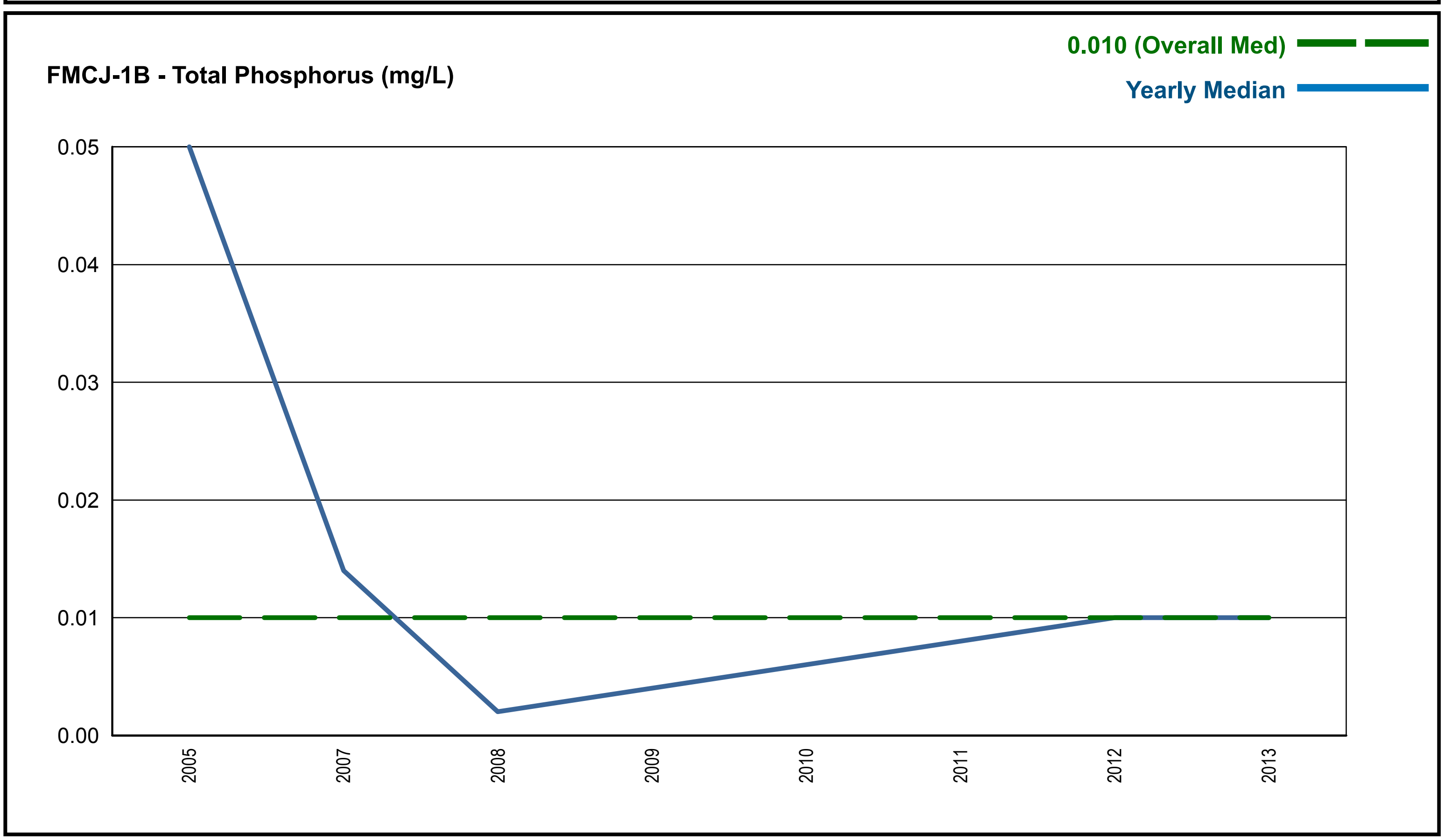

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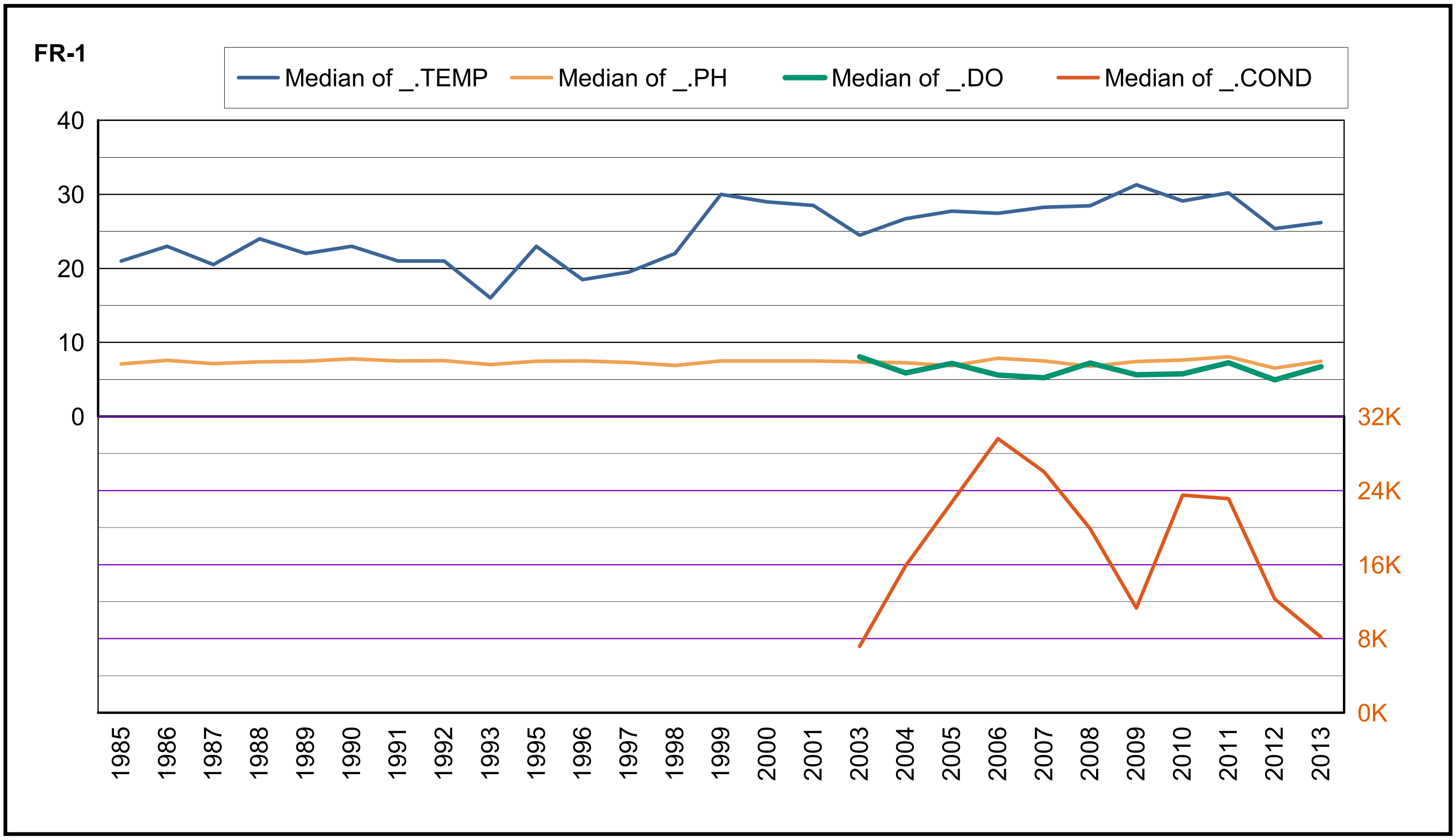

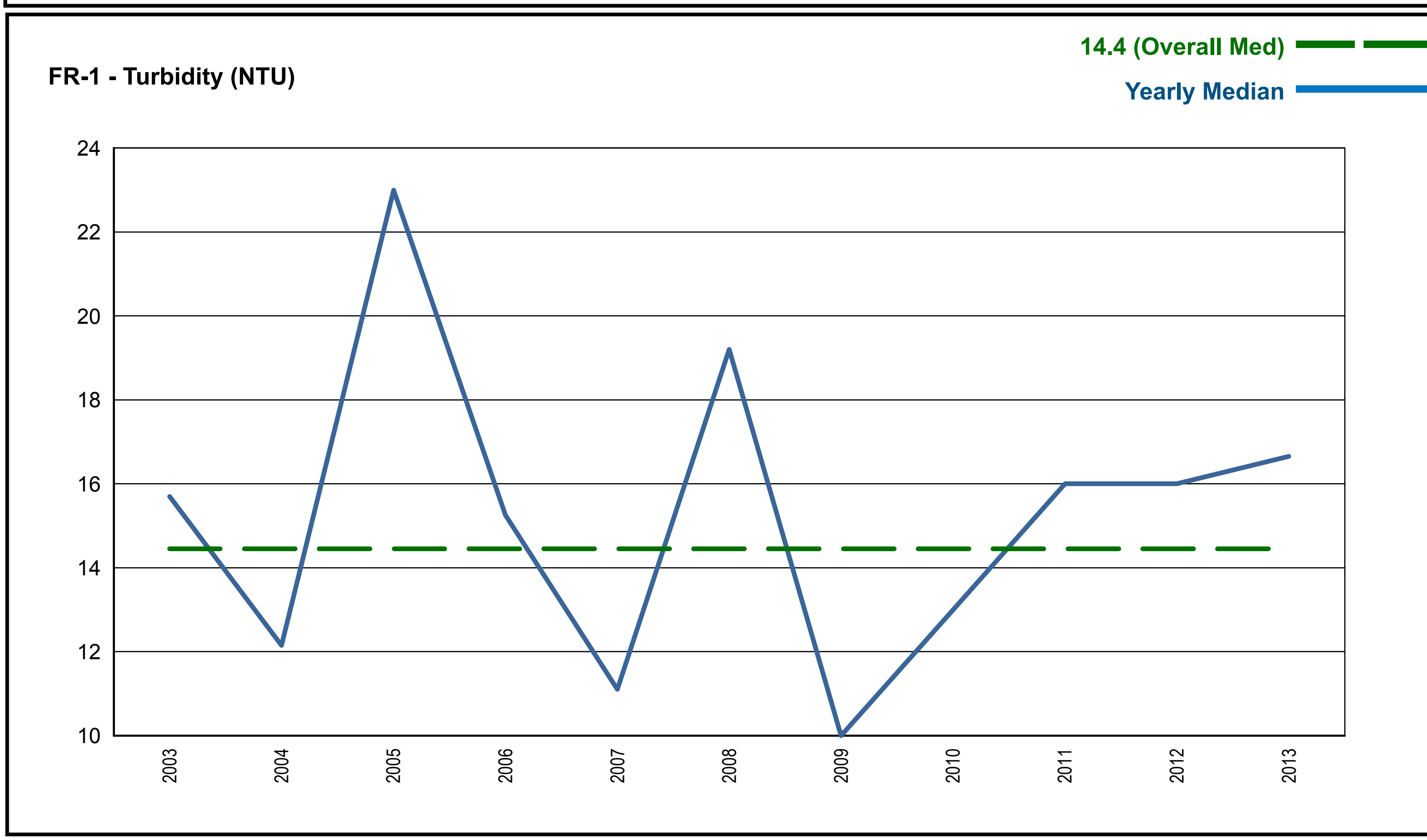

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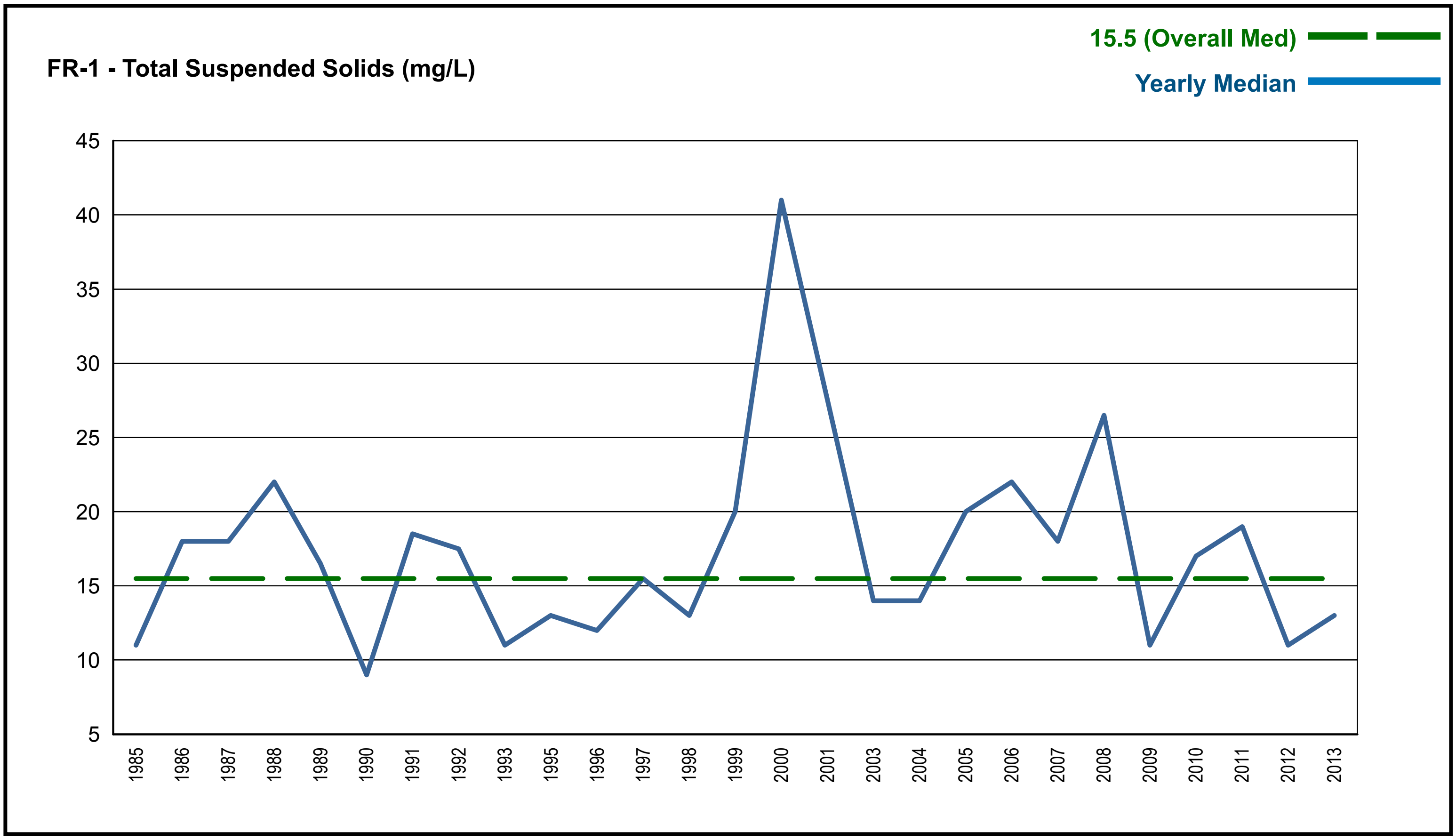

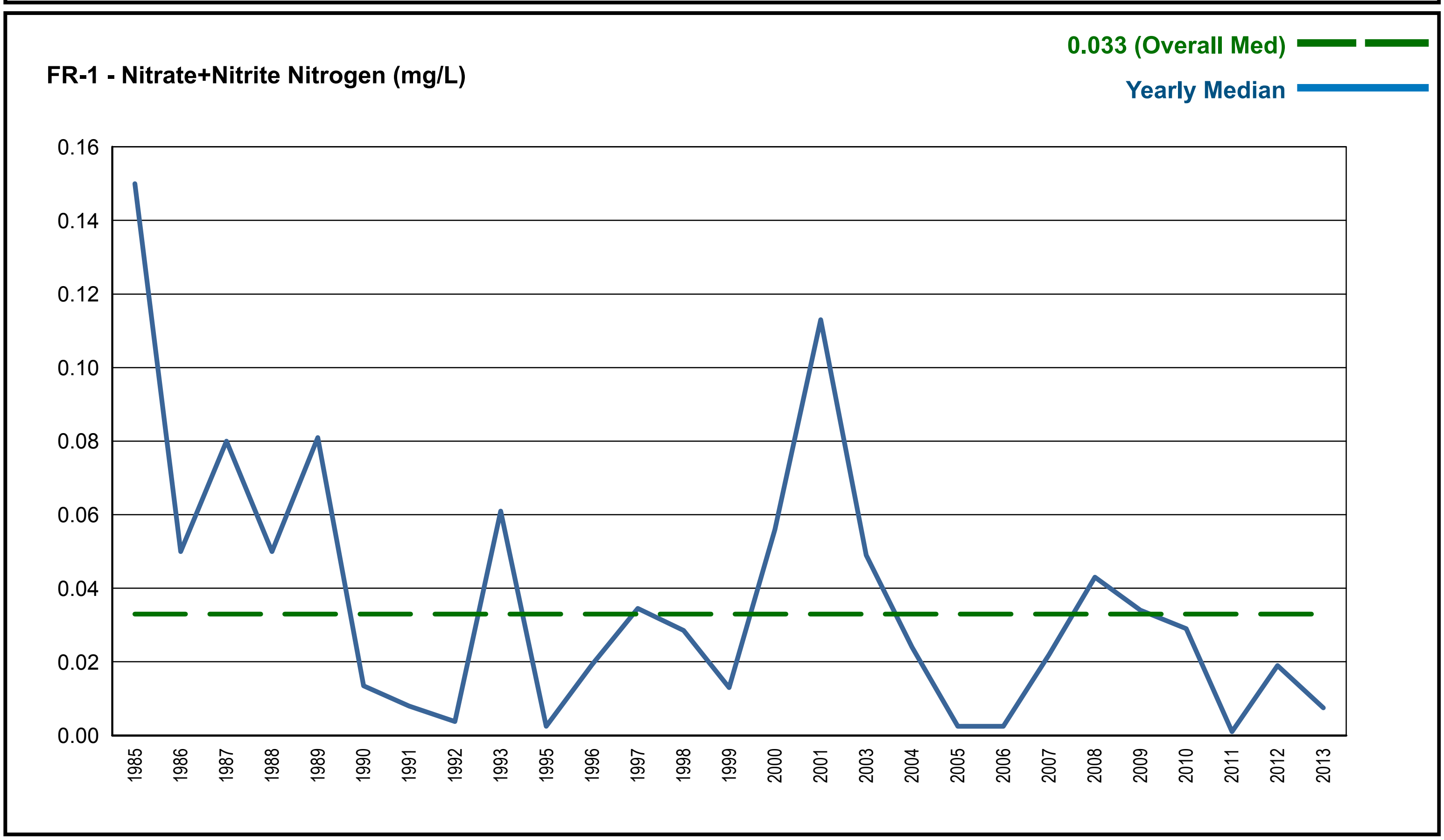

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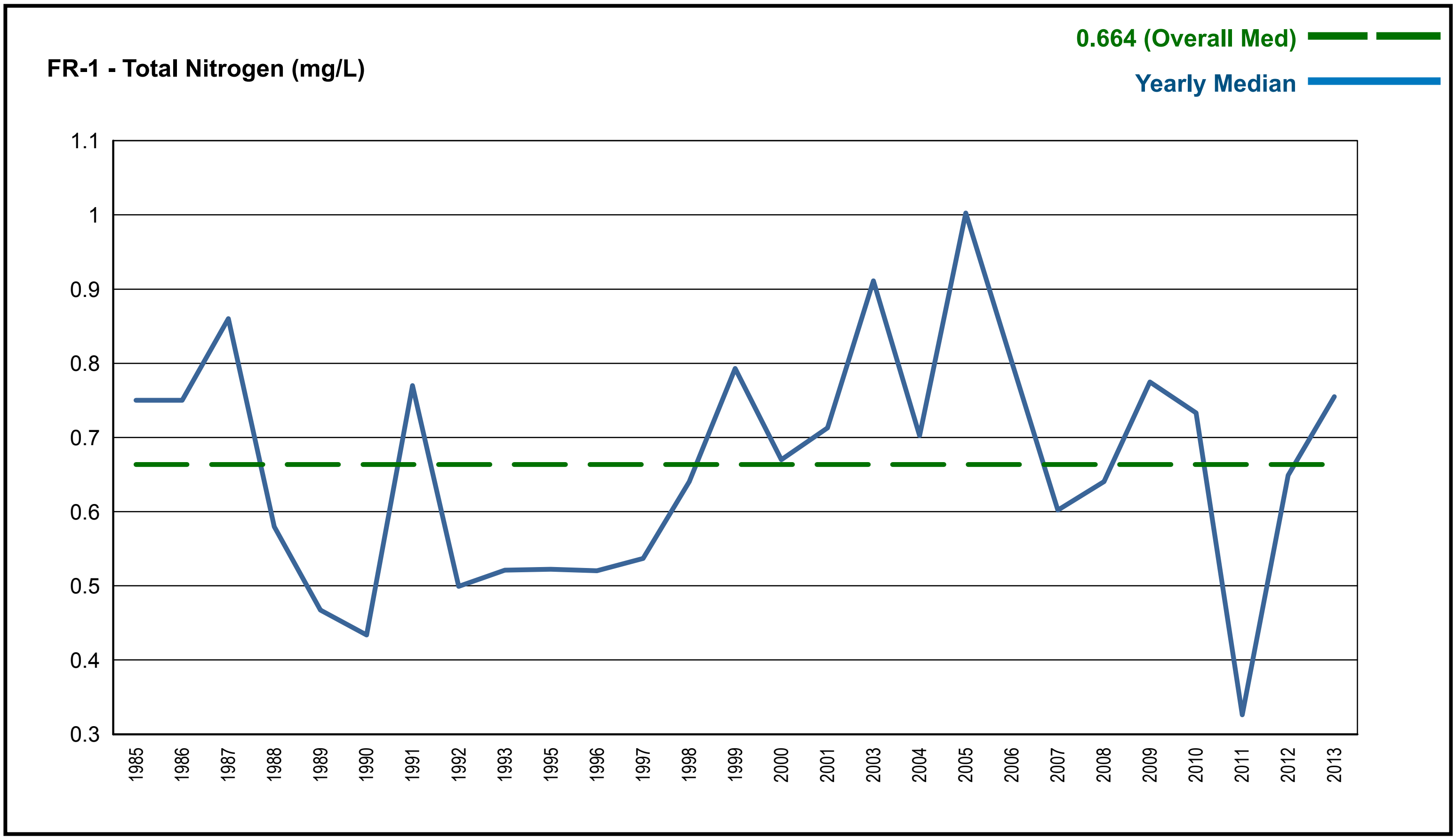

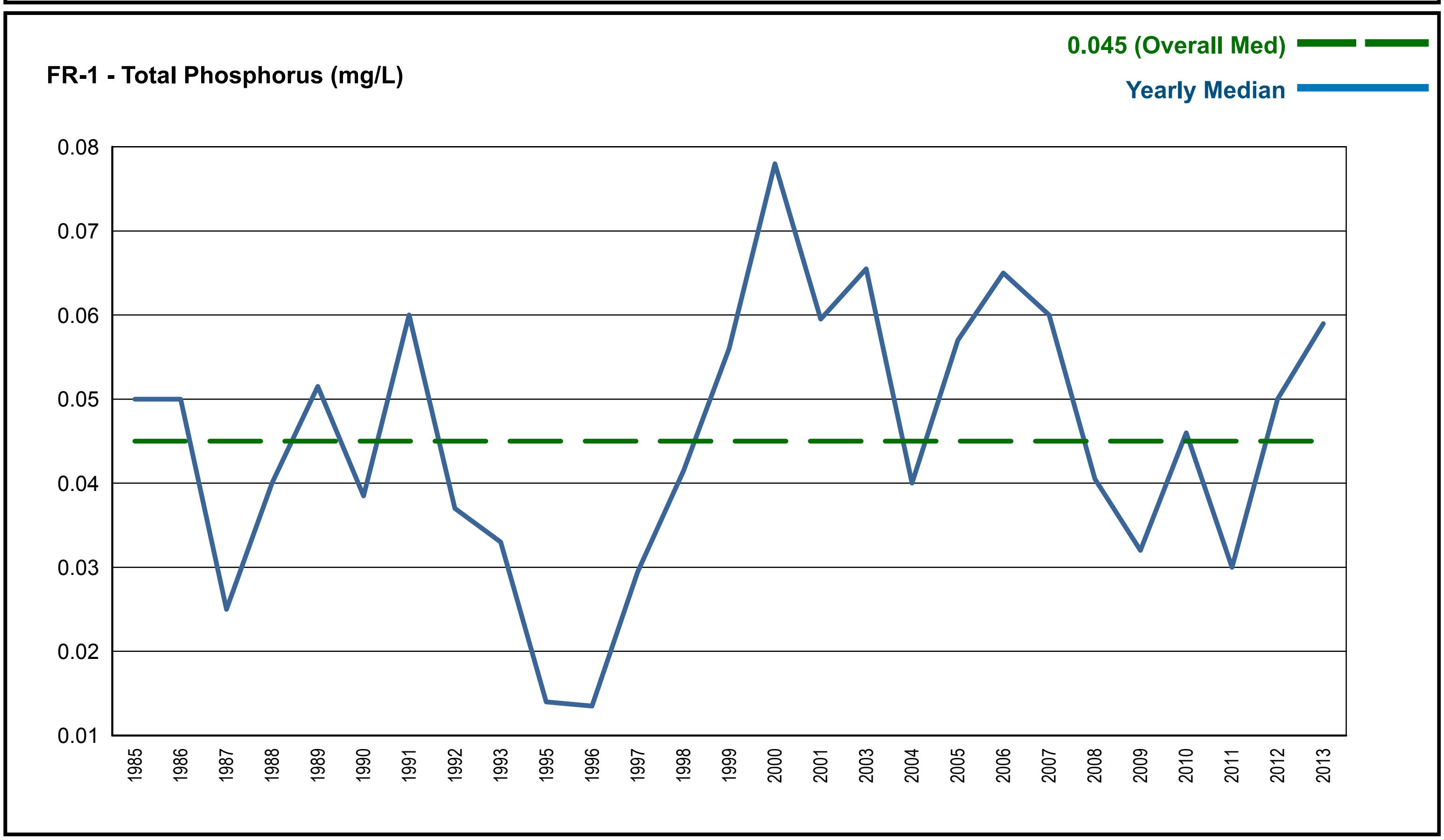

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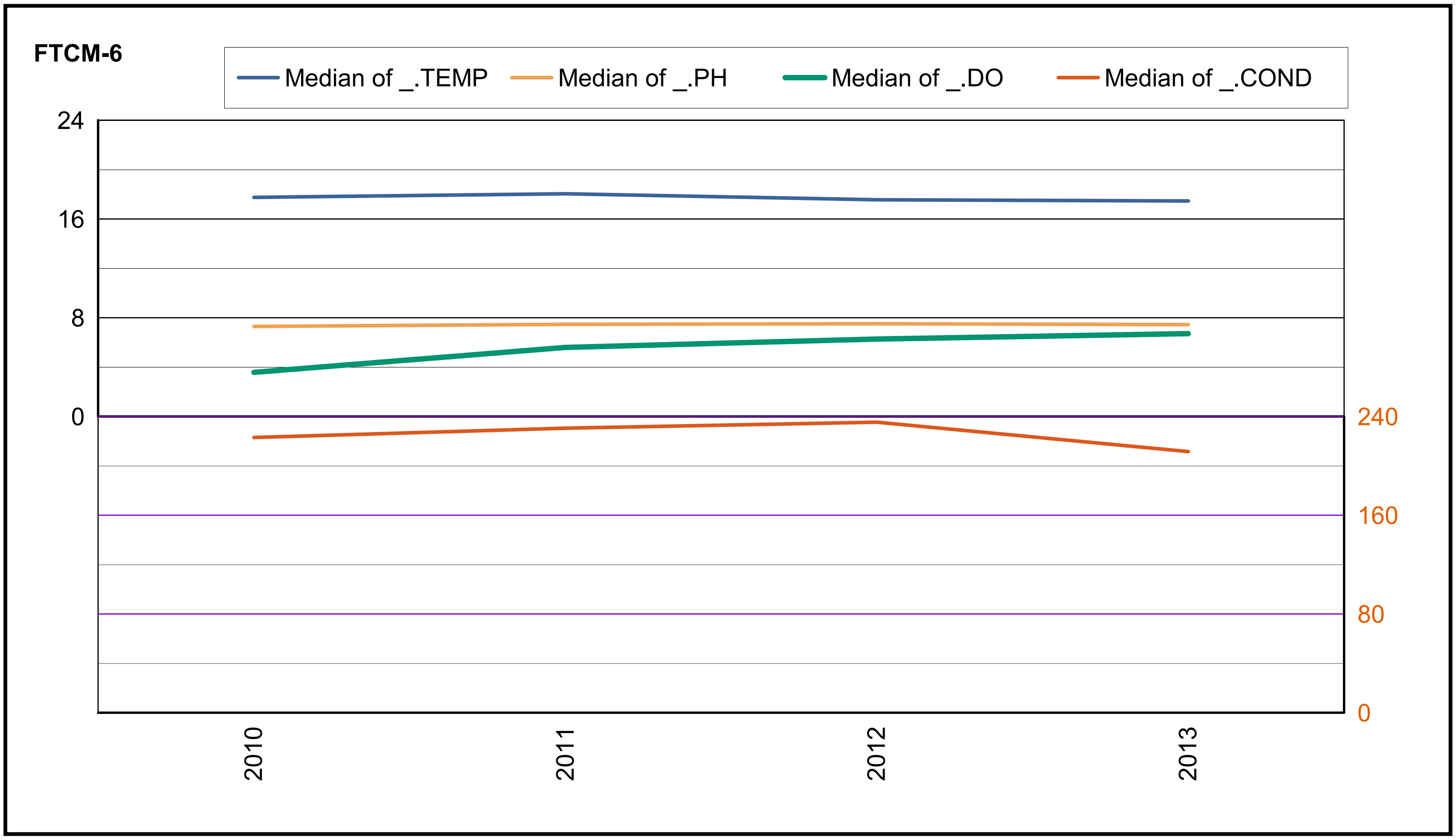

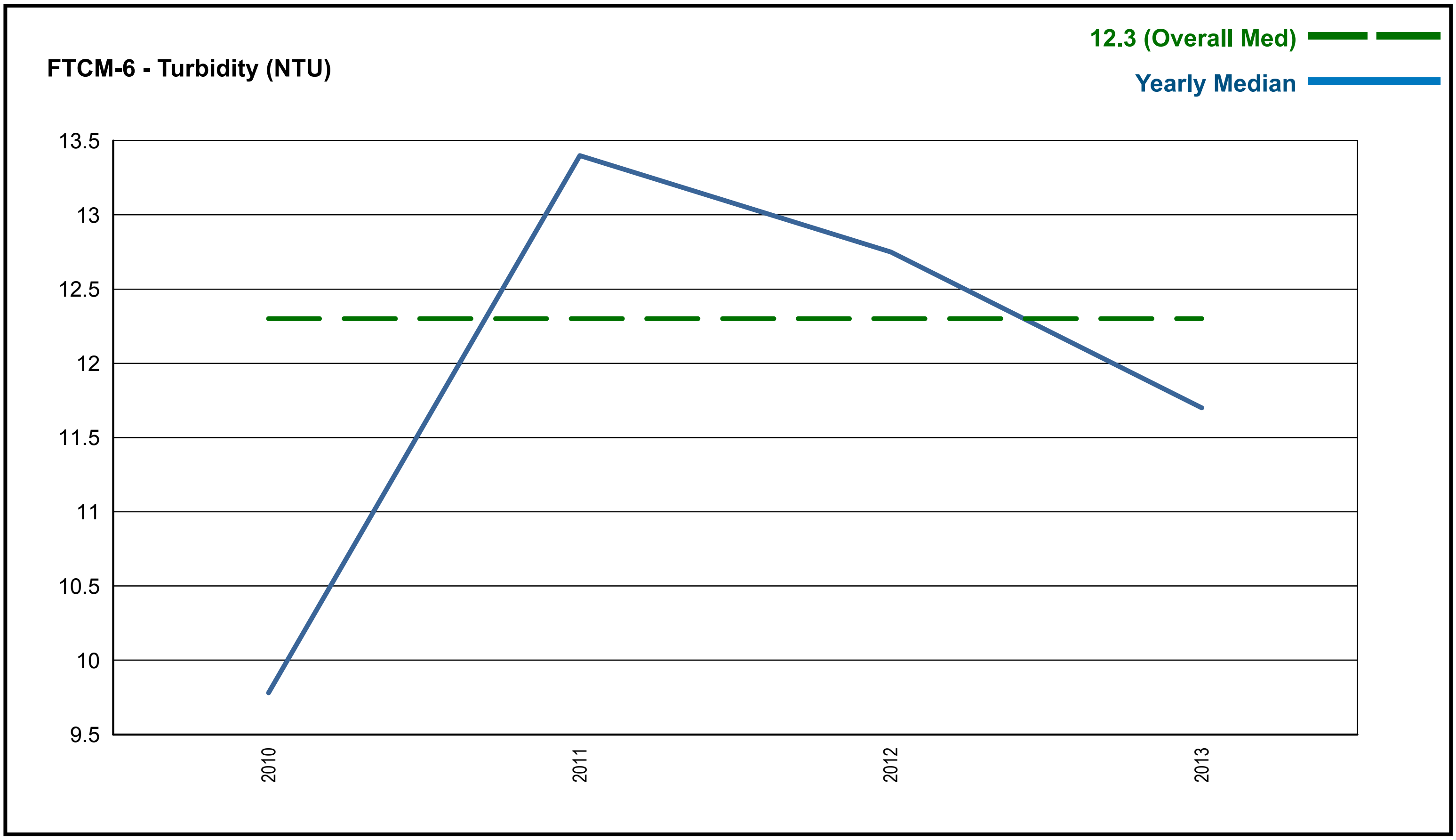

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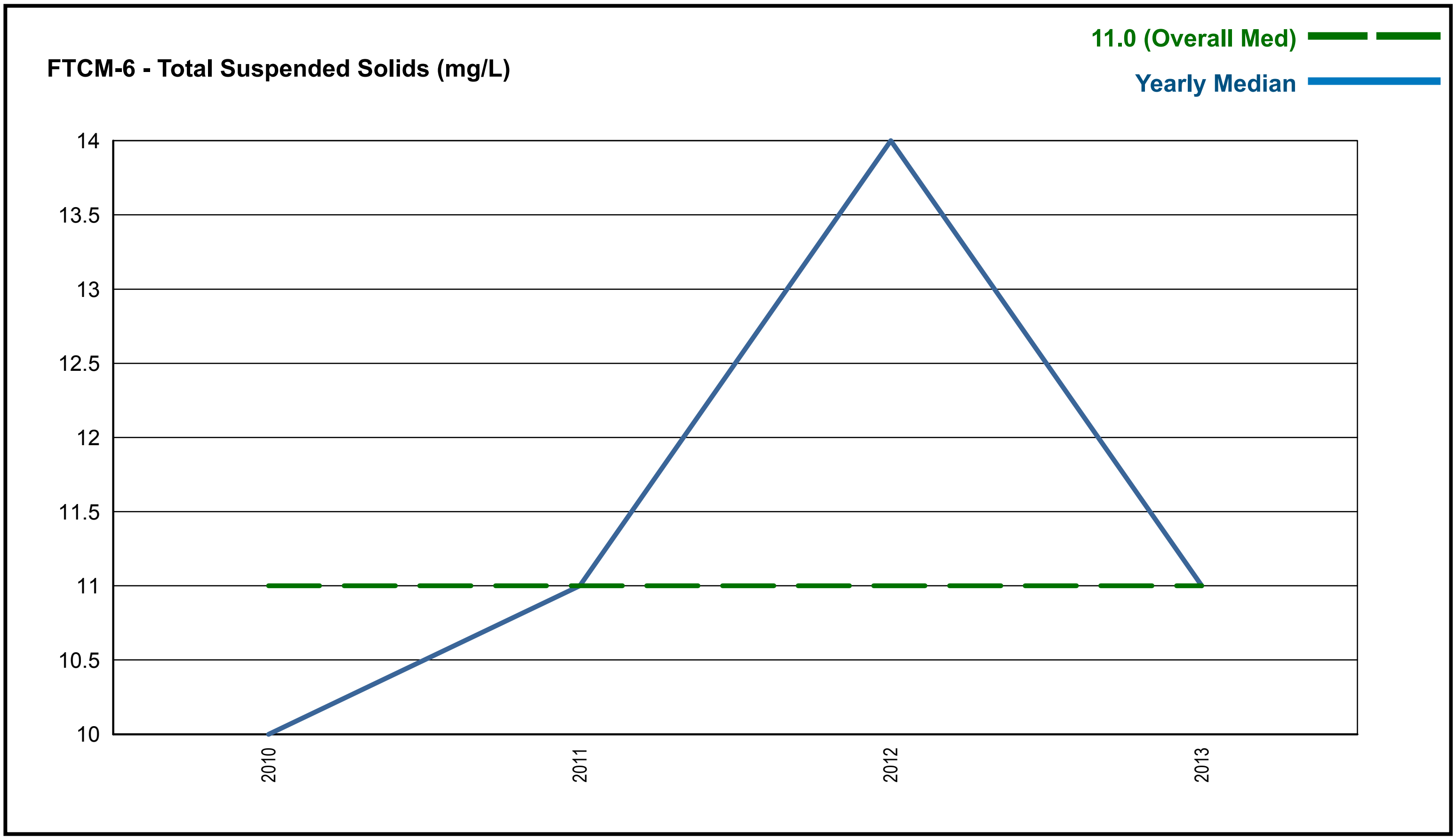

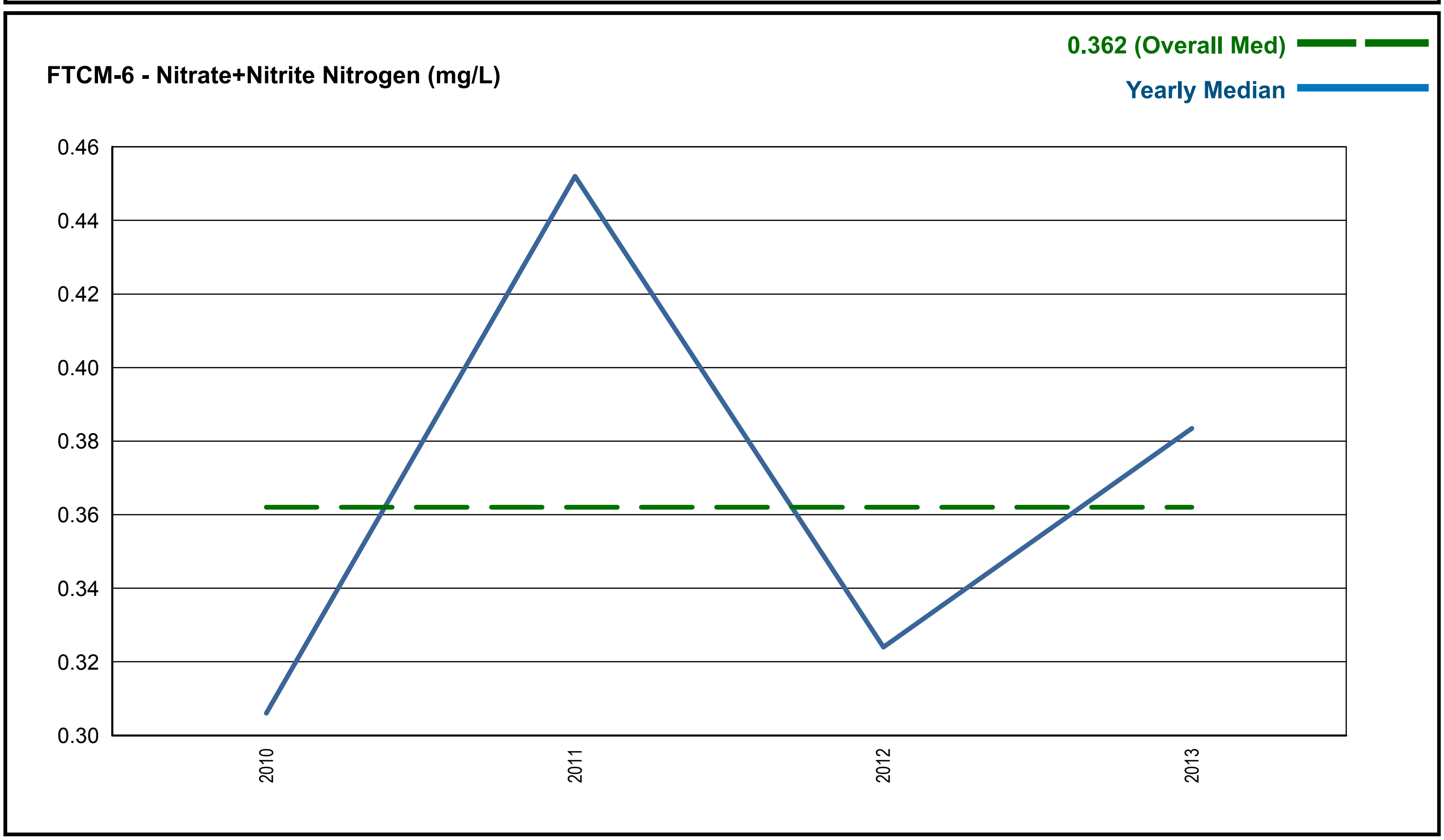

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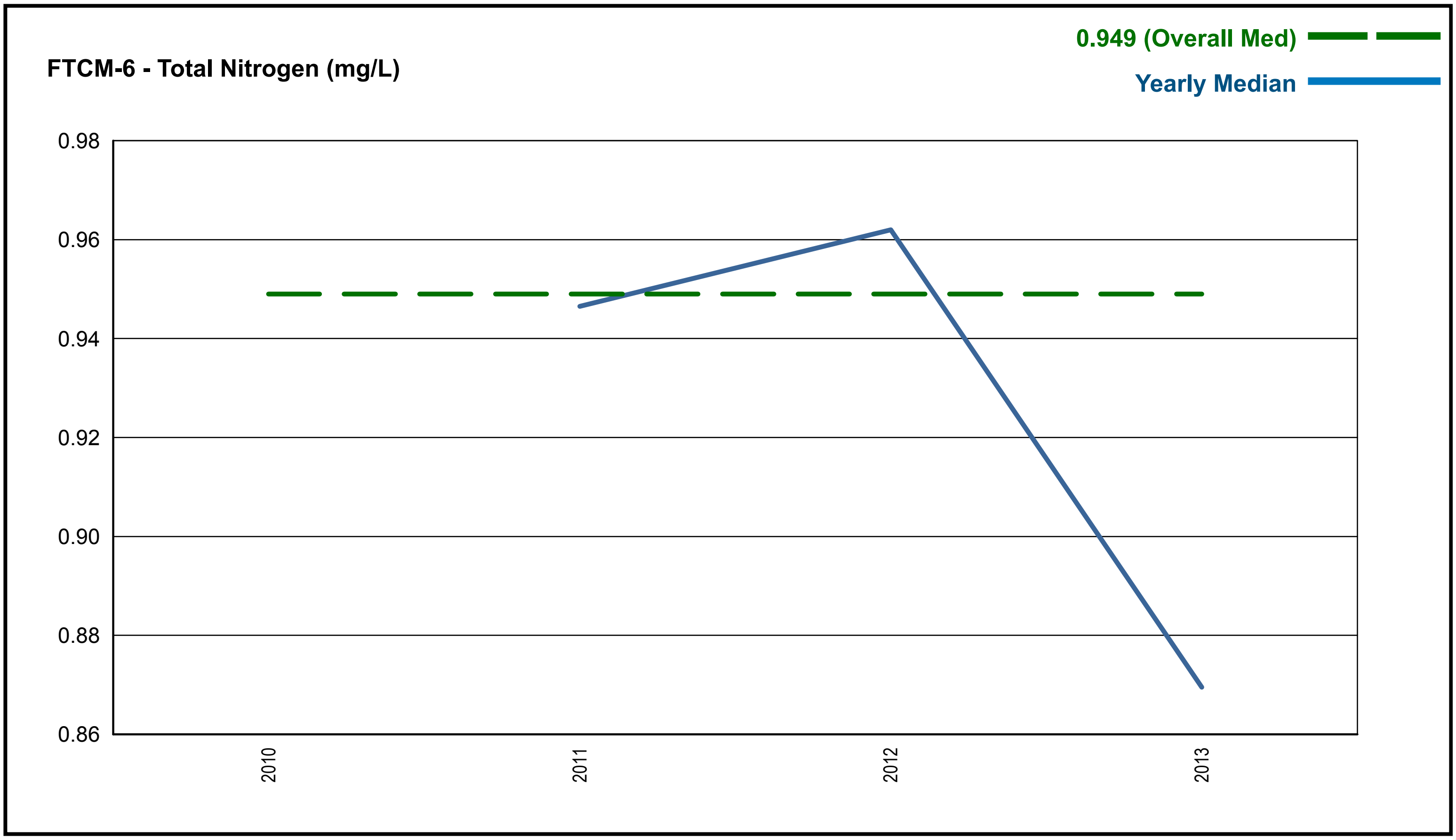

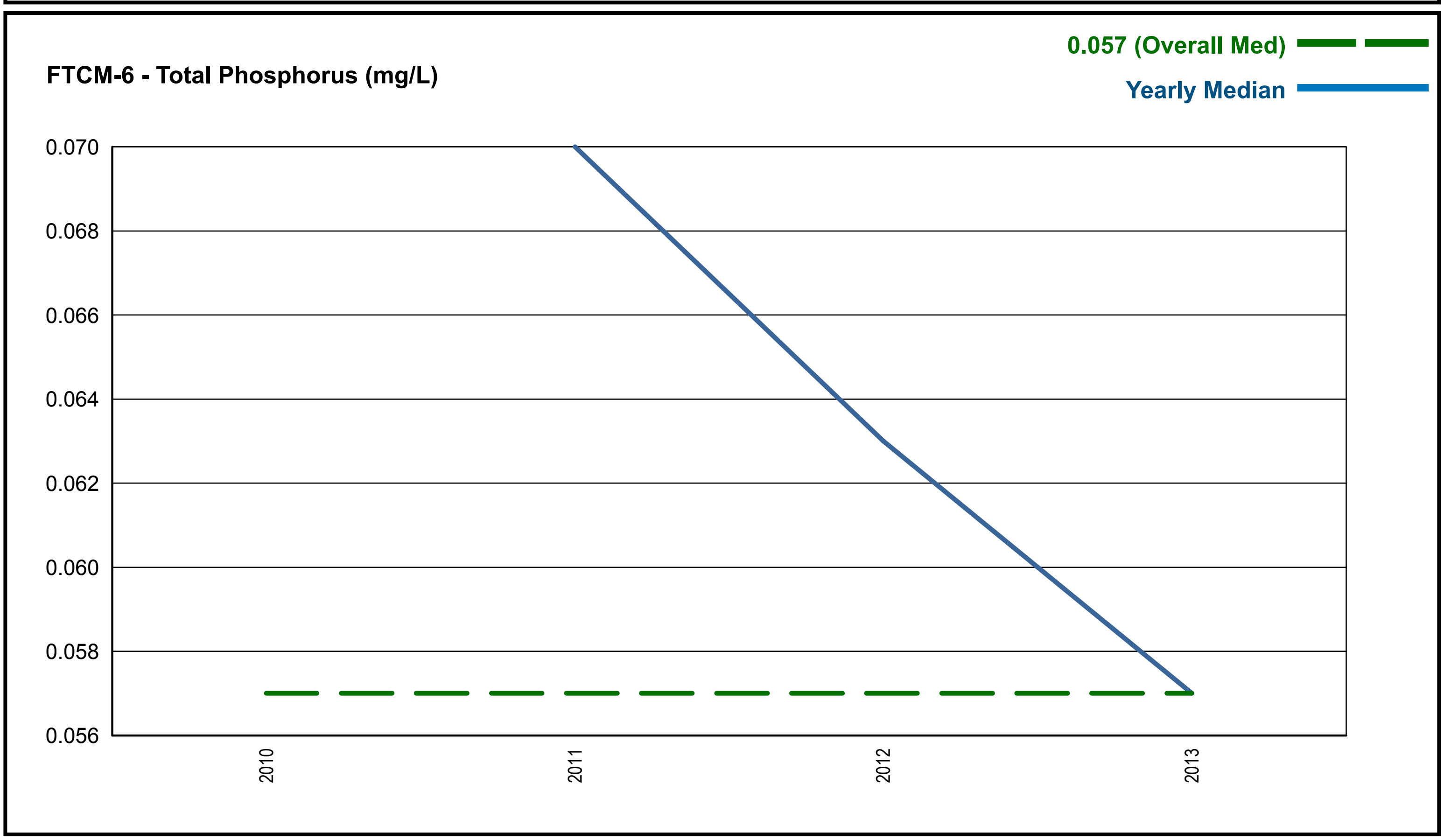

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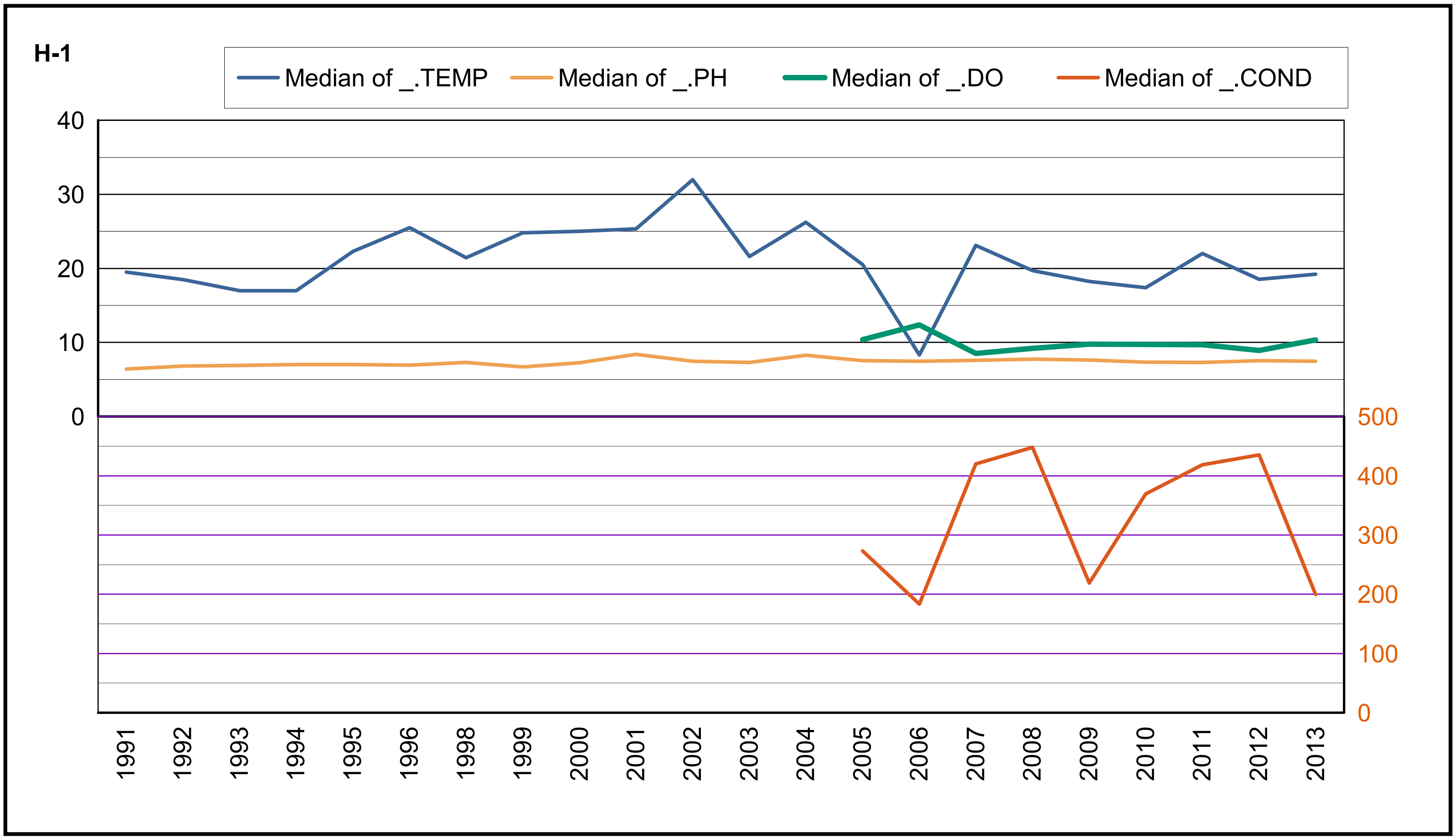

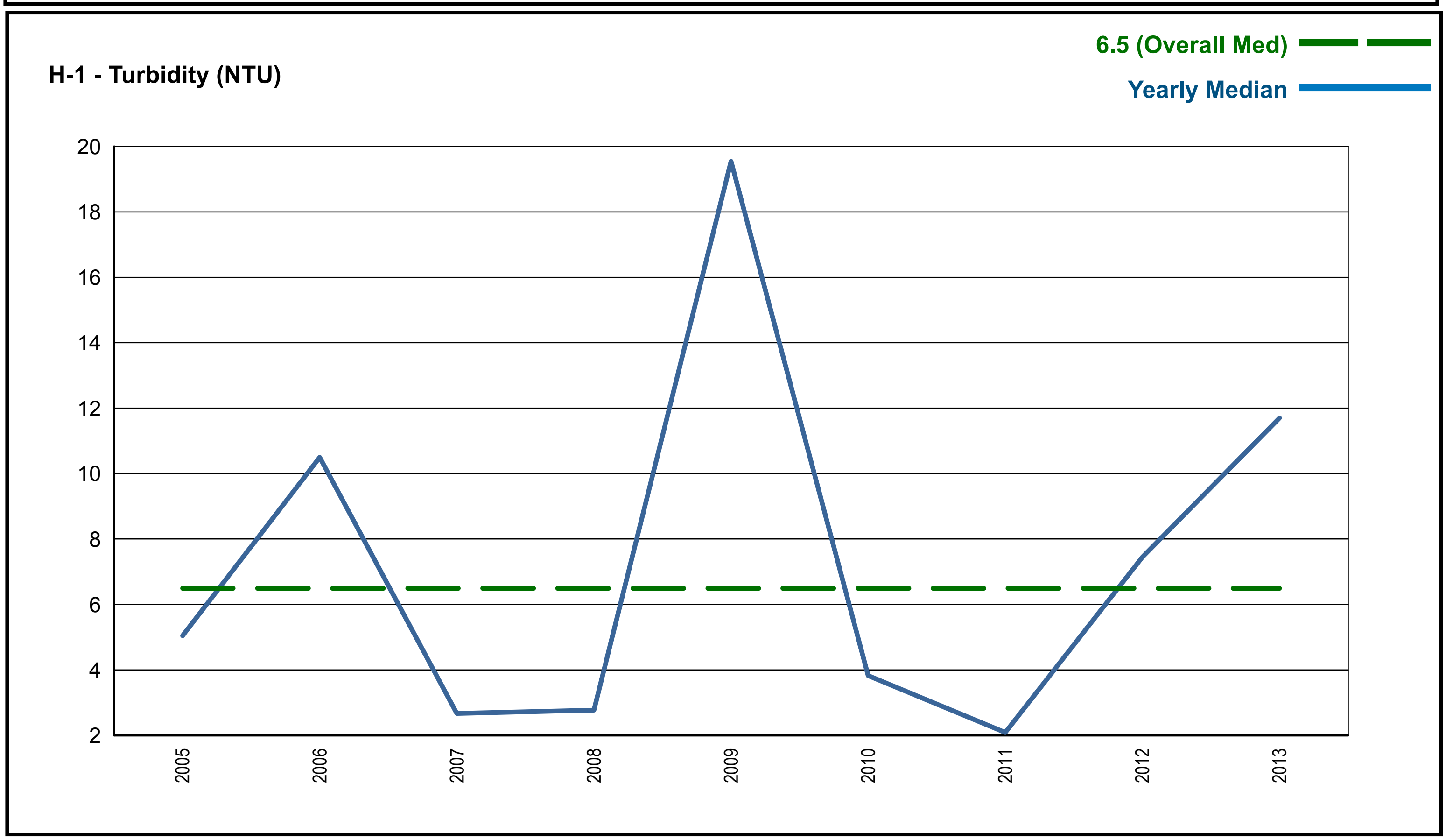

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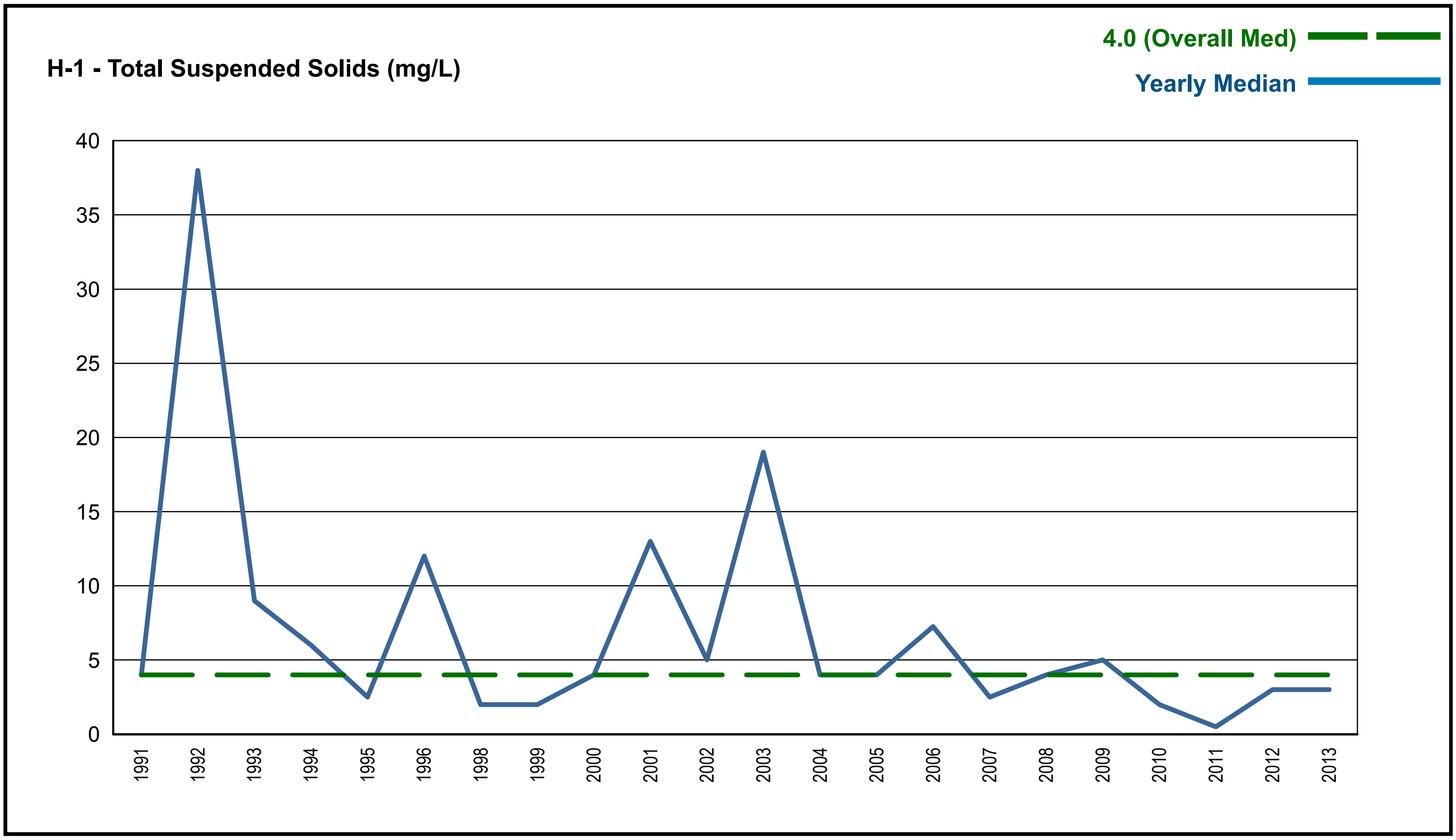

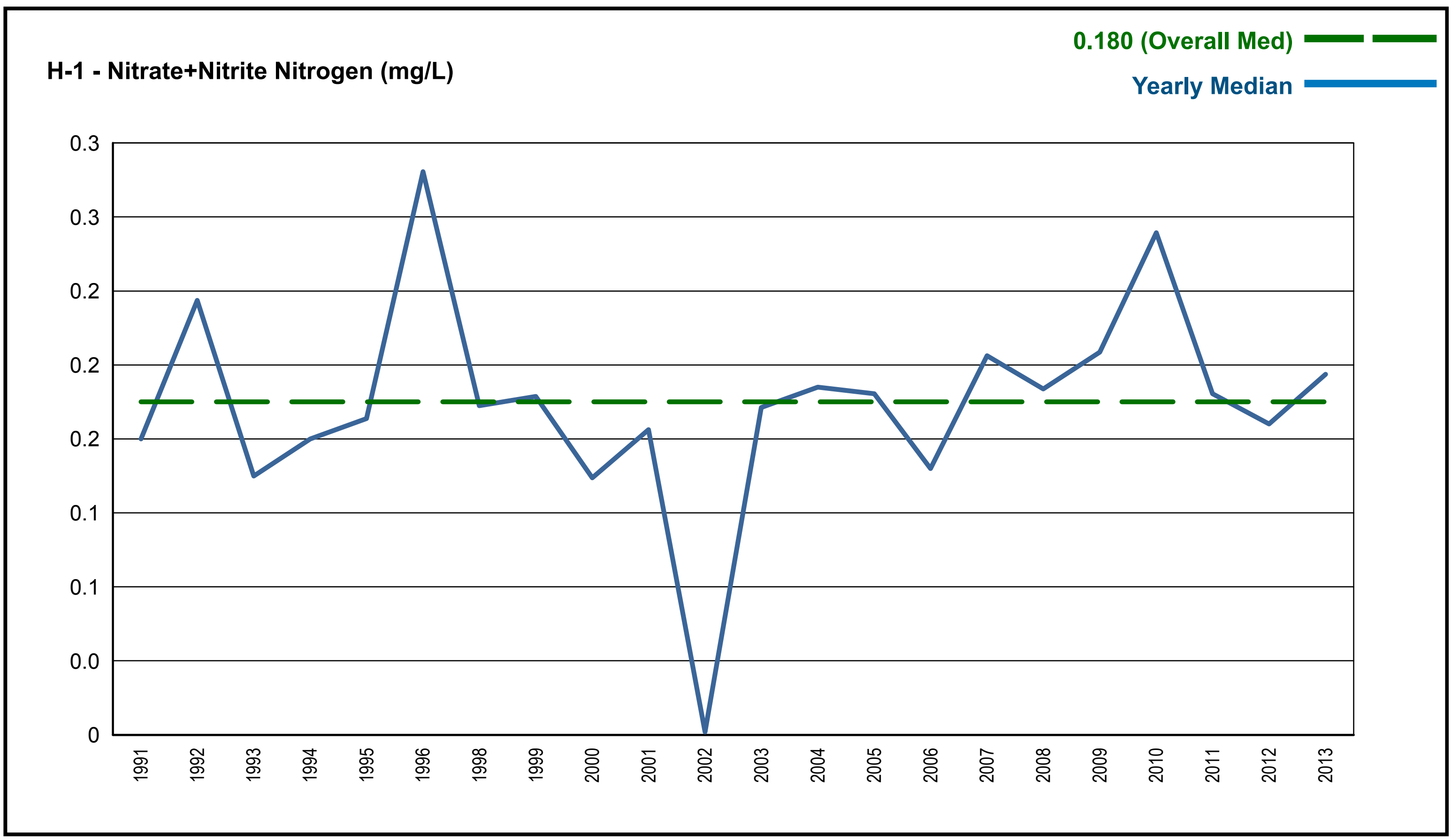

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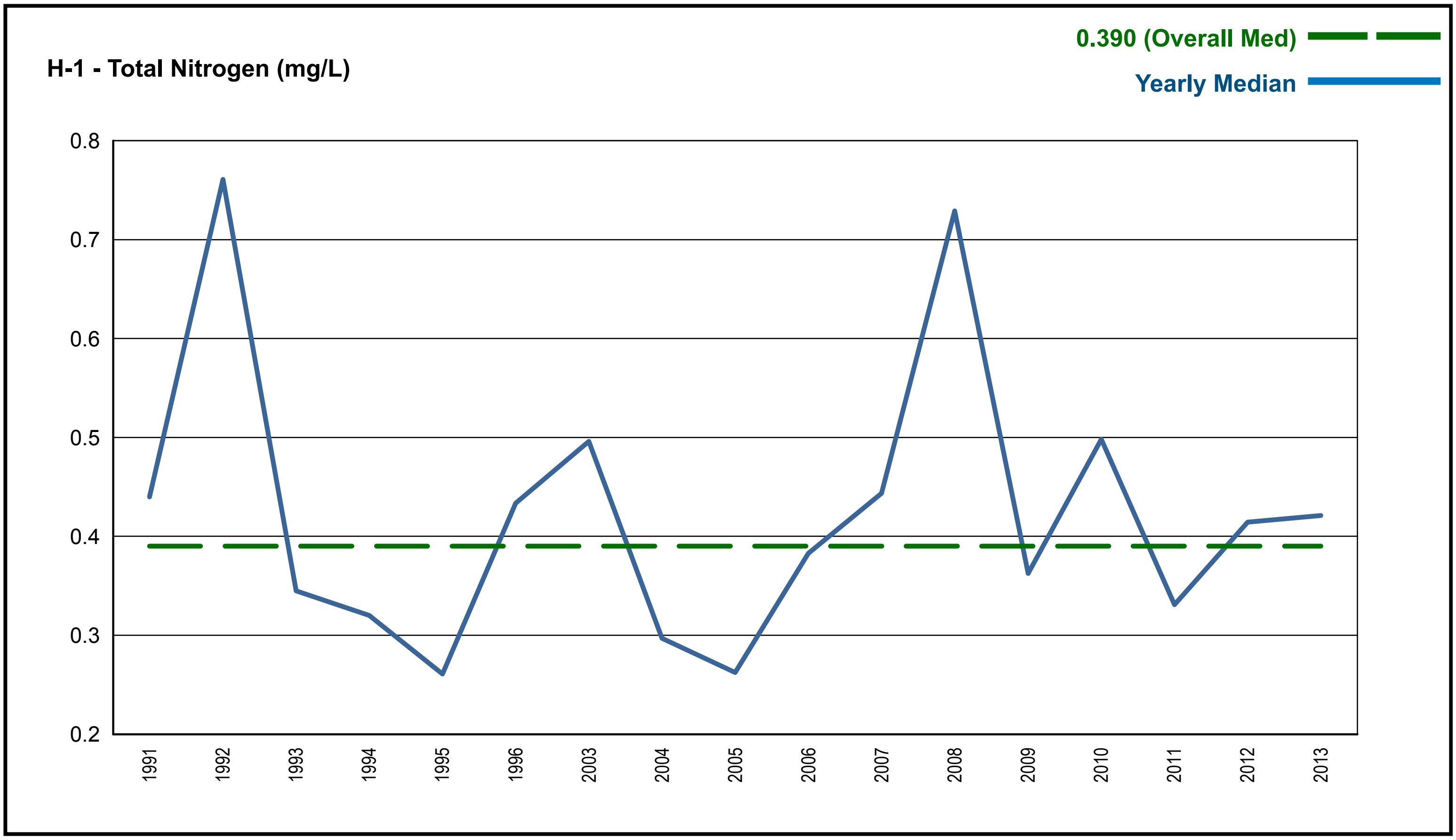

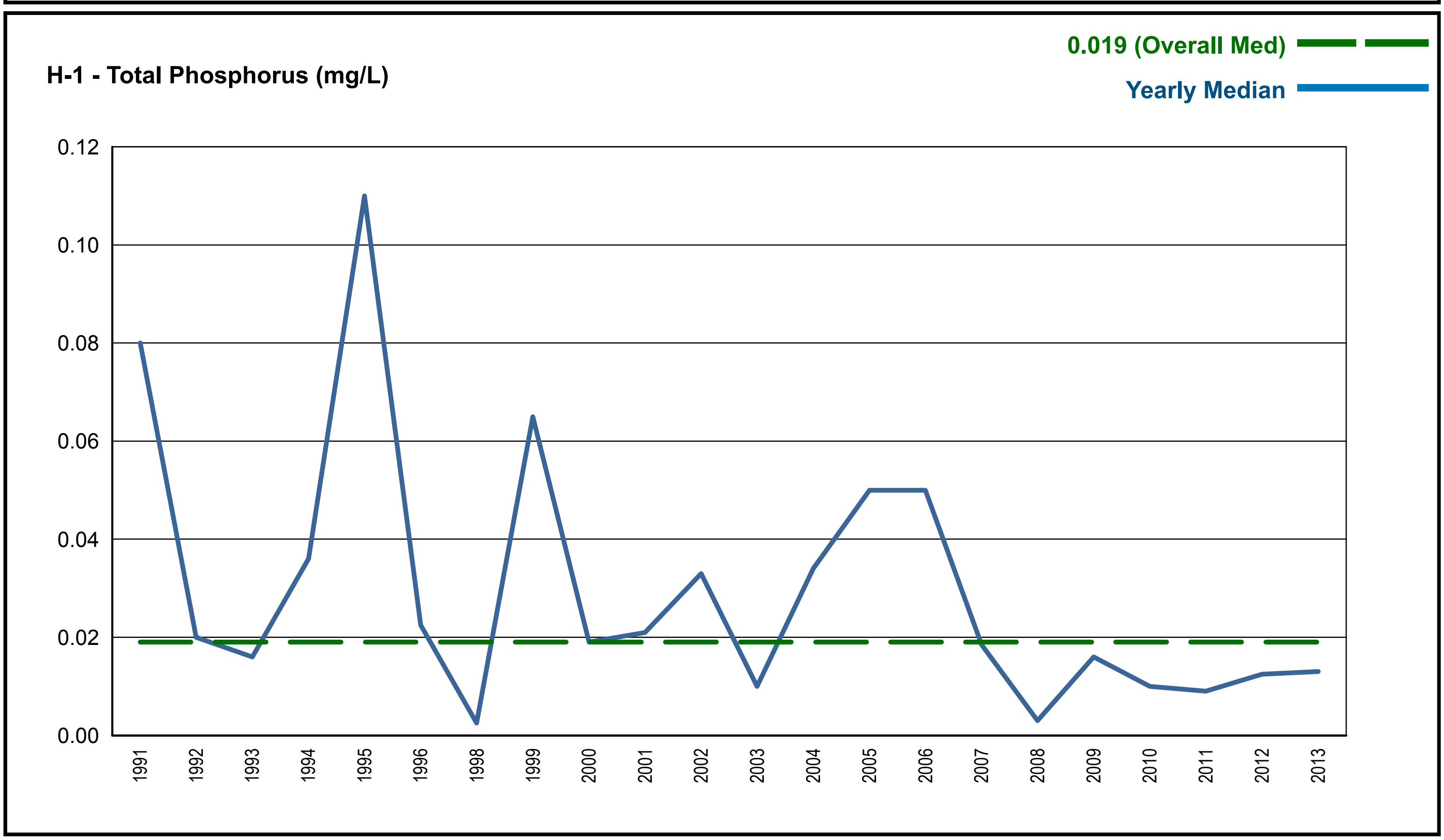

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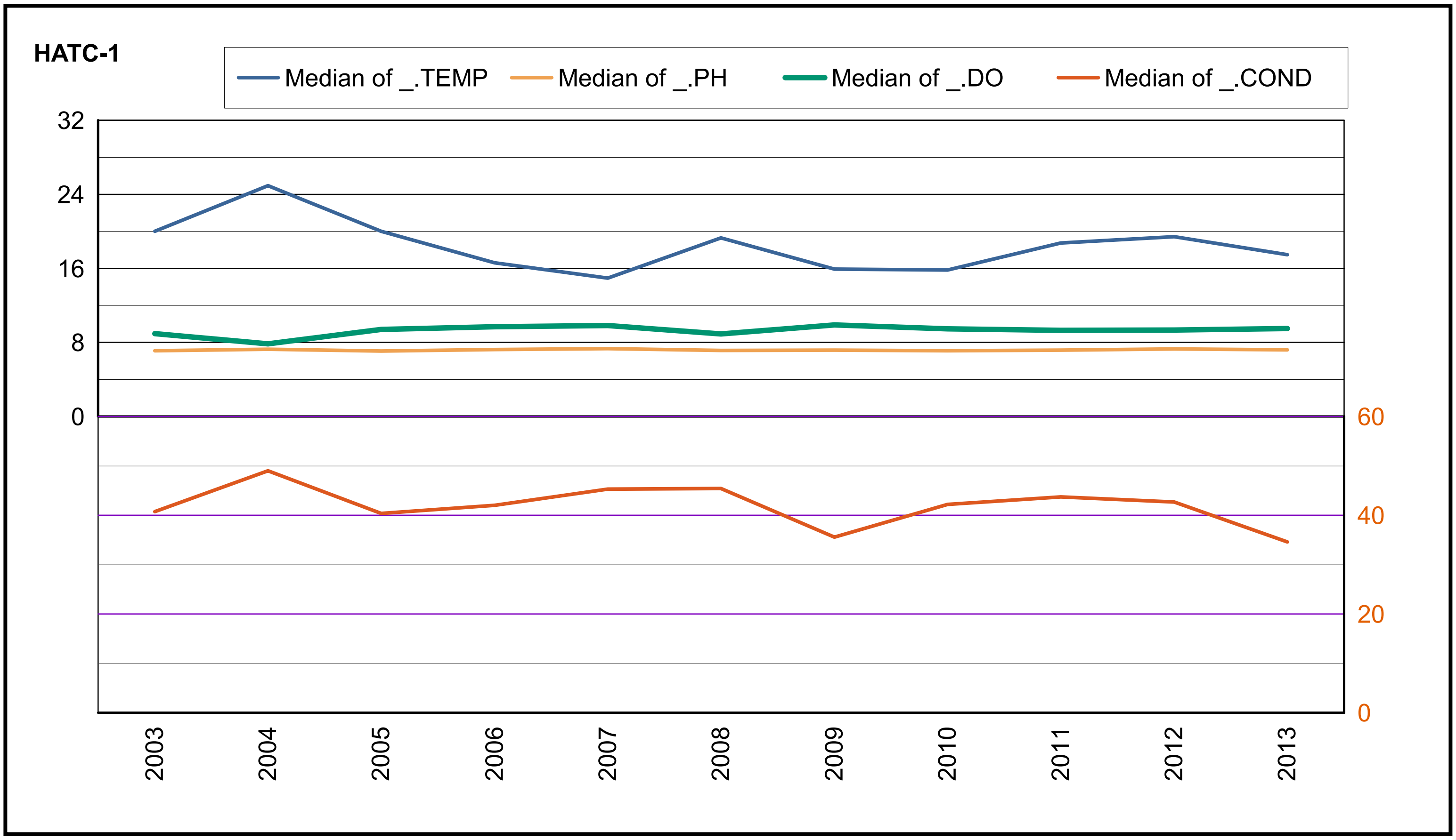

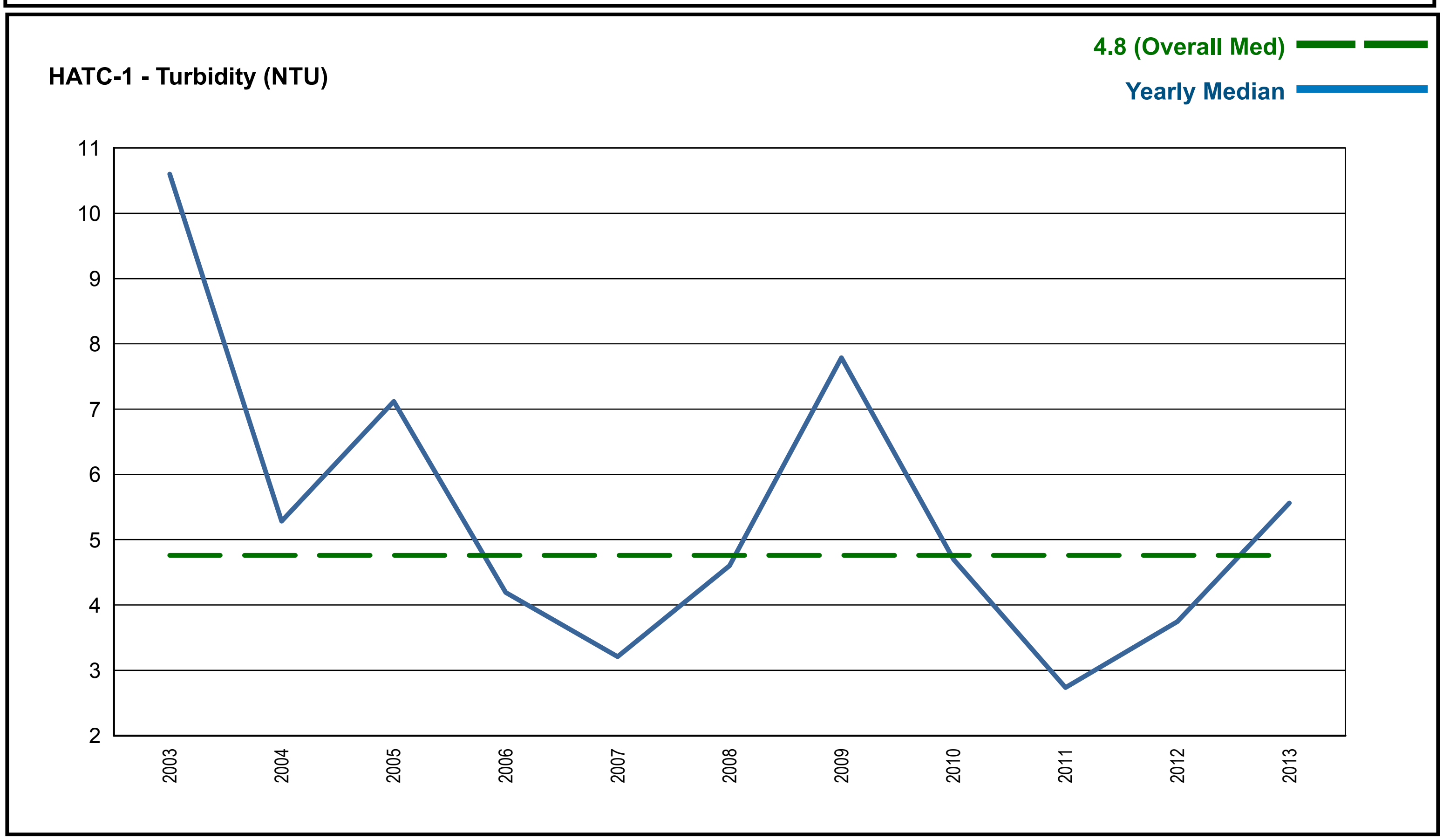

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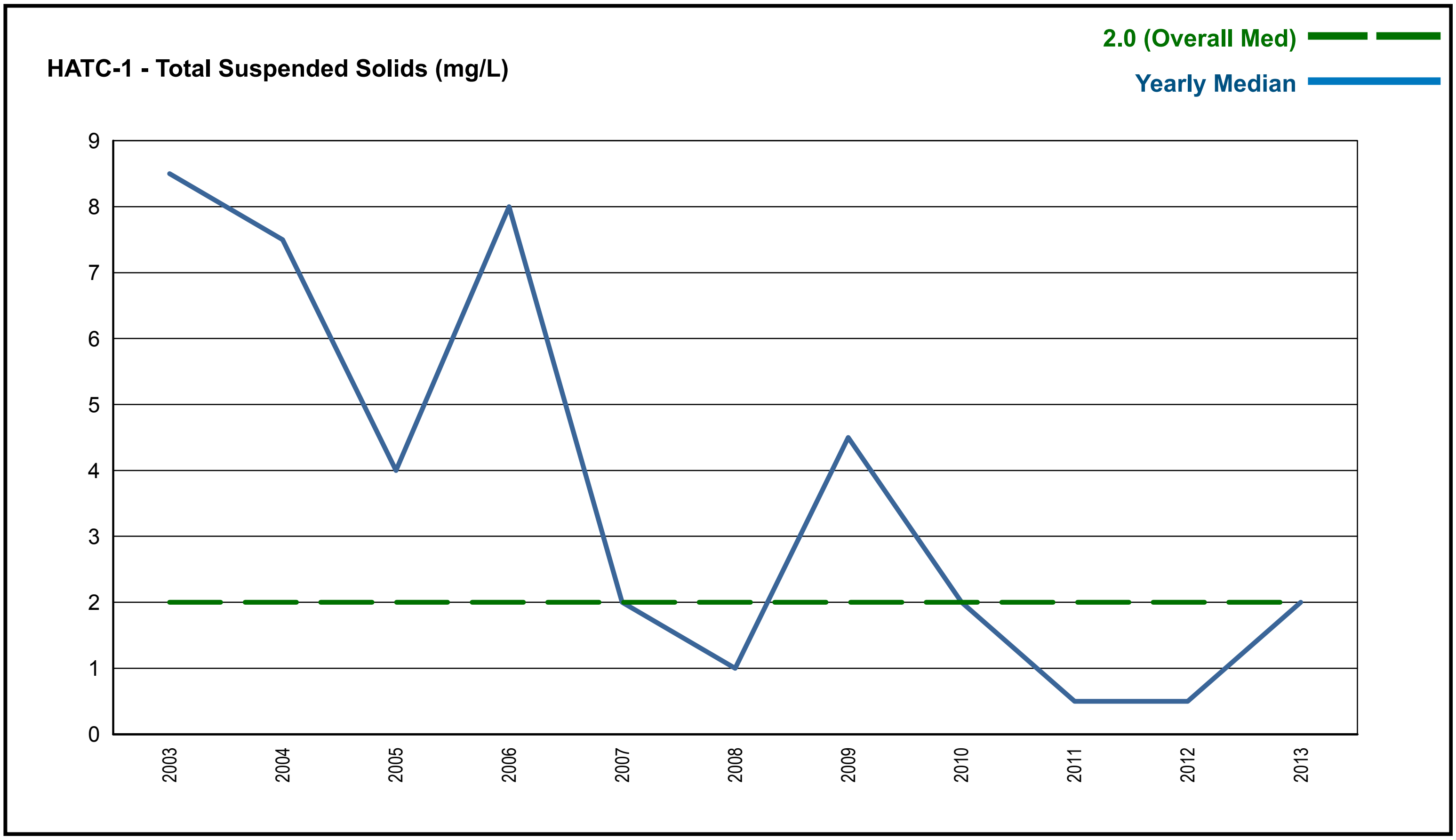

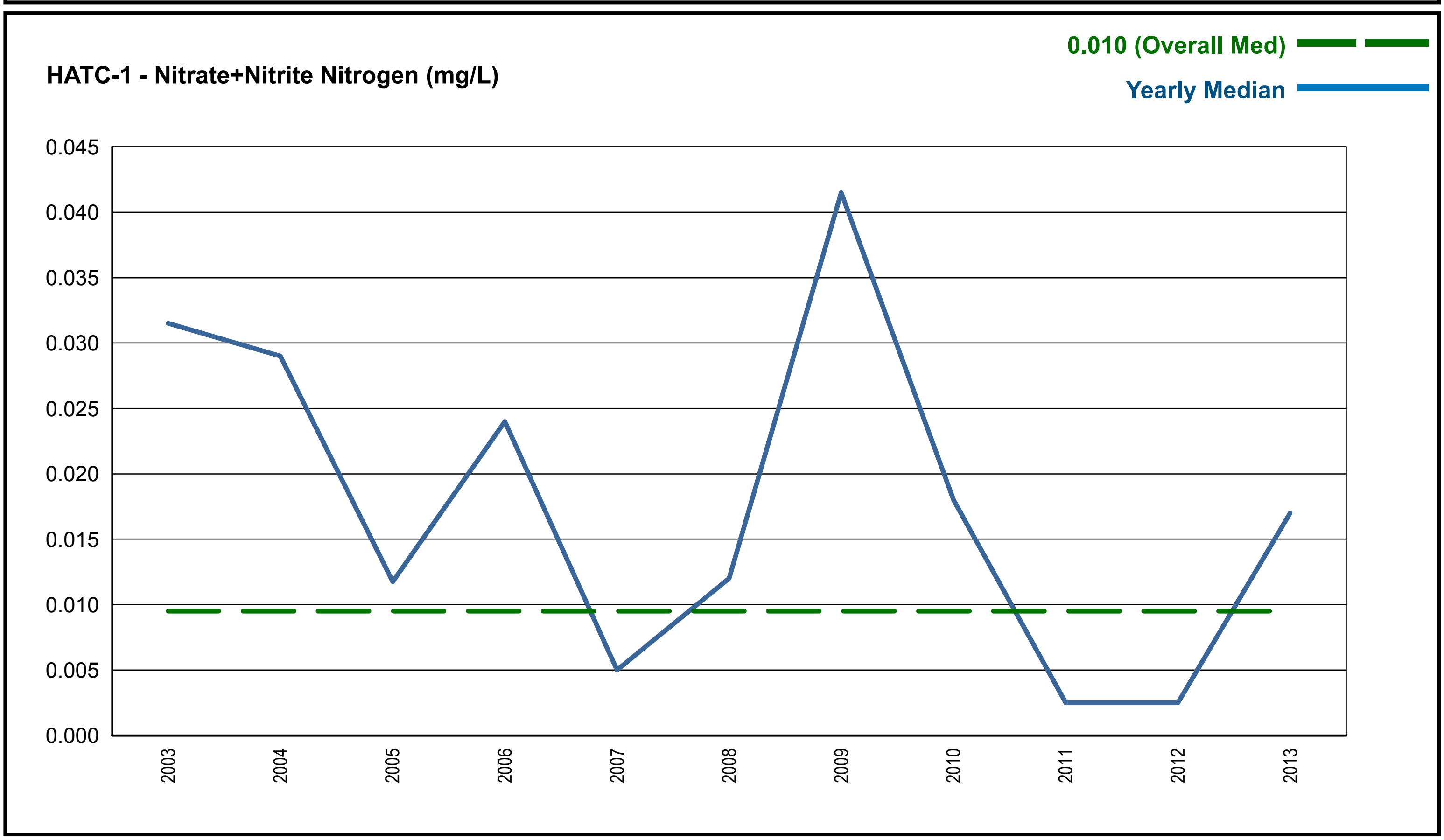

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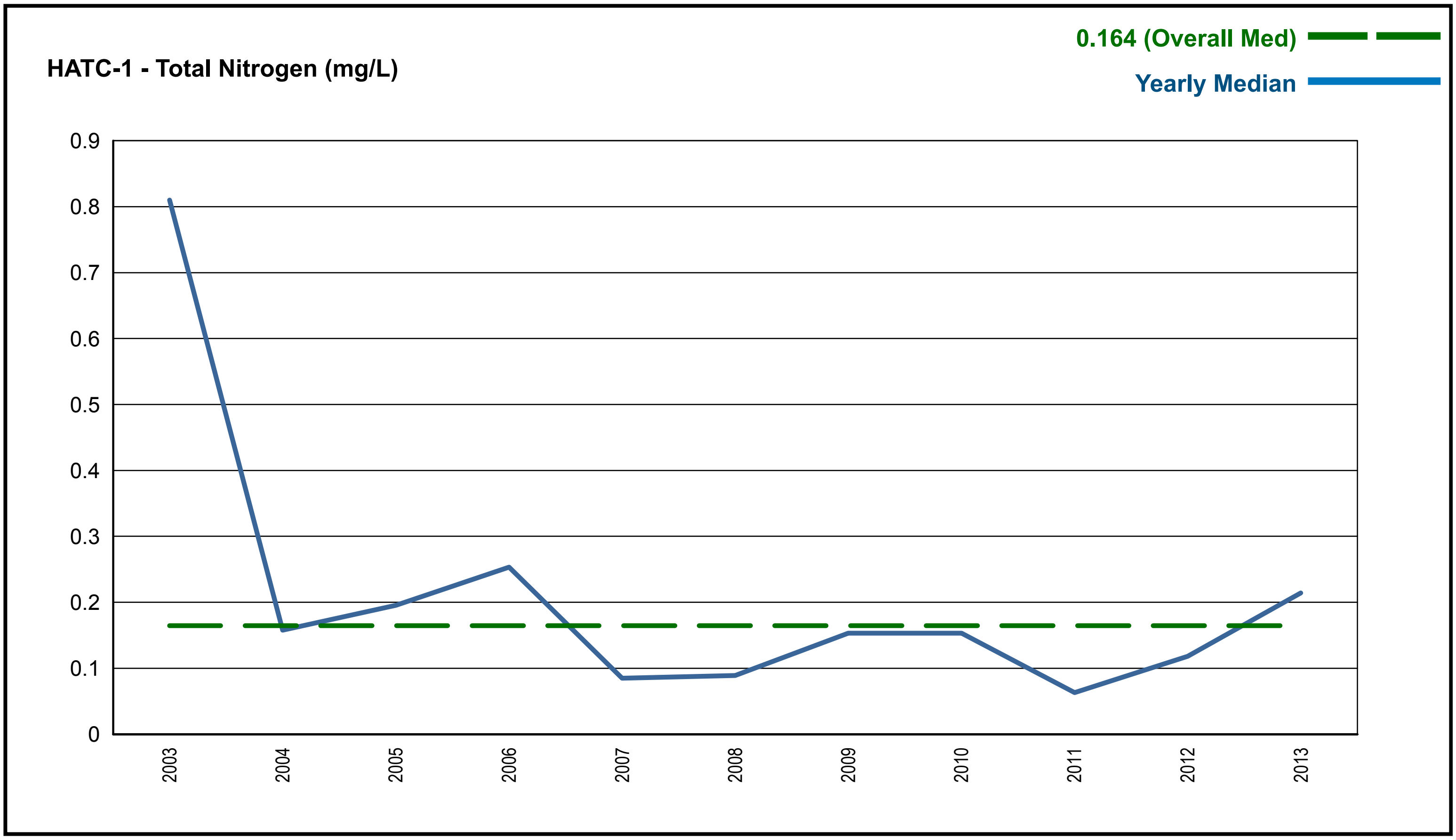

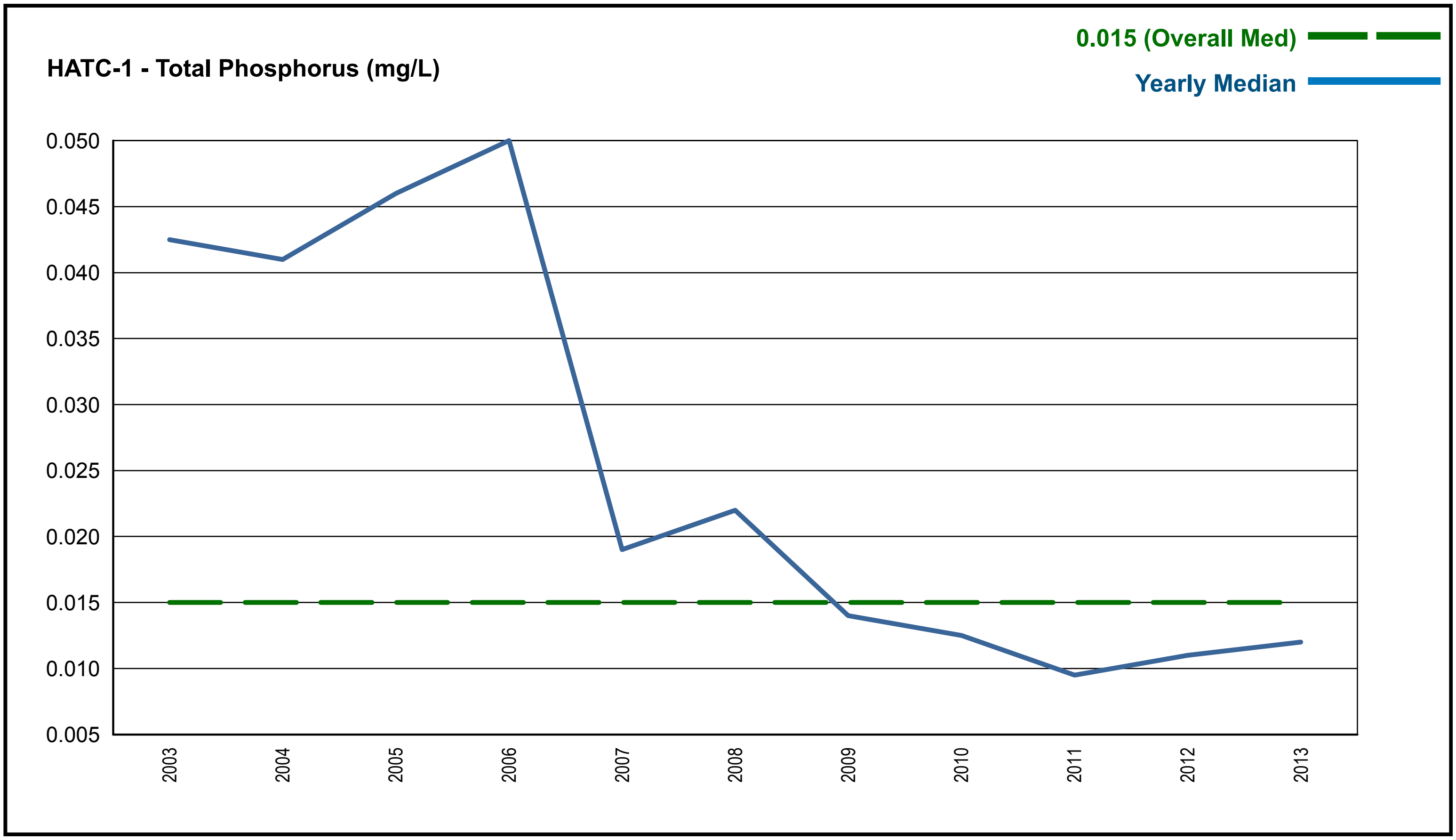

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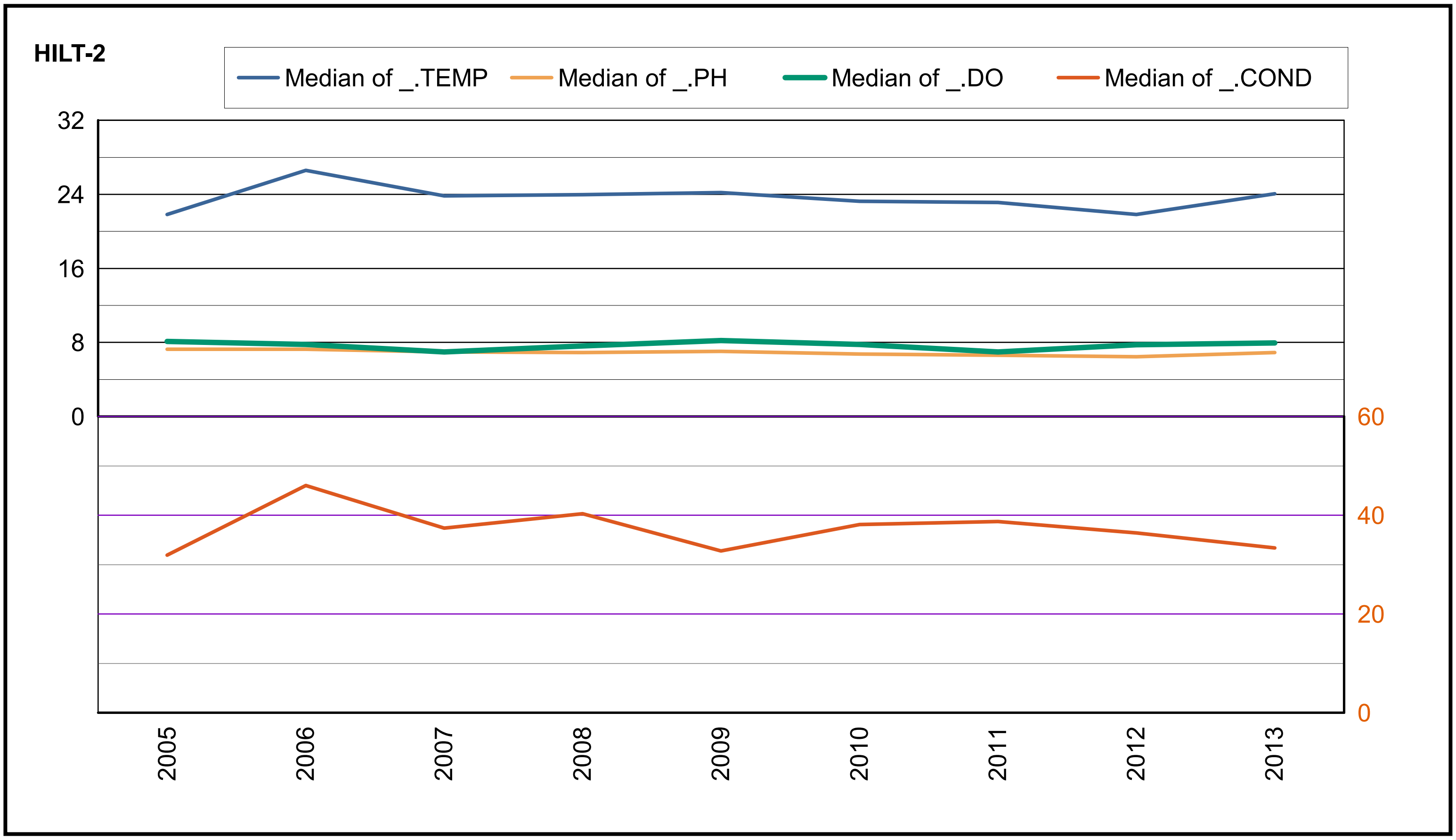

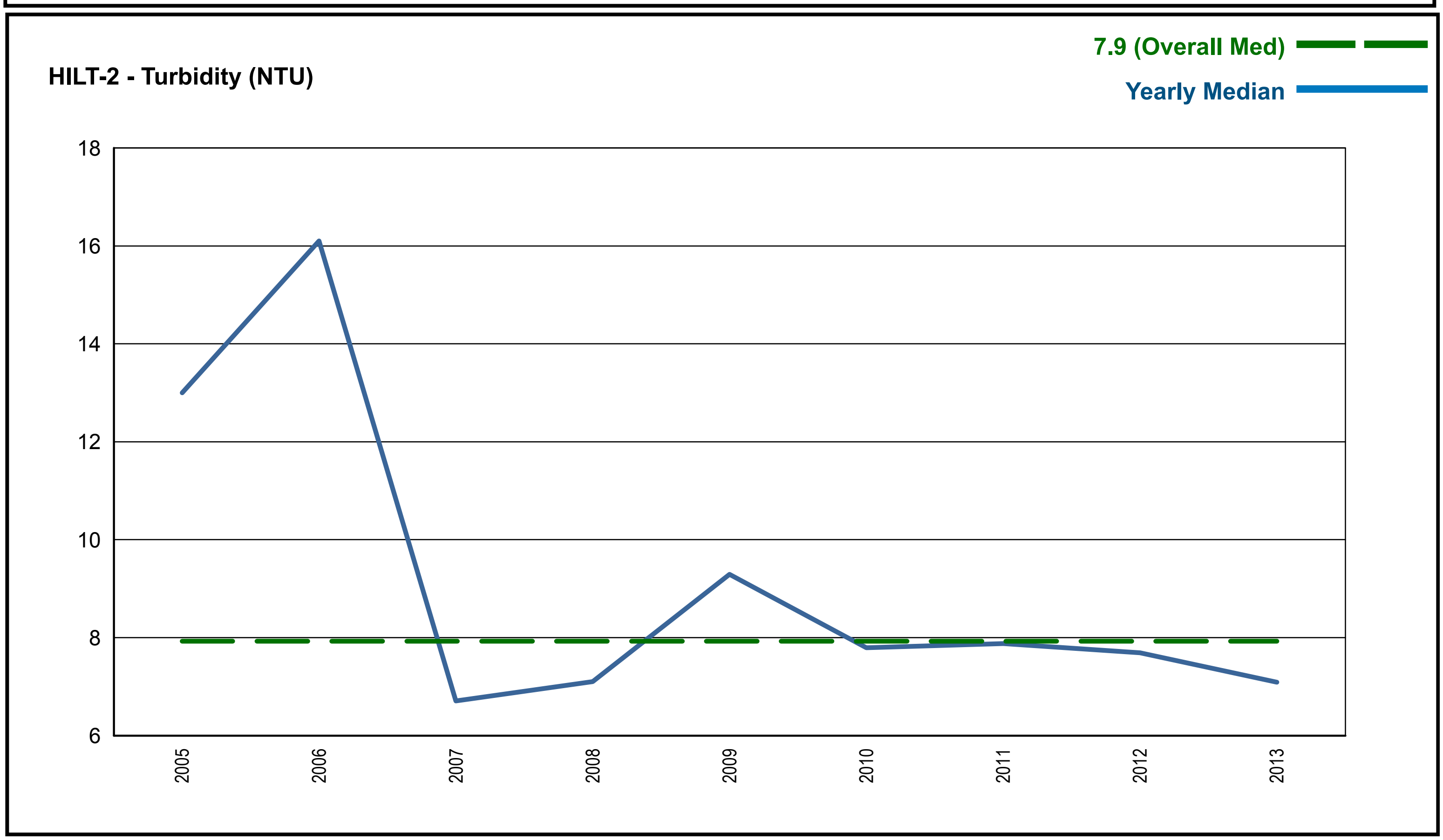

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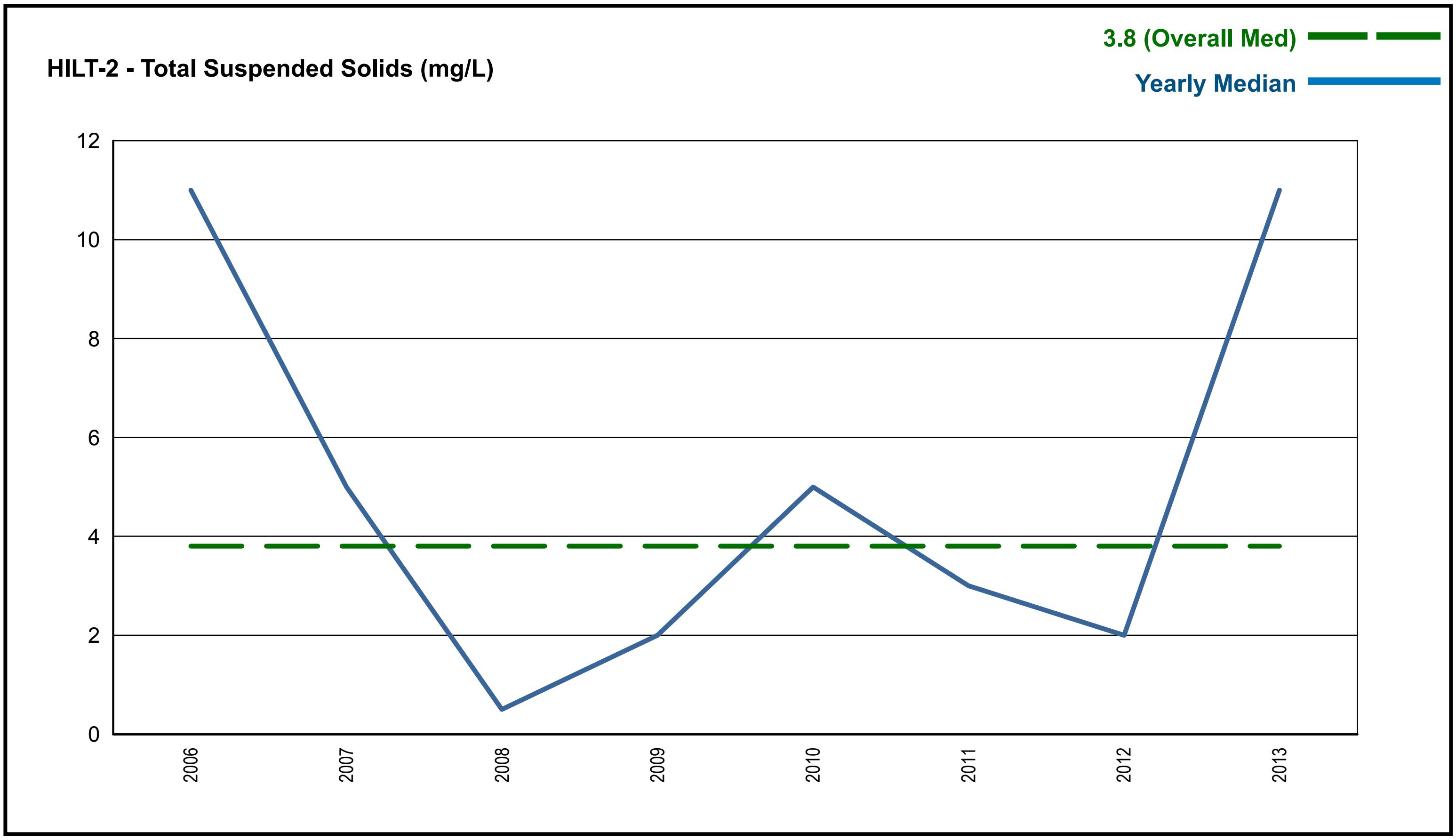

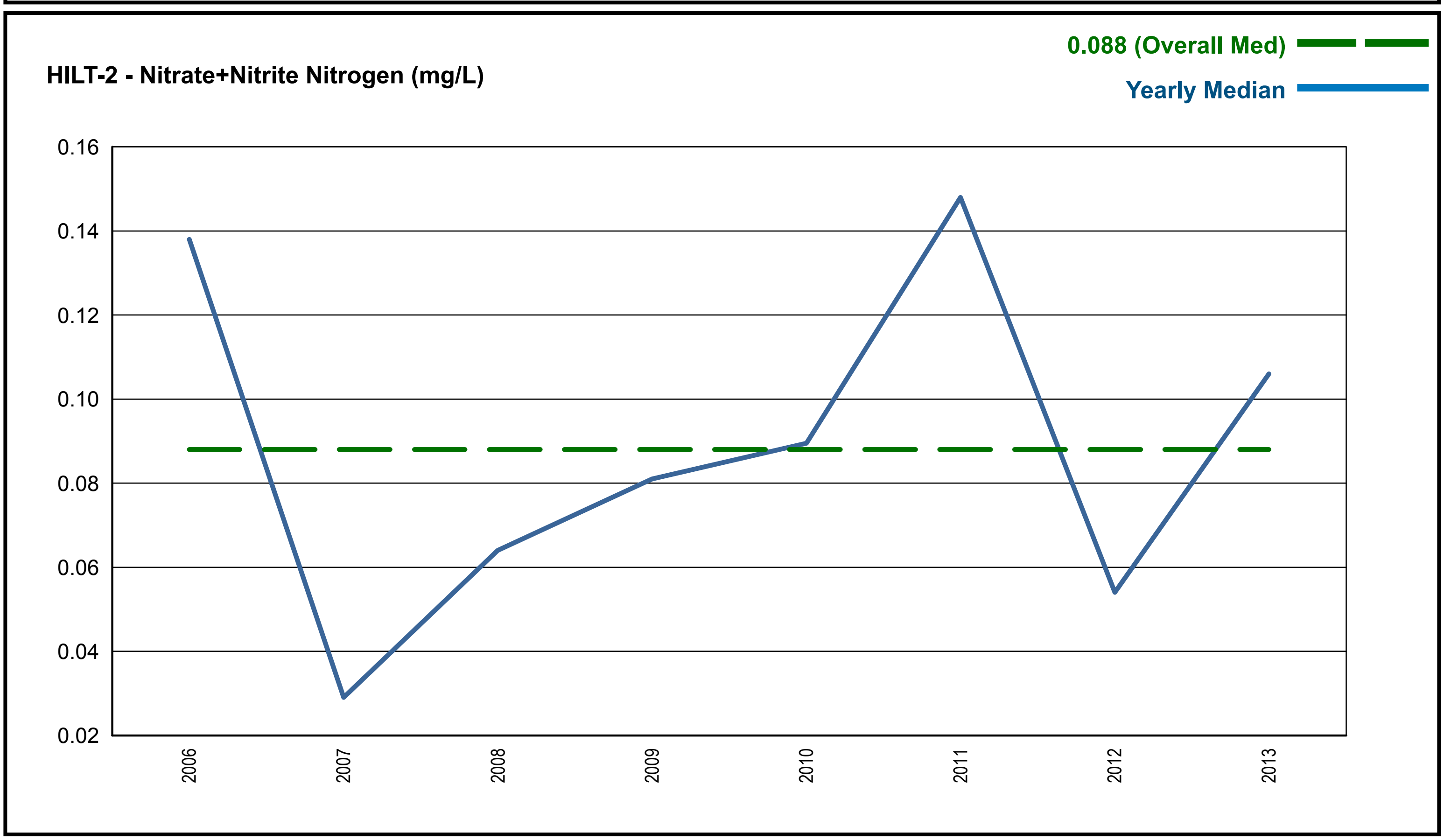

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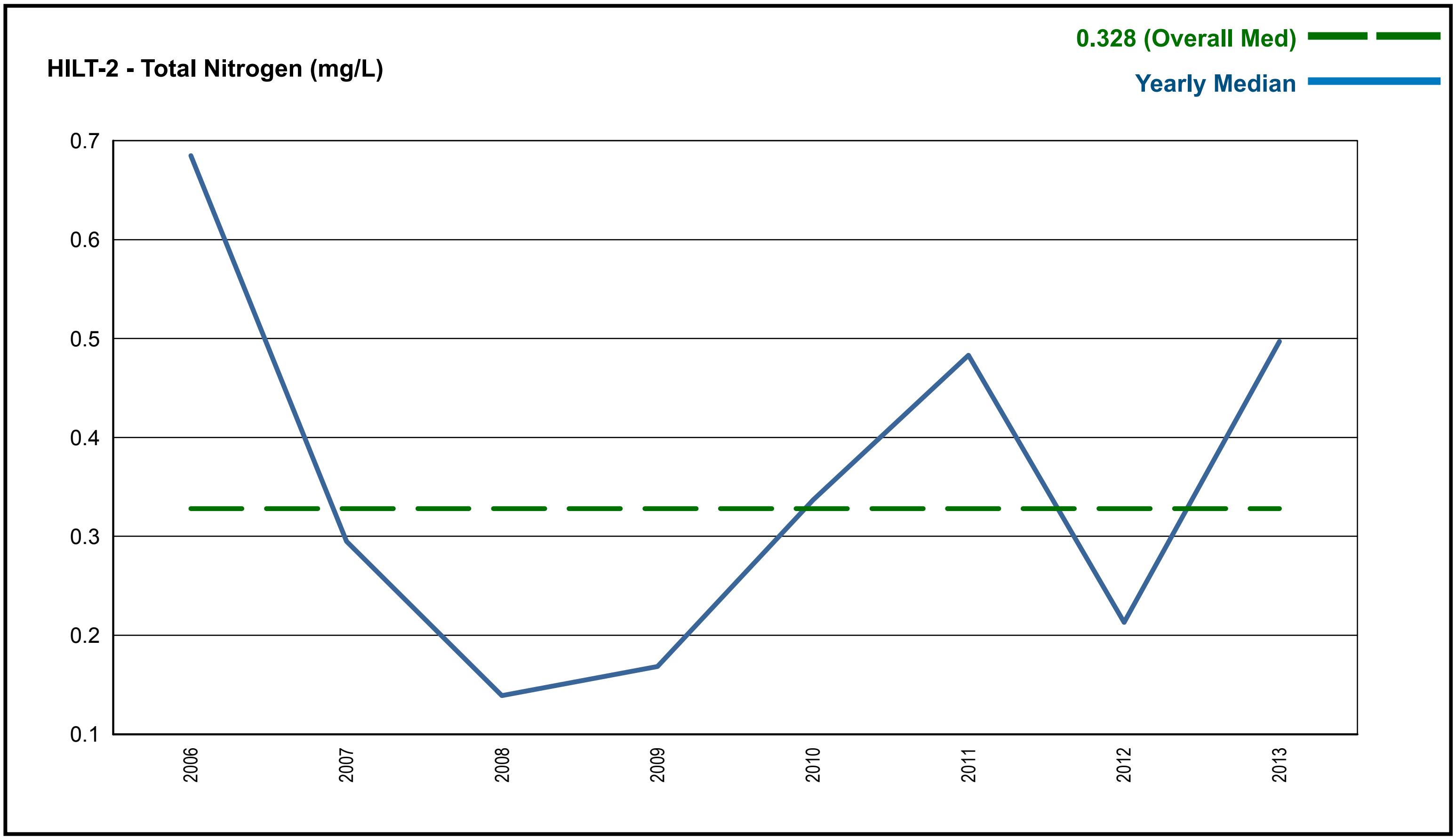

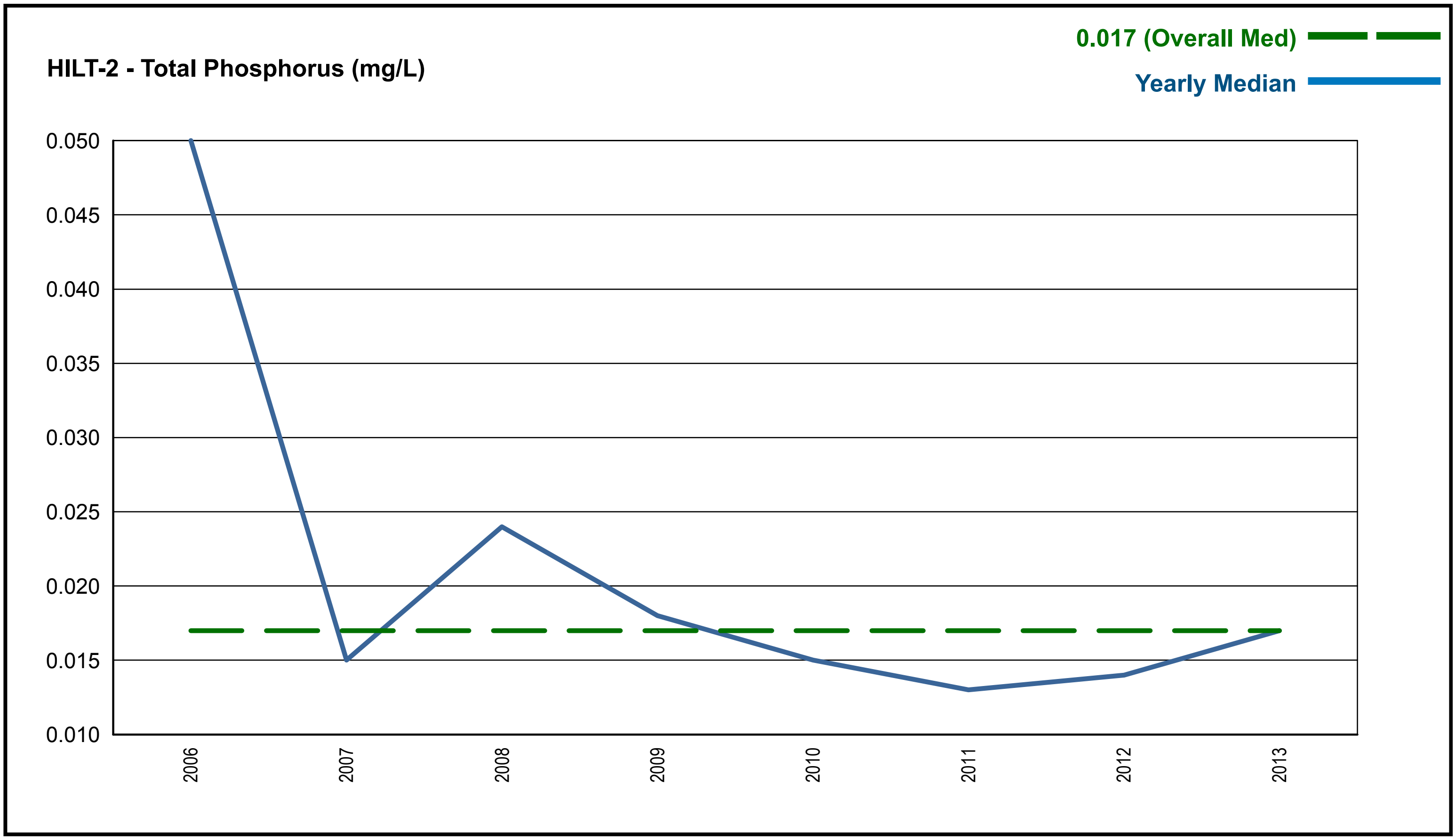

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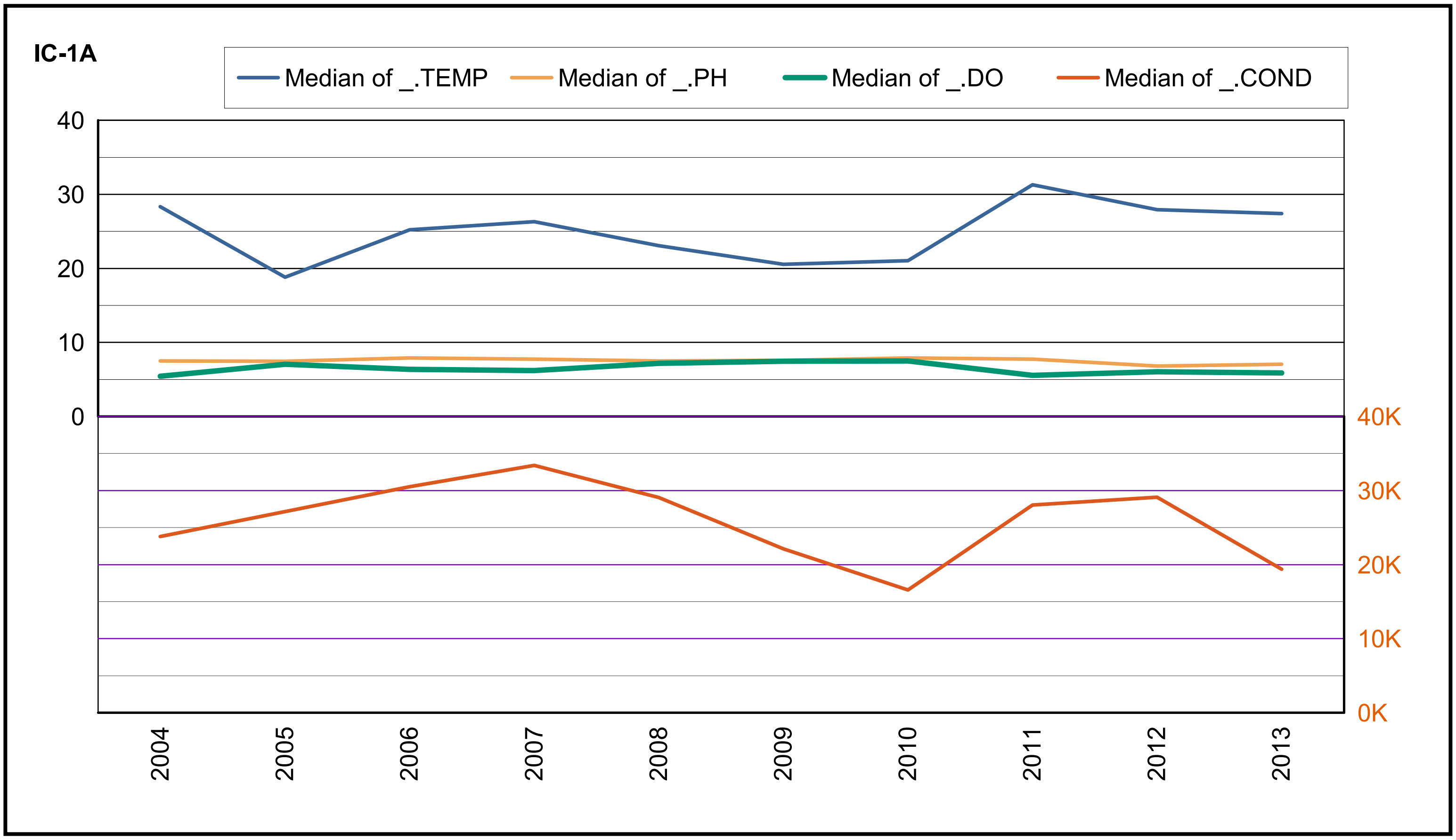

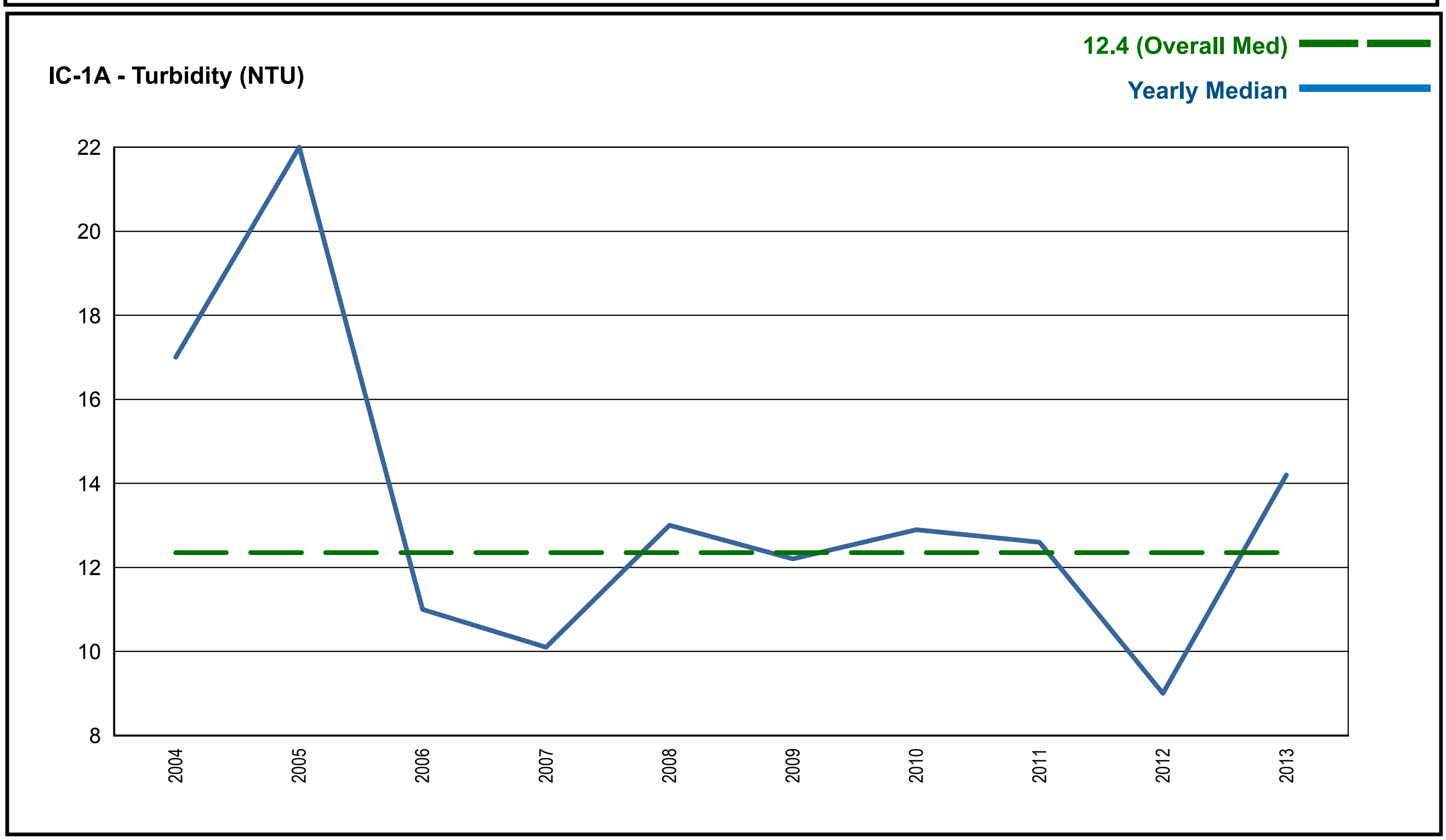

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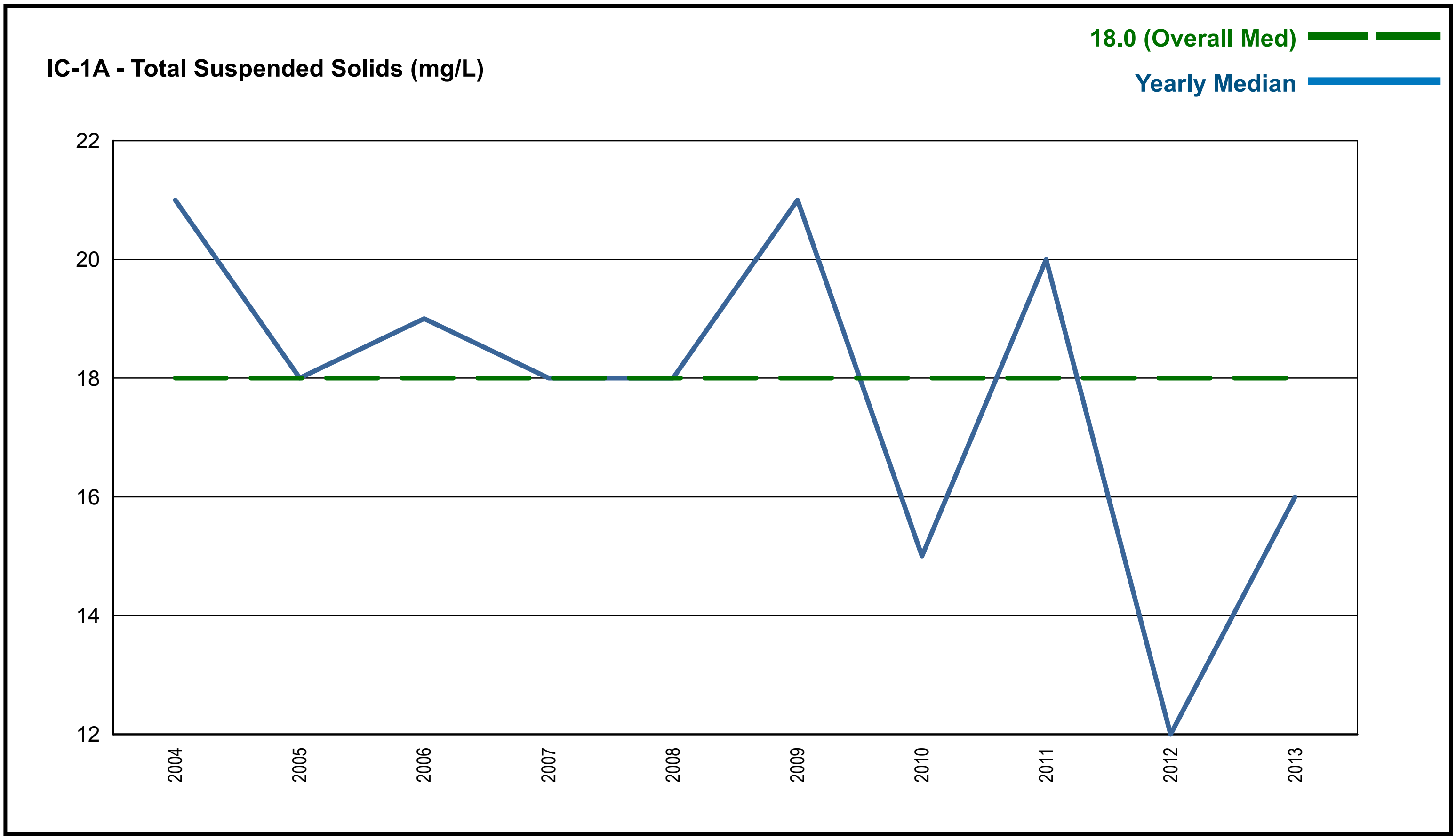

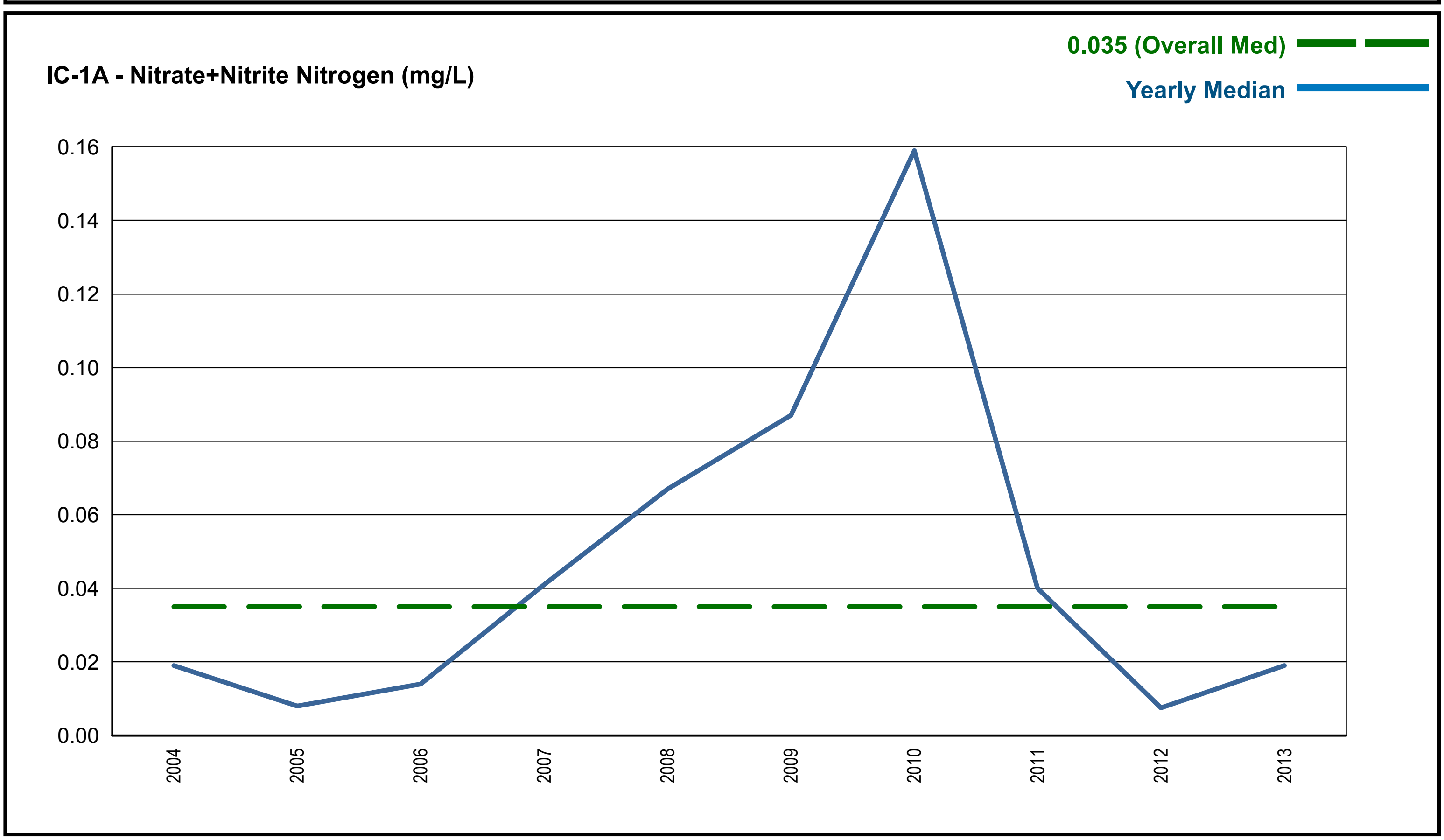

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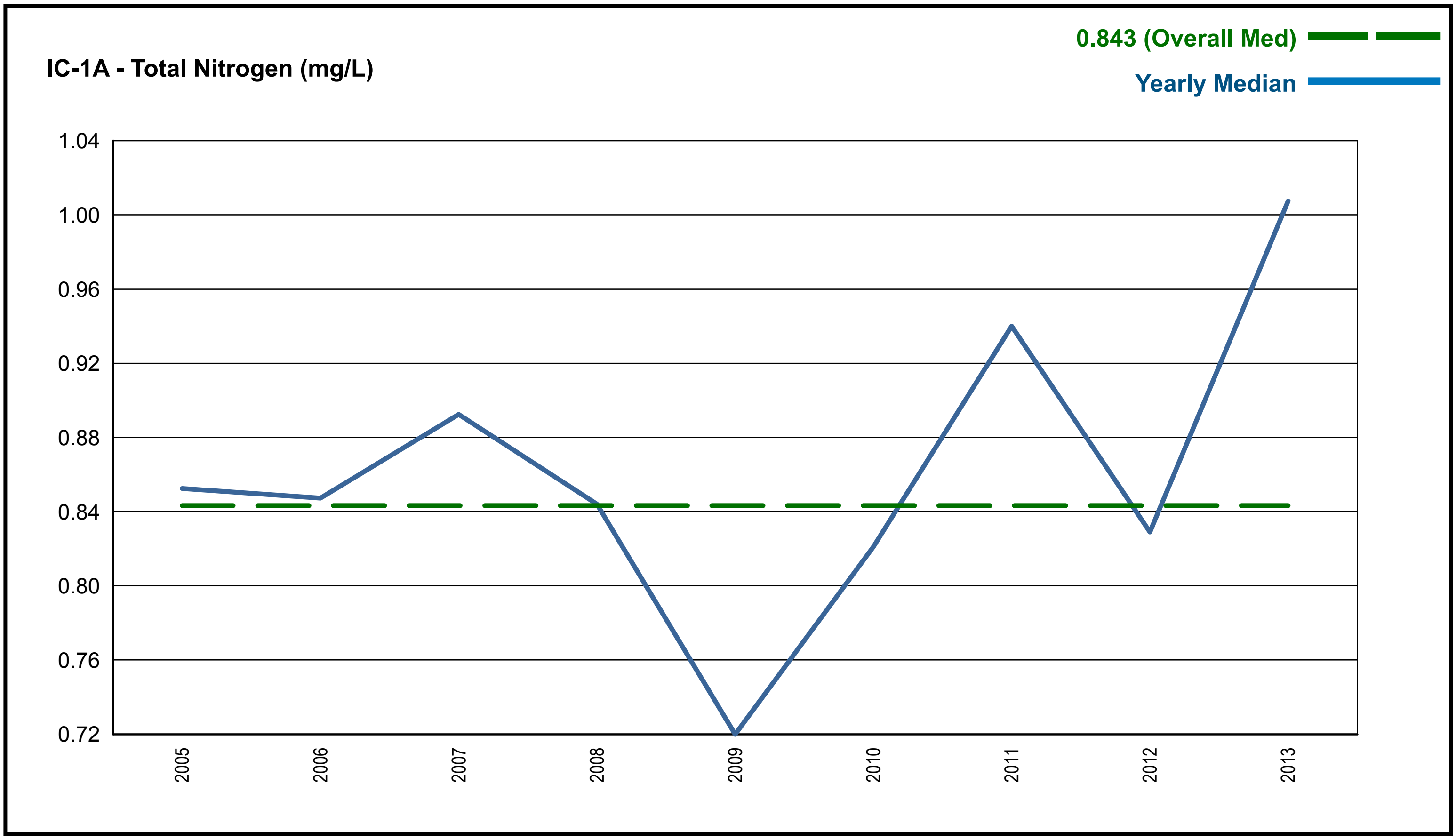

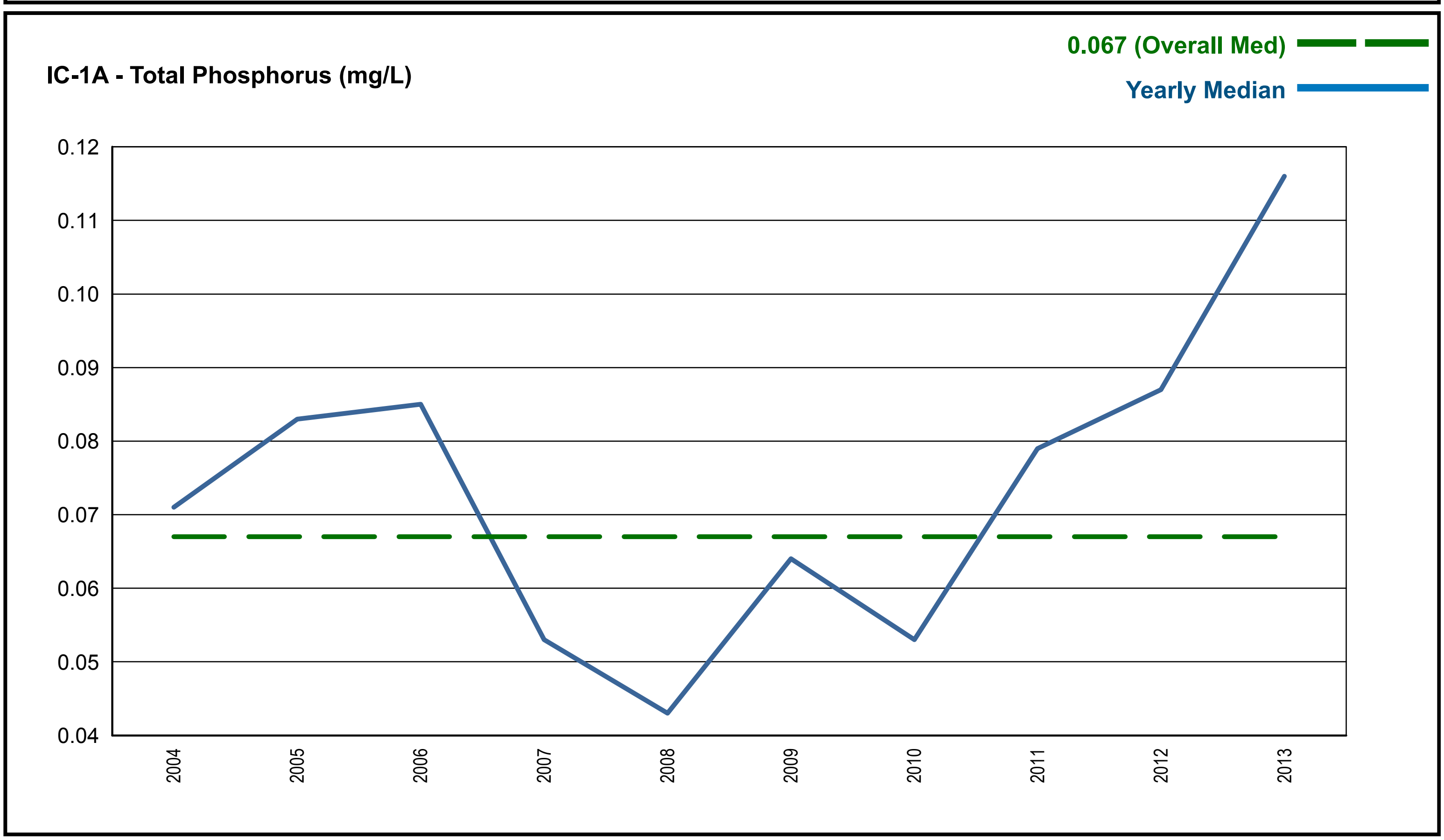

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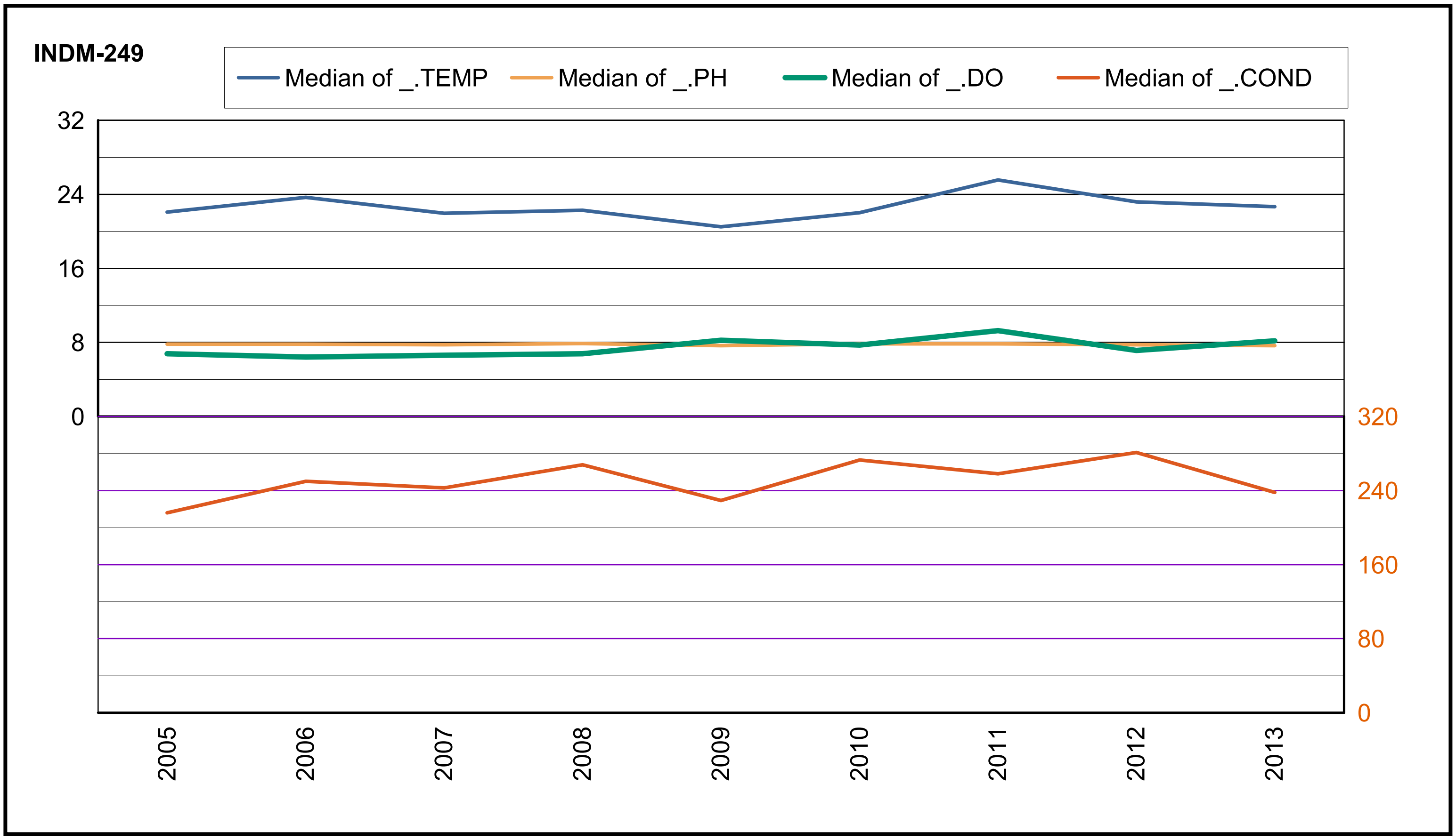

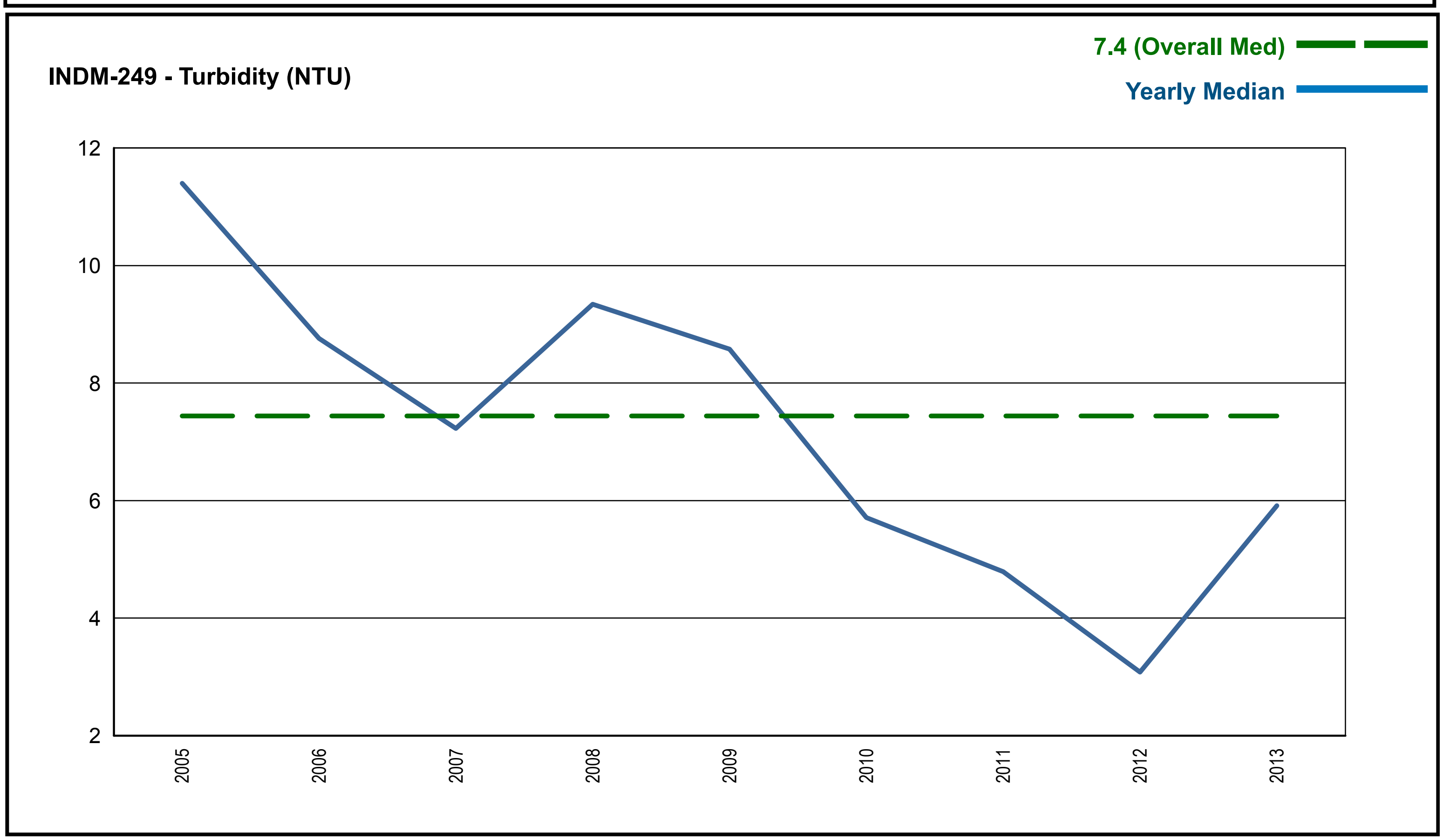

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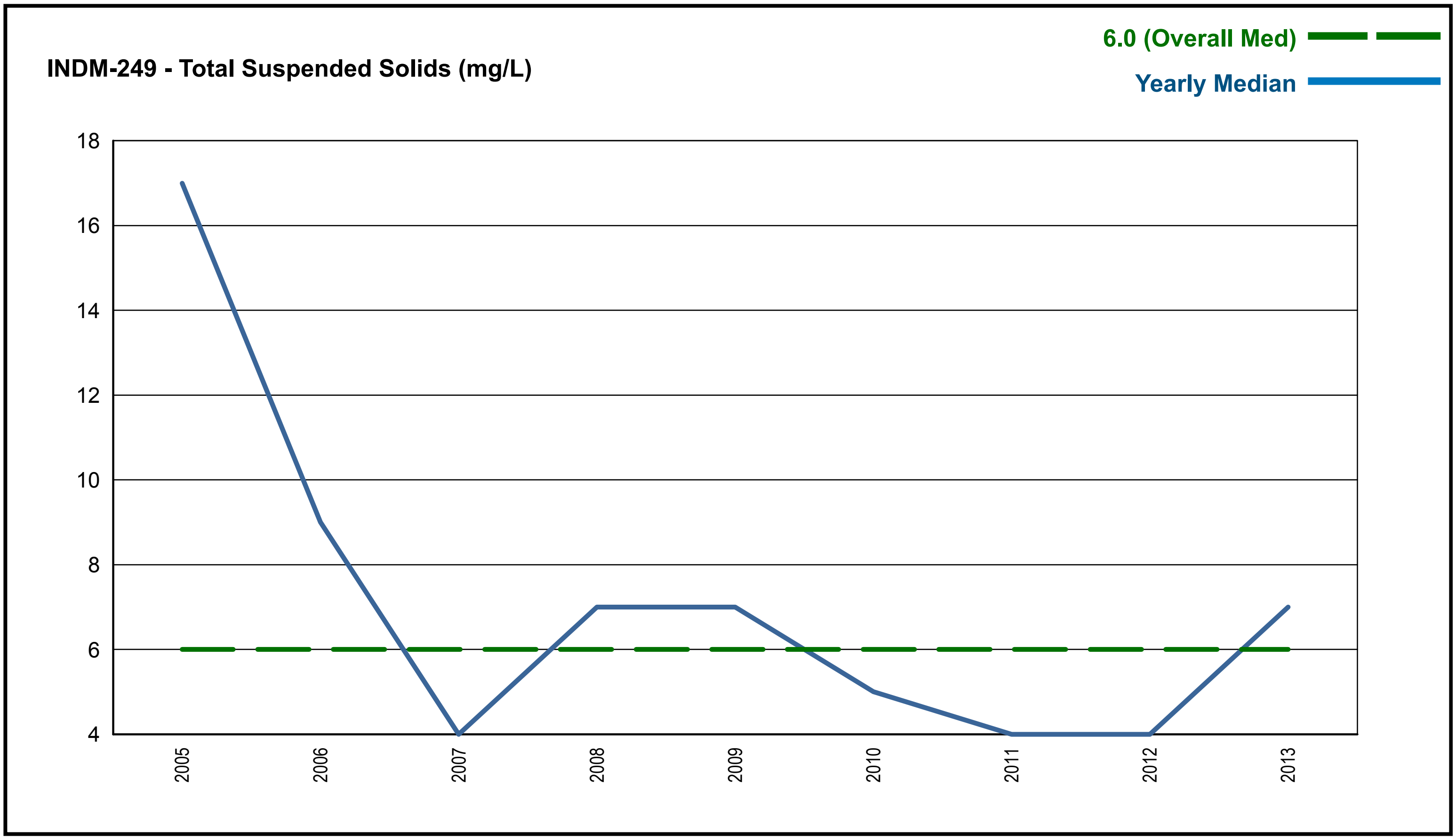

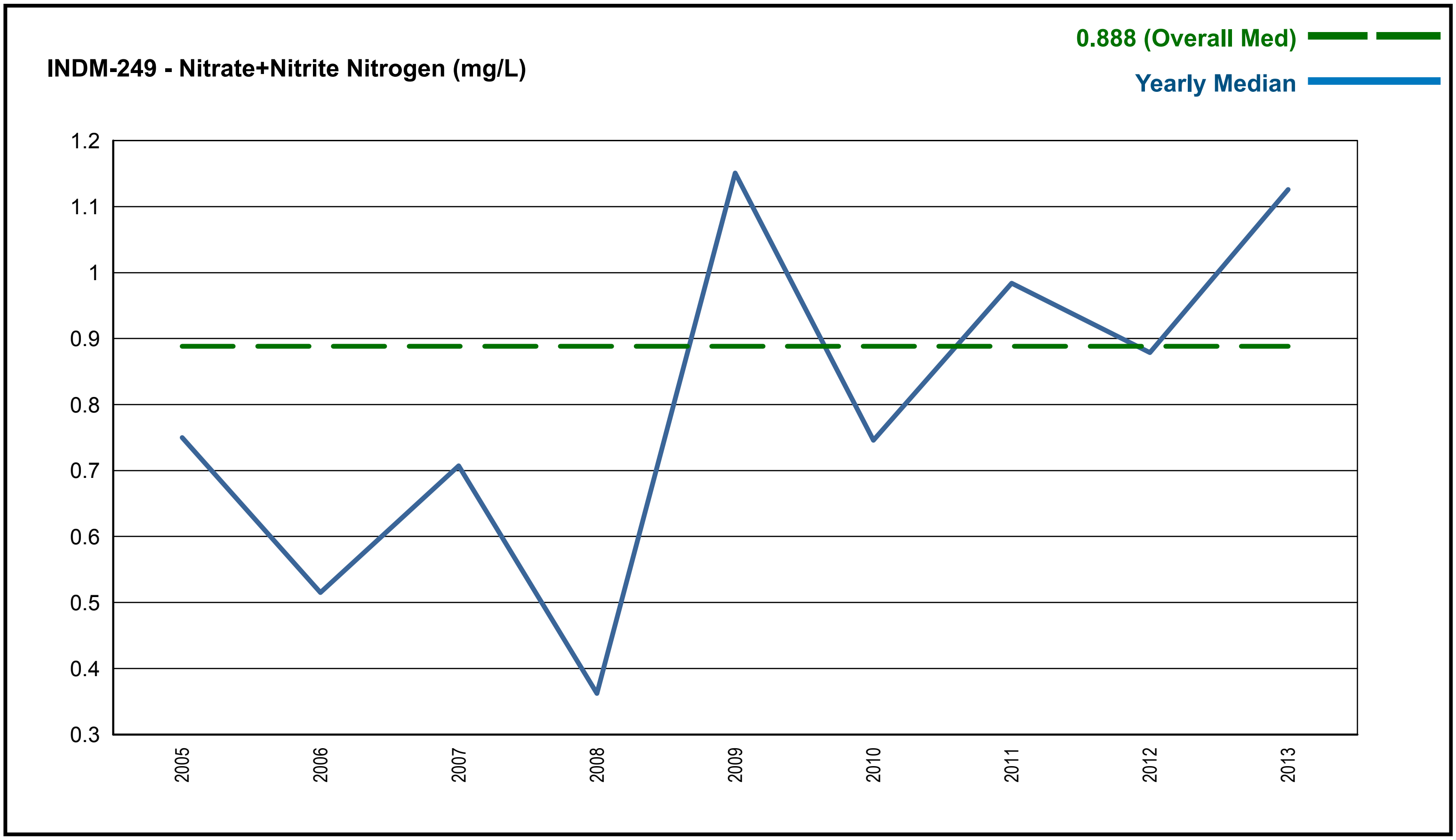

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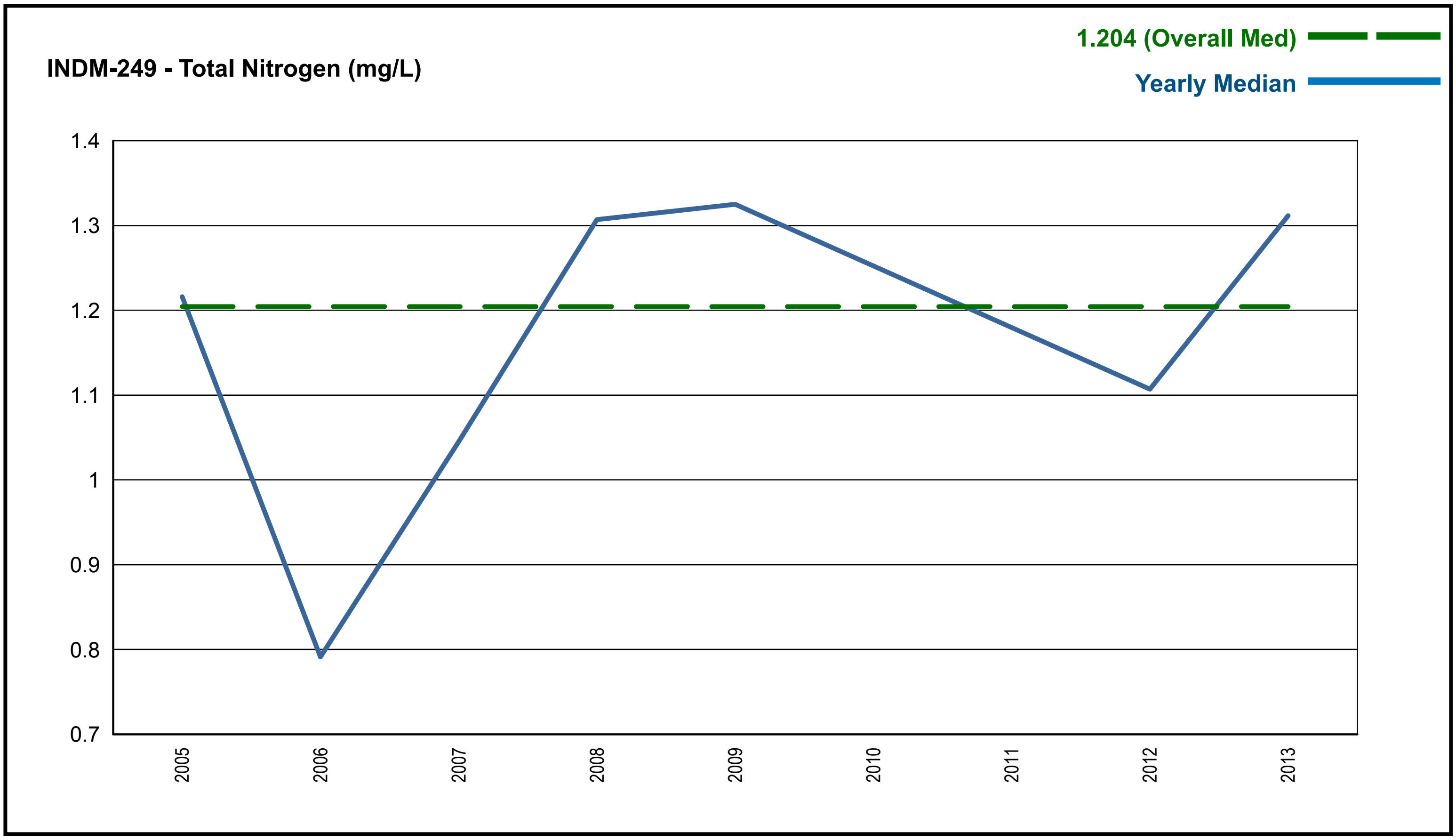

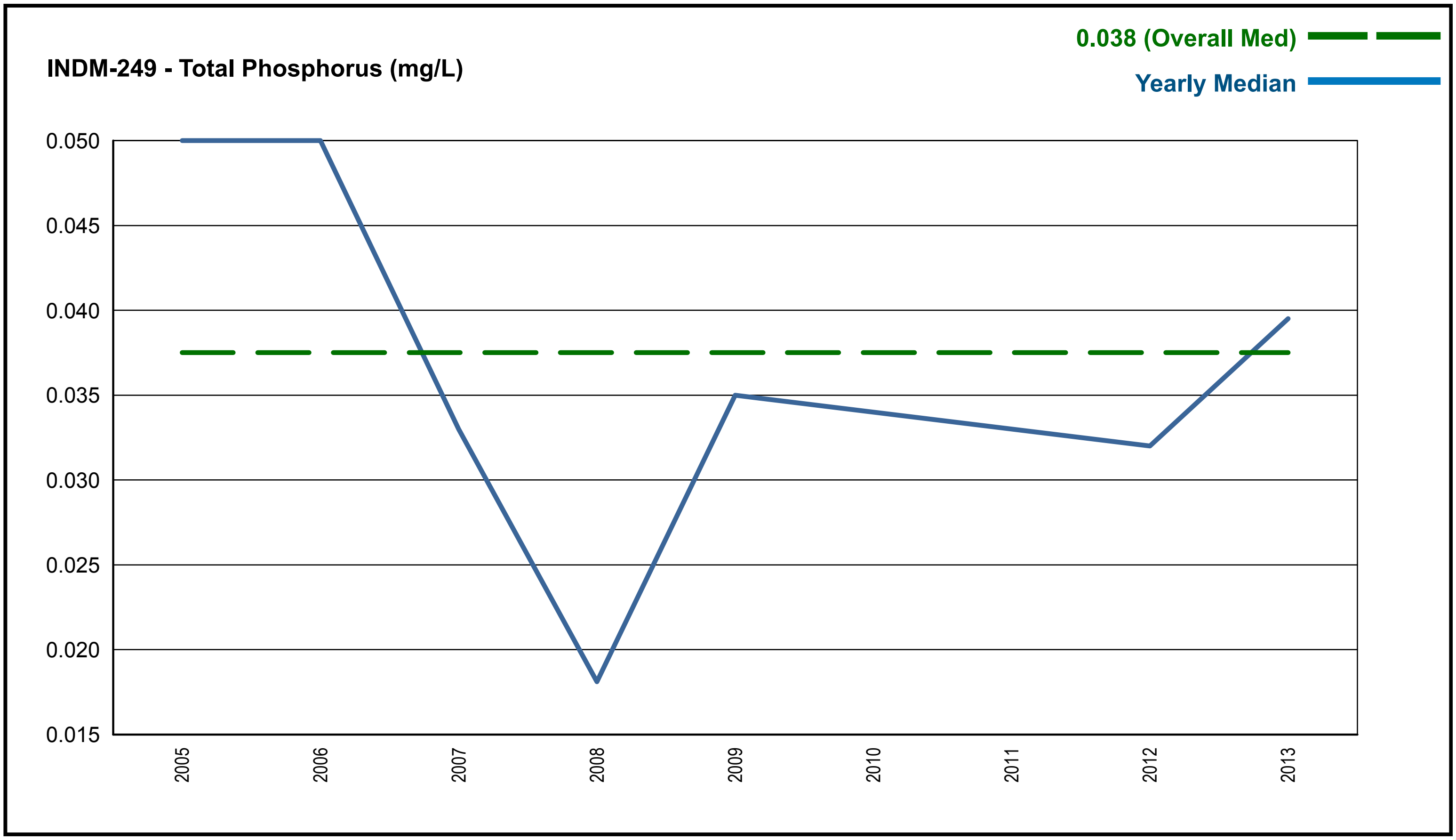

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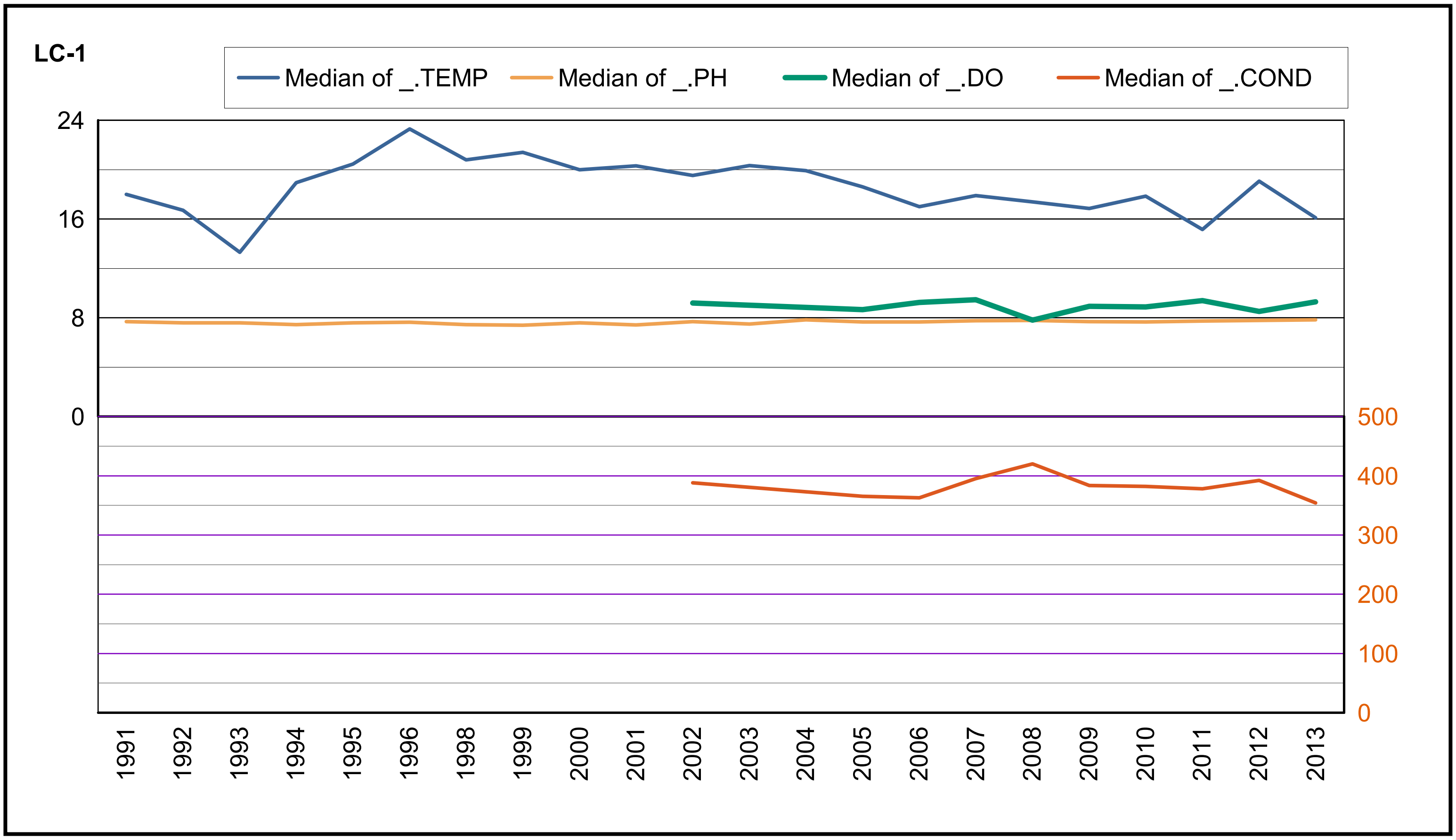

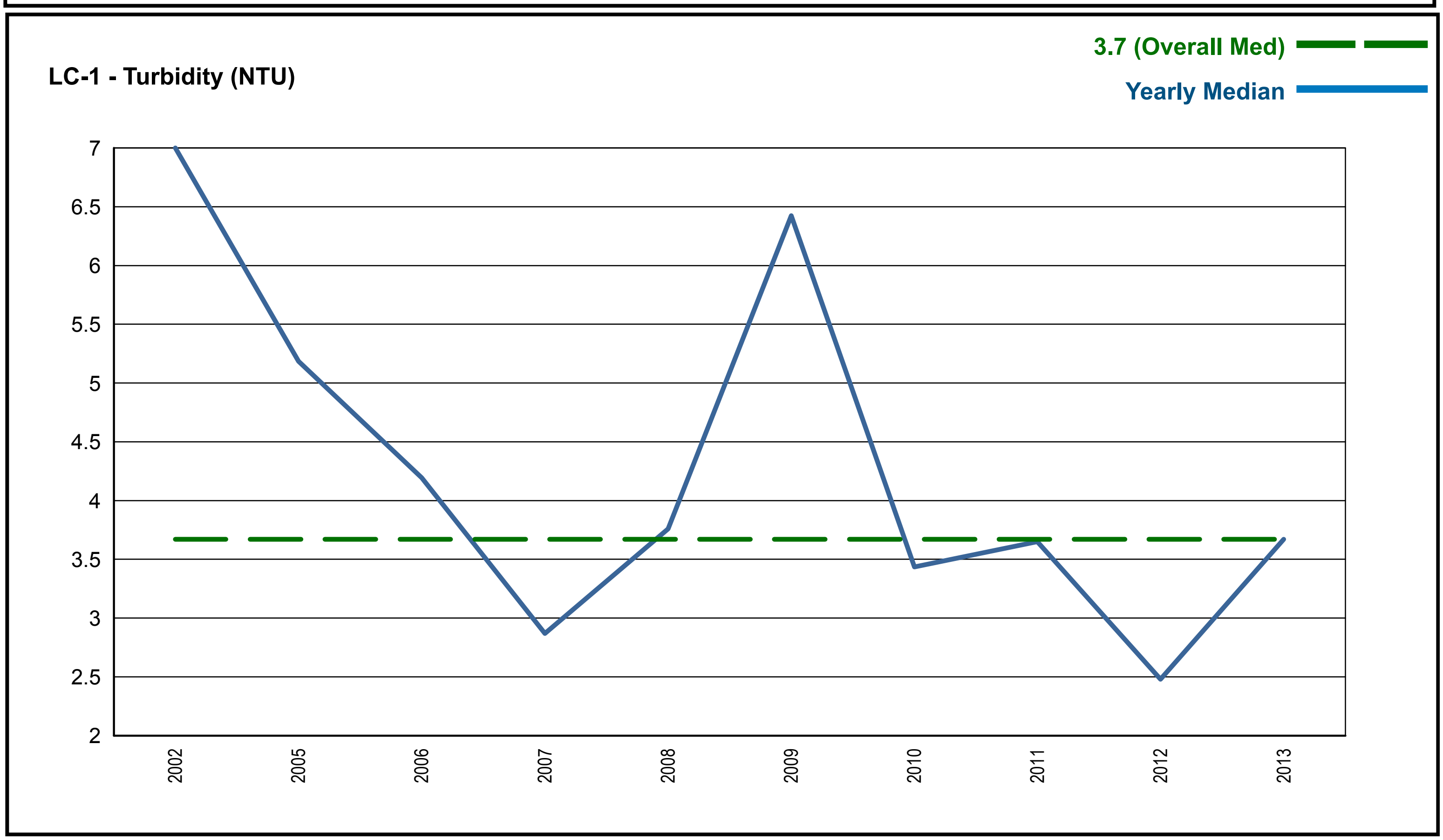

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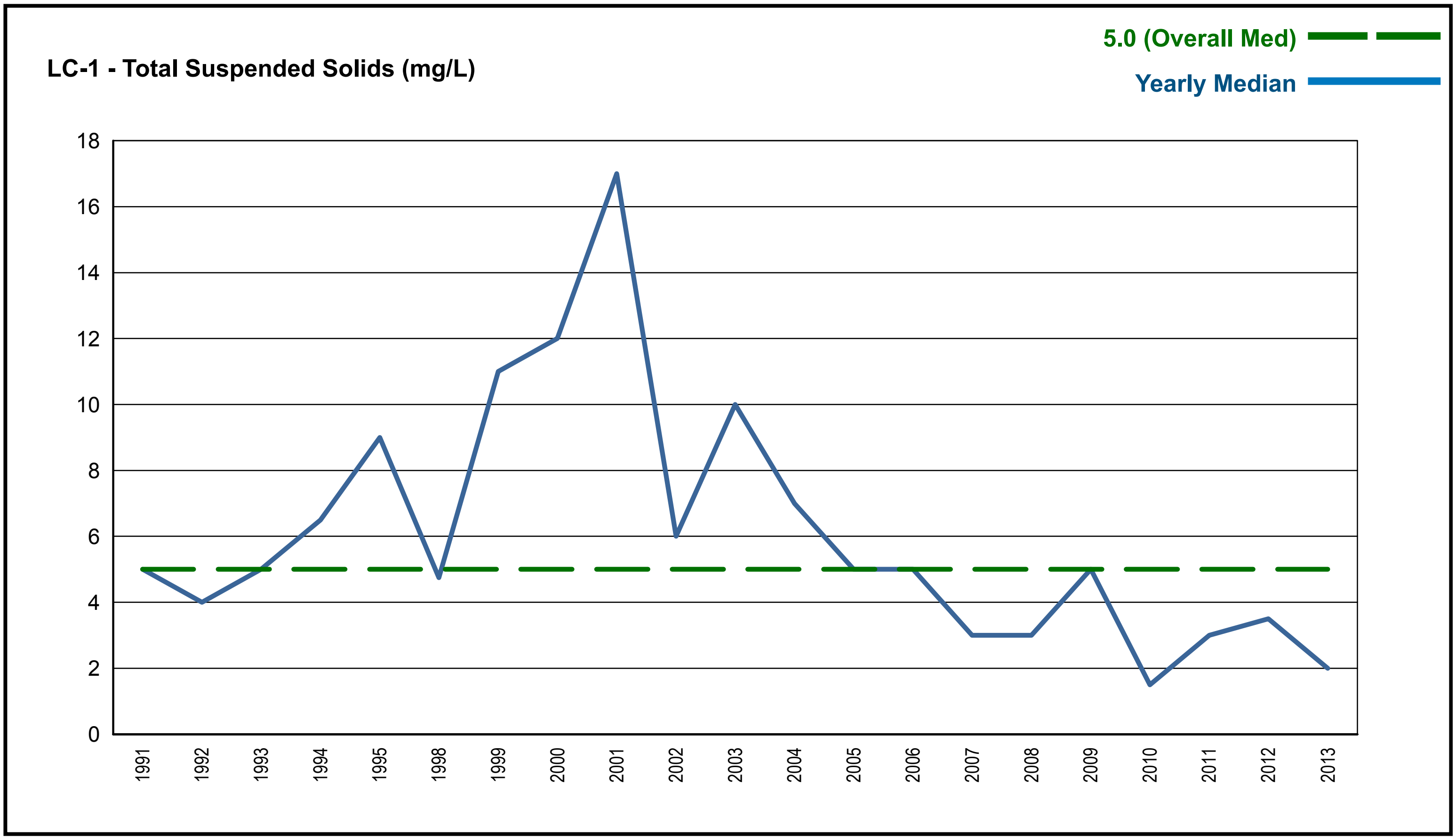

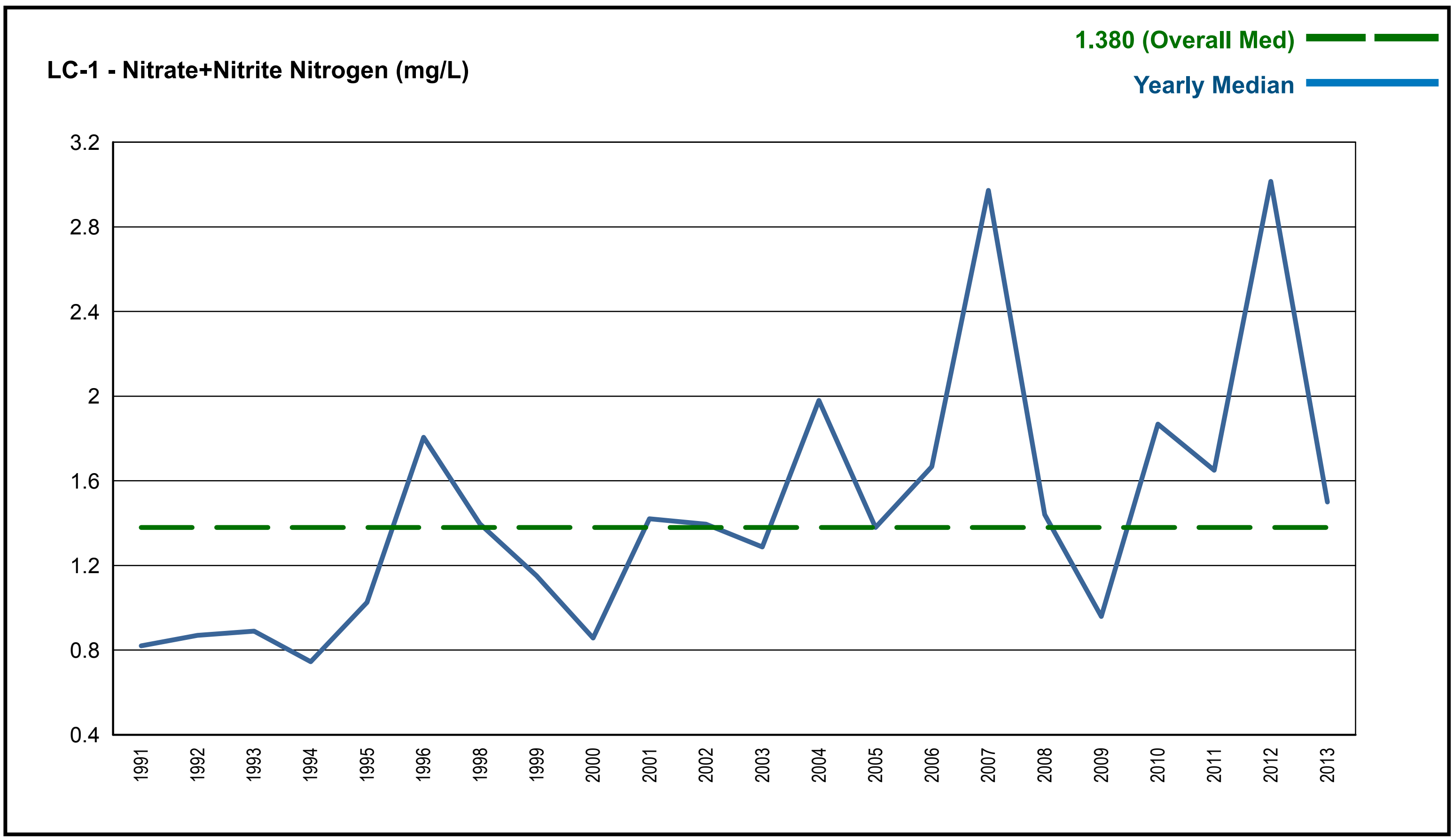

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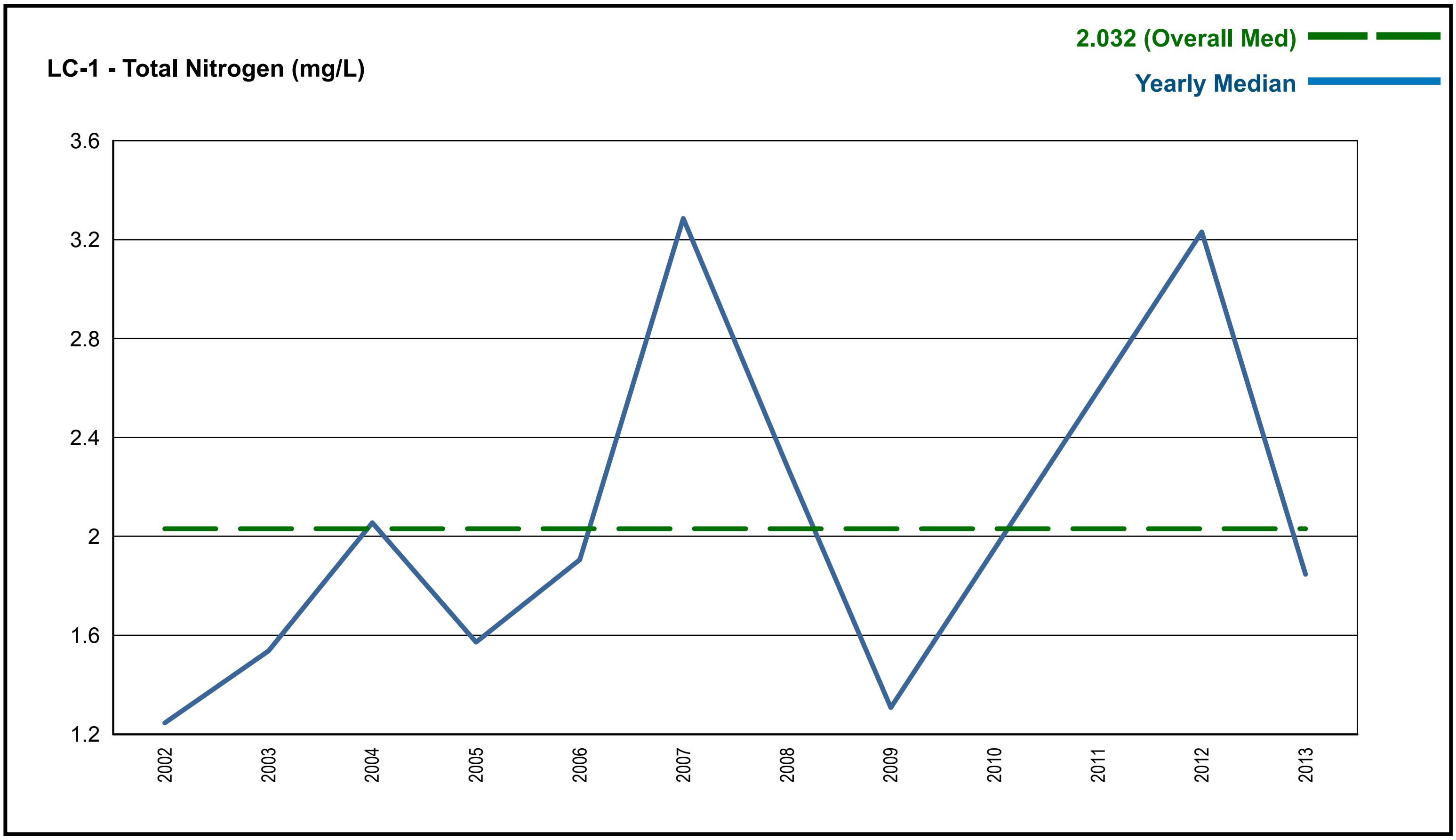

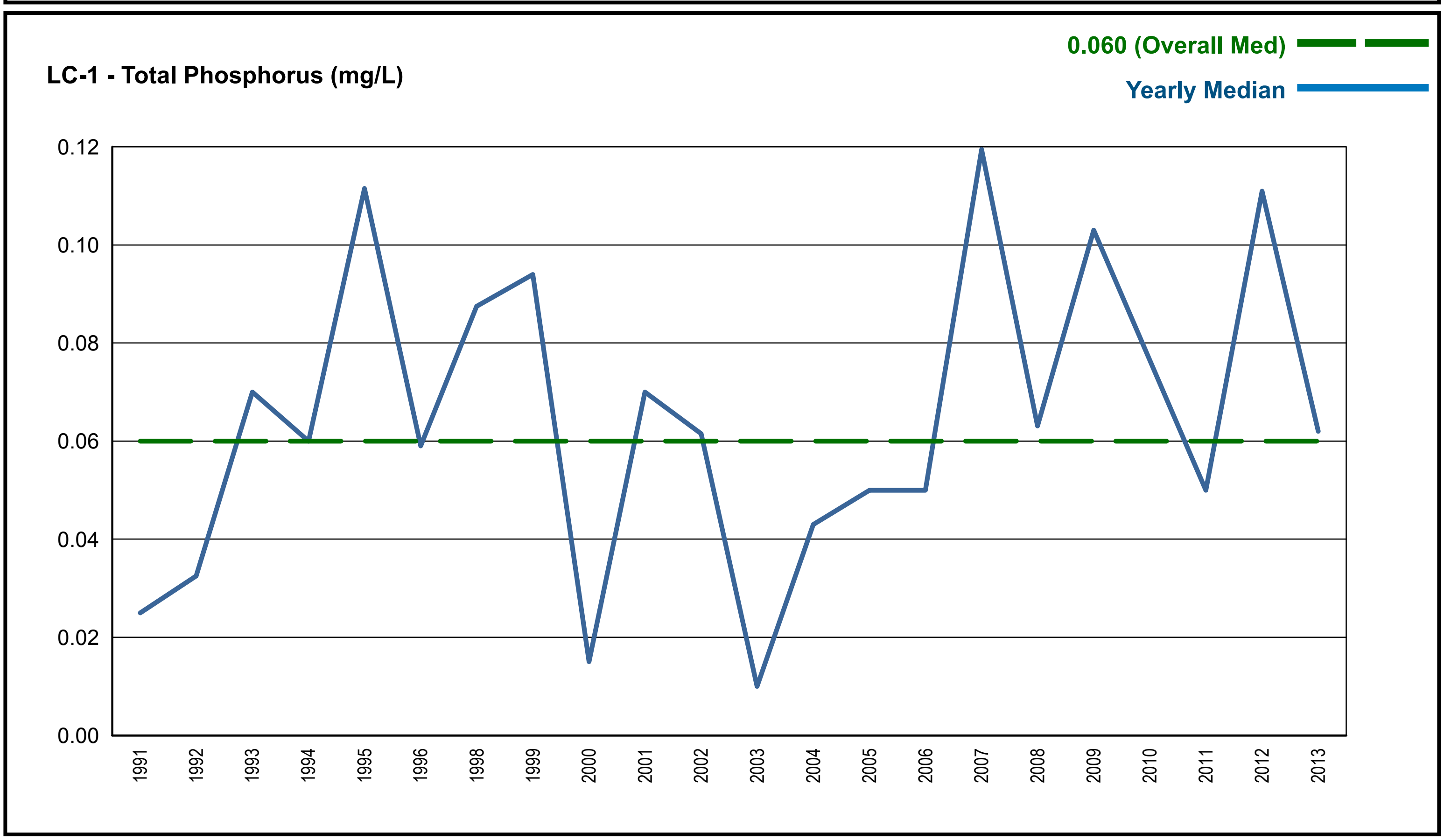

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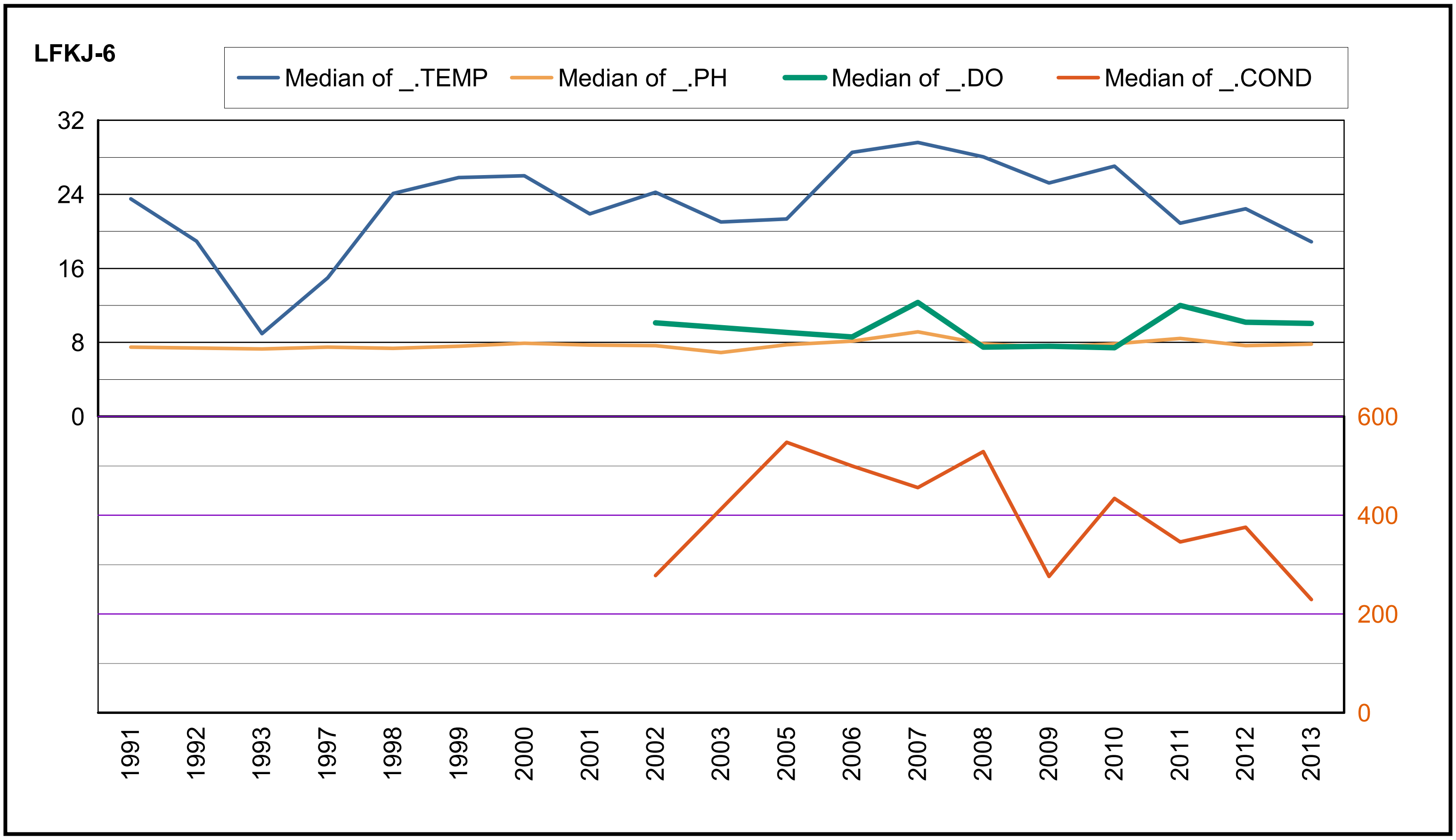

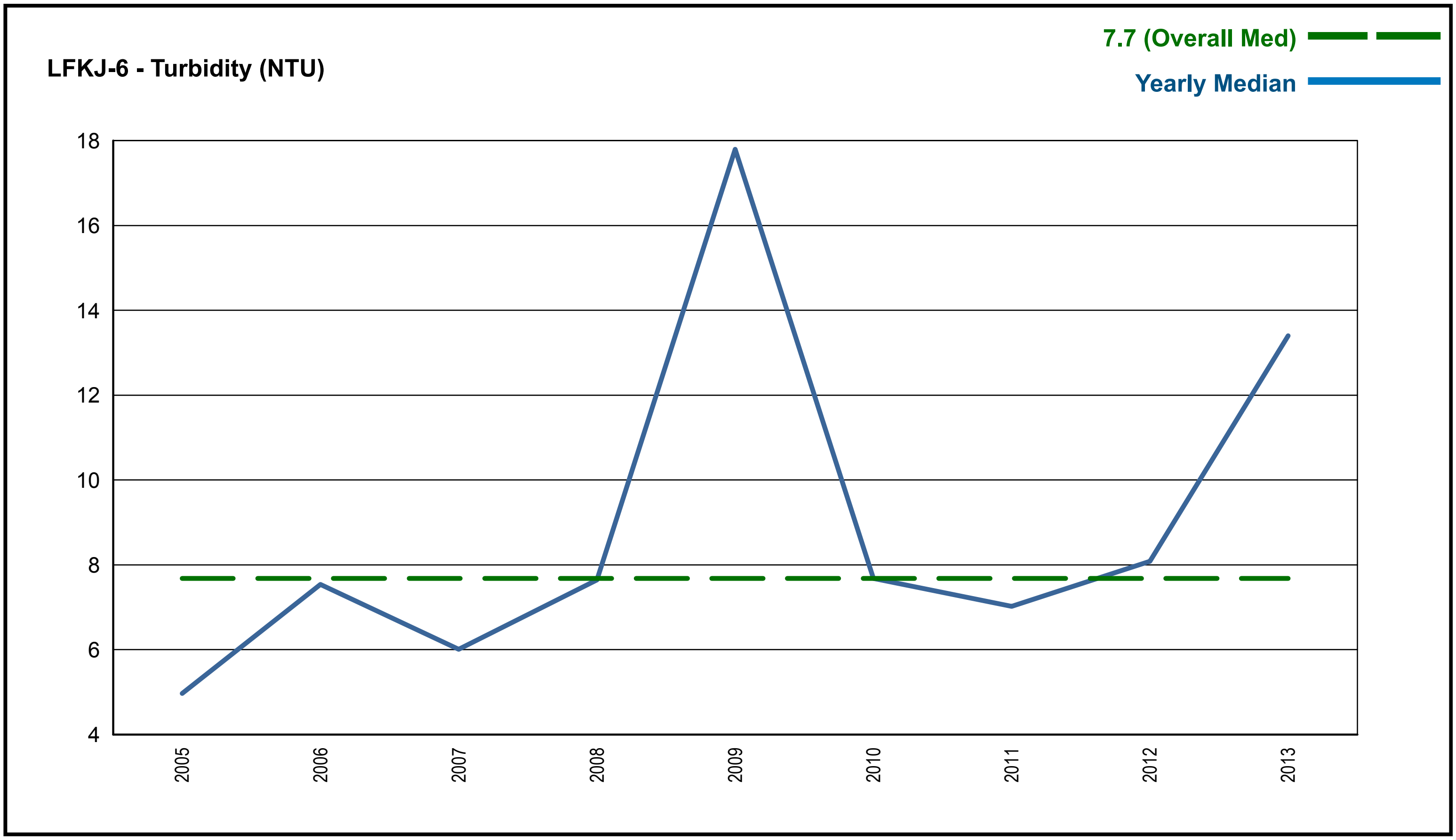

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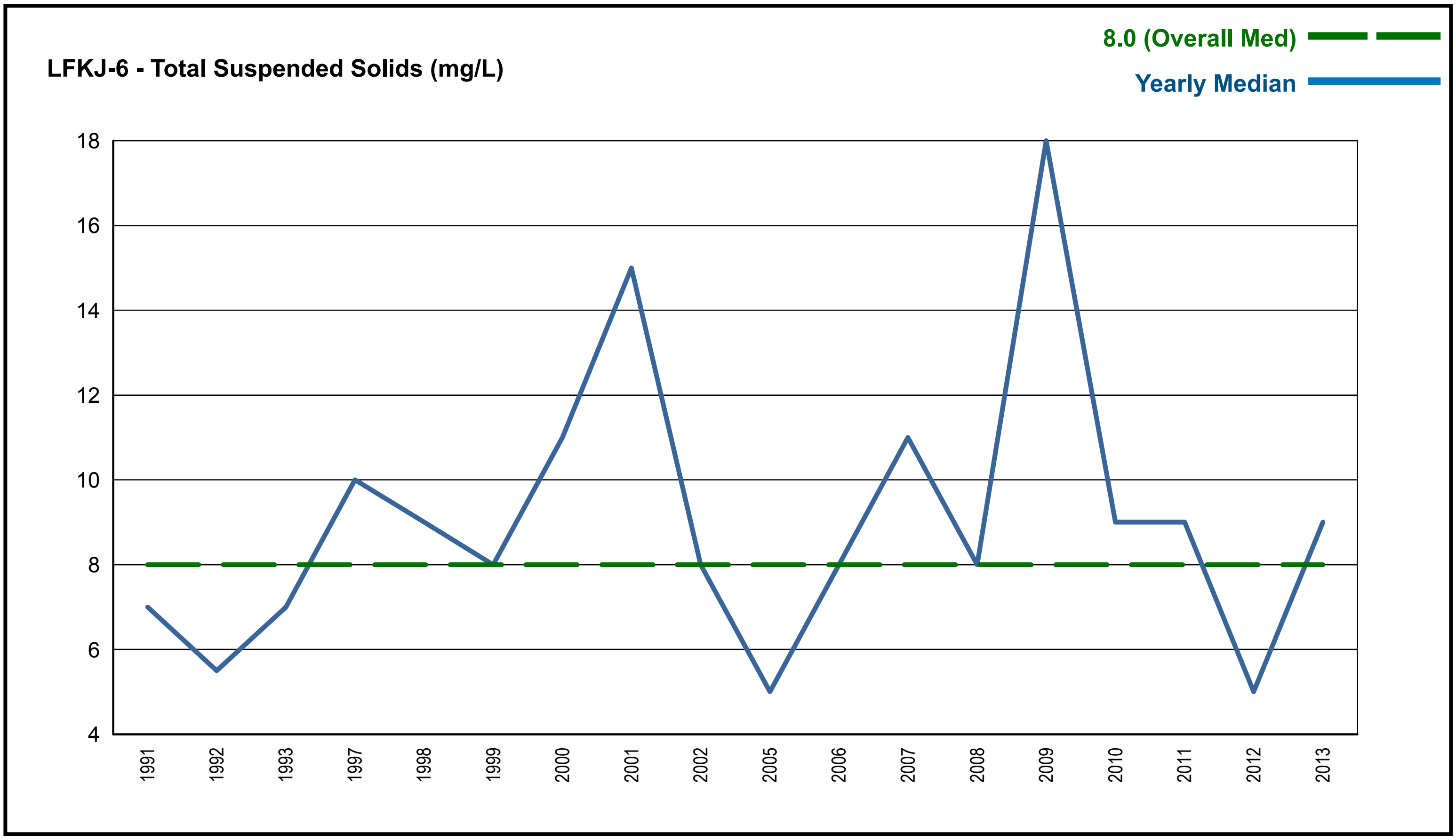

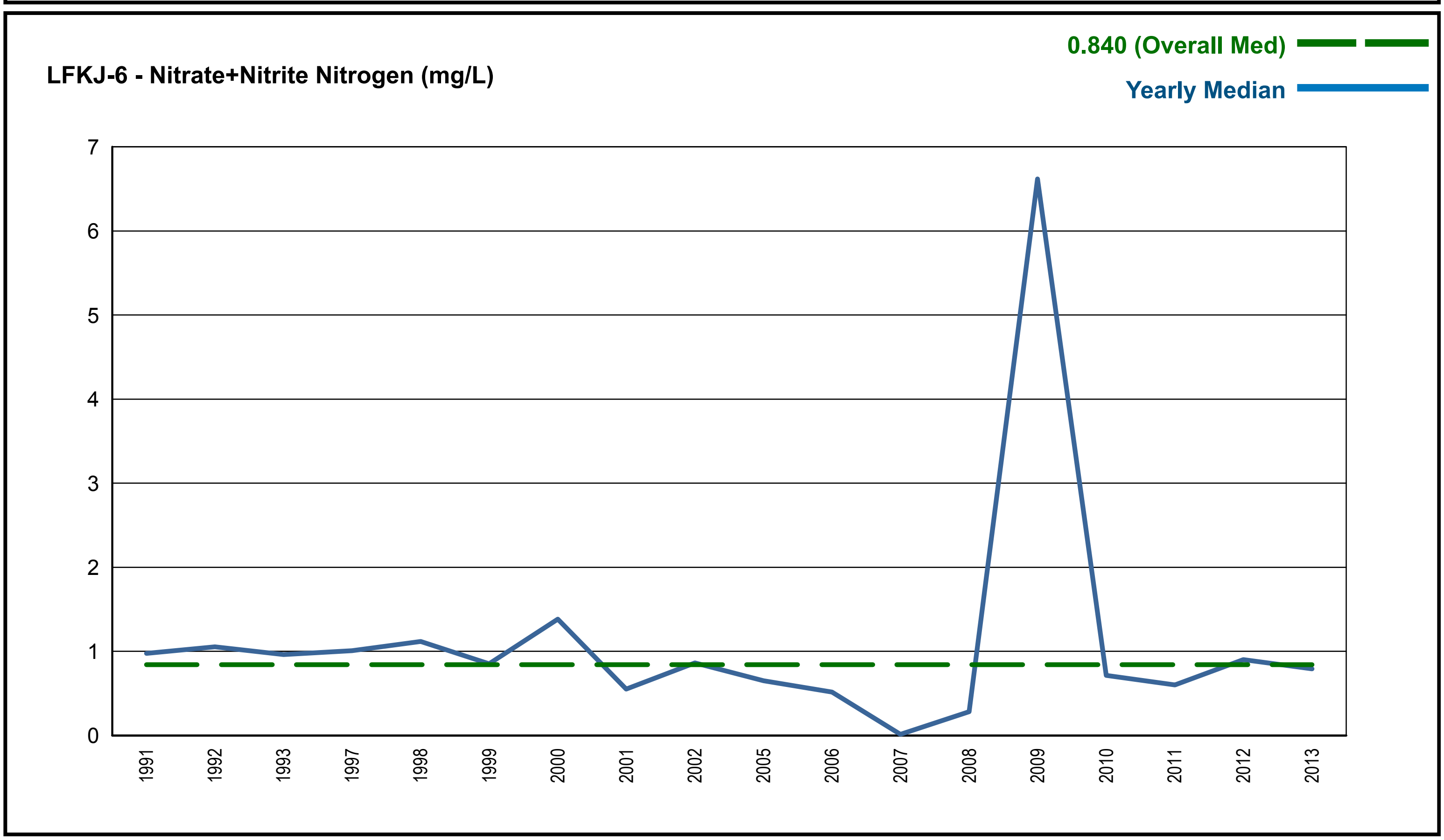

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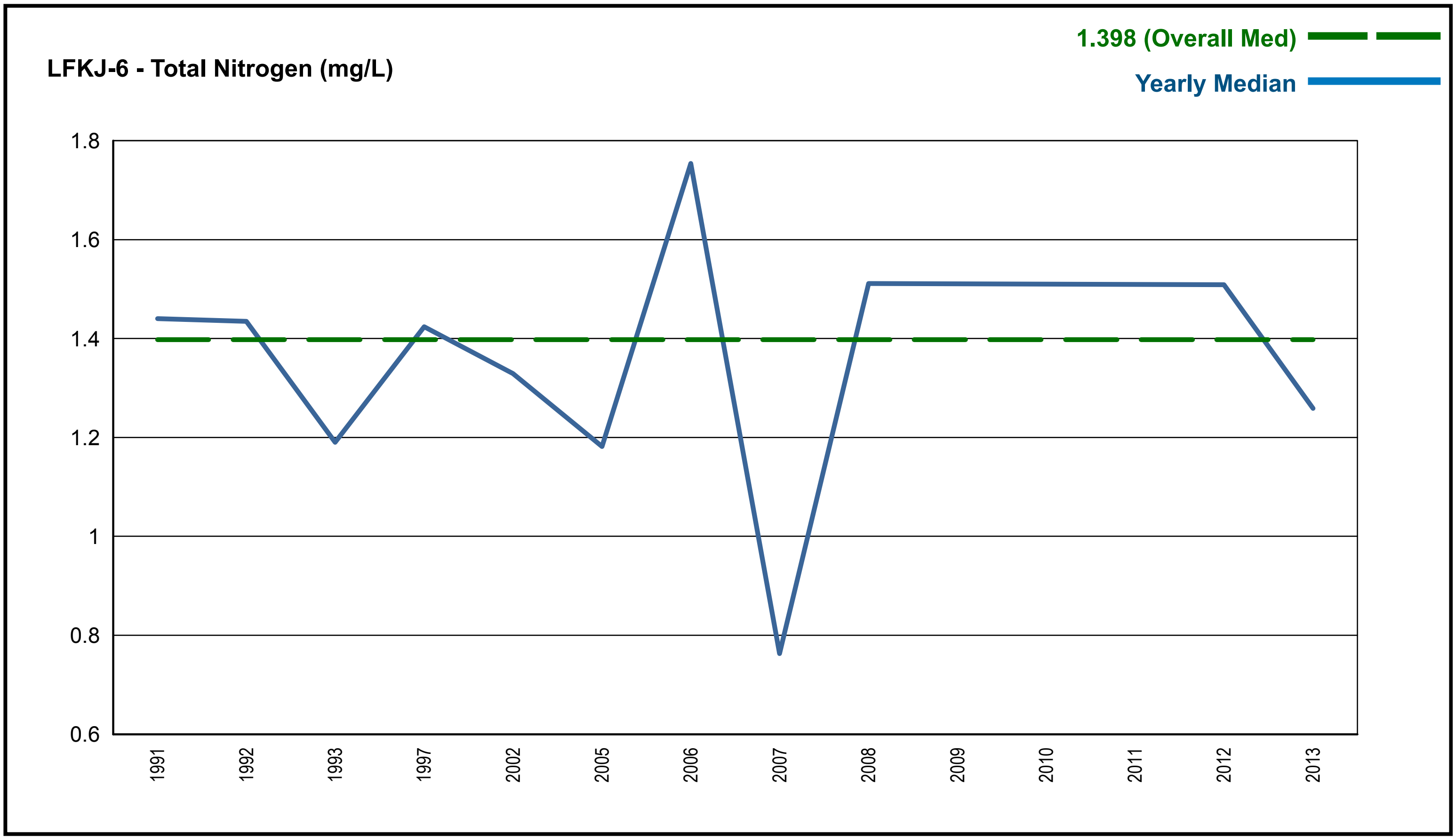

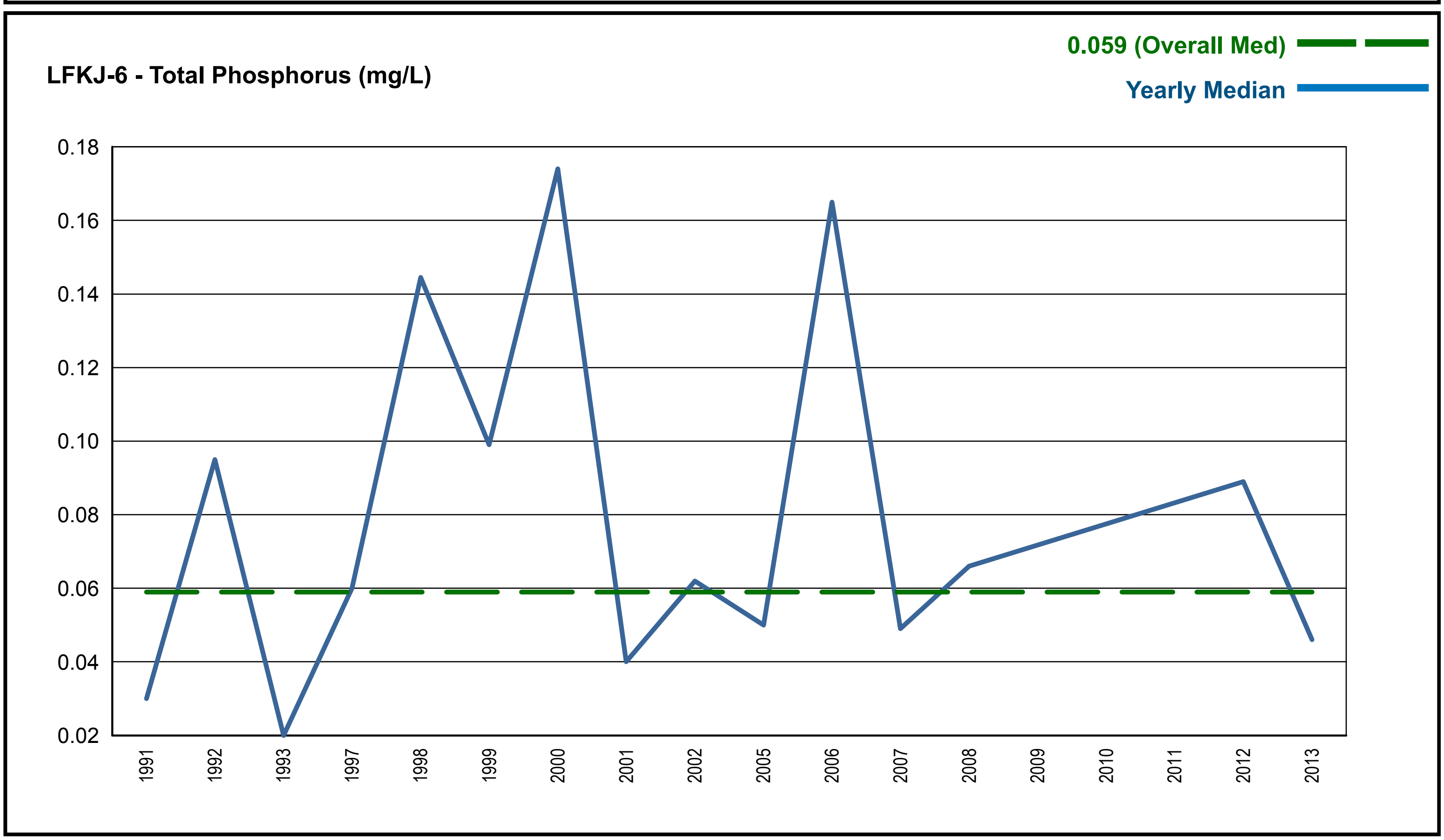

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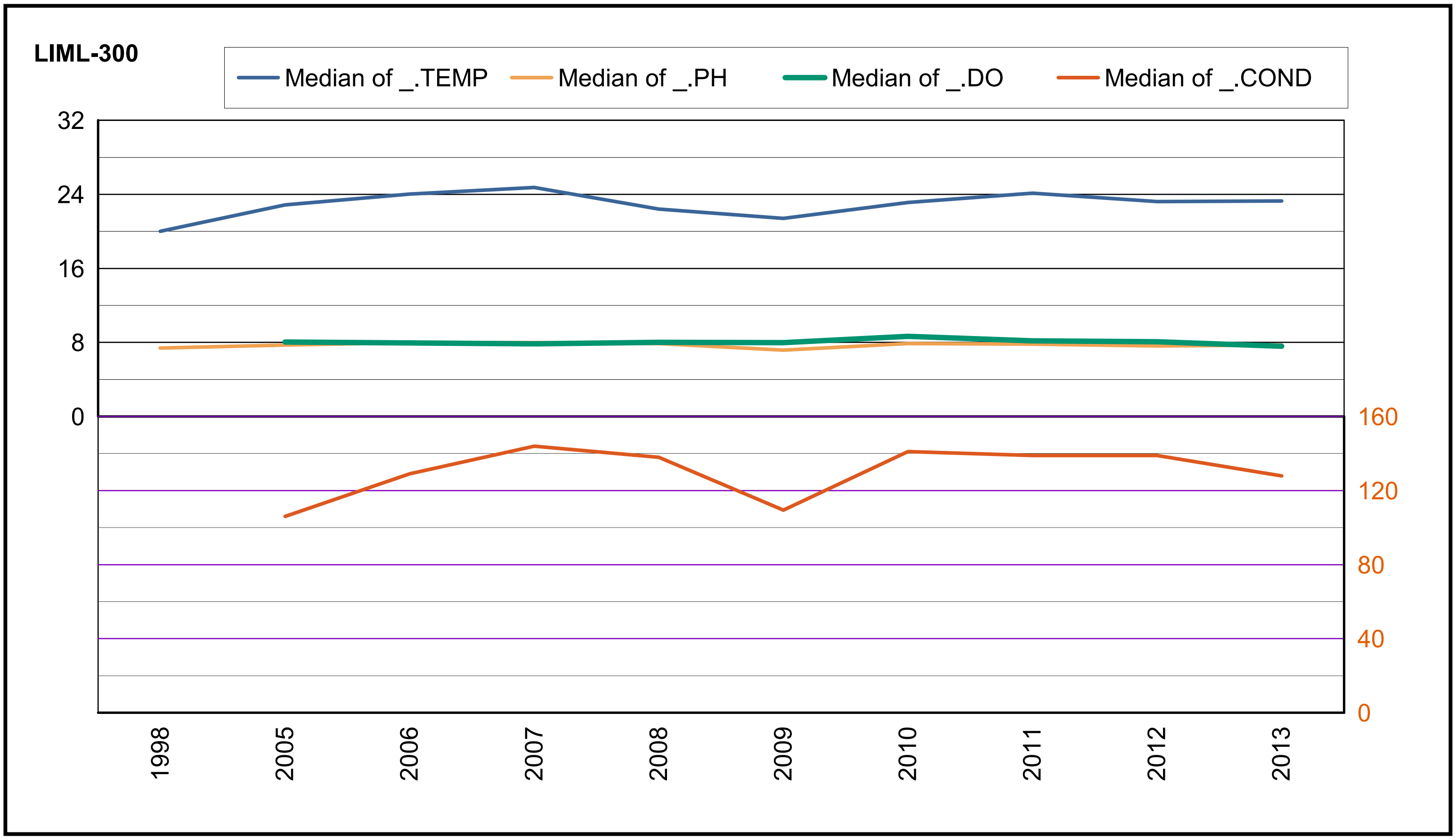

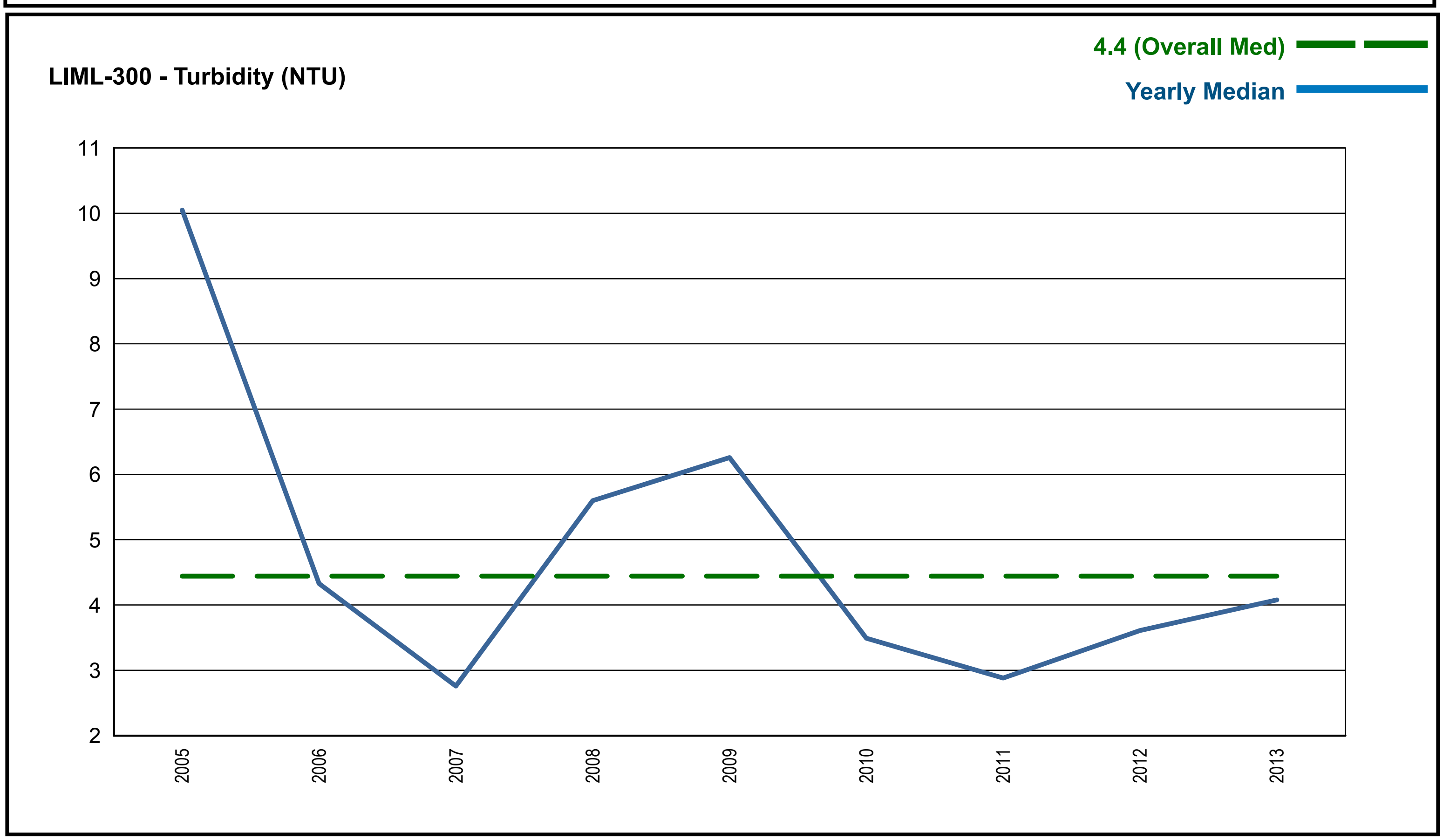

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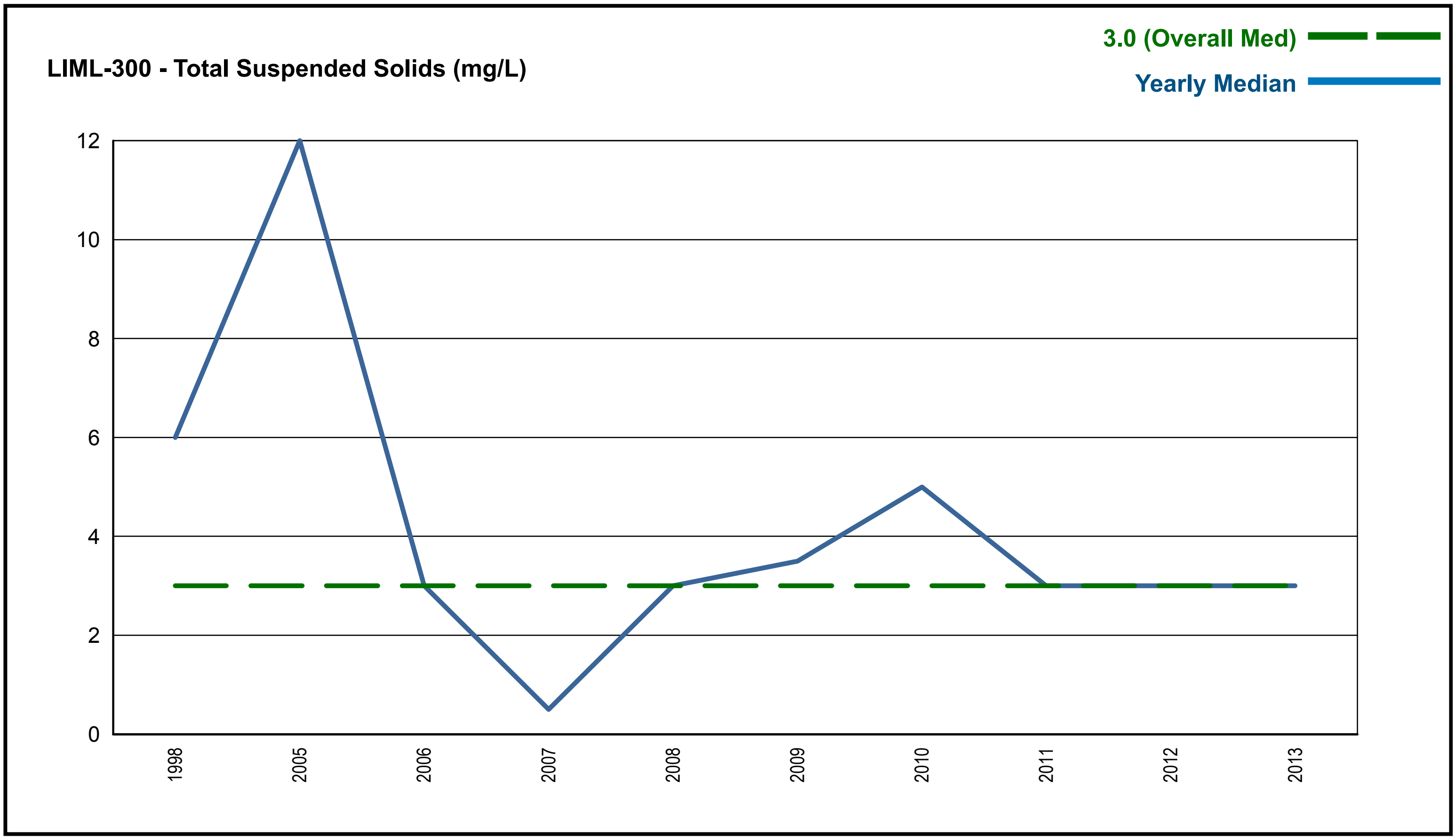

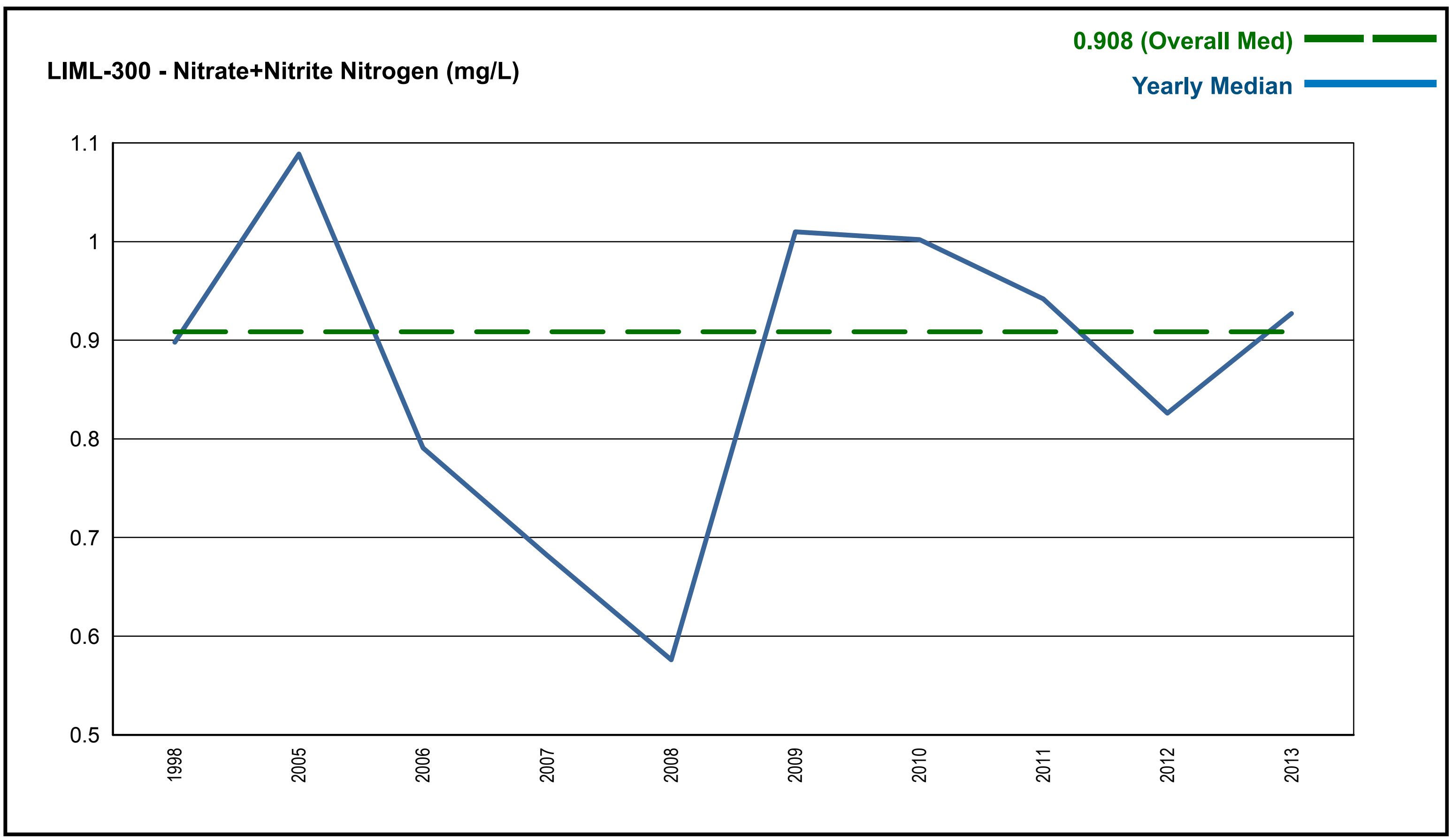

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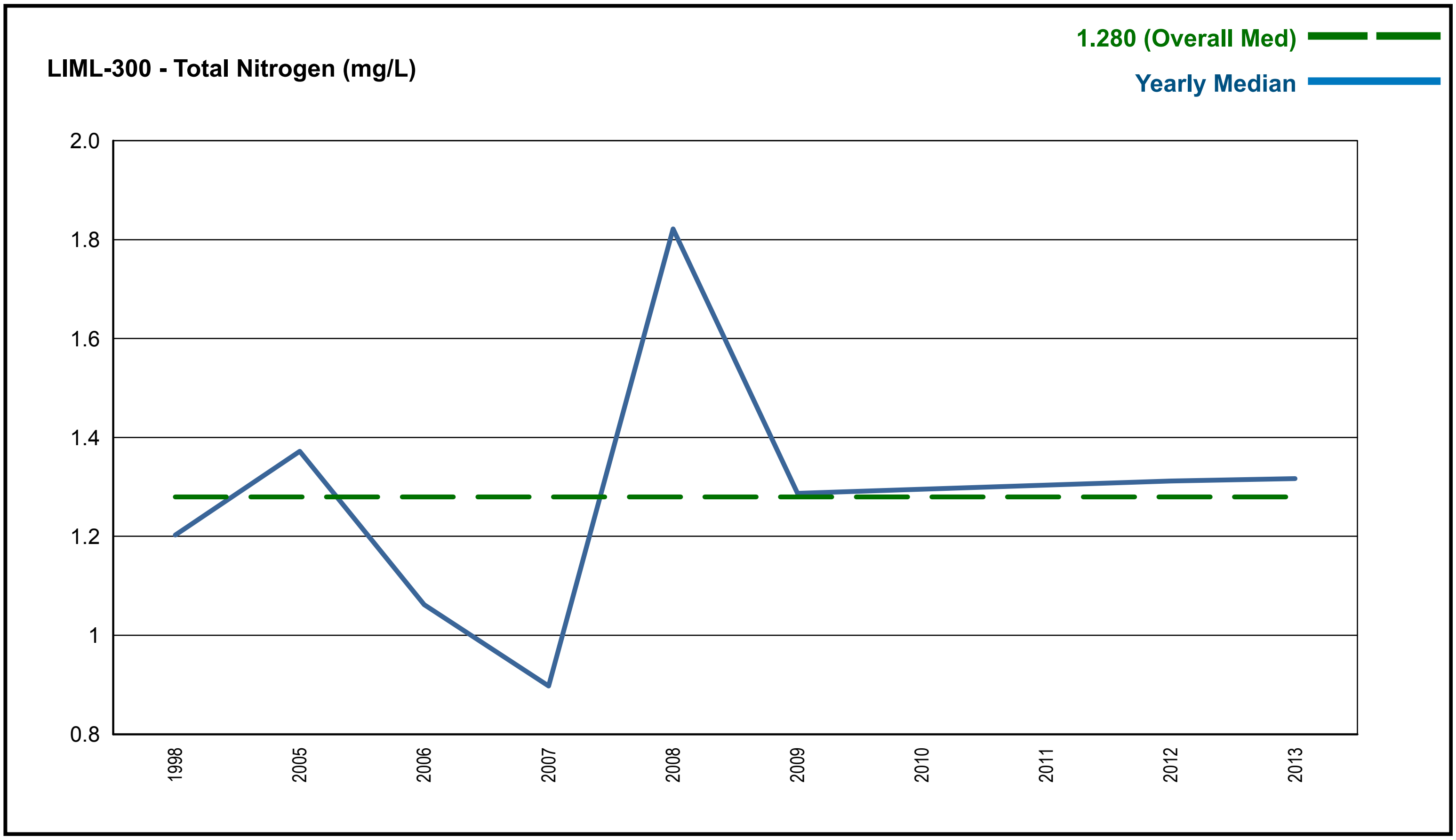

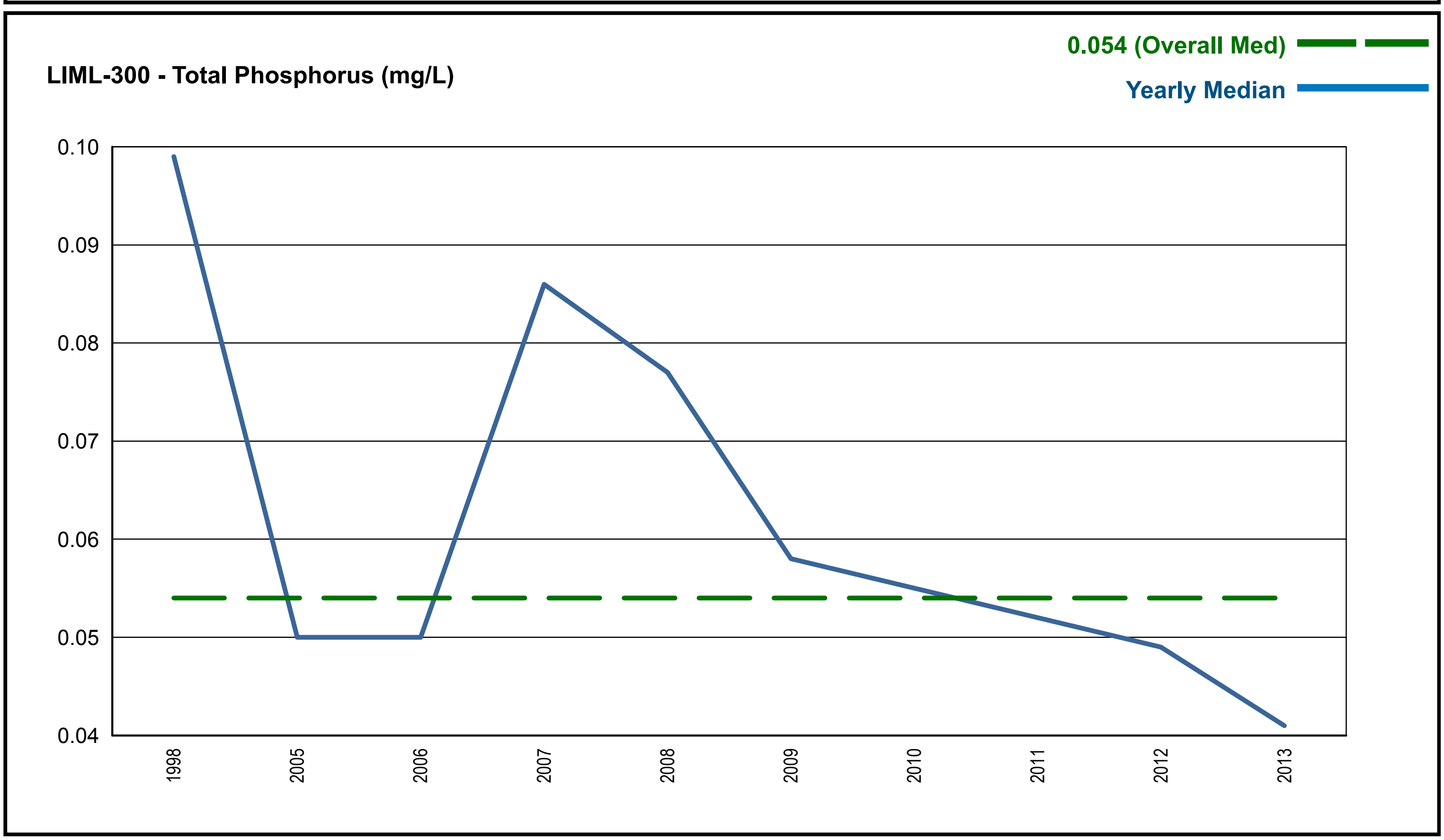

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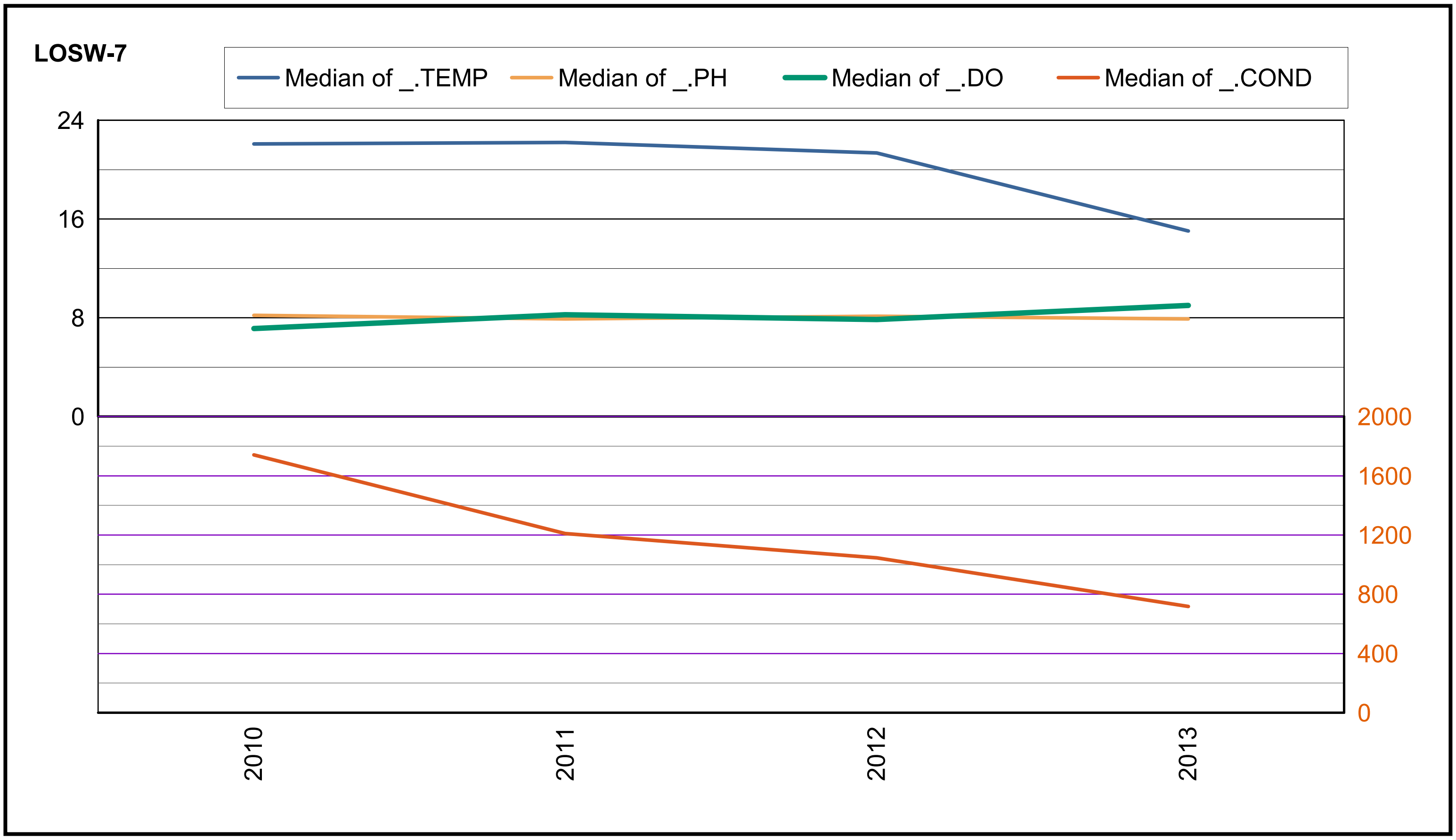

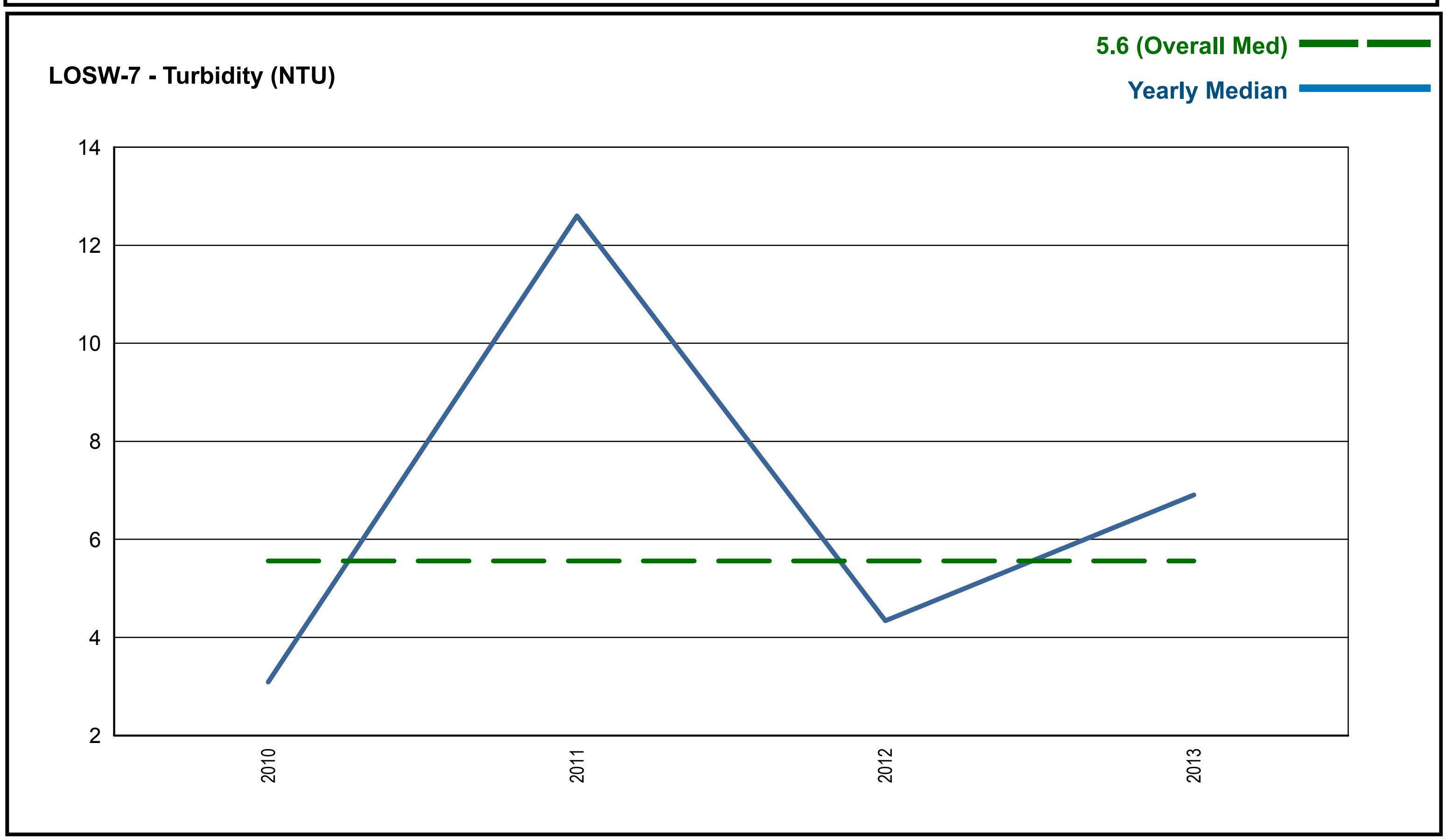

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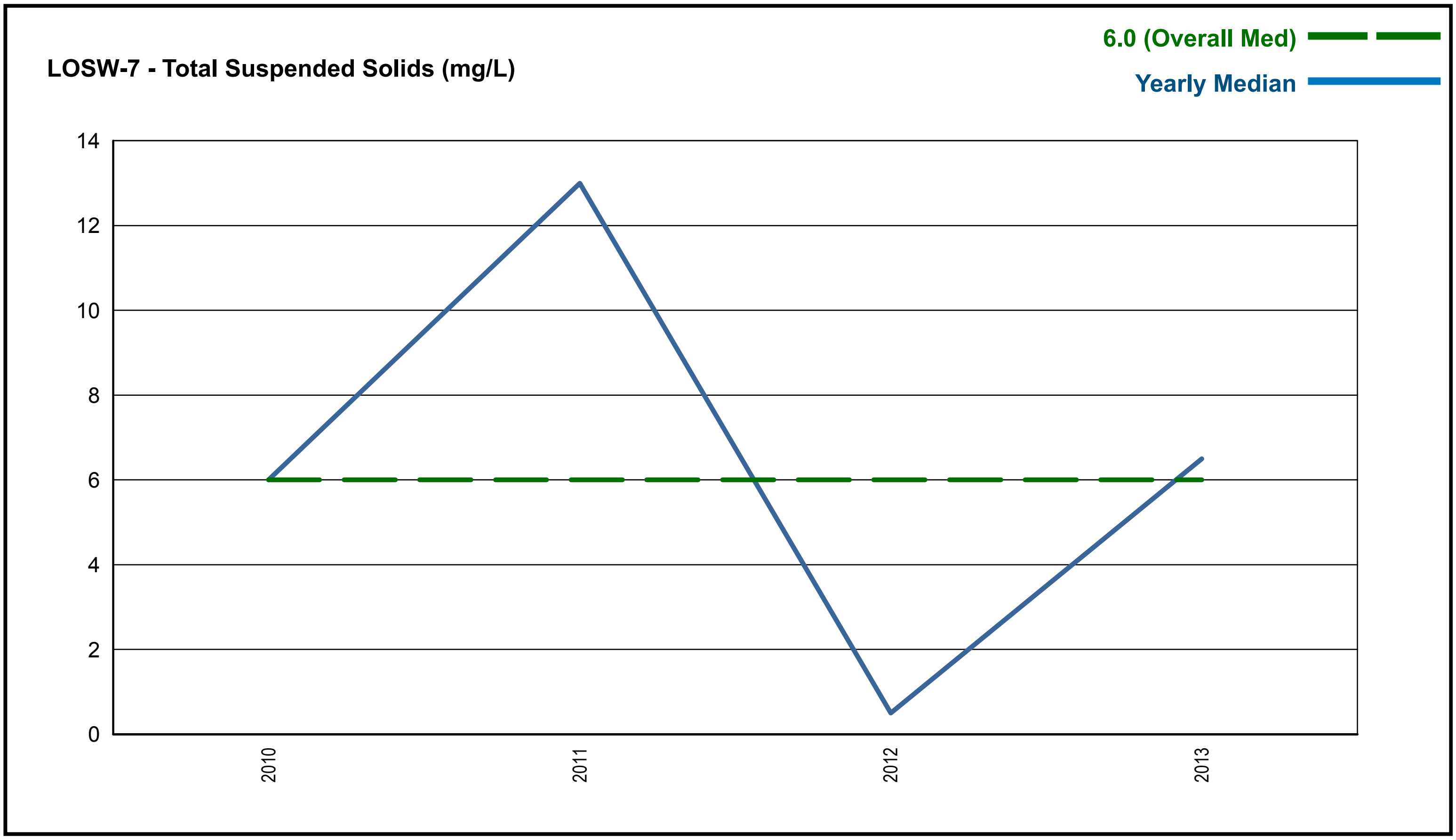

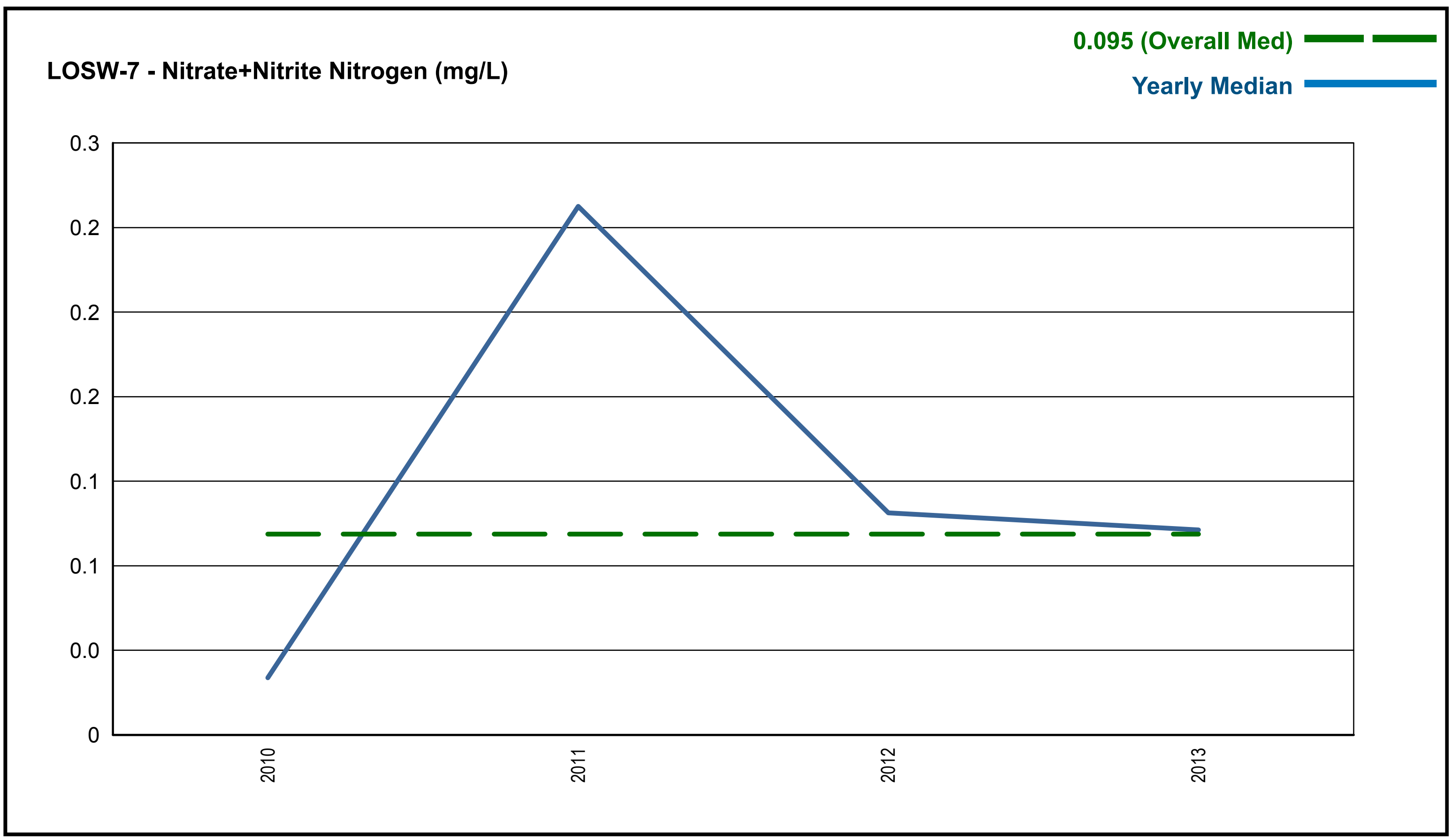

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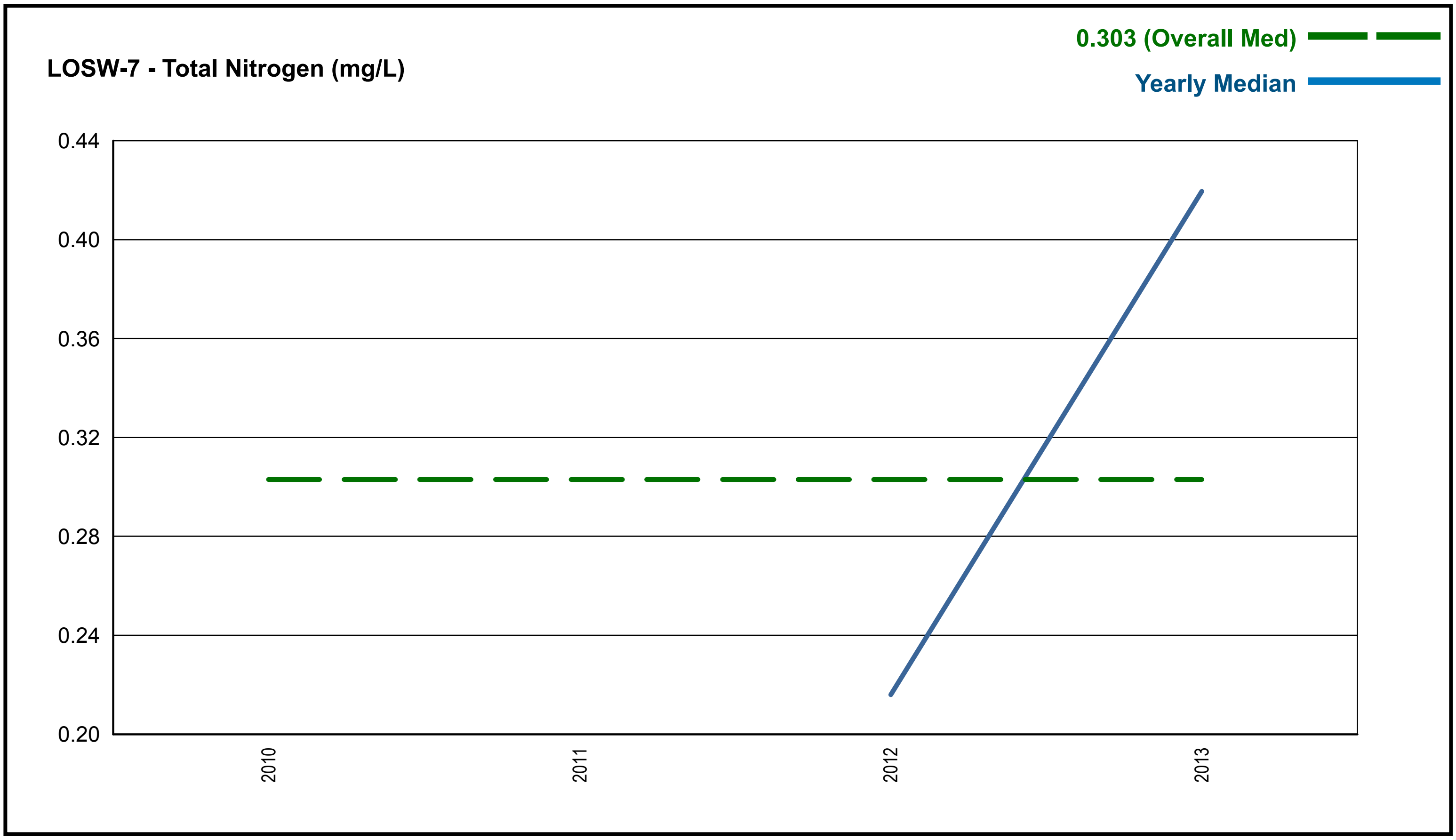

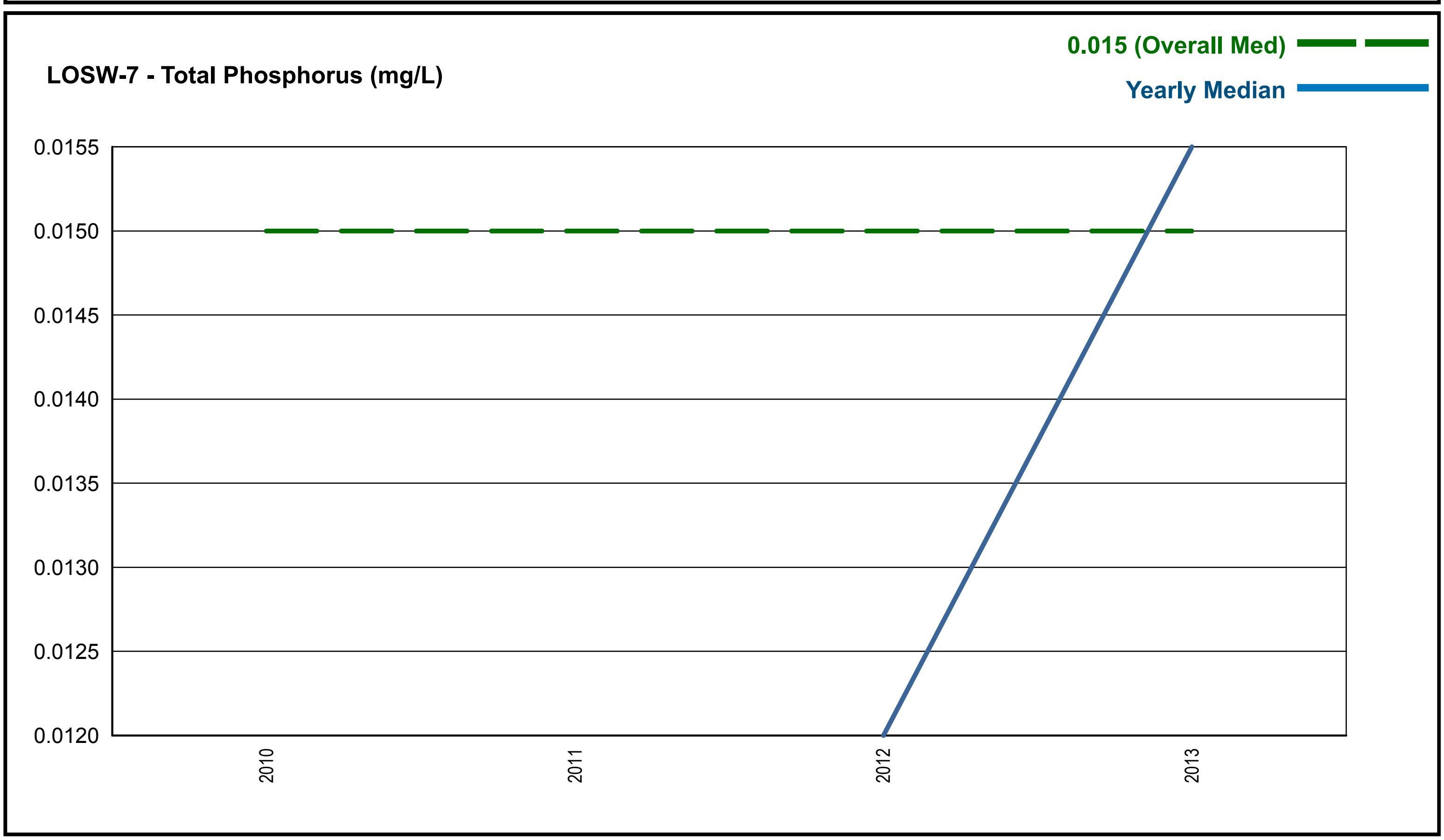

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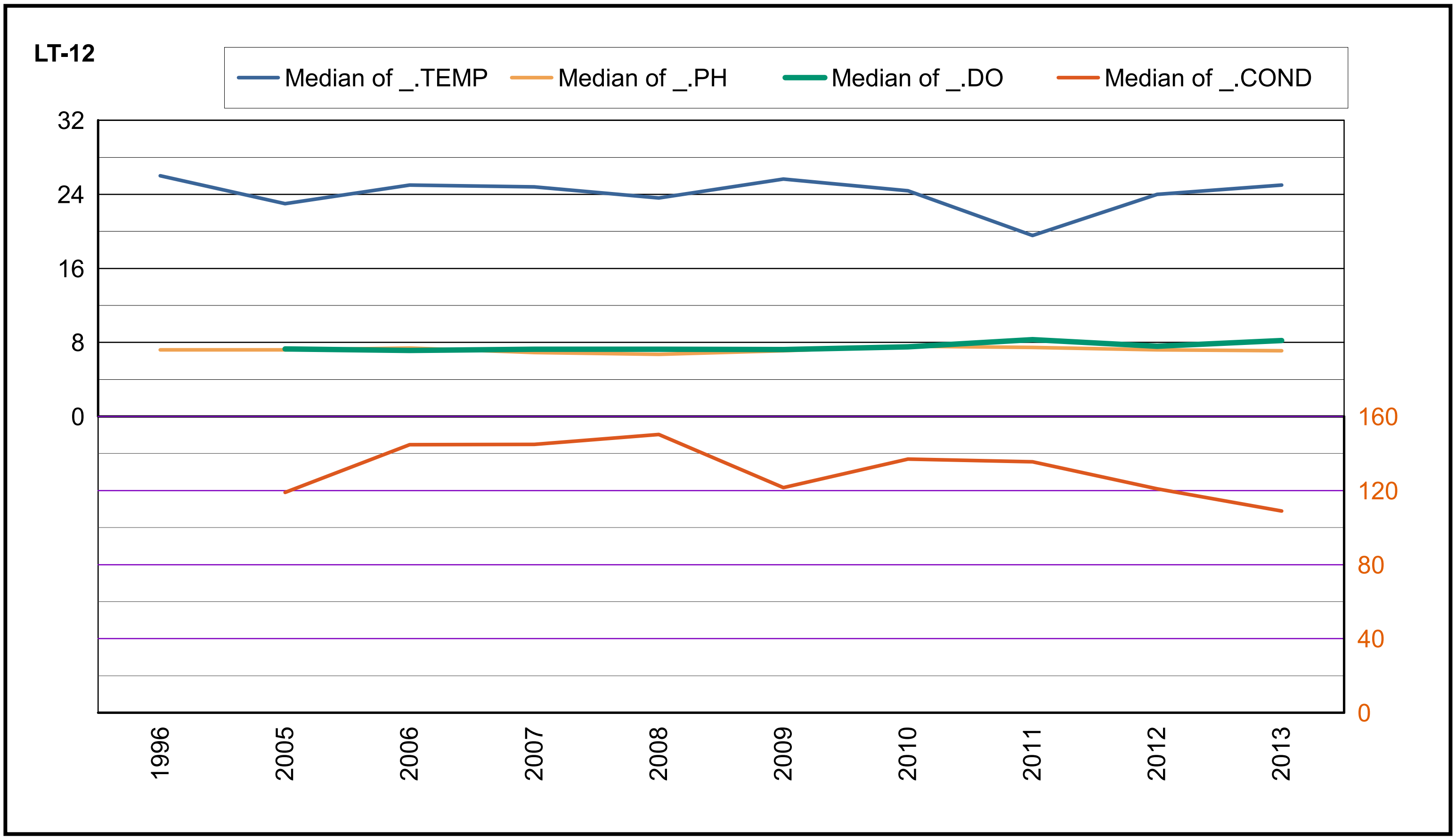
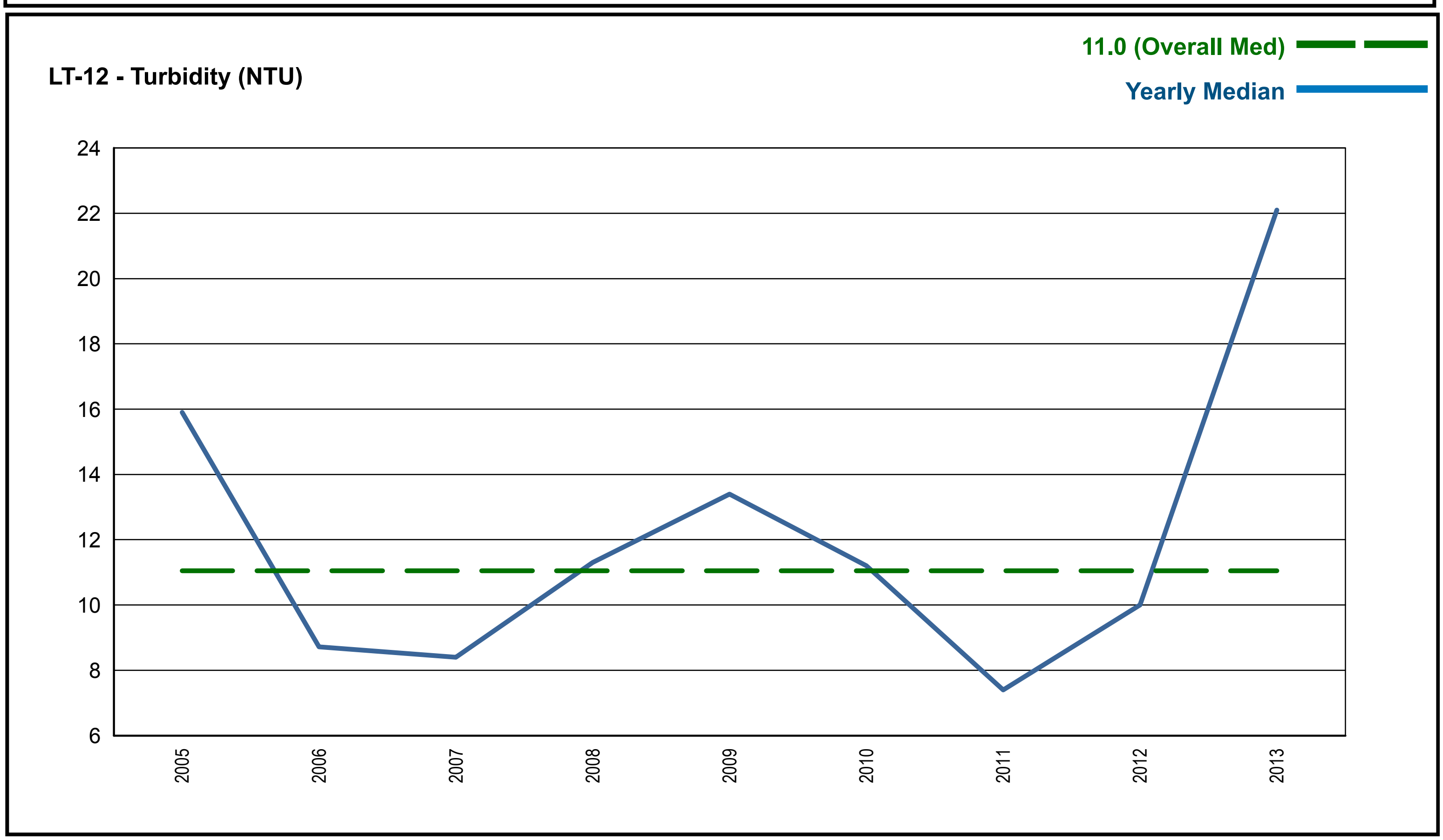
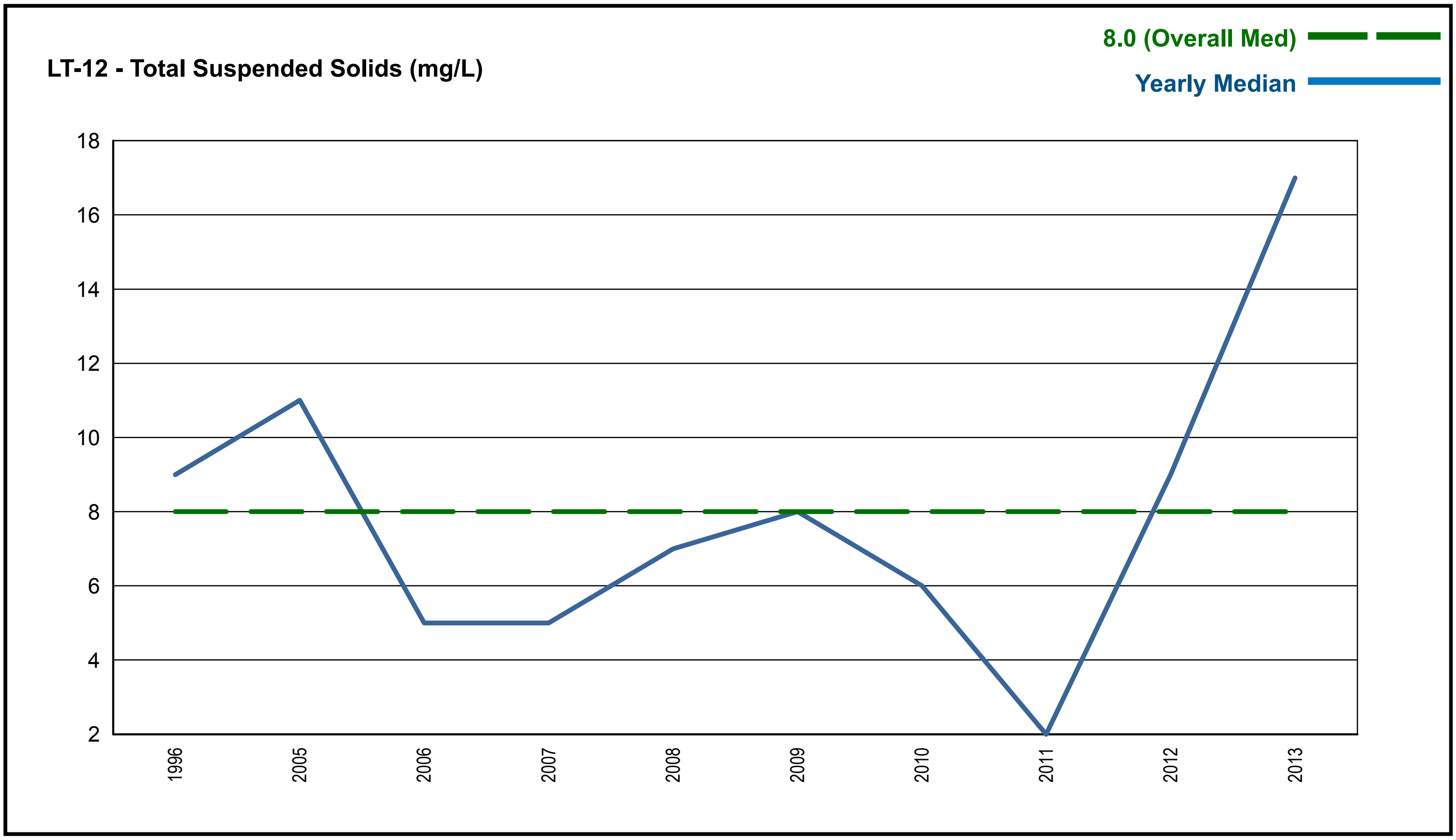
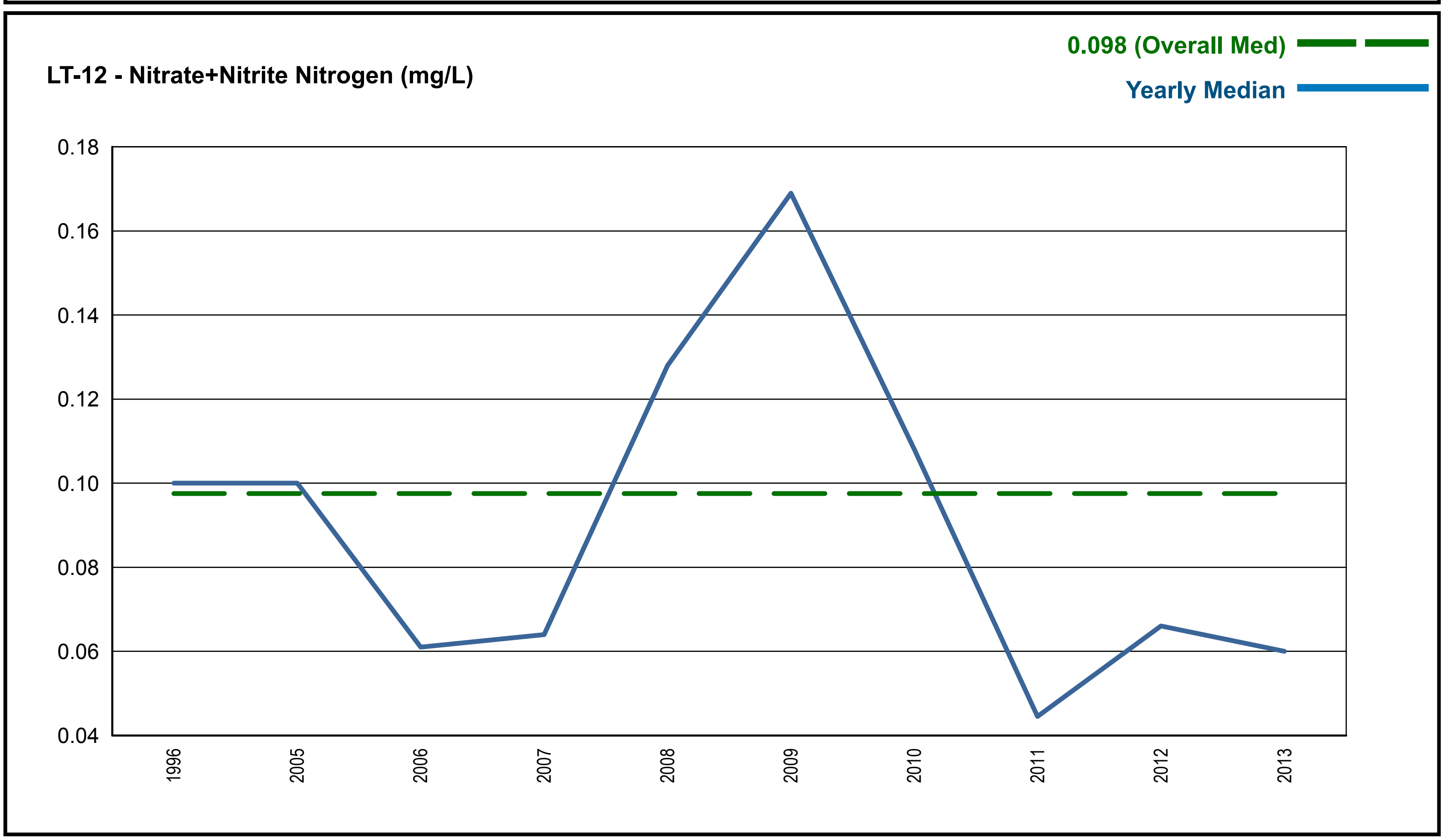




ADEM Ambient Trend Stations - Sampled 1977 - 2014





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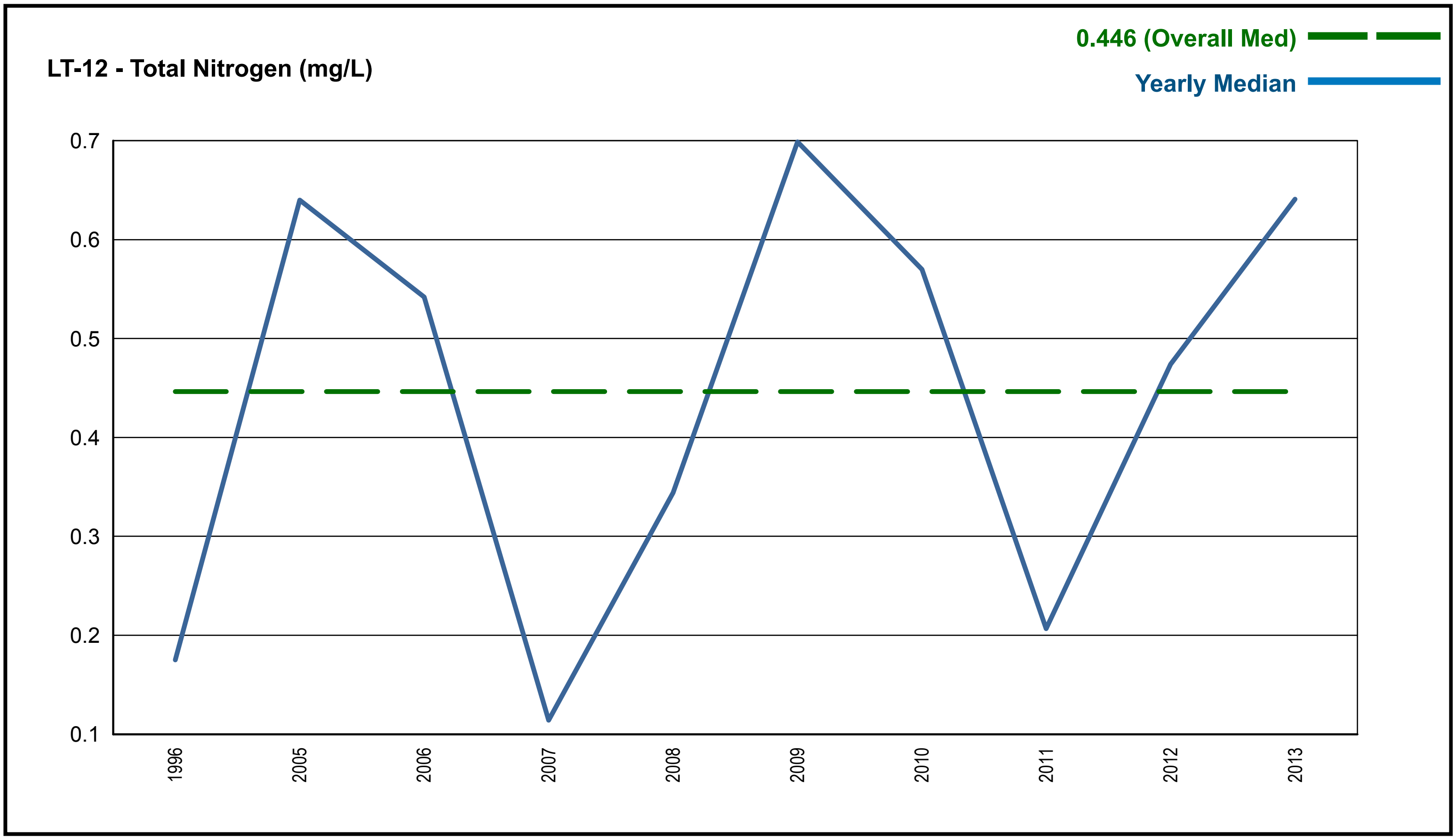

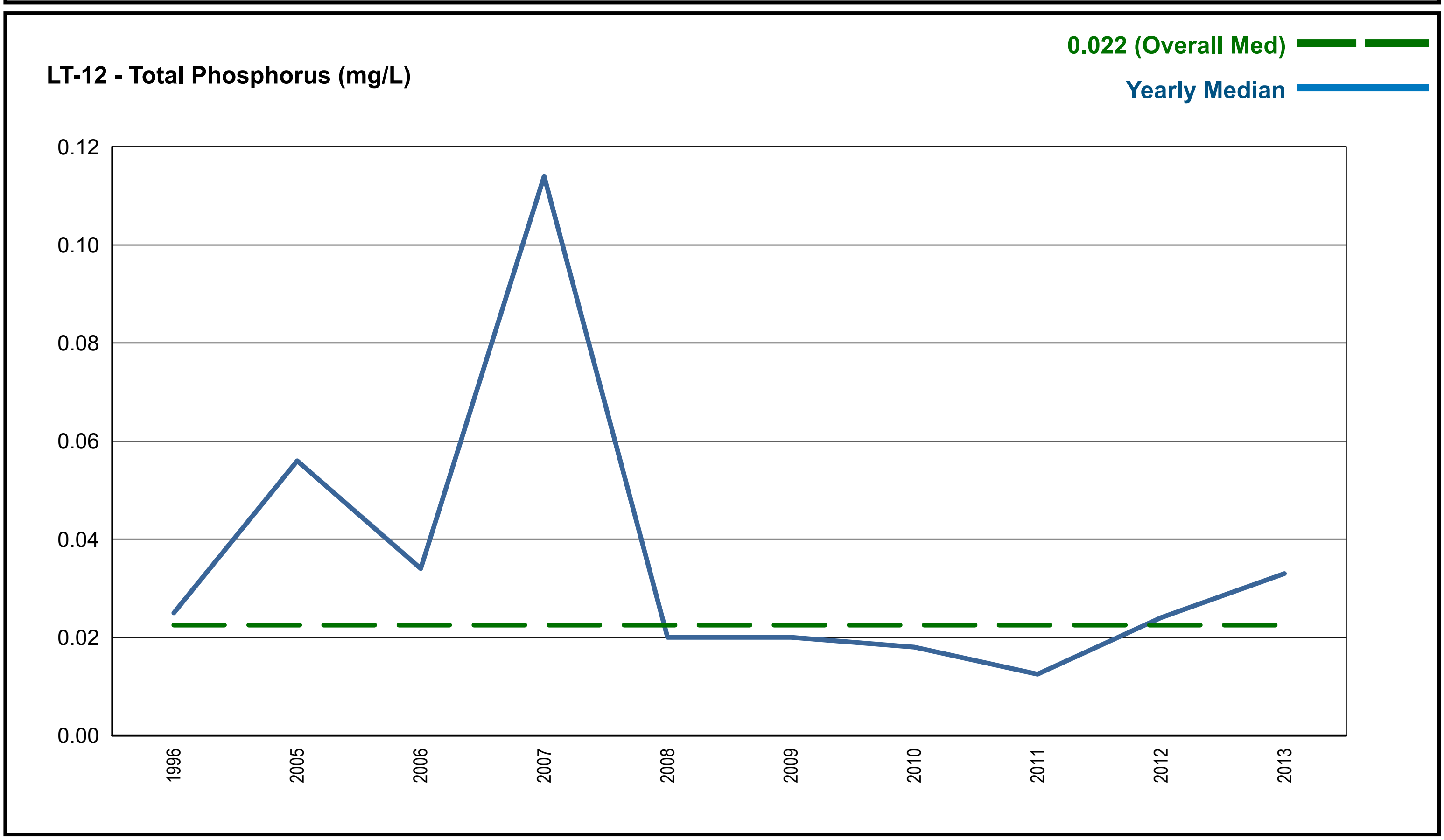

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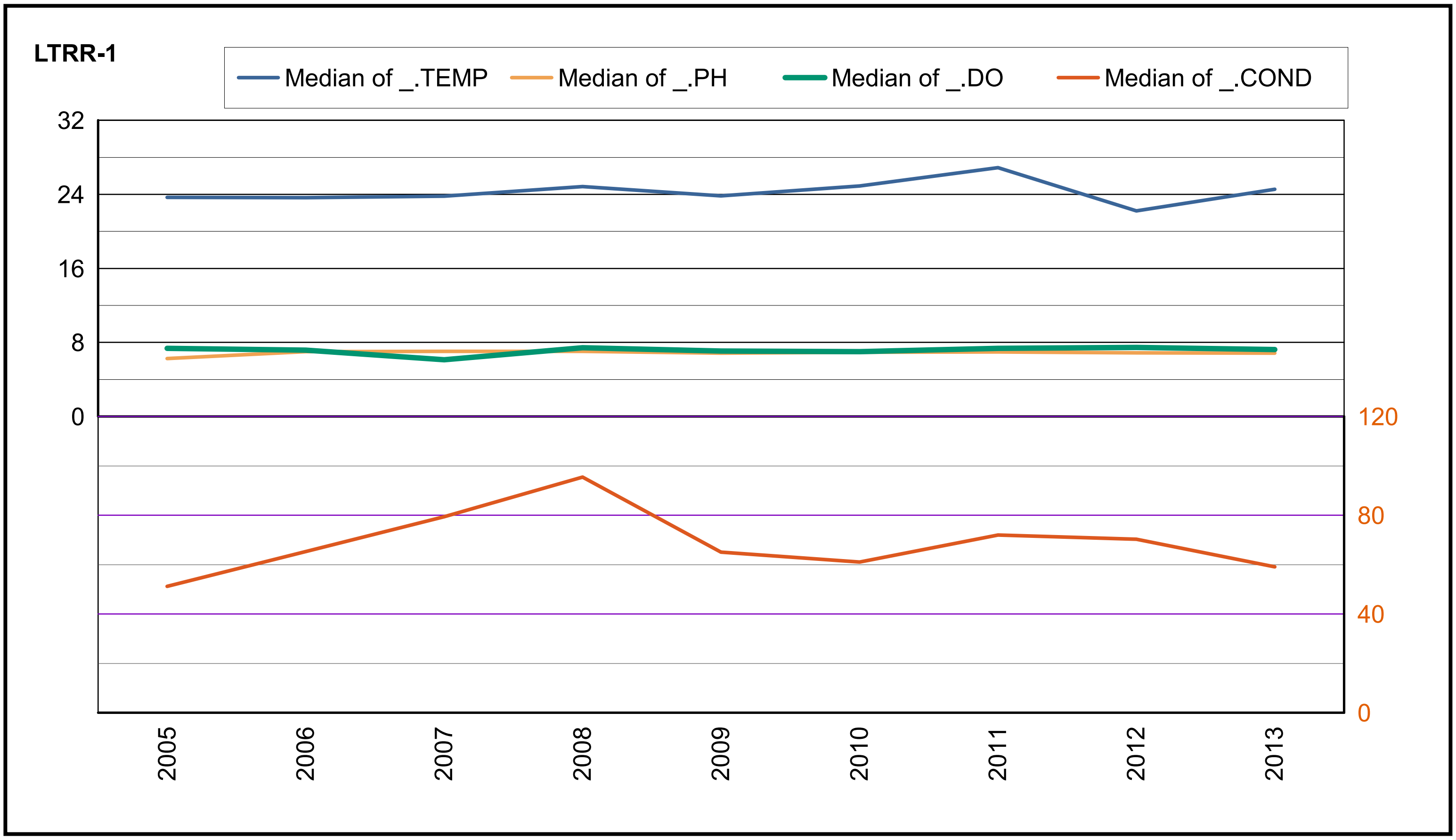

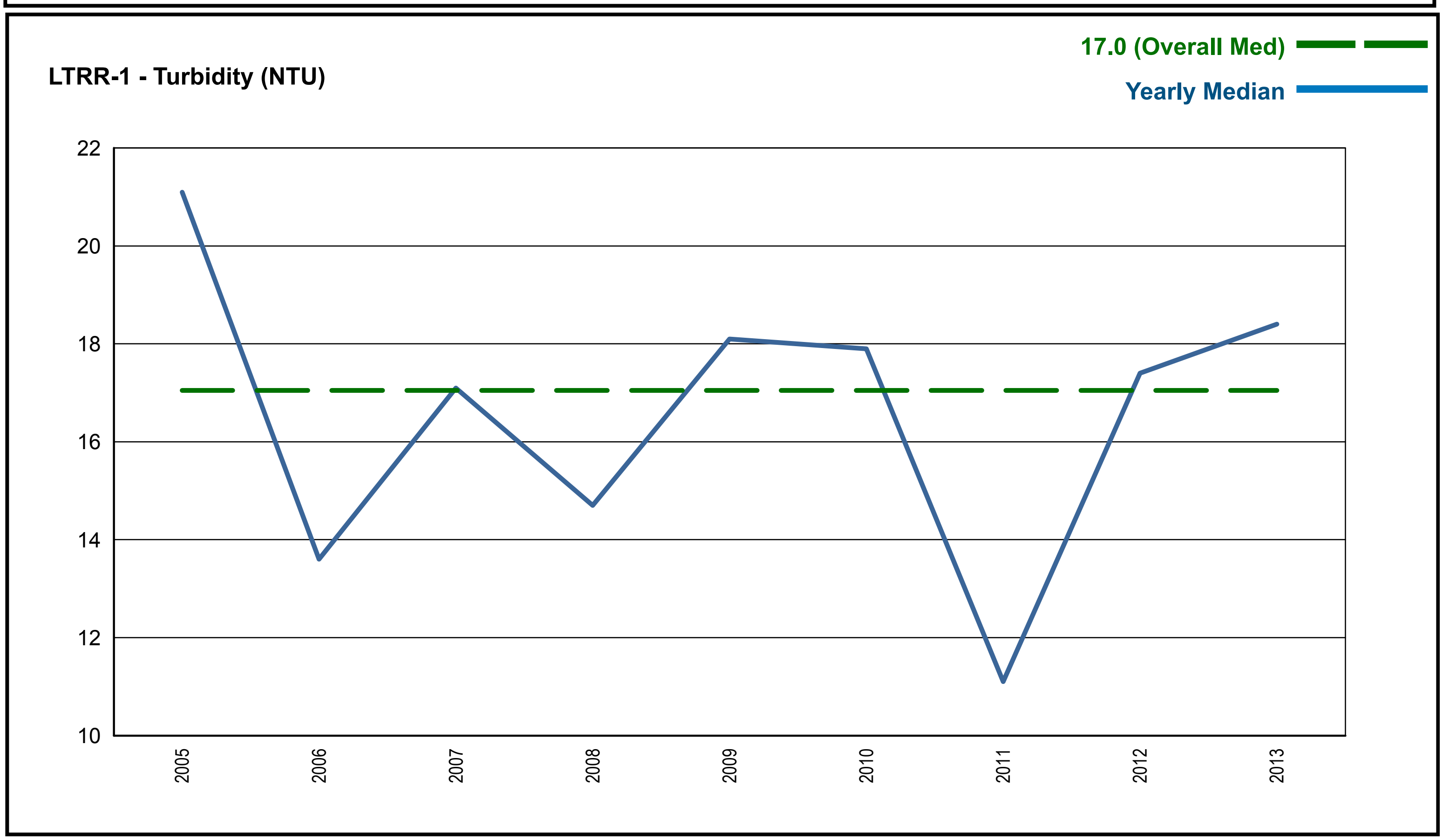

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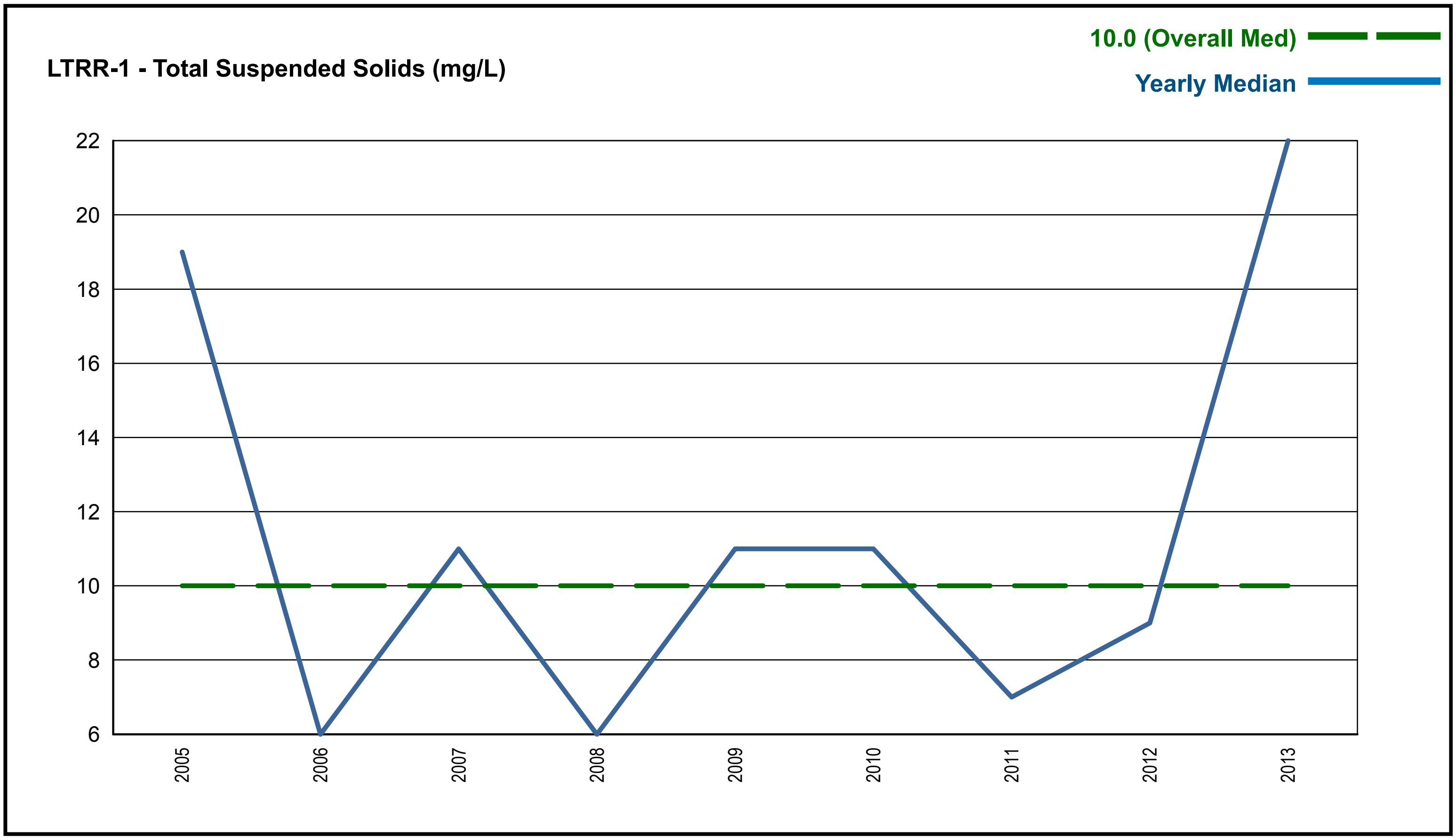

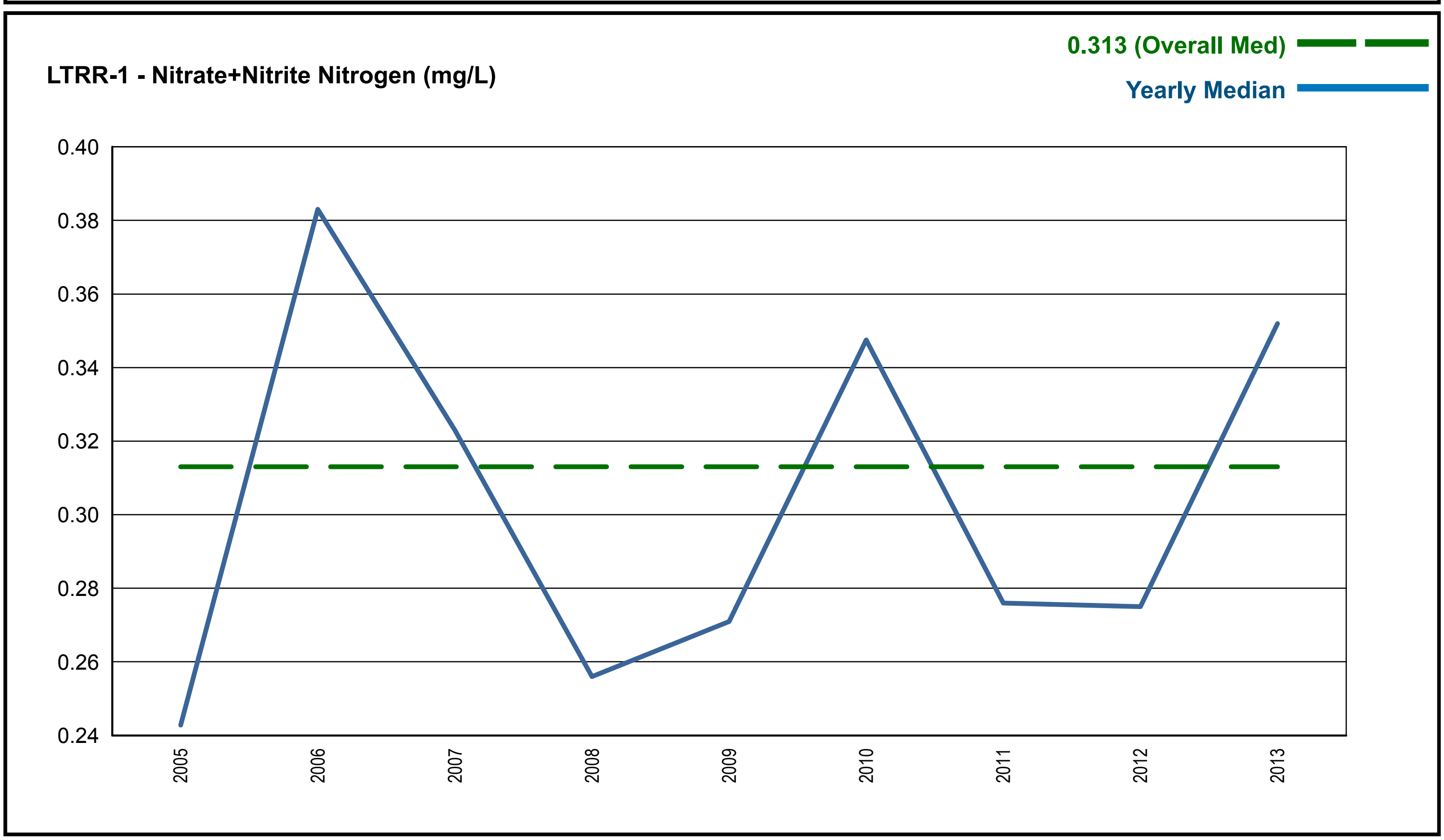

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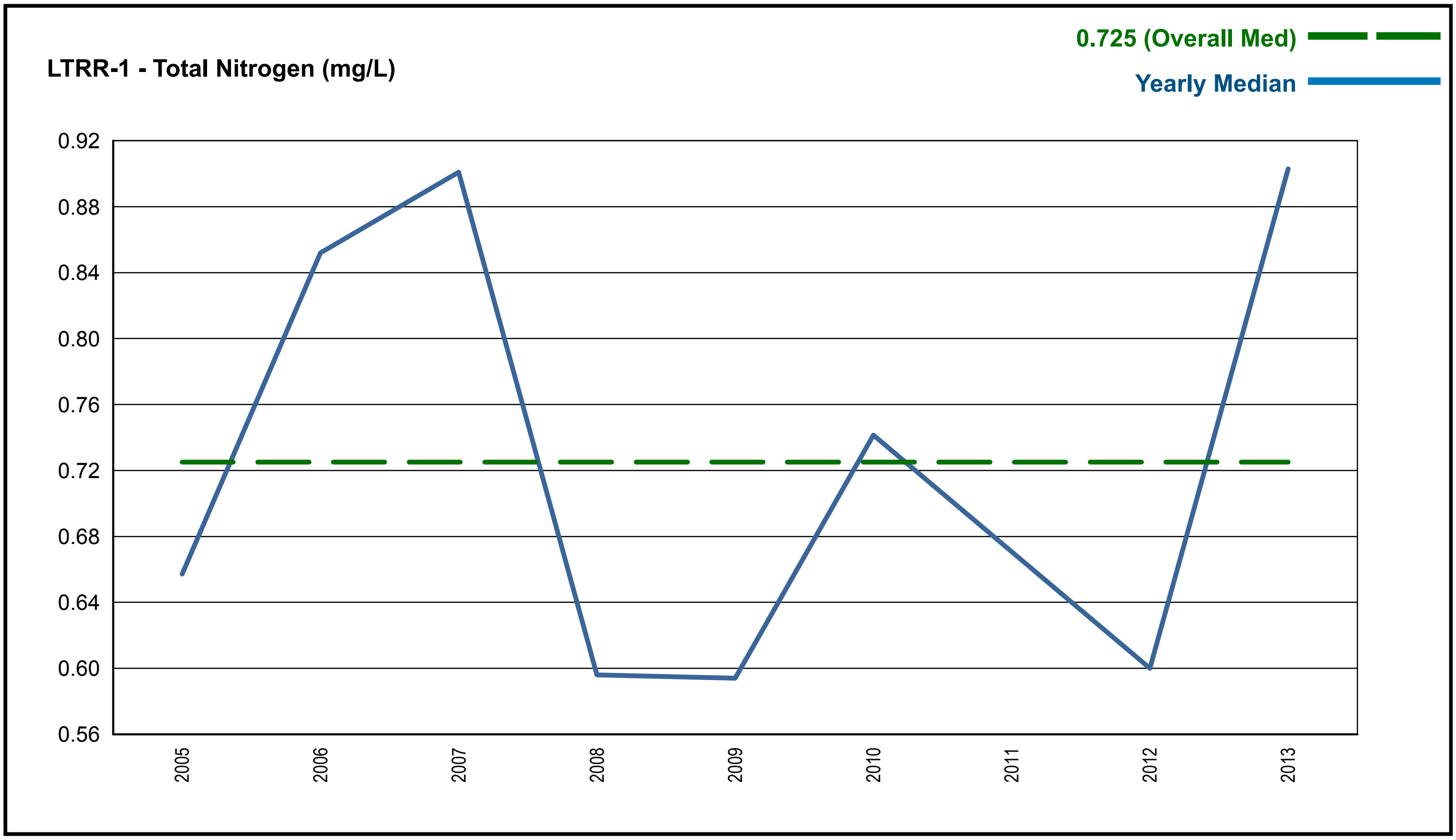

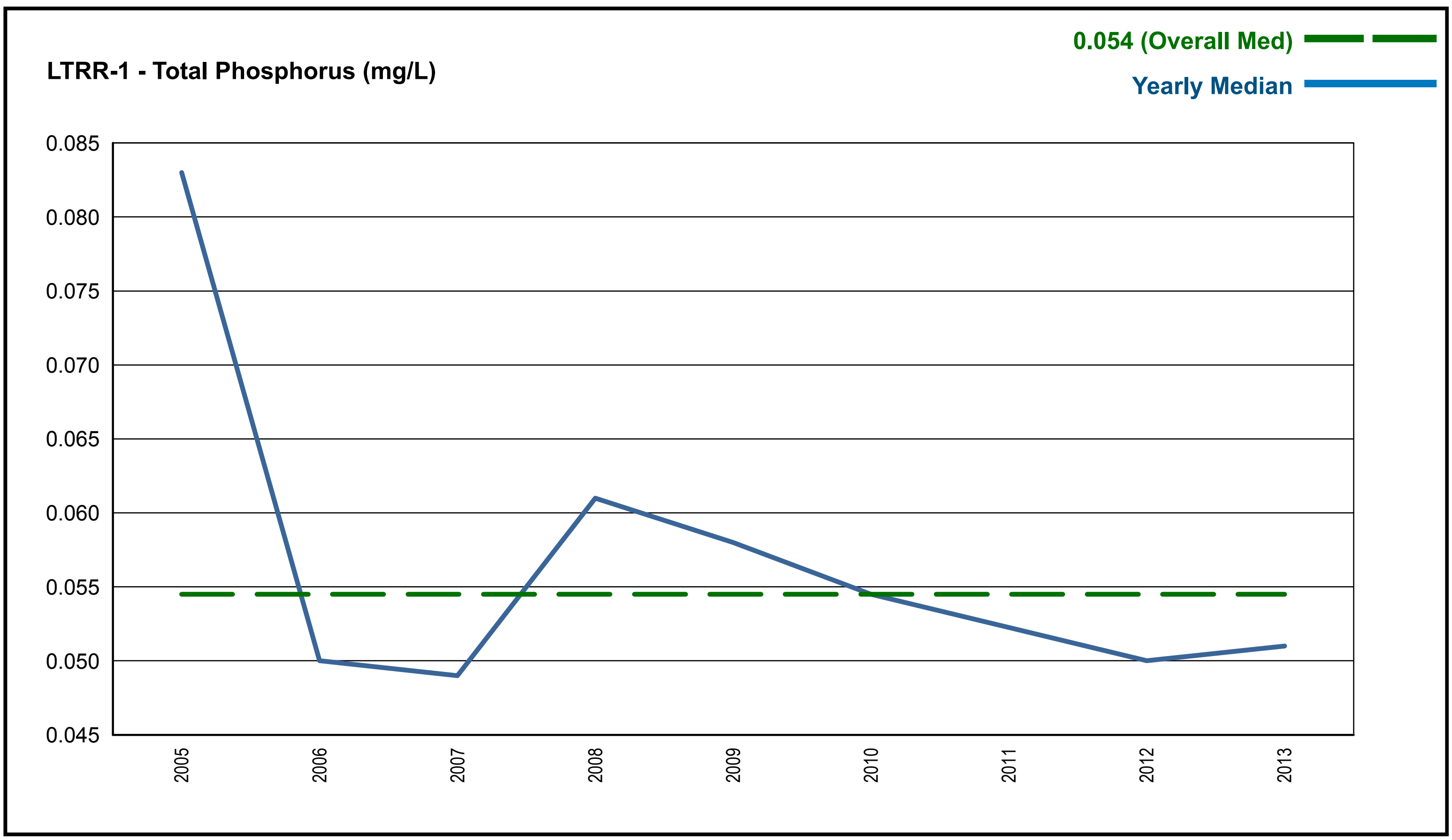

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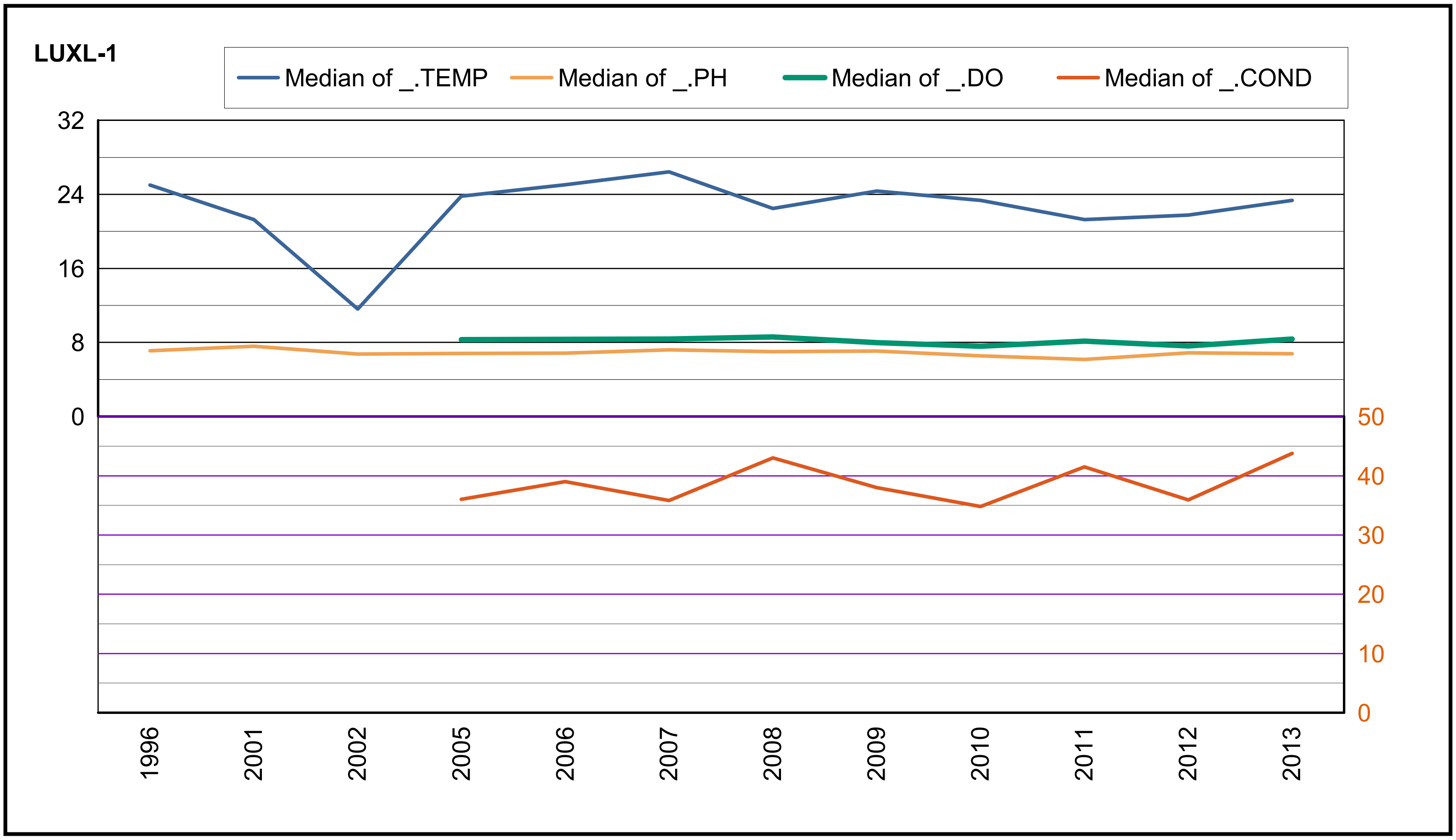

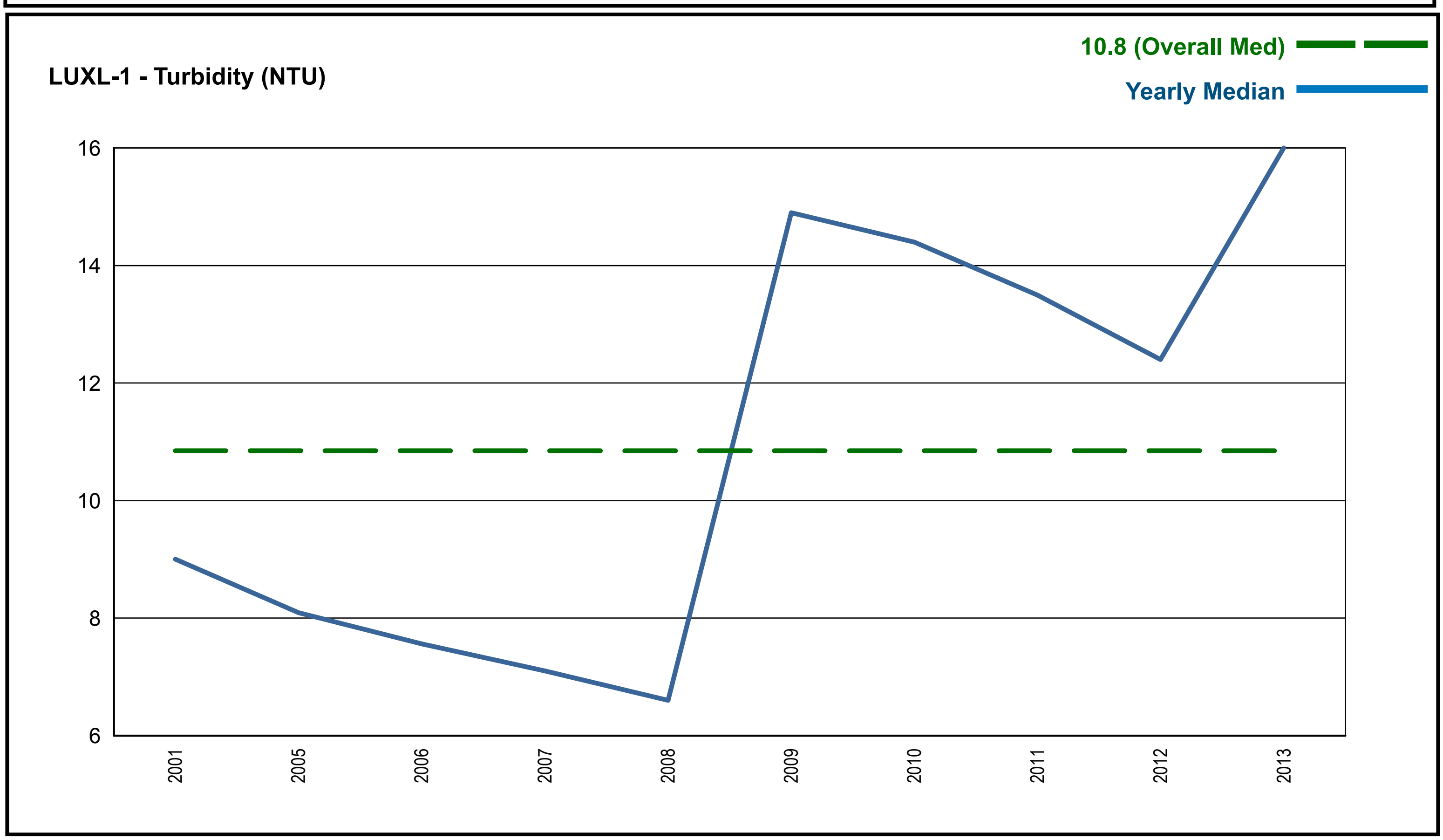

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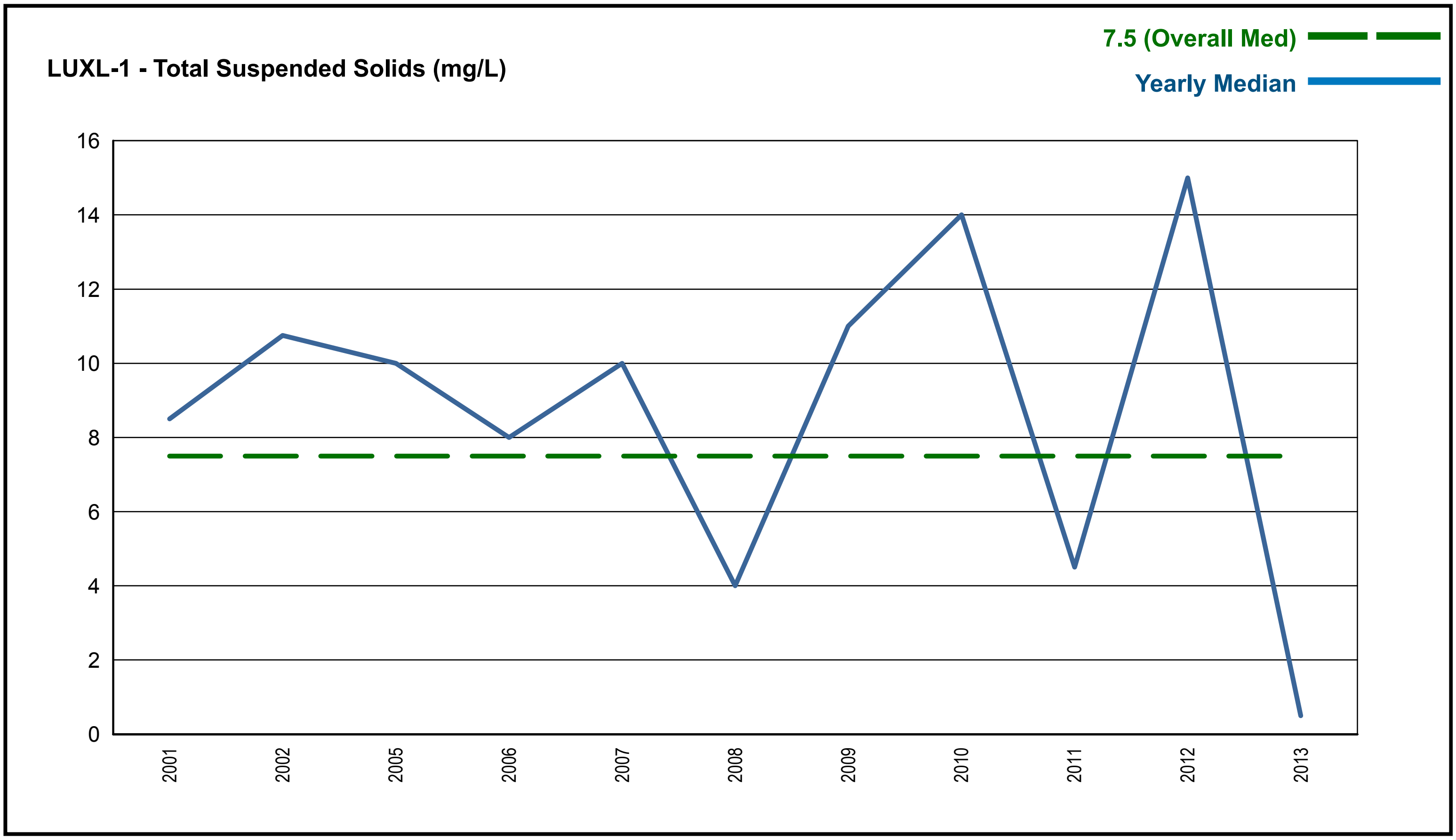

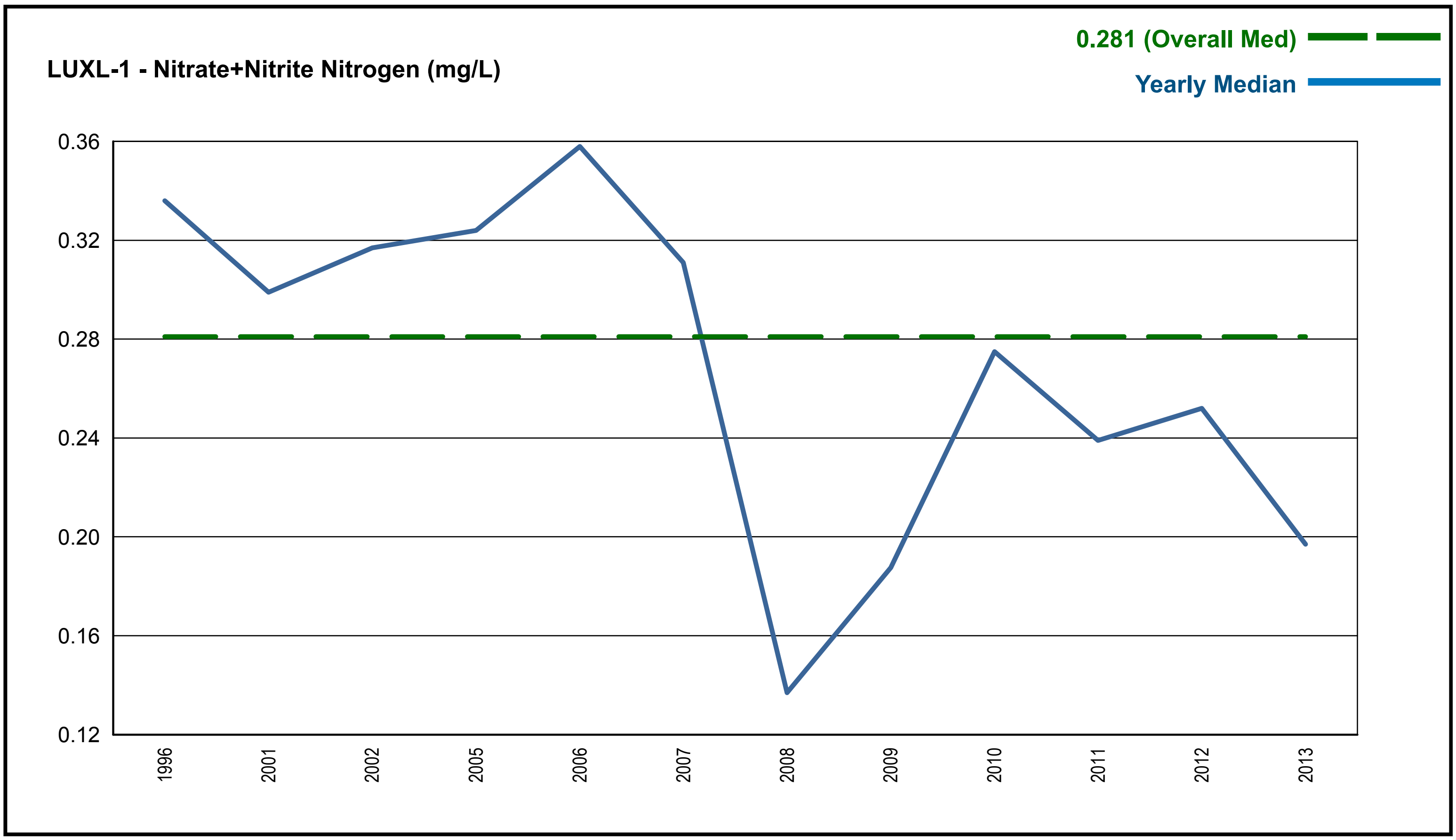

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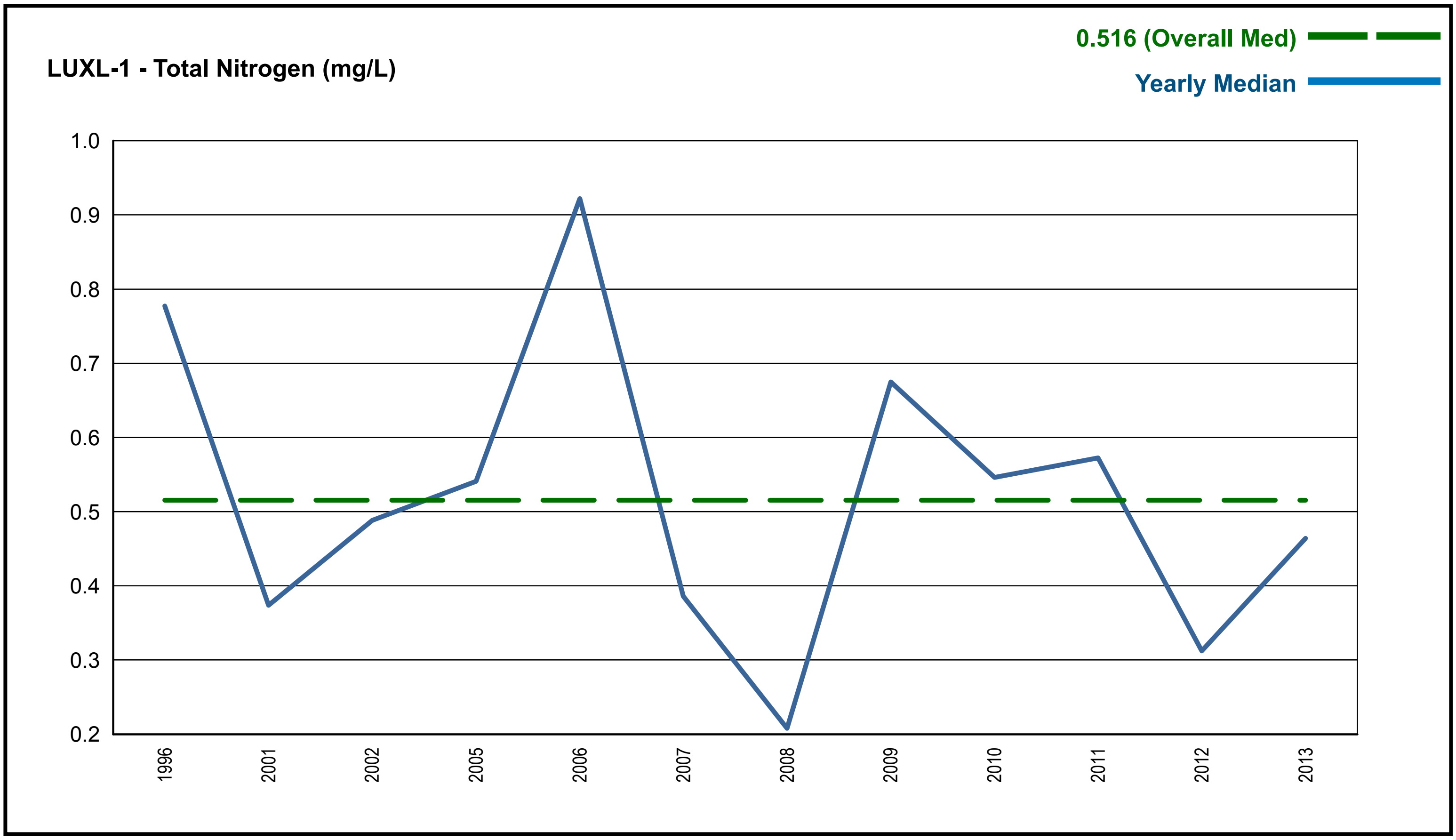

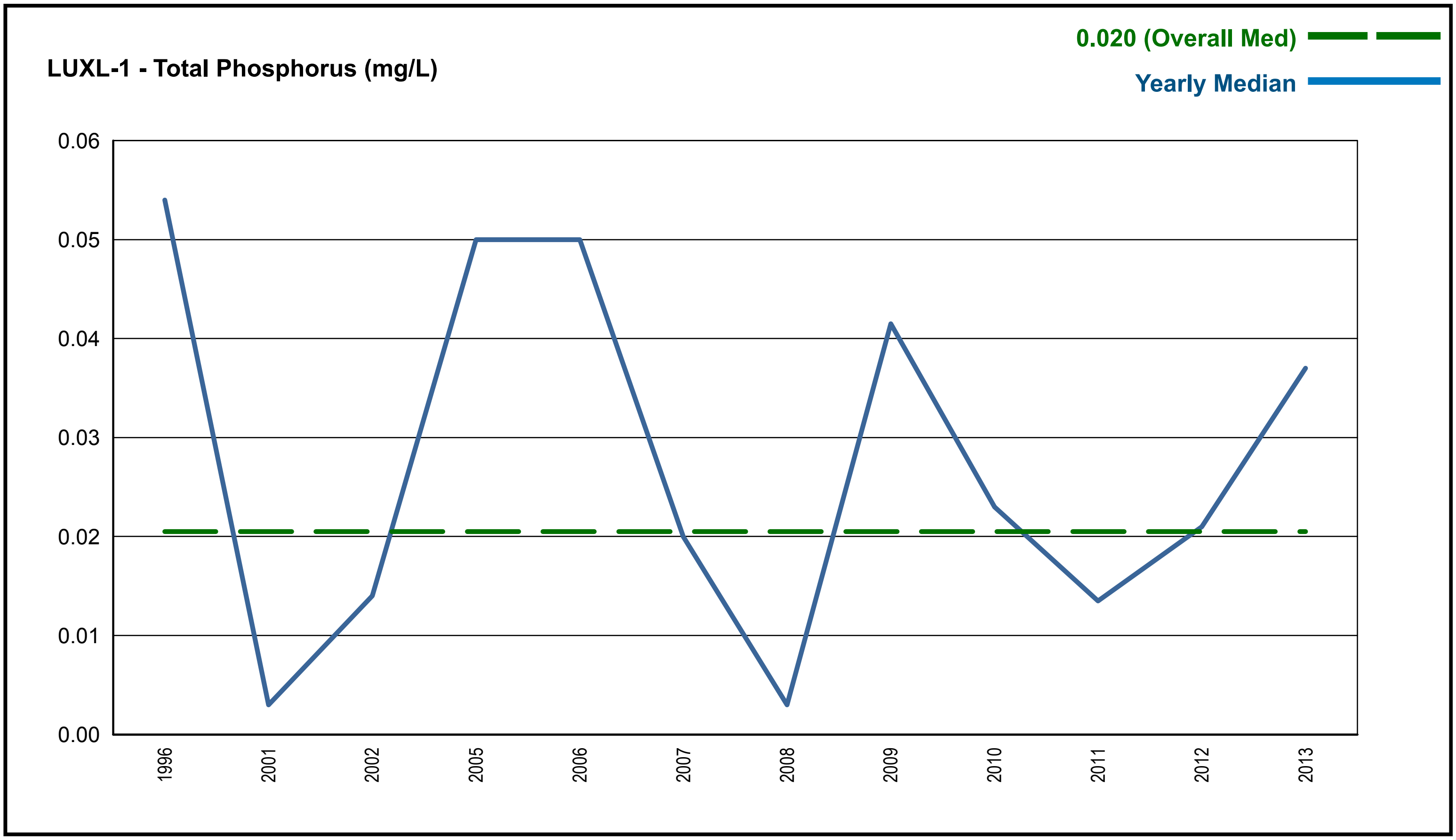

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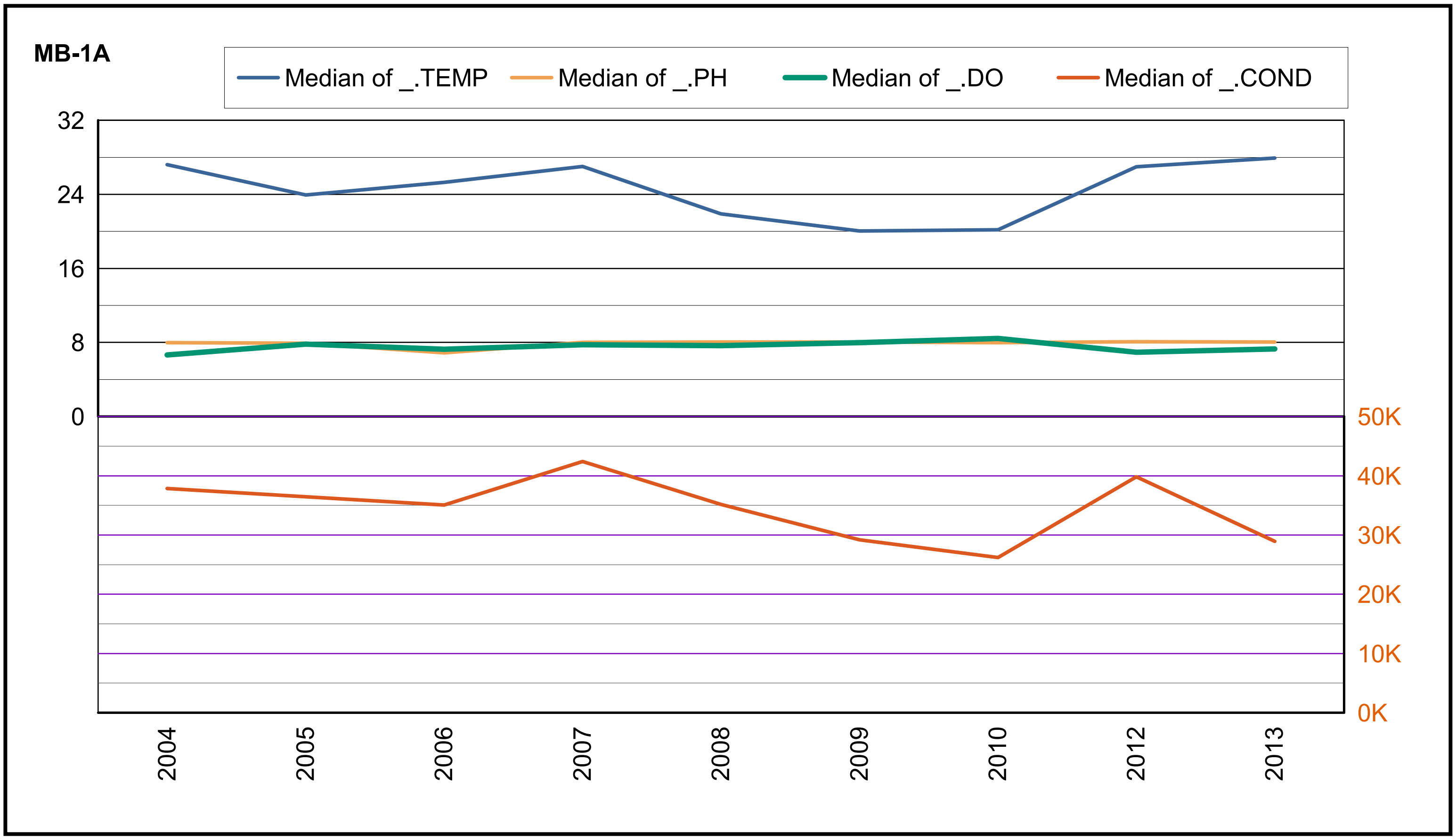

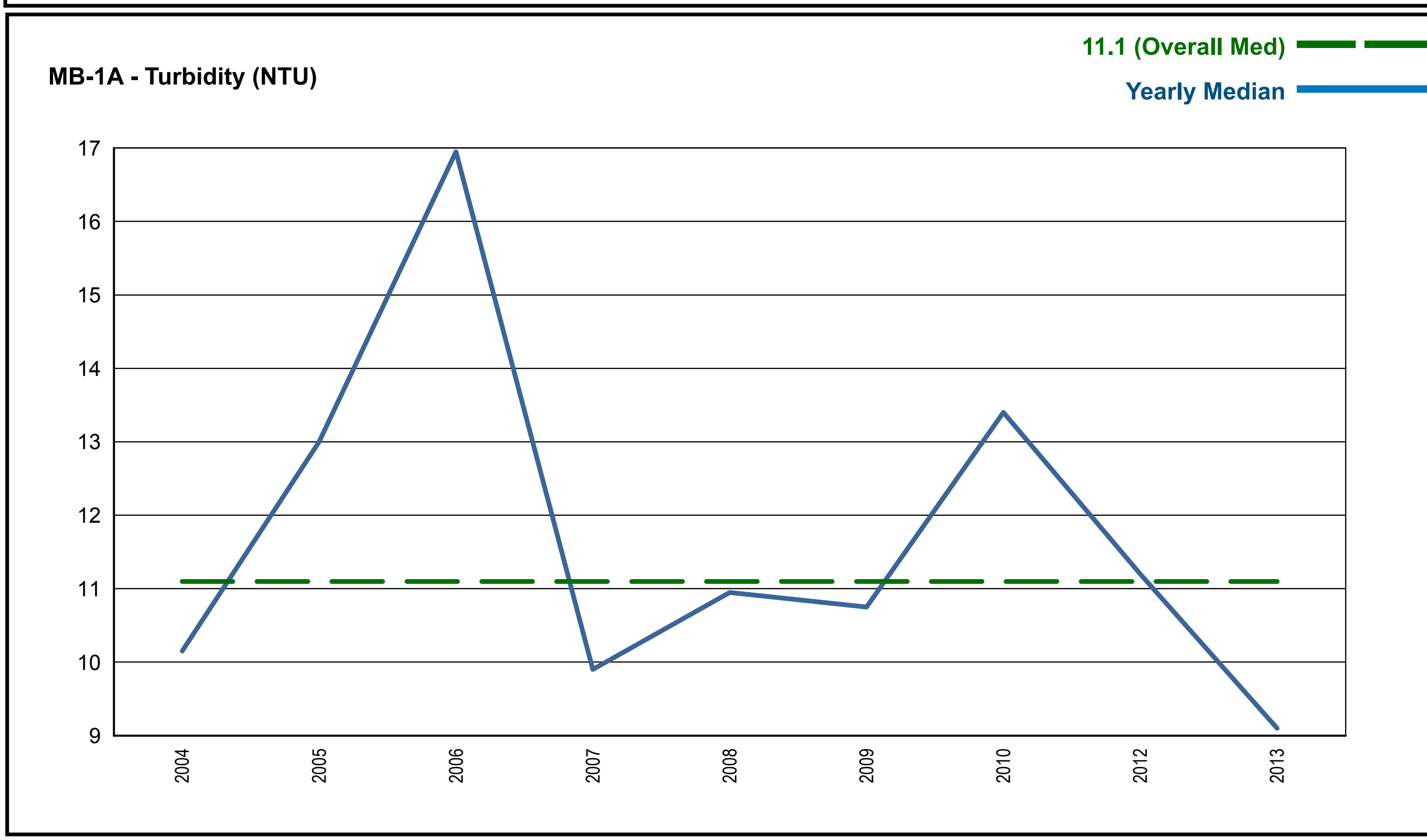

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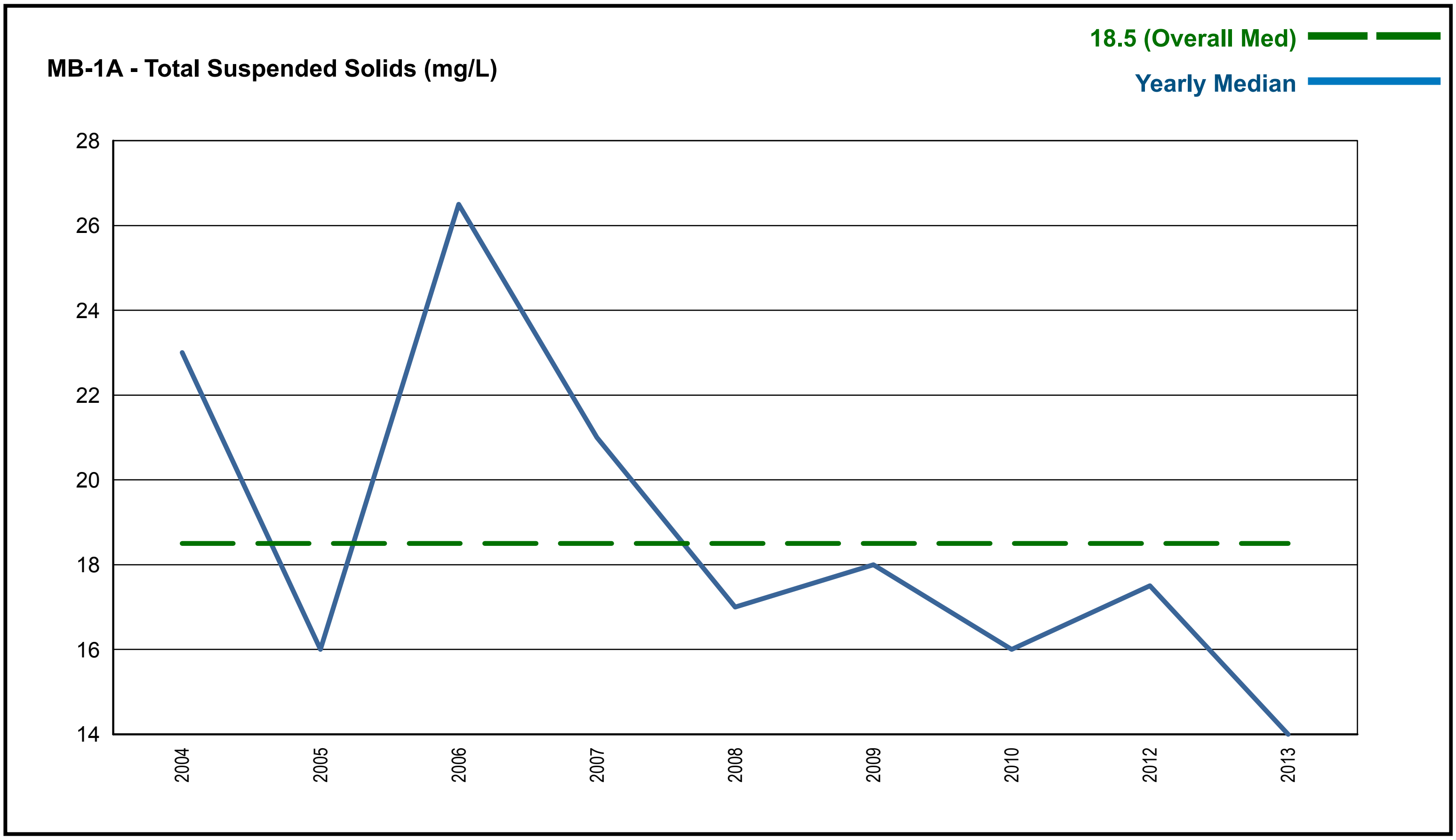

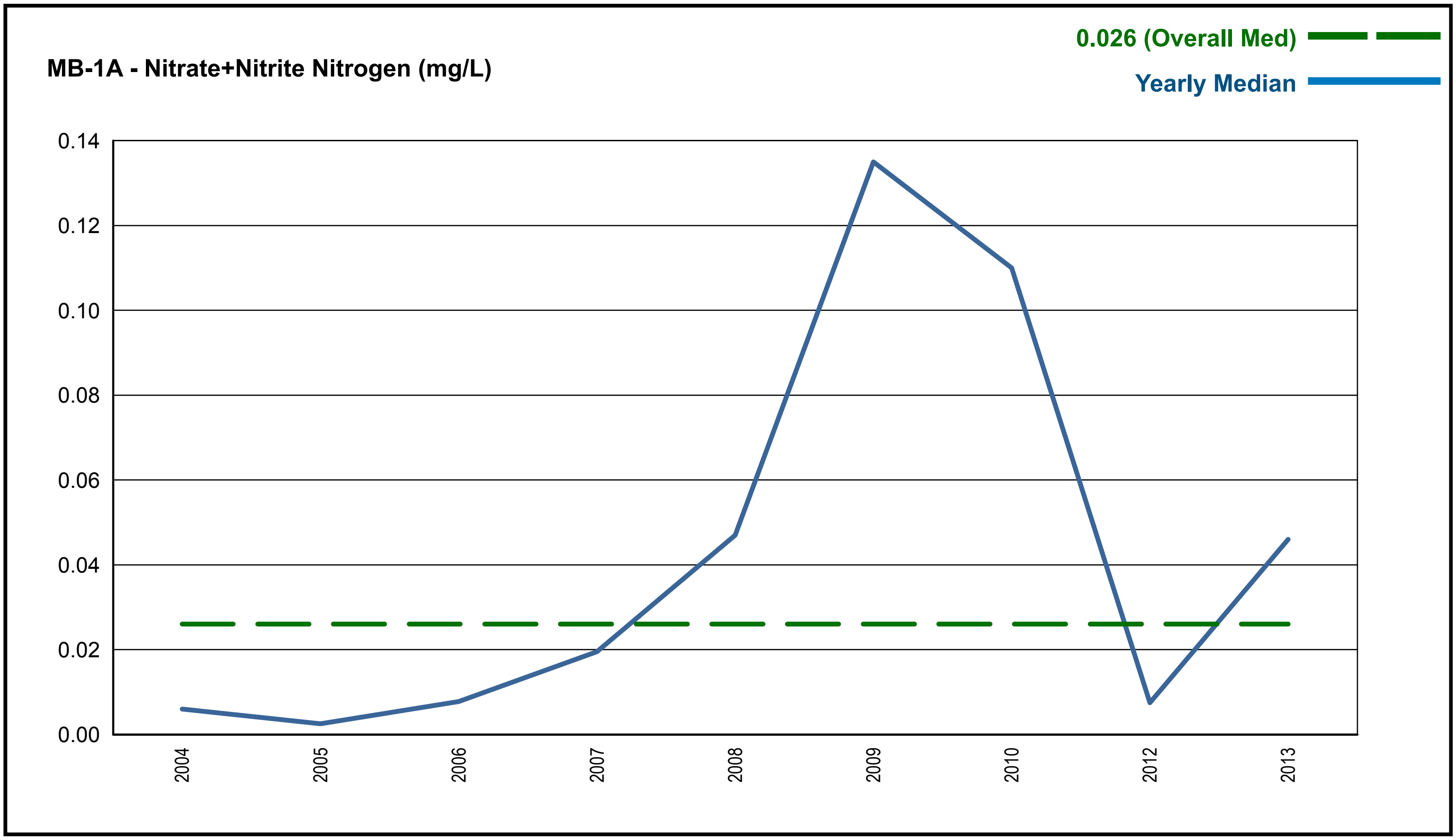

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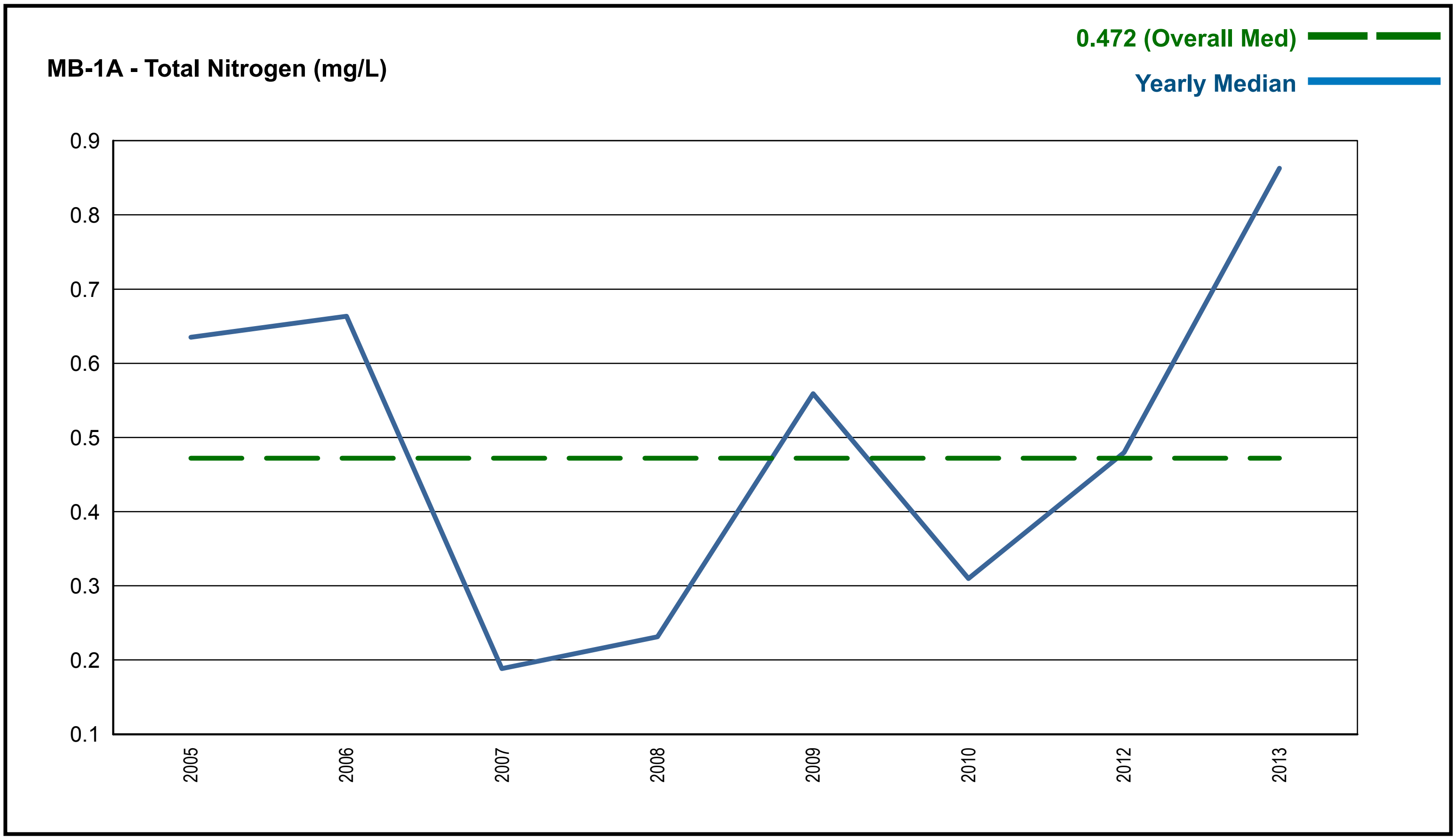

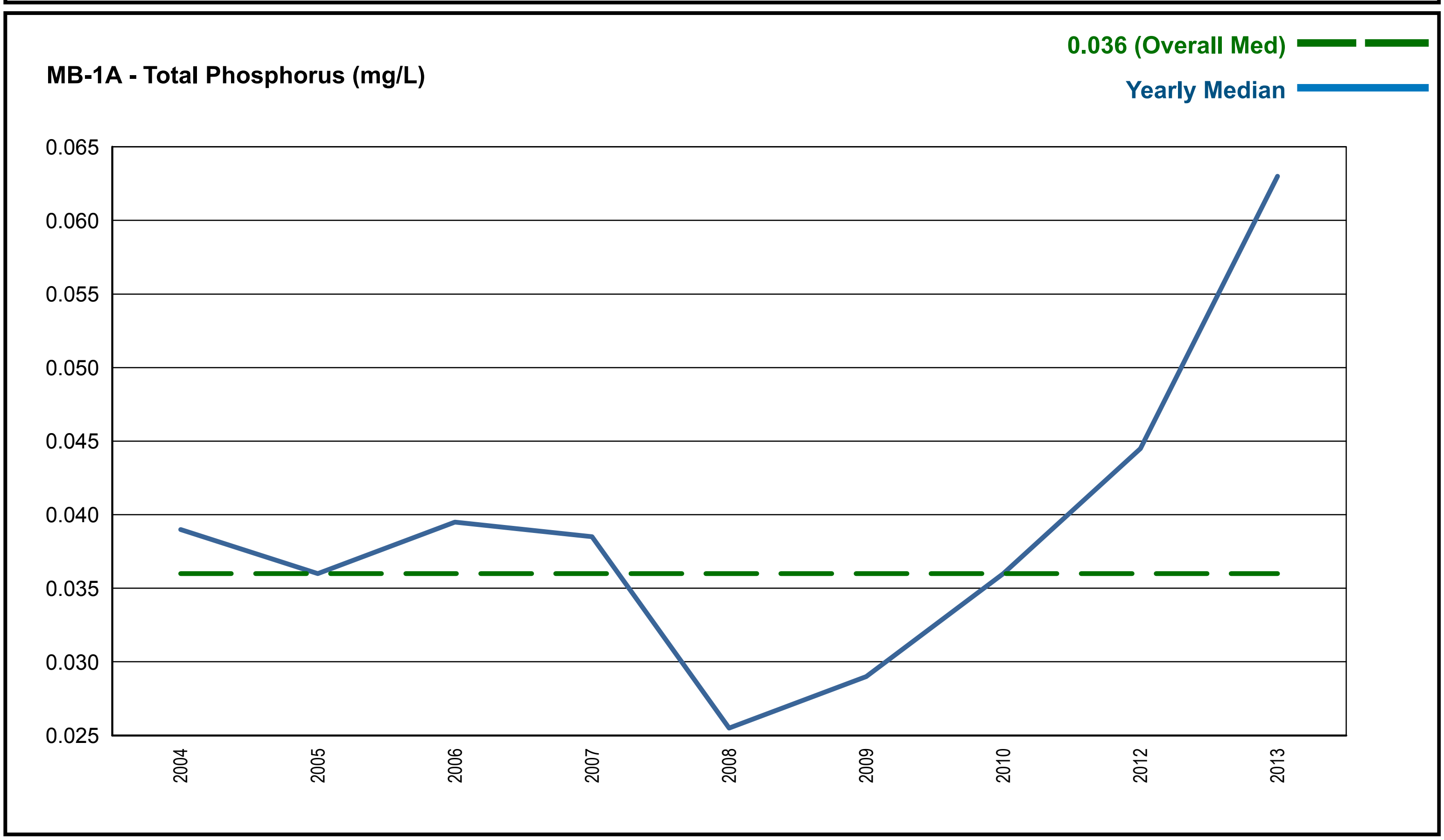

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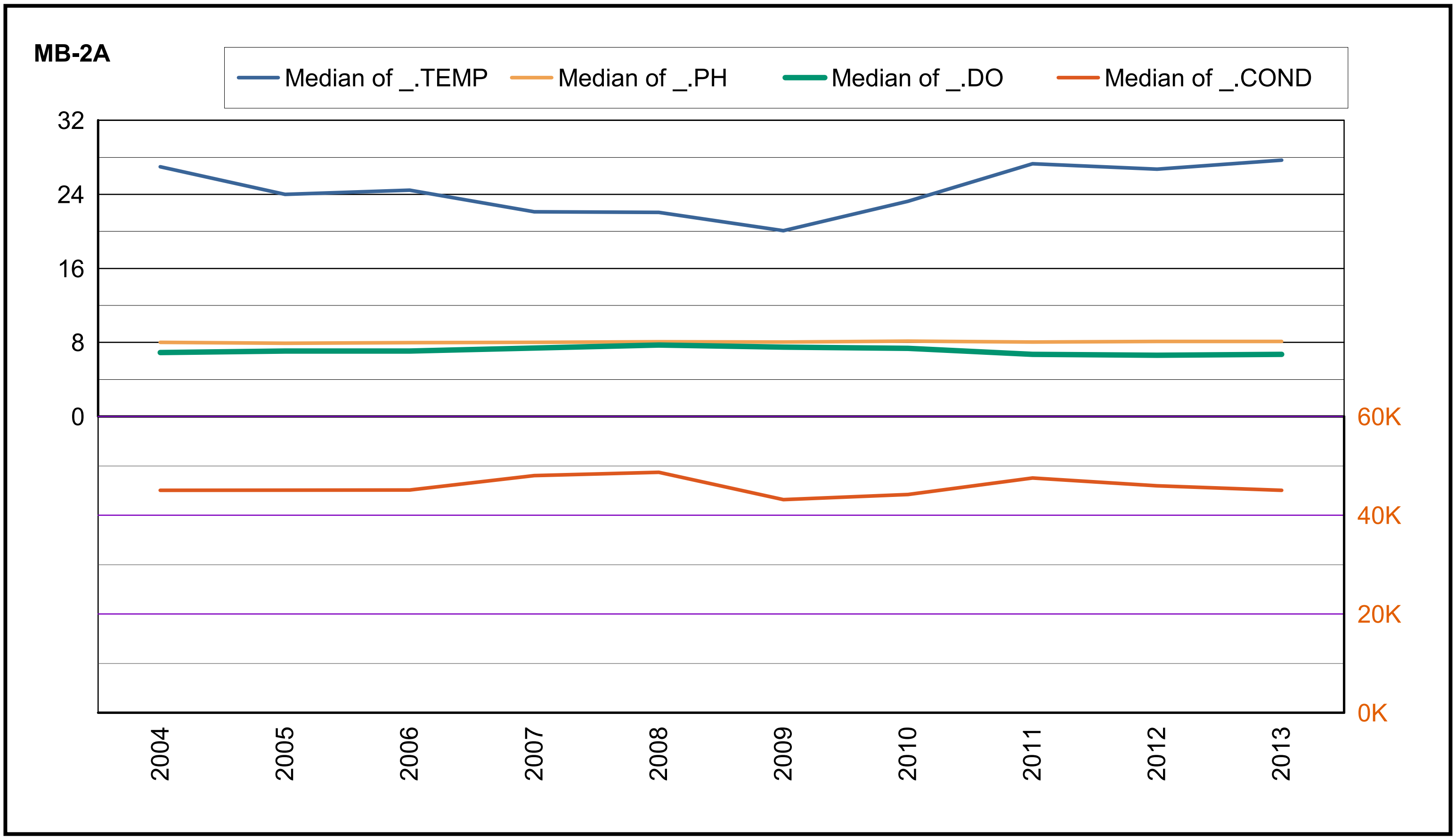

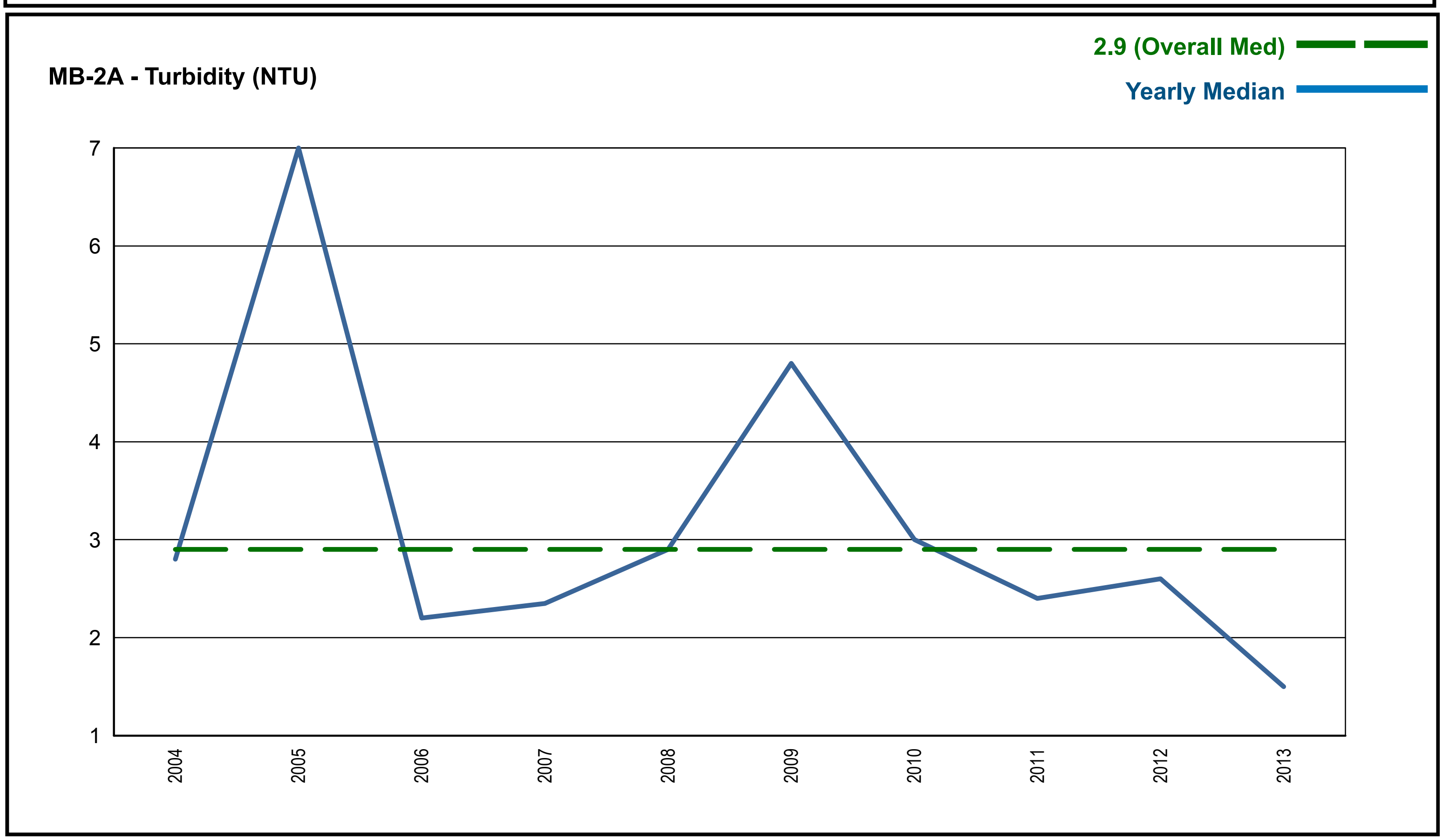

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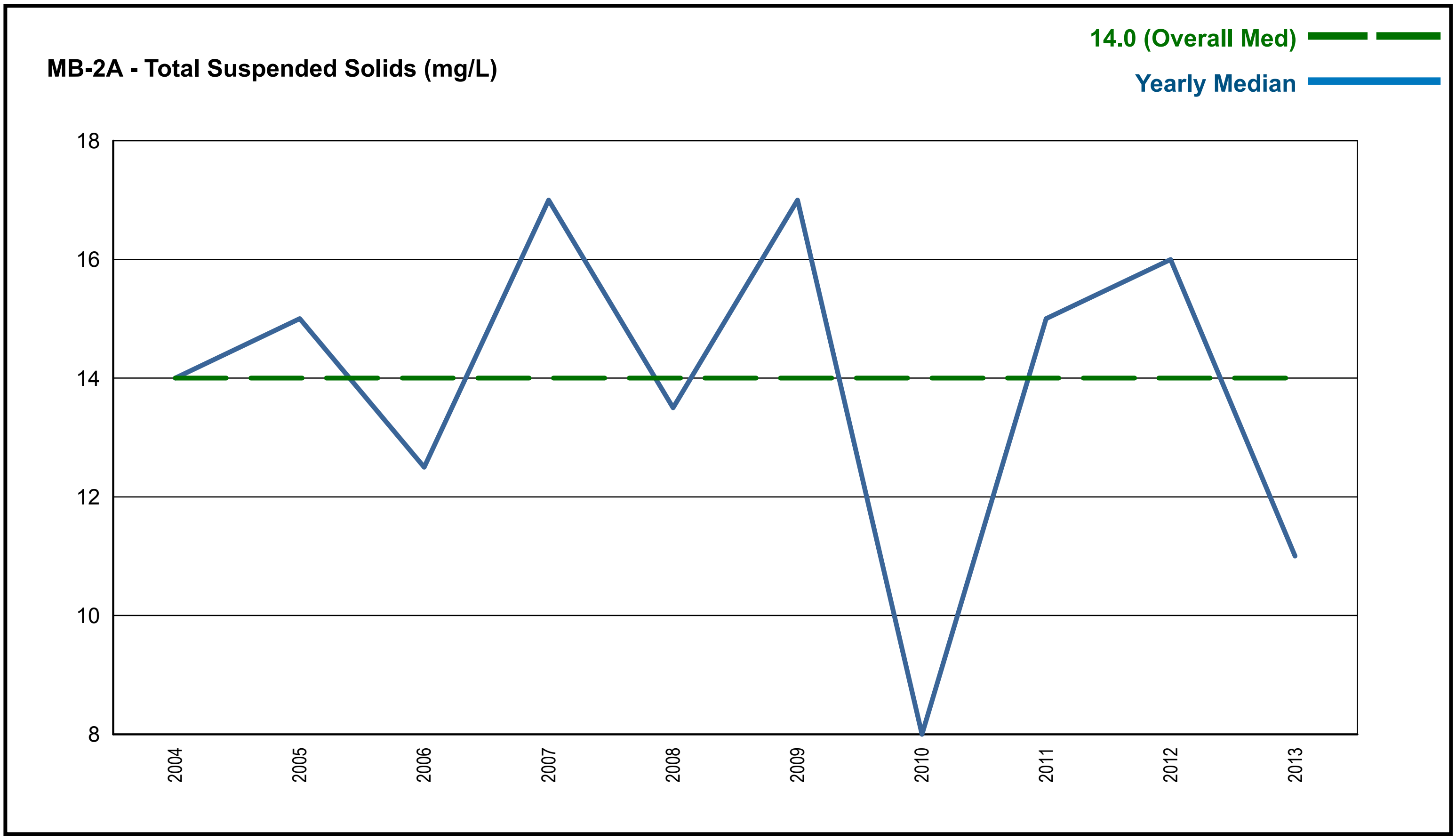

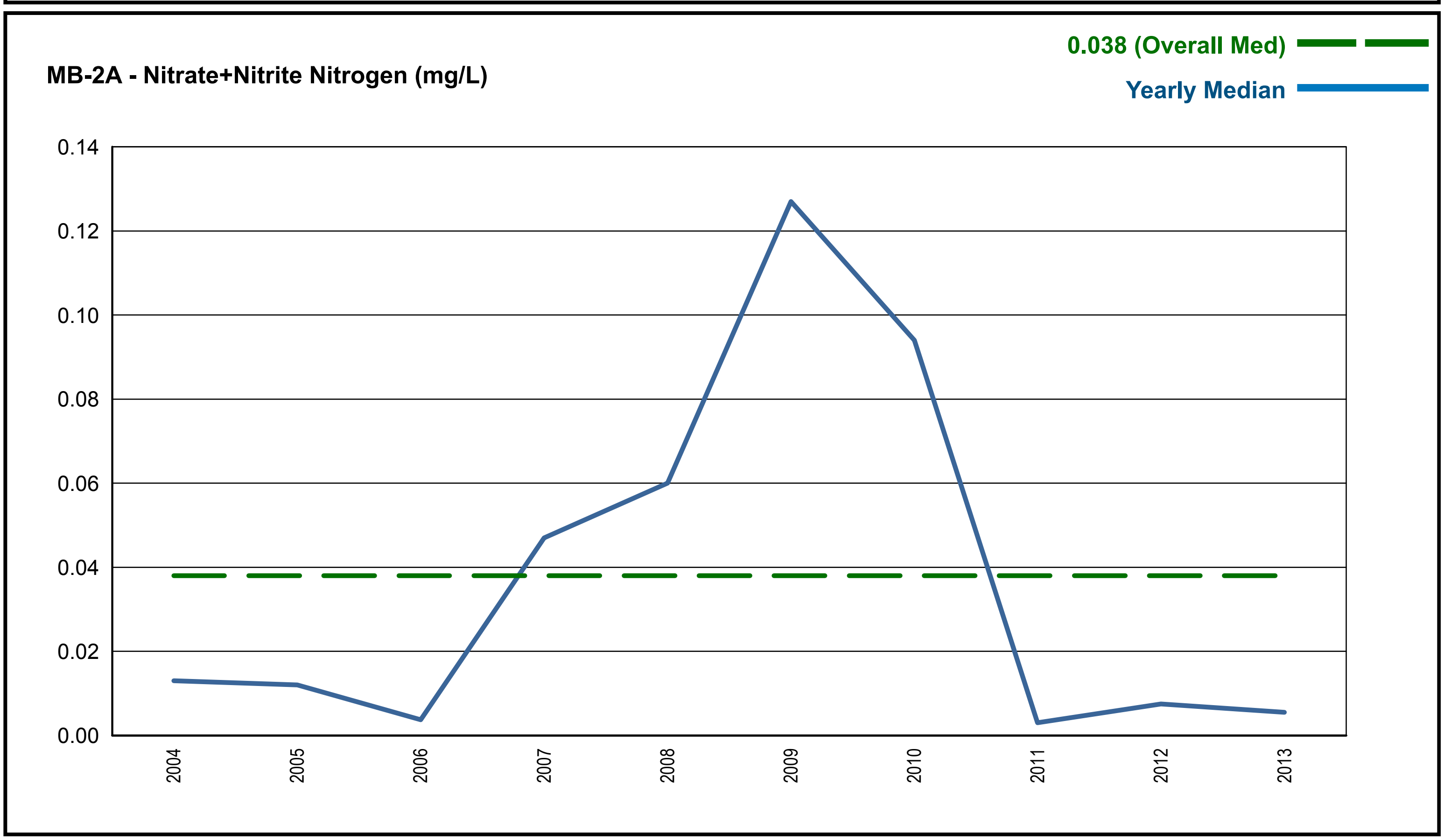

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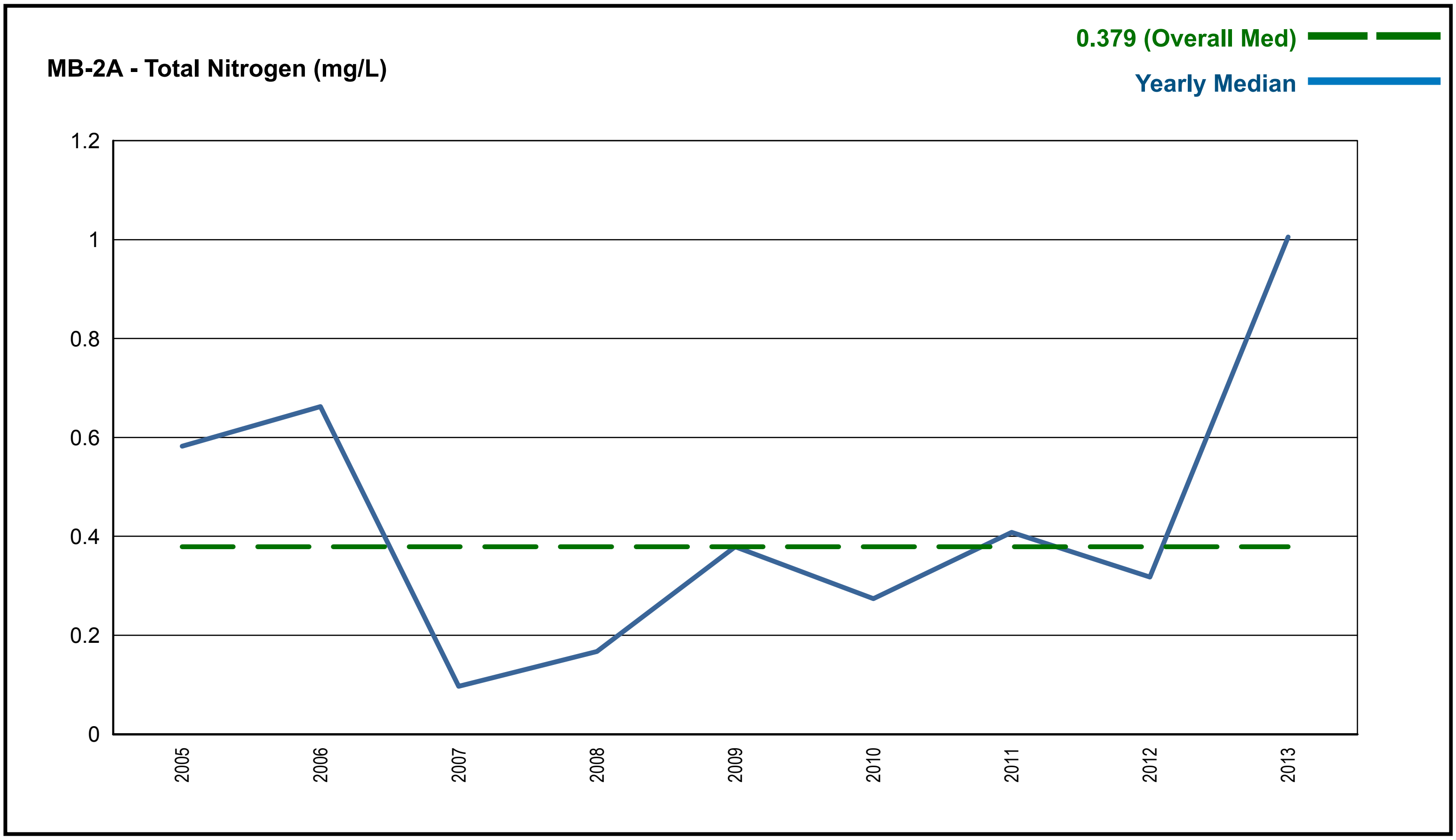

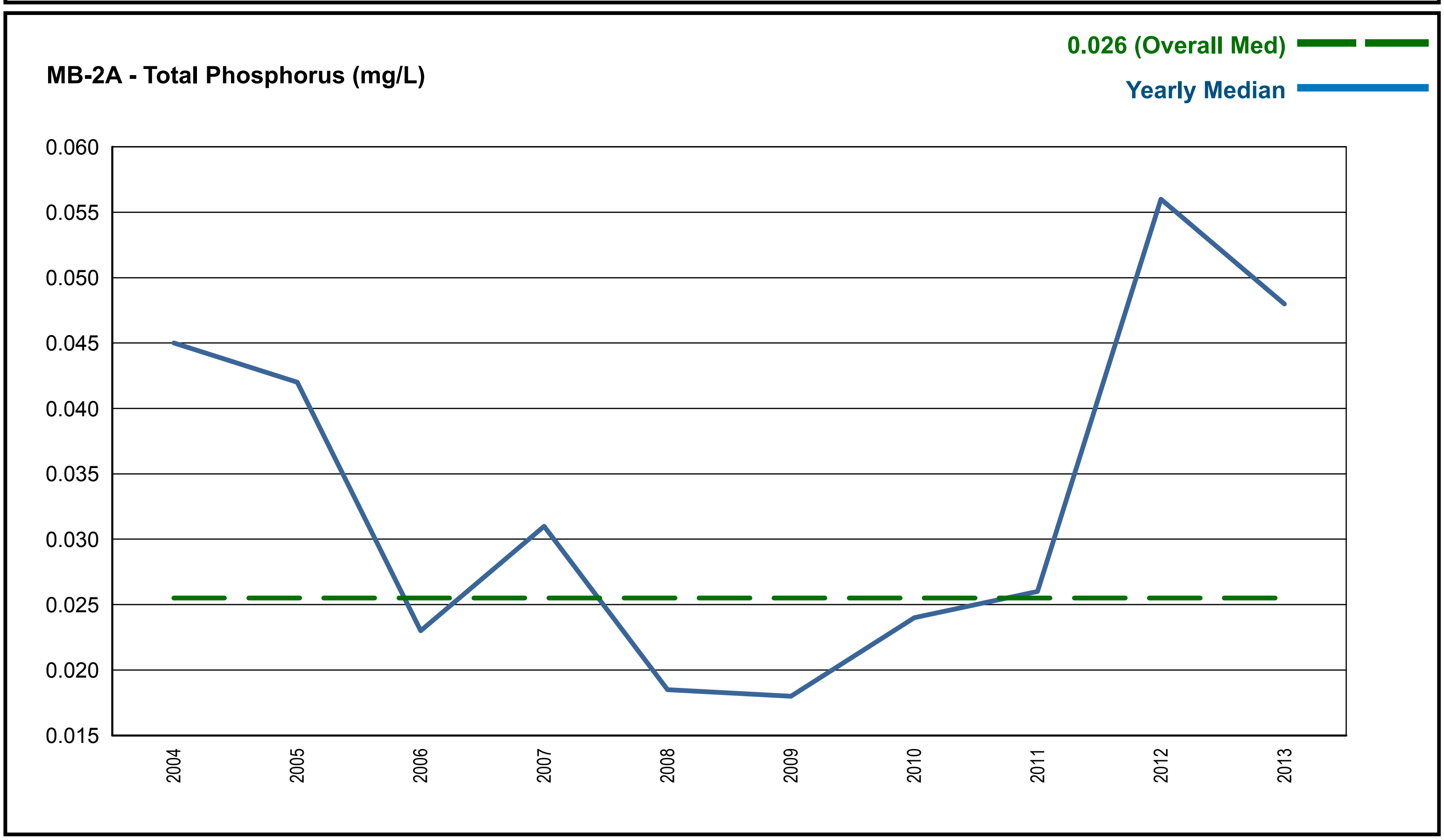

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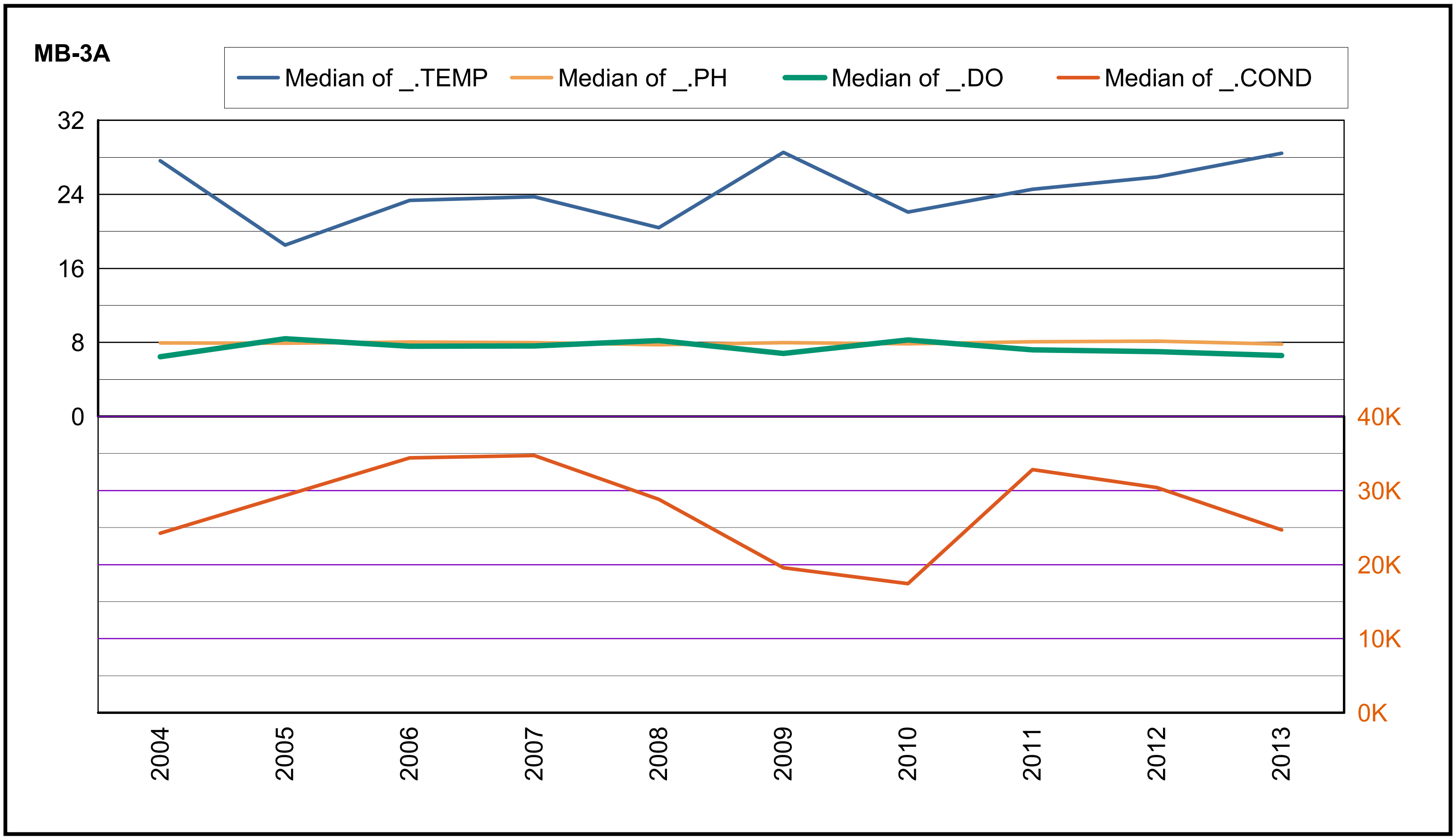

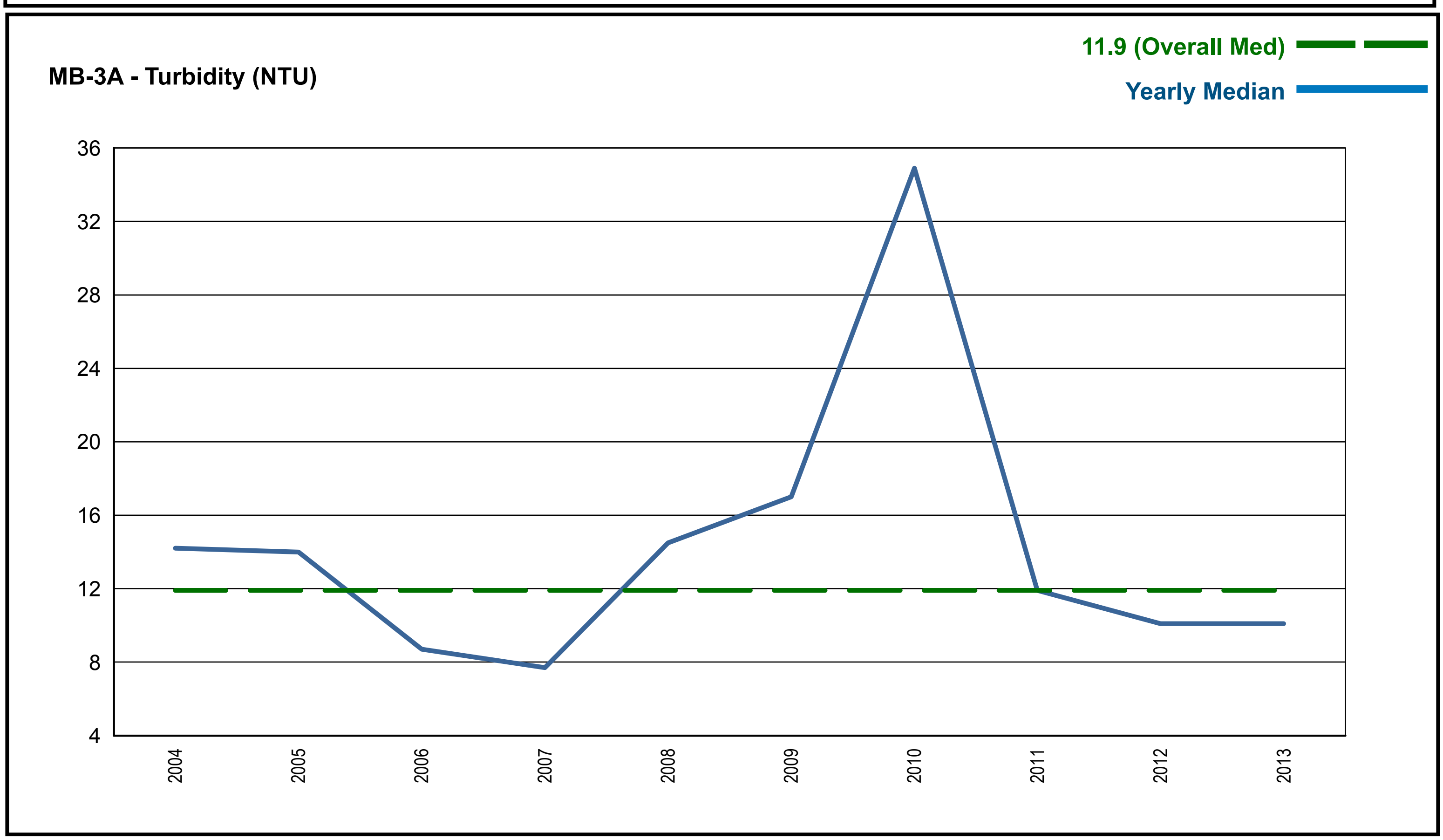

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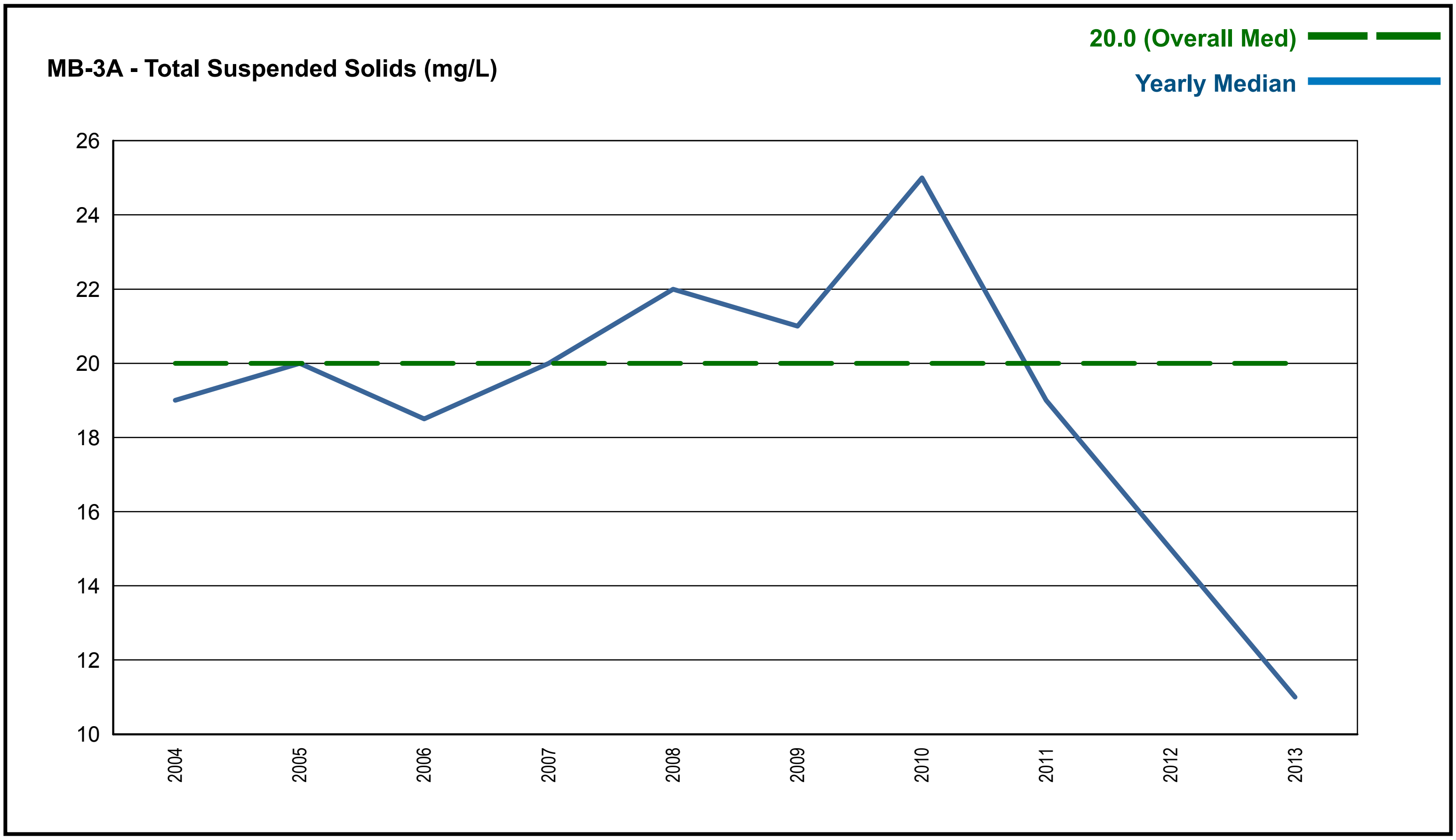

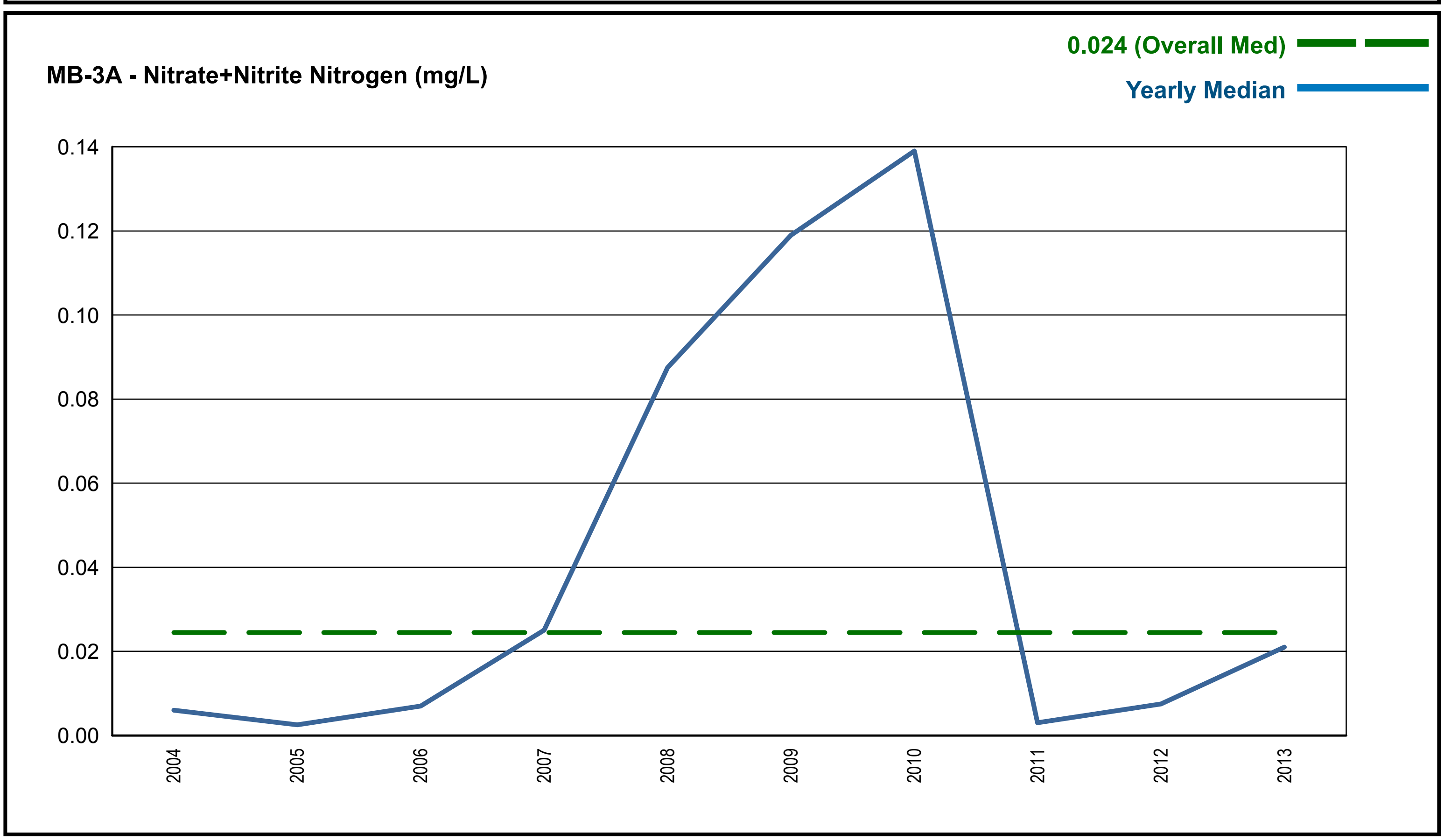

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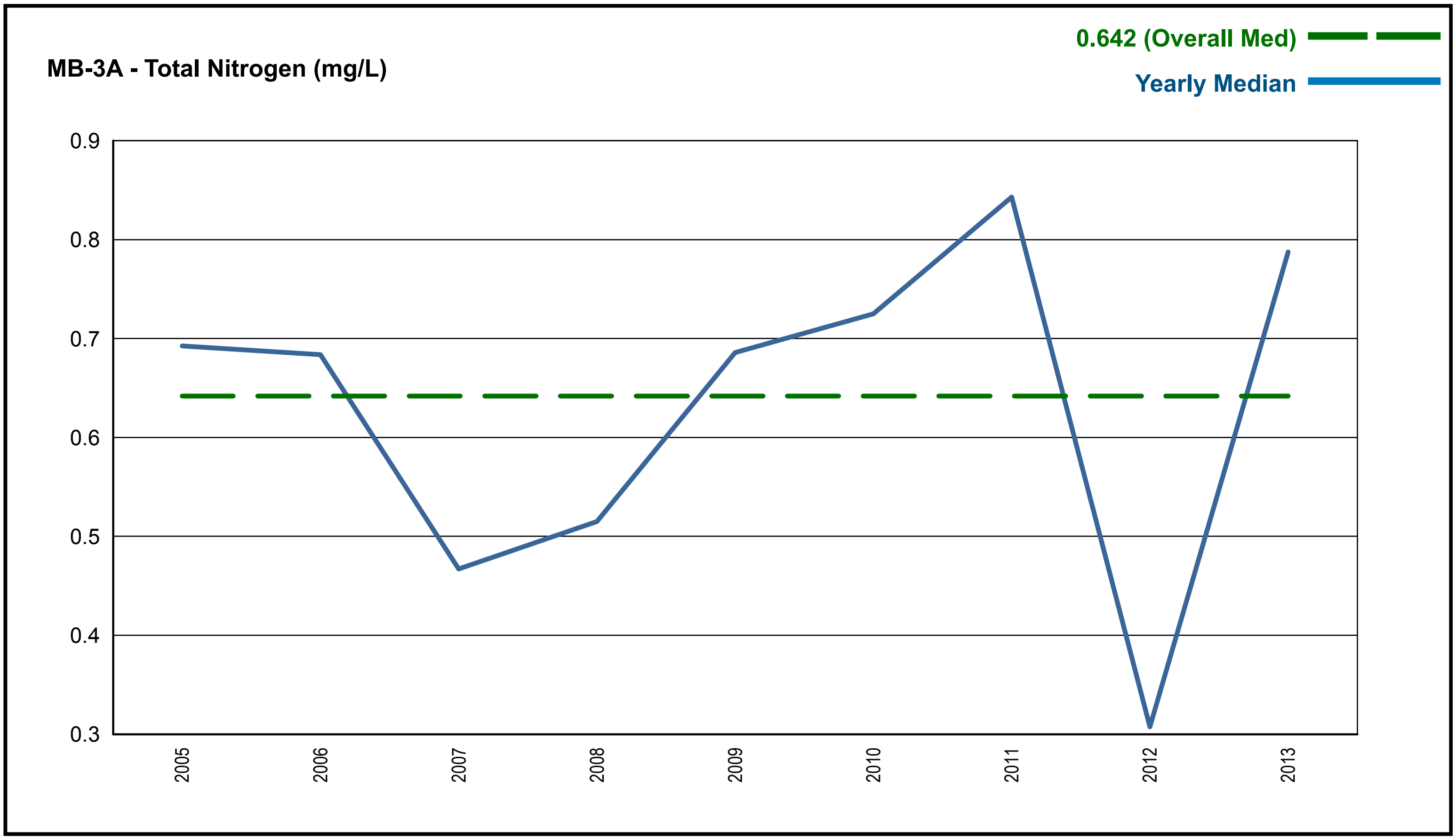

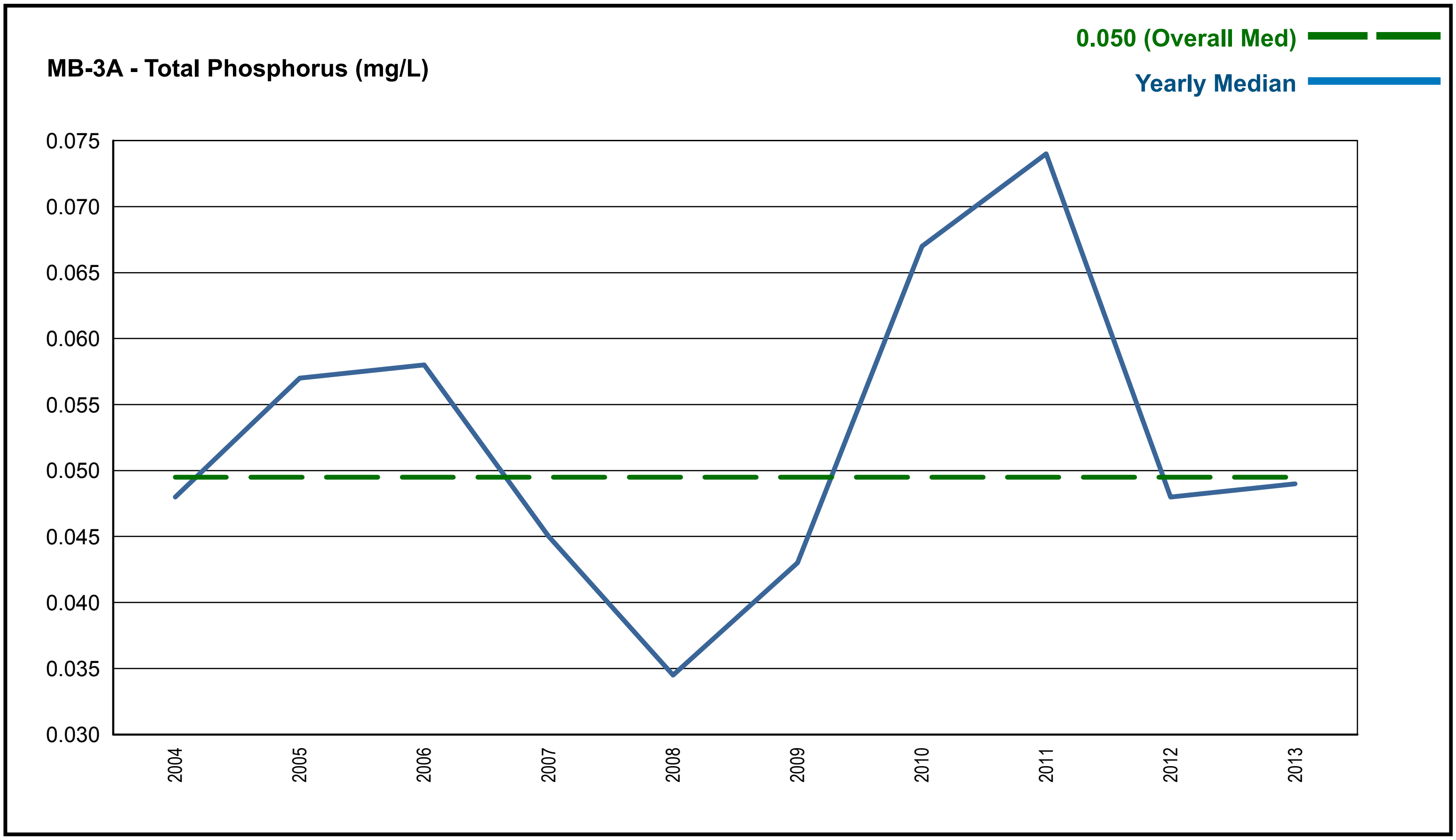

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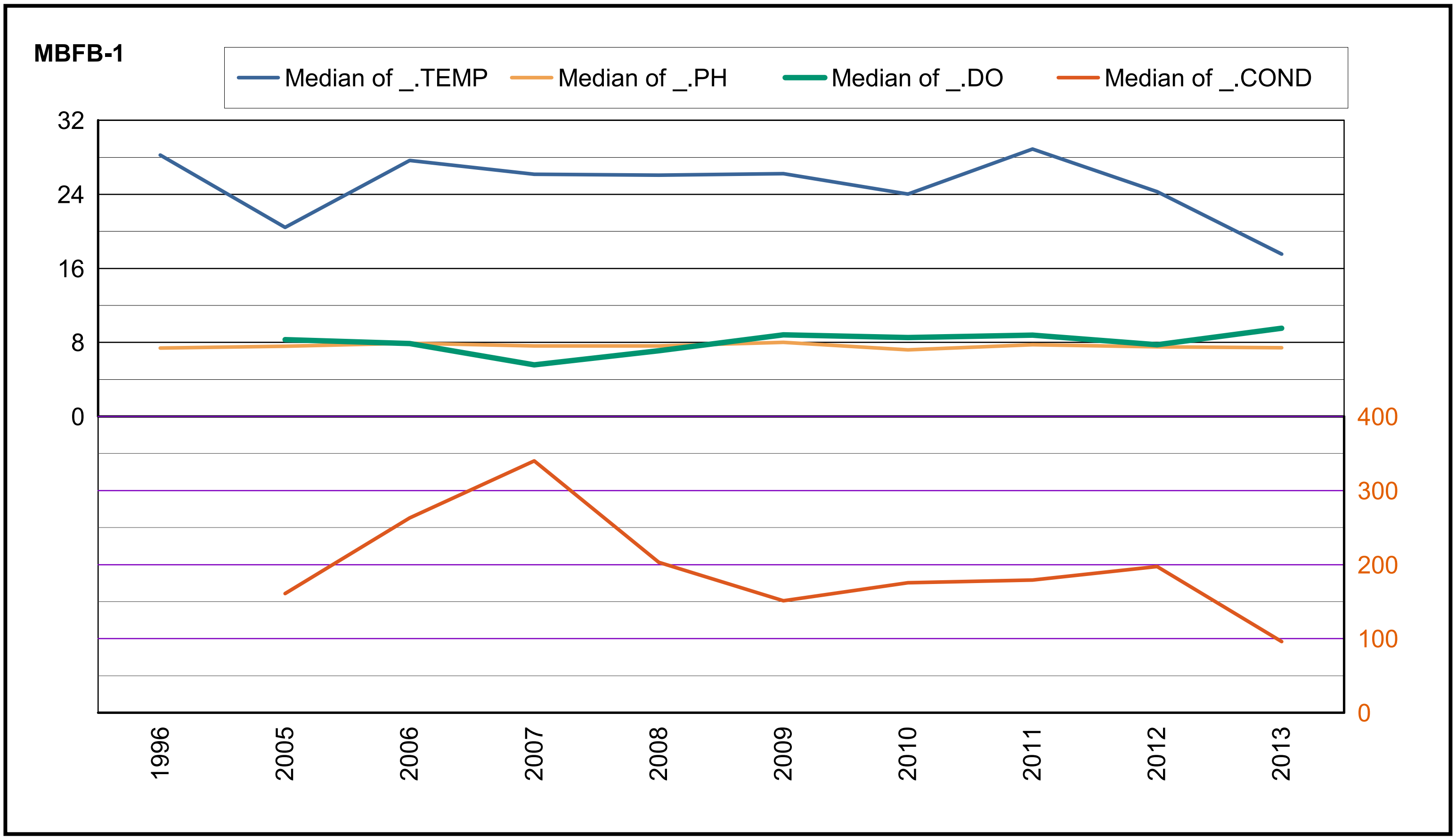

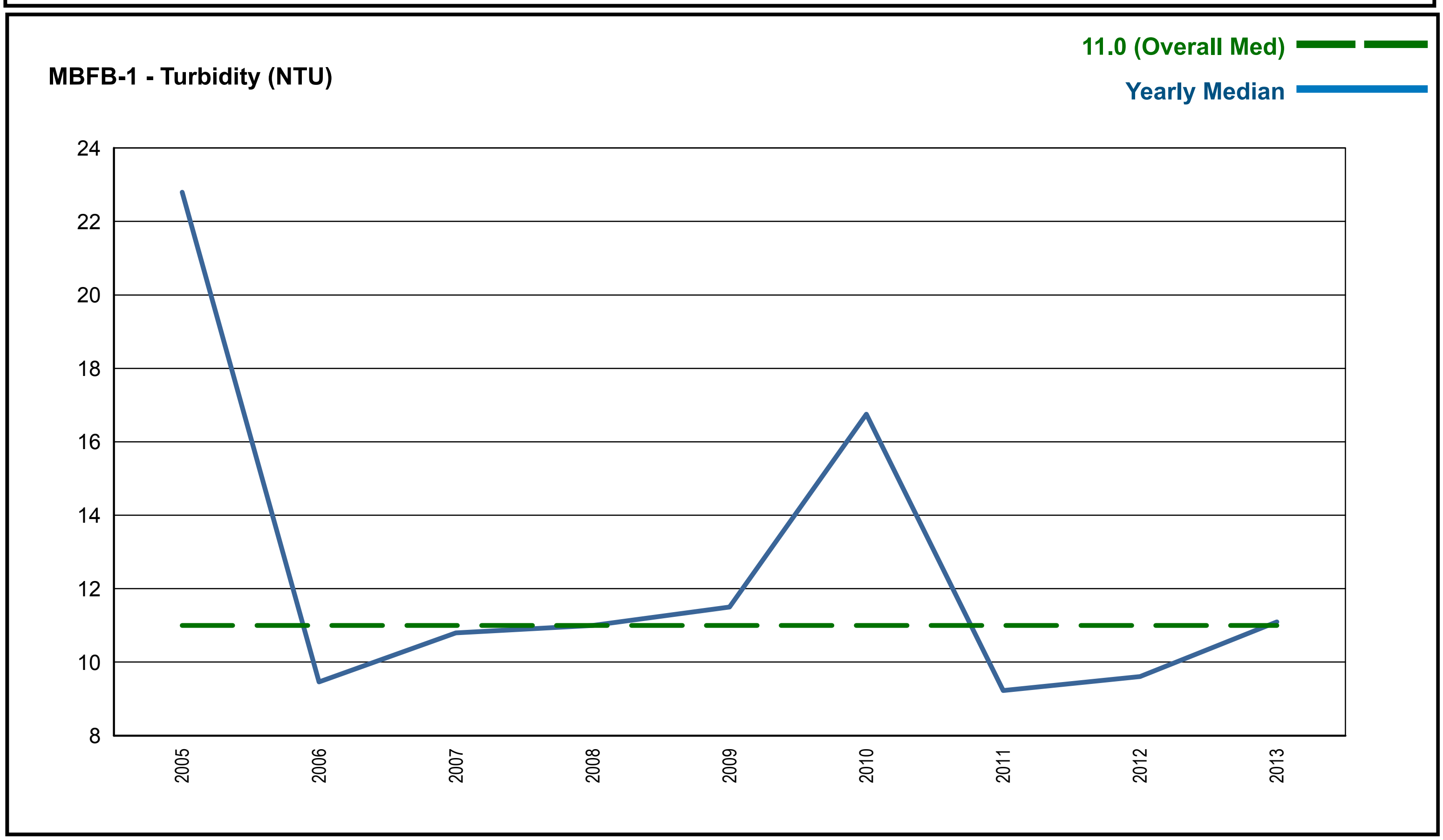

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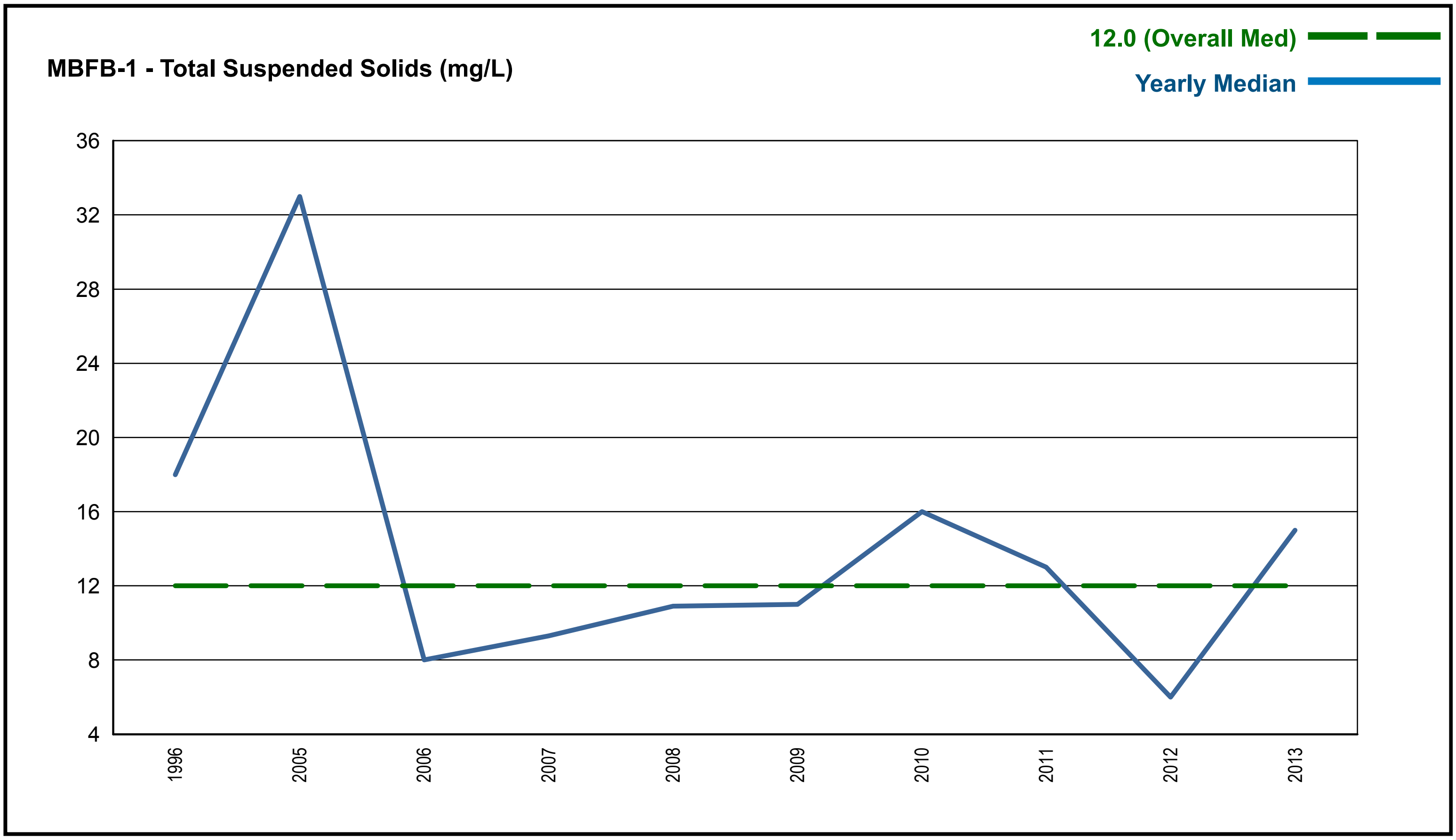

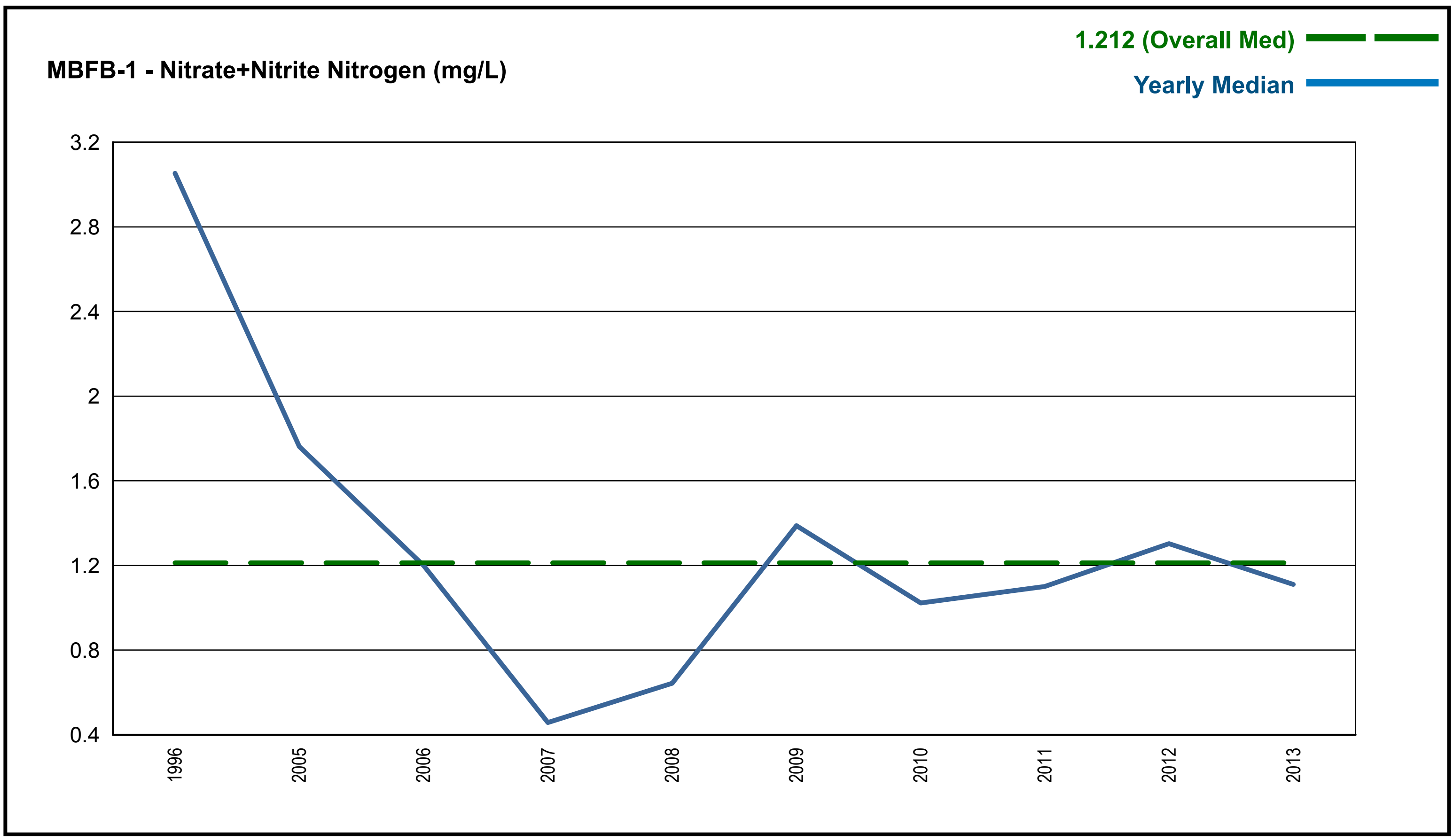

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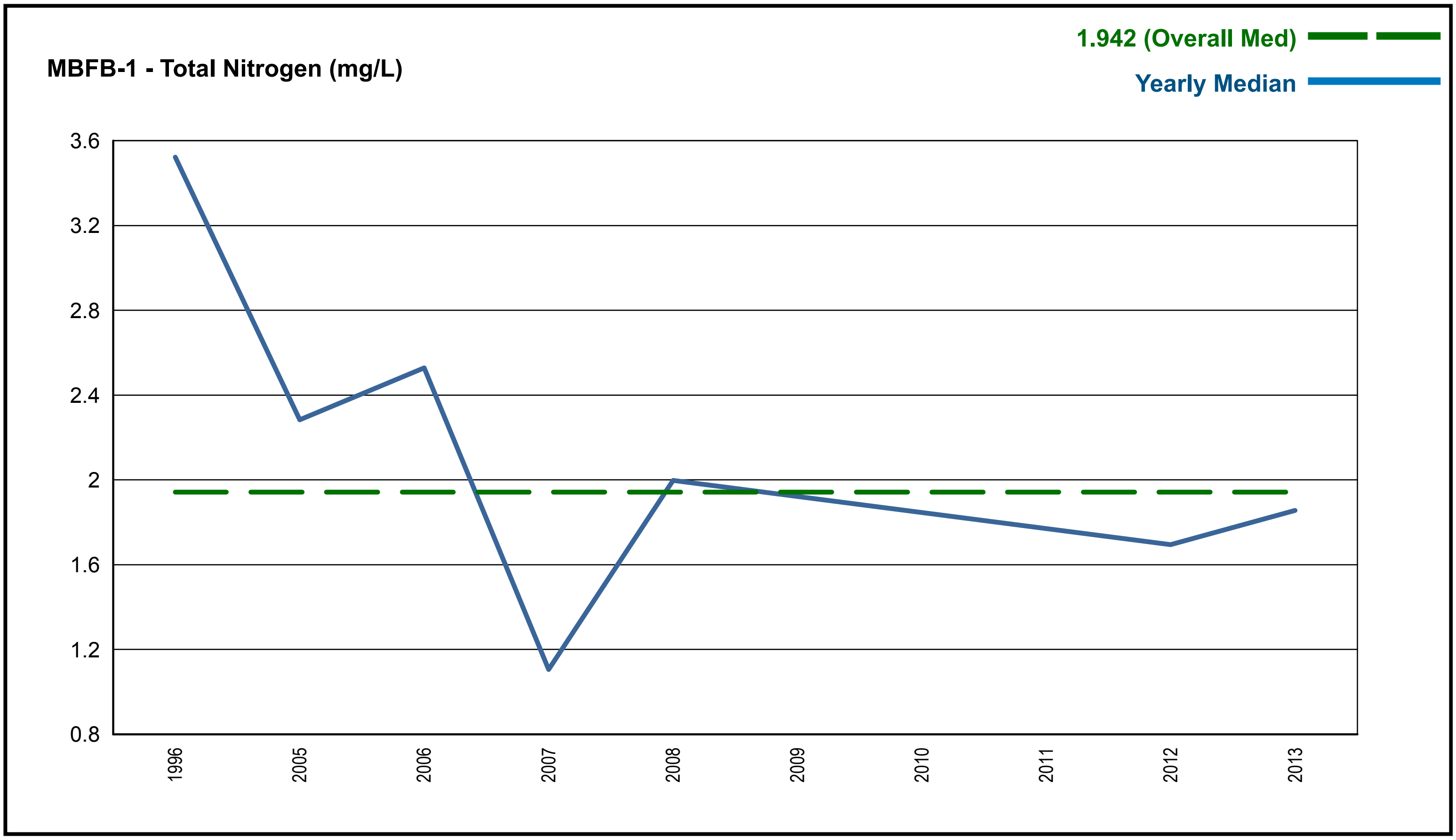

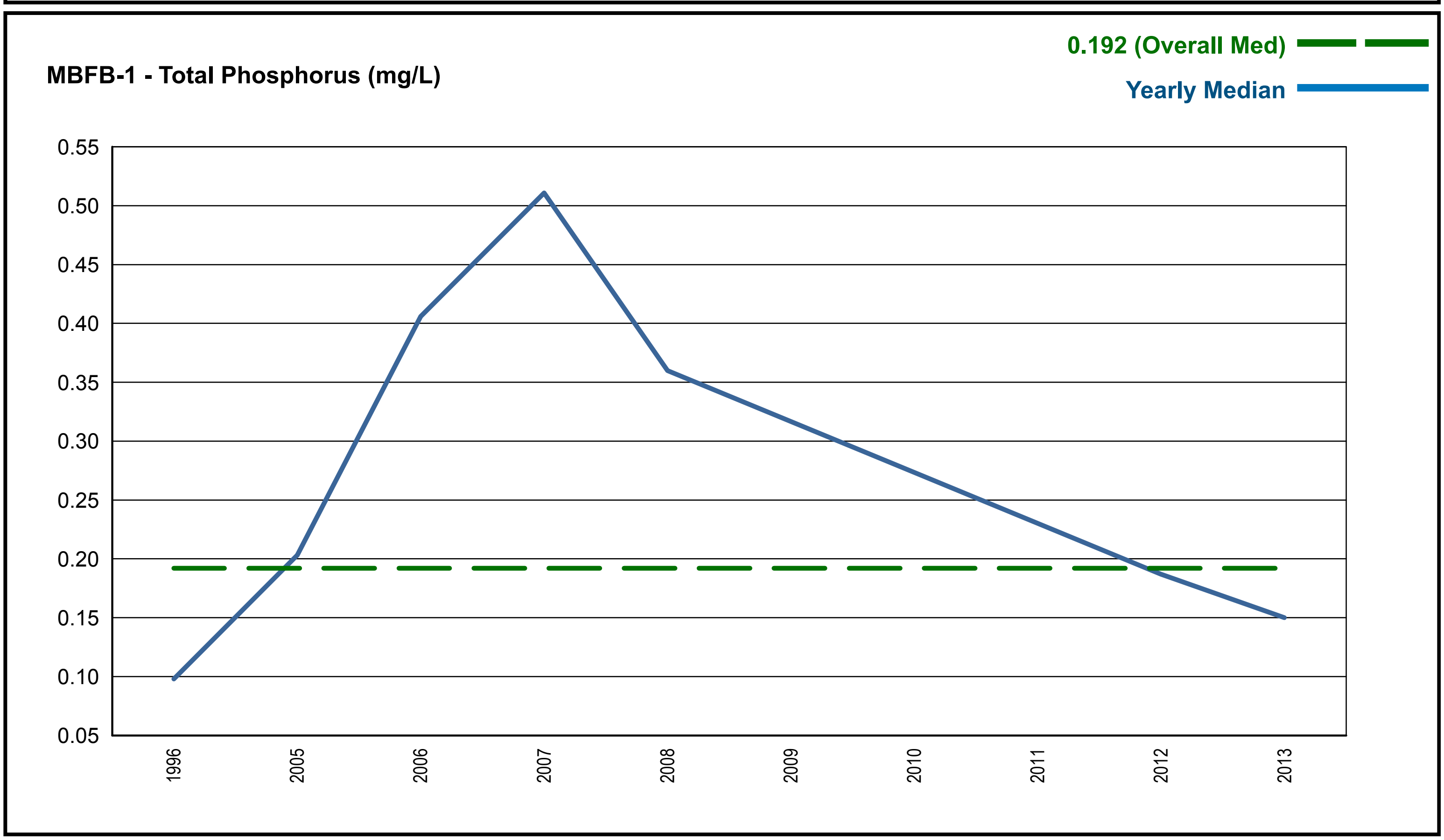

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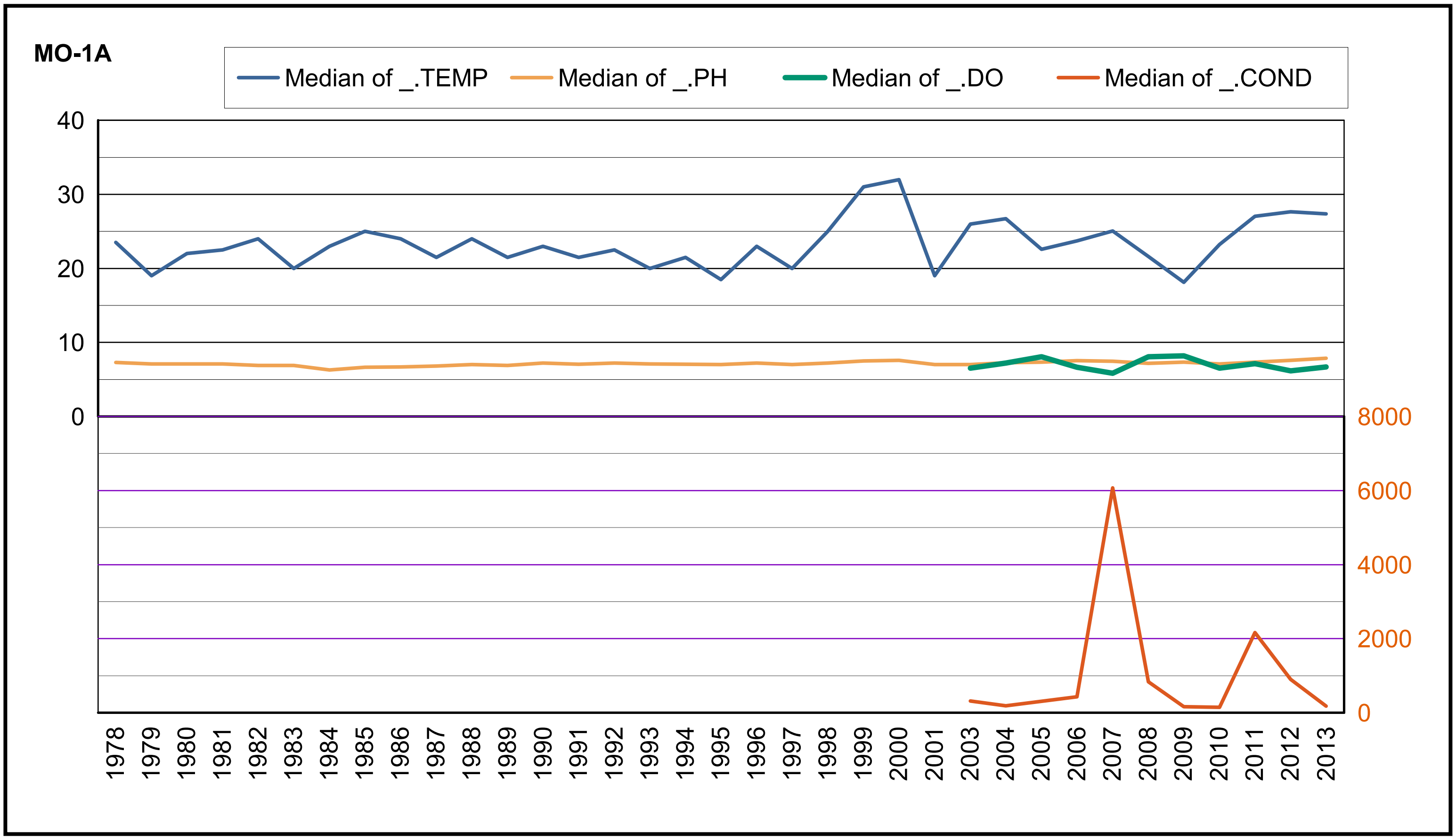

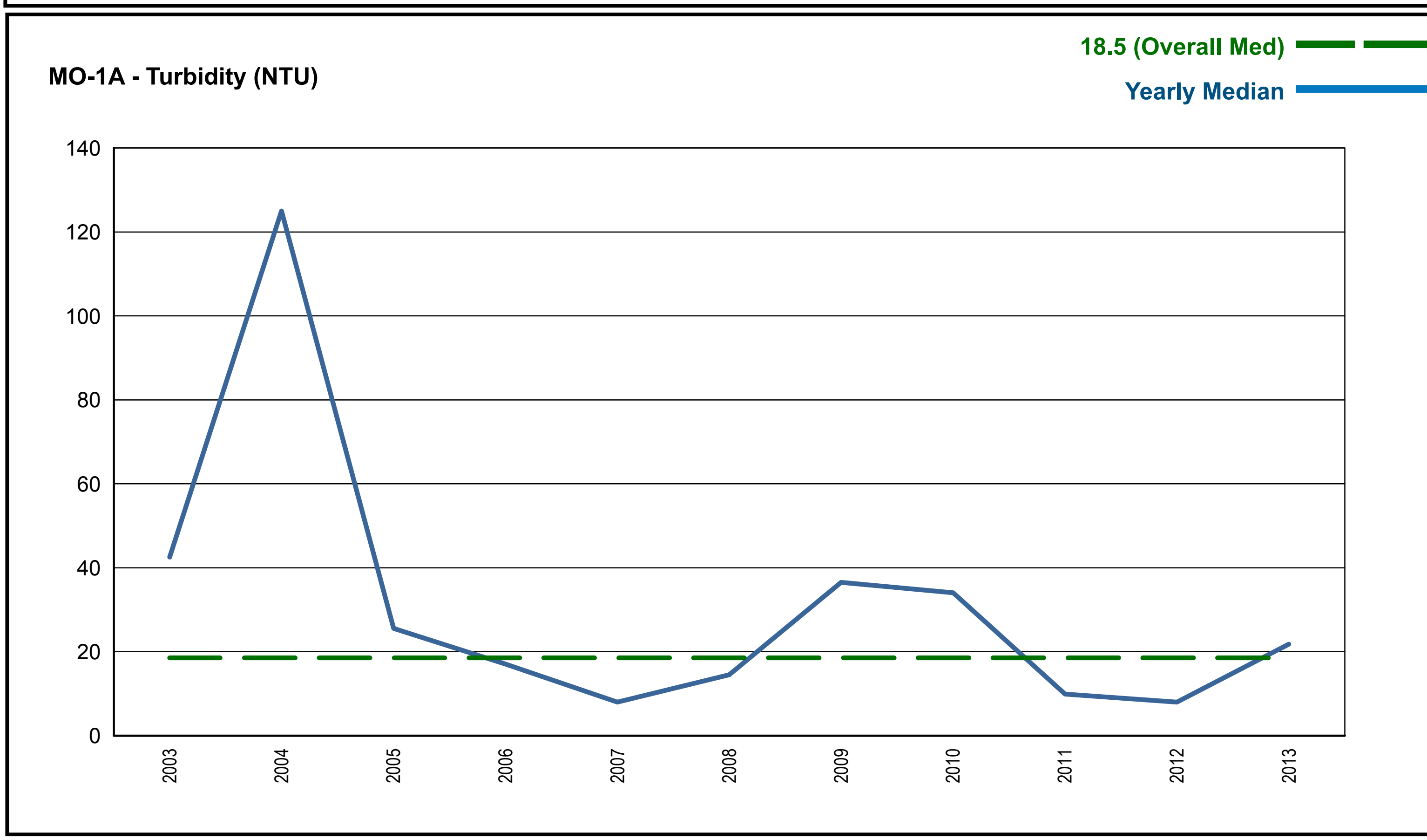

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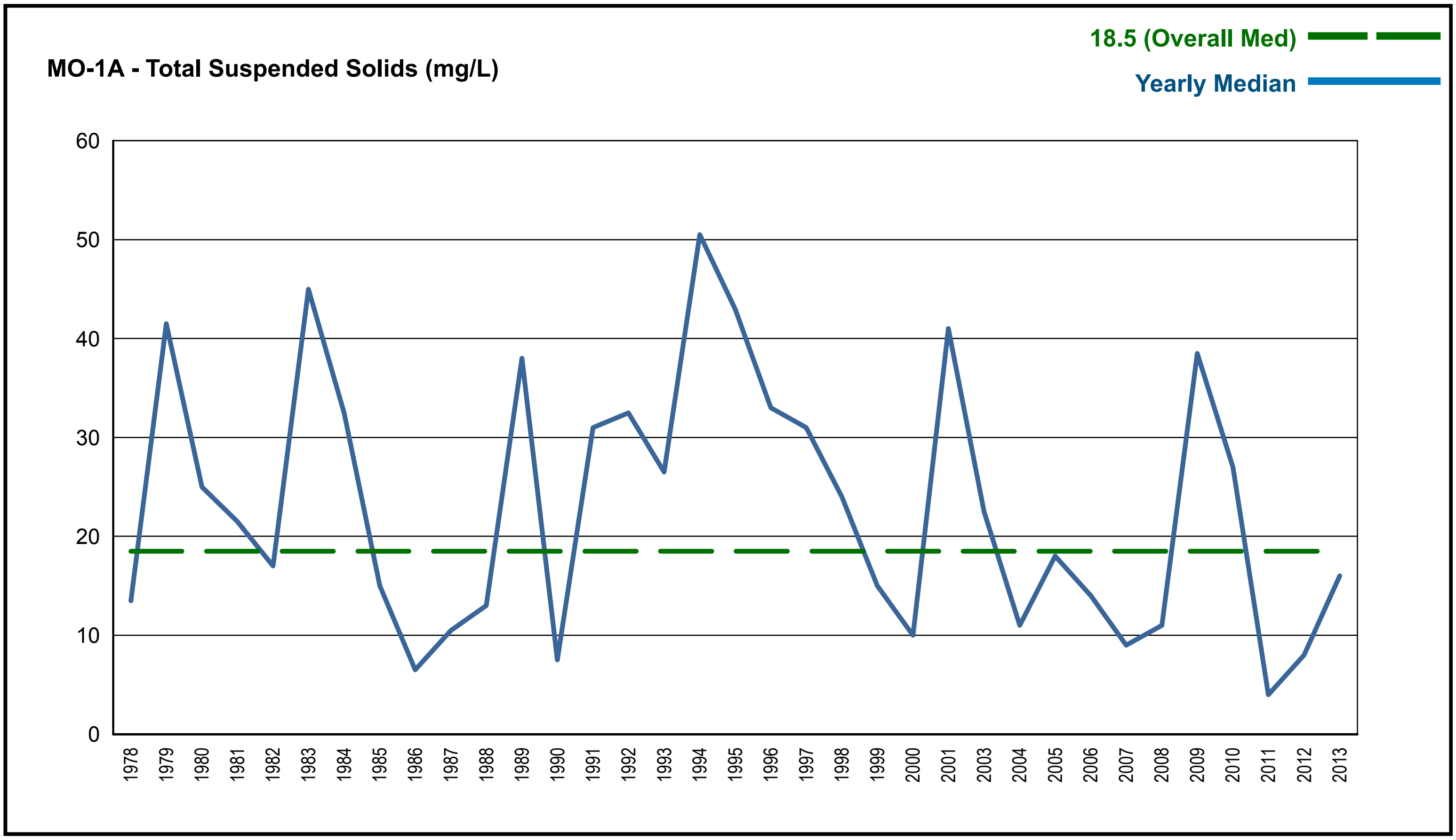

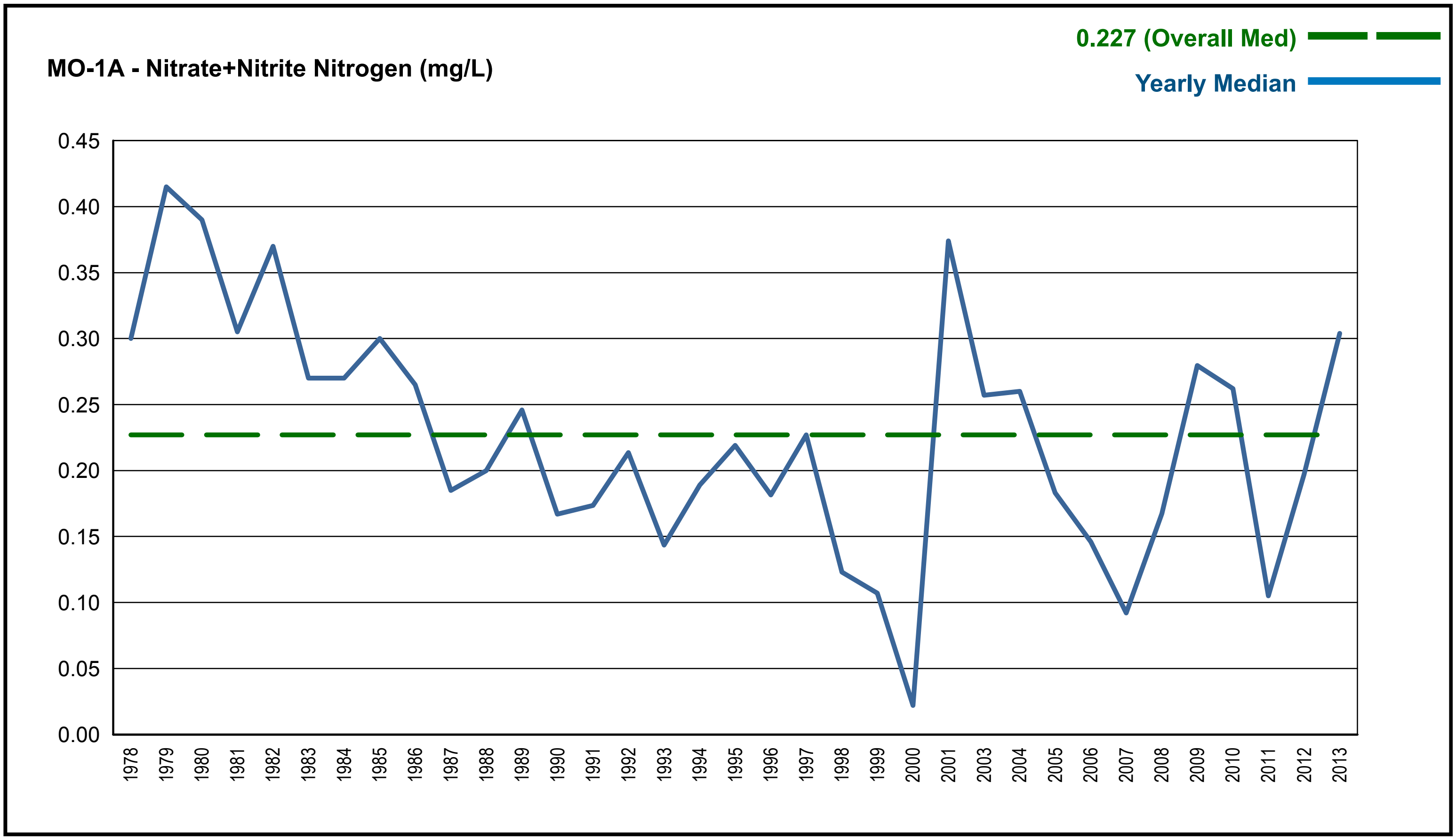

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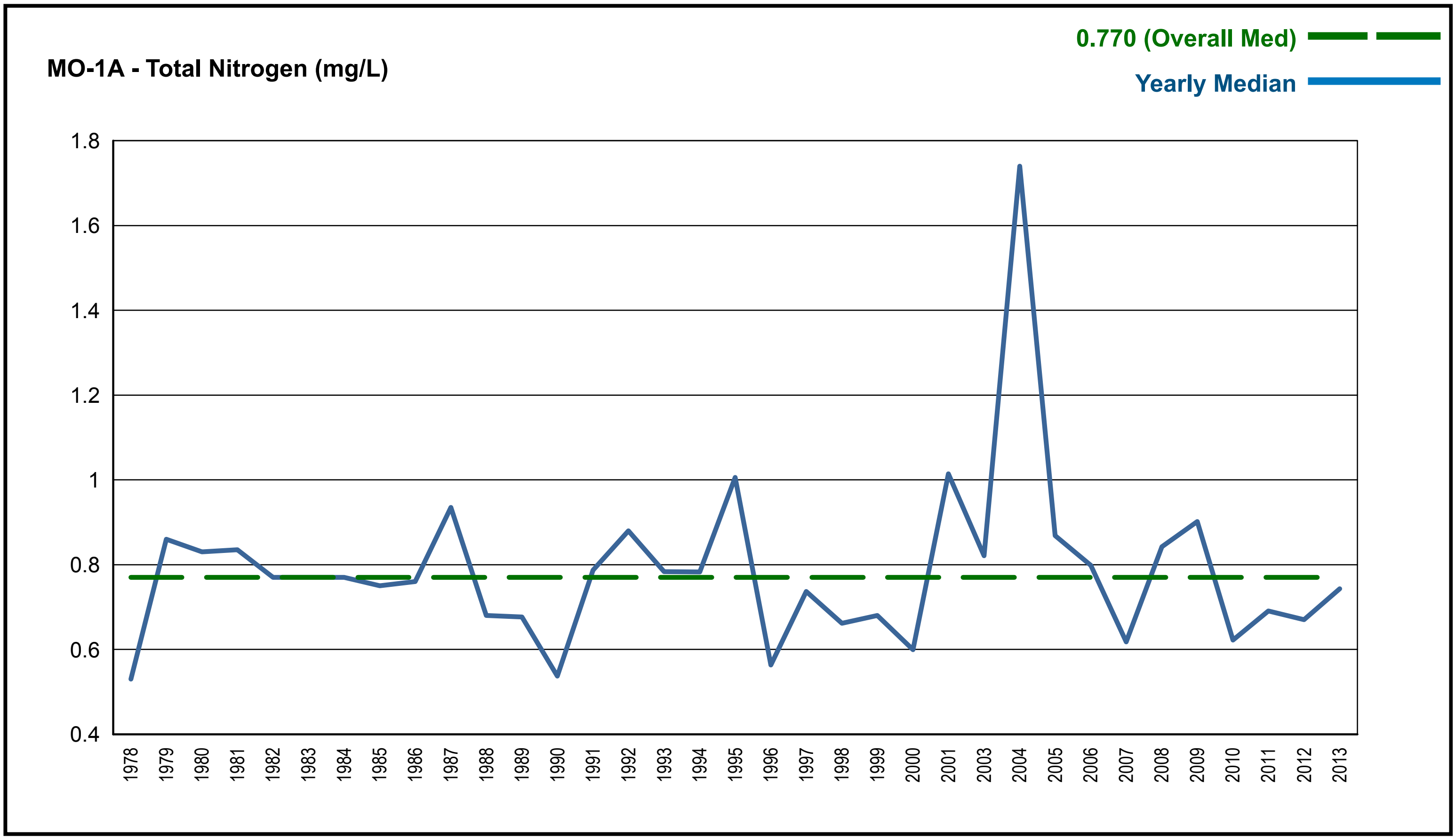

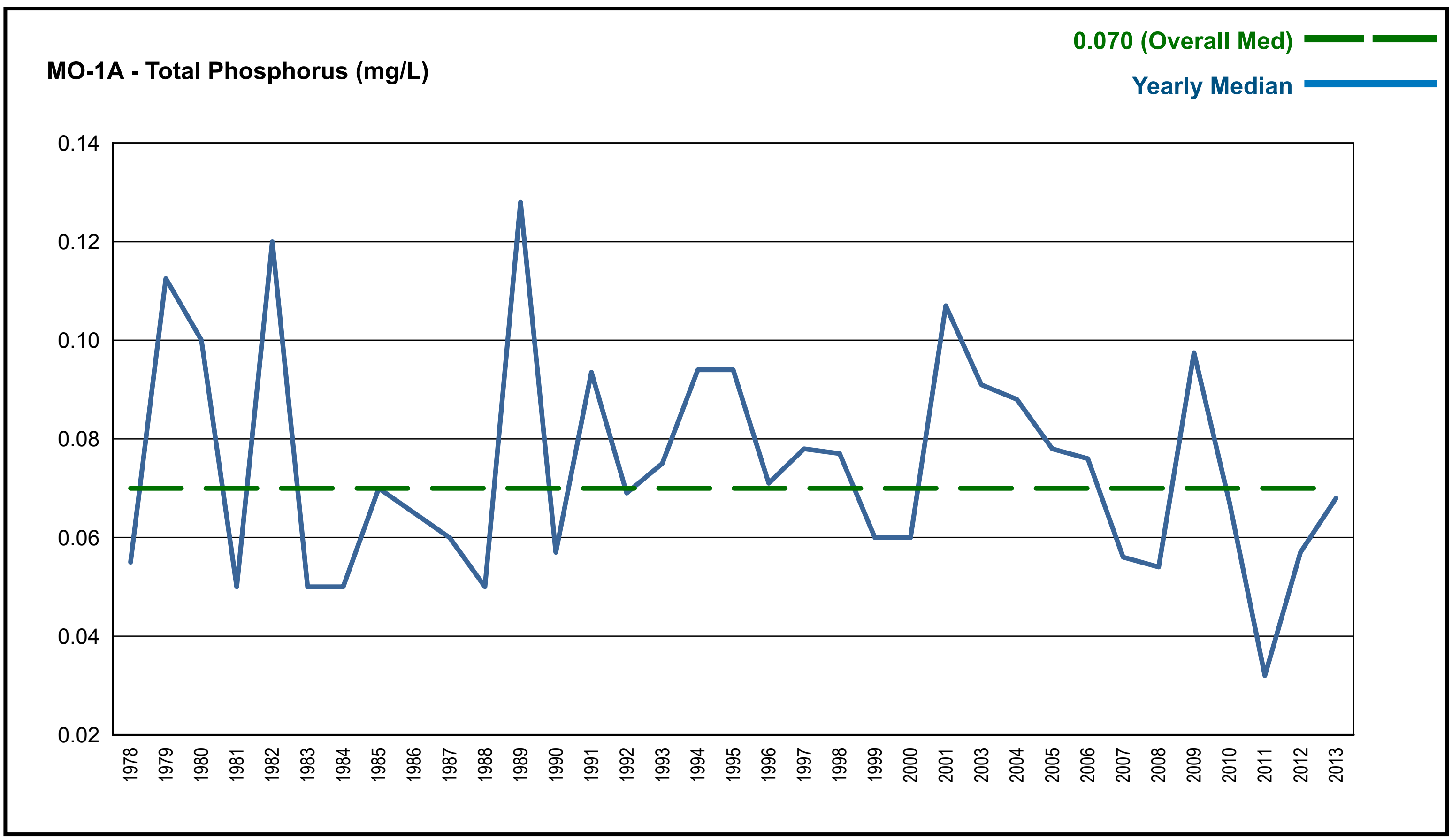

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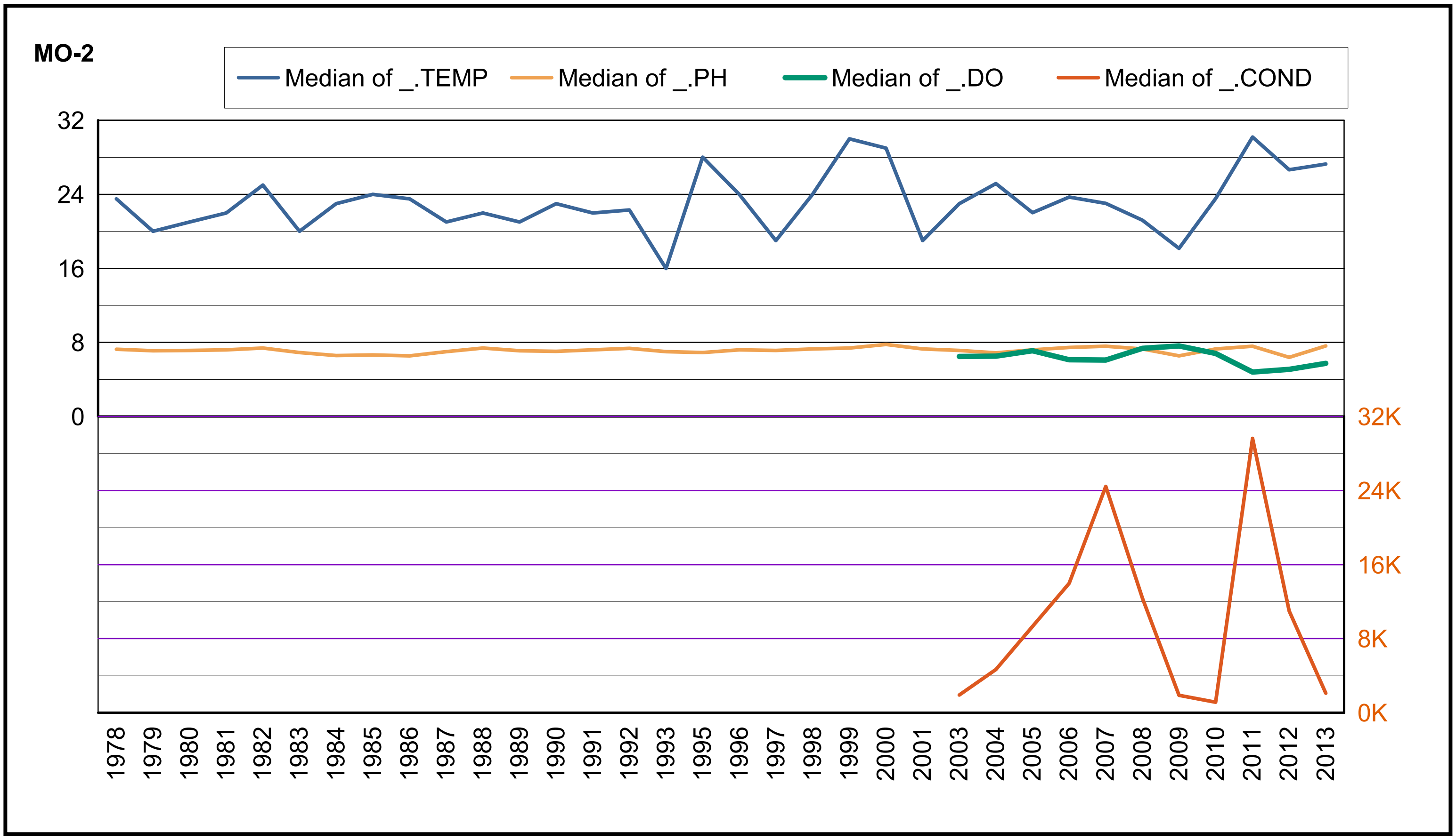

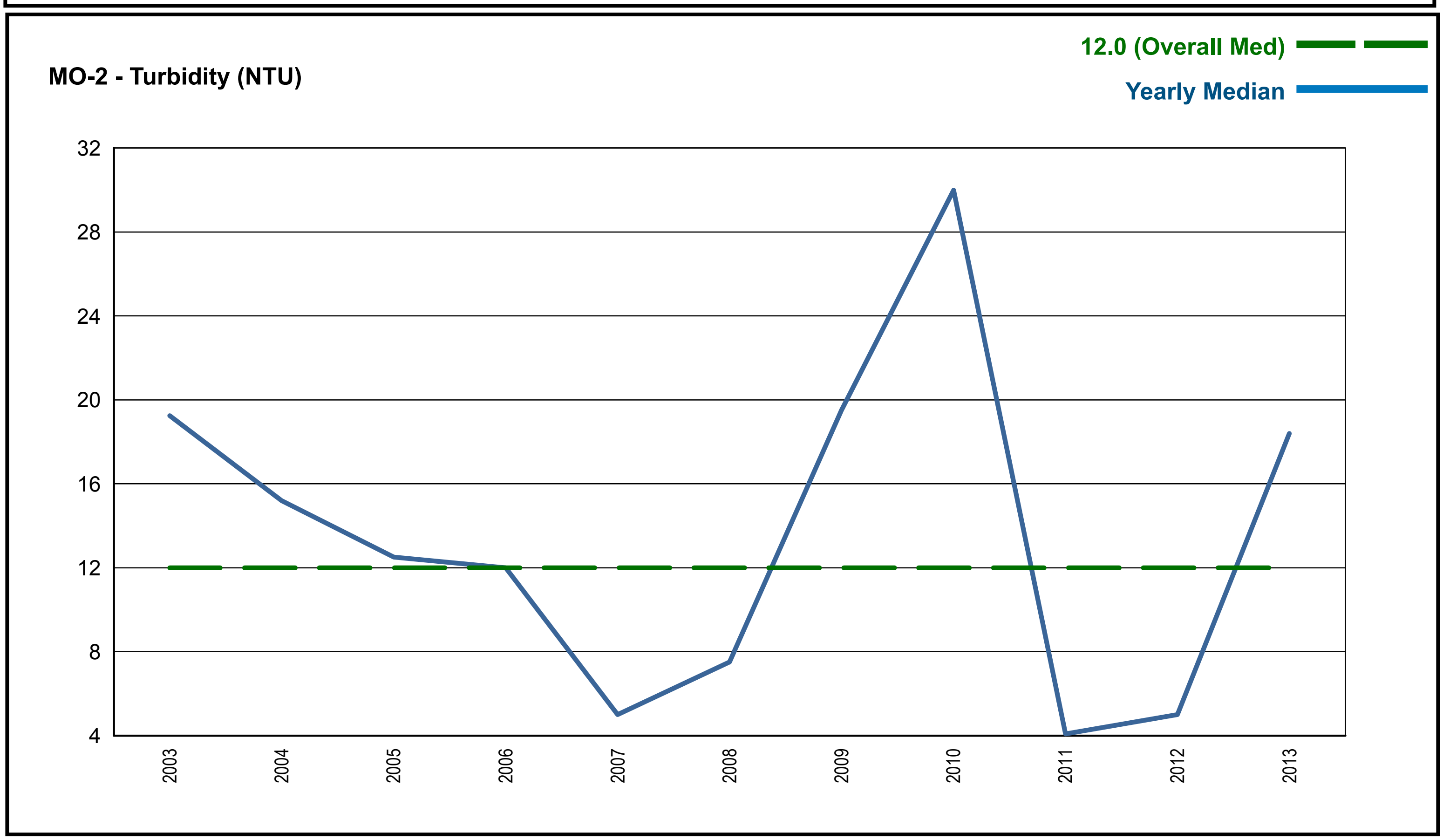

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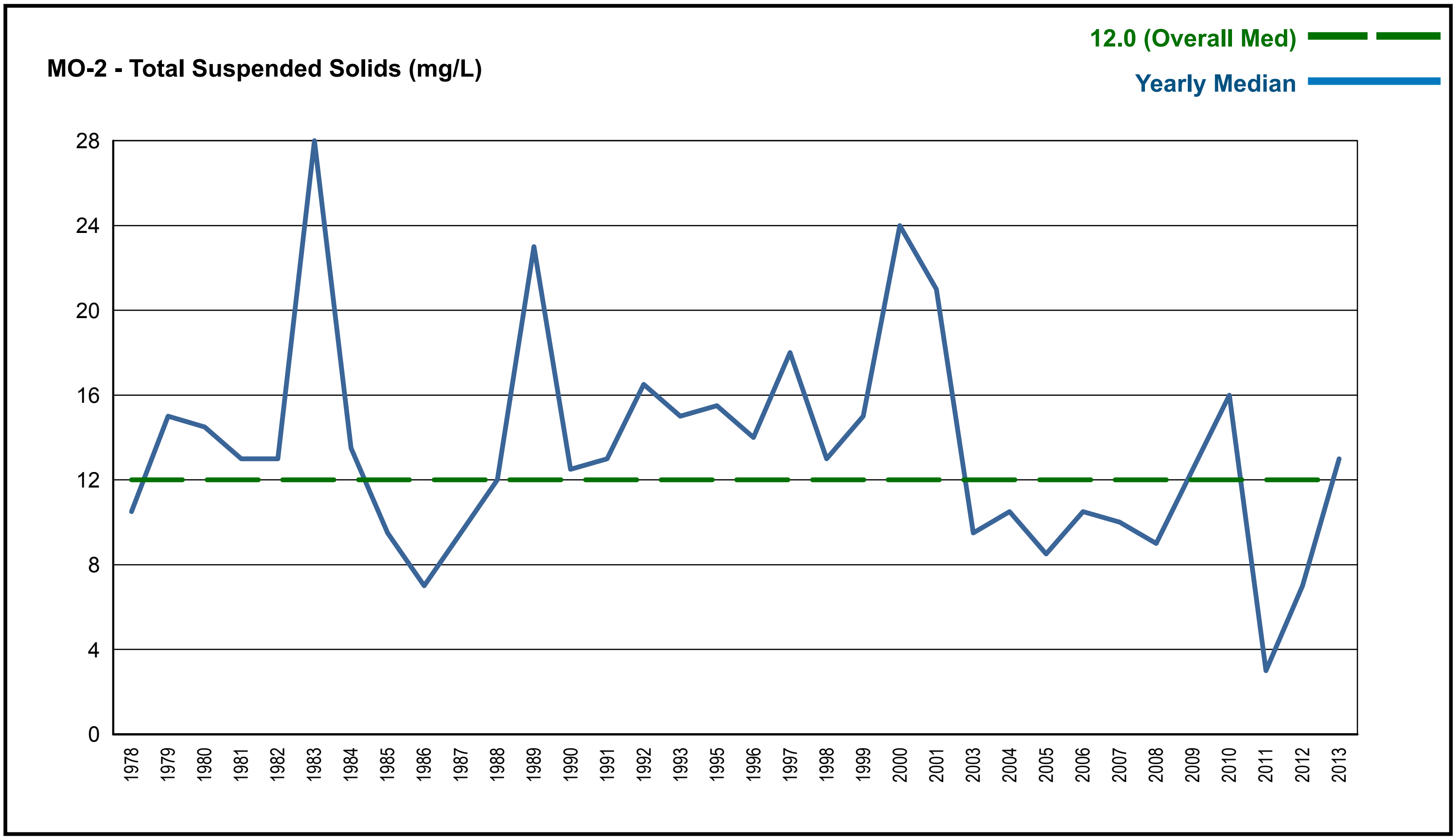

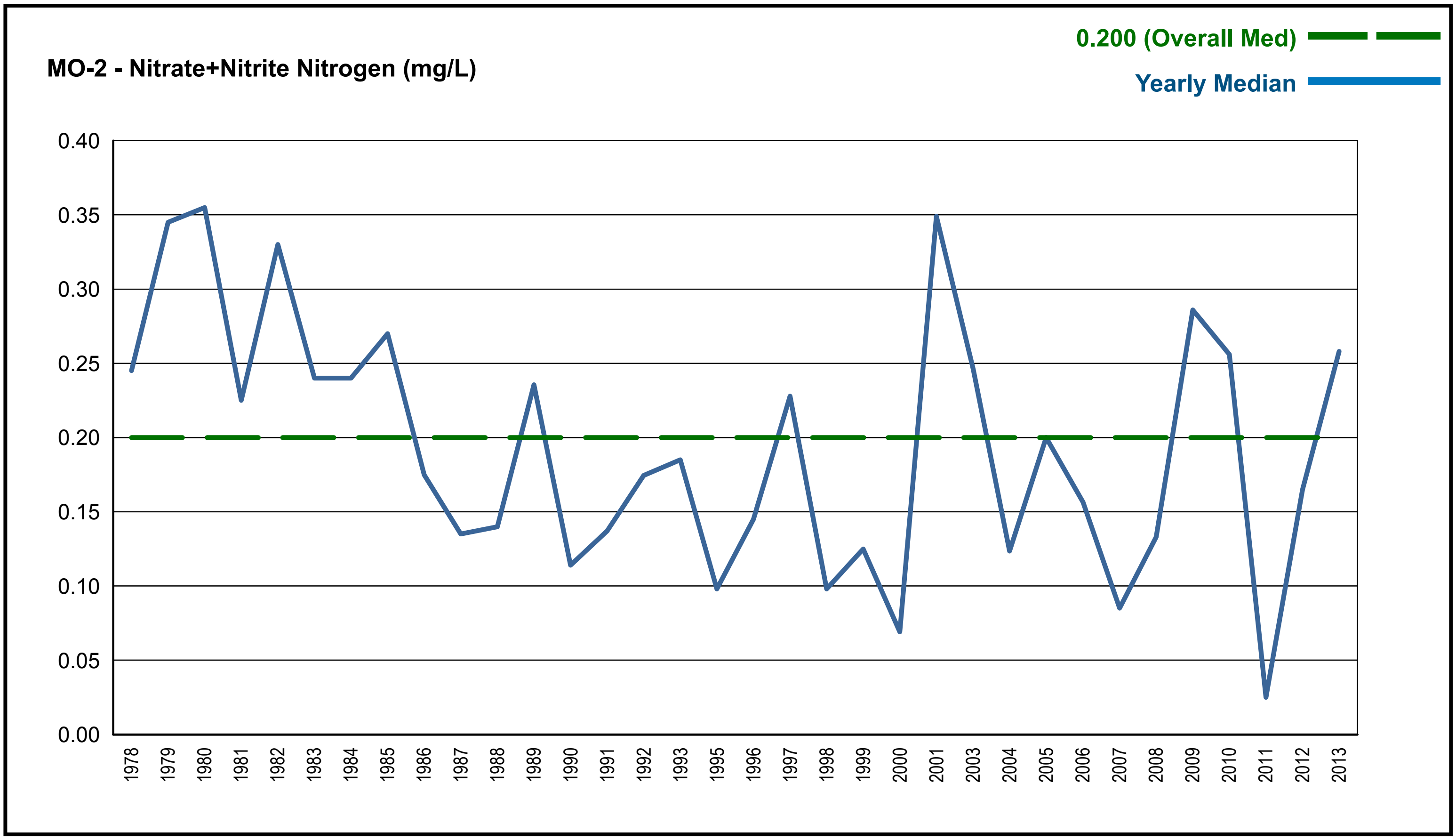

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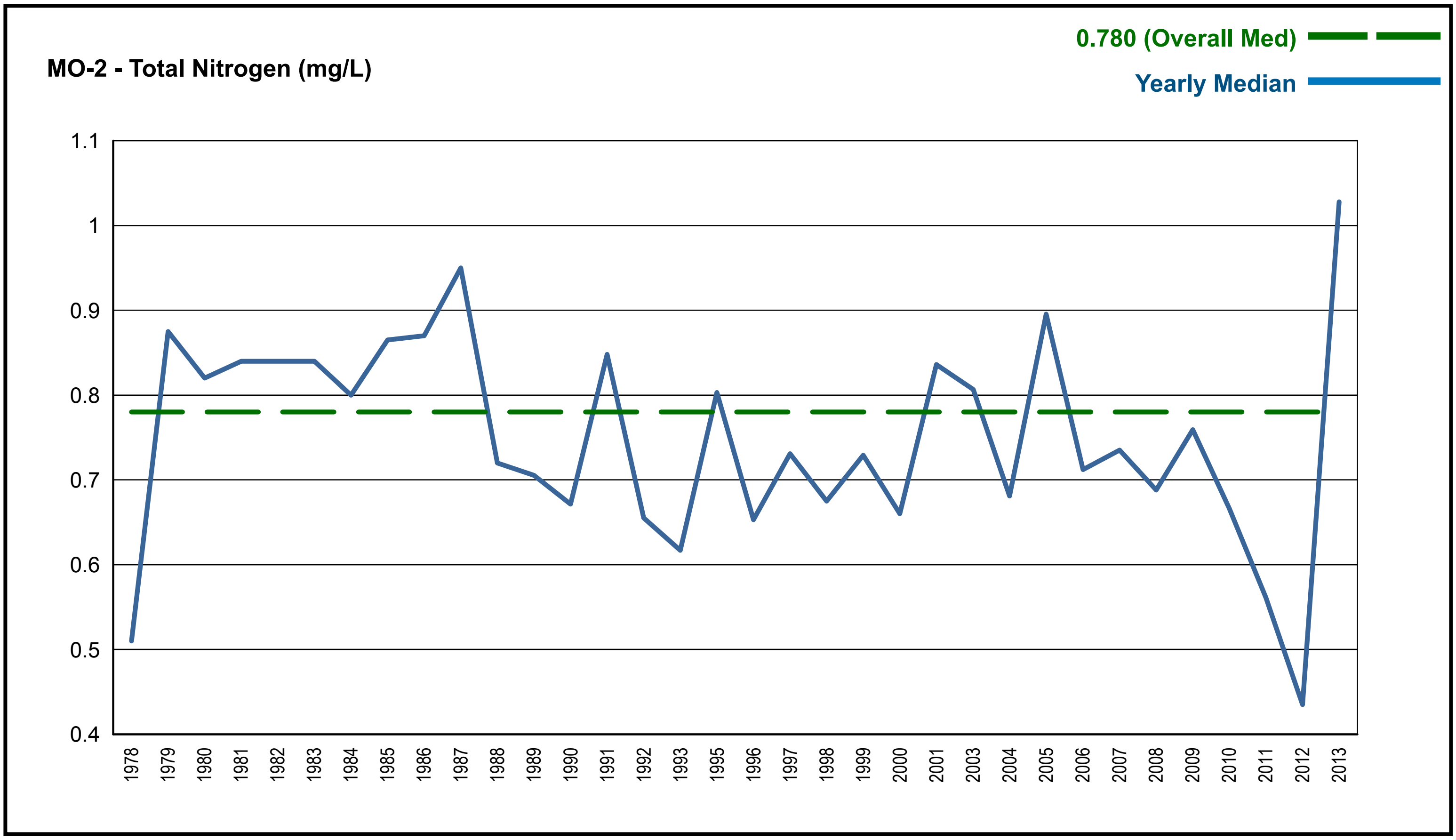

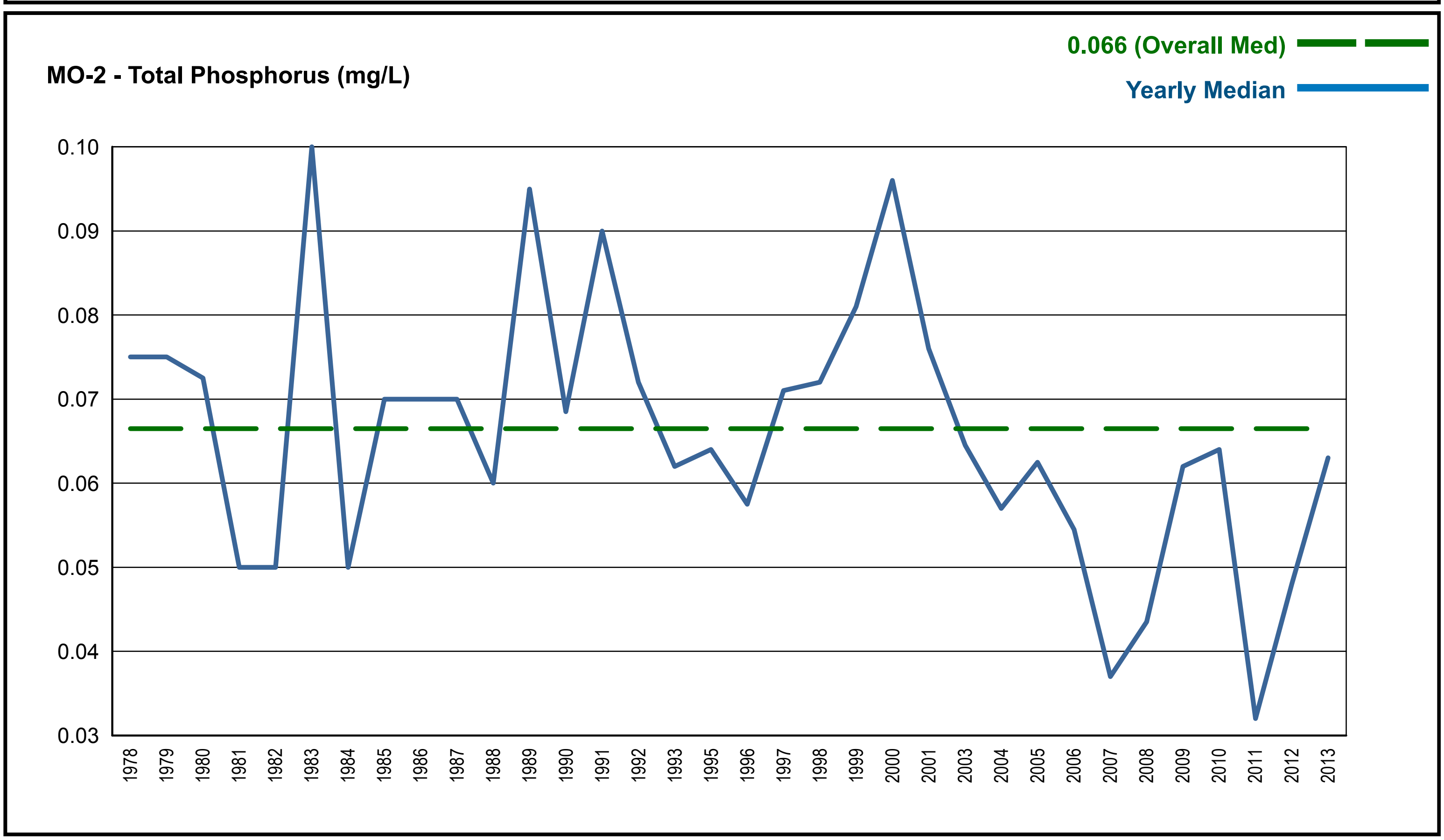

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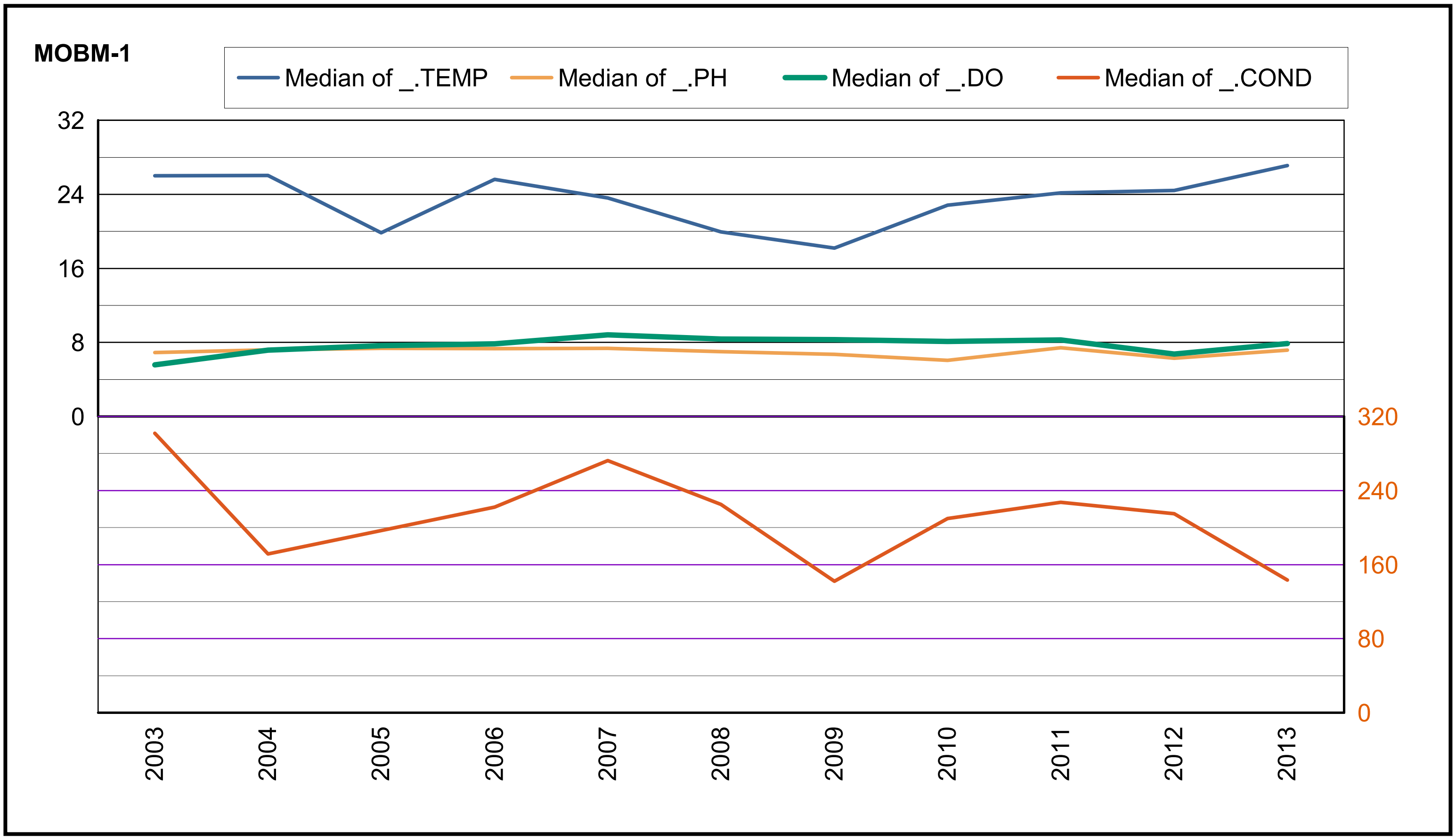

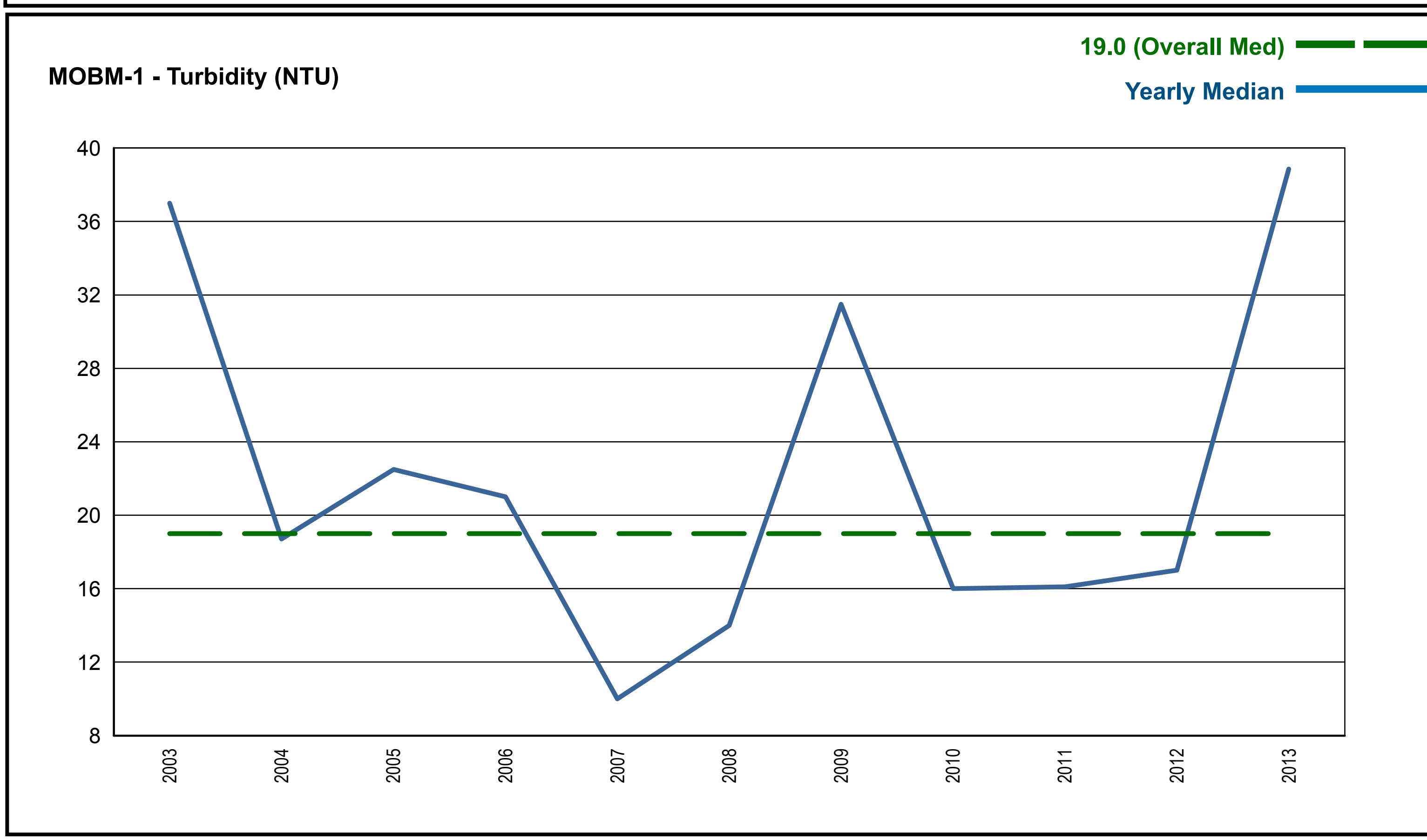

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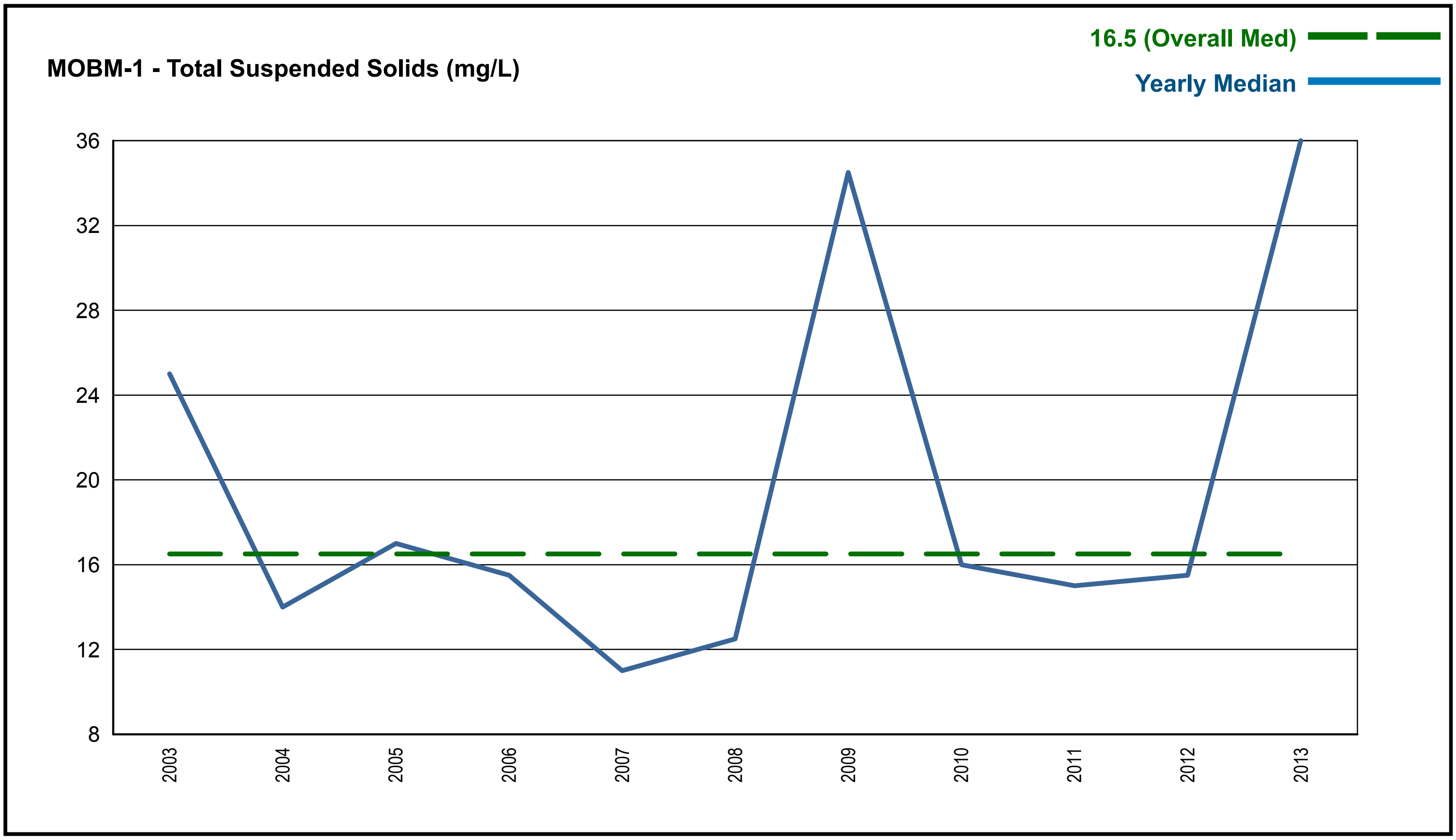

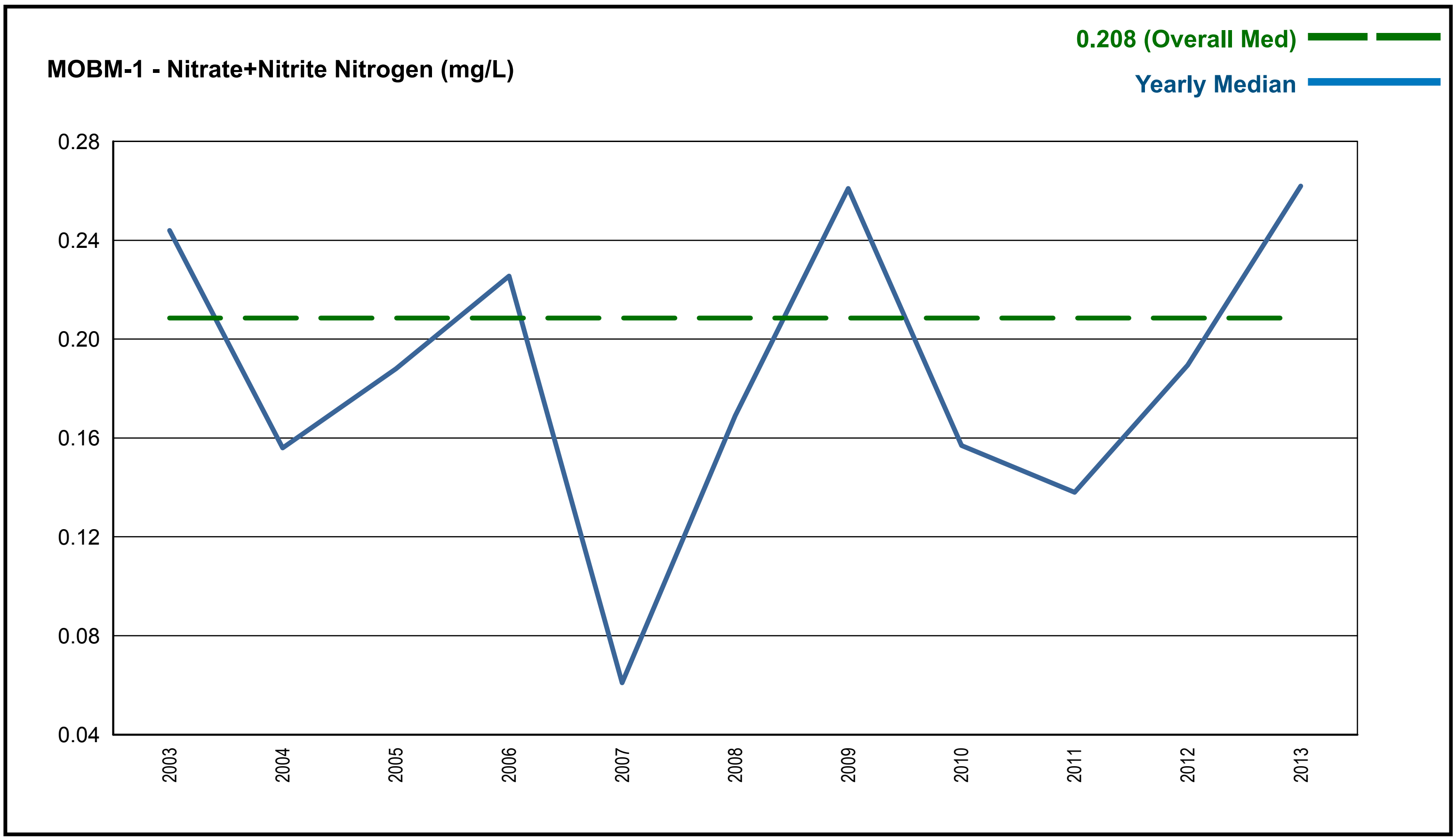

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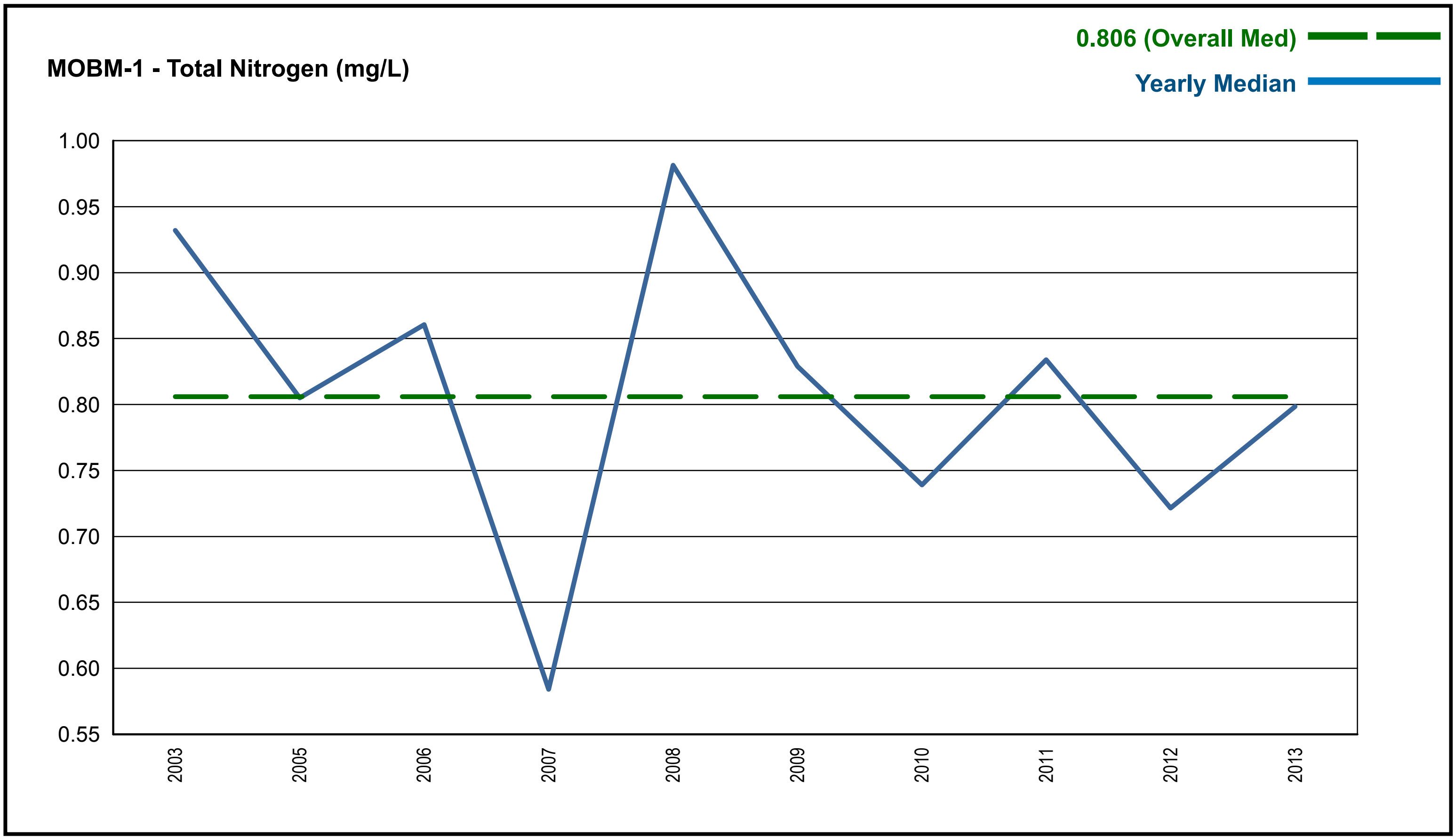

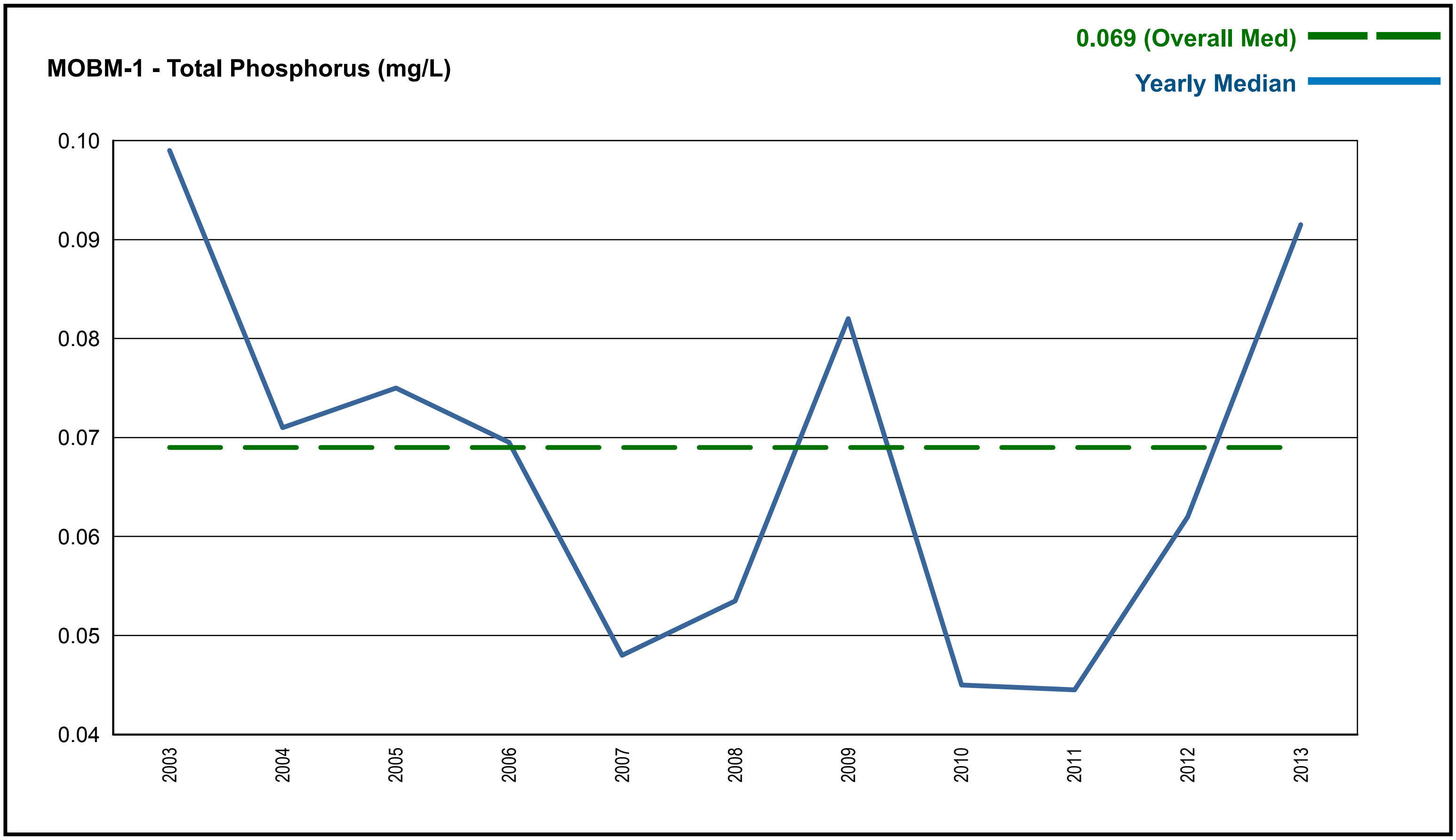

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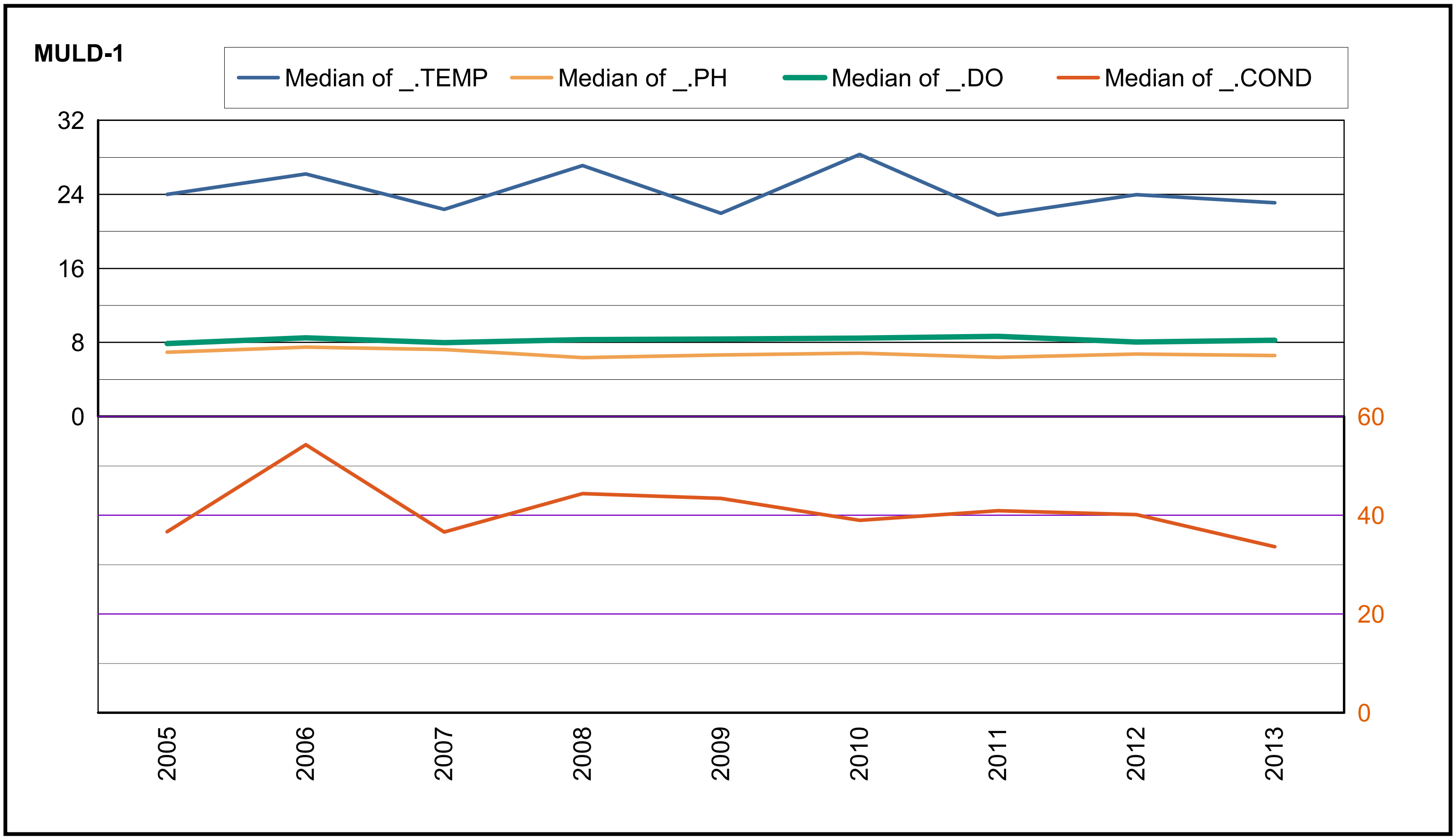

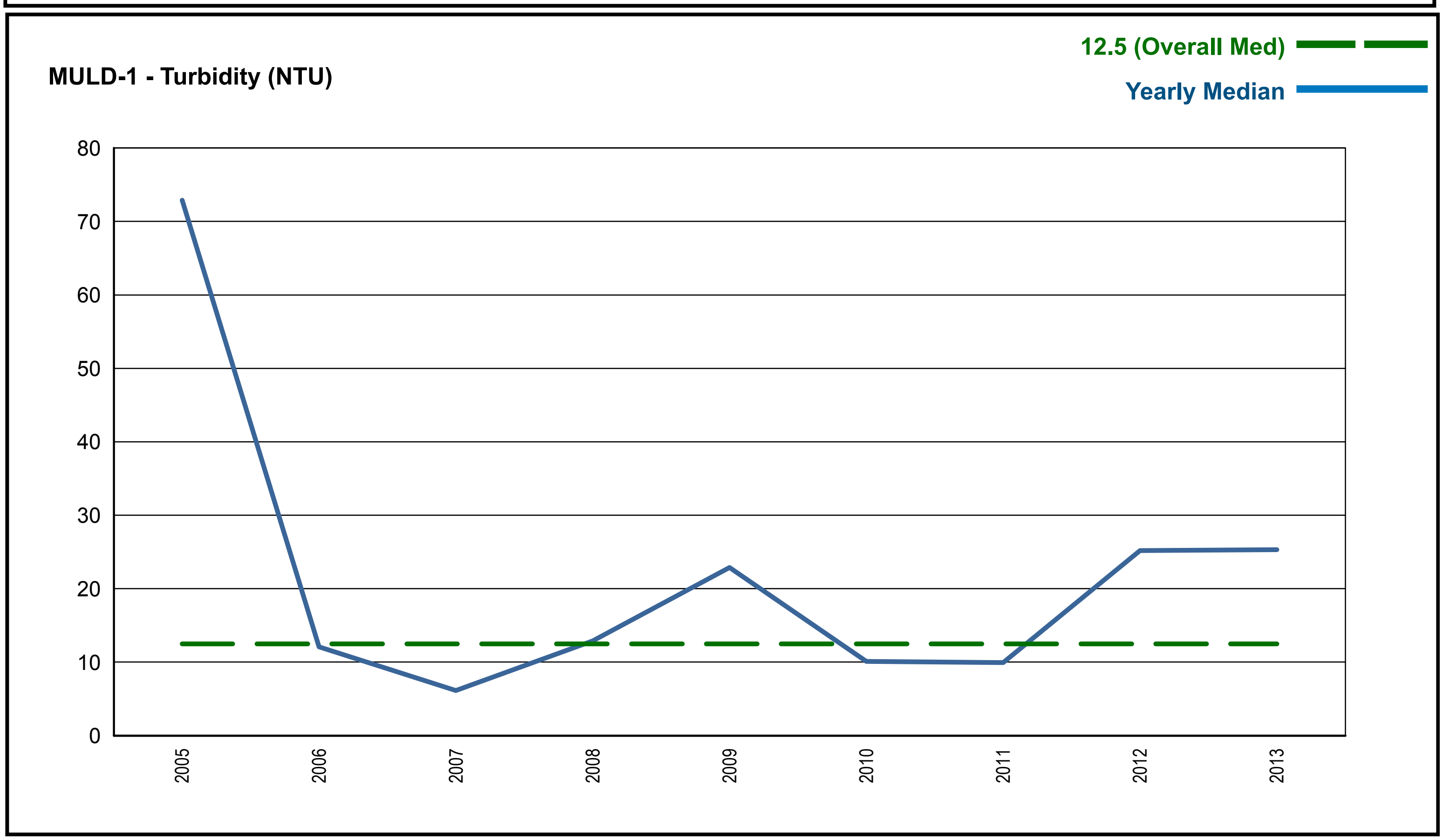

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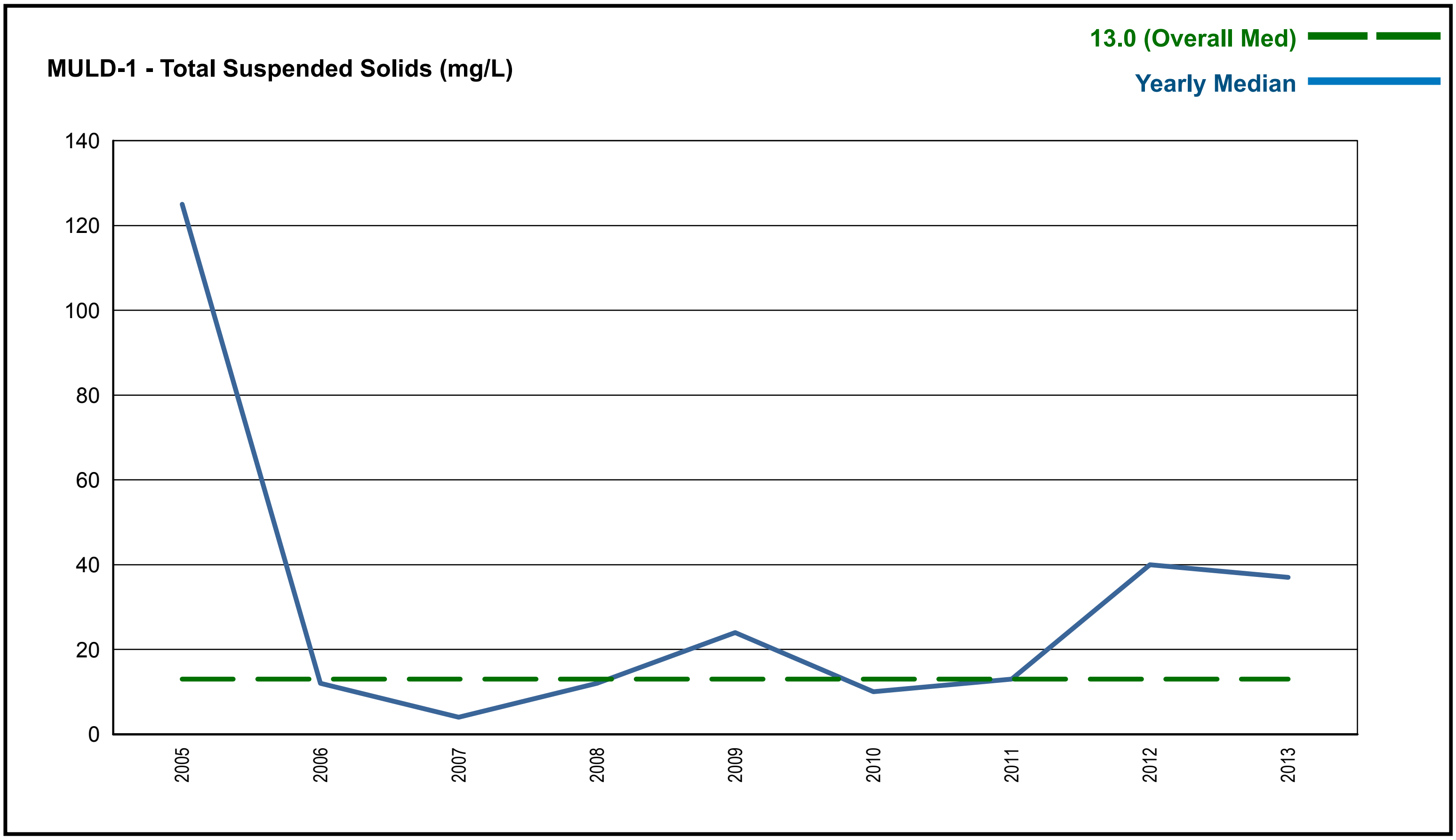

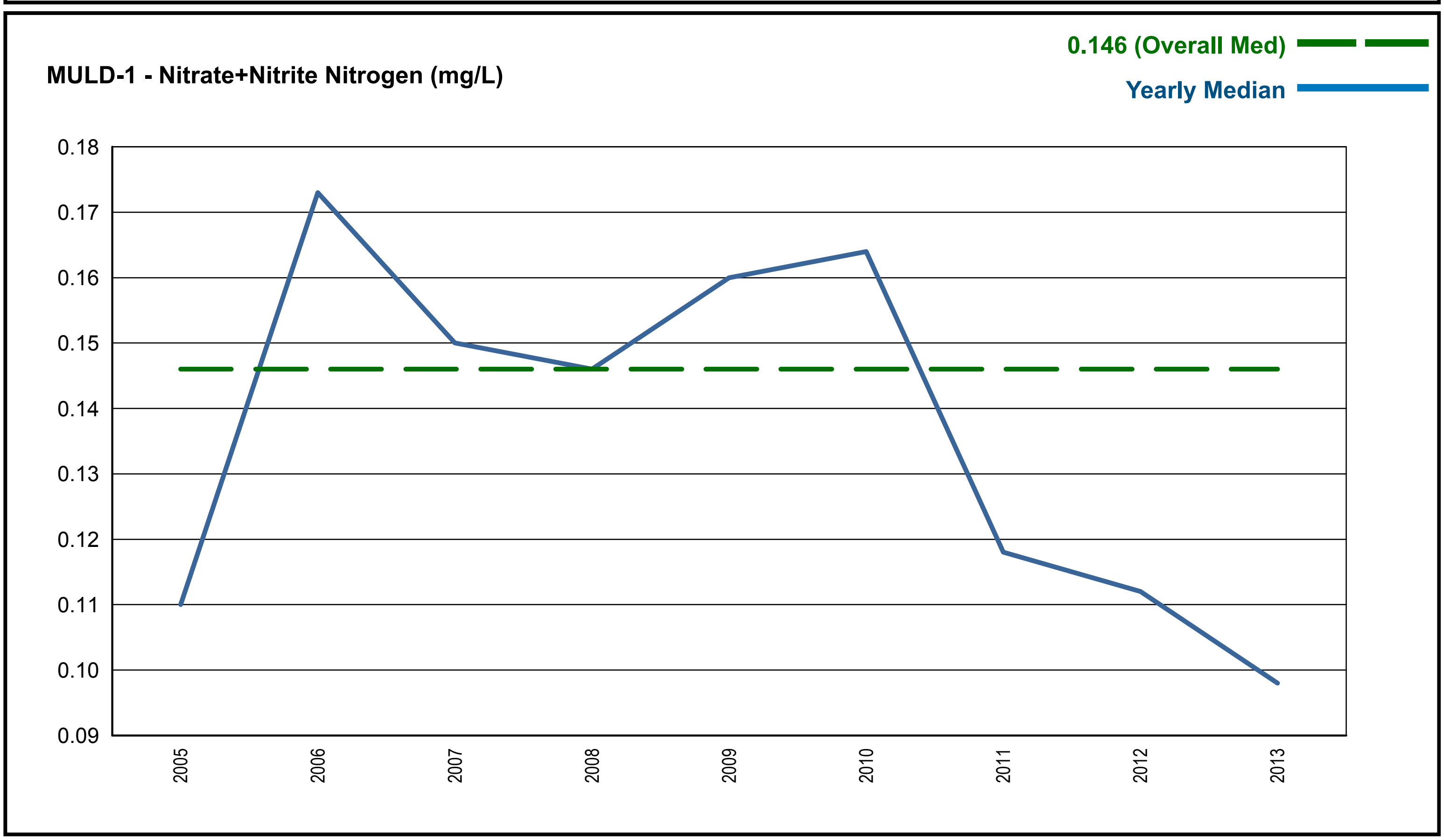

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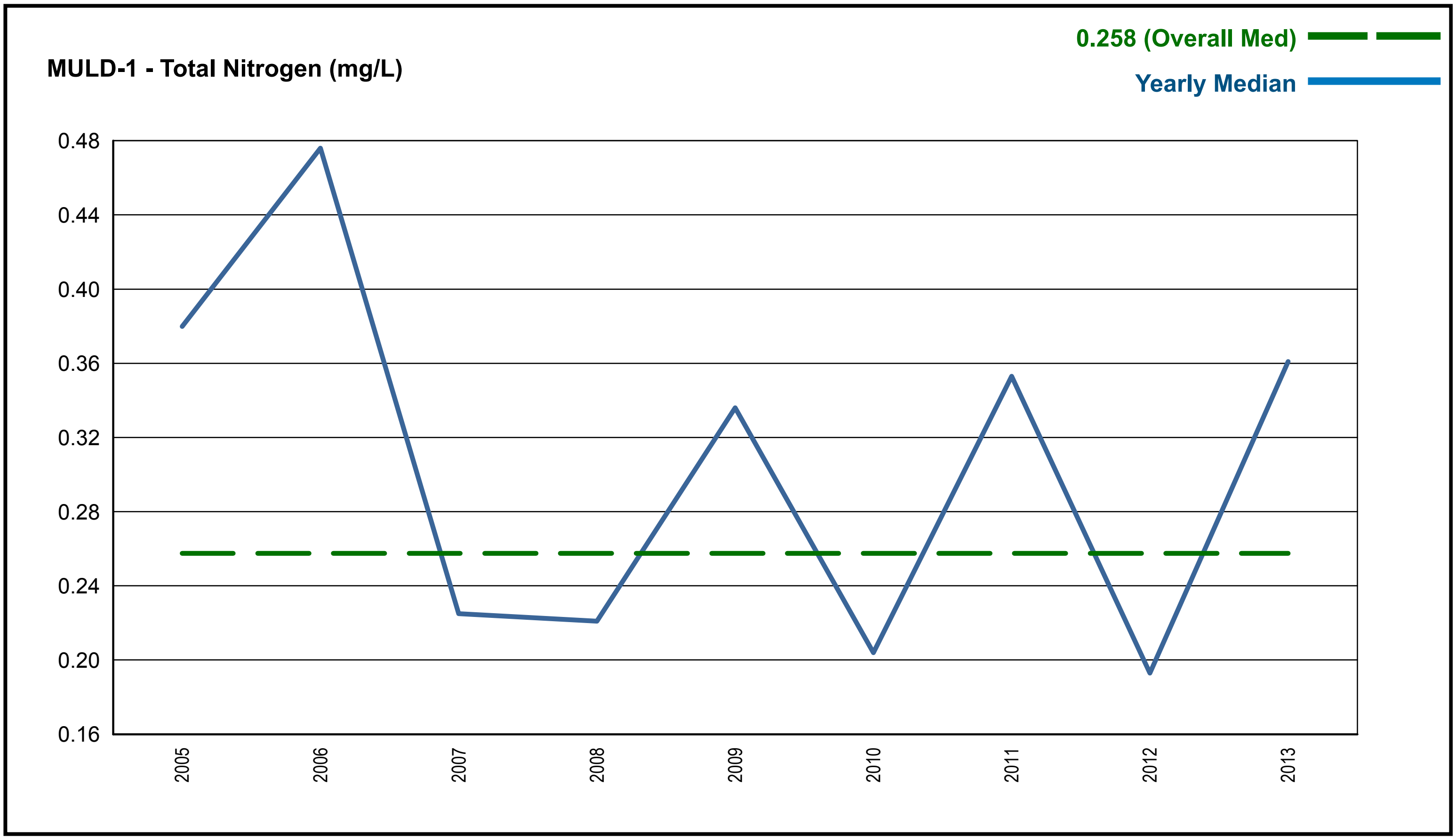

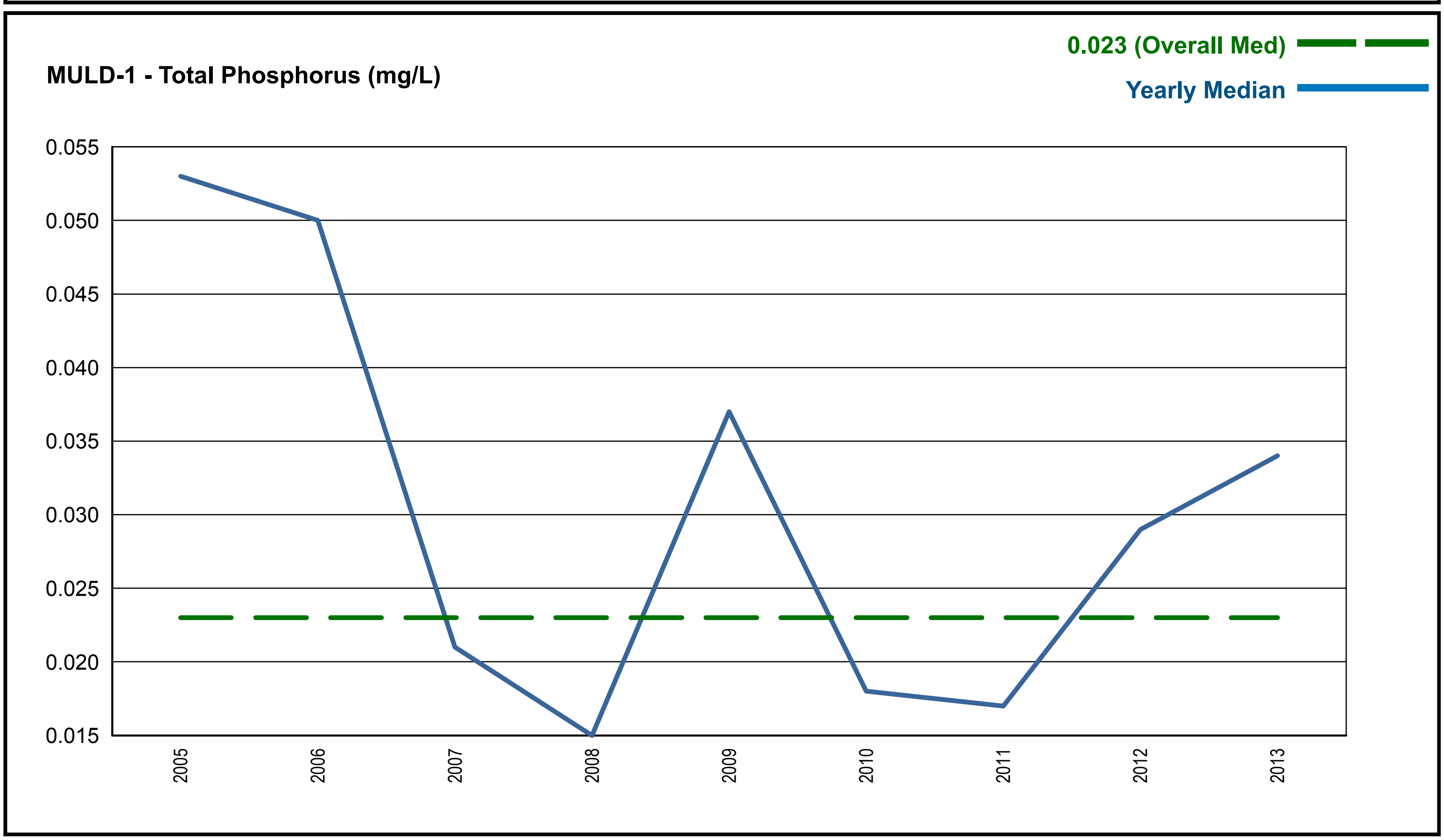

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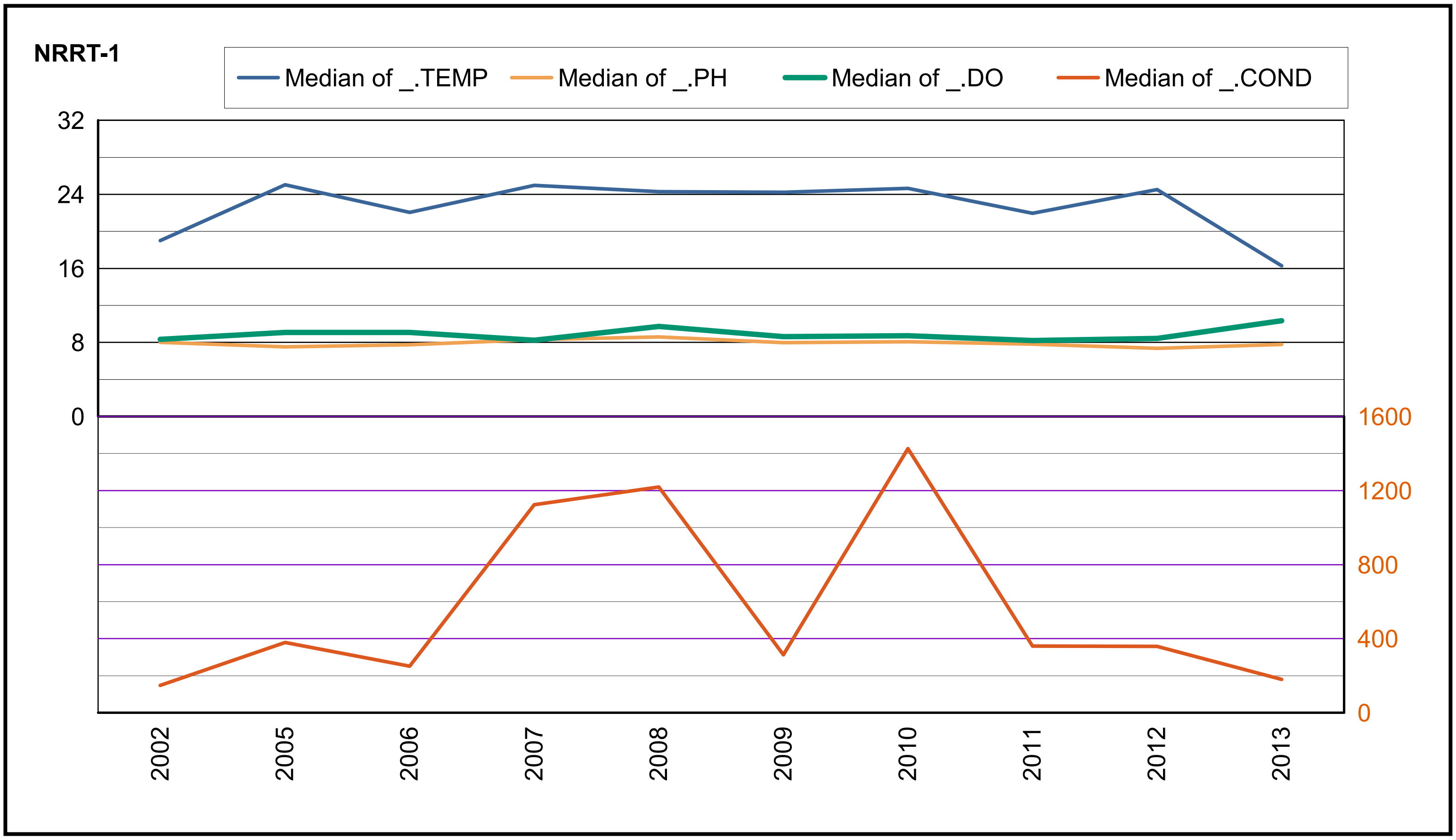

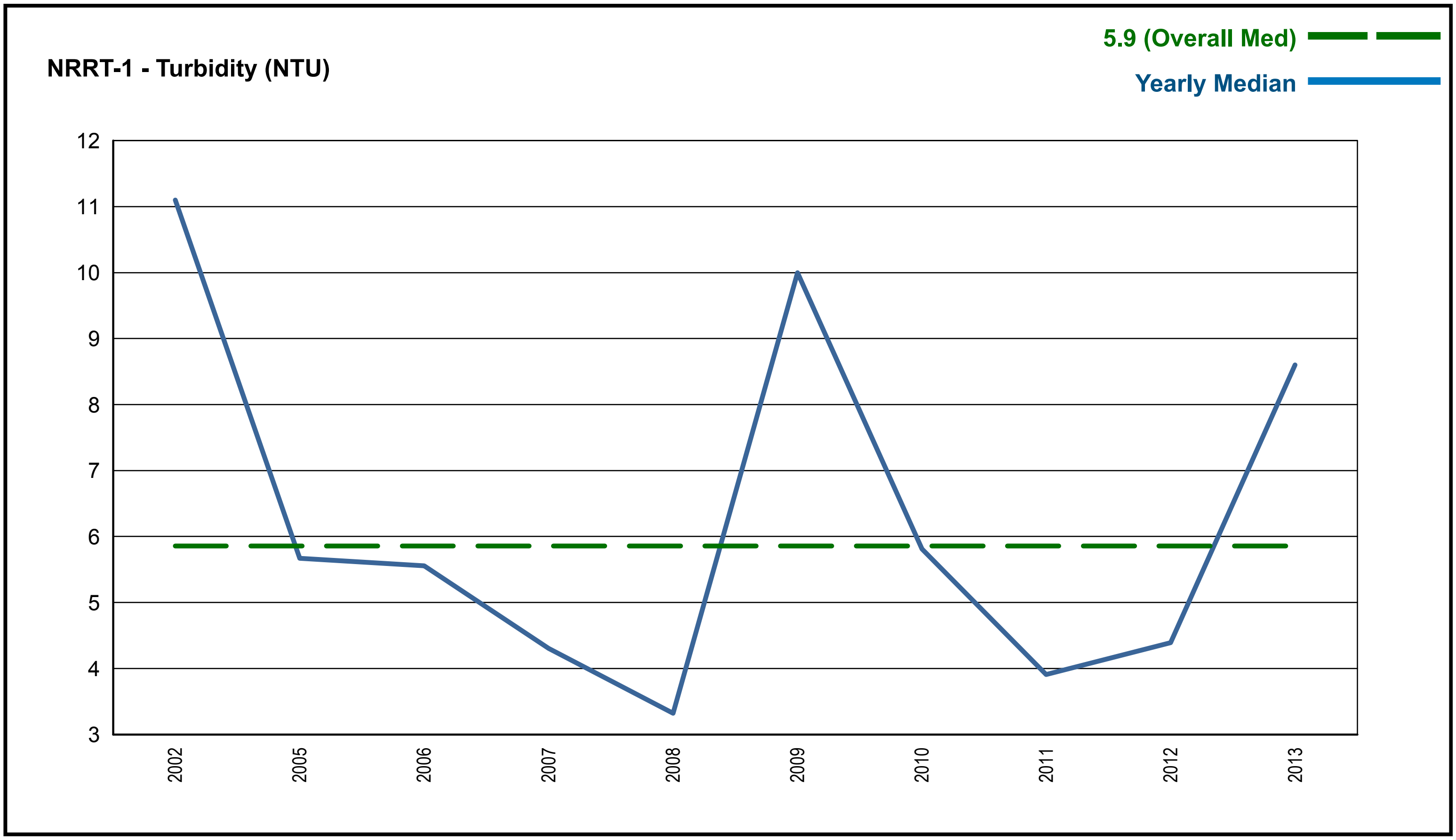

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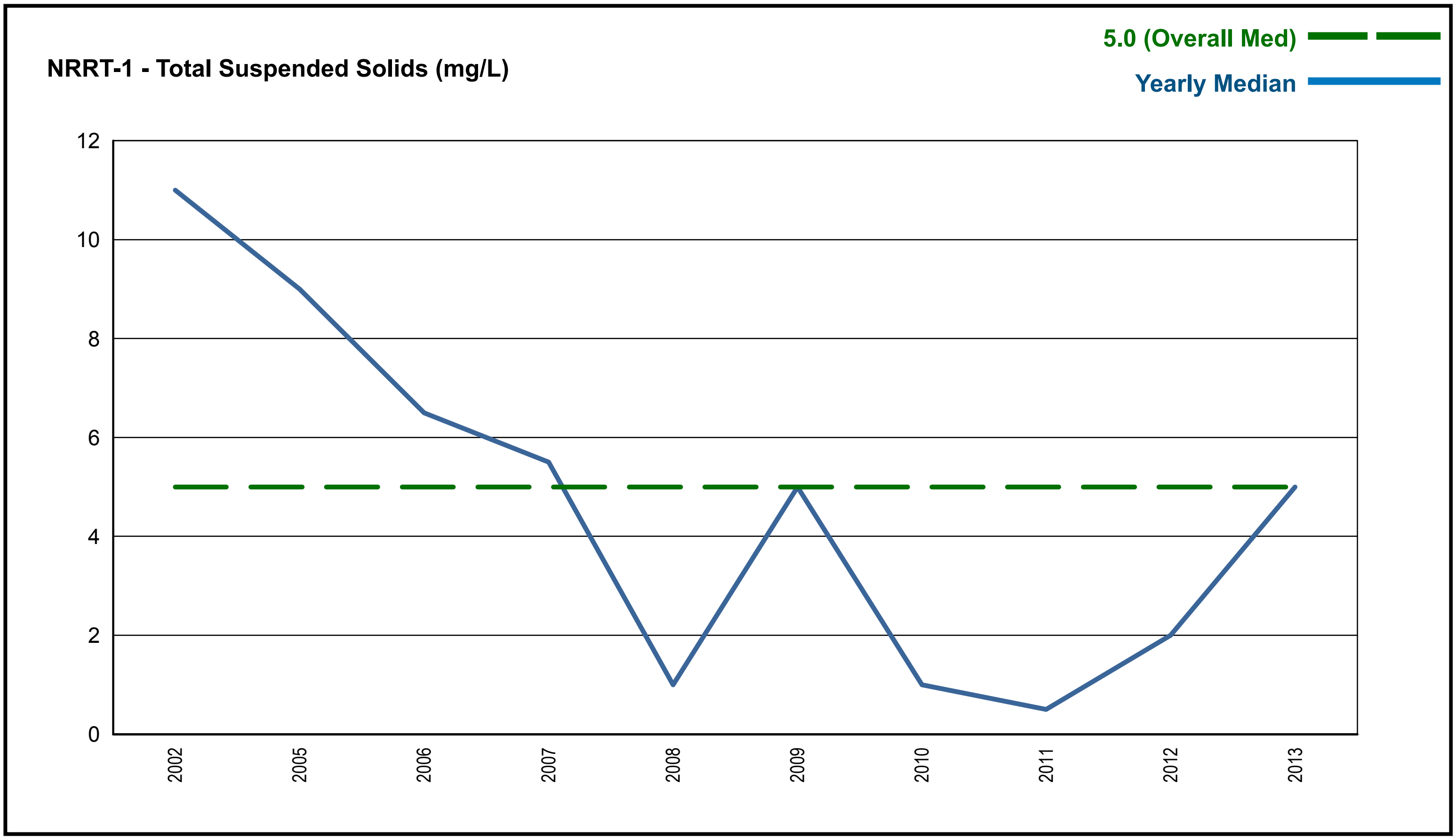

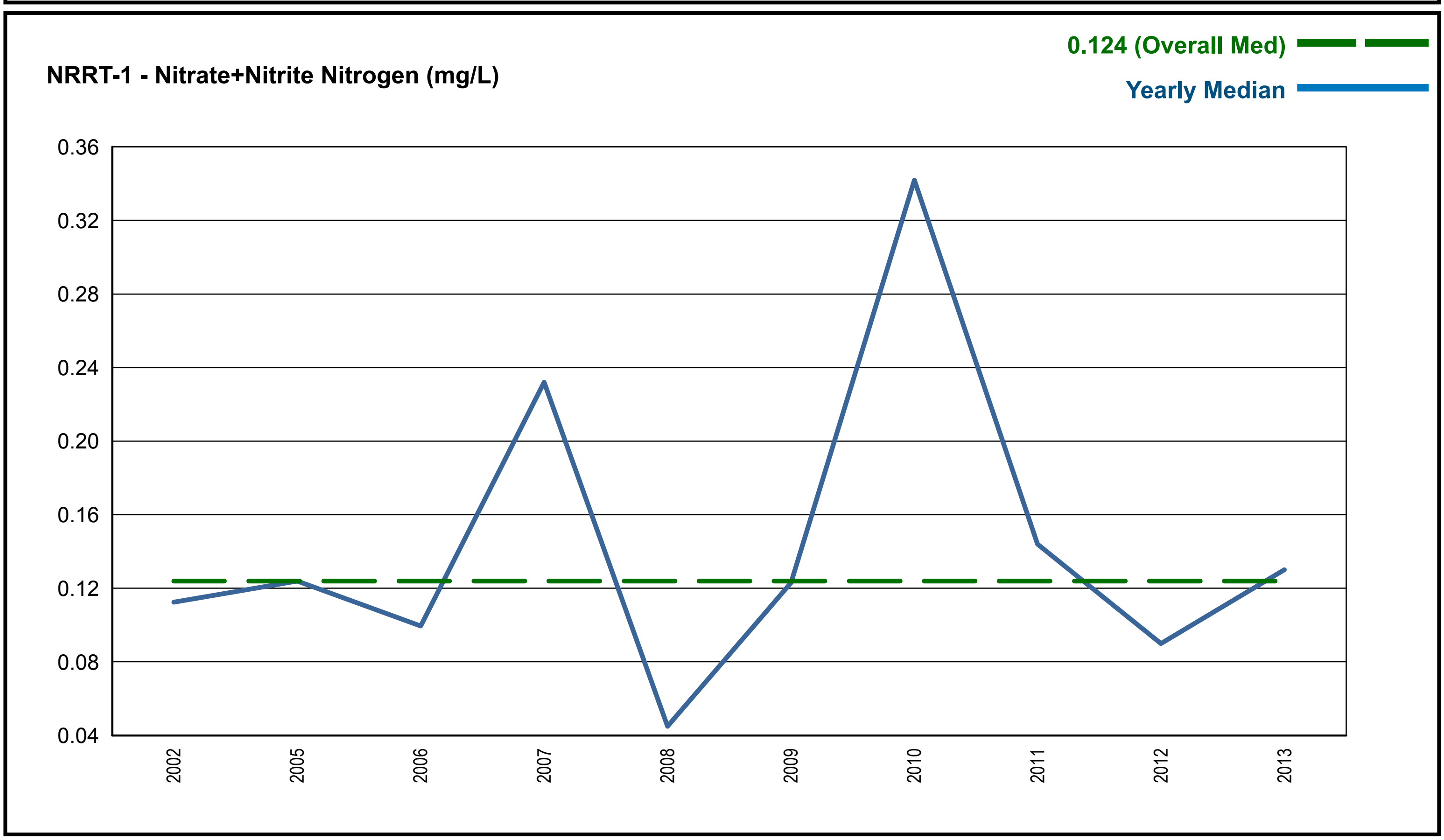

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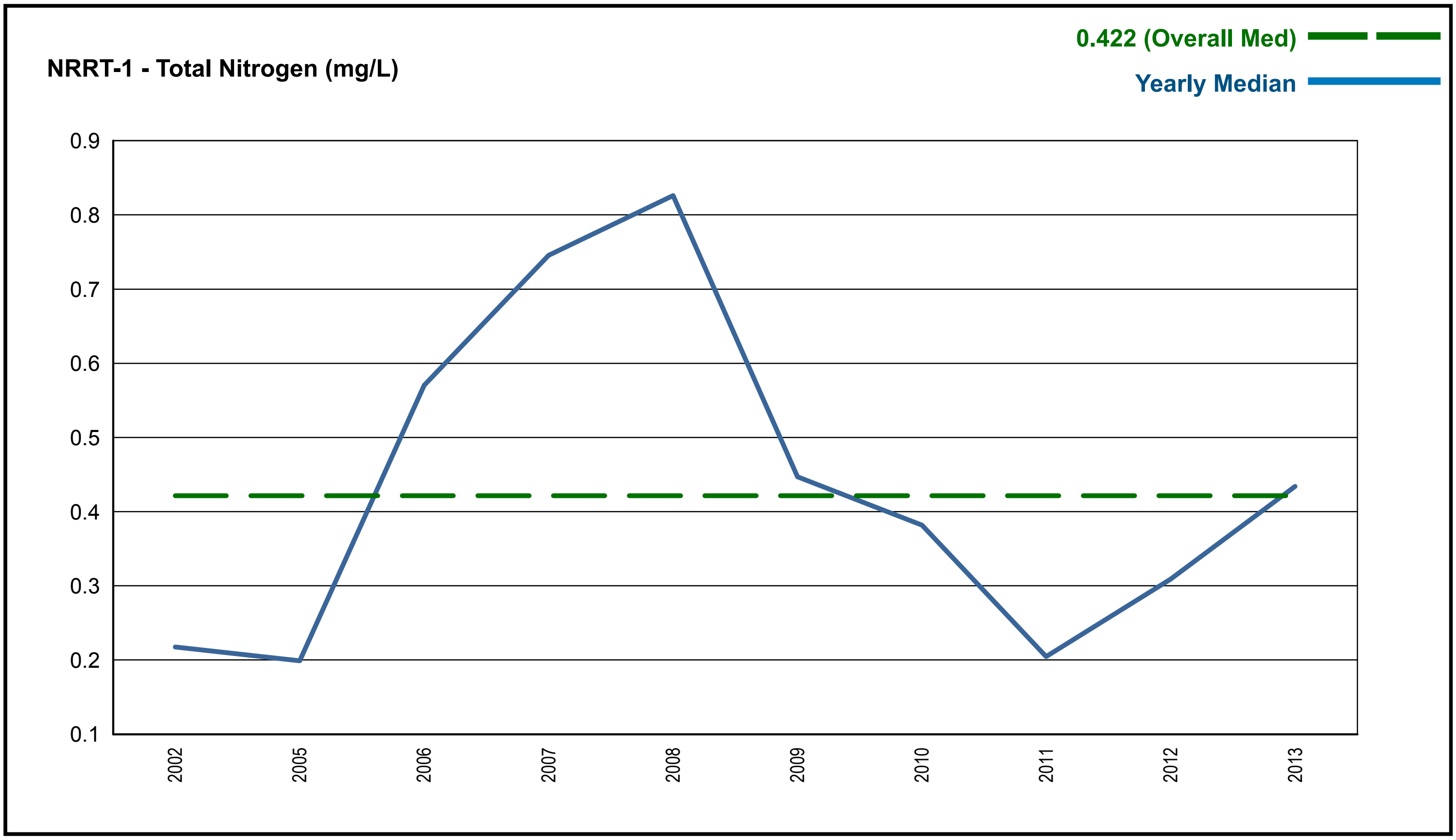

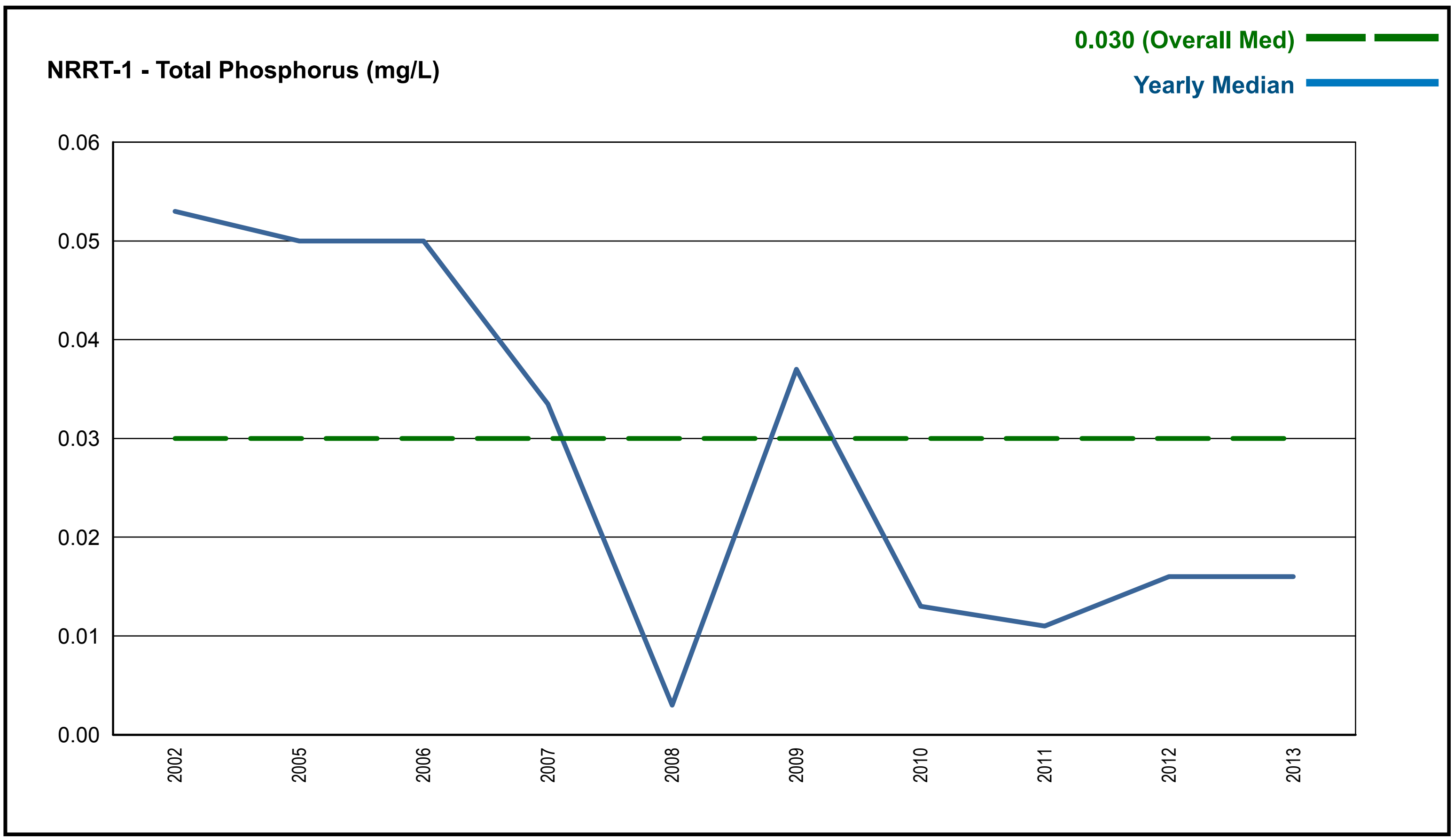

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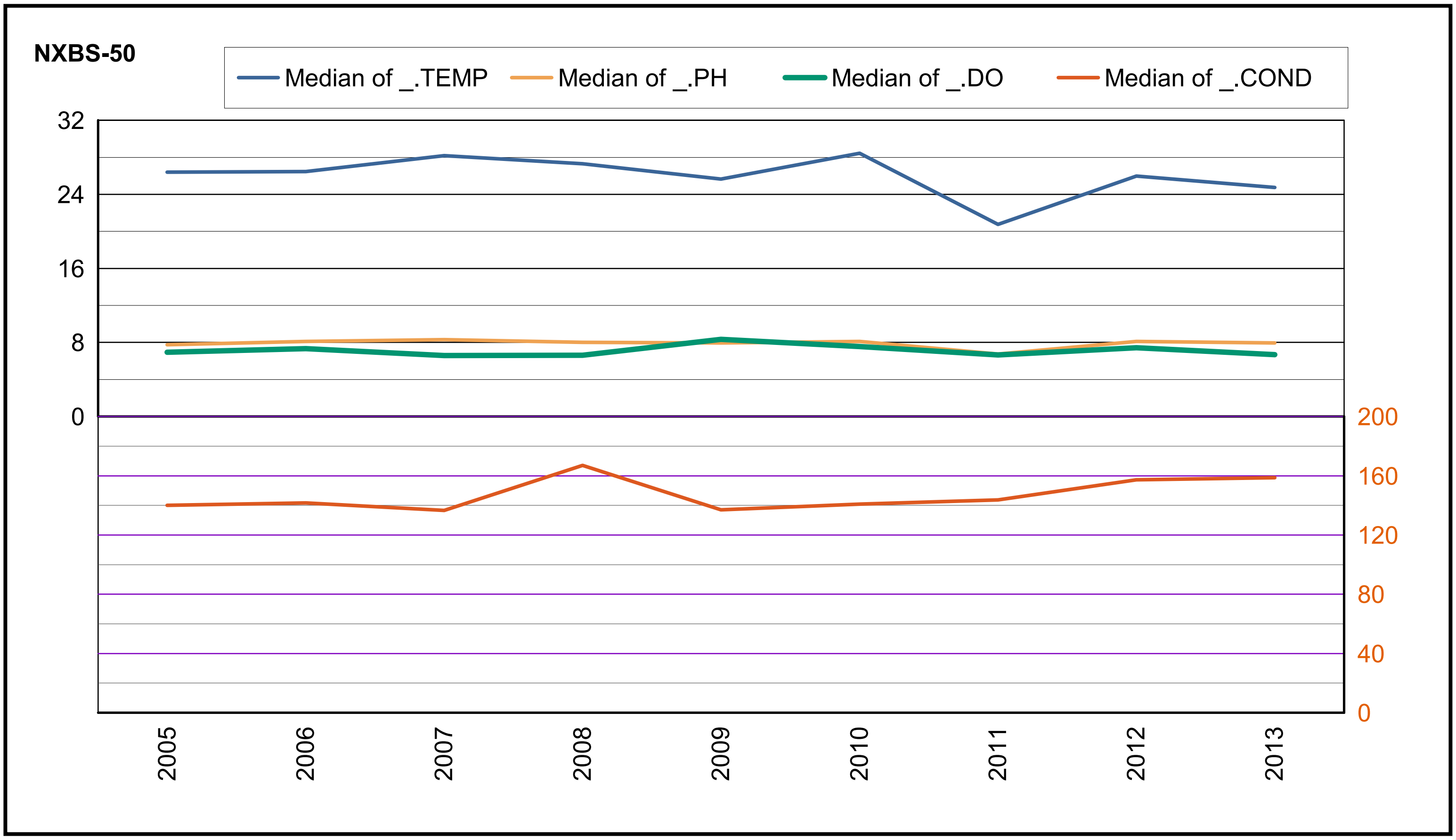

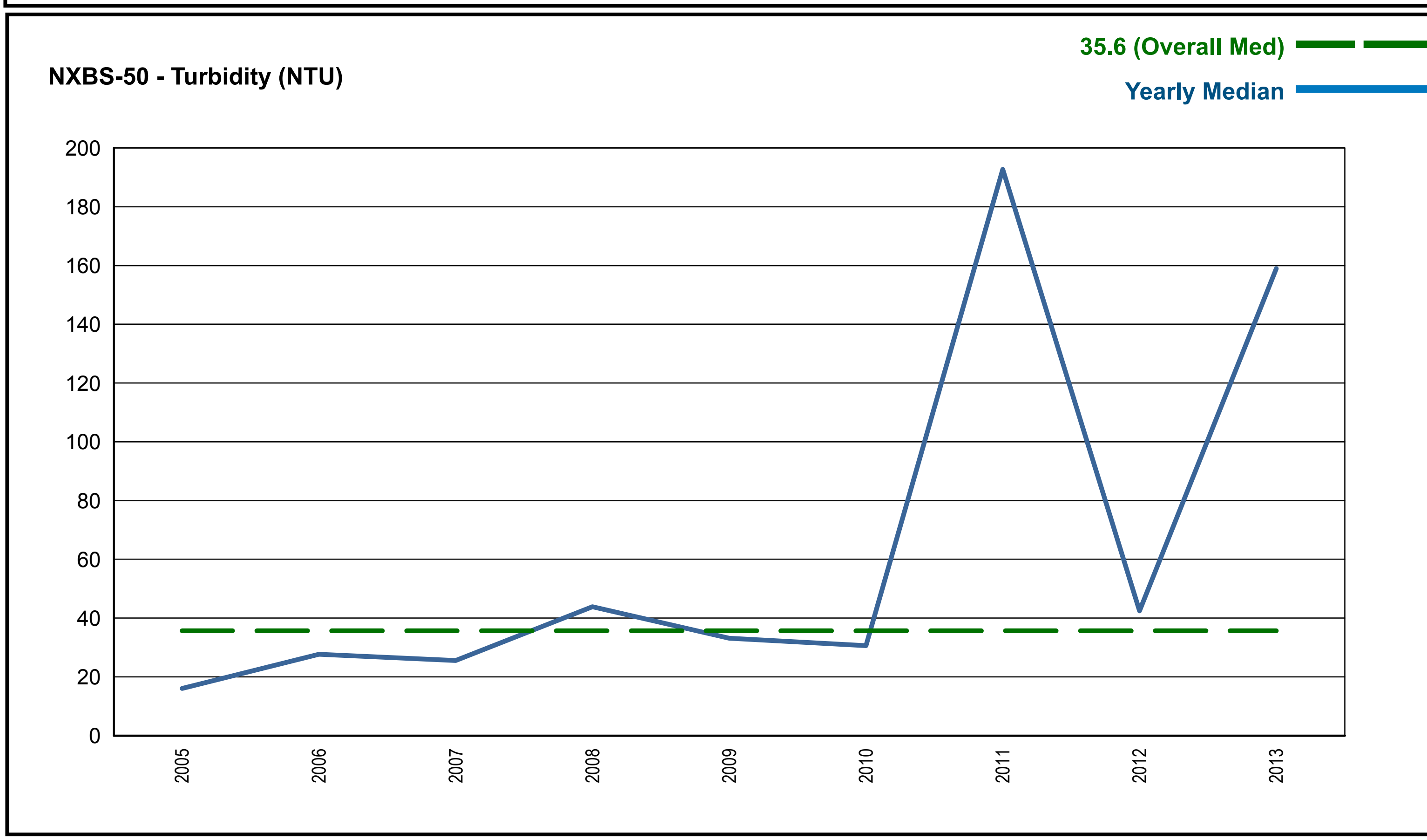

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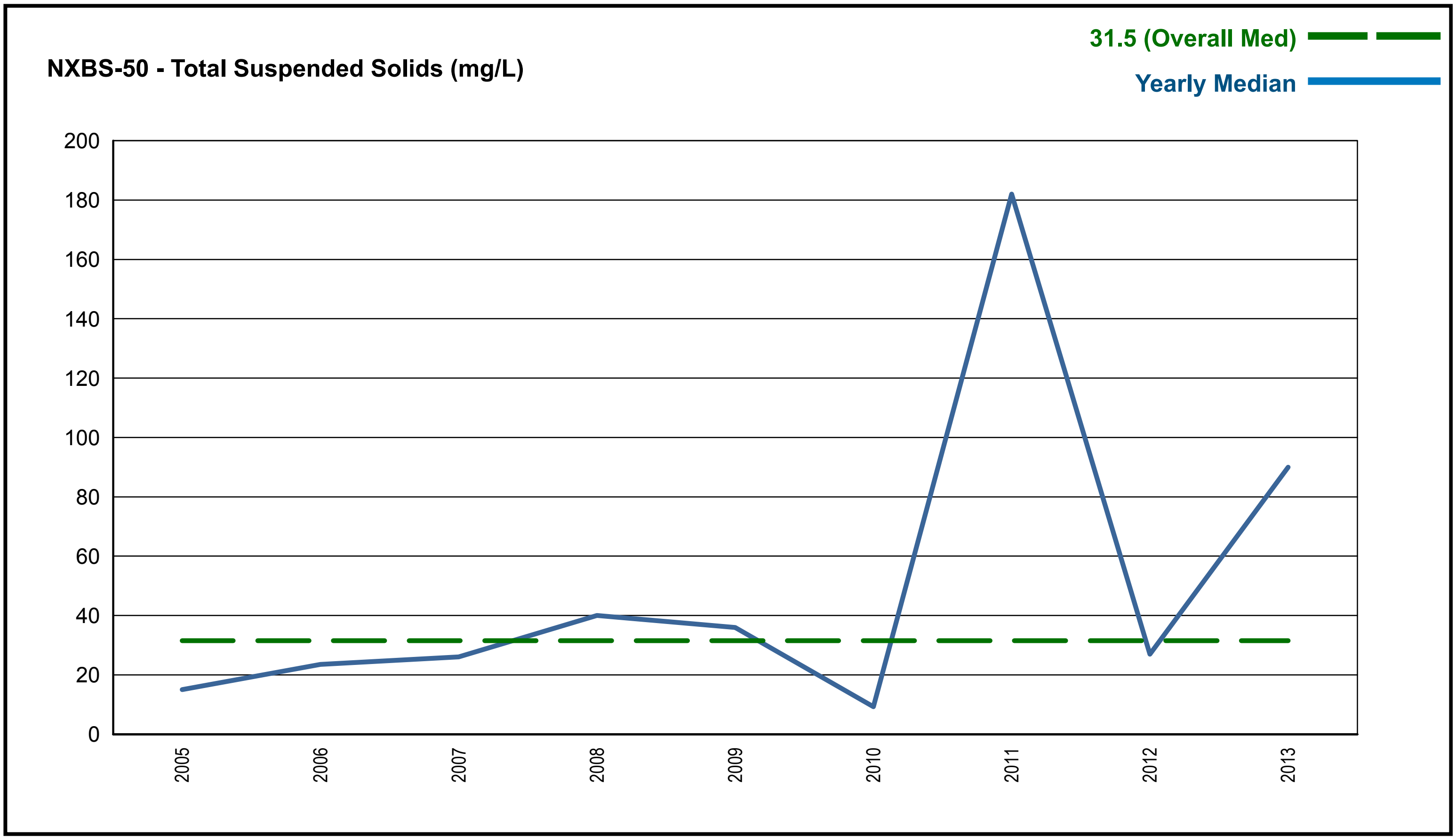
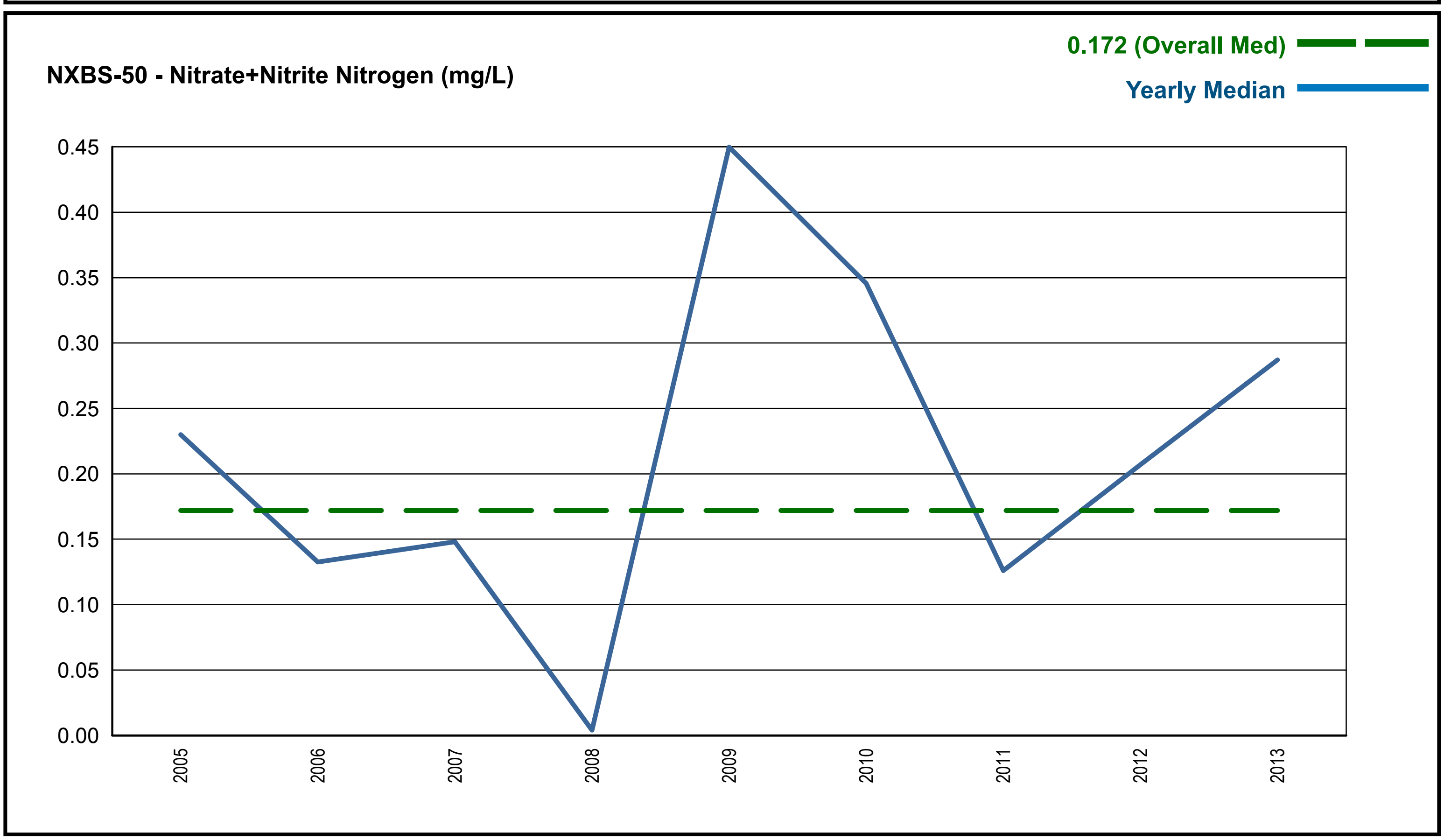
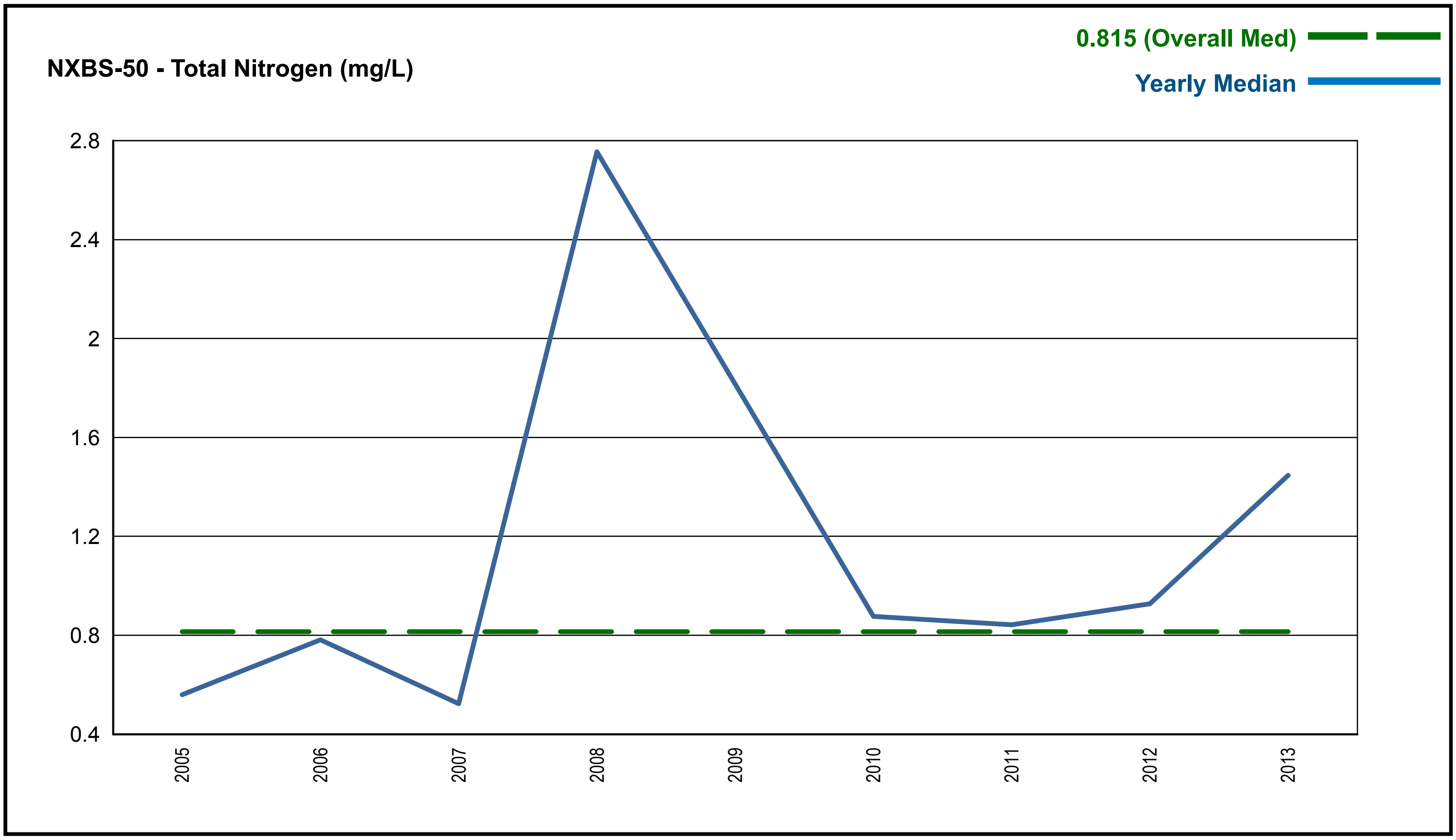
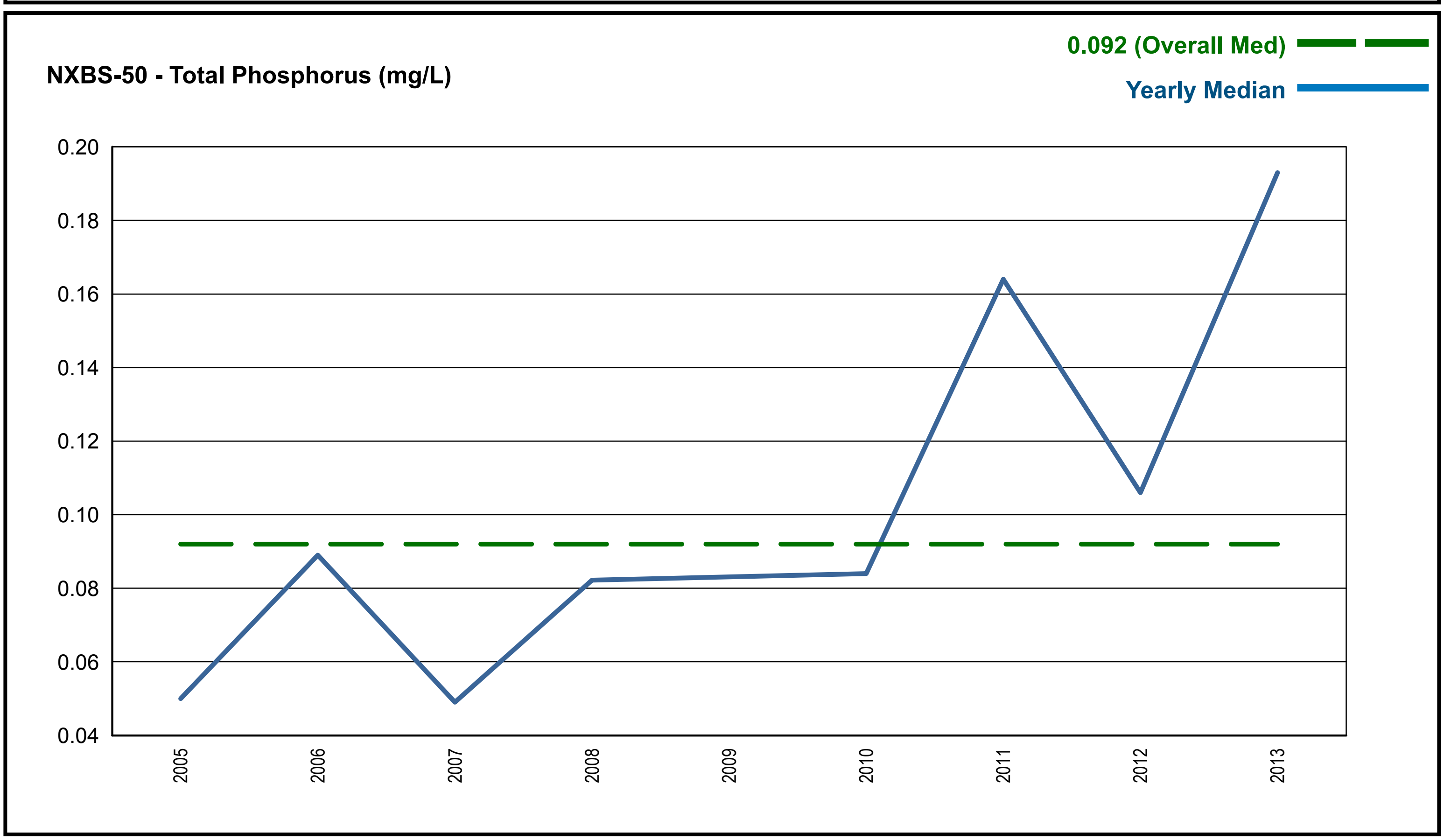




ADEM Ambient Trend Stations - Sampled 1977 - 2014





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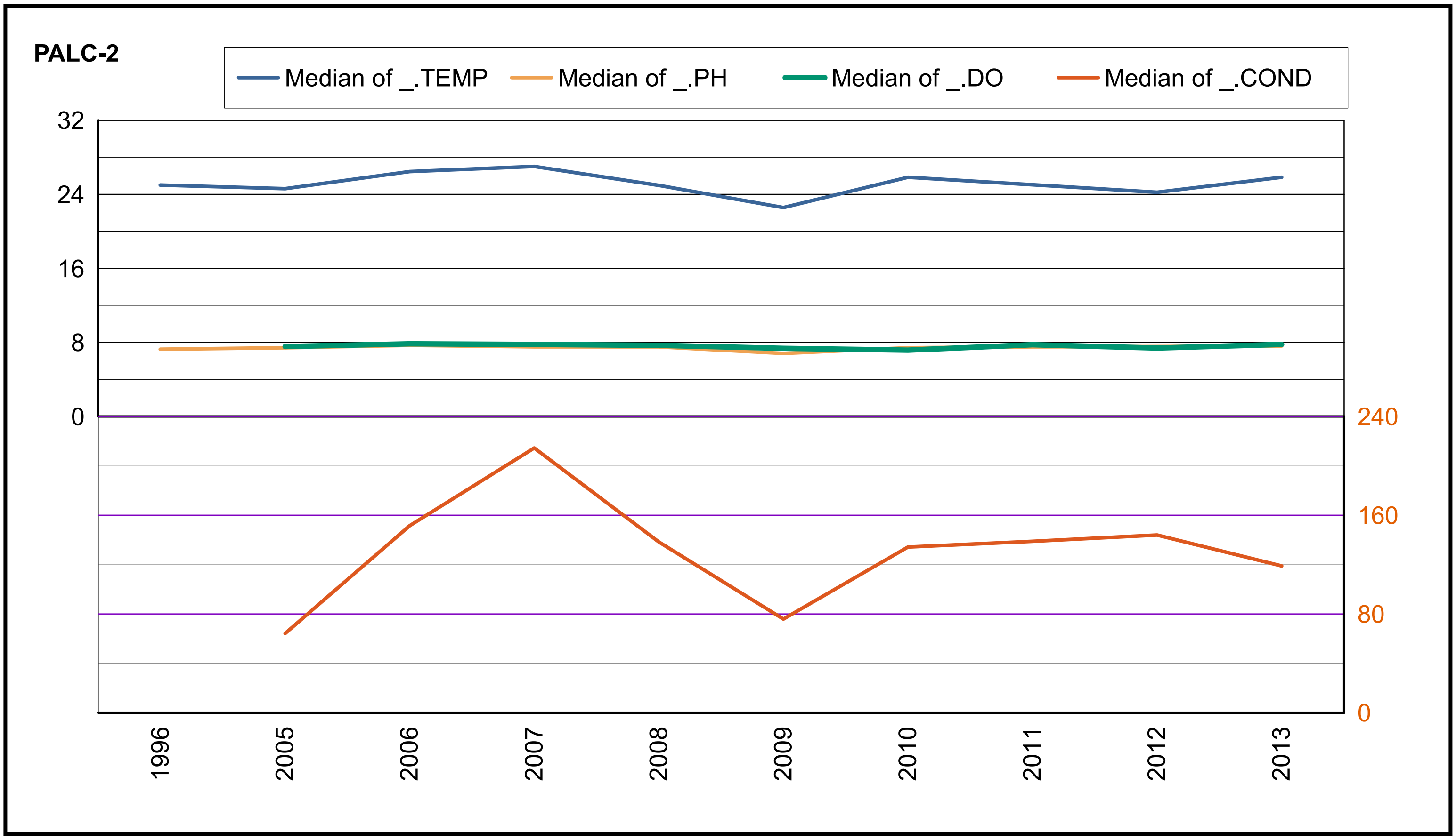

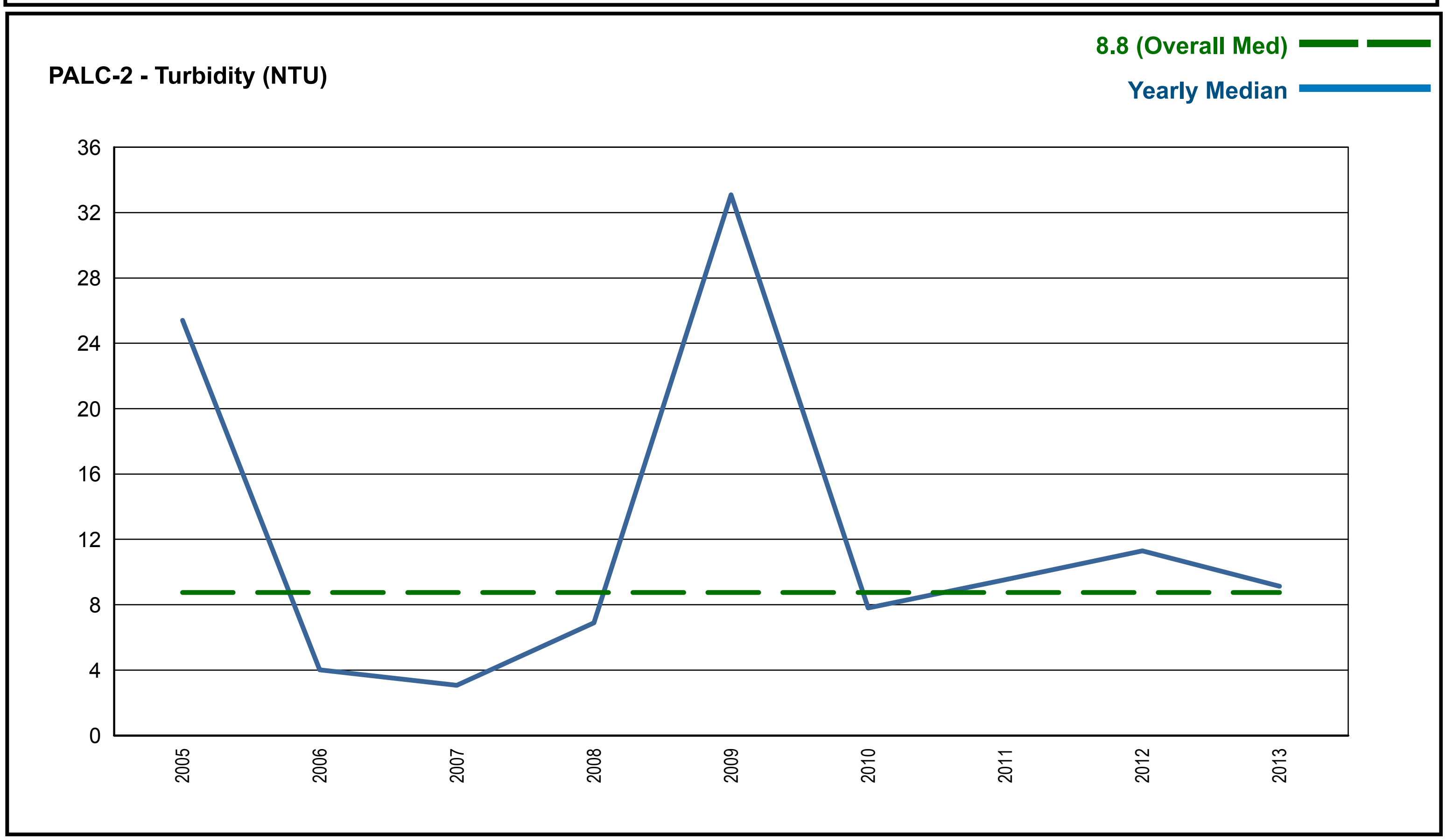

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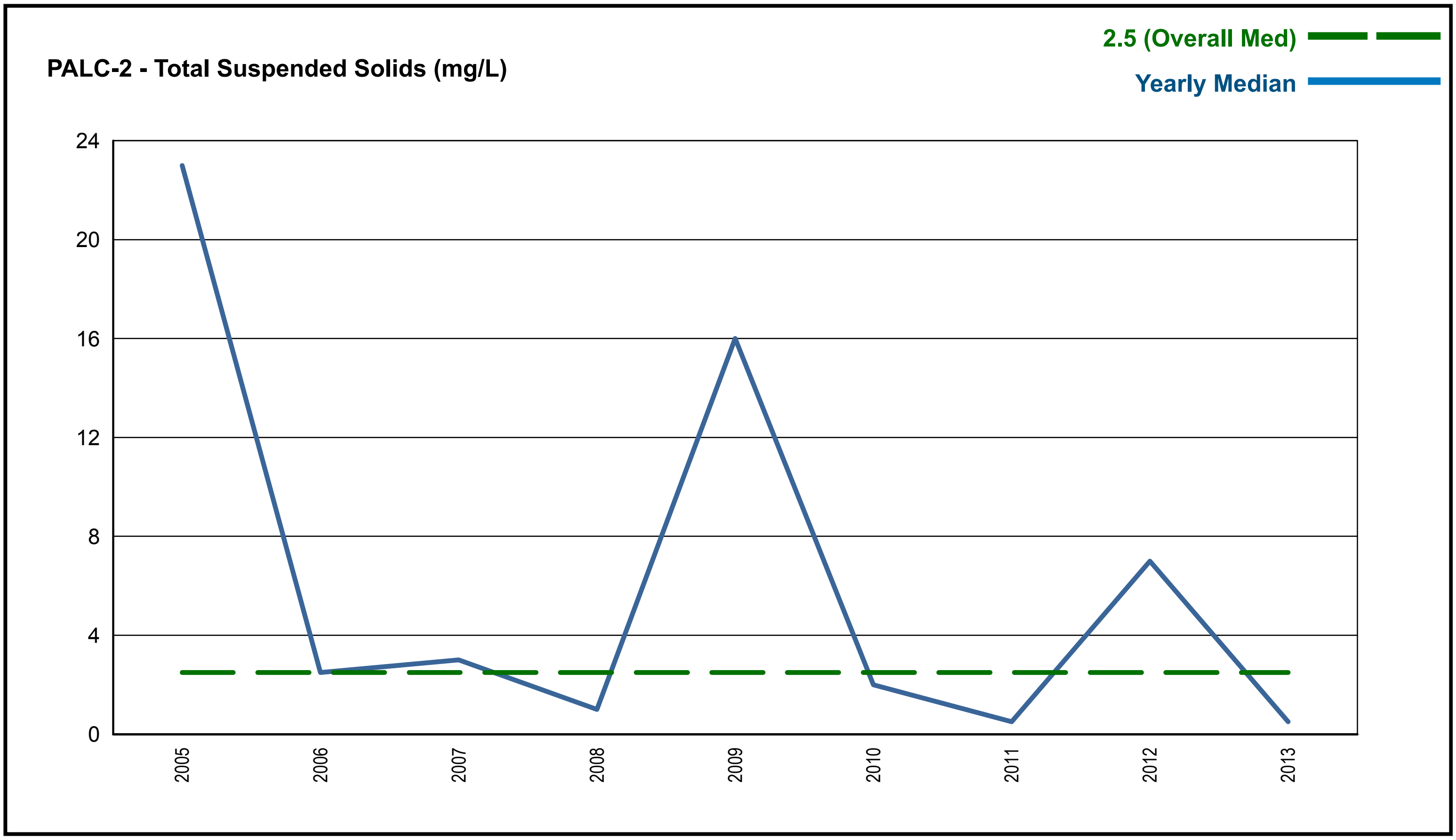

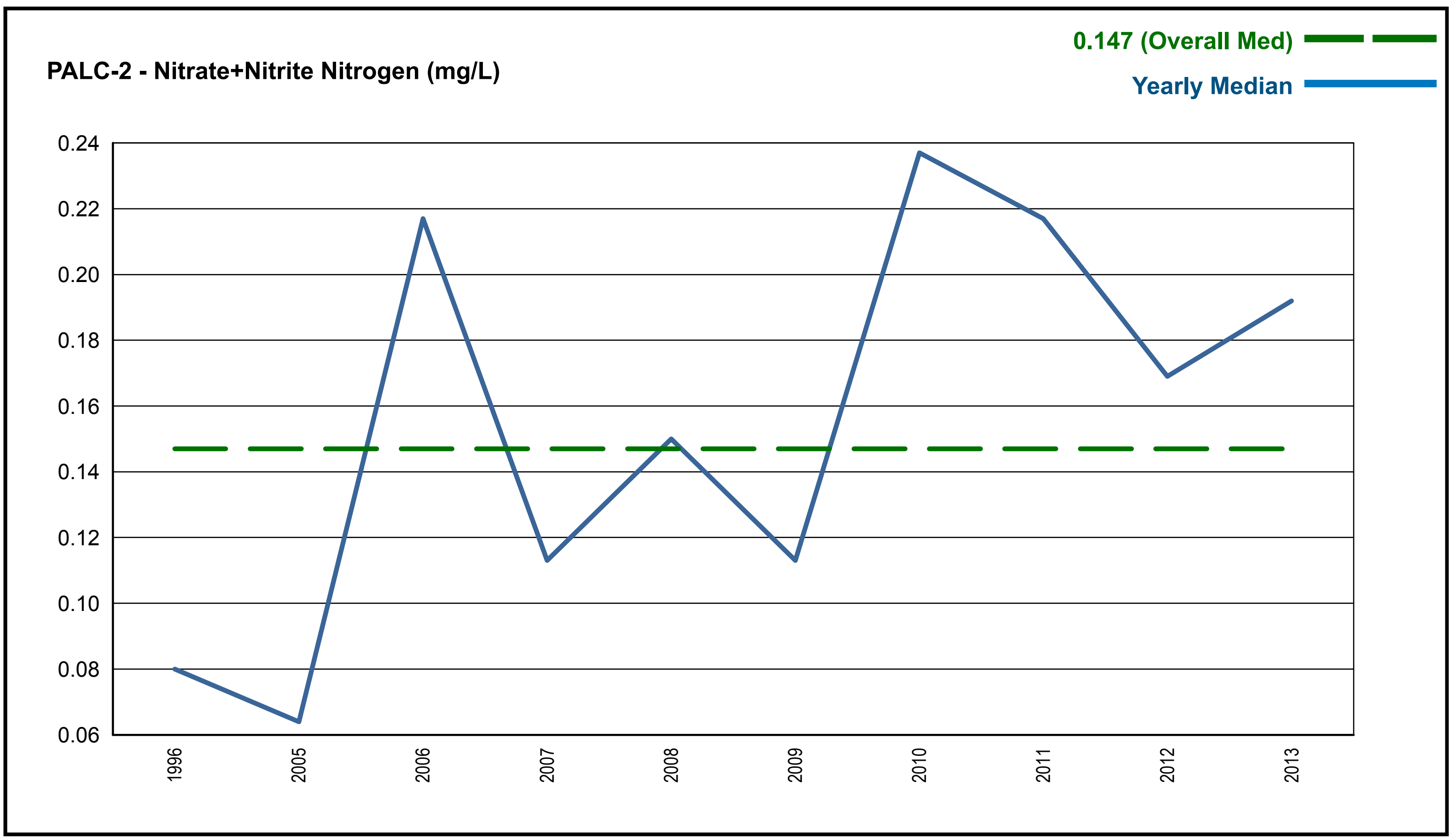

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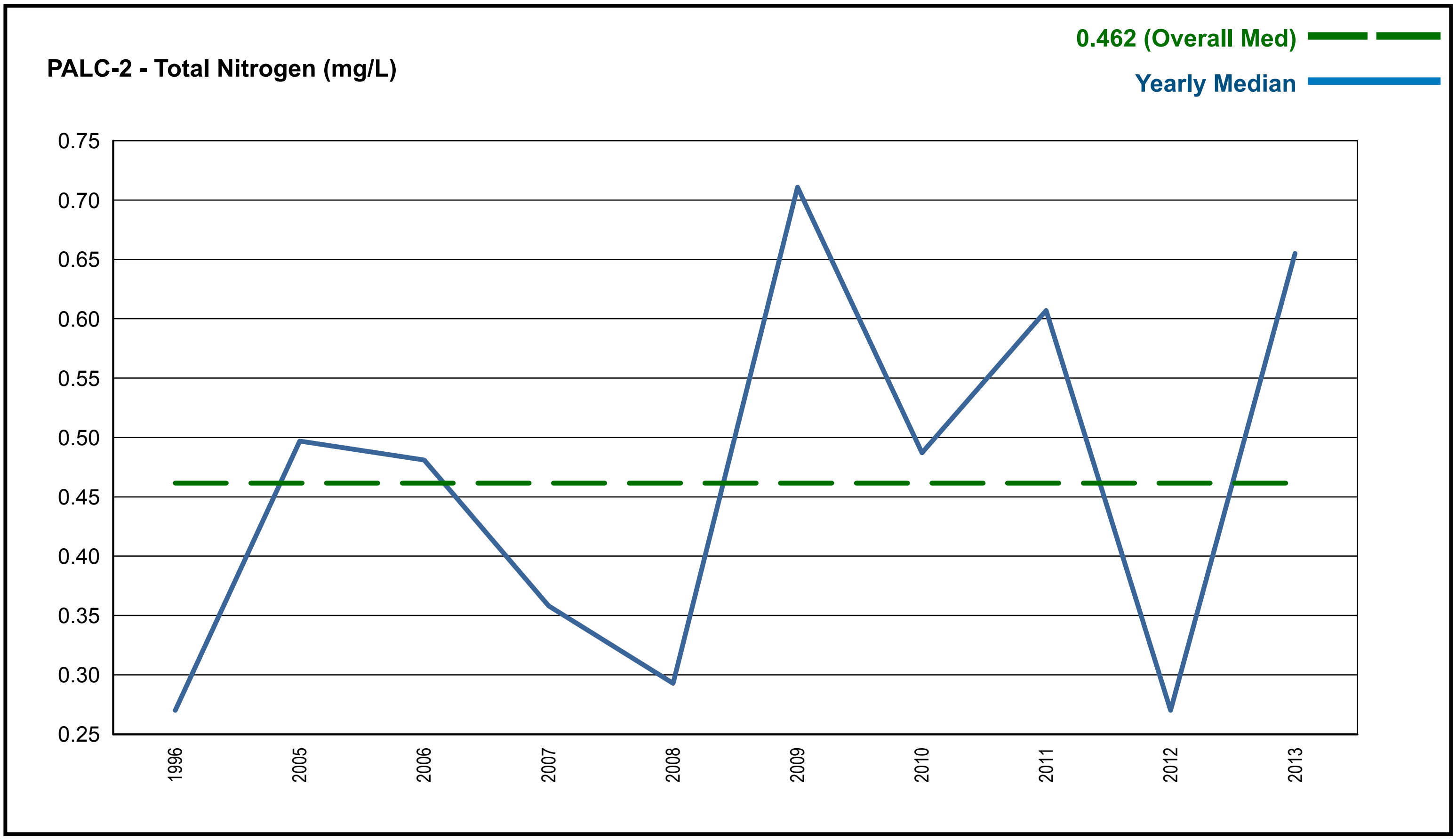

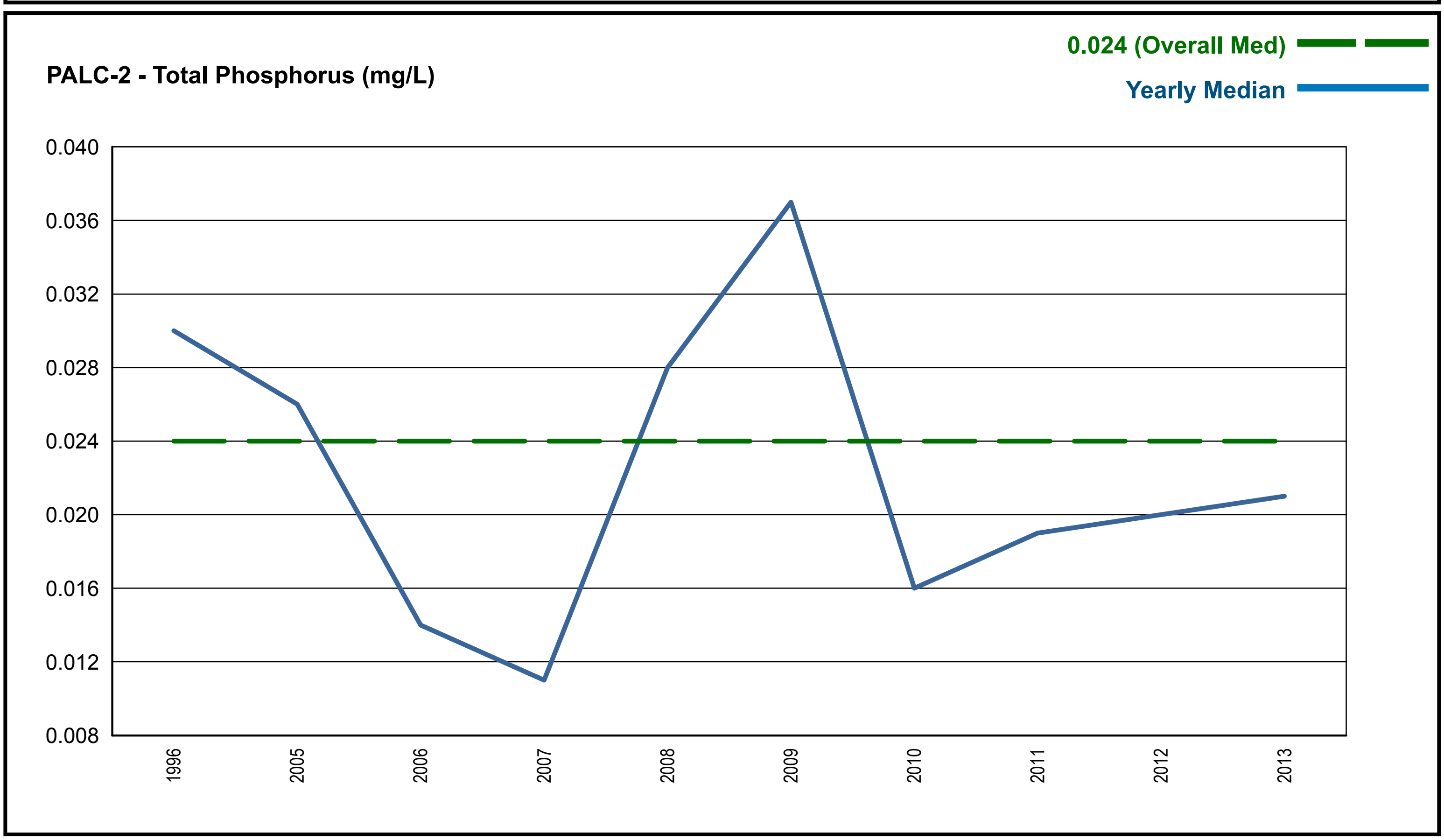

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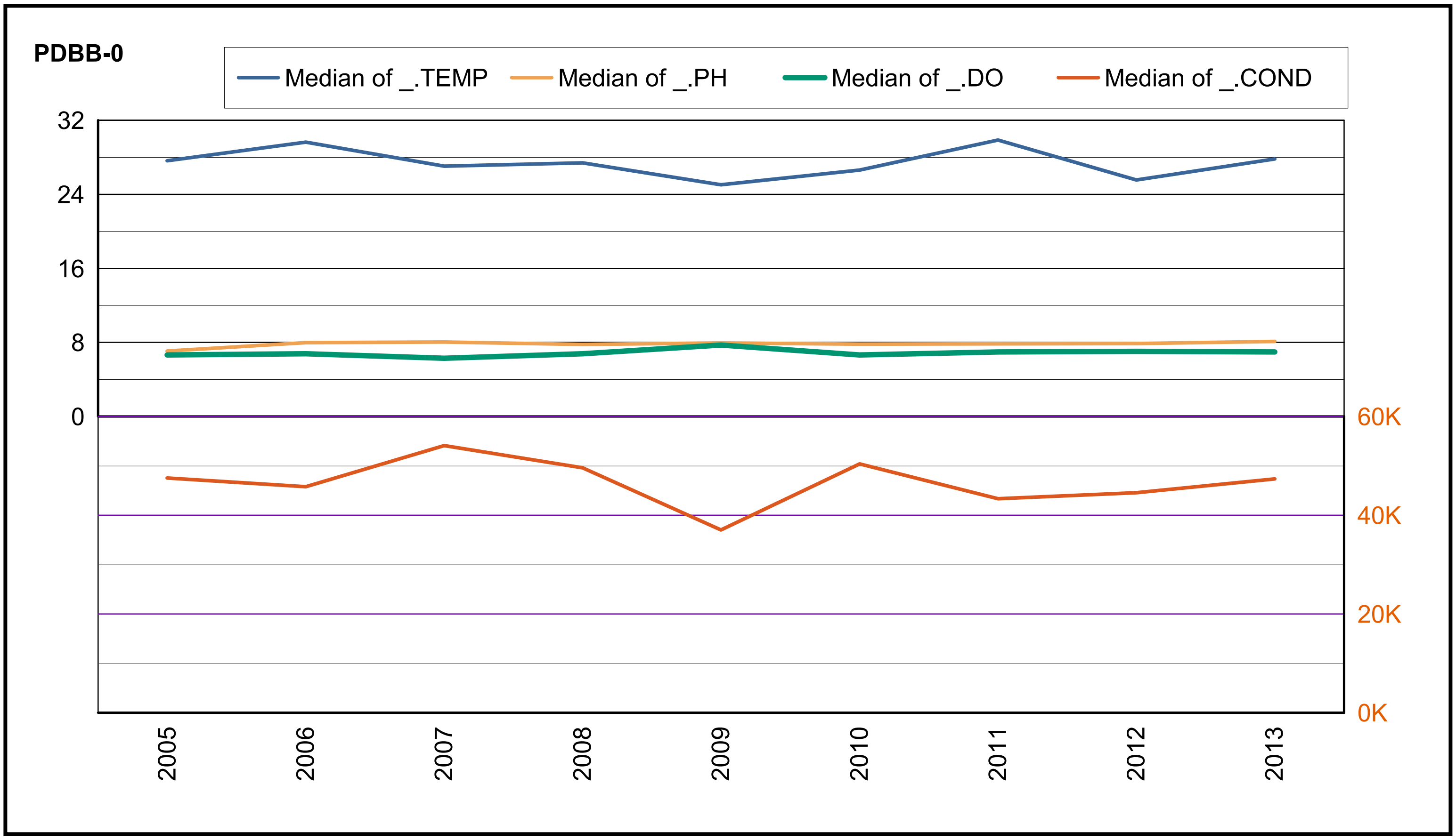

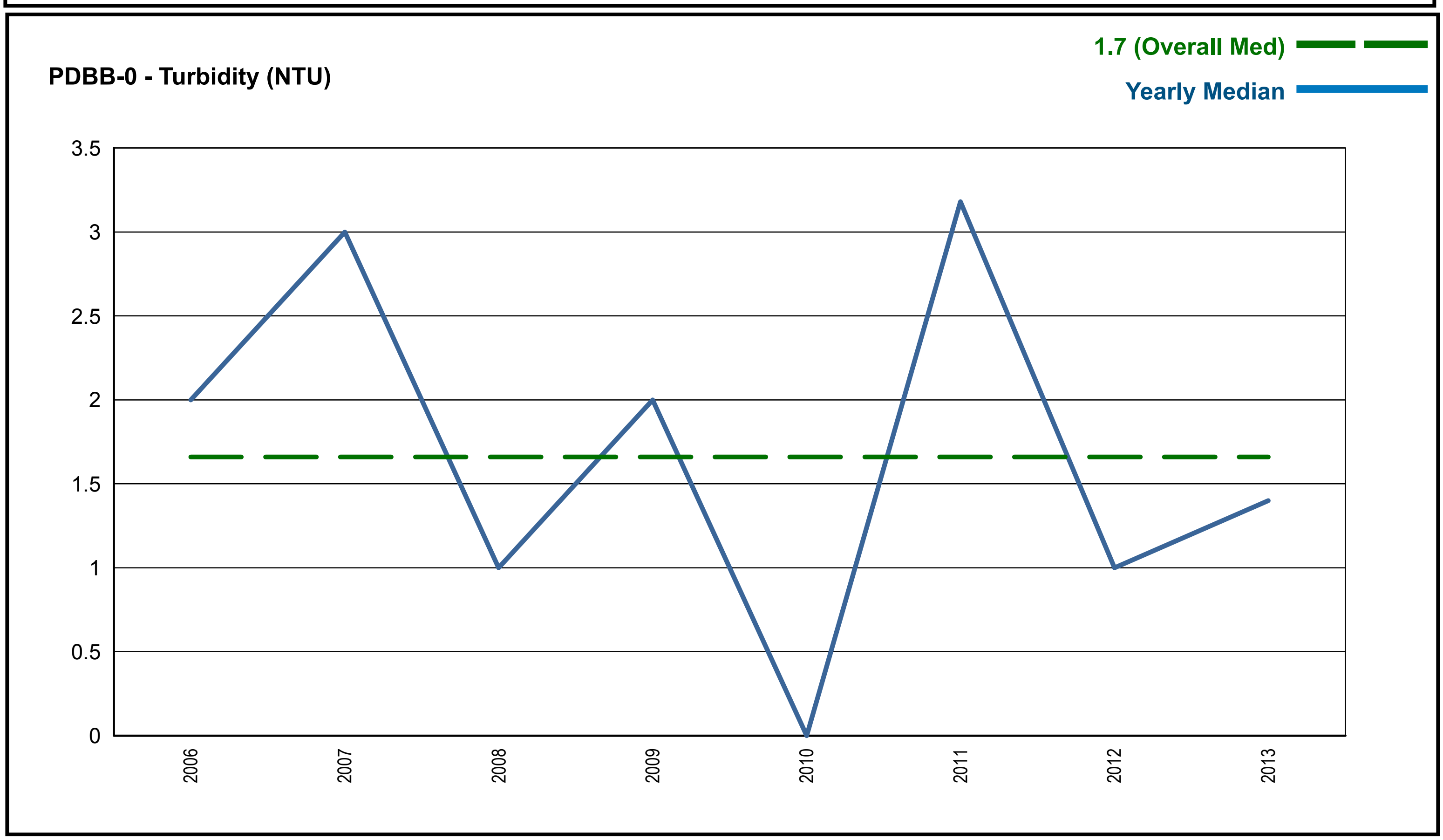

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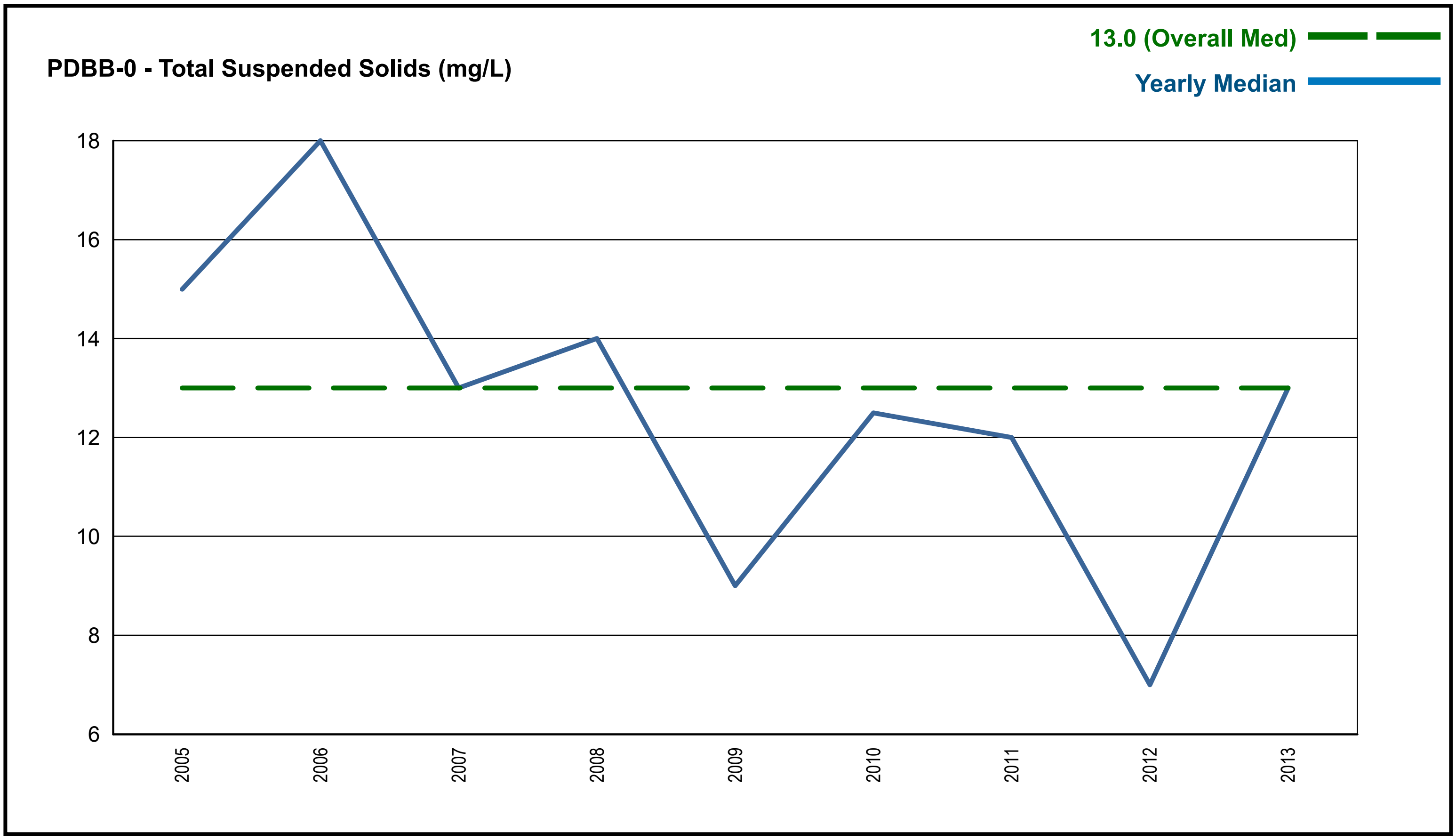
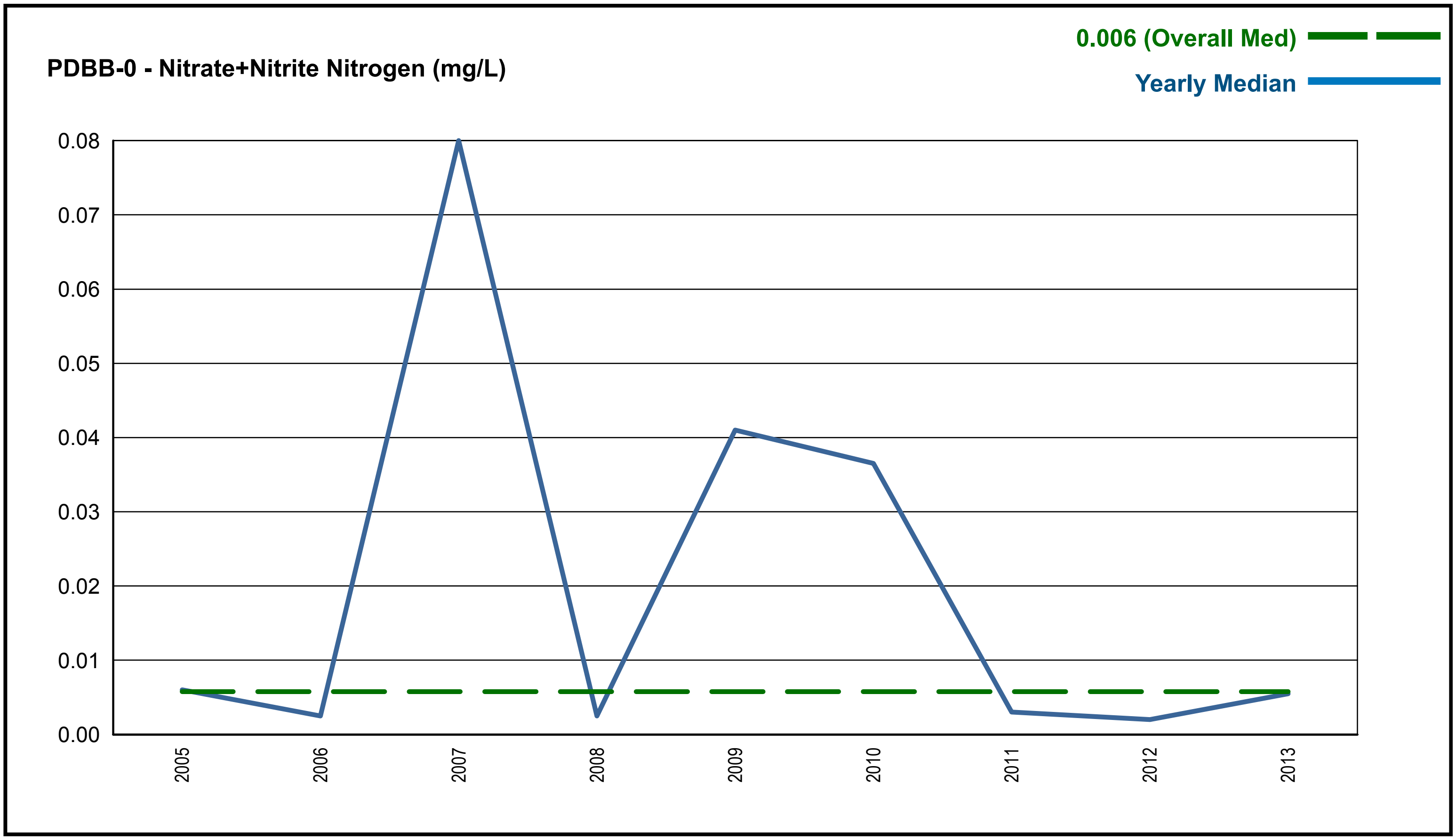
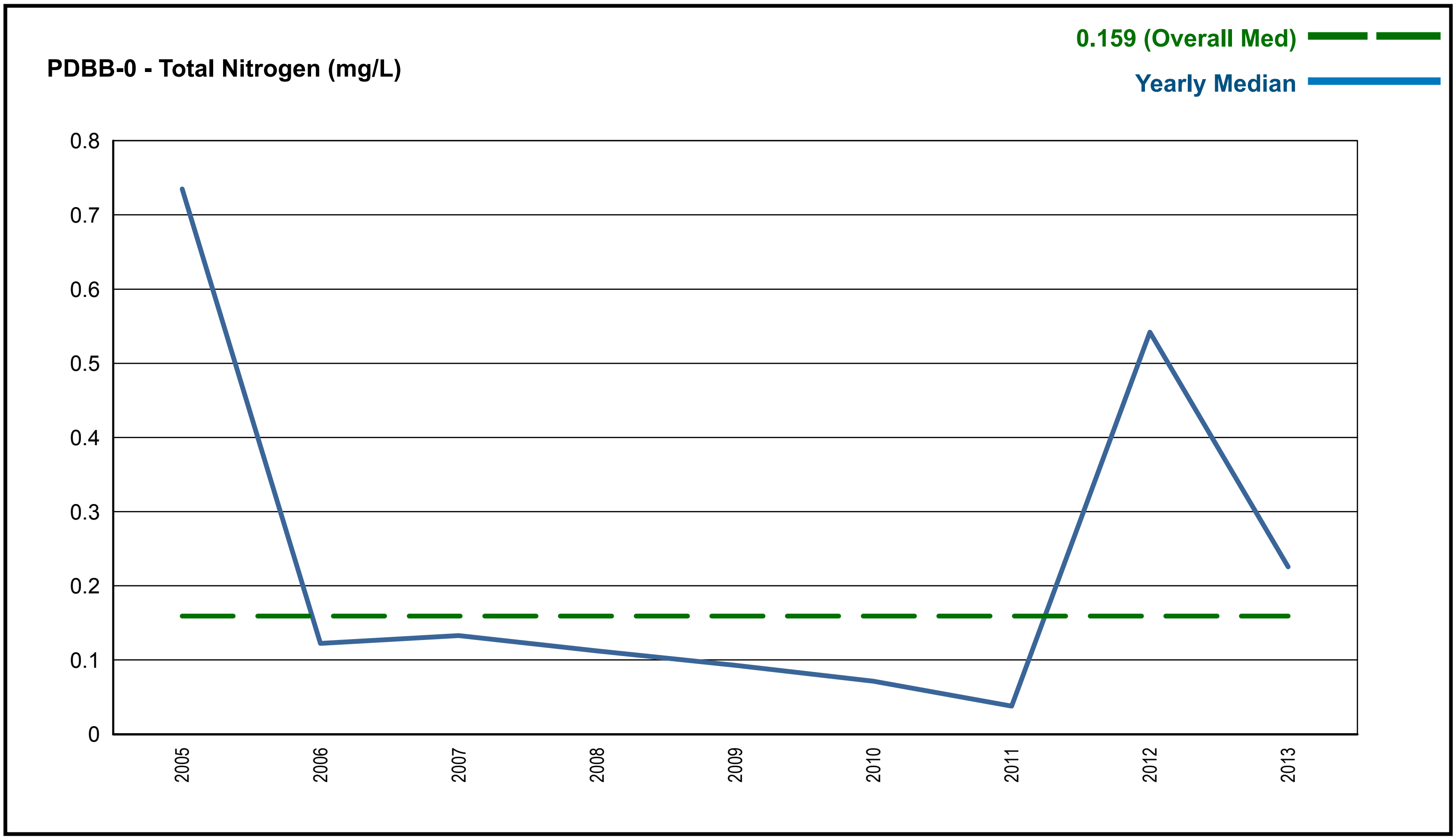
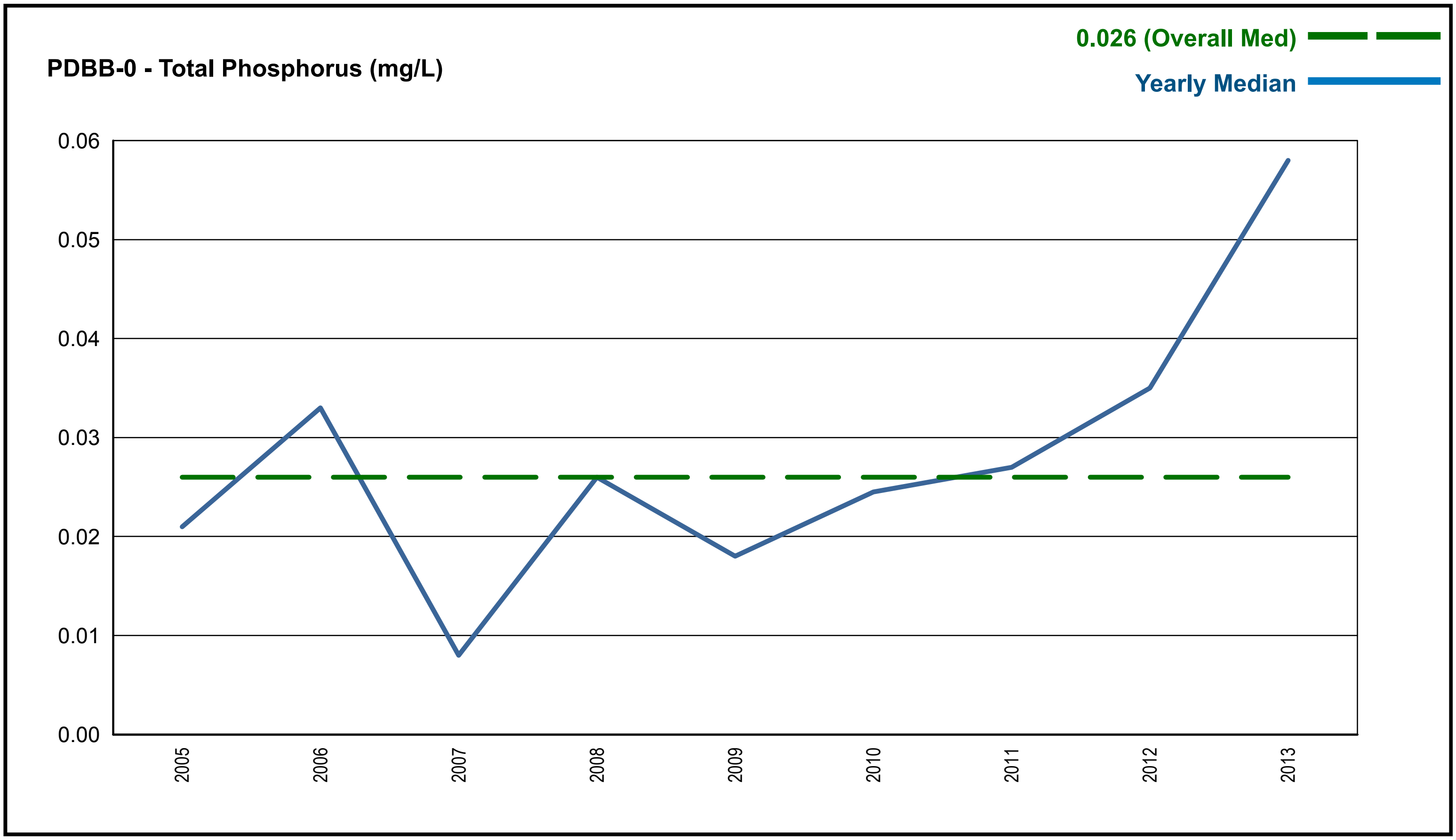


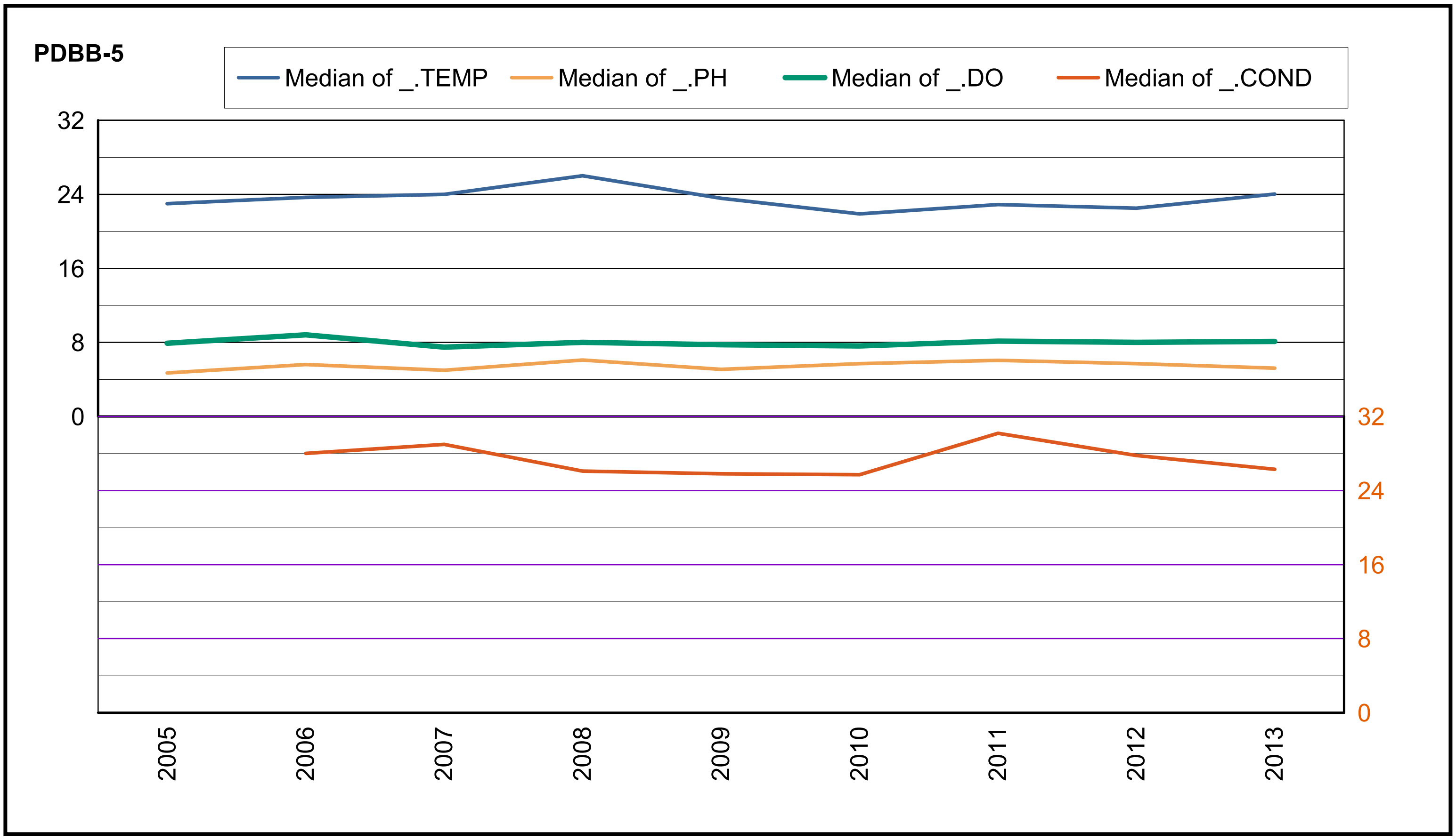


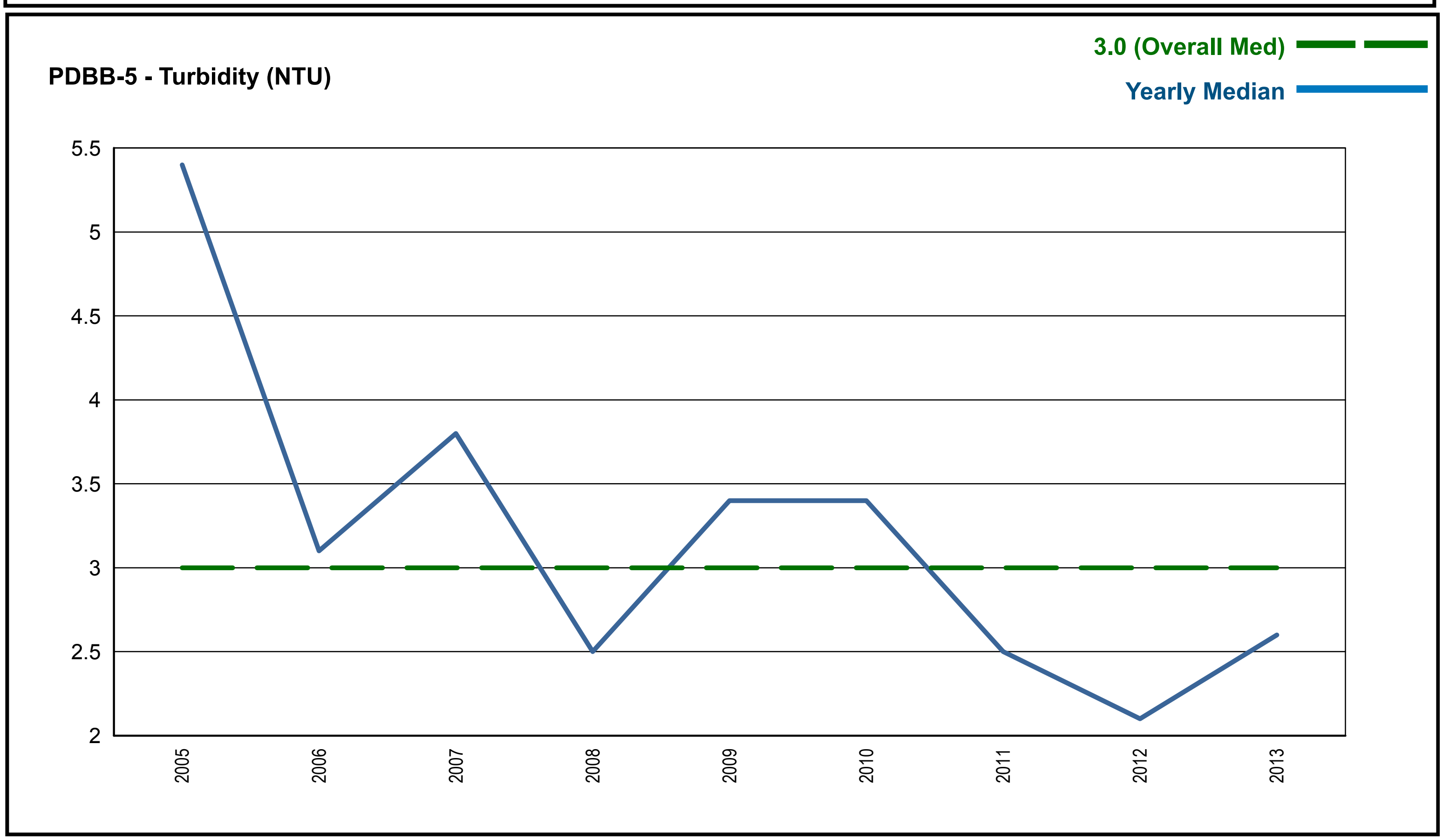
ADEM Ambient Trend Stations - Sampled 1977 - 2014



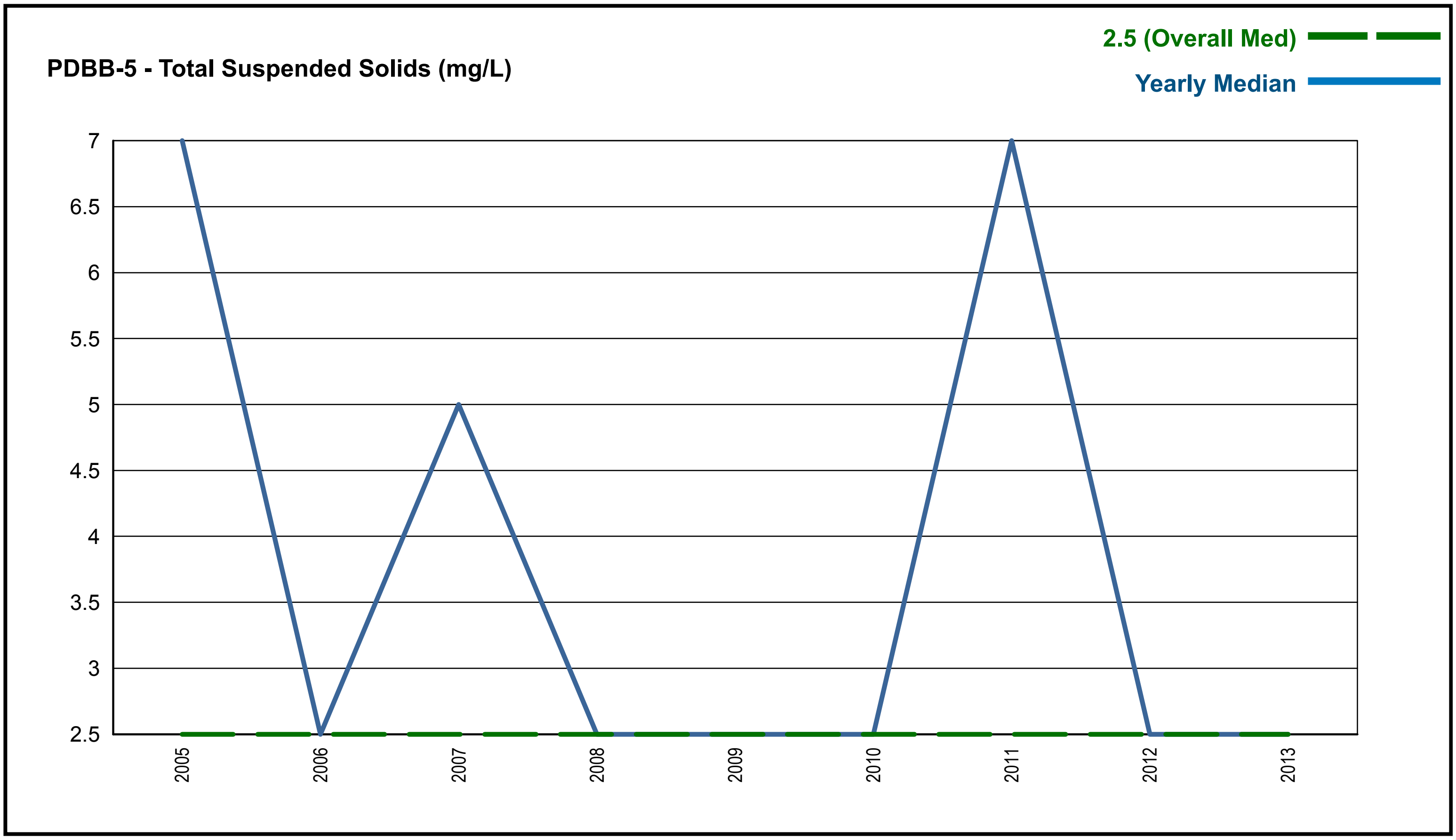


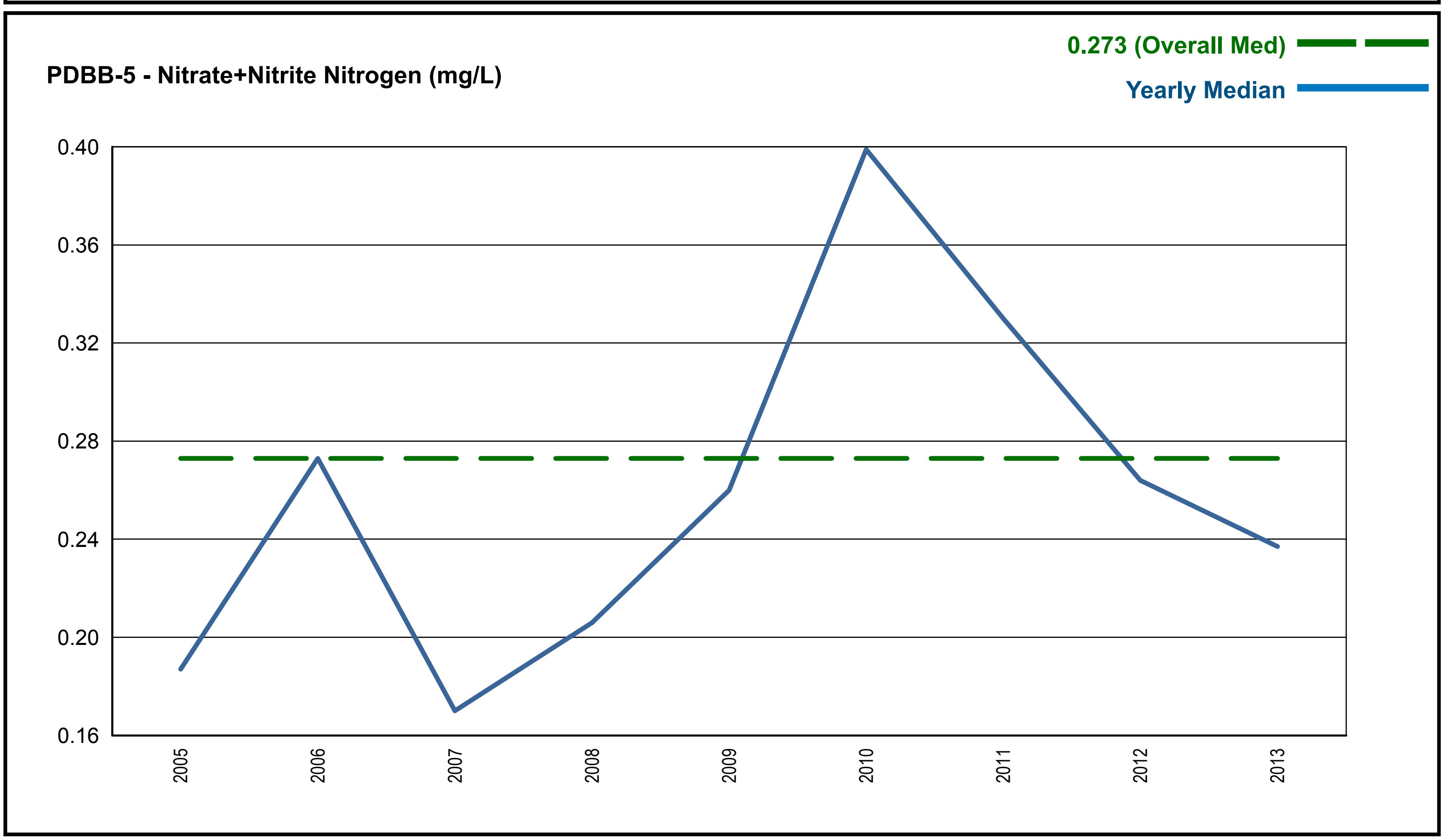
ADEM Ambient Trend Stations - Sampled 1977 - 2014



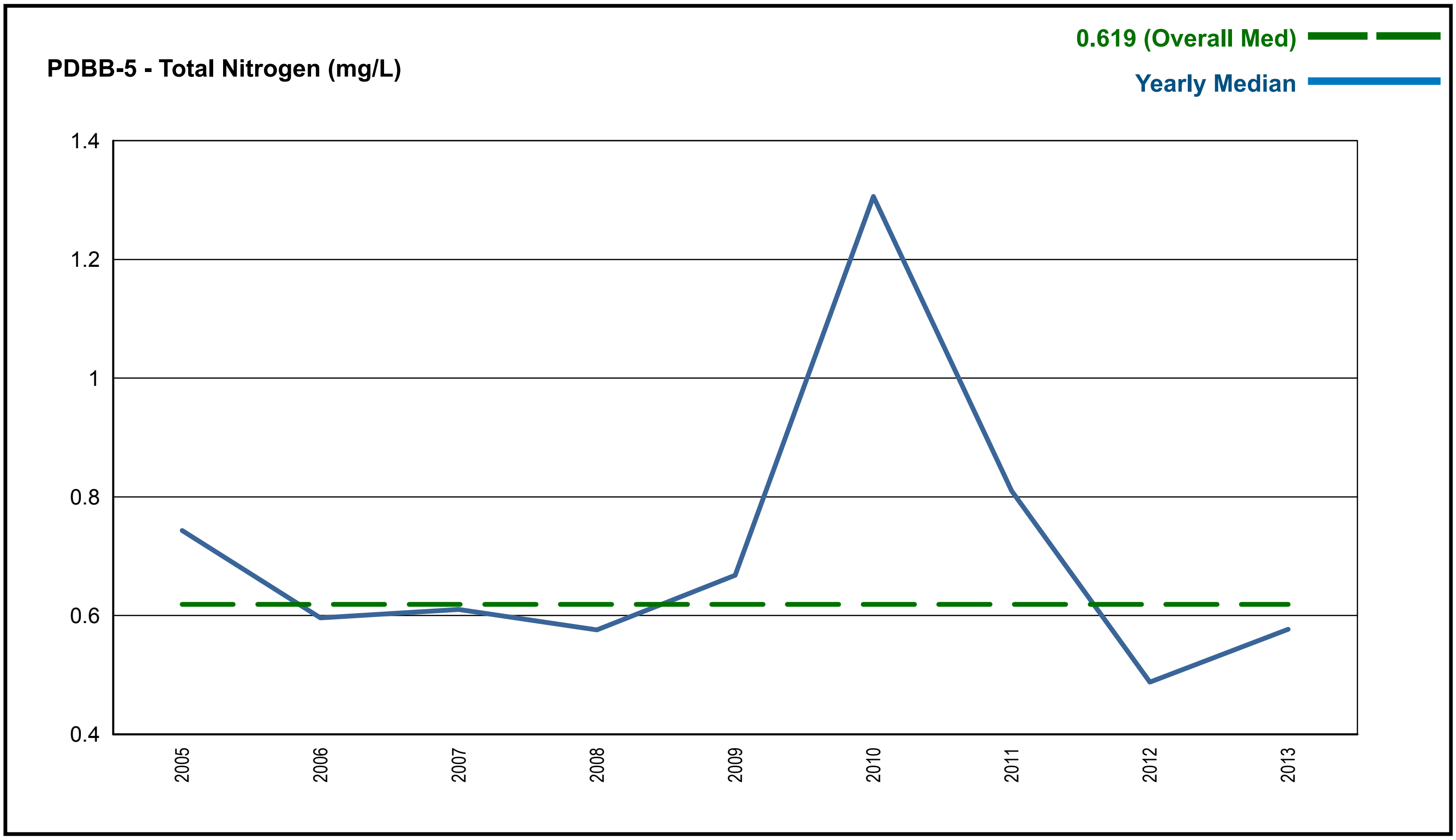


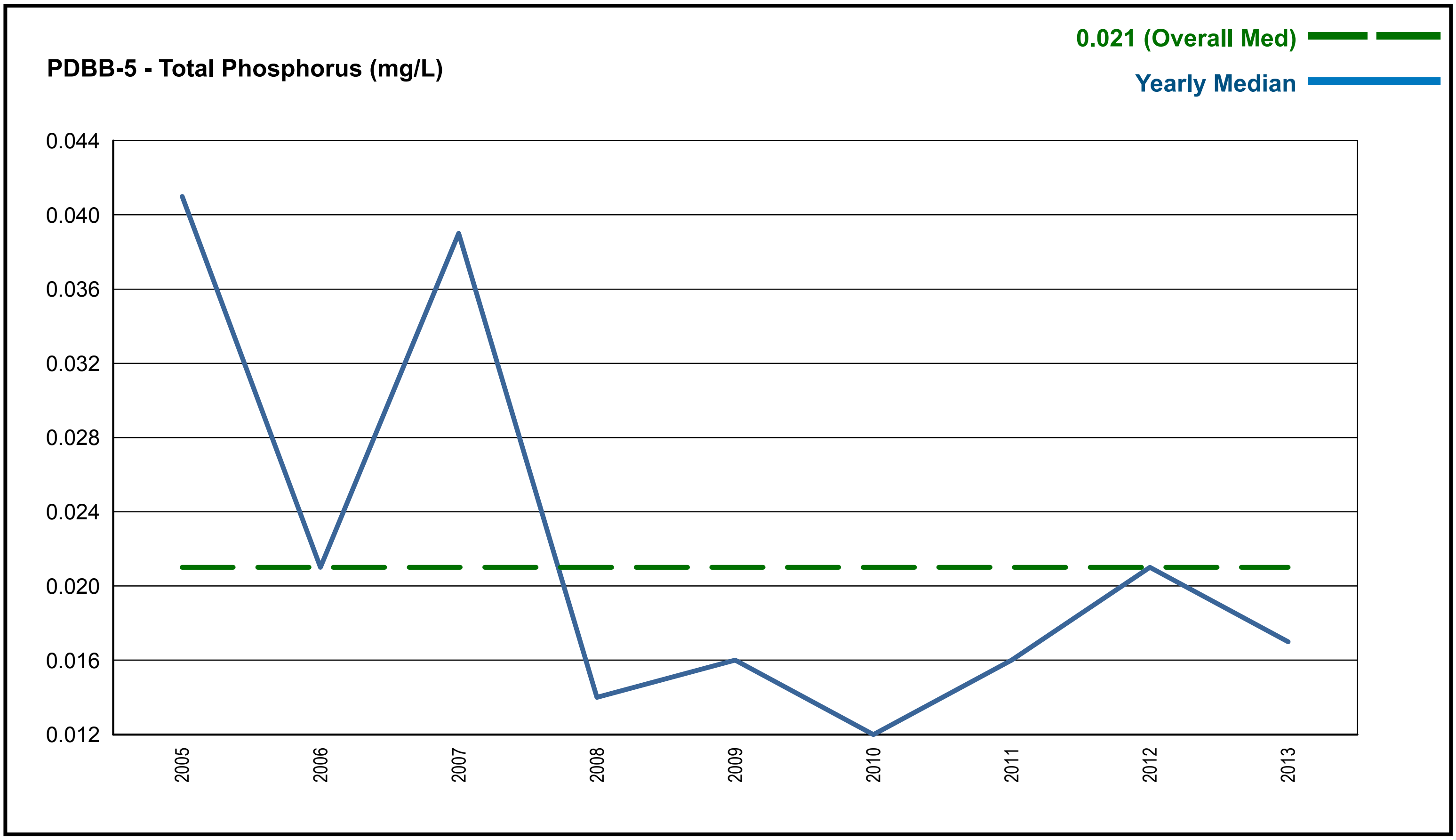
ADEM Ambient Trend Stations - Sampled 1977 - 2014



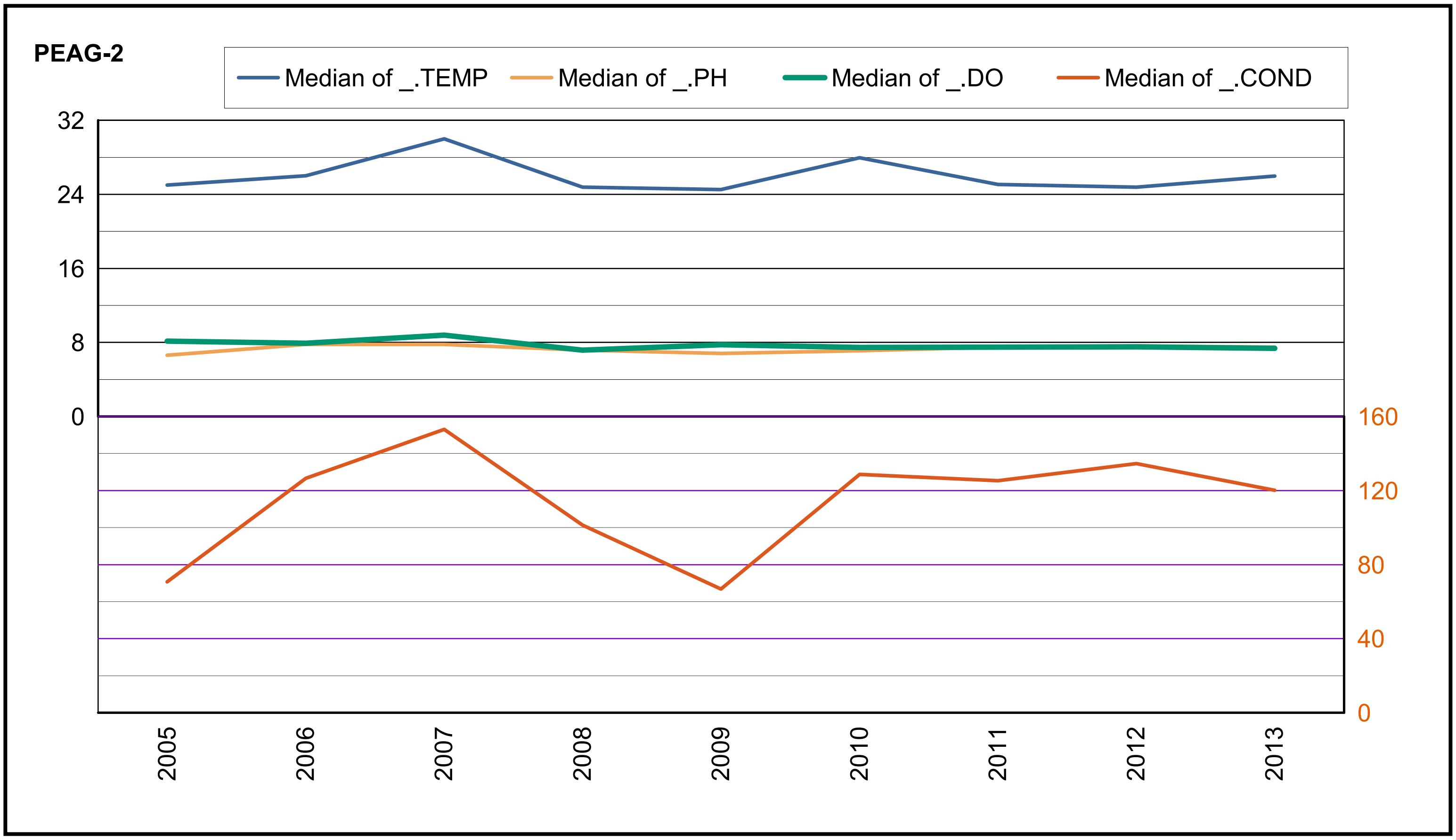


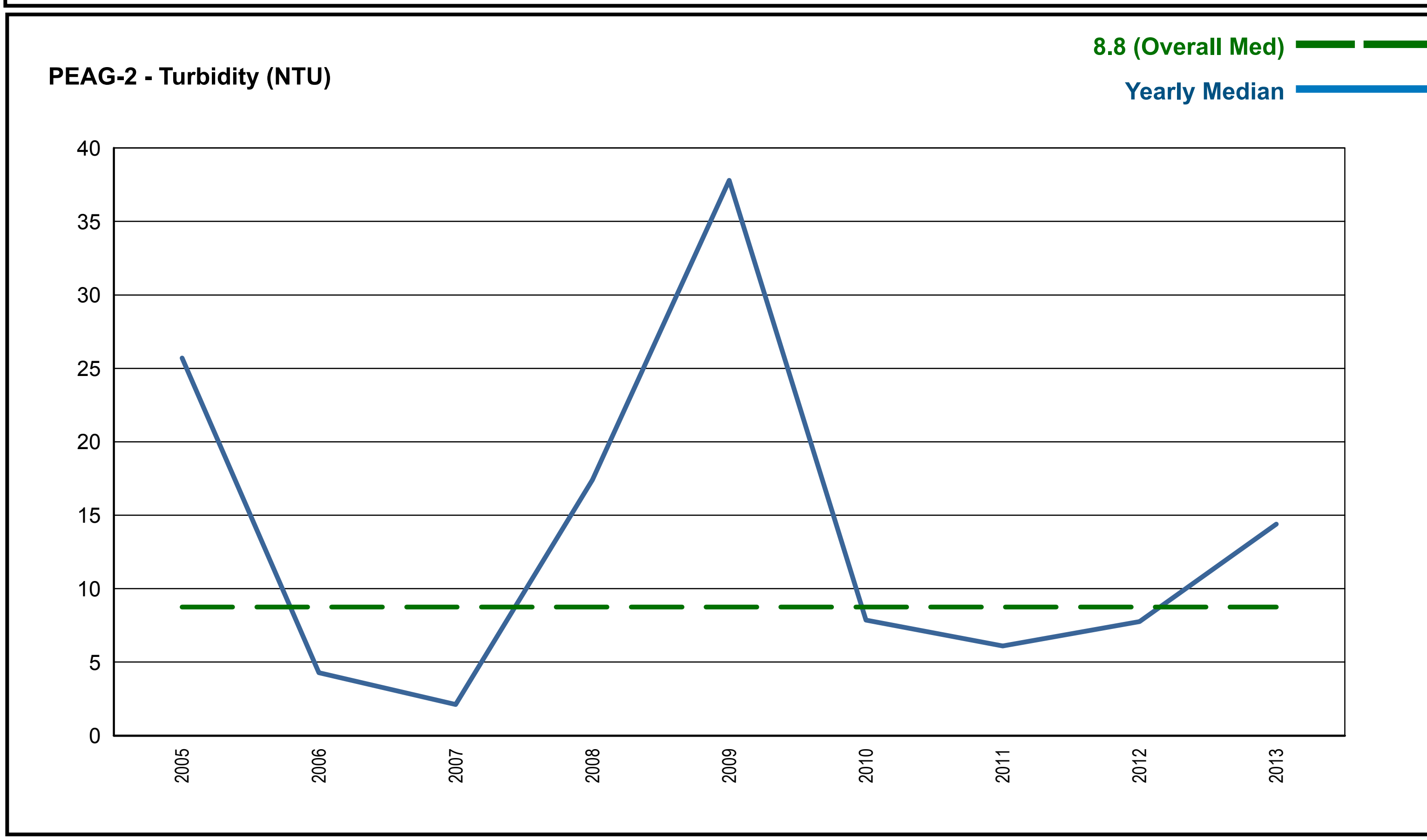
ADEM Ambient Trend Stations - Sampled 1977 - 2014



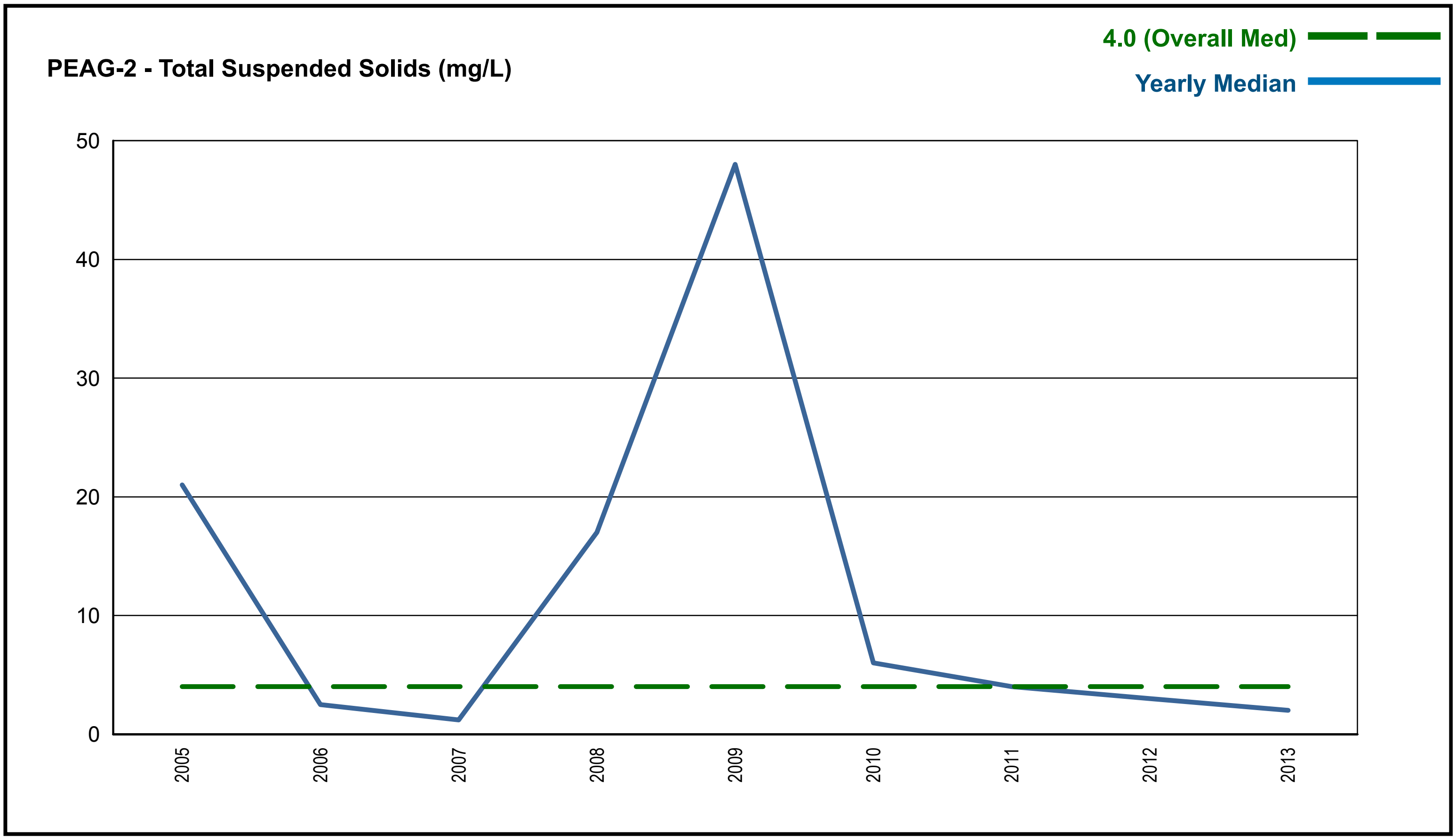


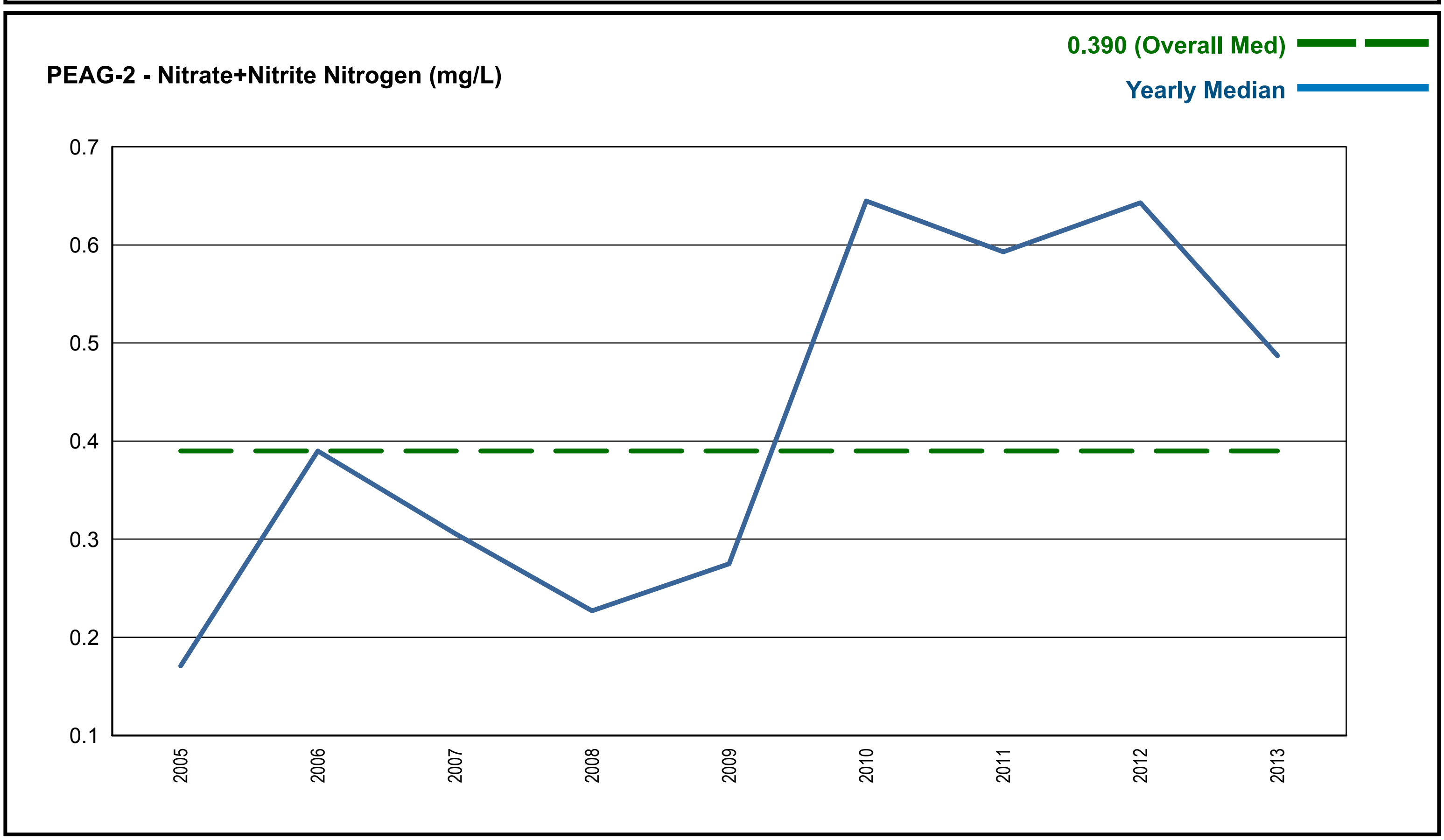
ADEM Ambient Trend Stations - Sampled 1977 - 2014



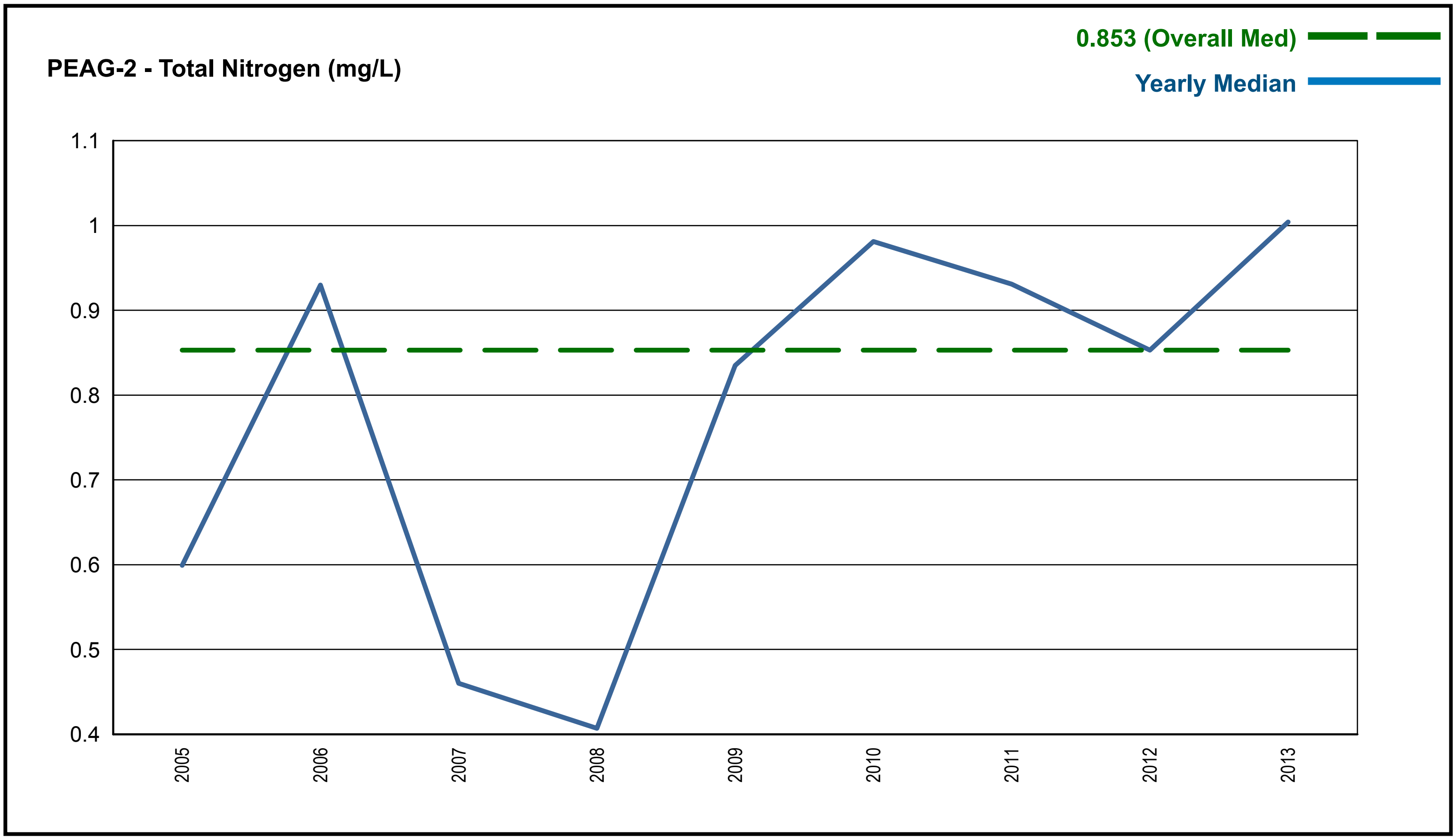


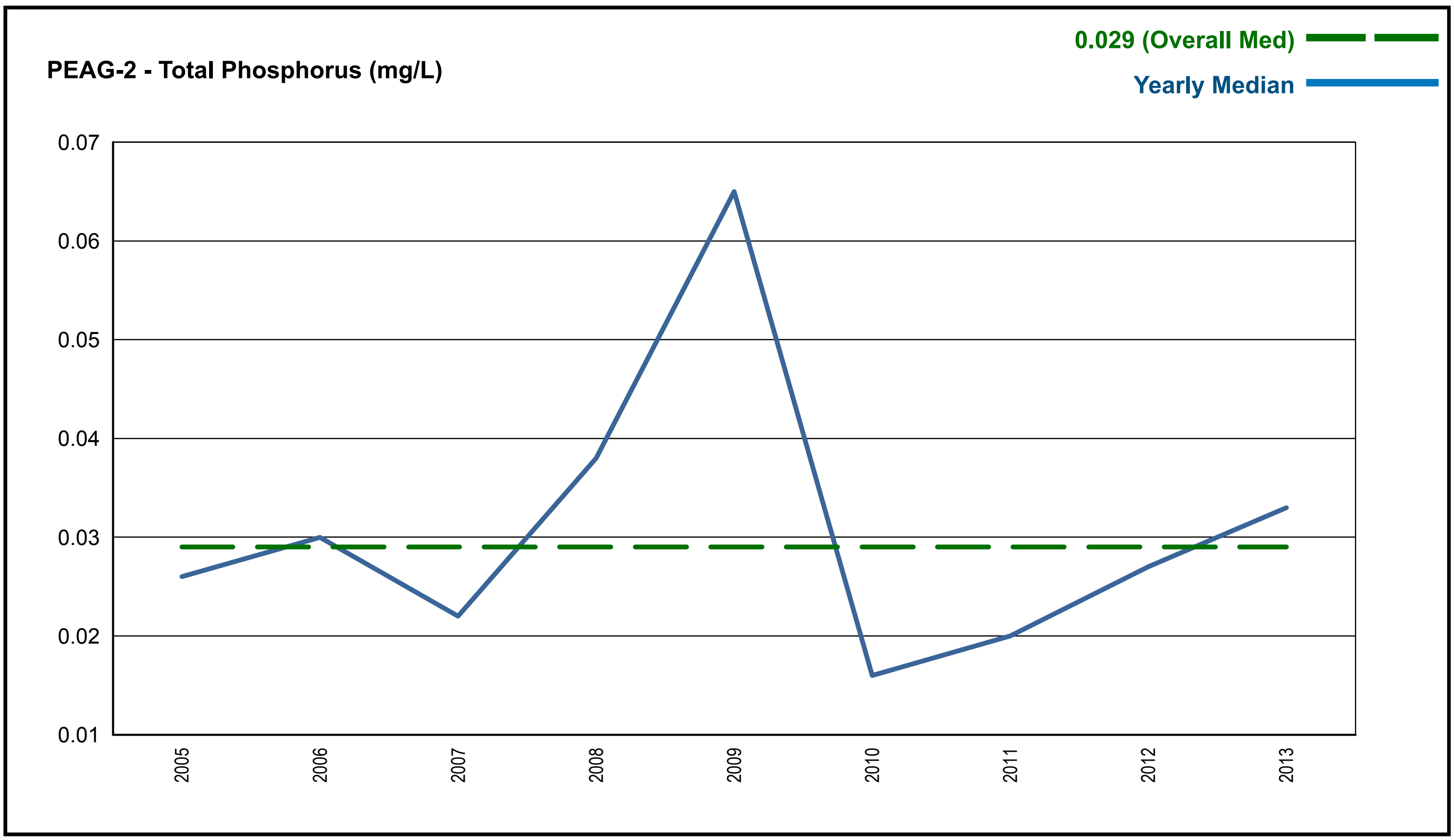
ADEM Ambient Trend Stations - Sampled 1977 - 2014



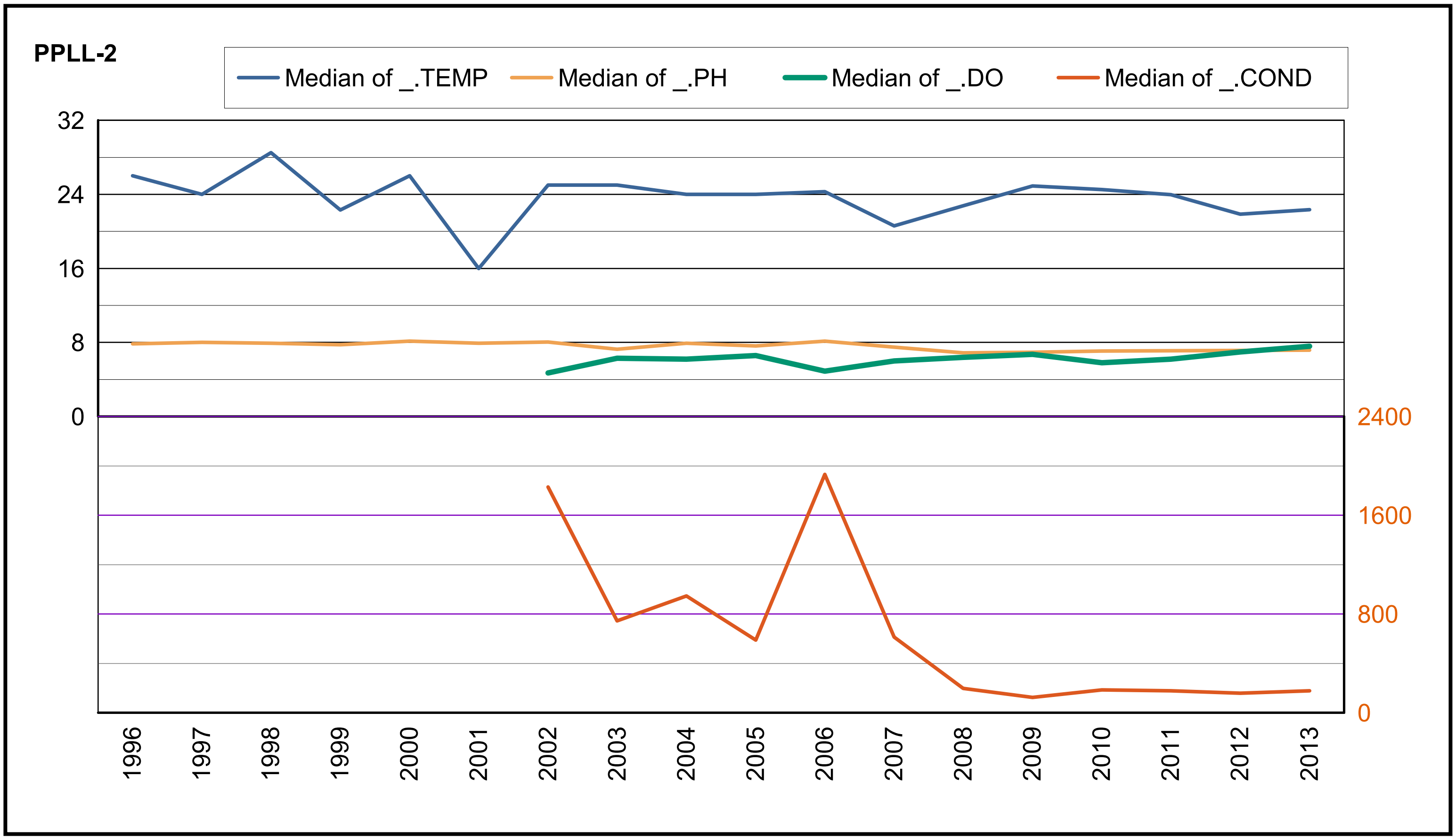


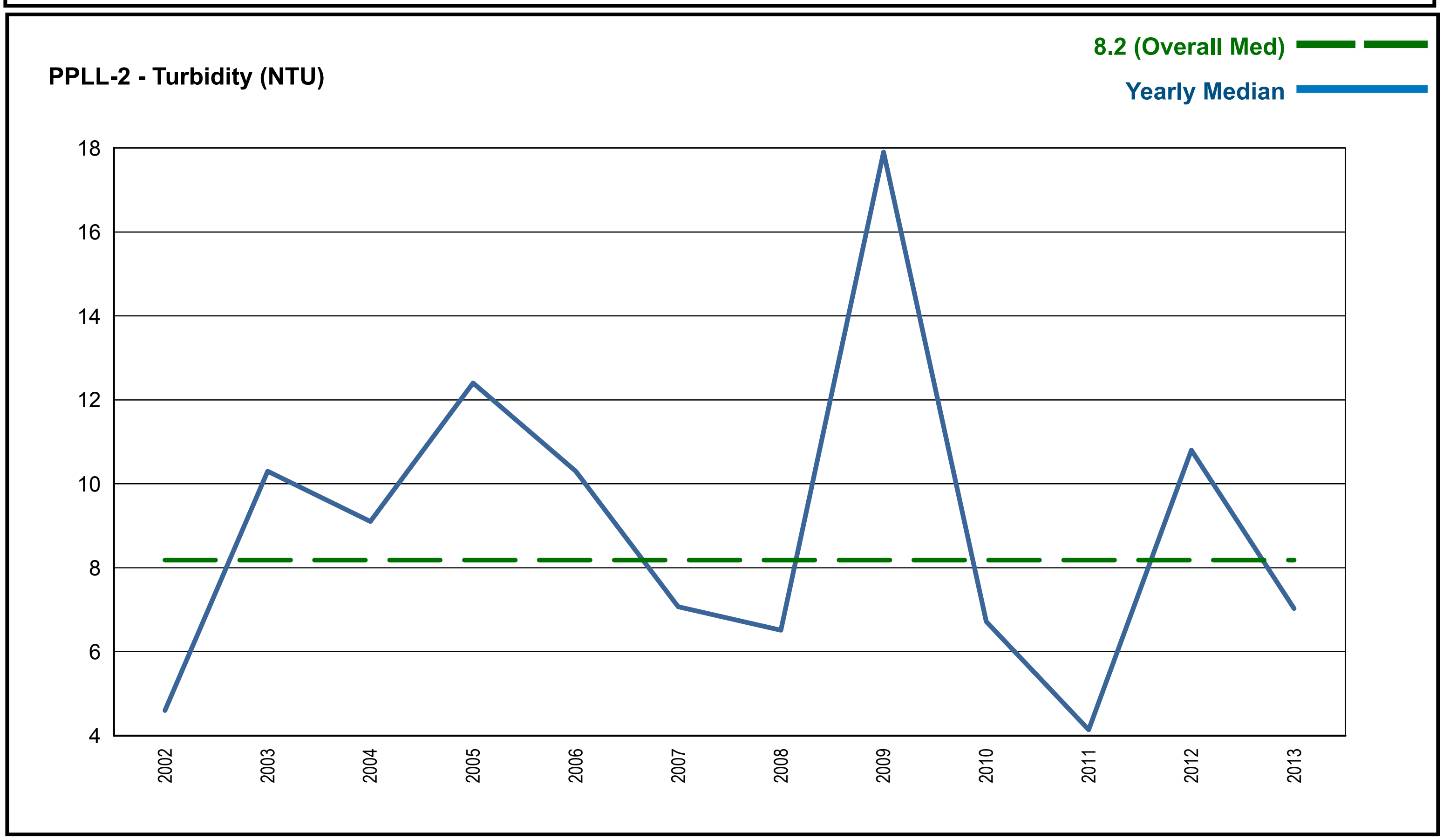
ADEM Ambient Trend Stations - Sampled 1977 - 2014



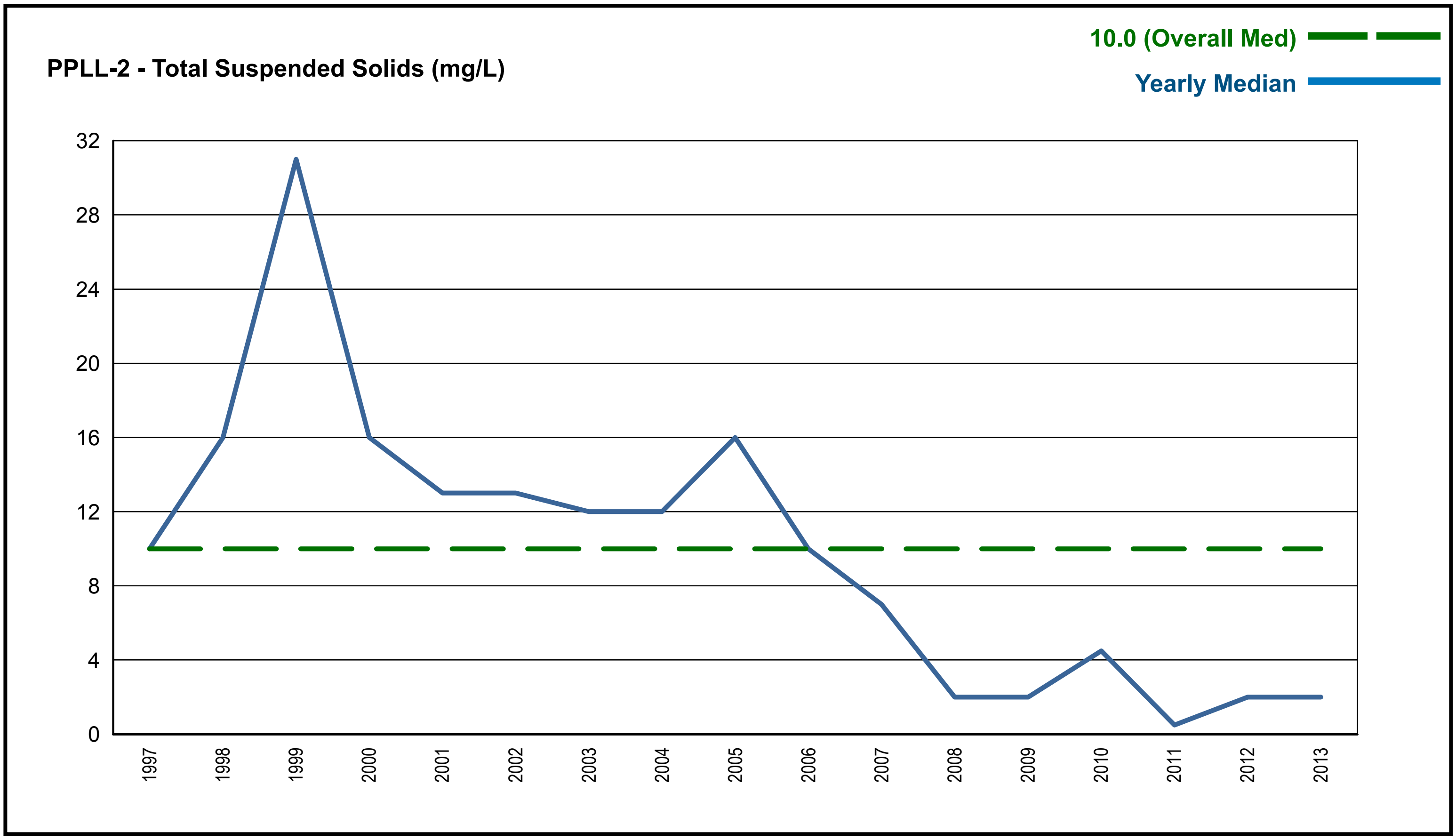


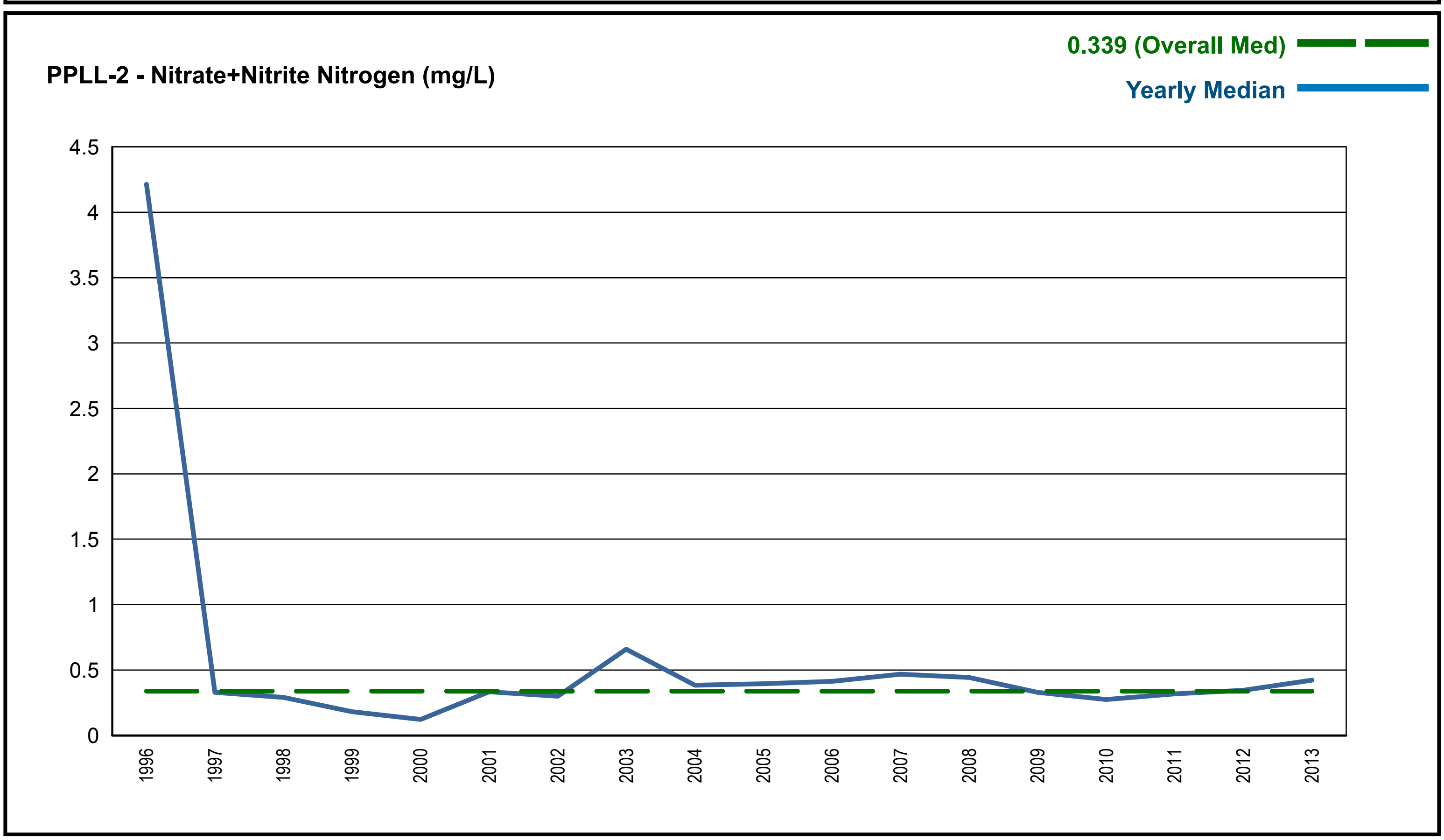
ADEM Ambient Trend Stations - Sampled 1977 - 2014



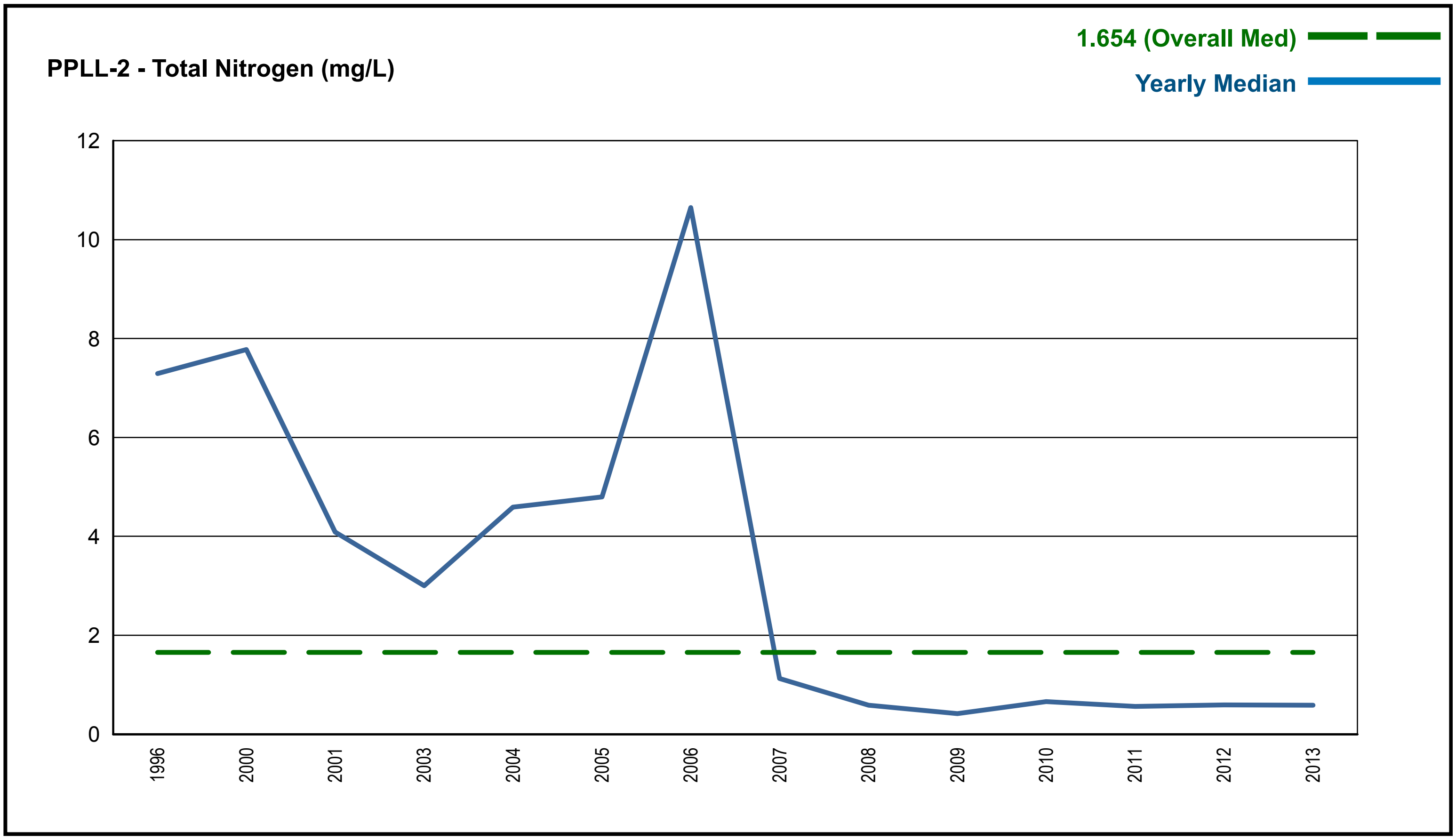


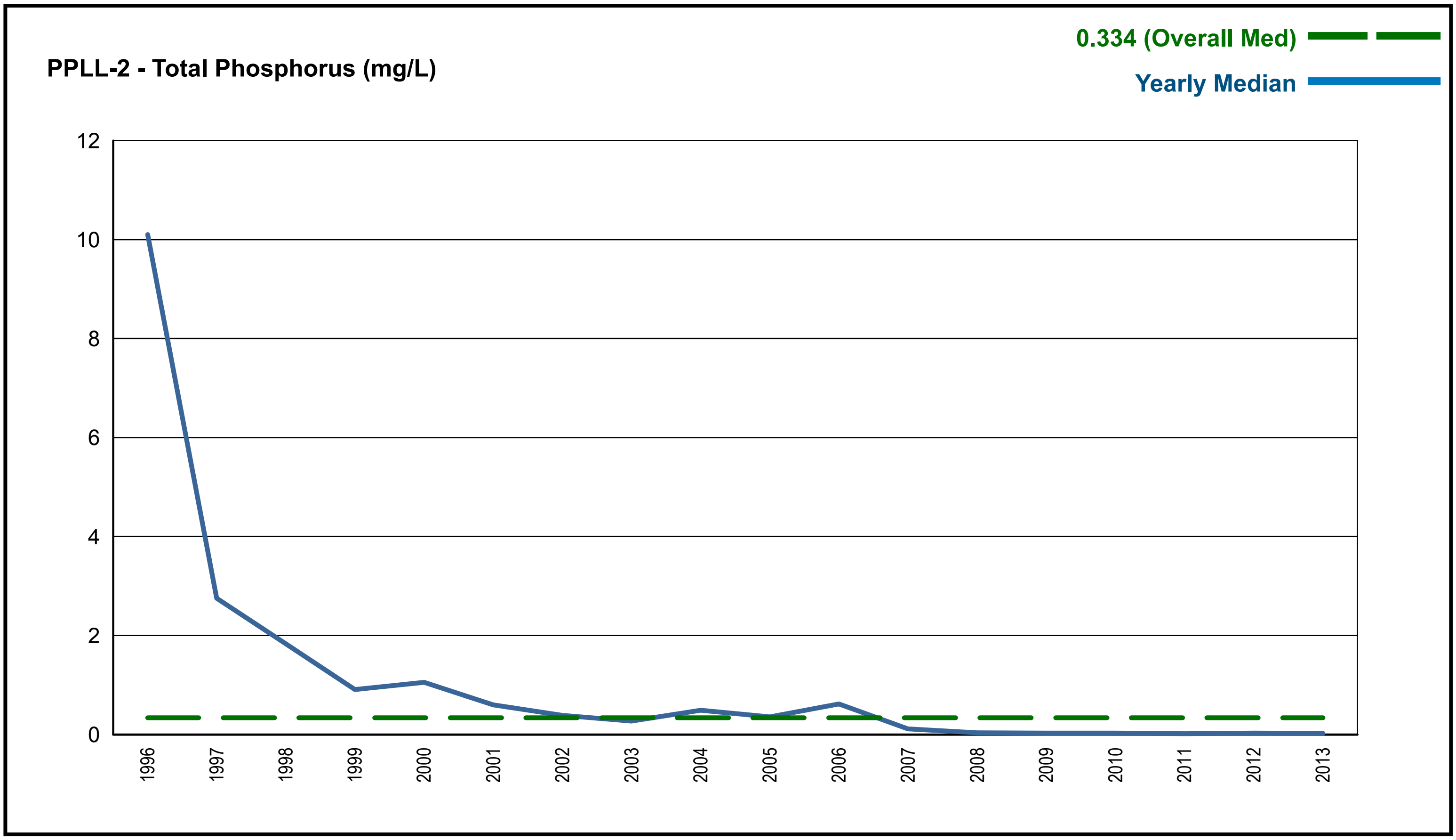
ADEM Ambient Trend Stations - Sampled 1977 - 2014



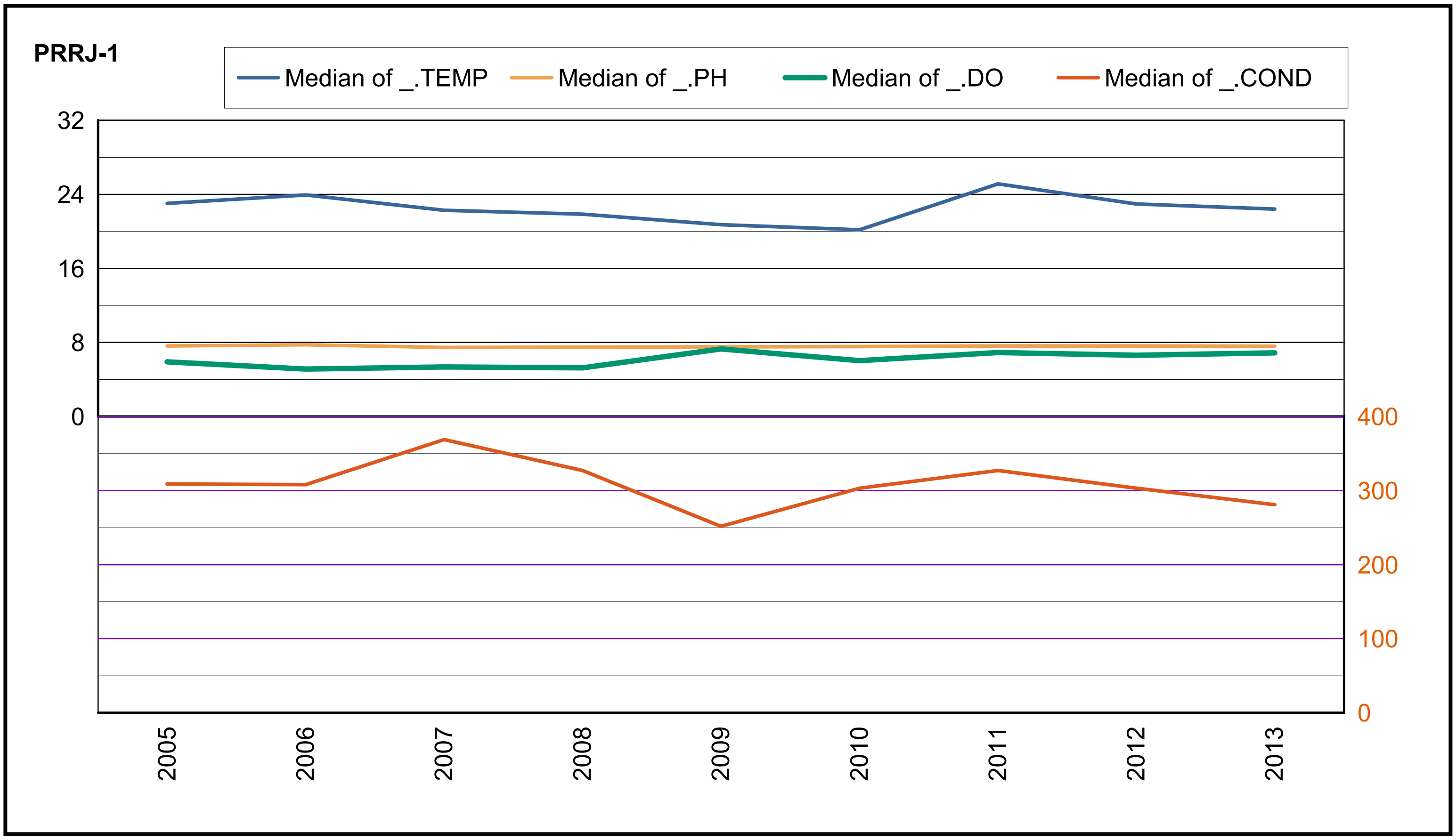


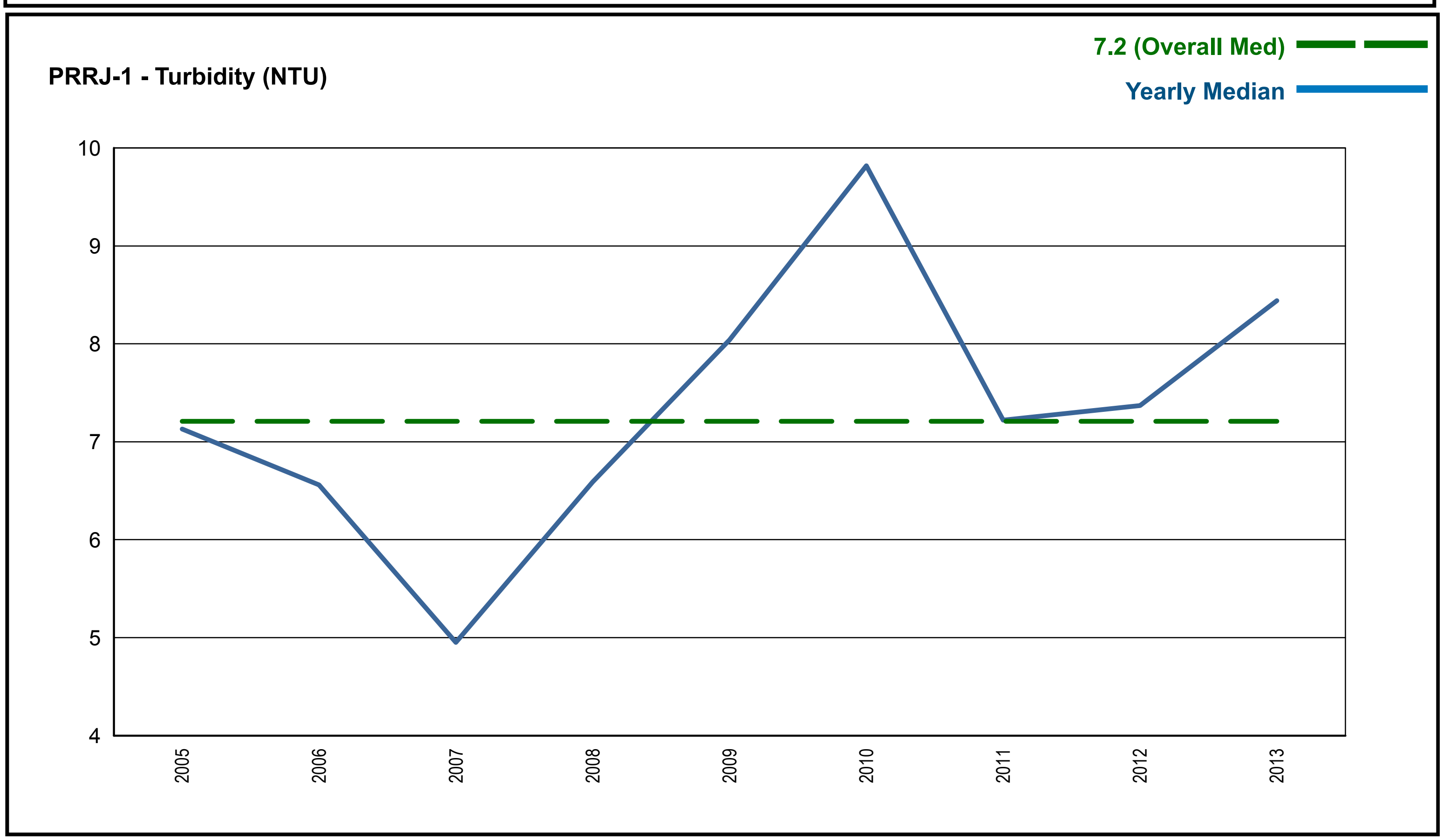
ADEM Ambient Trend Stations - Sampled 1977 - 2014





ADEM Ambient Trend Stations - Sampled 1977 - 2014





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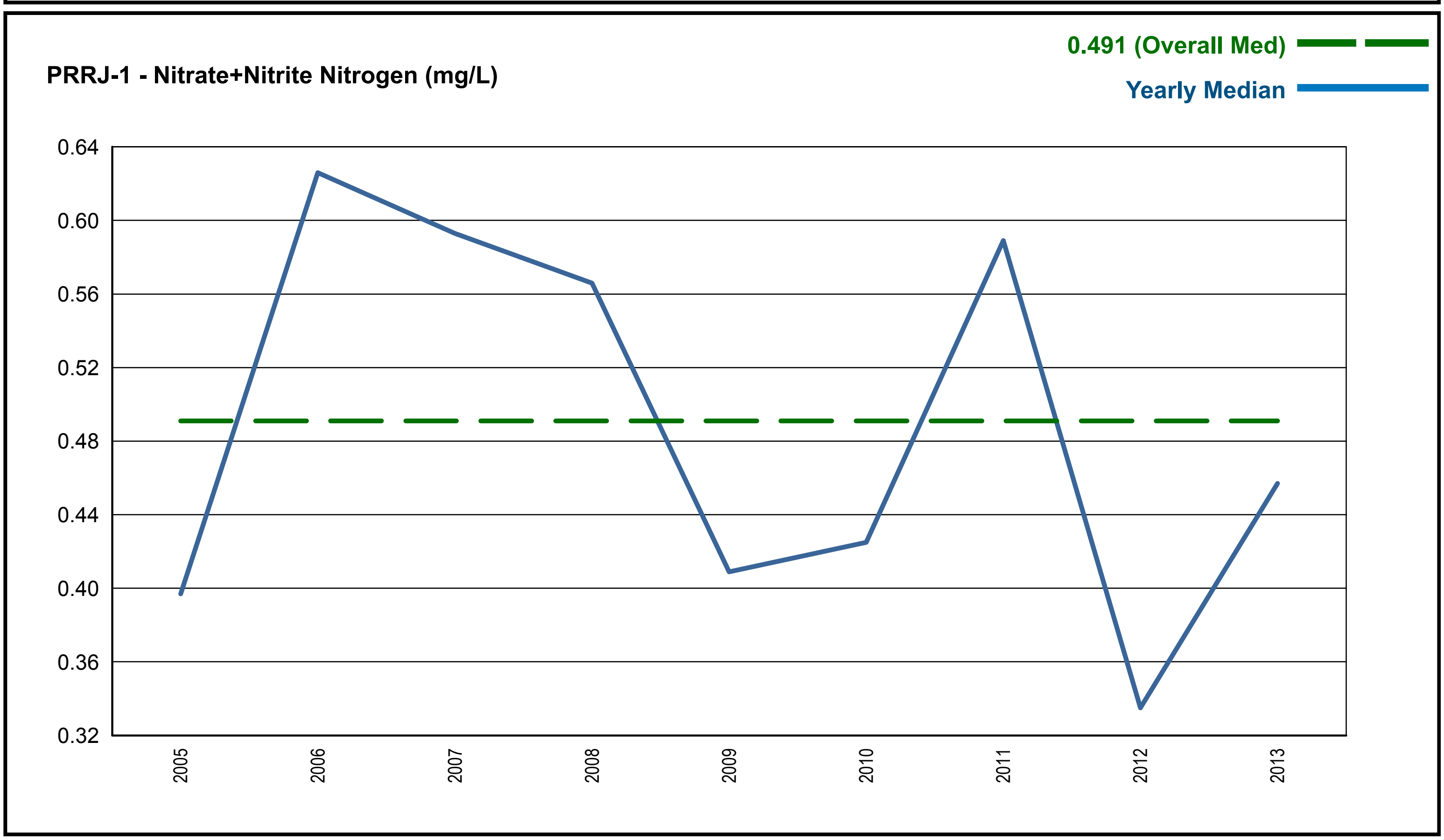

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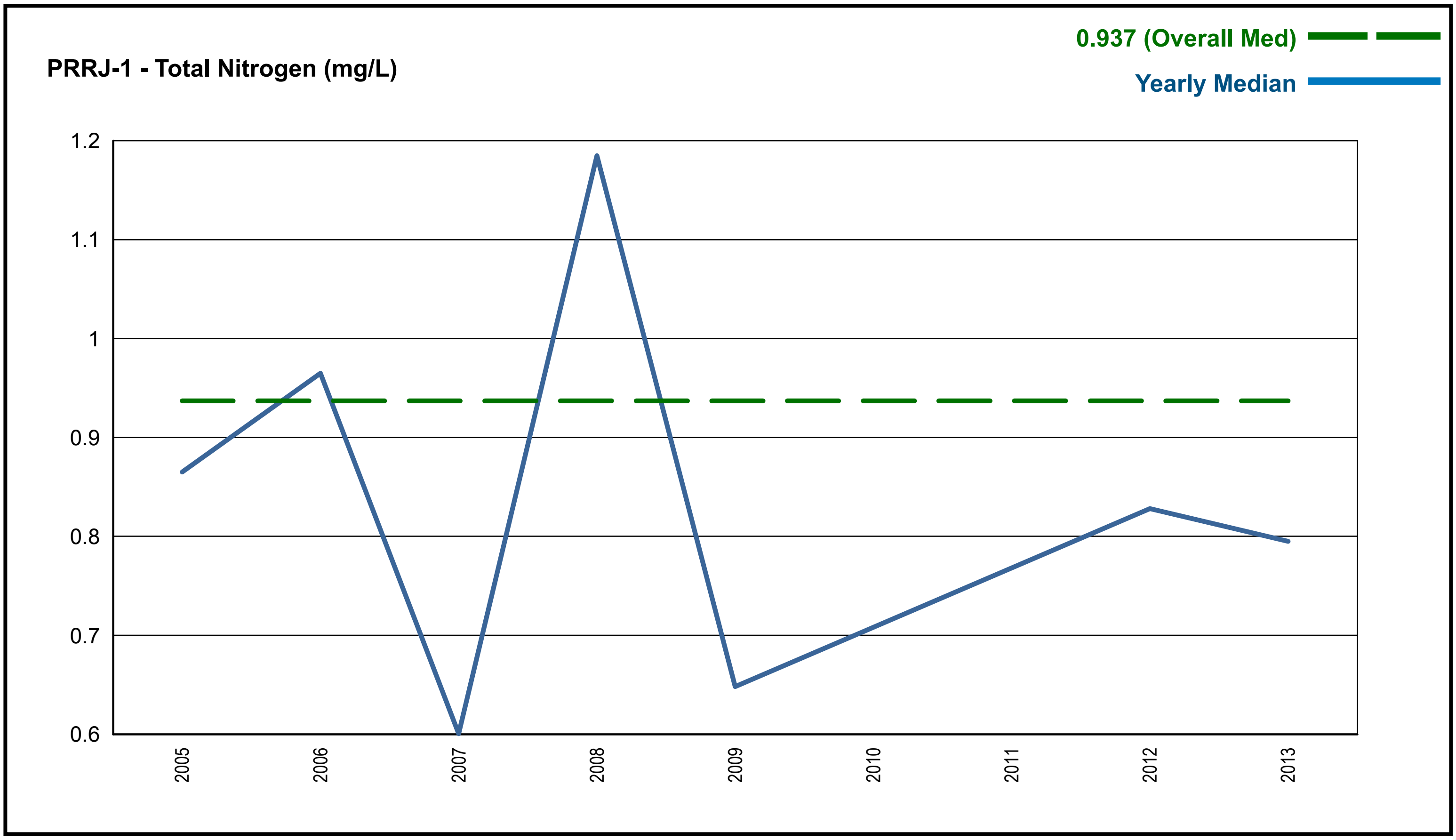

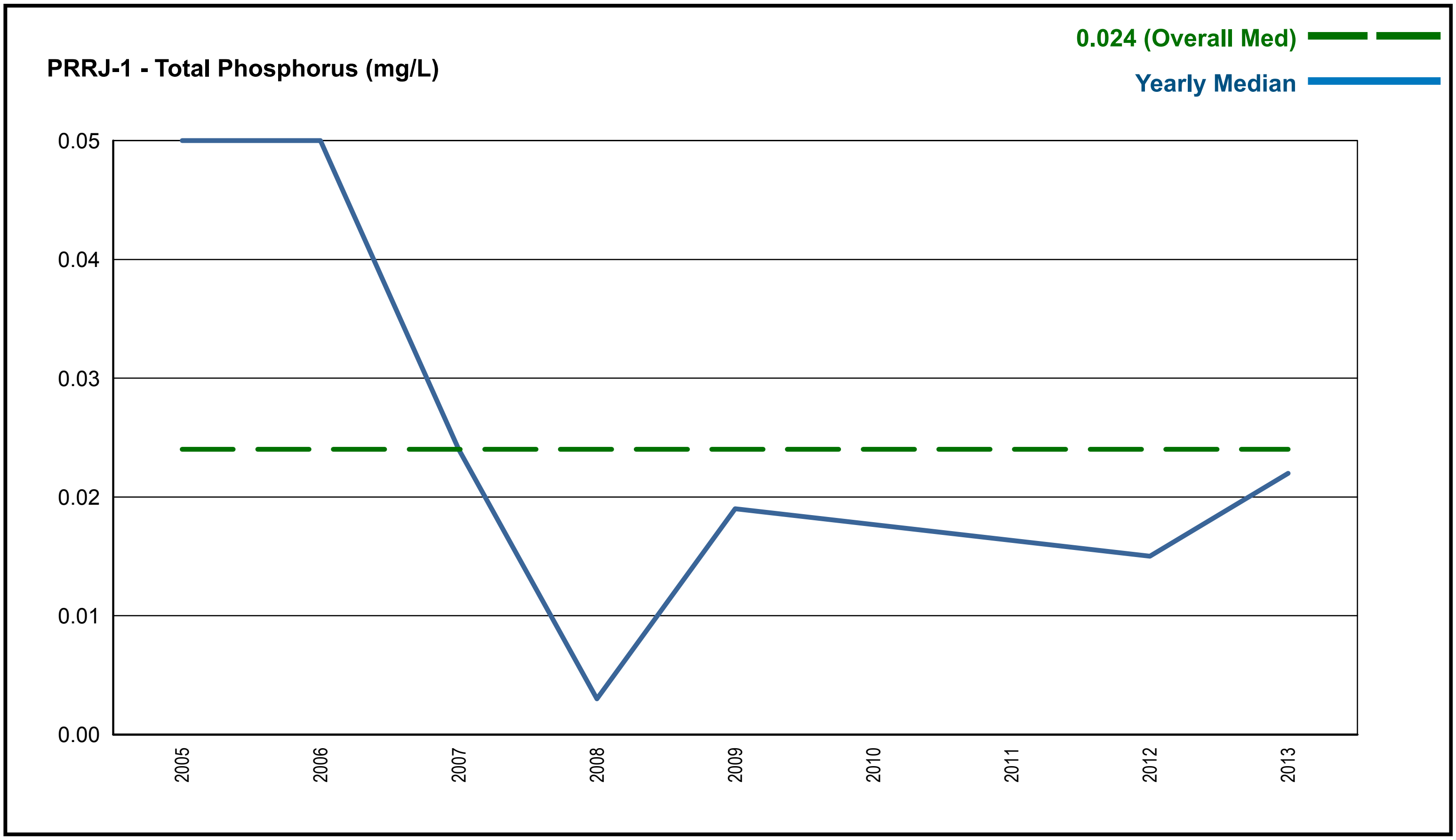

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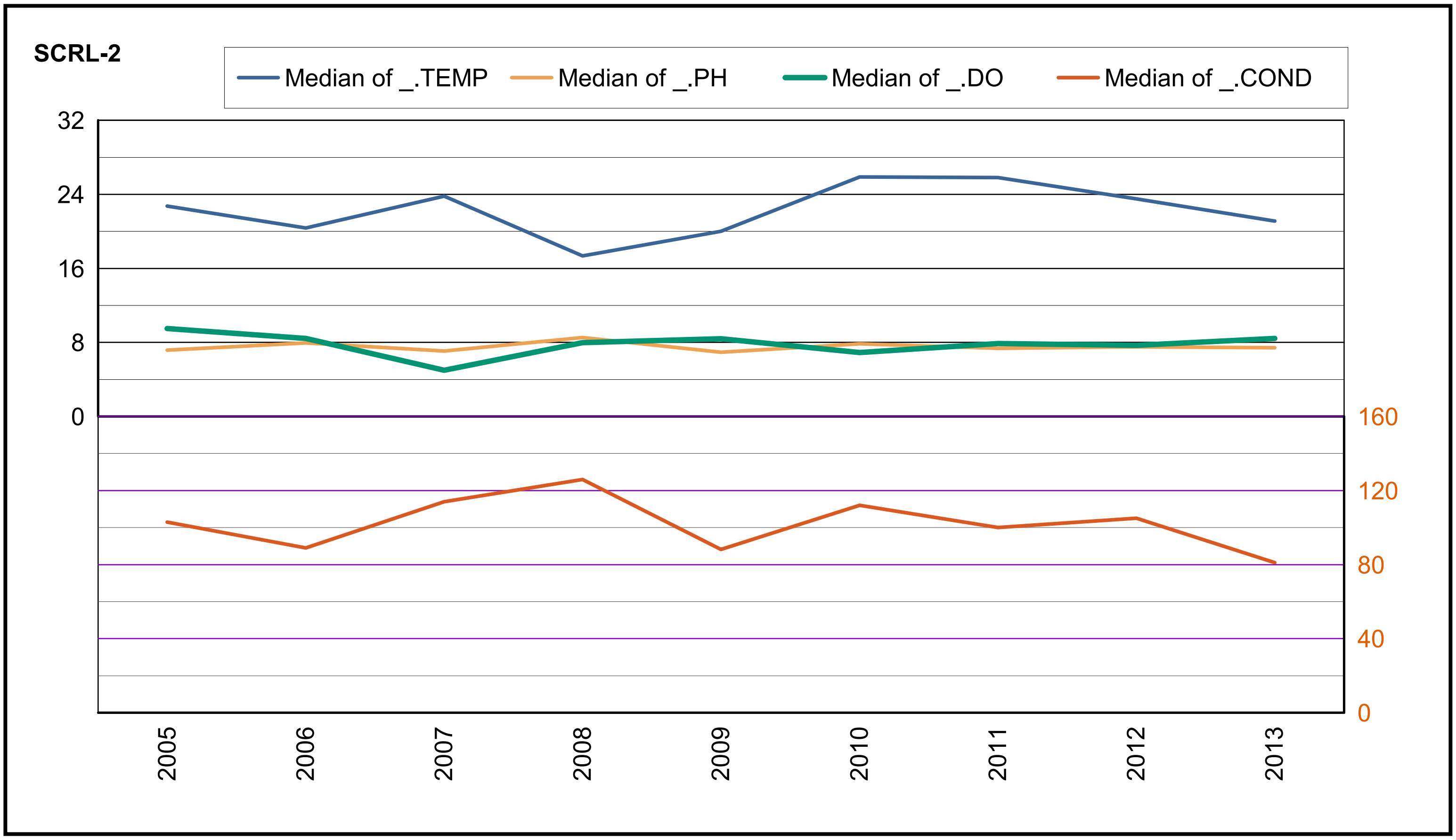

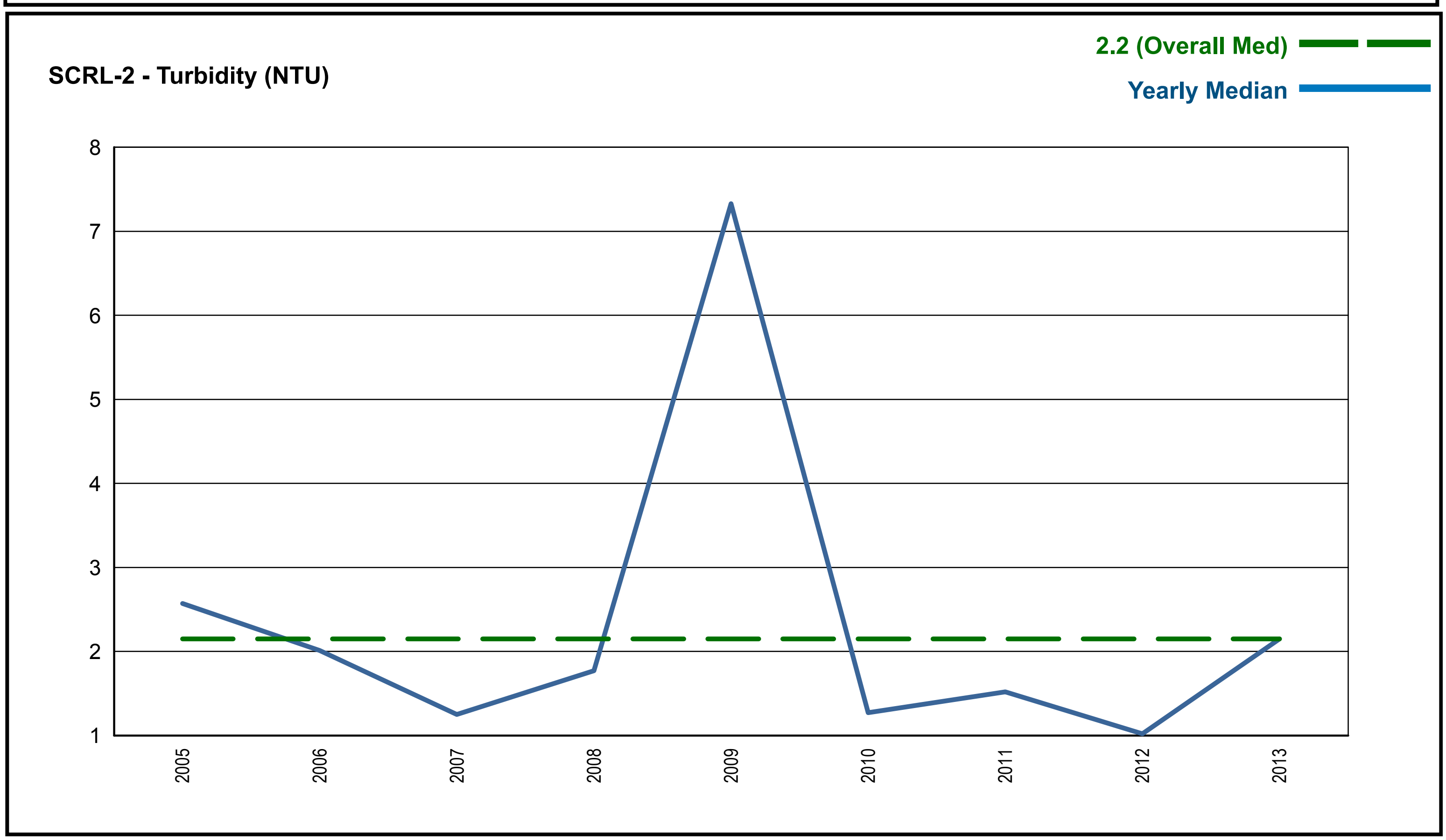

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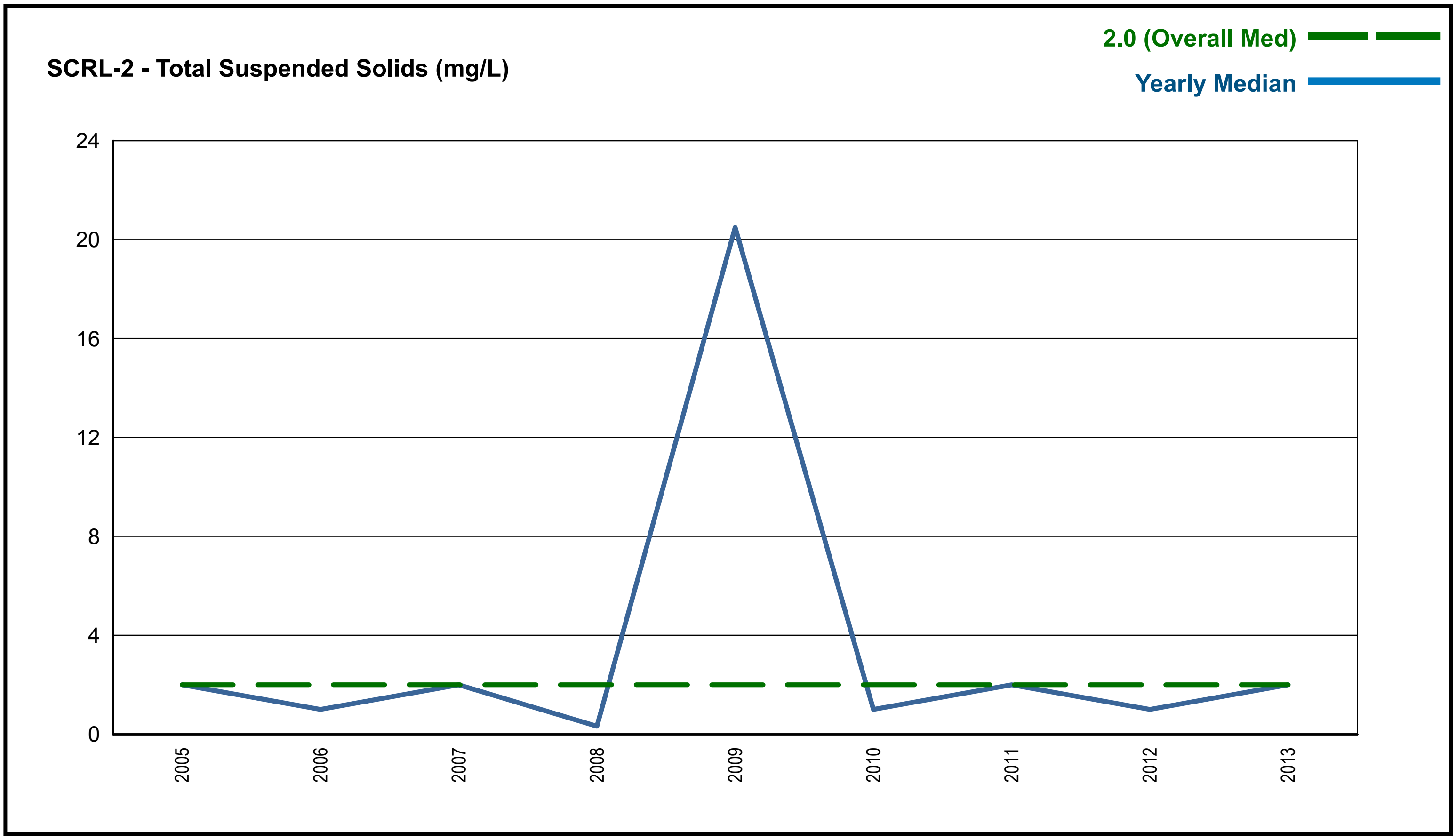

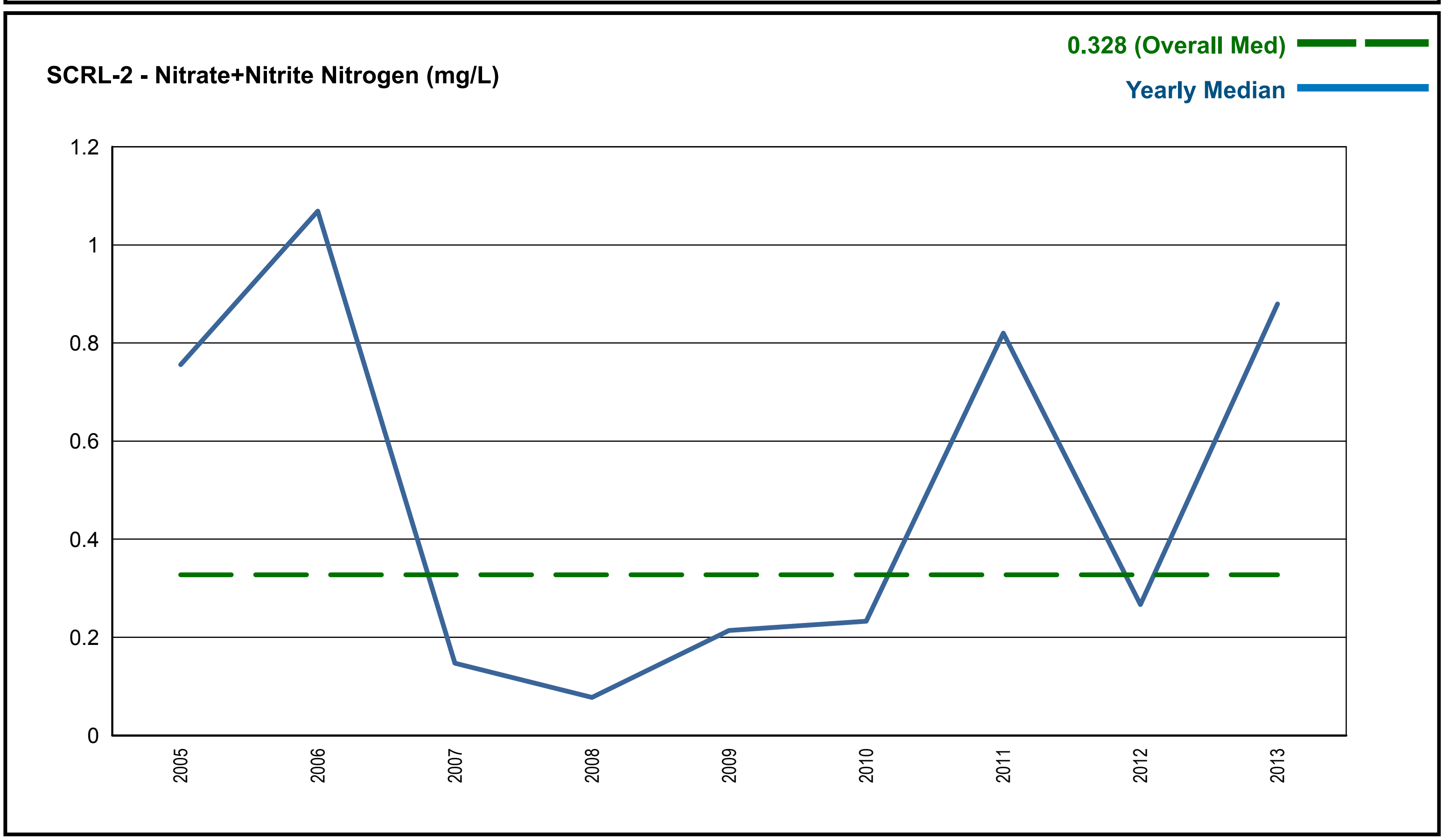

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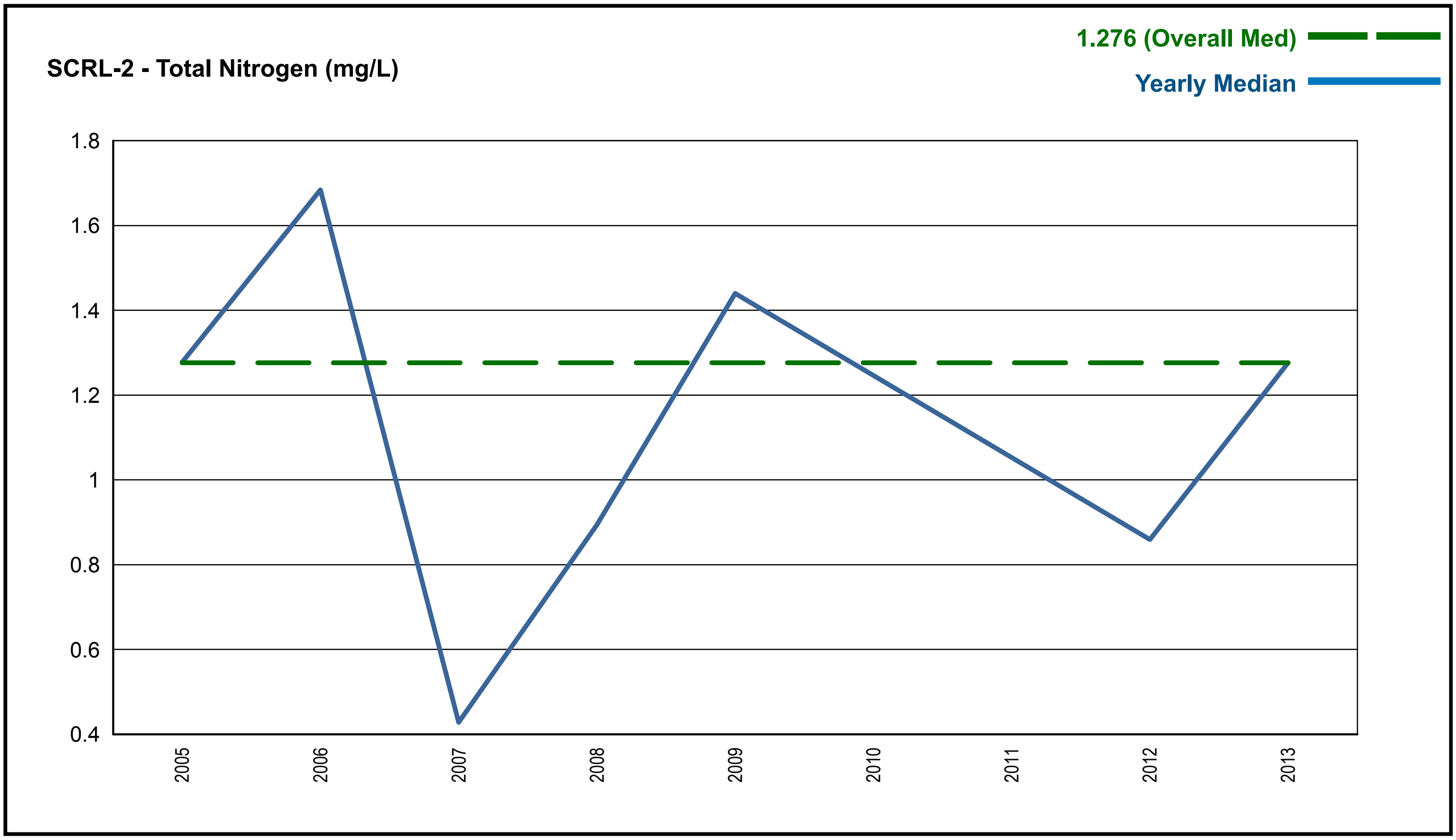

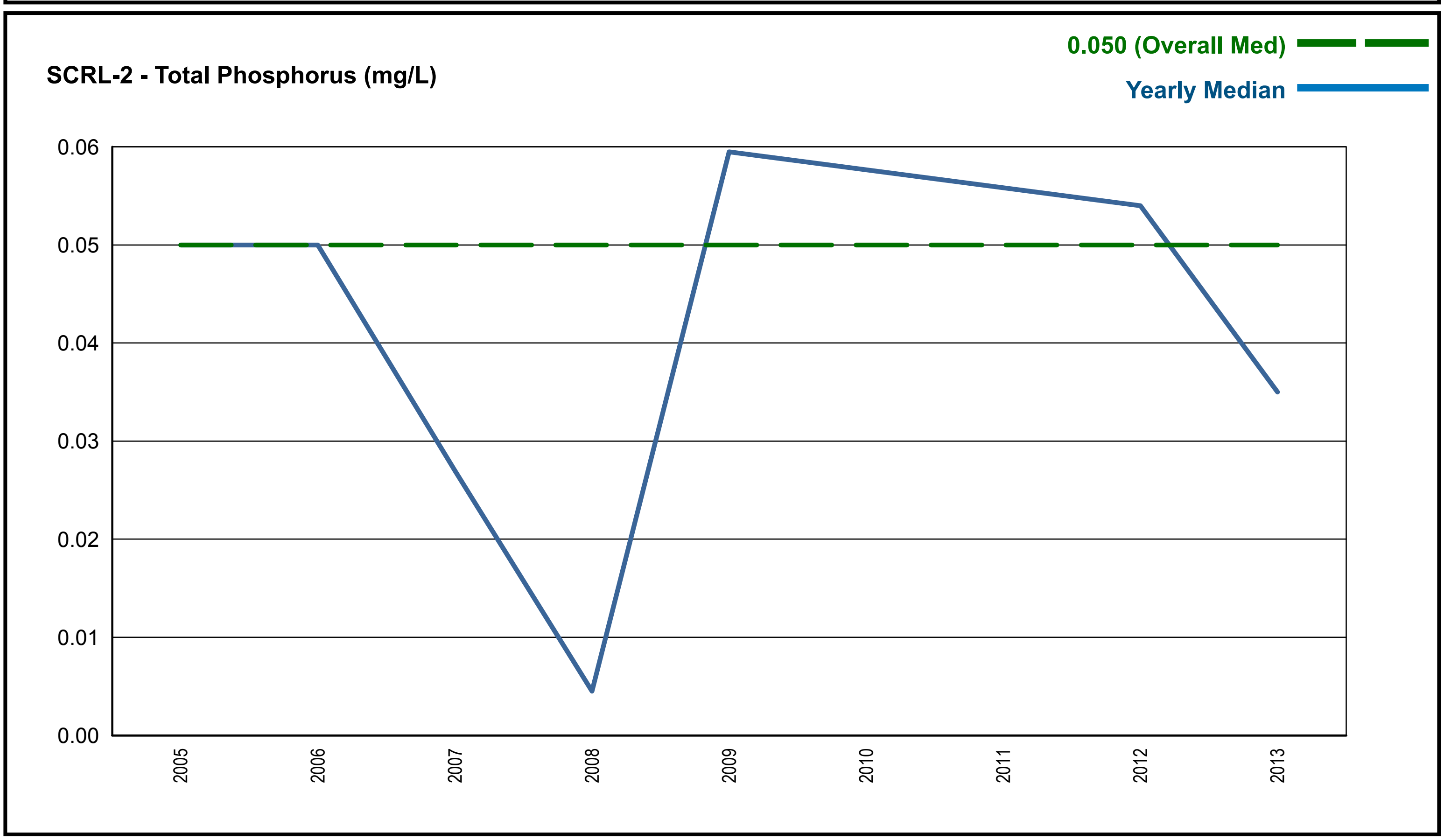

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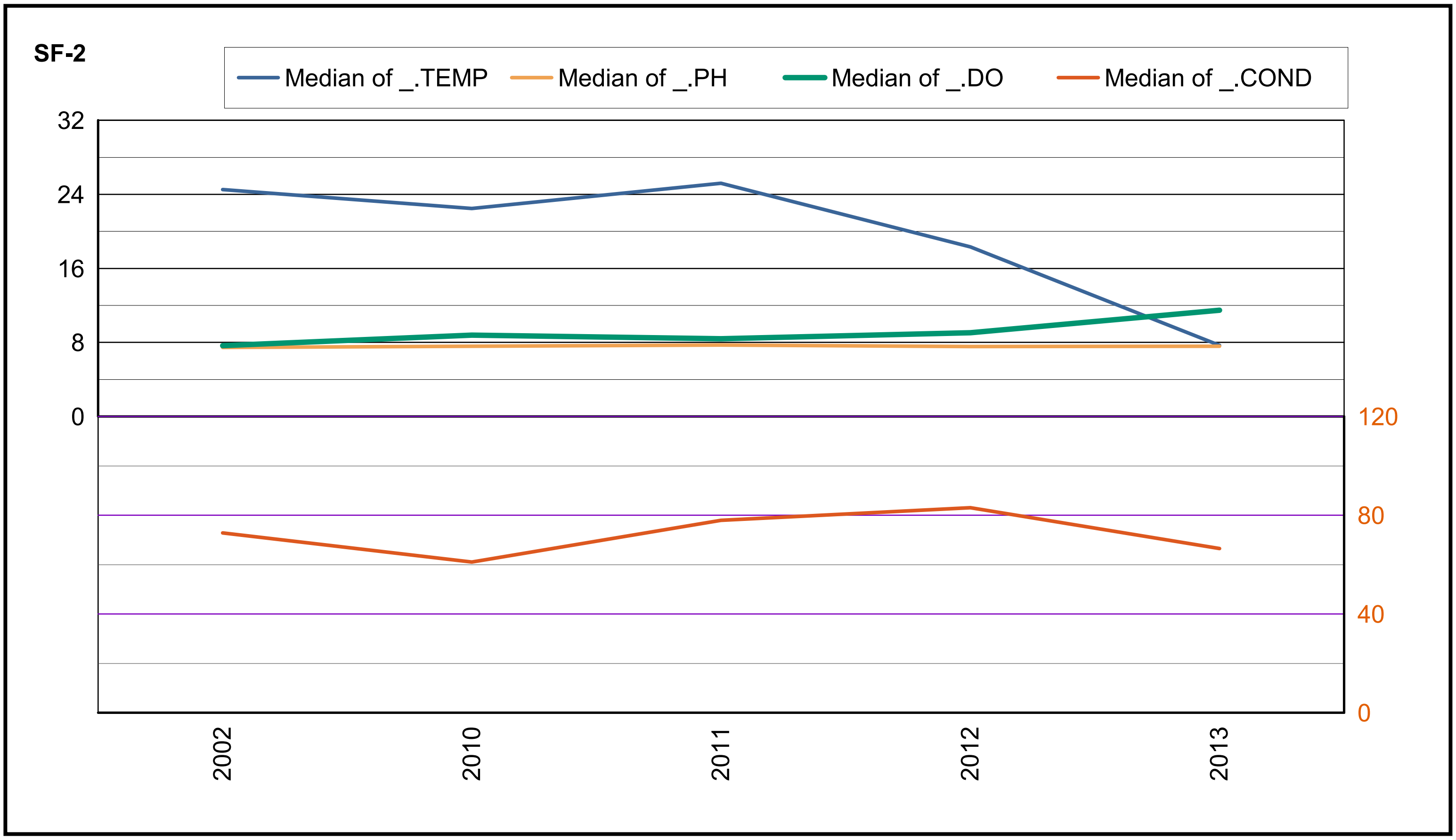

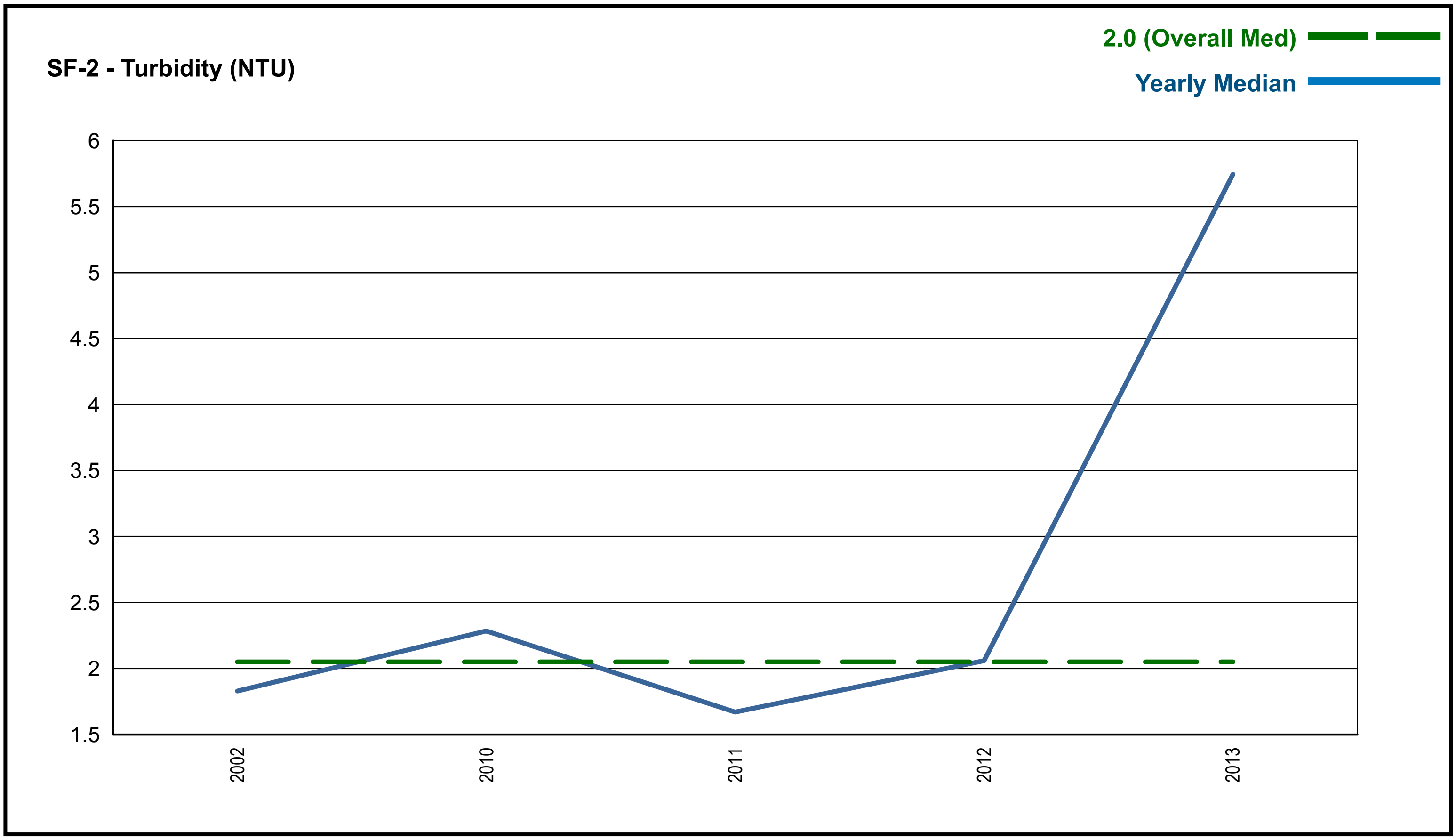

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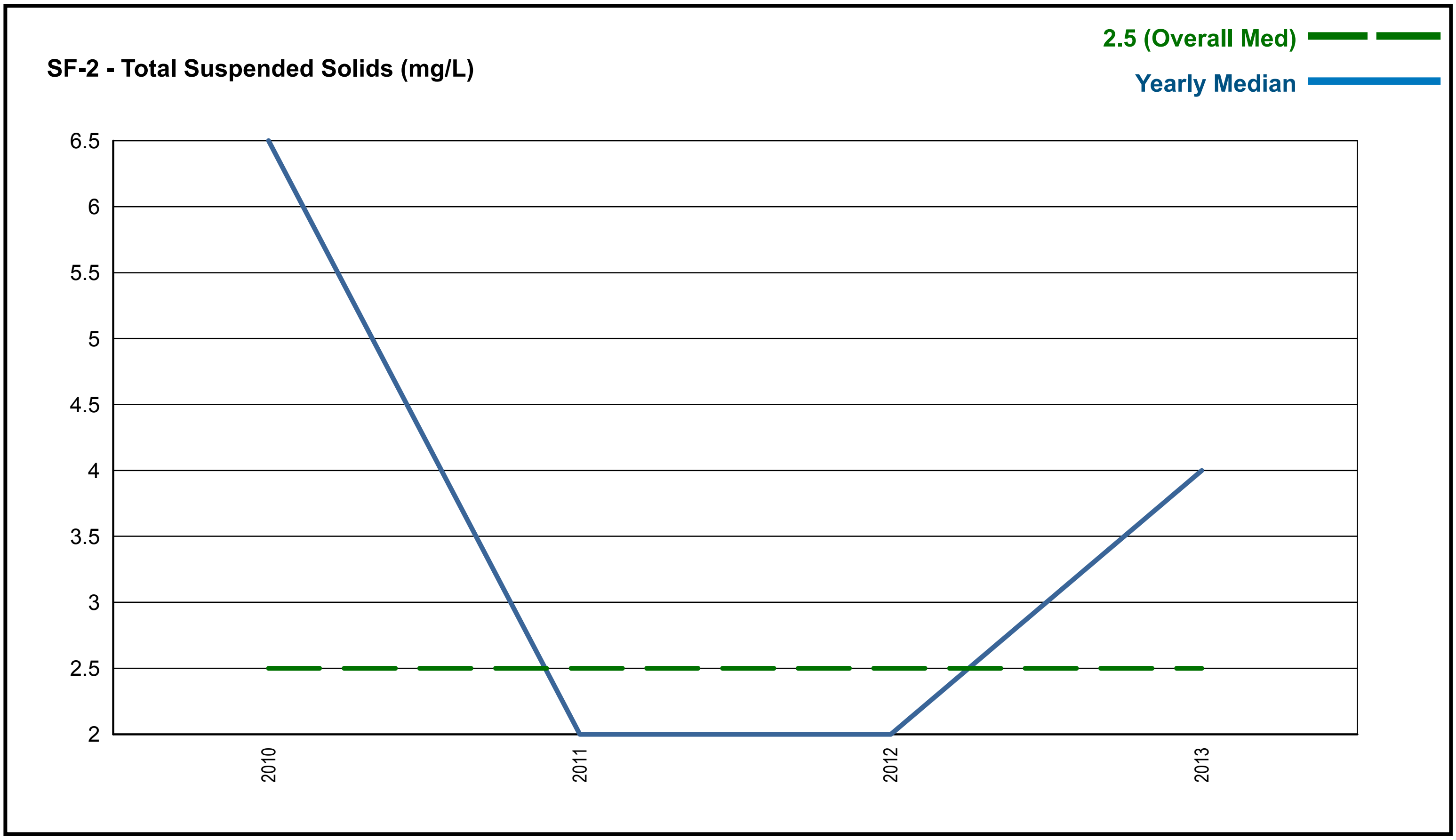

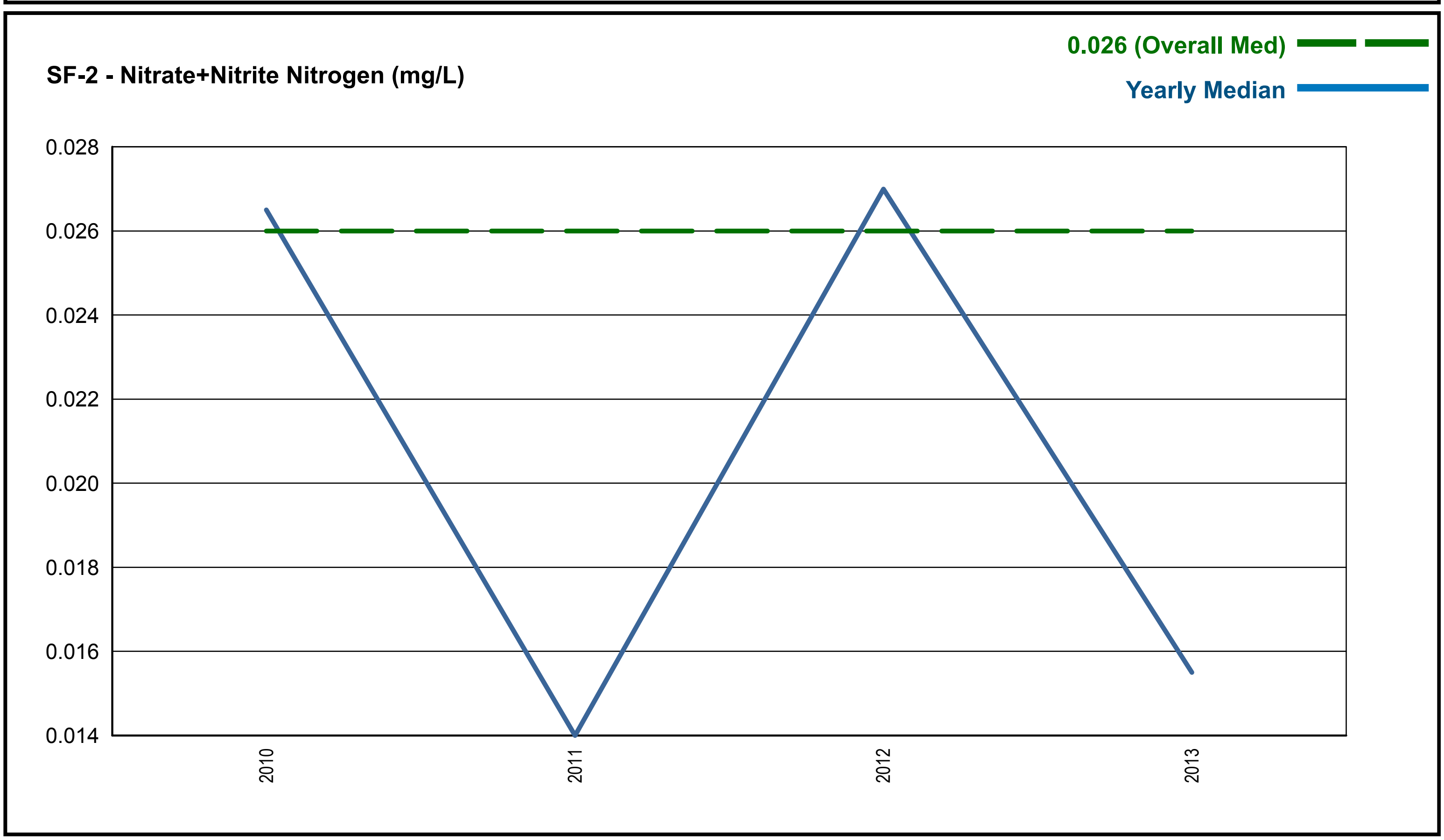

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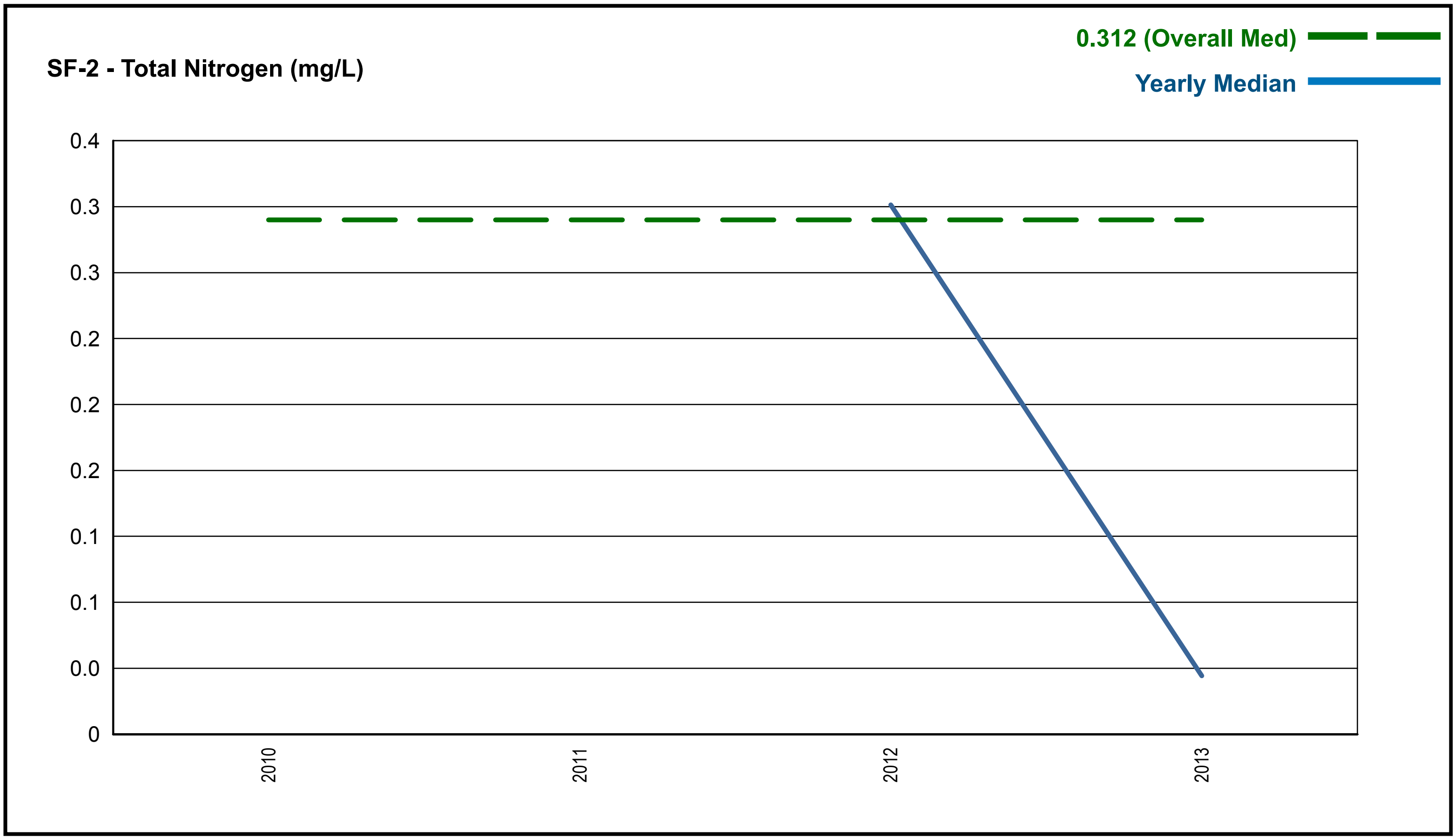
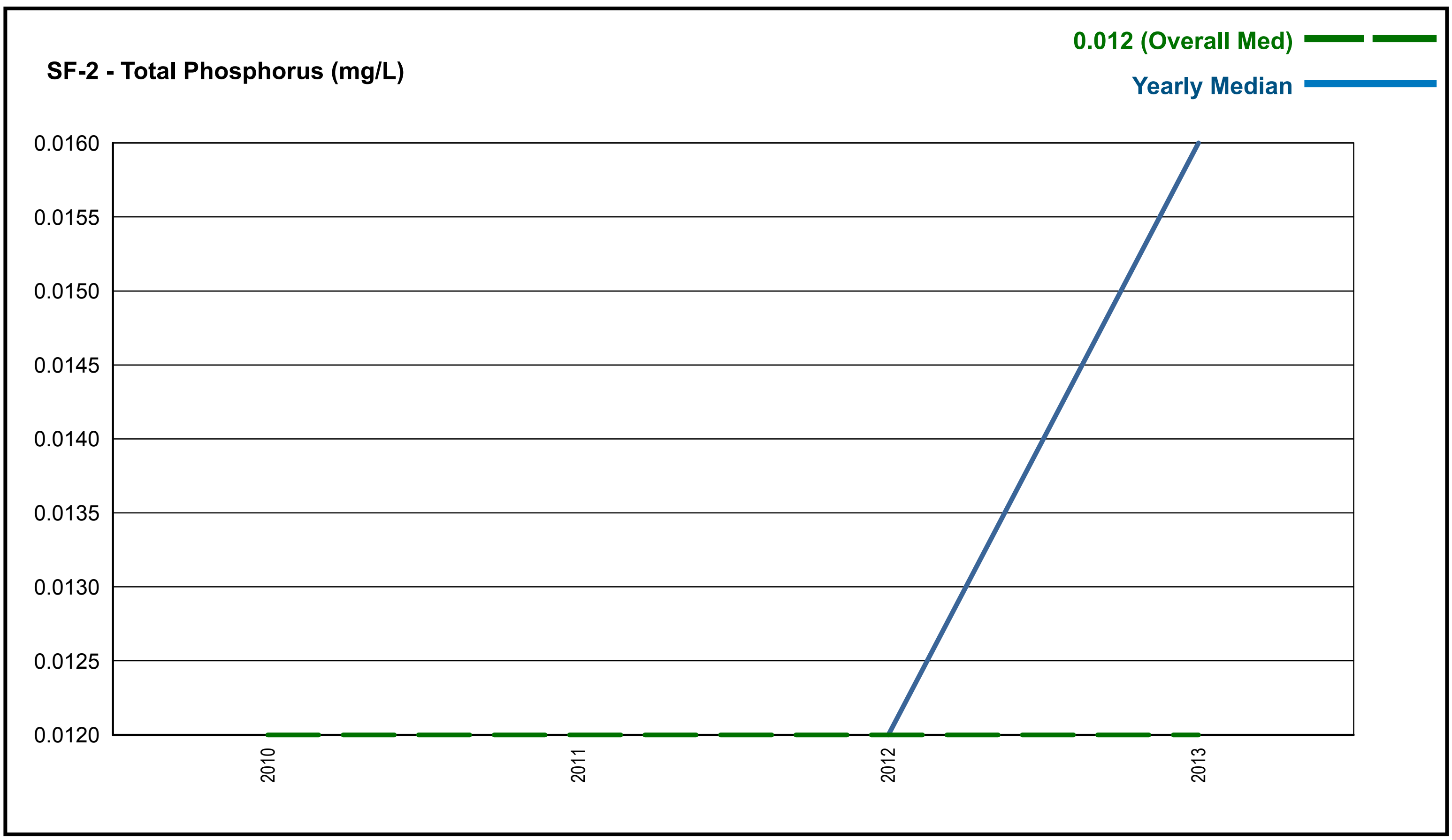
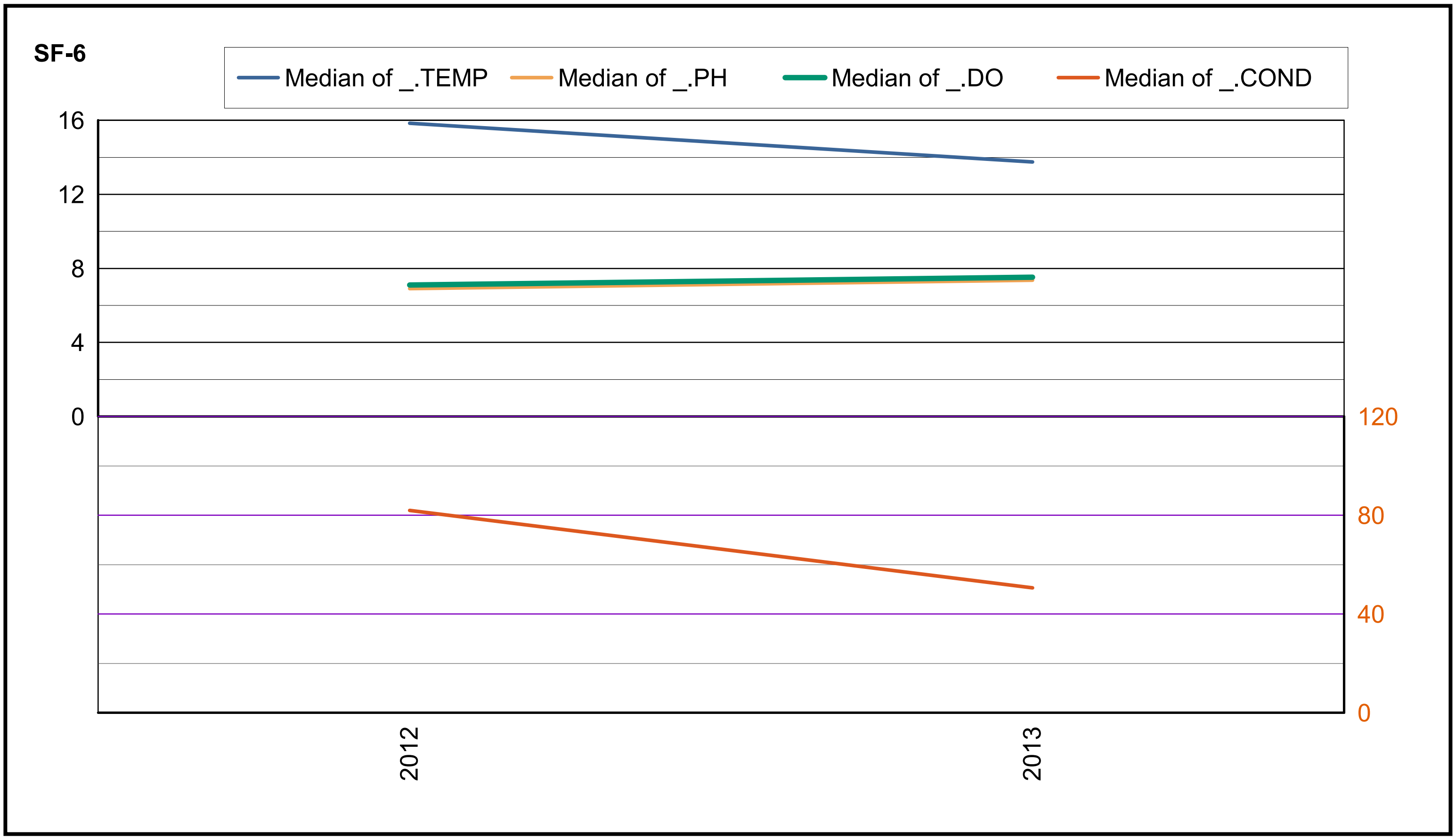
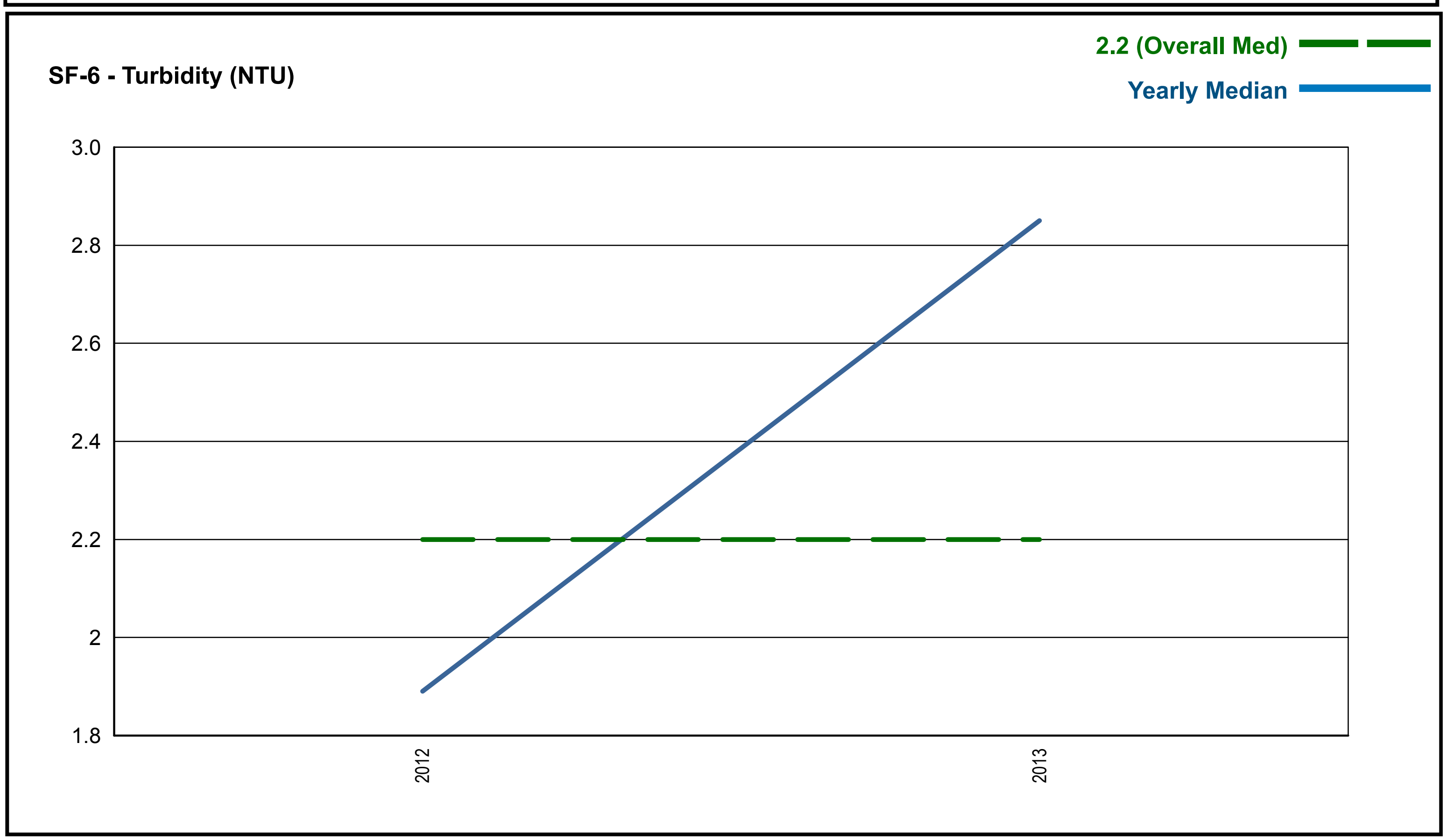




ADEM Ambient Trend Stations - Sampled 2012 - 2013





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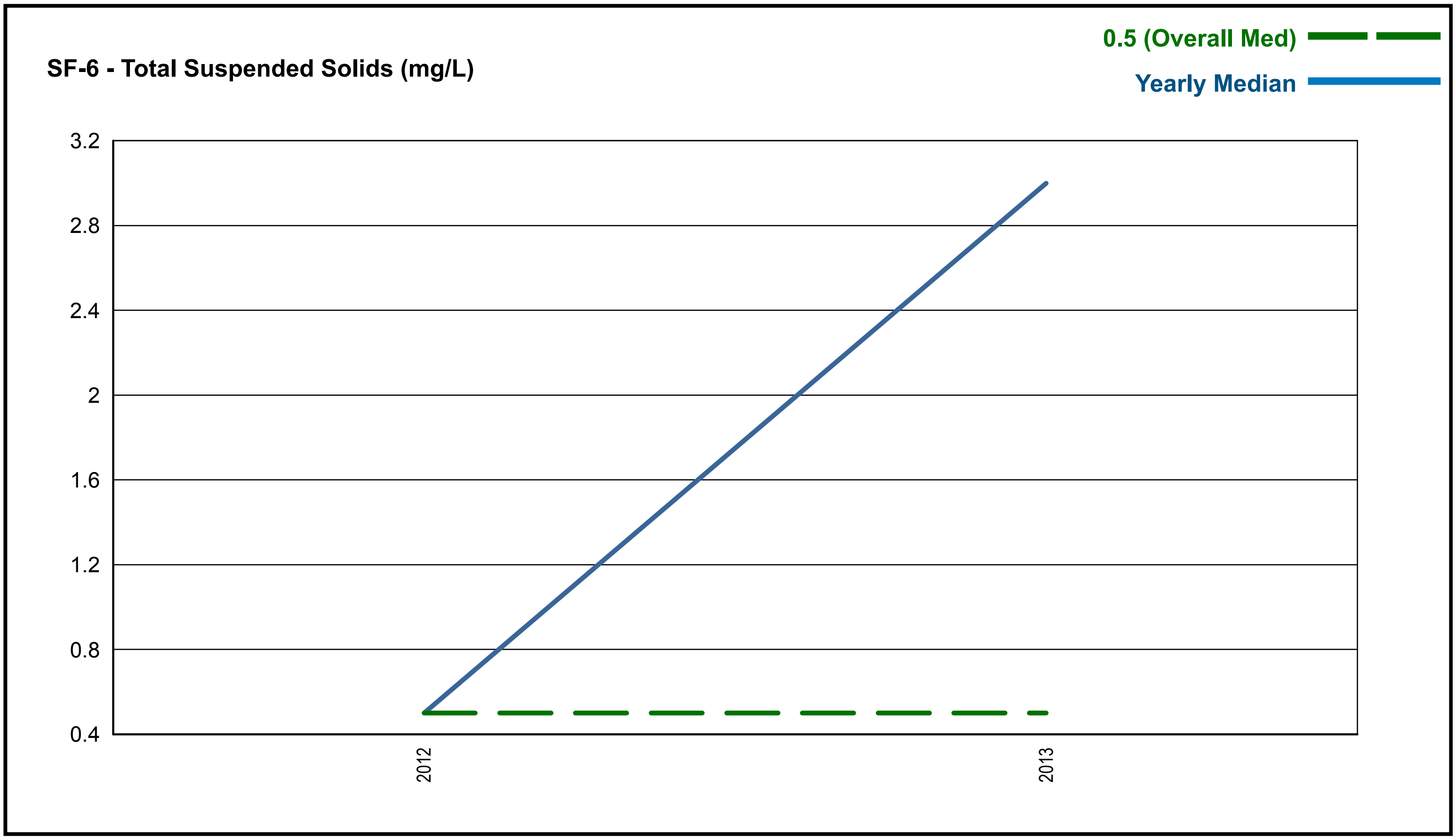

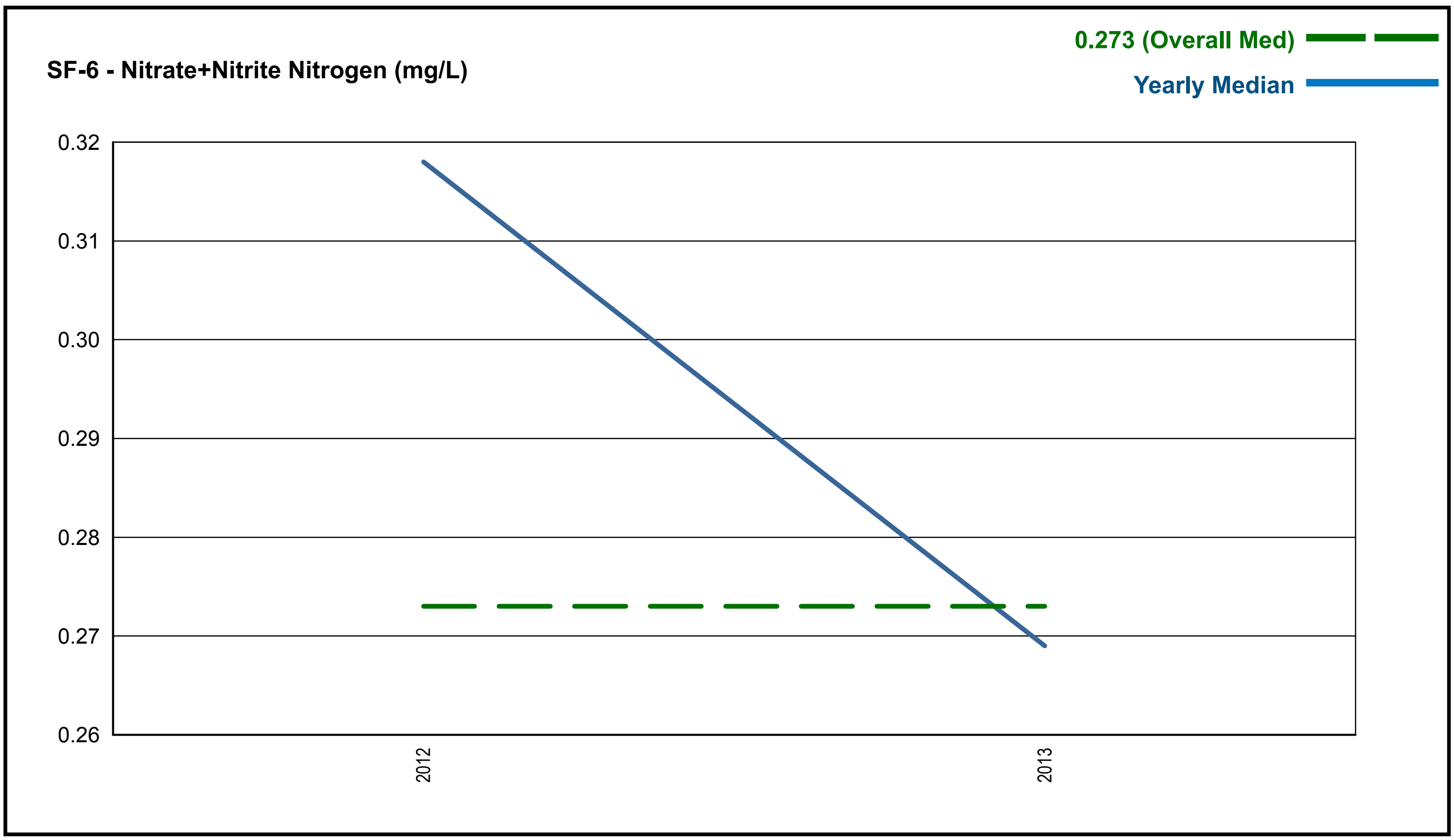

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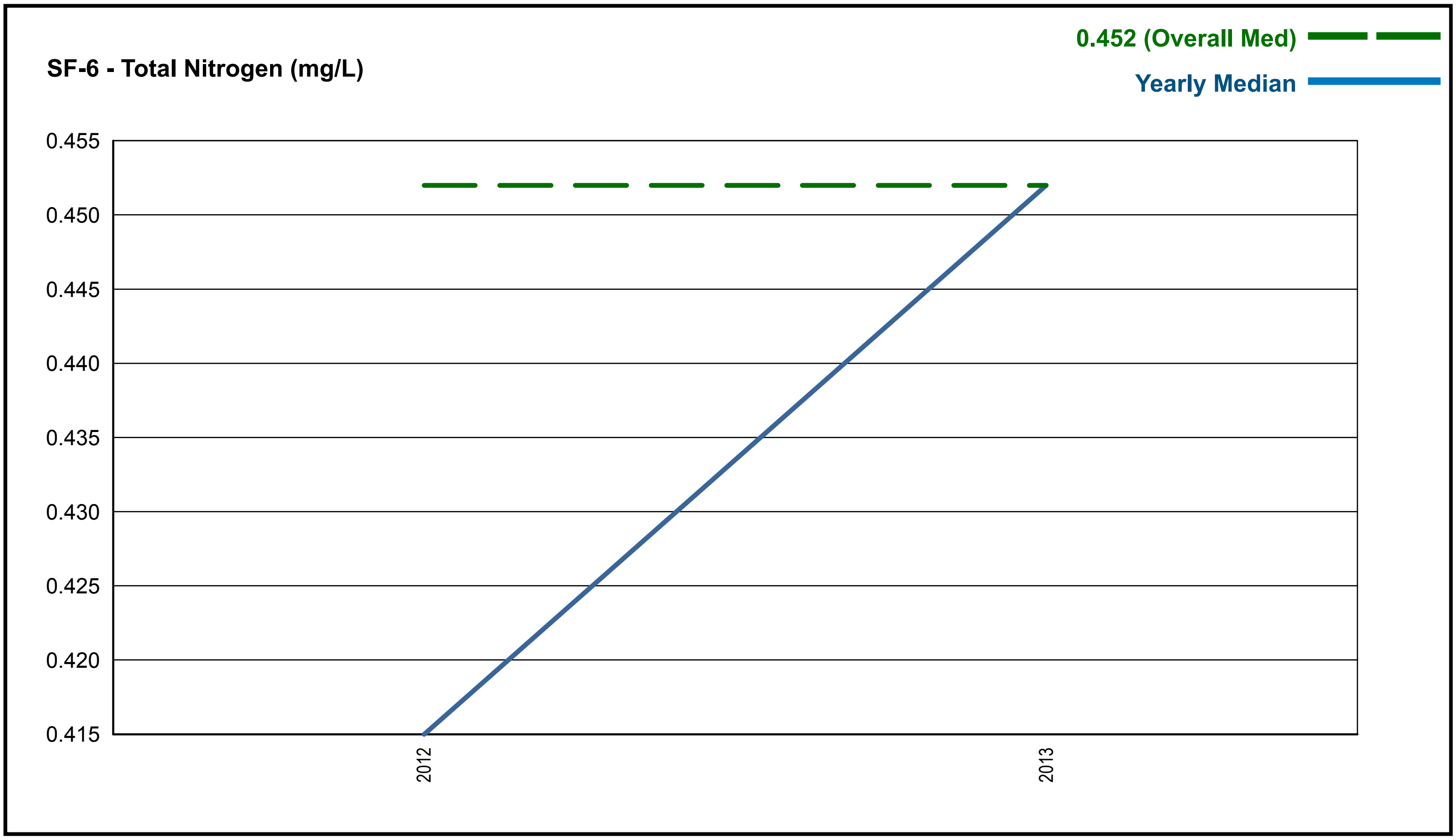
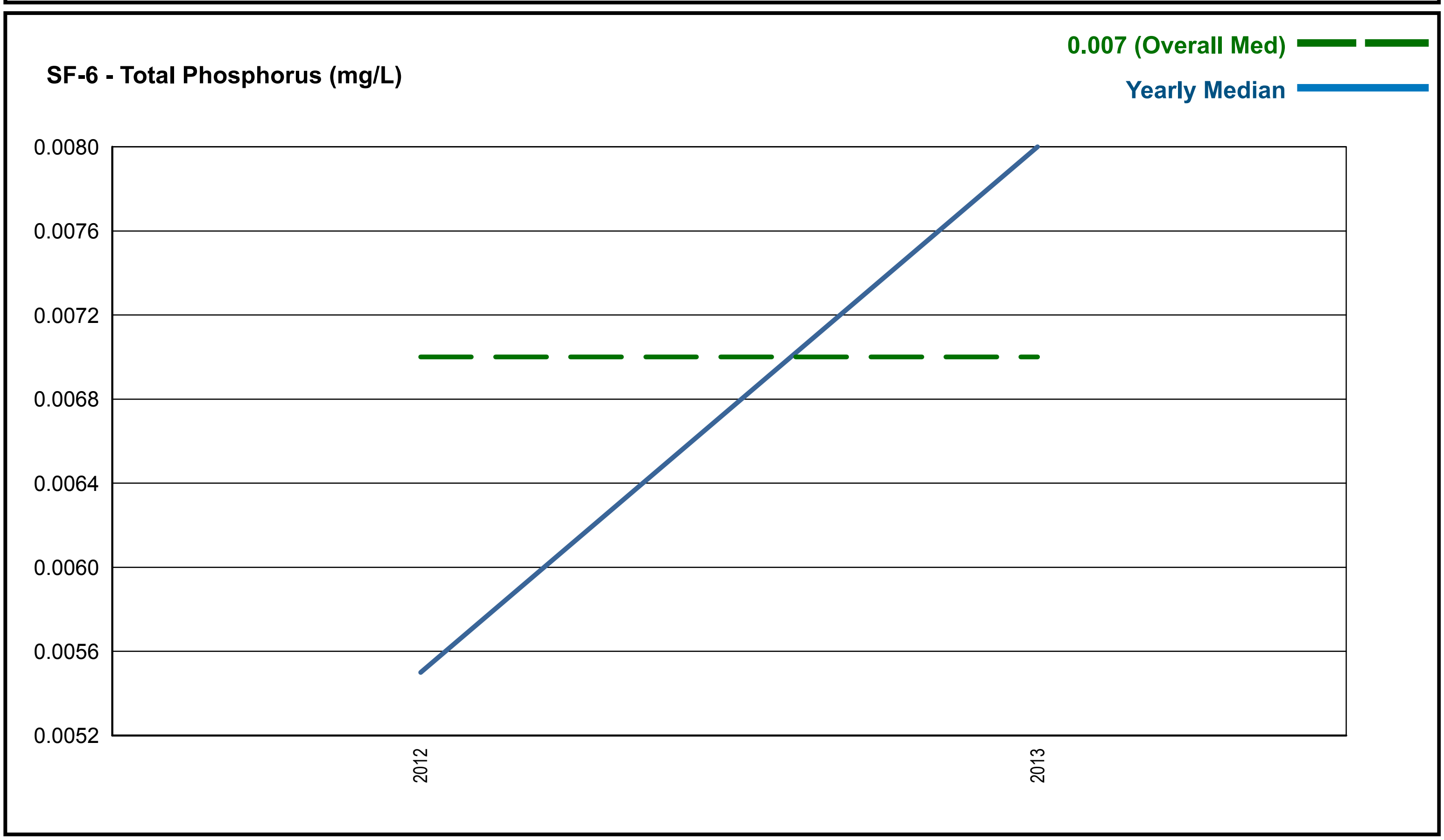
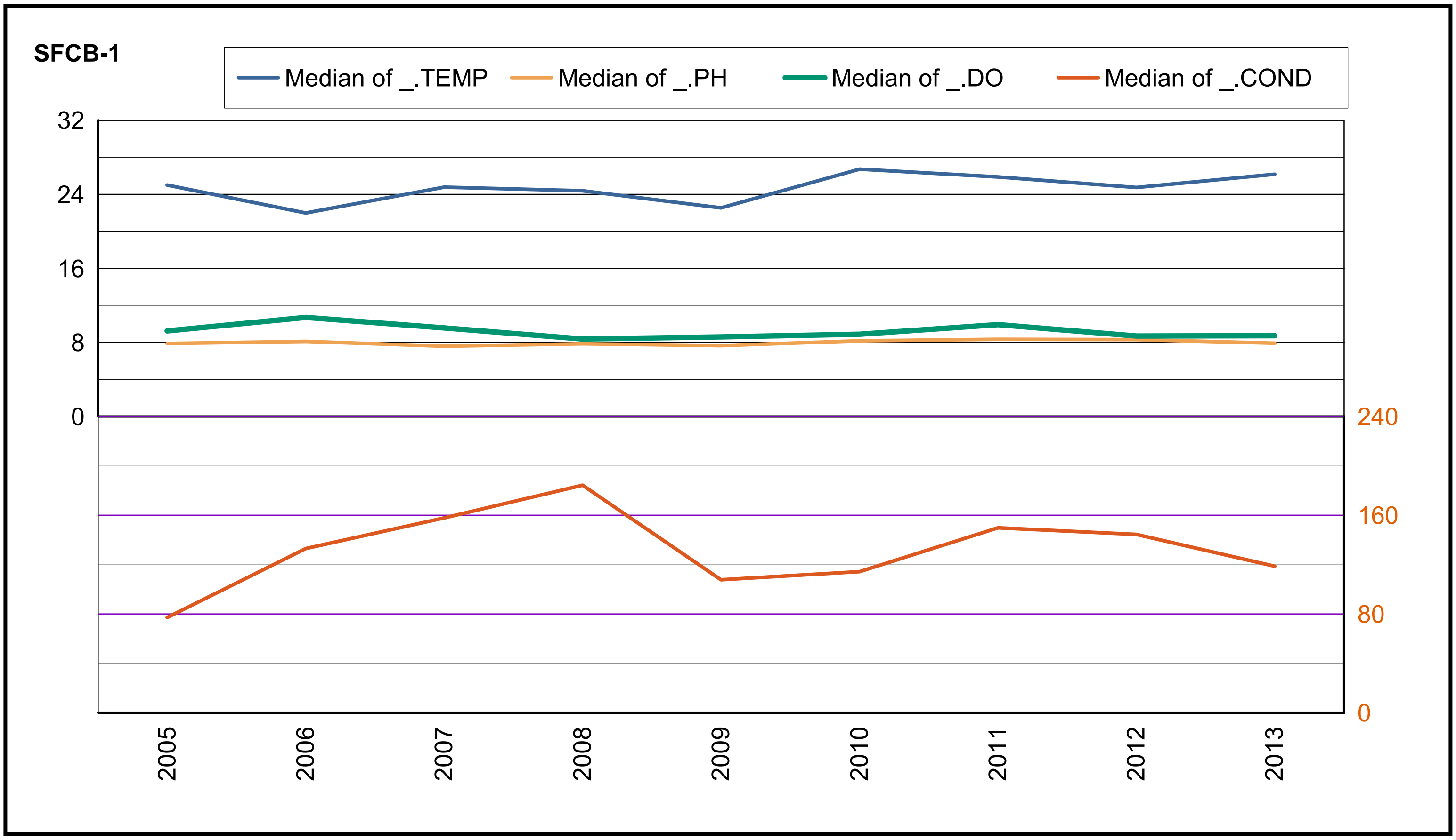
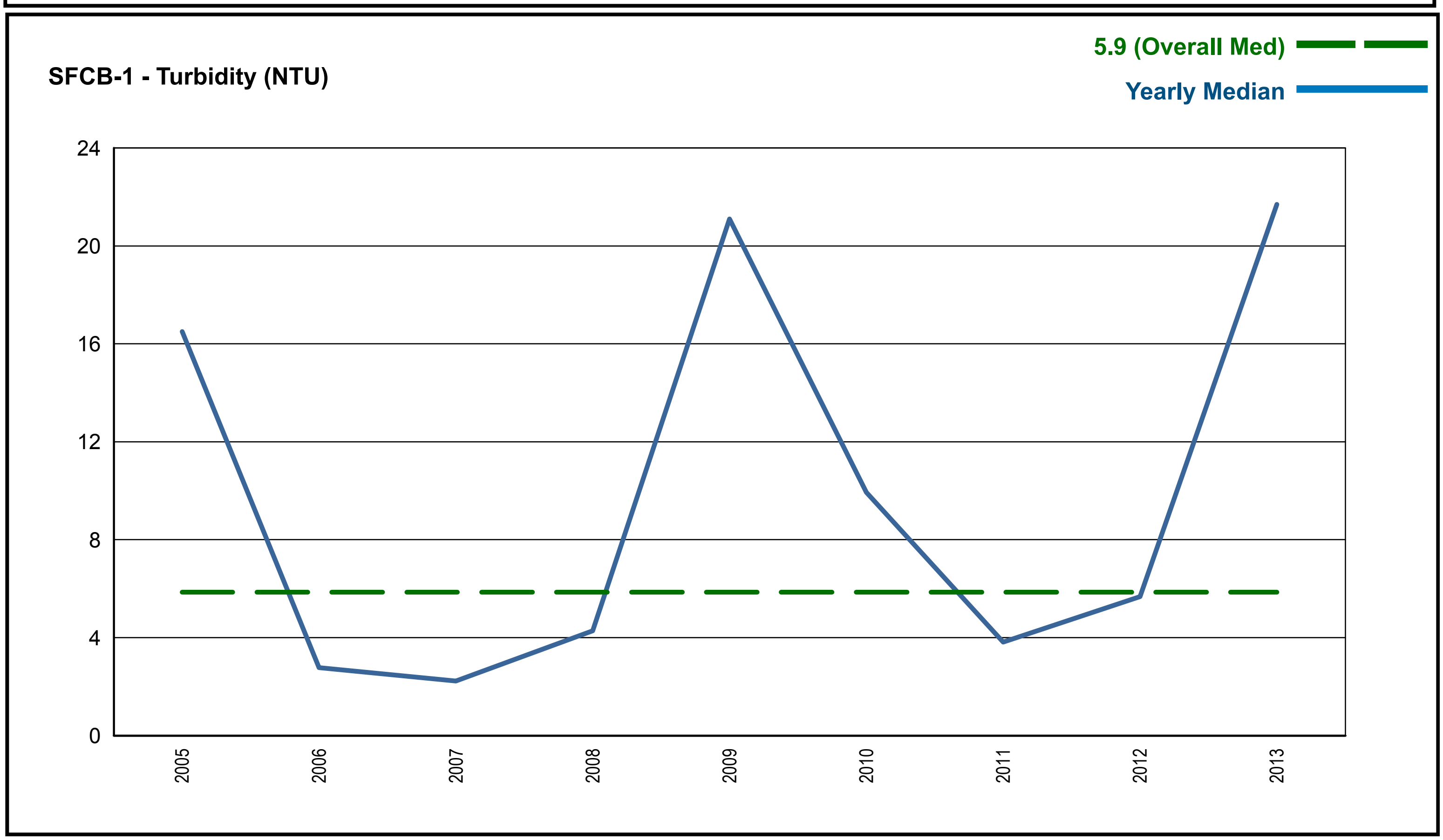


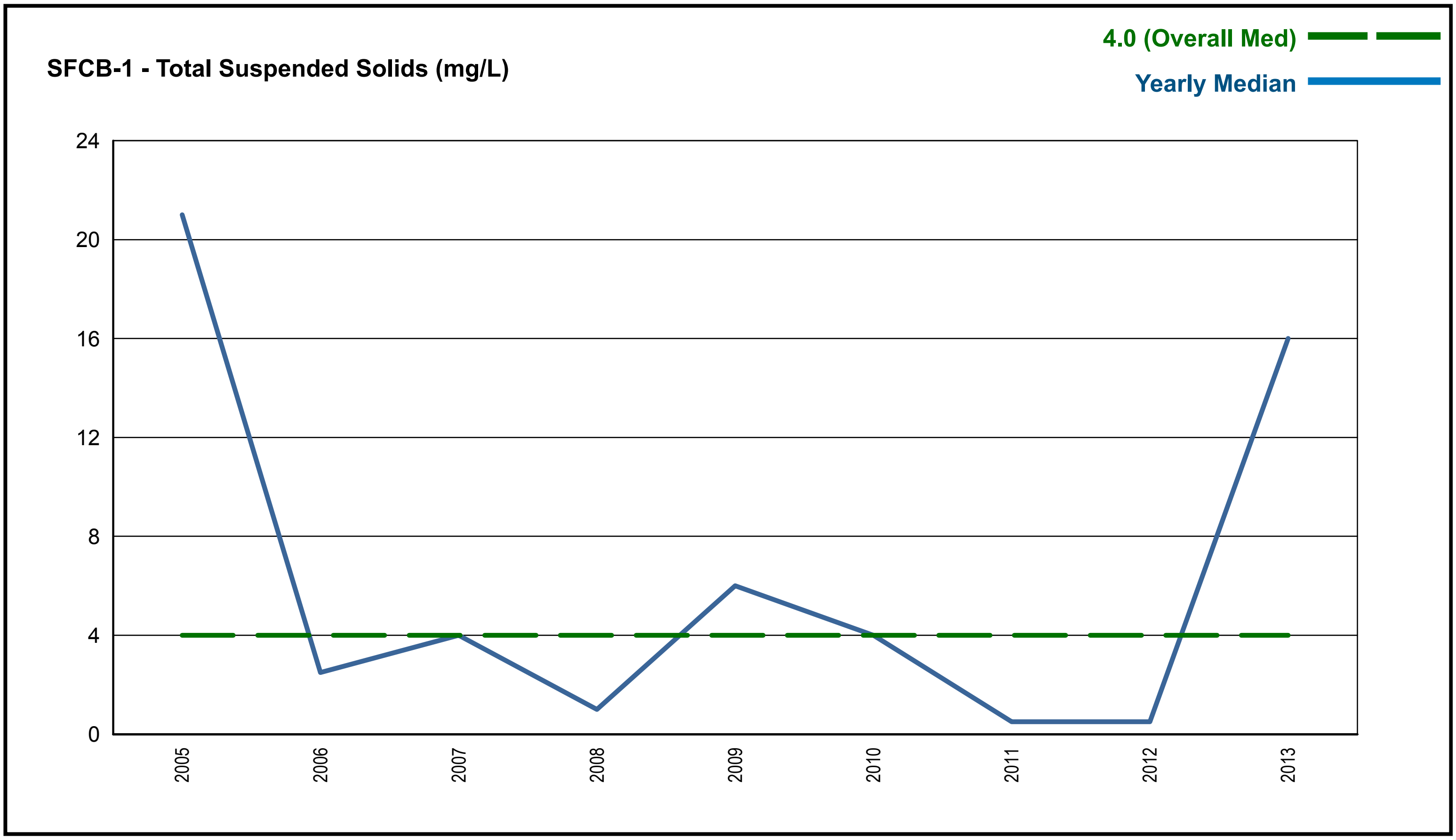


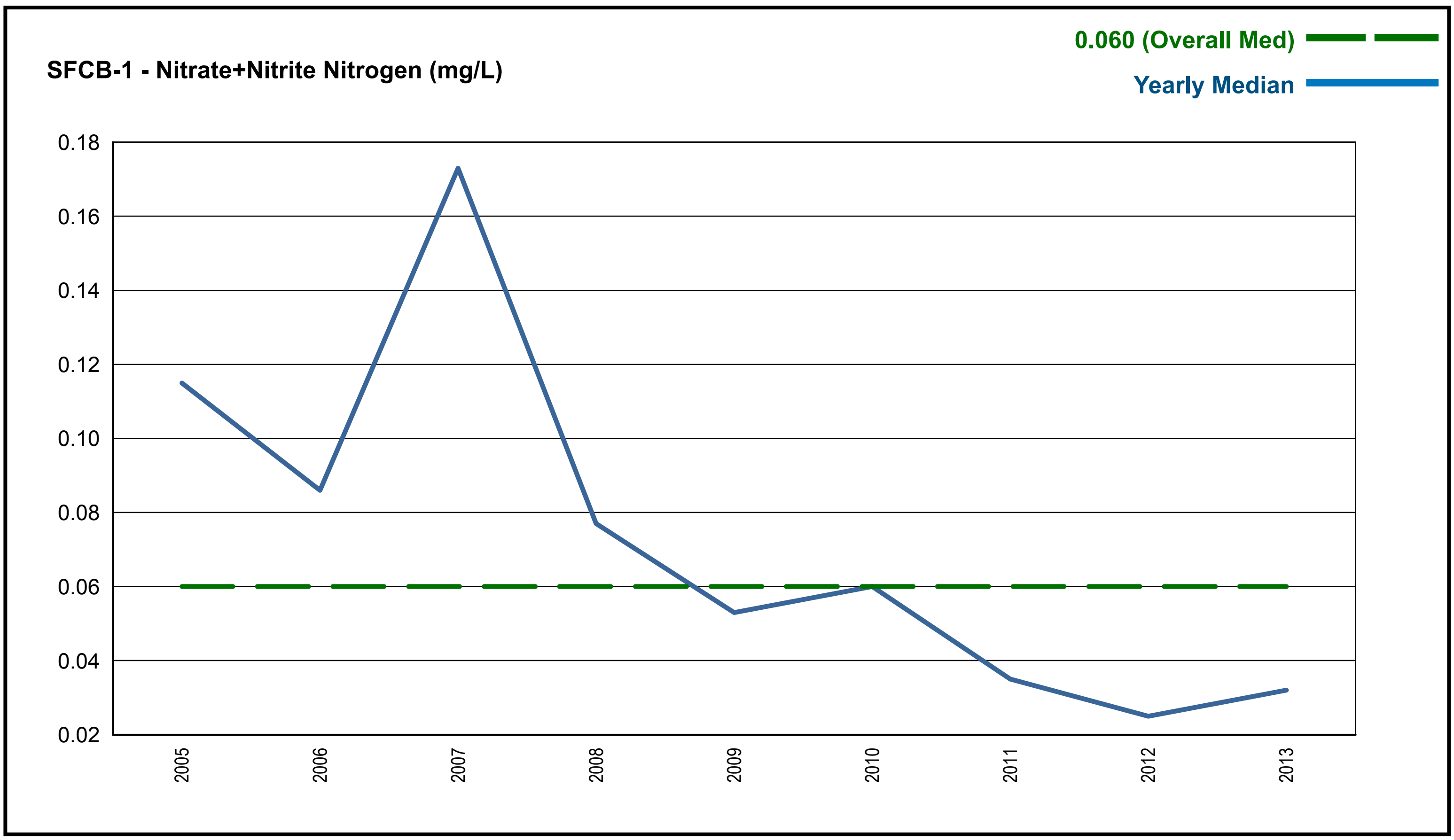
ADEM Ambient Trend Stations - Sampled 1977 - 2014



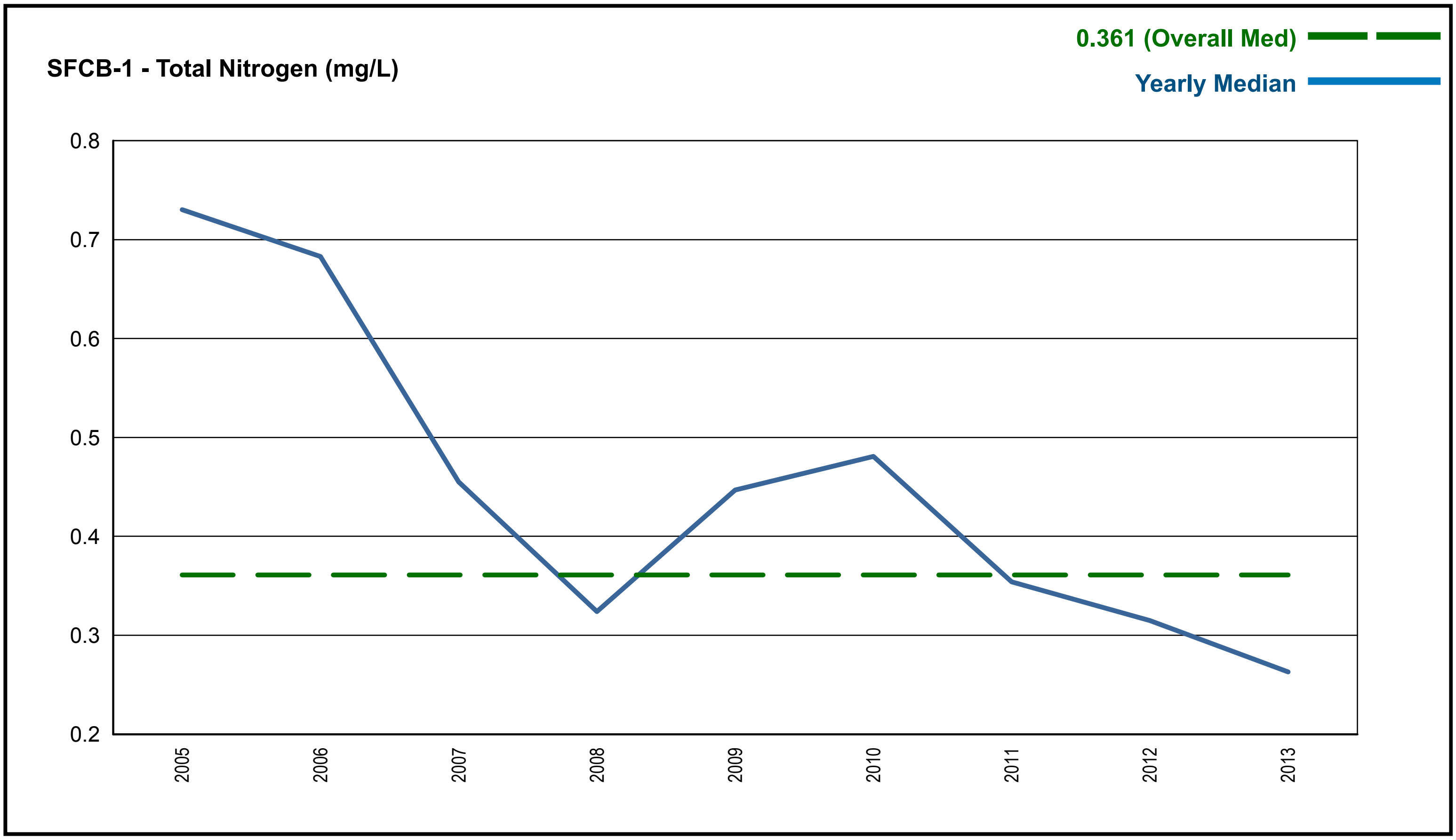


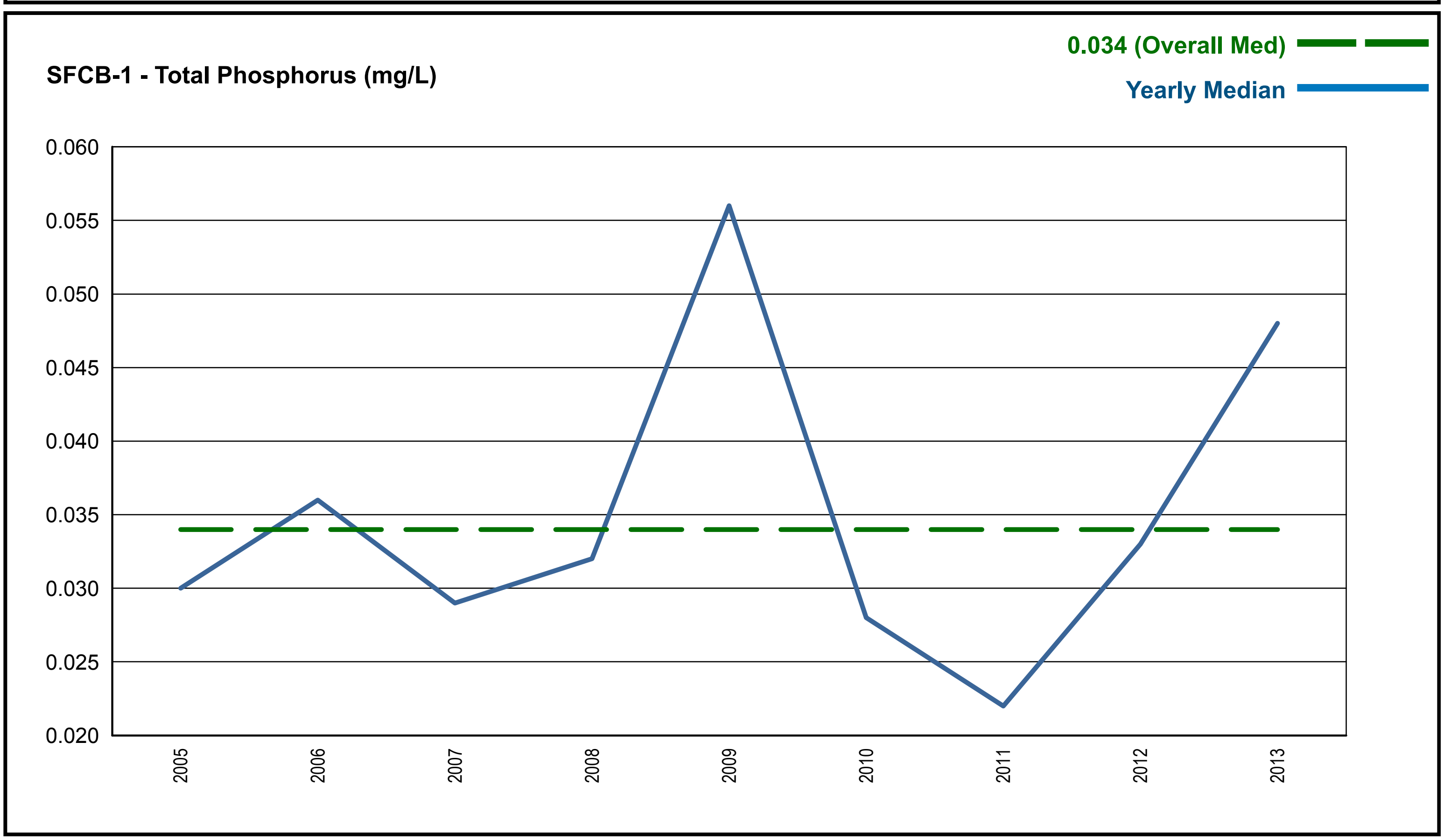
ADEM Ambient Trend Stations - Sampled 1977 - 2014



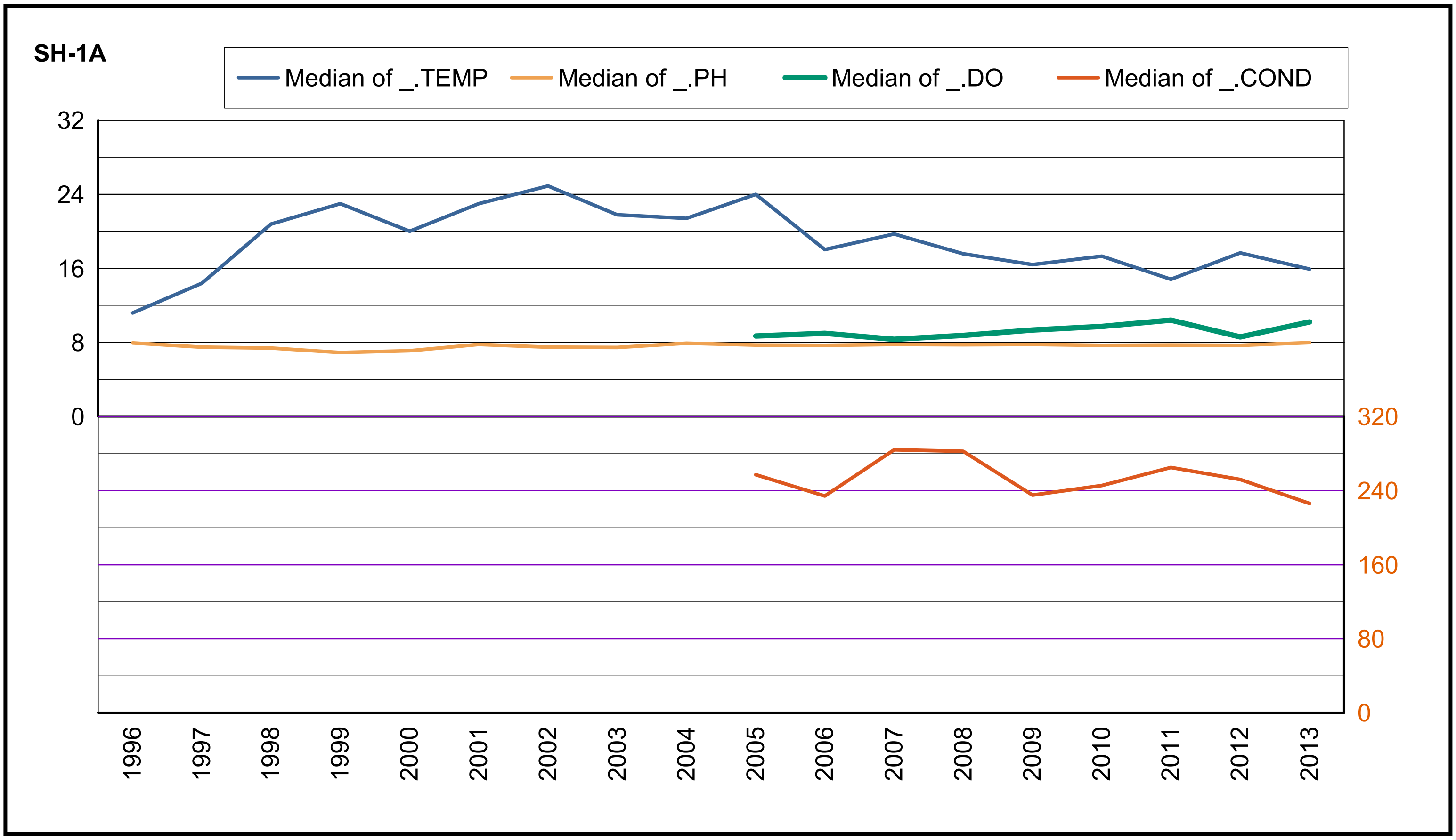


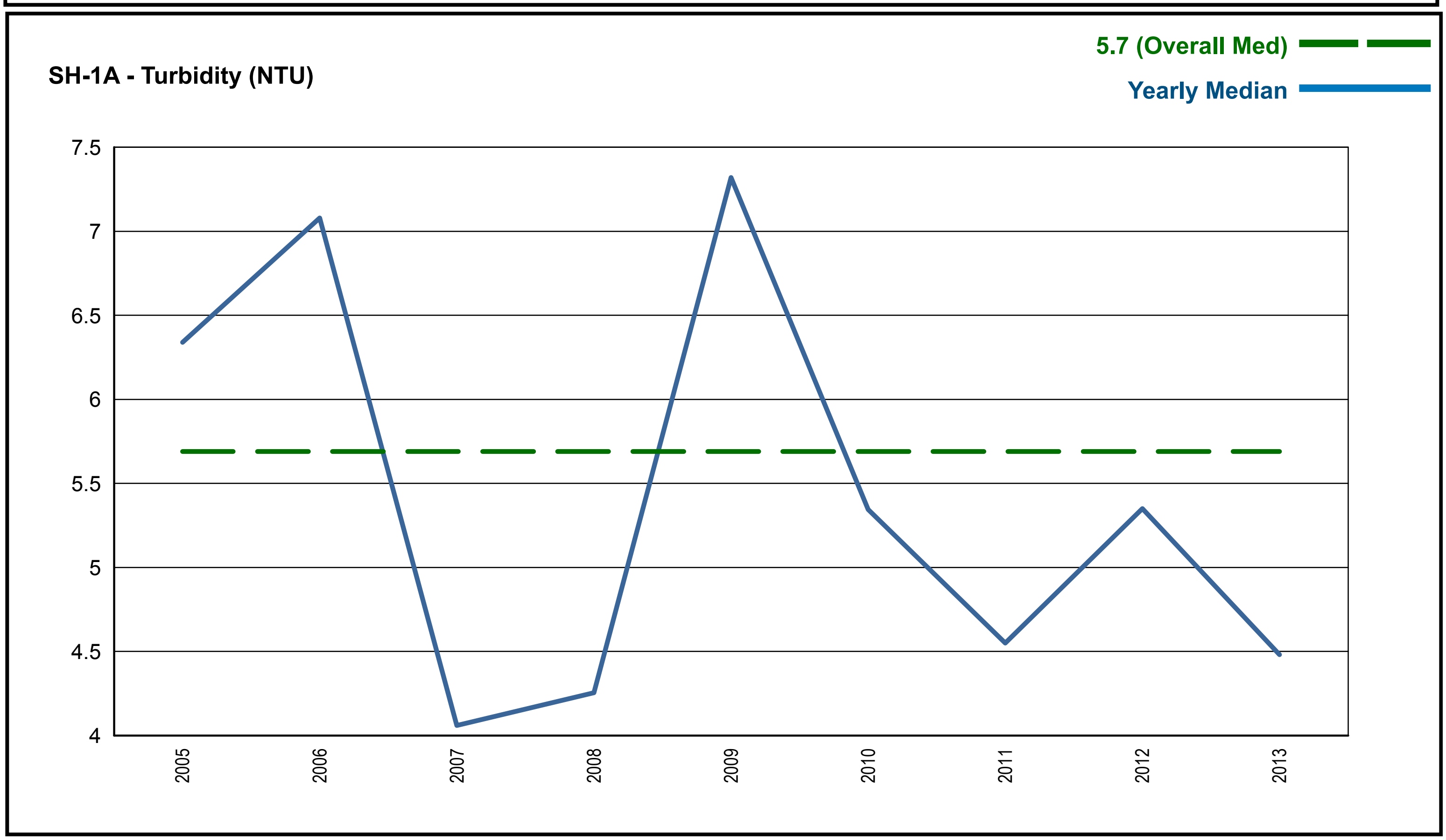
ADEM Ambient Trend Stations - Sampled 1977 - 2014



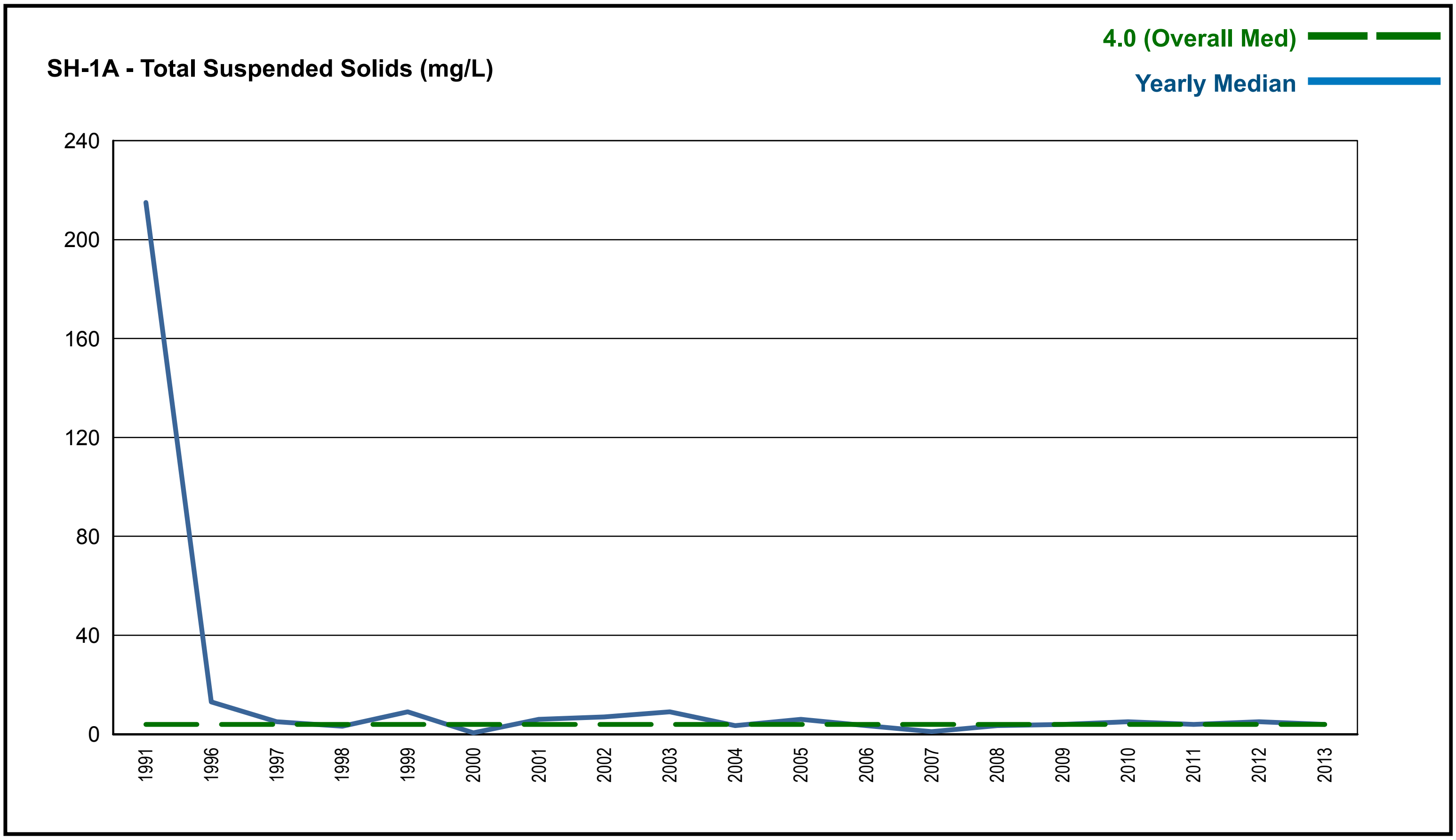


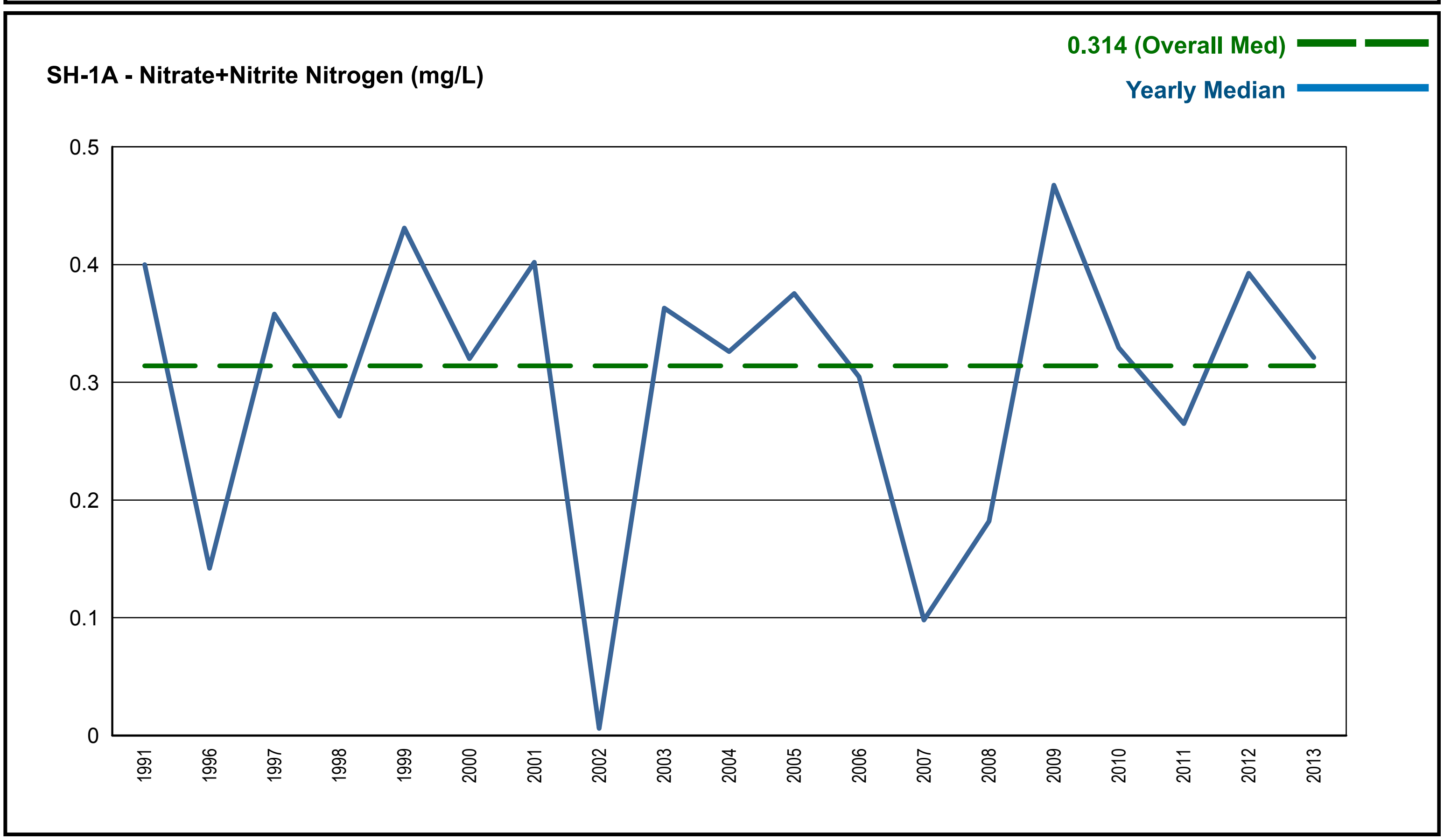
ADEM Ambient Trend Stations - Sampled 1977 - 2014



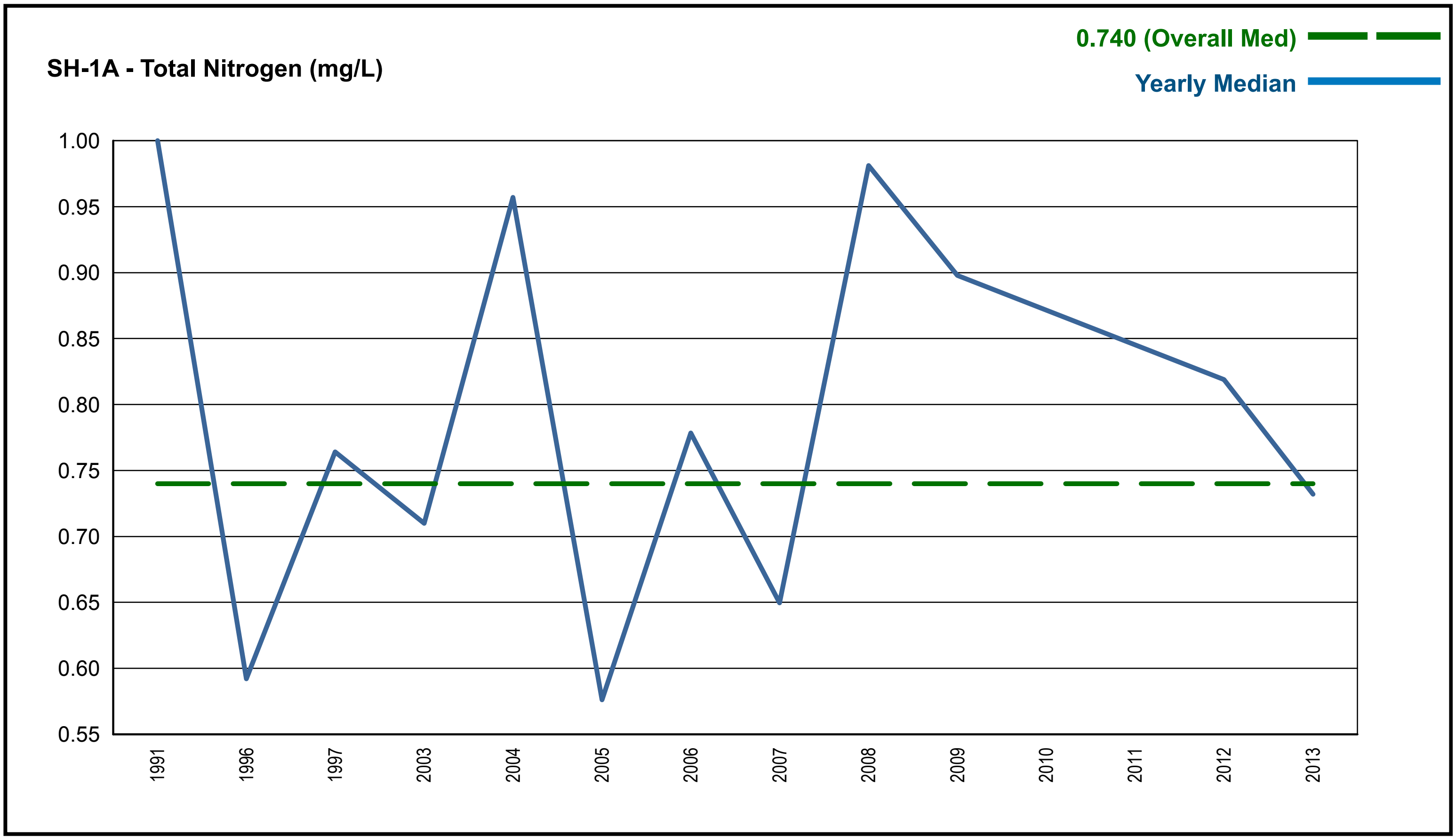


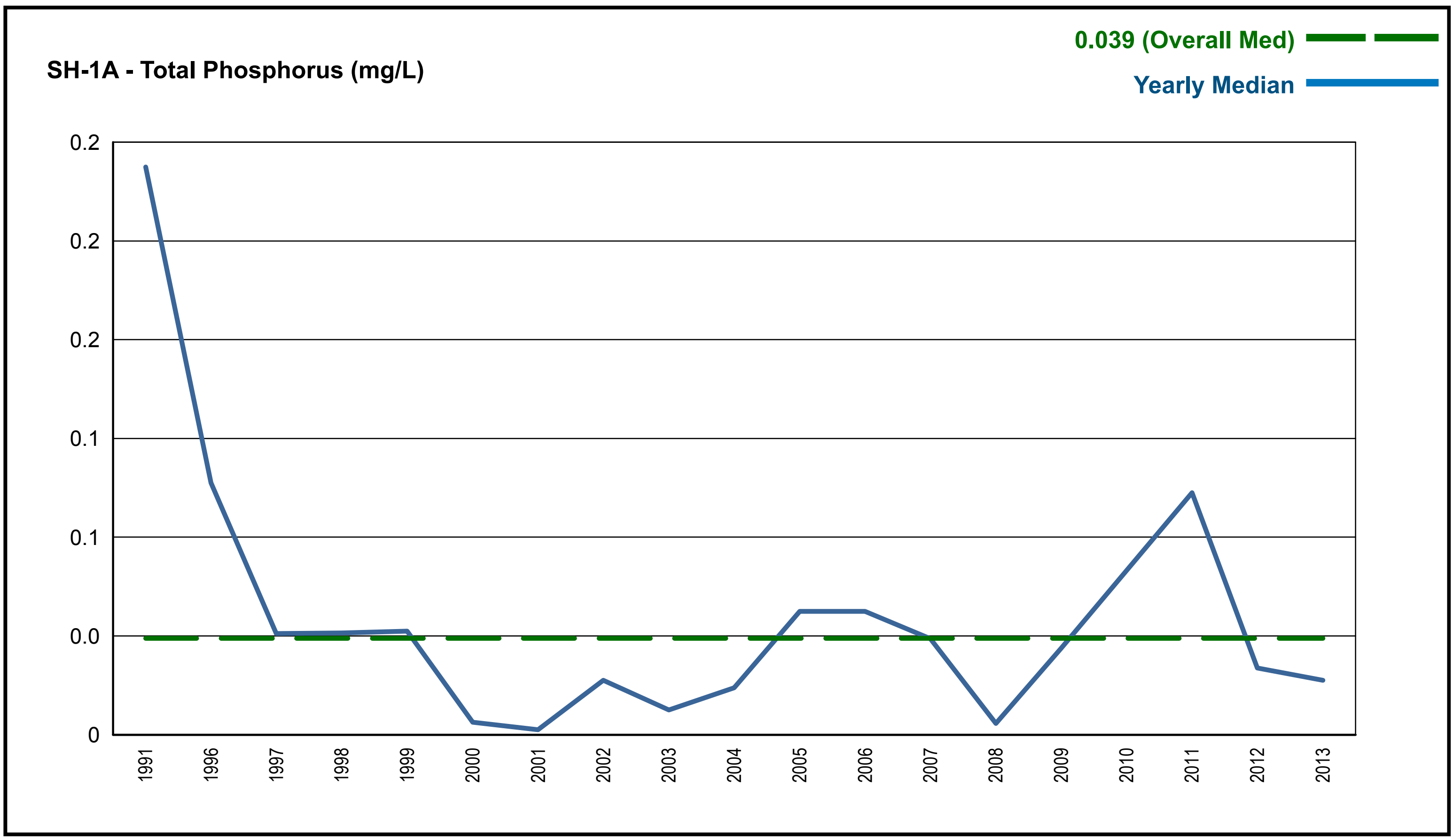
ADEM Ambient Trend Stations - Sampled 1977 - 2014



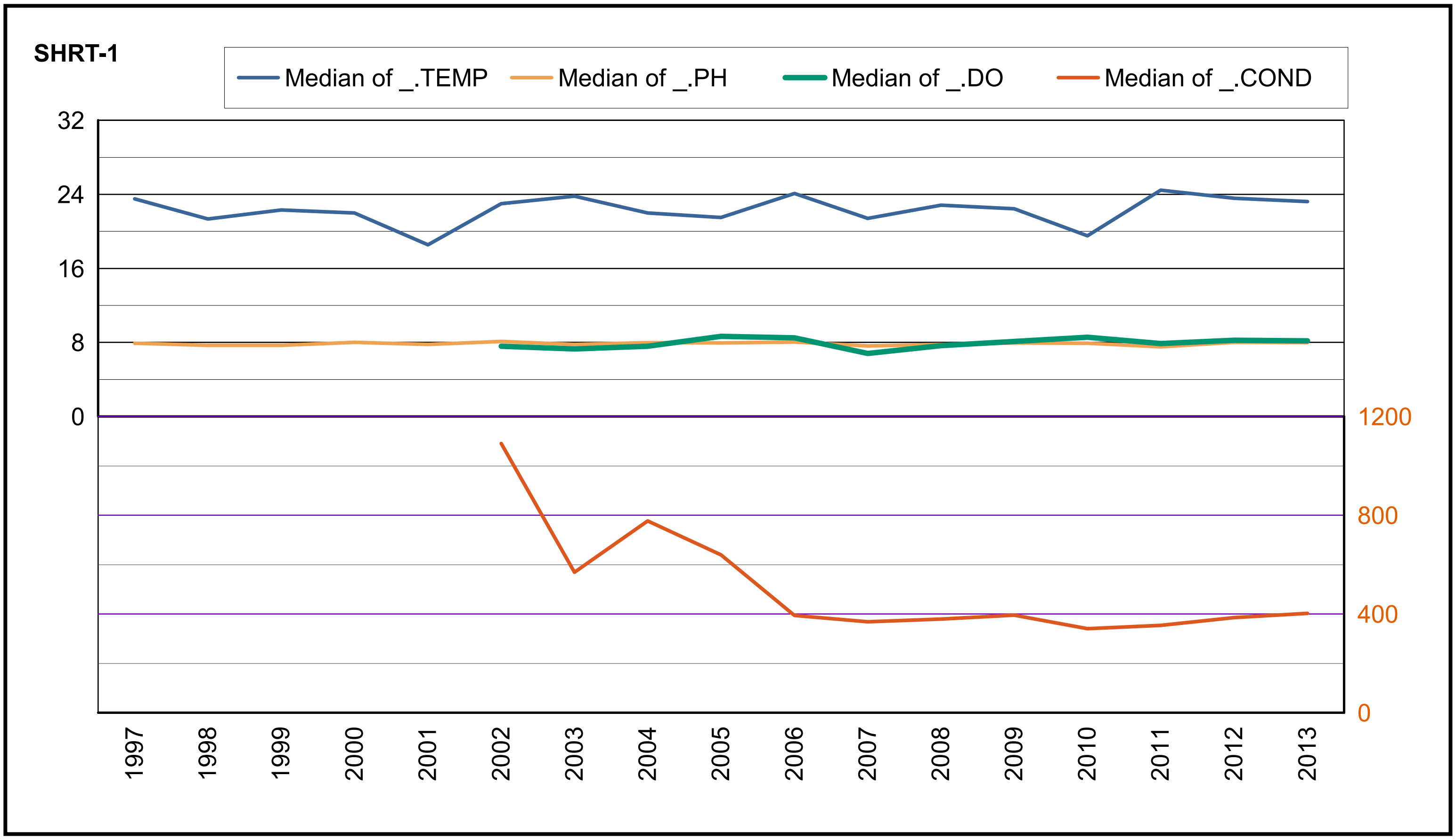


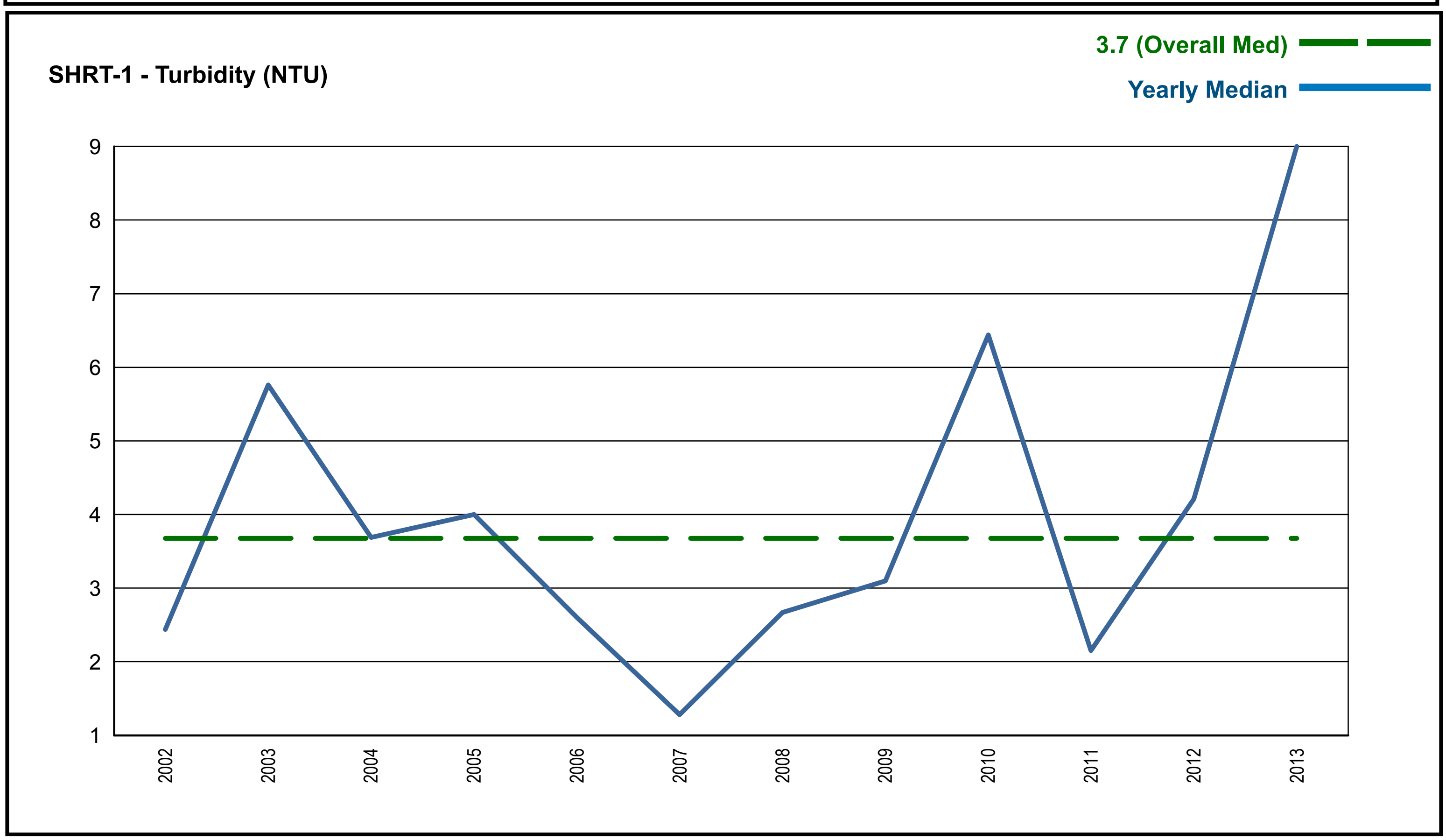
ADEM Ambient Trend Stations - Sampled 1977 - 2014



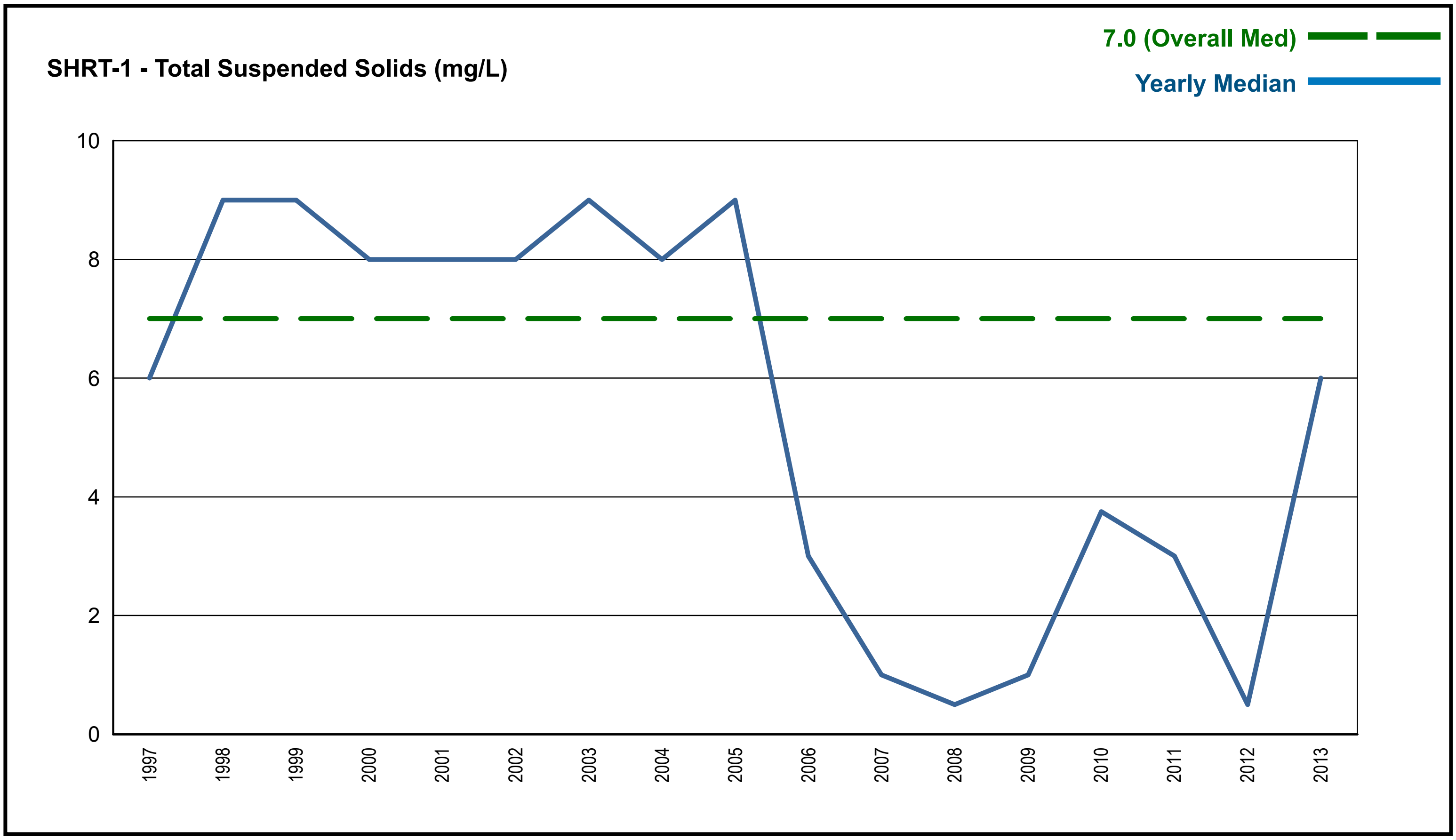


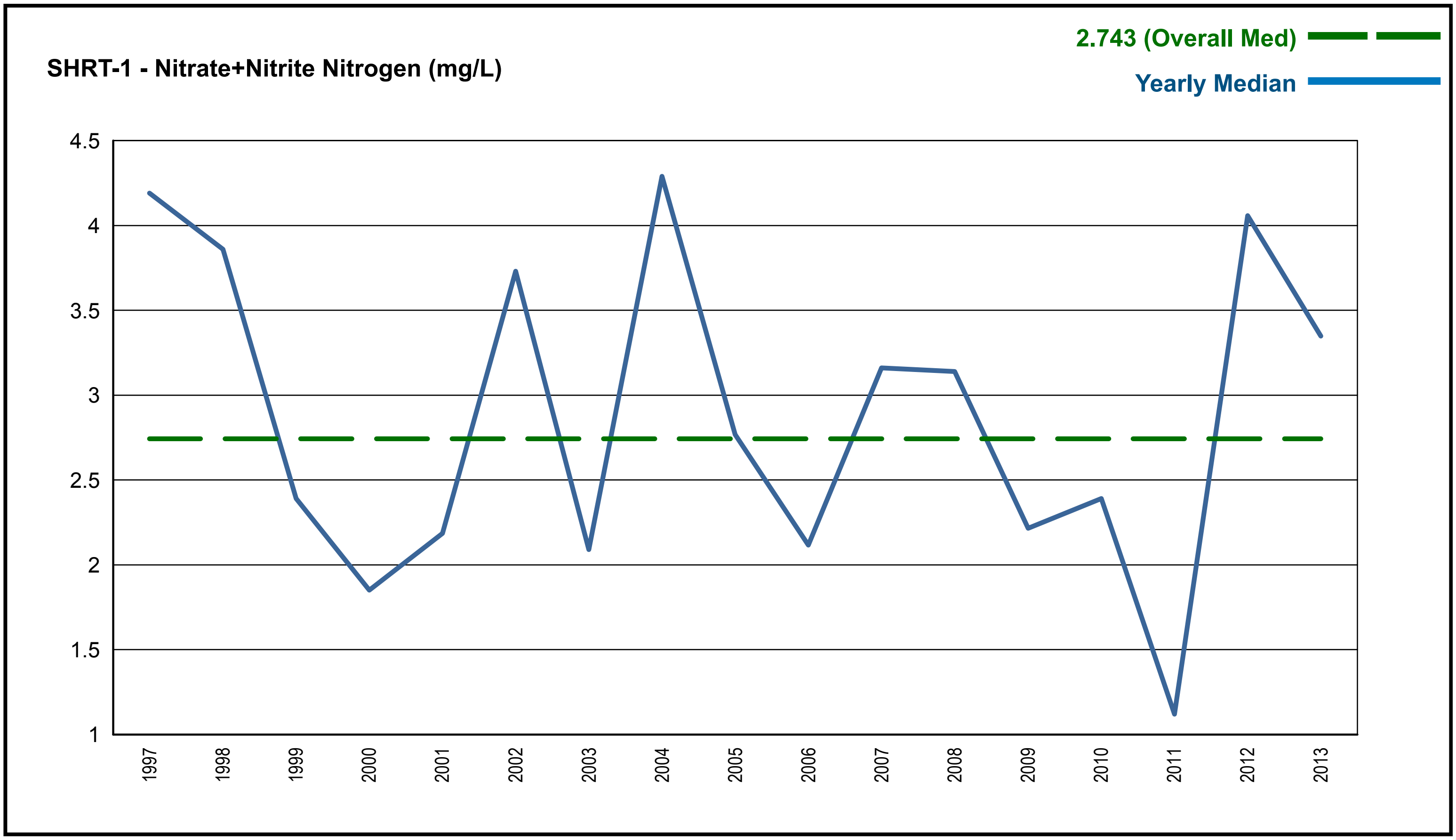
ADEM Ambient Trend Stations - Sampled 1977 - 2014



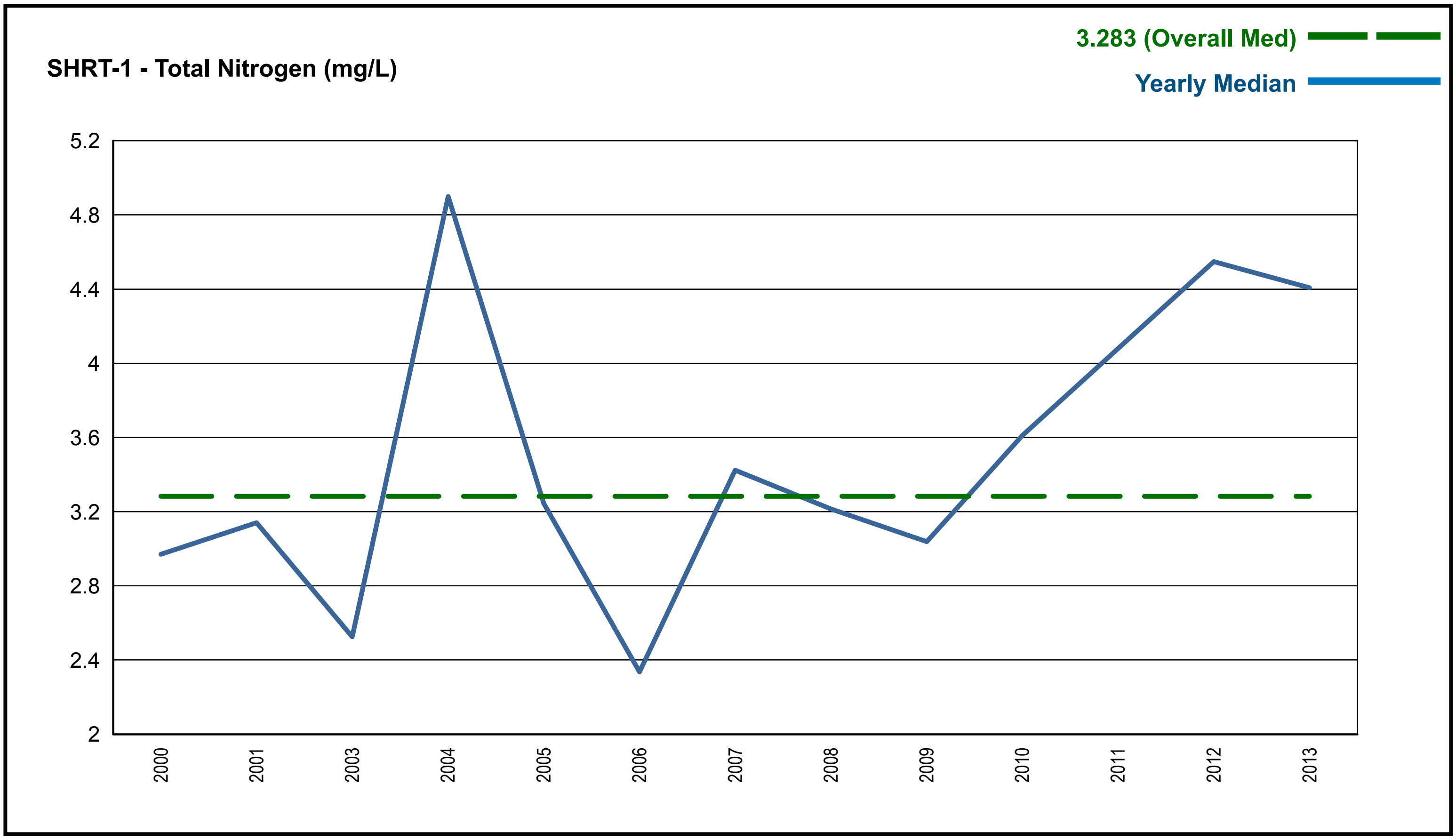


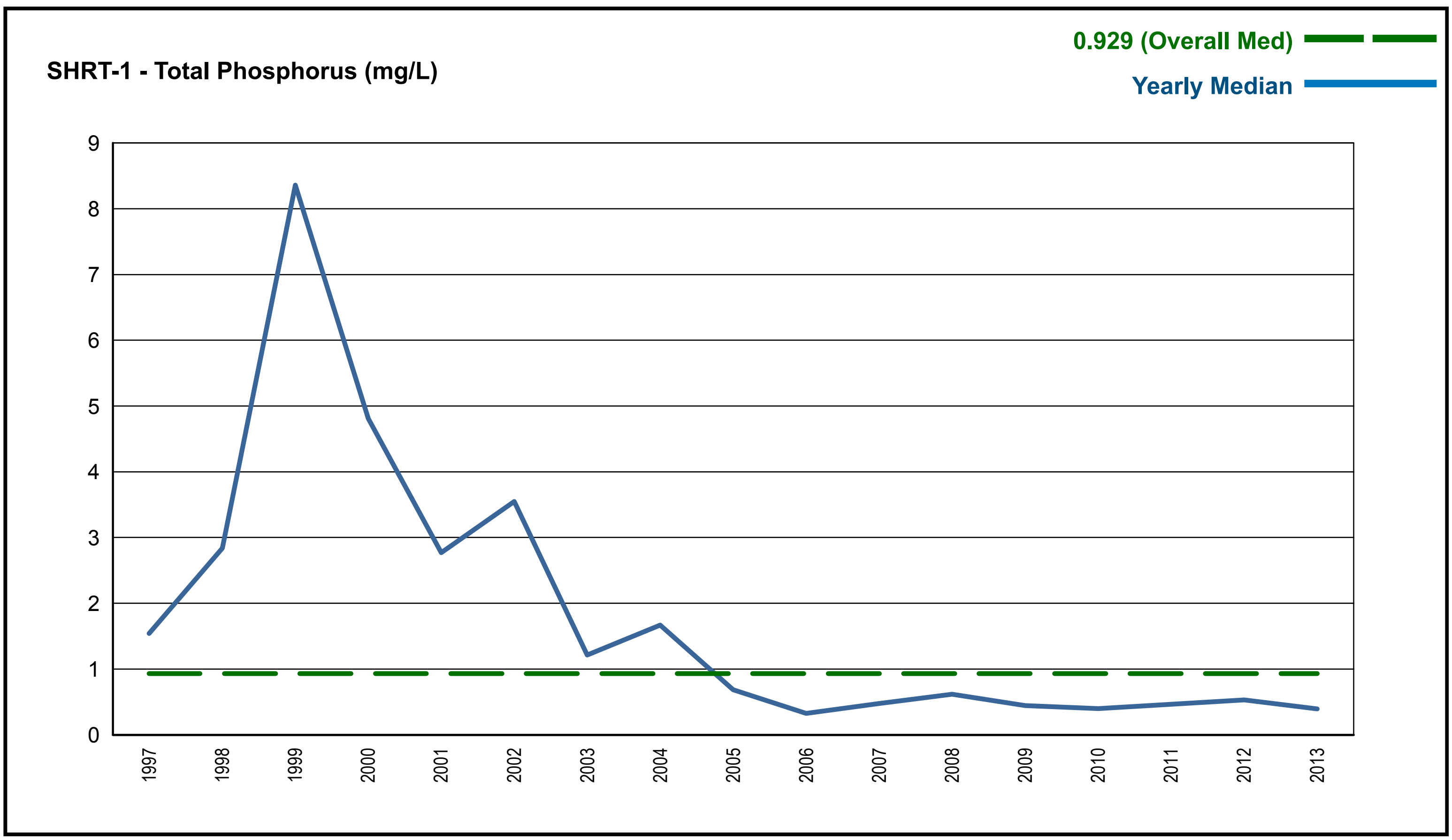
ADEM Ambient Trend Stations - Sampled 1977 - 2014



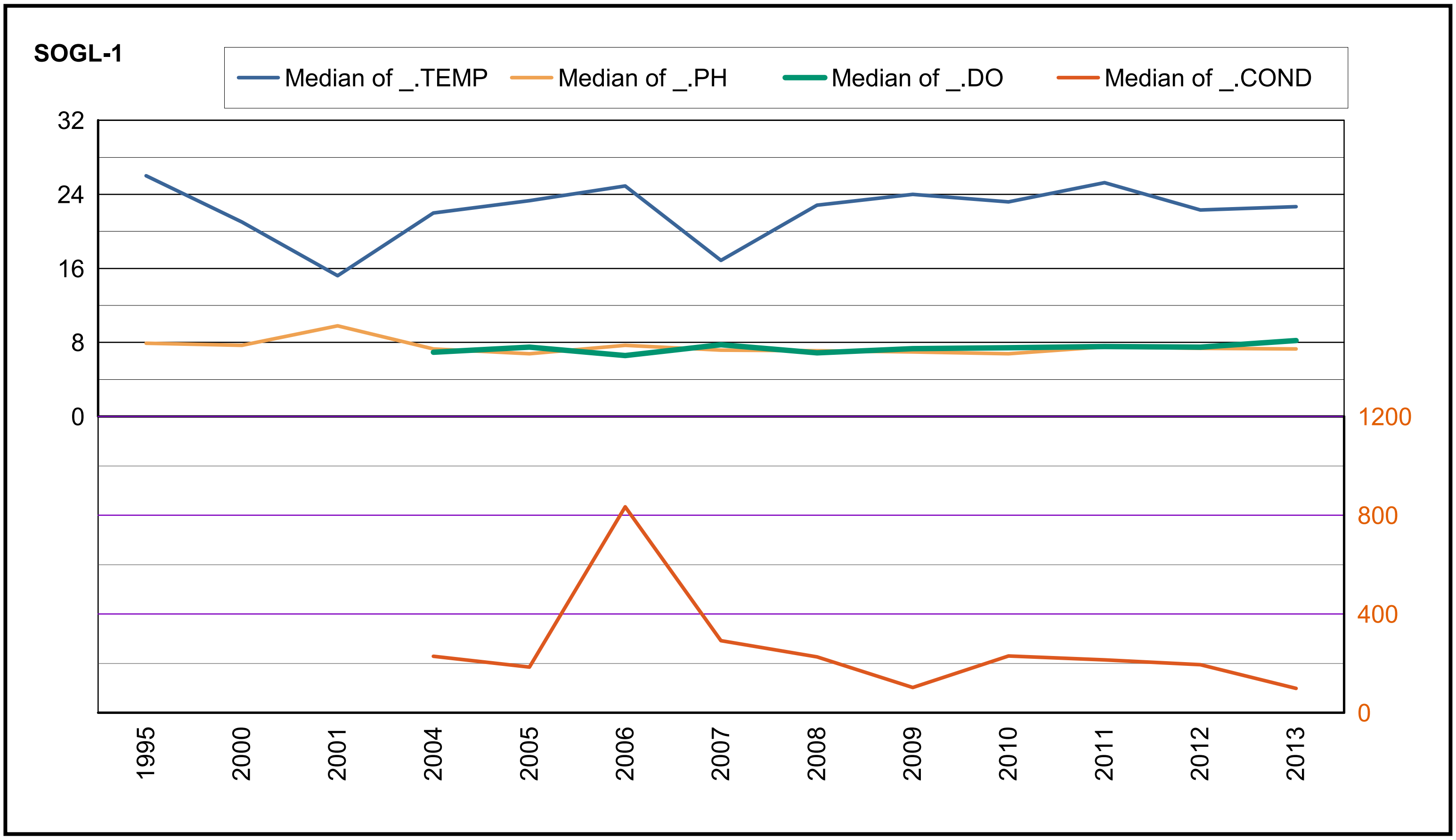


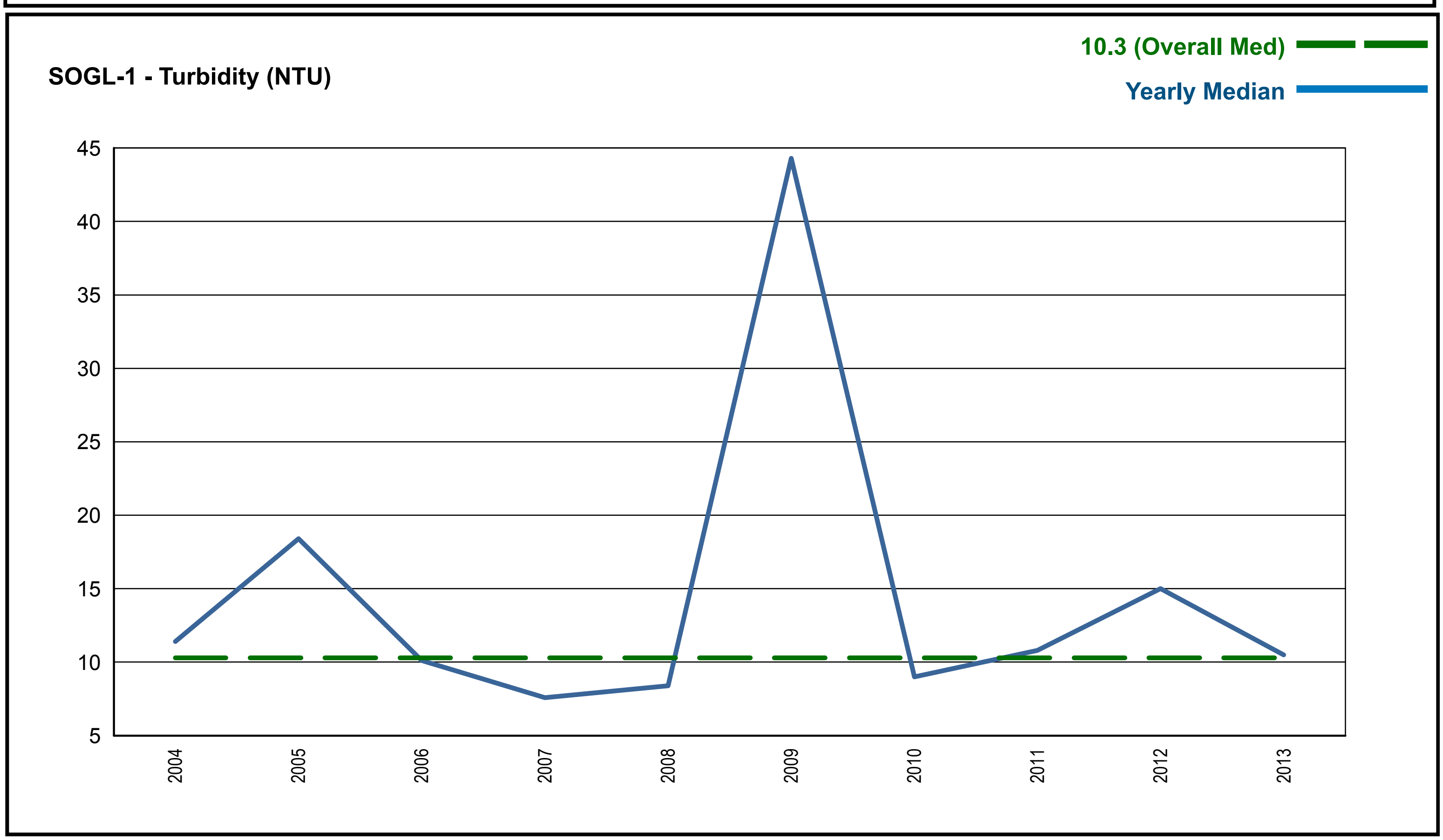
ADEM Ambient Trend Stations - Sampled 1977 - 2014





ADEM Ambient Trend Stations - Sampled 1977 - 2014





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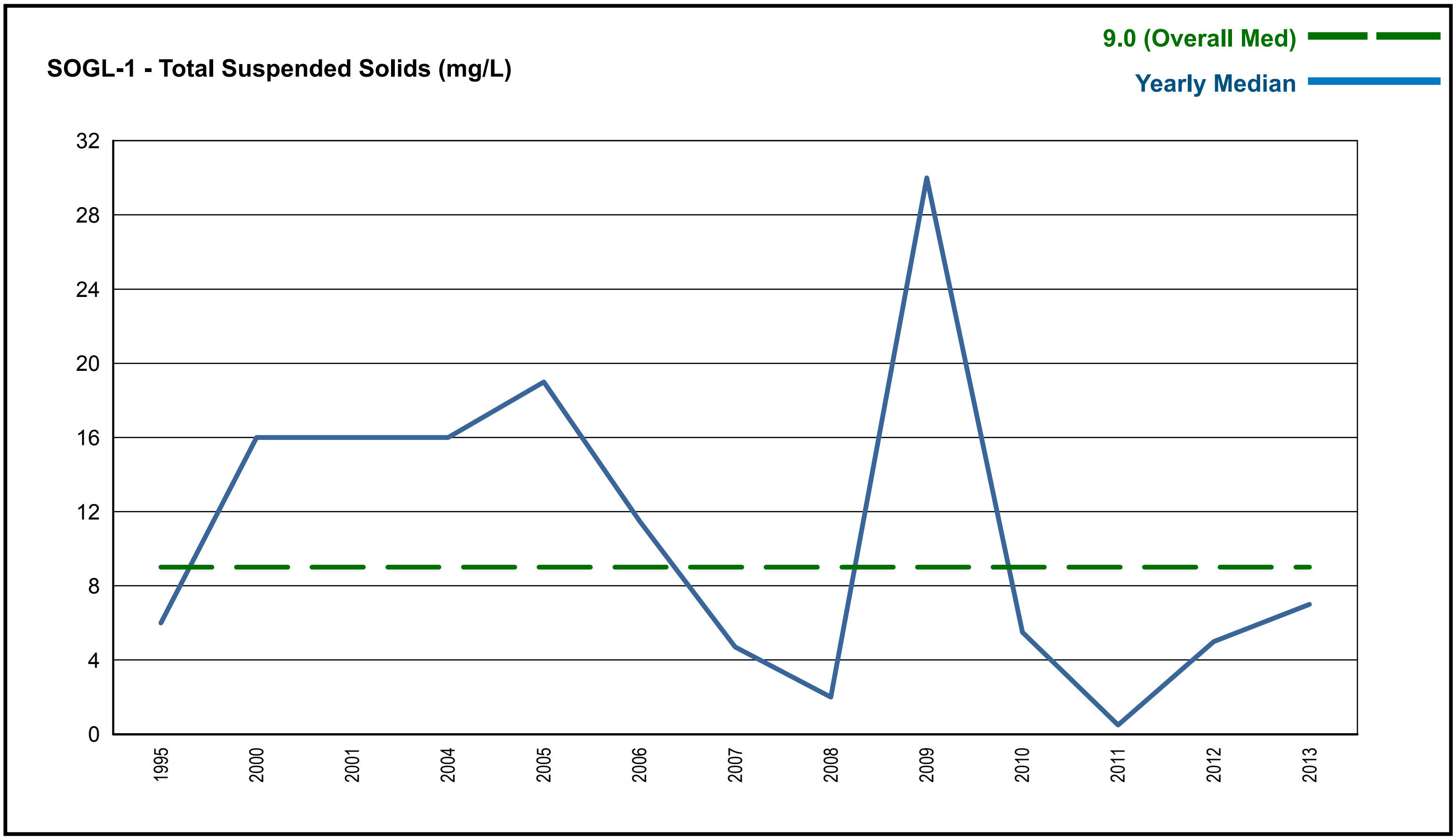

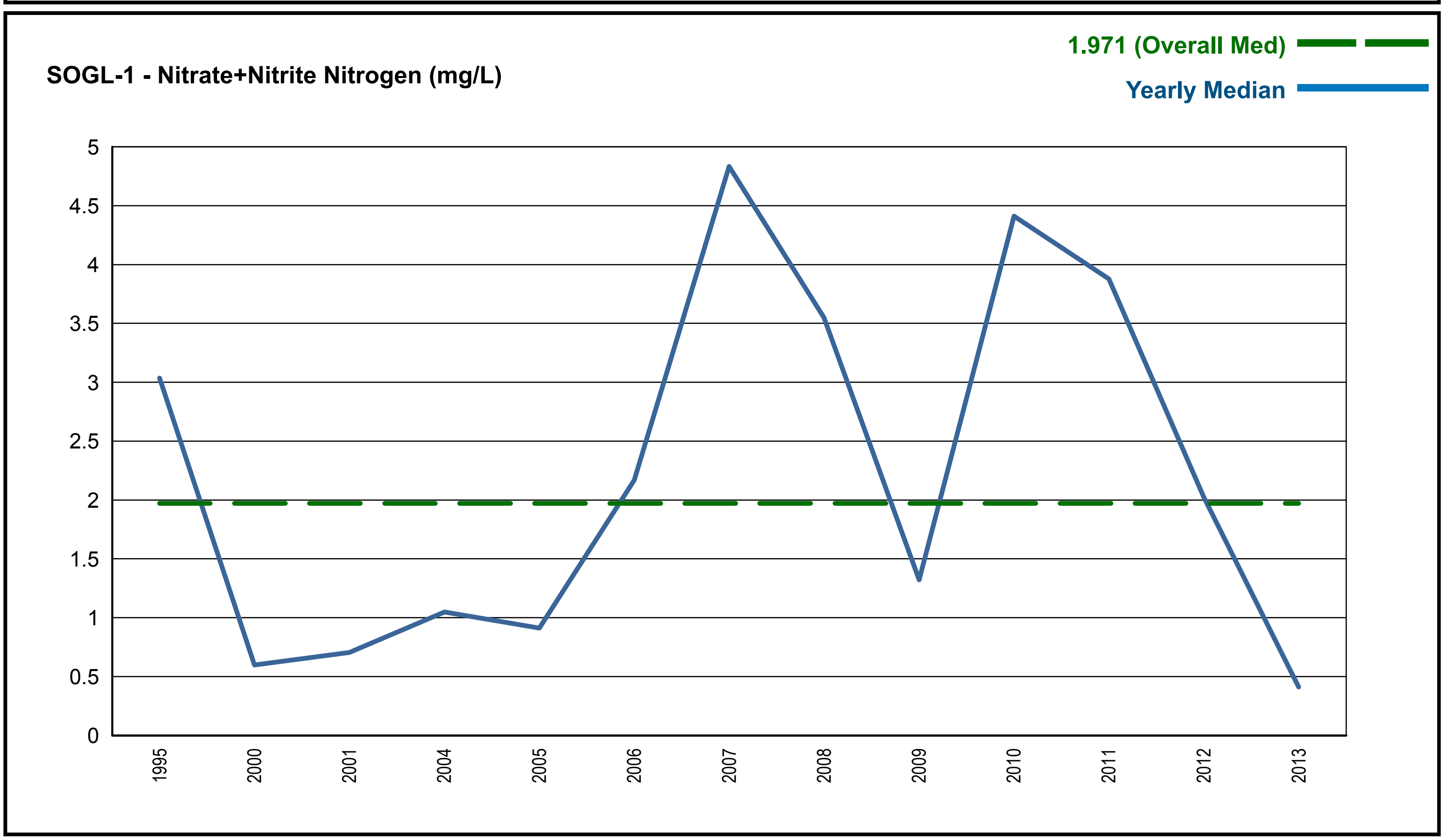

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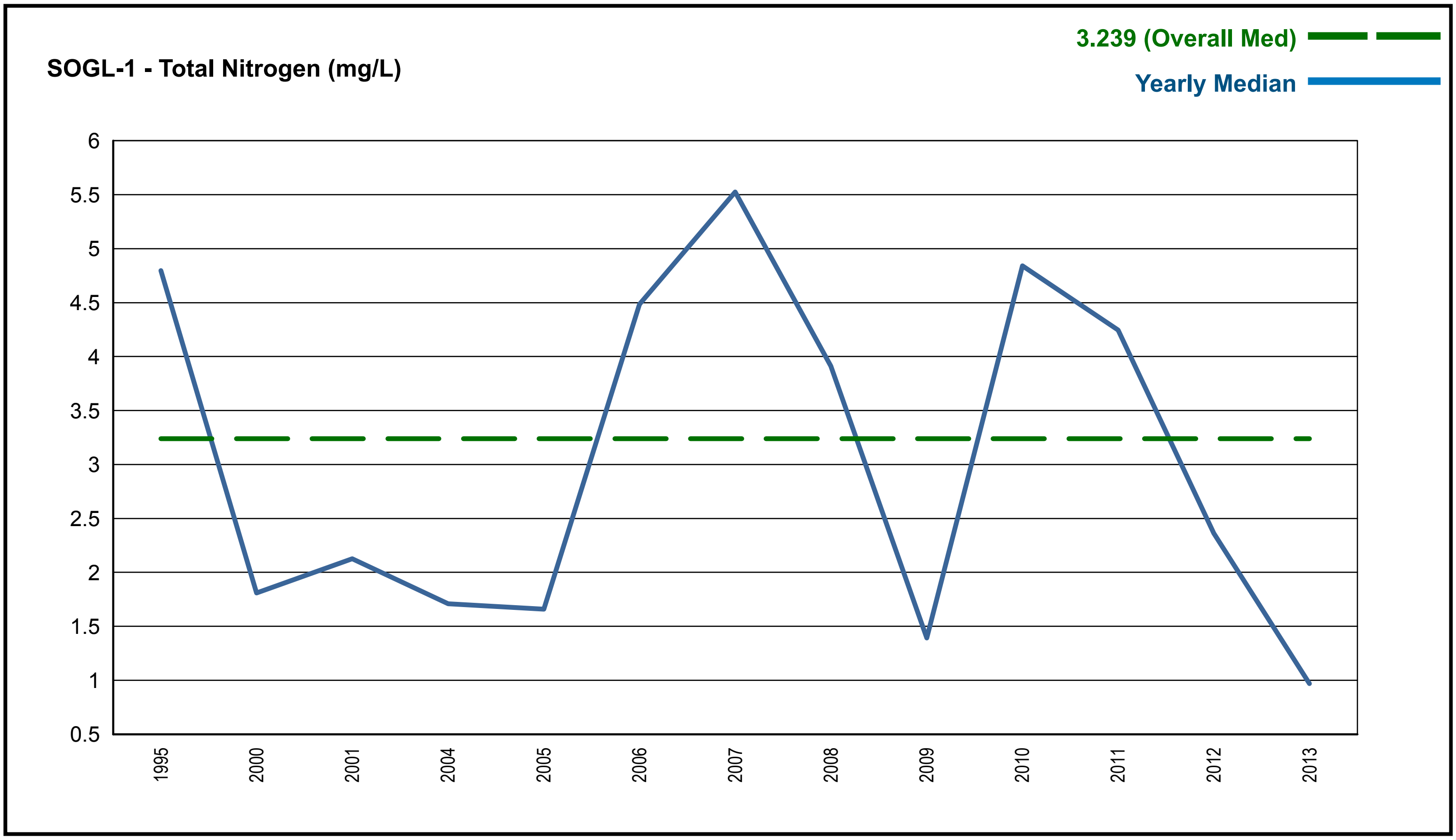

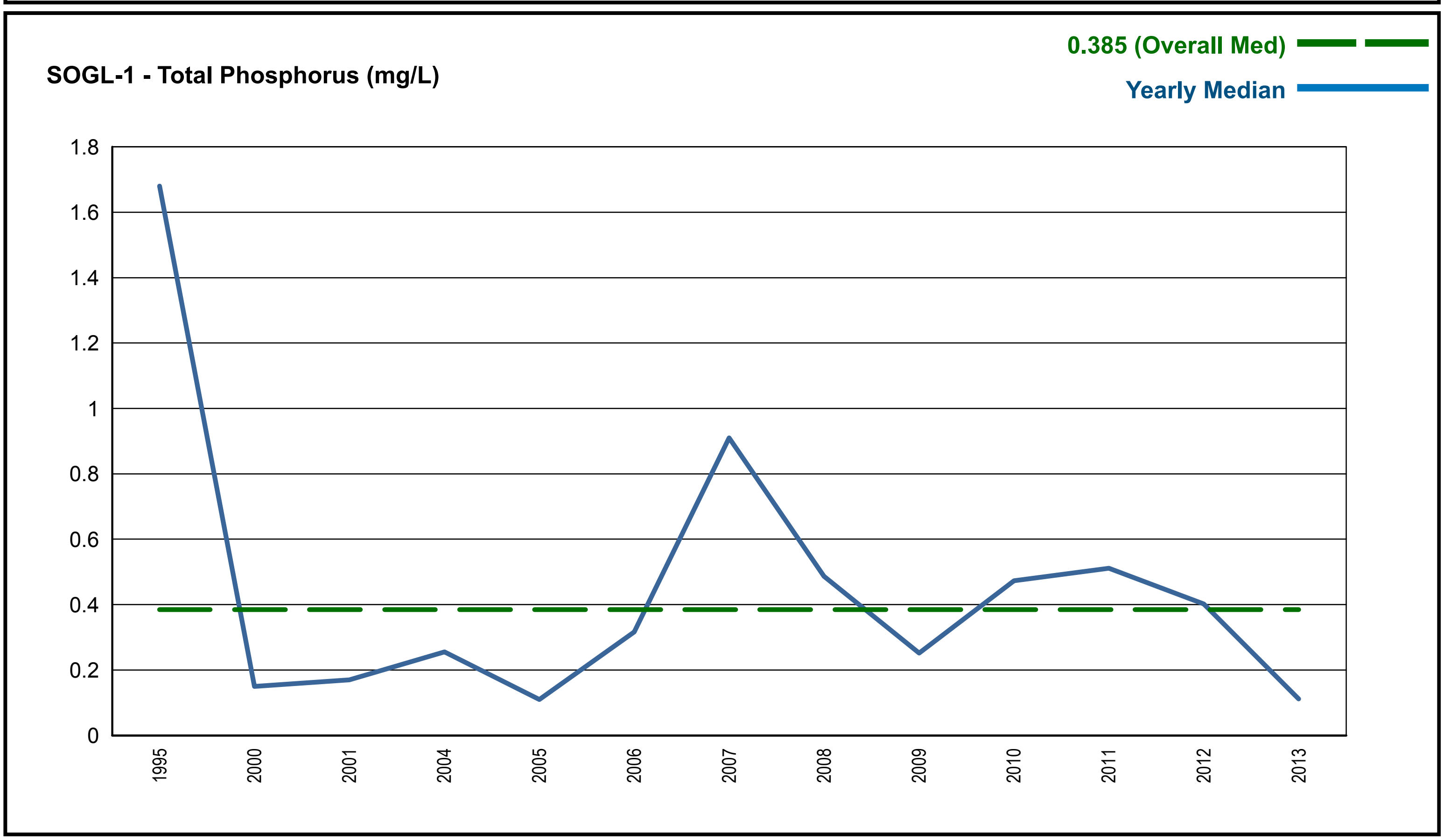

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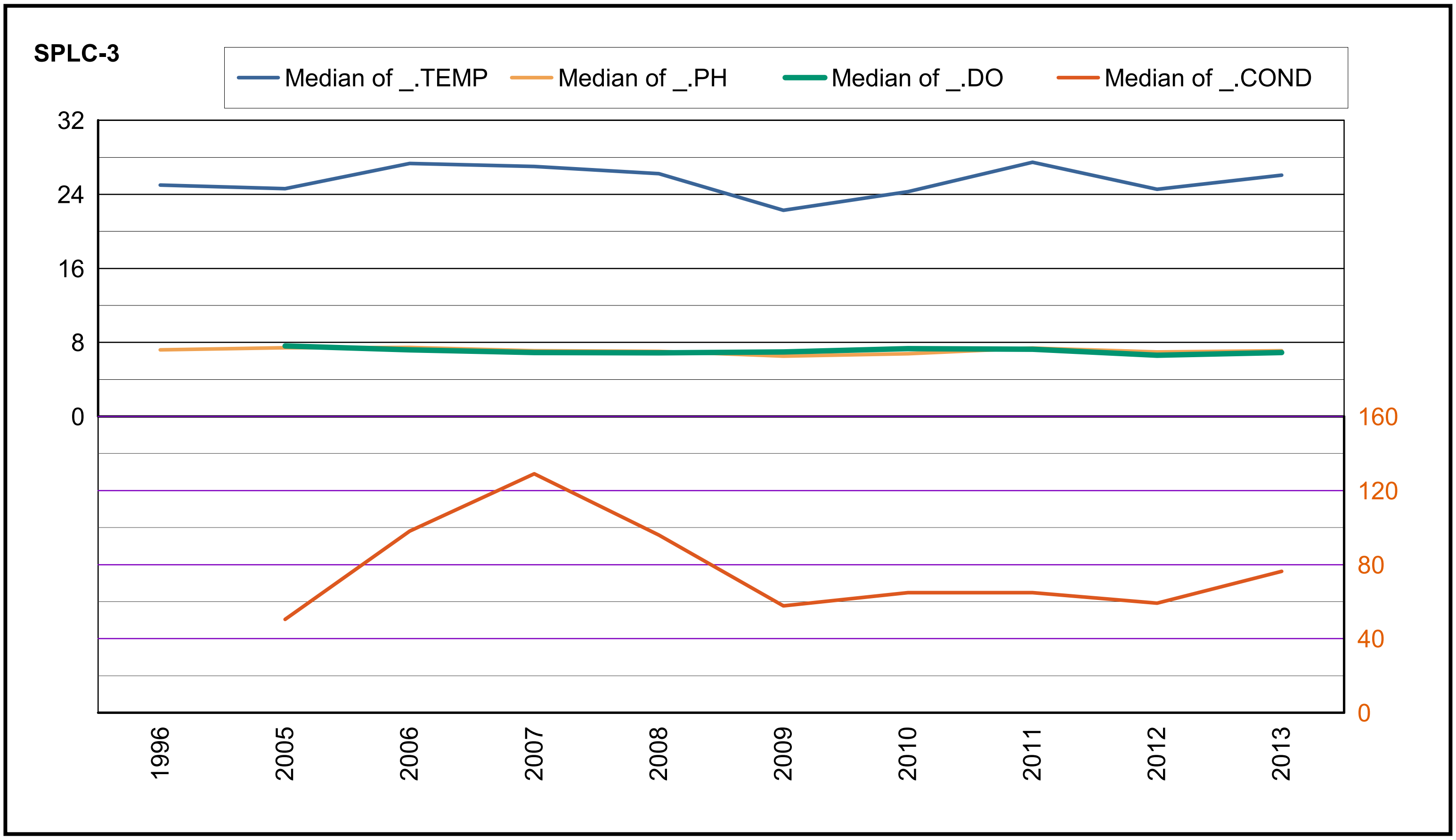

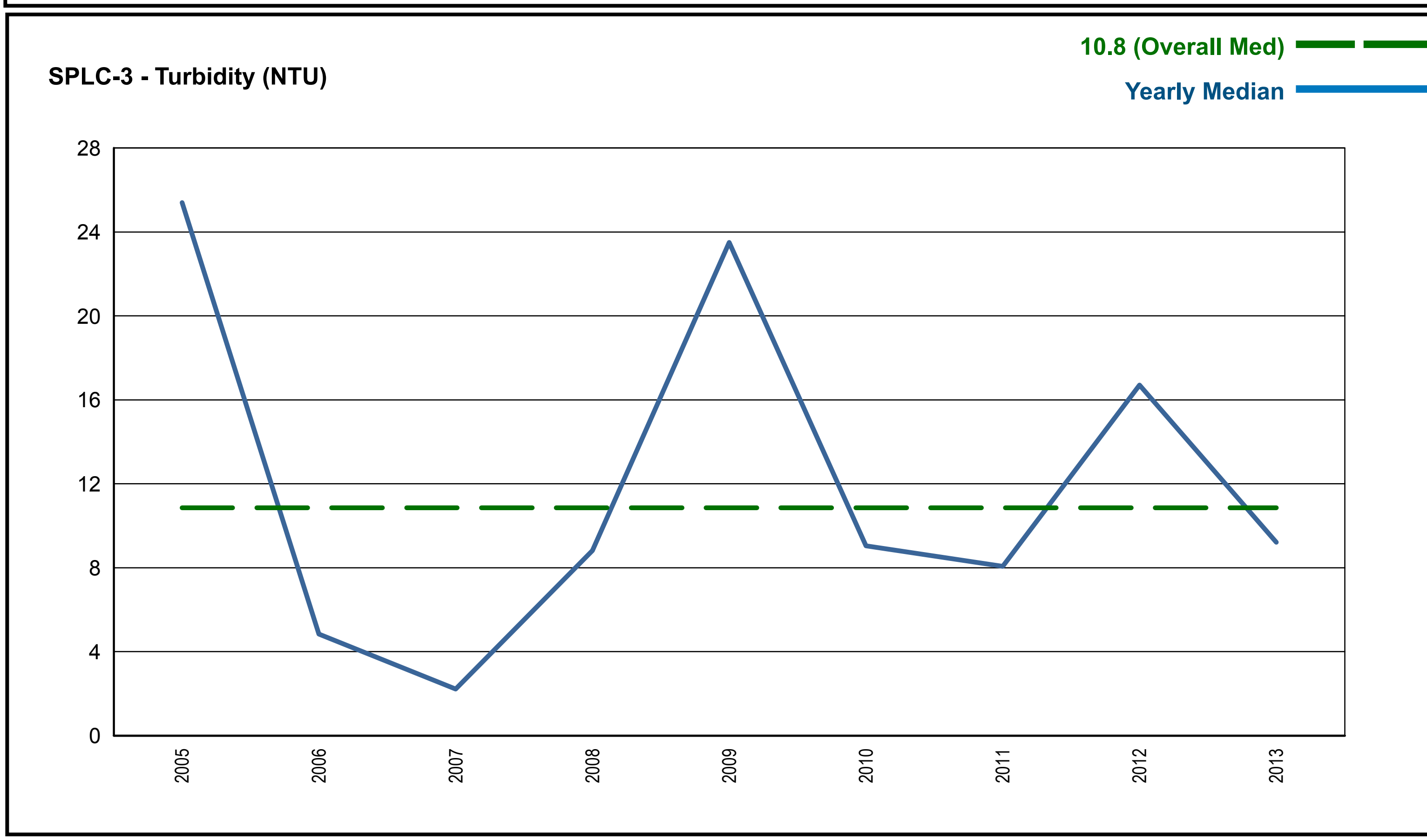

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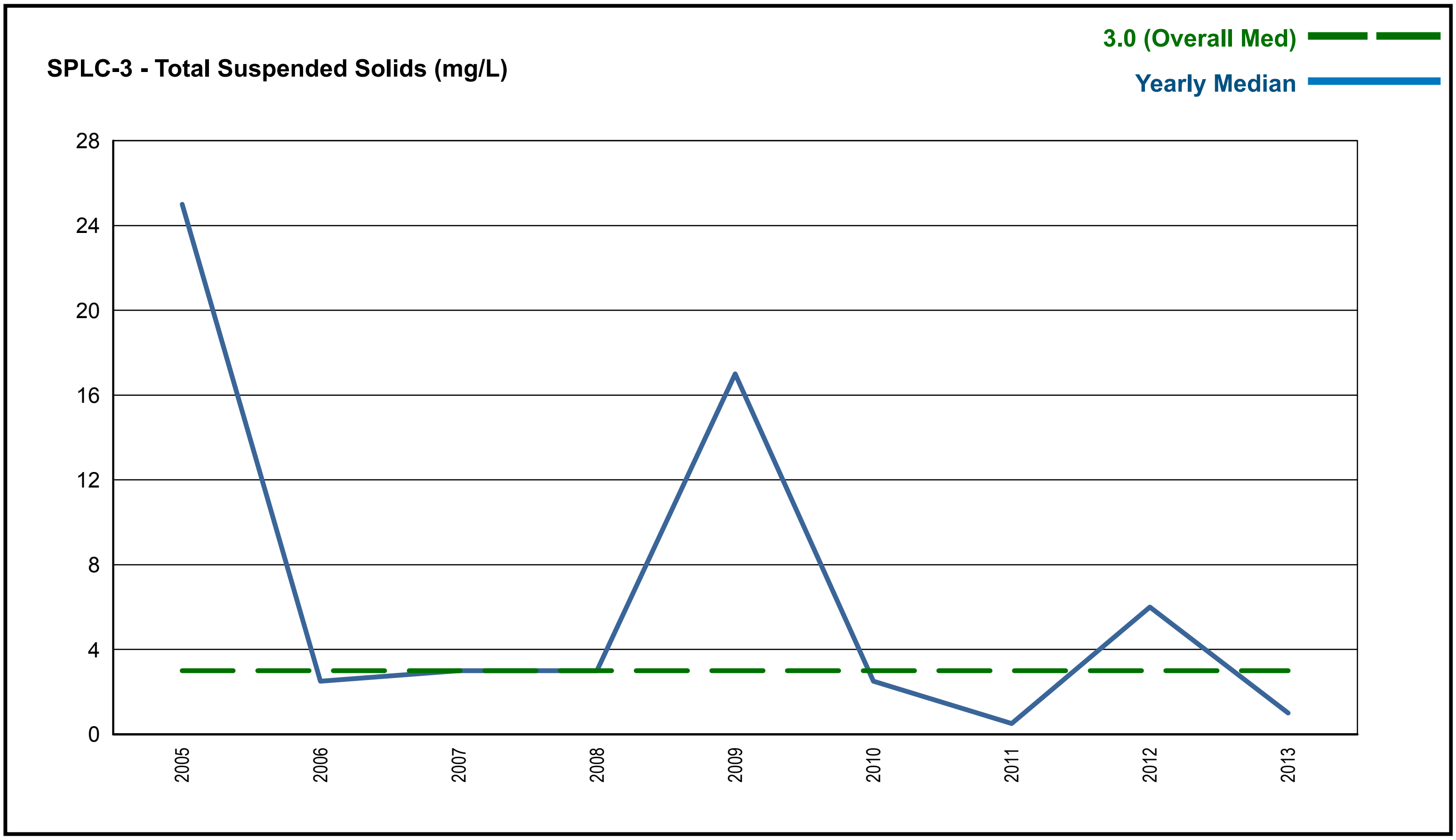

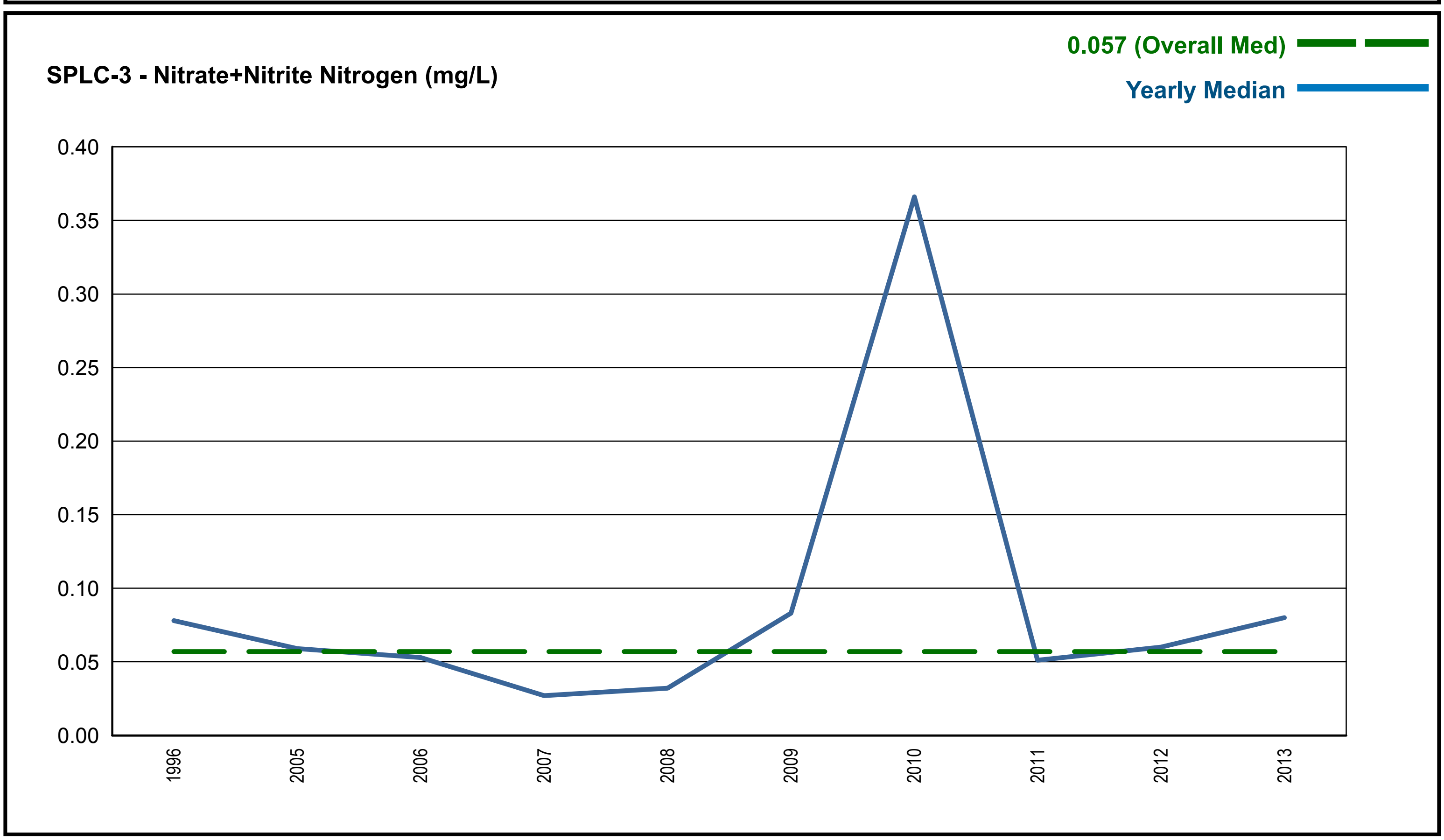

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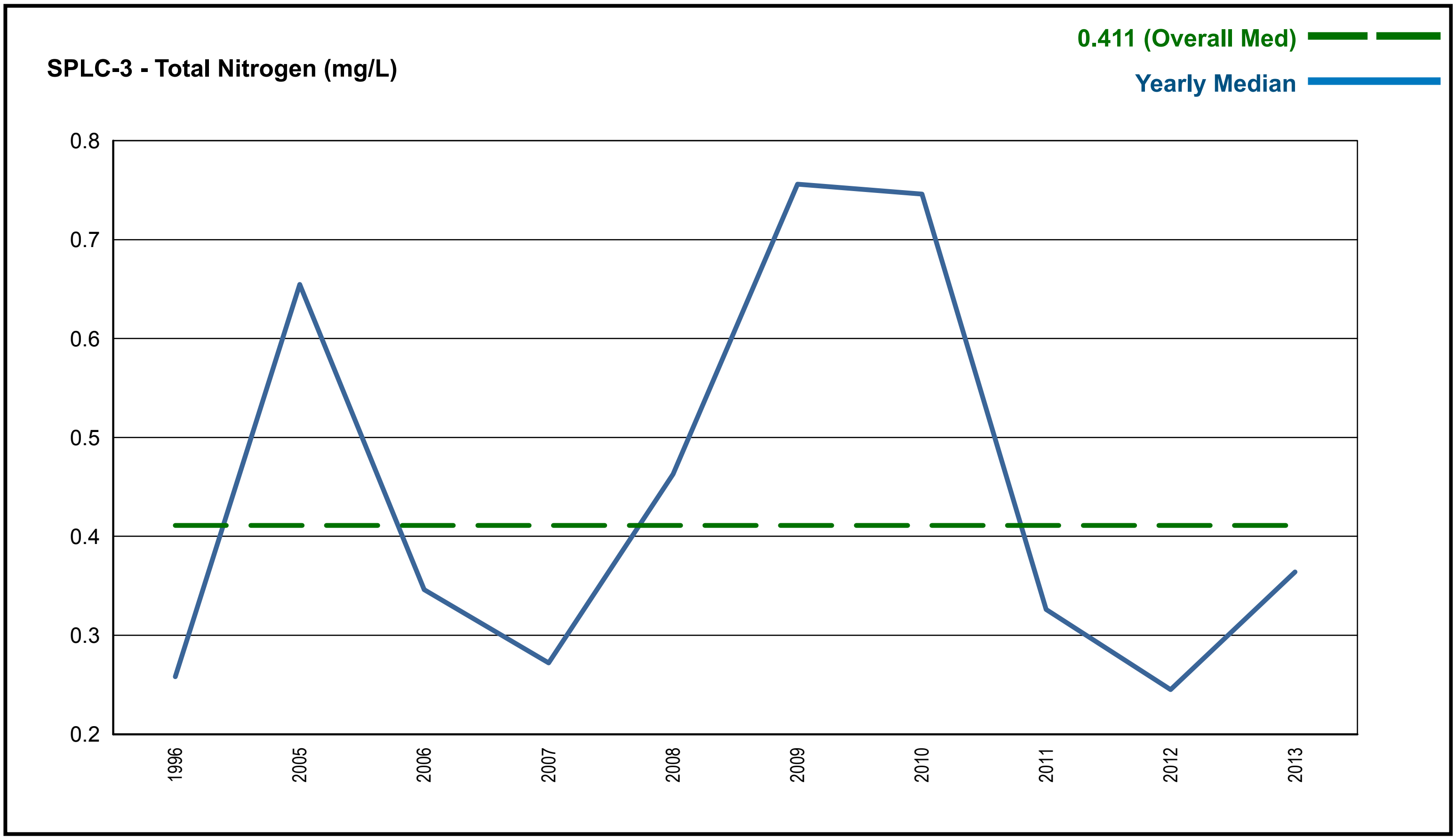

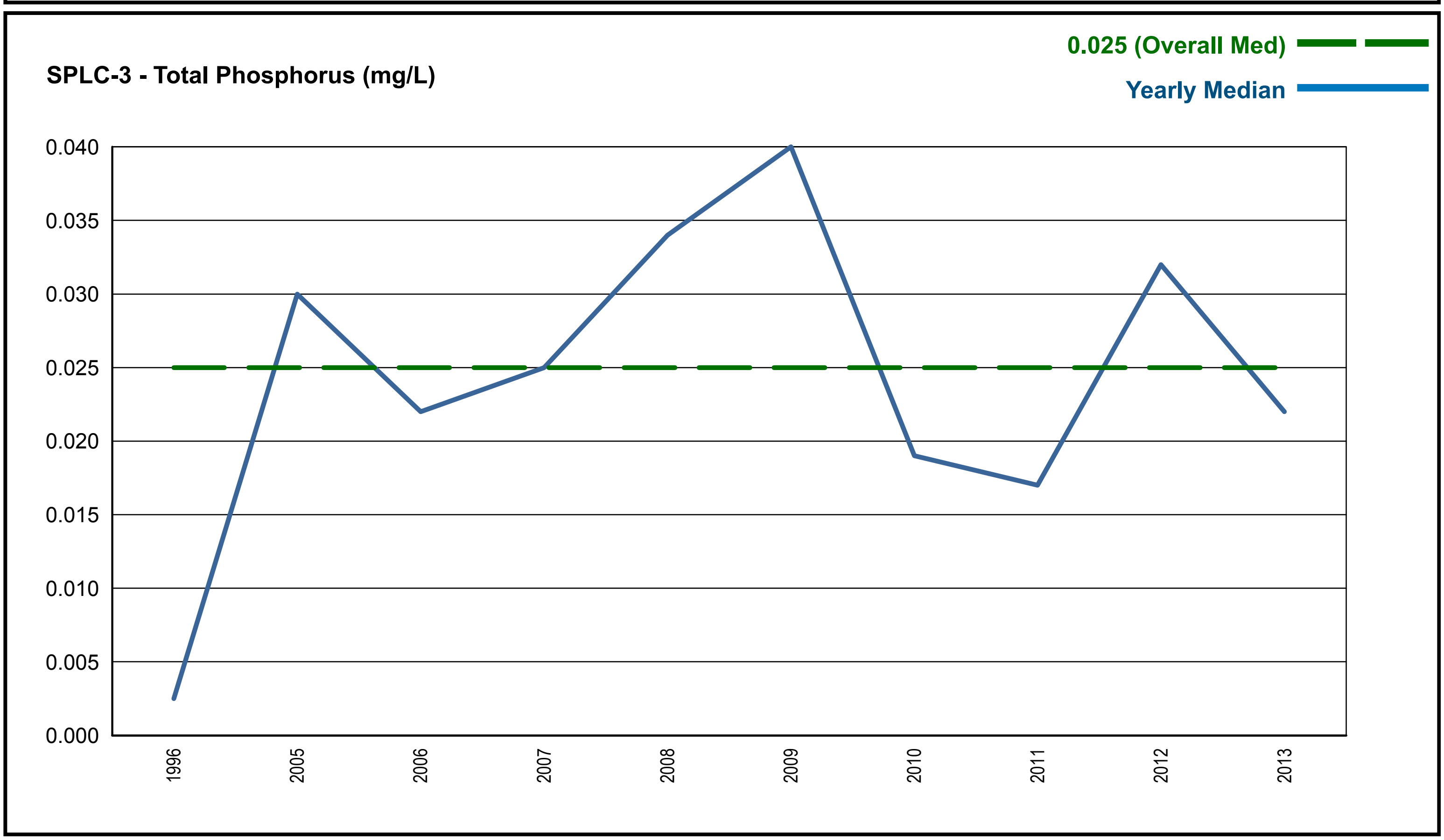

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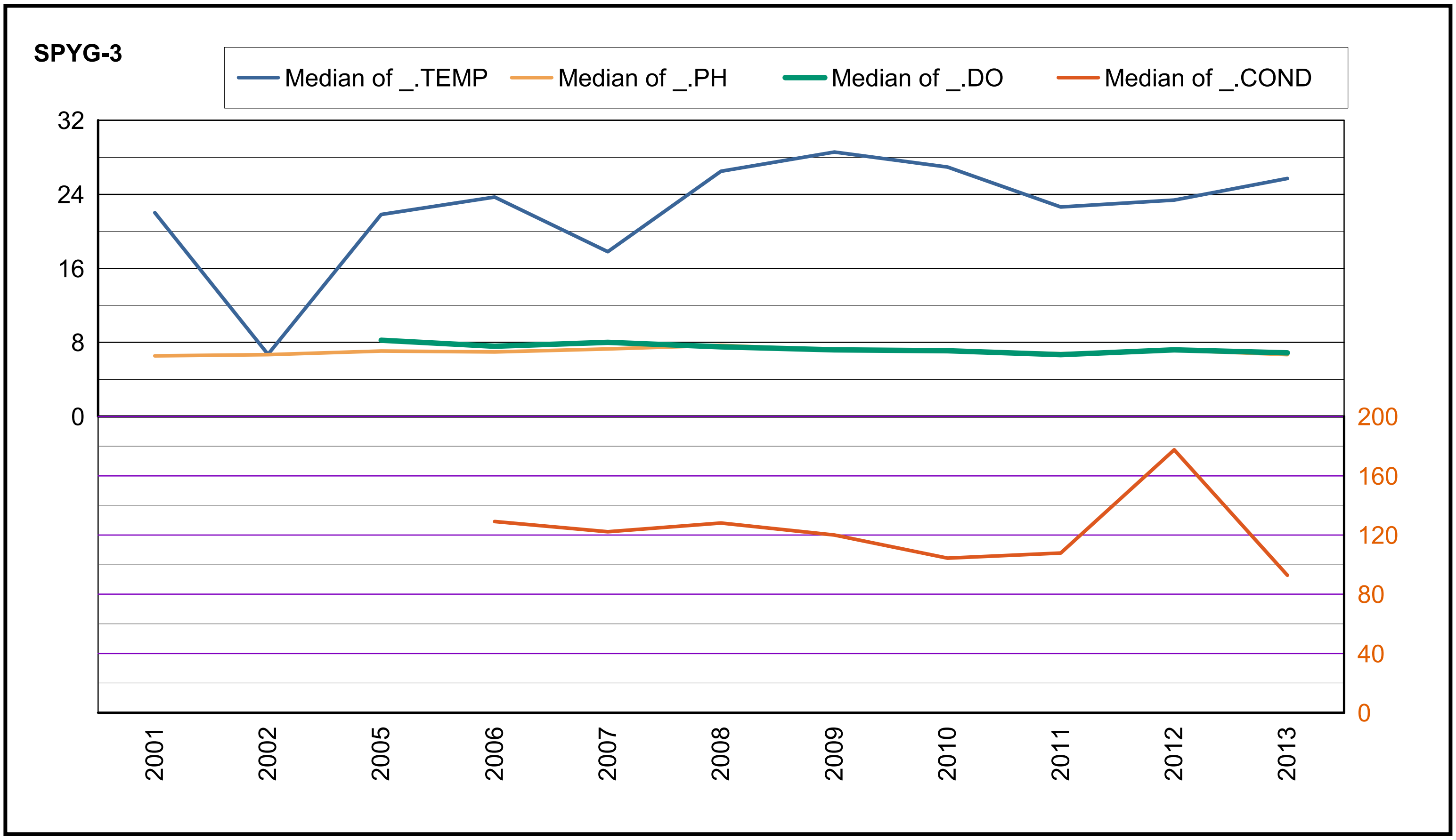
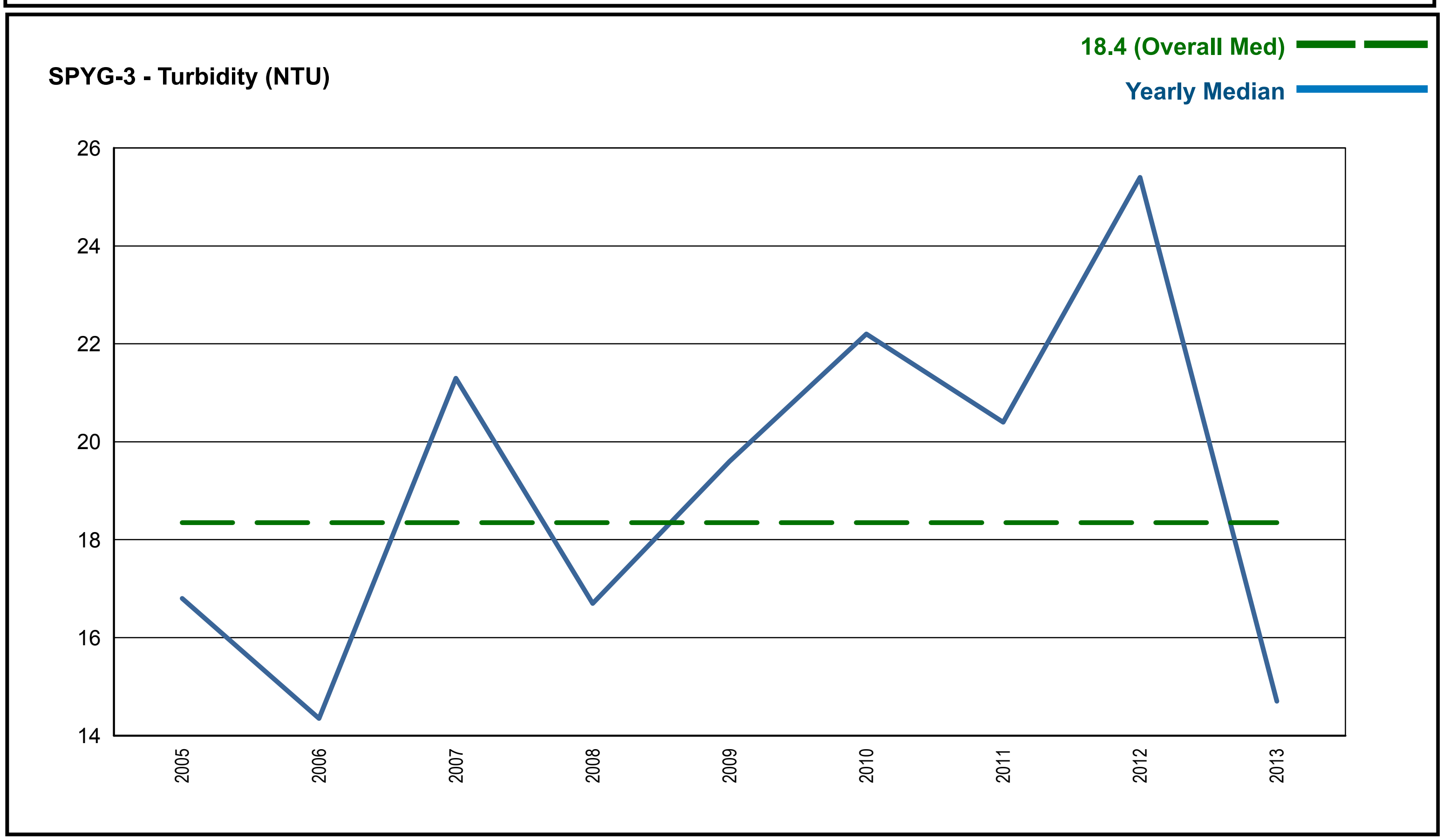
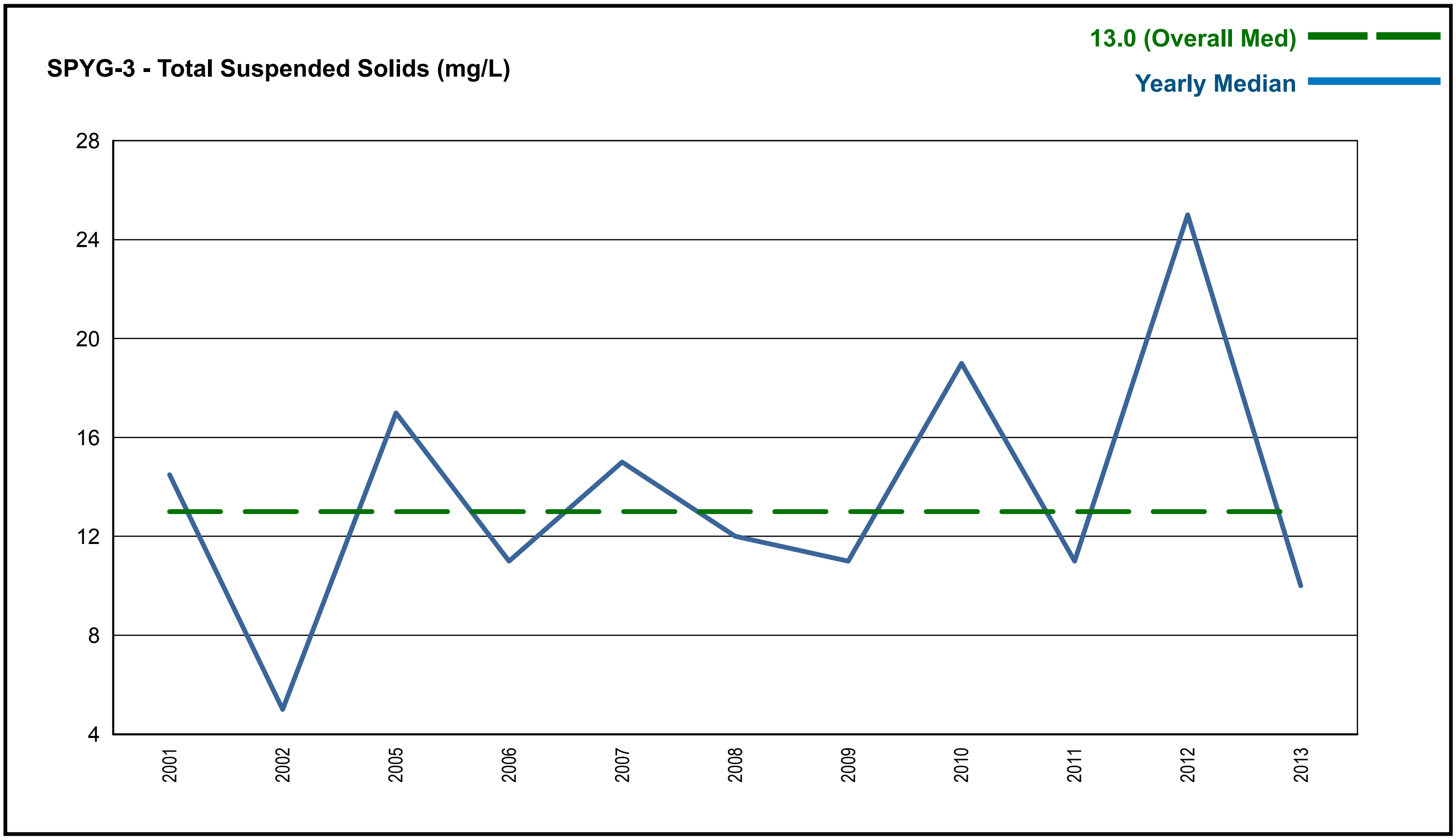
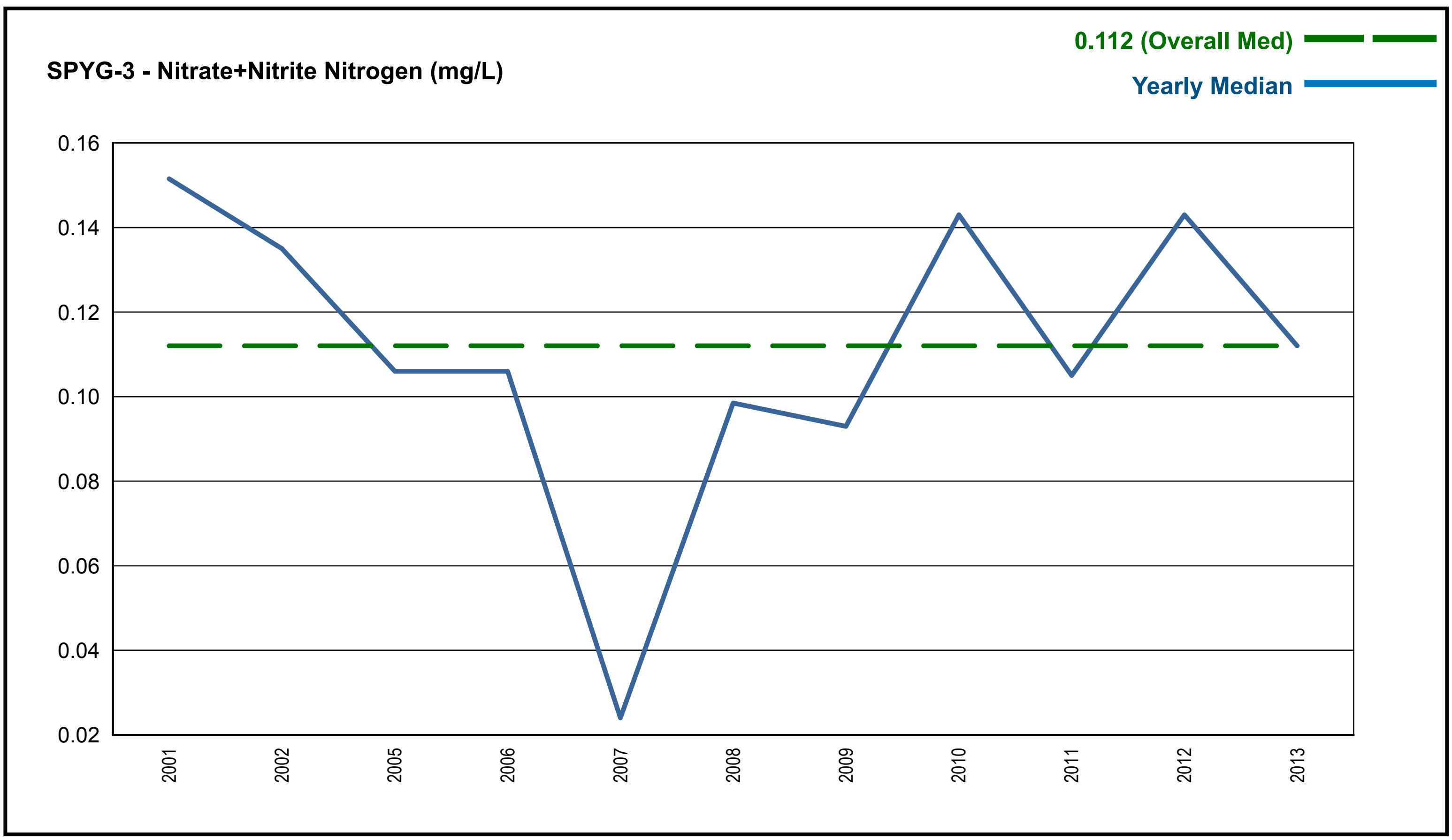


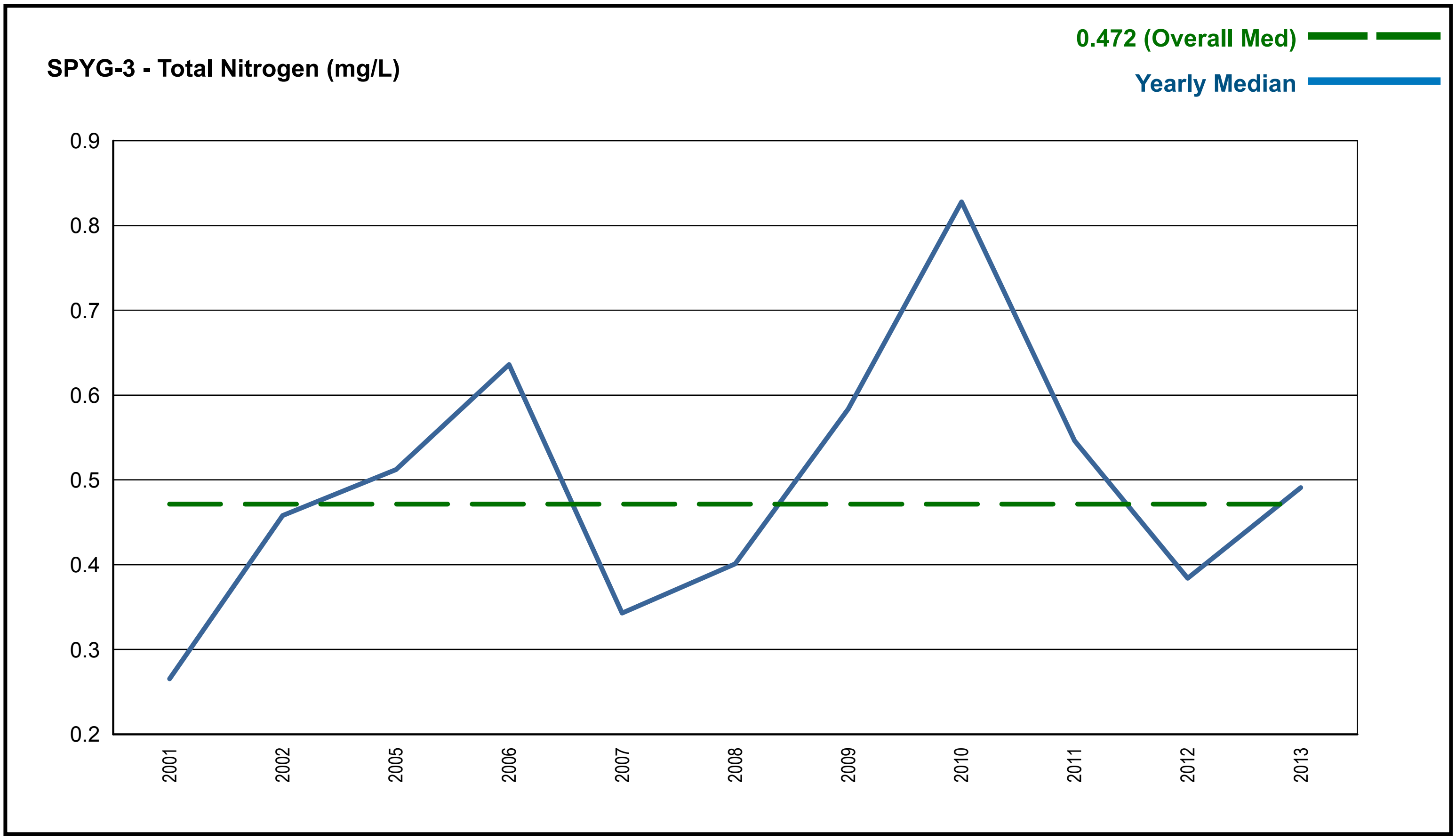


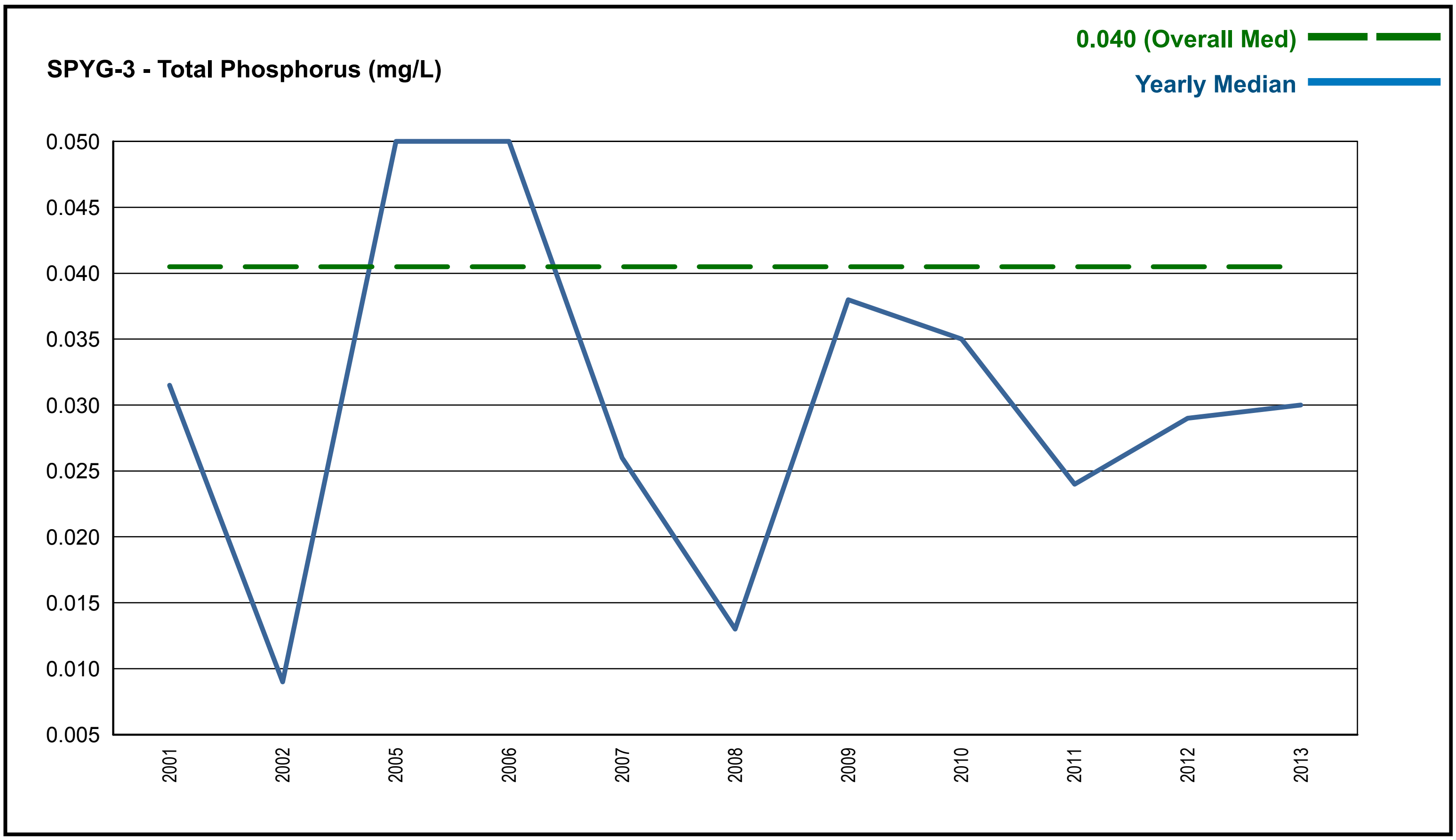
ADEM Ambient Trend Stations - Sampled 1977 - 2014





ADEM Ambient Trend Stations - Sampled 1977 - 2014





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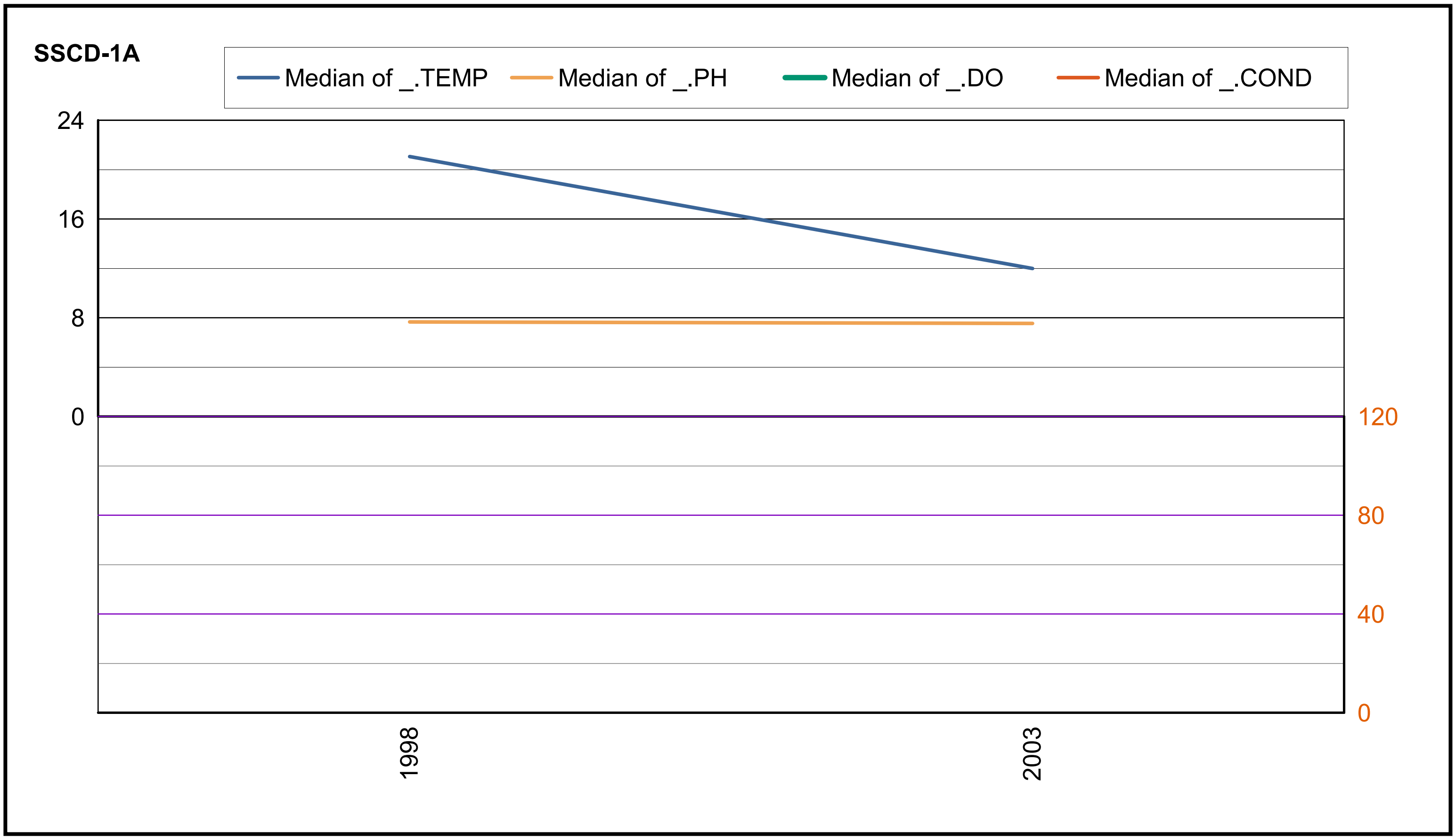

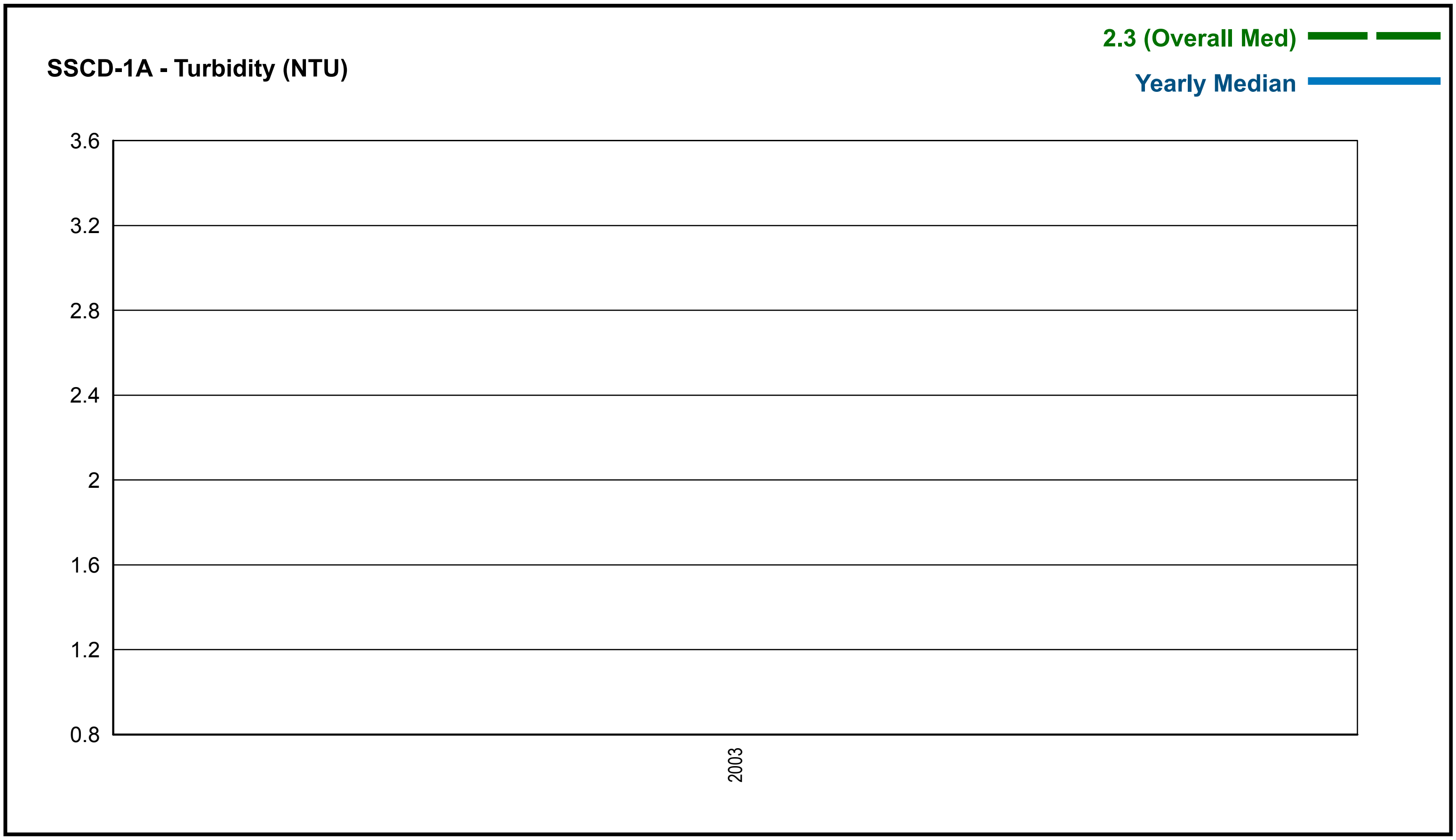

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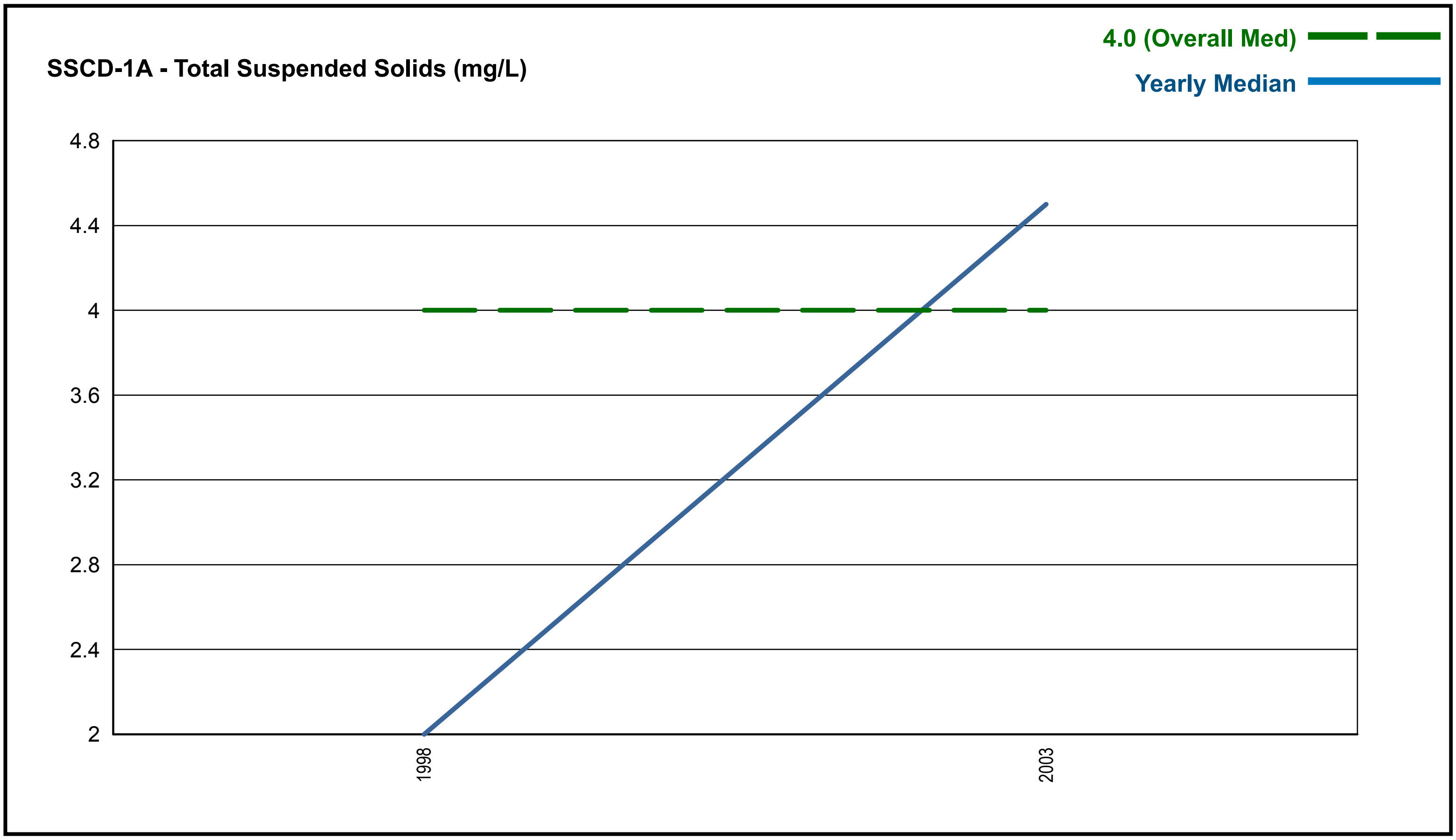

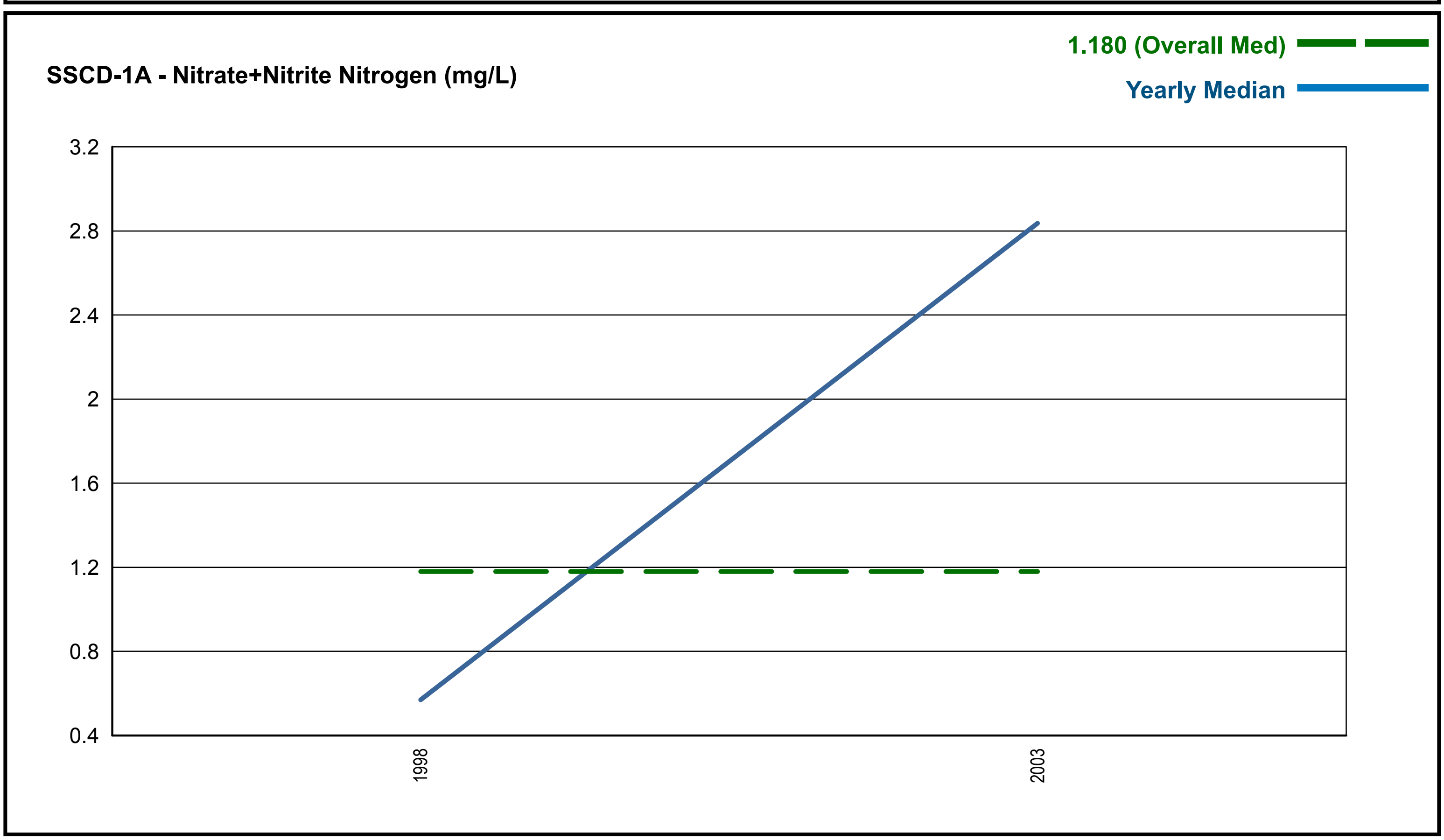

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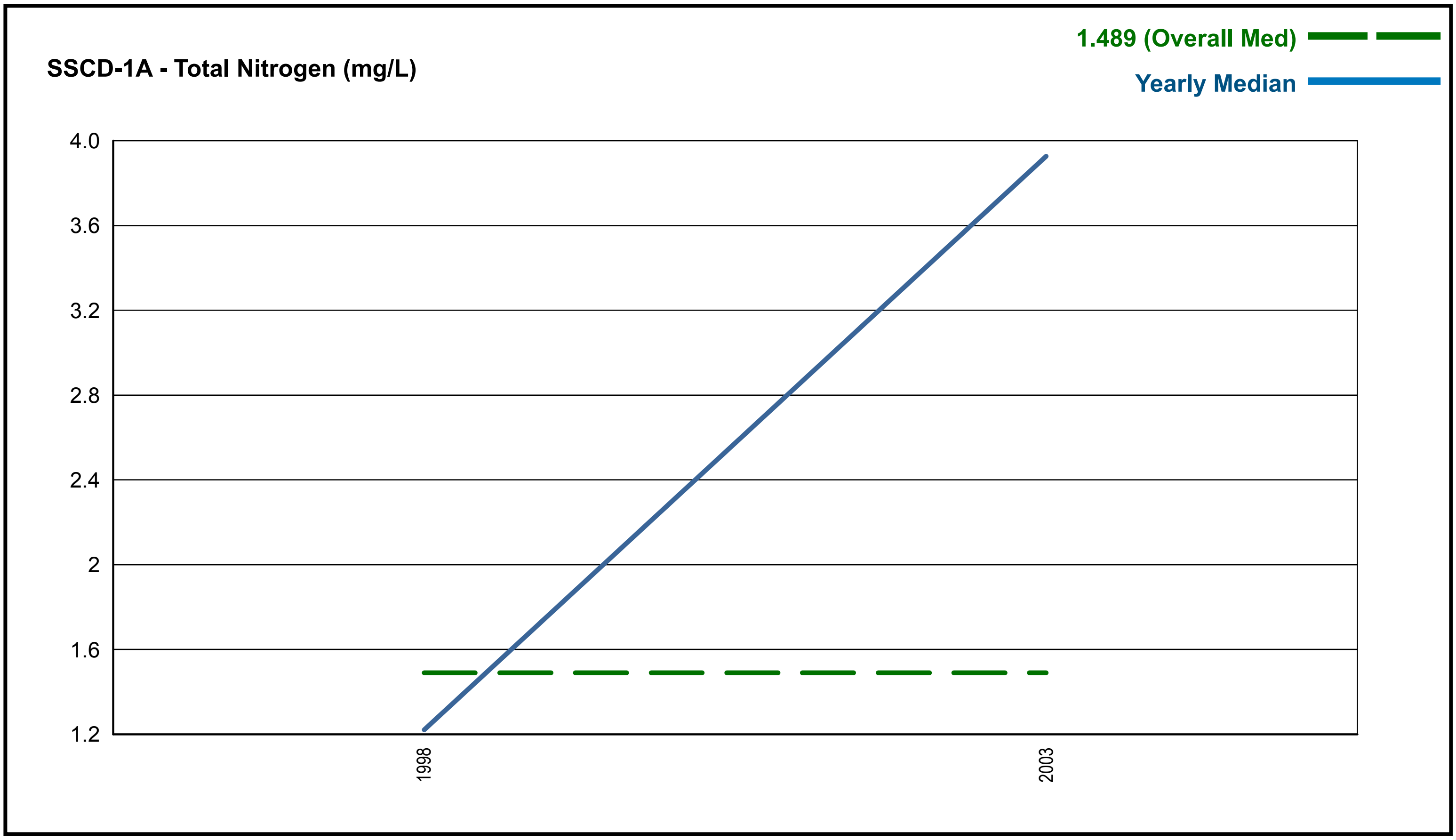
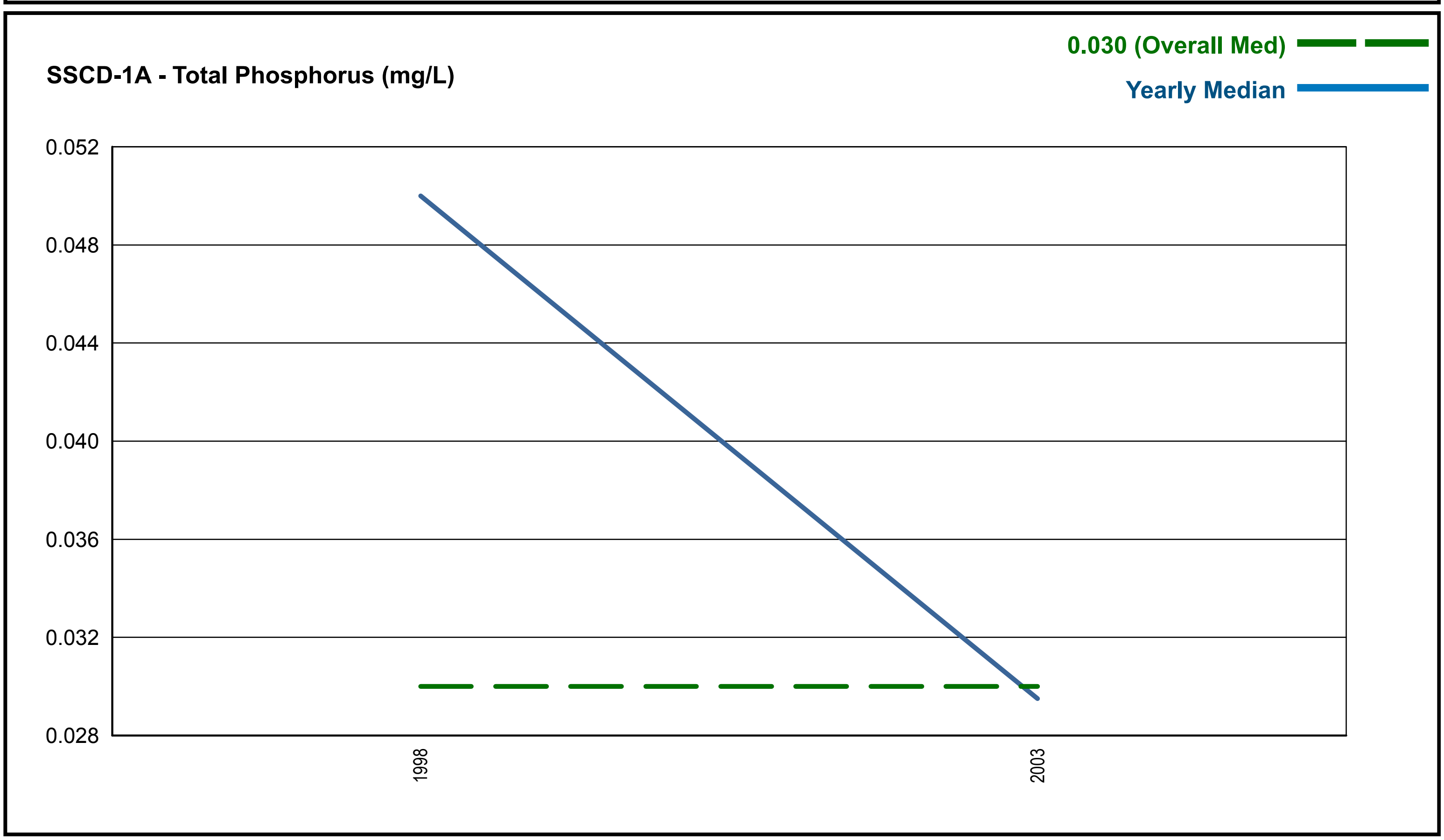
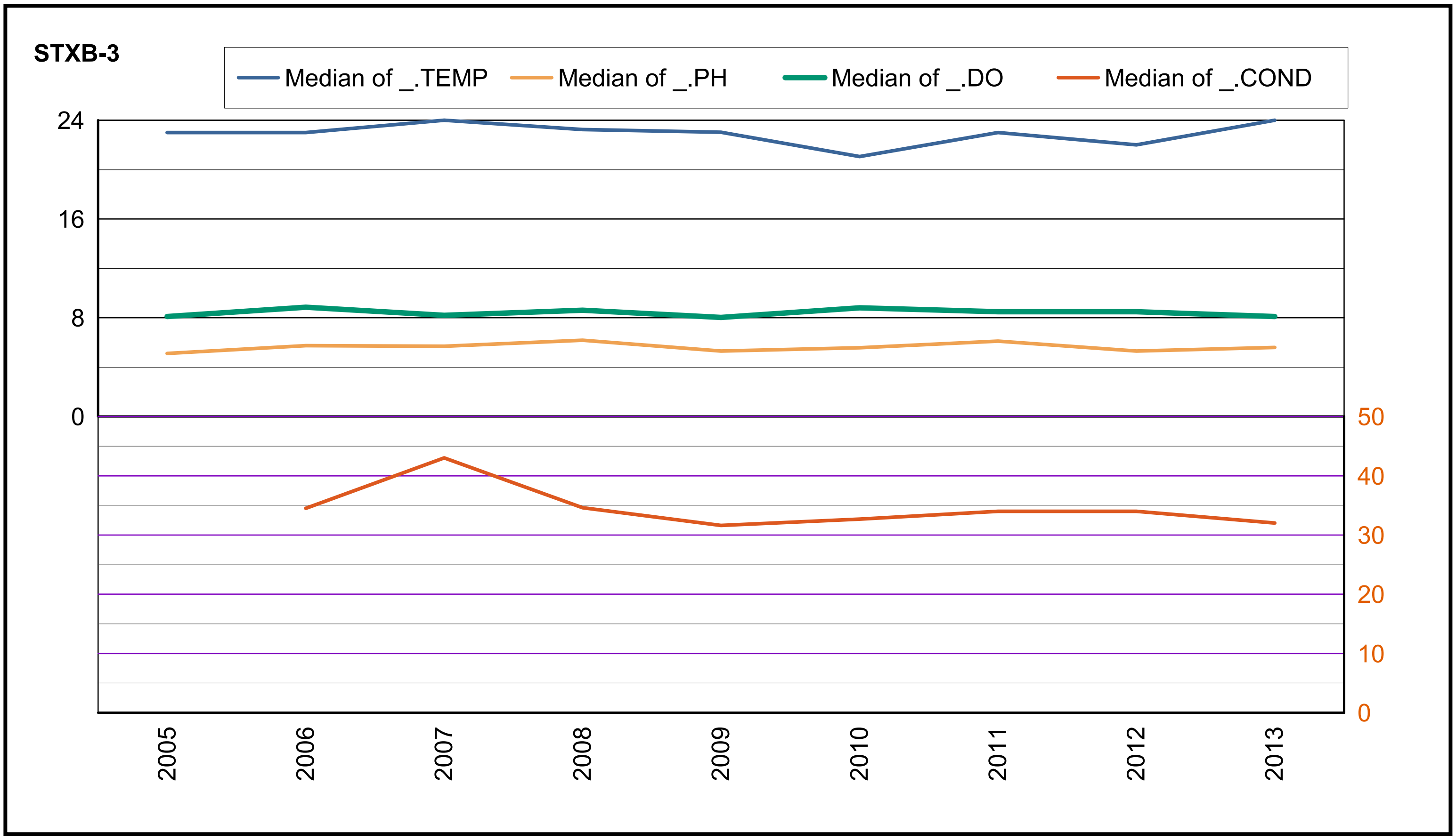
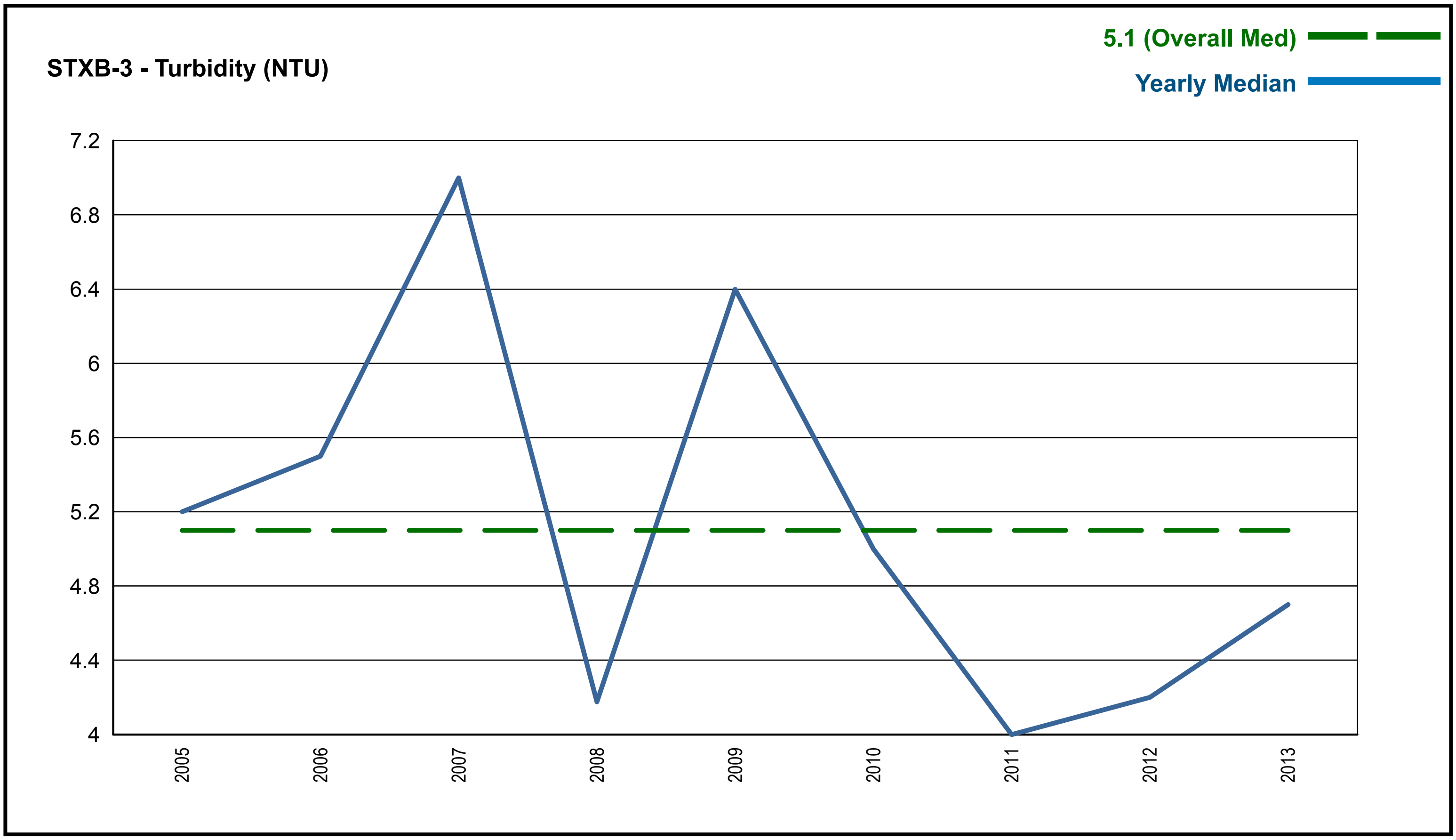


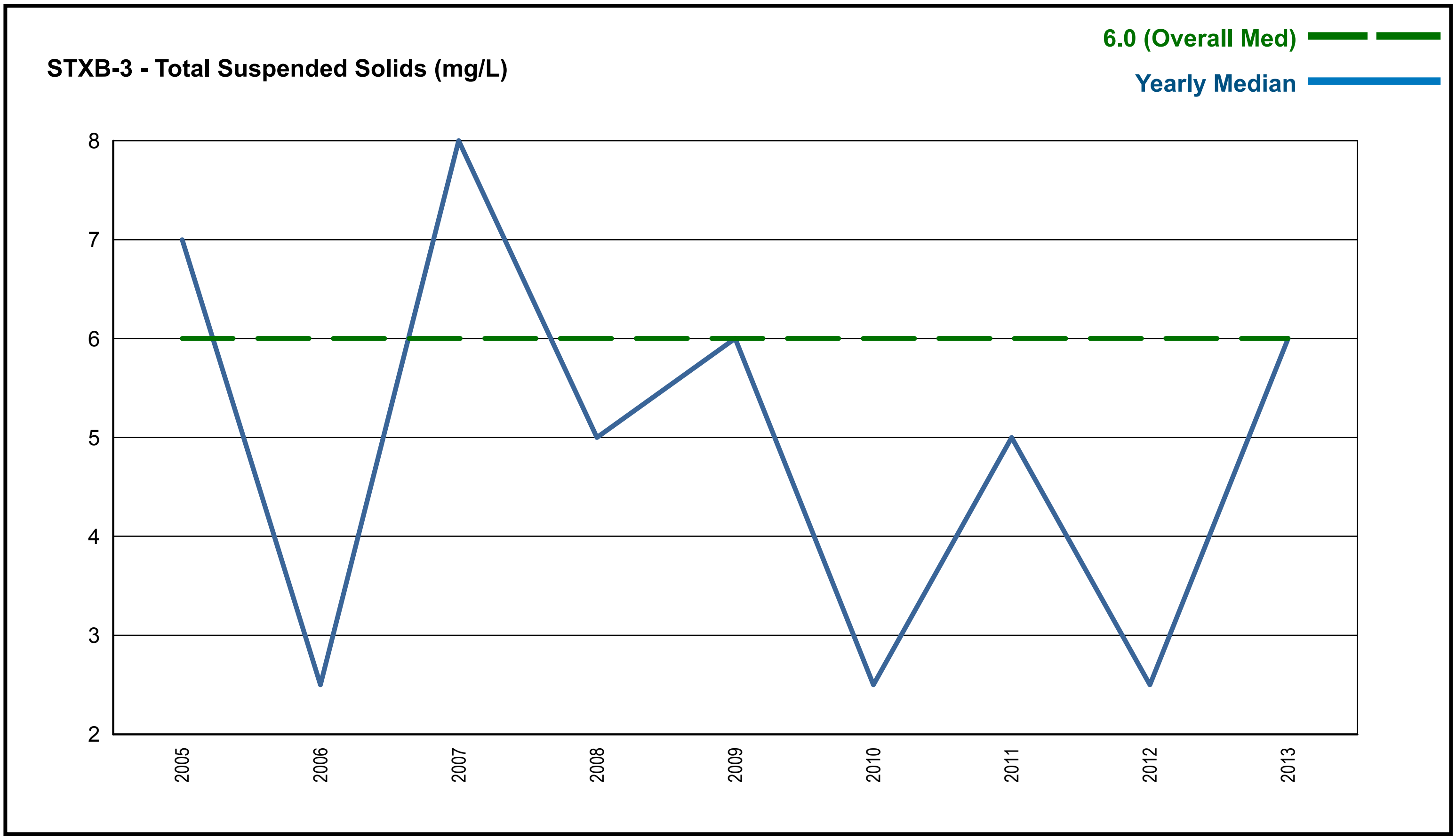


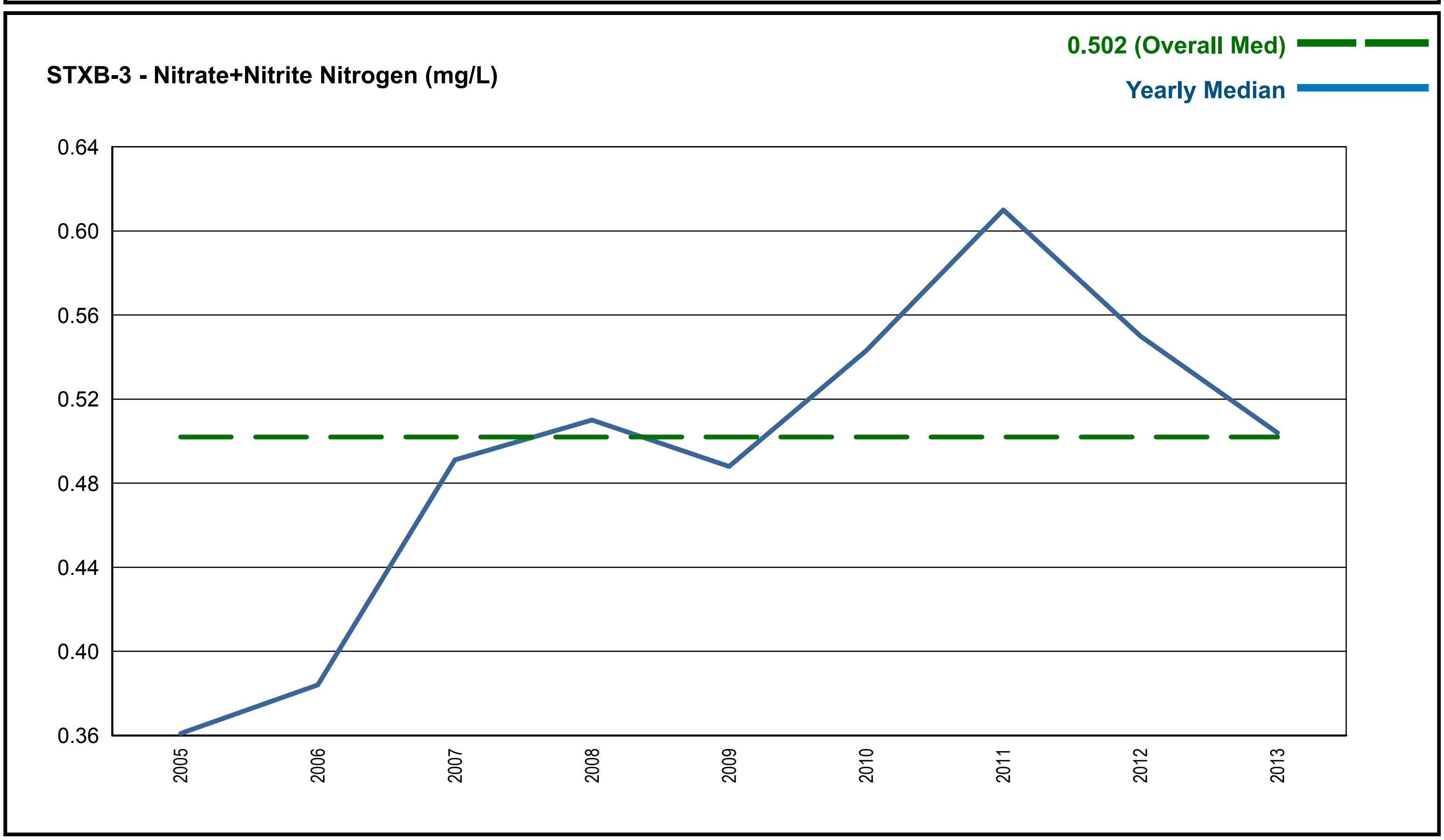
ADEM Ambient Trend Stations - Sampled 1977 - 2014





ADEM Ambient Trend Stations - Sampled 1977 - 2014





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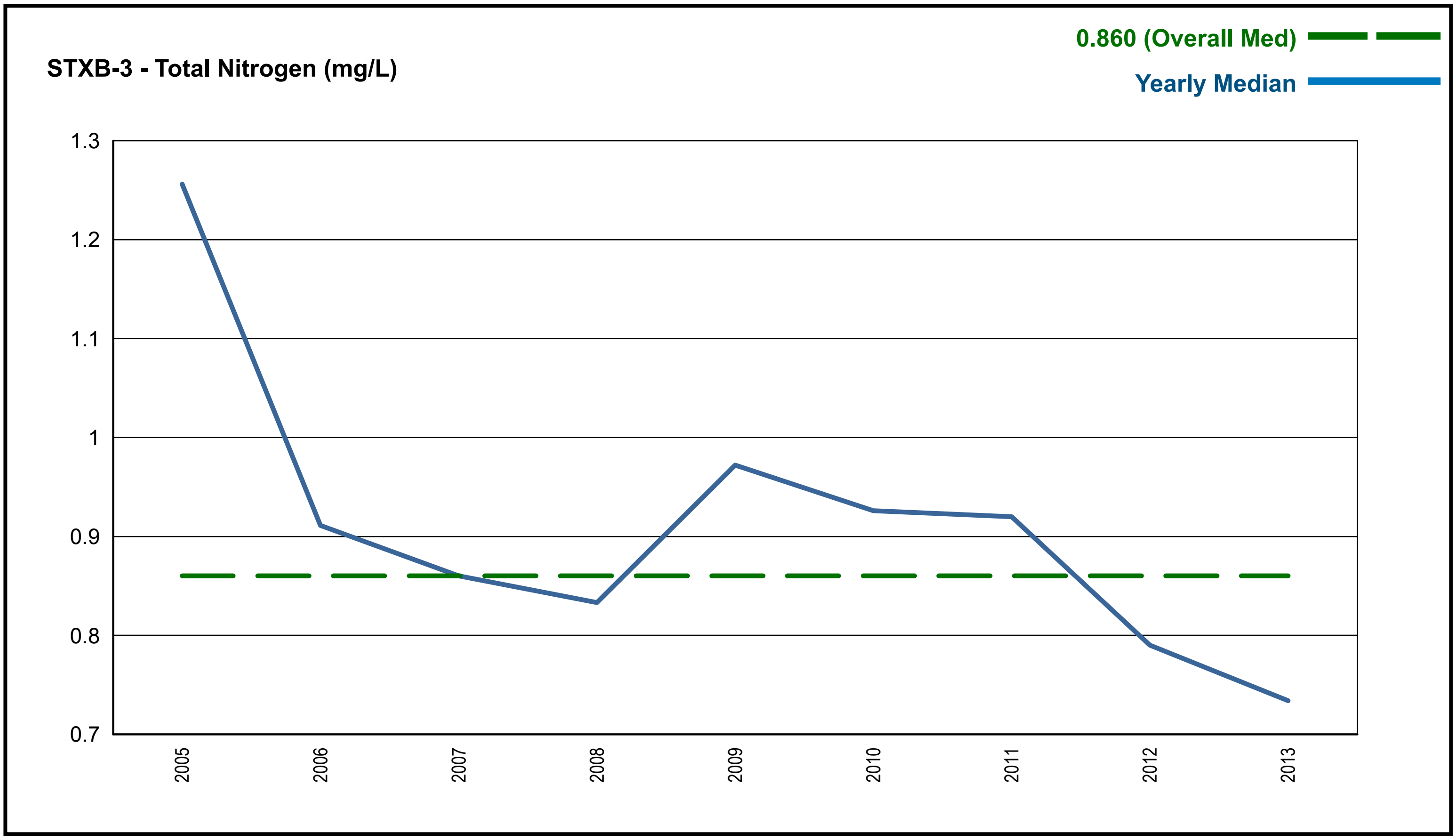
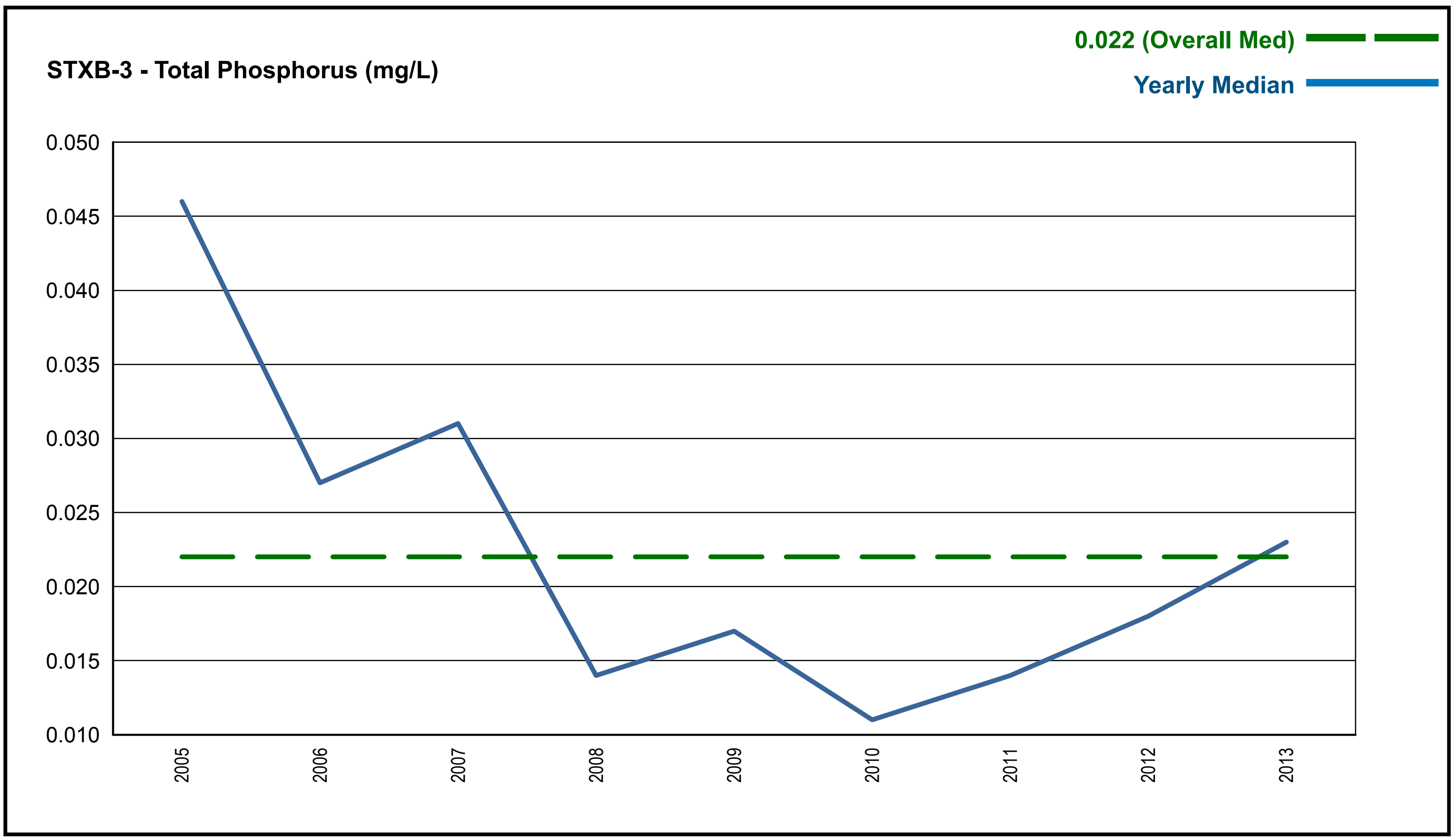
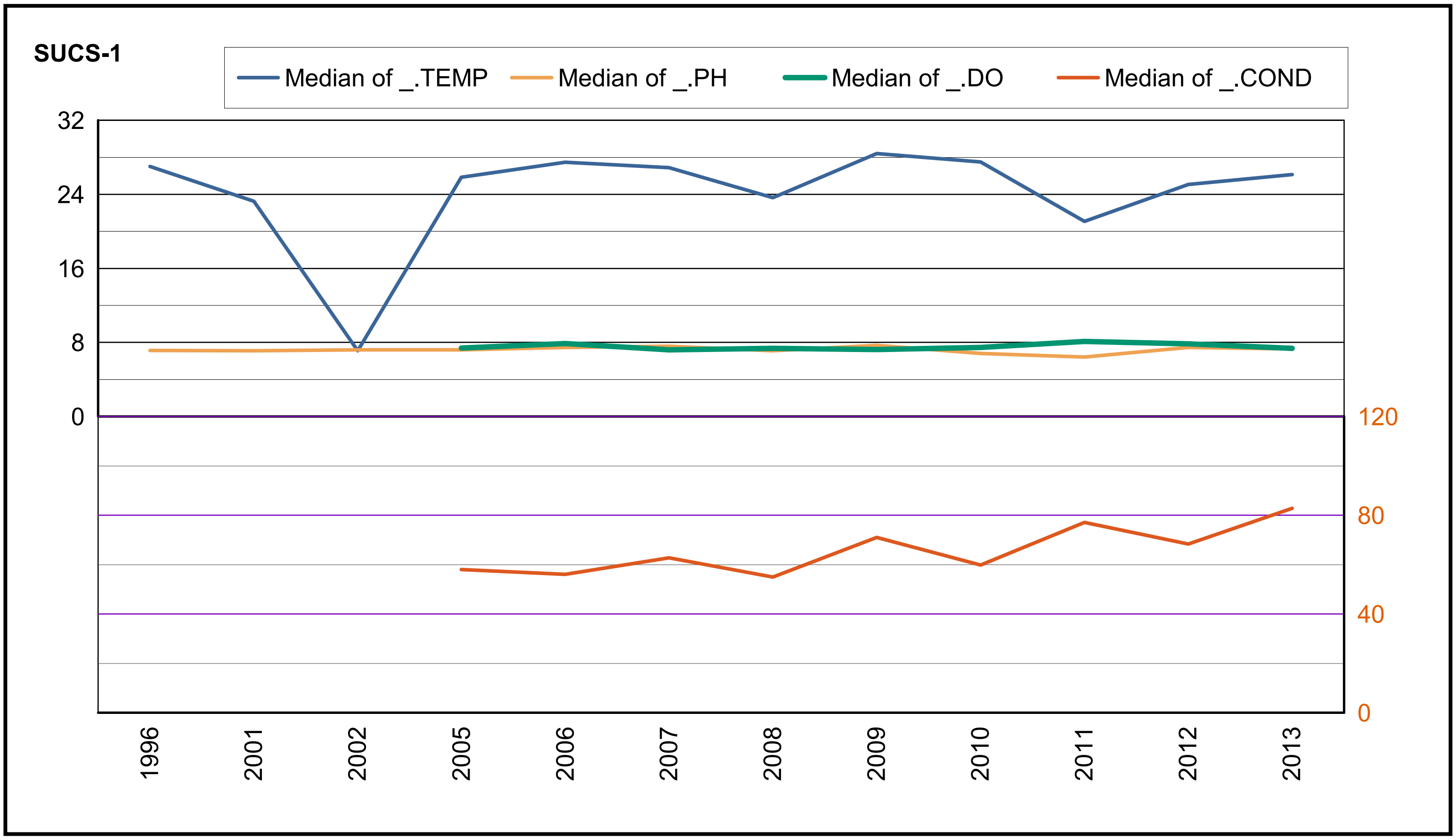
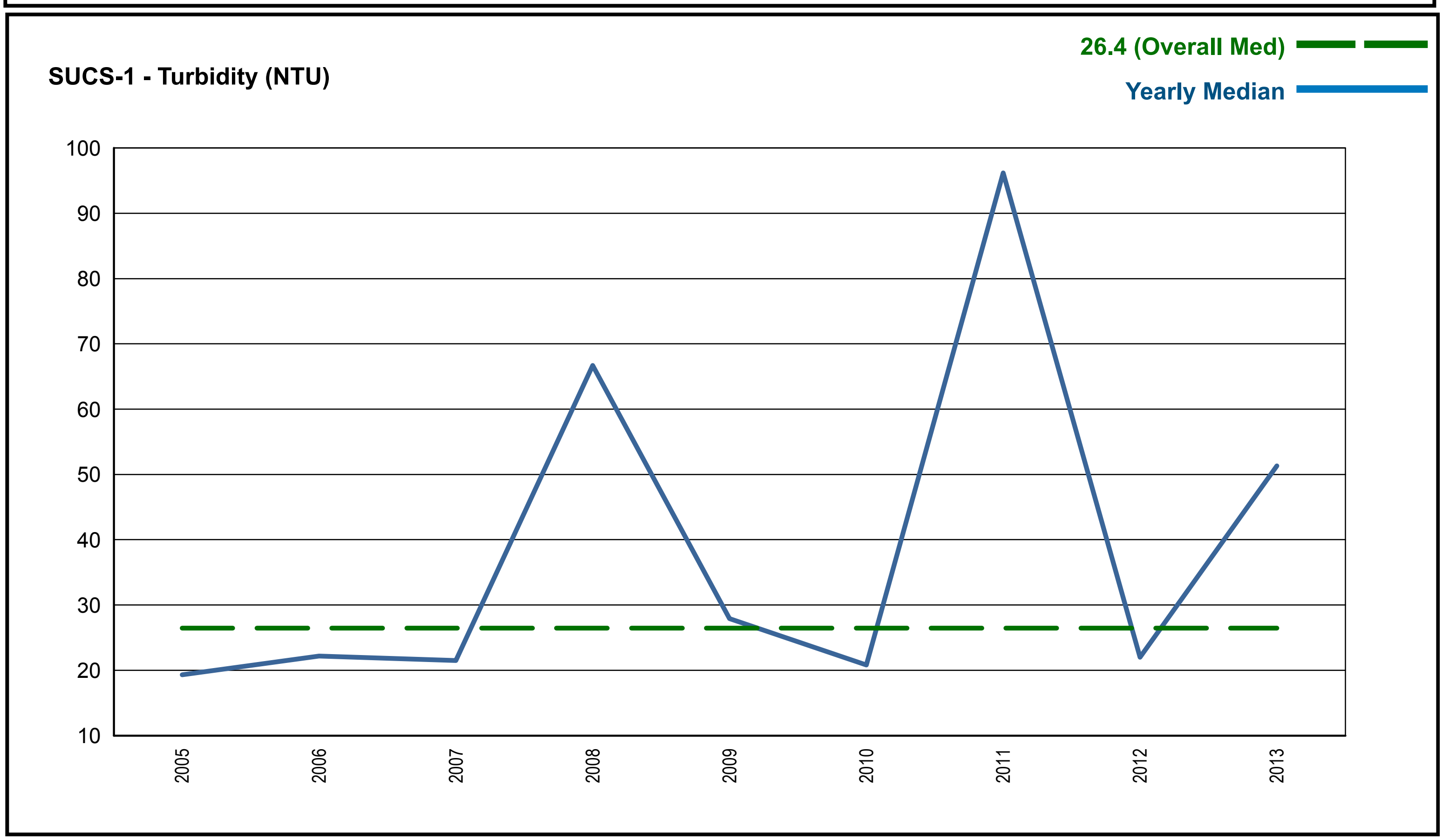


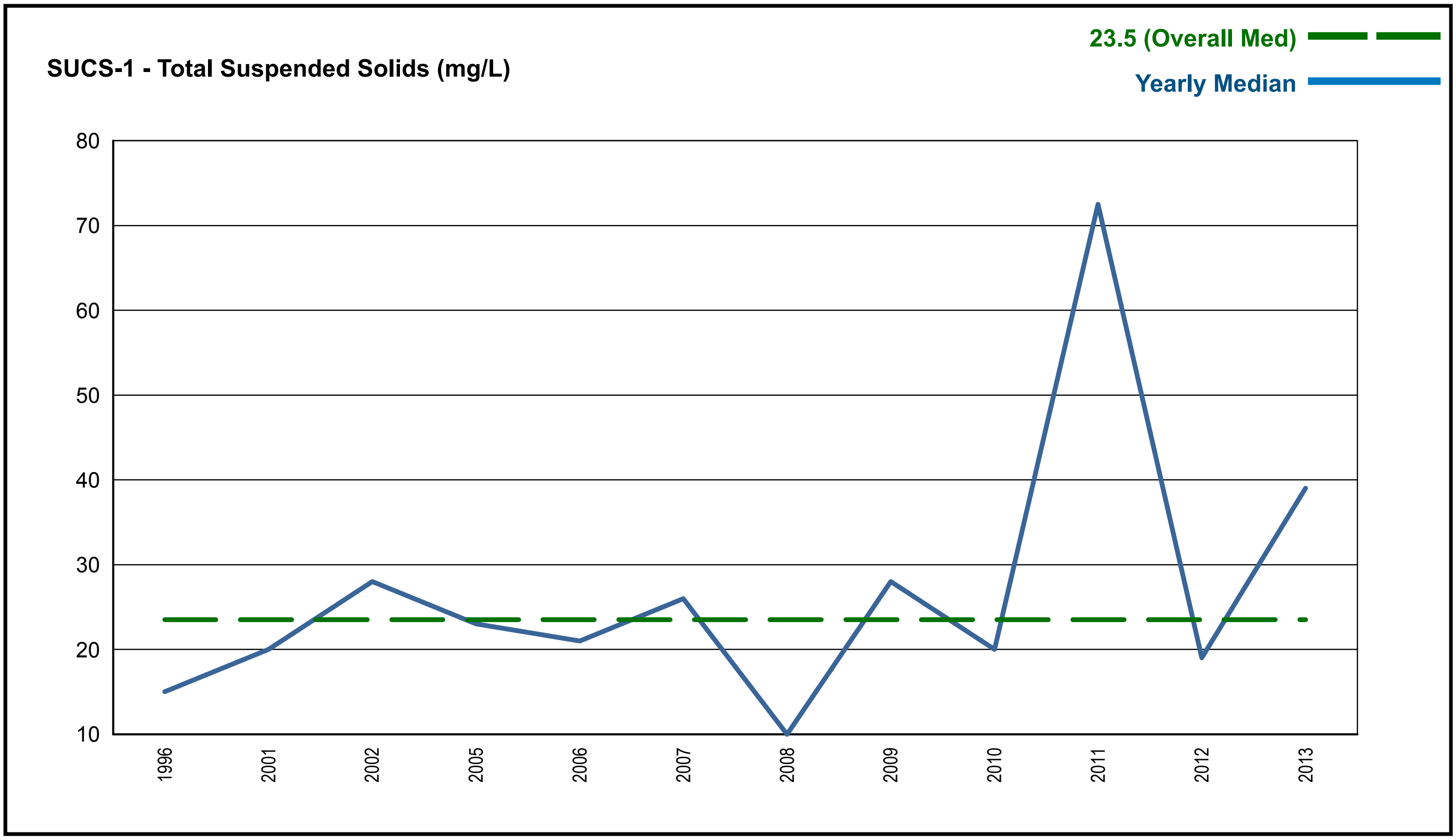


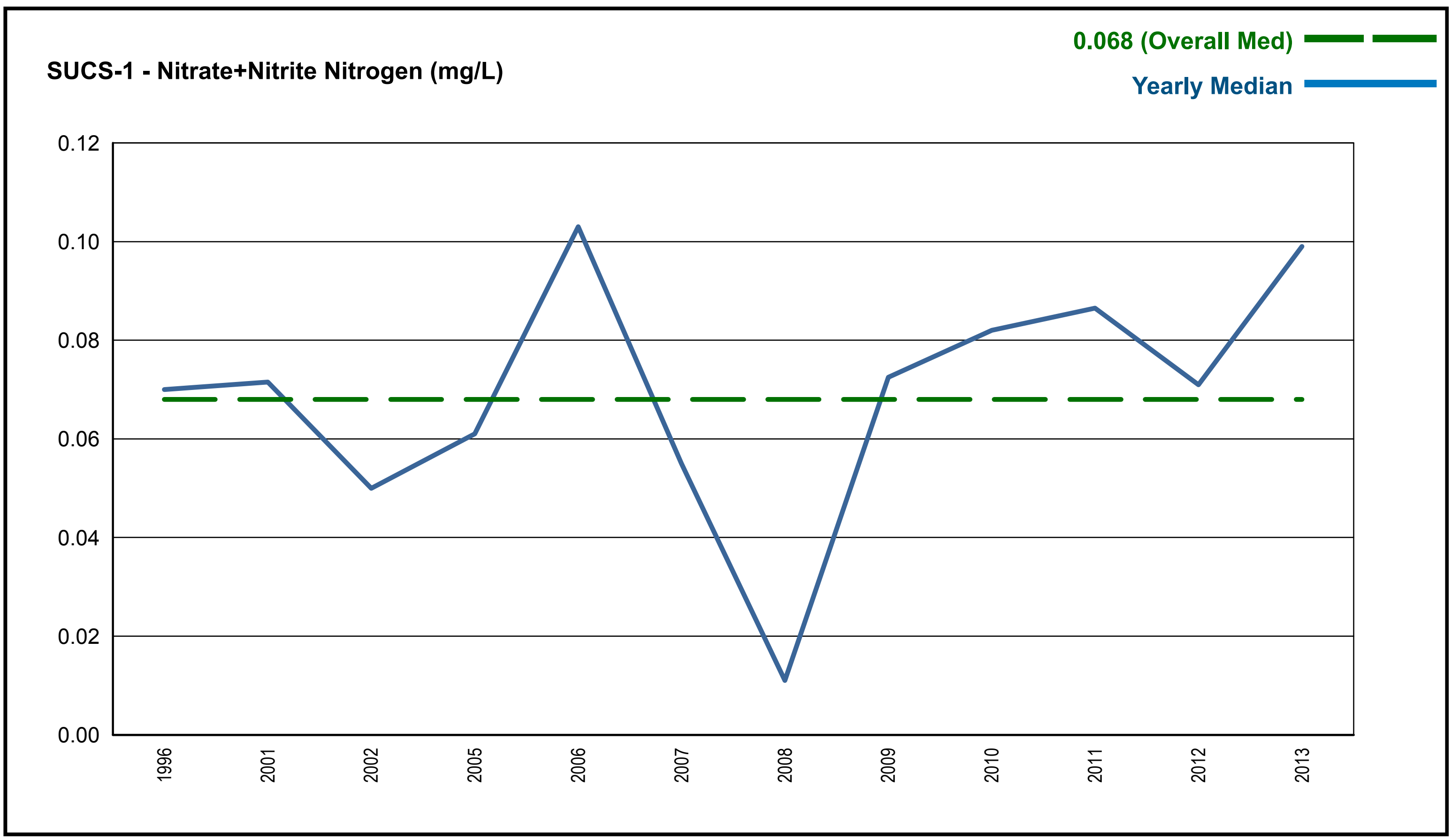
ADEM Ambient Trend Stations - Sampled 1977 - 2014



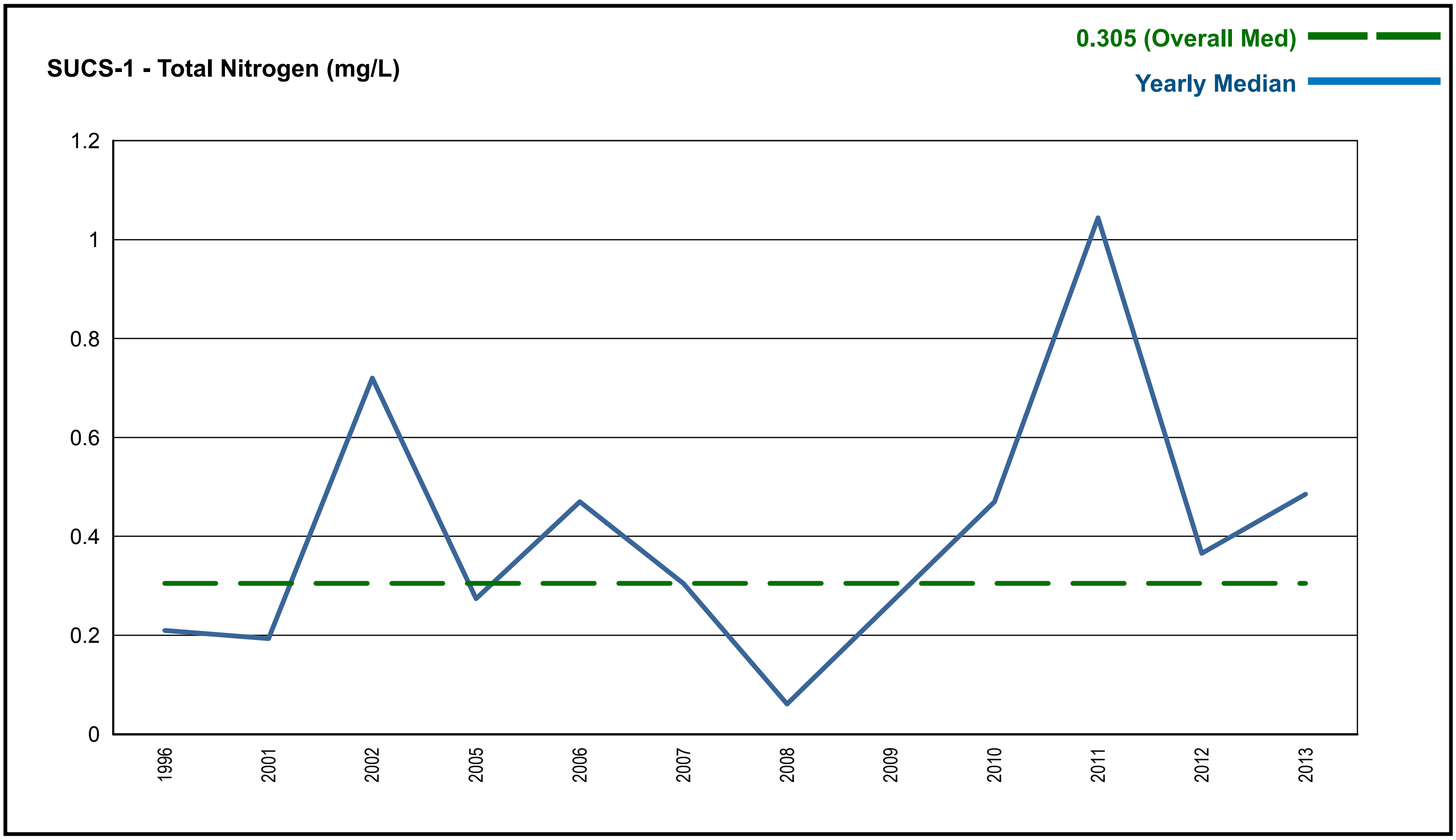


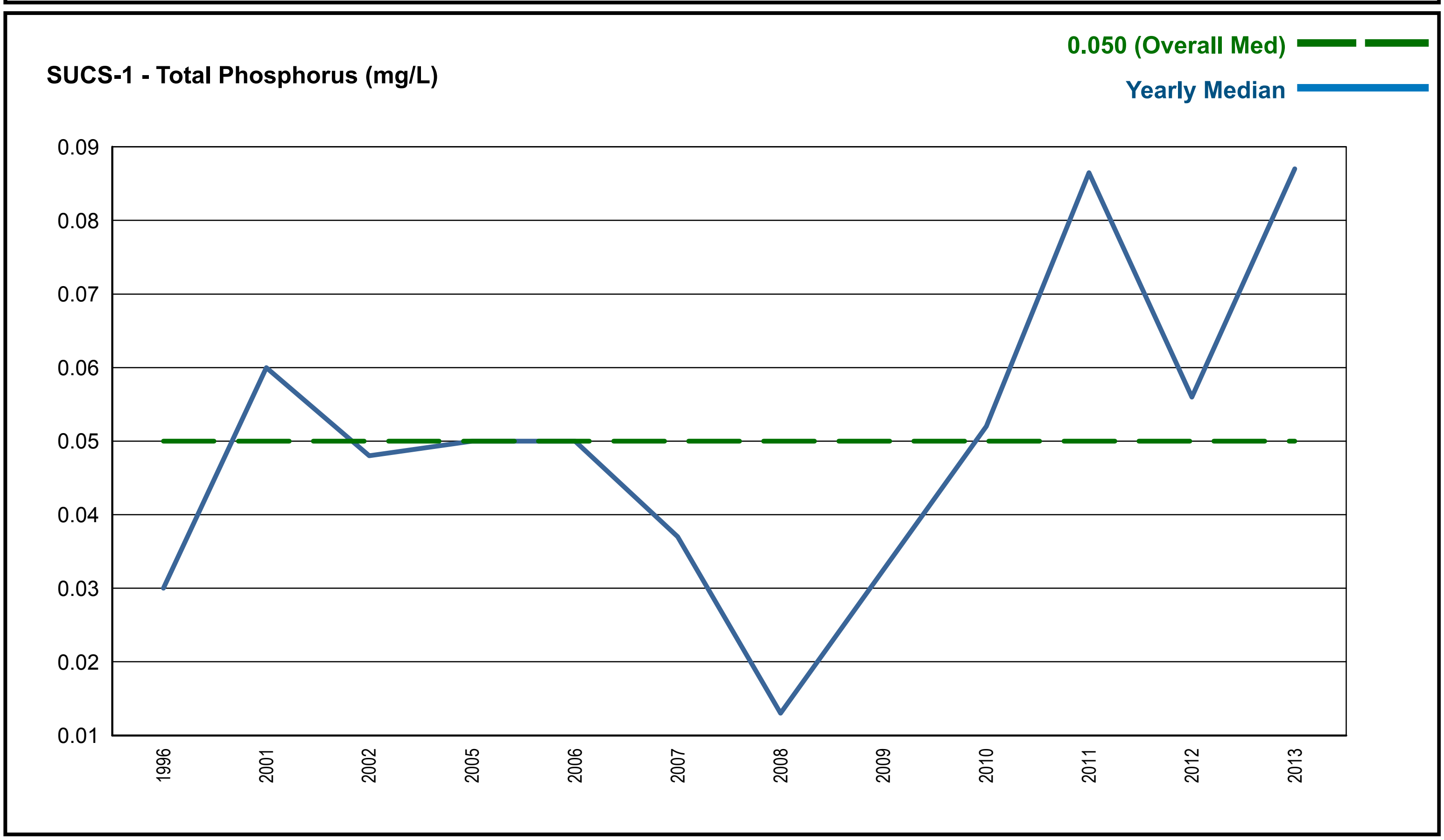
ADEM Ambient Trend Stations - Sampled 1977 - 2014



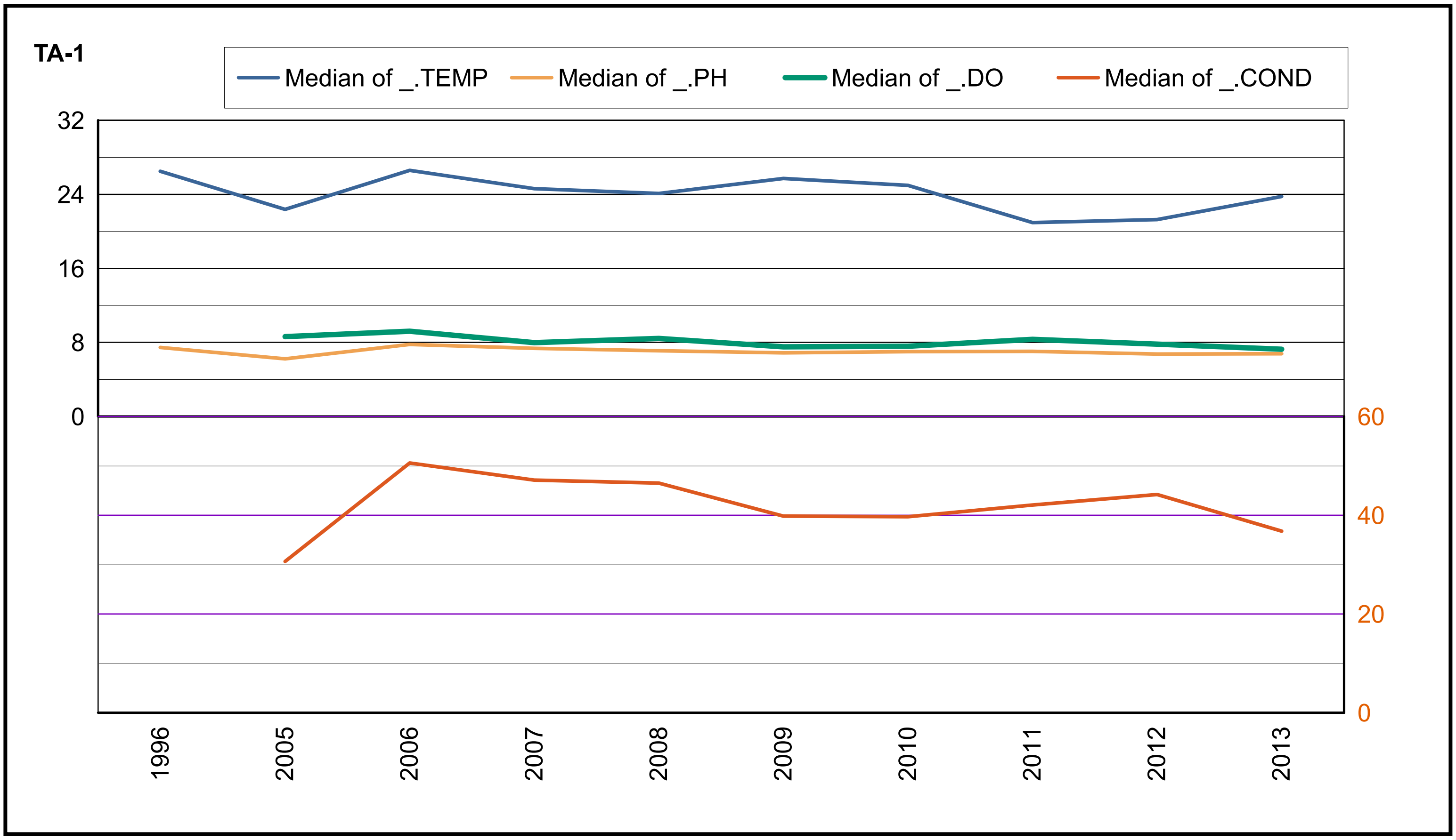


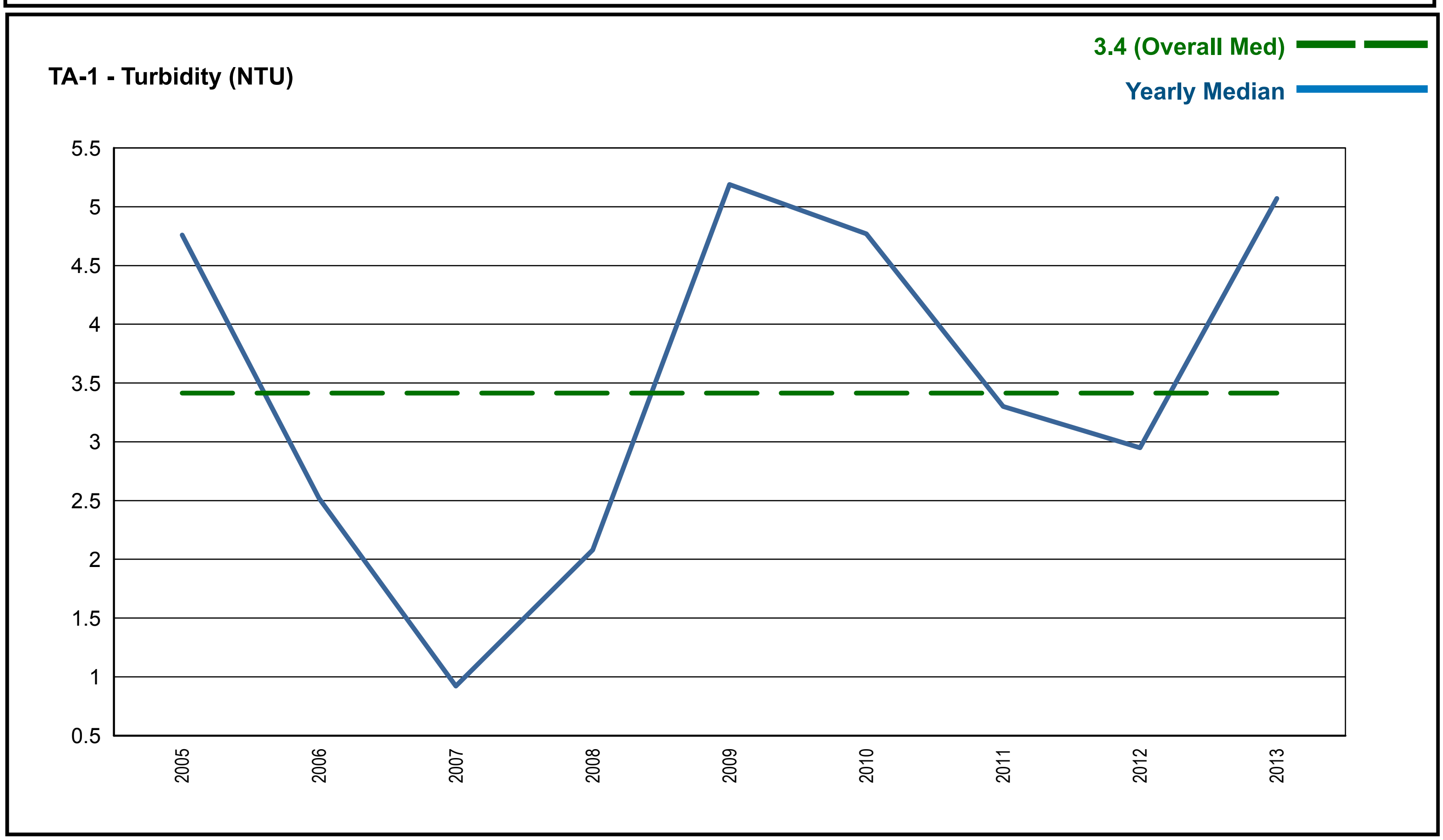
ADEM Ambient Trend Stations - Sampled 1977 - 2014





ADEM Ambient Trend Stations - Sampled 1977 - 2014





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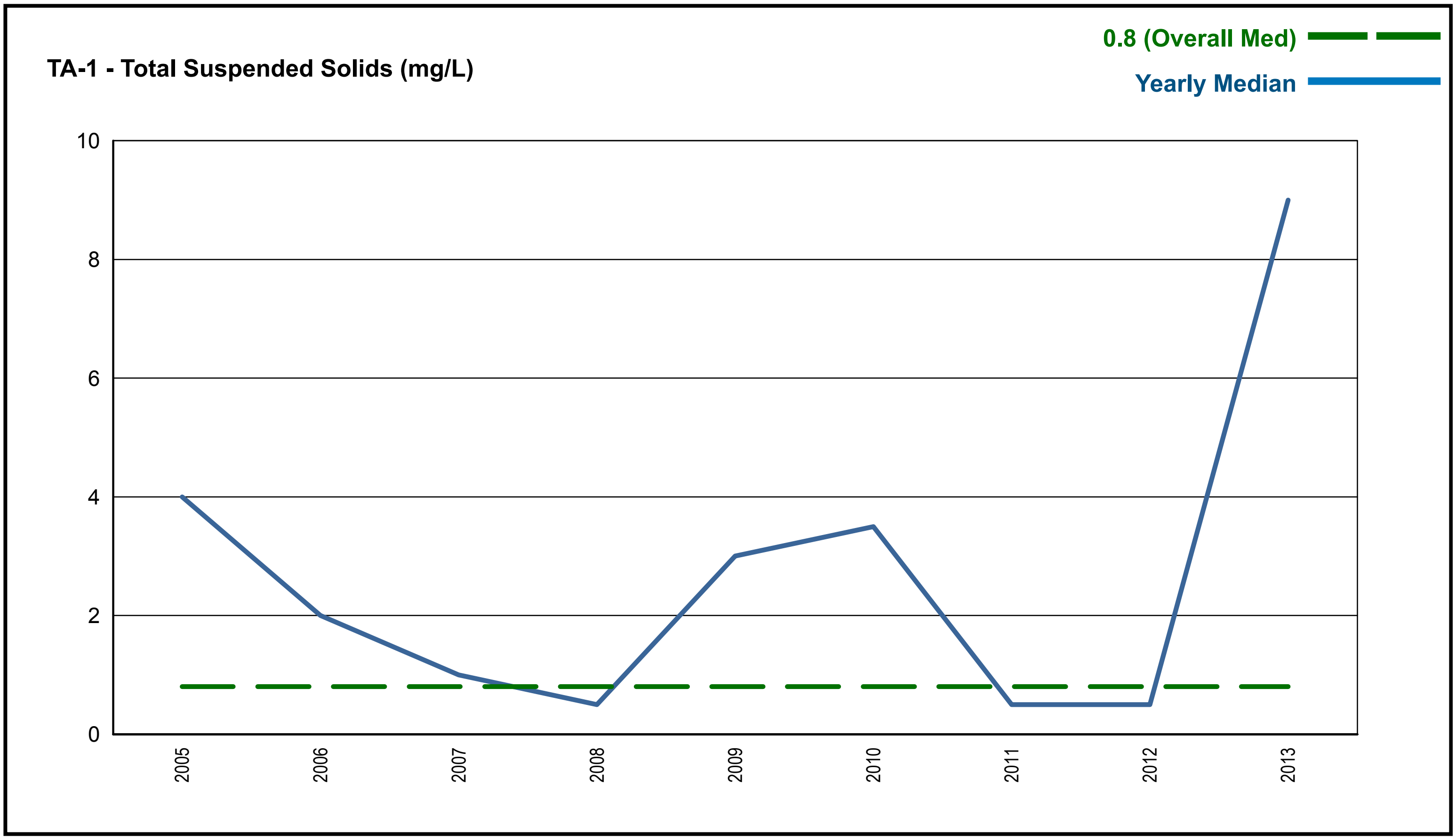

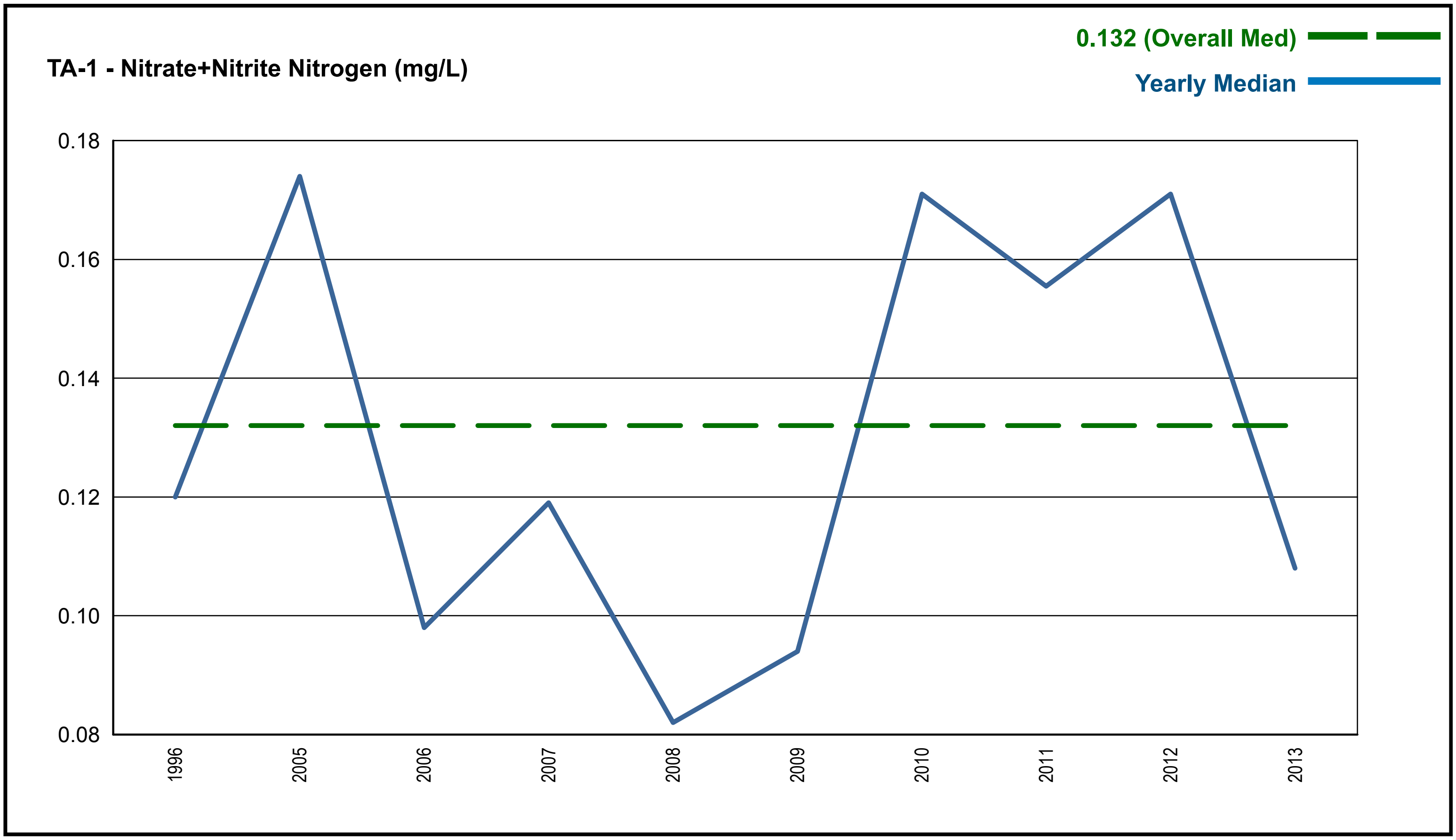

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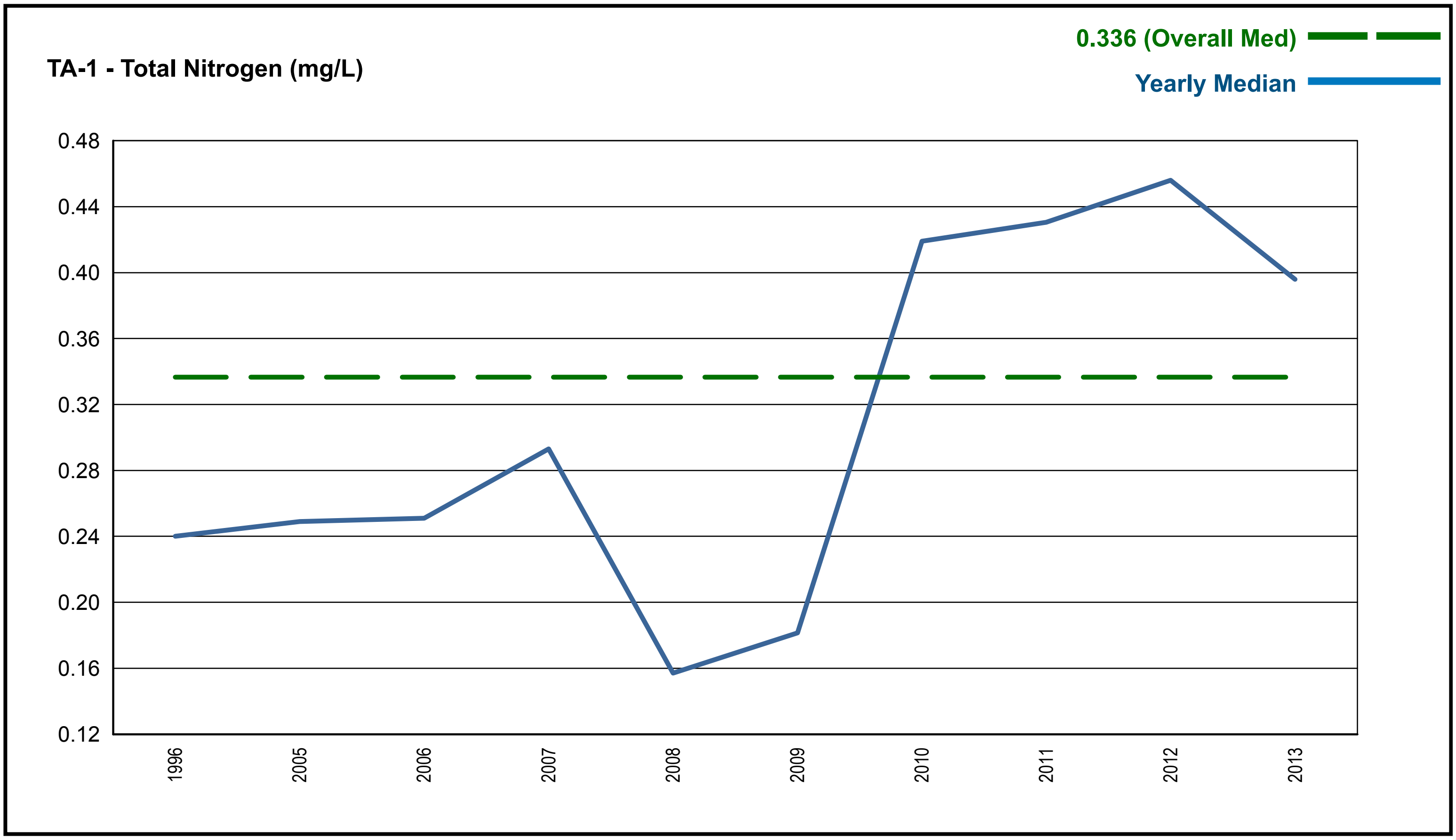
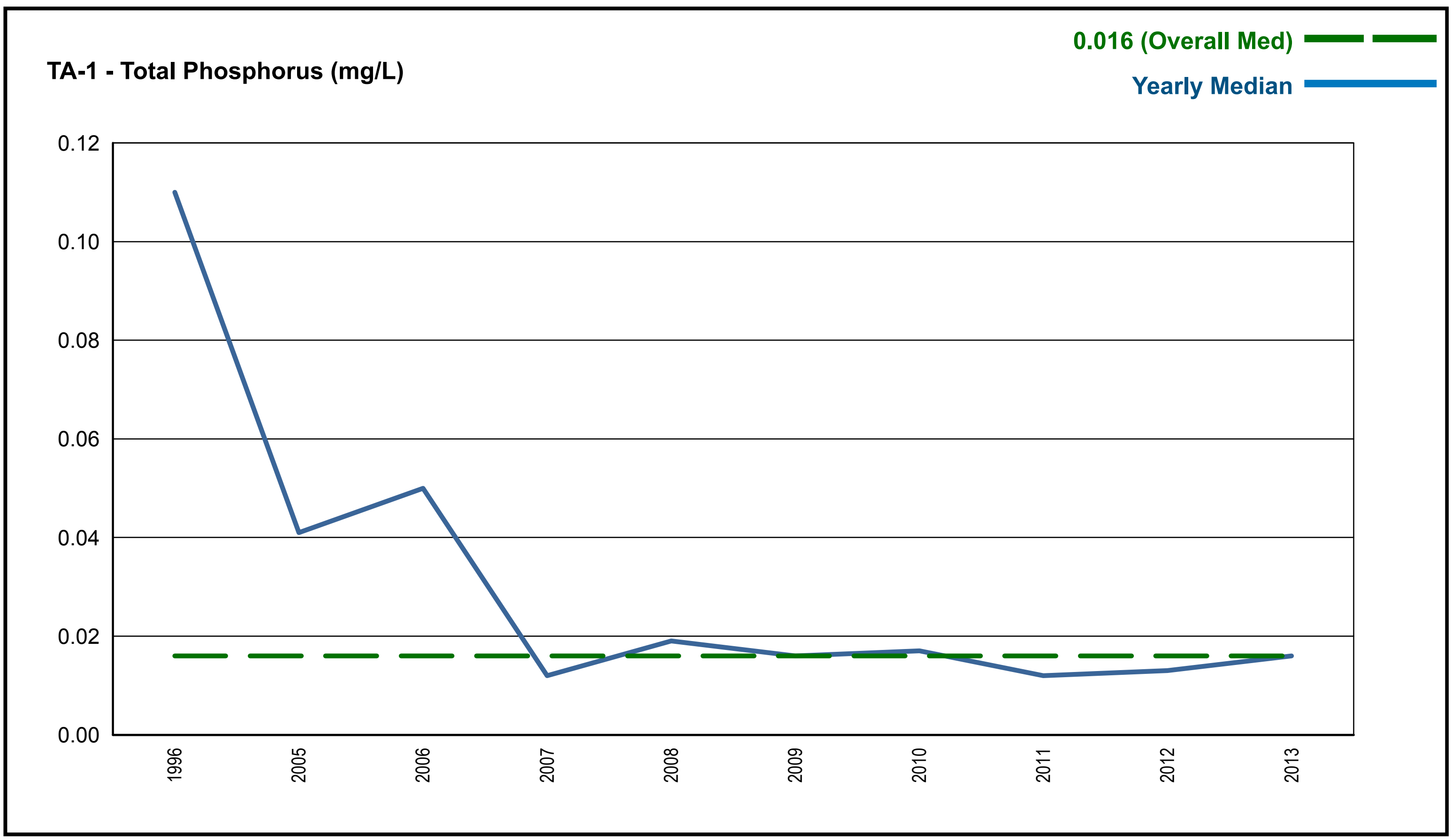
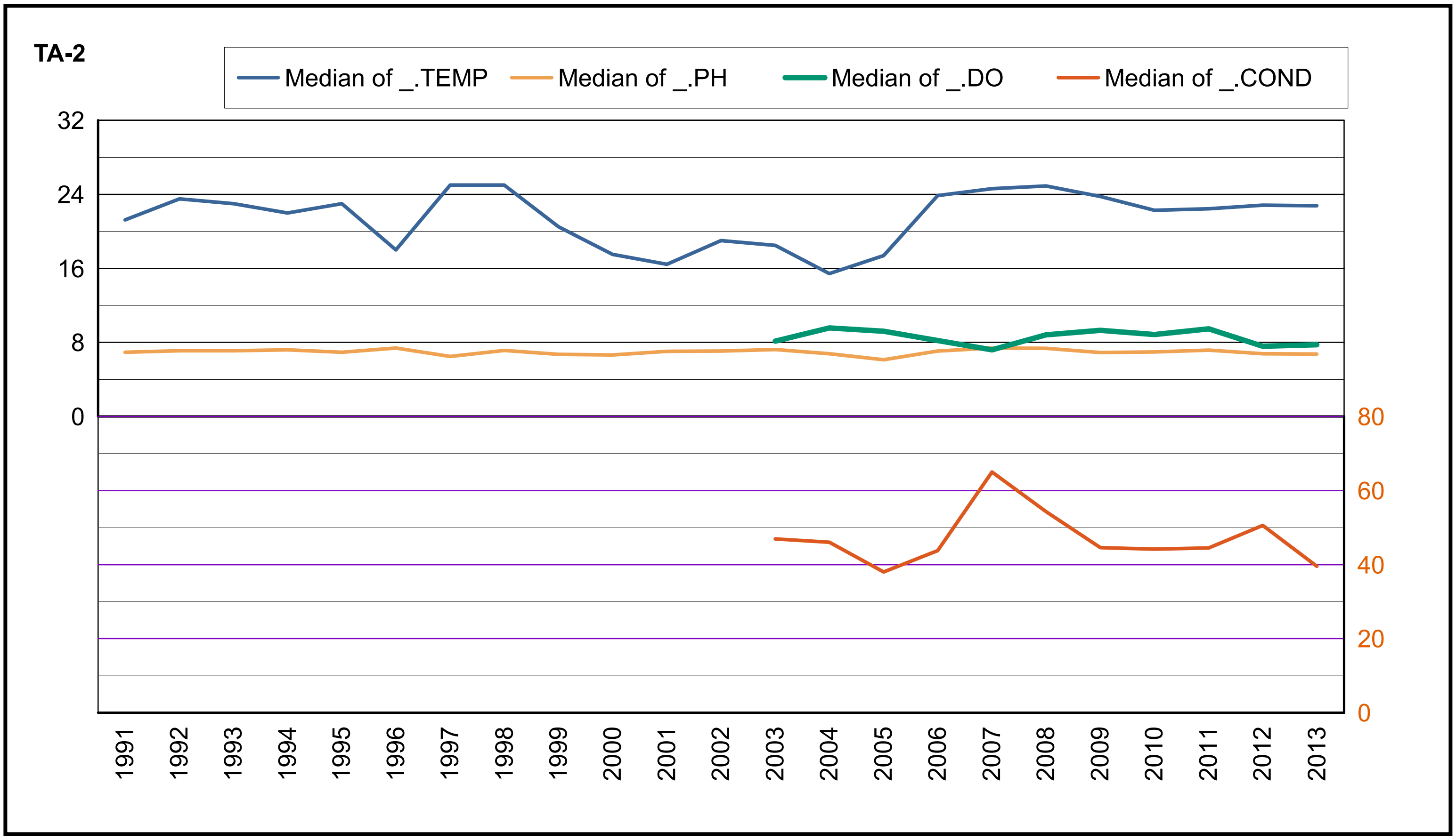
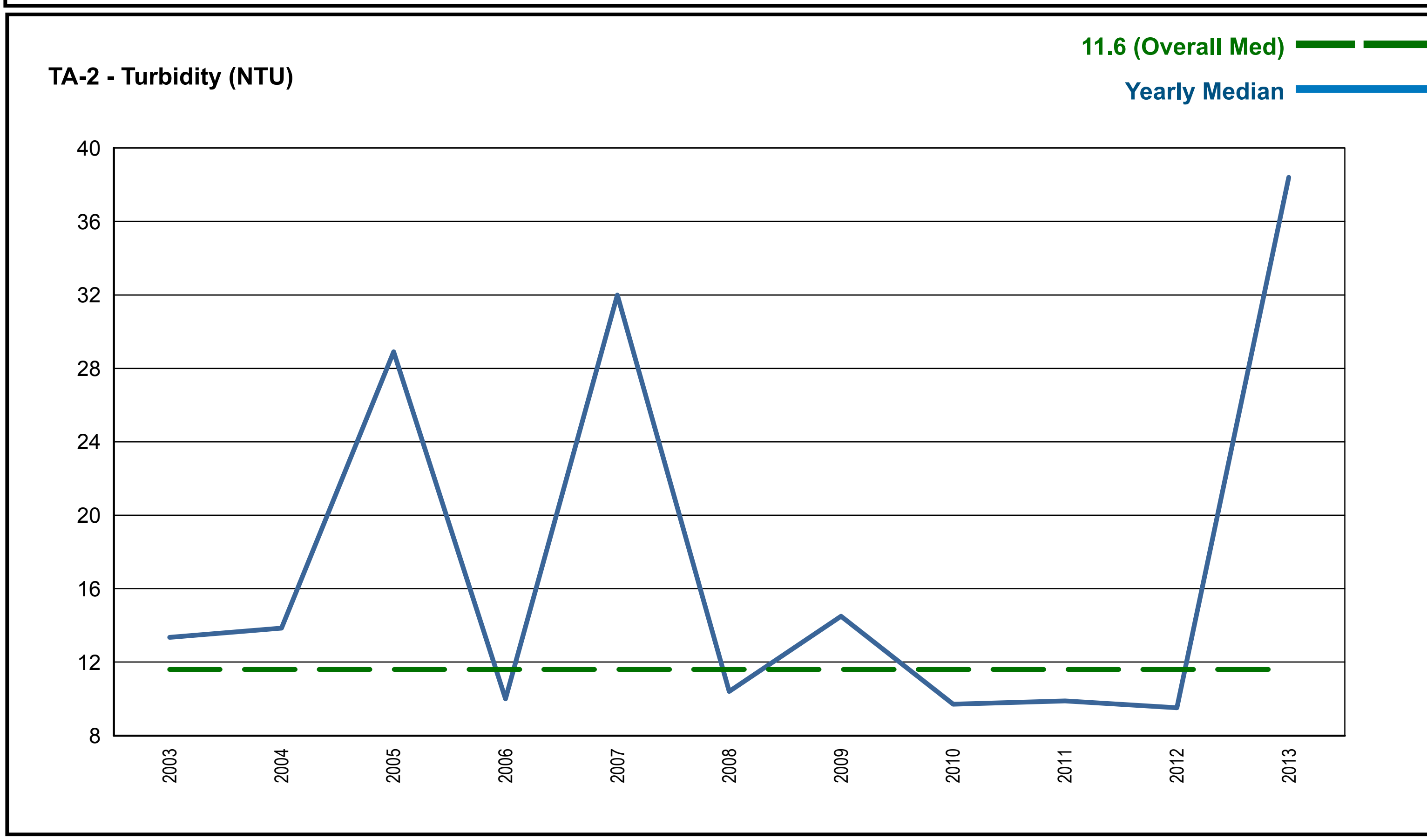




ADEM Ambient Trend Stations - Sampled 1977 - 2014





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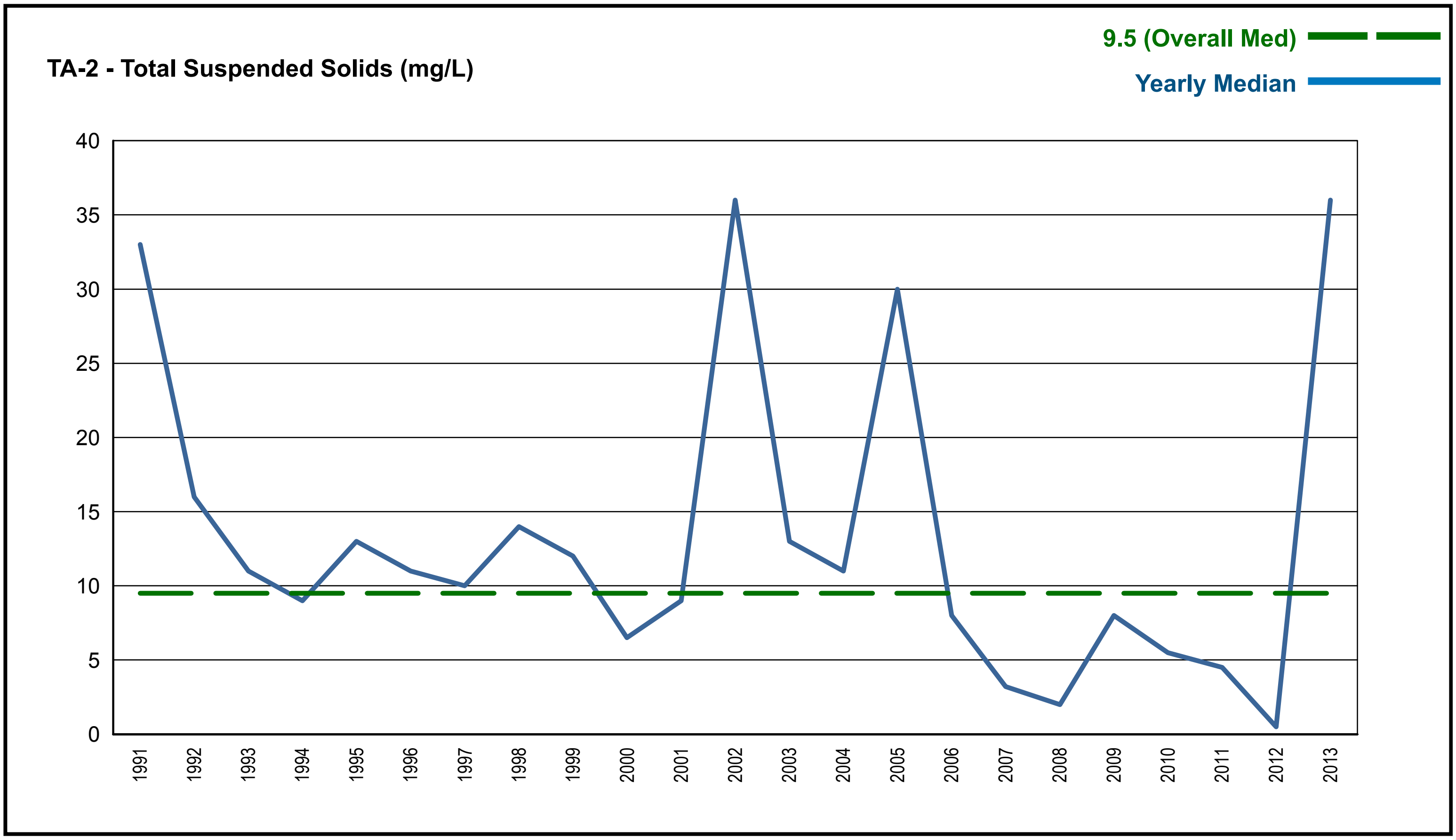

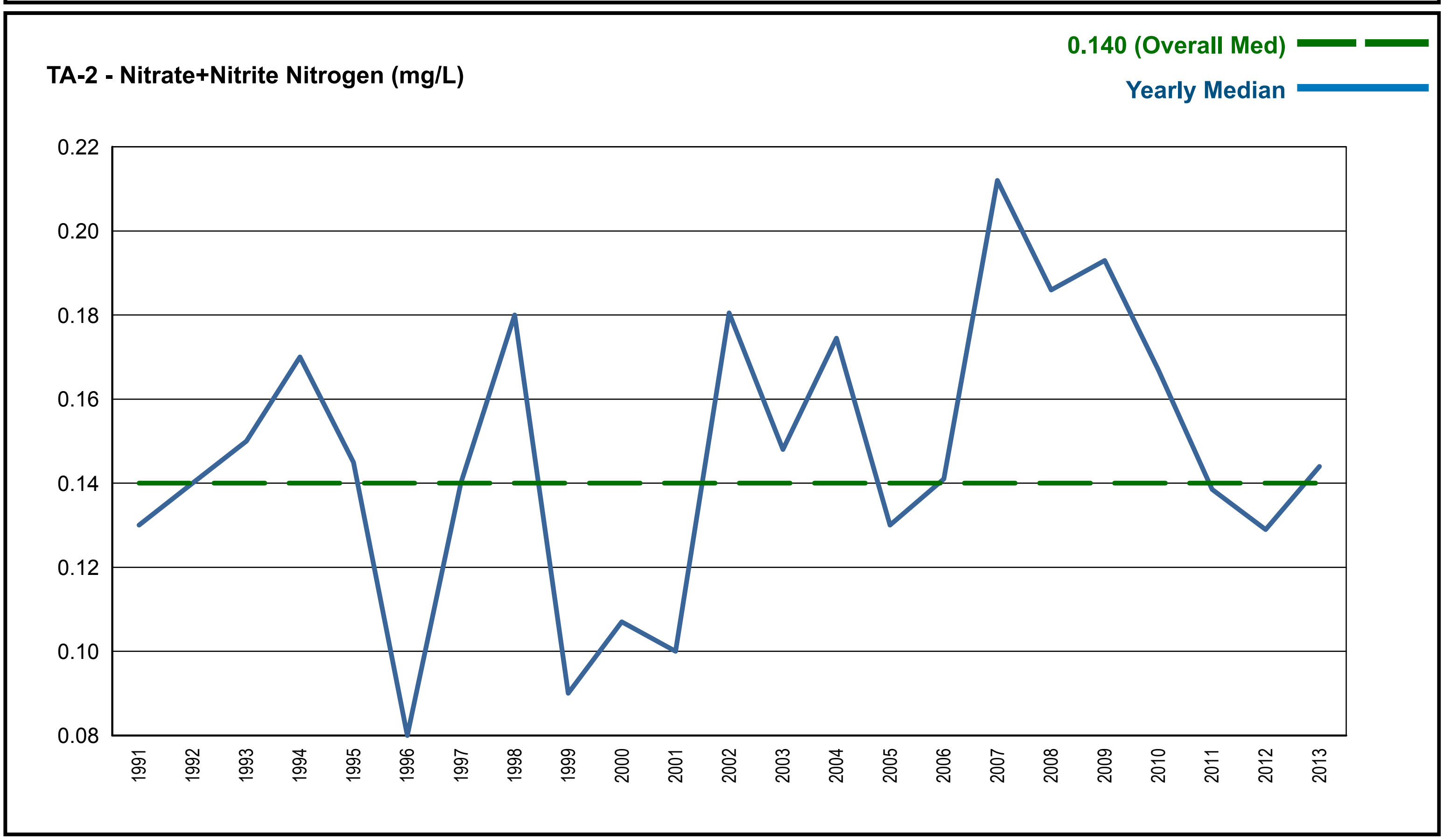

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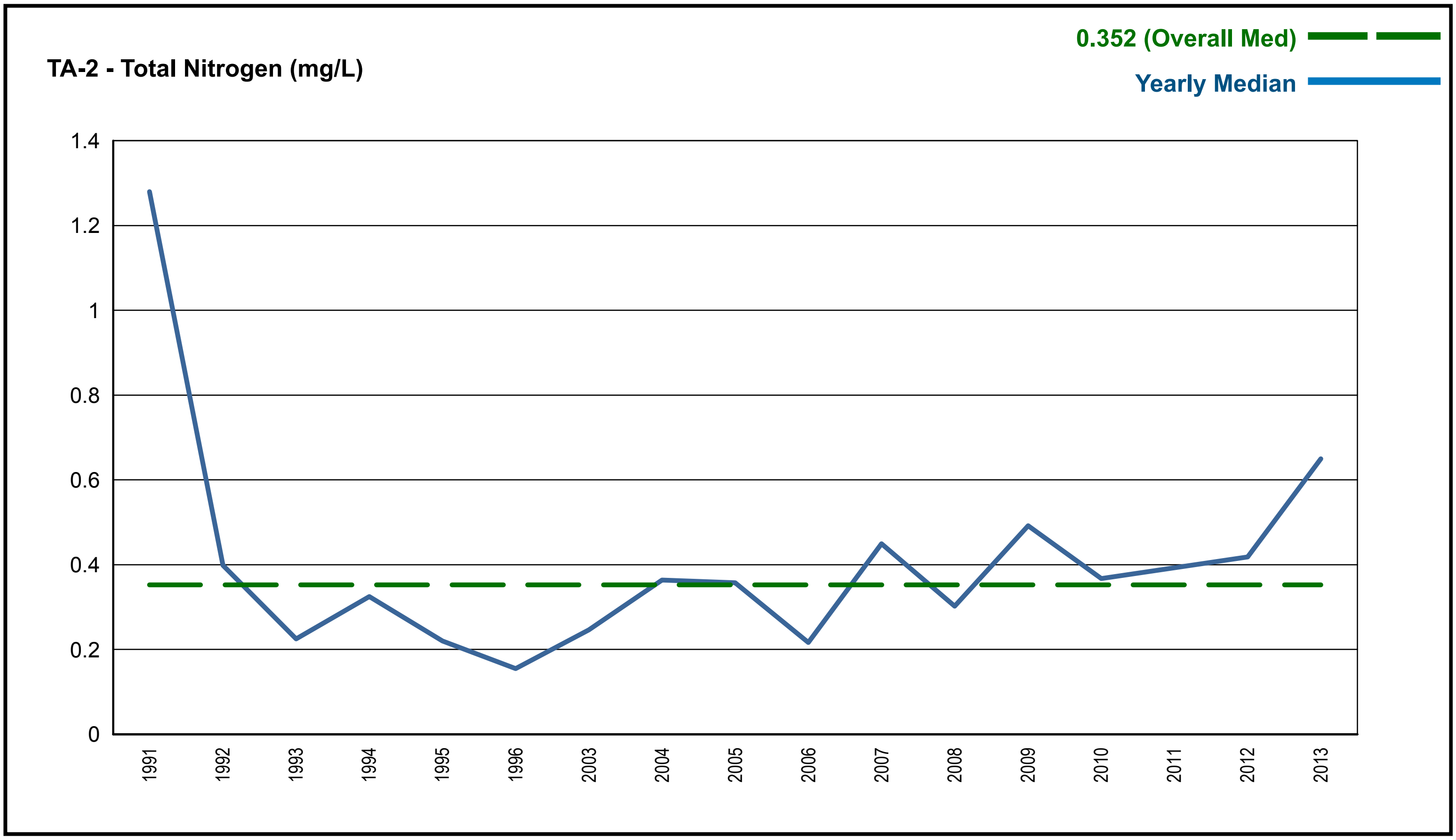

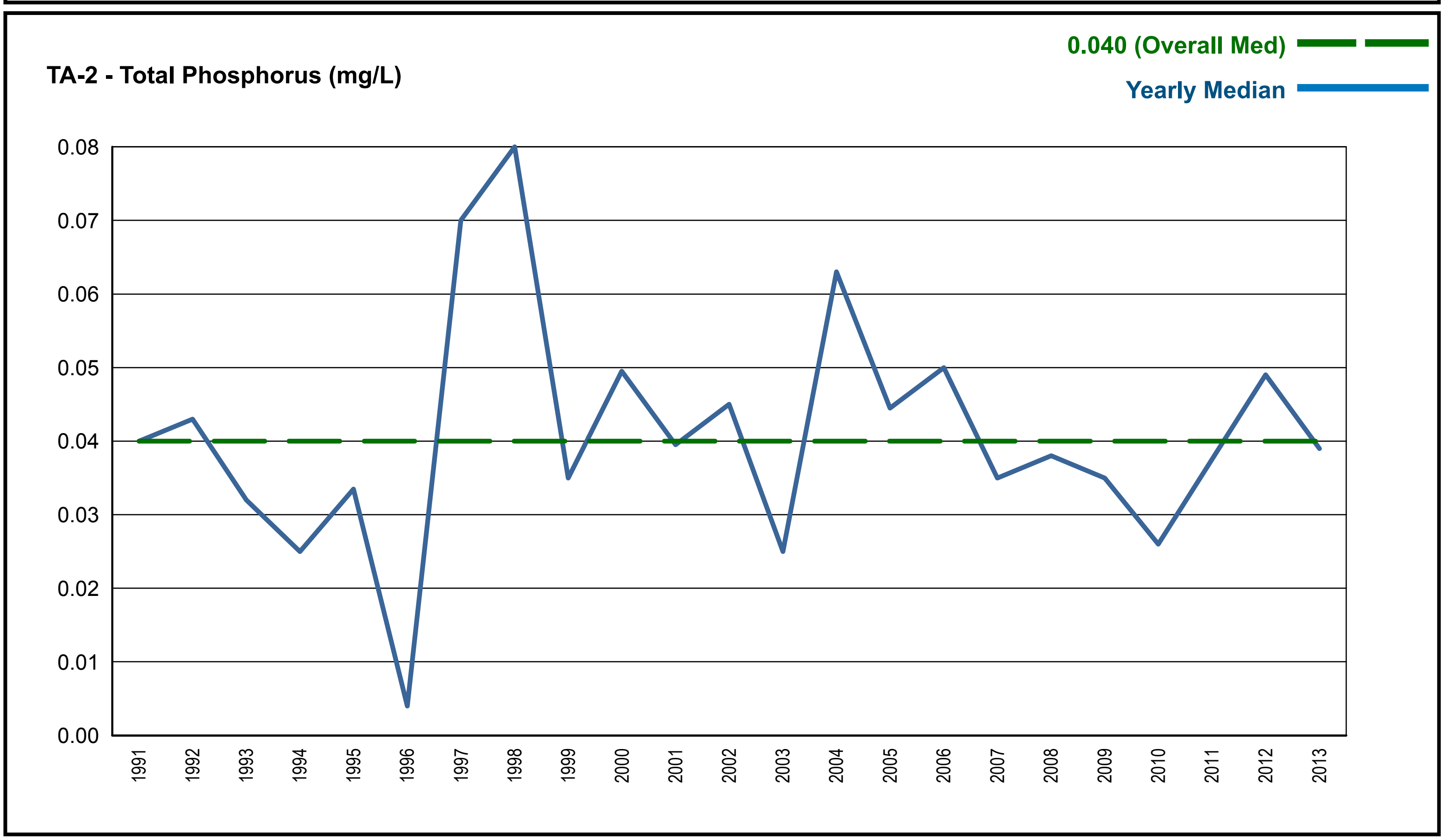

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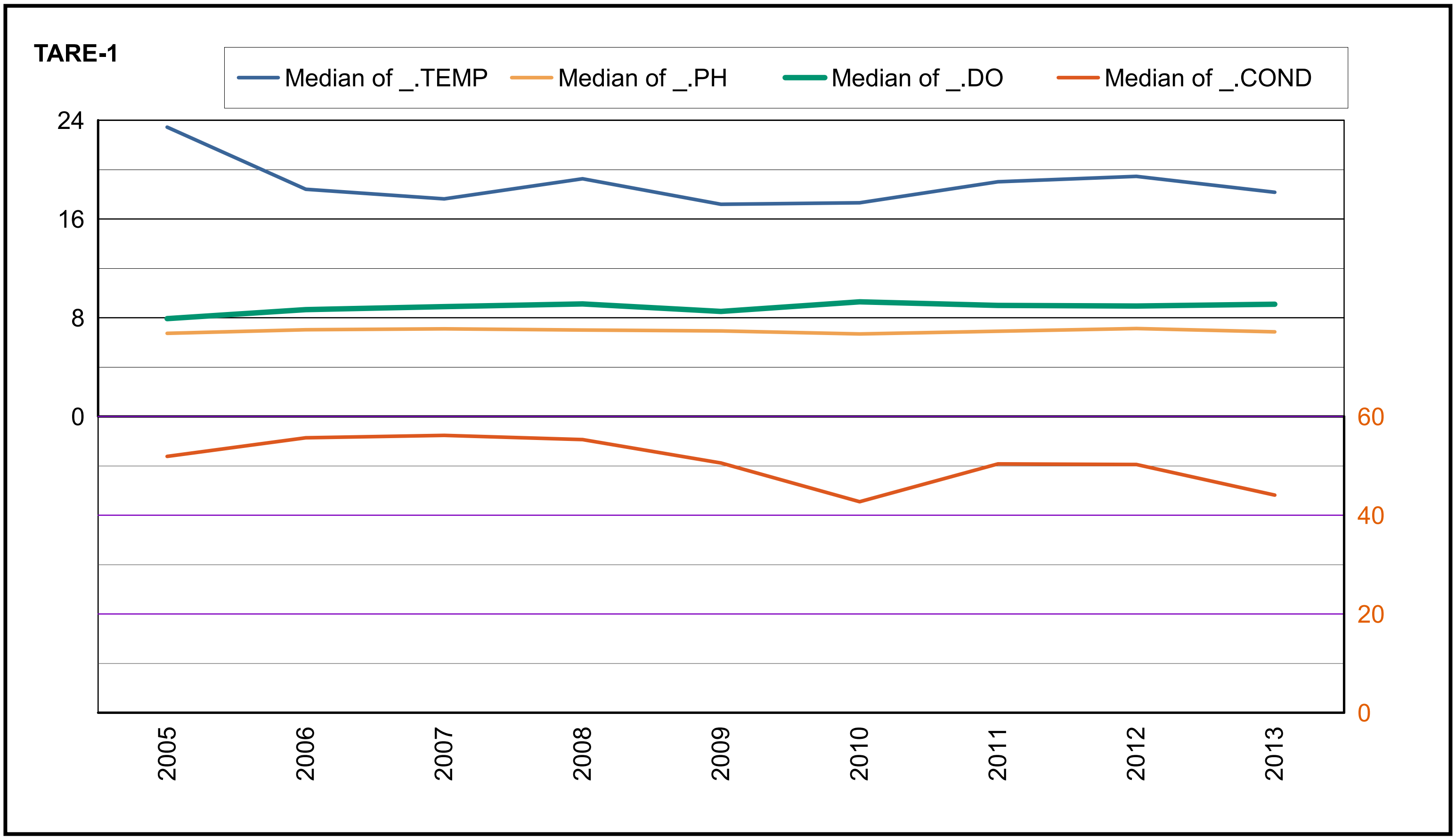

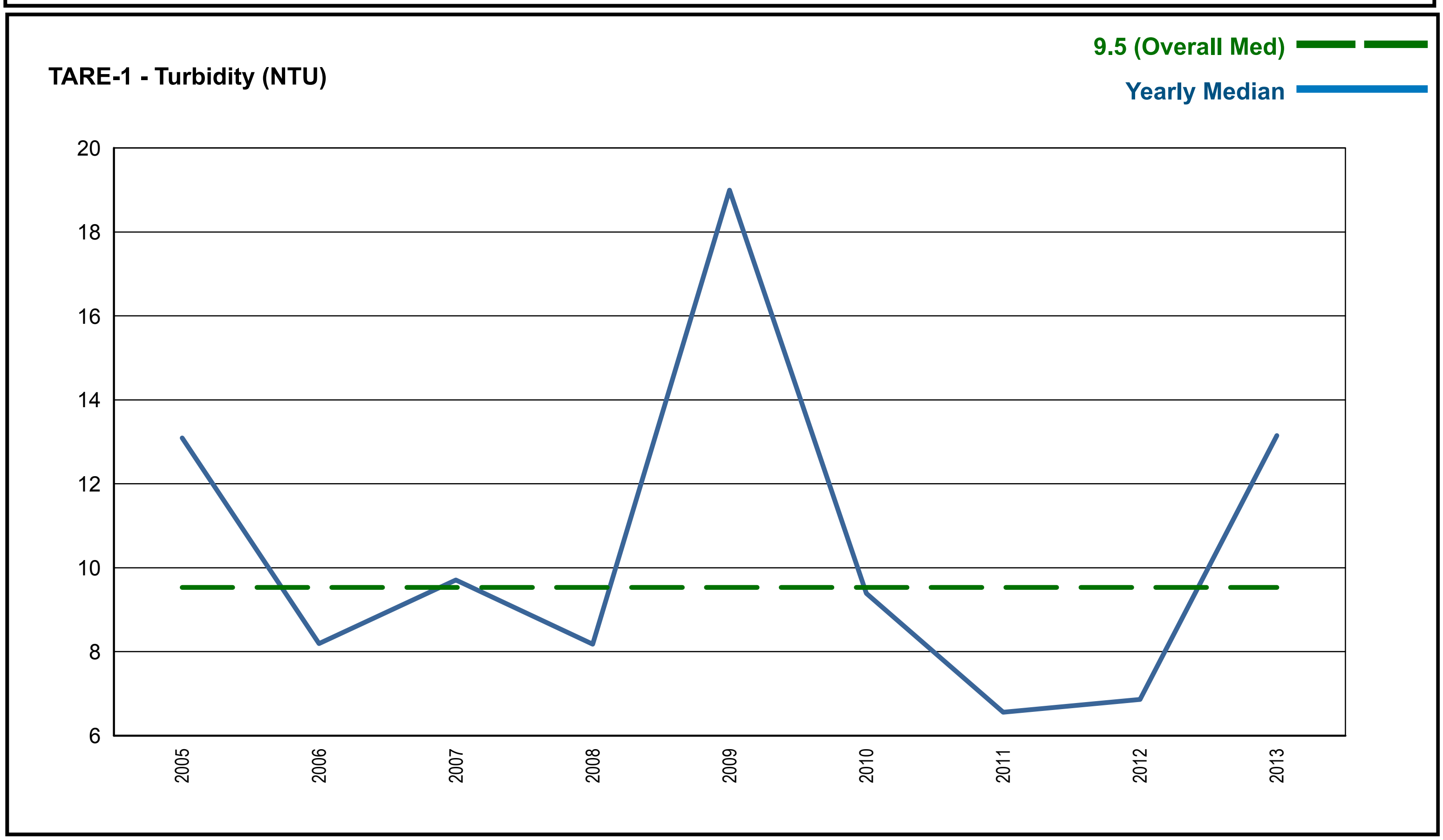

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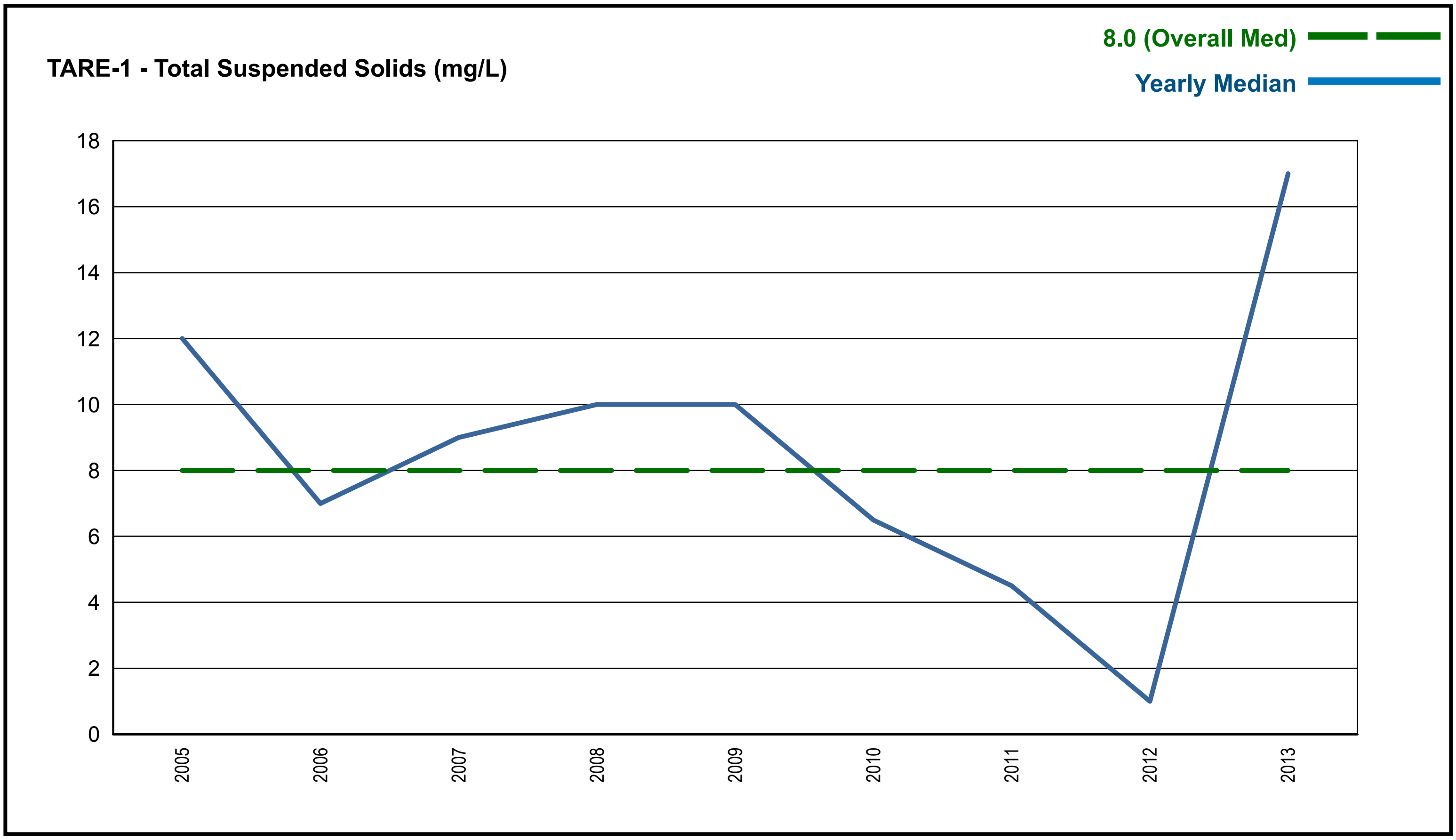

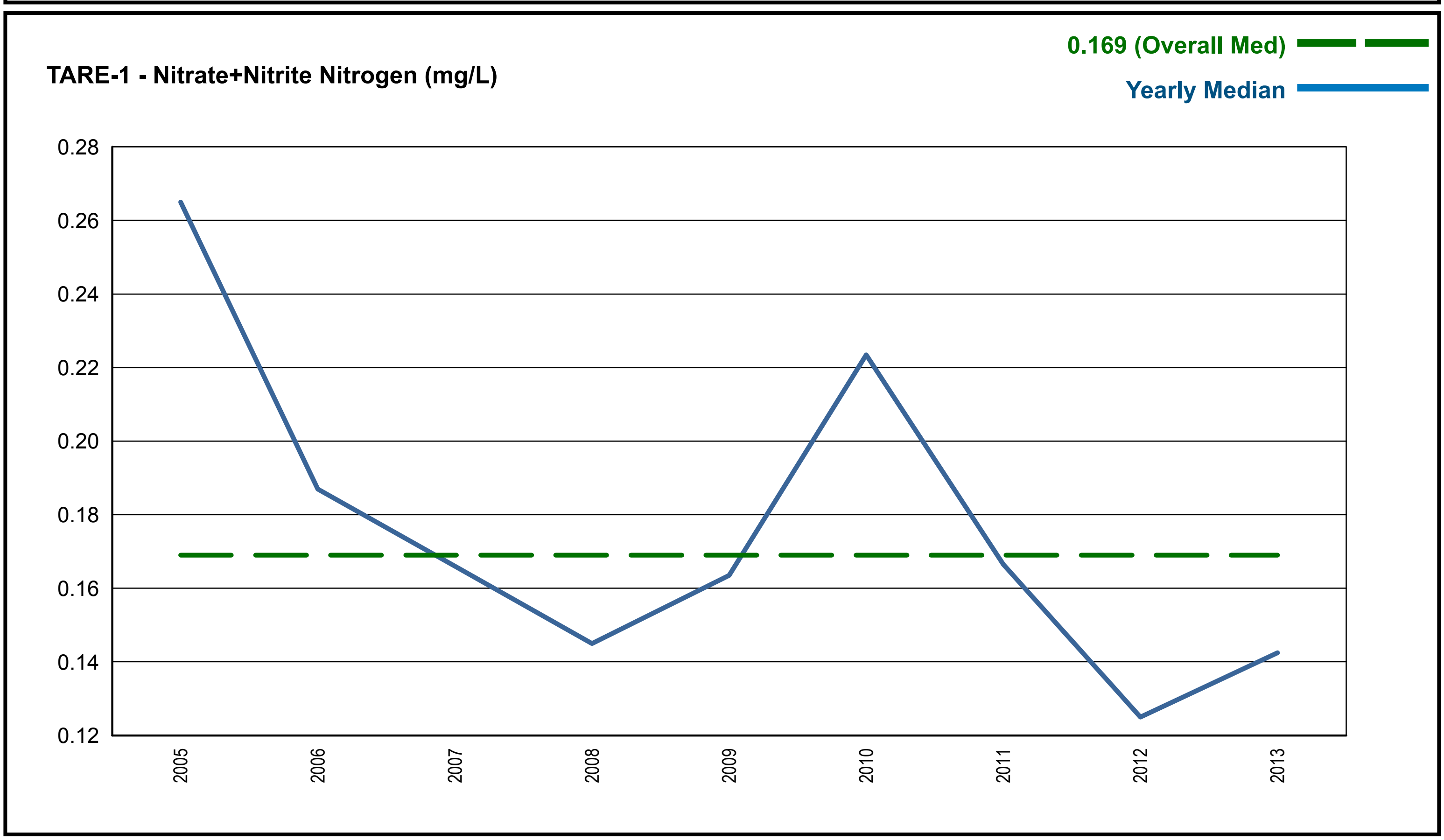

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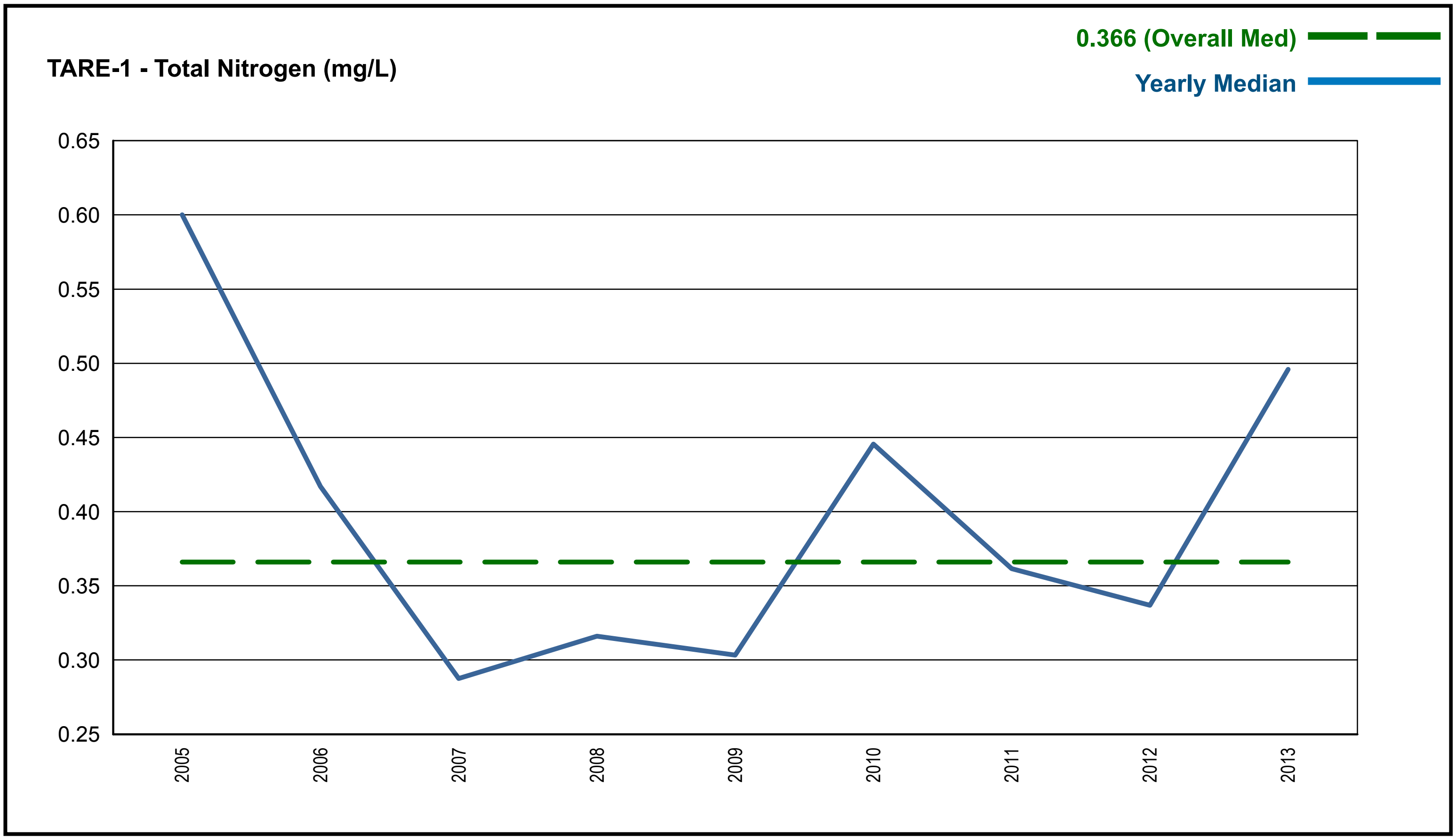

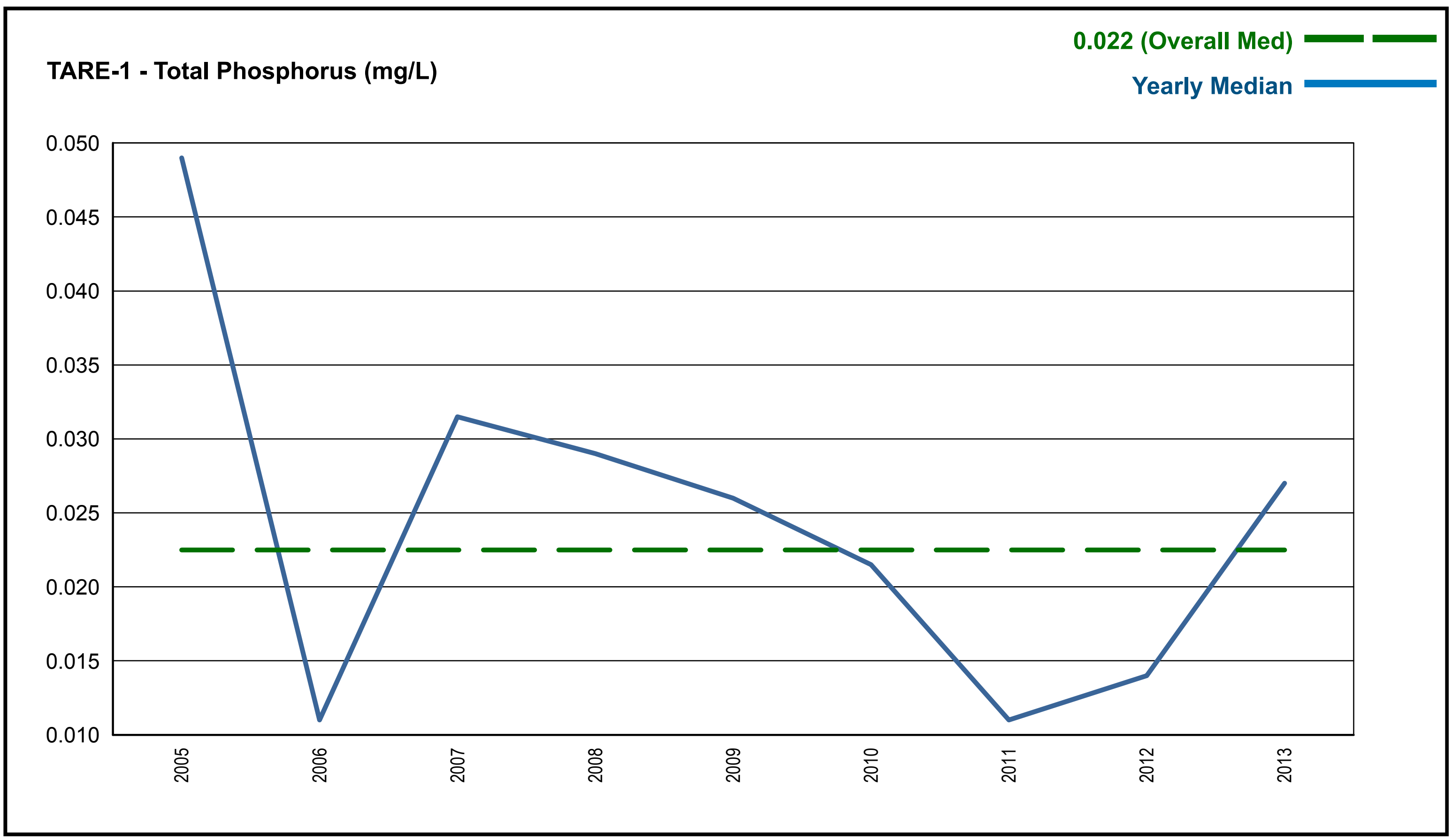

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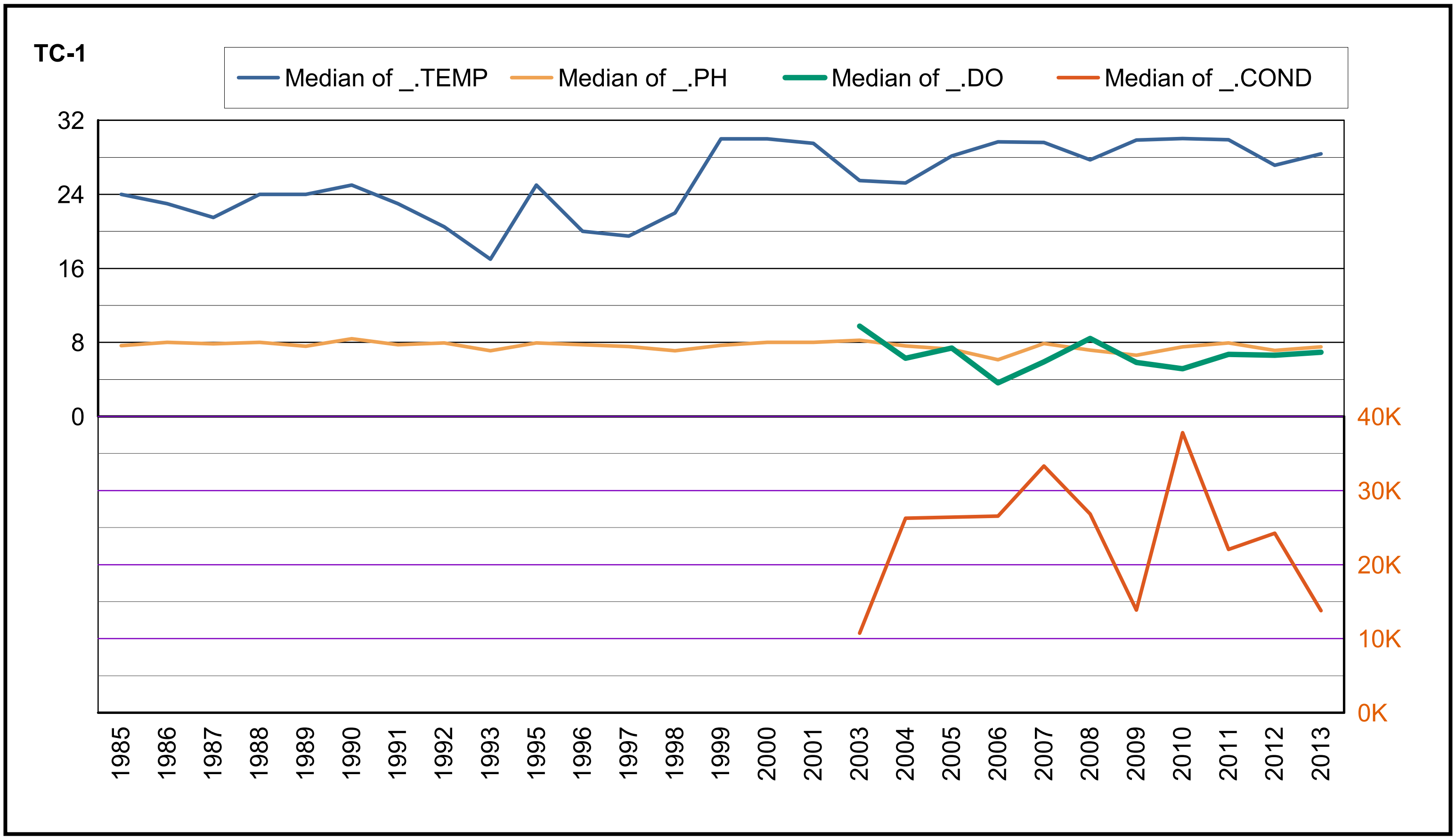

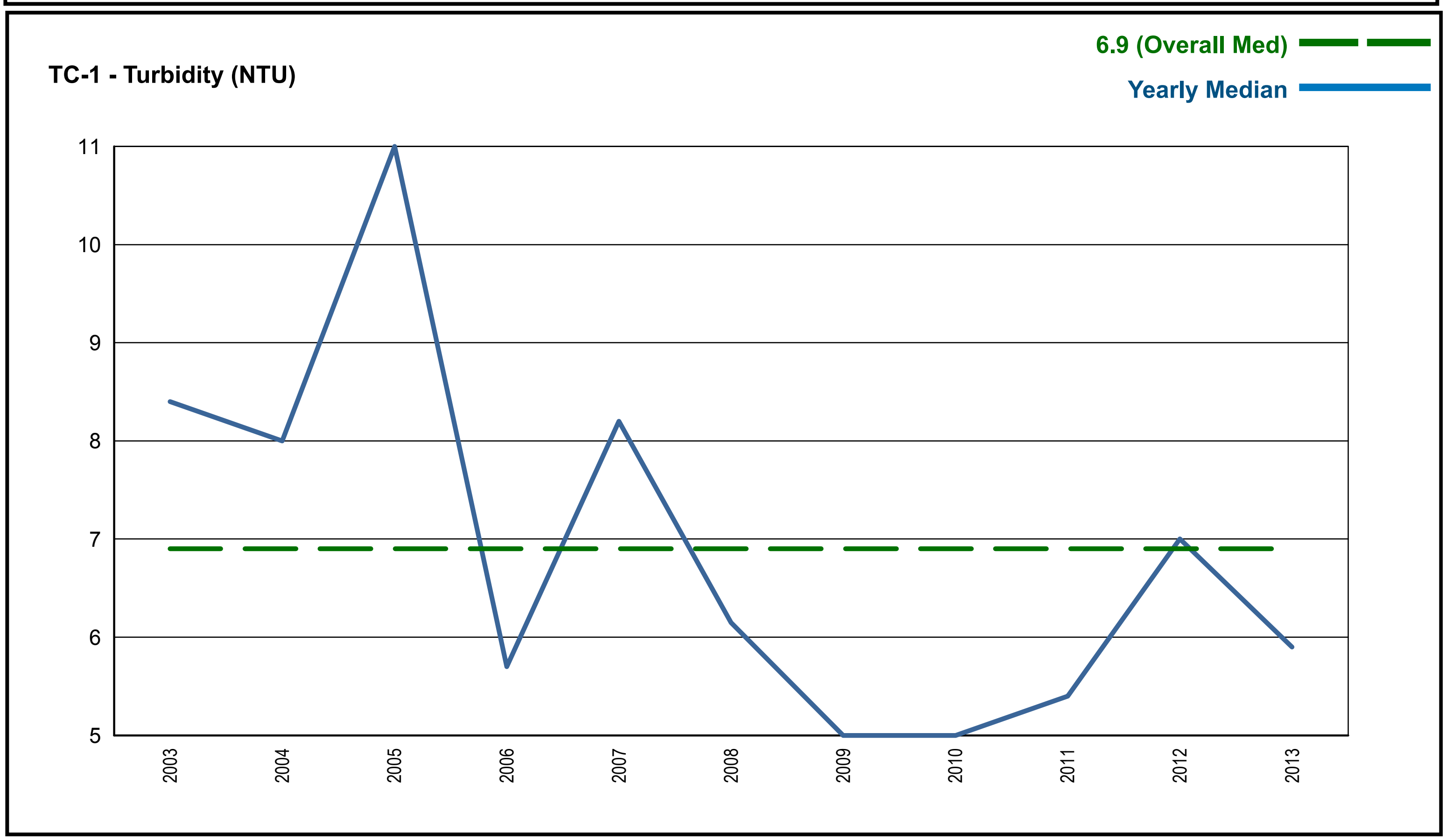

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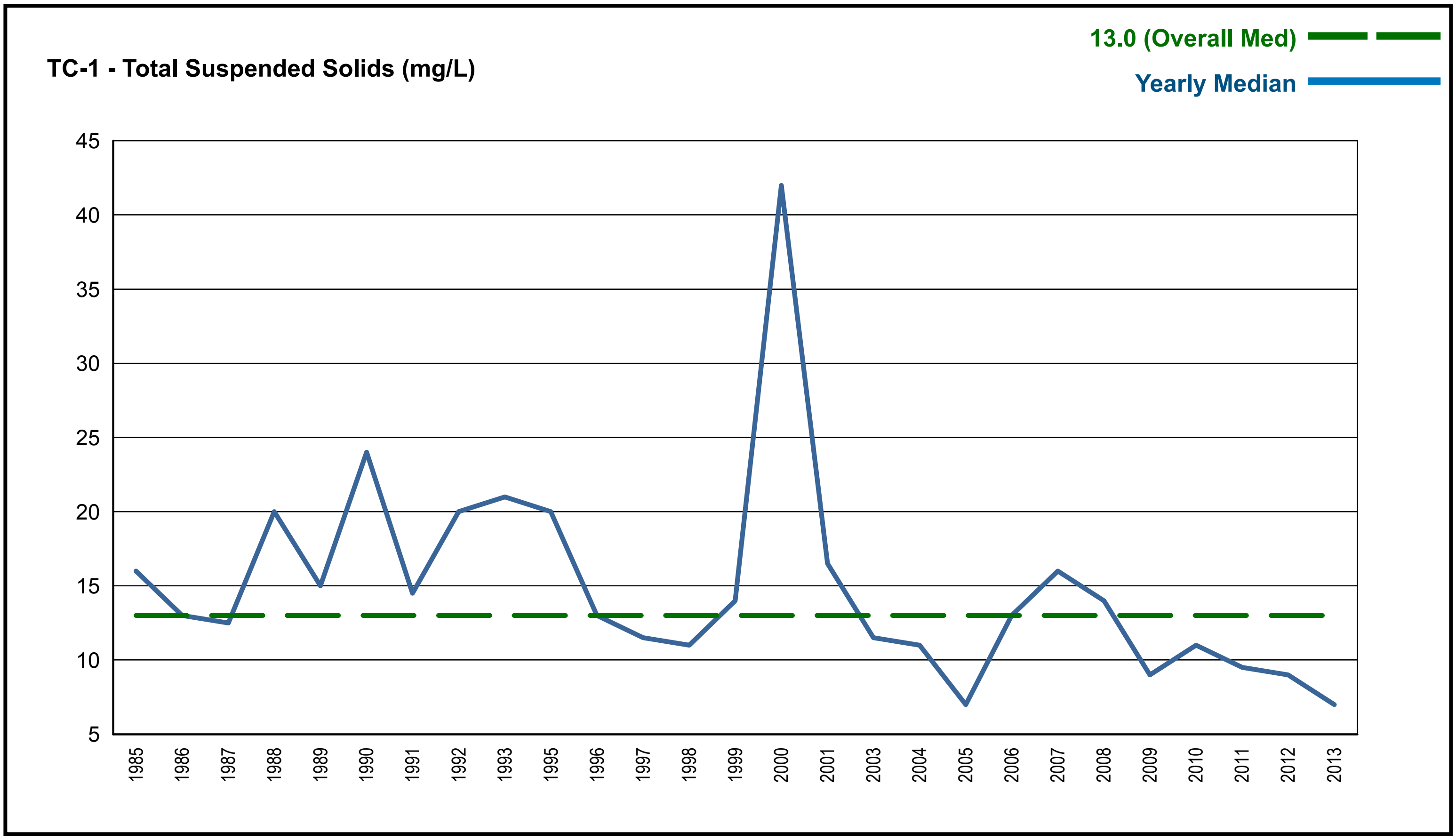

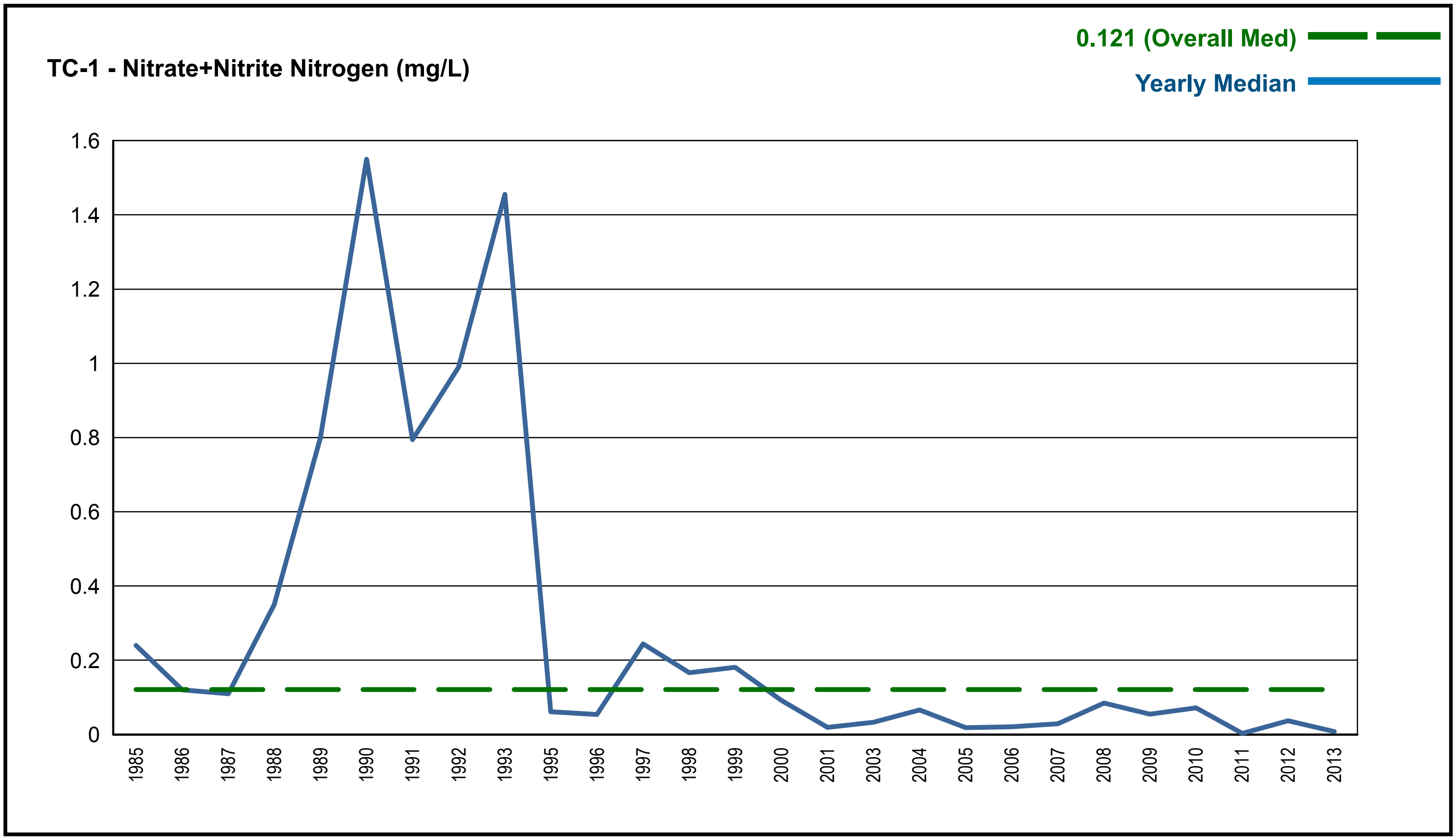

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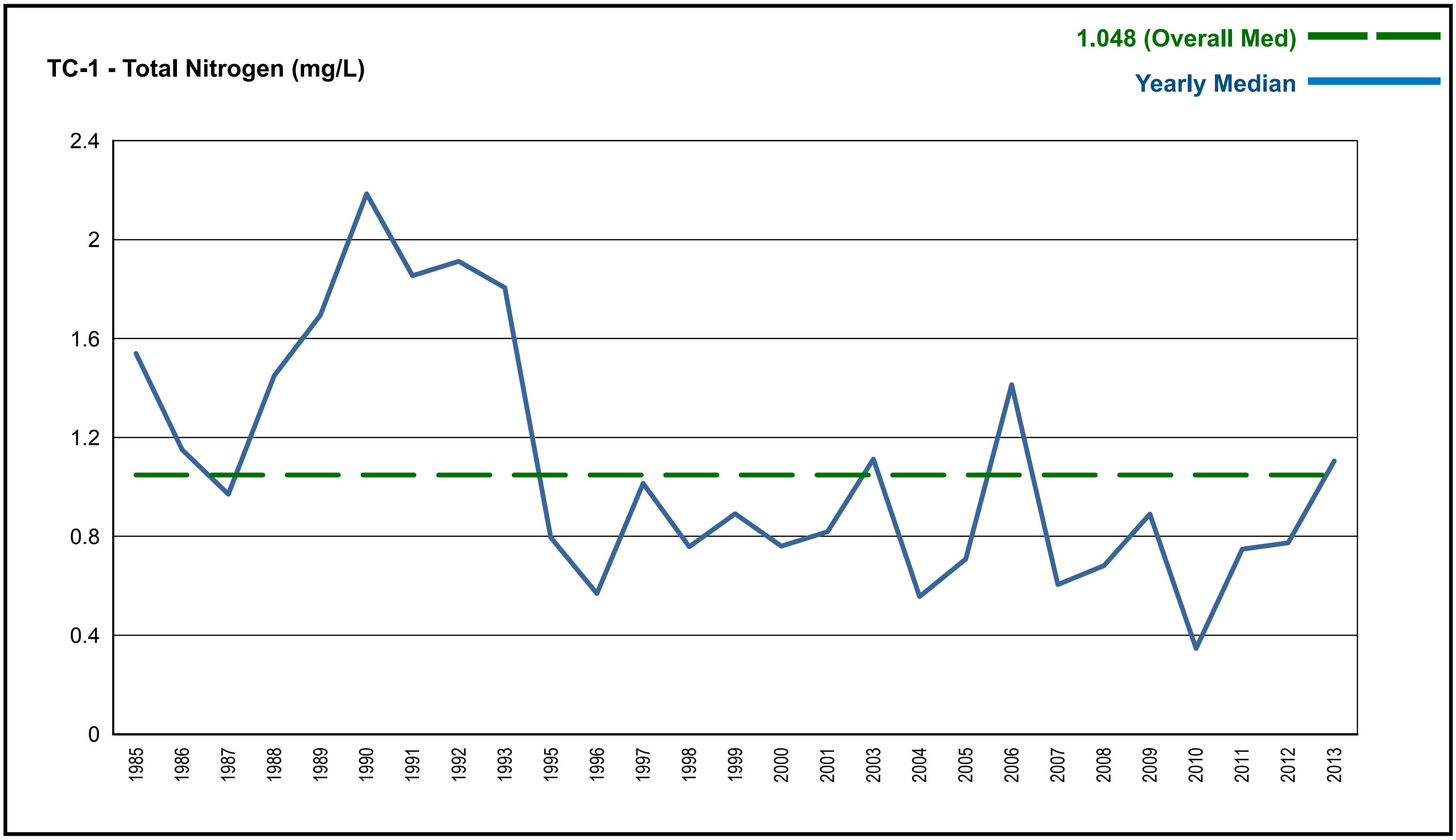
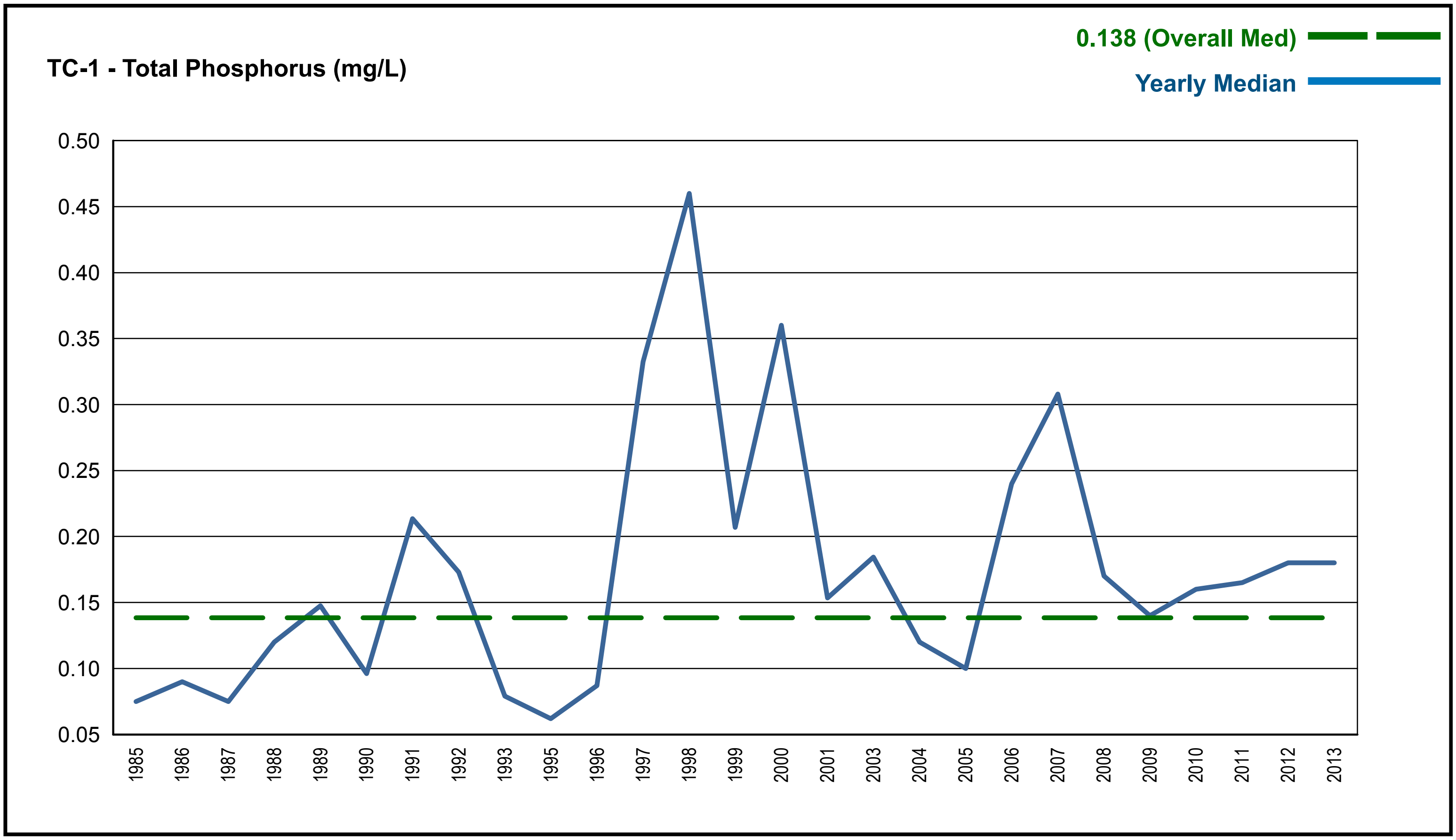
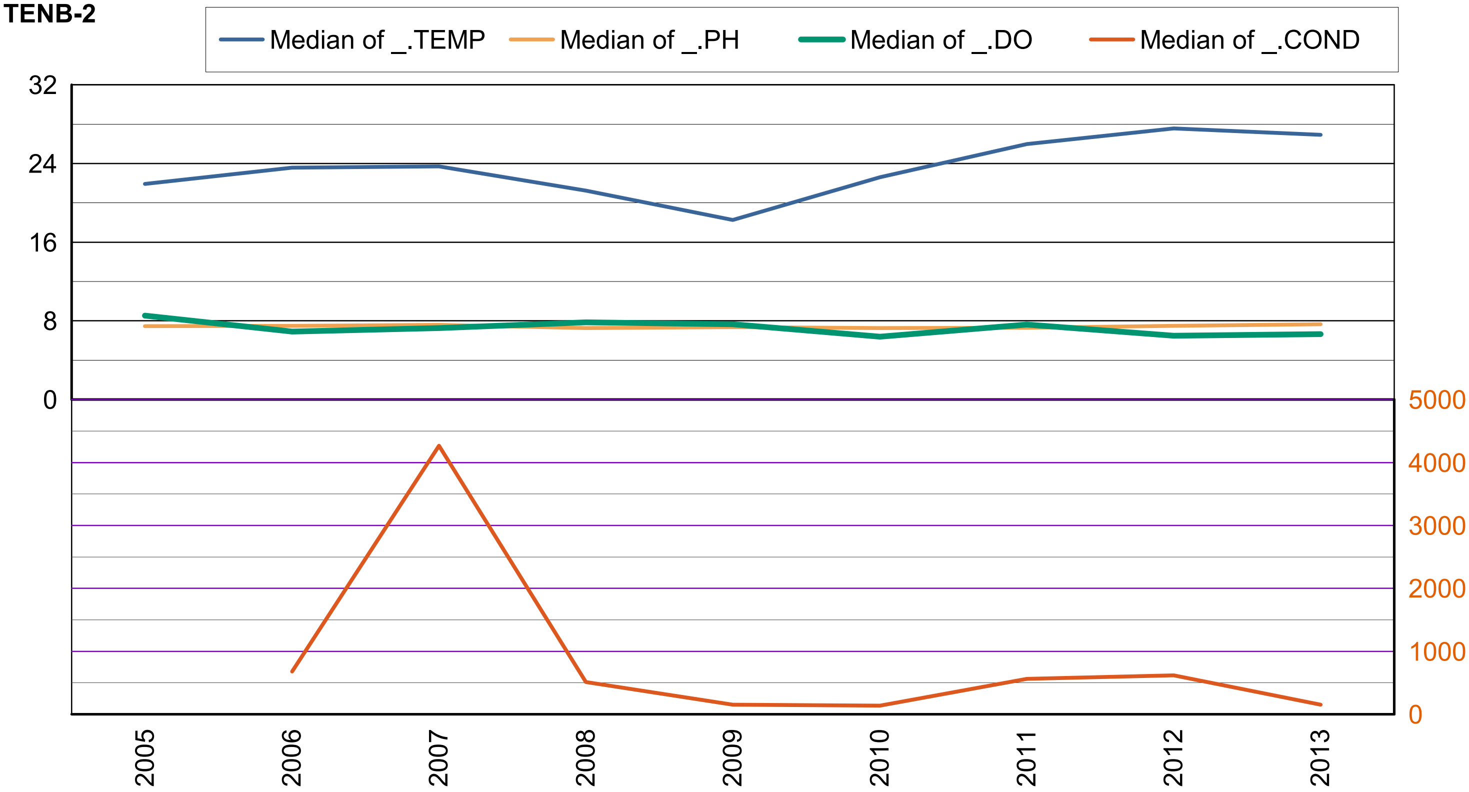


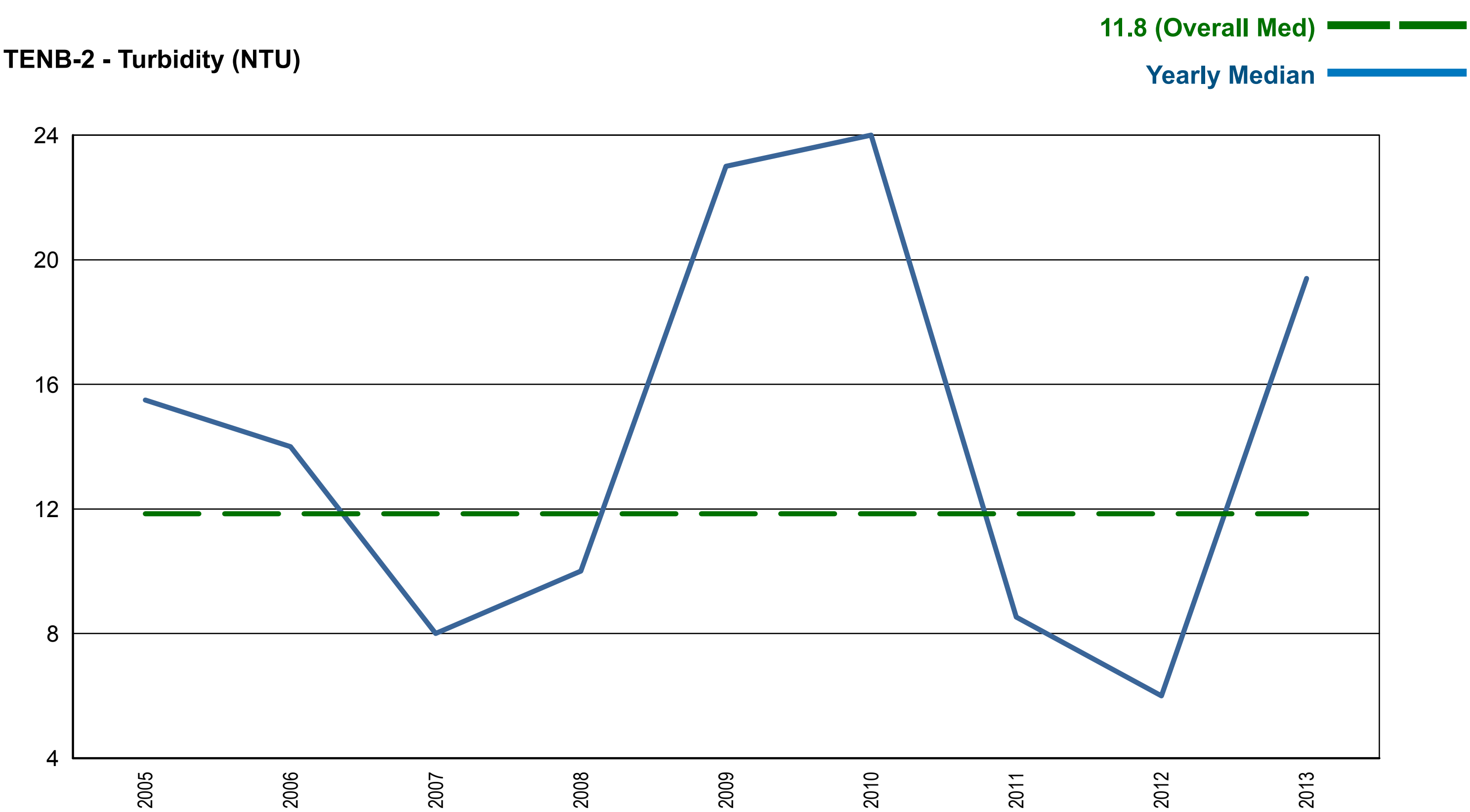


ADEM Ambient Trend Stations - Sampled 1977 - 2014

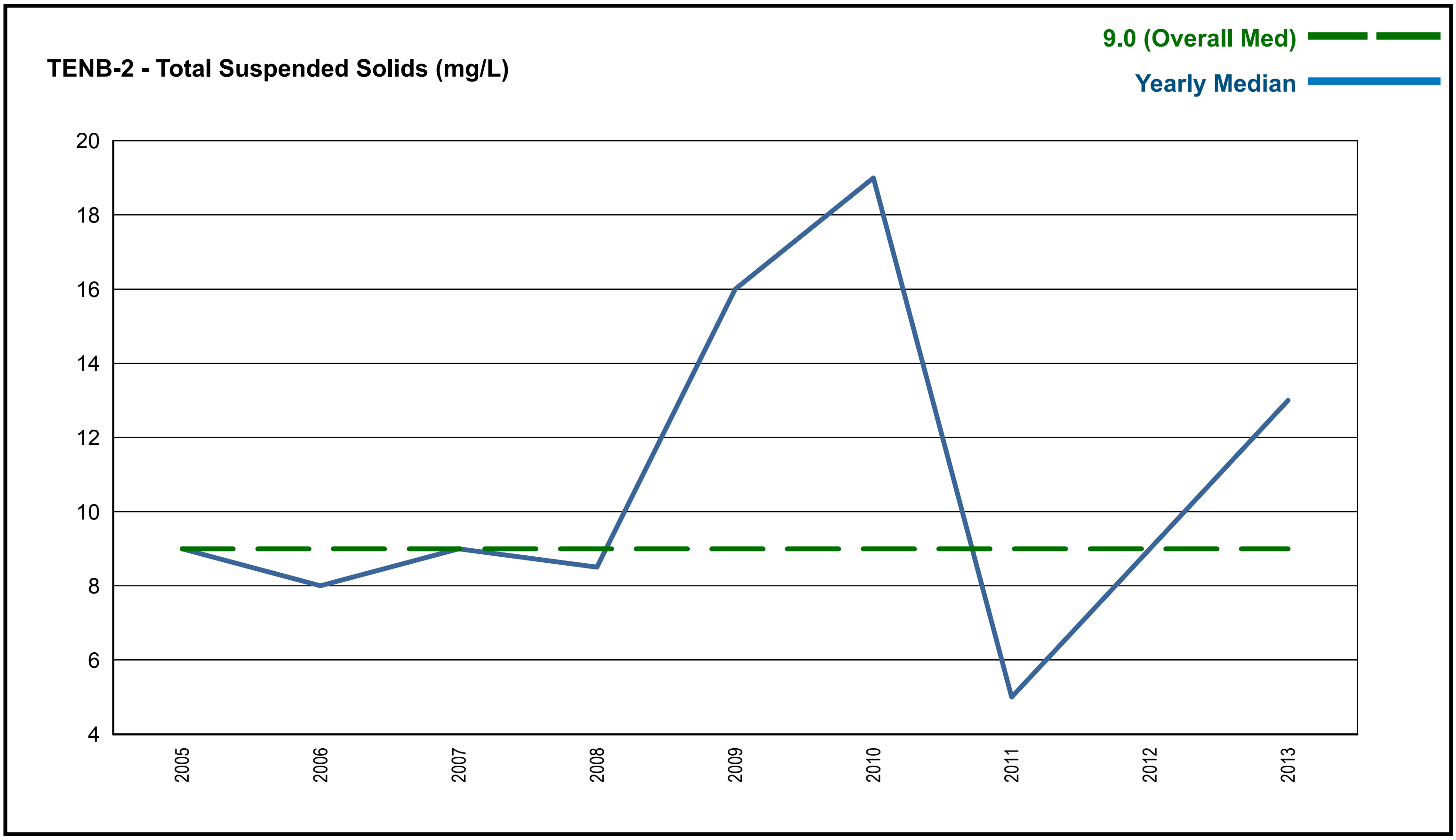
TENB-2

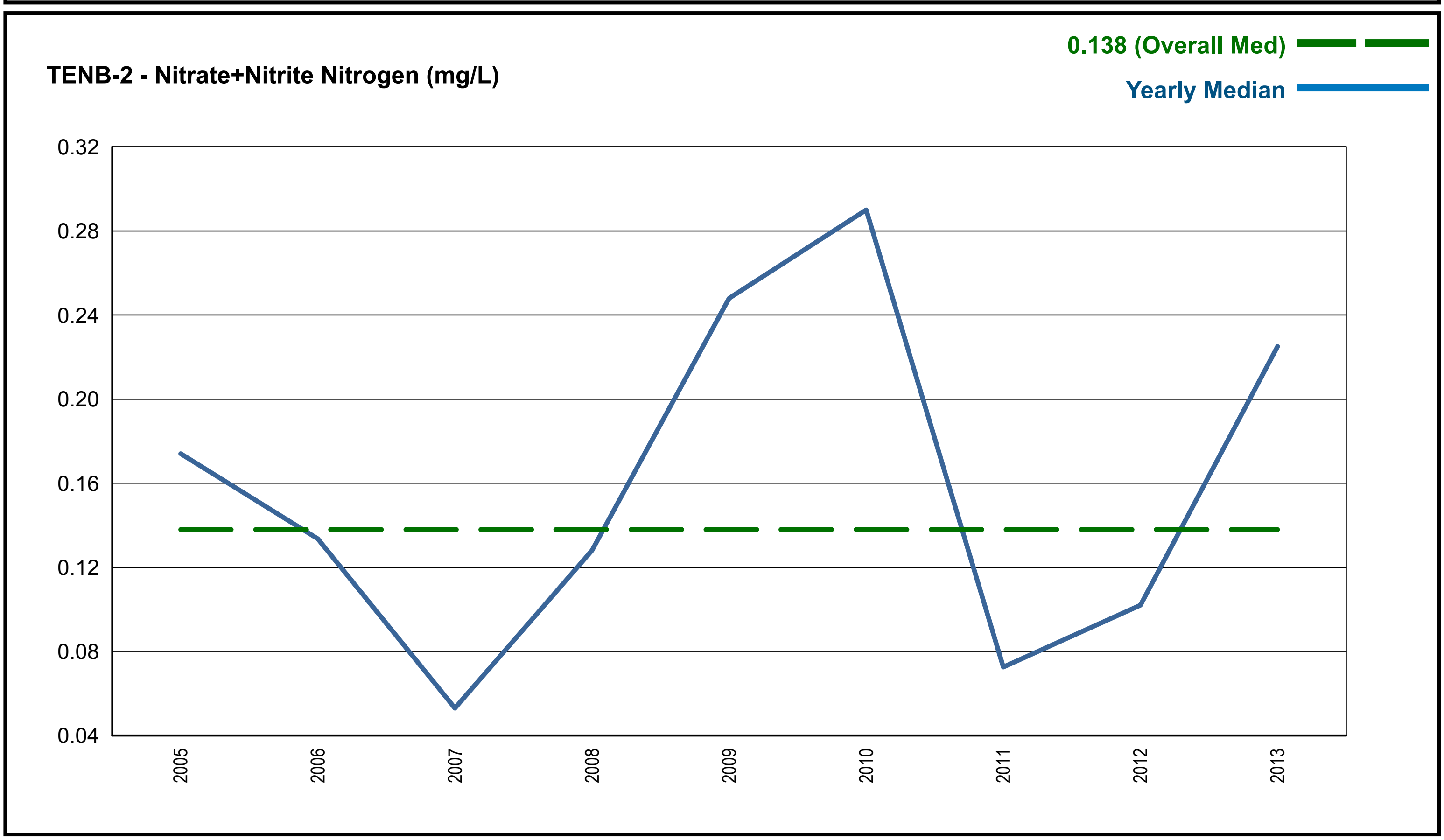


TENB-2 - Turbidity (NTU)



ADEM Ambient Trend Stations - Sampled 1977 - 2014





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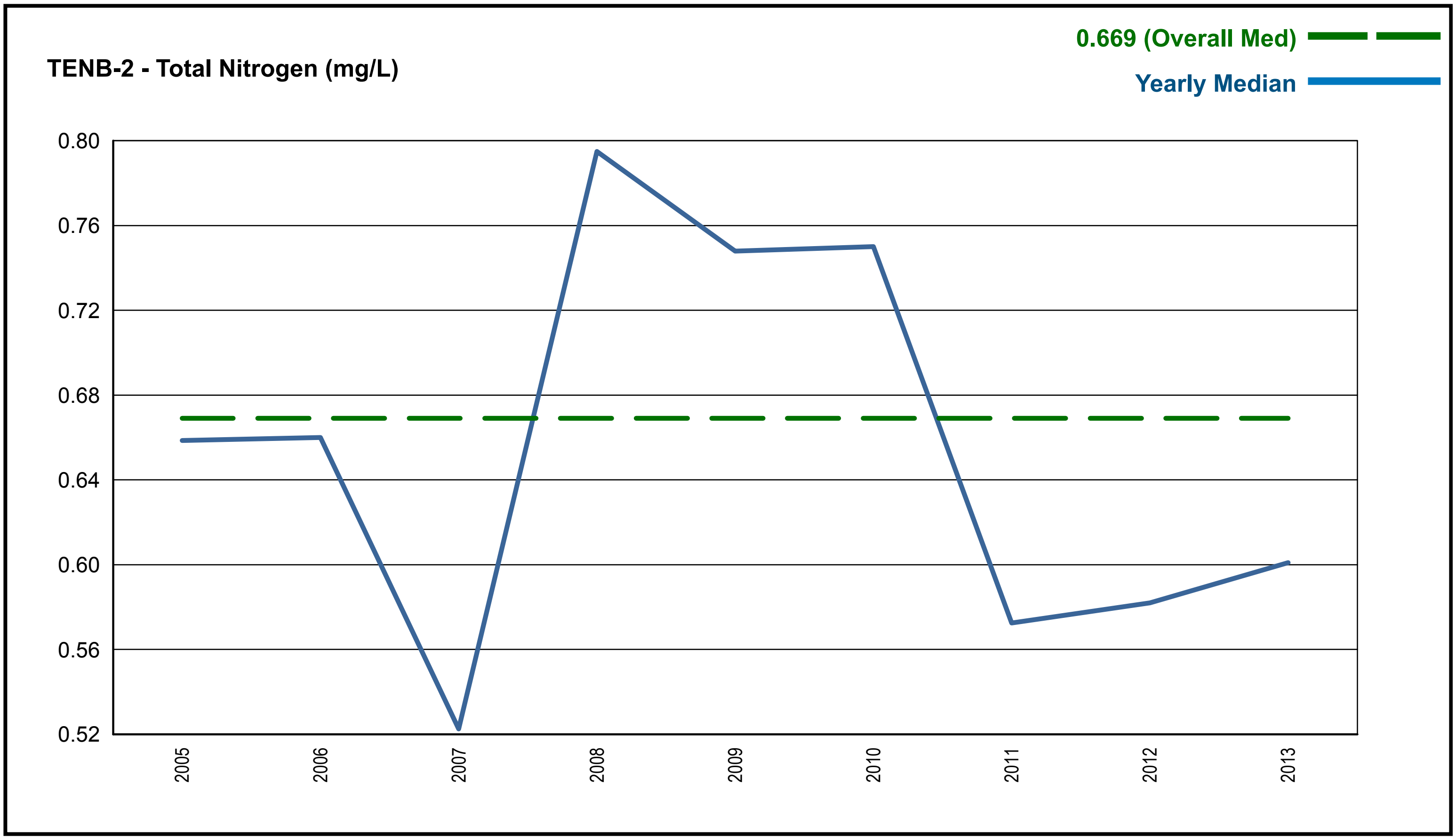
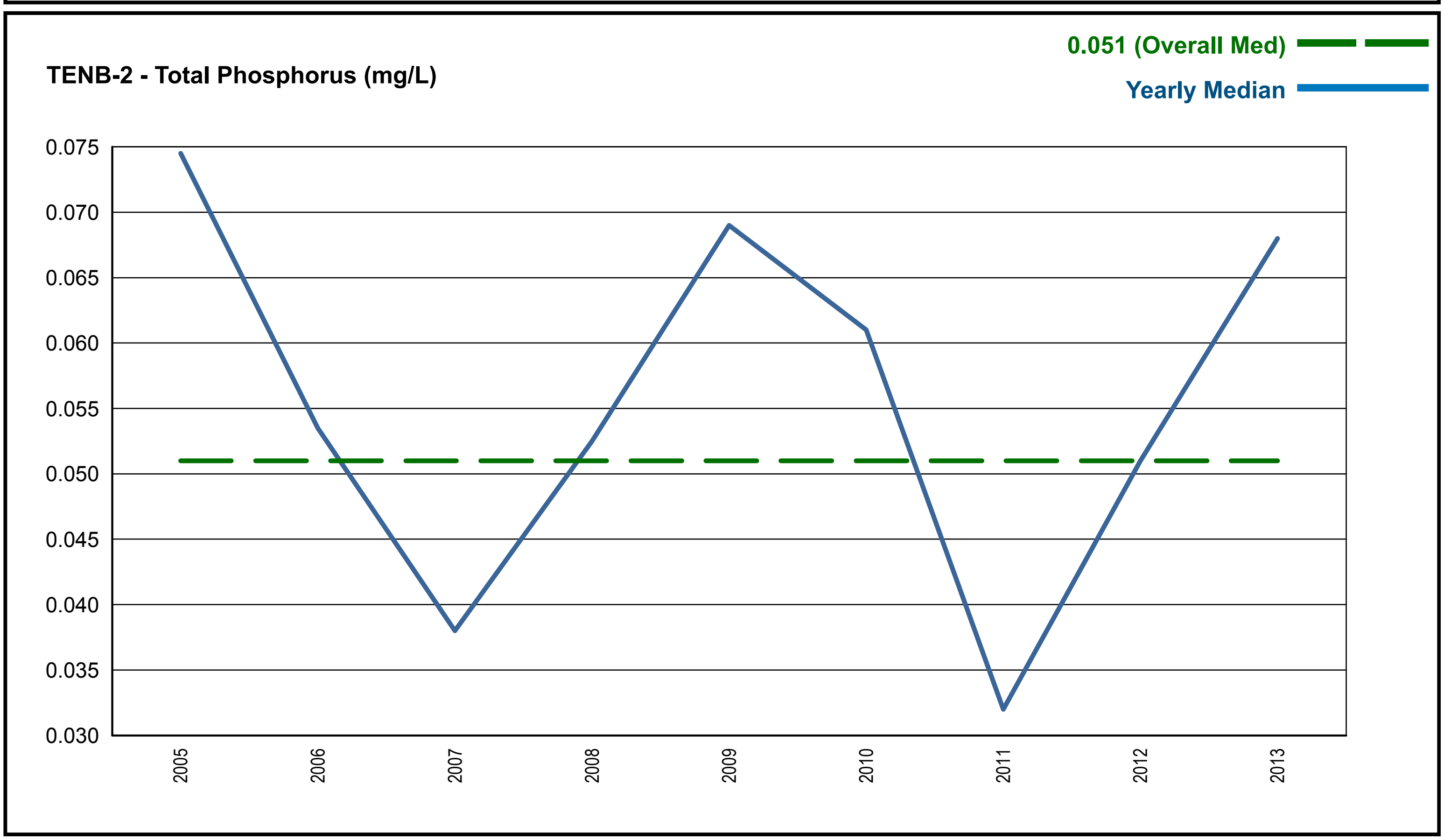
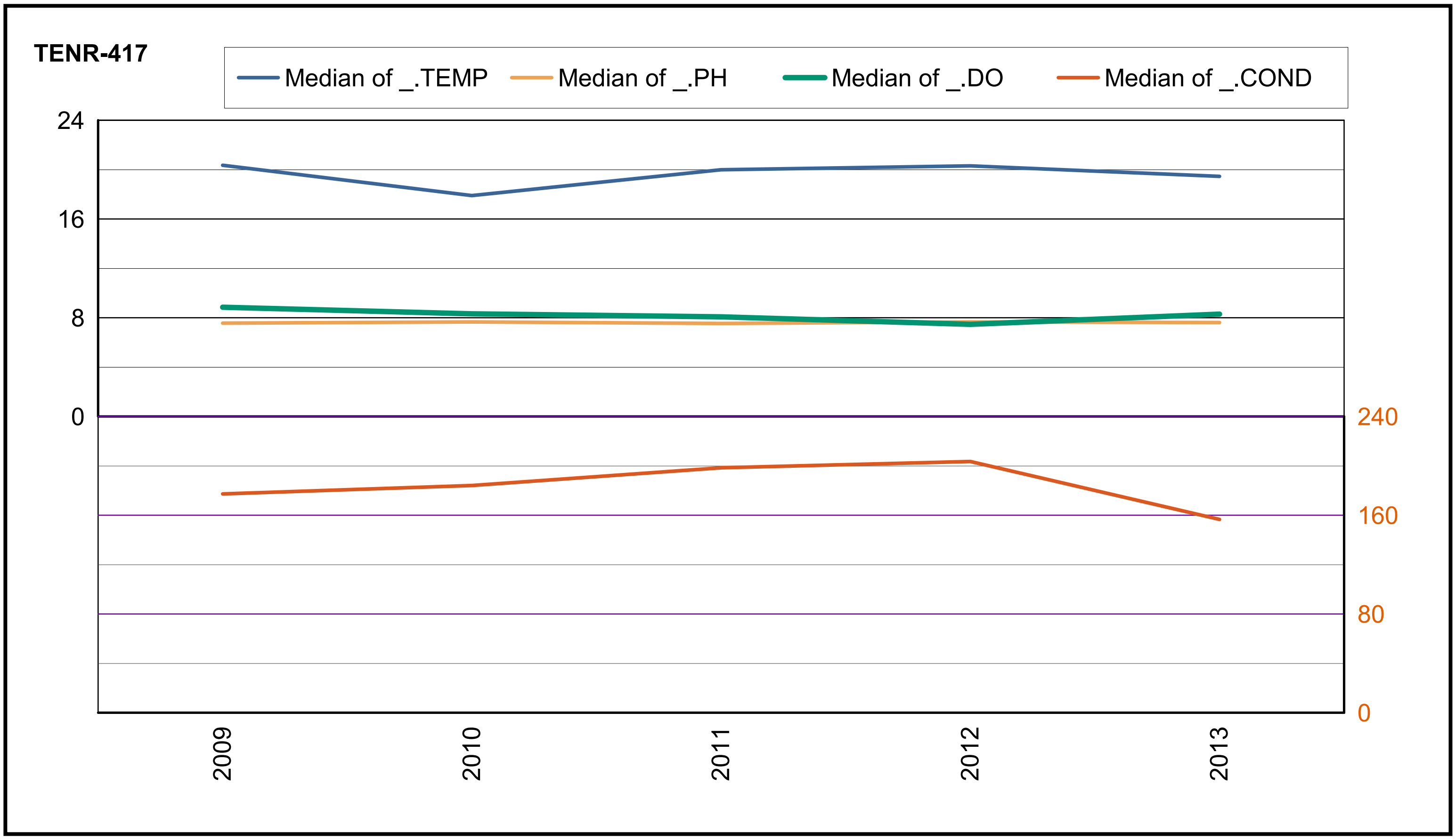
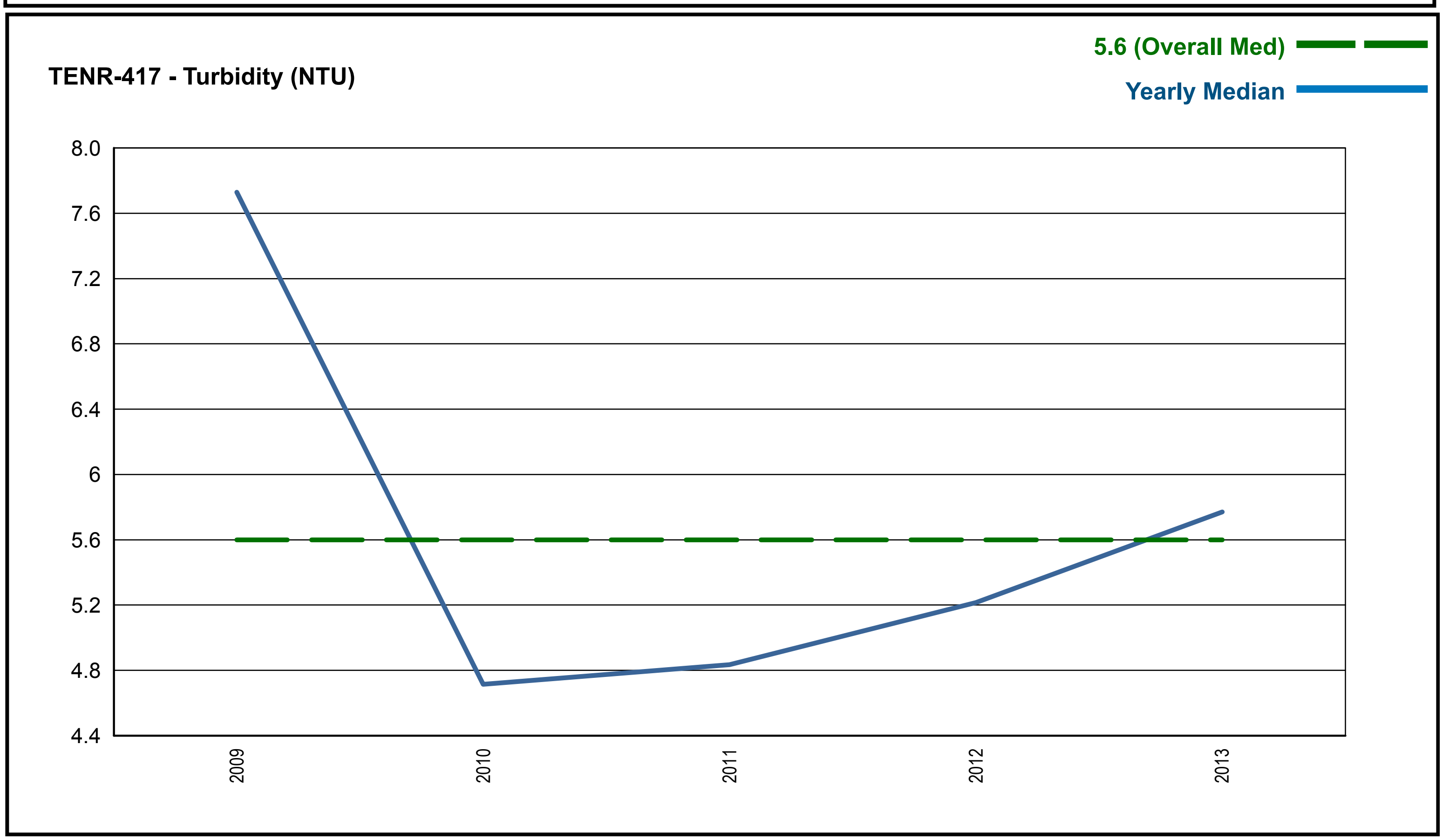


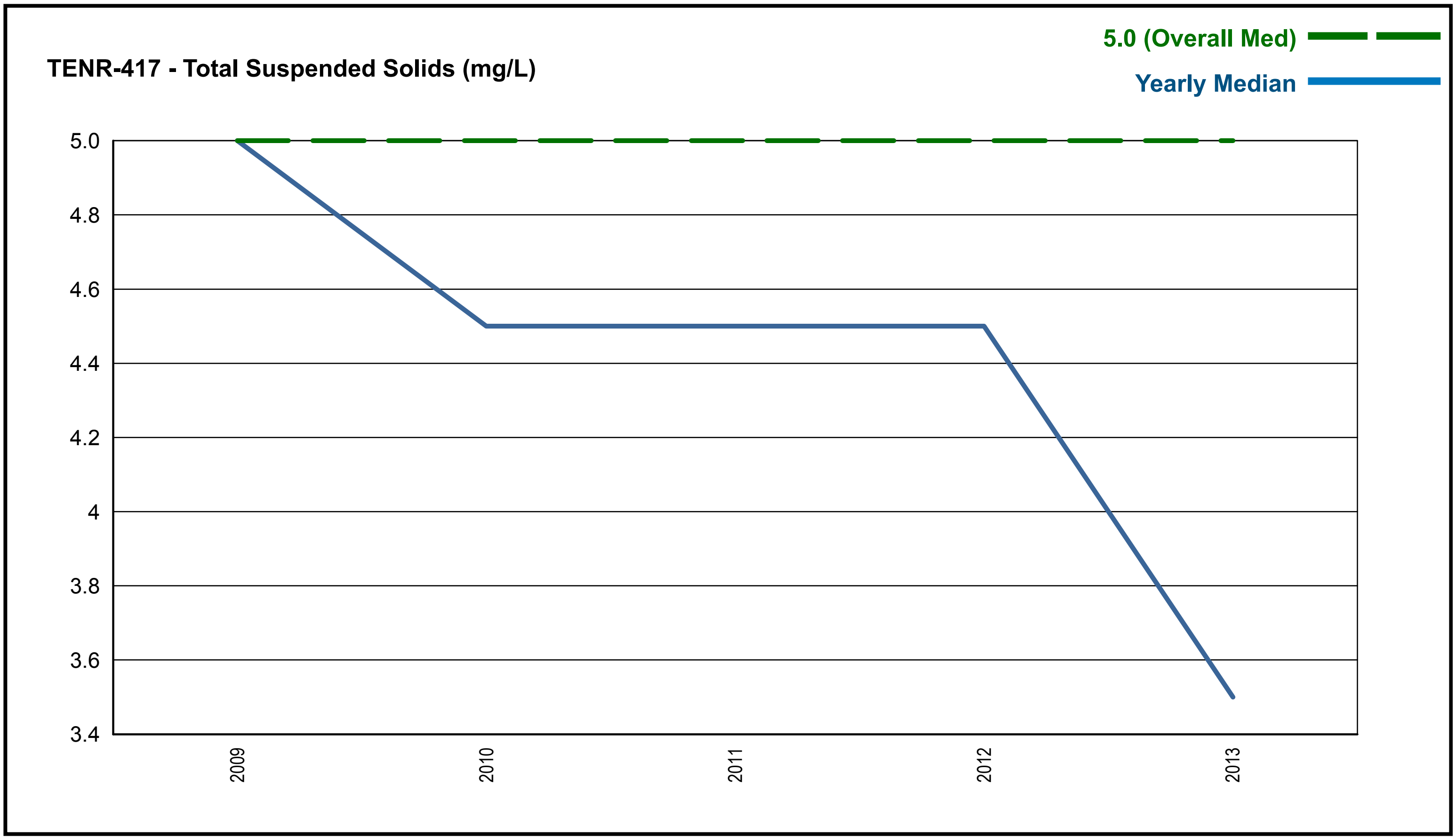


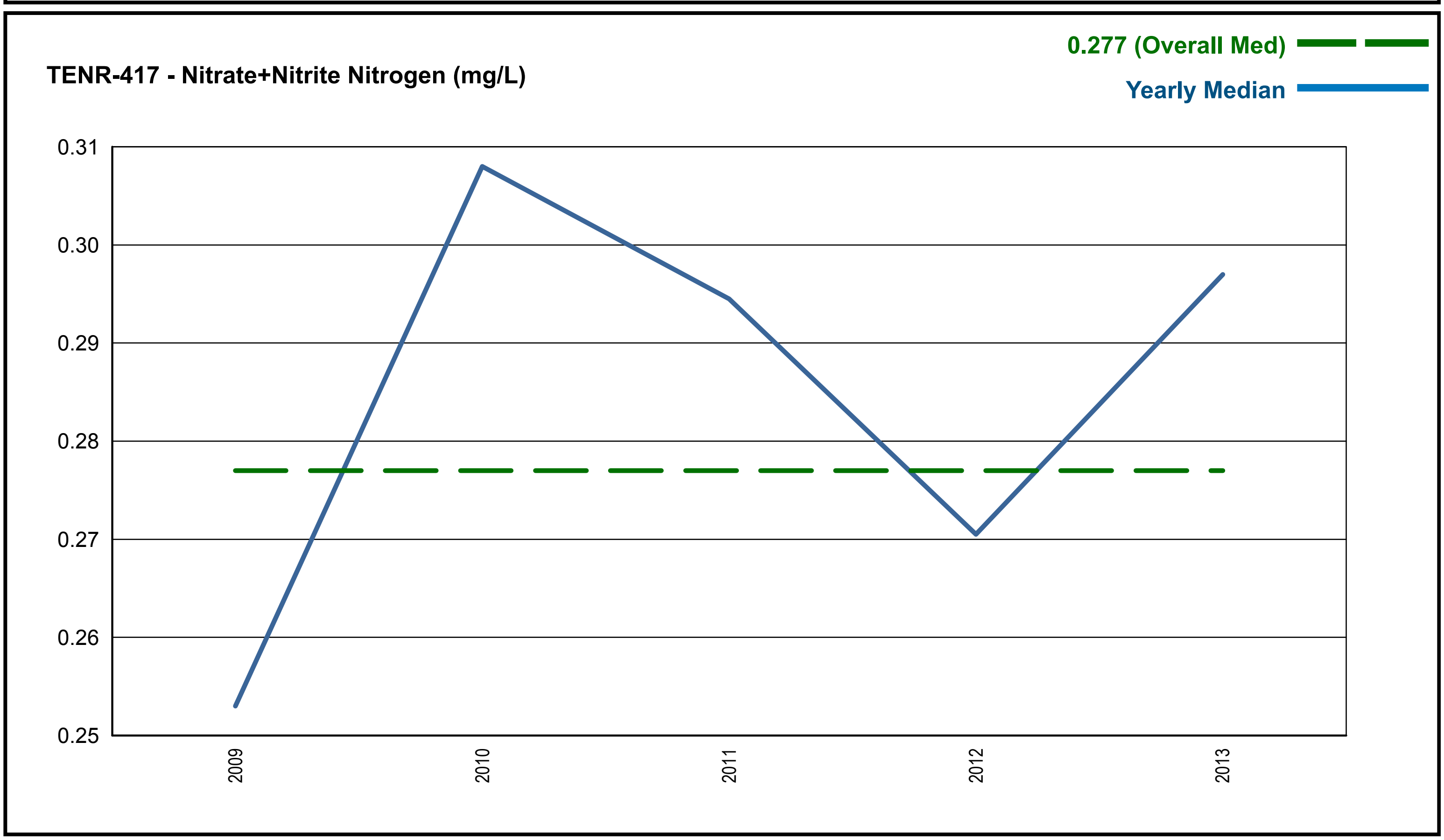
ADEM Ambient Trend Stations - Sampled 1977 - 2014





ADEM Ambient Trend Stations - Sampled 1977 - 2014





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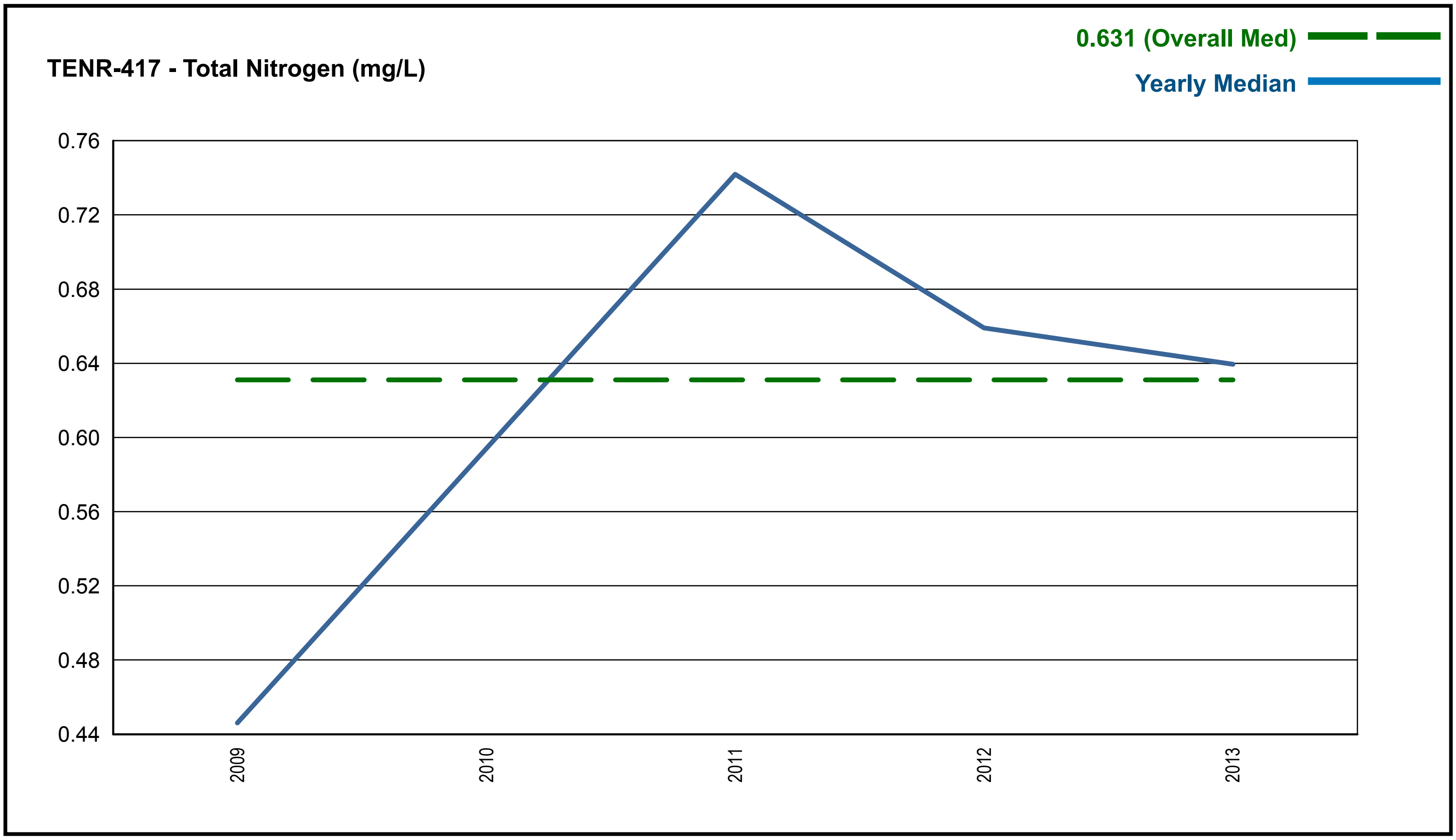

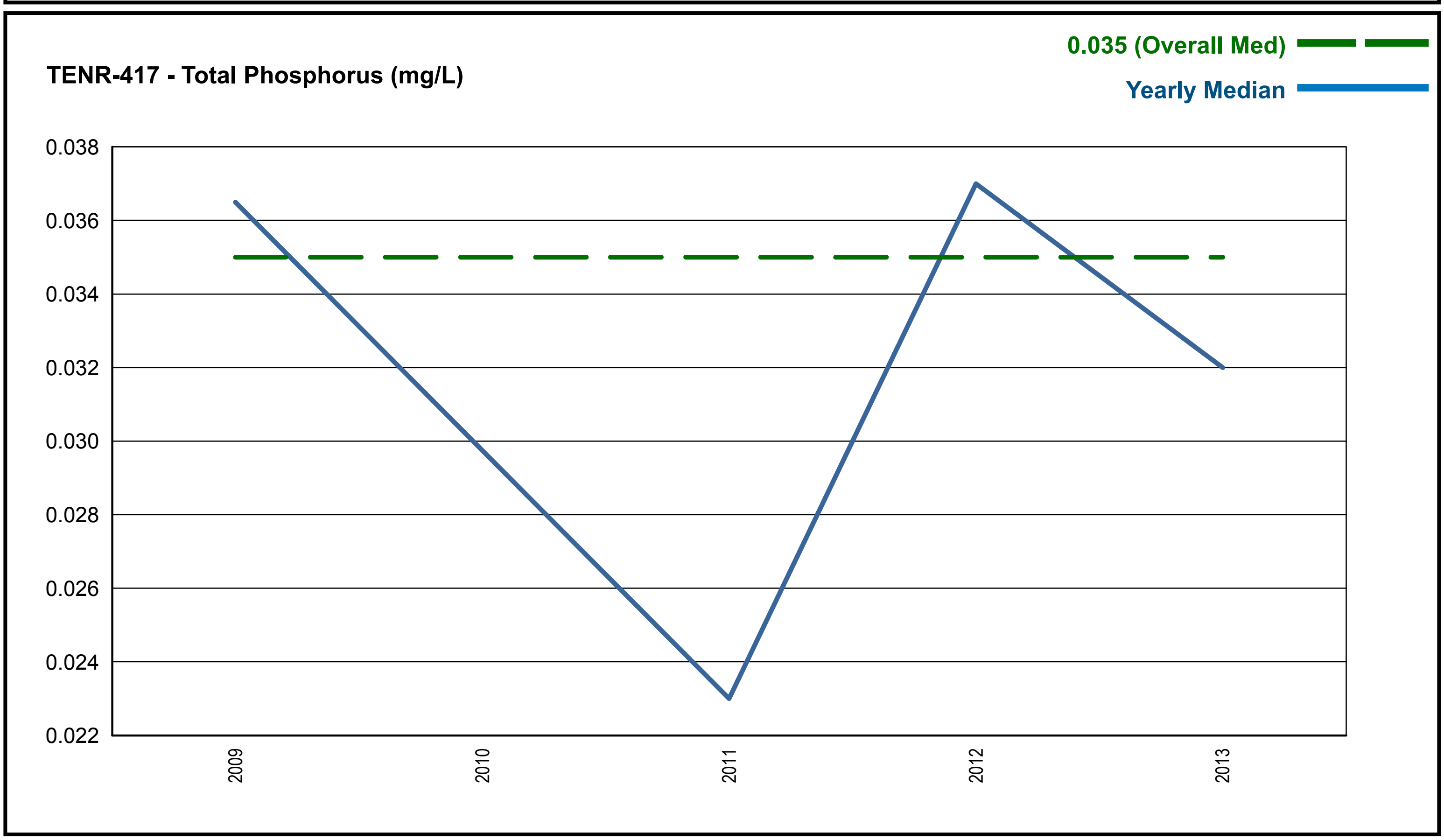

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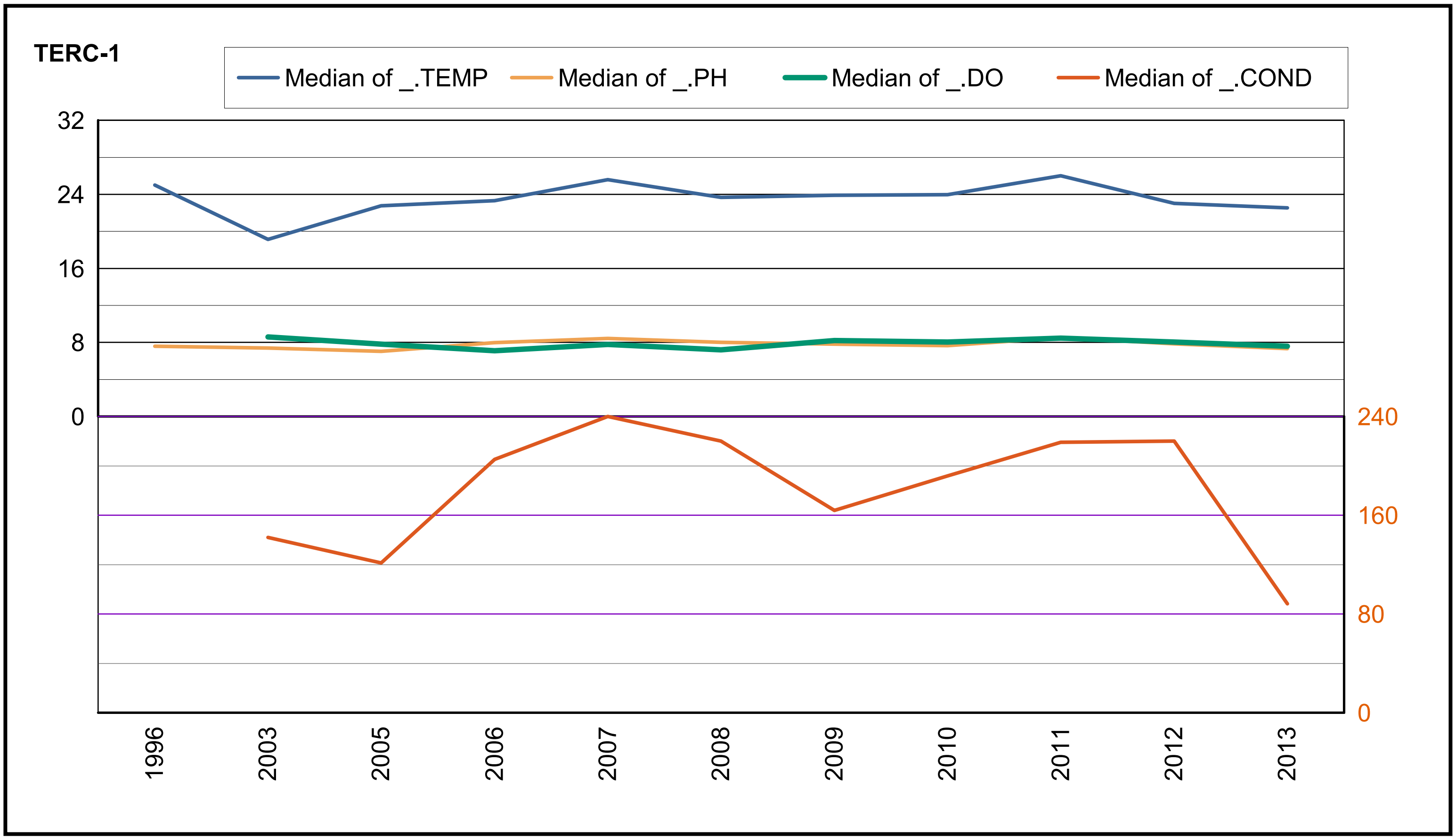

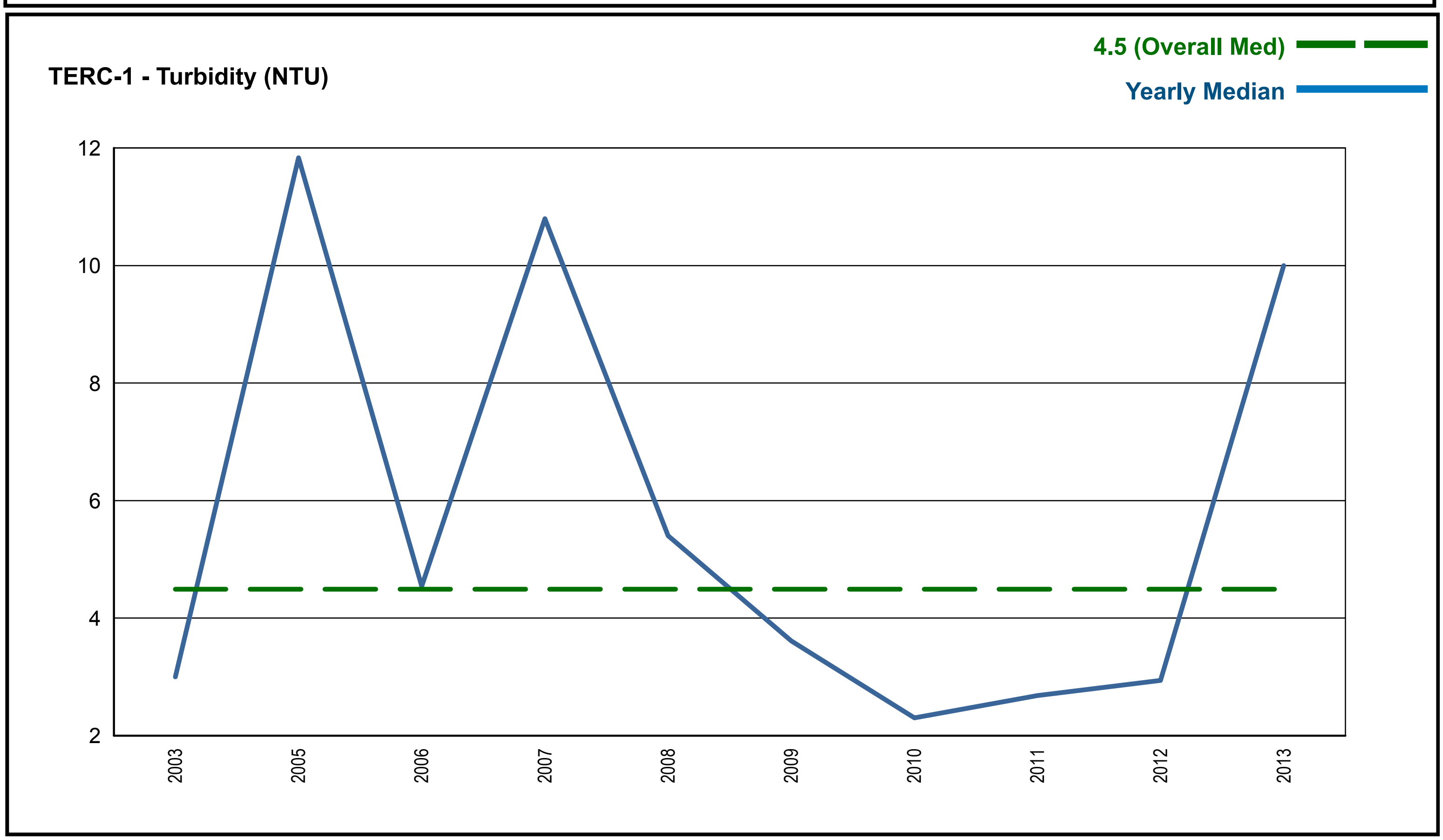

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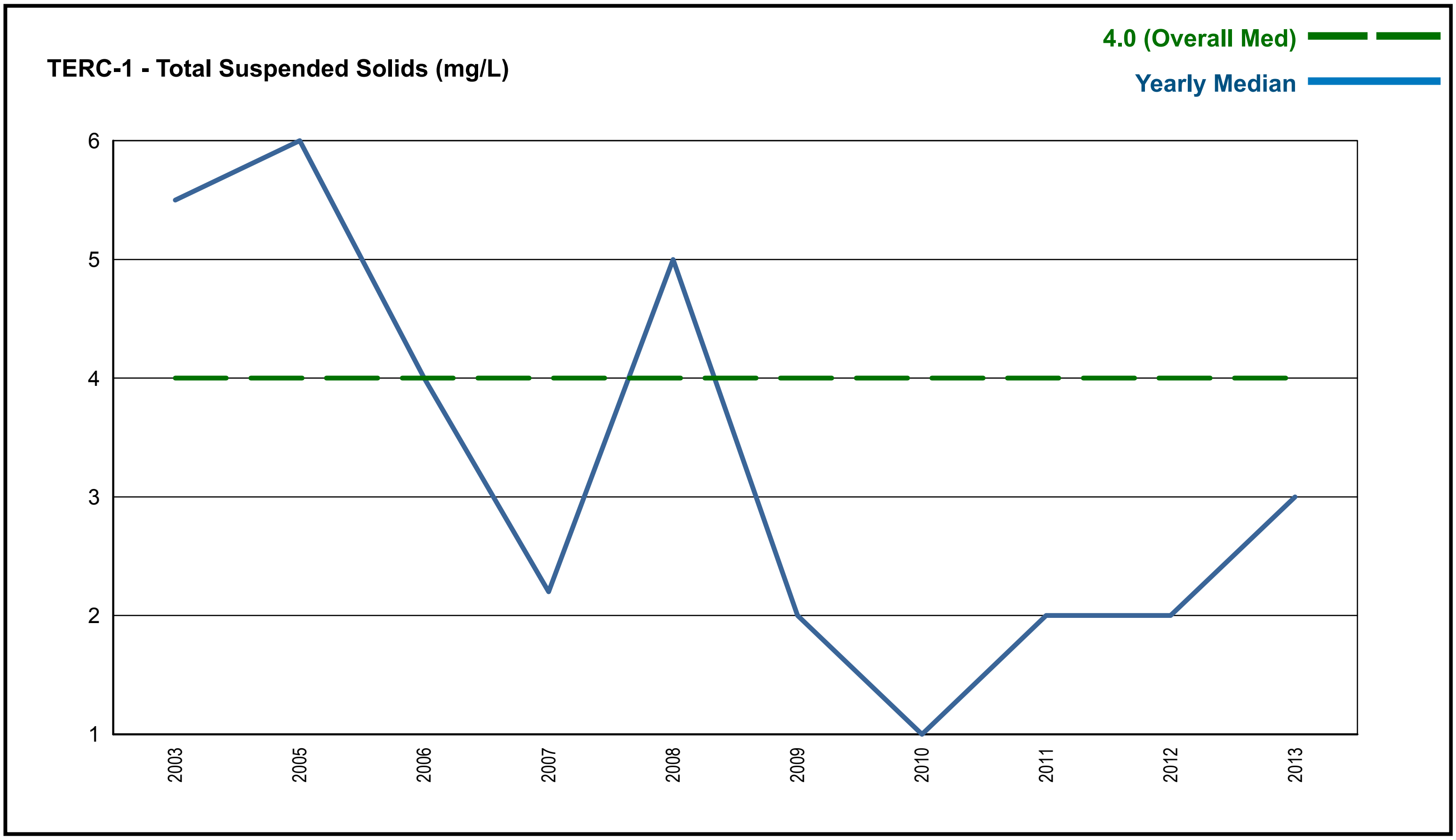

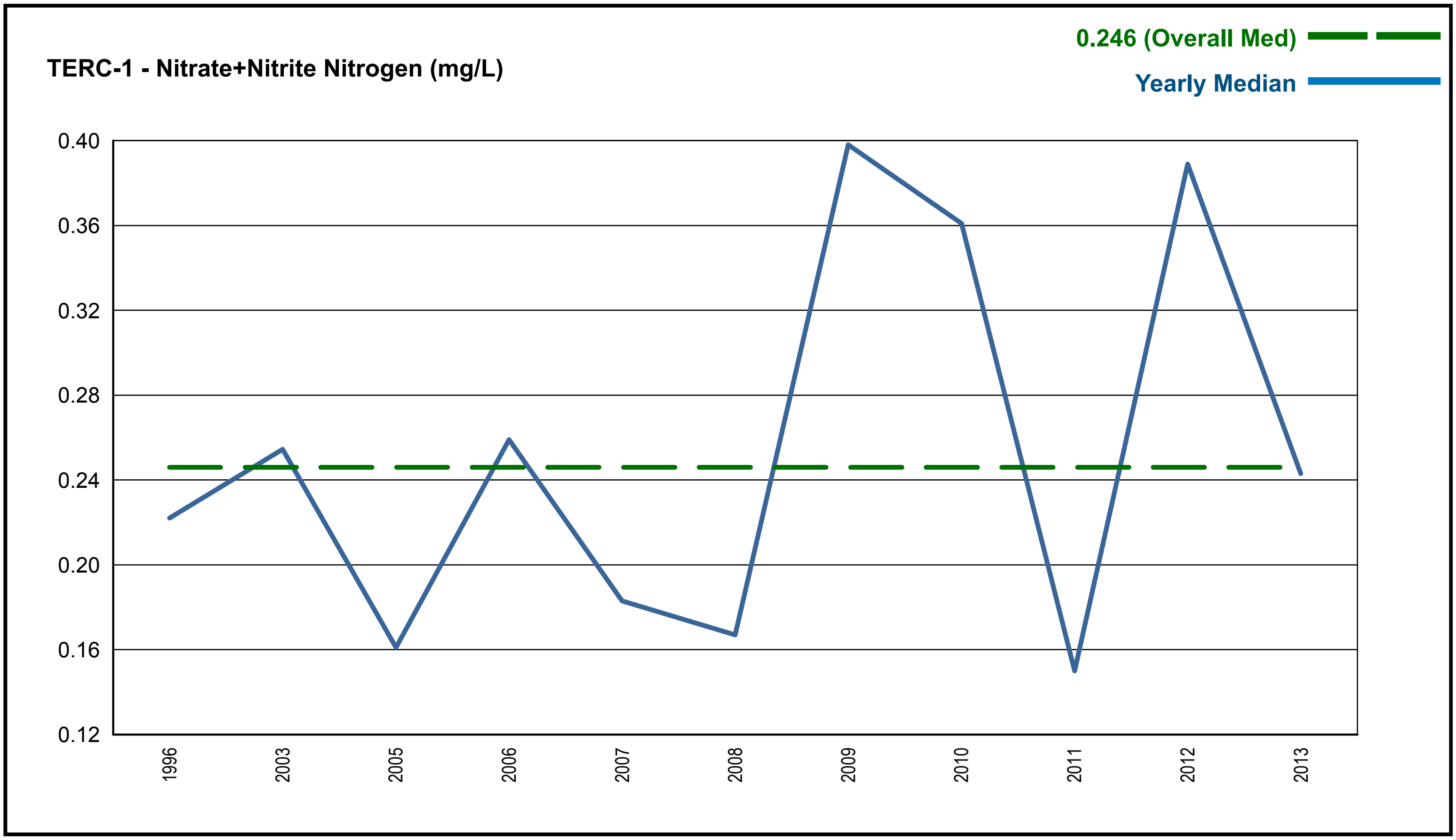

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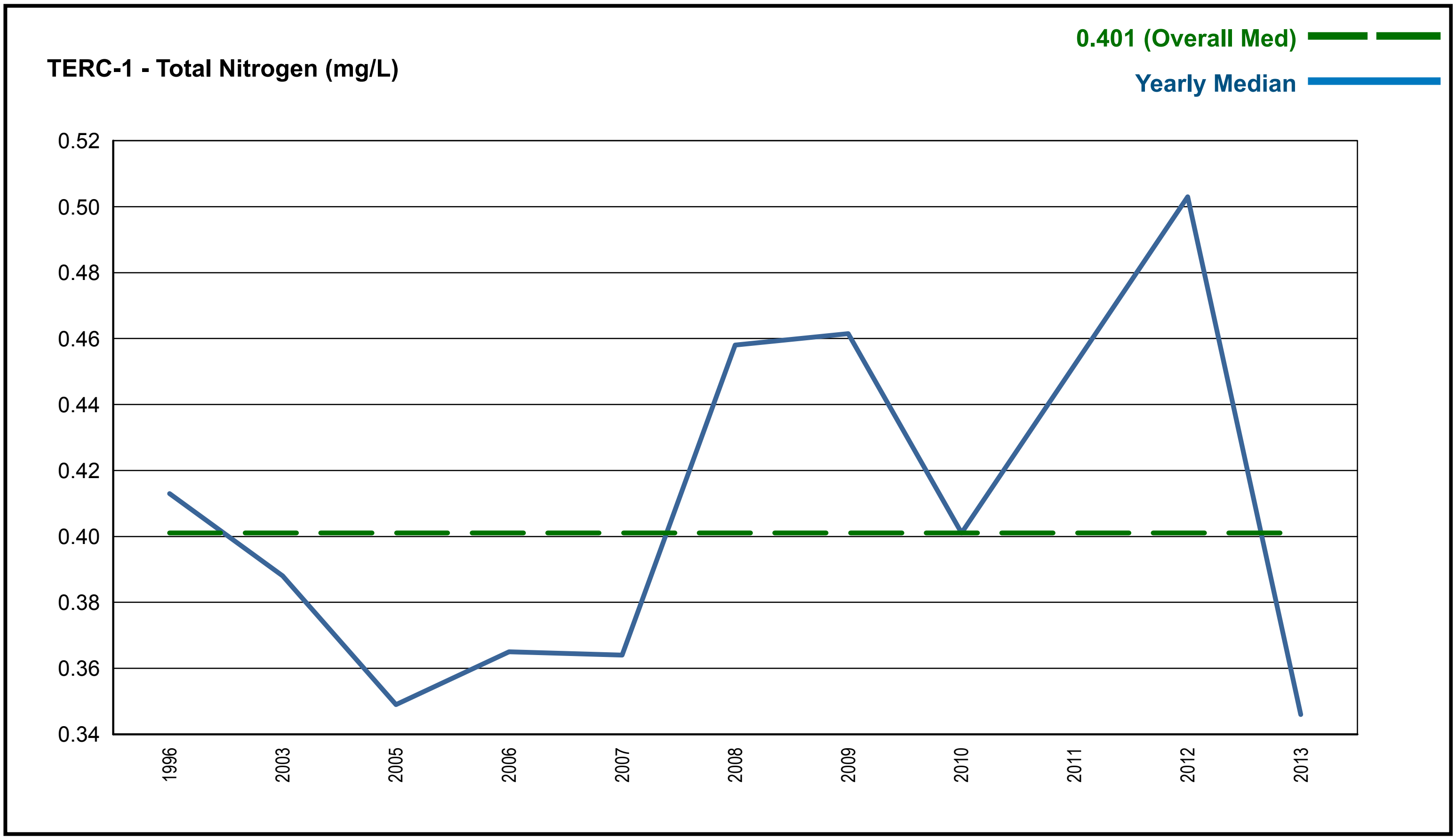

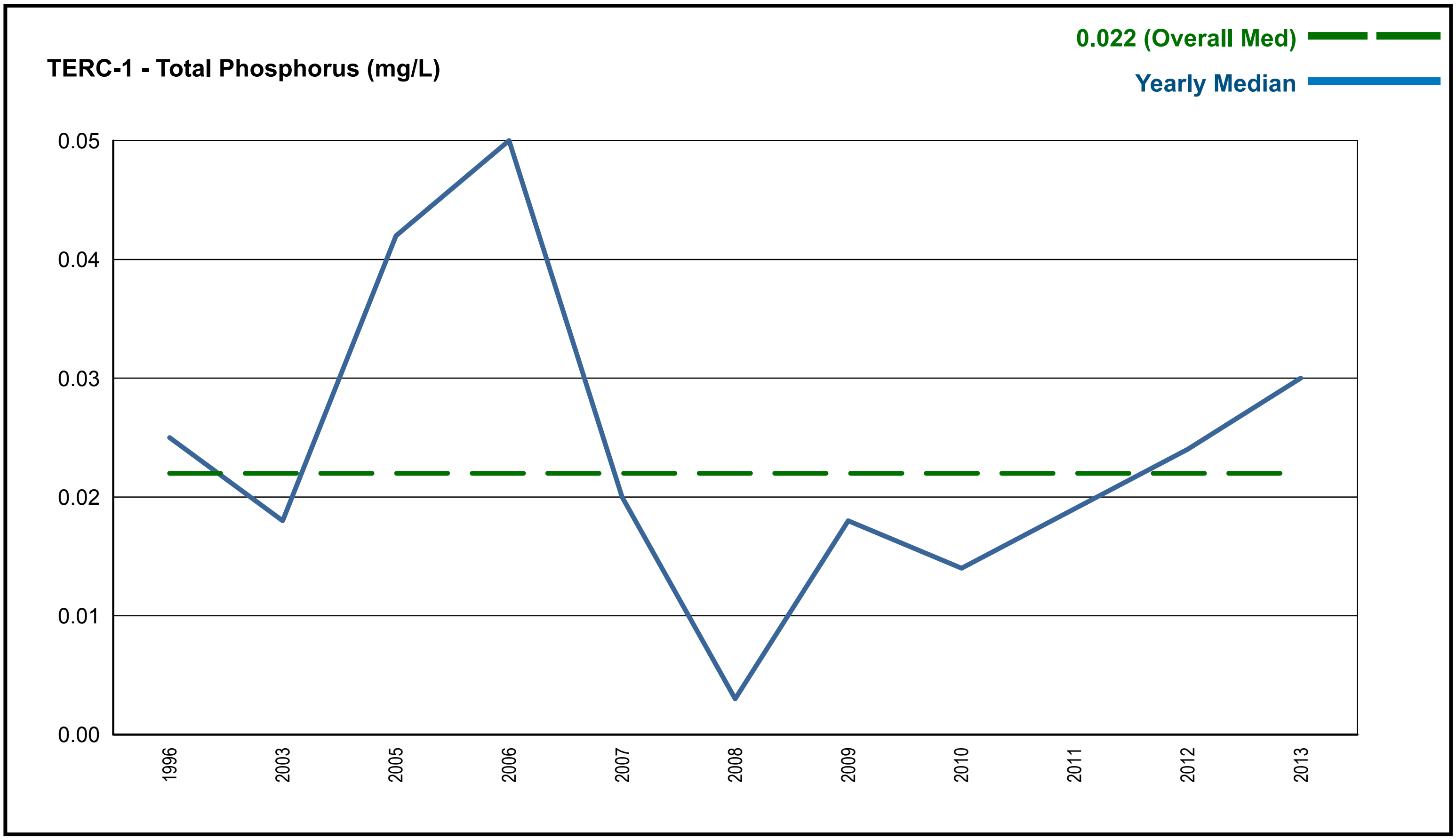

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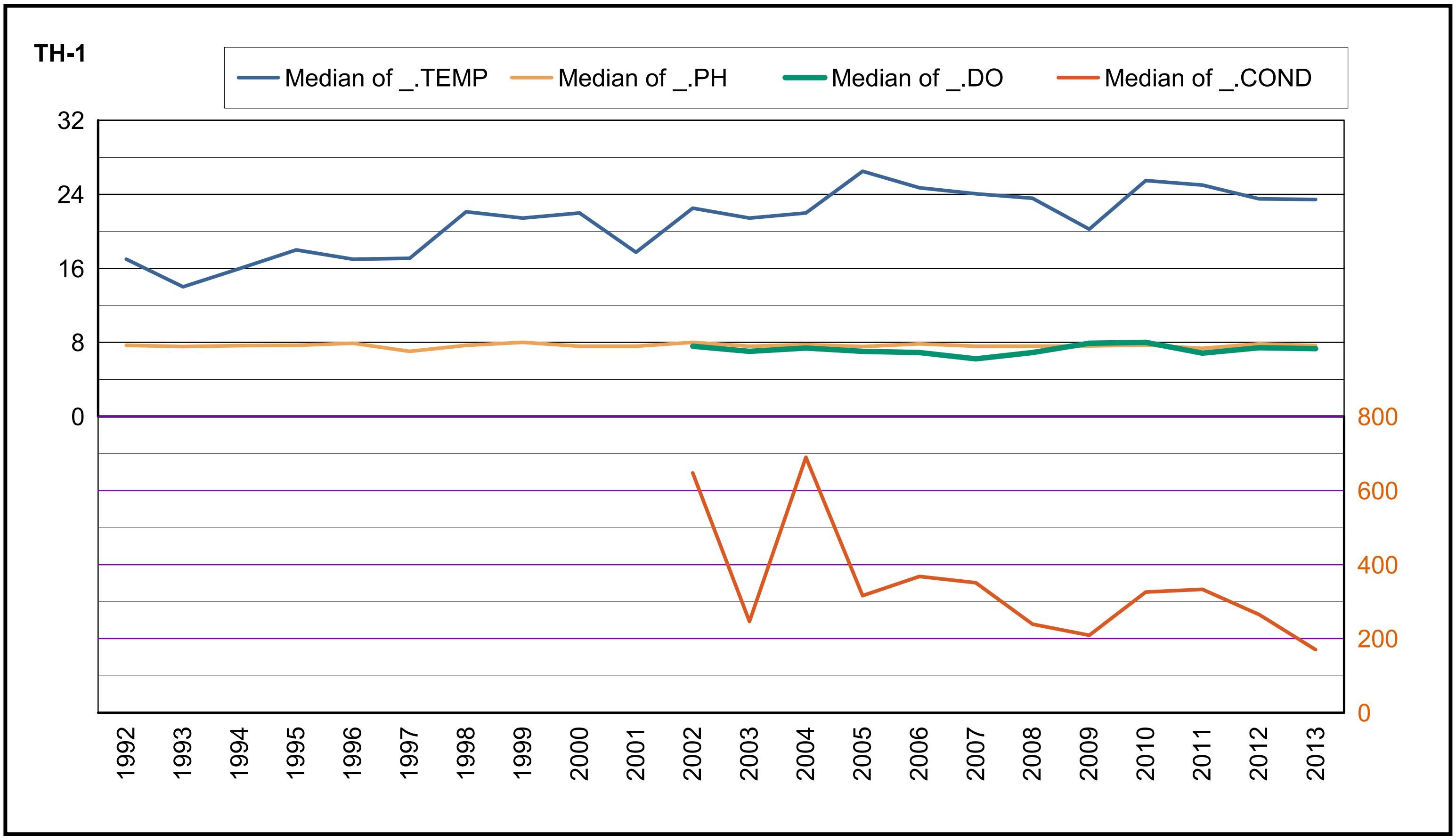

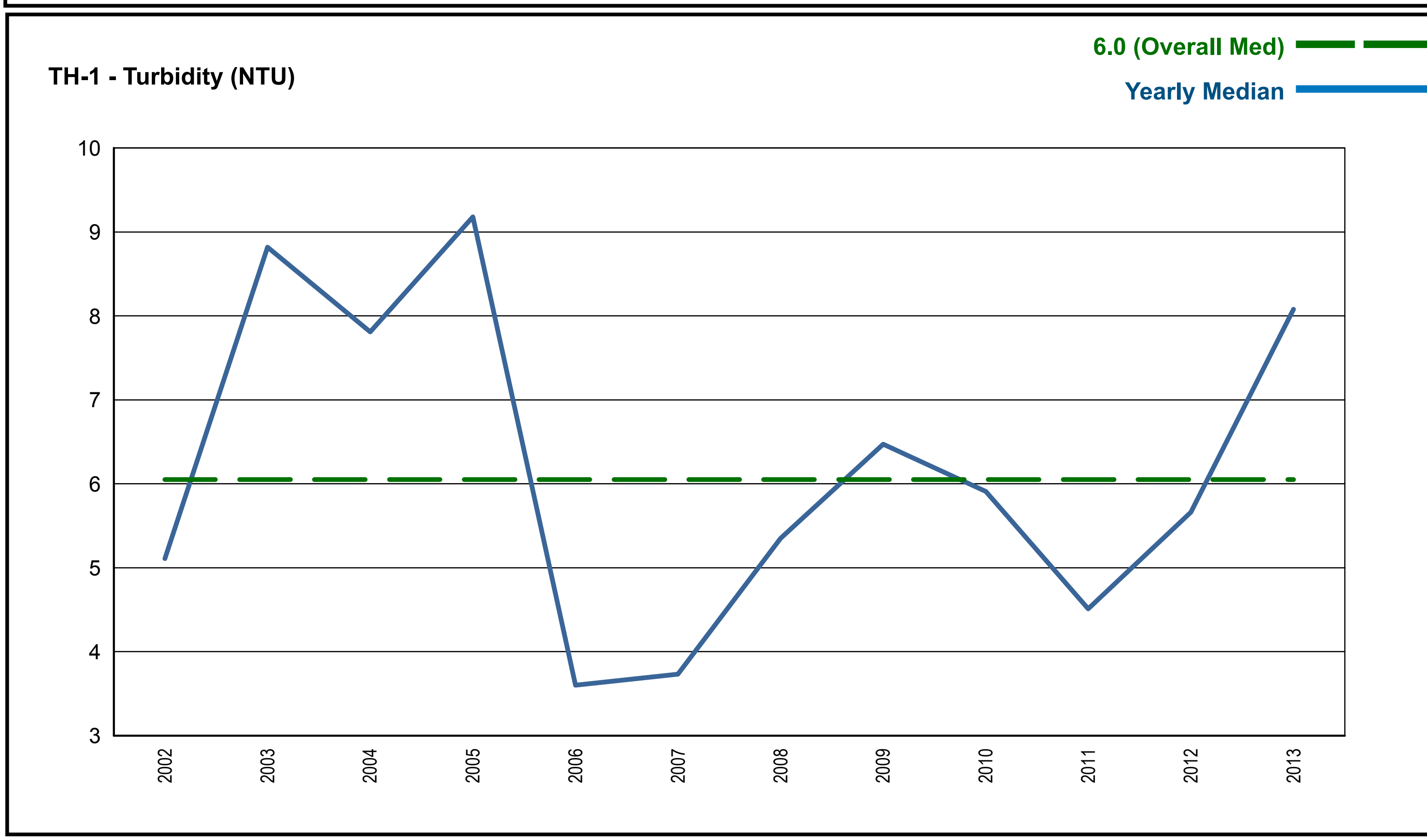

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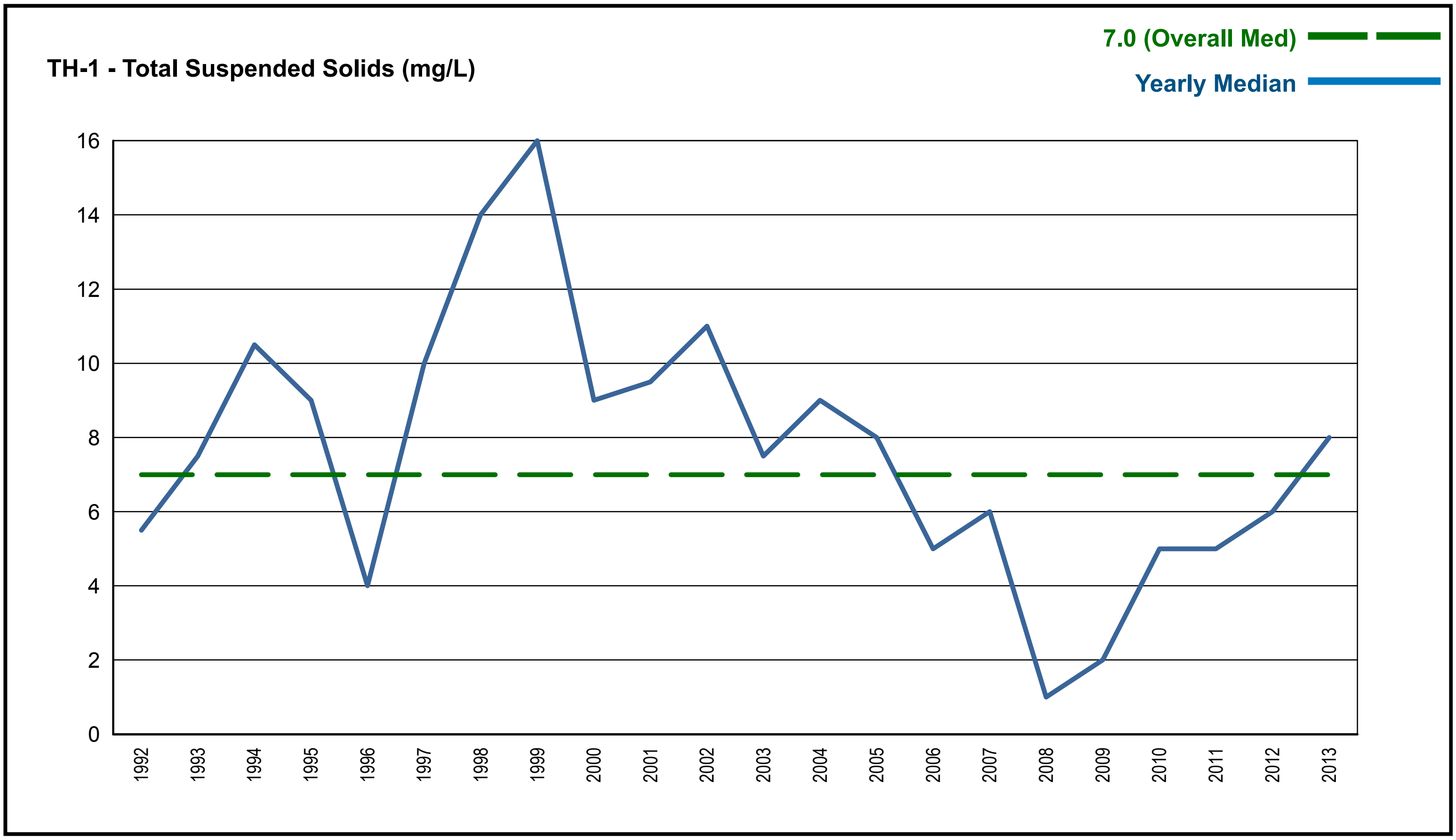

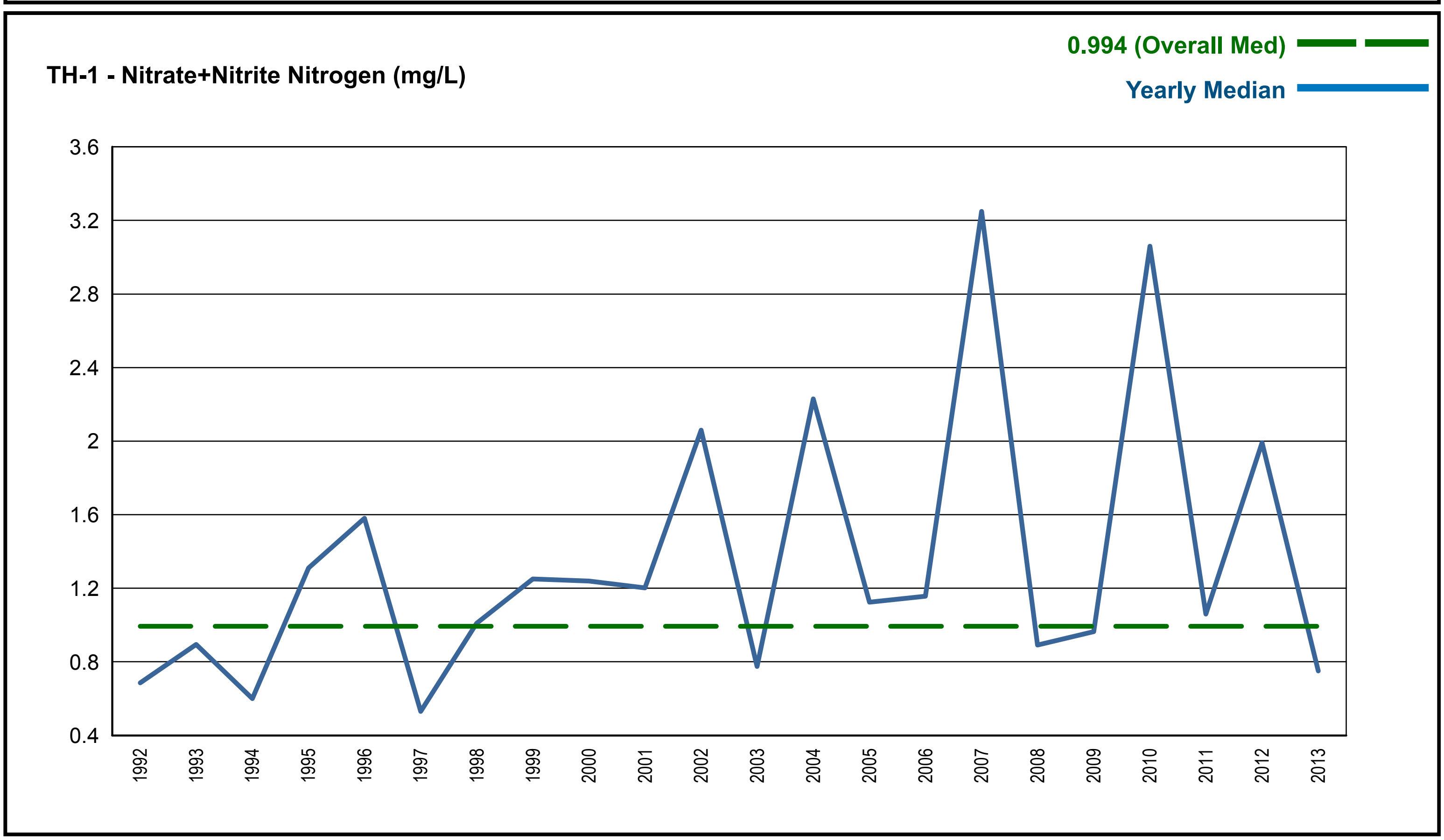

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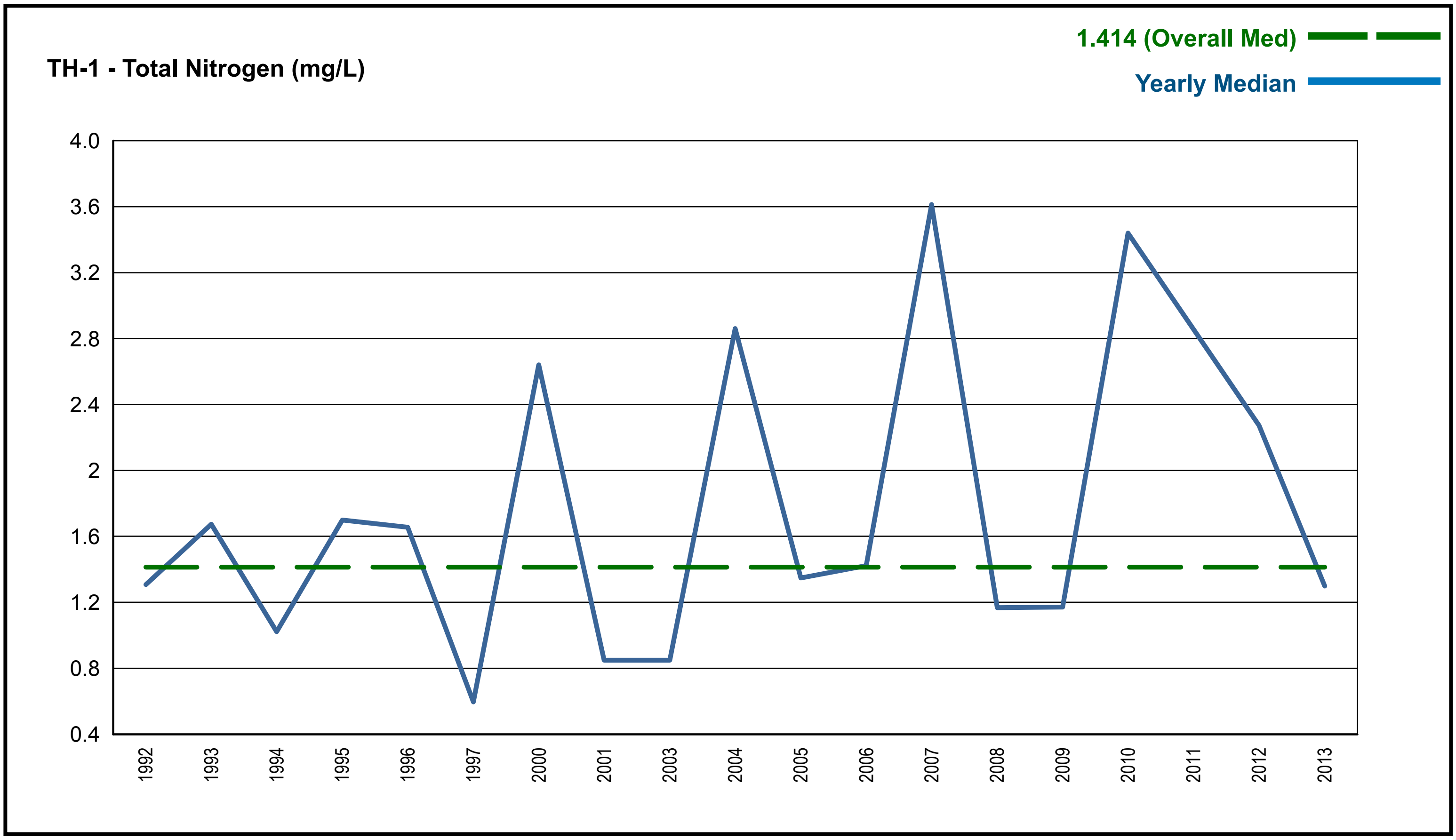

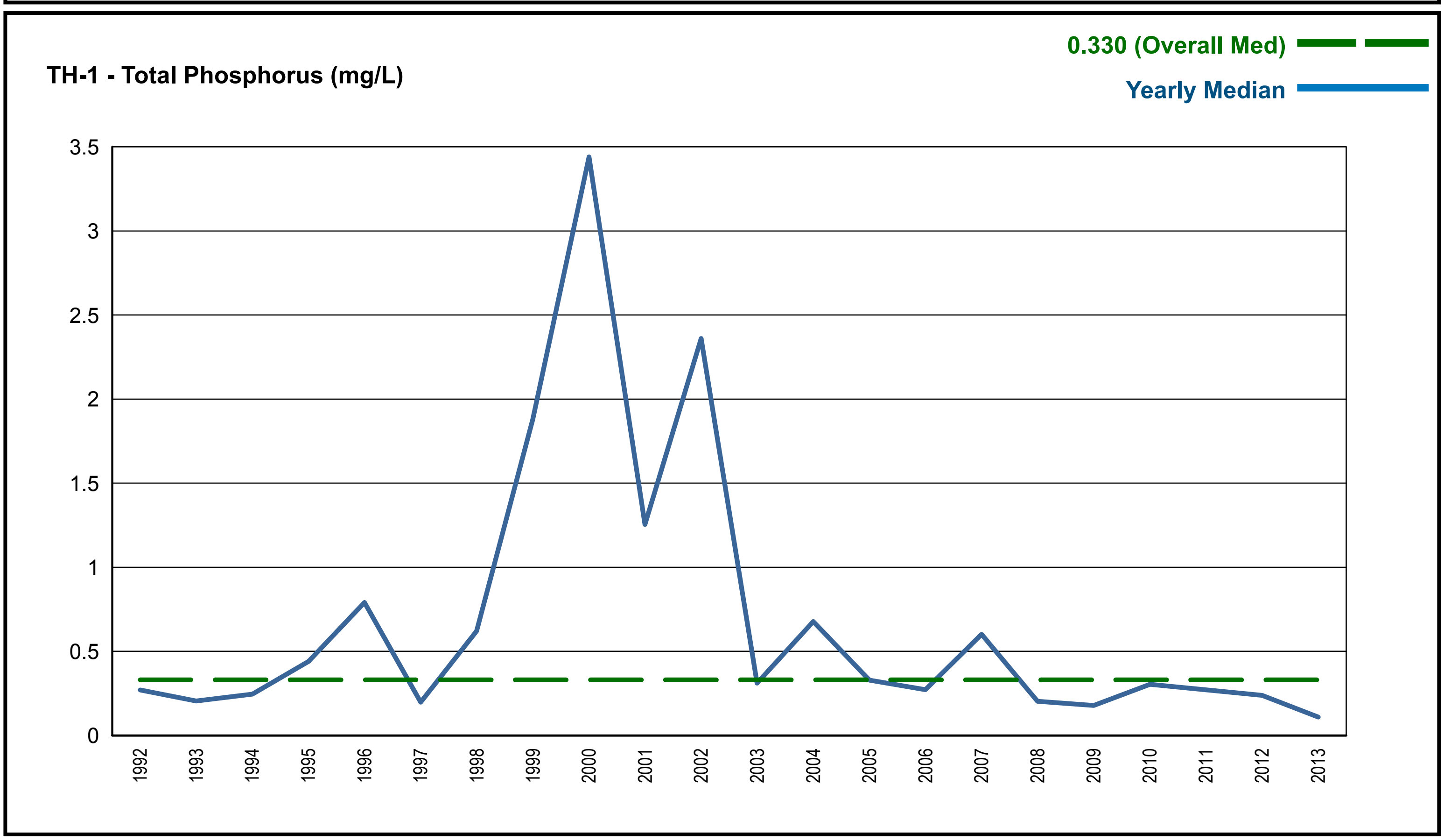

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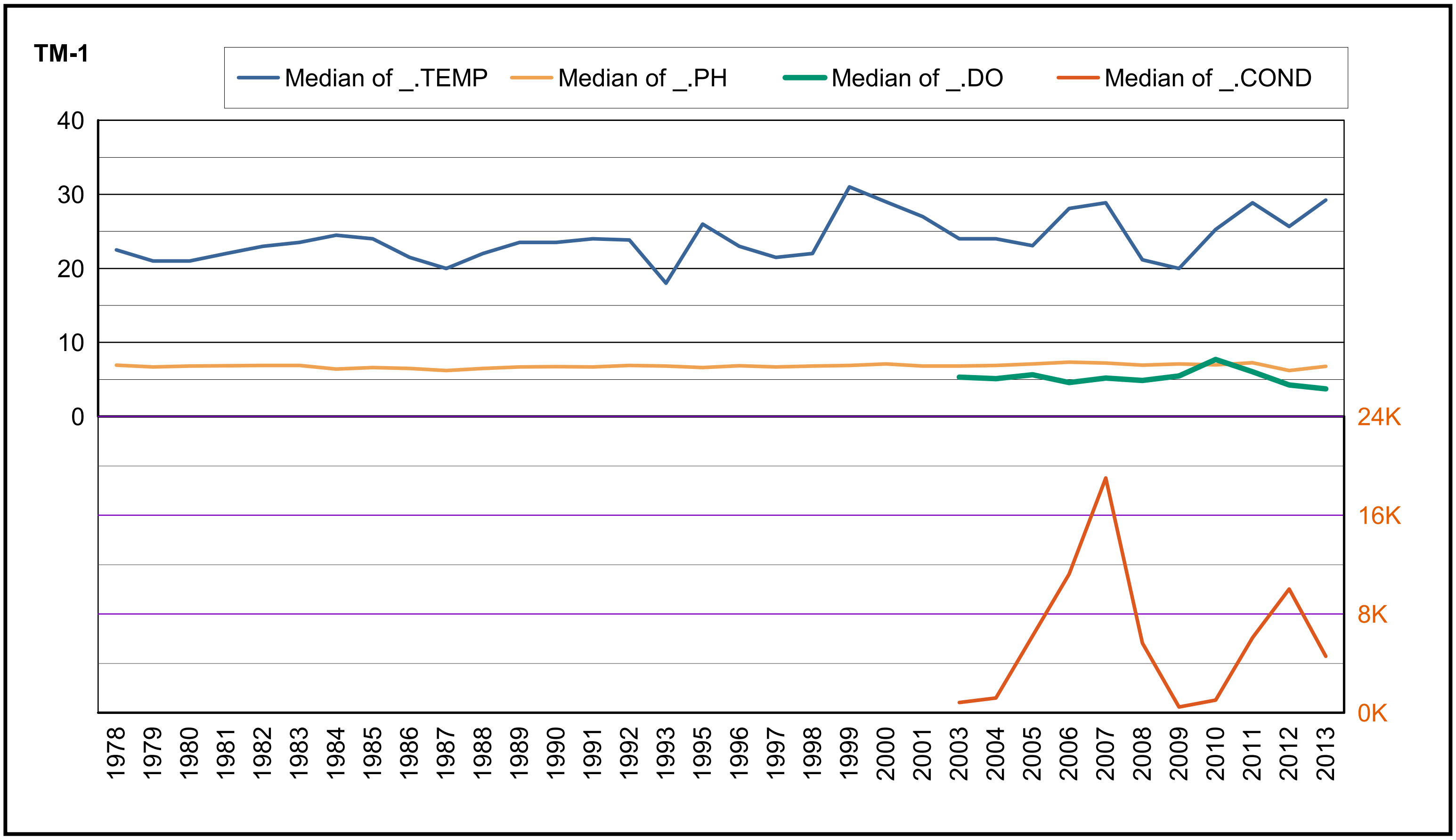

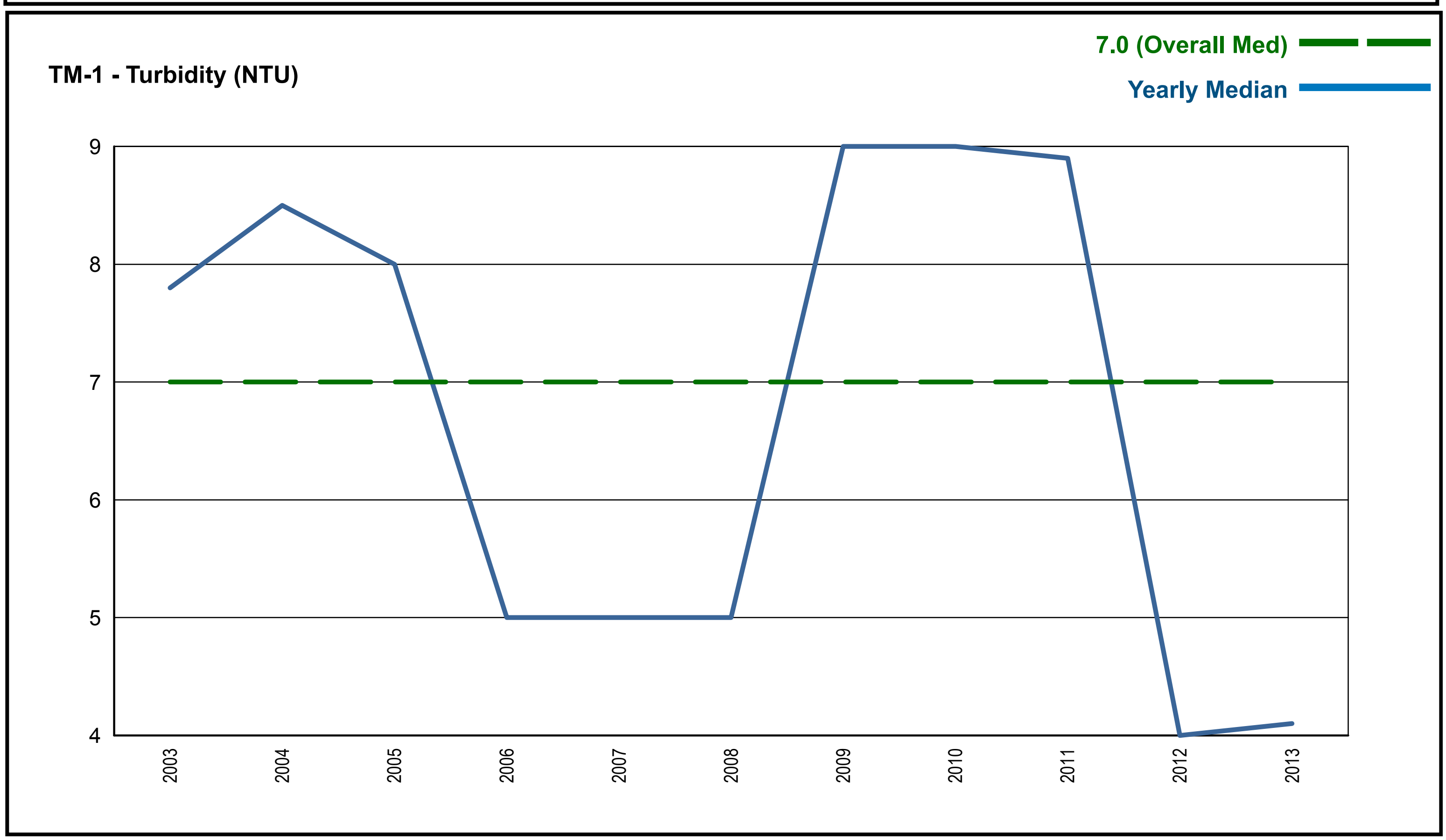

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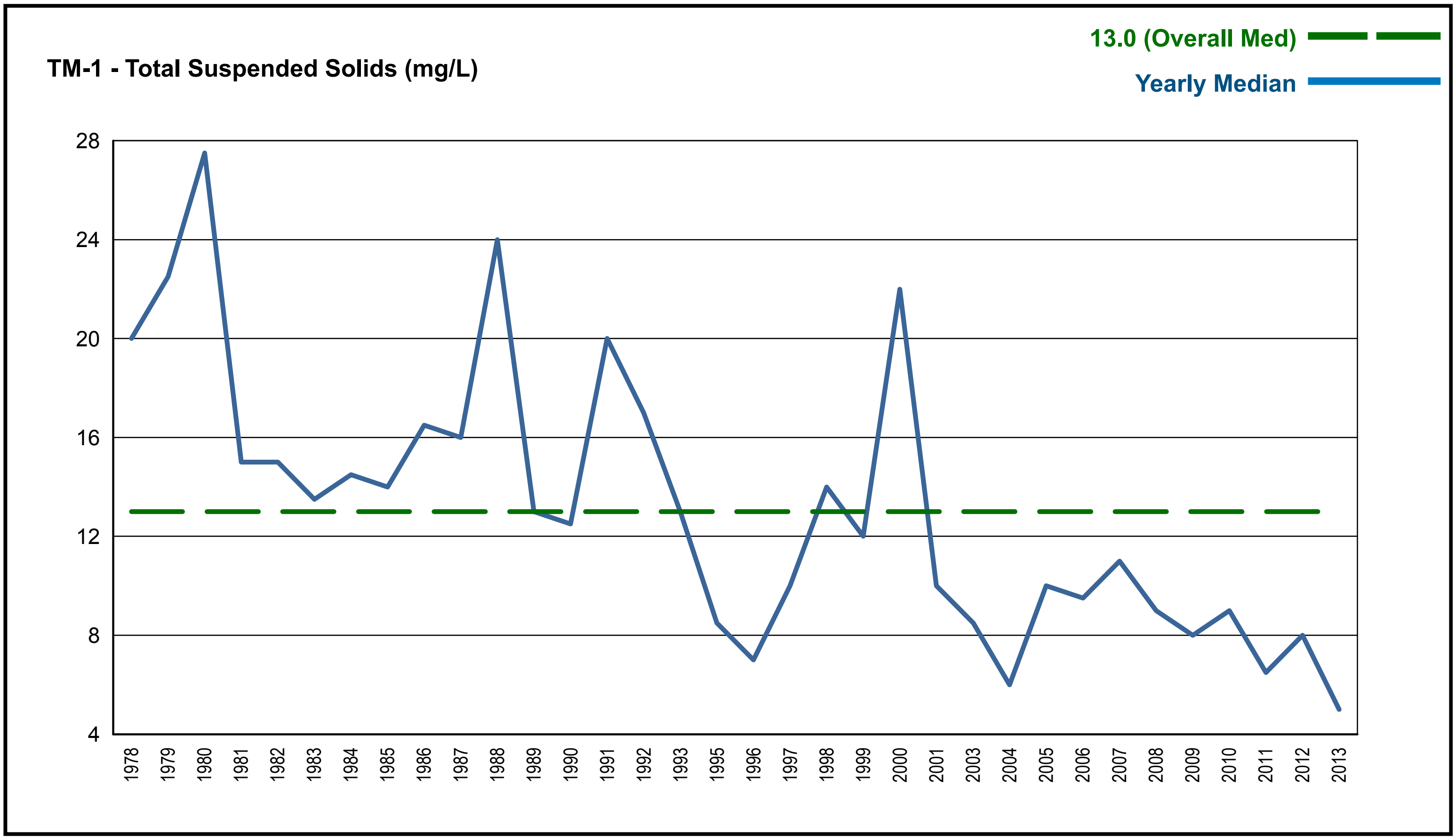

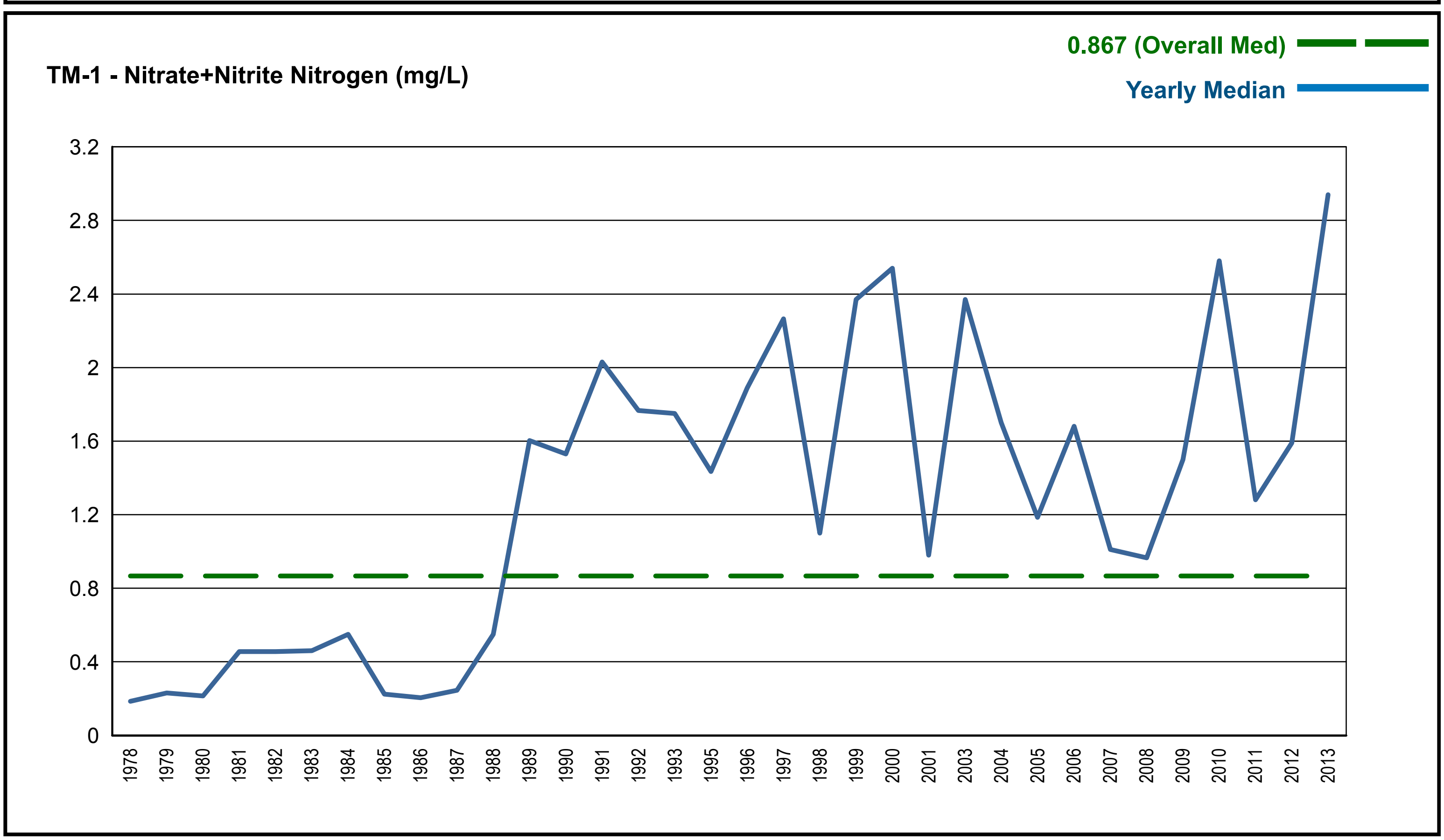

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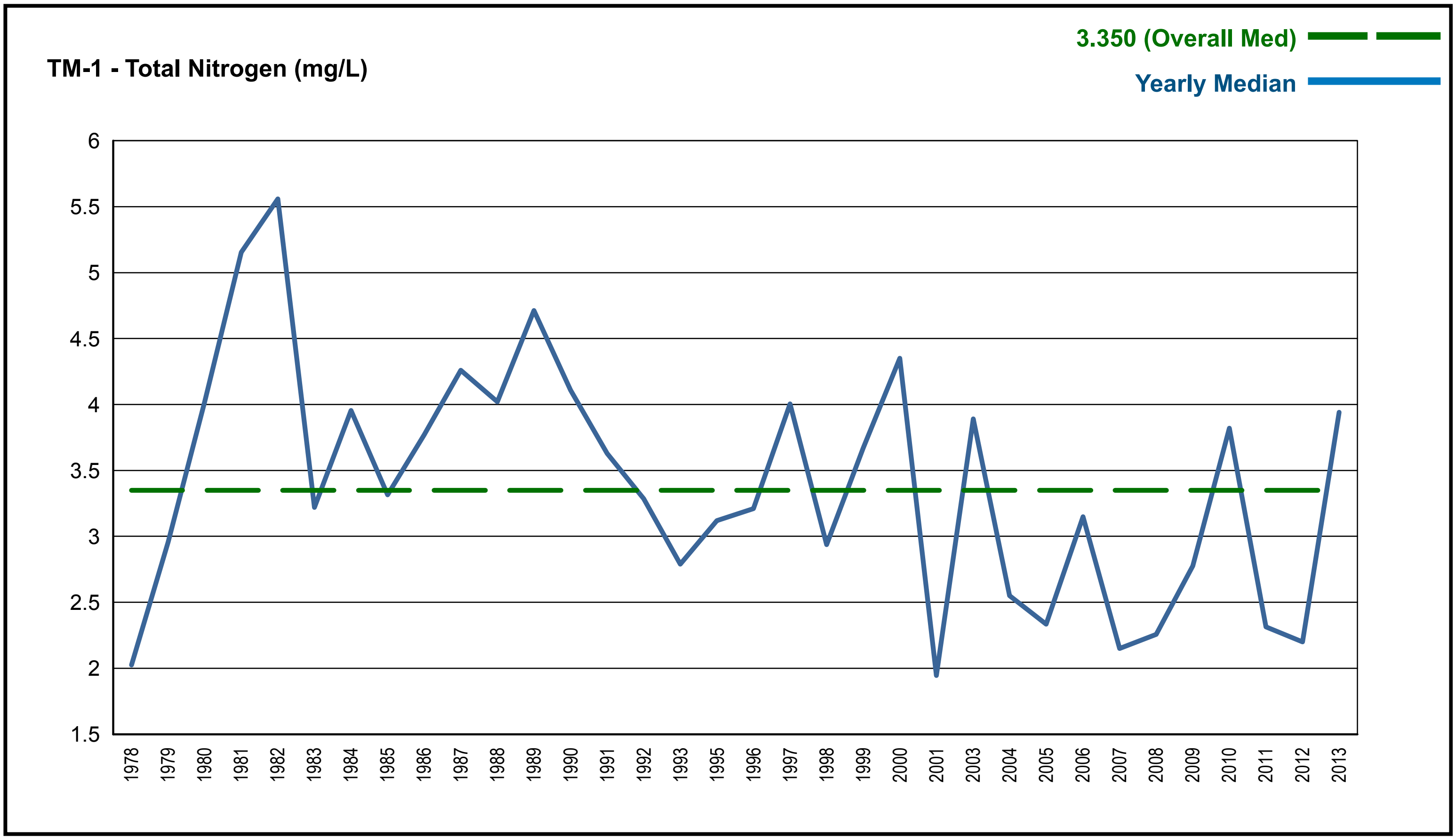

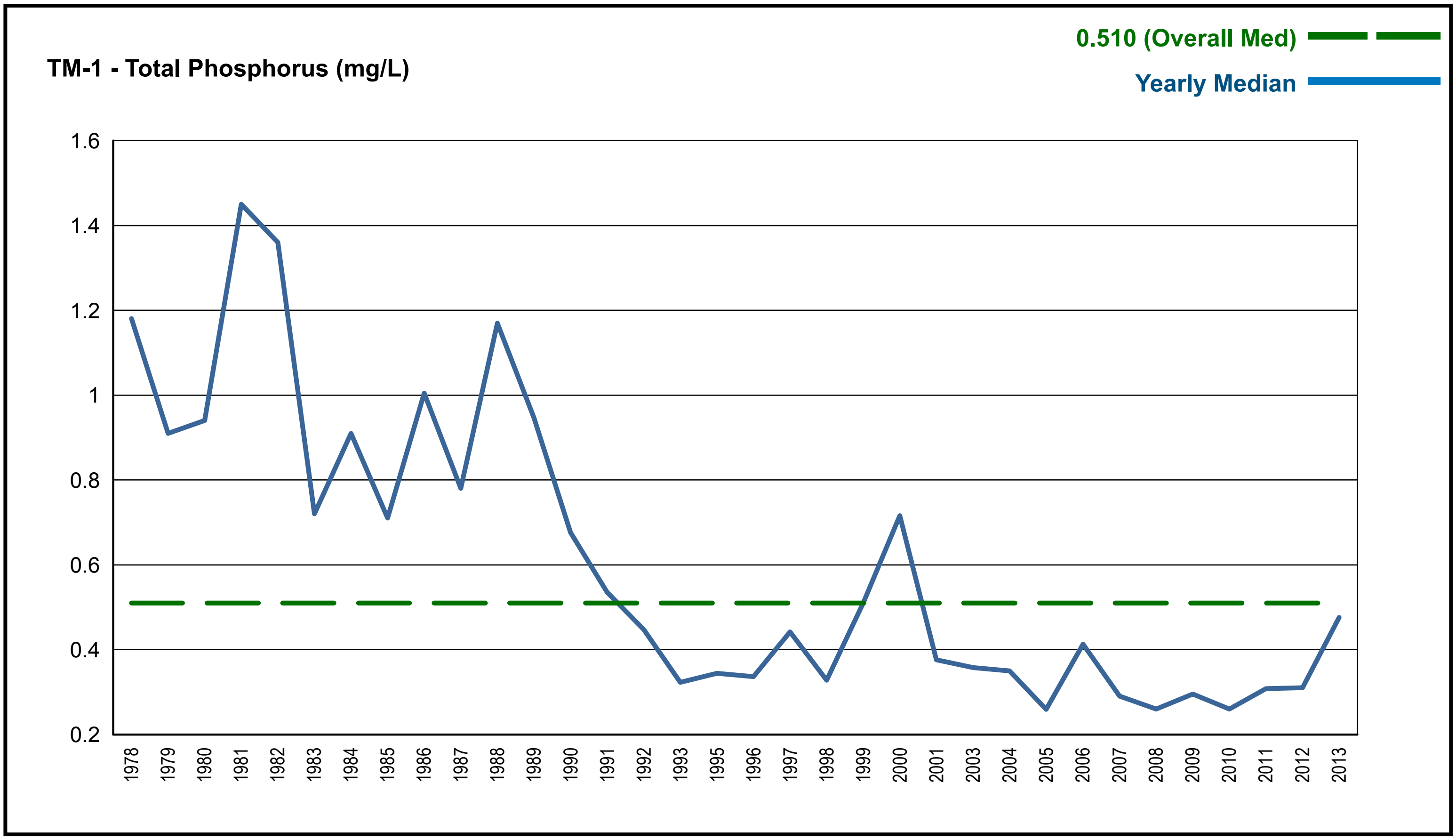

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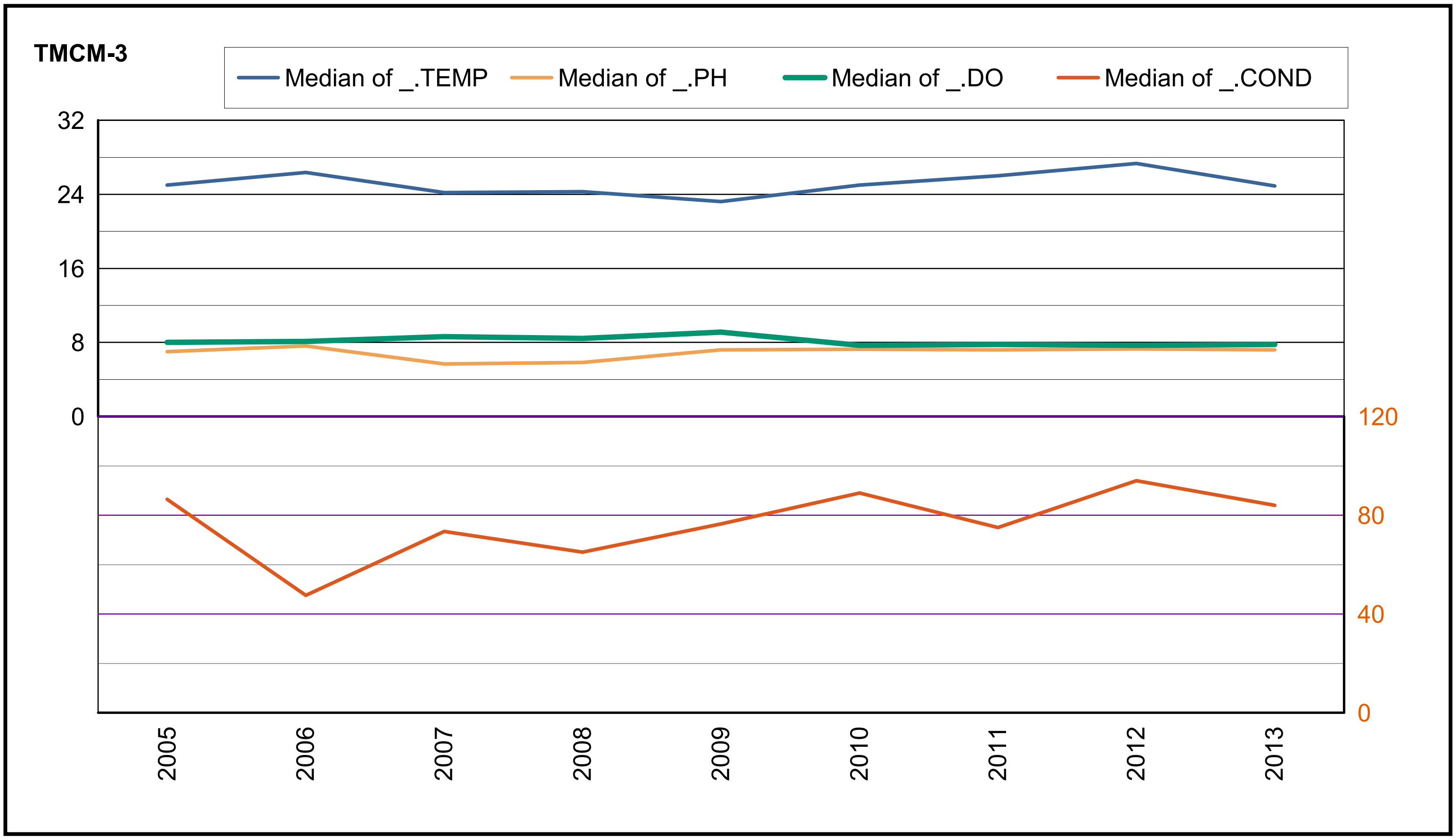

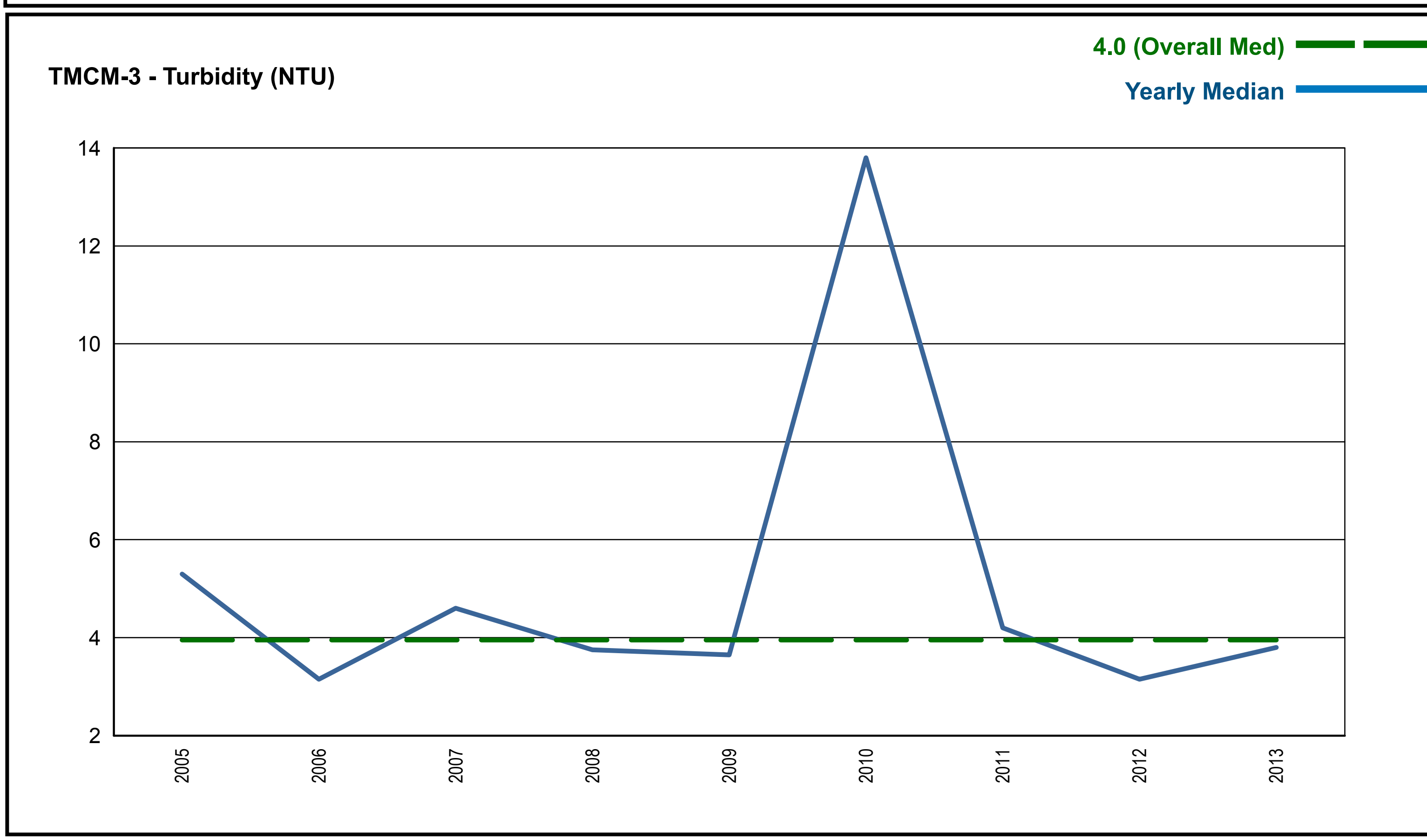

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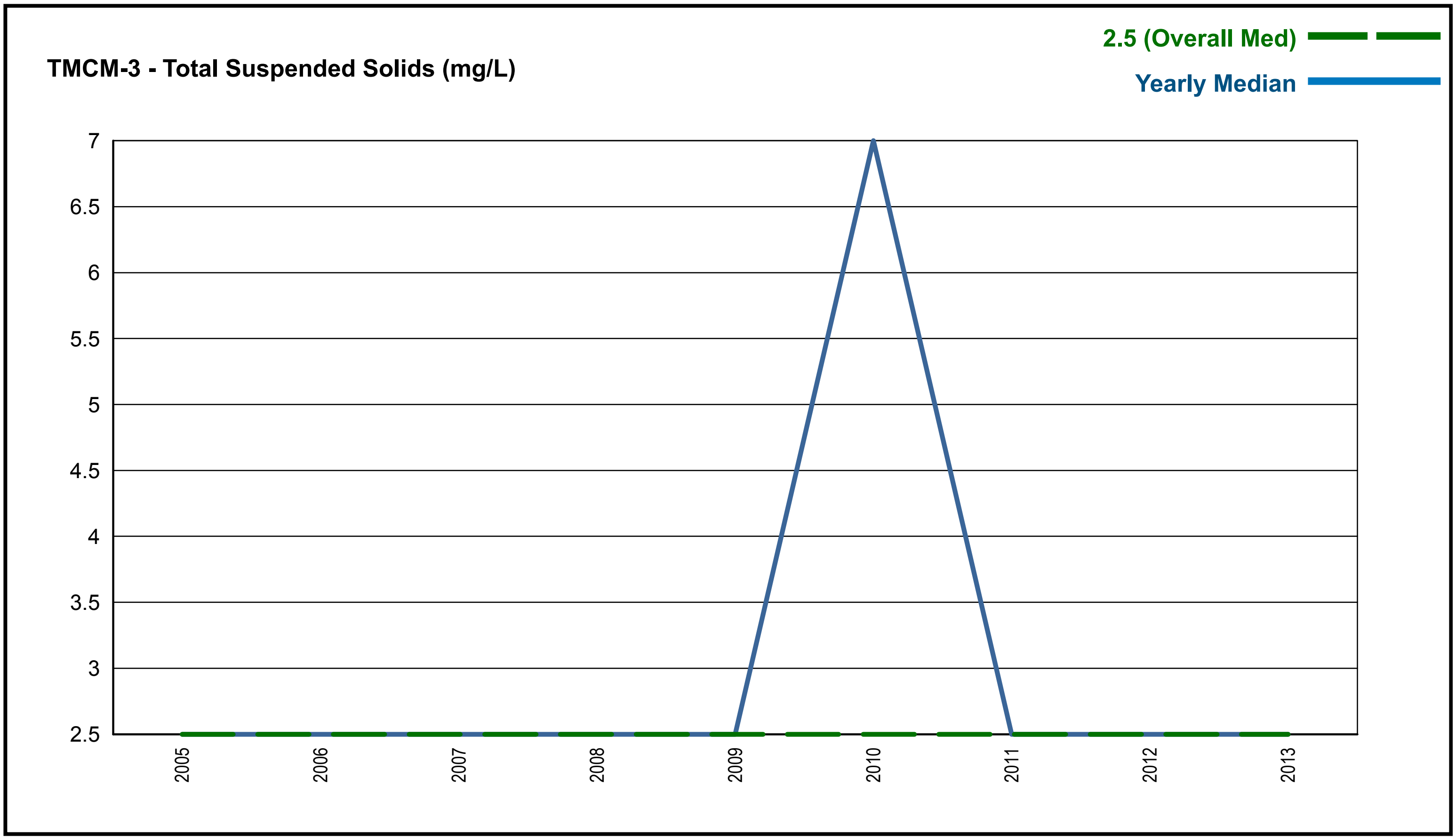

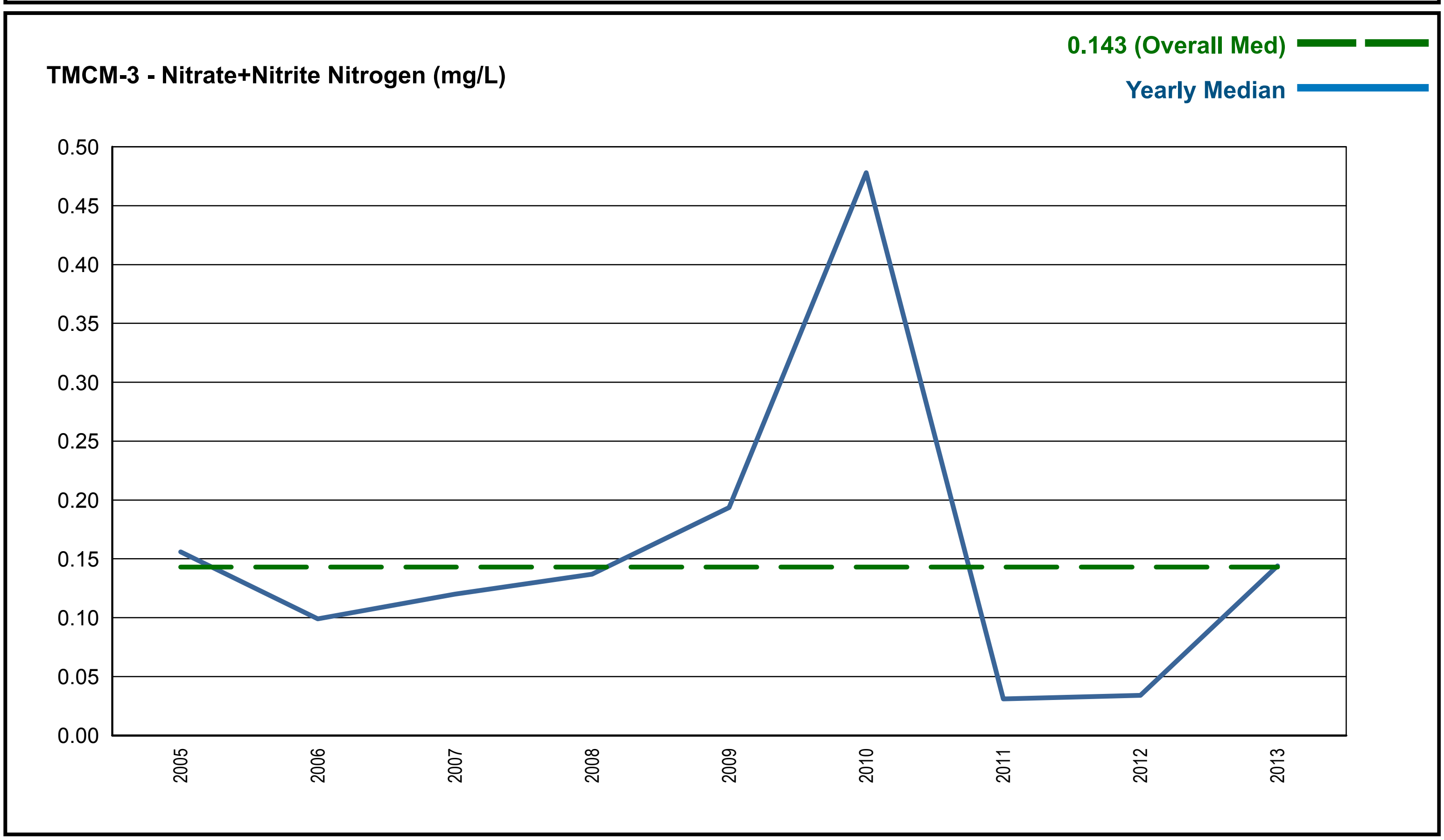

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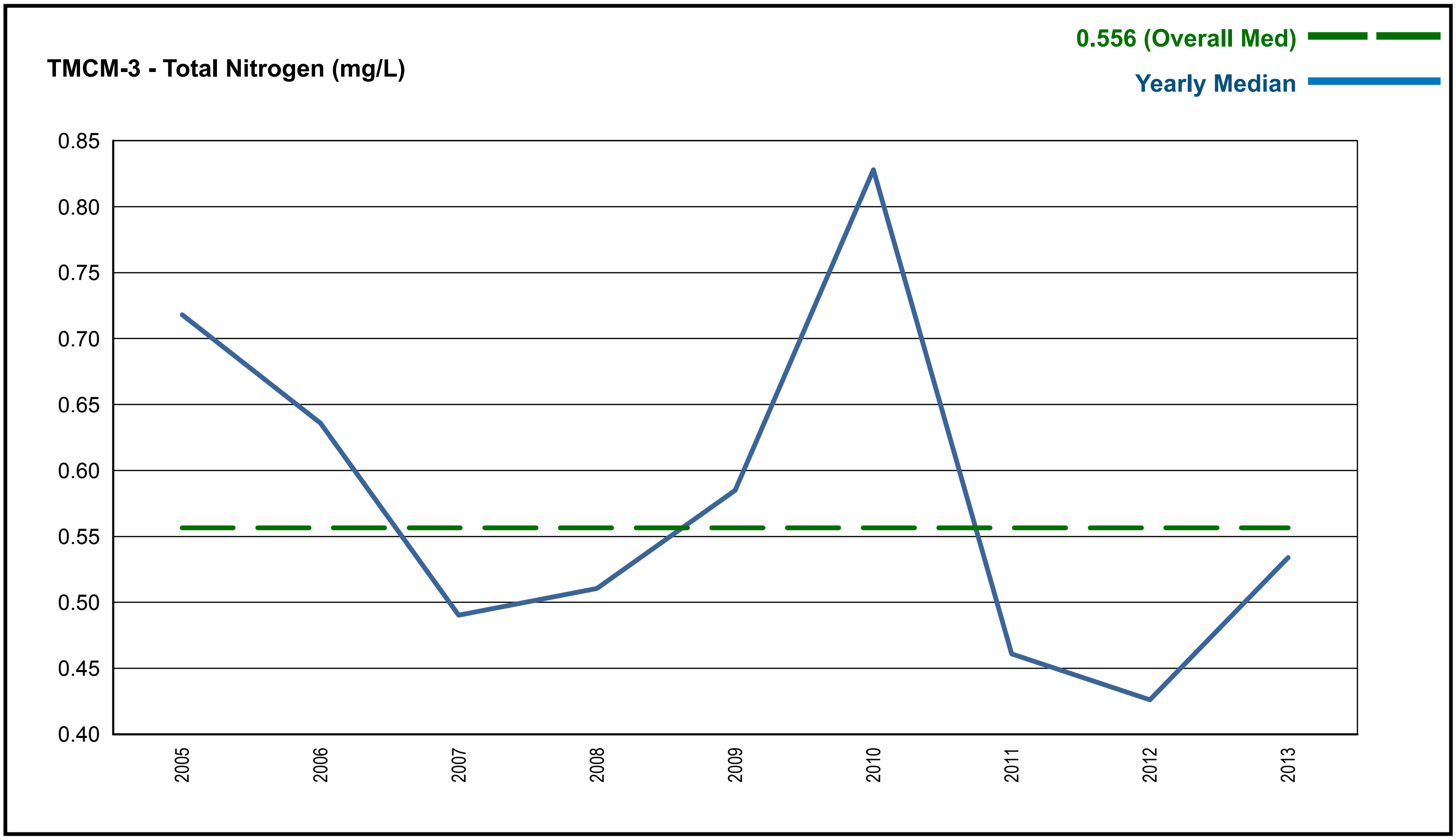

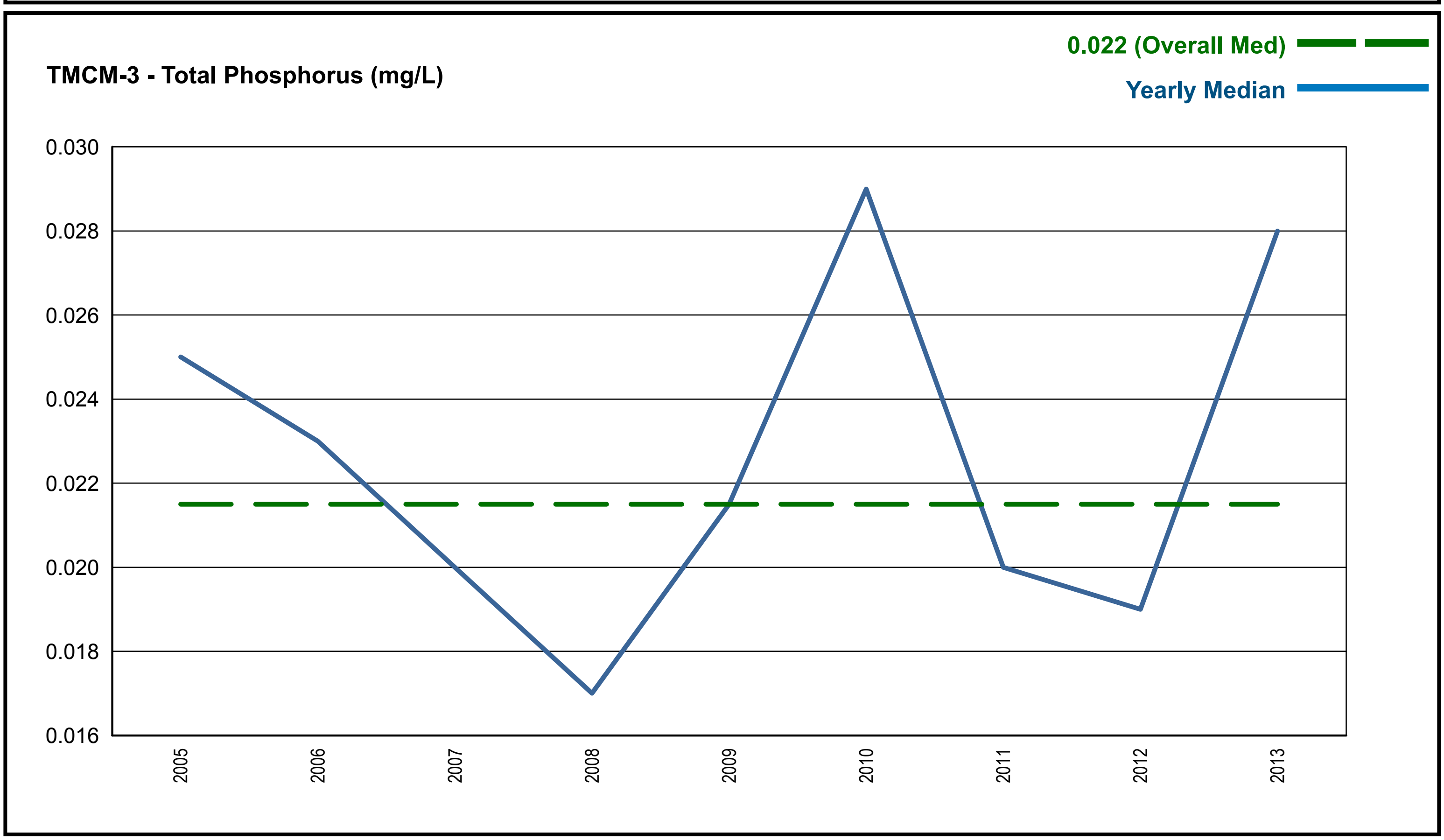

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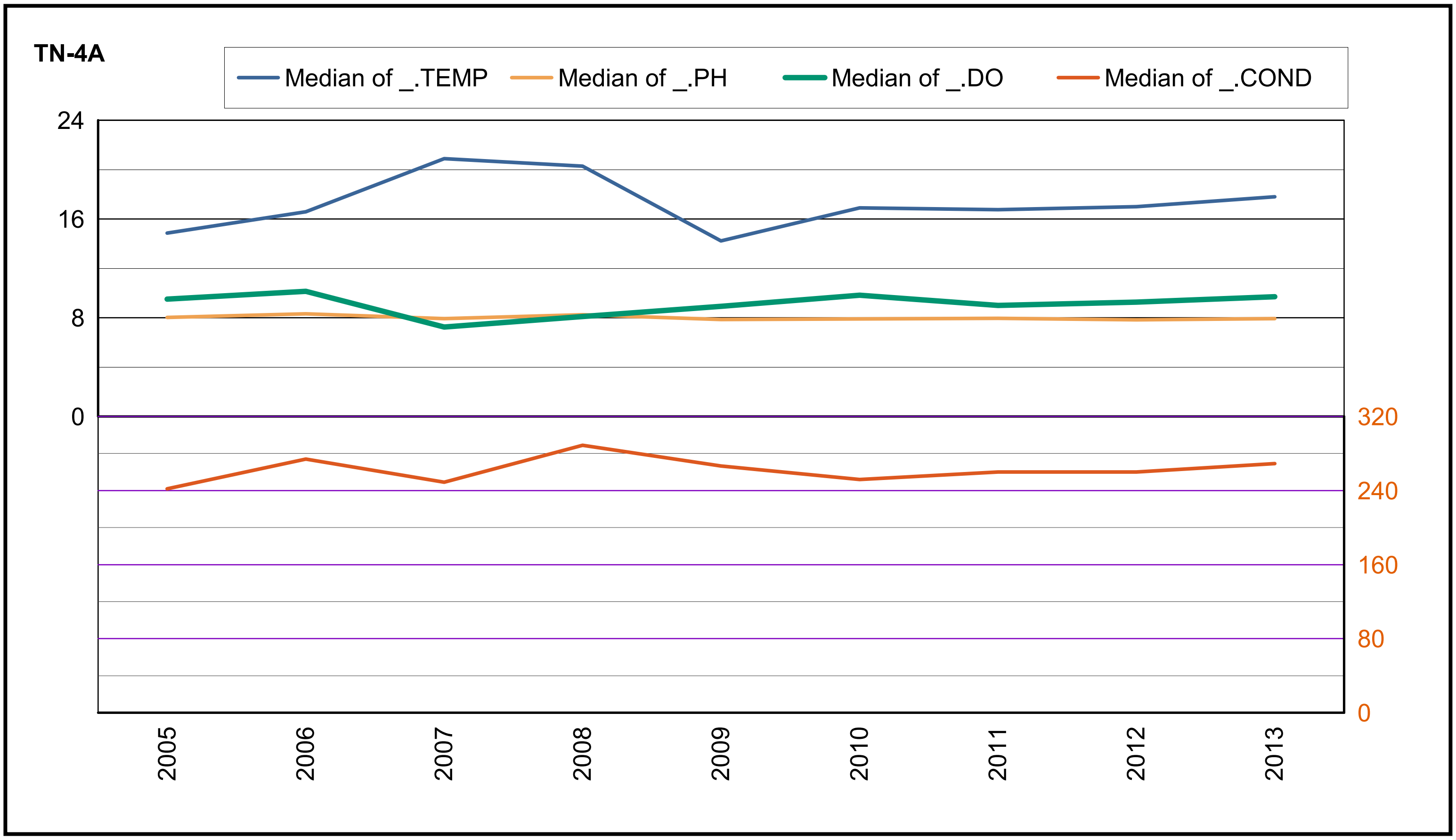

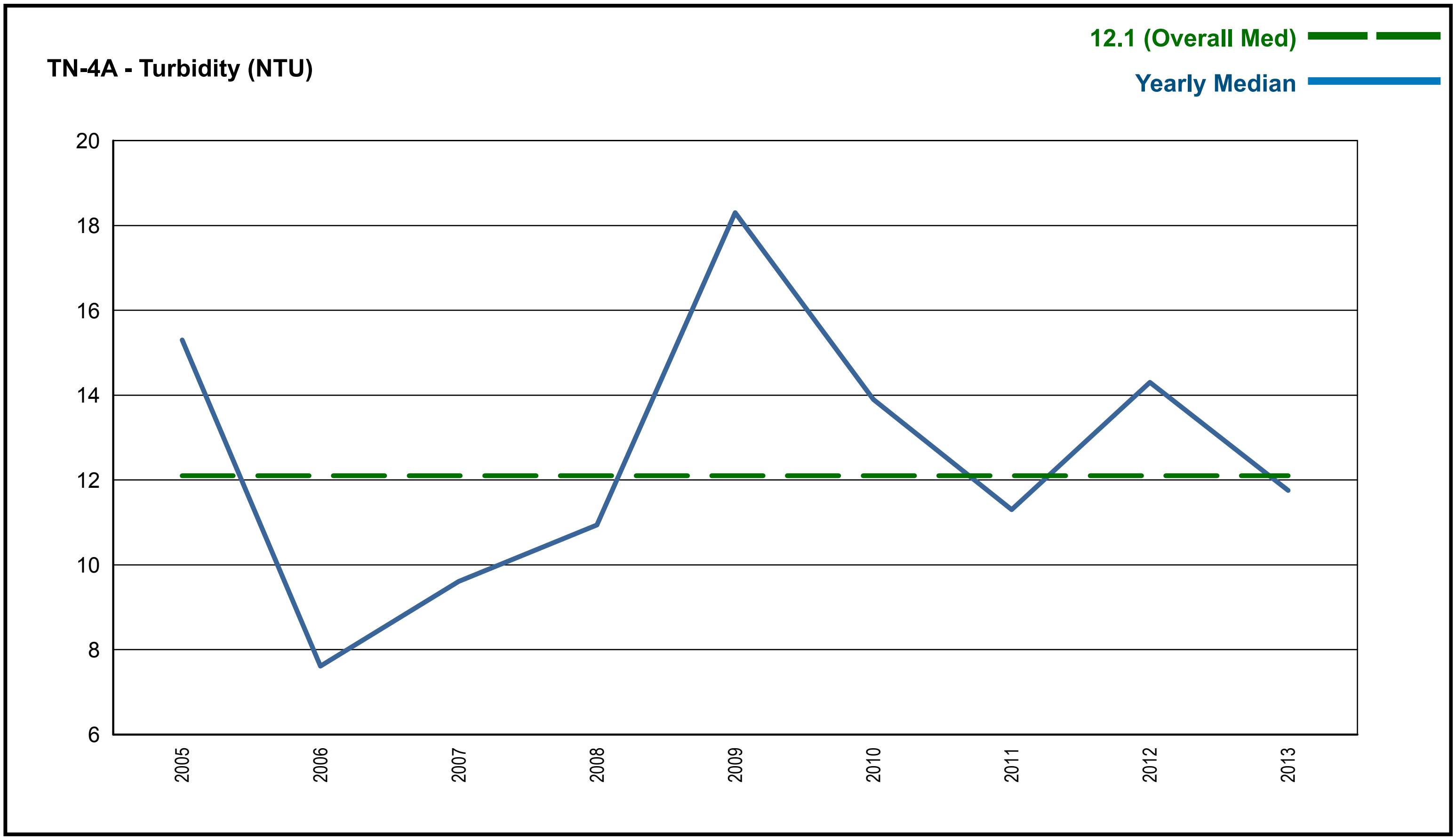

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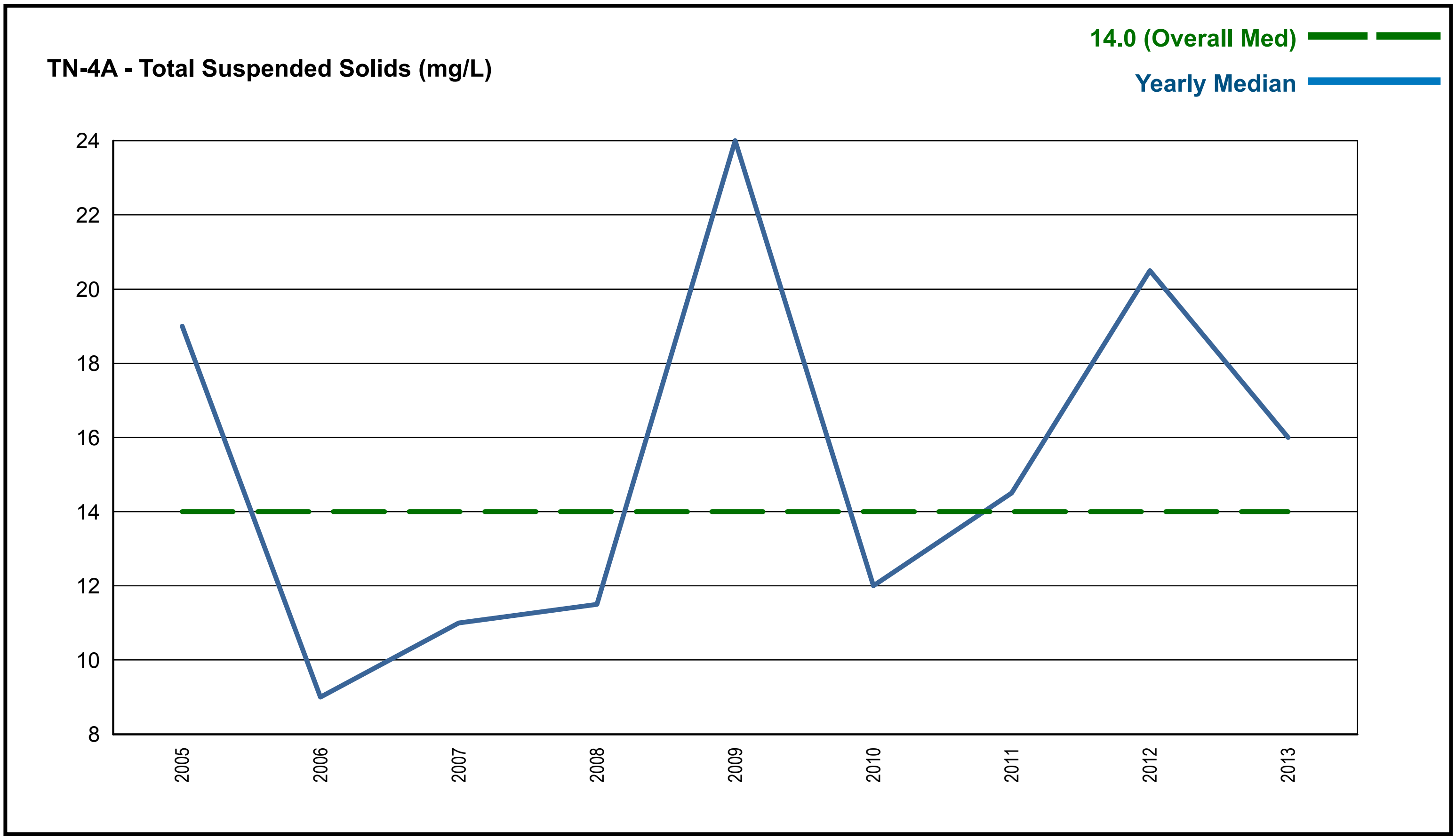

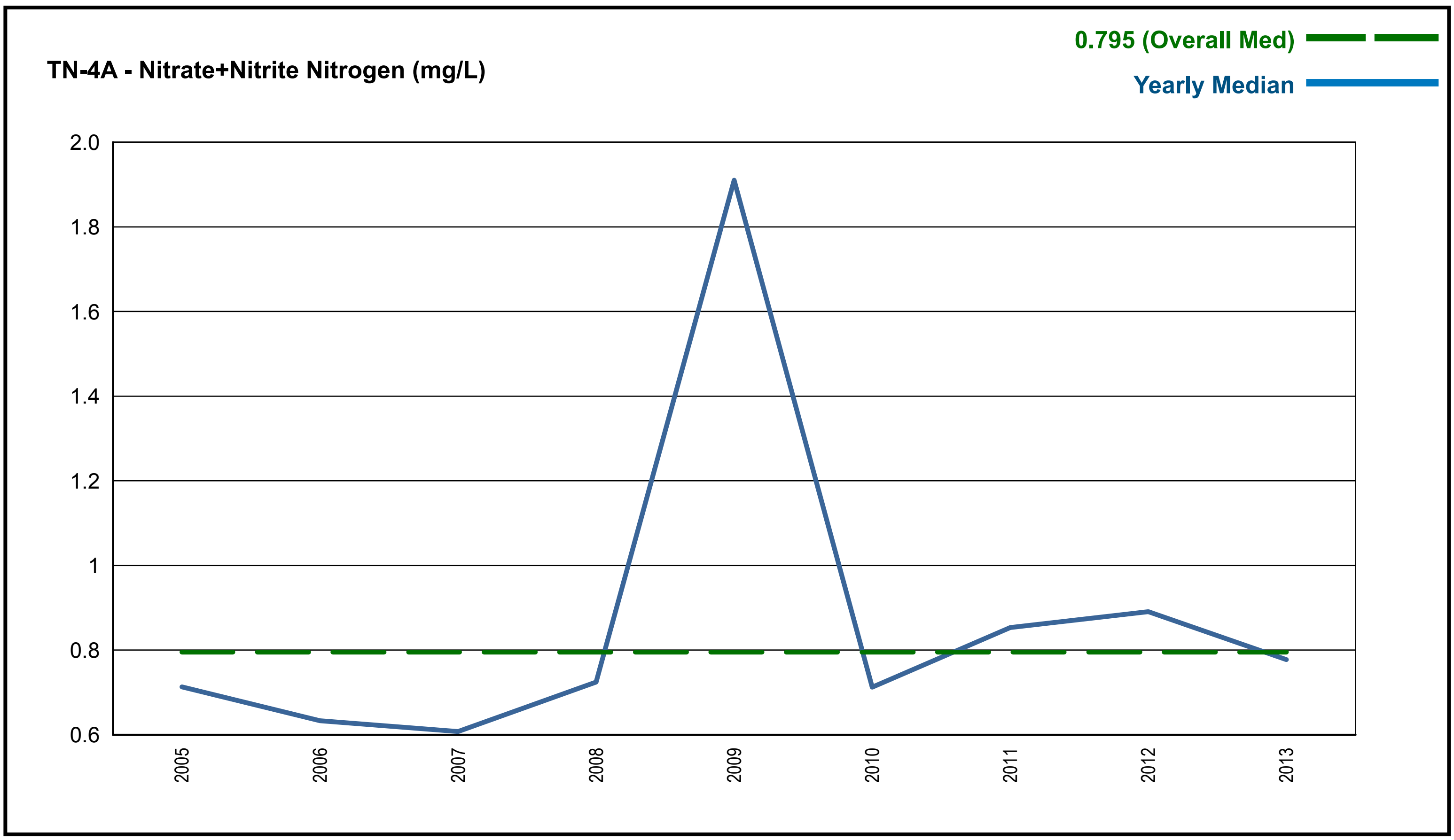

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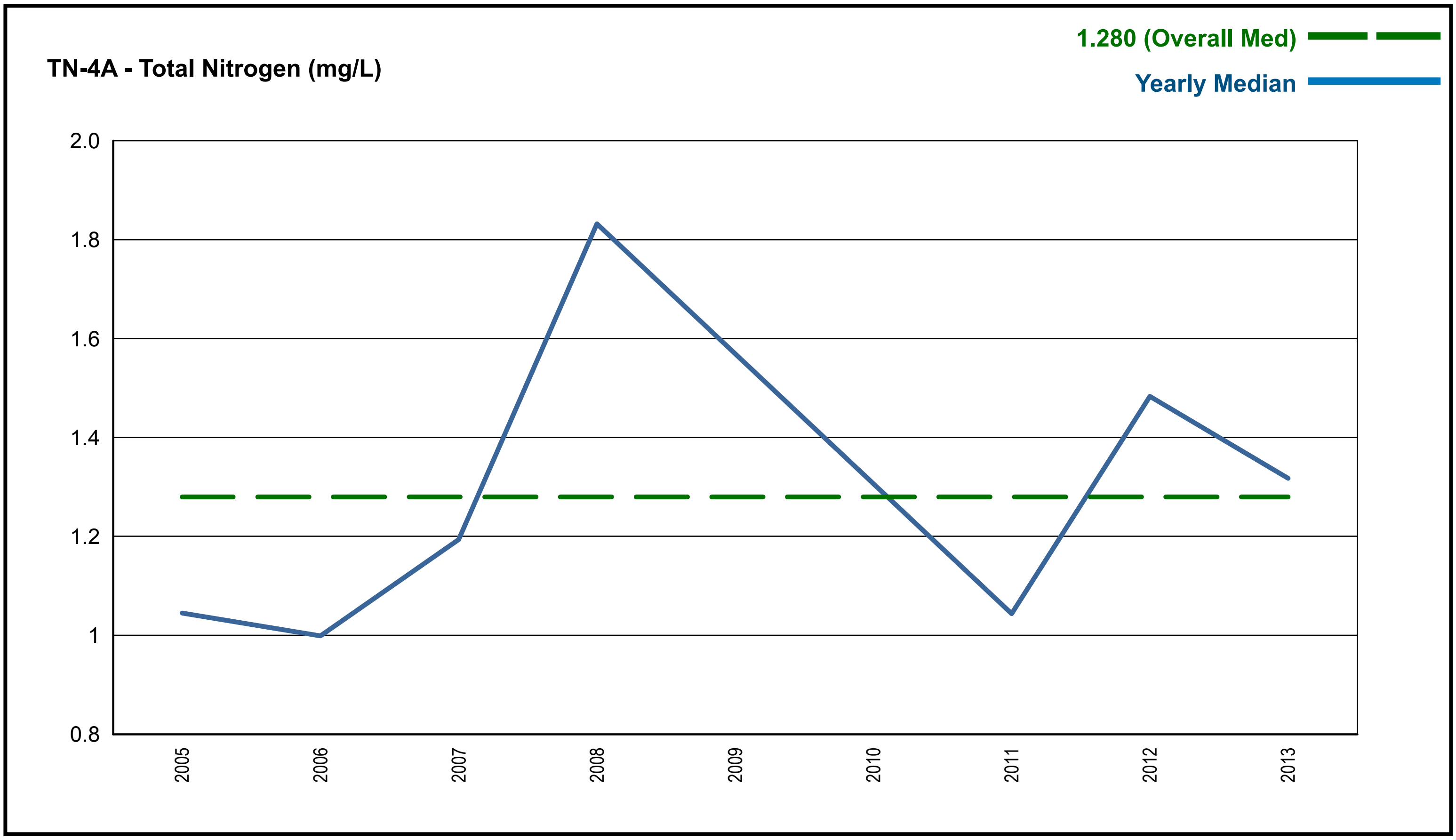

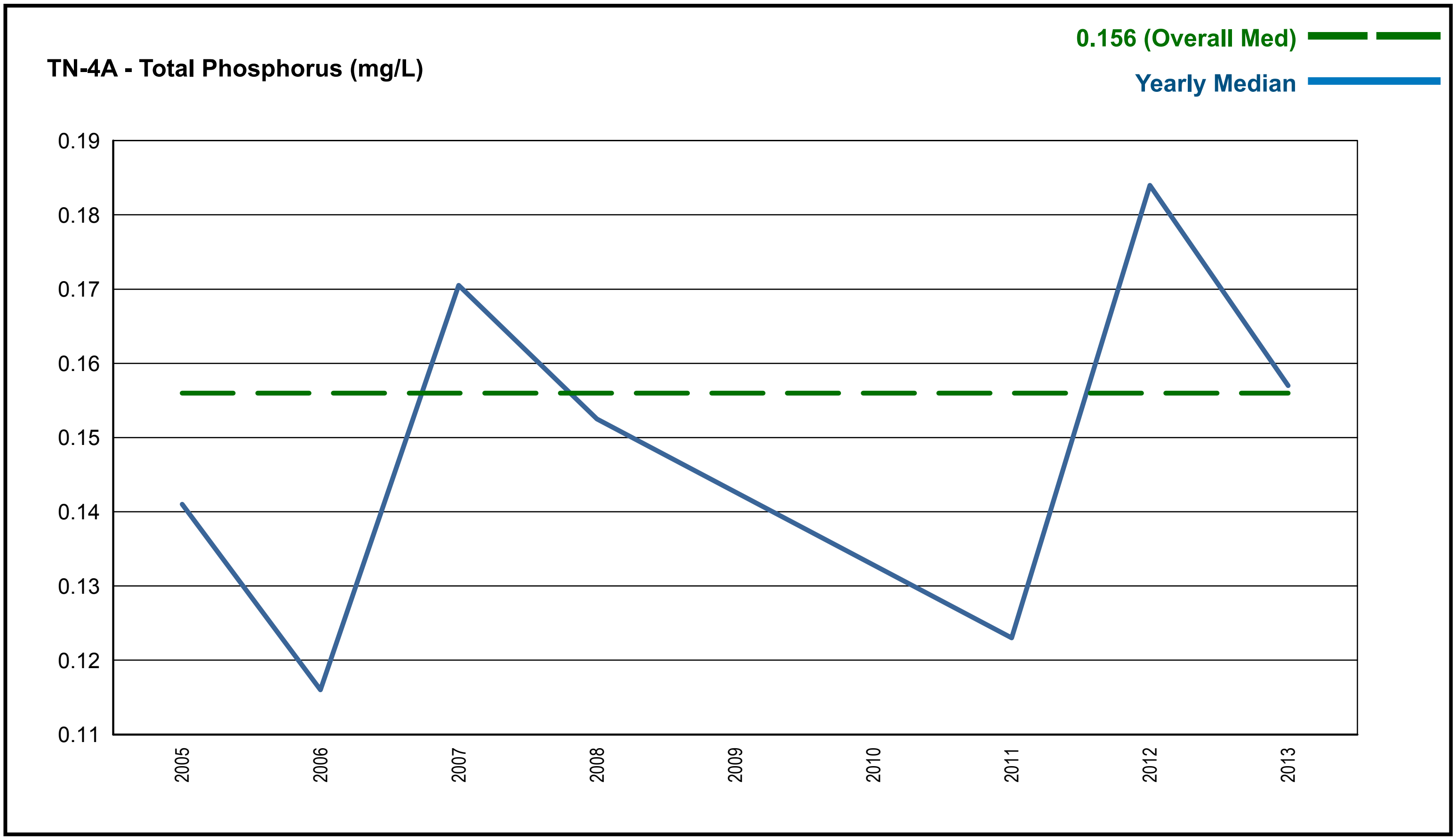

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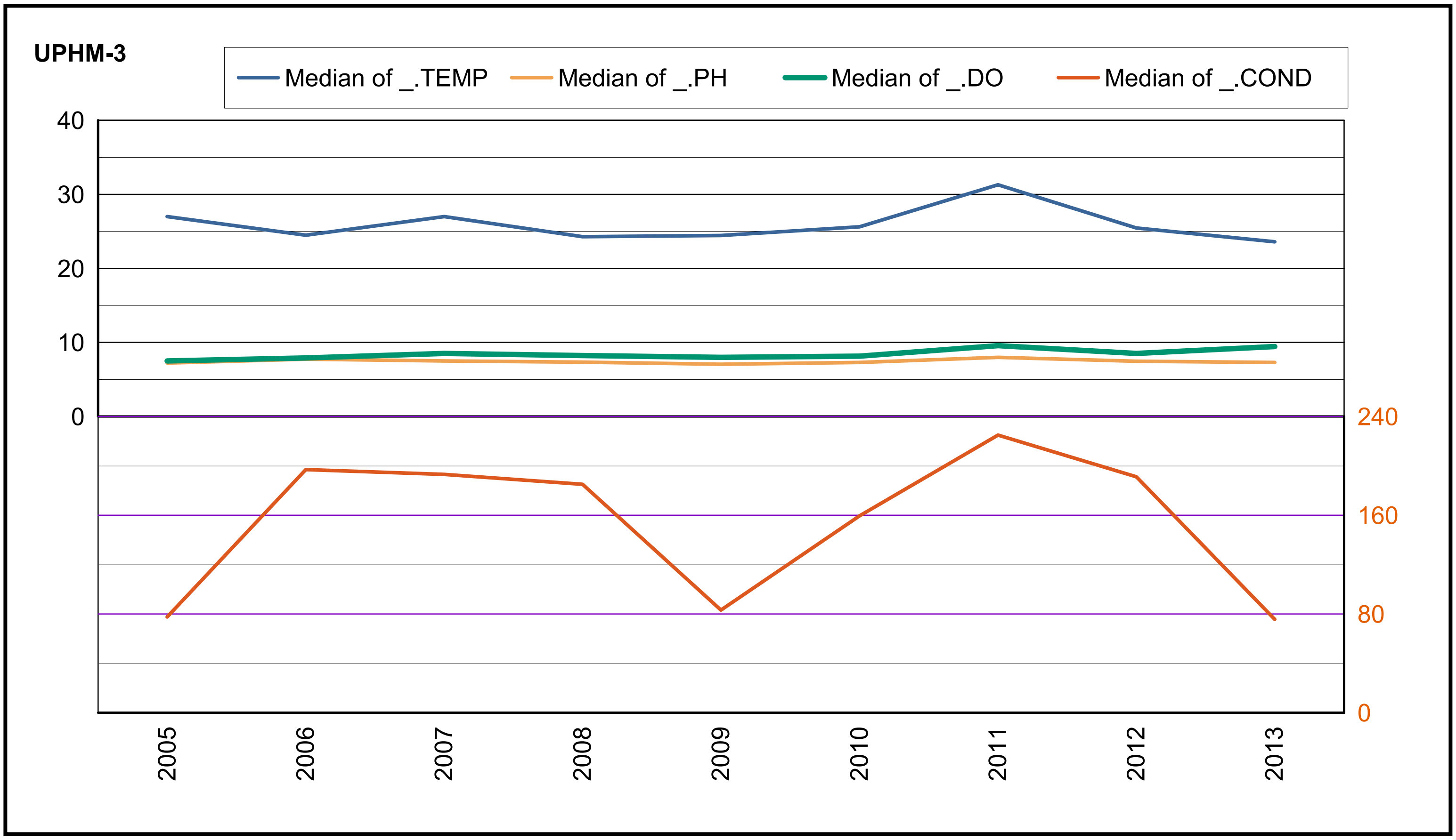

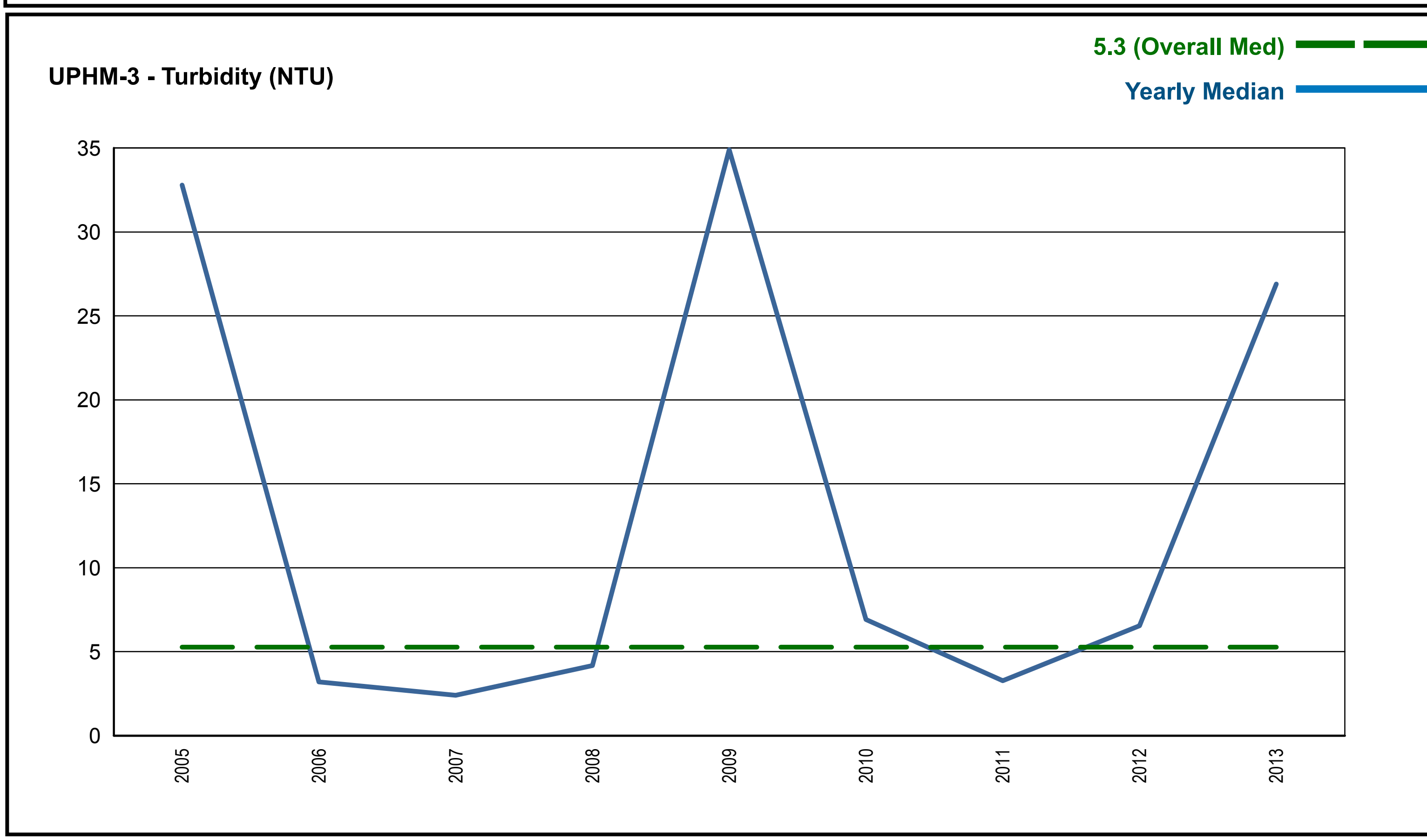

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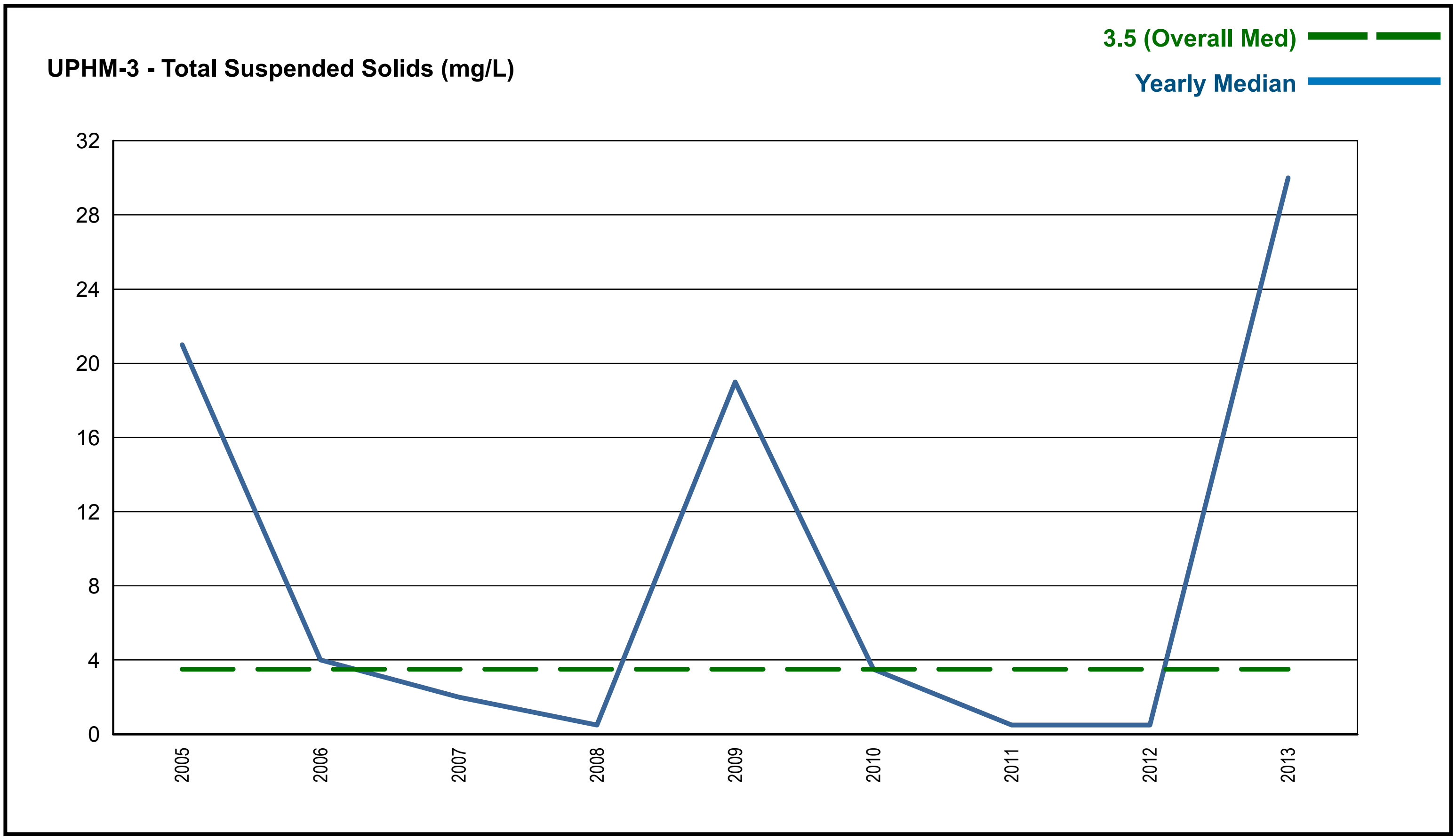

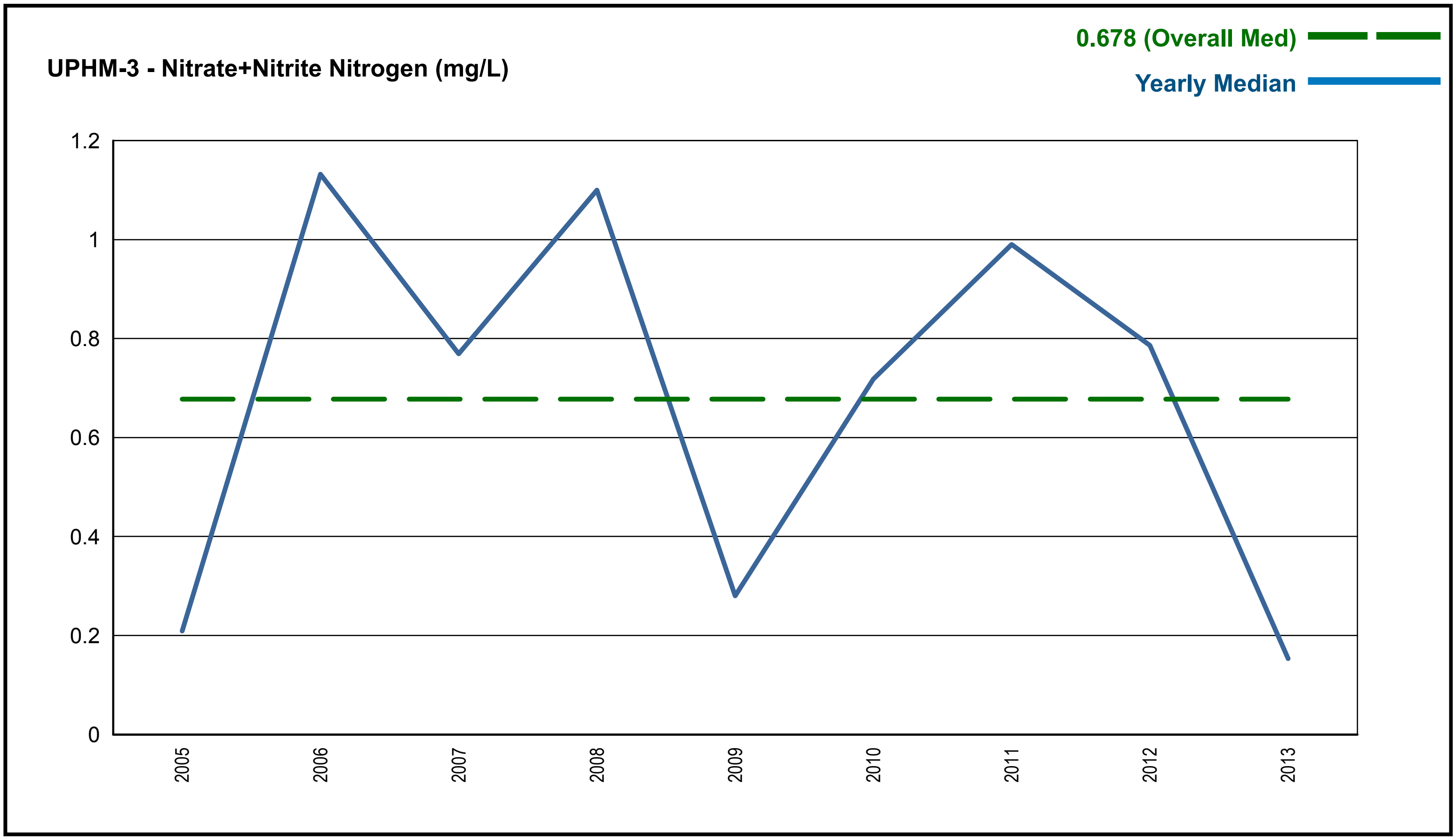

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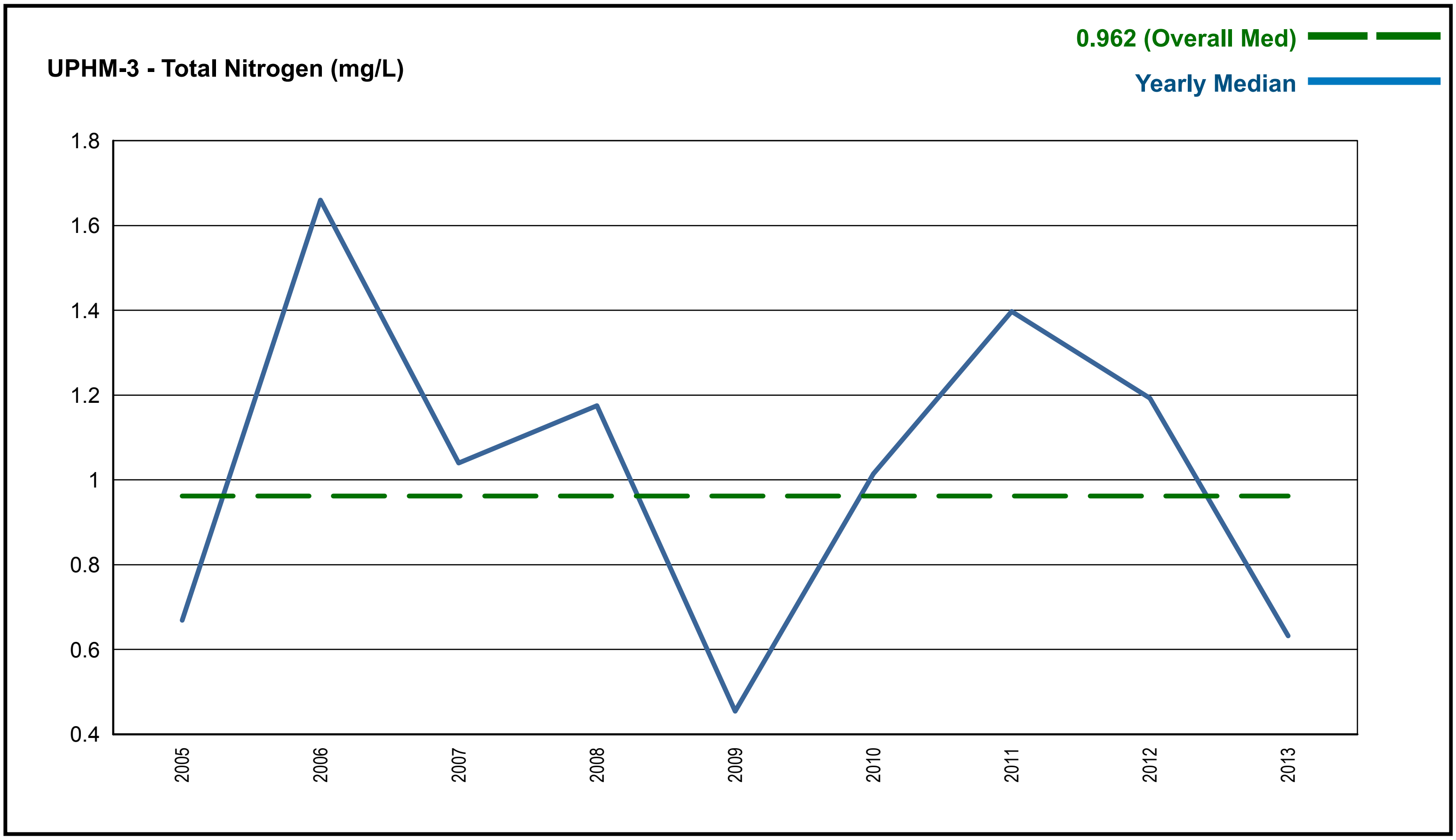

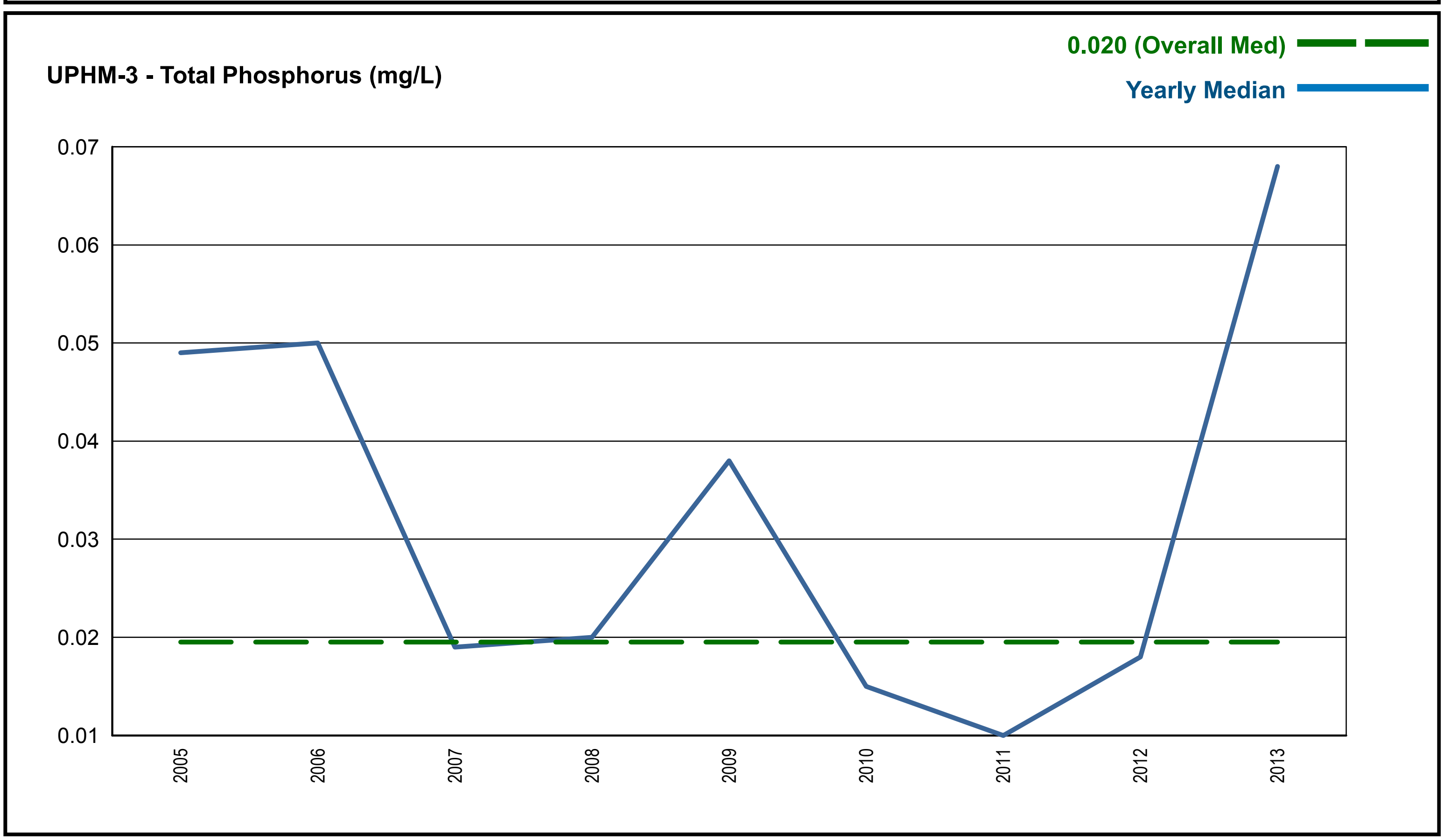

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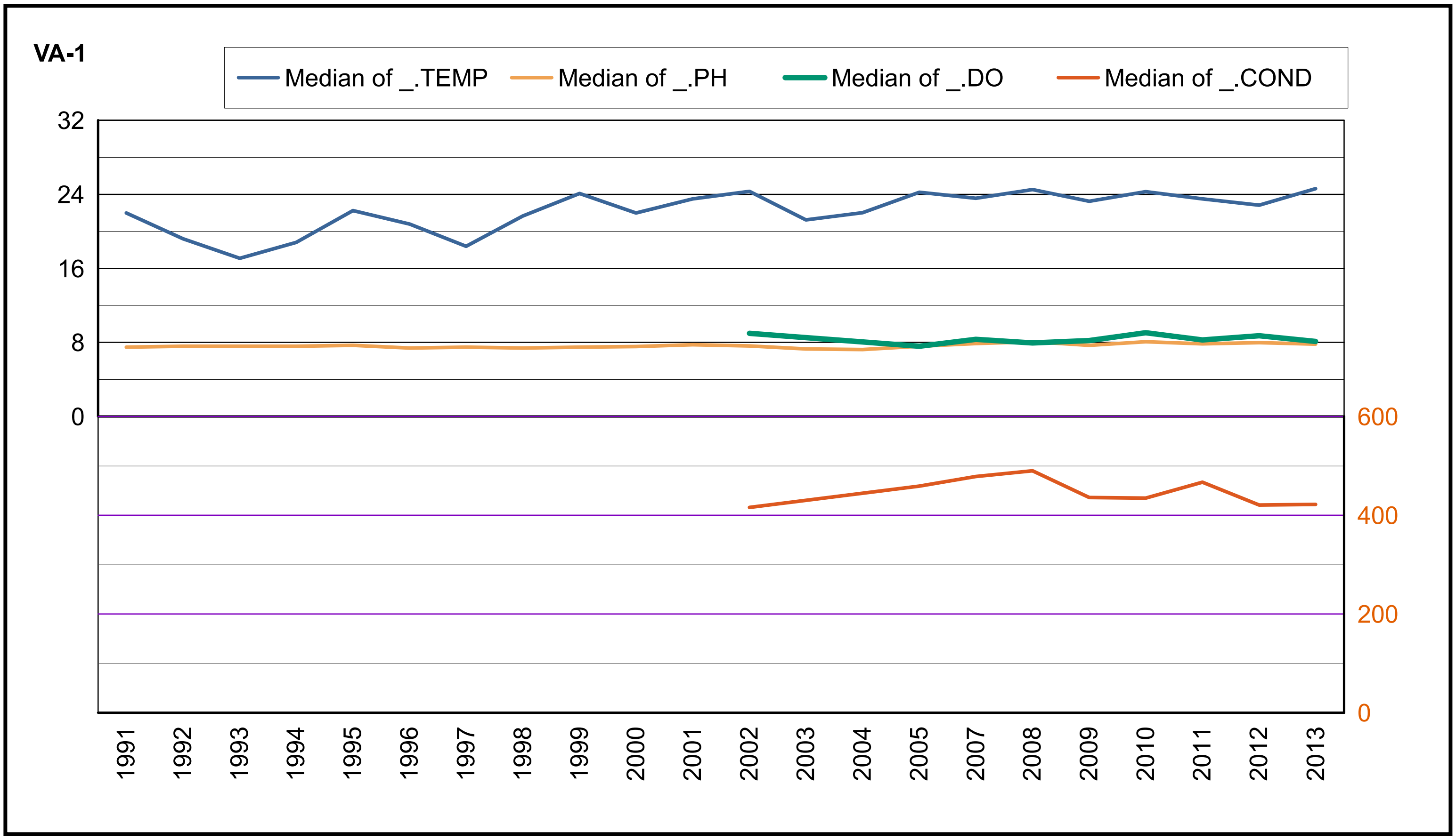

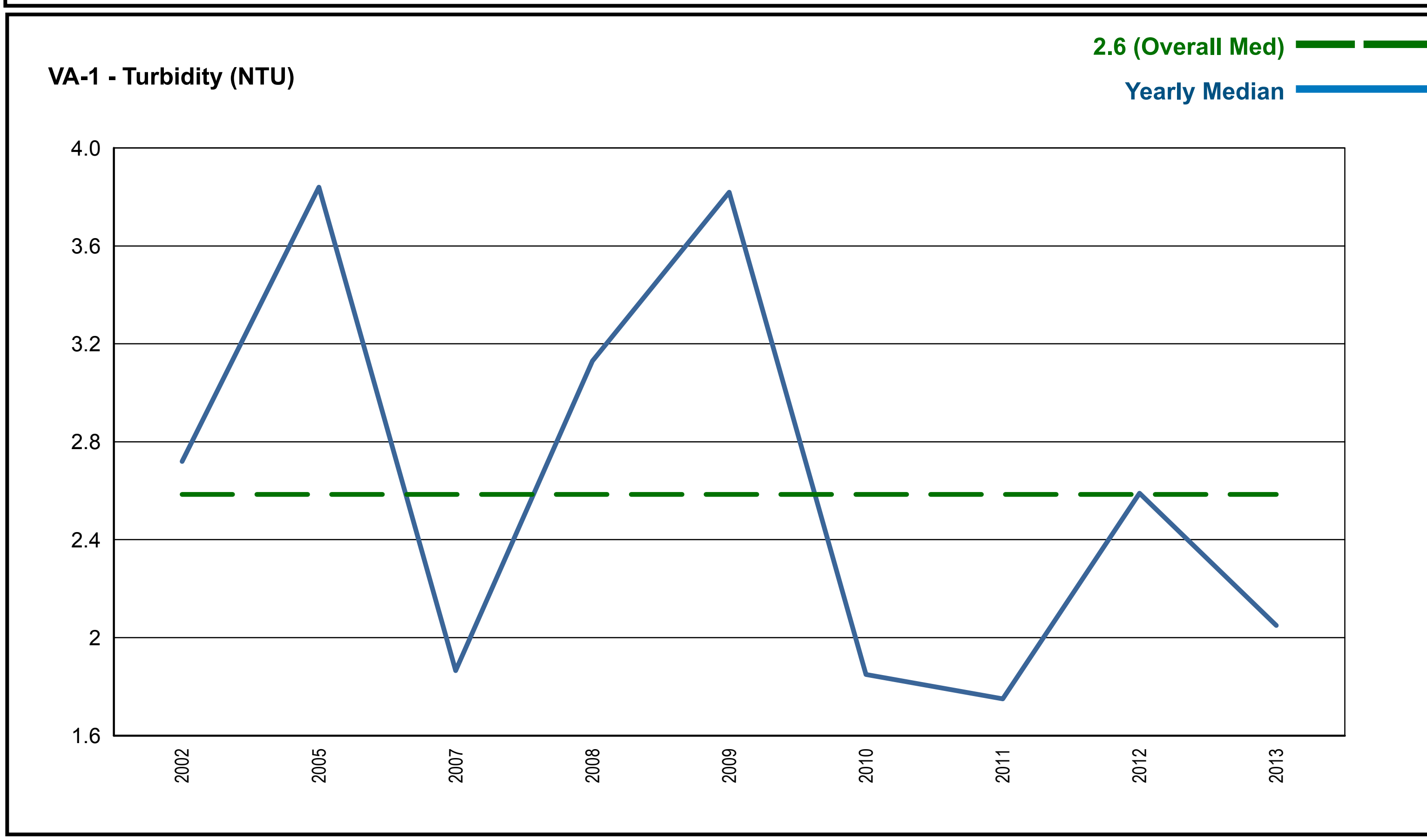

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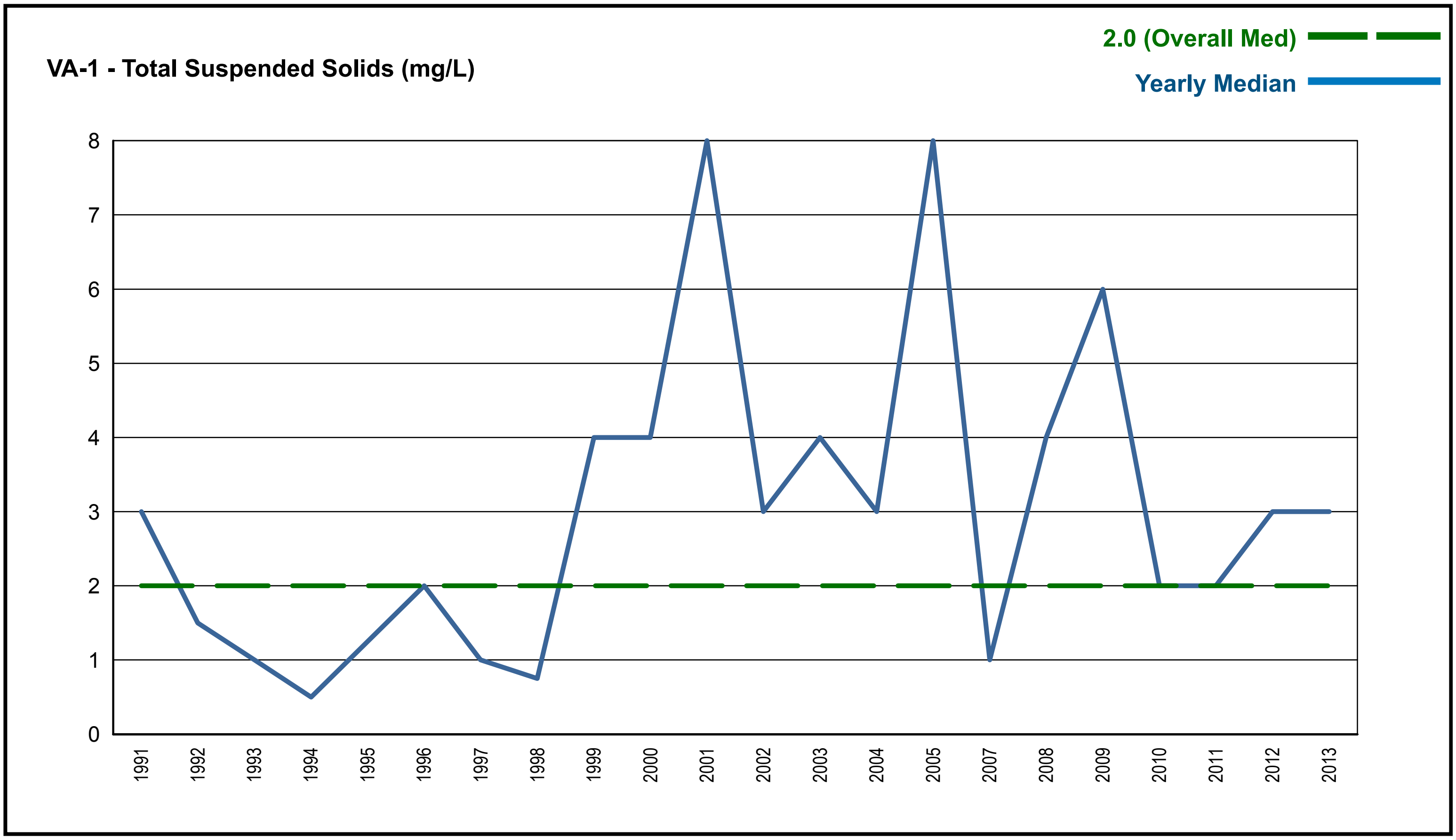

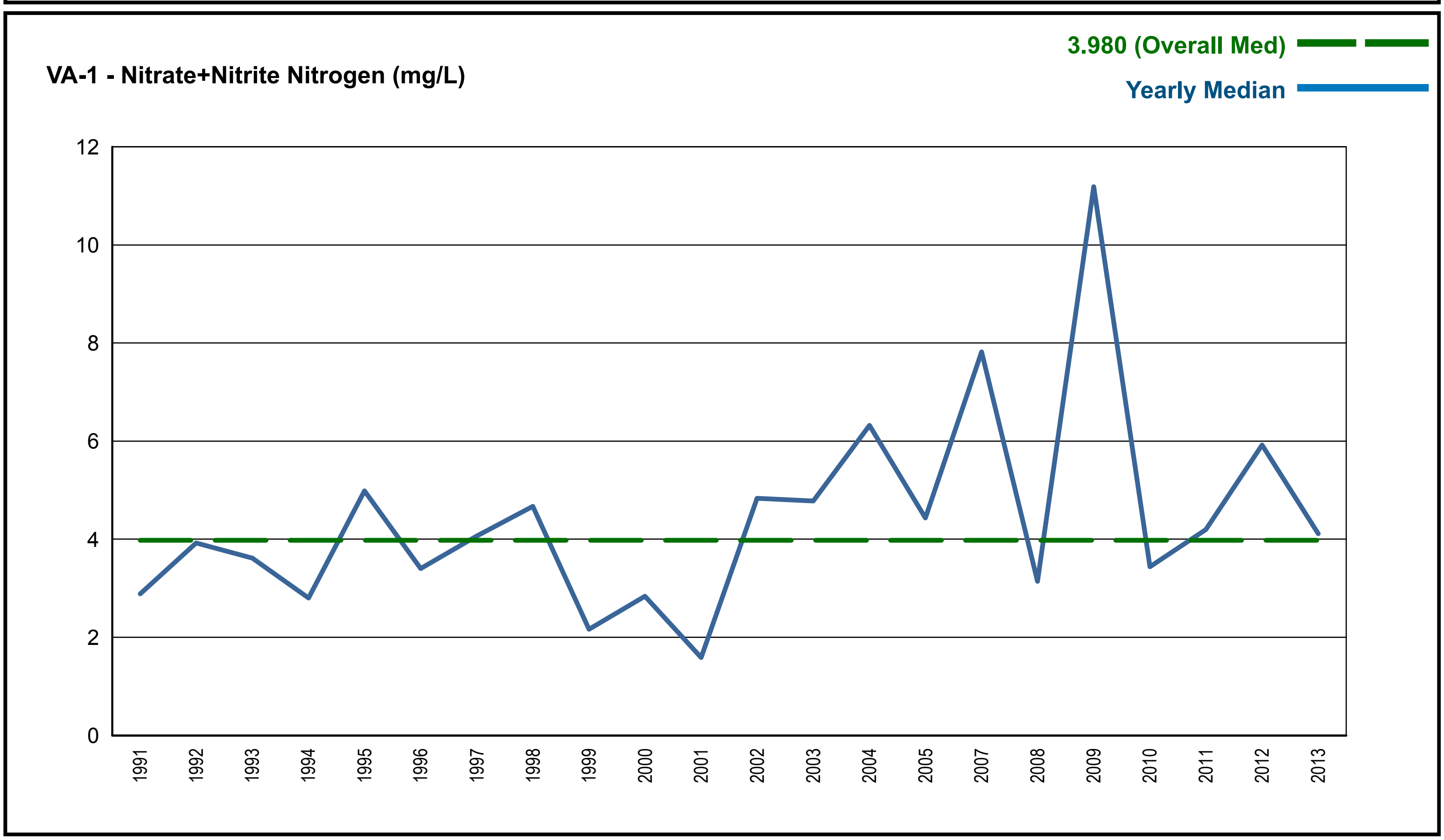

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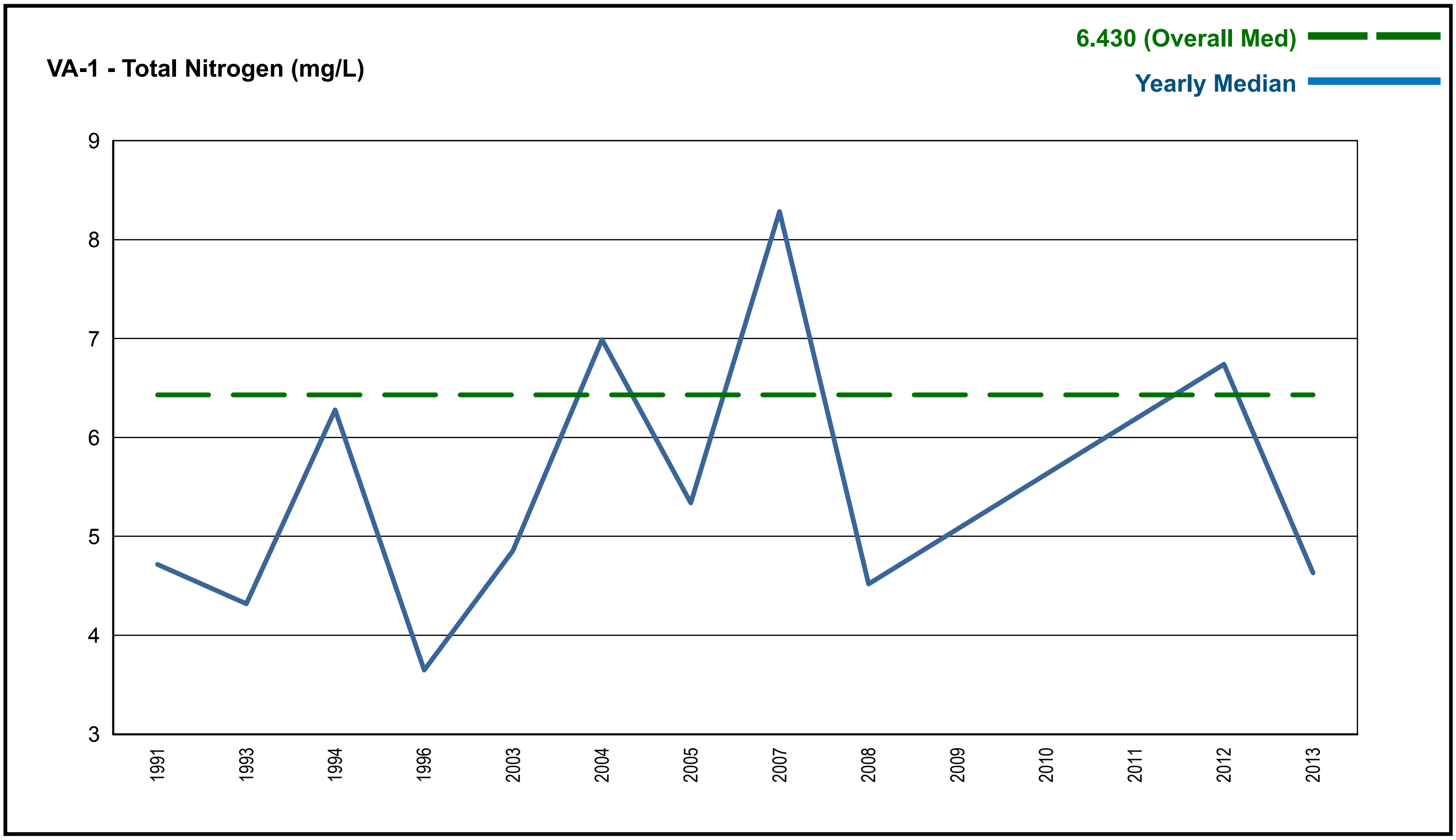

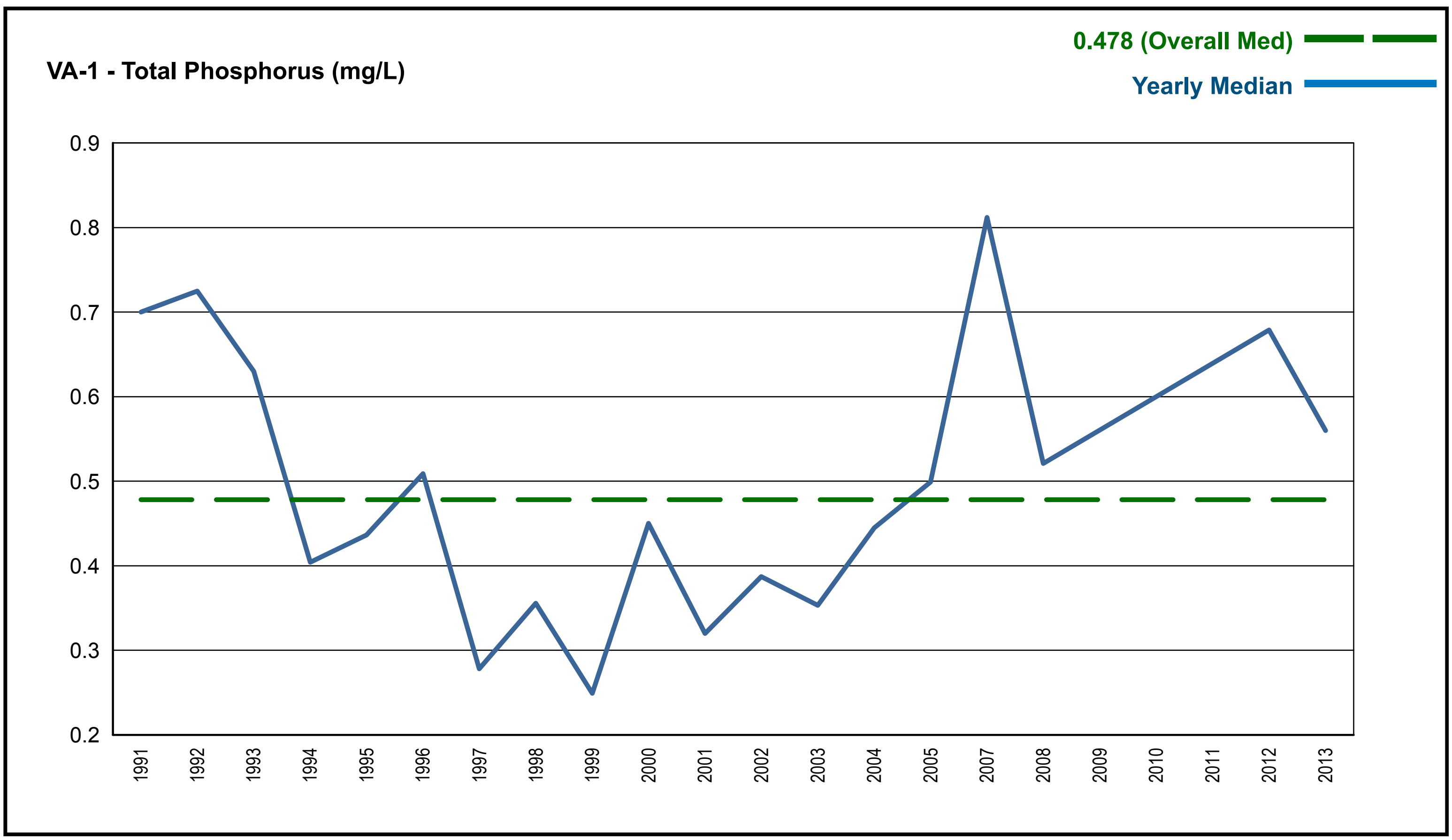

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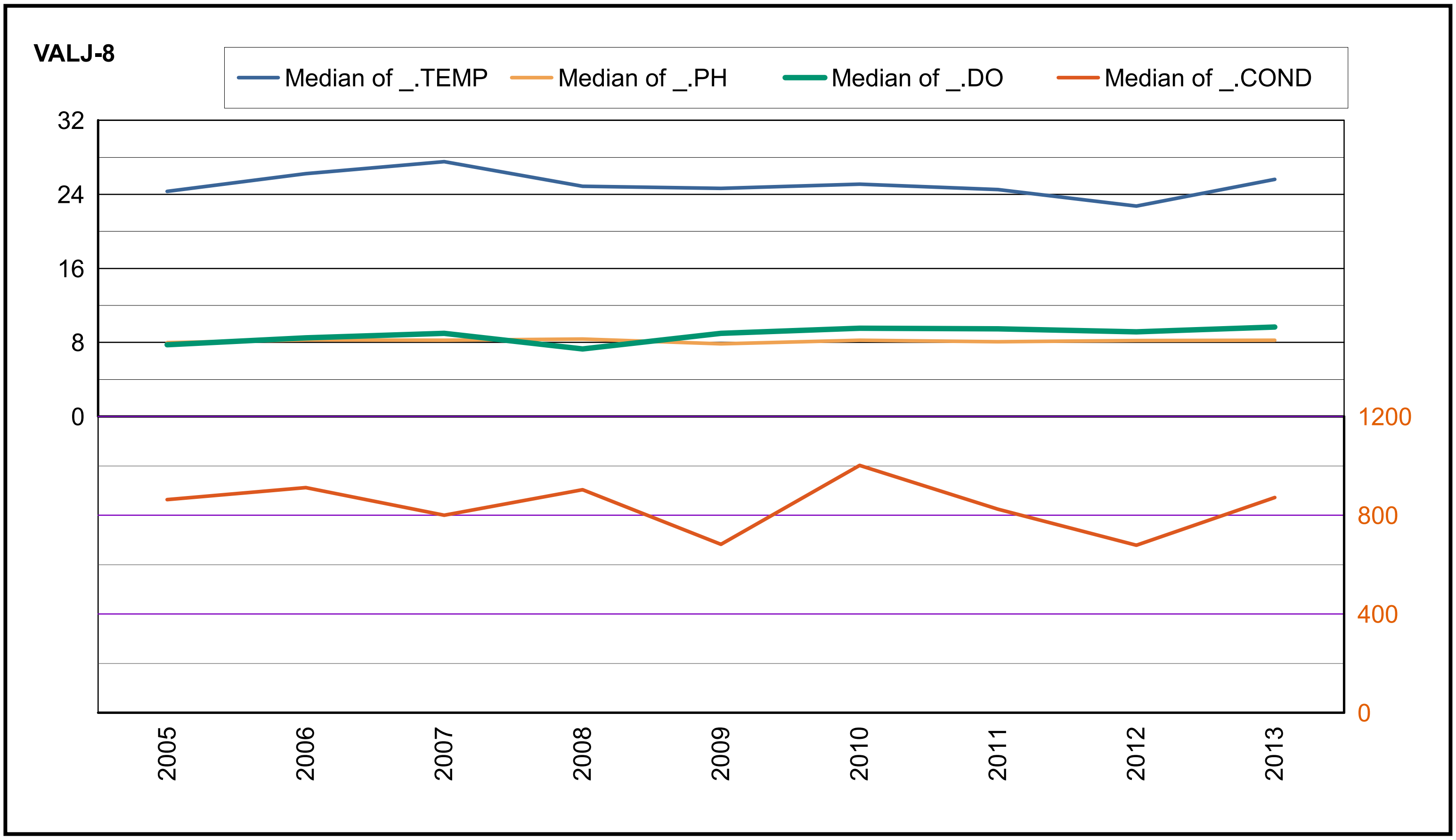

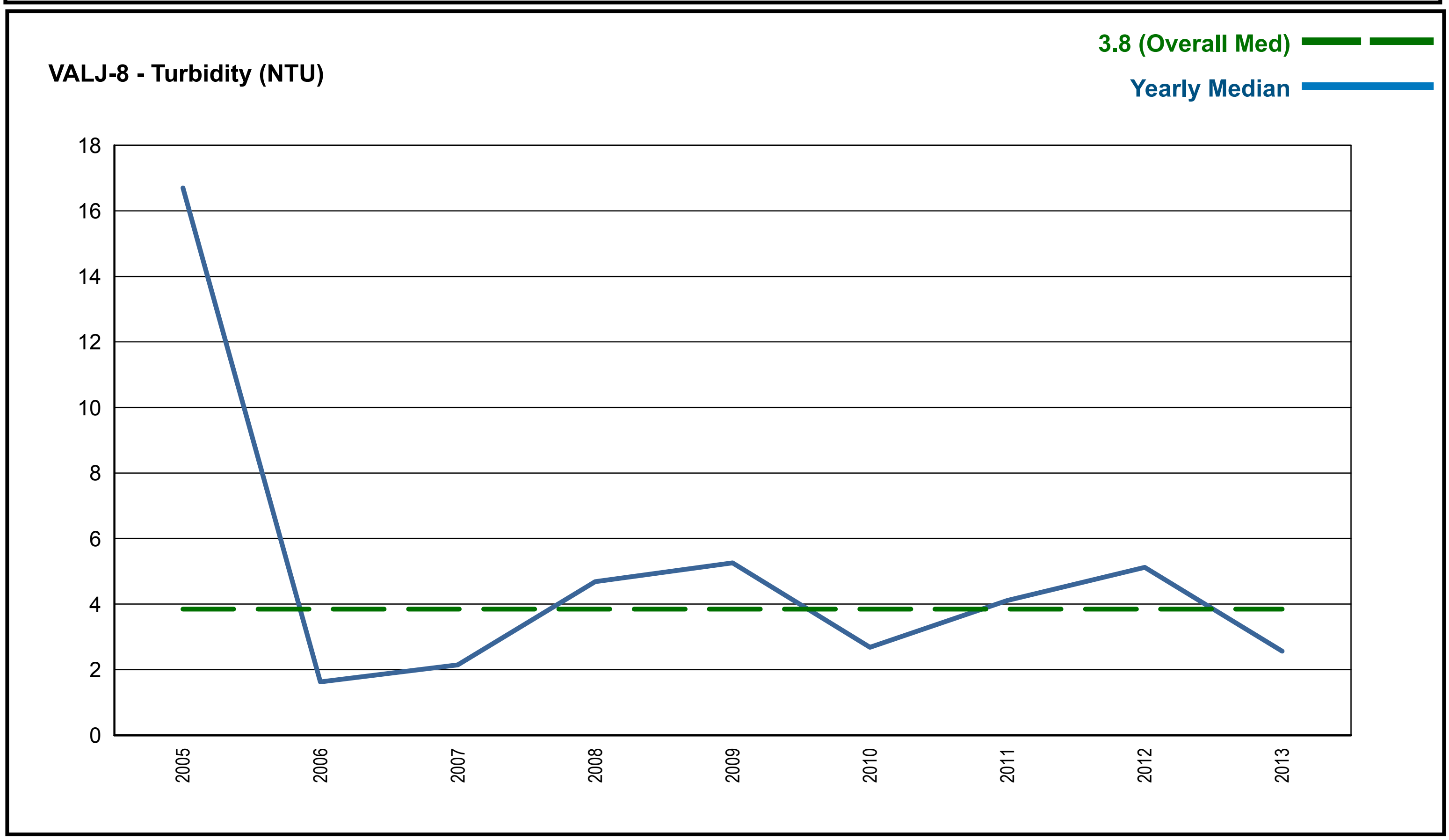

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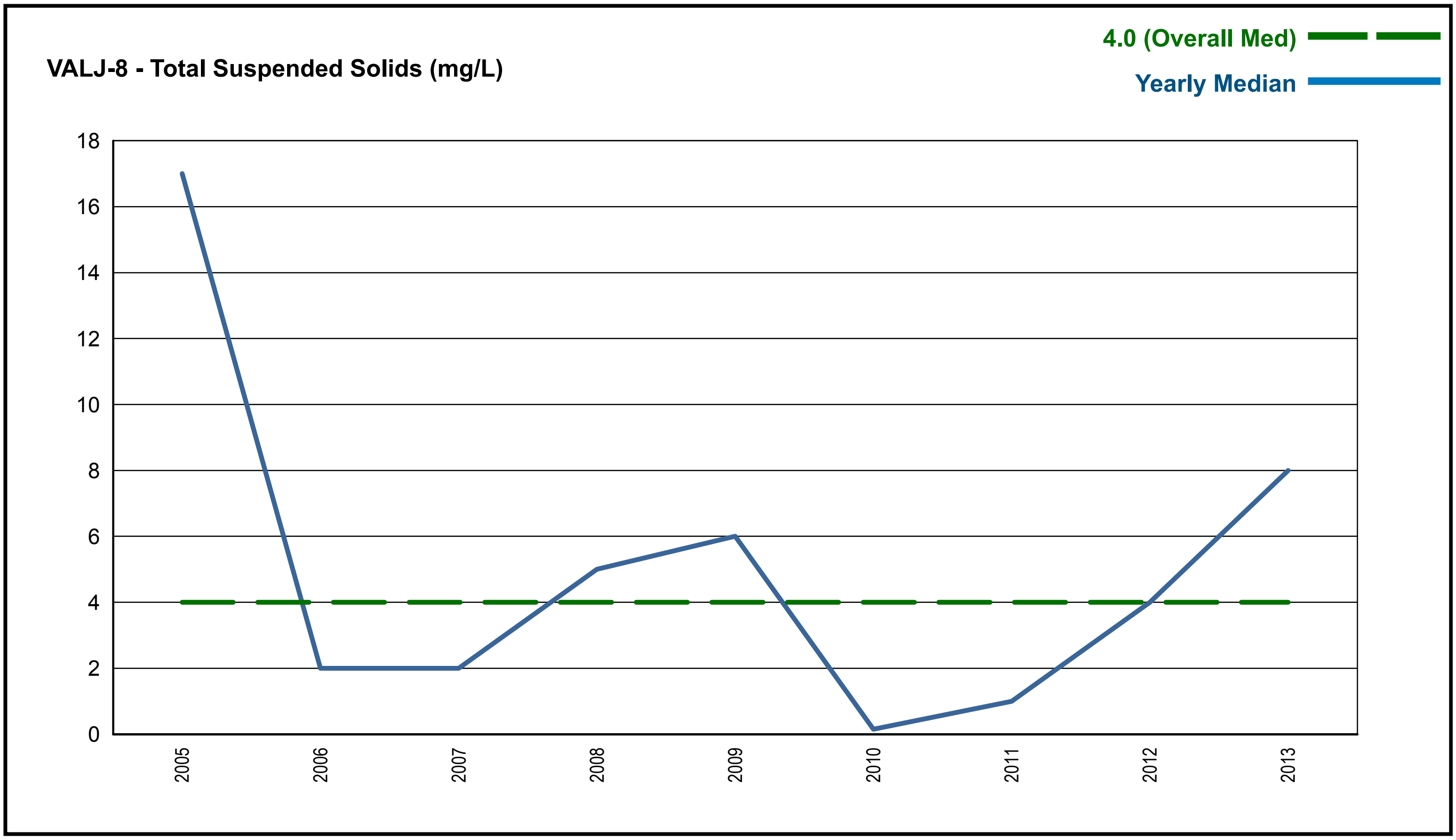

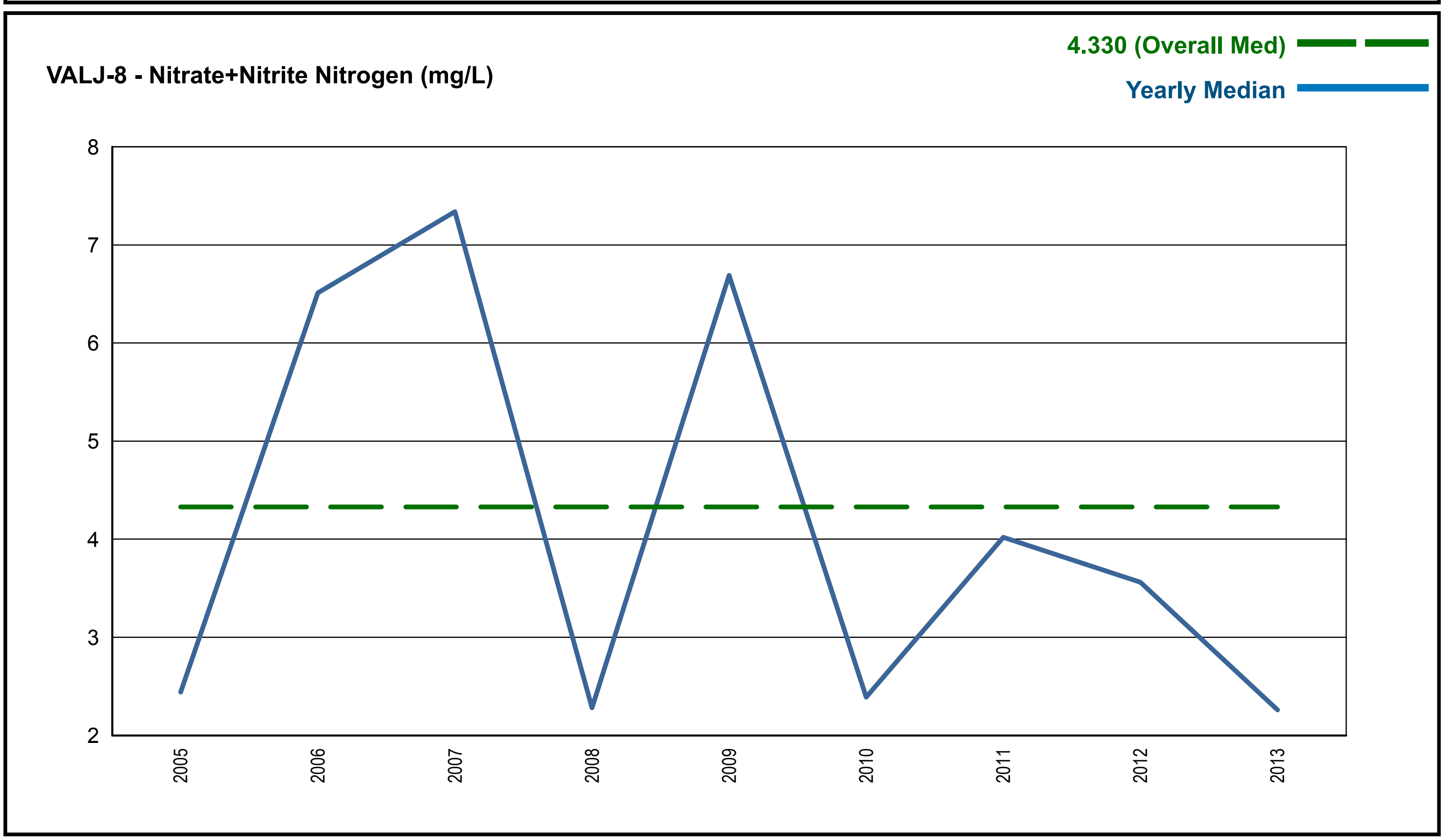

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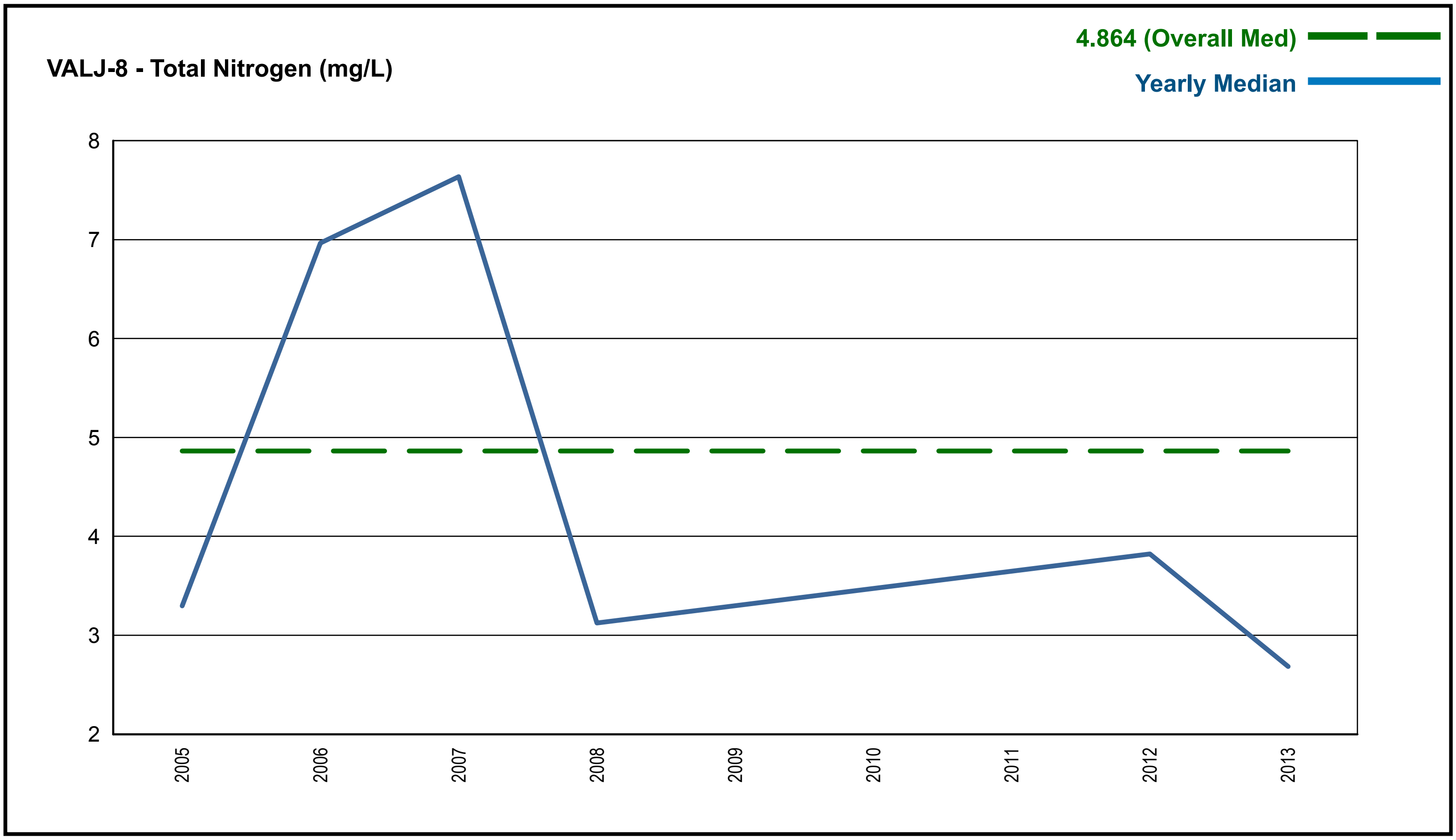

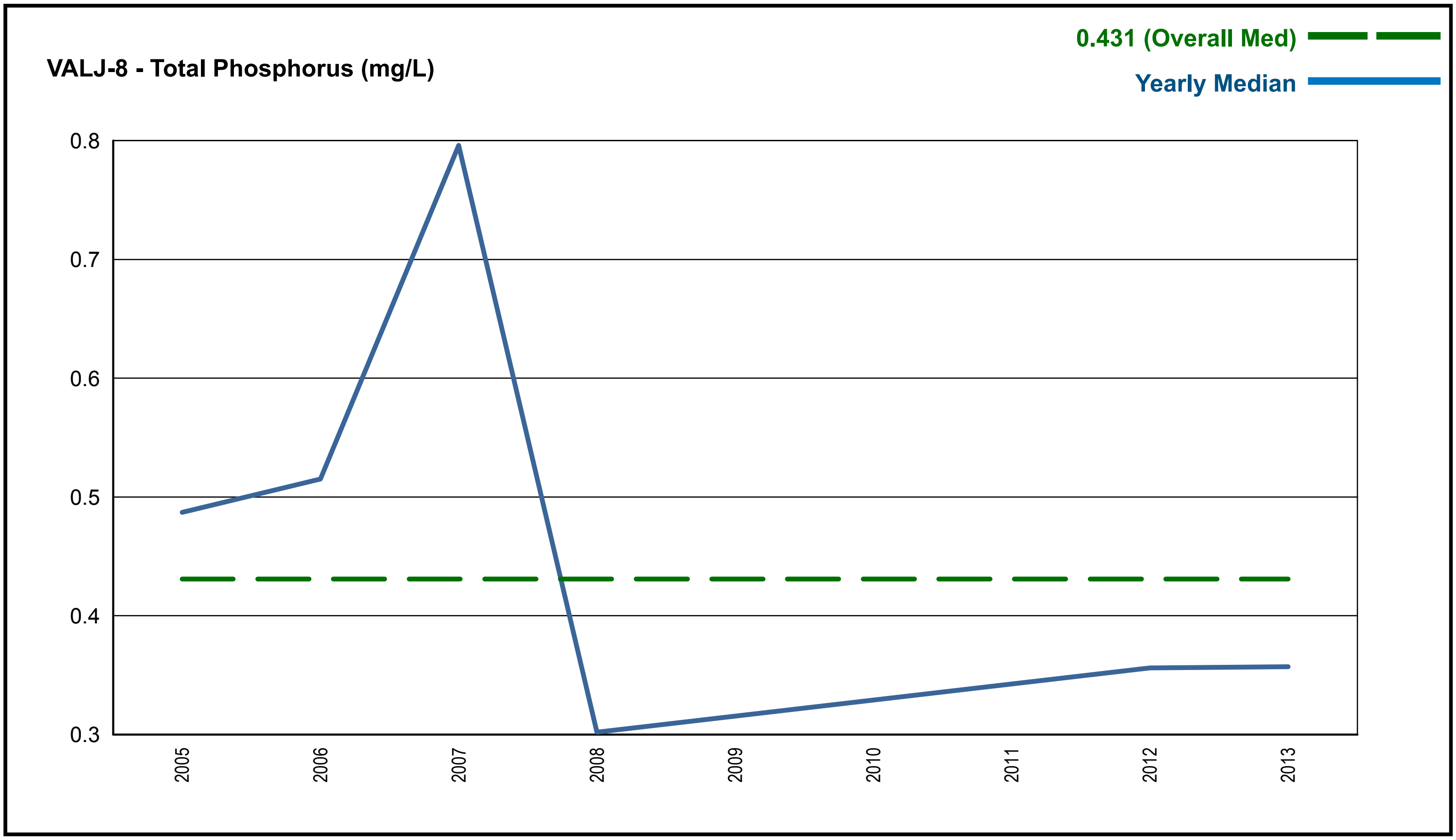

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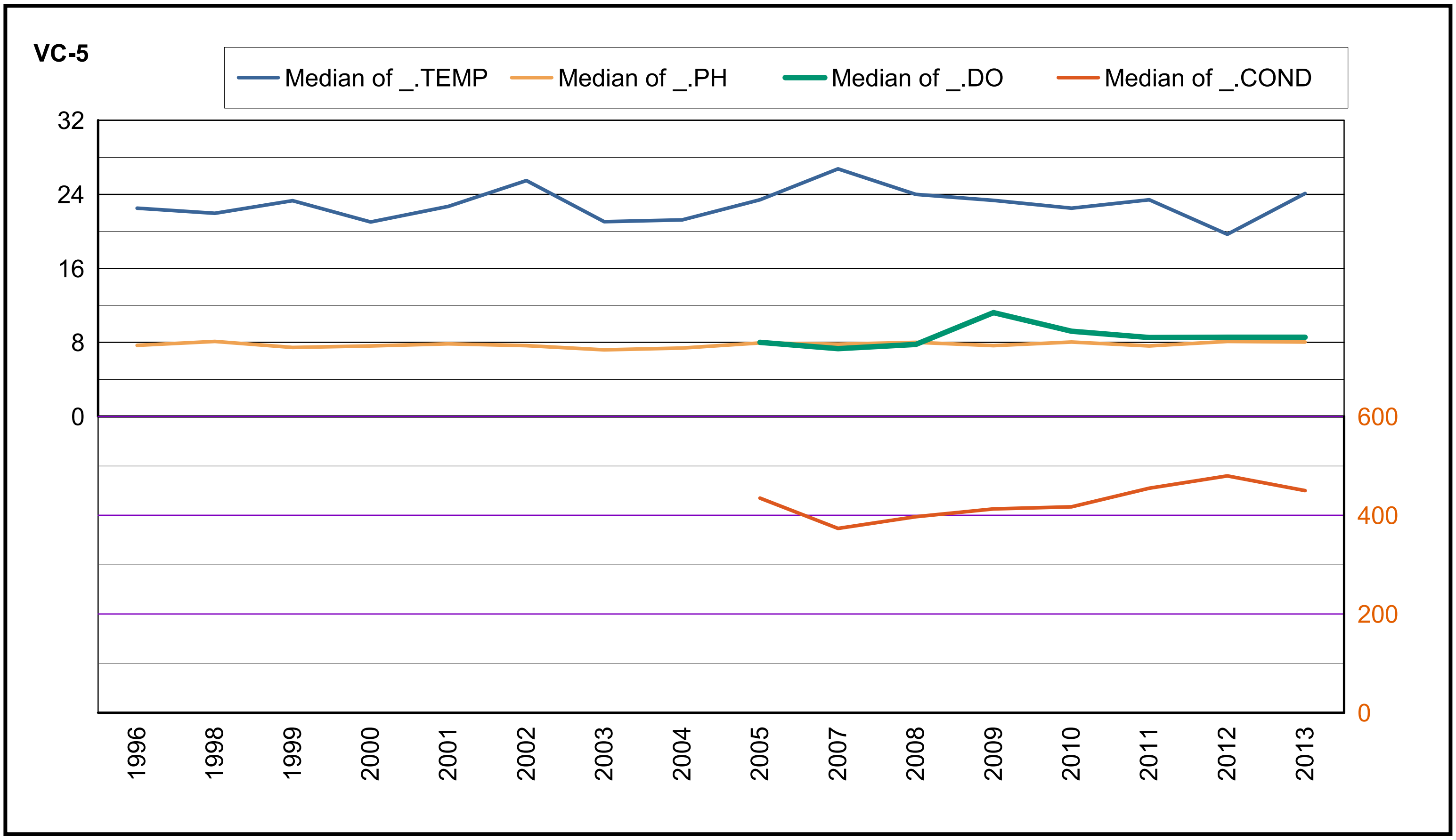

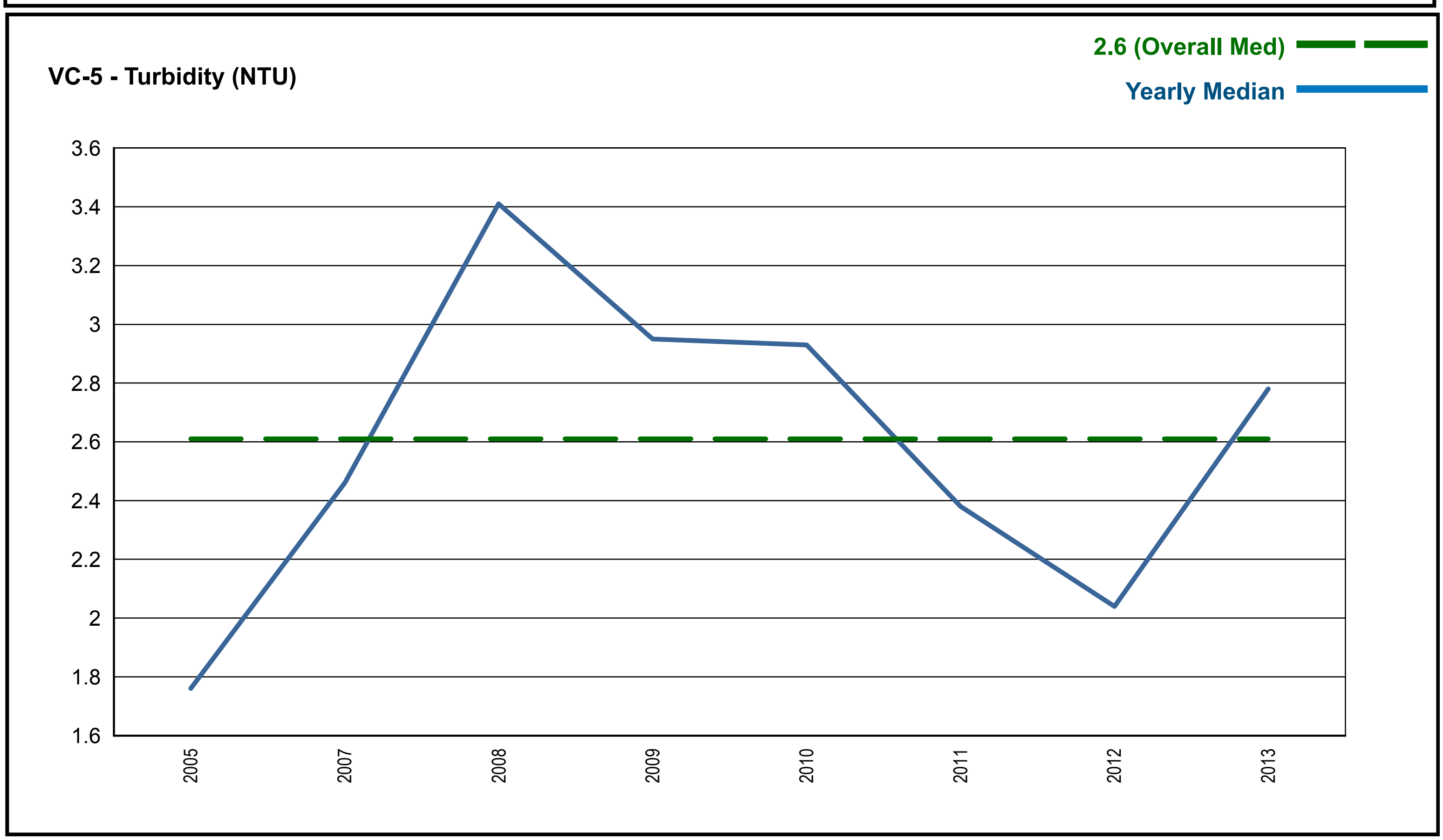

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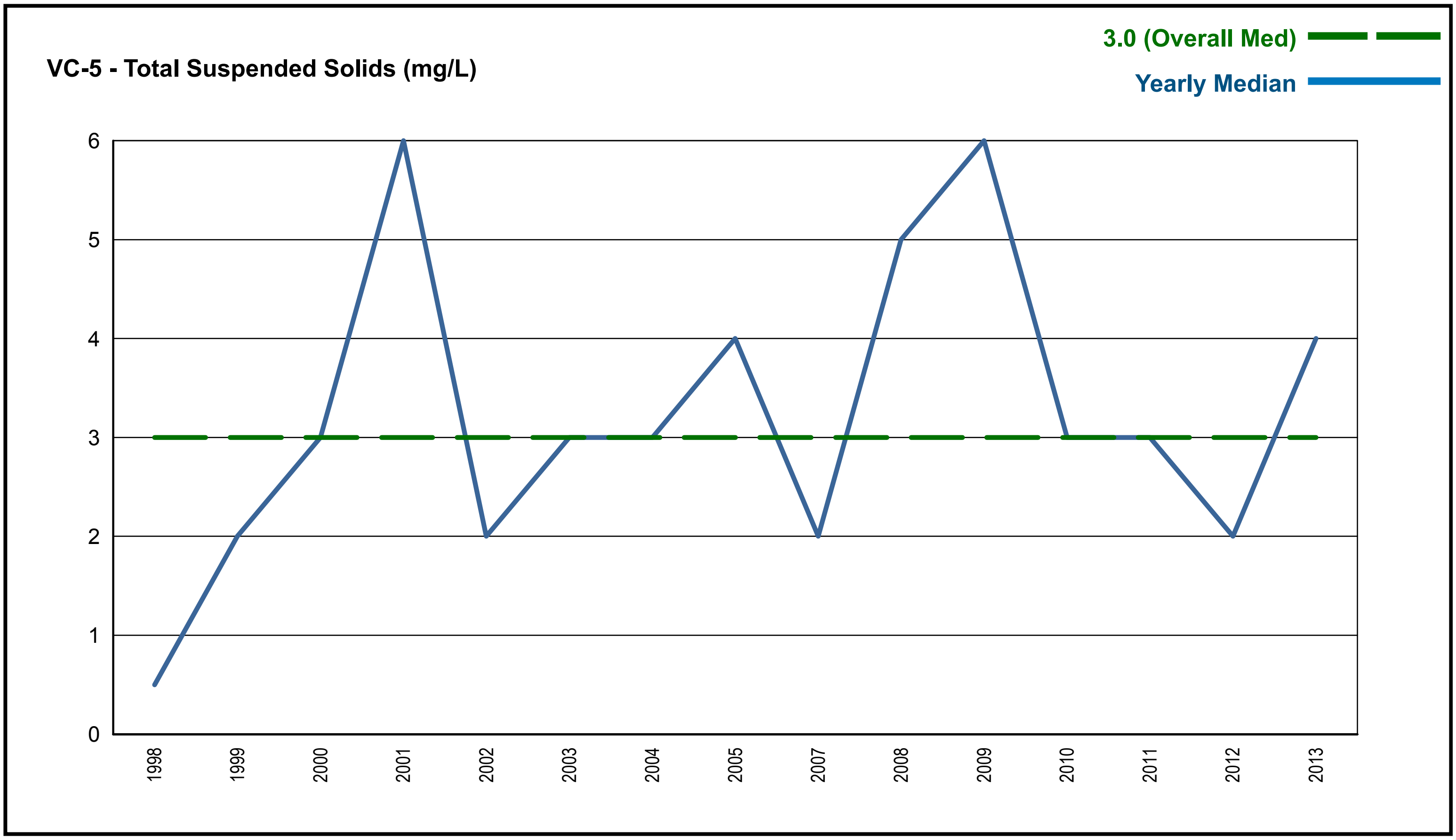

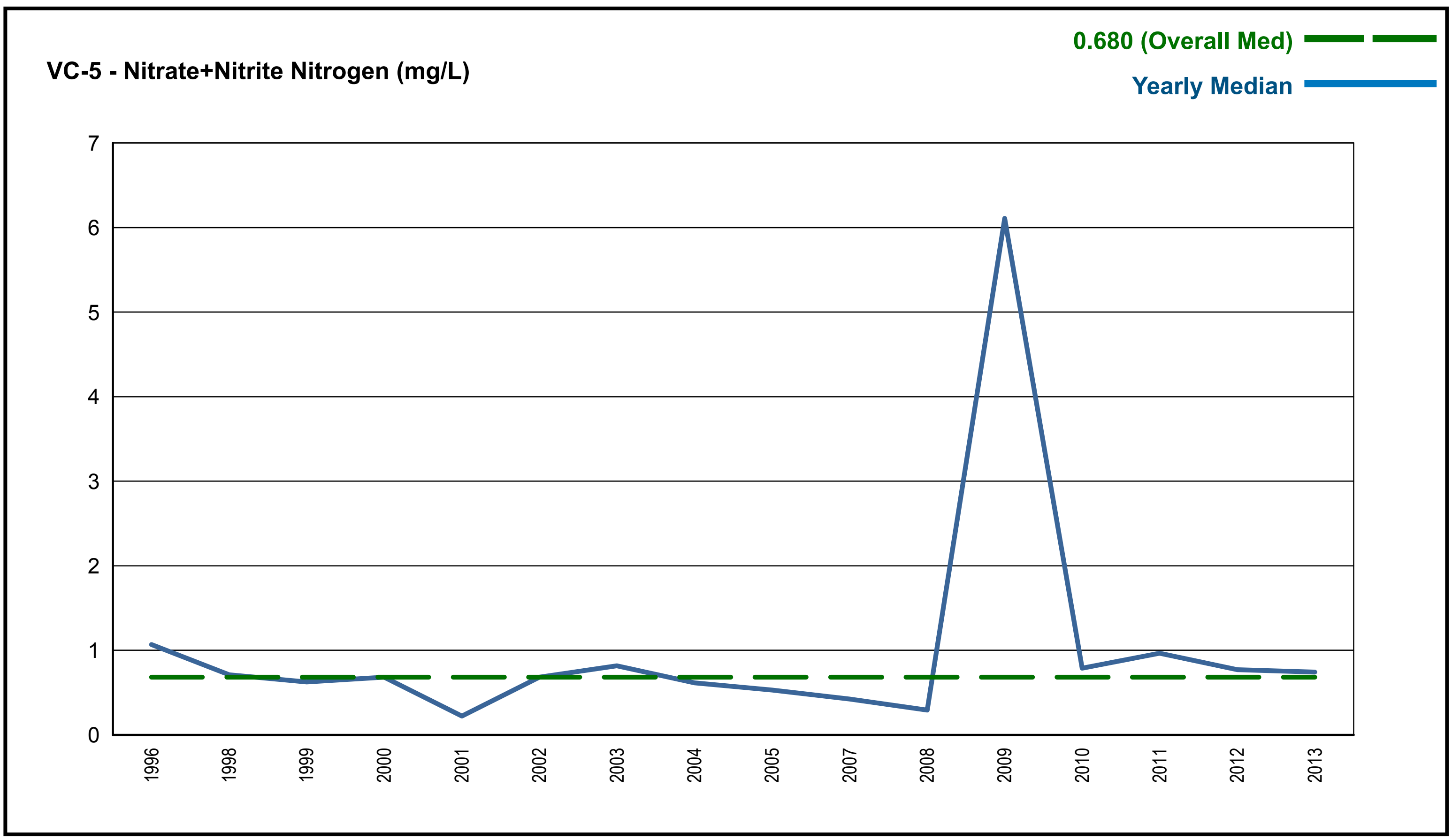

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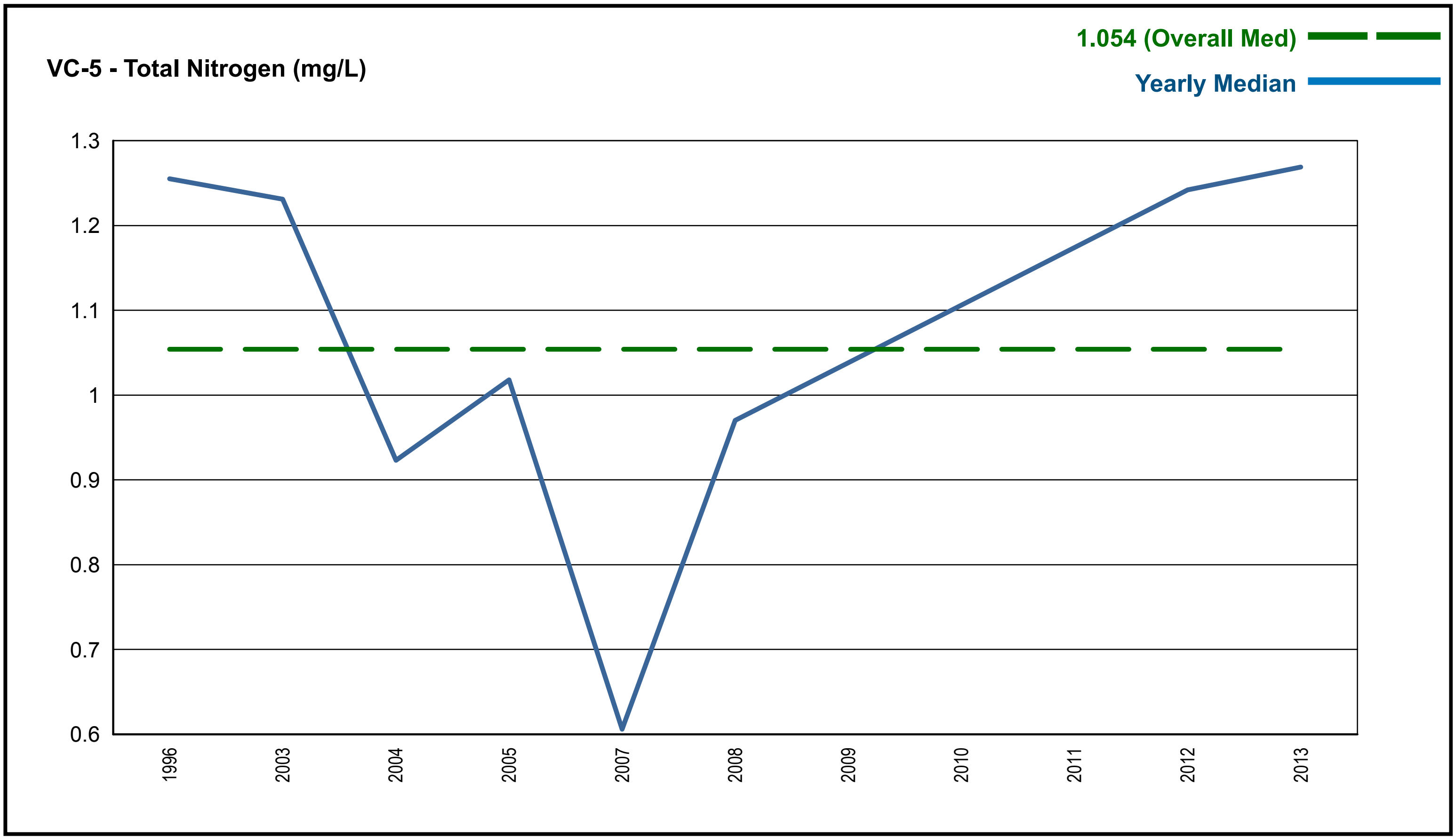

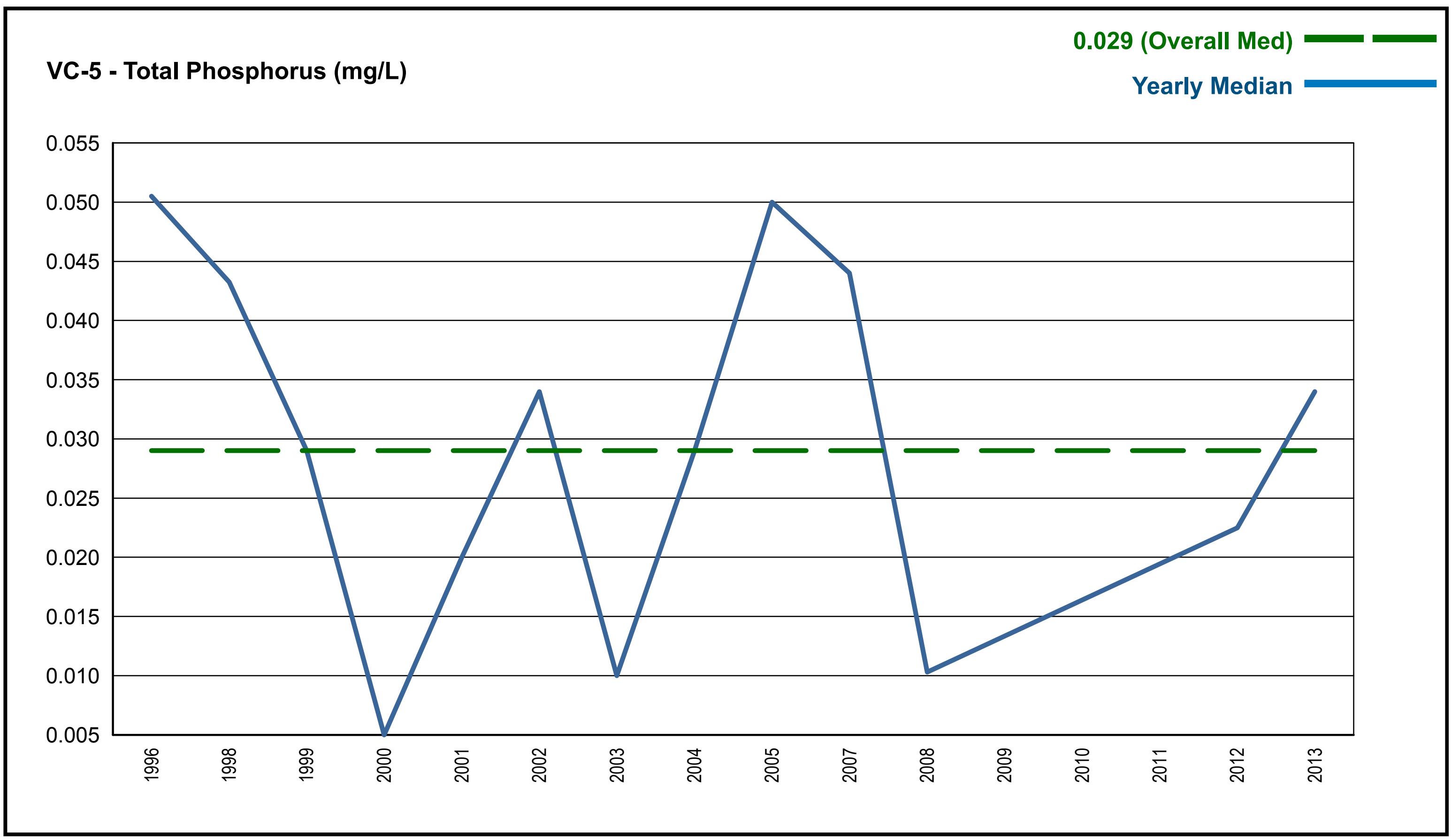

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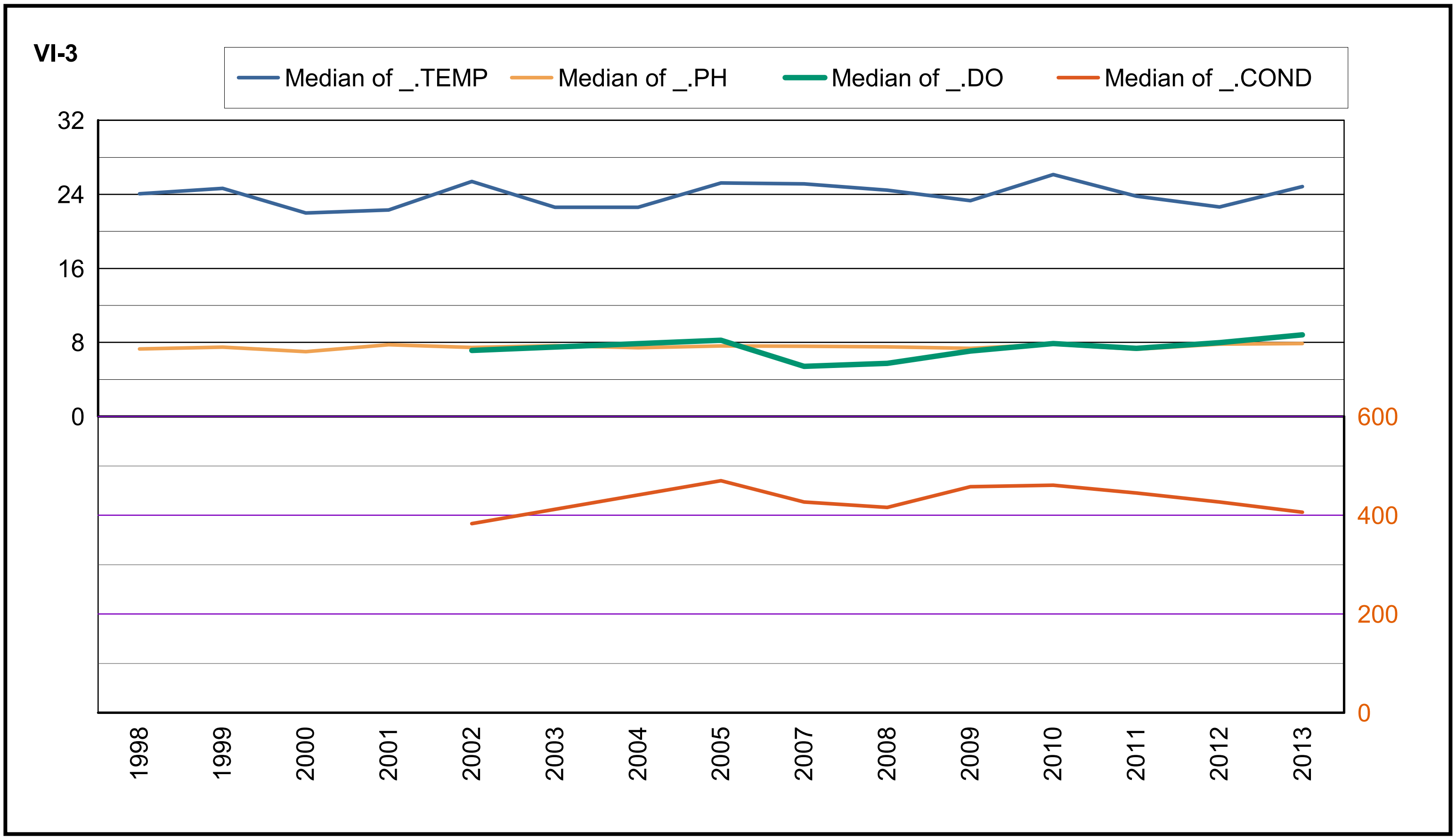

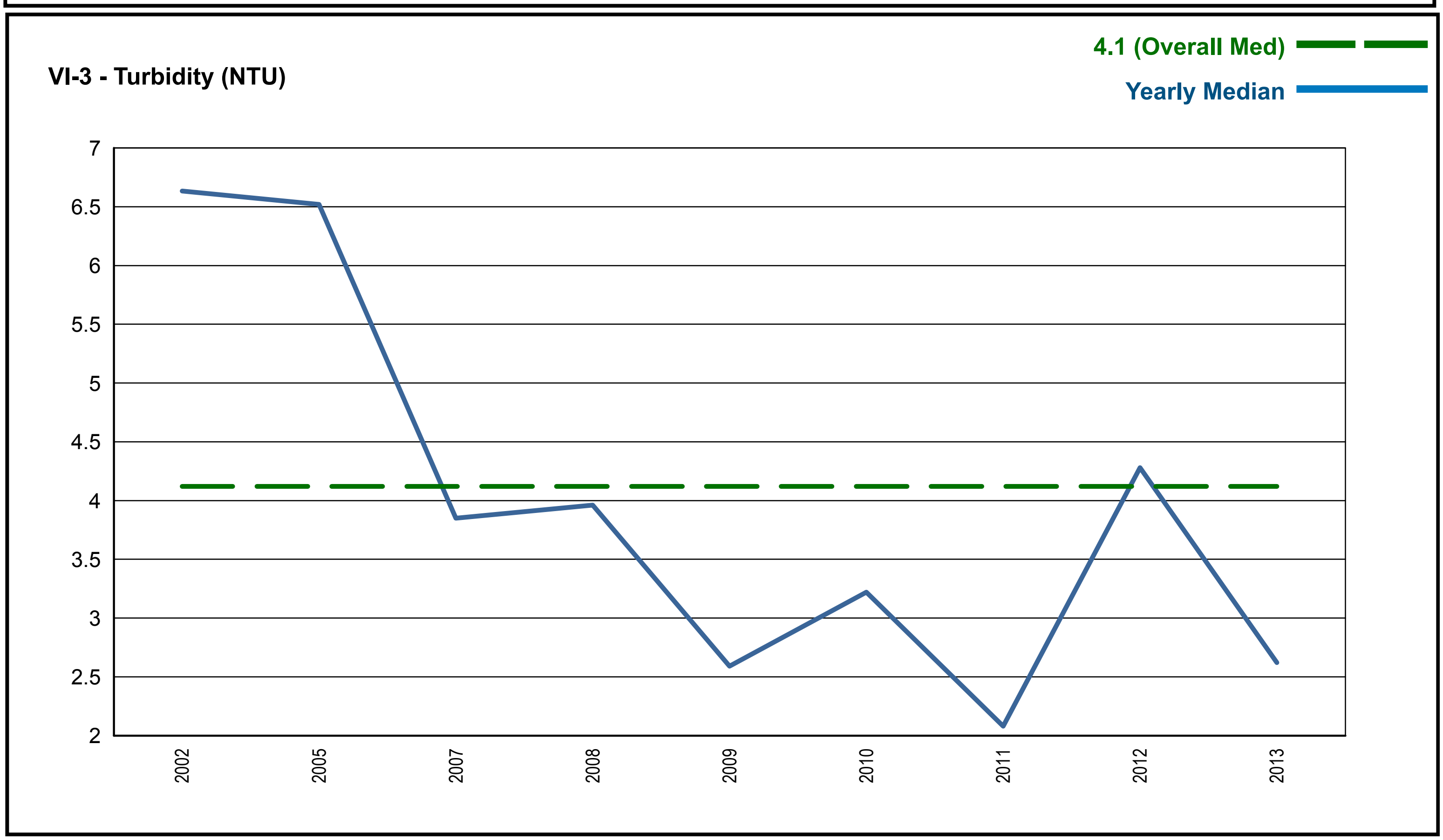

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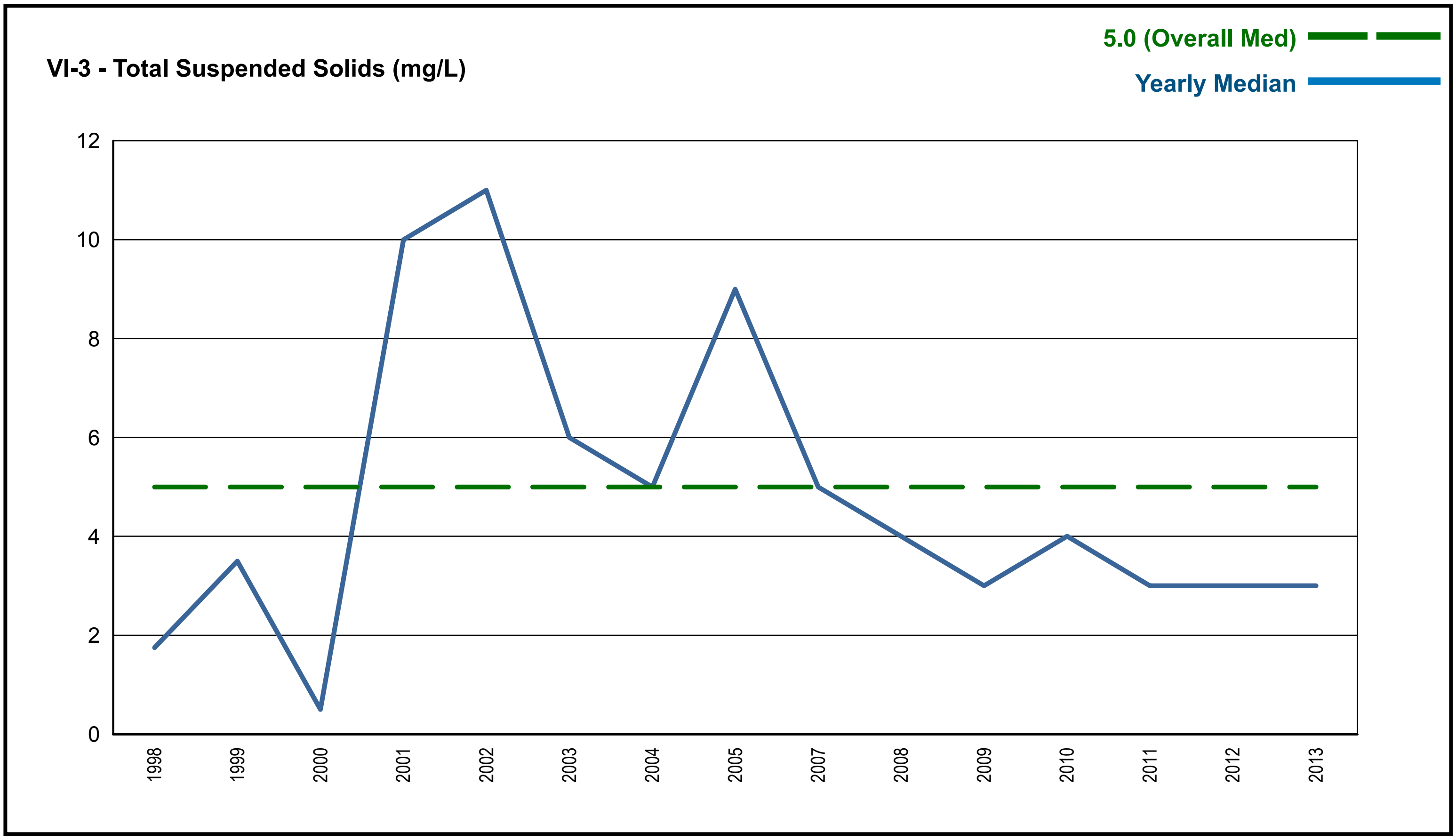

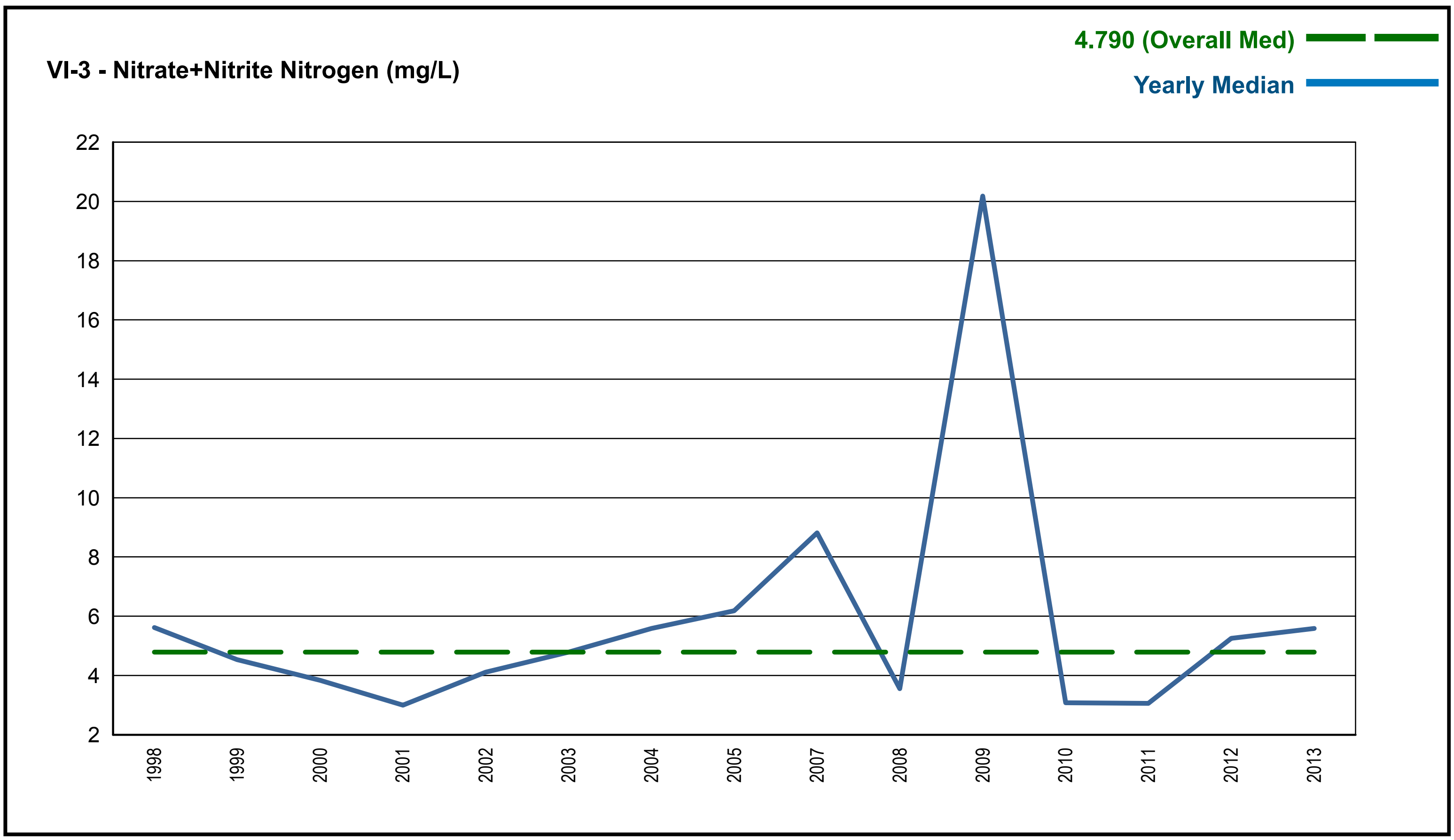

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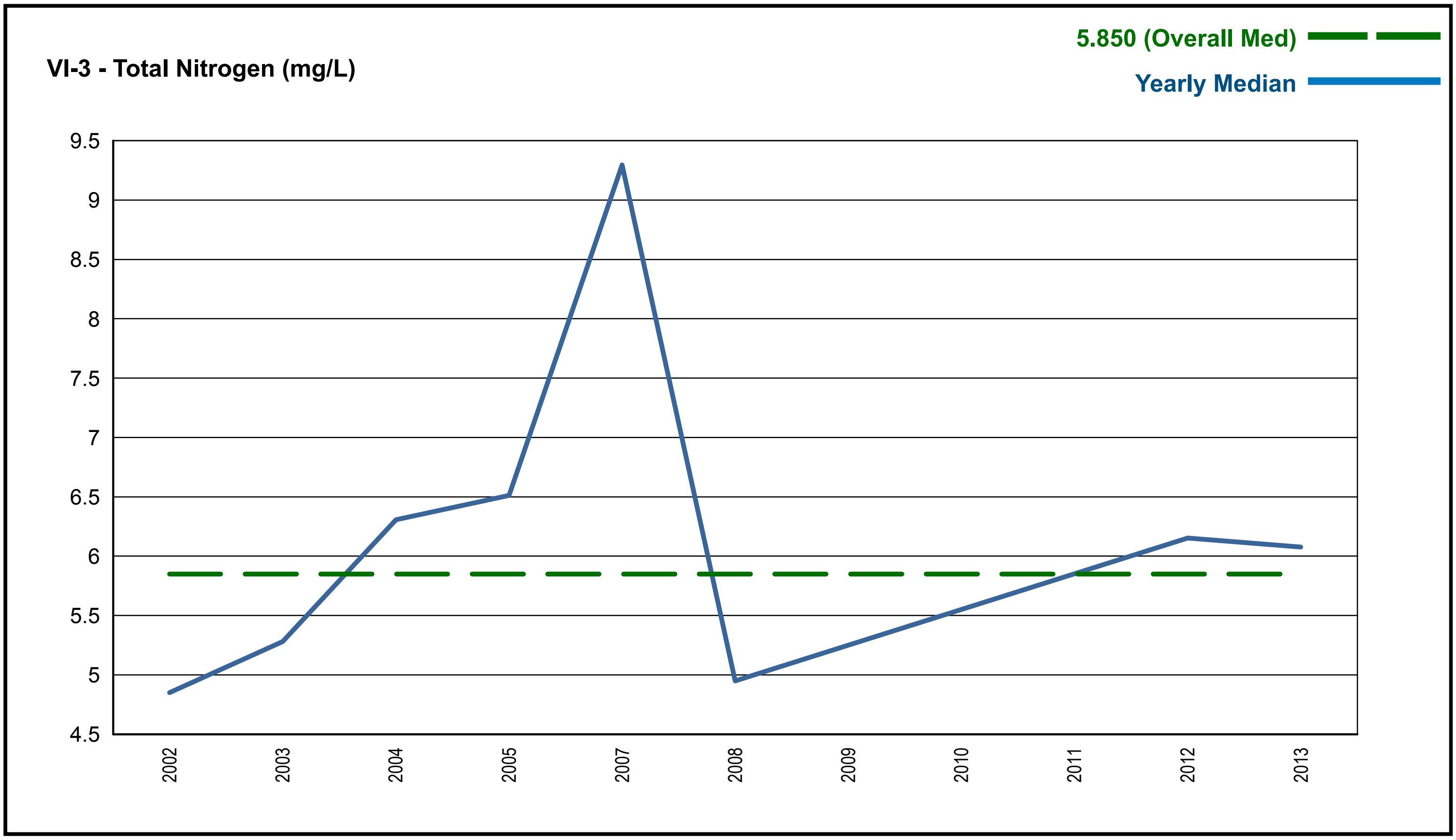

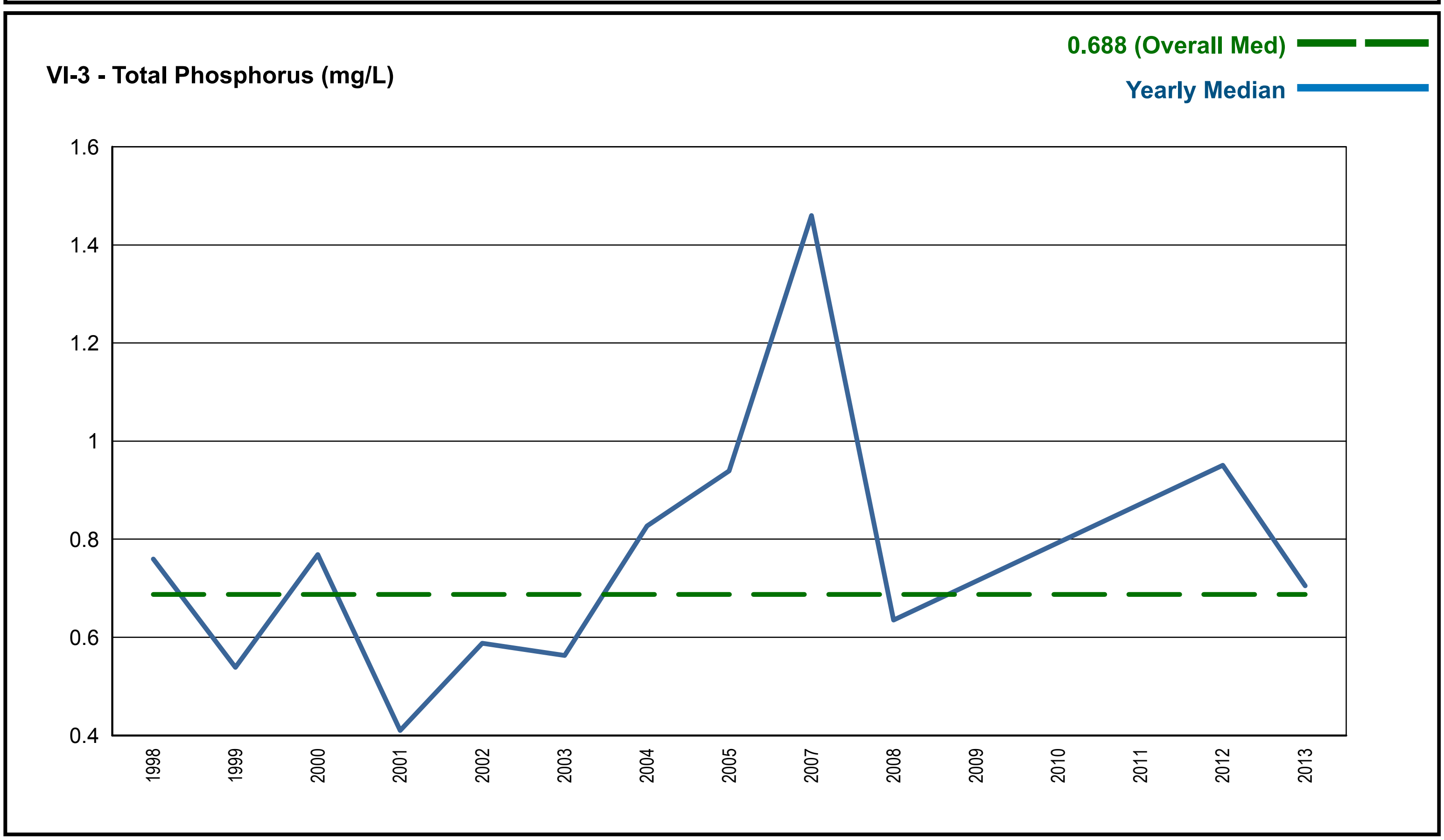

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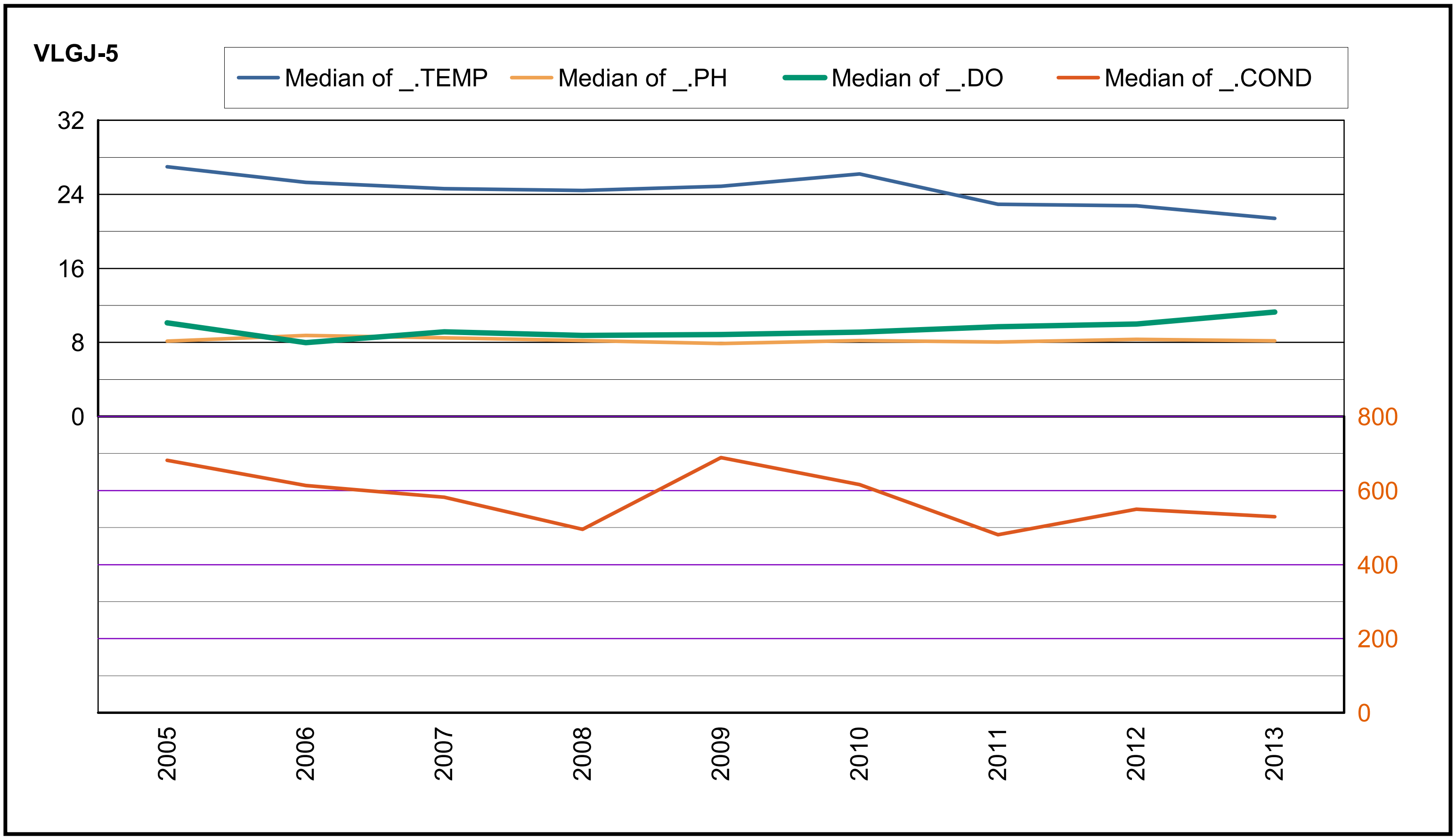

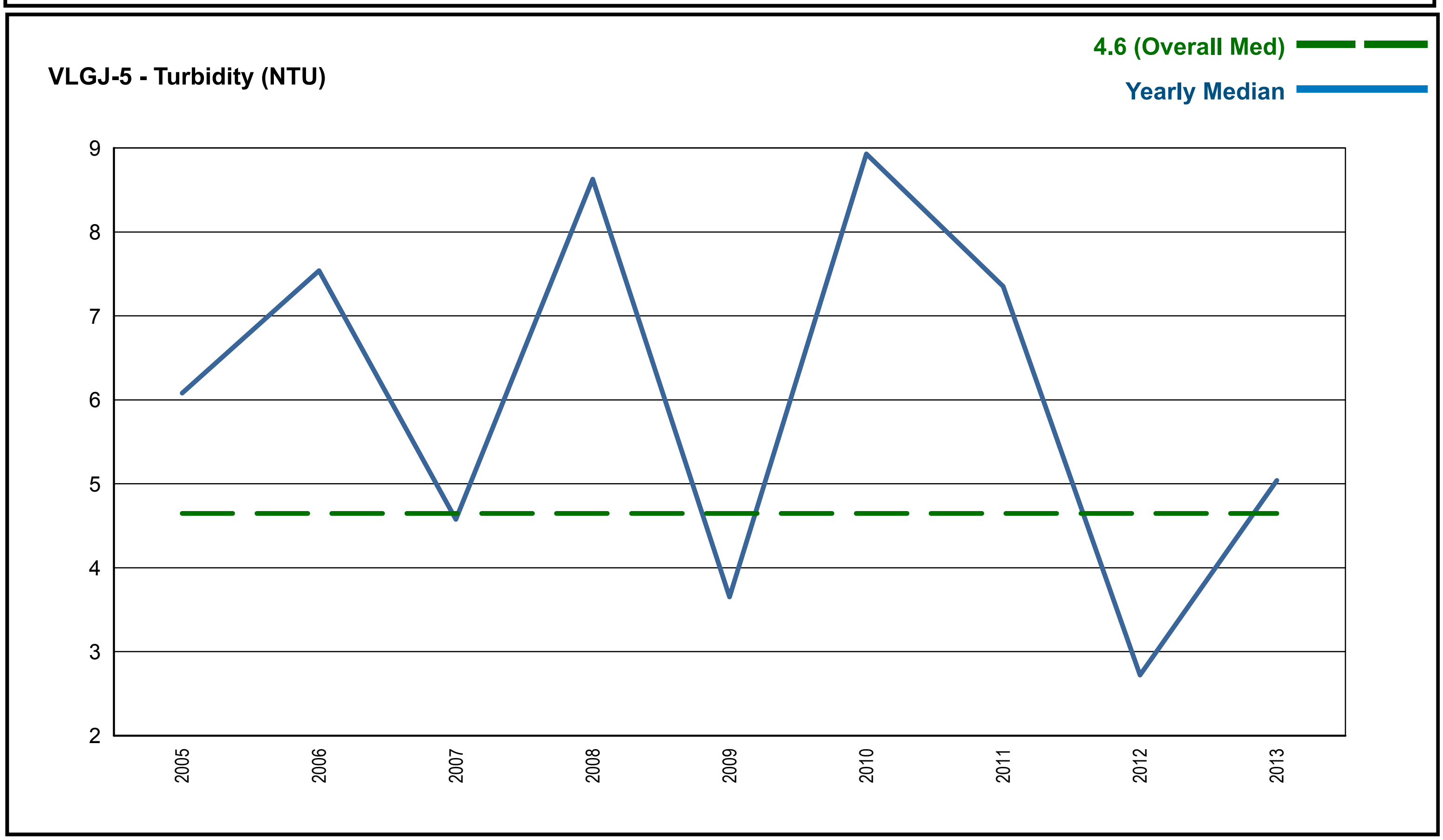

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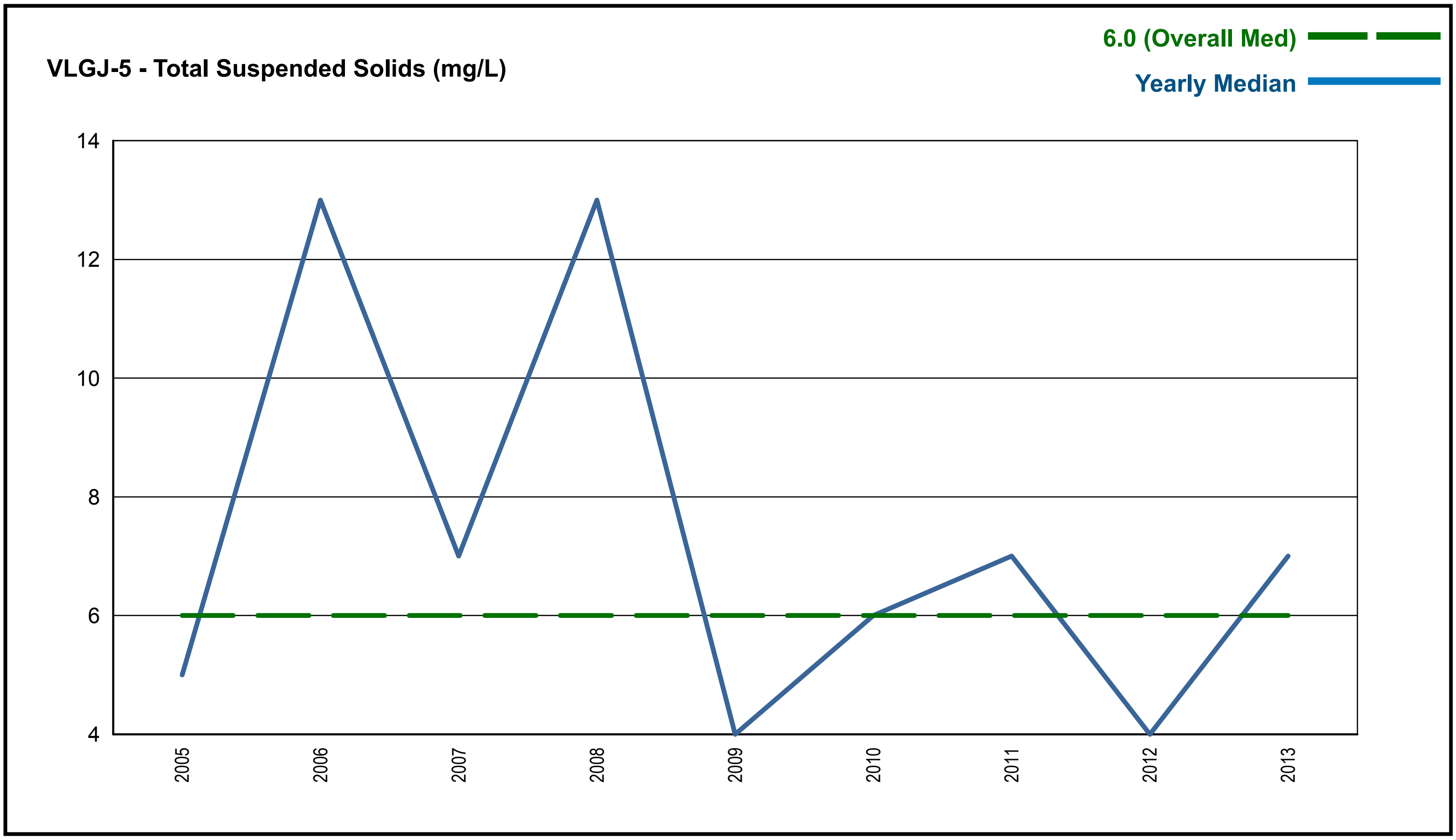

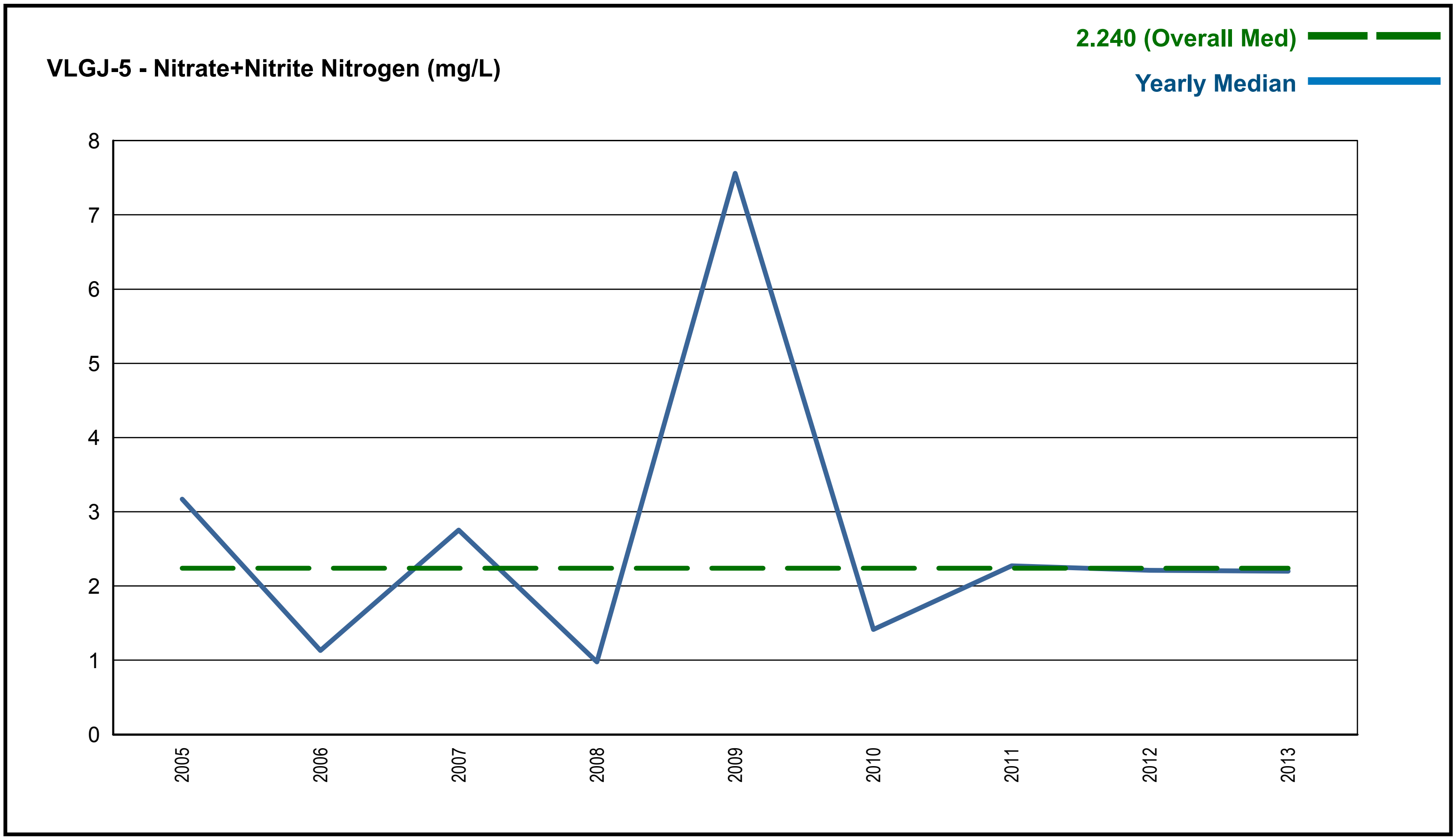

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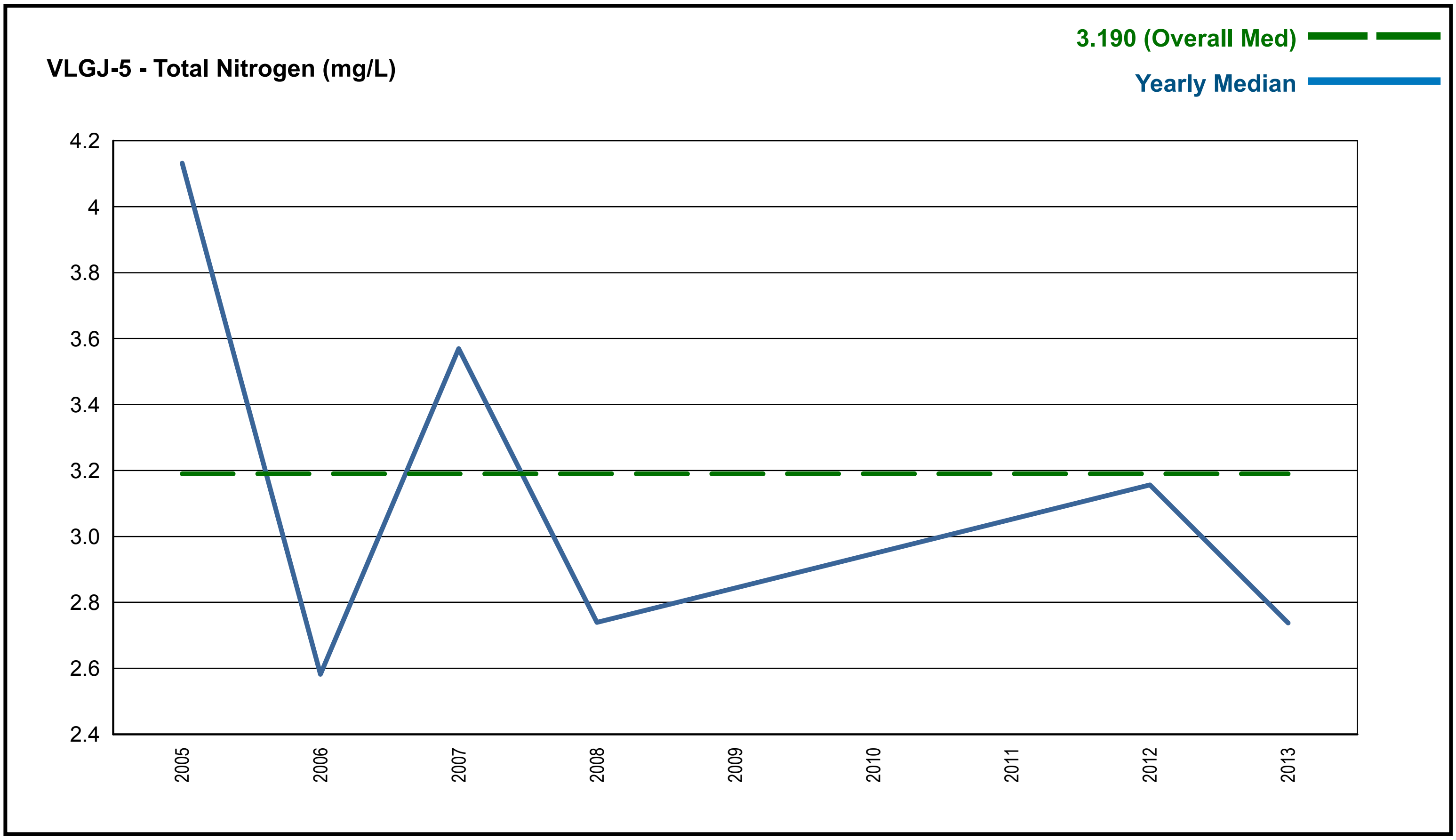

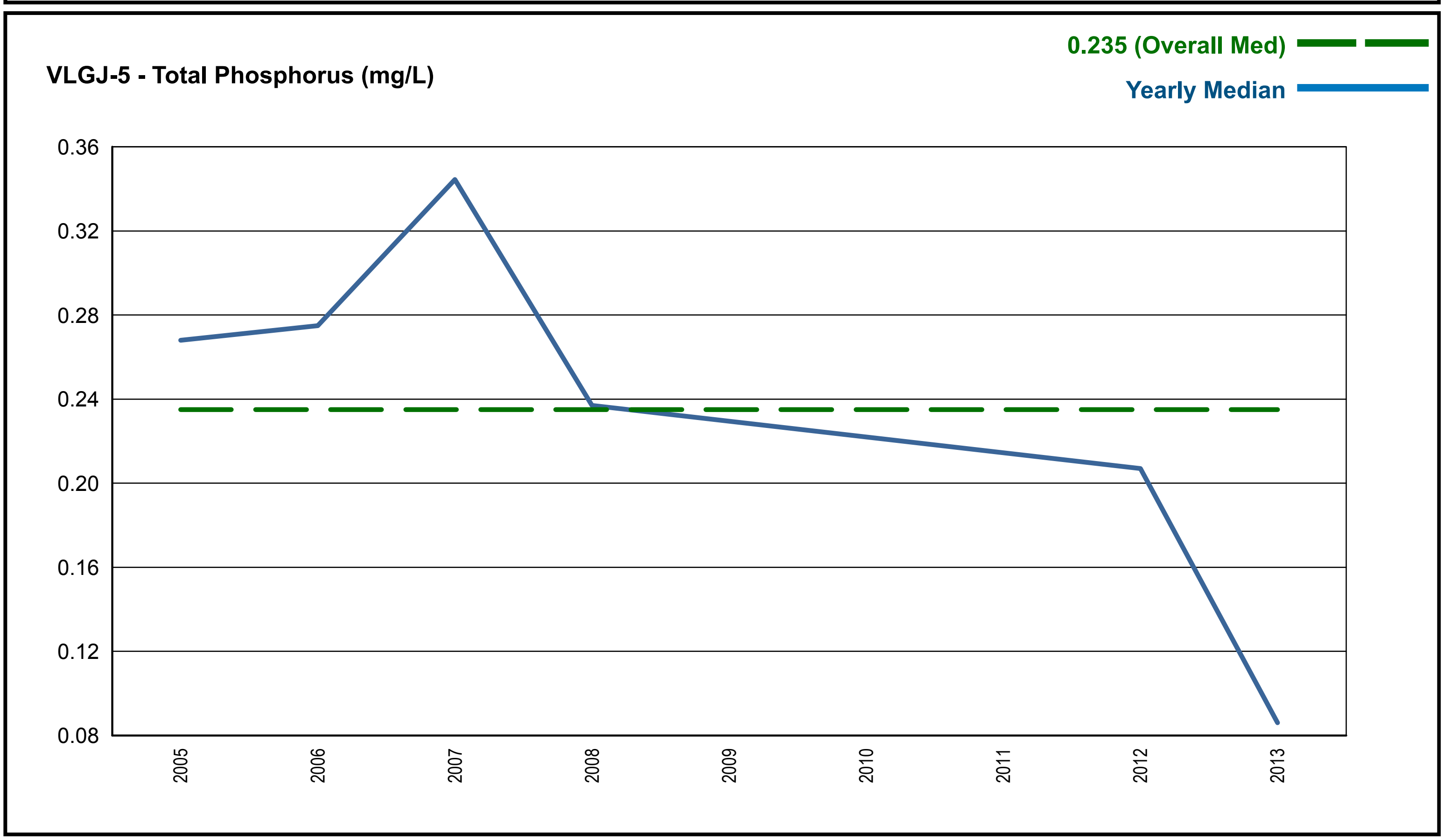

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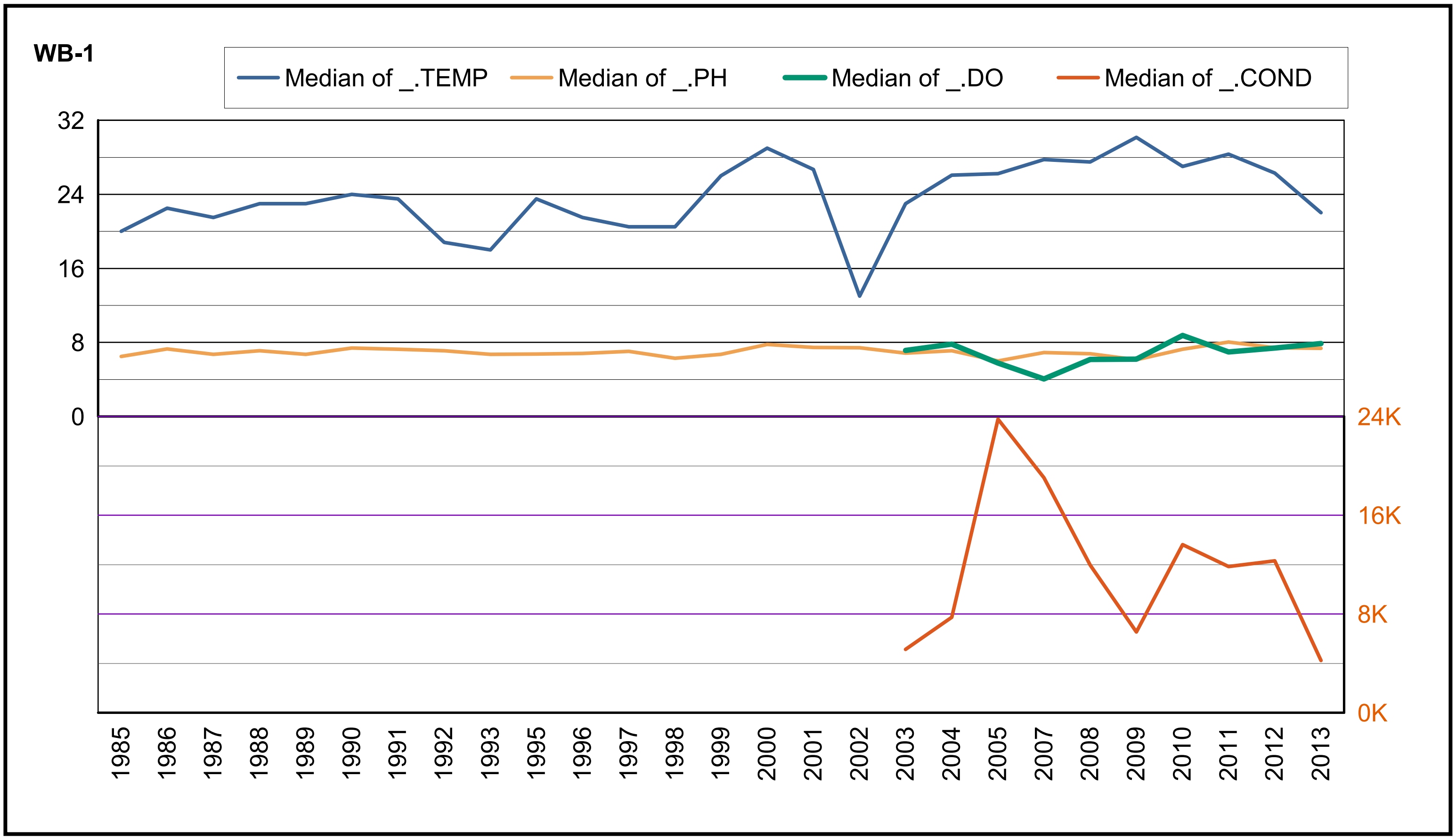

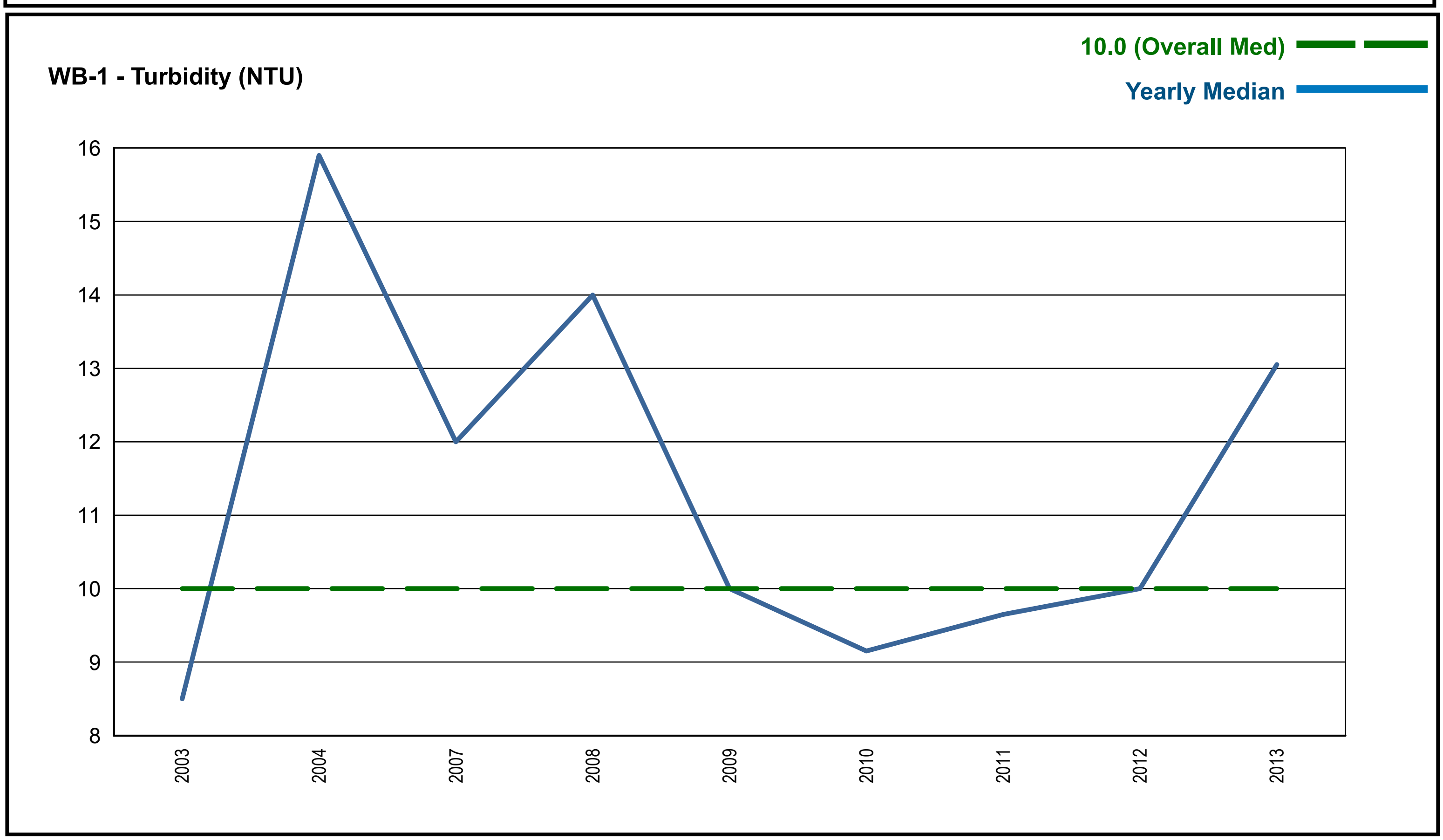

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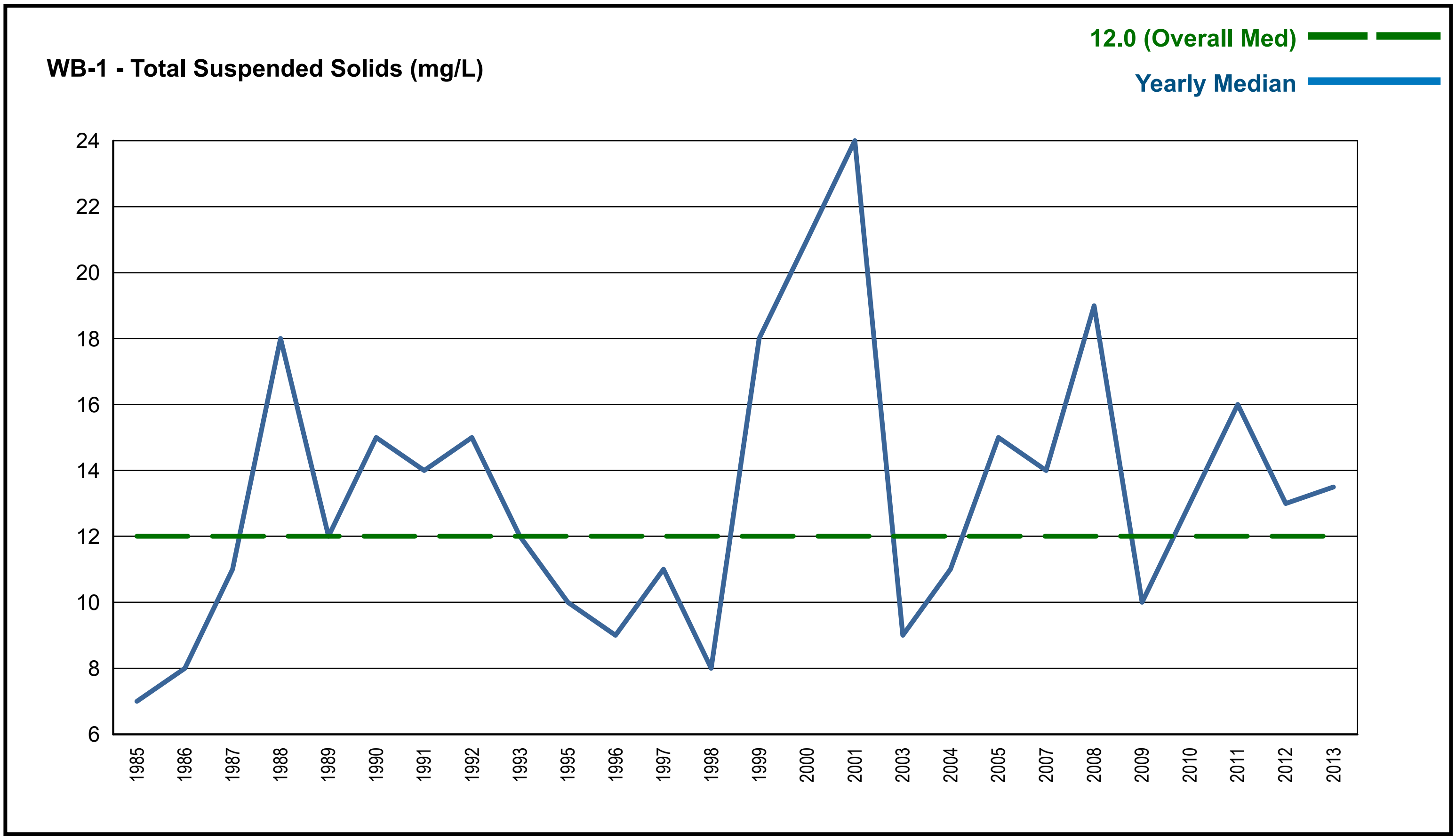

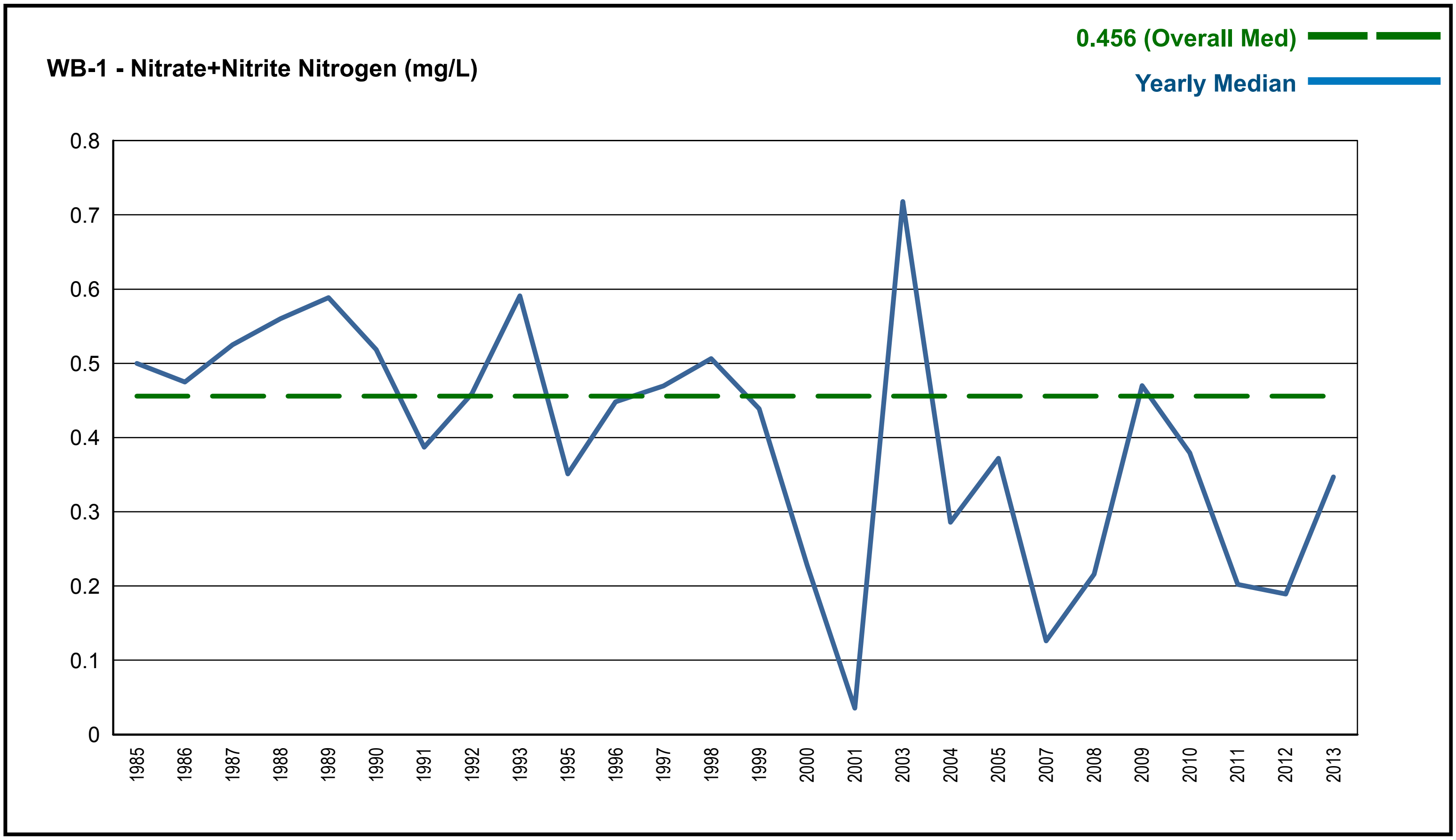

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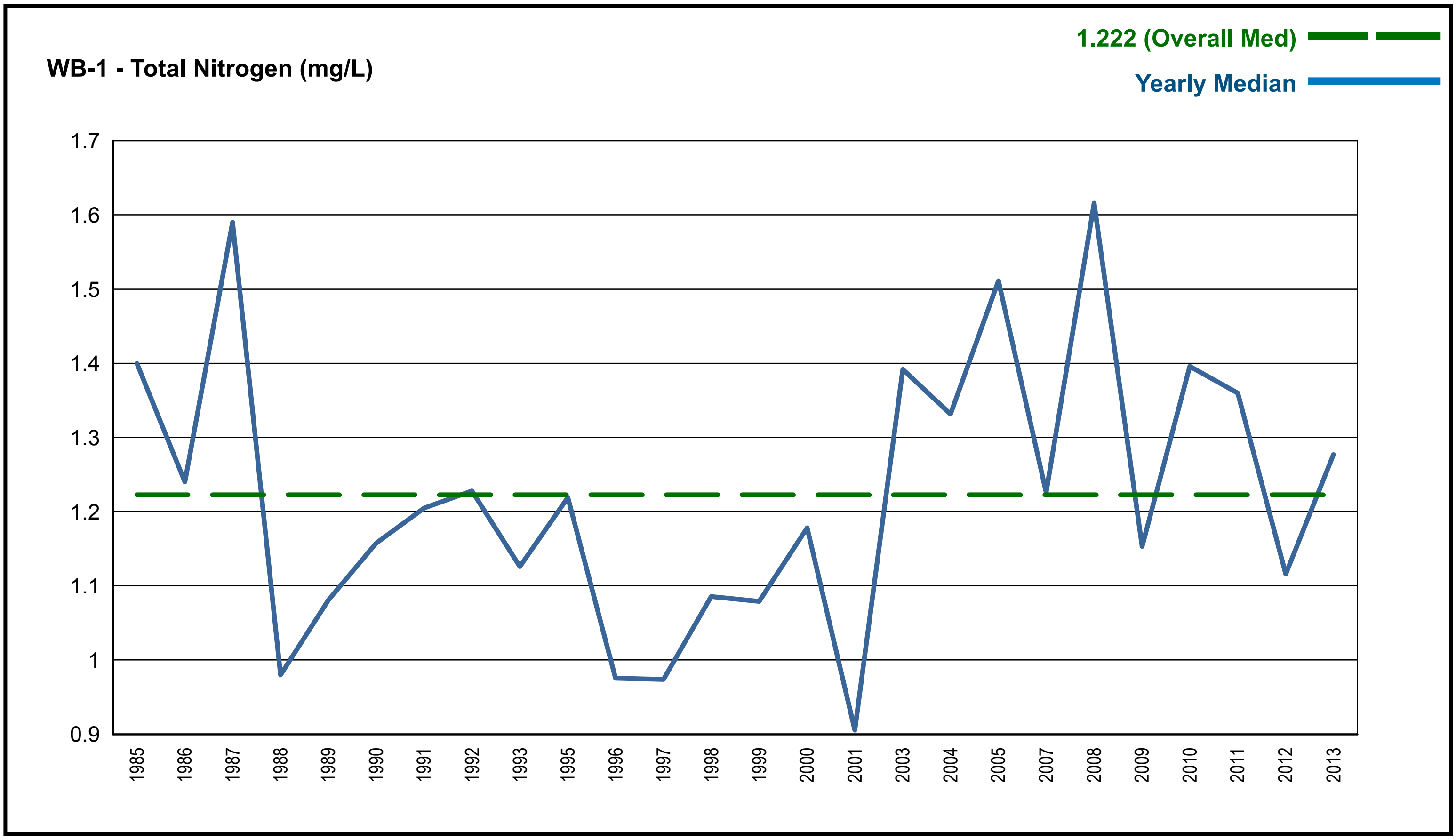

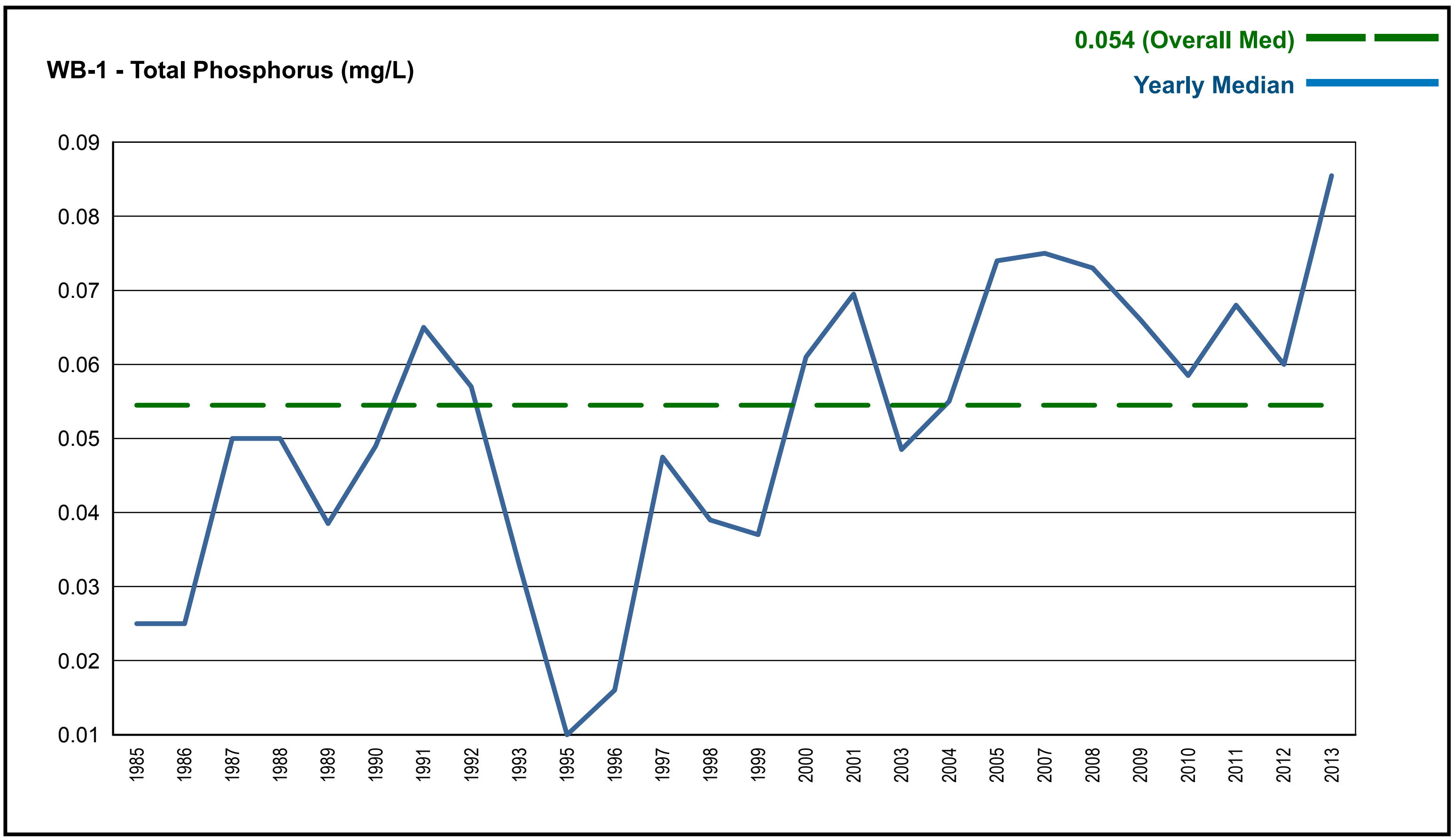

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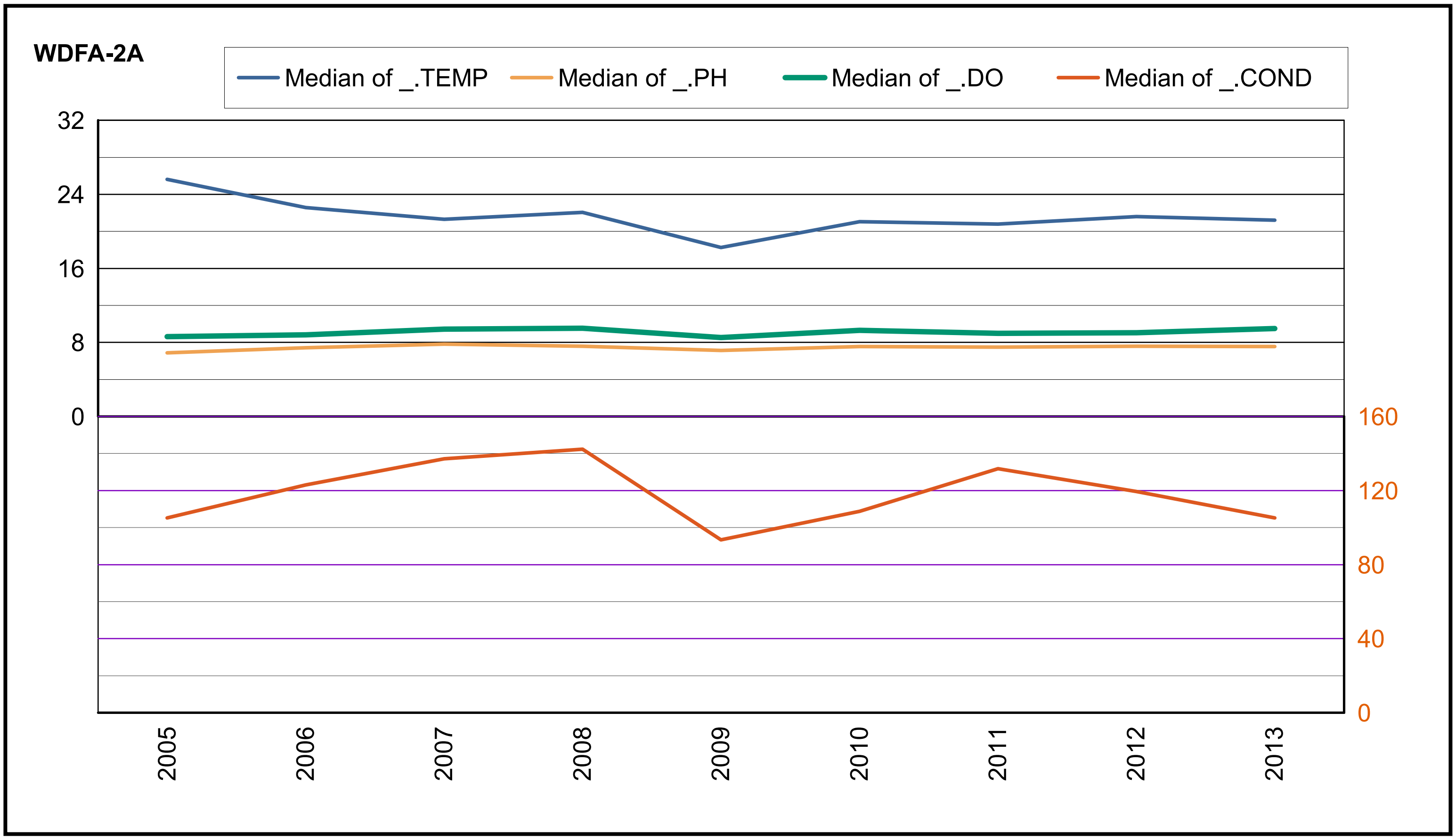

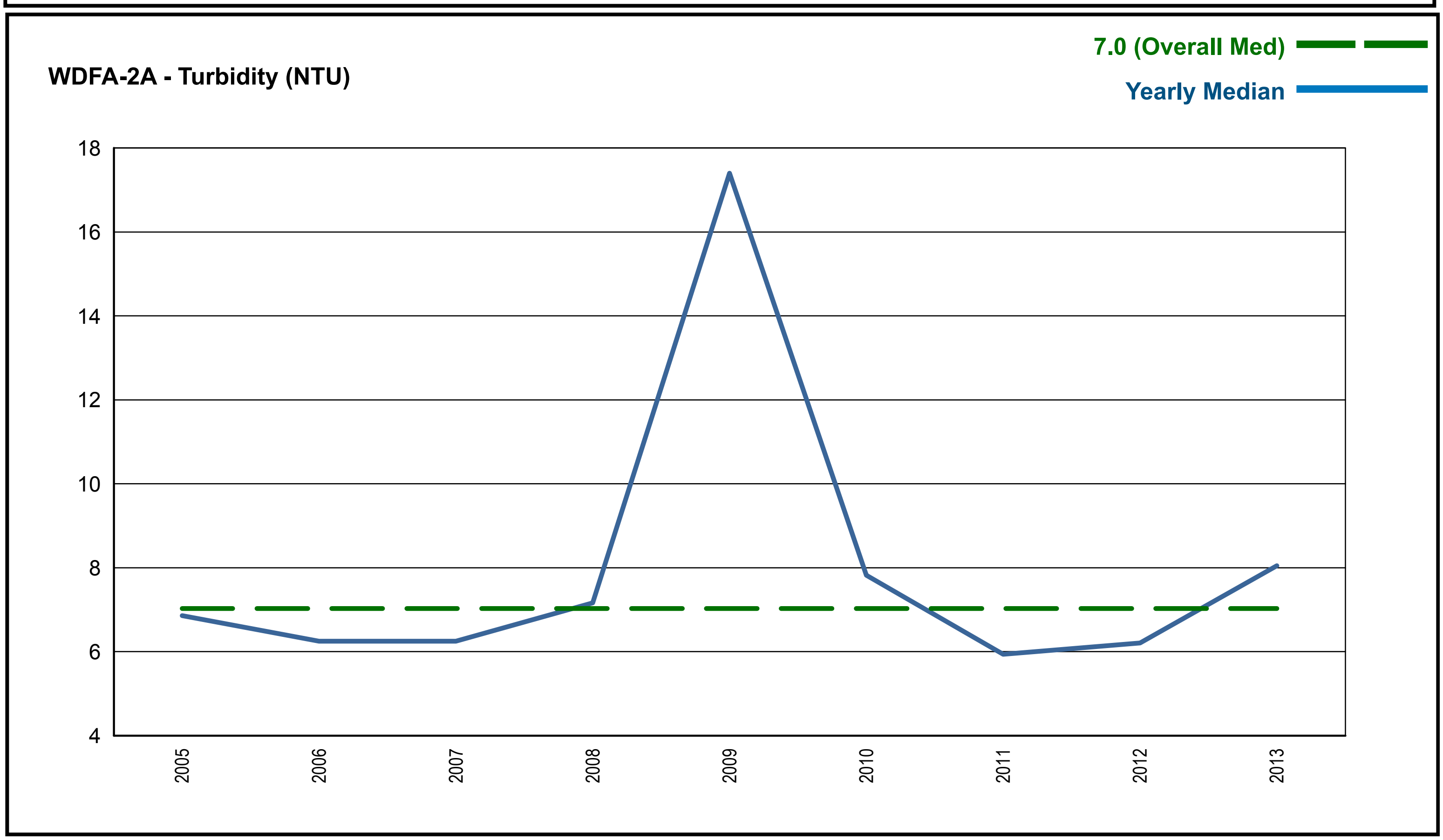

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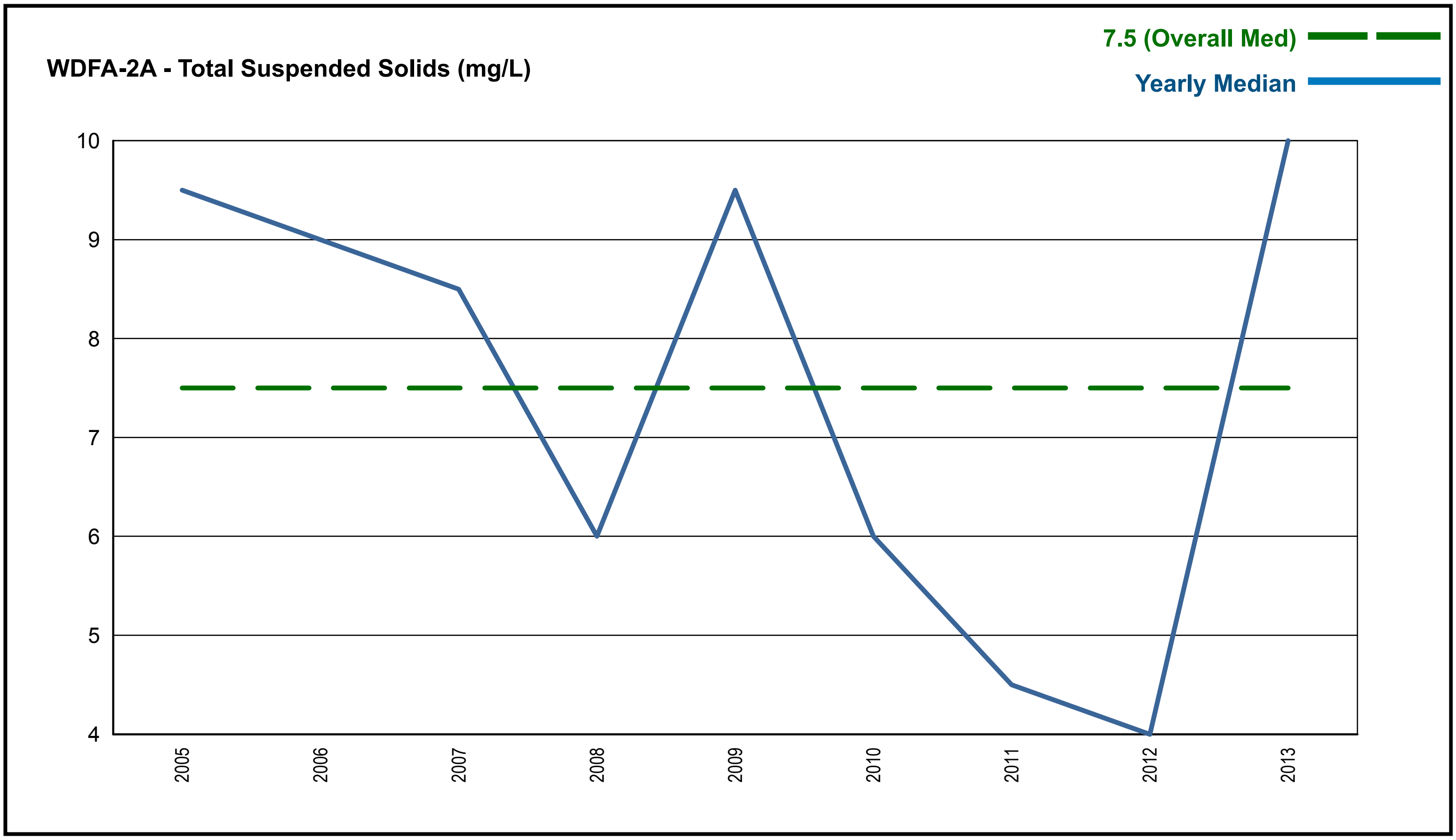

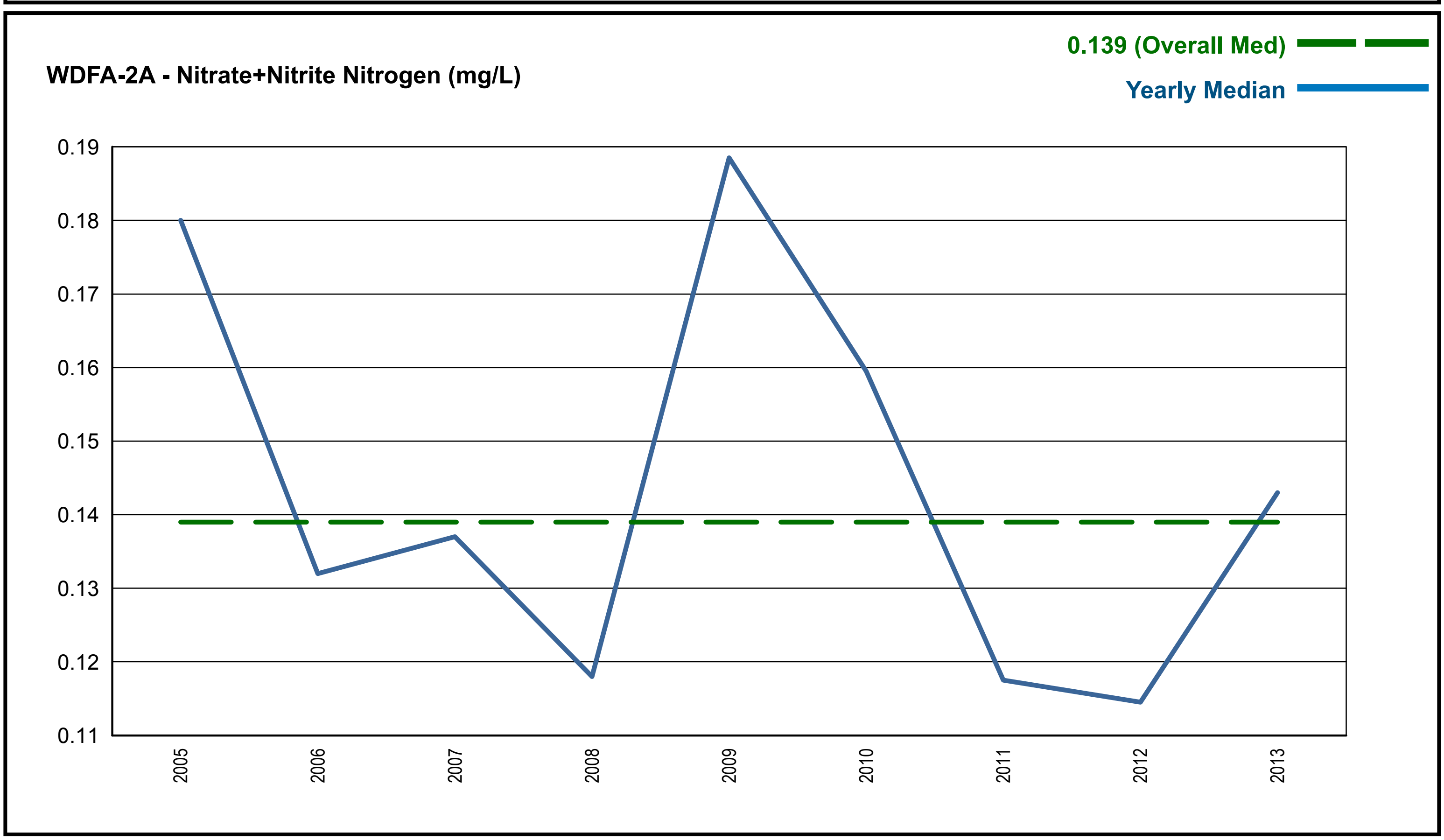

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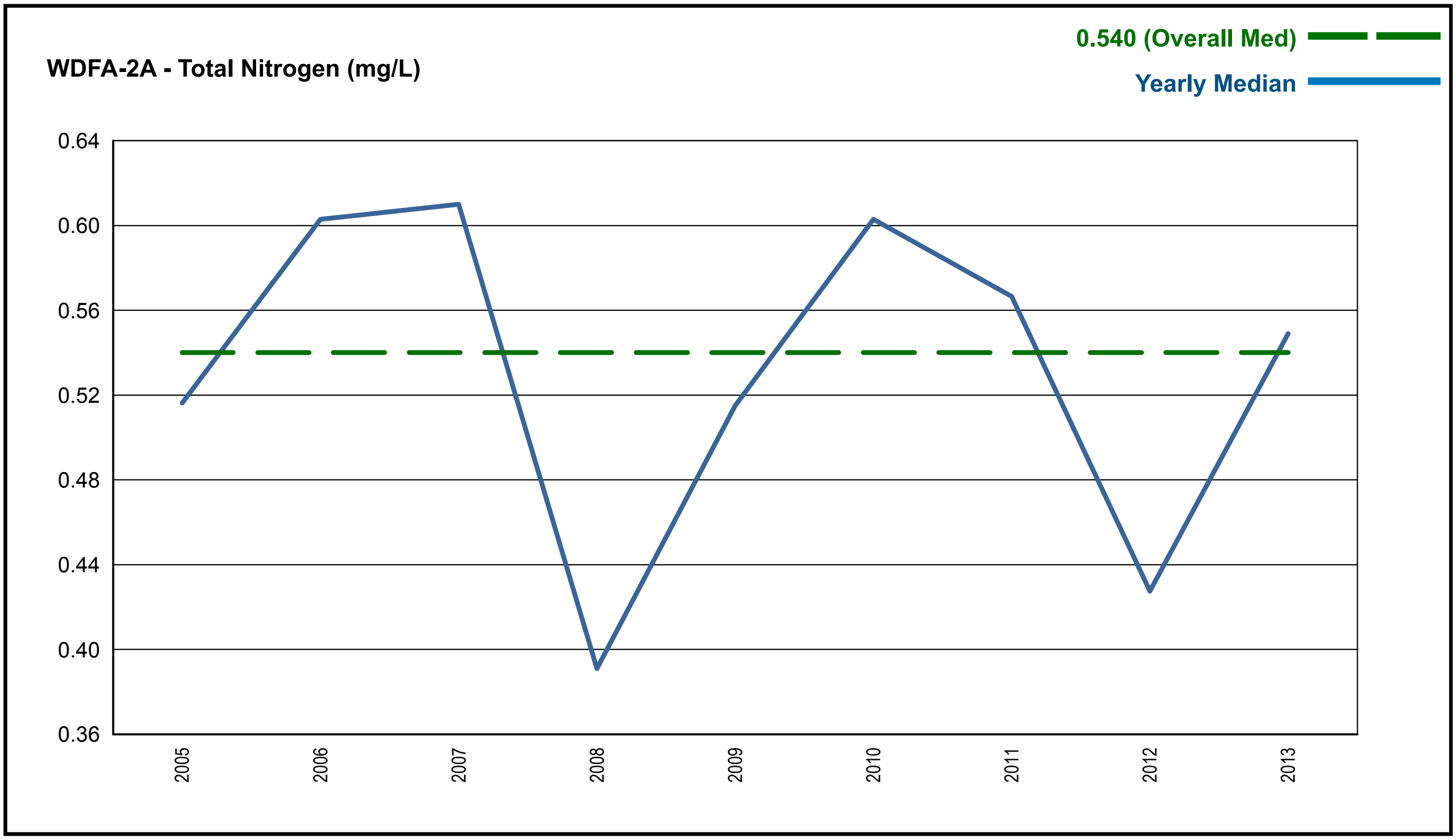

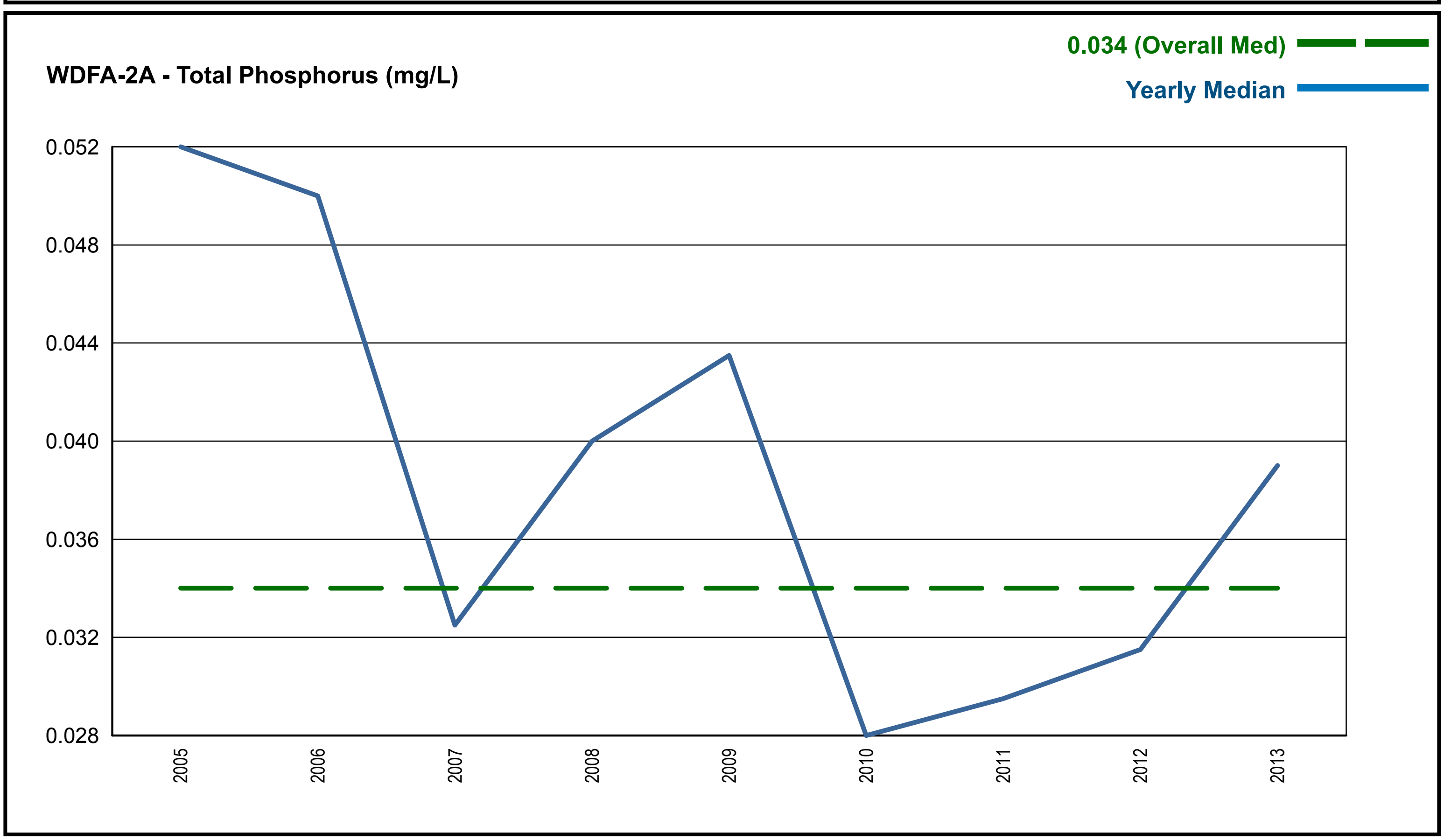

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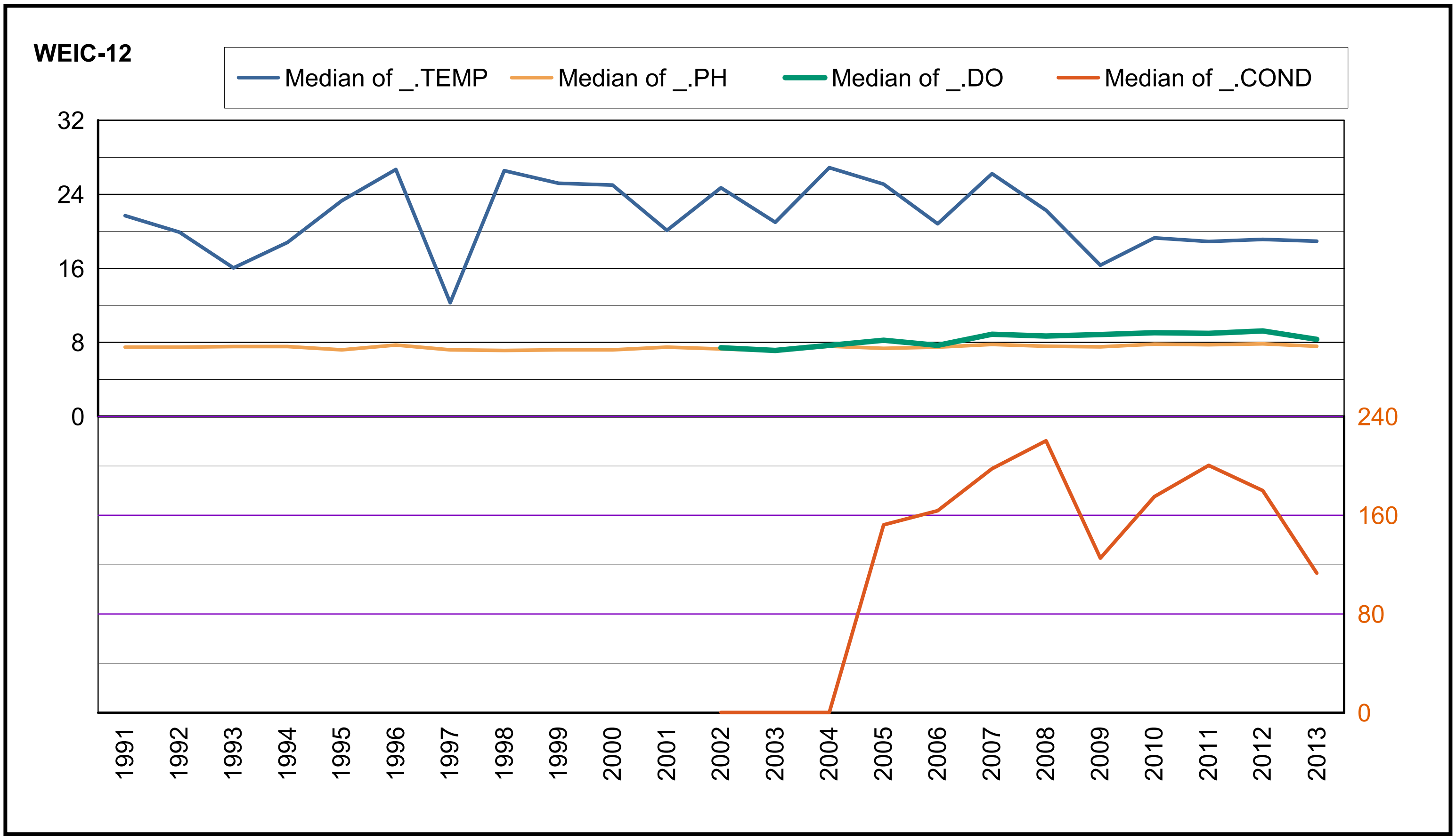

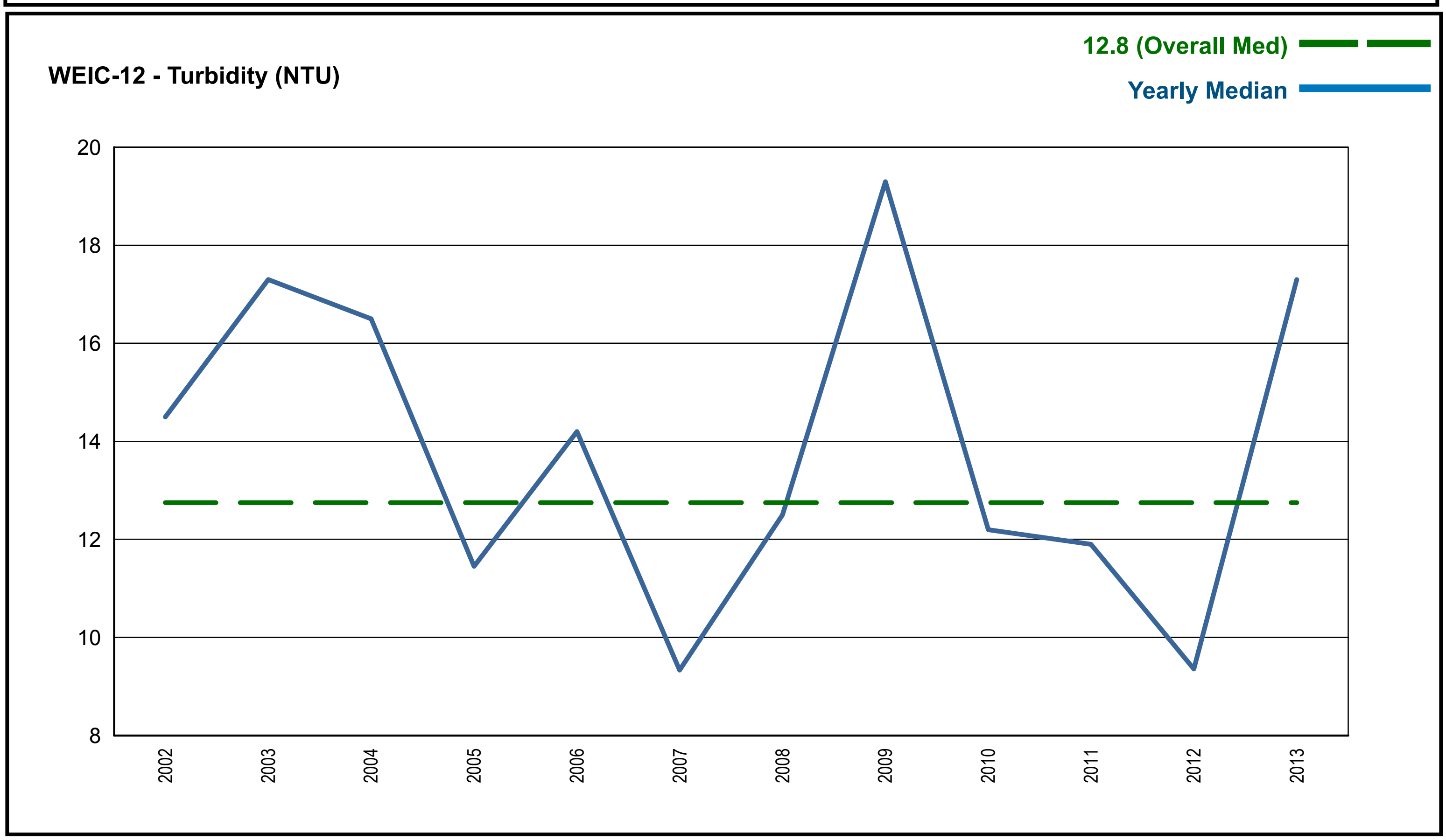

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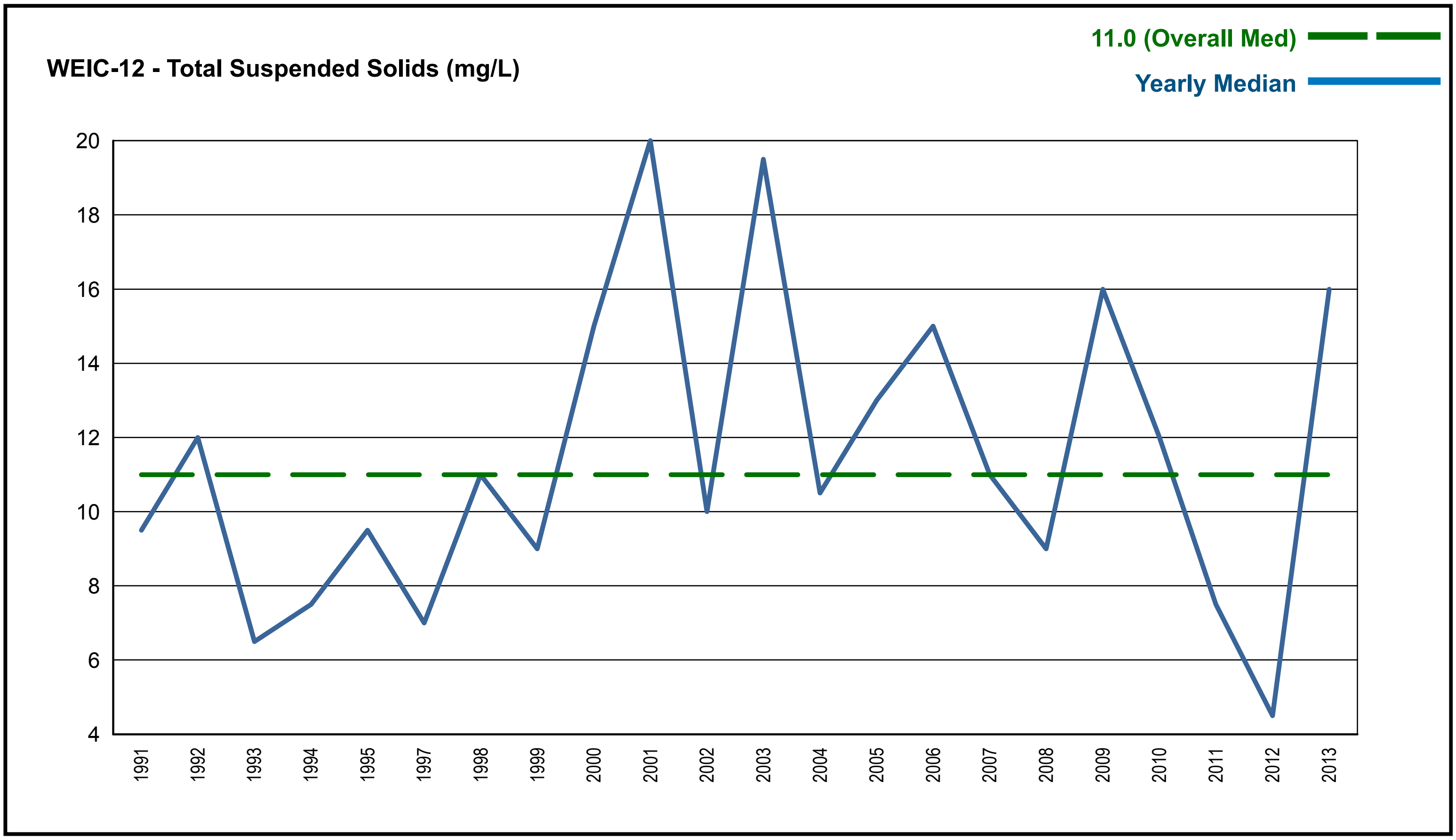

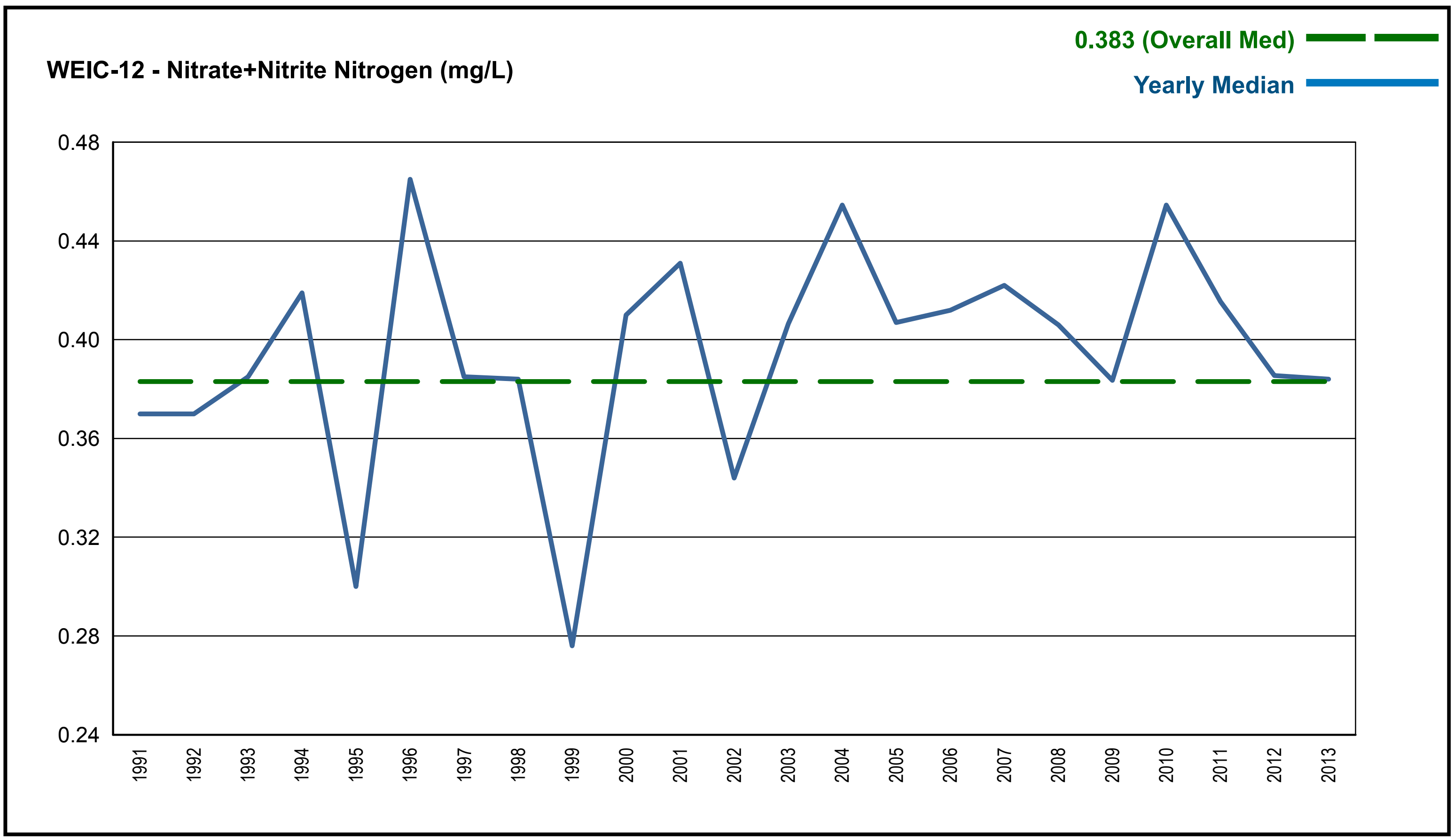

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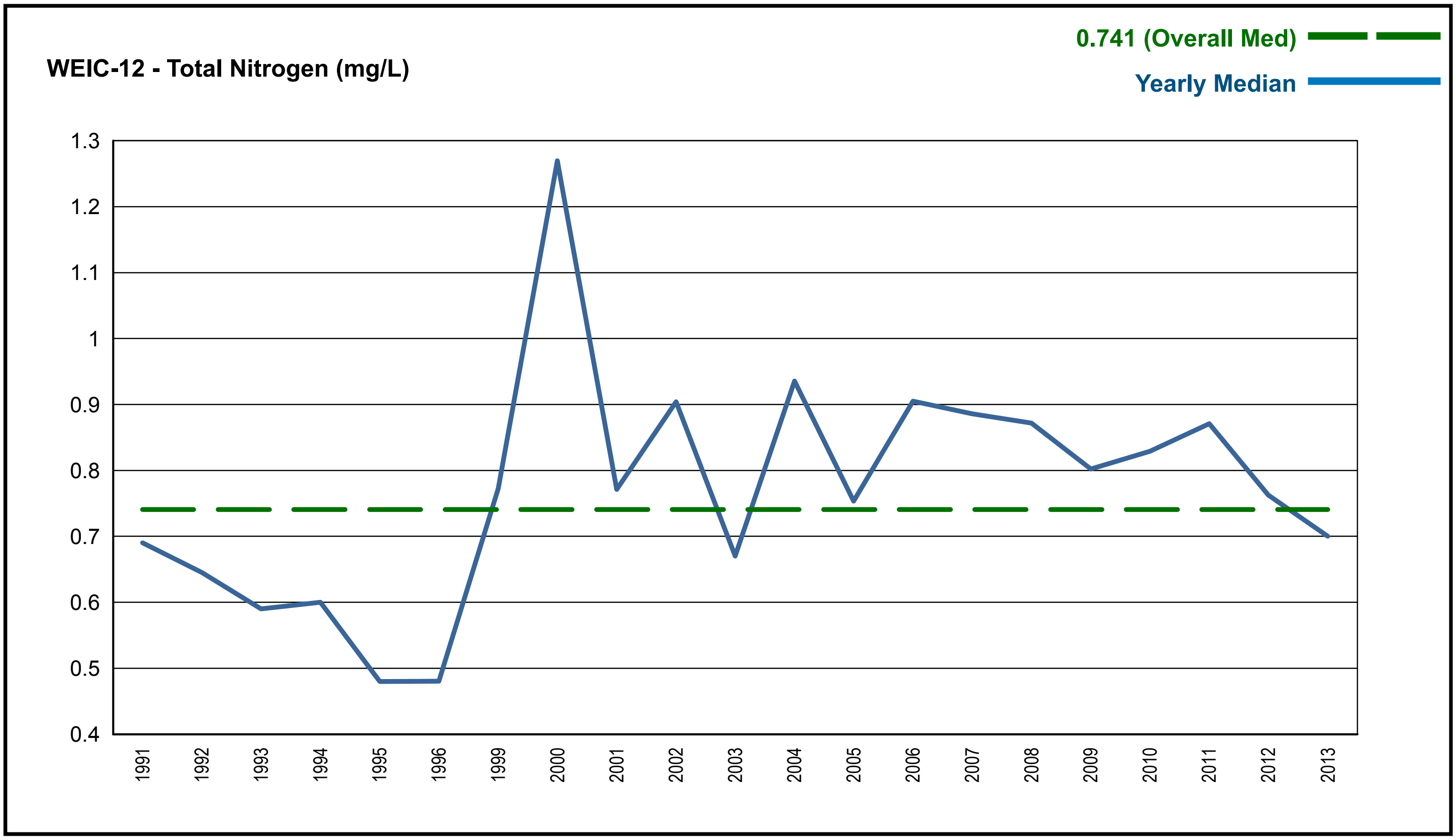

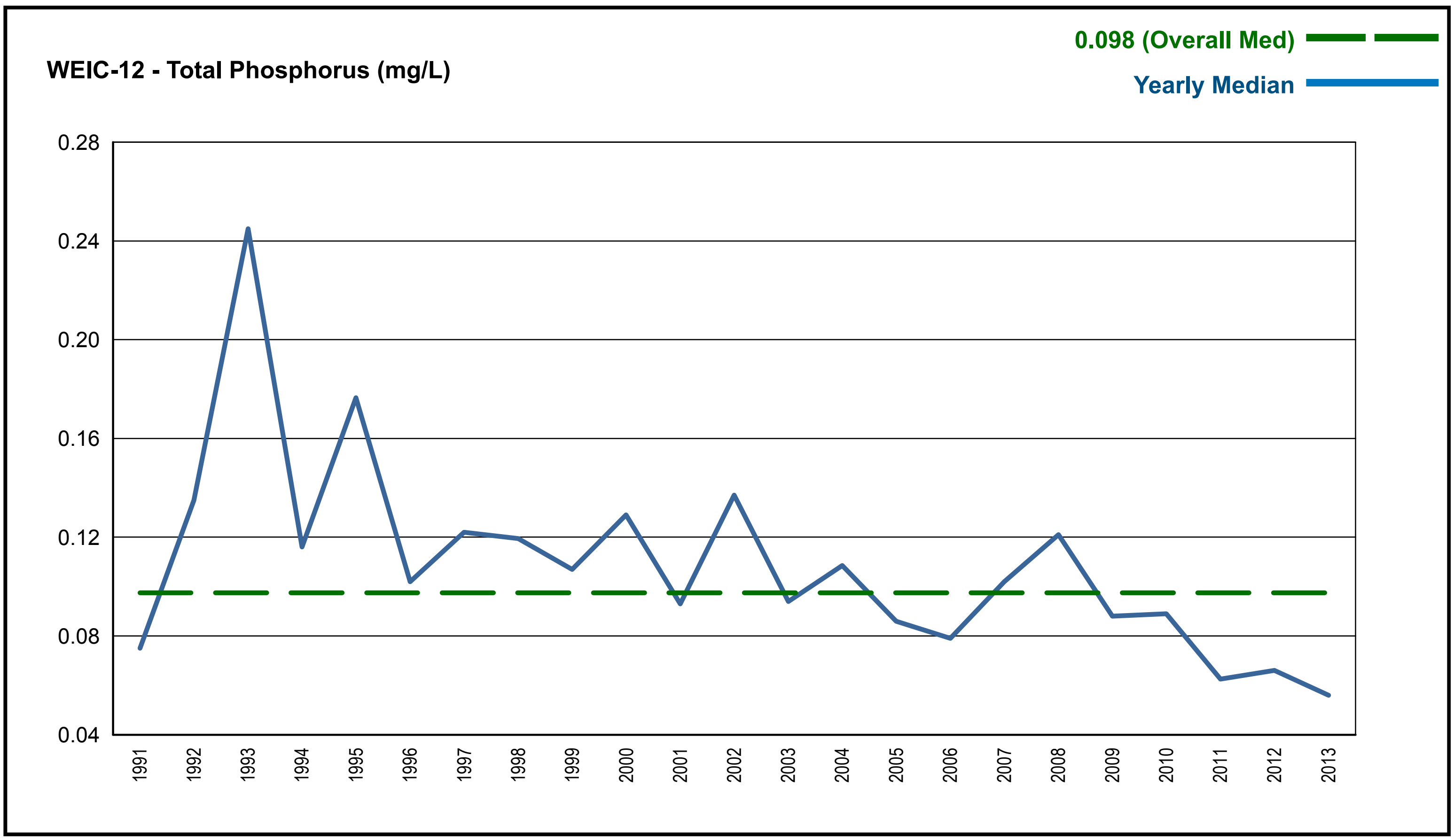

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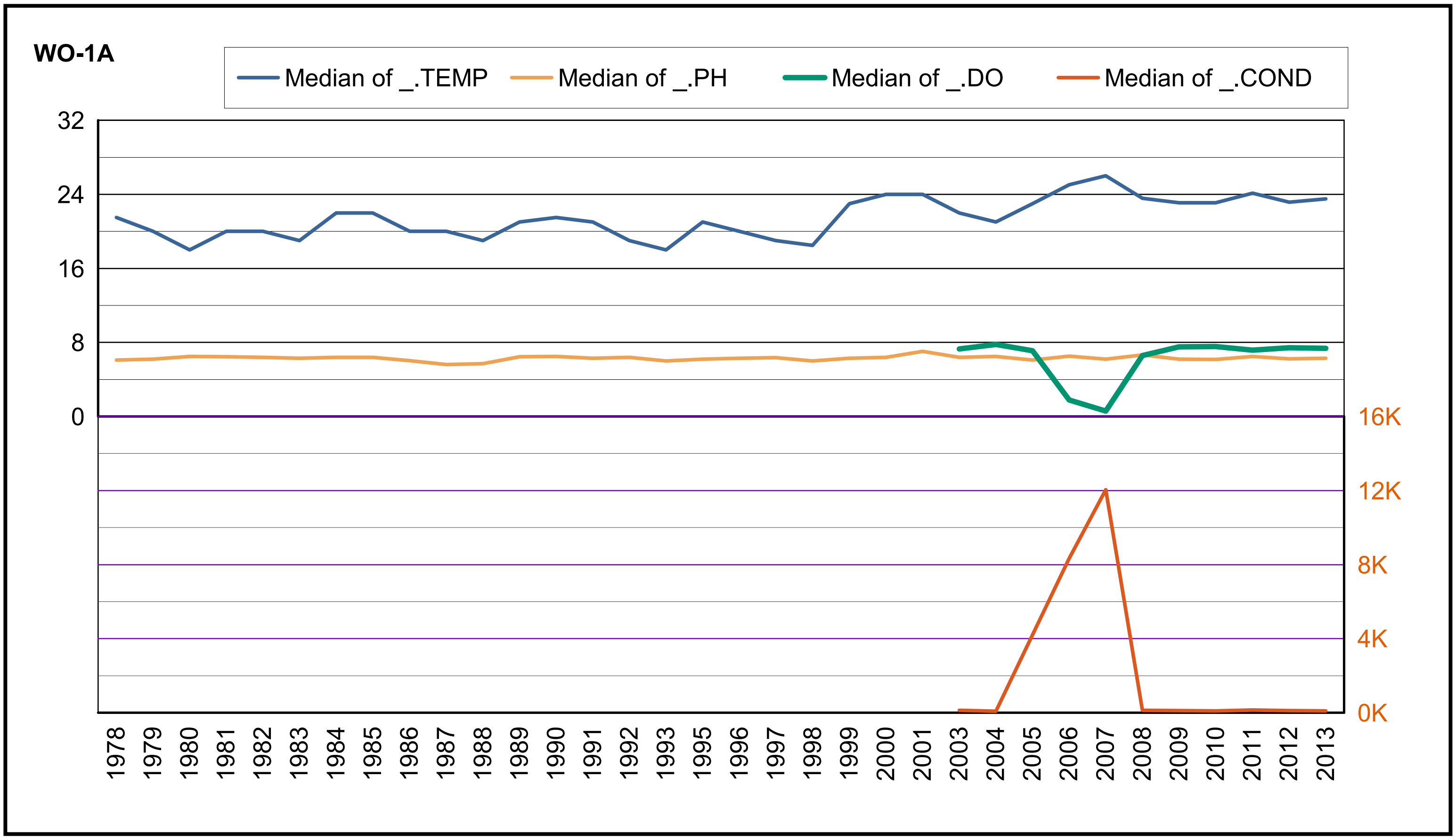

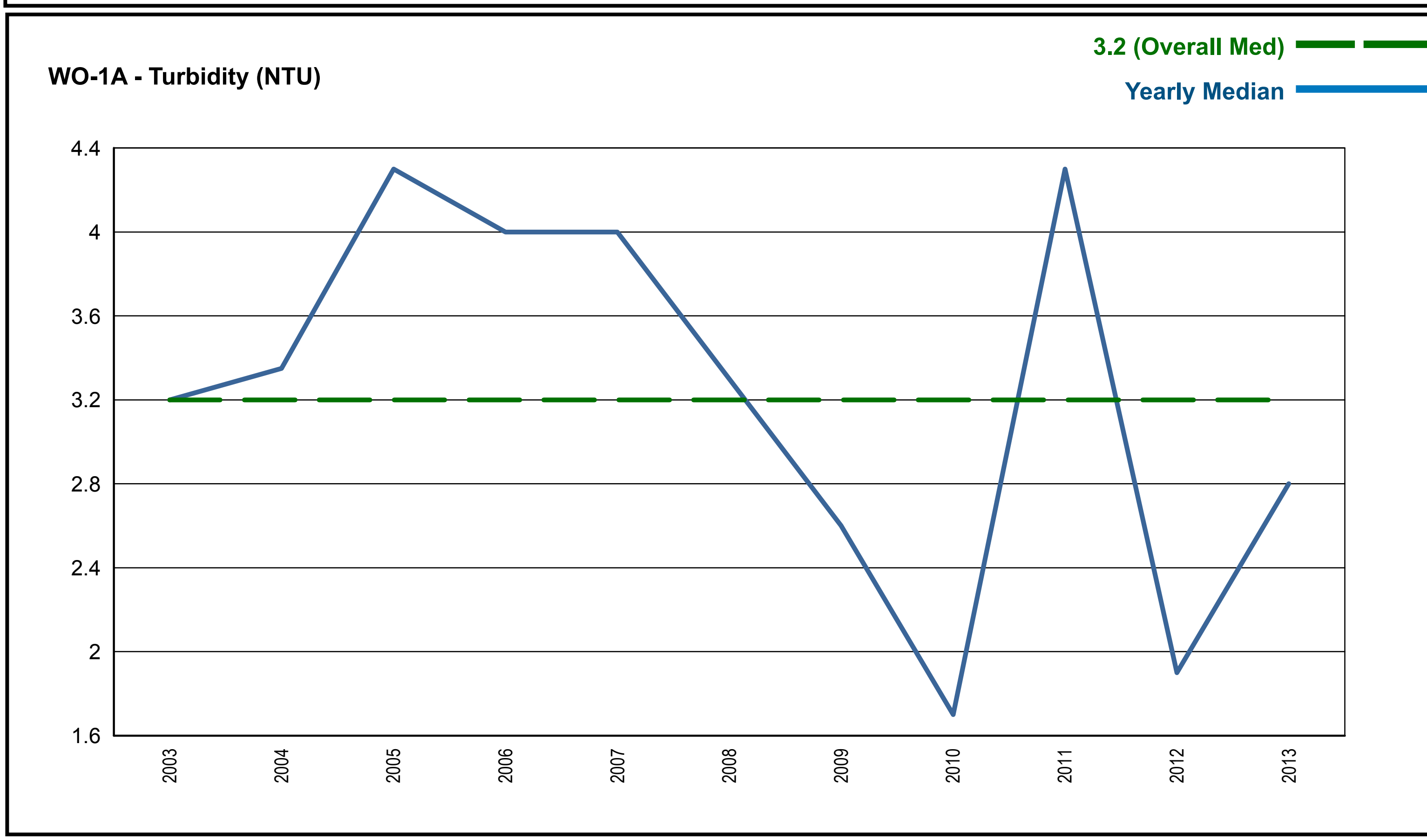

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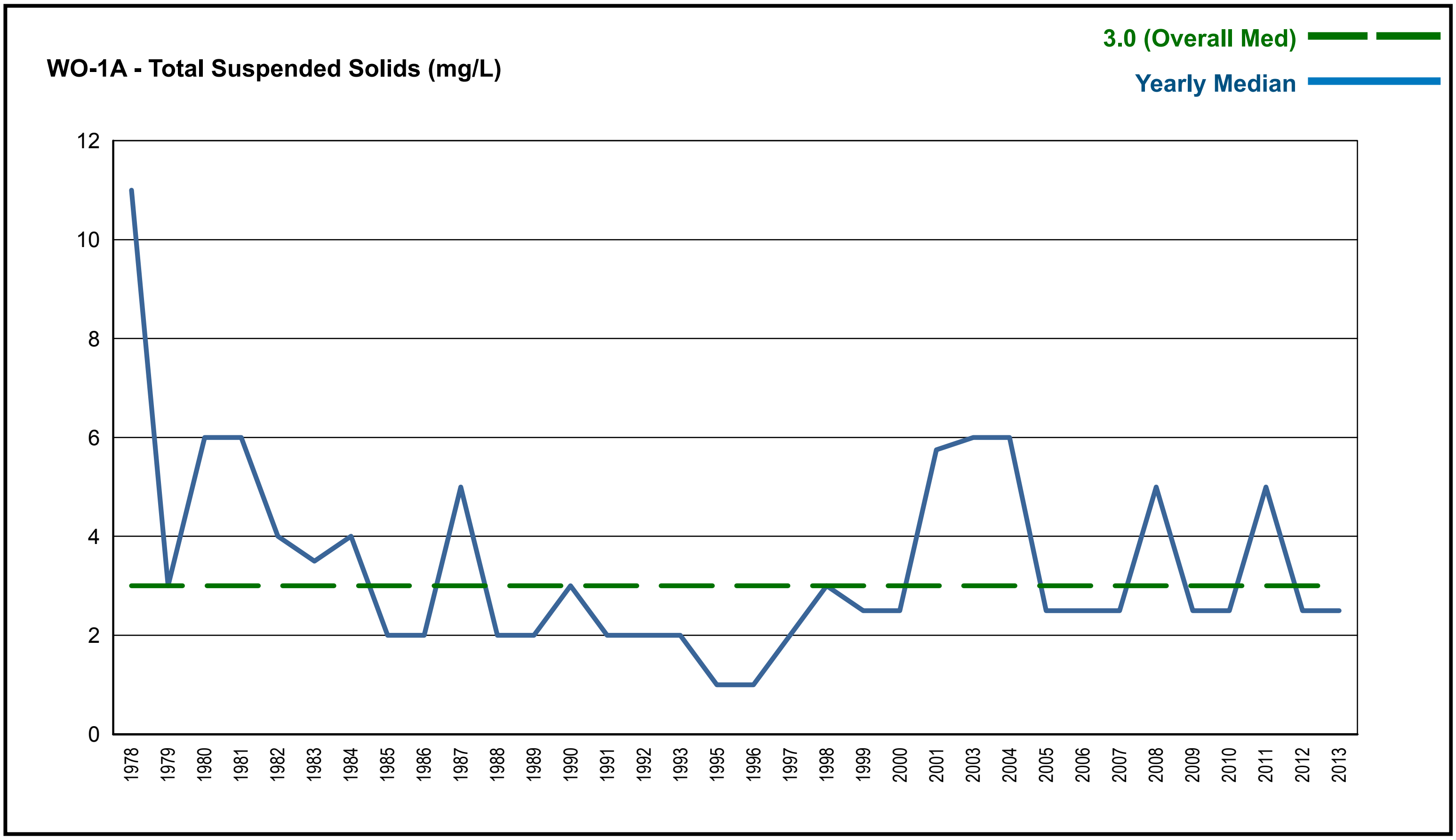

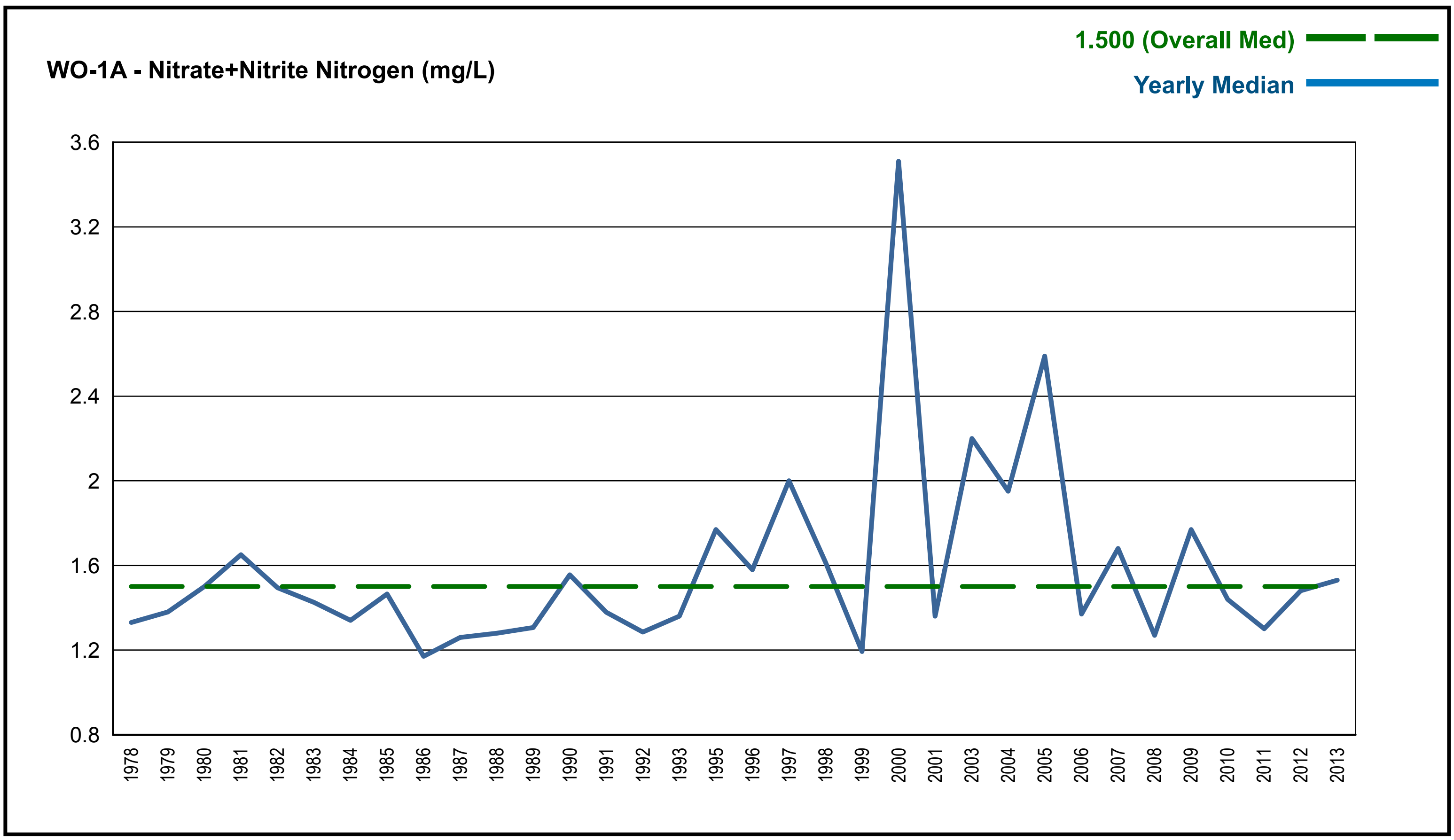

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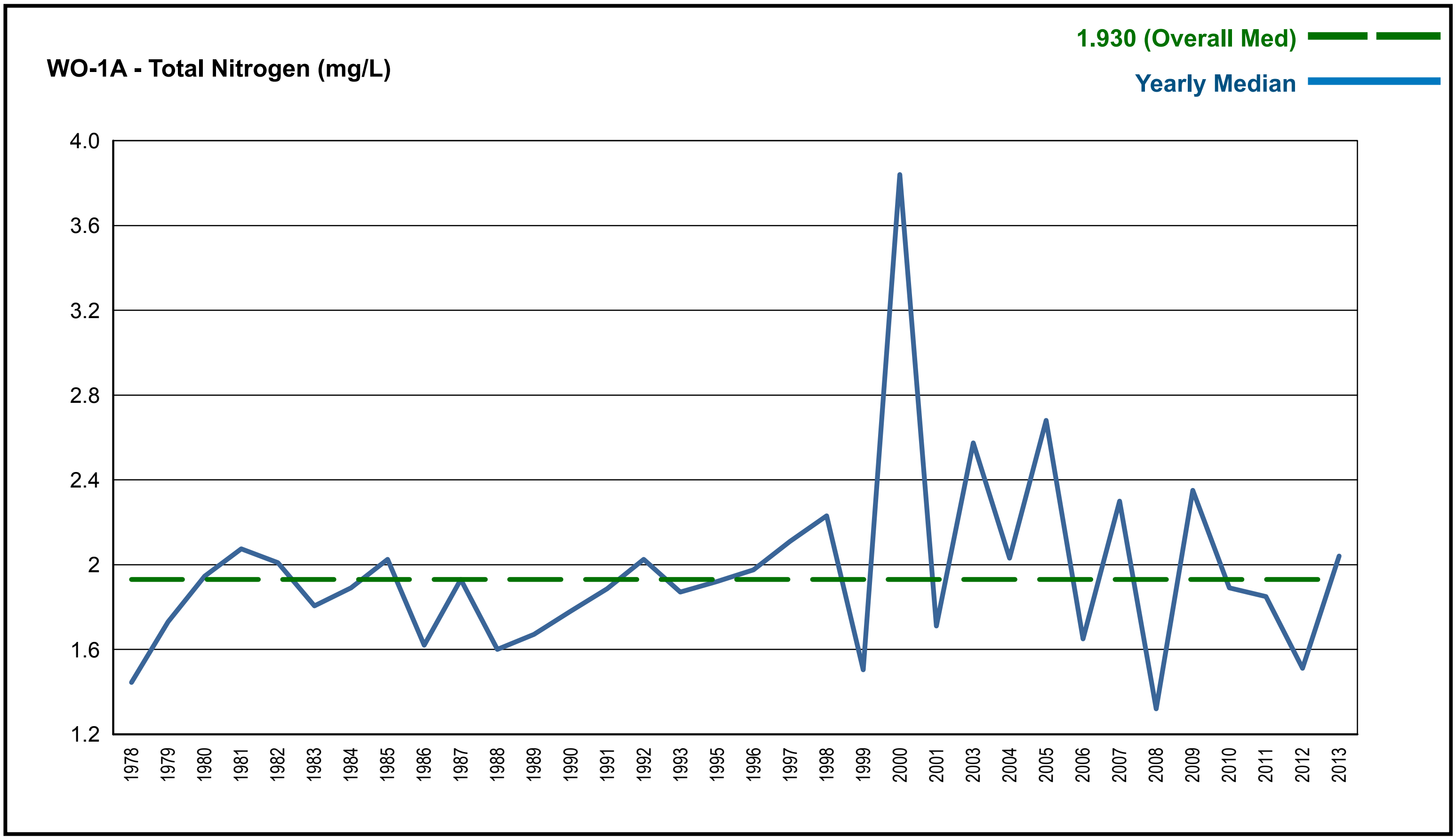

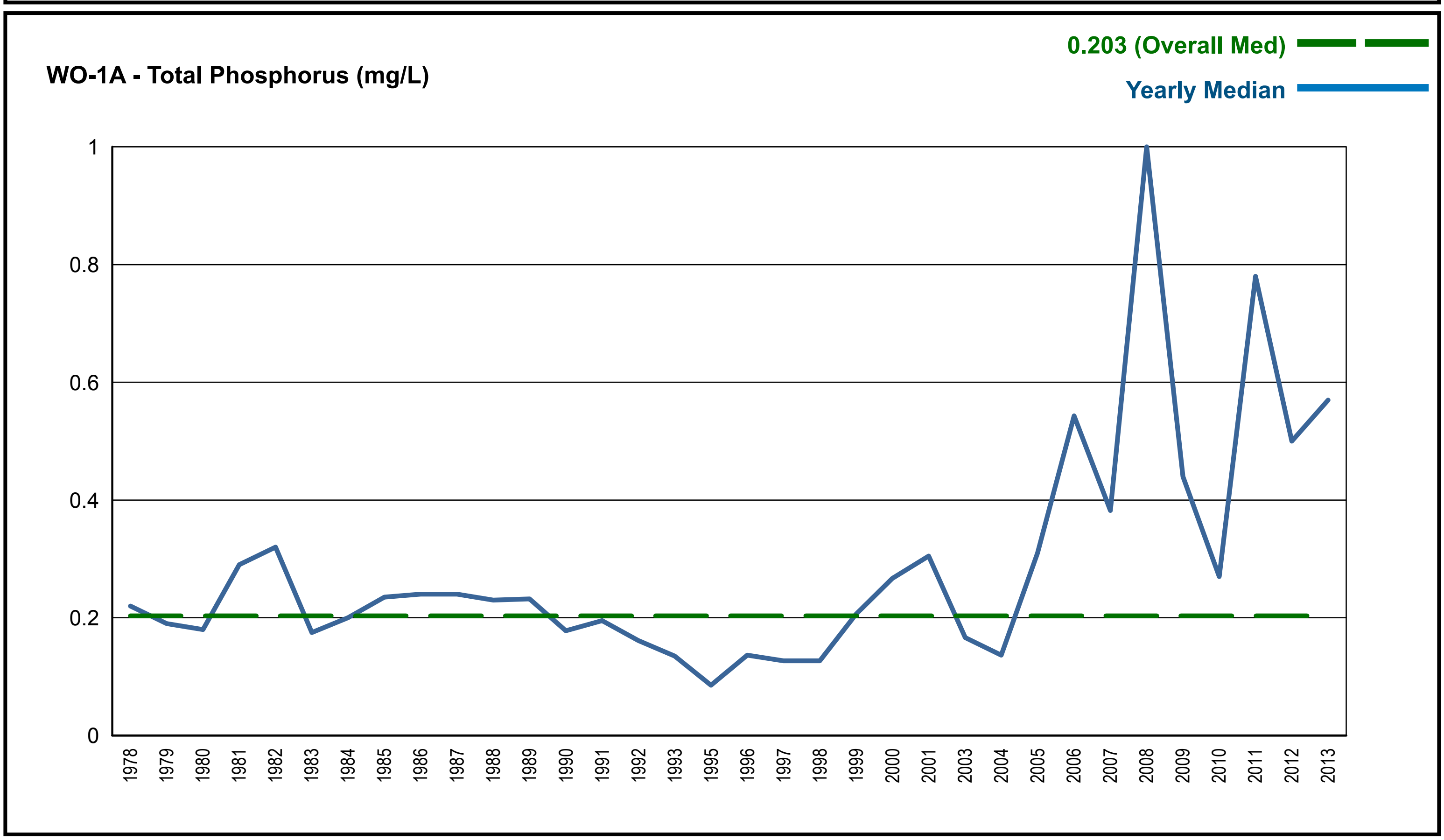

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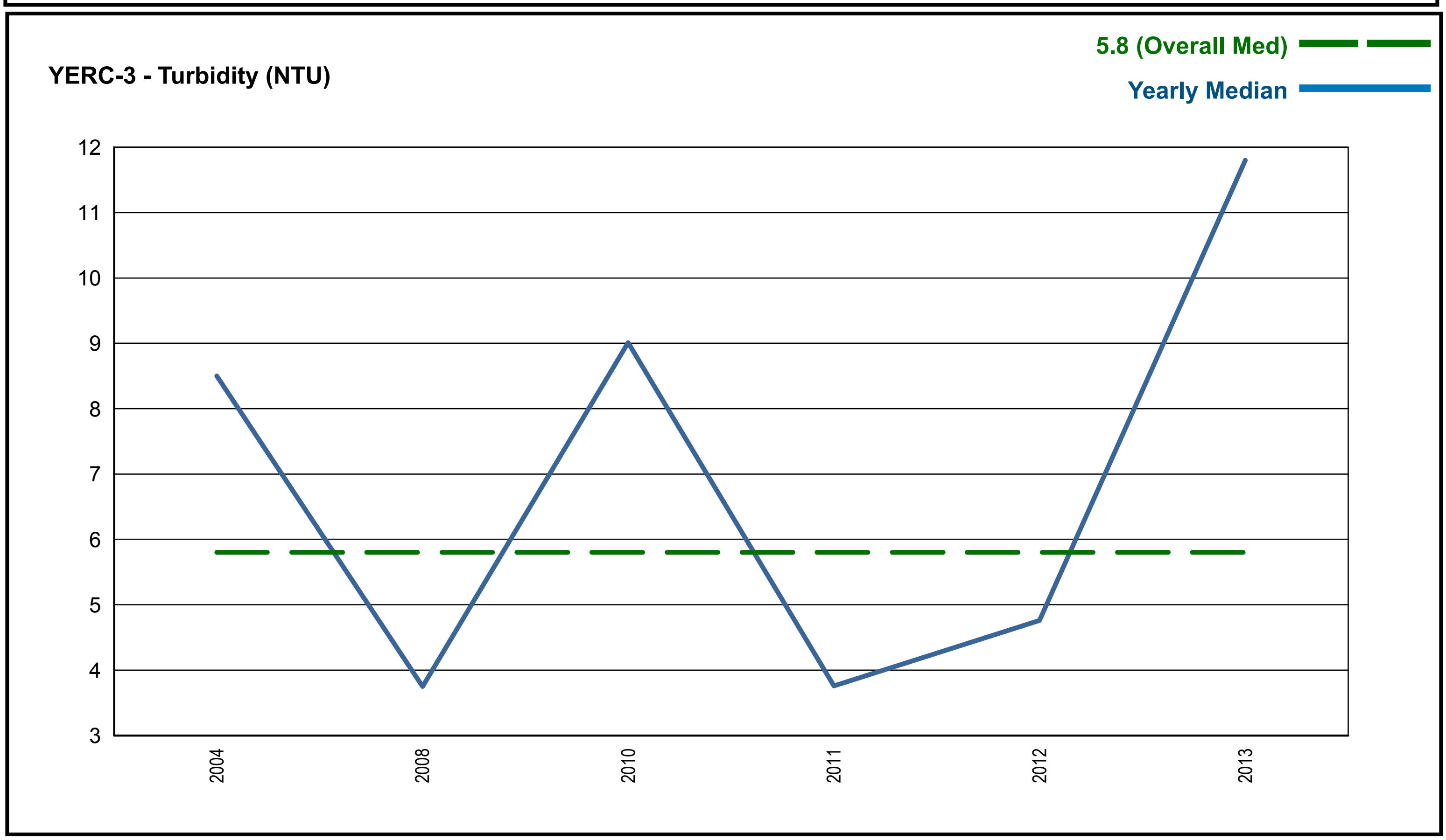

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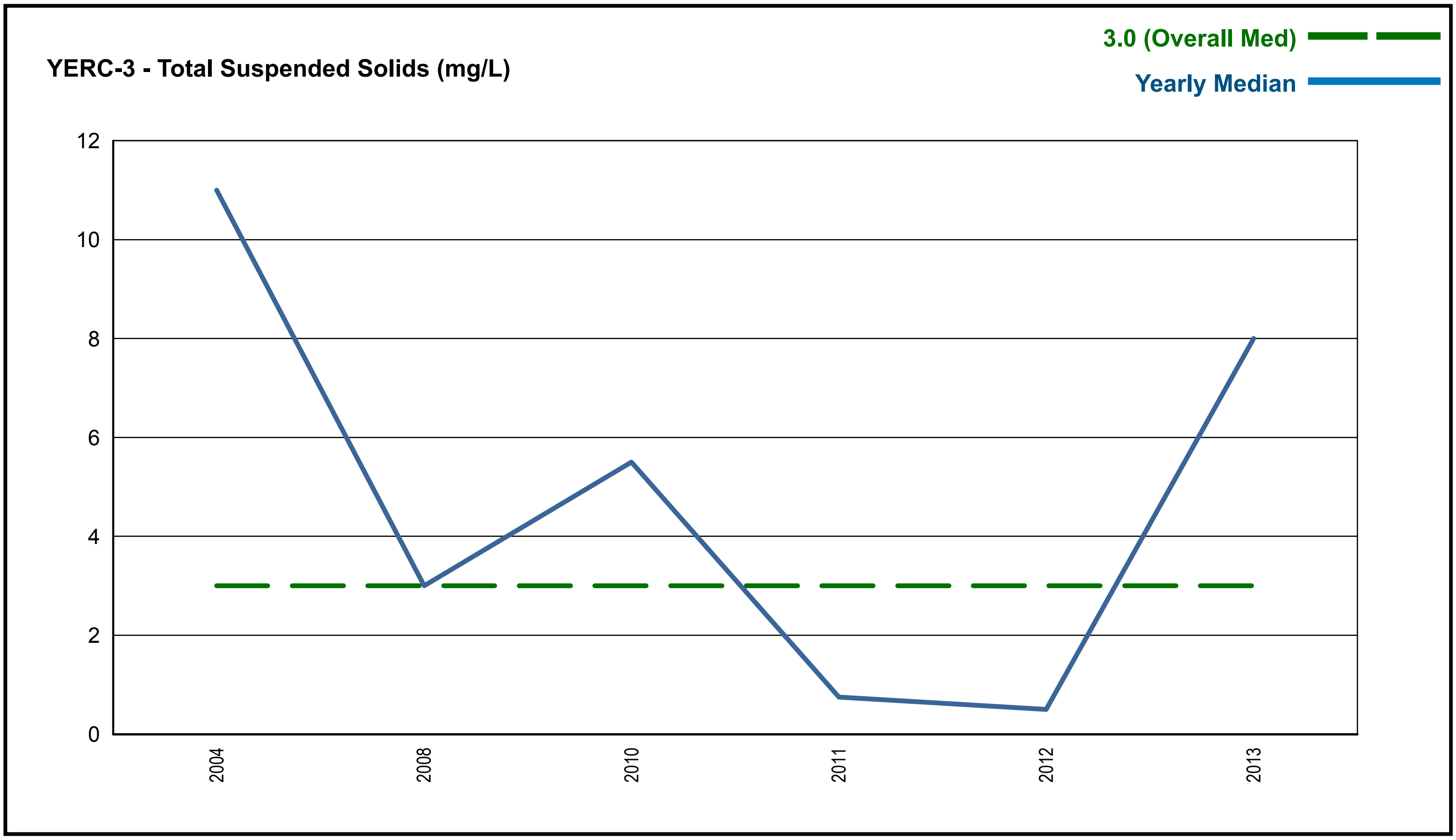

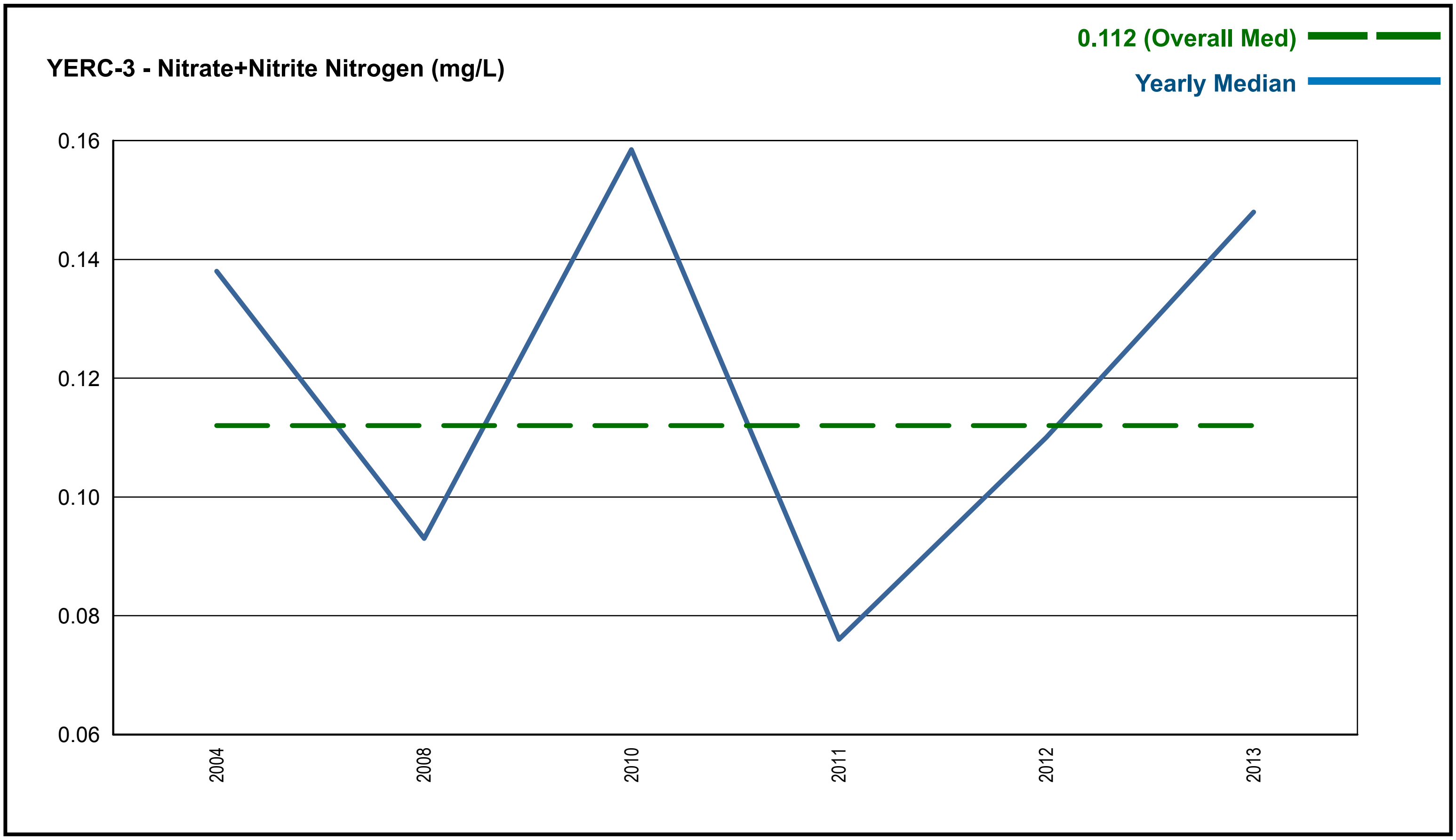

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