



# Sacramento Regional County Sanitation District Coordinated Monitoring Program

## 2005-2006 Annual Report

September 2006

*Prepared by:*

Camp Dresser & McKee Inc.  
Laboratory Data Consultants, Inc.  
Katz & Associates

Sacramento Regional County  
Sanitation District  
Coordinated Monitoring Program

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# Executive Summary

In May of 1991, the Sacramento Regional County Sanitation District (SRCSD), the County of Sacramento Water Resources Division (County) and the City of Sacramento (City) jointly established the Sacramento Coordinated Water Quality Monitoring Program (CMP) for ongoing and future Sacramento-area water quality monitoring programs on the Sacramento and American Rivers. The specific goals and objectives of the CMP include the following:

- Coordination and cooperation with other monitoring programs and agencies;
- Communication and public education;
- Water quality assessment;
- Operation of a cost-effective program; and
- Evaluation of local impacts on water quality and effective control measures.

This report summarizes CMP activities and ambient data for the period of July 2005 through June 2006, along with the entire period of record, December 1992 through June 2006. The report also presents activities associated with coordination with other water quality monitoring programs and public outreach and an update of current regulatory activities, which may influence the CMP. The following is a brief summary of the contents of this report.

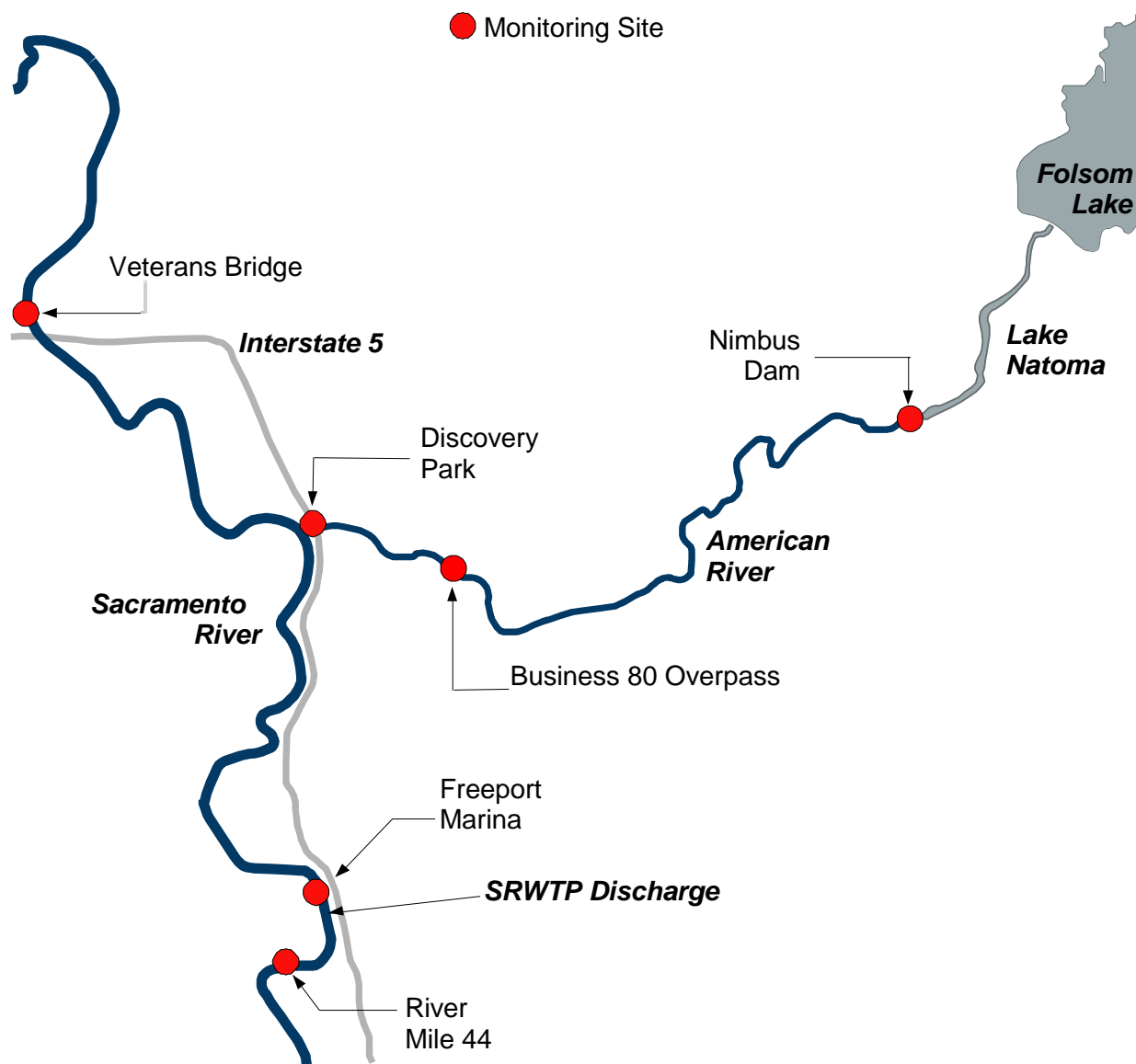
## Methods

Water quality samples for the CMP's ambient water quality monitoring program in the Sacramento and American rivers (AMP) have been obtained from sampling sites within Sacramento County since December 1992. In 2005-2006, three sites were monitored on the Sacramento River (at the Interstate 5 Veterans Bridge near Alamar Marina, at Freeport Marina and at River Mile 44). Three sites were monitored on the American River (below Nimbus Dam, Business 80 Overpass and at Discovery Park). Figure ES-1 identifies the locations of each site.

Water quality parameters which were measured in 2005-2006 included trace metals (arsenic, cadmium, chromium, copper, iron, lead, mercury, methyl mercury, molybdenum, nickel, silver and zinc), conventional parameters (hardness, pH, dissolved oxygen, temperature, conductivity, total organic carbon, dissolved organic carbon, chloride, total dissolved solids and total suspended solids), organophosphate and carbamate pesticides, coliform bacteria, cyanide, UVA 254, nutrients (nitrogen and phosphorus species) and selected trace organic compounds (herbicides, PAHs, semi-volatile organics and MTBE).

The sampling is performed at a minimum of six times per year at each station. Samples are analyzed for a standard suite of field and conventional parameters, nutrients, organic carbon, mercury species, cyanide, UVA 254, diazinon and chlorpyrifos, and bacteria species. The list is expanded during three events to include

trace metals, selected organophosphate and carbamates pesticides, selected herbicides, Polycyclic Aromatic Hydrocarbons (PAHs), and selected semi-volatile and volatile organics.



**Figure ES-1**  
**AMP Locations, 2005 – 2006**

The sampling methods, analytical methods and quality assurance/quality control (QA/QC) procedures are summarized in Chapter 2 of this report. An automated data checking and validation system is applied and the data are stored in a CMP data management system.

## **Annual Data Summary**

Data collected by the AMP between July 2005 and June 2006 (Events 175, 176, 177, 178, 178.1, 178.2, 179, and 180) are presented and evaluated in Chapter 3 of this report. The AMP has completed 190 sampling events since December 1992. Summary statistics for the entire dataset data representing the period December 1992 through June 2006 are presented in Appendix B.

## **Ambient Water Quality Conditions**

AMP data from July 2005 through June 2006 were evaluated to determine the ability of the program's sampling and analytical methods to produce representative and reliable water quality data. A total of 8,898 individual results generated from July 2005 through June 2006 were reviewed and evaluated. An overall analytical success rate of 80% was achieved. Accuracy and precision generally achieved CMP data quality objectives. Systematic problems with sampling or analytical procedures were also not found. The data quality evaluation is discussed in Appendix A.

Majority of the results for conventional parameters, trace metals, nitrates, TKN and bacteria were found to be above their respective analytical reporting limits. The majority of the results for phosphorus, ammonia, nitrite, pesticides, herbicides, PAHs and other trace organics were found to be below their respective analytical reporting limits.

Individual parameter levels found in 2005-2006 were comparable to levels found during previous monitoring events. The time series plots covering the entire period of record presented in Appendix C demonstrate this trend.

## **Comparisons with Water Quality Objectives**

Water quality data for 2005-06 (Events #175-#180) were compared to the lowest relevant water quality objectives (WQOs) from the California Toxics Rule (CTR) and the Water Quality Control Plan (Basin Plan) for the Sacramento River watershed, along with the Department of Fish and Game (DFG) criteria for diazinon and chlorpyrifos. The majority of the constituents measured in 2005-06 indicated compliance with existing water quality objectives.

Mercury concentrations in the American River and the Sacramento River for 2005-2006 were all below the CTR human health criterion (50 ng/L total mercury). The majority of concentrations of the trace metals were below their respective regulatory limits for sites on both the American and Sacramento Rivers for 2005-2006. However, 17 out of the total 27 total aluminum results and 15 out of the total 24 total iron results



from sites on both rivers exceeded the Title 22 secondary MCL criterion. Only the American River Nimbus site did not report a total aluminum or a total iron concentration higher than the criterion.

Bacteria levels (*E. coli* and Fecal Coliform) exceeded Basin Plan objectives during one event at each sampling site except for the American River Nimbus site, which reported none. Exceedances occurred in samples collected during wet weather events but not during the same wet event.

The majority of pesticides (orthophosphate and carbamate) and trace organics were not detected above their respective reporting limits. During the December 1-2, 2005 wet-weather event (#177), exceedances were reported for at least four trace organic parameters at the American River Highway 80 location. Elevated levels of trace organics have been reported at this site during other wet-weather events, but exceedances could not be confirmed due to values being below their respective reporting limits or QA/QC issues. Field crews have noted that the sampling location at American River Highway 80 site is located within a visible plume from an urban stormwater discharge during wet events. The presence of the plume may be the reason for these elevated levels of trace organic pollutants during wet events.

## **Coordination Activities**

One of the objectives of the CMP is to encourage coordination among the numerous water quality monitoring programs in the Sacramento Region and to perform outreach to convey information to the public and other agencies. Activities performed by the CMP between July 2005 and June 2006 are described in Chapter 4. The CMP coordinated four monitoring events with the Sacramento Stormwater Quality Partnership.

The CMP was present at three public events. A fact sheet and brochure were handed out to educate both parents and their children about the CMP program, and encourage them to be responsible for the cleanliness of local area rivers and waterways.

## **Review of Regulatory Issues and Implications**

Chapter 5 of this report includes a review and update of current federal, state and regional regulatory activities pertaining to surface water quality in Sacramento. The important federal and state activities include the 303(d) impaired waters listing, TMDL process, and agricultural discharge waivers.

## **Adjustments to the Program**

No significant changes to the CMP are planned for 2006–2007. Reviews of the various CMP elements are generally performed on a biannual or more frequent basis.

# Section 1

## Introduction

### 1.1 Goals and Objectives

In May of 1991, the Sacramento Regional County Sanitation District (SRCSD), the County of Sacramento Water Resources Division (County) and the City of Sacramento (City) jointly established the Sacramento Coordinated Water Quality Monitoring Program (CMP) for ongoing and future Sacramento-area water quality monitoring programs on the Sacramento and American Rivers. As defined by the CMP Steering Committee in the 1997 revision of the program Mission Statement, the specific goals and objectives of the CMP are listed below.

#### **Coordination**

- Coordinate monitoring activities, schedules, long term needs and efforts amongst participating local agencies, other programs and related agencies;
- Work cooperatively in conjunction with the Sacramento River watershed to understand and share concerns with other agencies and citizen groups regarding the local surface waters; and
- Make river data analysis easily accessible upon request.

#### **Communication**

- Inform and educate the public, agencies and decision makers to raise awareness, coordinate efforts and provide a basis for sharing information and resources regarding the protection of beneficial uses of Sacramento Metropolitan Area watershed; and
- Actively search for and pursue public outreach opportunities.

#### **Water Quality/Beneficial Use Assessment**

- Select appropriate measurements (chemical, toxicity, biological) to evaluate the Sacramento Metropolitan Area watershed;
- Develop and implement protocol to prioritize Sacramento's water bodies for the purpose of protection, enhancement and maximizing beneficial uses;
- Measure status of compliance with current regulatory standards;
- Investigate and develop local water quality standards;
- Maintain a proactive long-term ambient water quality monitoring program to collect reliable data for the purpose of identifying constituents of concern and developing tools to enhance water quality;

- Research and implement new water quality monitoring efforts to address present and future data needs; and
- Actively search for and pursue opportunities.

#### **Costs**

- Achieve the best benefit for the least cost; and
- Quantify hard and soft costs and relative savings.

#### **Impacts Assessment**

- Examine the Sacramento Metropolitan Area's impact on the local surface watershed as a contributor of constituents of concern, including examining long-term effects, source loadings and long-term trends;
- Prioritize constituents of concern and sources; and
- Assist in evaluating water quality benefits of potential source control measures.

#### **Success Story**

- Find an opportunity to demonstrate the effectiveness of control measures.

The CMP includes the following components:

- Ambient Monitoring Program (AMP) for collection of water samples and field measurements, along with subsequent laboratory analyses of the samples;
- Data validation, management and reporting of AMP results
- Regional coordination; and
- Public outreach and education.

## **1.2 Content of Report**

This annual report of the CMP presents the following information:

- Results of the sampling efforts for the period July 2005 through June 2006;
- Results of the sampling efforts for the period December 1992 through June 2006;
- Survey of efforts to coordinate with other water quality monitoring programs;
- Update on water quality regulations; and

- Discussion of the CMP for 2006–2007.

The report is separated into six sections.

### **Section 1. Introduction**

Section 1 describes the goals and objectives of the CMP as well as the contents of the annual report.

### **Section 2. Methods**

Section 2 briefly describes sampling methods and field and laboratory quality assurance/quality control (QA/QC) procedures for the AMP. The goal of the AMP is to collect representative samples without ancillary contamination and to achieve high quality laboratory results at low analytical detection limits.

### **Section 3. Annual Data Summary**

Each year, in order to assess the accuracy and precision of the data collected, a standard quality assurance and quality control (QA/QC) evaluation is conducted prior to analyzing the data generated by the AMP. Further data analysis is only performed on data deemed acceptable under the QA/QC evaluation.

Section 3 presents an analysis and evaluation of data from the AMP collected during the periods from July 2005 -June 2006 and December 1992 -June 2006. The evaluation of the ambient data serves to: (1) characterize water quality conditions; and (2) determine compliance with potential future water quality objectives.

### **Section 4. Coordination and Outreach**

Section 4 describes how the CMP staff coordinates their monitoring efforts with other local and regional monitoring programs, including participation in public events' activities.

### **Section 5. Update of Regulatory Issues**

Section 5 summarizes important federal, state and regional regulatory activities and their potential impacts on the CMP.

### **Section 6. Program Adjustments**

Section 6 summarizes the Program for 2006-2007.

## 1.3 Acknowledgments

The CMP Steering Committee directs and supervises the performance of the CMP. The CMP Steering Committee is currently comprised of representatives from the following sponsoring agencies:

<b>CMP Agencies and Representatives</b>
<b><i>Sacramento Regional County Sanitation District</i></b> <ul style="list-style-type: none"><li>• <i>Policy and Planning Division</i></li><li>• <i>Water Quality Control Lab</i></li></ul>
<b><i>Sacramento Stormwater Quality Partnership</i></b> <ul style="list-style-type: none"><li>• <i>County of Sacramento, Department of Water Resources</i></li><li>• <i>City of Sacramento, Department of Utilities</i></li><li>• <i>City of Citrus Heights</i></li><li>• <i>City of Galt</i></li><li>• <i>City of Elk Grove</i></li><li>• <i>City of Folsom</i></li><li>• <i>City of Rancho Cordova</i></li></ul>

The Program Manager for the CMP for the 2005–2006 monitoring period was Steven Nebozuk of the SRCSD.

In addition to agency staff, private consulting firms also contributed to the CMP. CDM was the prime consultant and provided technical support in the areas of program management, data analysis, coordination activities and reporting. Laboratory Data Consultants provided technical support for analytical data validation and database management. Katz & Associates, Inc. provided community relations and outreach support.

## Section 2

### Methods

This section summarizes the field sampling methods, field and laboratory quality assurance/quality control (QA/QC) procedures implemented by the CMP for the period July 2005 through June 2006. Detailed Standard Operating Procedures (SOPs) are presented in *The Ambient Monitoring Program of the CMP Standard Operating Procedures 2001* (SCRSD 2001). The Sacramento Regional Wastewater Treatment Plant Water Quality Control Laboratory (WQCL) sampling crew maintains this document.

#### 2.1 Sampling Methods

##### 2.1.1 Sampling Locations

For the 2005–2006 monitoring effort, the AMP collected water quality samples from three locations on the Sacramento River and three locations on the American River. Figure 2-1 presents the sampling locations. Sacramento River sampling sites were as follows:

- (1) Veterans Bridge, upstream from the Sacramento urban area
- (2) Freeport Marina, upstream from the SRWTP discharge
- (3) River Mile 44, downstream from the SRWTP discharge

American River sampling sites were as follows:

- (1) Nimbus Dam, below discharge
- (2) Business 80 Overpass
- (3) Discovery Park, near the confluence of the American and Sacramento Rivers

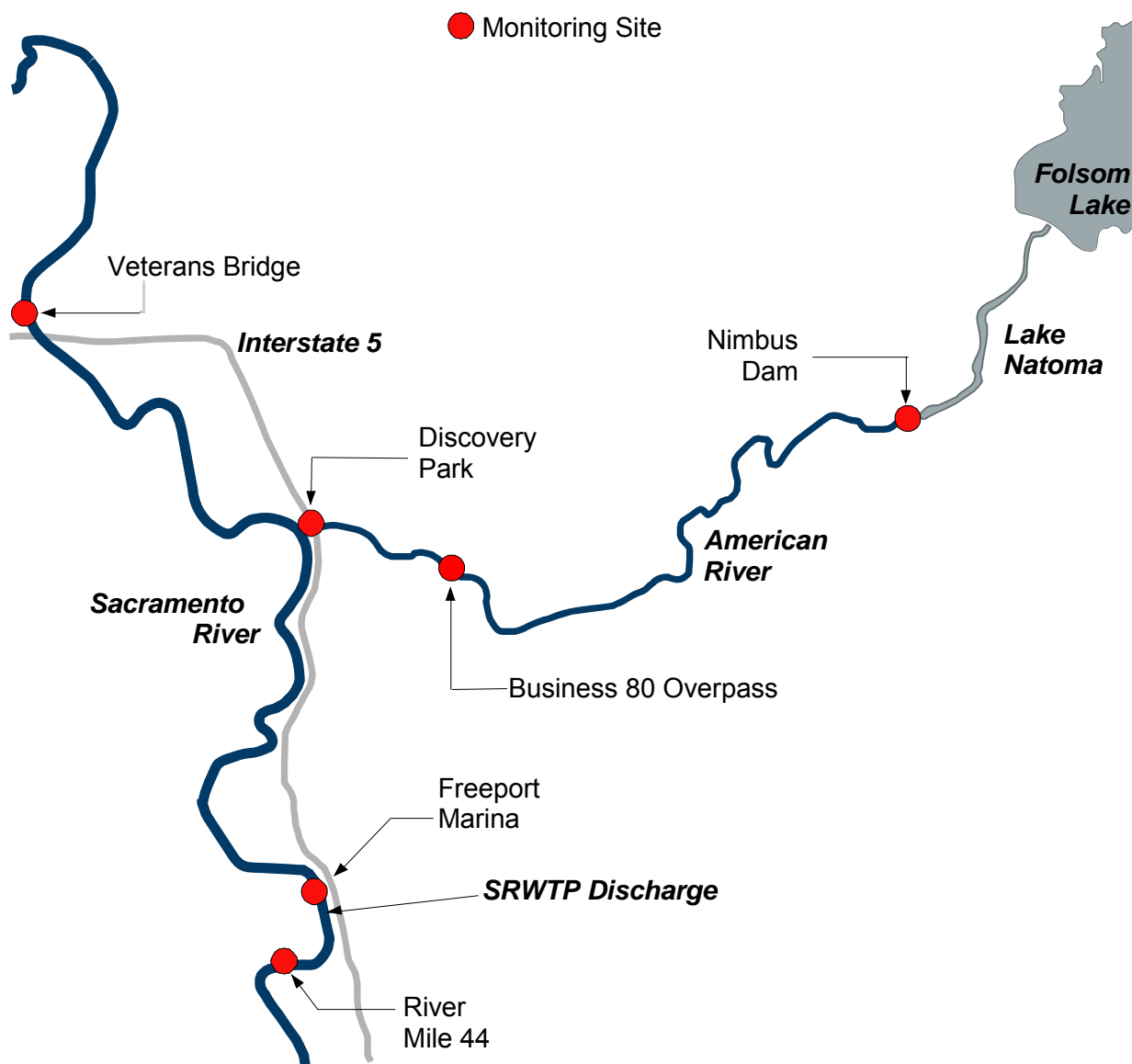
##### 2.1.2 Sampling Schedule

AMP crew members performed bi-monthly sampling. River sites were monitored for a total of eight sampling events for the 2005–2006 monitoring effort. Table 2-1 presents dates for all sampling events from July 2005 through June 2006 (Sampling events number 175 through 180).

##### 2.1.3 Sample Collection

Sample collection equipment and protocols were designed to minimize contamination and conformed to EPA guidance (Method 1669; USEPA 1995) for “clean” sampling methodologies. Cross-sectional composite samples were collected by boat at the Business 80 Overpass and Discovery Park sites on the American River and at the Veterans Bridge, Freeport Marina and River Mile 44 sites on the Sacramento River. Composite samples aliquots for most analytes were collected using a peristaltic pump with acid-cleaned polyethylene tubing. Composite samples were comprised of sub-samples collected from three depths at each of three or five sampling points along a

designated sampling transect. Details of cross-sectional composite sample collection procedures and sampling equipment for individual sites are documented in the SOP (SRCSD 2001). Composite samples were collected into acid-cleaned polyethylene carboys and divided into glass, polyethylene, or Teflon™ sample containers appropriate for the analyses to be performed.



**Figure 2-1**  
**AMP Sites, 2005 – 2006**

**Table 2-1  
AMP Sampling Schedule,  
July 2005 through June 2006**

AMP Events		Event Flows <sup>(1)</sup> (cfs)	Event Rain <sup>(2)</sup> (inches)
175	August 2-3, 2005	3,490 AR 0 SR	0"
176	October 4-5, 2005	2,290 AR 19,978 SR	0"
177 <sup>(3)</sup>	December 1-2, 2005	2,130 AR 16,158 SR	1.41"
178 <sup>(3)</sup>	February 7-8, 2006	15,331 AR 71,466 SR	0"
178.1 <sup>(3)</sup>	February 27 – March 2, 2006	7,525 AR 34,284 SR	1.51"
178.2 <sup>(3)</sup>	March 5-9, 2006	4,861 AR 67,943 SR	2.53"
179	April 4-5, 2006	17,944 AR 85,900 SR	4.07"
180	June 13-14, 2006	5,669 AR 29,820 SR	0"

- (1) Mean daily flows (in cfs) on first sample date. "AR" indicates American River flow at Fair Oaks, CA; "SR" indicates Sacramento River flow at Freeport, CA  
 (2) Regional rainfall in inches on first sample date as recorded at the Sacramento Executive Airport location. If rainfall occurred on days leading up to the start of sampling, this amount is included.  
 (3) Coordinated with Sacramento Stormwater Quality Partnership program

At the Nimbus Dam location on the American River, only single aliquot grab samples were collected from near the shore. These grab samples were collected either by pumping or by collecting the sample directly into a polyethylene carboy or other appropriate sample containers.

At all sites, samples analyzed for microbiological parameters, pesticides and trace organics were collected as separate near-surface grabs by submerging the sample containers 6 to 12 inches below the water surface. This sampling method was employed to avoid potential contamination from the sampling equipment.

## 2.2 Quality Assurance and Quality Control

A QA/QC program was implemented to achieve high quality laboratory results at low analytical detection limits. Table 2-2 summarizes QA/QC samples and analyses applied for the period July 2005 through June 2006. Appendix A presents details of the QA/QC procedures, along with the validation results of the 2005/06 AMP data.



**Table 2-2**  
**Summary of QA/QC Samples and Program Specifications for the 2005–2006 CMP**

QA/QC Sample Type	Parameter Evaluated	Source of Contamination or Variation	CMP QA/QC Specifications
field blanks	contamination	sampling and equipment	< reporting limit
“Milli-Q” blanks	contamination	blank water	< reporting limit
filter/bottle blanks	contamination	sample container	< reporting limit
duplicate samples (splits)	precision	sample handling	≤ 25% RPD
“blind” spikes (SRM)	accuracy	analytical	80 - 120% recovery
method blanks	contamination	analytical procedures	< reporting limit
filter blanks	contamination	analytical procedures	< reporting limit
lab control samples (LCS)	accuracy	analytical procedures	80 – 120% recovery <sup>(1)</sup>
duplicate sample and LCS analyses	precision	analytical procedures	≤ 25% RPD <sup>(1)</sup>
matrix spikes	accuracy	matrix effects	80 – 120% recovery <sup>(1)</sup>
matrix spike duplicates	precision	matrix effects	≤ 25% RPD <sup>(1)</sup>

(1) Data quality objectives for trace organic and pesticide analyses are specific to each analyte and are documented in data reports from each analyzing laboratory.

### 2.2.1 Field and External Laboratory QA/QC Samples

QA/QC samples were prepared and submitted to the contract laboratory to characterize and evaluate potential impacts of sampling procedures and equipment on the precision and accuracy of the resulting data. QA/QC samples submitted to the contract laboratory consisted of (1) field blanks, “Milli-Q” blanks (specially prepared blank water) and filter/bottle blanks to assess the potential for sample contamination and (2) sample duplicates (splits of single grab or composite samples) to assess sampling and sample handling precision. Field QA/QC samples were typically prepared and submitted at the rate of one sample of each type per sample event. To assess the accuracy and precision of laboratory analyses, external laboratory QA/QC samples consisting of split field samples were submitted, as blind samples, to the laboratory.

### 2.2.2 Internal Laboratory QA/QC

Internal laboratory QA/QC procedures were specified for the AMP to ensure the laboratories generated high quality data. Analysis of internal laboratory QA/QC samples was conducted at a minimum rate of one in 10 samples or at least one per analytical batch.

For most parameters, analytical accuracy was evaluated by each laboratory through analysis of (1) laboratory control samples and/or standard reference material (SRM) samples and (2) matrix spikes, as appropriate for specific analyses. Analytical precision was evaluated by each laboratory through analysis of (1) duplicate samples split from a single sample in the laboratory, (2) laboratory control sample duplicates and (3) matrix spike duplicate analyses. The laboratories monitored potential contamination due to analytical reagents or laboratory sample processing through the analysis of method blanks and filter blanks.

### 2.2.3 Data Validation Procedures

Data checking and quality validation was performed using the ADaPT software package. ADaPT is a Microsoft® Access program designed to perform:

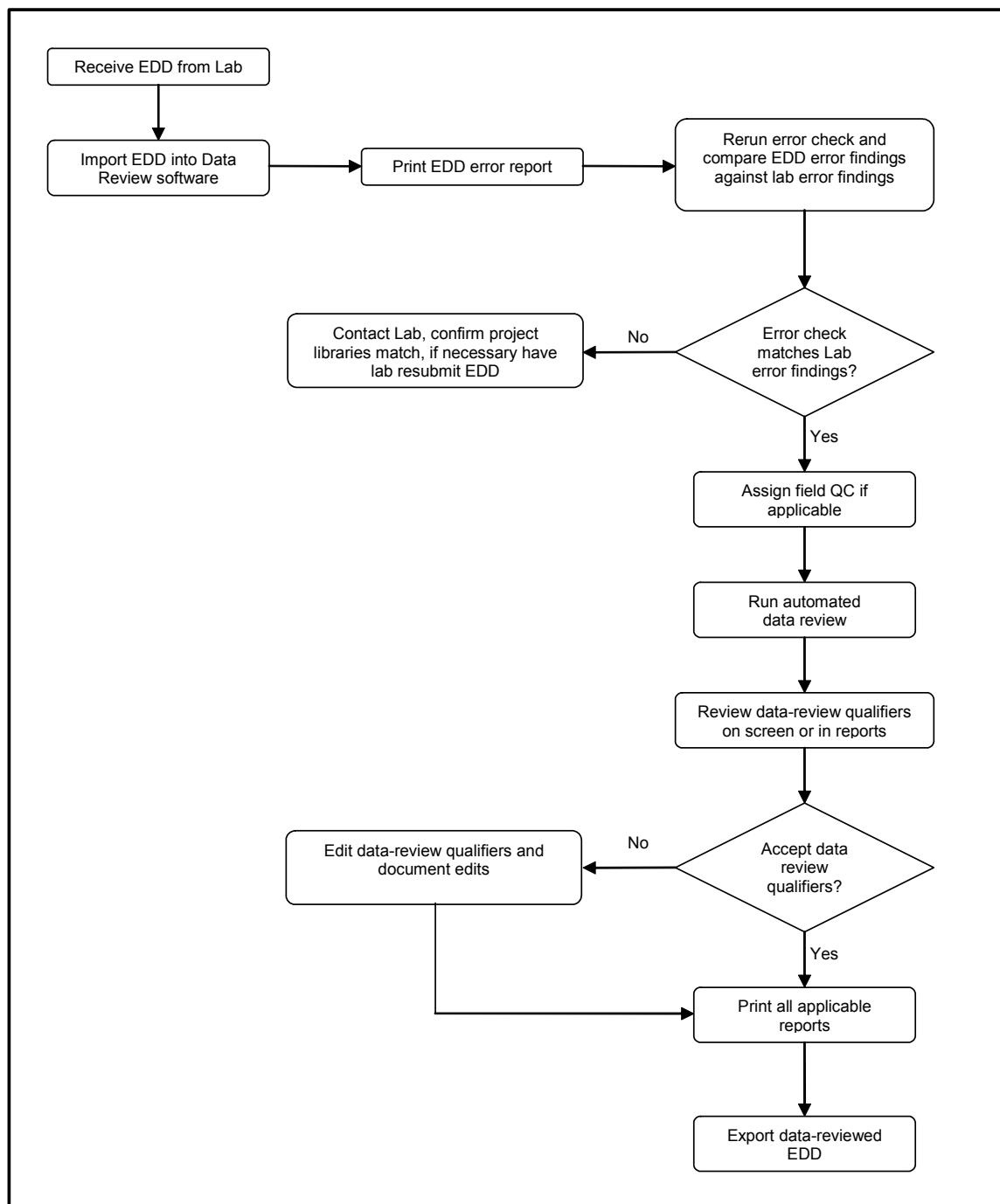
- Compliance screening or error checking to ensure the correctness and completeness of the laboratory analytical data; and
- Data review of the Electronic Data Deliverable (EDD) reports provided by the laboratory that measures quality and integrity of sample results against associated laboratory quality control, holding times and method detection limits.

ADAPT uses a specific library created for the CMP as the reference for EDD report error checking and data review (CDM 2004). The project library is an electronic representation of the Quality Assurance Project Plan (QAPP) or other project quality assurance guidance document. The project library contains all analytes; its data review criteria such as reporting limits, blank contamination rules, holding times and accuracy and precision criteria for each method and sample matrix within the scope of the CMP.

The compliance screening module examines each EDD report for correct standard values, data omission in required fields, date/time format, logical date/time values and duplicate records. The screening module also checks for target analyte completeness and correct reporting limits. The error checker examines each EDD report to make sure various laboratory QA/QC samples are included, depending on the analytical method reported. After checking the EDD report for errors, the software creates an error log that can be viewed on screen or as a report. Each error is described in detail and, if applicable, the record number where the error occurs is identified.

The Automated Data Review module evaluates the EDD report and applies data review qualifiers (flags) to each water quality sample result record based on laboratory quality control results reported in the EDD report and project specific data review criteria specified in a project library. Water quality sample result records in the EDD report are updated with applicable data review qualifiers and reason codes, which provide a coded explanation for any data review qualification. The software provides a variety of post data review qualification and outlier reports summarizing the results of the automated data review.

Figure 2-2 presents a summary of the steps performed for the data checking and validation. The flow chart illustrates how ADaPT is used to evaluate the quality of data produced by the AMP. The results and discussion of the QA/QC data review for events 175-180 appear in Appendix A and are summarized in Section 3 (Annual Data Summary) of this report.



**Figure 2-2**  
**ADAPT Process for Checking and Validating Data**

## 2.3 Analytical Methods

Table 2-3 presents methods used to analyze AMP water quality samples and program reporting limits (RLs). Reporting limits were determined based on detection limit studies conducted by the analyzing laboratories (Frontier Geosciences [FGS], APPL, CRG Marine, CALTEST [CT], Sierra Foothill [SFL] and WQCL).

**Table 2-3**  
**AMP Constituents, Analytical Methods,**  
**and Reporting Limits**

Analyte	Method	Lab	RL	Units
<b>Field</b>				
Temperature	EPA 170.1	WQCL	0.1	°C
Dissolved Oxygen	EPA 360.1	WQCL	0.1	mg/L
pH	EPA 150.1	WQCL	0.01	standard units
Conductivity	EPA 120.1	WQCL	0.1	µmhos/cm @ 25°C
Turbidity	EPA 180.1	WQCL	1	NTU
<b>Conventional</b>				
Total Organic Carbon	EPA 415.1	SFL / WQCL	0.5	mg/L
Dissolved Organic Carbon	EPA 415.1	SFL / CT	0.2	mg/L
Hardness, as CaCO <sub>3</sub>	EPA 130.2	WQCL	8.0	mg/L
Total Suspended Solids	EPA 160.2	WQCL	3.0	mg/L
<b>Other</b>				
Chloride	EPA 325.2	WQCL	3	mg/L
Cyanide	EPA 335.2	WQCL	5	µg/L
Mercury	FGS-069.2 / EPA 1631M	FGS	0.15	ng/L
Methyl Mercury	FGS-070.2 / EPA 1630M	FGS	0.025	ng/L
UVA <sub>254</sub>	SM 5910B	SFL / WQCL	NA	1/cm
<b>Nutrients</b>				
NH <sub>3</sub> -N	EPA 350.1	WQCL	0.1	mg/L
Nitrate as N	EPA 353.2	WQCL	0.1	mg/L
Nitrite as N	EPA 353.2	WQCL	0.1	mg/L
Total Phosphorus	EPA 365.4	WQCL	0.05	mg/L
Dissolved orthophosphate	EPA 365.1	WQCL	0.05	mg/L
<b>Trace Metals (total recoverable and dissolved)</b>				
Aluminum	FGS-054.4/ EPA 1638M	FGS	1.5	µg/L
Arsenic	FGS-054.4/ EPA 1638M	FGS	0.05	µg/L
Cadmium	FGS-054.4/ EPA 1638M	FGS	0.01	µg/L
Chromium	FGS-054.4/ EPA 1638M	FGS	0.05	µg/L
Copper	FGS-054.4/ EPA 1638M	FGS	0.05	µg/L
Iron	FGS-049.4/ EPA 1638M	FGS	0.1	µg/L
Lead	FGS-054.4/ EPA 1638M	FGS	0.1	µg/L
Molybdeum	FGS-054.4/ EPA 1638M	FGS	0.1	µg/L
Nickel	FGS-054.4/ EPA 1638M	FGS	0.15	µg/L
Silver	FGS-054.4/ EPA 1638M	FGS	0.1	µg/L
Zinc	FGS-054.4/ EPA 1638M	FGS	0.1	µg/L
<b>Bacteria / Pathogens</b>				
<i>E. coli</i> bacteria	SM 9221 F	WQCL	2	MPN/100 mL
Fecal coliform bacteria	SM 9221 E	WQCL	2	MPN/100 mL
Total coliform bacteria	SM 9221 B	WQCL	2	MPN/100 mL

**Table 2-3**  
**AMP Constituents, Analytical Methods,**  
**and Reporting Limits**

Analyte	Method	Lab	RL	Units
<b><i>Selected Organophosphate Pesticides</i></b>				
Diazinon	EPA 8141A	APPL	0.05-0.5	µg/L
Chlorpyrifos	EPA 8141A	APPL	0.05-0.5	µg/L
Malathion	EPA 8141A	APPL	0.1-0.5	µg/L
Methyl parathion	EPA 8141A	APPL	0.1-0.5	µg/L
<b><i>Carbamates Pesticides</i></b>	EPA 8321A	APPL	Variable <sup>(1)</sup>	µg/L
<b><i>Selected Semi Volatile Organics</i></b>				
PAHs	EPA 625	CRG	Variable <sup>(1)</sup>	ng/L
Hexachlorobenzene	EPA 625	CRG	Variable <sup>(1)</sup>	ng/L
N-nitroso-di-n-propylamine	EPA 625	CRG	Variable <sup>(1)</sup>	ng/L
Pentachlorophenol	EPA 625	CRG	Variable <sup>(1)</sup>	ng/L
2,4,6-trichlorophenol	EPA 625	CRG	Variable <sup>(1)</sup>	ng/L
Bis (2-ethylhexyl) phthalate	EPA 625	CRG	10	µg/L
<b><i>Selected Volatile Organics</i></b>				
MTBE	EPA 8260B	APPL	Variable <sup>(1)</sup>	µg/L

<sup>1</sup> Reporting limits vary by individual analyte and analytical run.

## Section 3

# Annual Data Summary

This data summary presents and evaluates water quality data collected between July 2005 and June 2006 by the AMP. Samples were collected from three sites on the American River (Nimbus Dam discharge, Business 80 Overpass and Discovery Park) and from three sites on the Sacramento River (Veterans Bridge, Freeport Marina and River Mile 44). Figure 2-1 shows these sites.

The AMP began monitoring in December 1992. Since then, a total of 190 sampling events (including events coordinated with the Sacramento Stormwater Quality Partnership) have been performed, with samples collected over various range of flow, seasons and years (demonstrated in Figures 3-1 and 3-2).

The scope of this data review comprises several related objectives:

- Review of QA/QC data for Events 175-180;
- Characterization of ambient water quality conditions in the Sacramento and American Rivers for July 2005 - June 2006 and for December 1992 - June 2006; and
- Comparison of water quality data for the period of July 2005 - June 2006 to relevant water quality objectives for the American and Sacramento rivers.

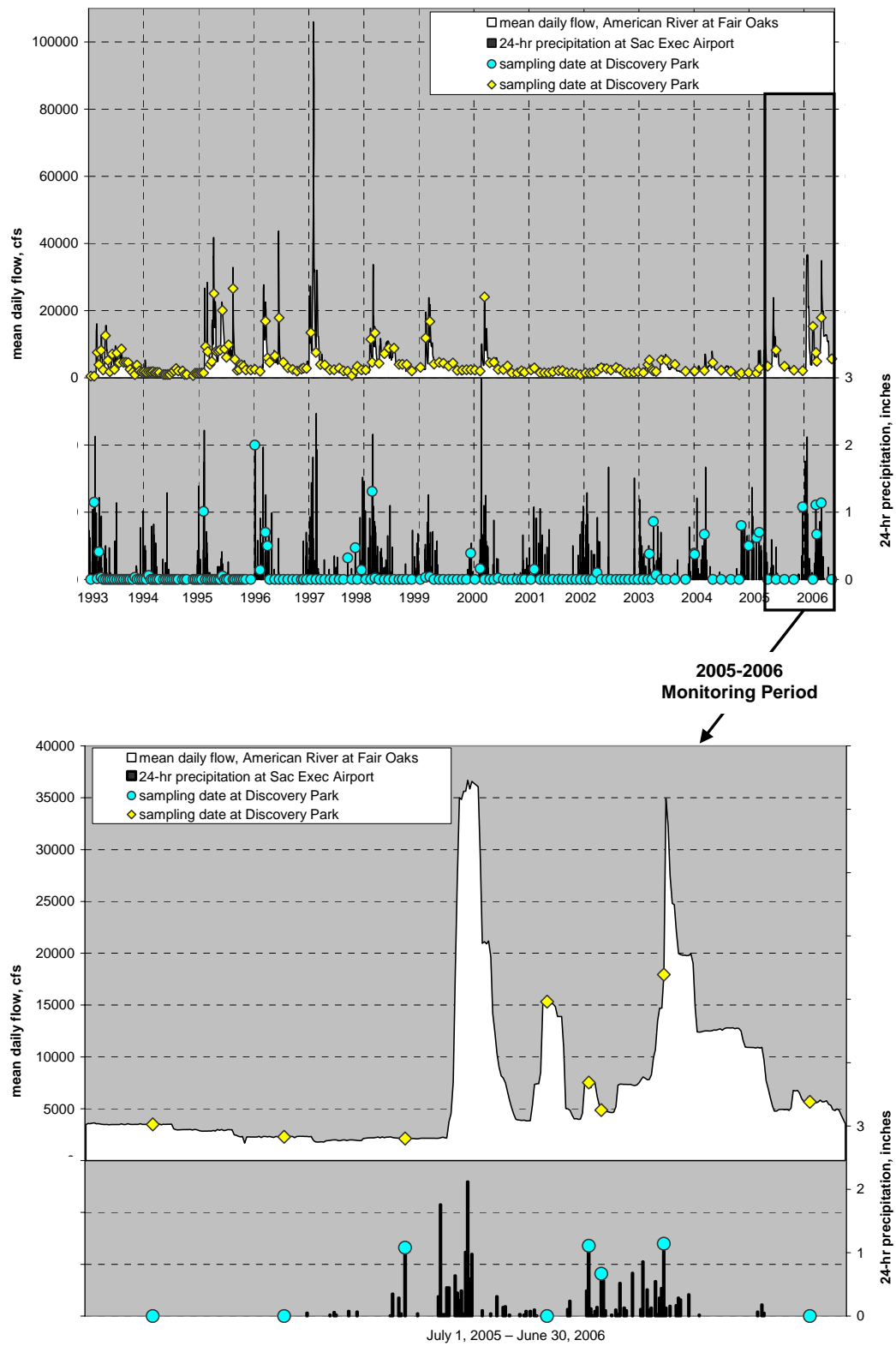
### 3.1 Results and Discussion of Data

The following sections discuss the results and analysis of the AMP data.

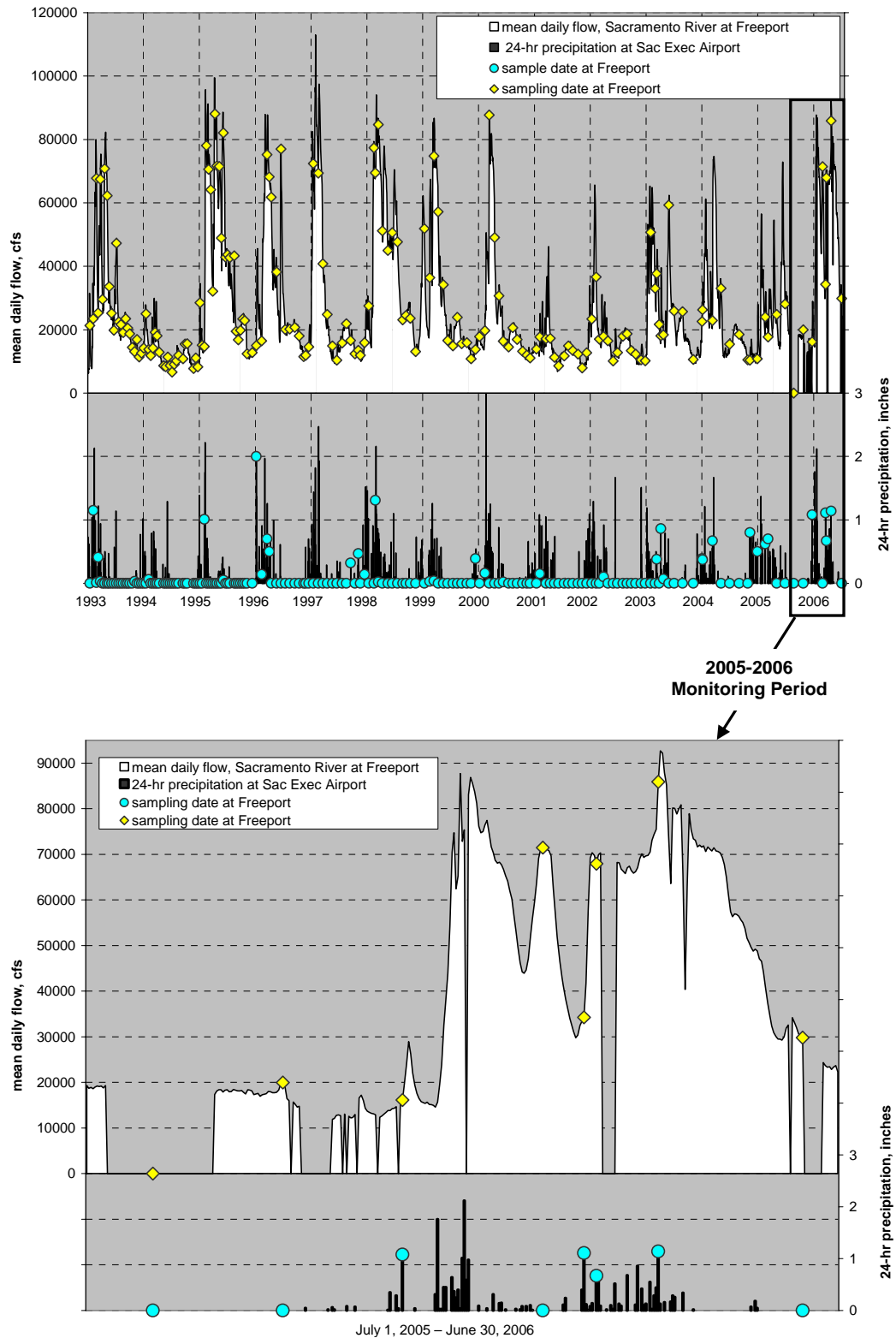
#### 3.1.1 Data Validation Results

AMP data from July 2005 through June 2006 were evaluated to determine the ability of the program's sampling and analytical methods to produce representative and reliable water quality data for the American and Sacramento Rivers. Sample results were reviewed for conformance with recommended, allowable holding times for specific analyses and for compliance with CMP data quality objectives for laboratory and field QA/QC results. These evaluations and results are presented in detail in Appendix A.

A total of 8,898 individual results generated from July 2005 through June 2006 were reviewed and evaluated. Data qualifications were required for 1,812 analytical results, leaving 7,086 unqualified results for an overall analytical success rate of 80 percent for Events 175 through 180. Only 1 of the 1,812 qualified results was rejected as shown in Table A-3. The one rejected result was an equipment blank.



**Figure 3-1**  
**Sample Events, Mean Daily River Flows and**  
**Regional Precipitation: American River**



**Figure 3-2**  
**Sample Events, Mean Daily River Flows and**  
**Regional Precipitation: Sacramento River**



The accuracy and precision of AMP data generally achieved the CMP QA/QC specifications listed in Table 2-2. Systematic problems with sampling or analytical procedures were also not generally found. The complete data quality evaluation results are presented in a series of tables in Appendix A.

### **3.1.2 Ambient Water Quality Conditions**

A primary goal of the CMP is to characterize ambient water quality conditions in the CMP study area. For the purpose of this report, ambient conditions are characterized by the individual values measured during the 8 monitoring events conducted between July 2005 and June 2006, temporal variations in these parameters, conditions associated with extreme values and comparison to water quality limits and objectives. Tables 3-1 through 3-6 summarize ambient conditions for the parameters monitored from July 2005 through June 2006.

For the period of December 1992 through June 2006 (entire data record), the following statistics were calculated for every water quality parameter monitored by the AMP:

- Total number of environmental samples analyzed;
- Number of samples in which a detectable quantity was measured;
- Percent of samples in which a detectable quantity was measured;
- Minimum and maximum detected value; and
- Minimum and maximum reporting limits for data below detection.

Appendix B presents the summary statistics and Appendix C presents time series plots for the same period of record. These plots provide more detailed views of water quality data and variations in water quality characteristics over the period monitored.

**Table 3-1**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at Veterans Bridge**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Conventional</b>										
Chloride	mg/L	4.6	5.1	5.7	2.2	3.3		2.2	4.2	< 250
Cyanide	ug/L		< 5	< 5	< 5				< 5	< 5.2
Dissolved organic carbon	mg/L	1.5	1.6		2.2	3.7		3.4	1.7	
Dissolved oxygen	mg/L		11	10	11	12	17	14	9.8	> 7
Electrical conductivity	umhos/cm	180	150	190	110	130	90	110	160	< 240/340
Hardness	mg/L	60	54	70	48	56		120	64	
pH	Units	8.1	7.9	7.4	7.4	7.4	7.7	7.6	7.6	- 6.5 - 8.5
Temperature	deg C	22.6	16.2	9.9	9.8	10.6	9.4	10.5	18.4	< 20
Total dissolved solids	mg/L	170	110	130	63	110		87	110	
Total organic carbon	mg/L	1.6	1.6		1.6			2.2	5.9	
Total suspended solids	mg/L	8	18	24	35	37		84	22	
Turbidity	NTU	7.7	12	13	81	25	40	66	20	< 150
UVA 254	cm-1	0.048	0.0441	0.085	0.15	0.056		0.16	0.075	
<b>Metals</b>										
Aluminum (Diss.)	ug/L		17	12	59.9	38.6			59.6	
Aluminum (Total)	ug/L		230	758	1020	853			1140	< 200
Arsenic (Dissolved)	ug/L		1.37	1.46	0.95	0.98			1.35	< 10
Arsenic (Total)	ug/L		1.42	1.82	1.29	1.22			1.64	< 50
Cadmium (Diss.)	ug/L		< 0.008	< 0.008	< 0.008	< 0.008			< 0.008	< 0.1-0.2
Cadmium (Total)	ug/L		0.018	0.026	0.025	0.023			0.037	< 0.1-0.3
Chromium (Diss.)	ug/L		< 0.07	0.27	0.33	0.3			< 0.4	< 18-70
Chromium (Total)	ug/L		0.86	2.39	3.09	2.33			3.94	< 22-80
Copper (Dissolved)	ug/L		1.13	1.5	1.58	1.12			1.44	< 2.1-8.2
Copper (Total)	ug/L		1.85	3.36	4.06	3.35			5.08	< 2.2-8.5
Iron (Dissolved)	ug/L			87.5	47	49.2			71.9	< 300
Iron (Total)	ug/L			1250	1760	1210			1660	< 300
Lead (Dissolved)	ug/L		< 0.016	0.032	0.037	< 0.023			< 0.035	< 0.4-2.2
Lead (Total)	ug/L		0.156	0.353	0.685	0.503			0.675	< 0.4-2.8
Mercury (filtered)	ng/L	< 0.55	< 0.47	< 0.82	1.52	0.92		2.43	< 0.78	
Mercury (unfiltered)	ng/L	2	1.7	3.48	9.67	5.85		26.7	6.53	< 50
Methyl Mercury (filtered)	ng/L	< 0.025	< 0.044	0.077	< 0.025	< 0.025		< 0.047	< 0.034	
Methyl Mercury (unfiltered)	ng/L	< 0.077	< 0.04	0.113	< 0.025	< 0.063		0.173	0.132	

**Table 3-1**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at Veterans Bridge**

Parameter	Unit	AMP 175 08/02/2005 Result		AMP 176 10/04/2005 Result		AMP 177 12/01/2005 Result		AMP 178 02/07/2006 Result		AMP 178.1 02/27/2006 Result		AMP 178.2 03/07/2006 Result		AMP 179 04/04/2006 Result		AMP 180 06/13/2006 Result		Lowest Objectives <sup>1</sup>	
Molybdenum (Dissolved)	ug/L				0.46		0.52		0.28		0.32						0.51		
Molybdenum (Total)	ug/L				0.41		0.44		0.18		0.19						0.32		
Nickel (Dissolved)	ug/L				0.38		0.93		1.1		1.08						0.79	<	12-48
Nickel (Total)	ug/L				1.27		3.5		4.94		3.93						5.67	<	12-48
Silver (Dissolved)	ug/L			<	0.015	<	0.015	<	0.015	<	0.015					<	0.015	<	0.2-2.7
Silver (Total)	ug/L			<	0.015	<	0.015		0.021	<	0.015					<	0.015	<	0.2-2.7
Zinc (Dissolved)	ug/L			<	0.28	<	0.44		0.37		0.4						0.73	<	27-108
Zinc (Total)	ug/L				1.56		39.2		5.23		4.27						6.47	<	28-110
<b>Nutrients</b>																			
Ammonia	mg/L	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1			<	0.1	<	0.1		
Nitrate	mg/L		2.6	<	0.1		0.18		0.16		0.2			<	0.1		0.13	<	10
Nitrite	mg/L	<	0.33	<	0.1	<	0.1	<	0.1	<	0.1			<	0.1	<	0.1	<	1
Orthophosphate (dissolved)	mg/L	<	0.05	<	0.05		0.053	<	0.05		0.053			<	0.05	<	0.05		
Total kjeldahl nitrogen	mg/L		0.15		0.3		0.43		0.26		0.11				0.39		0.29		
Total phosphorus	mg/L		0.055		0.059		0.1		0.079		0.066				0.1	<	0.05		
<b>Bacteria</b>																			
E. coli	mpn/100 mL		30		9		13		80		7				500		8	<	235
Fecal coliform	mpn/100 mL		130		17		13		130		7				500		23	<	400
Total coliform	mpn/100 mL		1700		500		5000		2300		500				3000		800		
<b>Carbamates Pesticides</b>																			
Aldicarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Aminocarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Barban	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Benomyl	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Carbaryl	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07	<	18
Carbofuran	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07		
Chlorpropham	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Methiocarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Methomyl	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07		
Mexacarbate	ug/L			<	0.8	<	0.8	<	0.8	<	0.8					<	0.8		
Oxamyl	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4	<	200
Propham	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Propoxur	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		

**Table 3-1**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at Veterans Bridge**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Selected O-P Pesticides</b>										
Chlorpyrifos	ug/L	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.014
Diazinon	ug/L	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Malathion	ug/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Parathion, methyl	ug/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
<b>Selected Herbicides</b>										
Glyphosate	ug/L			< 4.6	< 25	< 4.6			< 4.6	< 700
<b>PAHs</b>										
Acenaphthene	ng/L		< 5	< 5	< 5	< 5			< 5	< 1200000
Anthracene	ng/L		< 5	< 5	< 5	< 5			< 5	< 9600000
Benz(a)anthracene	ng/L		< 5	< 5	< 5	< 5			< 5	< 4.4
Benzo(a)pyrene	ng/L		< 5	< 5	< 5	< 5			< 5	< 4.4
Benzo(g,h,i)perylene	ng/L		< 5	< 5	< 5	< 5			< 5	
Benzo(k)fluoranthene	ng/L		< 5	< 5	< 5	< 5			< 5	< 4.4
Chrysene	ng/L		< 5	< 5	< 5	< 5			< 5	< 4.4
Dibenz(ah)anthracene	ng/L		< 5	< 5	< 5	< 5			< 5	< 4.4
Fluoranthene	ng/L		< 5	< 5	< 5	< 5			< 5	< 300000
Fluorene	ng/L		< 5	< 5	< 5	< 5			< 5	< 1300000
Indeno (1,2,3-cd) pyrene	ng/L		< 5	< 5	< 5	< 5			< 5	< 4.4
Naphthalene	ng/L		< 5	< 5	< 5	< 5			< 5	
Phenanthrene	ng/L		< 5	< 5	< 5	< 5			< 5	
Pyrene	ng/L		< 5	< 5	< 5	< 5			< 5	< 960000
<b>Selected Semi-Volatile Organics</b>										
2,4,6-Trichlorophenol	ng/L		< 100	< 100	< 100	< 100			< 100	< 2100
Bis(2-ethylhexyl) phthalate	ng/L		< 187	< 39.5	< 33.6	< 50.2			< 26.3	< 1800
Hexachlorobenzene	ng/L		< 5	< 5	< 5	< 5			< 5	< 0.75
N-Nitrosodi-N-propylamine	ng/L		< 100	< 100	< 100	< 100			< 100	< 5
Pentachlorophenol	ng/L		< 100	< 100	< 100	< 100			< 100	< 280
<b>Selected Volatile Organics</b>										
MTBE	ug/L		< 0.5	< 0.5	< 0.5				< 0.5	< 5

**Notes**

Refer to Table 3-7 for a listing of the various water quality objectives or criteria

Blank spaces indicated data were not generated

Cells highlighted in gray indicate the individual values exceeds a water quality objective or criterion

**Table 3-2**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at Freeport Marina**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Conventional</b>										
Chloride	mg/L	4.5	3.9	6.9	2.3	4.2		2.1	3.3	< 250
Cyanide	ug/L		< 5	< 5	< 5				< 5	< 5.2
Dissolved organic carbon	mg/L	1.7	1.4		2.2	3.3		3	2.8	
Dissolved oxygen	mg/L	12	13	11	12	15	16	14	10	> 7
Electrical conductivity	umhos/cm	150	130	190	100	130	95	95	180	< 240/340
Hardness	mg/L	48	50	68	68	64		46	52	
pH	Units	8.1	7.8	7.7	7.2	7.7	7.4	7.6	7.7	- 6.5 - 8.5
Temperature	deg C	22.1	16	10.5	9.7	10.4	9.6	10.2	18	
Total dissolved solids	mg/L	110	110	140	81	92		89	75	
Total organic carbon	mg/L	1.7	1.4		3.3			2.4	1.2	
Total suspended solids	mg/L	12	8	11	47	26		41	21	
Turbidity	NTU	13	6.2	12	55	19	39	38	18	< 150
UVA 254	cm-1	0.0475	0.0429	0.0836	0.14	0.053		0.14	0.059	
<b>Metals</b>										
Aluminum (Diss.)	ug/L		< 18	10.6	55.1	42			48	
Aluminum (Total)	ug/L		170	340	1110	6990			879	< 200
Arsenic (Dissolved)	ug/L		1.18	1.61	0.84	0.92			1.09	< 10
Arsenic (Total)	ug/L		1.24	1.67	1.21	1.56			1.32	< 50
Cadmium (Diss.)	ug/L		< 0.008	< 0.008	< 0.008	< 0.008			< 0.008	< 0.1-0.2
Cadmium (Total)	ug/L		< 0.009	0.017	0.023	0.101			0.031	< 0.1-0.3
Chromium (Diss.)	ug/L		< 0.07	0.22	0.31	0.24			0.32	< 18-70
Chromium (Total)	ug/L		< 0.67	1.13	3.22	18.3			2.85	< 22-80
Copper (Dissolved)	ug/L		1.09	1.38	1.39	1.08			1.27	< 2.1-8.2
Copper (Total)	ug/L		1.54	2.3	4.11	11.9			3.72	< 2.2-8.5
Iron (Dissolved)	ug/L			80.5	47	49.2			52.8	< 300
Iron (Total)	ug/L			617	1790	8660			1230	< 300
Lead (Dissolved)	ug/L		< 0.016	0.038	0.034	0.036			0.034	< 0.4-2.2
Lead (Total)	ug/L		0.113	0.298	0.71	2.41			0.534	< 0.4-2.8
Mercury (filtered)	ng/L	0.43	0.32	< 0.74	1.43	0.87		2.43	1.02	
Mercury (unfiltered)	ng/L	1.9	1.69	2	9.2	18		12	6.06	< 50
Methyl Mercury (filtered)	ng/L	0.038	< 0.025	0.08	< 0.025	< 0.025		< 0.042	0.171	
Methyl Mercury (unfiltered)	ng/L	0.066	0.056	0.104	< 0.025	< 0.118		0.108	0.318	

**Table 3-2**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at Freeport Marina**

Parameter	Unit	AMP 175 08/02/2005 Result		AMP 176 10/04/2005 Result		AMP 177 12/01/2005 Result		AMP 178 02/07/2006 Result		AMP 178.1 02/27/2006 Result		AMP 178.2 03/07/2006 Result		AMP 179 04/04/2006 Result		AMP 180 06/13/2006 Result		Lowest Objectives <sup>1</sup>	
Molybdenum (Dissolved)	ug/L				0.4		0.58		0.28		0.36						0.43		
Molybdenum (Total)	ug/L				0.37		0.55		0.18		0.11						0.29		
Nickel (Dissolved)	ug/L				0.41		0.83		0.96		0.98						0.69	<	12-48
Nickel (Total)	ug/L				0.92		1.75		4.99		30.6						3.71	<	12-48
Silver (Dissolved)	ug/L			<	0.015	<	0.015	<	0.015	<	0.015					<	0.015	<	0.2-2.7
Silver (Total)	ug/L			<	0.015	<	0.015		0.022		0.026					<	0.015	<	0.2-2.7
Zinc (Dissolved)	ug/L			<	0.22		0.73		0.32		0.6					<	0.31	<	27-108
Zinc (Total)	ug/L				1.01		2.67		5.78		37.4						4.66	<	28-110
<b>Nutrients</b>																			
Ammonia	mg/L	<	0.1	<	0.1		0.1	<	0.1	<	0.1			<	0.1	<	0.1		
Nitrate	mg/L		0.11	<	0.1		0.16		0.12		0.27			<	0.1	<	0.1	<	10
Nitrite	mg/L	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1			<	0.1	<	0.1	<	1
Orthophosphate (dissolved)	mg/L	<	0.05	<	0.05		0.06	<	0.05		0.055			<	0.05	<	0.05		
Total kjeldahl nitrogen	mg/L		0.17		0.29		0.37		0.16		0.1				0.31		0.25		
Total phosphorus	mg/L		0.062	<	0.05		0.078		0.059	<	0.05				0.075	<	0.05		
<b>Bacteria</b>																			
E. coli	mpn/100 mL		4		17		50		30		800				230		8	<	235
Fecal coliform	mpn/100 mL		50		30		130		30		800				300		13	<	400
Total coliform	mpn/100 mL		300		110		3000		1700		2300				3000		170		
<b>Carbamates Pesticides</b>																			
Aldicarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Aminocarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Barban	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Benomyl	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Carbaryl	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07	<	18
Carbofuran	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07		
Chlorpropham	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Methiocarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Methomyl	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07		
Mexacarbate	ug/L			<	0.8	<	0.8	<	0.8	<	0.8					<	0.8		
Oxamyl	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4	<	200
Propham	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Propoxur	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		

**Table 3-2**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at Freeport Marina**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>				
Selected O-P Pesticides														
Chlorpyrifos	ug/L	<	0.05	<	0.05	<	0.05	<	0.05	<	0.014			
Diazinon	ug/L	<	0.05	<	0.05	<	0.05	<	0.011	<	0.05			
Malathion	ug/L	<	0.1	<	0.1	<	0.1	<	0.1	<				
Parathion, methyl	ug/L	<	0.1	<	0.1	<	0.1	<	0.1	<				
Selected Herbicides														
Glyphosate	ug/L				<	4.6	<	25	<	4.6	<	700		
PAHs														
Acenaphthene	ng/L		<	5	<	5	<	5		<	5	<	1200000	
Anthracene	ng/L		<	5	<	5	<	5		<	5	<	9600000	
Benz(a)anthracene	ng/L		<	5	<	5	<	5		<	5	<	4.4	
Benzo(a)pyrene	ng/L		<	5	<	5	<	5		<	5	<	4.4	
Benzo(g,h,i)perylene	ng/L		<	5	<	5	<	5		<	5			
Benzo(k)fluoranthene	ng/L		<	5	<	5	<	5		<	5	<	4.4	
Chrysene	ng/L		<	5	<	5	<	5		<	5	<	4.4	
Dibenz(ah)anthracene	ng/L		<	5	<	5	<	5		<	5	<	4.4	
Fluoranthene	ng/L		<	5		2.1	<	5		2.4	<	5	<	300000
Fluorene	ng/L		<	5	<	5	<	5			<	5	<	1300000
Indeno (1,2,3-cd) pyrene	ng/L		<	5	<	5	<	5			<	5	<	4.4
Naphthalene	ng/L		<	5		2.7		3.5		1.5	<	5		
Phenanthrene	ng/L		<	5		3.2	<	5		2.4	<	5		
Pyrene	ng/L		<	5		2	<	5		2	<	5	<	960000
Selected Semi-Volatile Organics														
2,4,6-Trichlorophenol	ng/L		<	100	<	100	<	100			<	100	<	2100
Bis(2-ethylhexyl) phthalate	ng/L		<	230	<	53.6	<	92.7	<	101	<	25	<	1800
Hexachlorobenzene	ng/L		<	5	<	5	<	5			<	5	<	0.75
N-Nitrosodi-N-propylamine	ng/L		<	100	<	100	<	100			<	100	<	5
Pentachlorophenol	ng/L		<	100	<	100	<	100			<	100	<	280
Selected Volatile Organics														
MTBE	ug/L		<	0.5	<	0.5	<	0.5			<	0.5	<	5

**Notes**

Refer to Table 3-7 for a listing of the various water quality objectives or criteria

Blank spaces indicated data were not generated

Cells highlighted in gray indicate the individual values exceeds a water quality objective or criterion

**Table 3-3**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at River Mile 44**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Conventional</b>										
Chloride	mg/L	5.3	5.3	7.4	2.5			2.5	3.9	< 250
Cyanide	ug/L		< 5		< 5				< 5	< 5.2
Dissolved organic carbon	mg/L	1.5	1.6		2.2			3	2.3	
Dissolved oxygen	mg/L	9.8	13	10	12			14	11	> 7
Electrical conductivity	umhos/cm	160	140	190	97			98	190	< 240/340
Hardness	mg/L	54	52	70	64			74	56	
pH	Units	8	7.6	7.4	6.5			7.5	7.4	- 6.5 - 8.5
Temperature	deg C	22.3	16.3	10.6	9.8			10.2	18	
Total dissolved solids	mg/L	120	120	120	33			110	110	
Total organic carbon	mg/L	1.6	1.8		3.1			2.2	0.91	
Total suspended solids	mg/L	11	11	8	46			58	20	
Turbidity	NTU	9.2	7	11	58			43	13	< 150
UVA 254	cm-1	0.0484	0.0472	0.08	0.14			0.14	0.077	
<b>Metals</b>										
Aluminum (Diss.)	ug/L		15		52.5				40.6	
Aluminum (Total)	ug/L		190		939				541	< 200
Arsenic (Dissolved)	ug/L		1.21		0.87				1.16	< 10
Arsenic (Total)	ug/L		1.25		1.14				1.34	< 50
Cadmium (Diss.)	ug/L		< 0.009		0.009				0.008	< 0.1-0.2
Cadmium (Total)	ug/L		< 0.012		0.032				0.023	< 0.1-0.3
Chromium (Diss.)	ug/L		< 0.07		0.28				0.31	< 18-70
Chromium (Total)	ug/L		0.71		2.8				1.73	< 22-80
Copper (Dissolved)	ug/L		1.25		1.39				1.29	< 2.1-8.2
Copper (Total)	ug/L		1.77		3.88				2.7	< 2.2-8.5
Iron (Dissolved)	ug/L				44.9				43.3	< 300
Iron (Total)	ug/L				1610				736	< 300
Lead (Dissolved)	ug/L		< 0.015		0.037				0.031	< 0.4-2.2
Lead (Total)	ug/L		0.139		0.653				0.318	< 0.4-2.8
Mercury (filtered)	ng/L	0.54	0.46	< 0.76	1.45			2.32	0.78	
Mercury (unfiltered)	ng/L	2.25	1.51	2.33	8.58			9.06	3.01	< 50
Methyl Mercury (filtered)	ng/L	0.042	< 0.025	0.078	< 0.025			0.062	0.036	
Methyl Mercury (unfiltered)	ng/L	0.064	0.065	0.12	< 0.025			0.084	0.106	



**Table 3-3**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at River Mile 44**

Parameter	Unit	AMP 175 08/02/2005 Result		AMP 176 10/04/2005 Result		AMP 177 12/01/2005 Result		AMP 178 02/07/2006 Result		AMP 178.1 02/27/2006 Result		AMP 178.2 03/07/2006 Result		AMP 179 04/04/2006 Result		AMP 180 06/13/2006 Result		Lowest Objectives <sup>1</sup>	
Molybdenum (Dissolved)	ug/L				0.45				0.28								0.46		
Molybdenum (Total)	ug/L				0.41				0.18								0.37		
Nickel (Dissolved)	ug/L				0.49				0.96								0.65	<	12-48
Nickel (Total)	ug/L				1.05				4.69								2.45	<	12-48
Silver (Dissolved)	ug/L			<	0.015			<	0.015							<	0.015	<	0.2-2.7
Silver (Total)	ug/L			<	0.015			<	0.015							<	0.015	<	0.2-2.7
Zinc (Dissolved)	ug/L				0.79				0.38								0.55	<	27-108
Zinc (Total)	ug/L				1.75				5.16								2.9	<	28-110
<b>Nutrients</b>																			
Ammonia	mg/L		0.21		0.32		0.42	<	0.1					0.12		0.12			
Nitrate	mg/L	<	0.1	<	0.1		0.15		0.15					0.11		0.14	<	10	
Nitrite	mg/L	<	0.1	<	0.1	<	0.1	<	0.1					<	0.1	<	0.1	<	1
Orthophosphate (dissolved)	mg/L		0.074		0.06		0.069	<	0.05					<	0.05		0.051		
Total kjeldahl nitrogen	mg/L		0.48		0.67		0.85		0.28					0.35		0.5			
Total phosphorus	mg/L		0.11		0.079		0.088		0.072					0.083		0.064			
<b>Bacteria</b>																			
E. coli	mpn/100 mL		13		17		11		80					800		13	<	235	
Fecal coliform	mpn/100 mL		50		17		22		80					800		23	<	400	
Total coliform	mpn/100 mL		300		300		2300		3000					8000		300			
<b>Carbamates Pesticides</b>																			
Aldicarb	ug/L			<	0.4			<	0.4							<	0.4		
Aminocarb	ug/L			<	0.4			<	0.4							<	0.4		
Barban	ug/L			<	3.5			<	3.5							<	3.5		
Benomyl	ug/L			<	0.4			<	0.4							<	0.4		
Carbaryl	ug/L			<	0.07			<	0.07							<	0.07	<	18
Carbofuran	ug/L			<	0.07			<	0.07							<	0.07		
Chlorpropham	ug/L			<	3.5			<	3.5							<	3.5		
Methiocarb	ug/L			<	0.4			<	0.4							<	0.4		
Methomyl	ug/L			<	0.07			<	0.07							<	0.07		
Mexacarbate	ug/L			<	0.8			<	0.8							<	0.8		
Oxamyl	ug/L			<	0.4			<	0.4							<	0.4	<	200
Propham	ug/L			<	3.5			<	3.5							<	3.5		
Propoxur	ug/L			<	0.4			<	0.4							<	0.4		

**Table 3-3**  
**Summary of July 2005 through June 2006**  
**Data for Sacramento River at River Mile 44**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Selected O-P Pesticides</b>										
Chlorpyrifos	ug/L	< 0.05	< 0.05	< 0.05	< 0.05			< 0.05	< 0.05	< 0.014
Diazinon	ug/L	< 0.05	< 0.05	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05
Malathion	ug/L	< 0.1	< 0.1	< 0.1	< 0.1			< 0.1	< 0.1	
Parathion, methyl	ug/L	< 0.1	< 0.1	< 0.1	< 0.1			< 0.1	< 0.1	
Glyphosate	ug/L									< 700
<b>PAHs</b>										
Acenaphthene	ng/L		< 5		< 5				< 5	< 1200000
Anthracene	ng/L		< 5		< 5				< 5	< 9600000
Benz(a)anthracene	ng/L		< 5		< 5				< 5	< 4.4
Benzo(a)pyrene	ng/L		< 5		< 5				< 5	< 4.4
Benzo(g,h,i)perylene	ng/L		< 5		< 5				< 5	
Benzo(k)fluoranthene	ng/L		< 5		< 5				< 5	< 4.4
Chrysene	ng/L		< 5		< 5				< 5	< 4.4
Dibenz(ah)anthracene	ng/L		< 5		< 5				< 5	< 4.4
Fluoranthene	ng/L		< 5		< 5				< 5	< 300000
Fluorene	ng/L		< 5		< 5				< 5	< 1300000
Indeno (1,2,3-cd) pyrene	ng/L		< 5		< 5				< 5	< 4.4
Naphthalene	ng/L		2.1		< 5				< 5	
Phenanthrene	ng/L		< 5		< 5				< 5	
Pyrene	ng/L		< 5		< 5				< 5	< 960000
<b>Selected Semi-Volatile Organics</b>										
2,4,6-Trichlorophenol	ng/L		< 100		< 100				< 100	< 2100
Bis(2-ethylhexyl) phthalate	ng/L		1260		< 80.9				< 87.9	< 1800
Hexachlorobenzene	ng/L		< 5		< 5				< 5	< 0.75
N-Nitrosodi-N-propylamine	ng/L		< 100		< 100				< 100	< 5
Pentachlorophenol	ng/L		< 100		< 100				< 100	< 280
<b>Selected Volatile Organics</b>										
MTBE	ug/L		< 0.5		< 0.5				< 0.5	< 5

**Notes**

Refer to Table 3-7 for a listing of the various water quality objectives or criteria

Blank spaces indicated data were not generated

Cells highlighted in gray indicate the individual values exceeds a water quality objective or criterion

**Table 3-4**  
**Summary of July 2005 through June 2006**  
**Data for American River at Nimbus Dam**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Conventional</b>										
Chloride	mg/L	< 2	< 2	< 2	< 2	< 2.4	< 2	< 2	< 2	< 250
Cyanide	ug/L		< 5	< 5	< 5			< 5	< 5.2	
Dissolved organic carbon	mg/L	1.6	1.3		2	2.7		2.8	2.4	
Dissolved oxygen	mg/L	11	12		15	14	13	15	14	> 7
Electrical conductivity	umhos/cm	46	50	55	63	64	72	80	110	
Hardness	mg/L	14	22	20	34	42		56	24	
pH	Units	7.8	7.1		7.6	6.6	8.4	7.7	7.7	- 6.5 - 8.5
Temperature	deg C	15.9	17.4		8.8	8.4	9	9.7	13.7	
Total dissolved solids	mg/L	64	62	52	49	54		150	47	125
Total organic carbon	mg/L	1.6	1.4		1.4			2.6	0.93	
Total suspended solids	mg/L	< 3	< 3	3	4	6		5	5	
Turbidity	NTU	2	1.6	2	6.4	5.8	26	13	5.1	< 10
UVA 254	cm-1	0.0428	0.0375	0.0324	0.14	0.048		0.072	0.062	
<b>Metals</b>										
Aluminum (Diss.)	ug/L		4.8	2.2	48.8	25.8			24.2	
Aluminum (Total)	ug/L		34	54.9	175	197			103	< 200
Arsenic (Dissolved)	ug/L		0.29	0.29	0.29	0.36			0.26	< 10
Arsenic (Total)	ug/L		0.33	0.31	0.32	0.41			0.3	< 50
Cadmium (Diss.)	ug/L		< 0.012	< 0.008	0.02	< 0.008			0.03	< 0.1-0.2
Cadmium (Total)	ug/L		0.017	< 0.008	0.024	< 0.008			0.036	< 0.1-0.3
Chromium (Diss.)	ug/L		< 0.07	< 0.03	0.21	0.15			0.14	< 18-70
Chromium (Total)	ug/L		0.11	0.18	0.56	0.59			0.24	< 22-80
Copper (Dissolved)	ug/L		0.53	0.48	0.69	0.59			0.46	< 2.1-8.2
Copper (Total)	ug/L		0.62	0.61	0.94	0.98			0.6	< 2.2-8.5
Iron (Dissolved)	ug/L			< 6.4	29.9	25.8			32.9	< 300
Iron (Total)	ug/L			106	194	231			100	< 300
Lead (Dissolved)	ug/L		< 0.015	< 0.015	0.025	< 0.015			0.034	< 0.4-2.2
Lead (Total)	ug/L		0.077	0.114	0.121	0.187			0.153	< 0.4-2.8
Mercury (filtered)	ng/L	0.53	0.35	< 0.29	1.34	1.03		1.38	0.75	
Mercury (unfiltered)	ng/L	0.95	0.66	< 0.82	2.89	3.08		2.91	1.47	< 50
Methyl Mercury (filtered)	ng/L	0.109	< 0.025	< 0.033	0.314	< 0.025		< 0.025	0.044	
Methyl Mercury (unfiltered)	ng/L	0.032	0.04	< 0.036	< 0.025	< 0.025		< 0.033	0.094	

**Table 3-4**  
**Summary of July 2005 through June 2006**  
**Data for American River at Nimbus Dam**

Parameter	Unit	AMP 175 08/02/2005 Result		AMP 176 10/04/2005 Result		AMP 177 12/01/2005 Result		AMP 178 02/07/2006 Result		AMP 178.1 02/27/2006 Result		AMP 178.2 03/07/2006 Result		AMP 179 04/04/2006 Result		AMP 180 06/13/2006 Result		Lowest Objectives <sup>1</sup>	
Molybdenum (Dissolved)	ug/L				0.16		0.19		0.16		0.18						0.14		
Molybdenum (Total)	ug/L				0.16		0.18		0.14		0.16						0.14		
Nickel (Dissolved)	ug/L				0.41		0.25		0.81		0.74						0.43	<	12-48
Nickel (Total)	ug/L				0.51		0.43		1.32		1.23						0.59	<	12-48
Silver (Dissolved)	ug/L			<	0.015	<	0.015	<	0.015	<	0.015					<	0.015	<	0.2-2.7
Silver (Total)	ug/L			<	0.015	<	0.015	<	0.015		0.071					<	0.015	<	0.2-2.7
Zinc (Dissolved)	ug/L				1.05		0.13		1.52	<	0.5						0.87	<	27-108
Zinc (Total)	ug/L				1.26		0.39		2.23	<	1.13						1.18	<	28-110
<b>Nutrients</b>																			
Ammonia	mg/L	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1			<	0.1	<	0.1		
Nitrate	mg/L	<	0.1	<	0.1	<	0.1		0.14	<	0.1			<	0.1	<	0.1	<	10
Nitrite	mg/L	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1			<	0.1	<	0.1	<	1
Orthophosphate (dissolved)	mg/L	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05			<	0.05	<	0.05		
Total kjeldahl nitrogen	mg/L	<	0.1		0.49		0.31		0.14		0.22				0.2		0.2		
Total phosphorus	mg/L	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05			<	0.05	<	0.05		
<b>Bacteria</b>																			
E. coli	mpn/100 mL		2		30		50		23		230				230		170	<	235
Fecal coliform	mpn/100 mL		4		30		70		30		300				230		170	<	400
Total coliform	mpn/100 mL		70		2300		1700		300		1300				1300		2300		
<b>Carbamates Pesticides</b>																			
Aldicarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Aminocarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Barban	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Benomyl	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Carbaryl	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07	<	18
Carbofuran	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07		
Chlorpropham	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Methiocarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Methomyl	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07		
Mexacarbate	ug/L			<	0.8	<	0.8	<	0.8	<	0.8					<	0.8		
Oxamyl	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4	<	200
Propham	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Propoxur	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		

**Table 3-4**  
**Summary of July 2005 through June 2006**  
**Data for American River at Nimbus Dam**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>				
Selected O-P Pesticides														
Chlorpyrifos	ug/L	<	0.05	<	0.05	<	0.05	<	0.05	<	0.014			
Diazinon	ug/L	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05			
Malathion	ug/L	<	0.1	<	0.1	<	0.1	<	0.1	<				
Parathion, methyl	ug/L	<	0.1	<	0.1	<	0.1	<	0.1	<				
Selected Herbicides														
Glyphosate	ug/L			<	4.6	<	25	<	4.6	<	700			
PAHs														
Acenaphthene	ng/L		<	5	<	5	<	5	<	5	<	1200000		
Anthracene	ng/L		<	5	<	5	<	5	<	5	<	9600000		
Benz(a)anthracene	ng/L		<	5	<	5	<	5	<	5	<	4.4		
Benzo(a)pyrene	ng/L		<	5	<	5	<	5	<	5	<	4.4		
Benzo(g,h,i)perylene	ng/L		<	5	<	5	<	5	<	5				
Benzo(k)fluoranthene	ng/L		<	5	<	5	<	5	<	5	<	4.4		
Chrysene	ng/L		<	5	<	5	<	5	<	5	<	4.4		
Dibenz(ah)anthracene	ng/L		<	5	<	5	<	5	<	5	<	4.4		
Fluoranthene	ng/L		<	5	6.3	<	5	<	5	<	5	<	300000	
Fluorene	ng/L		<	5	<	5	<	5	<	5	<	1300000		
Indeno (1,2,3-cd) pyrene	ng/L		<	5	<	5	<	5	<	5	<	4.4		
Naphthalene	ng/L		<	5	1.7	<	5	<	5	<	5			
Phenanthrene	ng/L		<	5	3.5	<	5	<	5	<	5			
Pyrene	ng/L		<	5	21.9	<	5	<	5	<	5	<	960000	
Selected Semi-Volatile Organics														
2,4,6-Trichlorophenol	ng/L		<	100	<	100	<	100	<	100	<	2100		
Bis(2-ethylhexyl) phthalate	ng/L		<	82.8	2510	<	40.3	<	64.3	<	89.7	<	1800	
Hexachlorobenzene	ng/L		<	5	<	5	<	5	<	5	<	5	<	0.75
N-Nitrosodi-N-propylamine	ng/L		<	100	<	100	<	100	<	100	<	100	<	5
Pentachlorophenol	ng/L		<	100	<	100	<	100	<	100	<	100	<	280
Selected Volatile Organics														
MTBE	ug/L		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	5

**Notes**

Refer to Table 3-7 for a listing of the various water quality objectives or criteria

Blank spaces indicated data were not generated

Cells highlighted in gray indicate the individual values exceeds a water quality objective or criterion

\* The value of 148,000 ug/L is well out of range of all historical data. The sample was re-analyzed but after a two-month period. The second analysis detected a concentration around 4.0 ug/L, which was substantially lower. However, the second analysis exceeded the 7 day hold time along with detecting Bis(2-ethylhexyl) phthalate in the method blank, so the results must be qualified. Both results are provided but neither one can be considered representative of the true value.

**Table 3-5**  
**Summary of July 2005 through June 2006**  
**Data for American River at Discovery Park**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Conventional</b>										
Chloride	mg/L	< 2	< 2	< 2.1	< 2	< 2		< 2	< 2	< 250
Cyanide	ug/L		< 5	< 5	< 5				< 5	< 5.2
Dissolved organic carbon	mg/L	1.5	1.8		1.9	2.6		2.2	1.6	
Dissolved oxygen	mg/L		13	9.6	13	13	18	15	11	> 7
Electrical conductivity	umhos/cm	48	53	58	57	59	68	80	66	
Hardness	mg/L	16	20	20	40	44		66	42	
pH	Units	8.1	7.5	7.3	7.5	7.6	7.8	7.8	7.8	- 6.5 - 8.5
Temperature	deg C	17.3	17.2	12.8	8.5	9.1	10.3	9.6	13.7	
Total dissolved solids	mg/L	71	75	74	47	61		61	87	125
Total organic carbon	mg/L	1.7	1.5		1.4			2.7	3.9	
Total suspended solids	mg/L	3	< 3	< 3	4	7		12	45	
Turbidity	NTU	1.7	1.7	4.9	8.6	6	22	25	3.9	< 10
UVA 254	cm-1	0.0452	0.04	0.0339	0.069	0.051		0.069	0.054	
<b>Metals</b>										
Aluminum (Diss.)	ug/L		4.6	2.8	36.6	26.2			58.2	
Aluminum (Total)	ug/L		21	18	213	279			2250	< 200
Arsenic (Dissolved)	ug/L		0.32	0.28	0.31	0.32			0.23	< 10
Arsenic (Total)	ug/L		0.31	0.32	0.4	0.41			0.75	< 50
Cadmium (Diss.)	ug/L		< 0.008	< 0.008	< 0.008	< 0.008			< 0.008	< 0.1-0.2
Cadmium (Total)	ug/L		< 0.008	< 0.008	< 0.008	0.01			0.046	< 0.1-0.3
Chromium (Diss.)	ug/L		< 0.07	< 0.03	0.18	0.14			< 0.19	< 18-70
Chromium (Total)	ug/L		< 0.07	0.11	0.65	0.74			6.4	< 22-80
Copper (Dissolved)	ug/L		0.49	0.53	0.71	0.76			0.5	< 2.1-8.2
Copper (Total)	ug/L		0.54	0.62	1.11	1.45			5.5	< 2.2-8.5
Iron (Dissolved)	ug/L			< 9.5	27.7	27.5			48.9	< 300
Iron (Total)	ug/L			38.7	260	316			2630	< 300
Lead (Dissolved)	ug/L		< 0.015	< 0.015	0.024	0.041			< 0.043	< 0.4-2.2
Lead (Total)	ug/L		0.049	0.061	0.174	0.649			2.36	< 0.4-2.8
Mercury (filtered)	ng/L	< 0.57	< 0.41	< 0.4	1.1	1.33		1.14	0.87	
Mercury (unfiltered)	ng/L	1.04	< 0.51	< 0.74	3.53	4.12		3.63	7.42	< 50
Methyl Mercury (filtered)	ng/L	< 0.032	< 0.04	0.055	< 0.025	< 0.025		< 0.025	0.07	
Methyl Mercury (unfiltered)	ng/L	< 0.048	< 0.033	0.069	< 0.025	< 0.044		0.059	0.171	

**Table 3-5**  
**Summary of July 2005 through June 2006**  
**Data for American River at Discovery Park**

Parameter	Unit	AMP 175 08/02/2005 Result		AMP 176 10/04/2005 Result		AMP 177 12/01/2005 Result		AMP 178 02/07/2006 Result		AMP 178.1 02/27/2006 Result		AMP 178.2 03/07/2006 Result		AMP 179 04/04/2006 Result		AMP 180 06/13/2006 Result		Lowest Objectives <sup>1</sup>	
Molybdenum (Dissolved)	ug/L				0.18		0.18		0.16		0.19						0.15		
Molybdenum (Total)	ug/L				0.19		0.18		0.13		0.16						0.06		
Nickel (Dissolved)	ug/L				0.26		0.26		0.74		0.72						0.49	<	12-48
Nickel (Total)	ug/L				0.32		0.29		1.43		1.41						7.31	<	12-48
Silver (Dissolved)	ug/L			<	0.015	<	0.015	<	0.015	<	0.015					<	0.015	<	0.2-2.7
Silver (Total)	ug/L			<	0.015	<	0.015	<	0.015	<	0.015					<	0.015	<	0.2-2.7
Zinc (Dissolved)	ug/L			<	0.15		0.34	<	0.26		1.3						0.31	<	27-108
Zinc (Total)	ug/L			<	0.24		0.5	<	0.9		3.68						11.2	<	28-110
<b>Nutrients</b>																			
Ammonia	mg/L	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1			<	0.1	<	0.1		
Nitrate	mg/L	<	0.5	<	0.1	<	0.1		0.17		0.11			<	0.1	<	0.1	<	10
Nitrite	mg/L	<	0.33	<	0.1	<	0.1	<	0.1	<	0.1			<	0.1	<	0.1	<	1
Orthophosphate (dissolved)	mg/L	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05			<	0.05	<	0.05		
Total kjeldahl nitrogen	mg/L		0.1		0.54		0.34	<	0.1		0.13				0.22		0.35		
Total phosphorus	mg/L		0.092	<	0.05	<	0.05	<	0.05	<	0.05			<	0.05		0.069		
<b>Bacteria</b>																			
E. coli	mpn/100 mL		27		8		170		220		500				110		4	<	235
Fecal coliform	mpn/100 mL		80		23		170		500		800				140		23	<	400
Total coliform	mpn/100 mL		800		1300		1300		170		1300				2200		500		
<b>Carbamates Pesticides</b>																			
Aldicarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Aminocarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Barban	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Benomyl	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Carbaryl	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07	<	18
Carbofuran	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07		
Chlorpropham	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Methiocarb	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		
Methomyl	ug/L			<	0.07	<	0.07	<	0.07	<	0.07					<	0.07		
Mexacarbate	ug/L			<	0.8	<	0.8	<	0.8	<	0.8					<	0.8		
Oxamyl	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4	<	200
Propham	ug/L			<	3.5	<	3.5	<	3.5	<	3.5					<	3.5		
Propoxur	ug/L			<	0.4	<	0.4	<	0.4	<	0.4					<	0.4		

**Table 3-5**  
**Summary of July 2005 through June 2006**  
**Data for American River at Discovery Park**

Parameter	Unit	AMP 175 08/02/2005 Result		AMP 176 10/04/2005 Result		AMP 177 12/01/2005 Result		AMP 178 02/07/2006 Result		AMP 178.1 02/27/2006 Result		AMP 178.2 03/07/2006 Result		AMP 179 04/04/2006 Result		AMP 180 06/13/2006 Result		Lowest Objectives <sup>1</sup>	
Selected O-P Pesticides																			
Chlorpyrifos	ug/L	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05	<	0.014
Diazinon	ug/L	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05	<	0.05
Malathion	ug/L	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1		
Parathion, methyl	ug/L	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1		
Selected Herbicides																			
Glyphosate	ug/L					<	4.6	<	25	<	4.6					<	4.6	<	700
PAHs																			
Acenaphthene	ng/L			<	5	<	5	<	5	<	5					<	5	<	1200000
Anthracene	ng/L			<	5	<	5	<	5	<	5					<	5	<	9600000
Benz(a)anthracene	ng/L			<	5	<	5	<	5	<	5					<	5	<	4.4
Benzo(a)pyrene	ng/L			<	5	<	5	<	5	<	5					<	5	<	4.4
Benzo(g,h,i)perylene	ng/L			<	5	<	5	<	5	<	5					<	5		
Benzo(k)fluoranthene	ng/L			<	5	<	5	<	5	<	5					<	5	<	4.4
Chrysene	ng/L			<	5	<	5	<	5	<	5					<	5	<	4.4
Dibenz(ah)anthracene	ng/L			<	5	<	5	<	5	<	5					<	5	<	4.4
Fluoranthene	ng/L			<	5	<	5	<	5		1.9					<	5	<	300000
Fluorene	ng/L			<	5	<	5	<	5	<	5					<	5	<	1300000
Indeno (1,2,3-cd) pyrene	ng/L			<	5	<	5	<	5	<	5					<	5	<	4.4
Naphthalene	ng/L			<	5	<	5	<	5	<	5					<	5		
Phenanthrene	ng/L			<	5	<	5	<	5		1.6					<	5		
Pyrene	ng/L			<	5	<	5	<	5		2.1					<	5	<	960000
Selected Semi-Volatile Organics																			
2,4,6-Trichlorophenol	ng/L			<	100	<	100	<	100	<	100					<	100	<	2100
Bis(2-ethylhexyl) phthalate	ng/L			<	27.3	<	39.5	<	68.6	<	138					<	18.8	<	1800
Hexachlorobenzene	ng/L			<	5	<	5	<	5	<	5					<	5	<	0.75
N-Nitrosodi-N- propylamine	ng/L			<	100	<	100	<	100	<	100					<	100	<	5
Pentachlorophenol	ng/L			<	100	<	100	<	100	<	100					<	100	<	280
Selected Volatile Organics																			
MTBE	ug/L			<	0.5	<	0.5	<	0.5							<	0.5	<	5

**Notes**

Refer to Table 3-7 for a listing of the various water quality objectives or criteria

Blank spaces indicated data were not generated

Cells highlighted in gray indicate the individual values exceeds a water quality objective or criterion



**Table 3-6**  
**Summary of July 2005 through June 2006**  
**Data for American River at Business 80 Overpass**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Conventional</b>										
Chloride	mg/L			2.7	< 2	< 2			< 2	< 250
Cyanide	ug/L			< 5	< 5				< 5	< 5.2
Dissolved organic carbon	mg/L				1.9	3			1.7	
Dissolved oxygen	mg/L			9.6	13	13	19		10	> 7
Electrical conductivity	umhos/cm			59	58	59	64		59	
Hardness	mg/L			20	26	22			46	
pH	Units			7.3	7.7	7.6	7.8		7.5	- 6.5 - 8.5
Temperature	deg C			12.9	8.7	9	9.4		13.8	
Total dissolved solids	mg/L			52	52	65			52	125
Total organic carbon	mg/L				1.4				2.2	
Total suspended solids	mg/L			11	5	7			21	
Turbidity	NTU			13	10	7.9	27		8.5	< 10
UVA 254	cm-1			0.0605	0.063	0.052			0.064	
<b>Metals</b>										
Aluminum (Diss.)	ug/L			16	47.8	29.8			44.9	
Aluminum (Total)	ug/L			235	150	288			602	< 200
Arsenic (Dissolved)	ug/L			0.36	0.28	0.37			0.24	< 10
Arsenic (Total)	ug/L			0.46	0.34	0.45			0.38	< 50
Cadmium (Diss.)	ug/L			< 0.008	< 0.008	< 0.008			< 0.008	< 0.1-0.2
Cadmium (Total)	ug/L			0.023	< 0.008	0.011			0.019	< 0.1-0.3
Chromium (Diss.)	ug/L			0.14	0.22	0.14			< 0.18	< 18-70
Chromium (Total)	ug/L			0.77	0.49	0.74			1.75	< 22-80
Copper (Dissolved)	ug/L			1.18	0.67	0.79			0.53	< 2.1-8.2
Copper (Total)	ug/L			2.88	0.89	1.45			2.29	< 2.2-8.5
Iron (Dissolved)	ug/L			30.8	29.9	31.8			41.6	< 300
Iron (Total)	ug/L			336	176	328			740	< 300
Lead (Dissolved)	ug/L			0.127	0.024	0.062			< 0.041	< 0.4-2.2
Lead (Total)	ug/L			1.28	0.122	0.644			0.819	< 0.4-2.8
Mercury (filtered)	ng/L			1.07	1.1	1.31			0.84	
Mercury (unfiltered)	ng/L			5.5	2.79	4.19			4.97	< 50
Methyl Mercury (filtered)	ng/L									
Methyl Mercury (unfiltered)	ng/L			0.122	< 0.025	< 0.036			0.171	

**Table 3-6**  
**Summary of July 2005 through June 2006**  
**Data for American River at Business 80 Overpass**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
Molybdenum (Dissolved)	ug/L			0.27	0.16	0.19			0.14	
Molybdenum (Total)	ug/L			0.27	0.14	0.17			0.1	
Nickel (Dissolved)	ug/L			0.39	0.79	0.74			0.56	< 12-48
Nickel (Total)	ug/L			1.05	1.18	1.46			2.55	< 12-48
Silver (Dissolved)	ug/L			< 0.015	< 0.015	< 0.015			< 0.015	< 0.2-2.7
Silver (Total)	ug/L			< 0.015	< 0.015	< 0.015			< 0.015	< 0.2-2.7
Zinc (Dissolved)	ug/L			4.71	0.23	1.61			0.33	< 27-108
Zinc (Total)	ug/L			13.48	0.64	4.3			3.44	< 28-110
<b>Nutrients</b>										
Ammonia	mg/L			< 0.1	< 0.1	< 0.1			< 0.1	
Nitrate	mg/L			0.1	0.14	< 0.1			< 0.1	< 10
Nitrite	mg/L			< 0.1	< 0.1	< 0.1			< 0.1	< 1
Orthophosphate (dissolved)	mg/L			< 0.05	< 0.05	< 0.05			< 0.05	
Total kjeldahl nitrogen	mg/L			0.47	0.11	0.1			0.24	
Total phosphorus	mg/L			0.11	< 0.05	< 0.05			< 0.05	
<b>Bacteria</b>										
E. coli	mpn/100 mL			500	80	170			17	< 235
Fecal coliform	mpn/100 mL			500	80	220			17	< 400
Total coliform	mpn/100 mL			30000	500	5000			170	
<b>Carbamates Pesticides</b>										
Aldicarb	ug/L			< 0.4	< 0.4	< 0.4			< 0.4	
Aminocarb	ug/L			< 0.4	< 0.4	< 0.4			< 0.4	
Barban	ug/L			< 3.5	< 3.5	< 3.5			< 3.5	
Benomyl	ug/L			< 0.4	< 0.4	< 0.4			< 0.4	
Carbaryl	ug/L			< 0.07	< 0.07	< 0.07			< 0.07	< 18
Carbofuran	ug/L			< 0.07	< 0.07	< 0.07			< 0.07	
Chlorpropham	ug/L			< 3.5	< 3.5	< 3.5			< 3.5	
Methiocarb	ug/L			< 0.4	< 0.4	< 0.4			< 0.4	
Methomyl	ug/L			< 0.07	< 0.07	< 0.07			< 0.07	
Mexacarbate	ug/L			< 0.8	< 0.8	< 0.8			< 0.8	
Oxamyl	ug/L			< 0.4	< 0.4	< 0.4			< 0.4	< 200
Propham	ug/L			< 3.5	< 3.5	< 3.5			< 3.5	
Propoxur	ug/L			< 0.4	< 0.4	< 0.4			< 0.4	

**Table 3-6**  
**Summary of July 2005 through June 2006**  
**Data for American River at Business 80 Overpass**

Parameter	Unit	AMP 175 08/02/2005 Result	AMP 176 10/04/2005 Result	AMP 177 12/01/2005 Result	AMP 178 02/07/2006 Result	AMP 178.1 02/27/2006 Result	AMP 178.2 03/07/2006 Result	AMP 179 04/04/2006 Result	AMP 180 06/13/2006 Result	Lowest Objectives <sup>1</sup>
<b>Selected O-P Pesticides</b>										
Chlorpyrifos	ug/L			< 0.1	< 0.05	< 0.05	< 0.05		< 0.05	< 0.014
Diazinon	ug/L			< 0.1	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05
Malathion	ug/L			< 0.2	< 0.1	< 0.1	< 0.1		< 0.1	
Parathion, methyl	ug/L			< 0.2	< 0.1	< 0.1	< 0.1		< 0.1	
<b>Selected Herbicides</b>										
Glyphosate	ug/L			< 4.6	< 25	< 4.6			< 4.6	< 700
<b>PAHs</b>										
Acenaphthene	ng/L			< 5	< 5	< 5			< 5	< 1200000
Anthracene	ng/L			< 5	< 5	< 5			< 5	< 9600000
Benz(a)anthracene	ng/L			5	< 5	2.2			< 5	< 4.4
Benzo(a)pyrene	ng/L			5.2	< 5	< 5			< 5	< 4.4
Benzo(g,h,i)perylene	ng/L			10.2	< 5	< 5			< 5	
Benzo(k)fluoranthene	ng/L			11	< 5	< 5			< 5	< 4.4
Chrysene	ng/L			13.5	< 5	3.3			< 5	< 4.4
Dibenz(ah)anthracene	ng/L			< 5	< 5	< 5			< 5	< 4.4
Fluoranthene	ng/L			18.3	< 5	3.9			< 5	< 300000
Fluorene	ng/L			< 5	< 5	< 5			< 5	< 1300000
Indeno (1,2,3-cd) pyrene	ng/L			6.9	< 5	< 5			< 5	< 4.4
Naphthalene	ng/L			4	< 5	< 5			< 5	
Phenanthrene	ng/L			11.1	< 5	1.3			< 5	
Pyrene	ng/L			20.4	< 5	3.6			< 5	< 960000
<b>Selected Semi-Volatile Organics</b>										
2,4,6-Trichlorophenol	ng/L			< 100	< 100	< 100			< 100	< 2100
Bis(2-ethylhexyl) phthalate	ng/L			667	< 70.5	< 148			< 26.8	< 1800
Hexachlorobenzene	ng/L			< 5	< 5	< 5			< 5	< 0.75
N-Nitrosodi-N-propylamine	ng/L			< 100	< 100	< 100			< 100	< 5
Pentachlorophenol	ng/L			< 100	< 100	< 100			< 100	< 280
<b>Selected Volatile Organics</b>										
MTBE	ug/L			< 0.5	< 0.5				< 0.5	< 5

**Notes**

Refer to Table 3-7 for a listing of the various water quality objectives or criteria

Blank spaces indicated data were not generated

Cells highlighted in gray indicate the individual values exceeds a water quality objective or criterion

**Table 3-7**  
**Summary of Relevant Water Quality Objectives**

Parameter	California Toxic Rule (CTR) #	Units	Water Quality Objectives						
			California Toxic Rule				Basin Plan	Department of Fish and Game	Lowest Objective
			Freshwater Aquatic Life		Human Health (Consumption of)				
			Chronic	Acute	Water & Organisms	Organisms Only			
Conventional									
Chloride, total		mg/L	—	—	—	—	250	—	250
Cyanide	14	µg/L	5.2	22	700	220000	10	—	5.2
Dissolved Oxygen		mg/L	—	—	—	—	7	—	7
pH		Std. Units	—	—	—	—	6.5–8.5	—	6.5–8.5
Solids, Total Dissolved		mg/L	—	—	—	—	125	—	125 <sup>3</sup>
Specific Conductance		µS/cm	—	—	—	—	240/340	—	240/340 <sup>4</sup>
Temperature		°C	—	—	—	—	20 <sup>1</sup>	—	20 <sup>1</sup>
Turbidity		NTU	—	—	—	—	10/150	—	10/150 <sup>5</sup>
Bacteriological									
Fecal coliform		MPN/100 mL	—	—	—	—	400	—	400
Escherichia Coli		MPN/100 mL	—	—	—	—	235	—	235
Nutrient									
Nitrate plus Nitrite as N		mg/L	—	—	—	—	10	—	10
Nitrite		mg/L	—	—	—	—	1	—	1
Metals									
Aluminum, Total Recoverable		µg/L	—	—	—	—	200	—	200
Arsenic, Dissolved	2	µg/L	150	340	—	—	10	—	10
Arsenic, Total Recoverable	2	µg/L	150	340	—	—	50	—	50
Cadmium, Dissolved	4	µg/L	0.4-1.8 <sup>2</sup>	0.1-0.2 <sup>2</sup>	—	—	—	—	0.1-0.2 <sup>2</sup>
Cadmium, Total Recoverable	4	µg/L	0.4-1.8 <sup>2</sup>	0.1-0.3 <sup>2</sup>	—	—	5	—	0.1-0.3 <sup>2</sup>
Chromium, Dissolved	5a	µg/L	140-520 <sup>2</sup>	18-70 <sup>2</sup>	—	—	—	—	18-70 <sup>2</sup>
Chromium, Total Recoverable	5a	µg/L	440-1650 <sup>2</sup>	22-80 <sup>2</sup>	—	—	50	—	22-80 <sup>2</sup>
Copper, Dissolved	6	µg/L	2.7-12 <sup>2</sup>	2.1-8.2 <sup>2</sup>	—	—	10	—	2.1-8.2 <sup>2</sup>
Copper, Total Recoverable	6	µg/L	2.8-13 <sup>2</sup>	2.2-8.5 <sup>2</sup>	—	1300	1000	—	2.2-8.5 <sup>2</sup>
Iron, Dissolved		µg/L	—	—	—	—	300	—	300
Iron, Total Recoverable		µg/L	—	—	—	—	300	—	300
Lead, Dissolved	7	µg/L	9.6-58 <sup>2</sup>	0.4-2.2 <sup>2</sup>	—	—	—	—	0.4-2.2 <sup>2</sup>
Lead, Total Recoverable	7	µg/L	9.6-71 <sup>2</sup>	0.4-2.8 <sup>2</sup>	—	—	15	—	0.4-2.8 <sup>2</sup>
Mercury, Total	8	ng/L	—	—	50	51	2000	—	50
Nickel, Dissolved	9	µg/L	110-430 <sup>2</sup>	12-48 <sup>2</sup>	—	—	—	—	12-48 <sup>2</sup>
Nickel, Total Recoverable	9	µg/L	110-430 <sup>2</sup>	12-48 <sup>2</sup>	610	4600	100	—	12-48 <sup>2</sup>
Silver, Dissolved		µg/L	0.2-2.7 <sup>2</sup>	—	—	—	10	—	0.2-2.7 <sup>2</sup>
Silver, Total Recoverable		µg/L	0.2-2.7 <sup>2</sup>	—	—	—	100	—	0.2-2.7 <sup>2</sup>
Zinc, Dissolved	13	µg/L	27-108 <sup>2</sup>	27-108 <sup>2</sup>	—	—	100	—	27-108 <sup>2</sup>
Zinc, Total Recoverable	13	µg/L	28-110 <sup>2</sup>	28-110 <sup>2</sup>	—	—	5000	—	28-110 <sup>2</sup>
Carbamates Pesticides									
Carbofuran		µg/L	—	—	—	—	18	—	18
Oxamyl		µg/L	—	—	—	—	200	—	200
OP Pesticides									
Chlorpyrifos		µg/L	—	—	—	—	—	0.014	0.014
Diazinon		µg/L	—	—	—	—	—	0.05	0.05
Selected Herbicides									
Glyphosate		µg/L	—	—	—	—	700	—	700
PAH									
Acenaphthene	56	µg/L	—	—	1200	2700	—	—	1200
Anthracene	58	µg/L	—	—	9600	110000	—	—	9600
Benzo(a)anthracene	60	µg/L	—	—	0.0044	0.049	—	—	0.0044
Benzo(a)pyrene	61	µg/L	—	—	0.0044	0.049	0.2	—	0.0044
Benzo(b)fluoranthene	62	µg/L	—	—	0.0044	0.049	—	—	0.0044
Benzo(k)fluoranthene	64	µg/L	—	—	0.0044	0.049	—	—	0.0044
Chrysene	73	µg/L	—	—	0.0044	0.049	—	—	0.0044
Dibenzo(a,h)anthracene	74	µg/L	—	—	0.0044	0.049	—	—	0.0044
Fluoranthene	86	µg/L	—	—	300	370	—	—	300
Fluorene	87	µg/L	—	—	1300	14000	—	—	1300

**Table 3-7  
Summary of Relevant Water Quality Objectives**

Parameter	CTR #	Units	Water Quality Objectives						
			California Toxic Rule				Basin Plan	Department of Fish and Game	Lowest Objective
			Freshwater Aquatic Life		Human Health (Consumption of)				
			Chronic	Acute	Water & Organisms	Organisms Only			
Indeno(1,2,3-cd)pyrene	92	µg/L	—	—	0.0044	0.049	—	—	0.0044
Pyrene	100	µg/L	—	—	960	11000	—	—	960
Selected Semi-Volatile Organics									
Bis(2-ethylhexyl) phthalate	68	µg/L	—	—	1.8	5.9	4	—	1.8
2,4,6-Trichlorophenol	55	µg/L	—	—	2.1	6.5	—	—	2.1
Pentachlorophenol	53	µg/L	10	13	0.28	8.2	1	—	0.28
Hexachlorobenzene	88	µg/L	—	—	0.00075	0.00077	1	—	0.00075
N-Nitrosodi-n-propylamine	97	µg/L	—	—	0.005	1.4	—	—	0.005
Selected Volatile Organics									
MTBE		µg/L	—	—	—	—	5	—	5

**Notes:**

- <sup>1</sup> This objective applies only to Sacramento River above the I Street Bridge during periods when temperature increases will be detrimental to fisheries; April through June and September through November.
- <sup>2</sup> Adjusted for sample hardness (CaCO<sub>3</sub>), as specified in the CTR. Objectives were calculated for each station individually using river hardness. Minimum and maximum values are provided to indicate the range.
- <sup>3</sup> Applies only to the American River sites (90 percentile).
- <sup>4</sup> Applies only to the Sacramento River at I Street Bridge in 50 percentile (240) and 90 percentile (340).
- <sup>5</sup> 10 NTU applies to American River site and 150 NTU applies to Sacramento River sites; does not apply during periods of storm water runoff.

If 20 percent or more of the data for a parameter were detected values, the arithmetic mean and standard deviation were also calculated for the entire CMP data set (1992-2006). If less than 20 percent of the data were detected values, it was considered that insufficient data were available to reliably estimate the mean and standard deviation for that parameter and no additional statistics were calculated. If the distribution included data below reporting limits specified for the CMP, distribution parameters were estimated by the Robust Lognormal Regression method.

Summary statistics were computed using the Robust Lognormal Regression method (Helsel and Cohn 1988; Helsel 1990) when censored data were reported (i.e. data below program reporting limits). Using the censored data to calculate cumulative distribution values for the detected data fits the detected values to a lognormal distribution. Data below detection were assigned values based on lognormal distribution regression statistics and distribution parameters (means and standard deviations) were calculated directly from the combined data set of detected and synthetic data. In cases where less than 20 percent of the values were uncensored, distributional parameters were not calculated because data were considered insufficient to accurately estimate these statistics.

### 3.1.3 Comparisons with Water Quality Criteria

Water quality data for 2005-06 were compared to the lowest relevant water quality objectives (WQOs) from the California Toxics Rule (CTR; 2000) and the Water Quality Control Plan (Basin Plan; CVRWQCB 1995, CVRWQCB 2002) for the Sacramento River watershed, along with the Department of Fish and Game (DFG) criteria for

diazinon and chlorpyrifos. For hardness-adjusted metals criteria (cadmium, chromium, copper, lead, nickel, silver and zinc), the criterion used for comparison was adjusted for the hardness value for each event and monitoring location. The various numeric criteria and objectives are listed in Table 3-7.

Comparisons with applicable regulatory limits indicate that most ambient water quality characteristics monitored by the CMP consistently met these limits at all monitoring locations for 2005-2006. The lowest applicable water quality criteria or objectives are included in Tables 3-1 through 3-6. A discussion of these results is presented below.

### **Comparisons with Regulatory Limits for Conventional Pollutants**

In general, the levels of the conventional parameters monitored by the CMP (pH, temperature, dissolved oxygen, conductivity, chloride, turbidity and total dissolved solids (TDS) met applicable Basin Plan objectives during most of the 2005-06 sampling events. Details are presented below.

#### ***Comparisons with Basin Plan pH Limits***

The WQO for pH is 6.5 to 8.5 standard units. All pH measurements from the three sites in the American River and the three sites in the Sacramento River during 2005-06 met the WQOs for pH.

#### ***Comparisons with Basin Plan Temperature Limits***

All of the temperature levels measured at Freeport Marina and Veterans Bridge sites on the Sacramento River during 2005-06 met their respective Basin Plan objectives.

#### ***Comparisons with Basin Plan Dissolved Oxygen Limits***

All the dissolved oxygen levels measured at the sites in the American River and the sites in the Sacramento River during 2005-06 were higher than the Basin Plan minimum criterion of 7.0 mg/L.

#### ***Comparisons with Basin Plan Specific Conductivity Limits***

All the specific conductivity (or electrical conductivity) levels measured at the sites in the Sacramento River during 2005-06 were within the Basin Plan objectives of below 240  $\mu\text{S}/\text{cm}$  for 50 percent of the measurements and below 340  $\mu\text{S}/\text{cm}$  for 90 percent of the measurements. Neither of these limits was exceeded at any of the sites.

#### ***Comparisons with Basin Plan Chloride Limits***

All the chloride levels measured at the sites in the American and Sacramento rivers during 2005-06 were below the Basin Plan objective of 250 mg/L.

#### ***Comparisons with Basin Plan Turbidity Limits***

The Basin Plan provides explicit turbidity limits for the American River below Folsom Lake (10 NTU) and the Sacramento River (150 NTU). These objectives apply throughout the year except for periods when storm runoff occurs. Turbidity levels did not exceed these limits at all the sites in 2005-06 when sampling was conducted

during dry weather events (Events 175, 176, 178, and 180), when no storm runoff occurred. However, turbidity limits in the Basin Plan also consider changes from background conditions; when the background turbidity is between 5 and 10 NTU, only a 20% increase is permitted. Exceedances were reported during Event 180 at Highway 80 (8.5 NTU) and at Nimbus Dam (5.1 NTU).

#### ***Comparisons with Basin Plan TDS Limits***

The upstream American River location at Nimbus exceed the total dissolved solids Basin Plan 90<sup>th</sup> percentile objective for the American River (125 mg/L) with a reported concentration of 150mg/L for event 179. However, this one-time occurrence is not considered a WQO exceedance because the historical 90<sup>th</sup> percentile concentration at this location (83mg/L) is well below the objective. All other TDS levels measured at the sites in the American River during 2005-06 met the Basin Plan objective of 125 mg/L within the 90 percentile. No TDS objective has been established for the Sacramento River within the stretch covered by the CMP.

#### **Comparisons with Regulatory Limits for Nutrient Compounds**

Concentrations of nitrate and nitrite did not exceed their respective limits (10 mg/L and 1 mg/L) in any samples. There are currently no applicable regulatory criteria for other nutrient parameters monitored by the CMP (ammonia nitrogen, total Kjeldahl nitrogen, total phosphorus and dissolved orthophosphate).

#### **Comparisons with Metals Criteria and Objectives**

In comparisons with the CTR water quality criteria and existing Basin Plan WQOs, the majority of concentrations of the trace metals (including cyanide) were below their respective regulatory limits for both the American and Sacramento rivers sites for 2005-06.

The total aluminum concentrations exceeded the Title 22 secondary MCL of 200 µg/L during the events listed in Table 3-8. The dissolved aluminum concentration at each location was less than the Basin Plan Secondary MCL.

**Table 3-8**  
**Summary of July 2005 through June 2006**  
**Total Aluminum Concentrations Exceeding Title 22, Secondary MCL Objective**

<b>CMP Sampling Location</b>	<b>Unit</b>	<b>Event 176 10/04-05, 2005 (Dry) Result</b>	<b>Event 177 12/1-2, 2005 (Wet) Result</b>	<b>Event 178 02/7-8, 2006 (Dry) Result</b>	<b>Event 178.1 02/27- 03/02, 2006 (Wet) Result</b>	<b>Event 180 6/13-14, 2006 (Dry) Result</b>
Sacramento River Veterans Bridge	µg/L	230	758	1020	853	1140
Sacramento River River Mile 44	µg/L			939		541
Sacramento River Freeport Marina	µg/L		340	1110	6990 (Est.)	879
American River Highway Business 80	µg/L		235		288	602
American River Discovery Park	µg/L			213	279	2250

The total iron concentrations exceeded the Title 22 secondary MCL of 300 µg/L during the events listed in Table 3-9. The dissolved iron concentration at each location was less than the Basin Plan Secondary MCL.

**Table 3-9**  
**Summary of July 2005 through June 2006**  
**Total Iron Concentrations Exceeding Title 22, Secondary MCL Objective**

<b>CMP Sampling Location</b>	<b>Unit</b>	<b>Event 177 12/1-2, 2005 (Wet) Result</b>	<b>Event 178 02/7-8, 2006 (Dry) Result</b>	<b>Event 178.1 02/27- 03/02, 2006 (Wet) Result</b>	<b>Event 180 6/13-14, 2006 (Dry) Result</b>
Sacramento River Veterans Bridge	µg/L	1250	1760	1210	1660
Sacramento River Freeport Marina	µg/L	617	1790	8660	1230
Sacramento River River Mile 44	µg/L		1610		736
American River Discovery Park	µg/L			316	2630
American River Highway Business 80	µg/L	336		328	740

The measured total copper concentration (2.9 µg/L) and total lead concentration (1.3 µg/L) at the American River/Highway 80 site exceeded the CTR chronic (4-day) criteria for copper and lead during the December 1-2, 2005 event (#177). Total copper concentration (5.5 µg/L) and total lead concentration (2.36 µg/L) at the American River at Discovery Park site exceeded the CTR chronic criteria during the June 13-14, 2006 event (#180). However, neither the acute exposure period or dissolved fraction objectives exceeded CTR WQOs. Chronic objectives are based on four-day exposure



periods. These samples were collected during a short time window, which were more reflective of an acute exposure period (City of Sacramento 2006).

During the February 27 – 28th 2006 event (#178.1), the total copper concentration at the Sacramento River at Freeport (11.9 µg/L) may have exceeded the acute and chronic CTR objectives; however, because this concentration is considered an estimate, an exceedance cannot be confirmed.

All the total (unfiltered) mercury levels measured at the sites in the American River and Sacramento River during 2005-06 were below the CTR and Basin Plan objectives listed in Table 3-7. No limits have been adopted for dissolved mercury or methyl mercury. Mercury is of regulatory significance because it is cited as a cause for listing the lower American River and Sacramento River from Red Bluff to the Delta on the California 2002 Section 303(d) List of Water Quality Limited Segments.

### Comparisons with Microbiological Limits

Numbers of bacteria were compared to the proposed Draft Basin Plan objectives for *E. coli* bacteria of 235 MPN/100 mL for a single sample maximum. The *E. coli* concentrations exceeding the WQO of 235 MPN/100mL are presented below in Table 3-10.

**Table 3-10**  
**Summary of July 2005 through June 2006**  
***E. coli* Concentrations Exceeding WQO of 235 MPN/100mL**

<b>CMP Sampling Location</b>	<b>Unit</b>	<b>Event 177 12/1-2, 2005 (Wet) Result</b>	<b>Event 178 02/7-8, 2006 (Dry) Result</b>	<b>Event 178.1 02/27- 03/02, 2006 (Wet) Result</b>	<b>Event 179 04/04-05 2006 (Wet) Result</b>
Sacramento River Veterans Bridge	MPN/100mL				500
Sacramento River Freeport Marina	MPN/100mL			800	
Sacramento River River Mile 44	MPN/100mL				800
American River Highway Business 80	MPN/100mL	500			
American River Discovery Park	MPN/100mL			500	

Numbers of bacteria were compared to the Draft Basin Plan objectives for fecal coliform bacteria of 400 MPN/100 mL for a single sample maximum. The fecal coliform concentrations exceeding the WQO of 400 MPN/100mL are presented below in Table 3-11.

**Table 3-11**  
**Summary of July 2005 through June 2006**  
**Fecal Coliform Concentrations Exceeding WQO of 400 MPN/100mL**

<b>CMP Sampling Location</b>	<b>Unit</b>	<b>Event 177 12/1-2, 2005 (Wet) Result</b>	<b>Event 178 02/7-8, 2006 (Dry) Result</b>	<b>Event 178.1 02/27- 03/02, 2006 (Wet) Result</b>	<b>Event 179 04/04-05 2006 (Wet) Result</b>
Sacramento River Veterans Bridge	MPN/100mL				500
Sacramento River Freeport Marina	MPN/100mL			800	
Sacramento River River Mile 44	MPN/100mL				800
American River Highway Business 80	MPN/100mL	500			
American River Discovery Park	MPN/100mL		500	800	

The elevated bacteria levels occurred during monitoring events performed under wet-weather conditions, except for the February 7-8, 2006 event (#178). Previous evaluations of the bacteria data have indicated higher concentrations tend to occur during the wet season at all CMP monitoring locations (LWA 2003).

### **Comparisons with OP and Carbamate Pesticide Regulatory Limits**

All samples satisfied OP and carbamate regulatory limits for 2005-06. Although diazinon and chlorpyrifos have been infrequently detected in samples collected by the AMP, the pesticides are of regulatory significance because diazinon is cited as a cause for listing Delta waterways and several urban runoff-affected waterbodies in the Sacramento area as impaired California water bodies on the California 2002 Section 303(d) List of Water Quality Limited Segments.

### **Trace Organics Monitoring Results**

During the December 1-2, 2005 event (#177), exceedances were reported for chrysene (13.5 ng/L), benz(a)anthracene (5 ng/L), benzo(a)pyrene (5.2 ng/L), benzo(k)fluoranthene (11 ng/L) and indeno(1,2,3-cd)pyrene (6.9 ng/L) at the American River Highway 80 location.

Bis(2-ethylhexyl)phthalate was reported at a concentration above the water quality objective during Event 177 at the American River Nimbus location. An equipment blank during the same sampling event also reported an elevated level of bis(2-ethylhexyl)phthalate. Therefore, the detected concentration in the primary sample cannot be confirmed as an exceedance of the WQO.

During the February 27 - 28th wet-weather event (#178.1), at the Highway 80 site, benz(a)anthracene and chrysene were reported at concentrations between the method detection limit and the reporting limit. The detected concentrations cannot be

confirmed as an exceedance of the WQO because these values are considered to be estimated.

Field crews have noted that the sampling location at American River Highway 80 site is located within a visible plume from an urban stormwater discharge during wet events. The presence of the plume may be the reason for these elevated levels of trace organic pollutants during wet events.

## Section 4

# Coordination and Outreach

This section describes other monitoring programs in the region; and coordination and outreach activities of the CMP. These activities include coordination with other monitoring programs, and public outreach activities.

### 4.1 Monitoring Programs in the Region

This section summarizes other water quality monitoring programs in the region and provides primary contacts for each of the programs.

#### 4.1.1 Sacramento River Toxic Pollutant Control Program

The Sacramento River Toxic Pollutant Control Program (SRTPCP) is a project that is funded through direct Congressional appropriations channeled through the USEPA budget. The SRCSD is the recipient of this funding. The long-term objective of this program is to bring the Sacramento River and its tributaries into compliance with appropriate water quality standards for toxic pollutants and thereby protect its beneficial uses through a locally driven, watershed management approach. The primary contact for this program is Jerry Troyan at the SRCSD (916-876-6077, [troyanj@saccounty.net](mailto:troyanj@saccounty.net)). The SRCSD's web site is at [www.srcsd.com/sacwater.html](http://www.srcsd.com/sacwater.html).

The long-term objective of the SRTPCP is to be accomplished through the following steps:

- Performing water quality monitoring to assess conditions throughout the watershed, including the attainment of beneficial uses and water quality standards;
- Developing information used in setting site-specific water quality standards, where appropriate, for the river and its tributaries;
- Identifying and evaluating alternative control options for improving water quality conditions within the watershed; and
- Developing and implementing a technically feasible, cost-effective and locally supported program to protect beneficial uses and achieve water quality standards in the river and its tributaries.

The SRTPCP was intended to be a long-term, multi-year program, and its success requires the active participation of the various parties who have a "stake" in the quality of the River and its tributaries (i.e., the "stakeholders").

For that reason, a second objective of the SRTPCP has been to assist in the formation and maintenance of a viable organization of watershed stakeholders. It is intended that the stakeholder organization address not only the toxic pollutant-related issues in the watershed, but the broader water quality and watershed issues necessary to protect and enhance surface and ground waters throughout the basin. The broader program being conducted by this stakeholder organization started in 1996 and has

been named the Sacramento River Watershed Program (SRWP). In 2002, the SRWP was established as a corporate non-profit entity. The SRTPCP now works in cooperation with the SRWP.

The latter objective has been achieved through meetings of a general Stakeholder Committee and continued support for working subcommittees and working groups under the aegis of the SRWP.

Although SRTPCP funds were utilized to initially organize stakeholders and fund essential stakeholder activities (e.g., coordination and facilitation), the resulting stakeholder organization's goals and activities are considerably broader than the limited objectives of the SRTPCP. With the establishment of a broader SRWP, the SRTPCP, is intended to be just one element of that program.

The SRCSD received the SRTPCP Phase 10 funding from the EPA, which was the last grant to the program after ten years of funding. The grant has funded:

- Unknown Toxicity Study
- Coordination of the grant program
- The Delta Tributaries Mercury Council:
  - Public outreach for mercury in fish, distributed in many languages
  - USGS wetlands mercury study
- Ag Issues Group strategy white paper
- Sacramento River Watershed Program Public Outreach/Education Subcommittee:
  - Improving GIS on the [www.sacriver.org](http://www.sacriver.org) web site
  - Water quality public service announcements in the northern part of the state.

The SRTPCP has begun phasing down its various programs and studies, which are currently scheduled to conclude in December 2006. However, plans to extend the program into 2007 are under consideration.

### **4.1.2 The Sacramento River Watershed Program**

The Sacramento River Watershed Program (SRWP) has an elected Board of Trustees of 17 members. The Board of Trustees currently meets bi-monthly and the Chairperson is Butch Hodgkins (916-874-8730). The SRWP Coordinator is Kathy Russick (916-201-2703, [krussick@comcast.net](mailto:krussick@comcast.net)). The SRWP has a web site at [www.sacriver.org](http://www.sacriver.org). The SRWP's active subcommittees and working groups include the following: Delta Tributaries Mercury Council, SRTPCP Grants Subcommittee,

Monitoring Subcommittee, and Public Education and Outreach Subcommittee (SRWP 2006).

The monitoring program for the watershed was initiated in June 1998 (fish tissue monitoring was initiated in 1997). The program monitors a broad array of parameters to characterize conditions in the watershed, including mercury and other trace metals, pesticides, aquatic toxicity, pathogens, nutrients, minerals, biological parameters, pollutant concentrations in fish tissue, organic matter and temperature.

After approximately 18 months of monitoring inactivity, the SRWP launched monitoring efforts in May, 2006. This monitoring is using Prop 50 CALFED funds, which works in coordination with CMP.

Other water quality-related studies currently underway for the SRWP include the following:

- Unknown Toxicity Study (Toxicity Identification Evaluation development)
- USGS Bear River Mercury Monitoring
- USGS Soil Methyl-Mercury Potential Study
- USGS Monitoring of Mercury in Wetland Discharges

Recently completed, the PRISM Grant Project monitored and analyzed pyrethroid pesticides in sediment.

CMP team members, including Steering Committee members, City and County staff and members of the consultant team are participating in essentially all aspects of the watershed program. The CMP has coordinated extensively with the watershed program from the initiation of the watershed monitoring program.

### **4.1.3 Sacramento River Basin National Water Quality Assessment Program**

National Water Quality Assessment Program (NAWQA) is a nation-wide program with the following objectives:

- Describe current water quality conditions for a large part of the Nation's freshwater streams, rivers, and aquifers;
- Describe how water quality is changing over time; and
- Improve understanding of the primary natural and human factors that affect water quality conditions.

The program is based on a combination of physiography, land use, hydrology, and contaminant issues for a particular basin. The United States Geologic Survey (USGS) runs the program. The primary local contact for this program is Joseph Domagalski at the Sacramento USGS office (916-278-3077; [joed@usgs.gov](mailto:joed@usgs.gov)). The web site is at [http://ca.water.usgs.gov/sac\\_nawqa/index.html](http://ca.water.usgs.gov/sac_nawqa/index.html).

The Sacramento River Basin NAWQA Program has included monitoring sites that provide information on metals, pesticides, and urban runoff inputs to the Basin.

NAWQA's Cycle 2 program is underway. Sampling was conducted at Arcade Creek and the Sacramento River (at Freeport) from September 2005 to September 2006, with sampling scheduled to continue for 2006-2007 at only the Freeport location.

The Source Water Quality Assessment Study (Bryte Bend) is underway and has sampled water quality at the point of intake for the water treatment plant in West Sacramento. From 2005-2006, sampling will continue to take place at the intake, with additional sampling of the finished water. Sampling will conclude in September 2006. This is part of a national effort in sampling various utilities for quality of source drinking water.

Another topical study will research the effects of urbanization on stream ecosystems. This study will be focused on water quality and habitat along streams with urban pressures. Older, heavily developed creeks such as Arcade Creek will be studied, as well as creeks such as Lincoln Creek, which is facing newer development pressures. Planning for this study is set to begin in October 2006, with data collection commencing the following year.

Groundwater studies of two land use networks in the Sacramento area are also current projects of the USGS.

#### **4.1.4 San Francisco Estuary Regional Monitoring Program**

The Regional Monitoring Program for Trace Substances (RMP) is a pollutant-monitoring program funded by 71 entities, including municipal dischargers, industrial dischargers, stormwater dischargers, and dredgers that are located in the San Francisco Bay Estuary. The San Francisco Estuary Institute (SFEI) manages the RMP. The results from the RMP provide information on how contaminant concentrations in the Estuary are responding to pollution prevention and other steps being taken by dischargers and information to determine whether the resources spent on these efforts are having the desired effects. The primary contact for this program is Jay Davis at SFEI (510-746-7334; [jay@sfei.org](mailto:jay@sfei.org)). The web site is at [www.sfei.org/rmp/](http://www.sfei.org/rmp/).

The principal objectives of the RMP are:

- To describe patterns and trends in contaminant concentration and distribution;

- To describe general sources and loadings of contamination to the Estuary;
- To measure contaminant effect on selected parts of the Estuary ecosystem;
- To compare monitoring information to relevant water quality objectives and other guidelines; and
- To synthesize and distribute information from a range of sources to present a more complete picture of the sources, distribution, fates, and effects of contaminants in the Estuary ecosystem.

The RMP analyzes more than 100 individual chemical parameters in water, sediment, and tissue. The frequency for water, sediment and tissue sampling is once per year. Toxicity tests on water and sediment samples have also been conducted to determine possible toxicity to selected organisms. SFEI scheduled the release of 2004-2005 annual monitoring results for September 2006, at which point SFEI will also release “The Pulse of the Estuary”, its annual water quality monitoring report.

Current studies include the following, with more information provided in the 2006 Program Plan on the SFEI website:

- The Mallard Island Study – a study of contaminant loads from the Sacramento and San Joaquin Rivers. Entering its fifth year of study, this project sampled in 2006 and will remain dormant until sampling is conducted again in 2009. A report on the study (2002-2006) will be prepared in 2006.
- A Guadalupe River loading study (expected completion is the end of 2006) – a study of transported loads from small tributaries during storm events.
- A tributary loading study to identify sampling locations in watersheds and to determine a river for further study. The tributary chosen is expected to replace the Guadalupe River loading study in 2007.
- The Estuary-Wide Sediment Coring Study – a study to provide information regarding historic loads to the Bay and processes that affect recovery of the Bay from contamination with persistent chemicals.
- The Exposure and Effects Pilot Study (EEPS), which studies the effect of contaminants on the Estuary;
- A continuing study of emerging contaminants and their effects, especially PBDEs;
- An evaluation of the first ten years of the Regional Monitoring Program; and
- Publication of recent pollutant data from Bay sport fish samples.



Recently completed studies include a quantification of bioaccumulated contaminants in the San Francisco Bay food web as a result of dredging or disposal of dredged materials. Also, a study of sediment toxicity to freshwater and estuarine amphipods was recently finished. Both studies have produced reports, which can be found on the SFEI website.

#### **4.1.5 Central Valley Regional Water Quality Control Board Monitoring Efforts**

Staff of the Central Valley Regional Water Quality Control Board (CVRWQCB) continues to perform water quality monitoring throughout the Central Valley. Recent efforts have been integrated with development of total maximum daily loads for waterbodies. The primary contacts for these programs are Karen Larsen (916-255-0746) and Stephanie Fong (916-464-4822; [swfong@waterboards.ca.gov](mailto:swfong@waterboards.ca.gov)) at the Sacramento office of the CVRWQCB. The web site is at [www.waterboards.ca.gov/centralvalley/programs/index.html](http://www.waterboards.ca.gov/centralvalley/programs/index.html).

CVRWQCB has several monitoring programs. They include Surface Water Ambient Monitoring Program (SWAMP), TMDLs, and Discharges from Irrigated Lands.

The regional SWAMP combines rotational sub-regional monitoring and special screening studies (SWRCB 2006b). Robert Holmes is the contact for this program (916-464-4649; [rholmes@waterboards.ca.gov](mailto:rholmes@waterboards.ca.gov)).

Monitoring for the 2005-2006 funding year includes a watershed-based assessment of water column toxicity in the American River watershed. Also underway is the Urban Creek Sediment Toxicity/Pyrethroid Pesticides study that researches the effects of pyrethroid pesticides on invertebrates in Central Valley suburban watersheds.

Recently completed regional SWAMP studies include the following:

- Estrogenic Endocrine Disrupting Substances in Ambient Waters of the Central Valley – research and development of a test to screen surface water for the presence of endocrine disrupting chemicals. A draft assessment report is currently available.
- Benthic Macroinvertebrate (BMI) Assemblages in Agriculture and Effluent Dominated Waterways of the Lower Sacramento River Watershed – a final report has been issued on compromised BMI community integrity and aquatic habitat conditions. The report is available at [www.swrcb.ca.gov/swamp/reports.html](http://www.swrcb.ca.gov/swamp/reports.html).

A fish tissue study of organochloride (OC) pesticides and polychlorinated biphenyl (PCBs) is planned for fish populations of the Central Valley. Coordinated with the SRWP and OEHA, this study is expected to produce a report of its findings in Spring 2007.

The TMDL program conducts monitoring to address mercury and pesticide impacted stream reaches (CVRWQCB 2006).

Ending in June 2006, monthly TMDL monitoring for mercury, methyl mercury, and total suspended solids (TSS) was conducted in the Delta (24 sites), the Sacramento River (16 sites), and the San Joaquin River (12 sites). Spot monitoring and sediment monitoring are expected to continue in the future. A Delta TMDL technical report has been released for review; technical reports for the Sacramento and San Joaquin Rivers may be released in coming years. In addition, a two-month, Spring 2006 research has been conducted on methyl mercury in the Yolo Bypass. Another project completed recently was the Cache Creek TMDL Implementation Plan, which culminated several years of periodic monitoring and was recently approved by the State Board. Upcoming reports include an American River TMDL report; monthly water and sediment monitoring will start this year. Patrick Morris is the contact for the Mercury TMDL Program (916-464-4621; [pmorris@waterboards.ca.gov](mailto:pmorris@waterboards.ca.gov) ).

The Pesticide TMDL Program monitors agricultural dormant spray season runoff, as well as irrigation systems. Urban pesticide runoff monitoring is no longer a part of the Pesticide TMDL Program. Monitoring focuses on organo-phosphorus pesticides diazinon and chlorpyrifos, which are listed as causing impairments to surface water. Agricultural water runoff is monitored throughout the year, but mainly during the dormant spray season for orchards, which is January and February. Dormant season monitoring reports, containing monitoring results from the last few years, will be released shortly. The irrigation system monitoring examines the results of overspraying and dismissed applications of pesticides. Staff coordinates monitoring with urban stormwater permittees. A Quality Assurance Project Plan Report was released in January 2006. Petra Lee is the contact for the Pesticide TMDL Program (916-464-4603).

The Discharges from Irrigated Lands monitoring program produced a study plan published in March 2003 that would evaluate water quality from agricultural drains, conduct toxicity testing, identify causes of impairment, and make recommendations. The program, contracted to UC Davis, is currently in the report writing phase, with Irrigation Season 2004 Monitoring Results and Storm Season 2004-2005 Monitoring Results available. Refer to:

[http://www.waterboards.ca.gov/centralvalley/programs/irrigated\\_lands/index.html#Monitoring](http://www.waterboards.ca.gov/centralvalley/programs/irrigated_lands/index.html#Monitoring)

For more information, the contact is Margie Lopez-Read (916-464-4624; [mlopez-read@waterboards.ca.gov](mailto:mlopez-read@waterboards.ca.gov) ).

#### **4.1.6 Sacramento Stormwater Quality Partnership**

Formerly known as the Sacramento Stormwater Monitoring Program, the County of Sacramento and the cities of Citrus Heights, Elk Grove, Rancho Cordova, Sacramento,

Folsom, and Galt, conduct stormwater monitoring as part of the ongoing municipal stormwater NPDES permit requirements. The monitoring program is designed to characterize urban runoff quality, assist in the identification of target pollutants, and provide information that can be used to assess the effectiveness of the Stormwater Quality Improvement Plan. The coordinated effort allows the County, cities, and the CVRWQCB to share forecasting and equipment resources. The Sacramento County web site is at <http://www.sactostormwater.org/default.asp> and the City of Sacramento web site is at <http://www.sacstormwater.org/>.

Monitoring activities in 2005-2006 beyond the AMP monitoring along the American and Sacramento rivers consisted of:

- Urban Tributary (including metals persistence monitoring);
- Additional Pesticide;
- Urban Discharge; and
- Bioassessment Monitoring (LWA 2005, Sacramento Stormwater Management Program 2006).

The CMP coordinated four AMP monitoring events with the Sacramento Stormwater Quality Partnership. They included Events 177, 178, 178.1, and 178.2.

#### **4.1.7 State Water Resources Control Board Monitoring Efforts**

The Toxic Substances Monitoring Program (TSMP) was initiated in 1976 by the California SWRCB to provide a uniform statewide approach to the detection and evaluation of the occurrence of toxic substances in fresh, estuarine, and marine waters of the State through the analysis of the tissues of fish and other aquatic life. The TSMP primarily targets water bodies with known or suspected water quality impairment and is not intended to give an overall assessment of the water quality of each of the State's waters. The primary contact for this program is Del Rasmussen at the SWRCB (916-341-5545; [dwrasmussen@waterboards.ca.gov](mailto:dwrasmussen@waterboards.ca.gov)). TSMP has not collected samples in the Sacramento region since 1993, but the data are still used to identify impaired water bodies.

The State's SWAMP, required by AB 982 was initiated in 2000. It is intended to provide the necessary information for effective watershed (water quality) management. The challenge is considerable: California has 190 hydrologic units (655 hydrologic sub-areas), 211,000+ miles of rivers and streams, over 10,000 lakes (1.6+ million acres), over 1,300,000+ acres of bays and estuaries, and 1,609 miles of coastline. SWAMP is intended to coordinate all Board water quality monitoring projects and programs to ensure that comparable data are produced.

Specific goals of SWAMP include consistent and objective sampling, analysis and assessment methods (e.g., standard field protocols), consistent data quality assurance, and centralized and integrated data management. The contact for this program is Val Connor (916-341-5573; [vconner@waterboards.ca.gov](mailto:vconner@waterboards.ca.gov)). The web site is at:

<http://www.waterboards.ca.gov/swamp/index.html>.

Refer to section 4.1.5 for details of the Central Valley regional SWAMP program.

## 4.2 Coordination with Other Monitoring Programs

Representatives for the CMP and consultant staff coordinated with other water quality monitoring programs in the Sacramento region in 2005-2006.

As previously discussed, samples were collected by the AMP crew in coordination with the Sacramento Stormwater Quality Partnership Program in 2005-2006 during 4 events. In 2005 - 2006, representatives for the CMP attended meetings of the SRWP and shared information with managers or staff of ongoing monitoring programs in the Sacramento River watershed.

## 4.3 Outreach Activities

### 4.3.1 Salmon Festival

Representatives for the CMP participated in the Salmon Festival held at the Nimbus Fish Hatchery in October 2005. This weekend festival was sponsored by the



Department of Fish and Game and other state, federal and local organizations. The CMP exhibit was on display to inform the public about the monitoring program. CMP representatives discussed with visitors the monitoring program, parameters of concern, and what constitutes good water quality. Visitors to the exhibit received program brochures, coloring pages, and stickers of various salmon species.

### 4.3.2 Creek Week

The CMP participated in the Sacramento area's Creek Week activities by providing the new program brochures and program fact sheets for workers attending the Saturday creek cleaning event. The CMP staff also displayed the Sacramento County Stormwater Quality Program exhibit at their booth. This year's celebration, which was sponsored by the Urban Creeks Council of



Sacramento, was held in April 2006 and located adjacent to the Discovery Museum, which was open to the public after the event. The area-wide volunteer effort works to improve and enhance Sacramento area urban waterways by collecting and removing trash and debris, as well as invasive exotic plants.

### **4.3.3 Walk on the Wild Side**

Representatives for the CMP participated in the Walk on the Wild Side held at Beach Lake Preserve in Freeport in May 2006. The US Fish and Wildlife Service, the Department of Fish and Game and other state, federal and local organizations, sponsored this festival. The Sacramento County Stormwater Quality Program exhibit was on display. CMP representatives assisted with staffing the booth, and informing the public about the monitoring program. Visitors to the exhibit received program brochures and program fact sheets.



## Section 5

# Update of Regulatory Issues

This section reviews the federal, state and regional regulatory activities and initiatives taken in 2005-2006 that pertain to surface water quality management in California. Additionally, this section discusses how these laws, regulations, and policies may affect participating agencies in the CMP.

### 5.1 Federal Laws

The United States Environmental Protection Agency (EPA) is the federal agency responsible for water quality management. EPA Region IX, with offices in San Francisco, is responsible for water quality management in California.

#### 5.1.1 Clean Water Act

The Clean Water Act (CWA, 33 U.S.C. § 1251 *et seq.*) is the federal law that governs and authorizes water quality control activities by EPA. Congress originally passed the Clean Water Act in 1972 as PL 92-500. No bills re-authorizing or changing the CWA were adopted in 2005-2006 (NCSE 2006).

##### *Section 303(d) Lists and Total Maximum Daily Loads (TMDLs)*

Under Section 303(d) of the CWA, States must identify water quality impacted water segments based on the severity of the pollution and the uses to be made of the identified waters. In California, the most recent 2002 Section 303(d) list was adopted by the SWRCB on February 4, 2003 and approved in full by EPA on July 25, 2003. Sacramento River watershed water segments relevant to the CMP and included on the final 2002 303(d) list for California are summarized in Table 5-1 (SWRCB 2003).

The SWRCB has been developing a new list since September 2004. They reviewed significant amounts of new data, and released a draft 303(d) list in September 2005. No new pollutants have been proposed for the segments of the American and Sacramento rivers covered by the CMP. The proposed revisions do include additional segments on tributaries to the Sacramento and American rivers in the vicinity of the CMP. These new segments include the American River South Fork and Lake Natoma for Mercury levels; Morrison Creek for Chlorpyrifos; Deer Creek (Sacramento County) for iron levels; and the Delta Waterways for polychlorinated biphenyls and exotic species (SWRCB 2005).

For all water segments identified under the 303(d) listing process, Total Maximum Daily Loads (TMDLs) must be established for each of the listed pollutants. The only segments listed in Table 5-1 with a TMDL program are the 6 urban creeks in Sacramento County. For these 6 segments, a TMDL was adopted in 2004. A portion of the monitoring requirements is included in the Stormwater Quality Partnership's annual program discussed in Section 4.

**Table 5-1  
Selected Sacramento River Watershed Water Segments on the  
2002 303(d) List**

Water Segments	Pollutant/Stressor <sup>(1)</sup>	Sources <sup>(2)</sup>	TMDL Priority <sup>(3)</sup>
Sacramento River (Red Bluff To Delta)	Diazinon	Agriculture	High
	Unknown Toxicity	Source unknown	Low
	Mercury	Resource extraction	Medium
American River, Lower	Unknown Toxicity	Source unknown	Low
	Mercury	Resource extraction	Low
Natomas East Main Drain	Diazinon	Agriculture, Urban runoff/Storm Sewers	Medium
	PCBs	Industrial point sources, Urban runoff, Agriculture	Low
Arcade Creek	Chlorpyrifos	Urban runoff/Storm Sewers	High
	Diazinon	Agriculture, Urban runoff Storm Sewers	High
	Copper	Urban runoff/Storm Sewers	Low
Chicken Ranch Slough	Chlorpyrifos	Urban runoff/Storm Sewers	High
	Diazinon	Agriculture, Urban runoff/Storm Sewers	High
Strong Ranch Slough	Chlorpyrifos	Urban runoff/Storm Sewers	High
	Diazinon	Agriculture, Urban runoff/Storm Sewers	High
Elder Creek	Chlorpyrifos	Urban runoff/Storm Sewers	High
	Diazinon	Agriculture, Urban runoff	High
Elk Grove Creek	Diazinon	Agriculture, Urban runoff/Storm Sewers	High
Morrison Creek	Diazinon	Agriculture, Urban runoff/Storm Sewers	High
Delta Waterways	Unknown Toxicity	Source unknown	Low
	Mercury	Resource extraction	Medium
	Chlorpyrifos	Agriculture, Urban runoff/Storm Sewers	High
	DDT	Agriculture	Low
	Diazinon	Agriculture, Urban runoff/Storm Sewers	High
	Group A pesticides <sup>(4)</sup>	Agriculture	Low
DELTA WATERWAYS	Electrical Conductivity	Agriculture	Medium

(1) Cause of impairment of waterbody

(2) Source of pollutant or stressor causing impairment

(3) Priority for completing TMDLs to address impairment

(4) Group A pesticides include aldrin, dieldrin, chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexanes (including lindane), endosulfan, and toxaphene

### 5.1.2 Endangered Species Act

The Endangered Species Act (ESA, 16 U.S.C. § 1531 *et seq.*) protects species of fish, wildlife, and plants that are in danger of or threatened with extinction. The listing and proposed listing of various fish species that inhabit the receiving waters as either “threatened”, “endangered”, or other species of special concern may affect discharges into waters found within the critical habitat of these species.



### ***Endangered and Threatened Fish Listings***

The Sacramento splittail was listed as threatened on March 10, 1999. The decision was challenged and FWS issued a revised decision on September 22, 2003 that listed a Sacramento splittail as a species of concern. The Sacramento splittail occurs in Suisun Bay and the San Francisco Bay-Sacramento-San Joaquin River Estuary (Estuary) in California. This species is primarily threatened by changes in water flows and water quality resulting from the export of water from the Sacramento and San Joaquin rivers, periodic prolonged drought, loss of shallow-water habitat, introduced aquatic species, and agricultural and industrial pollutants.

The Central Valley steelhead is listed by NMFS as threatened with designated critical habitat. The Central Valley steelhead occurs throughout the Sacramento-San Joaquin River watersheds wherever fish barriers do not block migration routes. This species is primarily threatened by loss of habitat in river reaches blocked by dams, degradation of habitat conditions (e.g., water temperature), entrainment in water diversions, and possibly by introgression from hatchery fish.

The Central Valley Chinook is listed as threatened (spring-run), endangered (winter-run), and as a candidate species (fall/late fall-run) with critical habitat designated for spring and winter-runs. The Central Valley Chinook salmon occurs throughout the Sacramento-San Joaquin River watersheds wherever fish barriers do not block migration routes. This species is primarily threatened by loss and degradation of spawning and rearing habitat; alteration of streamflows; high summer water temperatures; predation of juveniles; overharvest; entrainment into water diversions; blockage of migration routes; exposure to toxins; and, possibly, loss of genetic viability from interbreeding with hatchery stocks.

## **5.2 EPA Water Quality Policies**

### **5.2.1 CALFED Bay-Delta Program**

The mission of the CALFED Bay-Delta Program is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta System. The CALFED Bay-Delta Program is managed by an interdisciplinary, interagency staff team and is assisted by technical experts from state and federal agencies as well as consultants.

In July 2004, the Bay-Delta Authority released the Drinking Water Quality Program Multiyear Program Plan (Years 5-8). The plan outlines goals and objectives, accomplishments to date, and planned activities over the next four years.

Most recently, in a May 2005 Budget Revise message, Governor Arnold Schwarzenegger presented a plan to refocus and revitalize CALFED. In hopes of addressing operational issues and emerging crises in the Delta, a 10-Year Action Plan will be released in the future.



## **5.3 State Laws**

### **5.3.1 Statewide Water Quality Control Plans**

#### **State Implementation Policy (SIP)**

The SWRCB adopted its Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California on March 2, 2000. This State Implementation Policy (SIP) became effective on May 22, 2000. In February 2005, the SWRCB approved the following revisions to the SIP:

- Clarify the SIP provisions for implementation of Basin Plan narrative toxicity objectives;
- Allow Water Effects Ratios (WERs) to be established as part of the permit process;
- Eliminate requirement for effluent limitations based solely on ambient background concentrations; and
- Adopt various non-regulatory language corrections.

In 2006 the SWRCB started the planning process for revising the Toxicity Control Provisions in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). A public meeting was held to seek input on the scope and content of the environmental information that should be considered in the planned revisions (SWRCB 2006)

#### **Storm Water Program**

The SWRCB sponsored a program on the Feasibility of Numeric Effluent Limits Applicable to Storm Water Discharges. The study was implemented by the Storm Water Panel. The final report was been published in June 2006. The study looks at municipal, construction, and industrial activities. Current problems or observations are discussed. Recommendations for BMPs and applying numeric limits are presented. SWRCB is currently conducting workshops and accepting comments (SWRCB 2006c).

#### **Conditional Waiver from Waste Discharge Requirements for Agricultural Return Flows and Agricultural Stormwater Run-off**

In response to SB 390, the CVRWQCB adopted a new waiver for agricultural return flows and stormwater runoff on July 11, 2003. To be covered by the waiver and not be subject to Reports of Waste Discharge or Waste Discharge Requirements, individual farmers or groups of farmers must file notices of intent, comply with monitoring and reporting requirements, and develop water quality management plans.

Both agricultural interests and environmental interests appealed the CVRWQCB adoption of the waiver and its requirements. In January 2004, the State Water Board upheld the decision of the CVRWQCB.

The CVRWQCB adopted two Conditional Waivers of Waste Discharge Requirements for Discharges from Irrigated Lands in June 2006. One was for Coalition Groups and the other for Individual Dischargers. Both took effect on July 1, 2006 (CVRWQCB 2006). Monitoring has been performed by various coalitions in the Central Valley at selected locations since 2004 for a variety of parameters including pesticides, toxicity, nutrients, metals, and solids. Data are available at the CVRWQCB website for the Discharges from Irrigated Lands Program.

## Section 6

# Program Adjustments

The CMP Steering Committee annually reviews the following elements of the AMP:

- Goals of the CMP;
- Sampling sites;
- Sampling and data analysis methods;
- Constituents and analytical methods;
- Quality assurance plan; and
- Reporting of AMP results and other CMP activities.

At this time, no changes in constituents or sampling and analytical methods are recommended. Furthermore, no changes in the monitoring locations of the AMP or sampling frequency are recommended. The proposed 2006-2007 CMP monitoring effort is summarized in Table 6-1. The CMP will continue to coordinate monitoring events with monitoring events conducted by the Sacramento Stormwater Quality Partnership.

**Table 6-1  
Proposed CMP Monitoring Program, 2006-2007**

Event #	Date	QC name	Type of event/QC	QC Site
181	August 1 & 2, 2006	APH APE	Standard constituents Split sample Equip Blank on-site <i>MS/MSD</i>	Nimbus
182	October 3 & 4, 2006 p(4) **	APG APE APF	Standard constituents Split sample Equip Blank on-site Field Blank <i>MS/MSD</i> <b>p-4 + Trace Organics</b>	Freeport
183	December 5 & 6, 2006	APG APE	Standard constituents Split sample Equip Blank on-site <i>MS/MSD</i>	Veterans
184	February 6 & 7, 2007 p(4) **	APH APE APF	Standard constituents Split sample Equip Blank on-site Field Blank <i>MS/MSD</i> <b>p-4 + Trace Organics</b>	River Mile 44
185	April 3 & 4, 2007	APG APE	Standard constituents Split sample Equip Blank on-site <i>MS/MSD</i>	Discovery
186	June 5 & 6, 2007 p(4) **	APG APE APF	Standard constituents Split sample Equip Blank on-site Field Blank <i>MS/MSD</i> <b>p-4 + Trace Organics</b>	Freeport
<b>Sacramento and American River</b>		<b>CMP Field:</b> temp, pH, DO, EC, Turbidity; <b>Lab:</b> Hardness, TSS, Cl, TDS, NH <sub>3</sub> , NO <sub>2</sub> , NO <sub>3</sub> , TP, DISS ORTHO-P, TKN, TOC/DOC; UVA 254, Diazinon & Chlorpyrifos, cyanide, mercury, methyl mercury <b>CMP bacteria:</b> Total, Fecal Coliform & E.coli*		
		<b>CMP Organics:</b> EPA 8321; PAH's & Chlorophenols (CRG) EPA 625; In conjunction with P4 sampling (Feb, Jun, Oct) <b>p4:</b> Total Rec - Ag,As,Cd,Cr,Cu,Mo,Ni,Pb,Zn + CN; 8260, 625 <b>p4:</b> Dissolved - Cd,Cu,Ni,Pb,Zn		
		<b>p4:</b> trace organics (8260, 625)		
		<b>MS/MSD</b> Request specific location, noted in schedule, on COC for standard trace metals, mercury, methyl mercury		
<b>P4 Events</b>		TM - 8321, 8260 (APPL) & 625 (CRG) at all locations		
<b>Influent &amp; Effluent</b>		Total and Fecal Coliform; <i>Diazinon</i> and <i>Chlorpyrifos</i>		

Notes:

\* T/F coliform done at R-3 not River Mile 44

\*\* Dates may change to coordinate with other sampling programs

Sacramento River sites: Veterans Bridge (x-sect), River Mile 44 (x-sect), Freeport Marina (x-sect), Garcia (QC sample designation)

American River sites: Discovery Park (x-sect), Nimbus Dam (no boat used), Business 80 (x-sect), Howe (QC sample designation)

# Section 7

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## Section 8

### Acronyms

ADaPT	Automated Data Processing Tool
AMP	ambient monitoring program
AR	American River
BMI	benthic macroinvertebrate
BPTCP	Bay Protection and Toxic Cleanup Program
°C	Centigrade, degrees
CCL	Drinking Water Contaminant Candidate List
cfs	cubic feet per second
CMP	Sacramento Coordinated Water Quality Monitoring Program
CT	CALTEST Laboratories
CTR	California Toxics Rule
CVRWACB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DFG	Department of Fish and Game
DHS	California Department of Health Services
DQOs	data quality objectives
EB	Equipment blank
EDD	Electronic Data Deliverable
EDMS	Environmental Data Management System
EEPS	Exposure and Effects Pilot Study
ESA	Endangered Species Act



FD	Field duplicate
FGS	Frontier Geosciences Laboratories
GIS	geographical information system
MCLs	maximum contaminant levels
µg/L	microgram per liter
µS/cm	micro per second
mg/L	milligram per liter
mL	milliliter
MPN	Most Probable Number
MS/MSD	matrix spike / matrix spike duplicate
NAWQA	National Water Quality Assessment Program
ng/L	nanogram per liter
NTU	Nephelometric Turbidity Units
OC	organochloride pesticides
OEHHA	Office of Environmental Health Hazard Assessment
PAG	Public Advisory Group
PBDE	Polybrominated diphenyl ether compounds
PCB	polychlorinated biphenyl compounds
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RLs	reporting limits
RMP	Regional Monitoring Program for Trace Substance
RPD	relative percent difference
SFEI	San Francisco Estuary Institute

SFL	Sierra Foothills Laboratories
SIP	State Implementation Policy
SOPs	Standard Operating Procedures
SR	Sacramento River
SRCSO	Sacramento Regional County Sanitation District
SRM	standard reference material
SRTPCP	Sacramento River Toxic Pollutant Control Program
SRWP	Sacramento River Watershed Program
SRWTP	Sacramento Regional Wastewater Treatment Plant
SWAMP	Surface Water Ambient Monitoring Program
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TMDLs	Total Maximum Daily Loads
TOC	total organic carbon
TSMP	Toxic Substances Monitoring Program
TSS	total suspended solids
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
WQCL	Water Quality Control Laboratory
WQO	Water quality objective

## *APPENDIX A*

### *Data Evaluation and Validation*

*July 2005 – June 2006*

# Appendix A

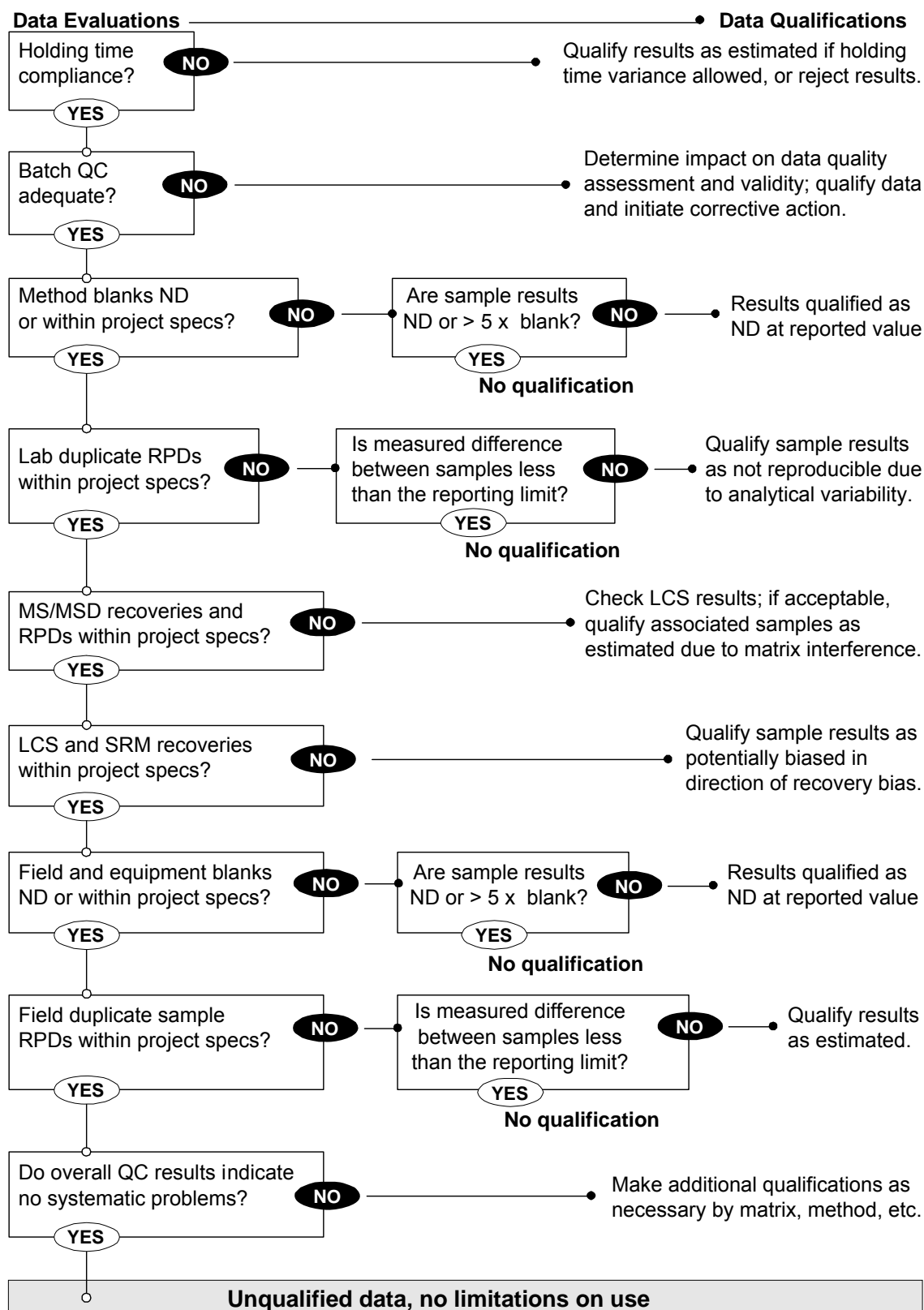
## Data Evaluation and Validation

QA/QC data for AMP events 175 through 180, collected from July 2005 through June 2006 are reviewed herein. All data were evaluated using the automated data checker and validation software program, ADaPT, discussed in Section 2. Sample results were reviewed for conformance with recommended allowable holding times for specific analyses and for compliance with CMP data quality objective (DQOs) for laboratory and external QA/QC results. Internal laboratory QA/QC data reviewed include results for method and reagent blanks, laboratory control samples (standard reference materials), laboratory duplicates, surrogate recoveries, matrix spikes and matrix spike duplicates. Field and external laboratory QA/QC data reviewed include results for field and equipment blanks and filter/bottle blanks. CMP specifications for data quality are summarized in Table A-1. A summary of the QA/QC checks performed for the CMP data validation is presented in Figure A-1 (LWA 2003). The flow chart illustrates how QA/QC samples and specific steps in the data review procedures are used to evaluate the quality of data produced by the AMP. Additional checks included comparison of total and dissolved parameters, method detection limits (MDLs) versus reporting limits (RLs) and temperature of the sample.

**Table A-1**  
**Summary of QA/QC Samples and Program**  
**Specifications for the 2005–2006**

QA/QC Sample Type	Parameter Evaluated	Source Of Contamination or Variation	QA/QC Specifications
field blanks	contamination	sampling and equipment	< reporting limit
"Milli-Q" blanks	contamination	blank water	< reporting limit
filter/bottle blanks	contamination	sample container	< reporting limit
duplicate samples (splits)	precision	sample handling	≤ 25% RPD
"blind" spikes (SRM)	accuracy	analytical	80 - 120% recovery
method blanks	contamination	analytical procedures	< reporting limit
filter blanks	contamination	analytical procedures	< reporting limit
lab control samples (LCS)	accuracy	analytical procedures	80 – 120% recovery <sup>(1)</sup>
duplicate sample and LCS analyses	precision	analytical procedures	≤ 25% RPD <sup>(1)</sup>
surrogate	accuracy	matrix effects	> 30% and < 150%.
matrix spikes	accuracy	matrix effects	80 – 120% recovery <sup>(1)</sup>
matrix spike duplicates	precision	matrix effects	≤ 25% RPD <sup>(1)</sup>

(1) DQOs for trace organic and pesticide analyses are specific to each analyte and are documented in data reports from each analyzing laboratory.



**Figure A-1**  
**CMP General QA/QC Review Procedures**

The CMP reviewed and evaluated 8,898 individual results generated from July 2005 through June 2006. Data qualifications were required for 1,812 analytical results, leaving 7,086 unqualified results for an overall analytical success rate of 80% for Events 175 through 180. Table A-2 summarizes the data qualification by analyte name. Of the 1,812 qualified results, 1 was rejected as shown in Table A-3. The accuracy and precision of AMP data generally achieved the established DQOs. Systematic problems with sampling or analytical procedures were also not found.

**Table A-2**  
**Summary of Qualified Data for Events 175-180**

Analyte Name	Lab Analysis Method ID	Number Of Analytes	Number Of Qualified Data	Percent Unqualified
Electrical Conductivity (EC)	120.1	43	1	97.7
Hardness	130.2	43	0	100.0
pH	150.1	42	0	100.0
TDS	160.1	47	0	100.0
TSS	160.2	47	0	100.0
Temperature	170.1	42	0	100.0
Turbidity	180.1	47	0	100.0
Nitrate / Nitrite	300 / 353.2	94	0	100.0
Chloride	325.2	43	3	93.0
Cyanide	335.2	27	0	100.0
Ammonia	350.1	43	0	100.0
TKN	351.2	47	7	85.1
Dissolved Oxygen (DO)	360.1	40	0	100.0
Orthophosphate (dissolved)	365.1	44	0	100.0
Total Phosphorous	365.4	44	0	100.0
DOC / TOC	415.1	70	0	100.0
MBAS	425.1	23	0	100.0
Glyphosate	547	24	6	75.0
PCB	608	521	2	99.6
Triazine Herbicides	619	264	66	75.0
Semi-Volatile Organics	625	2435	711	51.0
TPH - gas	8015	18	12	33.3
TPH - Diesel, Motor Oil	8015M	24	10	58.3
OP Pesticides	8141A	1530	323	78.9
Chlorinated Herbicides	8151A	240	60	75.0
VOCs	8260B	988	279	71.8
Carbamate Pesticides	8321A	800	152	81.0
Diazinon / Chlorpyrifos	ELISA	8	8	0.0
Iron	FGS-049.4	56	19	66.1
Trace Metals	FGS-054.4	766	102	86.7
Mercury	FGS-069.2	97	14	85.6
Methyl Mercury	FGS-070.2	86	19	77.9
COD	HA 8000	6	0	100.0
Total Nitrogen	SM 4500-N	43	0	100.0
BOD, 5 day	SM 5210B	22	0	100.0
UVA 254	SM 5910B	43	16	62.8
Total Coliform	SM 9221 B	48	1	97.9
Fecal Coliform	SM 9221 E	48	1	97.9
E. Coli	SM 9221 F	45	0	100.0
<b>TOTAL</b>		<b>8898</b>	<b>1812</b>	<b>79.6</b>

**Table A-3**  
**Summary of Rejected Data for Events 175-180**

Analyte Name	Lab Analysis Method ID	Number Of Analytes	Number Of Rejected Data	Percent Completeness
Electrical Conductivity (EC)	120.1	43	0	100.0
Hardness	130.2	43	0	100.0
pH	150.1	42	0	100.0
TDS	160.1	47	0	100.0
TSS	160.2	47	0	100.0
Temperature	170.1	42	0	100.0
Turbidity	180.1	47	0	100.0
Nitrate / Nitrite	300 / 353.2	94	0	100.0
Chloride	325.2	43	0	100.0
Cyanide	335.2	27	0	100.0
Ammonia	350.1	43	0	100.0
TKN	351.2	47	0	100.0
Dissolved Oxygen (DO)	360.1	40	0	100.0
Orthophosphate (dissolved)	365.1	44	0	100.0
Total Phosphorous	365.4	44	0	100.0
DOC / TOC	415.1	70	0	100.0
MBAS	425.1	23	0	100.0
Glyphosate	547	24	0	100.0
PCB	608	521	0	100.0
Triazine Herbicides	619	264	0	100.0
Semi-Volatile Organics	625	2435	0	100.0
TPH - gas	8015	18	0	100.0
TPH - Diesel, Motor Oil	8015M	24	0	100.0
OP Pesticides	8141A	1530	0	100.0
Chlorinated Herbicides	8151A	240	0	100.0
VOCs	8260B	988	0	100.0
Carbamate Pesticides	8321A	800	0	100.0
Diazinon / Chlorpyrifos	ELISA	8	0	100.0
Iron	FGS-049.4	56	0	100.0
Trace Metals	FGS-054.4	766	1	99.9
Mercury	FGS-069.2	97	0	100.0
Methyl Mercury	FGS-070.2	86	0	100.0
COD	HA 8000	6	0	100.0
Total Nitrogen	SM 4500-N	43	0	100.0
BOD, 5 day	SM 5210B	22	0	100.0
UVA 254	SM 5910B	43	0	100.0
Total Coliform	SM 9221 B	48	0	100.0
Fecal Coliform	SM 9221 E	48	0	100.0
E. Coli	SM 9221 F	45	0	100.0
<b>TOTAL</b>		<b>8898</b>	<b>1</b>	<b>100.0</b>

## Holding Times

Three holding times were checked, (1) collection to analysis, (2) collection to extraction and (3) extraction to analysis. Allowable holding times ranged from 6 hours for microbiological analyses to 6 months for metals and hardness (after preservation).

A total of 92 results were qualified due to violation of the holding time specifications. These data flagged with the reason codes C or 3, D or 4, and E or 5 are listed in Table A-4. Table A-5 lists all the reason codes found in Table A-4. Of the 92 qualified results, 56 were qualified due to missed analytical holding time (i.e., "collection to analysis") including 16 UVA 254 (method SM 5910B) results, 38 volatile organic compound (VOC) (method 8260 B) results and 2 total coliform (method SM 9221B) results. None of these data were qualified as rejected. The remaining 36 results were qualified due to missed extraction holding times (i.e., "collection to extraction") including 6 glyphosate (method 547) results, 22 TPH (methods 8015 and 8015M) results, and 8 diazinon / clorpyrifos (method ELISA) results. None of these data were qualified as rejected. These samples that were qualified due to missed extraction holding time occurred primarily during events 178.1 and 178.2. There were no qualified data for exceedance of holding time from "extraction to analysis." Included in these totals are two field duplicates for UVA 254 and four field duplicates for TPH. Detected results for the above qualified results may be biased low. Where the results are non-detectable, false negatives may exist.

## Sample Temperature

Upon collection, most samples need to be iced down as a method of preservation. The goal is to have the samples arrive at the laboratories with temperatures at or below 6 °C.

A total of 314 results were qualified due to violation of temperature specifications. Of these, 2 results represented UVA 254 parameters analyzed using SM 5910B, and 312 results were semi-volatile organic compounds (SVOCs) analyzed using EPA 625. The qualified SVOC data occurred during event 178. Sample results from the above analyses may be biased low, and where the results are non-detectable, false negatives may exist. None of the qualified samples were qualified as rejected. These data are flagged with the reason codes A or 1 and are listed in Table A-4.



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 125132</b>										
SM 5910B	508020024Veterans	AQ	N	UVA 254	0.0001	0.048		J	cm-1	A,C
SM 5910B	508020030Discovery	AQ	N	UVA 254	0.0001	0.0452		J	cm-1	A,C
<b>SDG: 125216</b>										
SM 5910B	508030015RM44	AQ	N	UVA 254	0.0001	0.0484		J	cm-1	C
<b>SDG: 127468</b>										
SM 5910B	510050019Freeport	AQ	N	UVA 254	0.0001	0.0429		J	cm-1	C
SM 5910B	510050025Garcia	AQ	FD	UVA 254	0.0001	0.0431		J	cm-1	C
SM 5910B	510050031RM44	AQ	N	UVA 254	0.0001	0.0472		J	cm-1	C

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 129410</b>										
SM 5910B	512020065Veterans	AQ	N	UVA 254	0.0001	0.085		J	cm-1	C
SM 5910B	512020069Discovery	AQ	N	UVA 254	0.0001	0.0339		J	cm-1	C
SM 5910B	512020075Garcia	AQ	FD	UVA 254	0.0001	0.0863		J	cm-1	C
SM 5910B	512020081Freeport	AQ	N	UVA 254	0.0001	0.0836		J	cm-1	C
SM 5910B	512020086RM44	AQ	N	UVA 254	0.0001	0.08		J	cm-1	C
SM 5910B	512020090Nimbus	AQ	N	UVA 254	0.0001	0.0324		J	cm-1	C
SM 5910B	512020098HWY80	AQ	N	UVA 254	0.0001	0.0605		J	cm-1	C

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 19837</b>										
351.2	508020020Veterans	AQ	N	Total Kjeldahl Nitrogen	.1	0.15		J	mg/L	J
351.2	508020026Discovery	AQ	N	Total Kjeldahl Nitrogen	.1	0.10		J	mg/L	J
351.2	508030002Freeport	AQ	N	Total Kjeldahl Nitrogen	.1	0.17		J	mg/L	J
351.2	508030011RM44	AQ	N	Total Kjeldahl Nitrogen	.1	0.48		J	mg/L	J
351.2	508030017Nimbus	AQ	N	Total Kjeldahl Nitrogen	.1	0.10U		UJ	mg/L	J
351.2	508030034Howe	AQ	FD	Total Kjeldahl Nitrogen	.1	0.10U		UJ	mg/L	J
351.2	508030040	AQ	N	Total Kjeldahl Nitrogen	.1	0.57		J	mg/L	J
ELISA	508030022	AQ	N	chlorpyrifos	.05	0.071		J	ug/L	D
				diazinon	.03	0.30		J	ug/L	D
<b>SDG: 2006030147</b>										
547	ARHWY80 0602270064	AQ	N	GLYPHOSATE	25	4.6U		UJ	UG/L	D
547	Discovery 062270059	AQ	N	GLYPHOSATE	25	4.6U		UJ	UG/L	D
547	Freeport 0602270069	AQ	N	GLYPHOSATE	25	4.6U		UJ	UG/L	D
547	Nimbus 0602270054	AQ	N	GLYPHOSATE	25	4.6U		UJ	UG/L	D
547	Veterans 0602270055	AQ	N	GLYPHOSATE	25	4.6U		UJ	UG/L	D

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2006030335</b>										
547	Howe 0602280049	AQ	N	GLYPHOSATE	25	4.6U		UJ	UG/L	D
<b>SDG: 20344</b>										
ELISA	510050012	AQ	N	chlorpyrifos	.05	0.050U		UJ	ug/L	D
				diazinon	.03	0.24		J	ug/L	D
ELISA	510050013	AQ	N	chlorpyrifos	.05	0.050U		UJ	ug/L	D
				diazinon	.03	0.030U		UJ	ug/L	D
<b>SDG: 21175</b>										
120.1	512020057Nimbus	AQ	N	Electrical Conductivity	1	55		J	umhos/ Z cm	
325.2	512020044Discovery	AQ	N	chloride	3.0	2.1		J	mg/L	L
325.2	512020049ARHW80	AQ	N	chloride	3.0	2.7		J	mg/L	L
325.2	512020058Nimbus	AQ	N	chloride	3.0	2.0		J	mg/L	L

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 21335</b>										
ELISA	602080053	AQ	N	Chlorpyrifos	.05	0.050U		UJ	ug/L	D
				Diazinon	.03	0.030U		UJ	ug/L	D
SM 5910B	602070002 Veterans	AQ	N	UVA 254		0.15		J	cm-1	C
SM 9221 B	602070003 Veterans	AQ	N	Total Coliform	2	2300		J	MPN/100 mL	C
SM 9221 E	602070003 Veterans	AQ	N	Fecal Coliform	2	130		J	MPN/100 mL	C
<b>SDG: 22936</b>										
SM 5910B	606130002	AQ	N	UVA 254		0.075		J	cm-1	C
SM 5910B	606130008	AQ	N	UVA 254		0.064		J	cm-1	C

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2534-15015</b>										
625	0510040013Veterans	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	187B		U	NG/L	F
				Butylbenzyl Phthalate	10	7.6B		UJ	NG/L	L,F
				DIETHYL PHTHALATE	10	40.4B		U	NG/L	F
				DIMETHYL PHTHALATE	10	49.1B		U	NG/L	F
				Di-n-butyl phthalate	10	41B		U	NG/L	F
625	0510040018Discovery	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	27.3B		U	NG/L	F
				Butylbenzyl Phthalate	10	8.4B		UJ	NG/L	L,F
				DIETHYL PHTHALATE	10	96.3B		U	NG/L	F
				DIMETHYL PHTHALATE	10	53.1B		U	NG/L	F
				Di-n-butyl phthalate	10	38.1B		U	NG/L	F
625	0510050015EQBLK	AQ	EB	Butylbenzyl Phthalate	10	13.9B		U	NG/L	F
				DIETHYL PHTHALATE	10	56.1B		U	NG/L	F
				DIMETHYL PHTHALATE	10	42.1B		U	NG/L	F
				Di-n-butyl phthalate	10	35.6B		U	NG/L	F
625	0510050018Freeport	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	230B		UJ	NG/L	I,N,P,Z,F,
				Butylbenzyl Phthalate	10	18.7B		U	NG/L	F,N
				DIETHYL PHTHALATE	10	94.4B		UJ	NG/L	H,N,P,Z,F
				DIMETHYL PHTHALATE	10	102B		U	NG/L	F,N,P
				Di-n-butyl phthalate	10	83.3B		UJ	NG/L	F,N,P,Z
625	0510050024Garcia	AQ	FD	BIS(2-ETHYLHEXYL) PHTHALATE	10	40.8B		U	NG/L	F
				Butylbenzyl Phthalate	10	18.3B		U	NG/L	F
				DIETHYL PHTHALATE	10	34.7B		U	NG/L	F
				DIMETHYL PHTHALATE	10	36.3B		U	NG/L	F
				Di-n-butyl phthalate	10	36.5B		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2534-15015</b>										
625	0510050030RM44	AQ	N	1,4-DICHLOROBENZENE	50	16.8		J	NG/L	L
				1-Methylnaphthalene	5	4.7		J	NG/L	L
				2-METHYLNAPHTHALENE	5	2.7		J	NG/L	L
				Butylbenzyl Phthalate	10	13.9B		U	NG/L	F
				DIETHYL PHTHALATE	10	70.7B		U	NG/L	F
				DIMETHYL PHTHALATE	10	57.9B		U	NG/L	F
				Di-n-butyl phthalate	10	74.2B		U	NG/L	F
				NAPHTHALENE	5	2.1		J	NG/L	L
625	0510050034Nimbus	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	82.8B		U	NG/L	F
				Butylbenzyl Phthalate	10	13.1B		U	NG/L	F
				DIETHYL PHTHALATE	10	54.3B		U	NG/L	F
				DIMETHYL PHTHALATE	10	47.7B		U	NG/L	F
				Di-n-butyl phthalate	10	52.4B		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2534f-15116</b>										
625	0512020064 Veterans	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	39.5		UJ	NG/L	F,N,Z
				BUTYLBENZYL PHTHALATE	10	18		U	NG/L	F,N
				DIETHYL PHTHALATE	10	157		UJ	NG/L	F,N,Z
				DIMETHYL PHTHALATE	10	147		U	NG/L	F,N
				Di-n-butyl phthalate	10	49.7		UJ	NG/L	F,N,Z
				Total Detectable PAHs	5	0		UJ	NG/L	L,N,F
625	0512020068 Discovery	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	39.5		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	11.6		U	NG/L	F
				DIETHYL PHTHALATE	10	54.5		U	NG/L	F
				DIMETHYL PHTHALATE	10	59		U	NG/L	F
				Di-n-butyl phthalate	10	17.8		U	NG/L	F
				Total Detectable PAHs	5	0		UJ	NG/L	L,F
625	0512020074 Garcia	AQ	FD	BIS(2-ETHYLHEXYL) PHTHALATE	10	35.2		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	15.1		U	NG/L	F
				DIETHYL PHTHALATE	10	119		U	NG/L	F
				DIMETHYL PHTHALATE	10	113		U	NG/L	F
				Di-n-butyl phthalate	10	68.4		U	NG/L	F
				Total Detectable PAHs	5	0		UJ	NG/L	L,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2534f-15116</b>										
625	0512020080 Freeport	AQ	N	2-METHYLNAPHTHALENE	5	2.8		J	NG/L	L
				BIPHENYL	5	4.2		J	NG/L	L
				BIS(2-ETHYLHEXYL) PHTHALATE	10	53.6		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	19.6		U	NG/L	F
				DIETHYL PHTHALATE	10	55.9		U	NG/L	F
				DIMETHYL PHTHALATE	10	44.7		U	NG/L	F
				Di-n-butyl phthalate	10	26.2		U	NG/L	F
				DI-N-OCTYL PHTHALATE	10	2.9		J	NG/L	L
				FLUORANTHENE	5	2.1		J	NG/L	L
				NAPHTHALENE	5	2.7		J	NG/L	L
				PHENANTHRENE	5	3.2		J	NG/L	L
				PYRENE	5	2		J	NG/L	L
625	0512020089 Nimbus	AQ	N	2-METHYLNAPHTHALENE	5	1.3		J	NG/L	L
				BUTYLBENZYL PHTHALATE	10	10.9		U	NG/L	F
				DIETHYL PHTHALATE	10	47.2		U	NG/L	F
				DIMETHYL PHTHALATE	10	61.8		U	NG/L	F
				Di-n-butyl phthalate	10	28.2		U	NG/L	F
				NAPHTHALENE	5	1.7		J	NG/L	L
				PHENANTHRENE	5	3.5		J	NG/L	L
625	0512020093 EQBLK	AQ	EB	BUTYLBENZYL PHTHALATE	10	7.2		UJ	NG/L	L,F
				DIETHYL PHTHALATE	10	46.7		U	NG/L	F
				DIMETHYL PHTHALATE	10	54.7		U	NG/L	F
				Di-n-butyl phthalate	10	18.3		U	NG/L	F
				Total Detectable PAHs	5	0		UJ	NG/L	L,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2534f-15116</b>										
625	0512020097 ARHW80	AQ	N	1-Methylnaphthalene	5	3.1		J	NG/L	L
				2,6-Dimethylnaphthalene	5	1.8		J	NG/L	L
				2-METHYLNAPHTHALENE	5	4.5		J	NG/L	L
				BIPHENYL	5	1.1		J	NG/L	L
				BUTYLBENZYL PHTHALATE	10	55.4		U	NG/L	F
				DIETHYL PHTHALATE	10	58.3		U	NG/L	F
				DIMETHYL PHTHALATE	10	52.1		U	NG/L	F
				Di-n-butyl phthalate	10	34.9		U	NG/L	F
				NAPHTHALENE	5	4		J	NG/L	L
				PERYLENE	5	2.9		J	NG/L	L

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
625	0602070013 Veterans	AQ	N	1,2,4-TRICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,2-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,3-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,4-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1-Methylnaphthalene	5	5U		UJ	NG/L	A
				1-Methylphenanthrene	5	5U		UJ	NG/L	A
				2,3,5-Trimethylnaphthalene	5	5U		UJ	NG/L	A
				2,4,6-TRICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DIMETHYLPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2,6-Dimethylnaphthalene	5	5U		UJ	NG/L	A
				2,6-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2-CHLORONAPHTHALENE	100	100U		UJ	NG/L	A
				2-CHLOROPHENOL	100	100U		UJ	NG/L	A
				2-METHYL-4,6-DINITROPHENOL	200	200U		UJ	NG/L	A
				2-METHYLNAPHTHALENE	5	5U		UJ	NG/L	A
				2-NITROPHENOL	200	200U		UJ	NG/L	A
				3,3'-DICHLOROBENZIDINE	100	100U		UJ	NG/L	A
				4-BROMOPHENYLPHENYLETHER	100	100U		UJ	NG/L	A
				4-CHLORO-3-METHYLPHENOL	200	200U		UJ	NG/L	A
				4-Chlorophenylphenylether	100	100U		UJ	NG/L	A
				4-NITROPHENOL	200	200U		UJ	NG/L	A
				ACENAPHTHENE	5	5U		UJ	NG/L	A
				ACENAPHTHYLENE	5	5U		UJ	NG/L	A
				ANTHRACENE	5	5U		UJ	NG/L	A
				Azobenzene	100	100U		UJ	NG/L	A
				Benz(a)anthracene	5	5U		UJ	NG/L	A
				BENZIDINE	100	100U		UJ	NG/L	A
				Benzo(a)pyrene	5	5U		UJ	NG/L	A
				Benzo(b)fluoranthene	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Benzo(e)pyrene	5	5U		UJ	NG/L	A
				Benzo(g,h,i)perylene	5	5U		UJ	NG/L	A
				Benzo(k)fluoranthene	5	5U		UJ	NG/L	A
				BIPHENYL	5	5U		UJ	NG/L	A
				Bis(2-chloroethoxy)methane	100	100U		UJ	NG/L	A
				BIS(2-CHLOROETHYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-CHLOROISOPROPYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-ETHYLHEXYL) PHTHALATE	10	33.6		UJ	NG/L	A,F
				BUTYLBENZYL PHTHALATE	10	21.6		UJ	NG/L	A,F
				CHRYSENE	5	5U		UJ	NG/L	A
				Dibenz(a,h)anthracene	5	5U		UJ	NG/L	A
				DIETHYL PHTHALATE	10	112		UJ	NG/L	A,F
				DIMETHYL PHTHALATE	10	176		UJ	NG/L	A,F
				Di-n-butyl phthalate	10	38.3		UJ	NG/L	A,F
				DI-N-OCTYL PHTHALATE	10	10U		UJ	NG/L	A
				FLUORANTHENE	5	5U		UJ	NG/L	A
				FLUORENE	5	5U		UJ	NG/L	A
				HEXACHLOROBENZENE	5	5U		UJ	NG/L	A
				HEXACHLOROBUTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROCYCLOPENTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROETHANE	100	100U		UJ	NG/L	A
				Indeno(1,2,3-c,d)pyrene	5	5U		UJ	NG/L	A
				ISOPHORONE	100	100U		UJ	NG/L	A
				NAPHTHALENE	5	5U		UJ	NG/L	A
				NITROBENZENE	100	100U		UJ	NG/L	A
				N-NITROSODIMETHYLAMINE	100	100U		UJ	NG/L	A
				N-NITroso-DI-N-PROPYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSODIPHENYLAMINE	100	100U		UJ	NG/L	A
				PENTACHLOROPHENOL	100	100U		UJ	NG/L	A
				PERYLENE	5	5U		UJ	NG/L	A
				PHENANTHRENE	5	5U		UJ	NG/L	A
				PHENOL	200	200U		UJ	NG/L	A
				PYRENE	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Total Detectable PAHs		0		UJ	NG/L	A,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
625	0602070017 Discovery	AQ	N	1,2,4-TRICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,2-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,3-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,4-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1-Methylnaphthalene	5	5U		UJ	NG/L	A
				1-Methylphenanthrene	5	5U		UJ	NG/L	A
				2,3,5-Trimethylnaphthalene	5	5U		UJ	NG/L	A
				2,4,6-TRICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DIMETHYLPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2,6-Dimethylnaphthalene	5	5U		UJ	NG/L	A
				2,6-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2-CHLORONAPHTHALENE	100	100U		UJ	NG/L	A
				2-CHLOROPHENOL	100	100U		UJ	NG/L	A
				2-METHYL-4,6-DINITROPHENOL	200	200U		UJ	NG/L	A
				2-METHYLNAPHTHALENE	5	5U		UJ	NG/L	A
				2-NITROPHENOL	200	200U		UJ	NG/L	A
				3,3'-DICHLOROBENZIDINE	100	100U		UJ	NG/L	A
				4-BROMOPHENYLPHENYLETHER	100	100U		UJ	NG/L	A
				4-CHLORO-3-METHYLPHENOL	200	200U		UJ	NG/L	A
				4-Chlorophenylphenylether	100	100U		UJ	NG/L	A
				4-NITROPHENOL	200	200U		UJ	NG/L	A
				ACENAPHTHENE	5	5U		UJ	NG/L	A
				ACENAPHTHYLENE	5	5U		UJ	NG/L	A
				ANTHRACENE	5	5U		UJ	NG/L	A
				Azobenzene	100	100U		UJ	NG/L	A
				Benz(a)anthracene	5	5U		UJ	NG/L	A
				BENZIDINE	100	100U		UJ	NG/L	A
				Benzo(a)pyrene	5	5U		UJ	NG/L	A
				Benzo(b)fluoranthene	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Benzo(e)pyrene	5	5U		UJ	NG/L	A
				Benzo(g,h,i)perylene	5	5U		UJ	NG/L	A
				Benzo(k)fluoranthene	5	5U		UJ	NG/L	A
				BIPHENYL	5	5U		UJ	NG/L	A
				Bis(2-chloroethoxy)methane	100	100U		UJ	NG/L	A
				BIS(2-CHLOROETHYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-CHLOROISOPROPYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-ETHYLHEXYL) PHTHALATE	10	68.6		UJ	NG/L	A,N,F
				BUTYLBENZYL PHTHALATE	10	38.6		UJ	NG/L	A,N,F
				CHRYSENE	5	5U		UJ	NG/L	A
				Dibenz(a,h)anthracene	5	5U		UJ	NG/L	A
				DIETHYL PHTHALATE	10	192		UJ	NG/L	A,N,F,H
				DIMETHYL PHTHALATE	10	318		UJ	NG/L	A,N,F
				Di-n-butyl phthalate	10	42.6		UJ	NG/L	A,N,F
				DI-N-OCTYL PHTHALATE	10	10U		UJ	NG/L	A
				FLUORANTHENE	5	5U		UJ	NG/L	A
				FLUORENE	5	5U		UJ	NG/L	A
				HEXACHLOROBENZENE	5	5U		UJ	NG/L	A
				HEXACHLOROBUTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROCYCLOPENTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROETHANE	100	100U		UJ	NG/L	A
				Indeno(1,2,3-c,d)pyrene	5	5U		UJ	NG/L	A
				ISOPHORONE	100	100U		UJ	NG/L	A
				NAPHTHALENE	5	5U		UJ	NG/L	A
				NITROBENZENE	100	100U		UJ	NG/L	A
				N-NITROSODIMETHYLAMINE	100	100U		UJ	NG/L	A
				N-NITroso-DI-N-PROPYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSODIPHENYLAMINE	100	100U		UJ	NG/L	A
				PENTACHLOROPHENOL	100	100U		UJ	NG/L	A
				PERYLENE	5	5U		UJ	NG/L	A
				PHENANTHRENE	5	5U		UJ	NG/L	A
				PHENOL	200	200U		UJ	NG/L	A
				PYRENE	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Total Detectable PAHs		0		UJ	NG/L	A,N,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
625	0602070021 Howe	AQ	FD	1,2,4-TRICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,2-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,3-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,4-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1-Methylnaphthalene	5	5U		UJ	NG/L	A
				1-Methylphenanthrene	5	5U		UJ	NG/L	A
				2,3,5-Trimethylnaphthalene	5	5U		UJ	NG/L	A
				2,4,6-TRICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DIMETHYLPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2,6-Dimethylnaphthalene	5	5U		UJ	NG/L	A
				2,6-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2-CHLORONAPHTHALENE	100	100U		UJ	NG/L	A
				2-CHLOROPHENOL	100	100U		UJ	NG/L	A
				2-METHYL-4,6-DINITROPHENOL	200	200U		UJ	NG/L	A
				2-METHYLNAPHTHALENE	5	5U		UJ	NG/L	A
				2-NITROPHENOL	200	200U		UJ	NG/L	A
				3,3'-DICHLOROBENZIDINE	100	100U		UJ	NG/L	A
				4-BROMOPHENYLPHENYLETHER	100	100U		UJ	NG/L	A
				4-CHLORO-3-METHYLPHENOL	200	200U		UJ	NG/L	A
				4-Chlorophenylphenylether	100	100U		UJ	NG/L	A
				4-NITROPHENOL	200	200U		UJ	NG/L	A
				ACENAPHTHENE	5	5U		UJ	NG/L	A
				ACENAPHTHYLENE	5	5U		UJ	NG/L	A
				ANTHRACENE	5	5U		UJ	NG/L	A
				Azobenzene	100	100U		UJ	NG/L	A
				Benz(a)anthracene	5	5U		UJ	NG/L	A
				BENZIDINE	100	100U		UJ	NG/L	A
				Benzo(a)pyrene	5	5U		UJ	NG/L	A
				Benzo(b)fluoranthene	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Benzo(e)pyrene	5	5U		UJ	NG/L	A
				Benzo(g,h,i)perylene	5	5U		UJ	NG/L	A
				Benzo(k)fluoranthene	5	5U		UJ	NG/L	A
				BIPHENYL	5	5U		UJ	NG/L	A
				Bis(2-chloroethoxy)methane	100	100U		UJ	NG/L	A
				BIS(2-CHLOROETHYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-CHLOROISOPROPYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-ETHYLHEXYL) PHTHALATE	10	38.8		UJ	NG/L	A,F
				BUTYLBENZYL PHTHALATE	10	10U		UJ	NG/L	A,P
				CHRYSENE	5	5U		UJ	NG/L	A
				Dibenz(a,h)anthracene	5	5U		UJ	NG/L	A
				DIETHYL PHTHALATE	10	211		UJ	NG/L	A,F
				DIMETHYL PHTHALATE	10	357		UJ	NG/L	A,F
				Di-n-butyl phthalate	10	40.7		UJ	NG/L	A,F
				DI-N-OCTYL PHTHALATE	10	10U		UJ	NG/L	A
				FLUORANTHENE	5	5U		UJ	NG/L	A
				FLUORENE	5	5U		UJ	NG/L	A
				HEXACHLOROBENZENE	5	5U		UJ	NG/L	A
				HEXACHLOROBUTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROCYCLOPENTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROETHANE	100	100U		UJ	NG/L	A
				Indeno(1,2,3-c,d)pyrene	5	5U		UJ	NG/L	A
				ISOPHORONE	100	100U		UJ	NG/L	A
				NAPHTHALENE	5	5U		UJ	NG/L	A
				NITROBENZENE	100	100U		UJ	NG/L	A
				N-NITROSODIMETHYLAMINE	100	100U		UJ	NG/L	A
				N-NITroso-DI-N-PROPYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSODIPHENYLAMINE	100	100U		UJ	NG/L	A
				PENTACHLOROPHENOL	100	100U		UJ	NG/L	A
				PERYLENE	5	5U		UJ	NG/L	A
				PHENANTHRENE	5	5U		UJ	NG/L	A
				PHENOL	200	200U		UJ	NG/L	A
				PYRENE	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Total Detectable PAHs		0		UJ	NG/L	A,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
625	0602070024 EQBLK	AQ	EB	1,2,4-TRICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,2-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,3-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,4-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1-Methylnaphthalene	5	2.4		J	NG/L	A
				1-Methylphenanthrene	5	5U		UJ	NG/L	A
				2,3,5-Trimethylnaphthalene	5	5U		UJ	NG/L	A
				2,4,6-TRICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DIMETHYLPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2,6-Dimethylnaphthalene	5	5U		UJ	NG/L	A
				2,6-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2-CHLORONAPHTHALENE	100	100U		UJ	NG/L	A
				2-CHLOROPHENOL	100	100U		UJ	NG/L	A
				2-METHYL-4,6-DINITROPHENOL	200	200U		UJ	NG/L	A
				2-METHYLNAPHTHALENE	5	1.5		J	NG/L	A
				2-NITROPHENOL	200	200U		UJ	NG/L	A
				3,3'-DICHLOROBENZIDINE	100	100U		UJ	NG/L	A
				4-BROMOPHENYLPHENYLETHER	100	100U		UJ	NG/L	A
				4-CHLORO-3-METHYLPHENOL	200	200U		UJ	NG/L	A
				4-Chlorophenylphenylether	100	100U		UJ	NG/L	A
				4-NITROPHENOL	200	200U		UJ	NG/L	A
				ACENAPHTHENE	5	5U		UJ	NG/L	A
				ACENAPHTHYLENE	5	5U		UJ	NG/L	A
				ANTHRACENE	5	5U		UJ	NG/L	A
				Azobenzene	100	100U		UJ	NG/L	A
				Benz(a)anthracene	5	5U		UJ	NG/L	A
				BENZIDINE	100	100U		UJ	NG/L	A
				Benzo(a)pyrene	5	5U		UJ	NG/L	A
				Benzo(b)fluoranthene	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Benzo(e)pyrene	5	5U		UJ	NG/L	A
				Benzo(g,h,i)perylene	5	5U		UJ	NG/L	A
				Benzo(k)fluoranthene	5	5U		UJ	NG/L	A
				BIPHENYL	5	2		J	NG/L	A
				Bis(2-chloroethoxy)methane	100	100U		UJ	NG/L	A
				BIS(2-CHLOROETHYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-CHLOROISOPROPYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-ETHYLHEXYL) PHTHALATE	10	54.2		UJ	NG/L	A,F
				BUTYLBENZYL PHTHALATE	10	29.3		UJ	NG/L	A,F
				CHRYSENE	5	5U		UJ	NG/L	A
				Dibenz(a,h)anthracene	5	5U		UJ	NG/L	A
				DIETHYL PHTHALATE	10	123		UJ	NG/L	A,F
				DIMETHYL PHTHALATE	10	164		UJ	NG/L	A,F
				Di-n-butyl phthalate	10	60.4		UJ	NG/L	A,F
				DI-N-OCTYL PHTHALATE	10	10U		UJ	NG/L	A
				FLUORANTHENE	5	5U		UJ	NG/L	A
				FLUORENE	5	5U		UJ	NG/L	A
				HEXACHLOROBENZENE	5	5U		UJ	NG/L	A
				HEXACHLOROBUTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROCYCLOPENTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROETHANE	100	100U		UJ	NG/L	A
				Indeno(1,2,3-c,d)pyrene	5	5U		UJ	NG/L	A
				ISOPHORONE	100	100U		UJ	NG/L	A
				NAPHTHALENE	5	1.8		J	NG/L	A
				NITROBENZENE	100	100U		UJ	NG/L	A
				N-NITROSODIMETHYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSO-DI-N-PROPYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSODIPHENYLAMINE	100	100U		UJ	NG/L	A
				PENTACHLOROPHENOL	100	100U		UJ	NG/L	A
				PERYLENE	5	5U		UJ	NG/L	A
				PHENANTHRENE	5	5U		UJ	NG/L	A
				PHENOL	200	200U		UJ	NG/L	A
				PYRENE	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Total Detectable PAHs		7.7		J	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
625	0602070105 ARHW80	AQ	N	1,2,4-TRICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,2-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,3-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,4-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1-Methylnaphthalene	5	1.3		J	NG/L	A
				1-Methylphenanthrene	5	5U		UJ	NG/L	A
				2,3,5-Trimethylnaphthalene	5	5U		UJ	NG/L	A
				2,4,6-TRICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DIMETHYLPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2,6-Dimethylnaphthalene	5	5U		UJ	NG/L	A
				2,6-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2-CHLORONAPHTHALENE	100	100U		UJ	NG/L	A
				2-CHLOROPHENOL	100	100U		UJ	NG/L	A
				2-METHYL-4,6-DINITROPHENOL	200	200U		UJ	NG/L	A
				2-METHYLNAPHTHALENE	5	5U		UJ	NG/L	A
				2-NITROPHENOL	200	200U		UJ	NG/L	A
				3,3'-DICHLOROBENZIDINE	100	100U		UJ	NG/L	A
				4-BROMOPHENYLPHENYLETHER	100	100U		UJ	NG/L	A
				4-CHLORO-3-METHYLPHENOL	200	200U		UJ	NG/L	A
				4-Chlorophenylphenylether	100	100U		UJ	NG/L	A
				4-NITROPHENOL	200	200U		UJ	NG/L	A
				ACENAPHTHENE	5	5U		UJ	NG/L	A
				ACENAPHTHYLENE	5	5U		UJ	NG/L	A
				ANTHRACENE	5	5U		UJ	NG/L	A
				Azobenzene	100	100U		UJ	NG/L	A
				Benz(a)anthracene	5	5U		UJ	NG/L	A
				BENZIDINE	100	100U		UJ	NG/L	A
				Benzo(a)pyrene	5	5U		UJ	NG/L	A
				Benzo(b)fluoranthene	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Benzo(e)pyrene	5	5U		UJ	NG/L	A
				Benzo(g,h,i)perylene	5	5U		UJ	NG/L	A
				Benzo(k)fluoranthene	5	5U		UJ	NG/L	A
				BIPHENYL	5	1		J	NG/L	A
				Bis(2-chloroethoxy)methane	100	100U		UJ	NG/L	A
				BIS(2-CHLOROETHYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-CHLOROISOPROPYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-ETHYLHEXYL) PHTHALATE	10	70.5		UJ	NG/L	A,F
				BUTYLBENZYL PHTHALATE	10	17.8		UJ	NG/L	A,F
				CHRYSENE	5	5U		UJ	NG/L	A
				Dibenz(a,h)anthracene	5	5U		UJ	NG/L	A
				DIETHYL PHTHALATE	10	159		UJ	NG/L	A,F
				DIMETHYL PHTHALATE	10	197		UJ	NG/L	A,F
				Di-n-butyl phthalate	10	39.4		UJ	NG/L	A,F
				DI-N-OCTYL PHTHALATE	10	10U		UJ	NG/L	A
				FLUORANTHENE	5	5U		UJ	NG/L	A
				FLUORENE	5	5U		UJ	NG/L	A
				HEXACHLOROBENZENE	5	5U		UJ	NG/L	A
				HEXACHLOROBUTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROCYCLOPENTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROETHANE	100	100U		UJ	NG/L	A
				Indeno(1,2,3-c,d)pyrene	5	5U		UJ	NG/L	A
				ISOPHORONE	100	100U		UJ	NG/L	A
				NAPHTHALENE	5	5U		UJ	NG/L	A
				NITROBENZENE	100	100U		UJ	NG/L	A
				N-NITROSODIMETHYLAMINE	100	100U		UJ	NG/L	A
				N-NITroso-DI-N-PROPYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSODIPHENYLAMINE	100	100U		UJ	NG/L	A
				PENTACHLOROPHENOL	100	100U		UJ	NG/L	A
				PERYLENE	5	5U		UJ	NG/L	A
				PHENANTHRENE	5	5U		UJ	NG/L	A
				PHENOL	200	200U		UJ	NG/L	A
				PYRENE	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Total Detectable PAHs		2.3		J	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
625	0602080012 Freeport	AQ	N	1,2,4-TRICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,2-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,3-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,4-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1-Methylnaphthalene	5	3.6		J	NG/L	A
				1-Methylphenanthrene	5	5U		UJ	NG/L	A
				2,3,5-Trimethylnaphthalene	5	5U		UJ	NG/L	A
				2,4,6-TRICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DIMETHYLPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2,6-Dimethylnaphthalene	5	5U		UJ	NG/L	A
				2,6-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2-CHLORONAPHTHALENE	100	100U		UJ	NG/L	A
				2-CHLOROPHENOL	100	100U		UJ	NG/L	A
				2-METHYL-4,6-DINITROPHENOL	200	200U		UJ	NG/L	A
				2-METHYLNAPHTHALENE	5	3.5		J	NG/L	A
				2-NITROPHENOL	200	200U		UJ	NG/L	A
				3,3'-DICHLOROBENZIDINE	100	100U		UJ	NG/L	A
				4-BROMOPHENYLPHENYLETHER	100	100U		UJ	NG/L	A
				4-CHLORO-3-METHYLPHENOL	200	200U		UJ	NG/L	A
				4-Chlorophenylphenylether	100	100U		UJ	NG/L	A
				4-NITROPHENOL	200	200U		UJ	NG/L	A
				ACENAPHTHENE	5	5U		UJ	NG/L	A
				ACENAPHTHYLENE	5	5U		UJ	NG/L	A
				ANTHRACENE	5	5U		UJ	NG/L	A
				Azobenzene	100	100U		UJ	NG/L	A
				Benz(a)anthracene	5	5U		UJ	NG/L	A
				BENZIDINE	100	100U		UJ	NG/L	A
				Benzo(a)pyrene	5	5U		UJ	NG/L	A
				Benzo(b)fluoranthene	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Benzo(e)pyrene	5	5U		UJ	NG/L	A
				Benzo(g,h,i)perylene	5	5U		UJ	NG/L	A
				Benzo(k)fluoranthene	5	5U		UJ	NG/L	A
				BIPHENYL	5	2.7		J	NG/L	A
				Bis(2-chloroethoxy)methane	100	100U		UJ	NG/L	A
				BIS(2-CHLOROETHYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-CHLOROISOPROPYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-ETHYLHEXYL) PHTHALATE	10	92.7		UJ	NG/L	A,F
				BUTYLBENZYL PHTHALATE	10	16.1		UJ	NG/L	A,F
				CHRYSENE	5	5U		UJ	NG/L	A
				Dibenz(a,h)anthracene	5	5U		UJ	NG/L	A
				DIETHYL PHTHALATE	10	136		UJ	NG/L	A,F
				DIMETHYL PHTHALATE	10	189		UJ	NG/L	A,F
				Di-n-butyl phthalate	10	39.3		UJ	NG/L	A,F
				DI-N-OCTYL PHTHALATE	10	10U		UJ	NG/L	A
				FLUORANTHENE	5	5U		UJ	NG/L	A
				FLUORENE	5	5U		UJ	NG/L	A
				HEXACHLOROBENZENE	5	5U		UJ	NG/L	A
				HEXACHLOROBUTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROCYCLOPENTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROETHANE	100	100U		UJ	NG/L	A
				Indeno(1,2,3-c,d)pyrene	5	5U		UJ	NG/L	A
				ISOPHORONE	100	100U		UJ	NG/L	A
				NAPHTHALENE	5	3.5		J	NG/L	A
				NITROBENZENE	100	100U		UJ	NG/L	A
				N-NITROSODIMETHYLAMINE	100	100U		UJ	NG/L	A
				N-NITroso-DI-N-PROPYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSODIPHENYLAMINE	100	100U		UJ	NG/L	A
				PENTACHLOROPHENOL	100	100U		UJ	NG/L	A
				PERYLENE	5	5U		UJ	NG/L	A
				PHENANTHRENE	5	5U		UJ	NG/L	A
				PHENOL	200	200U		UJ	NG/L	A
				PYRENE	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Total Detectable PAHs		13.3		J	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
625	0602080016 RM44	AQ	N	1,2,4-TRICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,2-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,3-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,4-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1-Methylnaphthalene	5	5U		UJ	NG/L	A
				1-Methylphenanthrene	5	5U		UJ	NG/L	A
				2,3,5-Trimethylnaphthalene	5	5U		UJ	NG/L	A
				2,4,6-TRICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DIMETHYLPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2,6-Dimethylnaphthalene	5	5U		UJ	NG/L	A
				2,6-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2-CHLORONAPHTHALENE	100	100U		UJ	NG/L	A
				2-CHLOROPHENOL	100	100U		UJ	NG/L	A
				2-METHYL-4,6-DINITROPHENOL	200	200U		UJ	NG/L	A
				2-METHYLNAPHTHALENE	5	5U		UJ	NG/L	A
				2-NITROPHENOL	200	200U		UJ	NG/L	A
				3,3'-DICHLOROBENZIDINE	100	100U		UJ	NG/L	A
				4-BROMOPHENYLPHENYLETHER	100	100U		UJ	NG/L	A
				4-CHLORO-3-METHYLPHENOL	200	200U		UJ	NG/L	A
				4-Chlorophenylphenylether	100	100U		UJ	NG/L	A
				4-NITROPHENOL	200	200U		UJ	NG/L	A
				ACENAPHTHENE	5	5U		UJ	NG/L	A
				ACENAPHTHYLENE	5	5U		UJ	NG/L	A
				ANTHRACENE	5	5U		UJ	NG/L	A
				Azobenzene	100	100U		UJ	NG/L	A
				Benz(a)anthracene	5	5U		UJ	NG/L	A
				BENZIDINE	100	100U		UJ	NG/L	A
				Benzo(a)pyrene	5	5U		UJ	NG/L	A
				Benzo(b)fluoranthene	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Benzo(e)pyrene	5	5U		UJ	NG/L	A
				Benzo(g,h,i)perylene	5	5U		UJ	NG/L	A
				Benzo(k)fluoranthene	5	5U		UJ	NG/L	A
				BIPHENYL	5	5U		UJ	NG/L	A
				Bis(2-chloroethoxy)methane	100	100U		UJ	NG/L	A
				BIS(2-CHLOROETHYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-CHLOROISOPROPYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-ETHYLHEXYL) PHTHALATE	10	80.9		UJ	NG/L	A,F
				BUTYLBENZYL PHTHALATE	10	33.8		UJ	NG/L	A,F
				CHRYSENE	5	5U		UJ	NG/L	A
				Dibenz(a,h)anthracene	5	5U		UJ	NG/L	A
				DIETHYL PHTHALATE	10	184		UJ	NG/L	A,F
				DIMETHYL PHTHALATE	10	314		UJ	NG/L	A,F
				Di-n-butyl phthalate	10	55.7		UJ	NG/L	A,F
				DI-N-OCTYL PHTHALATE	10	10U		UJ	NG/L	A
				FLUORANTHENE	5	5U		UJ	NG/L	A
				FLUORENE	5	5U		UJ	NG/L	A
				HEXACHLOROBENZENE	5	5U		UJ	NG/L	A
				HEXACHLOROBUTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROCYCLOPENTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROETHANE	100	100U		UJ	NG/L	A
				Indeno(1,2,3-c,d)pyrene	5	5U		UJ	NG/L	A
				ISOPHORONE	100	100U		UJ	NG/L	A
				NAPHTHALENE	5	5U		UJ	NG/L	A
				NITROBENZENE	100	100U		UJ	NG/L	A
				N-NITROSODIMETHYLAMINE	100	100U		UJ	NG/L	A
				N-NITroso-DI-N-PROPYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSODIPHENYLAMINE	100	100U		UJ	NG/L	A
				PENTACHLOROPHENOL	100	100U		UJ	NG/L	A
				PERYLENE	5	5U		UJ	NG/L	A
				PHENANTHRENE	5	5U		UJ	NG/L	A
				PHENOL	200	200U		UJ	NG/L	A
				PYRENE	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Total Detectable PAHs		0		UJ	NG/L	A,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
625	0602080020 Nimbus	AQ	N	1,2,4-TRICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,2-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,3-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1,4-DICHLOROBENZENE	50	50U		UJ	NG/L	A
				1-Methylnaphthalene	5	5U		UJ	NG/L	A
				1-Methylphenanthrene	5	5U		UJ	NG/L	A
				2,3,5-Trimethylnaphthalene	5	5U		UJ	NG/L	A
				2,4,6-TRICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DICHLOROPHENOL	100	100U		UJ	NG/L	A
				2,4-DIMETHYLPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROPHENOL	200	200U		UJ	NG/L	A
				2,4-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2,6-Dimethylnaphthalene	5	5U		UJ	NG/L	A
				2,6-DINITROTOLUENE	100	100U		UJ	NG/L	A
				2-CHLORONAPHTHALENE	100	100U		UJ	NG/L	A
				2-CHLOROPHENOL	100	100U		UJ	NG/L	A
				2-METHYL-4,6-DINITROPHENOL	200	200U		UJ	NG/L	A
				2-METHYLNAPHTHALENE	5	5U		UJ	NG/L	A
				2-NITROPHENOL	200	200U		UJ	NG/L	A
				3,3'-DICHLOROBENZIDINE	100	100U		UJ	NG/L	A
				4-BROMOPHENYLPHENYLETHER	100	100U		UJ	NG/L	A
				4-CHLORO-3-METHYLPHENOL	200	200U		UJ	NG/L	A
				4-Chlorophenylphenylether	100	100U		UJ	NG/L	A
				4-NITROPHENOL	200	200U		UJ	NG/L	A
				ACENAPHTHENE	5	5U		UJ	NG/L	A
				ACENAPHTHYLENE	5	5U		UJ	NG/L	A
				ANTHRACENE	5	5U		UJ	NG/L	A
				Azobenzene	100	100U		UJ	NG/L	A
				Benz(a)anthracene	5	5U		UJ	NG/L	A
				BENZIDINE	100	100U		UJ	NG/L	A
				Benzo(a)pyrene	5	5U		UJ	NG/L	A
				Benzo(b)fluoranthene	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Benzo(e)pyrene	5	5U		UJ	NG/L	A
				Benzo(g,h,i)perylene	5	5U		UJ	NG/L	A
				Benzo(k)fluoranthene	5	5U		UJ	NG/L	A
				BIPHENYL	5	5U		UJ	NG/L	A
				Bis(2-chloroethoxy)methane	100	100U		UJ	NG/L	A
				BIS(2-CHLOROETHYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-CHLOROISOPROPYL)ETHER	100	100U		UJ	NG/L	A
				BIS(2-ETHYLHEXYL) PHTHALATE	10	40.3		UJ	NG/L	A,F
				BUTYLBENZYL PHTHALATE	10	14		UJ	NG/L	A,F
				CHRYSENE	5	5U		UJ	NG/L	A
				Dibenz(a,h)anthracene	5	5U		UJ	NG/L	A
				DIETHYL PHTHALATE	10	124		UJ	NG/L	A,F
				DIMETHYL PHTHALATE	10	144		UJ	NG/L	A,F
				Di-n-butyl phthalate	10	31.8		UJ	NG/L	A,F
				DI-N-OCTYL PHTHALATE	10	10U		UJ	NG/L	A
				FLUORANTHENE	5	5U		UJ	NG/L	A
				FLUORENE	5	5U		UJ	NG/L	A
				HEXACHLOROBENZENE	5	5U		UJ	NG/L	A
				HEXACHLOROBUTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROCYCLOPENTADIENE	100	100U		UJ	NG/L	A
				HEXACHLOROETHANE	100	100U		UJ	NG/L	A
				Indeno(1,2,3-c,d)pyrene	5	5U		UJ	NG/L	A
				ISOPHORONE	100	100U		UJ	NG/L	A
				NAPHTHALENE	5	5U		UJ	NG/L	A
				NITROBENZENE	100	100U		UJ	NG/L	A
				N-NITROSODIMETHYLAMINE	100	100U		UJ	NG/L	A
				N-NITroso-DI-N-PROPYLAMINE	100	100U		UJ	NG/L	A
				N-NITROSODIPHENYLAMINE	100	100U		UJ	NG/L	A
				PENTACHLOROPHENOL	100	100U		UJ	NG/L	A
				PERYLENE	5	5U		UJ	NG/L	A
				PHENANTHRENE	5	5U		UJ	NG/L	A
				PHENOL	200	200U		UJ	NG/L	A
				PYRENE	5	5U		UJ	NG/L	A

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655-16063</b>										
				Total Detectable PAHs		0		UJ	NG/L	A,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655b-16105</b>										
625	0602270054Veterans	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	50.2B		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	9.4J		UJ	NG/L	L,F
				DIETHYL PHTHALATE	10	25.1B		U	NG/L	F
				Di-n-butyl phthalate	10	19.1B		U	NG/L	F
				Total Detectable PAHs	5	0		UJ	NG/L	L,F
625	0602270058Discovery	AQ	N	1-Methylnaphthalene	5	1J		J	NG/L	L
				2,6-Dimethylnaphthalene	5	1J		J	NG/L	L
				BIS(2-ETHYLHEXYL) PHTHALATE	10	138B		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	30.7B		U	NG/L	F
				DIETHYL PHTHALATE	10	32.9B		U	NG/L	F
				Di-n-butyl phthalate	10	25.8B		U	NG/L	F
				FLUORANTHENE	5	1.9J		J	NG/L	L
				PHENANTHRENE	5	1.6J		J	NG/L	L
				PYRENE	5	2.1J		J	NG/L	L
625	0602270063ARHW80	AQ	N	Benz(a)anthracene	5	2.2J		J	NG/L	L
				BIS(2-ETHYLHEXYL) PHTHALATE	10	148B		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	36.8B		U	NG/L	F
				CHRYSENE	5	3.3J		J	NG/L	L
				DIETHYL PHTHALATE	10	32.1B		U	NG/L	F
				Di-n-butyl phthalate	10	27.9B		U	NG/L	F
				FLUORANTHENE	5	3.9J		J	NG/L	L
				PHENANTHRENE	5	1.3J		J	NG/L	L
				PYRENE	5	3.6J		J	NG/L	L

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655b-16105</b>										
625	0602270068Freeport	AQ	N	1-Methylnaphthalene	5	1.4J		J	NG/L	L
				2-METHYLNAPHTHALENE	5	1.7J		J	NG/L	L
				BIPHENYL	5	1.7J		J	NG/L	L
				BIS(2-ETHYLHEXYL) PHTHALATE	10	101B		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	17.8B		U	NG/L	F
				DIETHYL PHTHALATE	10	32B		U	NG/L	F
				Di-n-butyl phthalate	10	22.5B		U	NG/L	F
				FLUORANTHENE	5	2.4J		J	NG/L	L
				NAPHTHALENE	5	1.5J		J	NG/L	L
				PHENANTHRENE	5	2.4J		J	NG/L	L
				PYRENE	5	2J		J	NG/L	L
625	0602280048Howe	AQ	FD	BIS(2-ETHYLHEXYL) PHTHALATE	10	31.7B		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	12.6B		U	NG/L	F
				DIETHYL PHTHALATE	10	23.2B		U	NG/L	F
				Di-n-butyl phthalate	10	16.2B		U	NG/L	F
				Total Detectable PAHs	5	0		UJ	NG/L	L,F
625	0602280053Nimbus	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	64.3B		UJ	NG/L	F,N,P,Z
				DIETHYL PHTHALATE	10	24.2B		UJ	NG/L	F,N,Z
				Di-n-butyl phthalate	10	11B		U	NG/L	F,N
				Total Detectable PAHs	5	0		UJ	NG/L	L,N,F
625	0602280057EQBLK	AQ	EB	BIS(2-ETHYLHEXYL) PHTHALATE	10	94B		U	NG/L	F
				DIETHYL PHTHALATE	10	57.1B		U	NG/L	F
				Di-n-butyl phthalate	10	26.2B		U	NG/L	F
				Total Detectable PAHs	5	0		UJ	NG/L	L,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655c-18022</b>										
625	0606130012 Veterans	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	26.3		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	14.8		U	NG/L	F
				DIETHYL PHTHALATE	10	31.6		U	NG/L	F
				DIMETHYL PHTHALATE	10	44.7		U	NG/L	F
				Di-n-butyl phthalate	10	23.7		U	NG/L	F
				Total Detectable PAHs		0		U	NG/L	F
625	0606130017 Discovery	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	18.8		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	23.4		U	NG/L	F
				DIETHYL PHTHALATE	10	40.8		U	NG/L	F
				DIMETHYL PHTHALATE	10	44.1		U	NG/L	F
				Di-n-butyl phthalate	10	57.2		U	NG/L	F
				Total Detectable PAHs		0		U	NG/L	F
625	0606130022 ARHW80	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	26.8		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	24.1		U	NG/L	F
				DIETHYL PHTHALATE	10	50.6		U	NG/L	F
				DIMETHYL PHTHALATE	10	46.9		U	NG/L	F
				Di-n-butyl phthalate	10	64.9		U	NG/L	F
				Total Detectable PAHs		0		U	NG/L	F
625	0606140016 Freeport	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	25		UJ	NG/L	F,N,Z
				BUTYLBENZYL PHTHALATE	10	24.6		UJ	NG/L	F,N,Z
				DIETHYL PHTHALATE	10	42.9		U	NG/L	F,N
				DIMETHYL PHTHALATE	10	52.7		U	NG/L	F,N
				Di-n-butyl phthalate	10	56.5		UJ	NG/L	F,N,Z
				Total Detectable PAHs		0		U	NG/L	F,N

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 2655c-18022</b>										
625	0606140021 RM44	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	87.9		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	26.7		U	NG/L	F
				DIMETHYL PHTHALATE	10	44.6		U	NG/L	F
				Di-n-butyl phthalate	10	64.8		U	NG/L	F
				Total Detectable PAHs		0		U	NG/L	F
625	0606140025 Nimbus	AQ	N	BIS(2-ETHYLHEXYL) PHTHALATE	10	89.7		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	38		U	NG/L	F
				DIETHYL PHTHALATE	10	45.7		U	NG/L	F
				DIMETHYL PHTHALATE	10	49.4		U	NG/L	F
				Di-n-butyl phthalate	10	50.3		U	NG/L	F
				Total Detectable PAHs		0		U	NG/L	F
625	0606140030 Garcia	AQ	FD	BIS(2-ETHYLHEXYL) PHTHALATE	10	44.1		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	33.4		U	NG/L	F
				DIETHYL PHTHALATE	10	49.8		U	NG/L	F
				DIMETHYL PHTHALATE	10	45.3		U	NG/L	F
				Di-n-butyl phthalate	10	32.9		U	NG/L	F
				Total Detectable PAHs		0		U	NG/L	F
625	0606140034 Eq Blk	AQ	EB	BIS(2-ETHYLHEXYL) PHTHALATE	10	26.5		U	NG/L	F
				BUTYLBENZYL PHTHALATE	10	20.5		U	NG/L	F
				DIETHYL PHTHALATE	10	61.1		U	NG/L	F
				DIMETHYL PHTHALATE	10	55.6		U	NG/L	F
				Di-n-butyl phthalate	10	63.9		U	NG/L	F
				Total Detectable PAHs		0		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 48676</b>										
8141A	0510050017Freeport	AQ	N	AZINPHOS-METHYL	1.0	1.0U		UJ	ug/L	I
				BOLSTAR	0.10	0.10U		UJ	ug/L	I,H
				CHLORPYRIFOS	0.05	0.05U		UJ	ug/L	I,H
				DIAZINON	0.05	0.05U		UJ	ug/L	I,H
				DIMETHOATE	0.10	0.10U		UJ	ug/L	I,H
				ETHOPROP	0.10	0.10U		UJ	ug/L	I,H
				MEVINPHOS	0.70	0.70U		UJ	ug/L	I
				NALED	0.50	0.50U		UJ	ug/L	I
				Parathion, Methyl	0.10	0.10U		UJ	ug/L	I,H
				PENDIMETHALIN	0.10	0.10U		UJ	ug/L	I,H
				PHORATE	0.10	0.10U		UJ	ug/L	I
				PHOSPHORIC ACID, TRIBUTYL	0.10	0.10U		UJ	ug/L	I,H
				TOKUTHION	0.10	0.10U		UJ	ug/L	I,H
				TRIFLURALIN	0.10	0.10U		UJ	ug/L	I
8260B	0510050017Freeport	AQ	N	BROMOMETHANE	1	1U		UJ	ug/L	I
				VINYL CHLORIDE	0.5	0.5U		UJ	ug/L	J
8260B	0510050023Garcia	AQ	FD	VINYL CHLORIDE	0.5	0.5U		UJ	ug/L	J
8260B	0510050029RM44	AQ	N	CHLOROFORM	0.5	0.21J		J	ug/L	L
				TOLUENE	0.5	0.34J		J	ug/L	L
				TOTAL XYLENES	0.5	0.43J		J	ug/L	L
				VINYL CHLORIDE	0.5	0.5U		UJ	ug/L	J
8260B	0510050033Nimbus	AQ	N	VINYL CHLORIDE	0.5	0.5U		UJ	ug/L	J

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
619 Triazine Herbicides	051202 NIMBUS	AQ	N							
				AMETRYN	0.1	0.1		U	ug/L	F
				ATRATON	0.1	0.1		U	ug/L	F
				ATRAZINE	0.1	0.1		U	ug/L	F
				CYANAZINE	0.1	0.1		U	ug/L	F
				PROMETON	0.1	0.1		U	ug/L	F
				PROMETRYN	0.1	0.1		U	ug/L	F
				PROPAZINE	0.1	0.1		U	ug/L	F
				SIMAZINE	0.1	0.1		U	ug/L	F
				SIMETRYN	0.1	0.1		U	ug/L	F
				TERBUTHYLAZINE	0.1	0.1		U	ug/L	F
				TERBUTRYN	0.1	0.1		U	ug/L	F
619 Triazine Herbicides	0512020063 VETERANS	AQ	N							
				AMETRYN	0.1	0.1		U	ug/L	F
				ATRATON	0.1	0.1		U	ug/L	F
				ATRAZINE	0.1	0.1		U	ug/L	F
				CYANAZINE	0.1	0.1		U	ug/L	F
				PROMETON	0.1	0.1		U	ug/L	F
				PROMETRYN	0.1	0.1		U	ug/L	F
				PROPAZINE	0.1	0.1		U	ug/L	F
				SIMAZINE	0.1	0.1		U	ug/L	F
				SIMETRYN	0.1	0.1		U	ug/L	F
				TERBUTHYLAZINE	0.1	0.1		U	ug/L	F
				TERBUTRYN	0.1	0.1		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
619 Triazine Herbicides	0512020067 DISCOVERY	AQ	N							
				AMETRYN	0.1	0.1		U	ug/L	F
				ATRATON	0.1	0.1		U	ug/L	F
				ATRAZINE	0.1	0.1		U	ug/L	F
				CYANAZINE	0.1	0.1		U	ug/L	F
				PROMETON	0.1	0.1		U	ug/L	F
				PROMETRYN	0.1	0.1		U	ug/L	F
				PROPAZINE	0.1	0.1		U	ug/L	F
				SIMAZINE	0.1	0.1		U	ug/L	F
				SIMETRYN	0.1	0.1		U	ug/L	F
				TERBUTHYLAZINE	0.1	0.1		U	ug/L	F
				TERBUTRYN	0.1	0.1		U	ug/L	F
619 Triazine Herbicides	0512020073 GARCIA	AQ	FD							
				AMETRYN	0.1	0.1		U	ug/L	F
				ATRATON	0.1	0.1		U	ug/L	F
				ATRAZINE	0.1	0.1		U	ug/L	F
				CYANAZINE	0.1	0.1		U	ug/L	F
				PROMETON	0.1	0.1		U	ug/L	F
				PROMETRYN	0.1	0.1		U	ug/L	F
				PROPAZINE	0.1	0.1		U	ug/L	F
				SIMAZINE	0.1	0.1		U	ug/L	F
				SIMETRYN	0.1	0.1		U	ug/L	F
				TERBUTHYLAZINE	0.1	0.1		U	ug/L	F
				TERBUTRYN	0.1	0.1		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
619 Triazine Herbicides	0512020079 FREEPORT	AQ	N							
				AMETRYN	0.1	0.1		U	ug/L	F
				ATRATON	0.1	0.1		U	ug/L	F
				ATRAZINE	0.1	0.1		U	ug/L	F
				CYANAZINE	0.1	0.1		U	ug/L	F
				PROMETON	0.1	0.1		U	ug/L	F
				PROMETRYN	0.1	0.1		U	ug/L	F
				PROPAZINE	0.1	0.1		U	ug/L	F
				SIMAZINE	0.1	0.1		U	ug/L	F
				SIMETRYN	0.1	0.1		U	ug/L	F
				TERBUTHYLAZINE	0.1	0.1		U	ug/L	F
				TERBUTRYN	0.1	0.1		U	ug/L	F
619 Triazine Herbicides	0512020096 AMRHWY80	AQ	N							
				AMETRYN	0.2	0.2		U	ug/L	F
				ATRATON	0.2	0.2		U	ug/L	F
				ATRAZINE	0.2	0.2		U	ug/L	F
				CYANAZINE	0.2	0.2		U	ug/L	F
				PROMETON	0.2	0.2		U	ug/L	F
				PROMETRYN	0.2	0.2		U	ug/L	F
				PROPAZINE	0.2	0.2		U	ug/L	F
				SIMAZINE	0.2	0.2		U	ug/L	F
				SIMETRYN	0.2	0.2		U	ug/L	F
				TERBUTHYLAZINE	0.2	0.2		U	ug/L	F
				TERBUTRYN	0.2	0.2		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8141A	051202 NIMBUS	AQ	N	AZINPHOS-METHYL	1.0	1.0		U	ug/L	F
				BOLSTAR	0.10	0.10		U	ug/L	F
				CHLORPYRIFOS	0.05	0.05		U	ug/L	F
				COUMAPHOS	0.20	0.20		U	ug/L	F
				DEMETON	0.20	0.20		U	ug/L	F
				DIAZINON	0.05	0.05		U	ug/L	F
				DICHLORVOS	0.20	0.20		U	ug/L	F
				DIMETHOATE	0.10	0.10		U	ug/L	F
				DISULFOTON	0.10	0.10		U	ug/L	F
				ETHION	0.10	0.10		U	ug/L	F
				ETHOPROP	0.10	0.10		U	ug/L	F
				ETHYL P-NITROPHENYL	0.10	0.10		U	ug/L	F
				PHENYLPHOSPHOROTHIOATE						
				FENSULFOTHION	0.50	0.50		U	ug/L	F
				FENTHION	0.10	0.10		U	ug/L	F
				MALATHION	0.10	0.10		U	ug/L	F
				MERPHOS	0.10	0.10		U	ug/L	F
				MEVINPHOS	0.70	0.70		U	ug/L	F
				NALED	0.50	0.50		U	ug/L	F
				Parathion, ethyl	0.10	0.10		U	ug/L	F
				Parathion, methyl	0.10	0.10		U	ug/L	F
				PENDIMETHALIN	0.10	0.10		U	ug/L	F
				PHORATE	0.10	0.10		U	ug/L	F
				PHOSPHORIC ACID, TRIBUTYL	0.10	0.10		U	ug/L	F
				RONNEL	0.10	0.10		U	ug/L	F
				S-Ethyl dipropylthiocarbamate	0.10	0.10		U	ug/L	F
				STIROPHOS	0.10	0.10		U	ug/L	F
				SULFOTEPP	0.10	0.10		U	ug/L	F
				TOKUTHION	0.10	0.10		U	ug/L	F
				TRICHLORONATE	0.10	0.10		U	ug/L	F
				TRIFLURALIN	0.10	0.10		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8141A	0512020063 VETERANS	AQ	N	AZINPHOS-METHYL	1.0	1.0		U	ug/L	F
				BOLSTAR	0.10	0.10		U	ug/L	F
				CHLORPYRIFOS	0.05	0.05		U	ug/L	F
				COUMAPHOS	0.20	0.20		UJ	ug/L	I,F
				DEMETON	0.20	0.20		UJ	ug/L	I,F
				DIAZINON	0.05	0.05		U	ug/L	F
				DICHLORVOS	0.20	0.20		UJ	ug/L	I,F
				DIMETHOATE	0.10	0.10		U	ug/L	F
				DISULFOTON	0.10	0.10		UJ	ug/L	I,F
				ETHION	0.10	0.10		UJ	ug/L	I,F
				ETHOPROP	0.10	0.10		U	ug/L	F
				ETHYL P-NITROPHENYL	0.10	0.10		UJ	ug/L	I,F
				PHENYLPHOSPHOROTHIOATE						
				FENSULFOTHION	0.50	0.50		UJ	ug/L	I,F
				FENTHION	0.10	0.10		UJ	ug/L	I,F
				MALATHION	0.10	0.10		UJ	ug/L	I,F
				MERPHOS	0.10	0.10		UJ	ug/L	I,F
				MEVINPHOS	0.70	0.70		U	ug/L	F
				NALED	0.50	0.50		U	ug/L	F
				Parathion, ethyl	0.10	0.10		UJ	ug/L	I,F
				Parathion, methyl	0.10	0.10		U	ug/L	F
				PENDIMETHALIN	0.10	0.10		U	ug/L	F
				PHORATE	0.10	0.10		U	ug/L	F
				PHOSPHORIC ACID, TRIBUTYL	0.10	0.10		U	ug/L	F
				RONNEL	0.10	0.10		UJ	ug/L	I,F
				S-Ethyl dipropylthiocarbamate	0.10	0.10		UJ	ug/L	I,F
				STIROPHOS	0.10	0.10		UJ	ug/L	I,F
				SULFOTEPP	0.10	0.10		UJ	ug/L	I,F
				TOKUTHION	0.10	0.10		U	ug/L	F
				TRICHLORONATE	0.10	0.10		UJ	ug/L	I,F
				TRIFLURALIN	0.10	0.10		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8141A	0512020067 DISCOVERY	AQ	N	AZINPHOS-METHYL	1.0	1.0		U	ug/L	F
				BOLSTAR	0.10	0.10		U	ug/L	F
				CHLORPYRIFOS	0.05	0.05		U	ug/L	F
				COUMAPHOS	0.20	0.20		U	ug/L	F
				DEMETON	0.20	0.20		U	ug/L	F
				DIAZINON	0.05	0.05		U	ug/L	F
				DICHLORVOS	0.20	0.20		U	ug/L	F
				DIMETHOATE	0.10	0.10		U	ug/L	F
				DISULFOTON	0.10	0.10		U	ug/L	F
				ETHION	0.10	0.10		U	ug/L	F
				ETHOPROP	0.10	0.10		U	ug/L	F
				ETHYL P-NITROPHENYL	0.10	0.10		U	ug/L	F
				PHENYLPHOSPHOROTHIOATE						
				FENSULFOTHION	0.50	0.50		U	ug/L	F
				FENTHION	0.10	0.10		U	ug/L	F
				MALATHION	0.10	0.10		U	ug/L	F
				MERPHOS	0.10	0.10		U	ug/L	F
				MEVINPHOS	0.70	0.70		U	ug/L	F
				NALED	0.50	0.50		U	ug/L	F
				Parathion, ethyl	0.10	0.10		U	ug/L	F
				Parathion, methyl	0.10	0.10		U	ug/L	F
				PENDIMETHALIN	0.10	0.10		U	ug/L	F
				PHORATE	0.10	0.10		U	ug/L	F
				PHOSPHORIC ACID, TRIBUTYL	0.10	0.10		U	ug/L	F
				RONNEL	0.10	0.10		U	ug/L	F
				S-Ethyl dipropylthiocarbamate	0.10	0.10		U	ug/L	F
				STIROPHOS	0.10	0.10		U	ug/L	F
				SULFOTEPP	0.10	0.10		U	ug/L	F
				TOKUTHION	0.10	0.10		U	ug/L	F
				TRICHLORONATE	0.10	0.10		U	ug/L	F
				TRIFLURALIN	0.10	0.10		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8141A	0512020073 GARCIA	AQ	FD	AZINPHOS-METHYL	1.0	1.0		U	ug/L	F
				BOLSTAR	0.10	0.10		U	ug/L	F
				CHLORPYRIFOS	0.05	0.05		U	ug/L	F
				COUMAPHOS	0.20	0.20		U	ug/L	F
				DEMETON	0.20	0.20		U	ug/L	F
				DIAZINON	0.05	0.05		U	ug/L	F
				DICHLORVOS	0.20	0.20		U	ug/L	F
				DIMETHOATE	0.10	0.10		U	ug/L	F
				DISULFOTON	0.10	0.10		U	ug/L	F
				ETHION	0.10	0.10		U	ug/L	F
				ETHOPROP	0.10	0.10		U	ug/L	F
				ETHYL P-NITROPHENYL	0.10	0.10		U	ug/L	F
				PHENYLPHOSPHOROTHIOATE						
				FENSULFOTHION	0.50	0.50		U	ug/L	F
				FENTHION	0.10	0.10		U	ug/L	F
				MALATHION	0.10	0.10		U	ug/L	F
				MERPHOS	0.10	0.10		U	ug/L	F
				MEVINPHOS	0.70	0.70		U	ug/L	F
				NALED	0.50	0.50		U	ug/L	F
				Parathion, ethyl	0.10	0.10		U	ug/L	F
				Parathion, methyl	0.10	0.10		U	ug/L	F
				PENDIMETHALIN	0.10	0.10		U	ug/L	F
				PHORATE	0.10	0.10		U	ug/L	F
				PHOSPHORIC ACID, TRIBUTYL	0.10	0.10		U	ug/L	F
				RONNEL	0.10	0.10		U	ug/L	F
				S-Ethyl dipropylthiocarbamate	0.10	0.10		U	ug/L	F
				STIROPHOS	0.10	0.10		U	ug/L	F
				SULFOTEPP	0.10	0.10		U	ug/L	F
				TOKUTHION	0.10	0.10		U	ug/L	F
				TRICHLORONATE	0.10	0.10		U	ug/L	F
				TRIFLURALIN	0.10	0.10		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8141A	0512020079 FREEPORT	AQ	N	AZINPHOS-METHYL	1.0	1.0		U	ug/L	F
				BOLSTAR	0.10	0.10		U	ug/L	F
				CHLORPYRIFOS	0.05	0.05		U	ug/L	F
				COUMAPHOS	0.20	0.20		U	ug/L	F
				DEMETON	0.20	0.20		U	ug/L	F
				DIAZINON	0.05	0.05		U	ug/L	F
				DICHLORVOS	0.20	0.20		U	ug/L	F
				DIMETHOATE	0.10	0.10		U	ug/L	F
				DISULFOTON	0.10	0.10		U	ug/L	F
				ETHION	0.10	0.10		U	ug/L	F
				ETHOPROP	0.10	0.10		U	ug/L	F
				ETHYL P-NITROPHENYL	0.10	0.10		U	ug/L	F
				PHENYLPHOSPHOROTHIOATE						
				FENSULFOTHION	0.50	0.50		U	ug/L	F
				FENTHION	0.10	0.10		U	ug/L	F
				MALATHION	0.10	0.10		U	ug/L	F
				MERPHOS	0.10	0.10		U	ug/L	F
				MEVINPHOS	0.70	0.70		U	ug/L	F
				NALED	0.50	0.50		U	ug/L	F
				Parathion, ethyl	0.10	0.10		U	ug/L	F
				Parathion, methyl	0.10	0.10		U	ug/L	F
				PENDIMETHALIN	0.10	0.10		U	ug/L	F
				PHORATE	0.10	0.10		U	ug/L	F
				PHOSPHORIC ACID, TRIBUTYL	0.10	0.10		U	ug/L	F
				RONNEL	0.10	0.10		U	ug/L	F
				S-Ethyl dipropylthiocarbamate	0.10	0.10		U	ug/L	F
				STIROPHOS	0.10	0.10		U	ug/L	F
				SULFOTEPP	0.10	0.10		U	ug/L	F
				TOKUTHION	0.10	0.10		U	ug/L	F
				TRICHLORONATE	0.10	0.10		U	ug/L	F
				TRIFLURALIN	0.10	0.10		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8141A	0512020085 RM44	AQ	N	AZINPHOS-METHYL	1.0	1.0		U	ug/L	F
				BOLSTAR	0.10	0.10		U	ug/L	F
				CHLORPYRIFOS	0.05	0.05		U	ug/L	F
				COUMAPHOS	0.20	0.20		U	ug/L	F
				DEMETON	0.20	0.20		U	ug/L	F
				DIAZINON	0.05	0.05		U	ug/L	F
				DICHLORVOS	0.20	0.20		U	ug/L	F
				DIMETHOATE	0.10	0.10		U	ug/L	F
				DISULFOTON	0.10	0.10		U	ug/L	F
				ETHION	0.10	0.10		U	ug/L	F
				ETHOPROP	0.10	0.10		U	ug/L	F
				ETHYL P-NITROPHENYL	0.10	0.10		U	ug/L	F
				PHENYLPHOSPHOROTHIOATE						
				FENSULFOTHION	0.50	0.50		U	ug/L	F
				FENTHION	0.10	0.10		U	ug/L	F
				MALATHION	0.10	0.10		U	ug/L	F
				MERPHOS	0.10	0.10		U	ug/L	F
				MEVINPHOS	0.70	0.70		U	ug/L	F
				NALED	0.50	0.50		U	ug/L	F
				Parathion, ethyl	0.10	0.10		U	ug/L	F
				Parathion, methyl	0.10	0.10		U	ug/L	F
				PENDIMETHALIN	0.10	0.10		U	ug/L	F
				PHORATE	0.10	0.10		U	ug/L	F
				PHOSPHORIC ACID, TRIBUTYL	0.10	0.10		U	ug/L	F
				RONNEL	0.10	0.10		U	ug/L	F
				S-Ethyl dipropylthiocarbamate	0.10	0.10		U	ug/L	F
				STIROPHOS	0.10	0.10		U	ug/L	F
				SULFOTEPP	0.10	0.10		U	ug/L	F
				TOKUTHION	0.10	0.10		U	ug/L	F
				TRICHLORONATE	0.10	0.10		U	ug/L	F
				TRIFLURALIN	0.10	0.10		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8141A	0512020096 AMRHWY80	AQ	N	AZINPHOS-METHYL	2.0	2.0		U	ug/L	F
				BOLSTAR	0.20	0.20		U	ug/L	F
				CHLORPYRIFOS	0.10	0.10		U	ug/L	F
				COUMAPHOS	0.40	0.40		U	ug/L	F
				DEMETON	0.40	0.40		U	ug/L	F
				DIAZINON	0.10	0.10		U	ug/L	F
				DICHLORVOS	0.40	0.40		U	ug/L	F
				DIMETHOATE	0.20	0.20		U	ug/L	F
				DISULFOTON	0.20	0.20		U	ug/L	F
				ETHION	0.20	0.20		U	ug/L	F
				ETHOPROP	0.20	0.20		U	ug/L	F
				ETHYL P-NITROPHENYL	0.20	0.20		U	ug/L	F
				PHENYLPHOSPHOROTHIOATE						
				FENSULFOTHION	1.0	1.0		U	ug/L	F
				FENTHION	0.20	0.20		U	ug/L	F
				MALATHION	0.20	0.20		U	ug/L	F
				MERPHOS	0.20	0.20		U	ug/L	F
				MEVINPHOS	1.4	1.4		U	ug/L	F
				NALED	1.0	1.0		U	ug/L	F
				Parathion, ethyl	0.20	0.20		U	ug/L	F
				Parathion, methyl	0.20	0.20		U	ug/L	F
				PENDIMETHALIN	0.20	0.20		U	ug/L	F
				PHORATE	0.20	0.20		U	ug/L	F
				PHOSPHORIC ACID, TRIBUTYL	0.20	0.20		U	ug/L	F
				RONNEL	0.20	0.20		U	ug/L	F
				S-Ethyl dipropylthiocarbamate	0.20	0.20		U	ug/L	F
				STIROPHOS	0.20	0.20		U	ug/L	F
				SULFOTEPP	0.20	0.20		U	ug/L	F
				TOKUTHION	0.20	0.20		U	ug/L	F
				TRICHLORONATE	0.20	0.20		U	ug/L	F
				TRIFLURALIN	0.20	0.20		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8151A	051202 NIMBUS	AQ	N	2,4,5-T	0.20	0.20		U	ug/L	F
				2,4,5-TP	0.20	0.20		U	ug/L	F
				2,4-D	1.00	1.00		U	ug/L	F
				2,4-DB	2.0	2.0		U	ug/L	F
				DALAPON	2.0	2.0		U	ug/L	F
				DICAMBA	0.20	0.20		U	ug/L	F
				DICHLOROPROP	1.00	1.00		U	ug/L	F
				DINOSEB	0.50	0.50		U	ug/L	F
				MCPA	200	200		U	ug/L	F
				MCPP	200	200		U	ug/L	F
8151A	0512020063 VETERANS	AQ	N	2,4,5-T	0.10	0.10		U	ug/L	F
				2,4,5-TP	0.10	0.10		U	ug/L	F
				2,4-D	0.50	0.50		U	ug/L	F
				2,4-DB	1.0	1.0		U	ug/L	F
				DALAPON	1.0	1.0		U	ug/L	F
				DICAMBA	0.10	0.10		U	ug/L	F
				DICHLOROPROP	0.50	0.50		U	ug/L	F
				DINOSEB	0.25	0.25		U	ug/L	F
				MCPA	100	100		U	ug/L	F
				MCPP	100	100		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8151A	0512020067 DISCOVERY	AQ	N	2,4,5-T	0.10	0.10		U	ug/L	F
				2,4,5-TP	0.10	0.10		U	ug/L	F
				2,4-D	0.50	0.50		U	ug/L	F
				2,4-DB	1.0	1.0		U	ug/L	F
				DALAPON	1.0	1.0		U	ug/L	F
				DICAMBA	0.10	0.10		U	ug/L	F
				DICHLOROPROP	0.50	0.50		U	ug/L	F
				DINOSEB	0.25	0.25		U	ug/L	F
				MCPA	100	100		U	ug/L	F
				MCPP	100	100		U	ug/L	F
8151A	0512020073 GARCIA	AQ	FD	2,4,5-T	0.10	0.10		U	ug/L	F
				2,4,5-TP	0.10	0.10		U	ug/L	F
				2,4-D	0.50	0.50		U	ug/L	F
				2,4-DB	1.0	1.0		U	ug/L	F
				DALAPON	1.0	1.0		U	ug/L	F
				DICAMBA	0.10	0.10		U	ug/L	F
				DICHLOROPROP	0.50	0.50		U	ug/L	F
				DINOSEB	0.25	0.25		U	ug/L	F
				MCPA	100	100		U	ug/L	F
				MCPP	100	100		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8151A	0512020079 FREEPORT	AQ	N	2,4,5-T	0.10	0.10		U	ug/L	F
				2,4,5-TP	0.10	0.10		U	ug/L	F
				2,4-D	0.50	0.50		U	ug/L	F
				2,4-DB	1.0	1.0		U	ug/L	F
				DALAPON	1.0	1.0		U	ug/L	F
				DICAMBA	0.10	0.10		U	ug/L	F
				DICHLOROPROP	0.50	0.50		U	ug/L	F
				DINOSEB	0.25	0.25		U	ug/L	F
				MCPA	100	100		U	ug/L	F
				MCPP	100	100		U	ug/L	F
8151A	0512020096 AMRHWY80	AQ	N	2,4,5-T	0.10	0.10		U	ug/L	F
				2,4,5-TP	0.10	0.10		U	ug/L	F
				2,4-D	0.50	0.50		U	ug/L	F
				2,4-DB	1.0	1.0		U	ug/L	F
				DALAPON	1.0	1.0		U	ug/L	F
				DICAMBA	0.10	0.10		U	ug/L	F
				DICHLOROPROP	0.50	0.50		U	ug/L	F
				DINOSEB	0.25	0.25		U	ug/L	F
				MCPA	100	100		U	ug/L	F
				MCPP	100	100		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8260B	051202 NIMBUS	AQ	N	1,1,1,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,1-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1-DICHLOROETHANE	1	1		U	ug/L	F
				1,1-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROPROPANE	0.5	0.5		U	ug/L	F
				1,3-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,4-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				BENZENE	0.5	0.5		U	ug/L	F
				BROMOBENZENE	0.5	0.5		U	ug/L	F
				BROMODICHLOROMETHANE	0.5	0.5		U	ug/L	F
				BROMOFORM	0.5	0.5		U	ug/L	F
				BROMOMETHANE	1	1		U	ug/L	F
				CARBON TETRACHLORIDE	0.5	0.5		U	ug/L	F
				CHLOROBENZENE	0.5	0.5		U	ug/L	F
				CHLOROETHANE	0.5	0.5		U	ug/L	F
				CHLOROFORM	0.5	0.22		UJ	ug/L	L,F
				CHLOROMETHANE	0.5	0.27		UJ	ug/L	L,F
				CIS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				CIS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				DIBROMOCHLOROMETHANE	0.5	0.5		U	ug/L	F
				DIBROMOMETHANE	0.5	0.5		U	ug/L	F
				DICHLORODIFLUOROMETHANE	1	1		U	ug/L	F
				ETHYLBENZENE	0.5	0.5		U	ug/L	F
				FREON 113	0.5	0.5		U	ug/L	F
				METHYLENE CHLORIDE	5.0	5.0		UJ	ug/L	F,J
				MTBE	0.5	0.5		U	ug/L	F
				TETRACHLOROETHENE	0.5	0.5		U	ug/L	F
				TOLUENE	0.5	0.5		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
				TOTAL XYLENES	0.5	0.5		U	ug/L	F
				TRANS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				TRICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRICHLOROFLUOROMETHANE	0.5	0.5		U	ug/L	F
				VINYL CHLORIDE	0.5	0.5		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8260B	0512020063 VETERANS	AQ	N	1,1,1,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,1-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1-DICHLOROETHANE	1	1		U	ug/L	F
				1,1-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROPROPANE	0.5	0.5		U	ug/L	F
				1,3-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,4-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				BENZENE	0.5	0.5		U	ug/L	F,P
				BROMOBENZENE	0.5	0.5		U	ug/L	F
				BROMODICHLOROMETHANE	0.5	0.5		U	ug/L	F
				BROMOFORM	0.5	0.5		U	ug/L	F
				BROMOMETHANE	1	1		UJ	ug/L	H,J,F
				CARBON TETRACHLORIDE	0.5	0.5		U	ug/L	F
				CHLOROBENZENE	0.5	0.5		U	ug/L	F
				CHLOROETHANE	0.5	0.5		U	ug/L	F
				CHLOROFORM	0.5	0.5		U	ug/L	F
				CHLOROMETHANE	0.5	0.5		U	ug/L	F
				CIS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				CIS-1,3-DICHLOROPROPENE	0.5	0.5		UJ	ug/L	H,F
				DIBROMOCHLOROMETHANE	0.5	0.5		U	ug/L	F
				DIBROMOMETHANE	0.5	0.5		U	ug/L	F
				DICHLORODIFLUOROMETHANE	1	1		U	ug/L	F
				ETHYLBENZENE	0.5	0.5		U	ug/L	F
				FREON 113	0.5	0.5		U	ug/L	F
				METHYLENE CHLORIDE	5.0	5.0		UJ	ug/L	H,F
				MTBE	0.5	0.5		U	ug/L	F
				TETRACHLOROETHENE	0.5	0.5		U	ug/L	F
				TOLUENE	0.5	0.32		UJ	ug/L	L,F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
				TOTAL XYLENES	0.5	0.17		UJ	ug/L	L,F
				TRANS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5		UJ	ug/L	H,F
				TRICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRICHLOROFLUOROMETHANE	0.5	0.5		U	ug/L	F
				VINYL CHLORIDE	0.5	0.5		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8260B	0512020067 DISCOVERY	AQ	N	1,1,1,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,1-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1-DICHLOROETHANE	1	1		U	ug/L	F
				1,1-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROPROPANE	0.5	0.5		U	ug/L	F
				1,3-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,4-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				BENZENE	0.5	0.5		U	ug/L	F
				BROMOBENZENE	0.5	0.5		U	ug/L	F
				BROMODICHLOROMETHANE	0.5	0.5		U	ug/L	F
				BROMOFORM	0.5	0.5		U	ug/L	F
				BROMOMETHANE	1	1		UJ	ug/L	F,J
				CARBON TETRACHLORIDE	0.5	0.5		U	ug/L	F
				CHLOROBENZENE	0.5	0.5		U	ug/L	F
				CHLOROETHANE	0.5	0.5		U	ug/L	F
				CHLOROFORM	0.5	0.5		U	ug/L	F
				CHLOROMETHANE	0.5	0.5		U	ug/L	F
				CIS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				CIS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				DIBROMOCHLOROMETHANE	0.5	0.5		U	ug/L	F
				DIBROMOMETHANE	0.5	0.5		U	ug/L	F
				DICHLORODIFLUOROMETHANE	1	1		U	ug/L	F
				ETHYLBENZENE	0.5	0.12		UJ	ug/L	L,F
				FREON 113	0.5	0.5		U	ug/L	F
				METHYLENE CHLORIDE	5.0	5.0		U	ug/L	F
				MTBE	0.5	0.5		U	ug/L	F
				TETRACHLOROETHENE	0.5	0.5		U	ug/L	F
				TOLUENE	0.5	0.51		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
				TOTAL XYLENES	0.5	0.67		U	ug/L	F
				TRANS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				TRICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRICHLOROFLUOROMETHANE	0.5	0.5		U	ug/L	F
				VINYL CHLORIDE	0.5	0.5		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8260B	0512020073 GARCIA	AQ	FD	1,1,1,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,1-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1-DICHLOROETHANE	1	1		U	ug/L	F
				1,1-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROPROPANE	0.5	0.5		U	ug/L	F
				1,3-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,4-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				BENZENE	0.5	0.11		UJ	ug/L	L,F
				BROMOBENZENE	0.5	0.5		U	ug/L	F
				BROMODICHLOROMETHANE	0.5	0.5		U	ug/L	F
				BROMOFORM	0.5	0.5		U	ug/L	F
				BROMOMETHANE	1	1		UJ	ug/L	F,J
				CARBON TETRACHLORIDE	0.5	0.5		U	ug/L	F
				CHLOROBENZENE	0.5	0.5		U	ug/L	F
				CHLOROETHANE	0.5	0.5		U	ug/L	F
				CHLOROFORM	0.5	0.5		U	ug/L	F
				CHLOROMETHANE	0.5	0.5		U	ug/L	F
				CIS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				CIS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				DIBROMOCHLOROMETHANE	0.5	0.5		U	ug/L	F
				DIBROMOMETHANE	0.5	0.5		U	ug/L	F
				DICHLORODIFLUOROMETHANE	1	1		U	ug/L	F
				ETHYLBENZENE	0.5	0.5		U	ug/L	F
				FREON 113	0.5	0.5		U	ug/L	F
				METHYLENE CHLORIDE	5.0	5.0		U	ug/L	F
				MTBE	0.5	0.5		U	ug/L	F
				TETRACHLOROETHENE	0.5	0.5		U	ug/L	F
				TOLUENE	0.5	0.32		UJ	ug/L	L,F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
				TOTAL XYLENES	0.5	0.16		UJ	ug/L	L,F
				TRANS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				TRICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRICHLOROFLUOROMETHANE	0.5	0.5		U	ug/L	F
				VINYL CHLORIDE	0.5	0.5		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8260B	0512020079 FREEPORT	AQ	N	1,1,1,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,1-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1-DICHLOROETHANE	1	1		U	ug/L	F
				1,1-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROPROPANE	0.5	0.5		U	ug/L	F
				1,3-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,4-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				BENZENE	0.5	0.5		U	ug/L	F
				BROMOBENZENE	0.5	0.5		U	ug/L	F
				BROMODICHLOROMETHANE	0.5	0.5		U	ug/L	F
				BROMOFORM	0.5	0.5		U	ug/L	F
				BROMOMETHANE	1	1		UJ	ug/L	F,J
				CARBON TETRACHLORIDE	0.5	0.5		U	ug/L	F
				CHLOROBENZENE	0.5	0.5		U	ug/L	F
				CHLOROETHANE	0.5	0.5		U	ug/L	F
				CHLOROFORM	0.5	0.5		U	ug/L	F
				CHLOROMETHANE	0.5	0.5		U	ug/L	F
				CIS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				CIS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				DIBROMOCHLOROMETHANE	0.5	0.5		U	ug/L	F
				DIBROMOMETHANE	0.5	0.5		U	ug/L	F
				DICHLORODIFLUOROMETHANE	1	1		U	ug/L	F
				ETHYLBENZENE	0.5	0.5		U	ug/L	F
				FREON 113	0.5	0.5		U	ug/L	F
				METHYLENE CHLORIDE	5.0	5.0		U	ug/L	F
				MTBE	0.5	0.5		U	ug/L	F
				TETRACHLOROETHENE	0.5	0.5		U	ug/L	F
				TOLUENE	0.5	1.1		U	ug/L	F

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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
				TOTAL XYLENES	0.5	2.4		U	ug/L	F
				TRANS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				TRICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRICHLOROFLUOROMETHANE	0.5	0.5		U	ug/L	F
				VINYL CHLORIDE	0.5	0.5		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8260B	0512020096 AMRHWY80	AQ	N	1,1,1,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,1-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2,2-TETRACHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1,2-TRICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,1-DICHLOROETHANE	1	1		U	ug/L	F
				1,1-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROETHANE	0.5	0.5		U	ug/L	F
				1,2-DICHLOROPROPANE	0.5	0.5		U	ug/L	F
				1,3-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				1,4-DICHLOROBENZENE	0.5	0.5		U	ug/L	F
				BENZENE	0.5	0.5		U	ug/L	F
				BROMOBENZENE	0.5	0.5		U	ug/L	F
				BROMODICHLOROMETHANE	0.5	0.5		U	ug/L	F
				BROMOFORM	0.5	0.5		U	ug/L	F
				BROMOMETHANE	1	1		UJ	ug/L	F,J
				CARBON TETRACHLORIDE	0.5	0.5		U	ug/L	F
				CHLOROBENZENE	0.5	0.5		U	ug/L	F
				CHLOROETHANE	0.5	0.5		U	ug/L	F
				CHLOROFORM	0.5	0.5		U	ug/L	F
				CHLOROMETHANE	0.5	0.5		U	ug/L	F
				CIS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				CIS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				DIBROMOCHLOROMETHANE	0.5	0.5		U	ug/L	F
				DIBROMOMETHANE	0.5	0.5		U	ug/L	F
				DICHLORODIFLUOROMETHANE	1	1		U	ug/L	F
				ETHYLBENZENE	0.5	0.26		UJ	ug/L	L,F
				FREON 113	0.5	0.5		U	ug/L	F
				METHYLENE CHLORIDE	5.0	5.0		U	ug/L	F
				MTBE	0.5	0.5		U	ug/L	F
				TETRACHLOROETHENE	0.5	0.5		U	ug/L	F
				TOLUENE	0.5	1.3		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8321A	051202 NIMBUS	AQ	N	TOTAL XYLENES	0.5	1.3		U	ug/L	F
				TRANS-1,2-DICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5		U	ug/L	F
				TRICHLOROETHENE	0.5	0.5		U	ug/L	F
				TRICHLOROFLUOROMETHANE	0.5	0.5		U	ug/L	F
				VINYL CHLORIDE	0.5	0.5		U	ug/L	F
				ALDICARB	0.4	0.4		U	ug/L	F
				AMINOCARB	0.4	0.4		UJ	ug/L	F,K
				BARBAN	3.5	3.5		U	ug/L	F
				BENOMYL	0.4	0.4		UJ	ug/L	F,K
				BROMACIL	0.4	0.4		U	ug/L	F
				CARBARYL	0.07	0.07		U	ug/L	F
				CARBOFURAN	0.07	0.07		U	ug/L	F
				CHLOROXURON	0.4	0.4		U	ug/L	F
				CHLORPROPHAM	3.5	3.5		U	ug/L	F
				DIURON	0.4	0.4		U	ug/L	F
				FENURON	0.4	0.4		U	ug/L	F
				FLUOMETURON	0.4	0.4		U	ug/L	F
				LINURON	0.4	0.4		U	ug/L	F
				METHIOCARB	0.4	0.4		U	ug/L	F
				METHOMYL	0.07	0.07		U	ug/L	F
				MEXACARBATE	0.8	0.8		U	ug/L	F
				MONURON	0.4	0.4		U	ug/L	F
				NEBURON	0.4	0.4		U	ug/L	F
				ORYZALIN	0.4	0.4		UJ	ug/L	F,K
				OXAMYL	0.4	0.4		UJ	ug/L	F,K
				PROPACHLOR	3.5	3.5		U	ug/L	F
				PROPHAM	3.5	3.5		U	ug/L	F
				PROPOXUR	0.4	0.4		U	ug/L	F
				SIDURON	0.4	0.4		U	ug/L	F
				TEBUTHIURON	0.4	0.4		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8321A	0512020063 VETERANS	AQ	N	ALDICARB	0.4	0.4		U	ug/L	F
				AMINOCARB	0.4	0.4		UJ	ug/L	F,K
				BARBAN	3.5	3.5		U	ug/L	F
				BENOMYL	0.4	0.4		UJ	ug/L	F,K
				BROMACIL	0.4	0.4		U	ug/L	F
				CARBARYL	0.07	0.07		U	ug/L	F
				CARBOFURAN	0.07	0.07		U	ug/L	F
				CHLOROXURON	0.4	0.4		U	ug/L	F
				CHLORPROPHAM	3.5	3.5		U	ug/L	F
				DIURON	0.4	0.4		U	ug/L	F
				FENURON	0.4	0.4		U	ug/L	F
				FLUOMETURON	0.4	0.4		U	ug/L	F
				LINURON	0.4	0.4		U	ug/L	F
				METHIOCARB	0.4	0.4		U	ug/L	F
				METHOMYL	0.07	0.07		U	ug/L	F
				MEXACARBATE	0.8	0.8		U	ug/L	F
				MONURON	0.4	0.4		U	ug/L	F
				NEBURON	0.4	0.4		U	ug/L	F
				ORYZALIN	0.4	0.4		UJ	ug/L	F,K
				OXAMYL	0.4	0.4		UJ	ug/L	F,K
				PROPACHLOR	3.5	3.5		U	ug/L	F
				PROPHAM	3.5	3.5		U	ug/L	F
				PROPOXUR	0.4	0.4		U	ug/L	F
				SIDURON	0.4	0.4		U	ug/L	F
				TEBUTHIURON	0.4	0.4		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8321A	0512020067 DISCOVERY	AQ	N	ALDICARB	0.4	0.4		UJ	ug/L	G,F
				AMINOCARB	0.4	0.4		UJ	ug/L	G,K,F
				BARBAN	3.5	3.5		UJ	ug/L	G,F
				BENOMYL	0.4	0.4		UJ	ug/L	G,K,F
				BROMACIL	0.4	0.4		UJ	ug/L	G,F
				CARBARYL	0.07	0.07		UJ	ug/L	G,F
				CARBOFURAN	0.07	0.07		UJ	ug/L	G,F
				CHLOROXURON	0.4	0.4		UJ	ug/L	G,F
				CHLORPROPHAM	3.5	3.5		UJ	ug/L	G,F
				DIURON	0.4	0.4		UJ	ug/L	G,F
				FENURON	0.4	0.4		UJ	ug/L	G,F
				FLUOMETURON	0.4	0.4		UJ	ug/L	G,F
				LINURON	0.4	0.4		UJ	ug/L	G,F
				METHIOCARB	0.4	0.4		UJ	ug/L	G,F
				METHOMYL	0.07	0.07		UJ	ug/L	G,F
				MEXACARBATE	0.8	0.8		UJ	ug/L	G,F
				MONURON	0.4	0.4		UJ	ug/L	G,F
				NEBURON	0.4	0.4		UJ	ug/L	G,F
				ORYZALIN	0.4	0.4		UJ	ug/L	G,K,F
				OXAMYL	0.4	0.4		UJ	ug/L	G,K,F
				PROPACHLOR	3.5	3.5		UJ	ug/L	G,F
				PROPHAM	3.5	3.5		UJ	ug/L	G,F
				PROPOXUR	0.4	0.4		UJ	ug/L	G,F
				SIDURON	0.4	0.4		UJ	ug/L	G,F
				TEBUTHIURON	0.4	0.4		UJ	ug/L	G,F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8321A	0512020073 GARCIA	AQ	FD	ALDICARB	0.4	0.4		UJ	ug/L	G,F
				AMINOCARB	0.4	0.4		UJ	ug/L	G,K,F
				BARBAN	3.5	3.5		UJ	ug/L	G,F
				BENOMYL	0.4	0.4		UJ	ug/L	G,K,F
				BROMACIL	0.4	0.4		UJ	ug/L	G,F
				CARBARYL	0.07	0.07		UJ	ug/L	G,F
				CARBOFURAN	0.07	0.07		UJ	ug/L	G,F
				CHLOROXURON	0.4	0.4		UJ	ug/L	G,F
				CHLORPROPHAM	3.5	3.5		UJ	ug/L	G,F
				DIURON	0.4	0.4		UJ	ug/L	G,F
				FENURON	0.4	0.4		UJ	ug/L	G,F
				FLUOMETURON	0.4	0.4		UJ	ug/L	G,F
				LINURON	0.4	0.4		UJ	ug/L	G,F
				METHIOCARB	0.4	0.4		UJ	ug/L	G,F
				METHOMYL	0.07	0.07		UJ	ug/L	G,F
				MEXACARBATE	0.8	0.8		UJ	ug/L	G,F
				MONURON	0.4	0.4		UJ	ug/L	G,F
				NEBURON	0.4	0.4		UJ	ug/L	G,F
				ORYZALIN	0.4	0.4		UJ	ug/L	G,K,F
				OXAMYL	0.4	0.4		UJ	ug/L	G,K,F
				PROPACHLOR	3.5	3.5		UJ	ug/L	G,F
				PROPHAM	3.5	3.5		UJ	ug/L	G,F
				PROPOXUR	0.4	0.4		UJ	ug/L	G,F
				SIDURON	0.4	0.4		UJ	ug/L	G,F
				TEBUTHIURON	0.4	0.4		UJ	ug/L	G,F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8321A	0512020079 FREEPORT	AQ	N	ALDICARB	0.4	0.4		U	ug/L	F
				AMINOCARB	0.4	0.4		UJ	ug/L	F,K
				BARBAN	3.5	3.5		U	ug/L	F
				BENOMYL	0.4	0.4		UJ	ug/L	F,K
				BROMACIL	0.4	0.4		U	ug/L	F
				CARBARYL	0.07	0.07		U	ug/L	F
				CARBOFURAN	0.07	0.07		U	ug/L	F
				CHLOROXURON	0.4	0.4		U	ug/L	F
				CHLORPROPHAM	3.5	3.5		U	ug/L	F
				DIURON	0.4	0.4		U	ug/L	F
				FENURON	0.4	0.4		U	ug/L	F
				FLUOMETURON	0.4	0.4		U	ug/L	F
				LINURON	0.4	0.4		U	ug/L	F
				METHIOCARB	0.4	0.4		U	ug/L	F
				METHOMYL	0.07	0.07		U	ug/L	F
				MEXACARBATE	0.8	0.8		U	ug/L	F
				MONURON	0.4	0.4		U	ug/L	F
				NEBURON	0.4	0.4		U	ug/L	F
				ORYZALIN	0.4	0.4		UJ	ug/L	F,K
				OXAMYL	0.4	0.4		UJ	ug/L	F,K
				PROPACHLOR	3.5	3.5		U	ug/L	F
				PROPHAM	3.5	3.5		U	ug/L	F
				PROPOXUR	0.4	0.4		U	ug/L	F
				SIDURON	0.4	0.4		U	ug/L	F
				TEBUTHIURON	0.4	0.4		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 49237</b>										
8321A	0512020096 AMRHWY80	AQ	N	ALDICARB	0.4	0.4		U	ug/L	F
				AMINOCARB	0.4	0.4		UJ	ug/L	F,K
				BARBAN	3.5	3.5		U	ug/L	F
				BENOMYL	0.4	0.4		UJ	ug/L	F,K
				BROMACIL	0.4	0.4		U	ug/L	F
				CARBARYL	0.07	0.07		U	ug/L	F
				CARBOFURAN	0.07	0.07		U	ug/L	F
				CHLOROXURON	0.4	0.4		U	ug/L	F
				CHLORPROPHAM	3.5	3.5		U	ug/L	F
				DIURON	0.4	0.4		U	ug/L	F
				FENURON	0.4	0.4		U	ug/L	F
				FLUOMETURON	0.4	0.4		U	ug/L	F
				LINURON	0.4	0.4		U	ug/L	F
				METHIOCARB	0.4	0.4		U	ug/L	F
				METHOMYL	0.07	0.07		U	ug/L	F
				MEXACARBATE	0.8	0.8		U	ug/L	F
				MONURON	0.4	0.4		U	ug/L	F
				NEBURON	0.4	0.4		U	ug/L	F
				ORYZALIN	0.4	0.4		UJ	ug/L	F,K
				OXAMYL	0.4	0.4		UJ	ug/L	F,K
				PROPACHLOR	3.5	3.5		U	ug/L	F
				PROPHAM	3.5	3.5		U	ug/L	F
				PROPOXUR	0.4	0.4		U	ug/L	F
				SIDURON	0.4	0.4		U	ug/L	F
				TEBUTHIURON	0.4	0.4		U	ug/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 49743										
8260B	0602070016 Discovery	AQ	N	TOLUENE	0.5	2.2		J	ug/L	H,P
8260B	0602070020 Howe	AQ	FD	TOLUENE	0.5	0.22J		J	ug/L	L
8260B	0602080015 RM44	AQ	N	TOLUENE	0.5	0.34J		J	ug/L	L
				TOTAL XYLENES	0.5	0.37J		J	ug/L	L
SDG: 49877										
8321A	0602280052Nimbus	AQ	N	ALDICARB	0.4	0.4U		UJ	ug/L	I
				CHLORPROPHAM	3.5	3.5U		UJ	ug/L	I
SDG: 49954										
8141A	0603070067Freeport	AQ	N	DIAZINON	0.05	0.011J		J	ug/L	L

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50219</b>										
8141A	0604040011 Veterans	AQ	N	COUMAPHOS	0.20	0.20U		UJ	ug/L	K
				DEMETON	0.20	0.20U		UJ	ug/L	K
				DICHLORVOS	0.20	0.20U		UJ	ug/L	K
				DISULFOTON	0.10	0.10U		UJ	ug/L	K
				ETHION	0.10	0.10U		UJ	ug/L	K
				ETHYL P-NITROPHENYL PHENYLPHOSPHOROTHIOATE	0.10	0.10U		UJ	ug/L	K
				FENSULFOTHION	0.50	0.50U		UJ	ug/L	K
				FENTHION	0.10	0.10U		UJ	ug/L	K
				MALATHION	0.10	0.10U		UJ	ug/L	K
				MERPHOS	0.10	0.10U		UJ	ug/L	K
				Parathion, ethyl	0.10	0.10U		UJ	ug/L	K
				RONNEL	0.10	0.10U		UJ	ug/L	K
				S-Ethyl dipropylthiocarbamate	0.10	0.10U		UJ	ug/L	K
				STIROPHOS	0.10	0.10U		UJ	ug/L	K
				SULFOTEPP	0.10	0.10U		UJ	ug/L	K
				TRICHLORONATE	0.10	0.10U		UJ	ug/L	K

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50219</b>										
8141A	0604040016 Discovery	AQ	N	COUMAPHOS	0.20	0.20U		UJ	ug/L	K
				DEMETON	0.20	0.20U		UJ	ug/L	K
				DICHLORVOS	0.20	0.20U		UJ	ug/L	K
				DISULFOTON	0.10	0.10U		UJ	ug/L	K
				ETHION	0.10	0.10U		UJ	ug/L	K
				ETHYL P-NITROPHENYL PHENYLPHOSPHOROTHIOATE	0.10	0.10U		UJ	ug/L	K
				FENSULFOTHION	0.50	0.50U		UJ	ug/L	K
				FENTHION	0.10	0.10U		UJ	ug/L	K
				MALATHION	0.10	0.10U		UJ	ug/L	K
				MERPHOS	0.10	0.10U		UJ	ug/L	K
				Parathion, ethyl	0.10	0.10U		UJ	ug/L	K
				RONNEL	0.10	0.10U		UJ	ug/L	K
				S-Ethyl dipropylthiocarbamate	0.10	0.10U		UJ	ug/L	K
				STIROPHOS	0.10	0.10U		UJ	ug/L	K
				SULFOTEPP	0.10	0.10U		UJ	ug/L	K
				TRICHLORONATE	0.10	0.10U		UJ	ug/L	K

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50219</b>										
8141A	0604050015 Freeport	AQ	N	COUMAPHOS	0.20	0.20U		UJ	ug/L	K
				DEMETON	0.20	0.20U		UJ	ug/L	K
				DICHLORVOS	0.20	0.20U		UJ	ug/L	K
				DISULFOTON	0.10	0.10U		UJ	ug/L	K
				ETHION	0.10	0.10U		UJ	ug/L	K
				ETHYL P-NITROPHENYL PHENYLPHOSPHOROTHIOATE	0.10	0.10U		UJ	ug/L	K
				FENSULFOTHION	0.50	0.50U		UJ	ug/L	K
				FENTHION	0.10	0.10U		UJ	ug/L	K
				MALATHION	0.10	0.10U		UJ	ug/L	K
				MERPHOS	0.10	0.10U		UJ	ug/L	K
				Parathion, ethyl	0.10	0.10U		UJ	ug/L	K
				RONNEL	0.10	0.10U		UJ	ug/L	K
				S-Ethyl dipropylthiocarbamate	0.10	0.10U		UJ	ug/L	K
				STIROPHOS	0.10	0.10U		UJ	ug/L	K
				SULFOTEPP	0.10	0.10U		UJ	ug/L	K
				TRICHLORONATE	0.10	0.10U		UJ	ug/L	K

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50219</b>										
8141A	0604050020 RM44	AQ	N	COUMAPHOS	0.20	0.20U		UJ	ug/L	K
				DEMETON	0.20	0.20U		UJ	ug/L	K
				DICHLORVOS	0.20	0.20U		UJ	ug/L	K
				DISULFOTON	0.10	0.10U		UJ	ug/L	K
				ETHION	0.10	0.10U		UJ	ug/L	K
				ETHYL P-NITROPHENYL PHENYLPHOSPHOROTHIOATE	0.10	0.10U		UJ	ug/L	K
				FENSULFOTHION	0.50	0.50U		UJ	ug/L	K
				FENTHION	0.10	0.10U		UJ	ug/L	K
				MALATHION	0.10	0.10U		UJ	ug/L	K
				MERPHOS	0.10	0.10U		UJ	ug/L	K
				Parathion, ethyl	0.10	0.10U		UJ	ug/L	K
				RONNEL	0.10	0.10U		UJ	ug/L	K
				S-Ethyl dipropylthiocarbamate	0.10	0.10U		UJ	ug/L	K
				STIROPHOS	0.10	0.10U		UJ	ug/L	K
				SULFOTEPP	0.10	0.10U		UJ	ug/L	K
				TRICHLORONATE	0.10	0.10U		UJ	ug/L	K

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50219</b>										
8141A	0604050022 Garcia	AQ	FD	COUMAPHOS	0.20	0.20U		UJ	ug/L	K
				DEMETON	0.20	0.20U		UJ	ug/L	K
				DICHLORVOS	0.20	0.20U		UJ	ug/L	K
				DISULFOTON	0.10	0.10U		UJ	ug/L	K
				ETHION	0.10	0.10U		UJ	ug/L	K
				ETHYL P-NITROPHENYL	0.10	0.10U		UJ	ug/L	K
				PHENYLPHOSPHOROTHIOATE						
				FENSULFOTHION	0.50	0.50U		UJ	ug/L	K
				FENTHION	0.10	0.10U		UJ	ug/L	K
				MALATHION	0.10	0.10U		UJ	ug/L	K
				MERPHOS	0.10	0.10U		UJ	ug/L	K
				Parathion, ethyl	0.10	0.10U		UJ	ug/L	K
				RONNEL	0.10	0.10U		UJ	ug/L	K
				S-Ethyl dipropylthiocarbamate	0.10	0.10U		UJ	ug/L	K
				STIROPHOS	0.10	0.10U		UJ	ug/L	K
				SULFOTEPP	0.10	0.10U		UJ	ug/L	K
				TRICHLORONATE	0.10	0.10U		UJ	ug/L	K

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50219</b>										
8141A	0604050027 Nimbus	AQ	N	COUMAPHOS	0.20	0.20U		UJ	ug/L	K
				DEMETON	0.20	0.20U		UJ	ug/L	K
				DICHLORVOS	0.20	0.20U		UJ	ug/L	K
				DISULFOTON	0.10	0.10U		UJ	ug/L	K
				ETHION	0.10	0.10U		UJ	ug/L	K
				ETHYL P-NITROPHENYL PHENYLPHOSPHOROTHIOATE	0.10	0.10U		UJ	ug/L	K
				FENSULFOTHION	0.50	0.50U		UJ	ug/L	K
				FENTHION	0.10	0.10U		UJ	ug/L	K
				MALATHION	0.10	0.10U		UJ	ug/L	K
				MERPHOS	0.10	0.10U		UJ	ug/L	K
				Parathion, ethyl	0.10	0.10U		UJ	ug/L	K
				RONNEL	0.10	0.10U		UJ	ug/L	K
				S-Ethyl dipropylthiocarbamate	0.10	0.10U		UJ	ug/L	K
				STIROPHOS	0.10	0.10U		UJ	ug/L	K
				SULFOTEPP	0.10	0.10U		UJ	ug/L	K
				TRICHLORONATE	0.10	0.10U		UJ	ug/L	K

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50923</b>										
8141A	0606140015 Freeport	AQ	N	DEMETON	0.20	0.20U		UJ	ug/L	I
				DISULFOTON	0.10	0.10U		UJ	ug/L	I

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50923</b>										
8260B	0606130011 Veterans	AQ	N	1,1,1,2-TETRACHLOROETHANE	0.5	0.5U		UJ	ug/L	C
				1,1,1-TRICHLOROETHANE	0.5	0.5U		UJ	ug/L	C
				1,1,2,2-TETRACHLOROETHANE	0.5	0.5U		UJ	ug/L	C
				1,1,2-TRICHLOROETHANE	0.5	0.5U		UJ	ug/L	C
				1,1-DICHLOROETHANE	1	1U		UJ	ug/L	C
				1,1-DICHLOROETHENE	0.5	0.5U		UJ	ug/L	C
				1,2-DICHLOROBENZENE	0.5	0.5U		UJ	ug/L	C
				1,2-DICHLOROETHANE	0.5	0.5U		UJ	ug/L	C
				1,2-DICHLOROPROPANE	0.5	0.5U		UJ	ug/L	C
				1,3-DICHLOROBENZENE	0.5	0.5U		UJ	ug/L	C
				1,4-DICHLOROBENZENE	0.5	0.5U		UJ	ug/L	C
				BENZENE	0.5	0.5U		UJ	ug/L	C
				BROMOBENZENE	0.5	0.5U		UJ	ug/L	C
				BROMODICHLOROMETHANE	0.5	0.5U		UJ	ug/L	C
				BROMOFORM	0.5	0.5U		UJ	ug/L	C
				BROMOMETHANE	1	1U		UJ	ug/L	C
				CARBON TETRACHLORIDE	0.5	0.5U		UJ	ug/L	C
				CHLOROBENZENE	0.5	0.5U		UJ	ug/L	C
				CHLOROETHANE	0.5	0.5U		UJ	ug/L	C
				CHLOROFORM	0.5	0.5U		UJ	ug/L	C
				CHLOROMETHANE	0.5	0.5U		UJ	ug/L	C
				CIS-1,2-DICHLOROETHENE	0.5	0.5U		UJ	ug/L	C
				CIS-1,3-DICHLOROPROPENE	0.5	0.5U		UJ	ug/L	C
				DIBROMOCHLOROMETHANE	0.5	0.5U		UJ	ug/L	C
				DIBROMOMETHANE	0.5	0.5U		UJ	ug/L	C
				DICHLORODIFLUOROMETHANE	1	1U		UJ	ug/L	C
				ETHYLBENZENE	0.5	0.5U		UJ	ug/L	C
				FREON 113	0.5	0.5U		UJ	ug/L	C
				METHYLENE CHLORIDE	5.0	5.0U		UJ	ug/L	C
				MTBE	0.5	0.5U		UJ	ug/L	C
				TETRACHLOROETHENE	0.5	0.5U		UJ	ug/L	C
				TOLUENE	0.5	0.5U		UJ	ug/L	C

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: 50923</b>										
				TOTAL XYLENES	0.5	0.5U		UJ	ug/L	C
				TRANS-1,2-DICHLOROETHENE	0.5	0.5U		UJ	ug/L	C
				TRANS-1,3-DICHLOROPROPENE	0.5	0.5U		UJ	ug/L	C
				TRICHLOROETHENE	0.5	0.5U		UJ	ug/L	C
				TRICHLOROFLUOROMETHANE	0.5	0.5U		UJ	ug/L	C
				VINYL CHLORIDE	0.5	0.5U		UJ	ug/L	C
8260B	0606140015 Freeport	AQ	N	DIBROMOMETHANE	0.5	0.5U		UJ	ug/L	I

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: G020478</b>										
608	0602080091 FREEPORT	AQ	N	Endosulfan sulfate	0.005	0.0020U		UJ	ug/L	K
608	0602080093 NIMBUS	AQ	N	Endosulfan sulfate	0.005	0.0020U		UJ	ug/L	K
8015	0602070108 ARHW80	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	0602070110 HOWE	AQ	FD	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	0602070112 DISCOVERY	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	0602070114 VETERANS	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	0602080091 FREEPORT	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	0602080093 NIMBUS	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015M	0602070108 ARHW80	AQ	N	Total Petroleum Hydrocarbons - Diesel	50	7.0U		UJ	ug/L	D
8015M	0602070110 HOWE	AQ	FD	Total Petroleum Hydrocarbons - Diesel	50	7.0U		UJ	ug/L	D
8015M	0602070112 DISCOVERY	AQ	N	Total Petroleum Hydrocarbons - Diesel	50	7.0U		UJ	ug/L	D
8015M	0602070114 VETERANS	AQ	N	Total Petroleum Hydrocarbons - Diesel	50	7.0U		UJ	ug/L	D

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: G021065</b>										
8015	0602270065 ARHW80	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	0602270070 FREEPORT	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	0602280050 HOWE	AQ	FD	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	0602280055 NIMBUS	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	6022700 71VETERANS	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015	602270060 DISCOVERY	AQ	N	Total Petroleum Hydrocarbons -	50	16U		UJ	ug/L	D
8015M	0602270065 ARHW80	AQ	N	Total Petroleum Hydrocarbons - Diesel	50	7U		UJ	ug/L	D
8015M	0602270070 FREEPORT	AQ	N	Total Petroleum Hydrocarbons - Diesel	50	7U		UJ	ug/L	D
8015M	0602280050 HOWE	AQ	FD	Total Petroleum Hydrocarbons - Diesel	50	7U		UJ	ug/L	D
8015M	0602280055 NIMBUS	AQ	N	Total Petroleum Hydrocarbons - Diesel	50	7U		UJ	ug/L	D
8015M	6022700 71VETERANS	AQ	N	Total Petroleum Hydrocarbons - Diesel	50	7U		UJ	ug/L	D
8015M	602270060 DISCOVERY	AQ	N	Total Petroleum Hydrocarbons - Diesel	50	7U		UJ	ug/L	D

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP175</b>										
FGS-069.2	0508020022Veterans	AQ	N	Mercury (Filtered)	0.15	0.55=		U	NG/L	F
FGS-069.2	0508020028Discovery	AQ	N	Mercury (Filtered)	0.15	0.57=		U	NG/L	F
FGS-070.2	0508020022Veterans	AQ	N	Methyl Mercury (Unfiltered)	0.025	0.077=		U	NG/L	F
FGS-070.2	0508020028Discovery	AQ	N	Methyl Mercury (Filtered)	0.025	0.032=		U	NG/L	F
				Methyl Mercury (Unfiltered)	0.025	0.048=		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP176</b>										
FGS-054.4	0510040010 Veterans	AQ	N	LEAD (DISSOLVED)	0.015	0.016=		U	UG/L	F
				Zinc (Dissolved)	0.1	0.28=		U	UG/L	F
FGS-054.4	0510040016 Discovery	AQ	N	Zinc (Dissolved)	0.1	0.15=		U	UG/L	F
				Zinc (Total)	0.1	0.24=		U	UG/L	F
FGS-054.4	0510050014 Equip Blk	AQ	EB	Zinc (Total)	0.1	0.1=		U	UG/L	F
FGS-054.4	0510050016 Freeport	AQ	N	ALUMINUM (DISSOLVED)	1.5	18=		U	UG/L	N
				LEAD (DISSOLVED)	0.015	0.016=		U	UG/L	F
				Zinc (Dissolved)	0.1	0.22=		U	UG/L	F,N
FGS-054.4	0510050028 RM44	AQ	N	CADMIUM (DISSOLVED)	0.008	0.009=		U	UG/L	F
				CADMIUM (TOTAL)	0.008	0.012=		U	UG/L	F
				LEAD (DISSOLVED)	0.015	0.015=		U	UG/L	F
FGS-054.4	0510050032 Nimbus	AQ	N	CADMIUM (DISSOLVED)	0.008	0.012=		U	UG/L	F
FGS-069.2	0510040010 Veterans	AQ	N	Mercury (Filtered)	0.15	0.47=		U	NG/L	F
FGS-069.2	0510040016 Discovery	AQ	N	Mercury (Filtered)	0.15	0.41=		U	NG/L	F
				Mercury (Unfiltered)	0.15	0.51=		U	NG/L	F
FGS-070.2	0510040010 Veterans	AQ	N	Methyl Mercury (Filtered)	0.025	0.044=		U	NG/L	F
				Methyl Mercury (Unfiltered)	0.025	0.04=		U	NG/L	F
FGS-070.2	0510040016 Discovery	AQ	N	Methyl Mercury (Filtered)	0.025	0.04=		U	NG/L	F
				Methyl Mercury (Unfiltered)	0.025	0.033=		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP177</b>										
FGS-049.4	0512020066Discovery	AQ	N	Iron (Dissolved)	5	9.5=		U	UG/L	F
FGS-049.4	0512700012Nimbus	AQ	N	Iron (Dissolved)	5	6.4=		U	UG/L	F
FGS-054.4	0512020062Veterans	AQ	N	Zinc (Dissolved)	0.1	0.44=		UJ	UG/L	H,N,P
				Zinc (Total)	0.1	39.2=		J	UG/L	H,P
FGS-054.4	0512020066Discovery	AQ	N	Zinc (Dissolved)	0.1	0.34=		J	UG/L	H
				Zinc (Total)	0.1	0.5=		J	UG/L	H
FGS-054.4	0512020072Garcia	AQ	FD	Zinc (Dissolved)	0.1	0.38=		J	UG/L	H
				Zinc (Total)	0.1	4.15=		J	UG/L	H
FGS-054.4	0512020092EquipBlk	AQ	EB	Zinc (Total)	0.1	0.25=		J	UG/L	H
FGS-054.4	05120700015Freeport	AQ	N	Zinc (Dissolved)	0.1	0.73=		J	UG/L	H
				Zinc (Total)	0.1	2.67=		J	UG/L	H
FGS-054.4	0512700012Nimbus	AQ	N	Zinc (Dissolved)	0.1	0.13=		J	UG/L	H
				Zinc (Total)	0.1	0.39=		J	UG/L	H
FGS-054.4	512020095AmRivatHwy8	AQ	N	Zinc (Dissolved)	0.1	4.71=		J	UG/L	H
				Zinc (Total)	0.1	13.48=		J	UG/L	H
FGS-069.2	0512020062Veterans	AQ	N	Mercury (Filtered)	0.15	0.82=		U	NG/L	F,P
FGS-069.2	0512020066Discovery	AQ	N	Mercury (Filtered)	0.15	0.4=		U	NG/L	F
				Mercury (Unfiltered)	0.15	0.74=		U	NG/L	F

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**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP177</b>										
FGS-069.2	0512020072Garcia	AQ	FD	Mercury (Filtered)	0.15	0.84=		U	NG/L	F
FGS-069.2	05120700015Freeport	AQ	N	Mercury (Filtered)	0.15	0.74=		U	NG/L	F
FGS-069.2	0512070018RiverMile44	AQ	N	Mercury (Filtered)	0.15	0.76=		U	NG/L	F
FGS-069.2	0512700012Nimbus	AQ	N	Mercury (Filtered)	0.15	0.29=		U	NG/L	F
				Mercury (Unfiltered)	0.15	0.82=		U	NG/L	F
FGS-070.2	0512700012Nimbus	AQ	N	Methyl Mercury (Filtered)	0.025	0.033=		U	NG/L	F
				Methyl Mercury (Unfiltered)	0.025	0.036=		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP178</b>										
FGS-054.4	0602070011Veterans	AQ	N	Arsenic (Dissolved)	0.15	0.95=		J	UG/L	J
				Arsenic (Total)	0.15	1.29=		J	UG/L	J
FGS-054.4	0602070015Discovery	AQ	N	Arsenic (Dissolved)	0.15	0.31=		J	UG/L	J
				Arsenic (Total)	0.15	0.4=		J	UG/L	J
				Zinc (Dissolved)	0.1	0.26=		U	UG/L	P,N
				Zinc (Total)	0.1	0.9=		U	UG/L	N
FGS-054.4	0602070019Howe	AQ	FD	Arsenic (Dissolved)	0.15	0.3=		J	UG/L	J
				Arsenic (Total)	0.15	0.38=		J	UG/L	J
FGS-054.4	0602070023EquipBlk	AQ	EB	Arsenic (Total)	0.15	0.15U		UJ	UG/L	J
FGS-054.4	0602070095AmRivathHwy 80	AQ	N	Arsenic (Dissolved)	0.15	0.28=		J	UG/L	J
				Arsenic (Total)	0.15	0.34=		J	UG/L	J
FGS-054.4	0602080010Freeport	AQ	N	Antimony (Dissolved)	0.008	0.055=		J	UG/L	J
				Antimony (Total)	0.008	0.071=		J	UG/L	J
				Arsenic (Dissolved)	0.15	0.84=		J	UG/L	J
				Arsenic (Total)	0.15	1.21=		J	UG/L	J
FGS-054.4	0602080014RiverMile44	AQ	N	Arsenic (Dissolved)	0.15	0.87=		J	UG/L	J
				Arsenic (Total)	0.15	1.14=		J	UG/L	J
FGS-054.4	0602080018Nimbus	AQ	N	Arsenic (Dissolved)	0.15	0.29=		J	UG/L	J
				Arsenic (Total)	0.15	0.32=		J	UG/L	J

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP178.1</b>										
FGS-049.4	0602270066Freeport	AQ	N	Iron (Dissolved)	2.5	49.2=		J	UG/L	H,Z
				Iron (Total)	12.5	8660=		J	UG/L	H,Z
FGS-054.4	0602270052Veterans	AQ	N	Lead (Dissolved)	0.015	0.023=		U	UG/L	F
FGS-054.4	0602270066Freeport	AQ	N	Aluminum (Dissolved)	1.5	42=		J	UG/L	H,Z
				Aluminum (total)	1.5	6990=		J	UG/L	H,Z
				Beryllium (Dissolved)	0.02	0.02U		UJ	UG/L	Z
				Beryllium (Total)	0.02	0.102=		J	UG/L	Z
				Chromium (Dissolved)	0.07	0.24=		J	UG/L	H,Z
				Chromium (Total)	0.07	18.3=		J	UG/L	H,Z
				Copper (Dissolved)	0.04	1.08=		J	UG/L	H,Z
				Copper (Total)	0.04	11.9=		J	UG/L	H,Z
				Molybdenum (Dissolved)	0.02	0.36=		J	UG/L	H,Z
				Molybdenum (Total)	0.02	0.11=		J	UG/L	H,Z
				Nickel (Dissolved)	0.04	0.98=		J	UG/L	H,Z
				Nickel (Total)	0.04	30.6=		J	UG/L	H,Z
				Selenium (Dissolved)	0.3	0.43=		U	UG/L	F
				Thallium (Dissolved)	0.004	0.004U		UJ	UG/L	Z
				Thallium (Total)	0.004	0.033=		J	UG/L	Z
				Zinc (Dissolved)	0.1	0.6=		J	UG/L	H,Z
				Zinc (Total)	0.1	37.4=		J	UG/L	H,Z
FGS-054.4	0602280046Howe	AQ	FD	Lead (Dissolved)	0.015	0.017=		U	UG/L	F
FGS-054.4	0602280051Nimbus	AQ	N	Zinc (Dissolved)	0.1	0.5=		U	UG/L	N
				Zinc (Total)	0.1	1.13=		U	UG/L	N
FGS-070.2	0602270052Veterans	AQ	N	Methyl Mercury (Unfiltered)	0.025	0.063=		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP178.1</b>										
FGS-070.2	0602270056Discovery	AQ	N	Methyl Mercury (Unfiltered)	0.025	0.044=		U	NG/L	F
FGS-070.2	0602270061ARHW80	AQ	N	Methyl Mercury (Unfiltered)	0.025	0.036=		U	NG/L	F
FGS-070.2	0602270066Freeport	AQ	N	Methyl Mercury (Unfiltered)	0.025	0.118=		U	NG/L	F
FGS-070.2	0602280046Howe	AQ	FD	Methyl Mercury (Filtered)	0.025	0.025=		U	NG/L	F
				Methyl Mercury (Unfiltered)	0.025	0.033=		U	NG/L	F
<b>SDG: SACAMP179</b>										
FGS-070.2	0604040010Veterans	AQ	N	Methyl Mercury (Filtered)	0.025	0.047=		U	NG/L	F
FGS-070.2	0604050014Freeport	AQ	N	Methyl Mercury (Filtered)	0.025	0.042=		U	NG/L	F
FGS-070.2	0604050026Nimbus	AQ	N	Methyl Mercury (Unfiltered)	0.025	0.033=		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank



**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP180</b>										
FGS-049.4	0606130010Veterans	AQ	N	Iron (Dissolved)	2.5	71.9=		J	UG/L	H
				Iron (Total)	12.5	1660=		J	UG/L	H
FGS-049.4	0606130015Discovery	AQ	N	Iron (Dissolved)	2.5	48.9=		J	UG/L	H
				Iron (Total)	5	2630=		J	UG/L	H
FGS-049.4	0606130020RivathHwy80	AQ	N	Iron (Dissolved)	2.5	41.6=		J	UG/L	H
				Iron (Total)	5	740=		J	UG/L	H
FGS-049.4	0606140014Freeport	AQ	N	Iron (Dissolved)	2.5	52.8=		J	UG/L	H
				Iron (Total)	125	1230=		J	UG/L	H
FGS-049.4	0606140019RiverMile44	AQ	N	Iron (Dissolved)	2.5	43.3=		J	UG/L	H
				Iron (Total)	12.5	736=		J	UG/L	H
FGS-049.4	0606140023Nimbus	AQ	N	Iron (Dissolved)	2.5	32.9=		J	UG/L	H
				Iron (Total)	5	100=		J	UG/L	H
FGS-049.4	0606140028Garcia	AQ	FD	Iron (Dissolved)	2.5	55.8=		J	UG/L	H
				Iron (Total)	12.5	1300=		J	UG/L	H
FGS-049.4	0606140033EquipBlk	AQ	EB	Iron (Total)	2.5	2.5U		UJ	UG/L	H
FGS-054.4	0606130010Veterans	AQ	N	Aluminum (Dissolved)	1.5	59.6=		J	UG/L	H
				Aluminum (Total)	1.5	1140=		J	UG/L	H
				Chromium (Dissolved)	0.07	0.4=		U	UG/L	F
				Lead (Dissolved)	0.015	0.035=		U	UG/L	F
				Silver (Dissolved)	0.015	0.015U		UJ	UG/L	H
				Silver (Total)	0.015	0.015U		UJ	UG/L	H

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP180</b>										
FGS-054.4	0606130015Discovery	AQ	N	Aluminum (Dissolved)	1.5	58.2=		J	UG/L	H
				Aluminum (Total)	1.5	2250=		J	UG/L	H
				Chromium (Dissolved)	0.07	0.19=		U	UG/L	F
				Lead (Dissolved)	0.015	0.043=		U	UG/L	F
				Silver (Dissolved)	0.015	0.015U		UJ	UG/L	H
				Silver (Total)	0.015	0.015U		UJ	UG/L	H
FGS-054.4	0606130020RivathHwy80	AQ	N	Aluminum (Dissolved)	1.5	44.9=		J	UG/L	H
				Aluminum (Total)	1.5	602=		J	UG/L	H
				Chromium (Dissolved)	0.07	0.18=		U	UG/L	F
				Lead (Dissolved)	0.015	0.041=		U	UG/L	F
				Silver (Dissolved)	0.015	0.015U		UJ	UG/L	H
				Silver (Total)	0.015	0.015U		UJ	UG/L	H
FGS-054.4	0606140014Freeport	AQ	N	Aluminum (Dissolved)	1.5	48=		J	UG/L	H,P
				Aluminum (Total)	1.5	879=		J	UG/L	H,P
				Silver (Dissolved)	0.015	0.015U		UJ	UG/L	H
				Silver (Total)	0.015	0.015U		UJ	UG/L	H
				Zinc (Dissolved)	0.1	0.31=		U	UG/L	N
FGS-054.4	0606140019RiverMile44	AQ	N	Aluminum (Dissolved)	1.5	40.6=		J	UG/L	H
				Aluminum (Total)	1.5	541=		J	UG/L	H
				Silver (Dissolved)	0.015	0.015U		UJ	UG/L	H
				Silver (Total)	0.015	0.015U		UJ	UG/L	H
FGS-054.4	0606140023Nimbus	AQ	N	Aluminum (Dissolved)	1.5	24.2=		J	UG/L	H
				Aluminum (Total)	1.5	103=		J	UG/L	H
				Silver (Dissolved)	0.015	0.015U		UJ	UG/L	H
				Silver (Total)	0.015	0.015U		UJ	UG/L	H

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-4**  
**Overall Qualified Results for Events 175 – 180**

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
<b>SDG: SACAMP180</b>										
FGS-054.4	0606140028Garcia	AQ	FD	Aluminum (Dissolved)	1.5	54.2=		J	UG/L	H
				Aluminum (Total)	1.5	911=		J	UG/L	H
				Silver (Dissolved)	0.015	0.015U		UJ	UG/L	H
				Silver (Total)	0.015	0.015U		UJ	UG/L	H
FGS-054.4	0606140033EquipBlk	AQ	EB	Aluminum (Total)	1.5	1.5U		R	UG/L	H
				Silver (Total)	0.015	0.015U		UJ	UG/L	H
FGS-069.2	0606130010Veterans	AQ	N	Mercury (Filtered)	0.5	0.78=		U	NG/L	F
FGS-070.2	0606130010Veterans	AQ	N	Methyl Mercury (Filtered)	0.025	0.034=		U	NG/L	F

N = Normal Sample    TB = Trip Blank  
FD = Field Duplicate    FB = Field Blank

**Table A-5  
Data Qualifier Reason Codes**

Category	Code	Category	Code
<b>Low Bias Indicator</b>	-, L	<b>Initial Calibration</b>	
<b>High Bias Indicator</b>	+, H	Initial Calibration RRF	Q, 17
<b>Temperature</b>	A, 1	Initial Calibration RSD	R, 18
<b>Holding Times</b>		Initial Calibration Cor. Coef	S, 19
Sampling to Analysis	C, 3	<b>Initial Calibration</b>	
Sampling to Extraction	D, 4	Initial Calibration Verification RRF	T, 20
Extraction to Analysis	E, 5	Initial Calibration Verification %D	U, 21
<b>Method Blanks</b>	F, 6	<b>Continuing Calibration</b>	
<b>Surrogate Recovery</b>	G, 7	Continuing Calibration	V, 22
<b>MS/MSD</b>		Continuing Calibration %D	W, 23
MS/MSD Recovery	H, 8	<b>GC/MS Tune</b>	
MS/MSD RPD	I, 9	GC/MS Tune for Initial Calibration	X, 24
<b>LCS</b>		GC/MS Tune for Continuing	Y, 25
LCS Recovery	J, 10	<b>Laboratory Duplicate</b>	Z, 26
LCS RPD	K, 11	<b>Categories not assessed by Automated Data Review*</b>	
<b>Reporting Limits</b>	L, 12	Internal Standards	Is, 27
<b>Field QC</b>		Calibration Blanks	Cb, 28
Field Blank	M, 13	Resolution Check Mixture	Rm, 29
Equipment Blank	N, 14	Performance Evaluation Mixture	Pm, 30
Trip Blank	O, 15	Professional Judgment	Pj, 31
Field Duplicate	P, 16		

\* The user manually enters qualifiers for data-review categories not assessed by automated data review. The application automatically adds reason codes listed here when the user manually adds qualifiers for these categories if the option for applying reason codes was selected during automated data review.

## Laboratory QC Results

### Laboratory Method and Filter Blanks

Laboratory method blanks and filter blanks were analyzed to evaluate the potential for contamination attributable to analytical reagents and sample processing. The CMP DQO for laboratory method and filter blanks was defined as below the reporting limit. If detectable levels of an analyte were determined to be present in method or filter blanks, sample results were accepted without qualification if the associated environmental sample results were greater than five times the concentration detected in the blank or were non-detectable. If detectable levels of an analyte were determined to be present in method or filter blanks and associated environmental sample results were less than five (5) times the concentration detected in the blank, the reported analytical results were qualified as non-detect at the reporting limit or reported concentration, whichever was greater.

For AMP Events 175 through 180, reportable concentrations of analytes in laboratory method blanks were detected in several analytical batches. As a result, 959 results were qualified including 190 SVOCs (EPA method 625), 51 of which were field duplicates (FD) or equipment blanks (EB); 55 metals (methods FGS-049.4, FGS-054.4, FGS-069.2, FGS-70.2), 5 of which were FD or EB; 66 triazine herbicides (method 619), of which 11 were field duplicates or equipment blanks; 210 OP pesticides (method 8141A), of which 30 were FD or EB; 60 chlorinated herbicides (method 8151A), of which 10 were FD or EB; 228 VOCs (method 8260B), of which 38 were FD or EB; and 150 carbamate pesticides (method 8321A), of which 25 were FD or EB. These data with reason codes F or 6 are listed in Table A-4. Overall, these results indicate that laboratory contamination of water quality samples is generally not a significant problem, recognizing a select number of data were qualified as mentioned above.

### Laboratory Control Samples

Laboratory control samples (LCS) were analyzed to evaluate analytical accuracy in the absence of matrix effects. The CMP DQO for laboratory control sample recoveries was defined as the range between 80% and 120% for all parameters, with the exception of trace organic compounds and pesticides, which have recovery targets specific to each individual analyte. If recoveries are outside the desired range, associated samples results are qualified as estimated with a "low or high bias" as indicated by the LCS recovery.

Percent recovery of LCS is calculated as:

$$\% \text{ Recovery} = 100\% \times (\text{measured concentration} / \text{expected concentration})$$

For AMP Events 175 through 180, the LCS percent recoveries exceeded project specifications 17 times for trace metals (method FGS-054.4), of which 3 were FD or EB; 7 times for total Kjeldahl nitrogen (method 351.2), of which 1 was a FD or EB; and 10 volatile organic carbons (method 8260B), of which 2 were FD or EB. These data with

reason codes J or 10 are listed in Table A-4. Overall, these results indicate that analytical accuracy was adequate for analysis of water quality samples, recognizing a select number of data were qualified as mentioned above.

## Laboratory Control Sample Duplicates

Analyses of LCS duplicate (LCSD) samples were performed to evaluate analytical precision. The CMP DQO for laboratory control sample duplicates was defined as relative percent differences of less than or equal to 25%. If laboratory control sample duplicate results are outside this range, associated samples results are qualified as “estimated” (not reproducible) due to analytical variability. Relative percent difference (RPD) for laboratory control sample duplicates is calculated using recovered spike concentrations:

$$RPD = 100\% \times | \text{spike 1} - \text{spike 2} | / \text{average of spike 1 and spike 2}$$

where,

*spike* = measured spiked concentration minus measured sample concentration.

For AMP Events 175 through 180, LCSD RPDs were outside program specifications for 24 carbamate pesticide parameters (method 8321A) during event 177; 96 organophosphate pesticides (method 8141A) during event 179, of which 16 were FD or EB; and 2 PCBs (method 608) during event 178. These data with reason codes K or 6 are listed in Table A-4.

## Laboratory Duplicates

Analysis of duplicate samples was conducted to evaluate analytical precision. The CMP DQO for laboratory duplicates was defined as RPD of less than or equal to 25%. If laboratory duplicate results are outside this range, associated samples results are qualified as “estimated” (not reproducible) due to analytical variability. An RPD greater than 25% was not considered cause for qualification of data if measured differences between replicates were less than the reporting limit, or if matrix spike duplicate results were acceptable. RPD of laboratory duplicate analyses is calculated, using sample results rather than spike recoveries, with the following formula:

$$RPD = 100\% \times | \text{replicate 1} - \text{replicate 2} | / \text{average of replicate 1 and replicate 2}$$

For AMP Events 175 through 180, laboratory duplicates were analyzed for several conventional analytes and trace metals and the following parameters were outside program specifications: one electrical conductivity (EC) parameter (method 120.1), 11 SVOCs (method 625), two iron results (method FGS-049.9), and 16 trace metals (method FGS-054.4). These results with reason codes Z or 26 are listed on Table A-4. Overall, these results indicate that analytical precision for these analytes was adequate to produce reliable data from water quality samples, recognizing a select number of data were qualified as mentioned above.

## Matrix Spike Recoveries

Analyses of matrix spike (MS) samples were performed to evaluate the effect of water quality sample matrix on analytical accuracy. MS sample analysis provides information regarding the effect of the sample matrix on sample extraction and analysis. The CMP DQO for matrix spike recoveries was defined as the range between 80% and 120% for all parameters. When a MS does not meet DQOs, associated sample results are considered “estimated” due to matrix interference. Percent recovery of matrix spikes is calculated as:

$$\% \text{ Recovery} = 100\% \times (\text{measured value} / \text{expected value})$$

For AMP Events 175 through 180, 88 MS recoveries were outside program specifications: 2 for diethyl phthalate (a SVOC analyzed by EPA method 625); 5 VOCs (method 8260B); 9 for organophosphate pesticides (method 8141A), 17 for iron (method FGS-049.4), of which 3 were FD or EB ; and 55 for trace metals (method FGS-054.4), of which 9 were FD or EB. One trace metal (aluminum EB) was rejected during event 180 and was considered unusable. The individual analytes flagged with reason codes H or 8 for matrix spike recoveries are included in Table A-4. MS recoveries outside acceptance criteria may indicate poor analytical technique and/or sample matrix effects that may interfere with accurate analyses.

Except for those results qualified in Table A-4, the MS data in combination with the LCS results indicate that matrix interference did not represent a significant problem and that analytical accuracy was adequate to produce reliable data for water quality samples.

## Matrix Spike Duplicates

Analyses of MS duplicate (MSD) samples were performed to evaluate the effect of water quality sample matrix on analytical precision. The CMP DQO for MSDs was defined as RPDs of less than or equal to 25%. If MSD results are outside this range, associated samples results are qualified as “estimated” (not reproducible) due to matrix variability. RPD for matrix spike duplicates is calculated in the same manner as for laboratory duplicates, using recovered spike concentrations instead of measured sample results:

$$\text{RPD} = 100\% \times | \text{spike 1} - \text{spike 2} | / \text{average of spike 1 and spike 2}$$

where,

*spike* = measured spiked concentration minus measured sample concentration.

For AMP Events 175 through 180, 37 MSD RPDs were outside of program specifications. Of the 37 RPDs outside specifications, 1 was for diethyl phthalate (a SVOC analyzed by method 625), 32 were for organophosphate pesticides (method 8141A), 2 were VOCs (method 8260B), and 2 were carbamate pesticides (method 8321A). The individual analytes flagged with reason codes I or 9 for matrix spike recoveries are included in Table A-4. MS recoveries outside acceptance criteria may

indicate poor analytical technique and/or sample matrix effects that may interfere with accurate analyses.

In combination with the results for laboratory duplicates, these results indicate that matrix interference did not represent a significant problem and that analytical precision was adequate to produce reliable data from water quality samples recognizing a select number of data were qualified as mentioned above.

## Surrogate Recoveries

Analyses of surrogate recoveries were performed to evaluate laboratory performance and accuracy. Surrogates are compounds which are similar in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results. Results were qualified as estimated in accordance with the CMP DQO when surrogate recoveries were :

- Greater than 150%; and
- Greater than 10% and less than 30%.

When a surrogate recovery does not meet DQOs, associated sample results are considered “estimated”. Percent recovery of surrogates is calculated as:

$$\% \text{ Recovery} = 100\% \times (\text{measured value} / \text{expected value})$$

For AMP Events 175 through 180, 50 results were flagged as estimated because surrogate recoveries were outside of program specifications (Reason codes G or 7). All 50 results were carbamate pesticides (Method 8321A) during Event 177. Twenty-five (25) results represented either FB or EB from this event.

The data indicate that surrogate recoveries did not represent a significant problem and that laboratory performance was adequate to produce reliable data from the water quality samples, recognizing a select number of data were qualified as mentioned above.

## Field Quality Control Results

### Equipment Blanks

Equipment blanks were submitted and analyzed to evaluate the potential for sampling equipment to contaminate water quality samples. The CMP DQO for field and equipment blanks was defined as below the program reporting limit. If detectable levels of an analyte were determined to be present in field or equipment blanks, sample results were accepted without qualification if the results were greater than five (5) times the concentrations detected in the blank or non-detectable. If detectable levels of an analyte were determined to be present in field or equipment blanks and sample results were less than five (5) times the concentrations detected in the blank,



the reported results were qualified as non-detect at the reporting limit or the reported concentration, whichever is greater.

For Events 175 through 180:

- Five SVOCs (method 625) and two trace metals (method FGS-054.4) were detected at concentrations higher than the reporting limit in the equipment blank collected during event 175.
- Six SVOCs (method 625) and one trace metal (method FGS-054.4) were detected at concentrations higher than the reporting limit in the equipment blank collected during event 176.
- Five SVOCs (method 625) and one trace metal (method FGS-054.4) were detected at concentrations higher than the reporting limit in the equipment blank collected during event 178.
- Four SVOCs (method 625) and two trace metals (method FGS-054.4) were detected at concentrations higher than the reporting limit in the equipment blank collected during event 178.1.
- Six SVOCs (method 625) were detected at concentrations higher than the reporting limit in the equipment blank collected during event 180.

These data were flagged with the reason codes N or 14. The individual analytes are included in Table A-4. All the remaining equipment blank results were within program specifications. Results of analyses of equipment blanks indicate the equipment was generally adequate to prevent detectable or significant levels of contamination of water quality samples collected.

## External Quality Control Samples

### Field Duplicates

The purpose of duplicate field samples is to measure the reproducibility (i.e. precision) of analyte concentrations in field samples split from the same composite or grab sample. The results provide a measure of the variability attributable to sample handling and aliquoting procedures after sample collection. The CMP DQO for field duplicates (splits) was defined as a RPD of less than or equal to 25%. Duplicate RPDs outside this range resulted in the qualification of sample result data as “estimated” (not reproducible) due to sample variability. An RPD greater than 25% was not considered cause for qualification of data if measured differences between replicates were less than the reporting limit. RPD is calculated in the same manner as described above for laboratory duplicates.

For Events 175 through 180, field duplicate RPDs exceeded program specifications for 14 analytes. The individual analytes flagged with the reason codes P or 16 are included in Table A-4. Exceedances include eight SVOCs (method 625), one VOC

(method 8260B), four trace metals (method FGS-054.4), and one mercury analyte (method FGS-069.2). These results indicated that sampling and handling procedures were adequate for all parameters.

## *APPENDIX B*

### *Summary Statistics*

*December 1992 – June 2006*

# Appendix B

## Summary Statistics

Summary statistics for AMP data for the period December 1992 through June 2006 are presented in this Appendix, Table B-1 through Table B-6. All the parameters listed in Tables 3-1 through 3-6 in Section 3 are included.

For each water quality parameter measured by the AMP, the following statistics were calculated:

- Number of measurements (n)
- Number of measurements for which a measurable quantity was detected
- Percent of measurements for which a measurable quantity was detected
- Mean and standard deviation
- Minimum and maximum detected values
- Minimum and maximum reporting limits for data below detection.

If the data set for a parameter contained no data below the reporting limits, the arithmetic mean and standard deviation were calculated using the complete data set. If up to 80% of the data were below Ambient Program reporting limits, distribution parameters were estimated using the Robust Lognormal Regression method (see following discussion). If more than 80% of the data were below Ambient Program reporting limits, it was considered that insufficient detected data were available to reliably estimate the mean and standard deviation and no additional statistics were calculated.

Split samples submitted as part of the QA/QC program are not used to calculate summary statistics. For cases where parameters were analyzed by more than one method (most commonly 625 and 8260 for volatile organics), the more definitive of the two (or more) results was used for plots and other analyses. This was generally considered to be the result from the method with the lowest detection limit.

### **Treatment of Values below Reporting Limits**

Summary statistics are computed using the Robust Lognormal Regression method (Helsel and Cohn 1988; Helsel 1990) when censored data were reported (i.e. data below program reporting limits). This method fits the detected values to a lognormal distribution, using the censored data to calculate cumulative distribution values for the detected data. Data below detection are assigned values based on the lognormal distribution regression statistics and distributional parameters (means and standard deviations) are calculated directly from the combined data set of detected and synthetic data. In cases where less than 20% of the values were uncensored, the mean and standard deviation are not calculated because data are considered insufficient to accurately estimate these statistics.

**Table B-1. Summary Statistics for the Sacramento River at Veterans Bridge**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
Ammonia	mg/L	37	0%	0	id	id	ND	ND	0.1	0.1
Arsenic (dissolved)	ug/L	87	76%	66	1.3	0.42	0.51	2.4	0.15	0.15
Arsenic (total)	ug/L	157	94%	147	1.7	0.51	0.7	3.63	0.15	0.15
Cadmium (dissolved)	ug/L	142	56%	79	0.016	0.025	0.003	0.24	0.008	0.008
Cadmium (total)	ug/L	155	92%	142	0.065	0.103	0.008	0.74	0.008	0.008
Chloride	mg/L	87	95%	83	6	2	2.2	14	2	3
Chromium (dissolved)	ug/L	78	17%	13	id	id	0.02	1.2	0.03	0.07
Chromium (total)	ug/L	158	88%	139	2.7	2.5	0.03	19	0.03	0.07
Copper (dissolved)	ug/L	157	99%	155	1.5	0.57	0.33	5	0.04	0.04
Copper (total)	ug/L	158	99%	157	4.3	2.3	0.72	16.9	0.04	0.04
Cyanide	ug/L	15	7%	1	id	id	1.16	1.16	3	5
Dissolved organic carbon	mg/L	114	68%	78	2	1	0.7	10	0.2	1
Dissolved oxygen	mg/L	165	100%	165	10	1	6.6	17	0.1	0.1
E. coli	mpn/100 ml	60	97%	58	48	94	2	500	2	2
Electrical conductivity	umhos/cm	175	100%	175	145	42	21.2	260	10	10
Fecal coliform	mpn/100 ml	104	98%	102	126	388	2	2400	2	2
Hardness	mg/L	166	100%	166	60	13	28	120	4	8
Lead (dissolved)	ug/L	138	57%	79	0.05	0.06	0.011	0.4	0.015	0.015
Lead (total)	ug/L	158	98%	155	0.63	0.71	0.04	7.2	0.015	0.015
Mercury (filtered)	ng/L	156	95%	148	1.5	1.2	0.35	7.96	0.15	0.5
Mercury (unfiltered)	ng/L	158	99%	157	8	5	0.77	34.9	0.15	0.5
Methyl mercury (filtered)	ng/L	49	67%	33	0.04	0.021	0.026	0.113	0.025	0.026
Methyl mercury (unfiltered)	ng/L	54	83%	45	0.102	0.042	0.047	0.216	0.025	0.026
Molybdenum (dissolved)	ug/L	17	100%	17	0.49	0.16	0.24	0.84	0.02	0.06
Molybdenum (total)	ug/L	23	96%	22	0.37	0.12	0.18	0.67	0.02	0.06
Nickel (dissolved)	ug/L	136	76%	103	0.79	0.44	0.2	2.8	0.04	0.04
Nickel (total)	ug/L	139	98%	136	5	4.2	0.43	28	0.04	0.04
Nitrate	mg/L	40	68%	27	0.2	0.5	0.1	2.6	0.1	0.5
Nitrite	mg/L	39	3%	1	id	id	0.22	0.22	0.1	0.1
Orthophosphate (dissolved)	mg/L	32	9%	3	id	id	0.053	0.16	0.05	0.1
pH	Units	176	100%	176	7.6	0.4	6.2	8.94	0.1	0.1
Silver (dissolved)	ug/L	17	35%	6	0.007	0.014	0.001	0.049	0.015	0.015
Silver (total)	ug/L	25	28%	7	0.007	0.004	0.004	0.021	0.015	0.015
Temperature	deg C	168	100%	168	15.1	4.5	7.5	25	0	0.1
Total coliform	mpn/100 ml	104	100%	104	1665	3103	17	16000	2	2
Total dissolved solids	mg/L	63	100%	63	115	32	63	193	20	20
Total kjeldahl nitrogen	mg/L	40	68%	27	0.3	0.1	0.11	0.76	0.1	0.1
Total organic carbon	mg/L	107	65%	70	2.4	1.2	1.2	6.6	0.2	0.5
Total phosphorus	mg/L	34	62%	21	0.08	0.04	0.05	0.18	0.05	0.05
Total suspended solids	mg/L	188	100%	188	40	27	3	200	3	3
Turbidity	NTU	64	100%	64	25	23	1.5	110	0	1
Uva 254	cm-1	31	100%	31	0.08	0.06	0.0347	0.28	0.0001	0.0001
Zinc (dissolved)	ug/L	152	61%	93	1	3	0.04	23	0.1	0.1
Zinc (total)	ug/L	157	94%	147	7	6	0.22	39.2	0.1	0.1

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-1. Summary Statistics for the Sacramento River at Veterans Bridge**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
2,4,6-trichlorophenol	ng/L	36	0%	0	id	id	ND	ND	100	100
Acenaphthene	ng/L	40	5%	2	id	id	0.34	0.68	2	5
Aldicarb	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Aminocarb	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Anthracene	ng/L	40	8%	3	id	id	0.18	1.1	2	5
Barban	ug/L	33	0%	0	id	id	ND	ND	3.5	3.5
Benomyl	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Benz(a)anthracene	ng/L	40	18%	7	id	id	0.12	0.45	2	5
Benzo(a)pyrene	ng/L	40	10%	4	id	id	0.18	1.1	2	5
Benzo(b)fluoranthene	ng/L	27	0%	0	id	id	ND	ND	2	5
Benzo(g,h,i)perylene	ng/L	27	0%	0	id	id	ND	ND	2	5
Benzo(k)fluoranthene	ng/L	27	0%	0	id	id	ND	ND	2	5
Bis(2-ethylhexyl) phthalate	ng/L	28	7%	2	id	id	72.3	251	10	10
Carbaryl	ug/L	33	0%	0	id	id	ND	ND	0.07	0.1
Carbofuran	ug/L	34	0%	0	id	id	ND	ND	0.07	0.1
Chlorpropham	ug/L	33	0%	0	id	id	ND	ND	3.5	3.5
Chlorpyrifos	ug/L	63	0%	0	id	id	ND	ND	0.05	0.1
Chrysene	ng/L	40	25%	10	0.4298	0.2449	0.15	0.916	2	5
Diazinon	ug/L	90	8%	7	id	id	0.011	0.16	0.05	0.1
Dibenz(a,h)anthracene	ng/L	40	0%	0	id	id	ND	ND	2	5
Fluoranthene	ng/L	40	28%	11	0.8998	0.9829	0.41	5.2	2	5
Fluorene	ng/L	40	12%	5	id	id	0.379	1.3	2	5
Glyphosate	ug/L	12	0%	0	id	id	ND	ND	25	25
Hexachlorobenzene	ng/L	40	3%	1	id	id	1.11	1.11	5	62.5
Indeno(1,2,3-c,d)pyrene	ng/L	40	12%	5	id	id	0.39	1.5	2	5
Malathion	ug/L	61	0%	0	id	id	ND	ND	0.1	0.1
Methiocarb	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Methomyl	ug/L	33	0%	0	id	id	ND	ND	0.07	0.1
Mexacarbate	ug/L	33	0%	0	id	id	ND	ND	0.8	0.8
Mtbe	ug/L	16	19%	3	id	id	0.51	0.7	0.5	0.5
Naphthalene	ng/L	27	7%	2	id	id	3.6	65	2	5
N-nitroso-di-n-propylamine	ng/L	40	5%	2	id	id	8.6	48.2	62	100
Oxamyl	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Parathion, methyl	ug/L	61	0%	0	id	id	ND	ND	0.1	0.1
Pentachlorophenol	ng/L	38	3%	1	id	id	2.5	2.5	100	100
Phenanthrene	ng/L	27	7%	2	id	id	1	2	2	5
Propham	ug/L	33	0%	0	id	id	ND	ND	3.5	3.5
Propoxur	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-2. Summary Statistics for the Sacramento River at Freeport Marina**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
Ammonia	mg/L	36	3%	1	id	id	0.1	0.1	0.1	0.1
Arsenic (dissolved)	ug/L	80	71%	57	1.1	0.4	0.6	2.1	0.15	0.15
Arsenic (total)	ug/L	151	93%	140	1.51	0.41	0.78	3.6	0.15	0.15
Cadmium (dissolved)	ug/L	139	50%	69	0.01	0.01	0.003	0.06	0.008	0.008
Cadmium (total)	ug/L	149	81%	120	0.06	0.27	0.01	2.5	0.008	0.008
Chloride	mg/L	86	93%	80	5	2	2.1	11	2	3
Chromium (dissolved)	ug/L	71	21%	15	0.21	0.36	0.11	2.25	0.03	0.07
Chromium (total)	ug/L	150	89%	133	2.7	2.7	0.13	18.3	0.03	0.07
Copper (dissolved)	ug/L	151	99%	149	1.4	0.48	0.27	2.9	0.04	0.04
Copper (total)	ug/L	151	100%	151	4.1	2.4	1.19	14.5	0.04	0.04
Cyanide	ug/L	15	7%	1	id	id	1.34	1.34	3	5
Dissolved organic carbon	mg/L	110	75%	82	2	1	1.2	5.3	0.2	1
Dissolved oxygen	mg/L	161	100%	161	9.9	1.5	6.9	16	0.1	0.1
E. coli	mpn/100 ml	59	98%	58	85	177	2	800	2	2
Electrical conductivity	umhos/cm	169	100%	169	140	37	54	254	0	10
Fecal coliform	mpn/100 ml	104	100%	104	197	999	4	8000	2	2
Hardness	mg/L	160	100%	160	56	13	26	94	4	8
Lead (dissolved)	ug/L	137	60%	82	0.06	0.13	0.006	1.2	0.015	0.015
Lead (total)	ug/L	151	94%	142	0.6	0.5	0.017	3	0.015	0.015
Mercury (filtered)	ng/L	157	98%	154	1.6	1.7	0.26	14.92	0.15	0.5
Mercury (unfiltered)	ng/L	157	100%	157	8.8	12	1.2	96	0.15	0.5
Methyl mercury (filtered)	ng/L	51	67%	34	0.065	0.259	0.009	1.39	0.025	0.026
Methyl mercury (unfiltered)	ng/L	57	89%	51	0.098	0.054	0.038	0.318	0.025	0.026
Molybdenum (dissolved)	ug/L	18	100%	18	0.47	0.15	0.28	0.82	0.02	0.06
Molybdenum (total)	ug/L	23	100%	23	0.39	0.15	0.11	0.69	0.02	0.06
Nickel (dissolved)	ug/L	129	78%	100	0.74	0.43	0.075	2.5	0.04	0.04
Nickel (total)	ug/L	132	96%	127	4.6	4.4	0.51	30.6	0.04	0.04
Nitrate	mg/L	39	56%	22	0.1	0.1	0.11	0.42	0.1	0.1
Nitrite	mg/L	39	0%	0	id	id	ND	ND	0.1	0.1
Orthophosphate (dissolved)	mg/L	31	19%	6	id	id	0.05	0.15	0.05	0.1
pH	Units	169	100%	169	7.6	0.4	5.6	8.79	0	0.1
Silver (dissolved)	ug/L	18	11%	2	id	id	0.001	0.002	0.015	0.015
Silver (total)	ug/L	25	32%	8	0.006	0.007	0.003	0.026	0.015	0.015
Temperature	deg C	164	100%	164	15	4	6.2	23.1	0.1	0.1
Total coliform	mpn/100 ml	105	100%	105	1759	3977	13	30000	2	2
Total dissolved solids	mg/L	62	100%	62	104	27	39	180	20	20
Total kjeldahl nitrogen	mg/L	36	72%	26	0.33	0.14	0.1	0.73	0.05	0.1
Total organic carbon	mg/L	101	73%	74	2.3	1.2	1.2	6.8	0.2	0.5
Total phosphorus	mg/L	33	45%	15	0.07	0.04	0.057	0.2	0.05	0.1
Total suspended solids	mg/L	180	99%	179	34	30	2	210	3	3
Turbidity	NTU	66	100%	66	20	16	4.6	70	1	1
Uva 254	cm-1	33	100%	33	0.069	0.037	0.0353	0.177	0.0001	0.0001
Zinc (dissolved)	ug/L	145	71%	103	1.4	3	0.12	27	0.1	0.1
Zinc (total)	ug/L	150	91%	136	6.5	5.5	0.74	37.4	0.1	0.1

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-2. Summary Statistics for the Sacramento River at Freeport Marina**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
2,4,6-trichlorophenol	ng/L	39	0%	0	id	id	ND	ND	100	100
Acenaphthene	ng/L	41	10%	4	id	id	0.35	5.2	2	5
Aldicarb	ug/L	34	0%	0	id	id	ND	ND	0.4	0.4
Aminocarb	ug/L	34	0%	0	id	id	ND	ND	0.4	0.4
Anthracene	ng/L	41	12%	5	id	id	0.124	4.8	2	5
Barban	ug/L	34	0%	0	id	id	ND	ND	3.5	3.5
Benomyl	ug/L	34	0%	0	id	id	ND	ND	0.4	0.4
Benz(a)anthracene	ng/L	41	15%	6	id	id	0.182	3.1	2	5
Benzo(a)pyrene	ng/L	41	10%	4	id	id	0.29	2.5	2	5
Benzo(b)fluoranthene	ng/L	27	0%	0	id	id	ND	ND	2	5
Benzo(g,h,i)perylene	ng/L	27	0%	0	id	id	ND	ND	2	5
Benzo(k)fluoranthene	ng/L	27	0%	0	id	id	ND	ND	2	5
Bis(2-ethylhexyl) phthalate	ng/L	28	7%	2	id	id	172	325	10	10
Carbaryl	ug/L	34	0%	0	id	id	ND	ND	0.07	0.07
Carbofuran	ug/L	35	0%	0	id	id	ND	ND	0.07	0.07
Chlorpropham	ug/L	34	0%	0	id	id	ND	ND	3.5	3.5
Chlorpyrifos	ug/L	63	0%	0	id	id	ND	ND	0.05	0.05
Chrysene	ng/L	41	27%	11	0.6454	0.6519	0.2	2.9	2	5
Diazinon	ug/L	89	9%	8	id	id	0.011	0.14	0.05	0.05
Dibenz(a,h)anthracene	ng/L	41	2%	1	id	id	2.6	2.6	2	5
Fluoranthene	ng/L	41	37%	15	1.396	1.2018	0.54	6.3	2	5
Fluorene	ng/L	41	10%	4	id	id	0.41	7.5	2	5
Glyphosate	ug/L	12	0%	0	id	id	ND	ND	25	25
Hexachlorobenzene	ng/L	41	7%	3	id	id	0.43	1.17	5	62.5
Indeno(1,2,3-c,d)pyrene	ng/L	41	15%	6	id	id	0.38	2.1	2	5
Malathion	ug/L	61	0%	0	id	id	ND	ND	0.1	0.1
Methiocarb	ug/L	34	0%	0	id	id	ND	ND	0.4	0.4
Methomyl	ug/L	34	0%	0	id	id	ND	ND	0.07	0.07
Mexacarbate	ug/L	34	0%	0	id	id	ND	ND	0.8	0.8
Mtbe	ug/L	17	24%	4	0.5816	0.5442	0.43	2.3	0.5	0.5
Naphthalene	ng/L	27	19%	5	id	id	1.5	3.5	2	5
N-nitroso-di-n-propylamine	ng/L	41	2%	1	id	id	12	12	62	100
Oxamyl	ug/L	34	0%	0	id	id	ND	ND	0.4	0.4
Parathion, methyl	ug/L	61	0%	0	id	id	ND	ND	0.1	0.1
Pentachlorophenol	ng/L	39	10%	4	id	id	1.7	26	100	100
Phenanthrene	ng/L	27	7%	2	id	id	2.4	3.2	2	5
Propham	ug/L	34	0%	0	id	id	ND	ND	3.5	3.5
Propoxur	ug/L	34	0%	0	id	id	ND	ND	0.4	0.4

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits



**Table B-3. Summary Statistics for the Sacramento River at River Mile 44**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
Ammonia	mg/L	29	83%	24	0.2	0.1	0.1	0.42	0.1	0.1
Arsenic (dissolved)	ug/L	77	73%	56	1.3	0.39	0.87	2.2	0.15	0.15
Arsenic (total)	ug/L	139	94%	130	1.5	0.45	0.24	3.07	0.15	0.15
Cadmium (dissolved)	ug/L	130	58%	76	0.02	0.02	0.003	0.18	0.008	0.008
Cadmium (total)	ug/L	137	85%	117	0.07	0.11	0.007	0.78	0.008	0.008
Chloride	mg/L	79	95%	75	6	2	2.5	12	2	3
Chromium (dissolved)	ug/L	70	11%	8	id	id	0.13	1.2	0.07	0.07
Chromium (total)	ug/L	139	85%	118	2.4	2.5	0.19	20	0.07	0.07
Copper (dissolved)	ug/L	140	99%	139	1.5	0.7	0.29	6	0.04	0.04
Copper (total)	ug/L	139	100%	139	4.2	2.6	0.69	16	0.04	0.04
Cyanide	ug/L	13	8%	1	id	id	0.99	0.99	3	5
Dissolved organic carbon	mg/L	100	62%	62	2.8	4.6	1.3	38	0.2	1
Dissolved oxygen	mg/L	162	100%	162	9.6	1.4	6.7	14	0.1	0.1
E. coli	mpn/100 ml	10	100%	10	174	321	13	800	2	2
Electrical conductivity	umhos/cm	170	100%	170	138	42	45	234	10	10
Fecal coliform	mpn/100 ml	15	100%	15	129	270	4	800	2	2
Hardness	mg/L	151	100%	151	58	14	24	110	4	8
Lead (dissolved)	ug/L	126	55%	69	0.05	0.06	0.008	0.3	0.015	0.015
Lead (total)	ug/L	139	99%	138	0.7	0.6	0.1	3.5	0.015	0.015
Mercury (filtered)	ng/L	145	97%	141	1.6	1.4	0.45	11.1	0.15	0.5
Mercury (unfiltered)	ng/L	146	100%	146	8.5	8.6	1.34	73.41	0.15	0.5
Methyl mercury (filtered)	ng/L	50	74%	37	0.059	0.131	0.023	0.752	0.025	0.026
Methyl mercury (unfiltered)	ng/L	50	92%	46	0.103	0.043	0.051	0.251	0.025	0.026
Molybdenum (dissolved)	ug/L	11	100%	11	0.51	0.22	0.28	1.02	0.02	0.06
Molybdenum (total)	ug/L	16	100%	16	0.44	0.18	0.18	0.93	0.02	0.06
Nickel (dissolved)	ug/L	117	75%	88	0.77	0.4	0.21	2.3	0.04	0.04
Nickel (total)	ug/L	119	97%	116	4.8	5.8	0.63	42	0.04	0.04
Nitrate	mg/L	30	57%	17	0.1	0.1	0.1	0.44	0.1	0.1
Nitrite	mg/L	30	0%	0	id	id	ND	ND	0.1	0.1
Orthophosphate (dissolved)	mg/L	28	18%	5	id	id	0.051	0.1	0.05	0.1
pH	Units	168	100%	168	7.5	0.42	6.14	8.83	0.1	0.1
Silver (dissolved)	ug/L	11	9%	1	id	id	0.003	0.003	0.015	0.015
Silver (total)	ug/L	18	28%	5	0.008	0.004	0.007	0.018	0.015	0.015
Temperature	deg C	161	100%	161	15.4	4.5	7.16	22.86	0.1	0.1
Total coliform	mpn/100 ml	14	100%	14	2932	5302	130	16000	2	2
Total dissolved solids	mg/L	53	100%	53	108	26	33	170	20	20
Total kjeldahl nitrogen	mg/L	30	77%	23	0.5	0.2	0.28	1.3	0.05	0.1
Total organic carbon	mg/L	95	61%	58	2.3	1.1	0.91	6.6	0.2	0.5
Total phosphorus	mg/L	28	75%	21	0.09	0.03	0.058	0.16	0.05	0.05
Total suspended solids	mg/L	171	99%	170	37	37	2	250	3	3
Turbidity	NTU	58	100%	58	19	16	5	71	1	1
Uva 254	cm-1	28	100%	28	0.066	0.033	0.0377	0.144	0.0001	0.0001
Zinc (dissolved)	ug/L	138	62%	86	1.4	2.3	0.12	18	0.1	0.1
Zinc (total)	ug/L	138	93%	128	8.9	8.5	0.36	52	0.1	0.1

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-3. Summary Statistics for the Sacramento River at River Mile 44**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
2,4,6-trichlorophenol	ng/L	30	27%	8	4.3479	5.7846	0.81	19	100	100
Acenaphthene	ng/L	29	10%	3	id	id	0.43	0.68	2	5
Aldicarb	ug/L	22	0%	0	id	id	ND	ND	0.4	0.4
Aminocarb	ug/L	22	0%	0	id	id	ND	ND	0.4	0.4
Anthracene	ng/L	29	7%	2	id	id	0.18	0.35	2	5
Barban	ug/L	22	0%	0	id	id	ND	ND	3.5	3.5
Benomyl	ug/L	22	0%	0	id	id	ND	ND	0.4	0.4
Benz(a)anthracene	ng/L	29	21%	6	0.2271	0.1502	0.151	0.571	2	5
Benzo(a)pyrene	ng/L	29	14%	4	id	id	0.2	0.51	2	5
Benzo(b)fluoranthene	ng/L	18	0%	0	id	id	ND	ND	2	5
Benzo(g,h,i)perylene	ng/L	18	0%	0	id	id	ND	ND	2	5
Benzo(k)fluoranthene	ng/L	18	0%	0	id	id	ND	ND	2	5
Bis(2-ethylhexyl) phthalate	ng/L	20	10%	2	id	id	476	1260	10	10
Carbaryl	ug/L	22	0%	0	id	id	ND	ND	0.07	0.07
Carbofuran	ug/L	23	0%	0	id	id	ND	ND	0.07	0.07
Chlorpropham	ug/L	22	0%	0	id	id	ND	ND	3.5	3.5
Chlorpyrifos	ug/L	54	2%	1	id	id	0.1	0.1	0.05	0.05
Chrysene	ng/L	29	31%	9	0.5309	0.2609	0.25	1.31	2	5
Diazinon	ug/L	77	3%	2	id	id	0.015	0.039	0.05	0.05
Dibenz(a,h)anthracene	ng/L	29	7%	2	id	id	0.4	0.44	2	5
Fluoranthene	ng/L	29	31%	9	1.1658	0.5877	0.64	2.28	2	5
Fluorene	ng/L	29	14%	4	id	id	0.407	1.4	2	5
Glyphosate	ug/L	1	0%	0	id	id	ND	ND	25	25
Hexachlorobenzene	ng/L	29	7%	2	id	id	0.28	2.11	5	62.5
Indeno(1,2,3-c,d)pyrene	ng/L	29	14%	4	id	id	0.46	1.05	2	5
Malathion	ug/L	52	0%	0	id	id	ND	ND	0.1	0.1
Methiocarb	ug/L	22	0%	0	id	id	ND	ND	0.4	0.4
Methomyl	ug/L	22	0%	0	id	id	ND	ND	0.07	0.07
Mexacarbate	ug/L	22	0%	0	id	id	ND	ND	0.8	0.8
Mtbe	ug/L	16	38%	6	0.6018	0.5635	0.34	2.1	0.5	0.5
Naphthalene	ng/L	18	6%	1	id	id	2.1	2.1	2	5
N-nitroso-di-n-propylamine	ng/L	29	3%	1	id	id	17	17	62.5	100
Oxamyl	ug/L	22	0%	0	id	id	ND	ND	0.4	0.4
Parathion, methyl	ug/L	52	0%	0	id	id	ND	ND	0.1	0.1
Pentachlorophenol	ng/L	29	7%	2	id	id	1.5	4.3	100	100
Phenanthrene	ng/L	18	0%	0	id	id	ND	ND	2	5
Propham	ug/L	22	0%	0	id	id	ND	ND	3.5	3.5
Propoxur	ug/L	22	0%	0	id	id	ND	ND	0.4	0.4

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-4. Summary Statistics for the American River at Nimbus Dam**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
Ammonia	mg/L	35	3%	1	id	id	0.2	0.2	0.1	0.1
Arsenic (dissolved)	ug/L	73	25%	18	0.3	0.1	0.2	1	0.15	0.15
Arsenic (total)	ug/L	143	62%	89	0.4	0.34	0.03	2.9	0.15	0.15
Cadmium (dissolved)	ug/L	126	42%	53	0.01	0.01	0.002	0.07	0.008	0.008
Cadmium (total)	ug/L	140	57%	80	0.06	0.59	0.002	5.1	0.008	0.008
Chloride	mg/L	78	32%	25	1.5	1	0.2	3.6	2	3
Chromium (dissolved)	ug/L	76	11%	8	id	id	0.02	0.3	0.03	0.07
Chromium (total)	ug/L	151	60%	90	0.67	4.6	0.02	41	0.03	0.07
Copper (dissolved)	ug/L	151	82%	124	0.57	0.26	0.13	1.9	0.04	0.04
Copper (total)	ug/L	152	93%	142	0.83	0.54	0.24	4.3	0.04	0.04
Cyanide	ug/L	14	7%	1	id	id	1.1	1.1	3	5
Dissolved organic carbon	mg/L	104	56%	58	1.5	0.4	0.7	2.8	0.2	1
Dissolved oxygen	mg/L	165	100%	165	10.5	2.1	5.8	16	0.1	0.1
E. coli	mpn/100 ml	57	100%	57	74	157	2	800	2	2
Electrical conductivity	umhos/cm	174	100%	174	55	16	4.3	123	10	10
Fecal coliform	mpn/100 ml	100	100%	100	103	218	4	1300	2	2
Hardness	mg/L	160	100%	160	26	9	4	64	1	8
Lead (dissolved)	ug/L	120	40%	48	0.04	0.05	0.004	0.2	0.015	0.015
Lead (total)	ug/L	149	77%	114	0.15	0.18	0.004	1.4	0.015	0.015
Mercury (filtered)	ng/L	154	94%	144	0.91	0.67	0.19	4.43	0.15	0.5
Mercury (unfiltered)	ng/L	154	98%	151	2.3	2.3	0.42	15.4	0.15	0.5
Methyl mercury (filtered)	ng/L	48	33%	16	0.025	0.055	0.008	0.314	0.025	0.026
Methyl mercury (unfiltered)	ng/L	52	52%	27	0.034	0.024	0.021	0.115	0.025	0.026
Molybdenum (dissolved)	ug/L	16	100%	16	0.2	0.04	0.14	0.27	0.02	0.06
Molybdenum (total)	ug/L	21	100%	21	0.21	0.08	0.14	0.46	0.02	0.06
Nickel (dissolved)	ug/L	74	49%	36	0.43	0.33	0.07	1.9	0.04	0.04
Nickel (total)	ug/L	132	77%	102	1.2	3.3	0.21	30	0.04	0.04
Nitrate	mg/L	38	16%	6	id	id	0.12	1.1	0.1	0.1
Nitrite	mg/L	38	0%	0	id	id	ND	ND	0.1	0.1
Orthophosphate (dissolved)	mg/L	30	3%	1	id	id	0.05	0.05	0.05	0.1
pH	Units	176	100%	176	7.2	0.6	5.82	9.4	0	0.1
Silver (dissolved)	ug/L	16	12%	2	id	id	0.002	0.002	0.015	0.015
Silver (total)	ug/L	23	17%	4	id	id	0.001	0.071	0.015	0.015
Temperature	deg C	169	100%	169	13	4	7.04	23	0	0.1
Total coliform	mpn/100 ml	101	100%	101	535	793	13	3000	2	2
Total dissolved solids	mg/L	61	98%	60	51	22	13	150	20	20
Total kjeldahl nitrogen	mg/L	37	59%	22	0.2	0.2	0.1	0.76	0.1	0.1
Total organic carbon	mg/L	101	55%	56	1.7	0.7	0.93	6.4	0.2	1
Total phosphorus	mg/L	32	12%	4	id	id	0.056	0.11	0.05	0.05
Total suspended solids	mg/L	173	58%	101	4	7	1	68	3	3
Turbidity	NTU	55	96%	53	3	4	0.85	26	1	1
Uva 254	cm-1	34	100%	34	0.04	0.02	0.0295	0.14	0.0001	0.0001
Zinc (dissolved)	ug/L	147	58%	85	0.6	1.3	0.04	6.8	0.1	0.1
Zinc (total)	ug/L	148	72%	106	3.1	8.3	0.1	60	0.1	0.1

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-4. Summary Statistics for the American River at Nimbus Dam**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
2,4,6-trichlorophenol	ng/L	38	0%	0	id	id	ND	ND	100	100
Acenaphthene	ng/L	37	3%	1	id	id	0.56	0.56	2	5
Aldicarb	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Aminocarb	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Anthracene	ng/L	37	5%	2	id	id	0.28	0.36	2	5
Barban	ug/L	33	0%	0	id	id	ND	ND	3.5	3.5
Benomyl	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Benz(a)anthracene	ng/L	37	5%	2	id	id	0.25	0.34	2	5
Benzo(a)pyrene	ng/L	37	0%	0	id	id	ND	ND	2	5
Benzo(b)fluoranthene	ng/L	25	0%	0	id	id	ND	ND	2	5
Benzo(g,h,i)perylene	ng/L	25	0%	0	id	id	ND	ND	2	5
Benzo(k)fluoranthene	ng/L	25	0%	0	id	id	ND	ND	2	5
Bis(2-ethylhexyl) phthalate	ng/L	25	8%	2	id	id	125	2510	10	10
Carbaryl	ug/L	32	0%	0	id	id	ND	ND	0.07	0.07
Carbofuran	ug/L	34	0%	0	id	id	ND	ND	0.07	0.07
Chlorpropham	ug/L	33	0%	0	id	id	ND	ND	3.5	3.5
Chlorpyrifos	ug/L	61	0%	0	id	id	ND	ND	0.05	0.1
Chrysene	ng/L	37	11%	4	id	id	0.35	0.94	2	5
Diazinon	ug/L	88	2%	2	id	id	0.012	0.09	0.05	0.1
Dibenz(a,h)anthracene	ng/L	37	3%	1	id	id	0.35	0.35	2	5
Fluoranthene	ng/L	37	30%	11	2.385	11.9745	0.317	53.1	2	5
Fluorene	ng/L	37	16%	6	id	id	0.219	1.3	2	5
Glyphosate	ug/L	13	0%	0	id	id	ND	ND	4.6	25
Hexachlorobenzene	ng/L	37	5%	2	id	id	0.27	1.1	5	62.5
Indeno(1,2,3-c,d)pyrene	ng/L	37	5%	2	id	id	0.22	0.33	2	5
Malathion	ug/L	59	0%	0	id	id	ND	ND	0.1	0.1
Methiocarb	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Methomyl	ug/L	33	0%	0	id	id	ND	ND	0.07	0.07
Mexacarbate	ug/L	33	0%	0	id	id	ND	ND	0.8	0.8
Mtbe	ug/L	16	25%	4	0.4133	0.16	0.26	0.85	0.5	0.5
Naphthalene	ng/L	25	8%	2	id	id	1.7	4.1	2	5
N-nitroso-di-n-propylamine	ng/L	37	0%	0	id	id	ND	ND	62.5	100
Oxamyl	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4
Parathion, methyl	ug/L	59	0%	0	id	id	ND	ND	0.1	0.1
Pentachlorophenol	ng/L	39	5%	2	id	id	4.5	4.6	100	100
Phenanthrene	ng/L	25	4%	1	id	id	3.5	3.5	2	5
Propham	ug/L	33	0%	0	id	id	ND	ND	3.5	3.5
Propoxur	ug/L	33	0%	0	id	id	ND	ND	0.4	0.4

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-5. Summary Statistics for the American River at Discovery Park**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
Ammonia	mg/L	35	3%	1	id	id	0.1	0.1	0.1	0.1
Arsenic (dissolved)	ug/L	76	26%	20	0.37	0.25	0.16	1.68	0.15	0.15
Arsenic (total)	ug/L	148	61%	91	0.41	0.31	0.02	2.9	0.15	0.15
Cadmium (dissolved)	ug/L	137	47%	64	0.01	0.01	0.002	0.1	0.008	0.008
Cadmium (total)	ug/L	145	59%	86	0.05	0.35	0.003	3.3	0.008	0.008
Chloride	mg/L	80	33%	26	2.1	0.6	1	3.7	2	3
Chromium (dissolved)	ug/L	79	11%	9	id	id	0.02	0.18	0.03	0.07
Chromium (total)	ug/L	154	58%	90	0.48	0.67	0.03	6.4	0.03	0.07
Copper (dissolved)	ug/L	153	87%	133	0.65	0.29	0.28	1.9	0.04	0.04
Copper (total)	ug/L	155	97%	151	1	0.7	0.3	5.5	0.04	0.04
Cyanide	ug/L	13	0%	0	id	id	ND	ND	3	5
Dissolved organic carbon	mg/L	105	56%	59	1.8	0.5	0.9	3.8	0.2	1
Dissolved oxygen	mg/L	174	100%	174	10.1	1.7	6.18	18	0.1	0.1
E. coli	mpn/100 ml	59	100%	59	483	2657	2	16000	2	2
Electrical conductivity	umhos/cm	175	100%	175	59	58	17	644	0	10
Fecal coliform	mpn/100 ml	102	100%	102	544	2200	2	16000	2	2
Hardness	mg/L	163	100%	163	26	8	14	66	2	8
Lead (dissolved)	ug/L	136	52%	71	0.05	0.06	0.01	0.5	0.015	0.015
Lead (total)	ug/L	153	94%	144	0.28	0.34	0.03	2.36	0.015	0.015
Mercury (filtered)	ng/L	151	92%	139	1.2	1.2	0.07	11.3	0.15	0.5
Mercury (unfiltered)	ng/L	156	99%	154	3.8	14.6	0.56	139	0.15	0.5
Methyl mercury (filtered)	ng/L	49	55%	27	0.03	0.02	0.021	0.073	0.025	0.026
Methyl mercury (unfiltered)	ng/L	53	85%	45	0.075	0.115	0.027	0.714	0.025	0.026
Molybdenum (dissolved)	ug/L	17	100%	17	0.23	0.08	0.15	0.47	0.02	0.06
Molybdenum (total)	ug/L	23	96%	22	0.21	0.08	0.06	0.43	0.02	0.06
Nickel (dissolved)	ug/L	77	44%	34	0.42	0.2	0.09	1.1	0.04	0.04
Nickel (total)	ug/L	137	79%	108	1	1	0.09	8	0.04	0.04
Nitrate	mg/L	39	21%	8	0.1	0.1	0.1	0.46	0.1	0.5
Nitrite	mg/L	38	3%	1	id	id	0.42	0.42	0.1	0.1002
Orthophosphate (dissolved)	mg/L	30	3%	1	id	id	0.64	0.64	0.05	0.1
pH	Units	176	100%	176	7.4	0.4	6.37	8.62	0.1	0.1
Silver (dissolved)	ug/L	17	24%	4	0.005	-0.001	0.001	0.016	0.015	0.015
Silver (total)	ug/L	25	12%	3	id	id	0.001	0.004	0.015	0.015
Temperature	deg C	174	100%	174	14.1	4.1	7.56	24.4	0	0.1
Total coliform	mpn/100 ml	103	100%	103	2179	6467	17	50000	2	2
Total dissolved solids	mg/L	61	100%	61	54	24	16	140	20	20
Total kjeldahl nitrogen	mg/L	37	54%	20	0.2	0.1	0.1	0.54	0.05	0.1
Total organic carbon	mg/L	104	55%	57	2	1	1.2	9.6	0.2	1
Total phosphorus	mg/L	31	26%	8	0.05	0.02	0.05	0.092	0.05	0.05
Total suspended solids	mg/L	182	70%	128	5	7	1	45	2	3
Turbidity	NTU	61	93%	57	4	5	1	25	0	1
Uva 254	cm-1	33	100%	33	0.045	0.013	0.0304	0.0873	0.0001	0.0001
Zinc (dissolved)	ug/L	151	57%	86	0.9	1.5	0.03	11	0.1	0.1
Zinc (total)	ug/L	155	71%	110	5	24	0.15	230	0.1	0.1

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-5. Summary Statistics for the American River at Discovery Park**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
2,4,6-trichlorophenol	ng/L	39	3%	1	id	id	0.29	0.29	100	100
Acenaphthene	ng/L	41	2%	1	id	id	0.72	0.72	2	5
Aldicarb	ug/L	32	0%	0	id	id	ND	ND	0.4	0.4
Aminocarb	ug/L	32	0%	0	id	id	ND	ND	0.4	0.4
Anthracene	ng/L	41	7%	3	id	id	0.3	0.81	2	5
Barban	ug/L	32	0%	0	id	id	ND	ND	3.5	3.5
Benomyl	ug/L	32	0%	0	id	id	ND	ND	0.4	0.4
Benz(a)anthracene	ng/L	41	20%	8	id	id	0.11	1.6	2	5
Benzo(a)pyrene	ng/L	41	7%	3	id	id	0.27	1.2	2	5
Benzo(b)fluoranthene	ng/L	28	0%	0	id	id	ND	ND	2	5
Benzo(g,h,i)perylene	ng/L	28	0%	0	id	id	ND	ND	2	5
Benzo(k)fluoranthene	ng/L	28	0%	0	id	id	ND	ND	2	5
Bis(2-ethylhexyl) phthalate	ng/L	29	3%	1	id	id	160	160	10	10
Carbaryl	ug/L	32	0%	0	id	id	ND	ND	0.07	0.07
Carbofuran	ug/L	33	0%	0	id	id	ND	ND	0.07	0.07
Chlorpropham	ug/L	32	0%	0	id	id	ND	ND	3.5	3.5
Chlorpyrifos	ug/L	60	0%	0	id	id	ND	ND	0.05	0.05
Chrysene	ng/L	41	27%	11	0.8336	0.9534	0.29	5	2	5
Diazinon	ug/L	86	14%	12	id	id	0.013	0.1	0.05	0.05
Dibenz(a,h)anthracene	ng/L	41	5%	2	id	id	0.33	0.57	2	5
Fluoranthene	ng/L	41	34%	14	1.5857	1.6221	0.519	8.6	2	5
Fluorene	ng/L	41	12%	5	id	id	0.32	2.9	2	5
Glyphosate	ug/L	11	0%	0	id	id	ND	ND	25	25
Hexachlorobenzene	ng/L	41	7%	3	id	id	0.81	1.3	5	62.5
Indeno(1,2,3-c,d)pyrene	ng/L	41	10%	4	id	id	0.36	1.9	2	5
Malathion	ug/L	58	0%	0	id	id	ND	ND	0.1	0.1
Methiocarb	ug/L	32	0%	0	id	id	ND	ND	0.4	0.4
Methomyl	ug/L	32	0%	0	id	id	ND	ND	0.07	0.07
Mexacarbate	ug/L	32	0%	0	id	id	ND	ND	0.8	0.8
Mtbe	ug/L	16	19%	3	id	id	0.47	0.55	0.5	0.5
Naphthalene	ng/L	28	4%	1	id	id	5	5	2	5
N-nitroso-di-n-propylamine	ng/L	41	2%	1	id	id	13	13	62	100
Oxamyl	ug/L	32	0%	0	id	id	ND	ND	0.4	0.4
Parathion, methyl	ug/L	57	0%	0	id	id	ND	ND	0.1	0.1
Pentachlorophenol	ng/L	39	10%	4	id	id	0.95	26	100	100
Phenanthrene	ng/L	28	11%	3	id	id	1.5	6	2	5
Propham	ug/L	32	0%	0	id	id	ND	ND	3.5	3.5
Propoxur	ug/L	32	0%	0	id	id	ND	ND	0.4	0.4

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-6. Summary Statistics for the American River at Business 80 Overpass**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
Ammonia	mg/L	11	0%	0	id	id	ND	ND	0.1	0.1
Arsenic (dissolved)	ug/L	13	92%	12	0.41	0.3	0.24	1.08	0.15	0.15
Arsenic (total)	ug/L	14	86%	12	0.58	0.5	0.33	1.71	0.15	0.15
Cadmium (dissolved)	ug/L	13	23%	3	0.005	0.011	0.009	0.031	0.008	0.008
Cadmium (total)	ug/L	14	71%	10	0.03	0.03	0.01	0.097	0.008	0.008
Chloride	mg/L	11	64%	7	2	1	2	3.8	2	3
Chromium (dissolved)	ug/L	13	62%	8	0.11	0.05	0.09	0.22	0.03	0.07
Chromium (total)	ug/L	14	79%	11	0.77	0.68	0.25	2.03	0.03	0.07
Copper (dissolved)	ug/L	13	100%	13	0.96	0.63	0.49	2.25	0.04	0.04
Copper (total)	ug/L	14	100%	14	2.1	2.2	0.12	7.2	0.04	0.04
Cyanide	ug/L	5	0%	0	id	id	ND	ND	5	5
Dissolved organic carbon	mg/L	12	100%	12	2.4	1.6	1.2	5.5	0.2	1
Dissolved oxygen	mg/L	12	100%	12	12.2	2.9	9.3	19	0	0
E. coli	mpn/100 ml	11	100%	11	141	252	2	700	2	2
Electrical conductivity	umhos/cm	13	100%	13	63	10	49	87	0	0
Fecal coliform	mpn/100 ml	11	100%	11	165	314	4	900	2	2
Hardness	mg/L	12	100%	12	25	9	16	46	4	8
Lead (dissolved)	ug/L	13	69%	9	0.112	0.151	0.009	0.399	0.015	0.015
Lead (total)	ug/L	14	86%	12	1.08	1.81	0.072	5.39	0.015	0.015
Mercury (filtered)	ng/L	13	85%	11	0.89	0.34	0.44	1.32	0.15	0.5
Mercury (unfiltered)	ng/L	14	93%	13	3.79	3.65	0.71	11.7	0.15	0.5
Methyl mercury (filtered)	ng/L	4	25%	1	0	0	0.57	0.57	0.025	0.025
Methyl mercury (unfiltered)	ng/L	13	77%	10	0.084	0.08	0.034	0.236	0.025	0.025
Molybdenum (dissolved)	ug/L	13	100%	13	0.32	0.29	0.14	0.94	0.02	0.06
Molybdenum (total)	ug/L	14	93%	13	0.3	0.29	0.1	0.93	0.02	0.06
Nickel (dissolved)	ug/L	13	100%	13	0.54	0.24	0.2	0.88	0.04	0.04
Nickel (total)	ug/L	14	93%	13	1.2	0.8	0.28	2.55	0.04	0.04
Nitrate	mg/L	12	42%	5	0.09	0.06	0.1	0.22	0.1	0.1
Nitrite	mg/L	12	0%	0	id	id	ND	ND	0.1	0.1
Orthophosphate (dissolved)	mg/L	11	9%	1	id	id	0.12	0.12	0.05	0.1
pH	Units	13	100%	13	7.6	0.2	7.3	8	0	0
Silver (dissolved)	ug/L	13	15%	2	id	id	0.001	0.004	0.015	0.015
Silver (total)	ug/L	14	14%	2	id	id	0.001	0.009	0.015	0.015
Temperature	deg C	13	100%	13	12.7	3.6	8.7	20.2	0	0
Total coliform	mpn/100 ml	11	91%	10	4730	10614	130	30000	2	2
Total dissolved solids	mg/L	12	92%	11	59	16	44	89	20	20
Total kjeldahl nitrogen	mg/L	13	77%	10	0.3	0.2	0.1	0.77	0.1	0.1
Total organic carbon	mg/L	12	100%	12	2.8	2.7	1.3	9.3	0.2	1
Total phosphorus	mg/L	12	50%	6	0.08	0.06	0.073	0.22	0.05	0.05
Total suspended solids	mg/L	11	73%	8	8	10	3	30	3	3
Turbidity	NTU	11	91%	10	9	8	1.6	27	1	1
Uva 254	cm-1	13	100%	13	0.069	0.04	0.0321	0.152	0.0001	0.0001
Zinc (dissolved)	ug/L	13	92%	12	3	4	0.2	11	0.1	0.1
Zinc (total)	ug/L	14	100%	14	8	13	0.51	38.2	0.1	0.1

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits

**Table B-6. Summary Statistics for the American River at Business 80 Overpass**

Parameter	units	Dec 1992 - June 2006 data								
		n (a)	% det. (b)	n det. (c)	mean (d)	std dev (e)	min det. (f)	max det. (g)	min reporting limit (h)	max reporting limit (i)
2,4,6-trichlorophenol	ng/L	10	0%	0	id	id	ND	ND	100	100
Acenaphthene	ng/L	12	0%	0	id	id	ND	ND	2	5
Aldicarb	ug/L	11	0%	0	id	id	ND	ND	0.4	0.4
Aminocarb	ug/L	11	0%	0	id	id	ND	ND	0.4	0.4
Anthracene	ng/L	12	0%	0	id	id	ND	ND	2	5
Barban	ug/L	11	0%	0	id	id	ND	ND	3.5	3.5
Benomyl	ug/L	11	0%	0	id	id	ND	ND	0.4	0.4
Benz(a)anthracene	ng/L	12	25%	3	2.7038	8.2865	2.2	22.5	2	5
Benzo(a)pyrene	ng/L	12	17%	2	id	id	1.4	5.2	2	5
Benzo(b)fluoranthene	ng/L	12	25%	3	4.474	13.7885	2.6	37.8	2	5
Benzo(g,h,i)perylene	ng/L	12	17%	2	id	id	10.2	39.4	2	5
Benzo(k)fluoranthene	ng/L	12	25%	3	3.9663	10.2608	2.6	29.2	2	5
Bis(2-ethylhexyl) phthalate	ng/L	13	23%	3	176.5689	347.8167	267	788	10	10
Carbaryl	ug/L	11	0%	0	id	id	ND	ND	0.07	0.07
Carbofuran	ug/L	11	0%	0	id	id	ND	ND	0.07	0.07
Chlorpropham	ug/L	11	0%	0	id	id	ND	ND	3.5	3.5
Chlorpyrifos	ug/L	13	0%	0	id	id	ND	ND	0.05	0.1
Chrysene	ng/L	12	42%	5	5.8786	13.8075	1.7	39.9	2	5
Diazinon	ug/L	13	0%	0	id	id	ND	ND	0.05	0.1
Dibenz(a,h)anthracene	ng/L	12	0%	0	id	id	ND	ND	2	5
Fluoranthene	ng/L	12	42%	5	6.2225	10.826	3.9	32.6	2	5
Fluorene	ng/L	12	0%	0	id	id	ND	ND	2	5
Glyphosate	ug/L	13	0%	0	id	id	ND	ND	25	25
Hexachlorobenzene	ng/L	12	0%	0	id	id	ND	ND	5	62.5
Indeno(1,2,3-c,d)pyrene	ng/L	12	8%	1	id	id	6.9	6.9	2	5
Malathion	ug/L	13	0%	0	id	id	ND	ND	0.1	0.2
Methiocarb	ug/L	11	0%	0	id	id	ND	ND	0.4	0.4
Methomyl	ug/L	11	0%	0	id	id	ND	ND	0.07	0.07
Mexacarbate	ug/L	11	0%	0	id	id	ND	ND	0.8	0.8
Mtbe	ug/L	4	0%	0	id	id	ND	ND	0.5	0.5
Naphthalene	ng/L	12	17%	2	id	id	4	7.8	2	5
N-nitroso-di-n-propylamine	ng/L	12	0%	0	id	id	ND	ND	62	100
Oxamyl	ug/L	11	0%	0	id	id	ND	ND	0.4	0.4
Parathion, methyl	ug/L	13	0%	0	id	id	ND	ND	0.1	0.2
Pentachlorophenol	ng/L	11	0%	0	id	id	ND	ND	100	100
Phenanthrene	ng/L	12	42%	5	3.497	5.1762	1.3	15.2	2	5
Propham	ug/L	11	0%	0	id	id	ND	ND	3.5	3.5
Propoxur	ug/L	11	0%	0	id	id	ND	ND	0.4	0.4

(a) number of samples analyzed

(b) percent of samples in which analyte was detected

(c) number of samples in which analyte was detected

(d) arithmetic mean value; "id" indicates insufficient detected data to calculate value

(e) standard deviation of data; "id" indicates insufficient detected data to calculate value

(f) minimum detected value reported, or ND if no detected values

(g) maximum detected value reported, or ND if no detected values

(h) minimum reporting limit for data below detection, or NA if all data above reporting limits

(i) maximum reporting limit for data below detection, or NA if all data above reporting limits



## *APPENDIX C*

### *Time Series Plots*

*December 1992 – June 2006*

# Appendix C

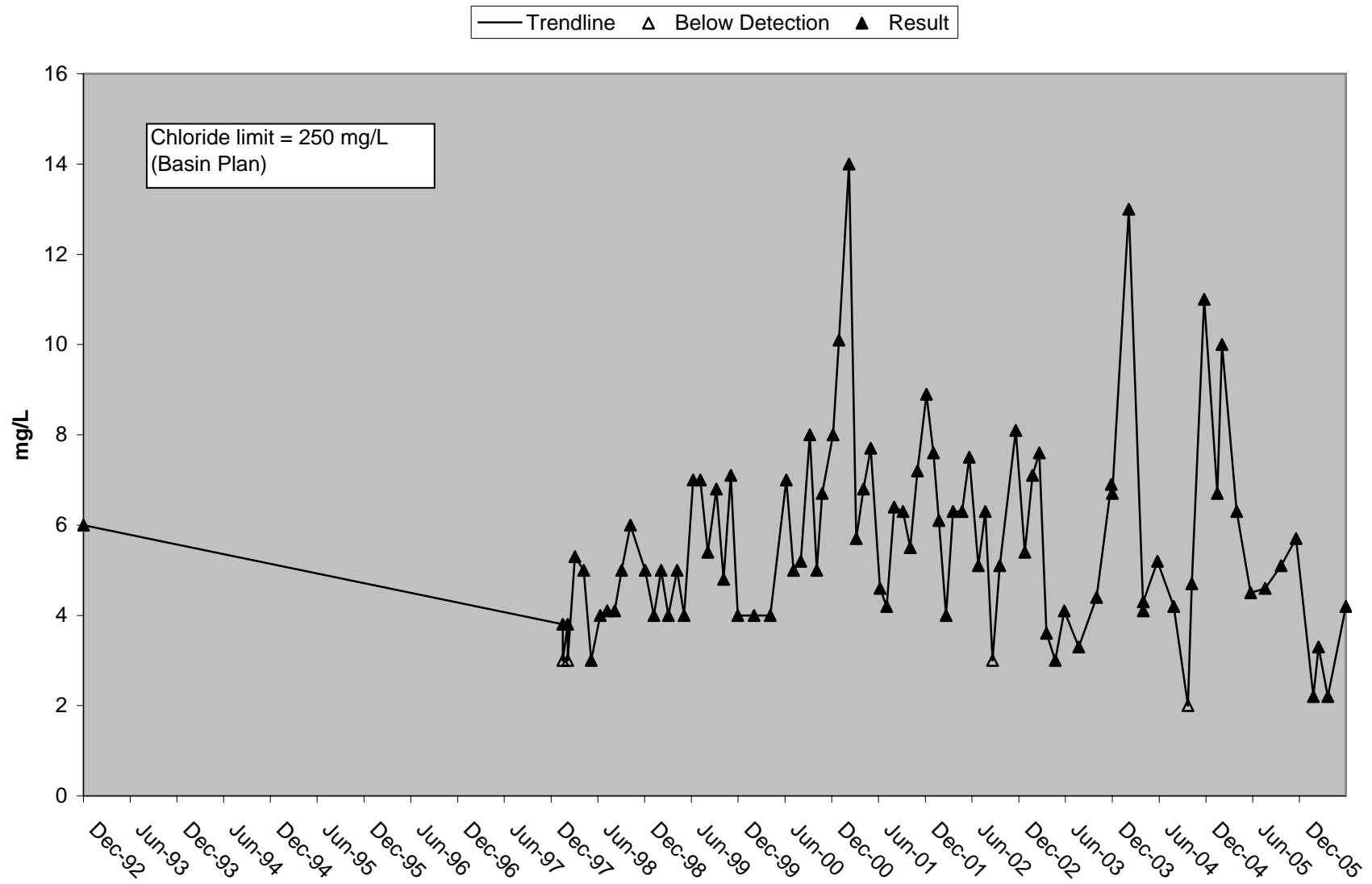
## Time Series Plots

Time-series plots representing AMP data from December 1992 through June 2006 are presented in this Appendix. These plots were prepared for most parameters monitored in 2005-2006. However, not all parameters have been included. Time series plots for a majority of the trace organic parameters were not included because their results were below detection. A representative number have been included to demonstrate trends for the various categories (carbamate pesticides, OP pesticides, PAHs, semi volatile organics and volatile organics). The lowest water quality objective as listed in Table 3-7 have been included on selected plots. Plots are presented by monitoring site.

## *APPENDIX C-1*

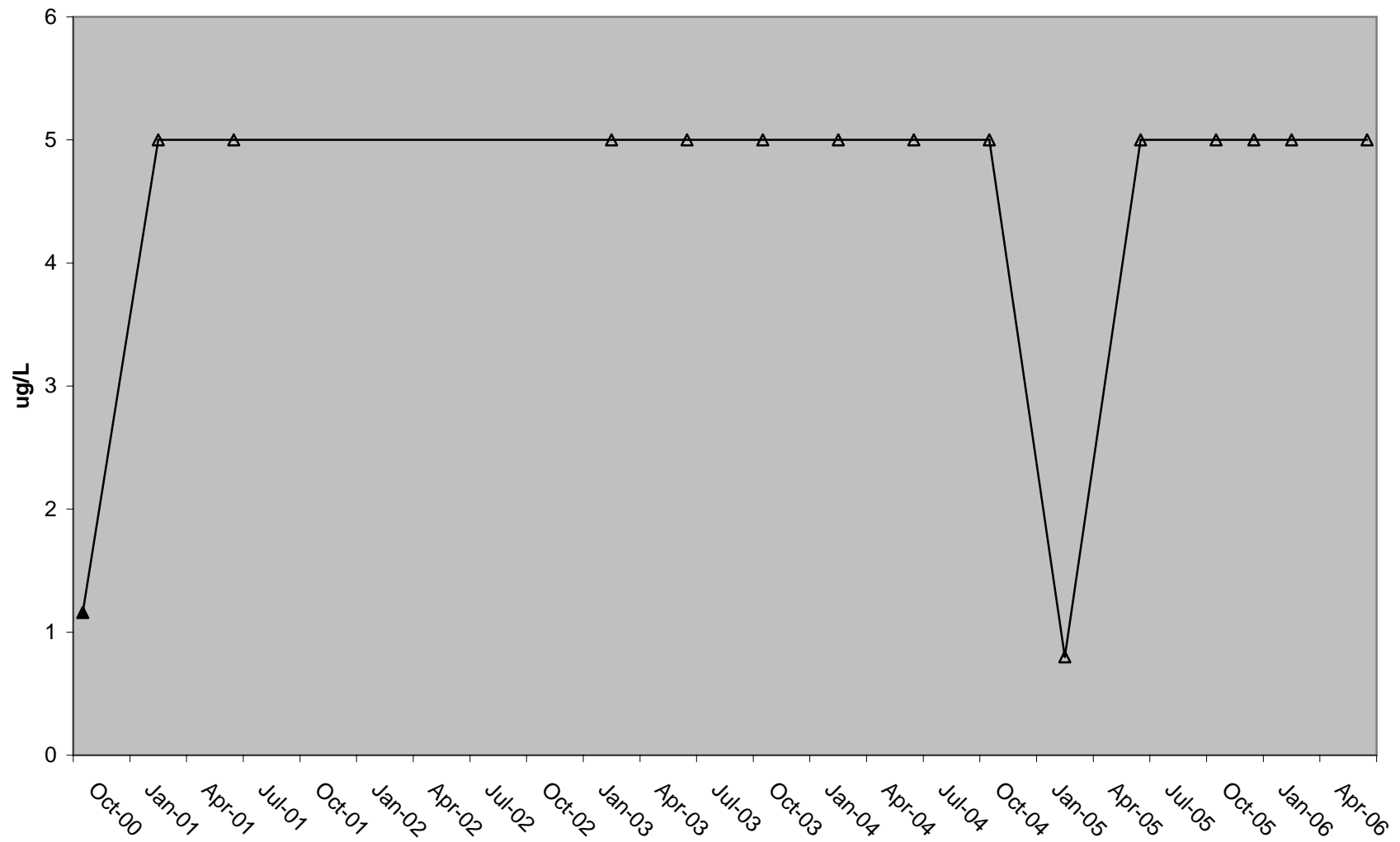
### *Sacramento River at Veterans Bridge*

## Veterans Bridge Chloride

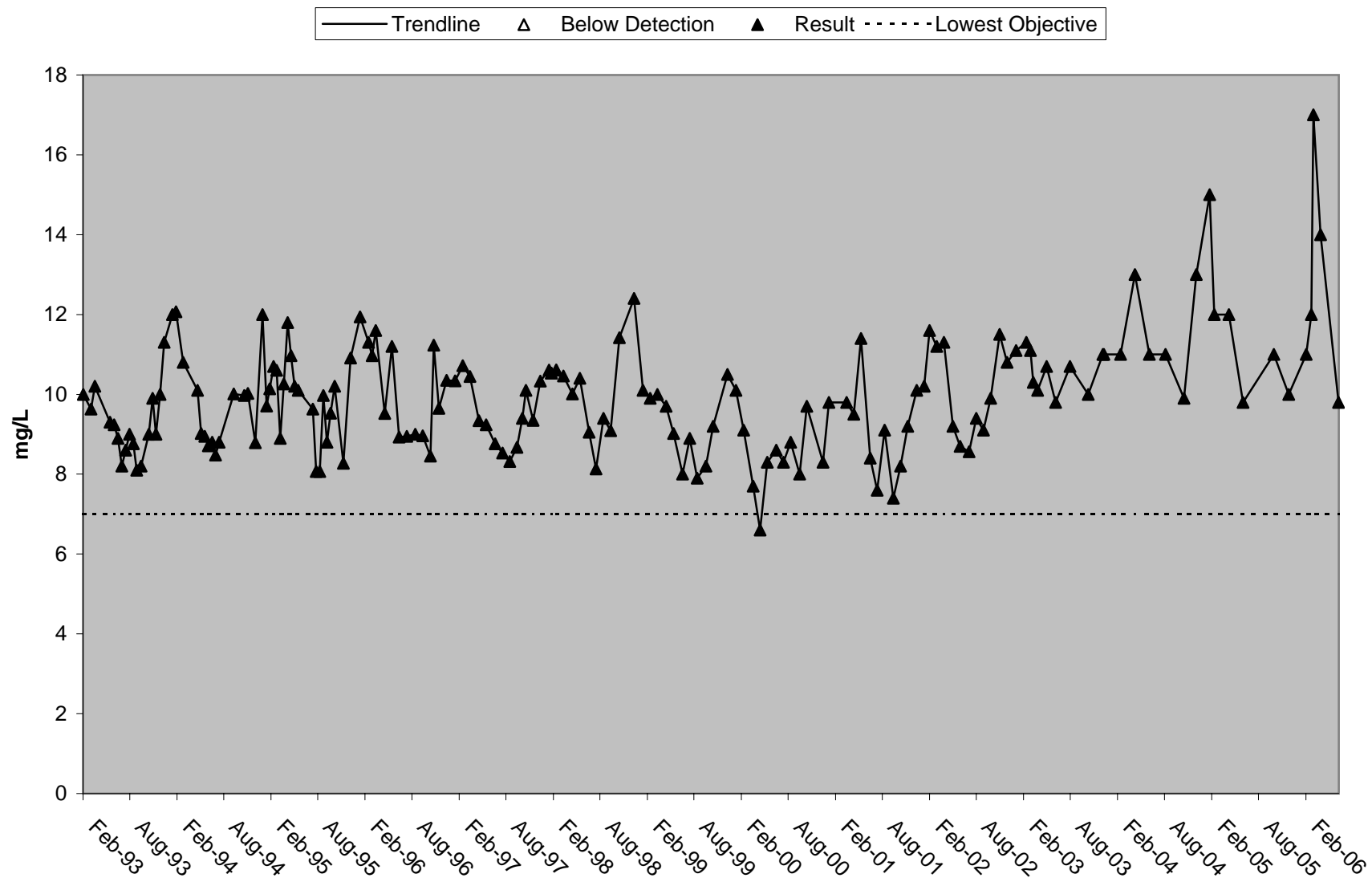


# Veterans Bridge Cyanide

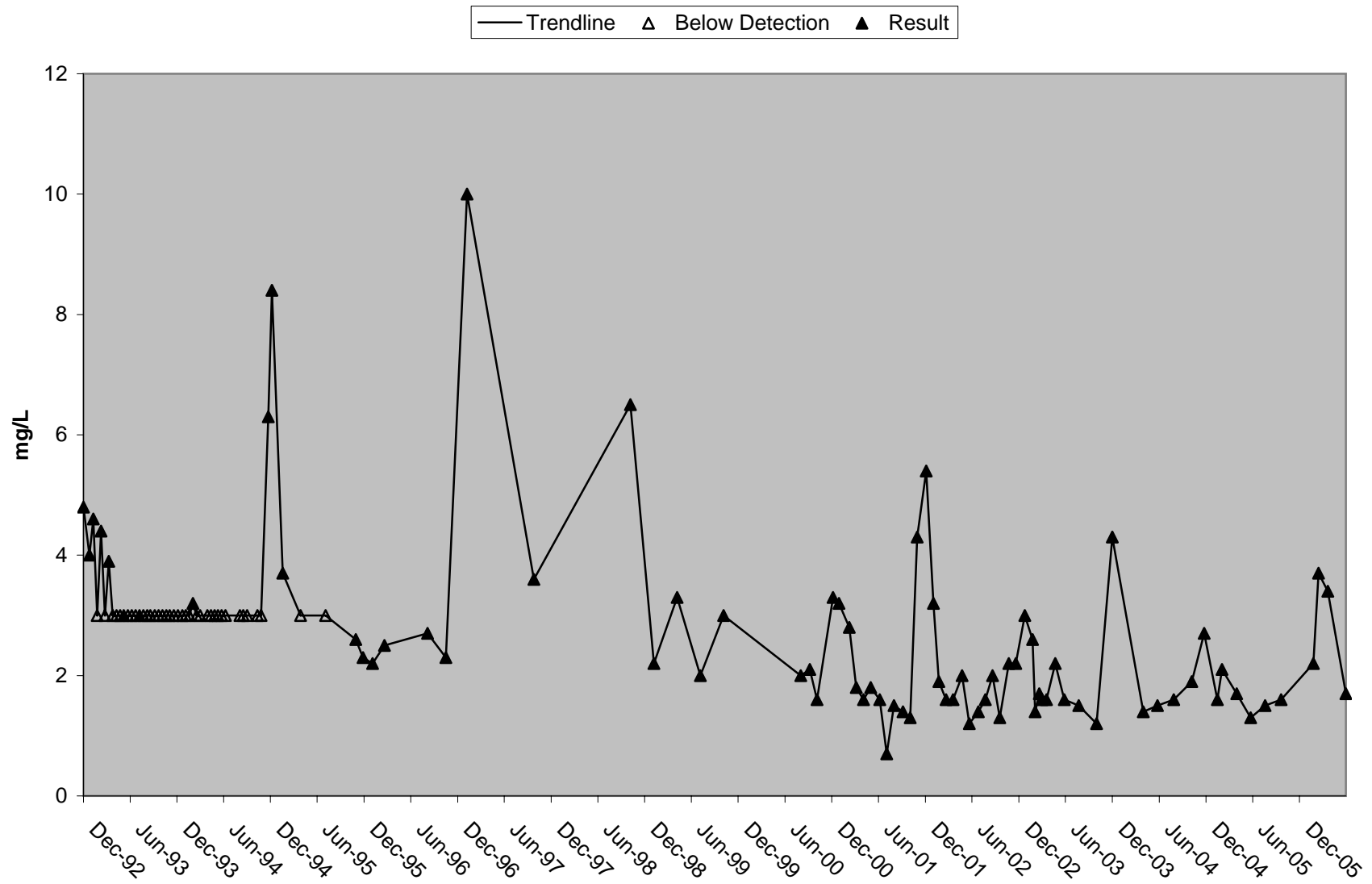
— Trendline    △ Below Detection    ▲ Result



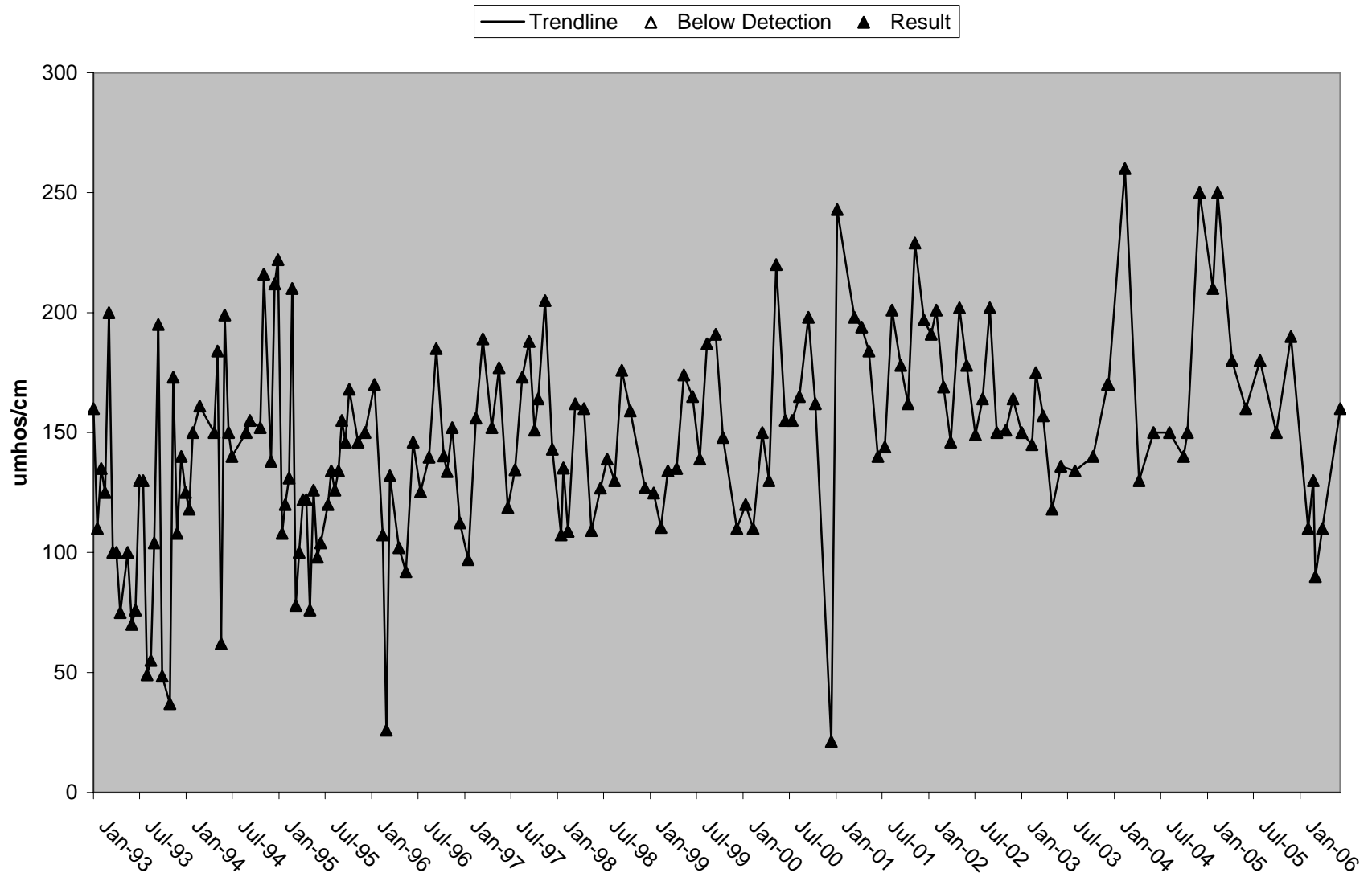
## Veterans Bridge Dissolved Oxygen (DO)



# Veterans Bridge Dissolved Organic Carbon (DOC)

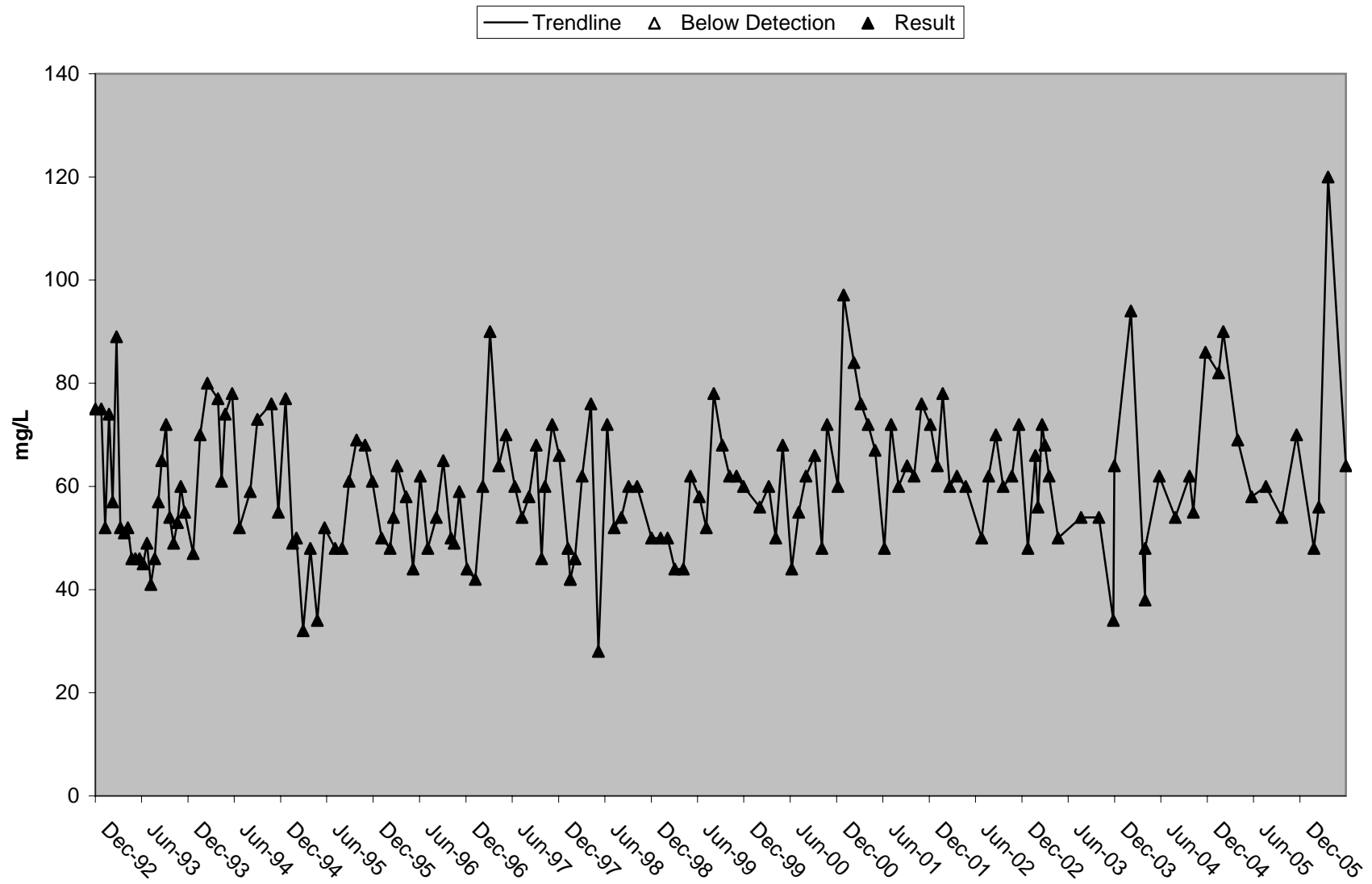


### Veterans Bridge Electrical Conductivity (EC)

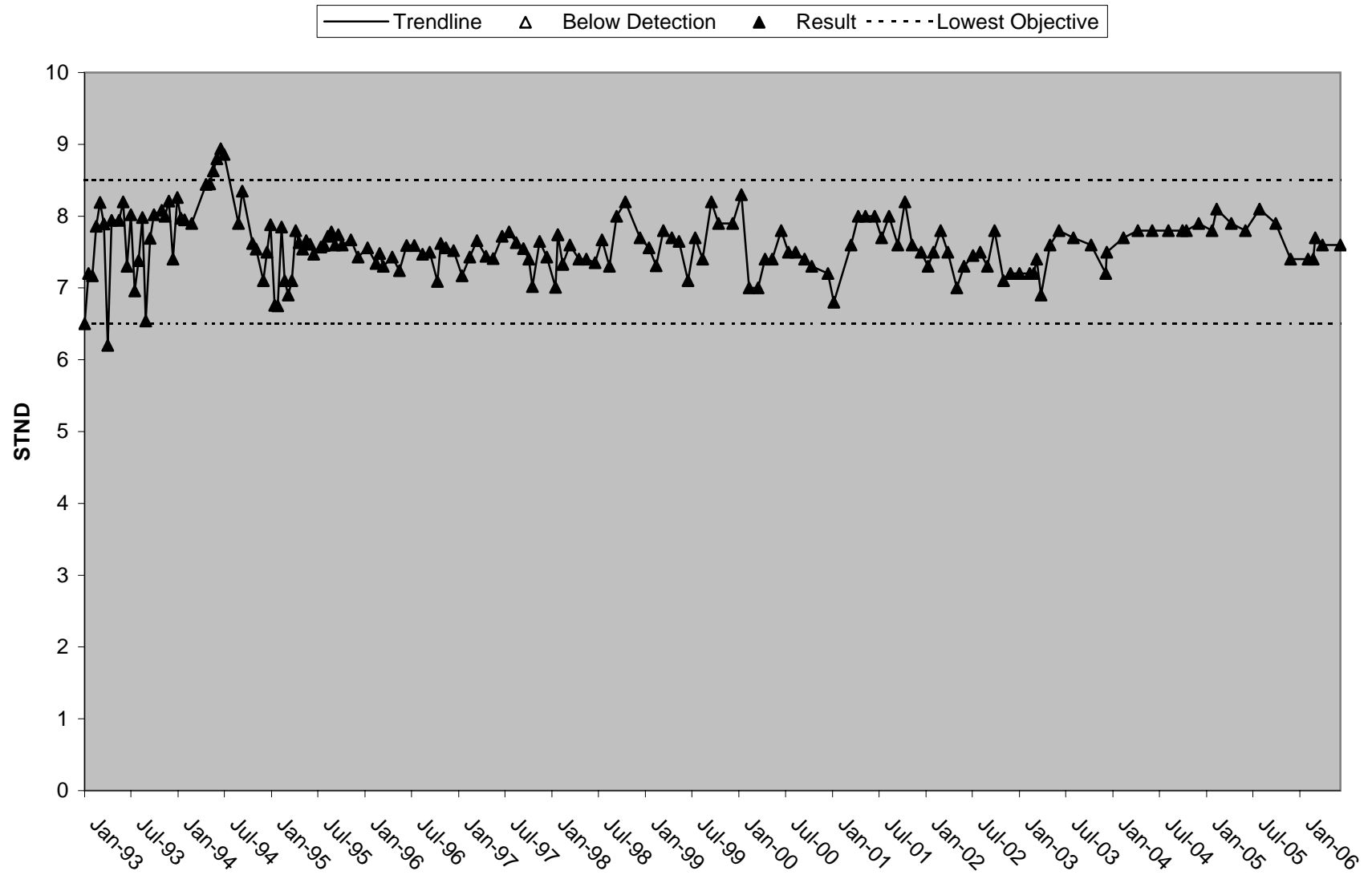




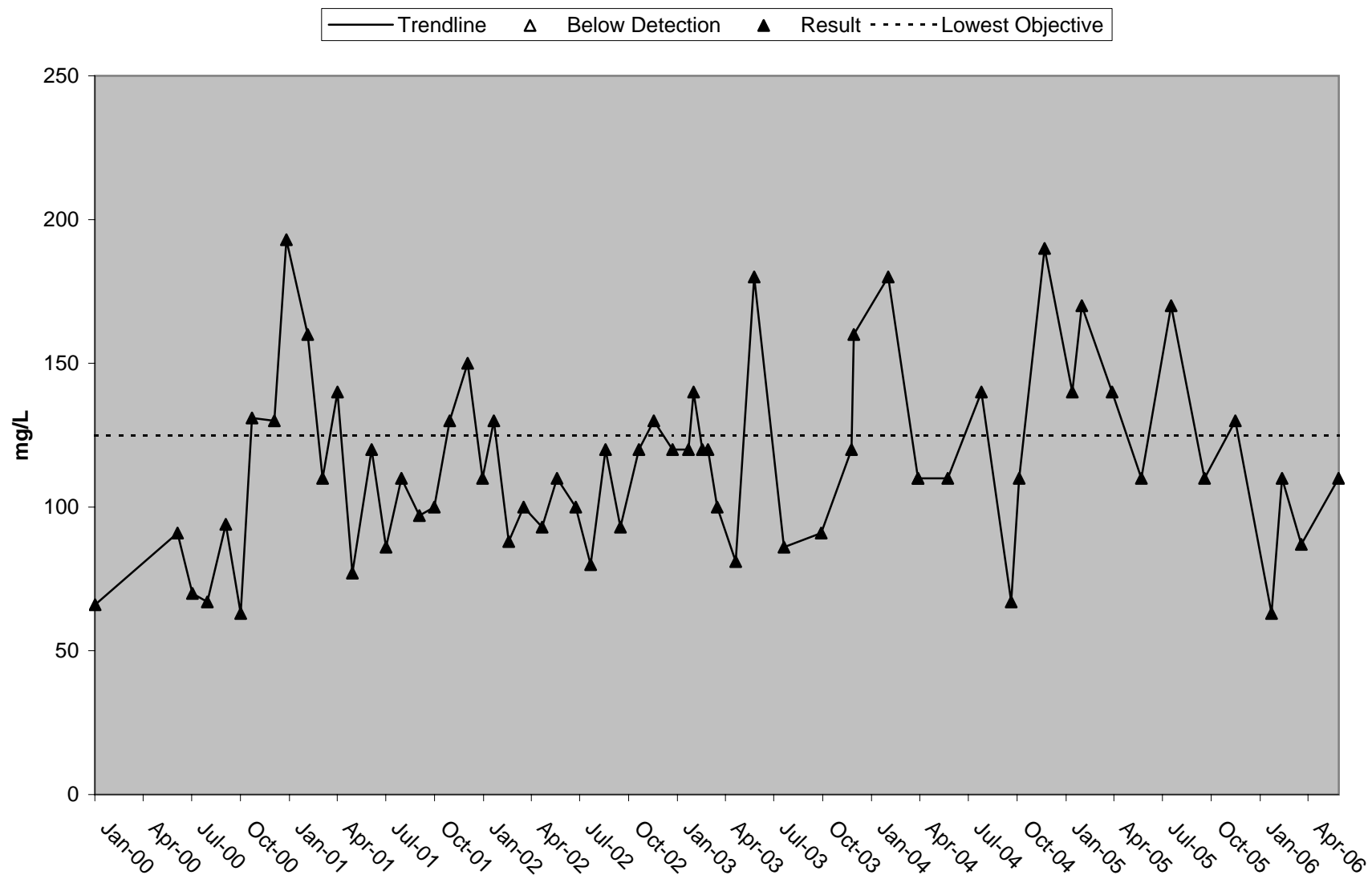
## Veterans Bridge Hardness



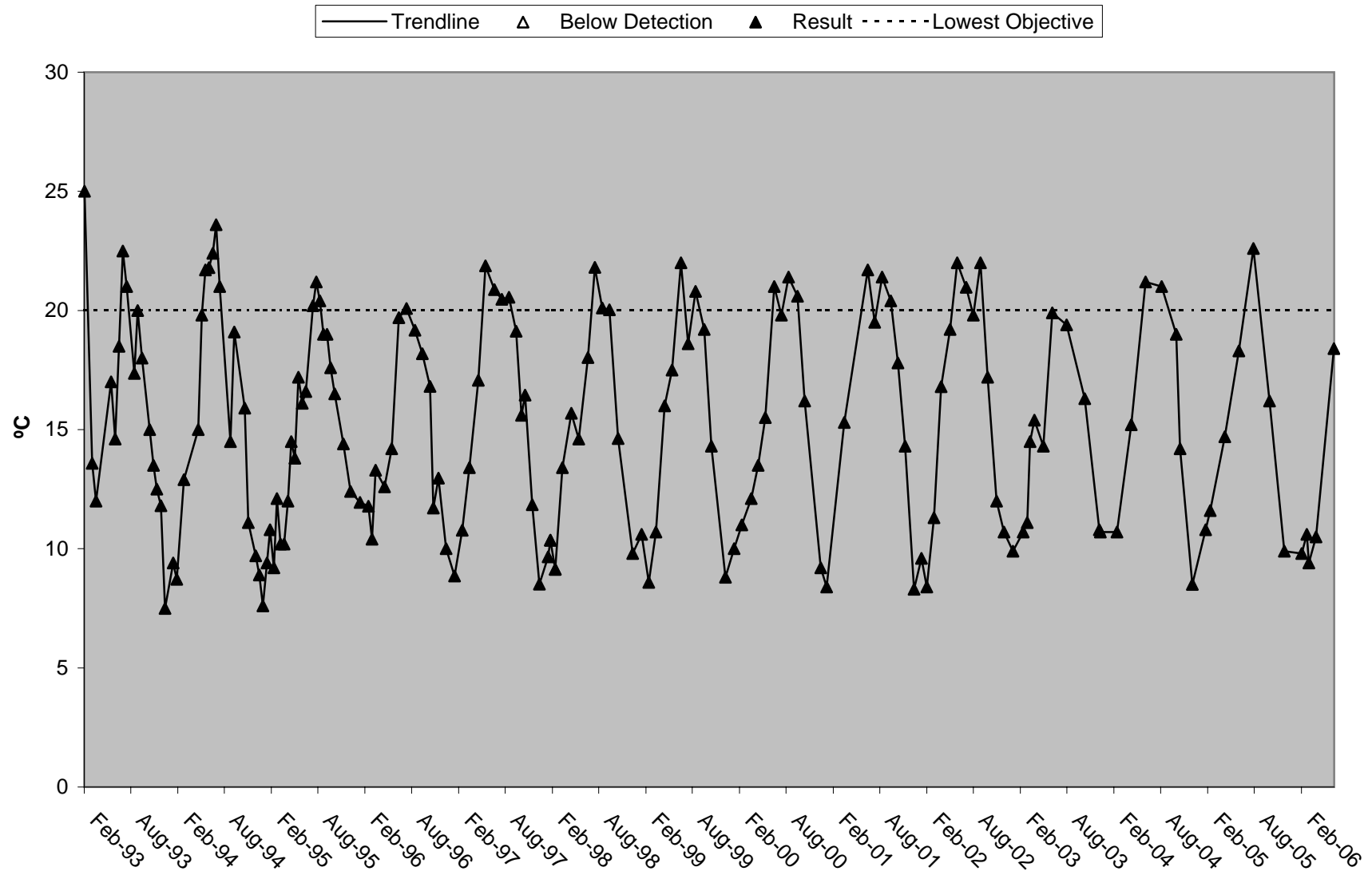
# Veterans Bridge pH



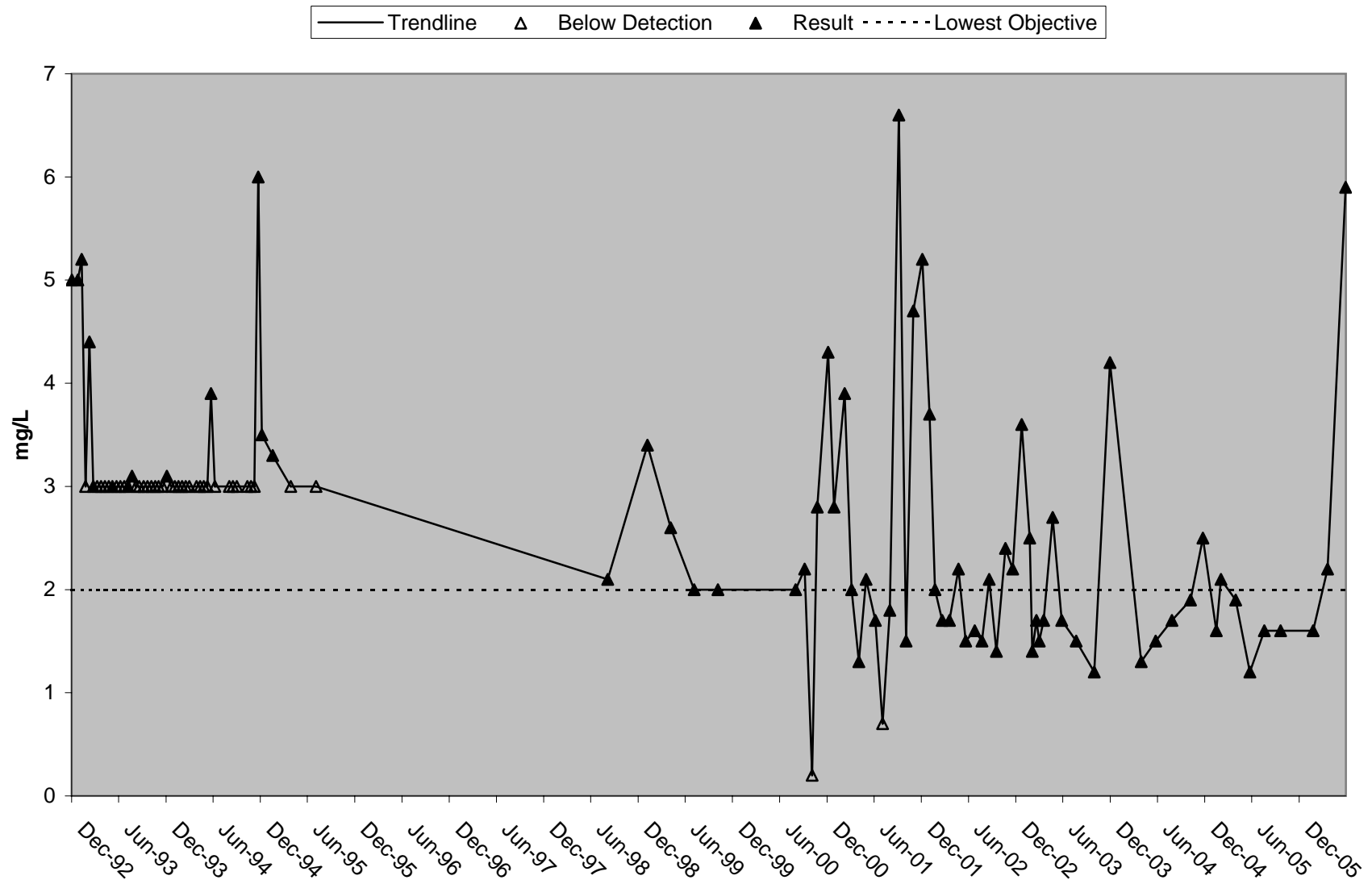
### Veterans Bridge Total Dissolved Solids (TDS)



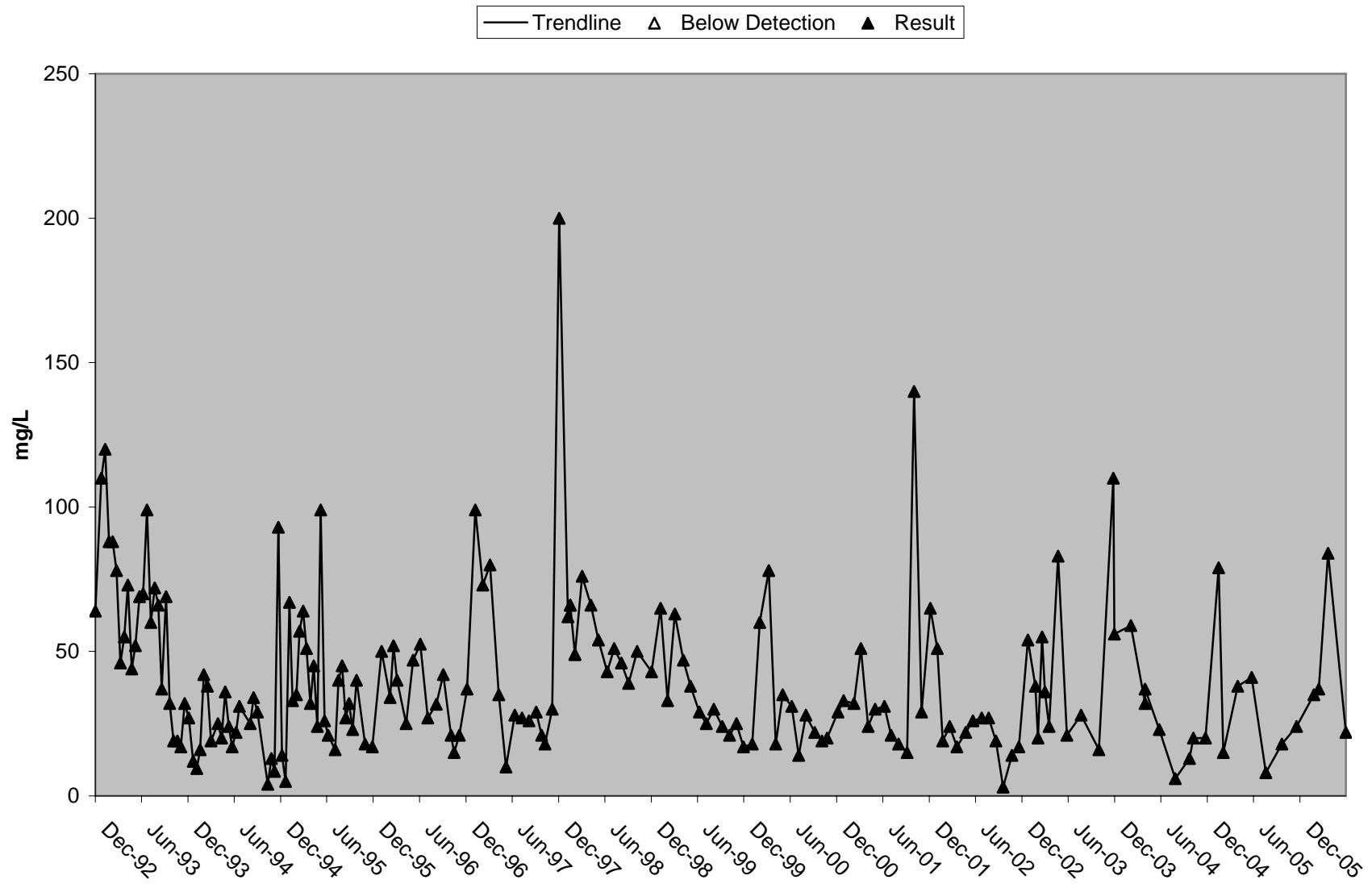
# Veterans Bridge Water Temperature



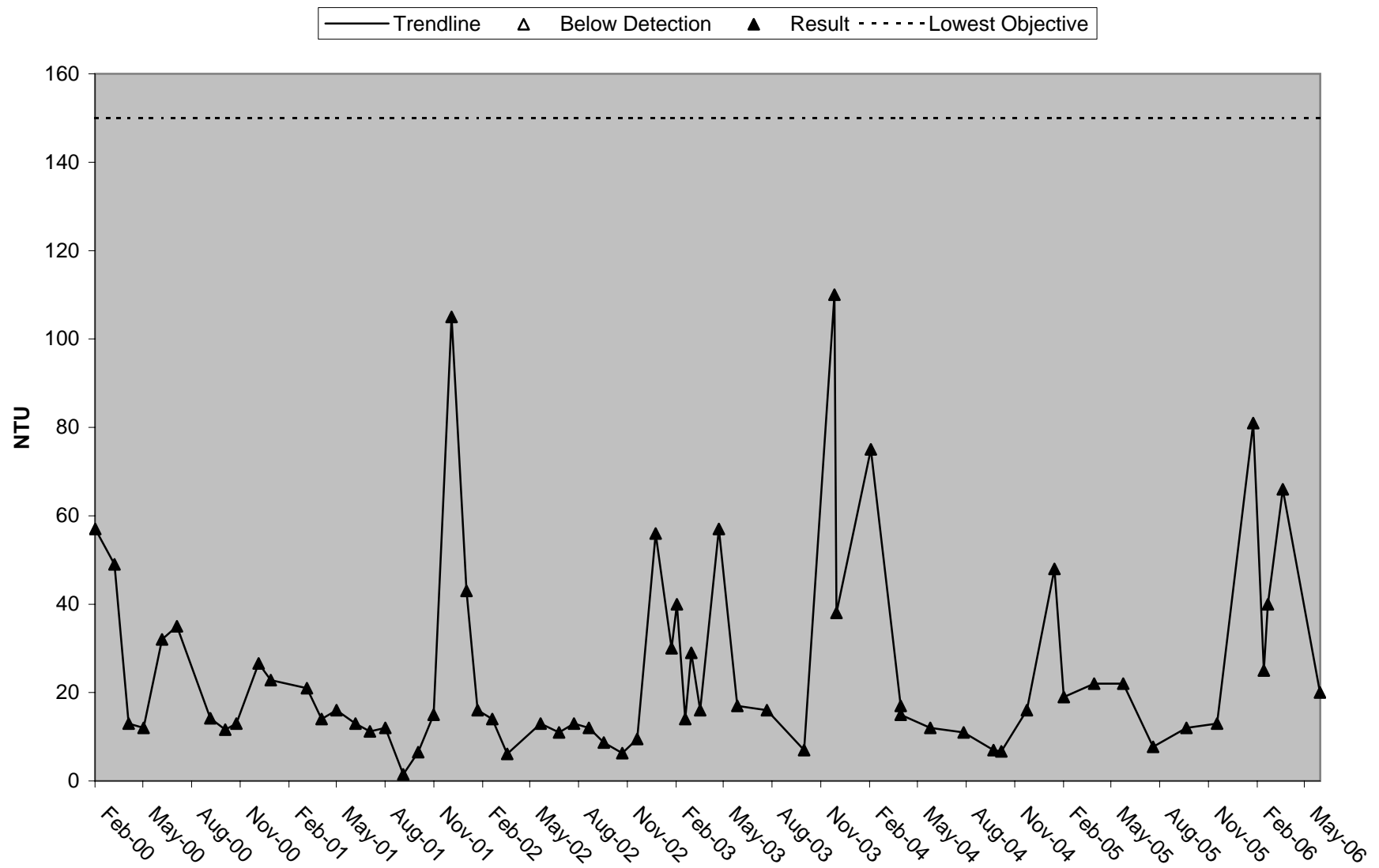
# Veterans Bridge Total Organic Carbon (TOC)



### Veterans Bridge Total Suspended Solids (TSS)

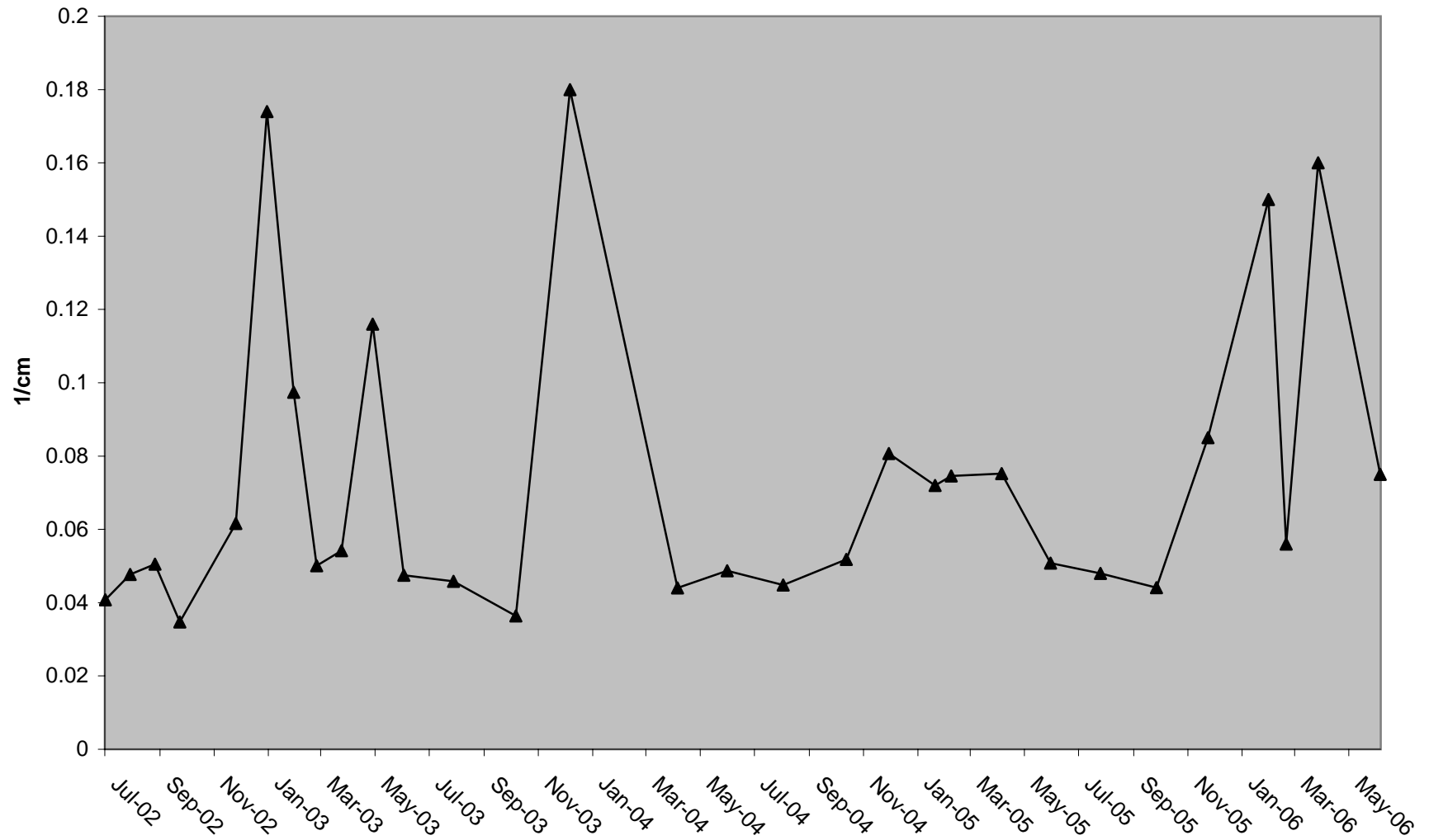


## Veterans Bridge Turbidity



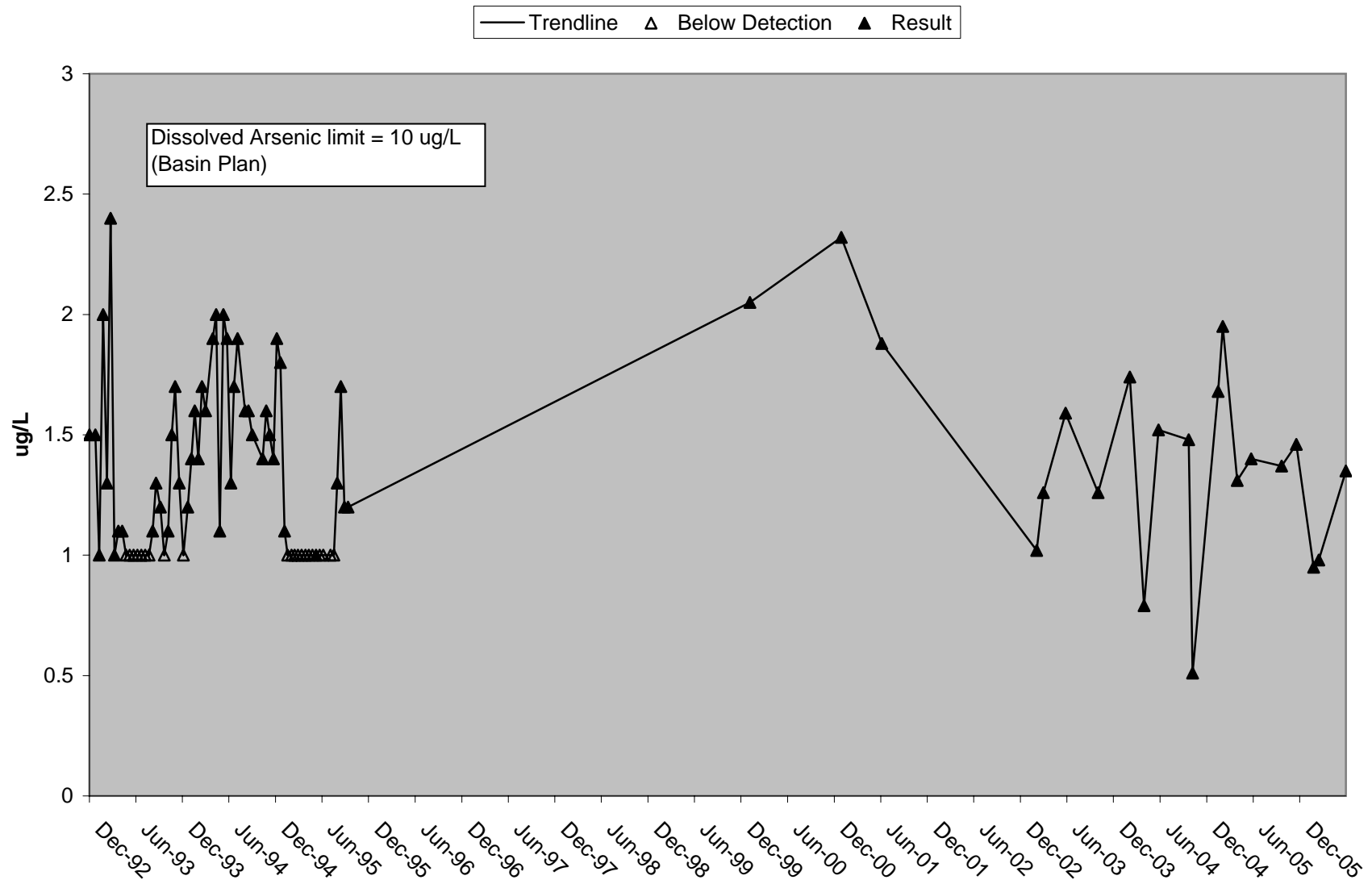
# Veterans Bridge UVA 254

— Trendline    △ Below Detection    ▲ Result

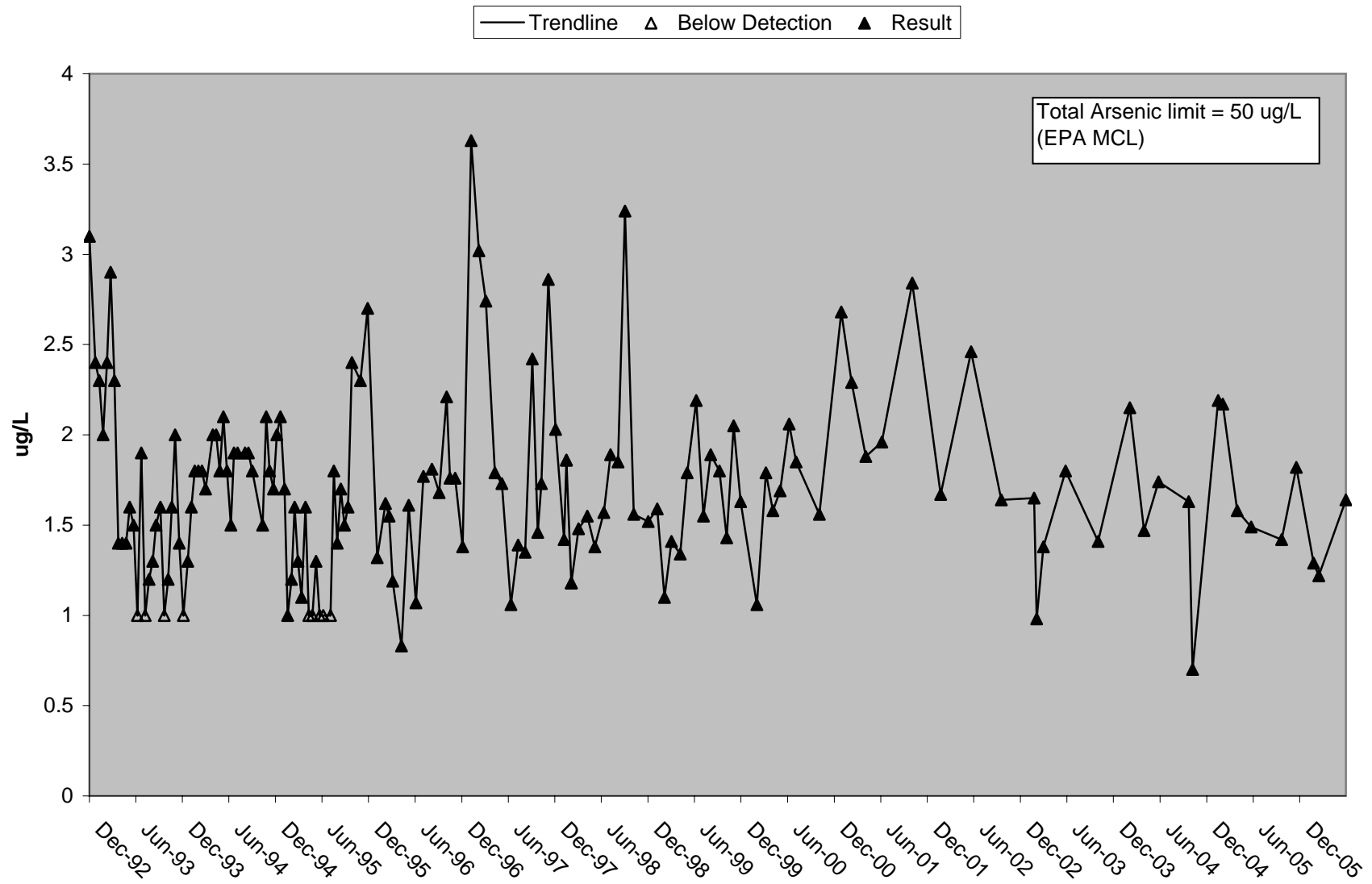




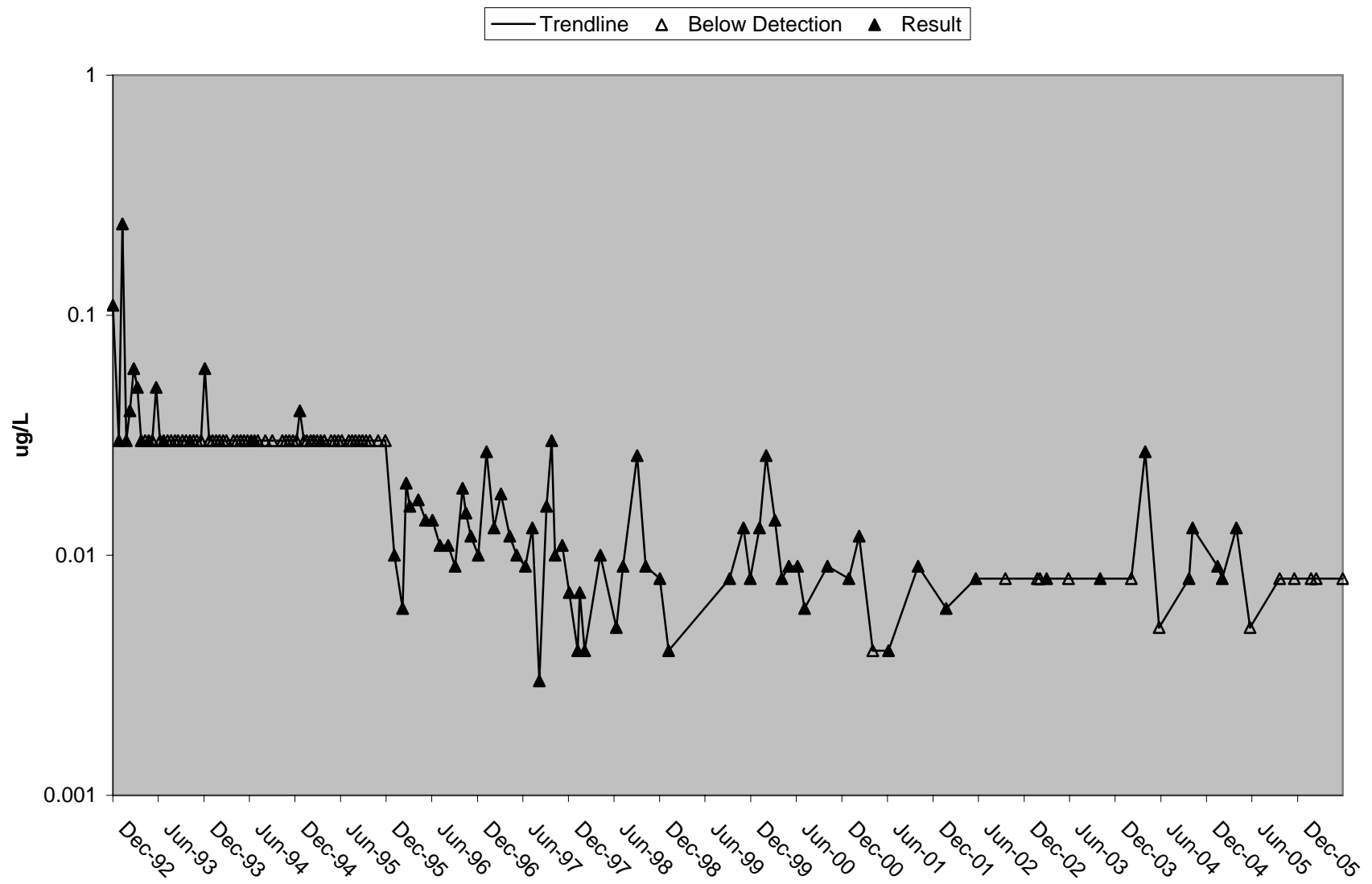
### Veterans Bridge Dissolved Arsenic (As-d)



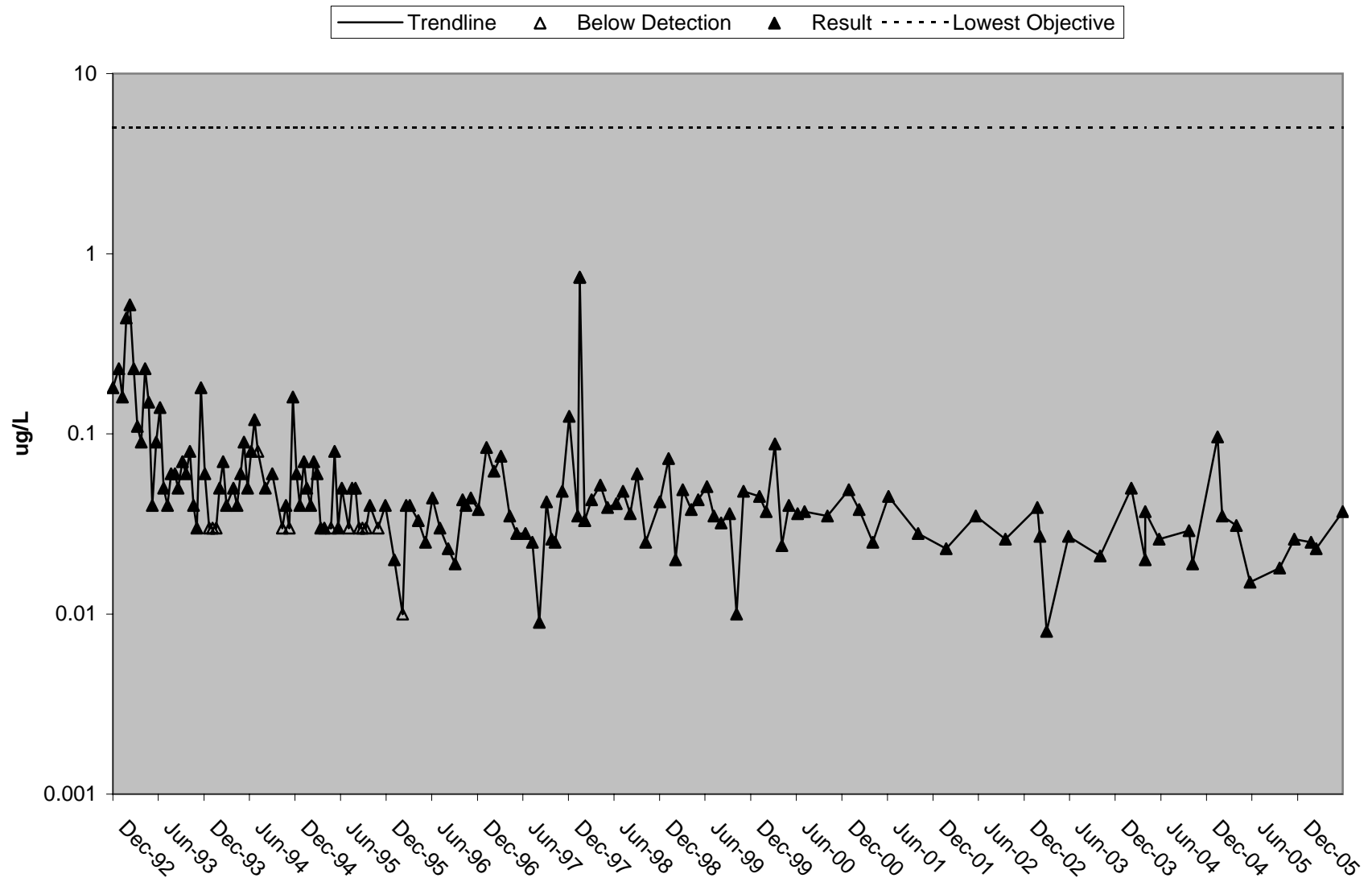
### Veterans Bridge Total Arsenic (As-T)



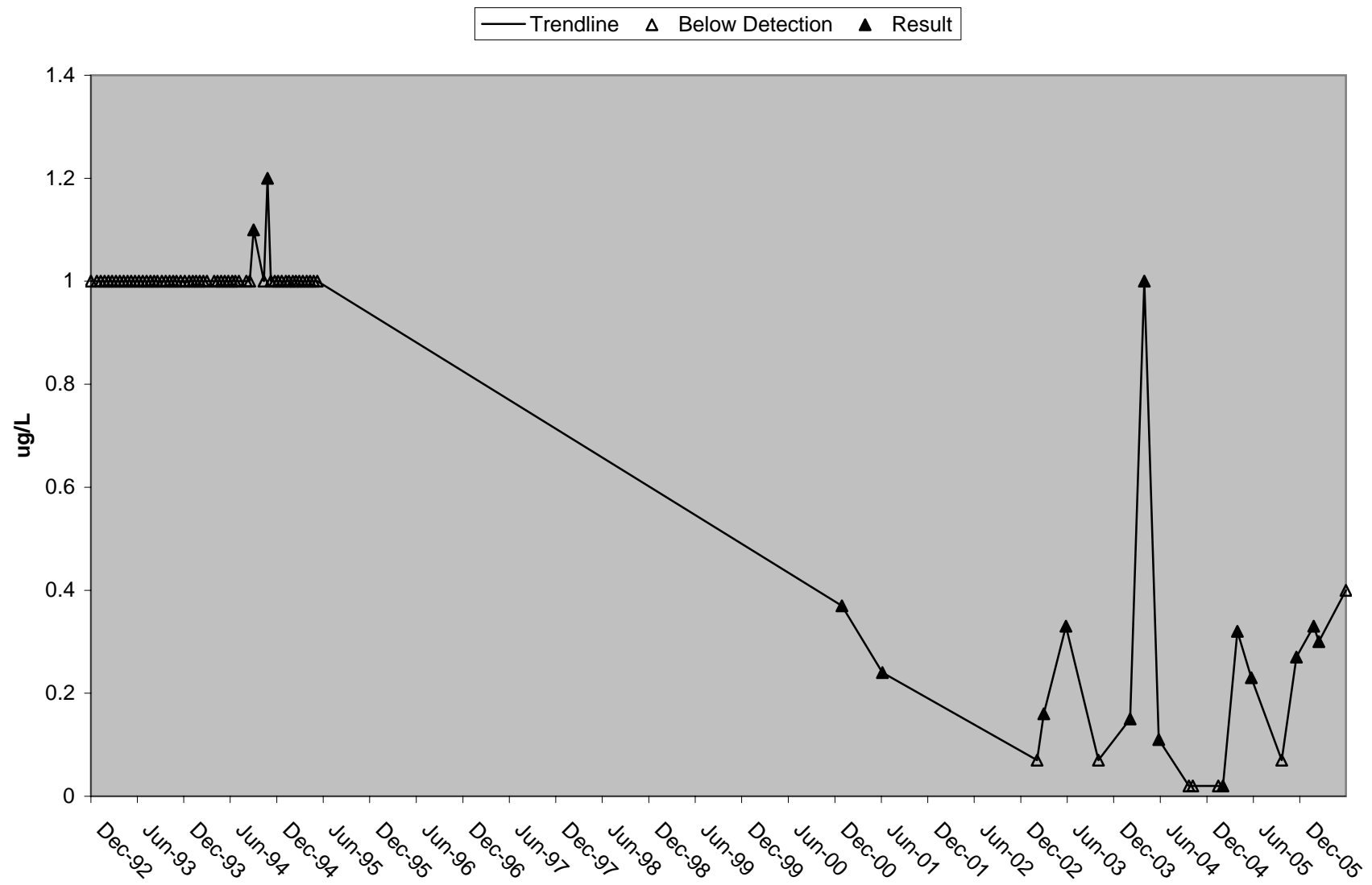
# Veterans Bridge Dissolved Cadmium (Cd-d)



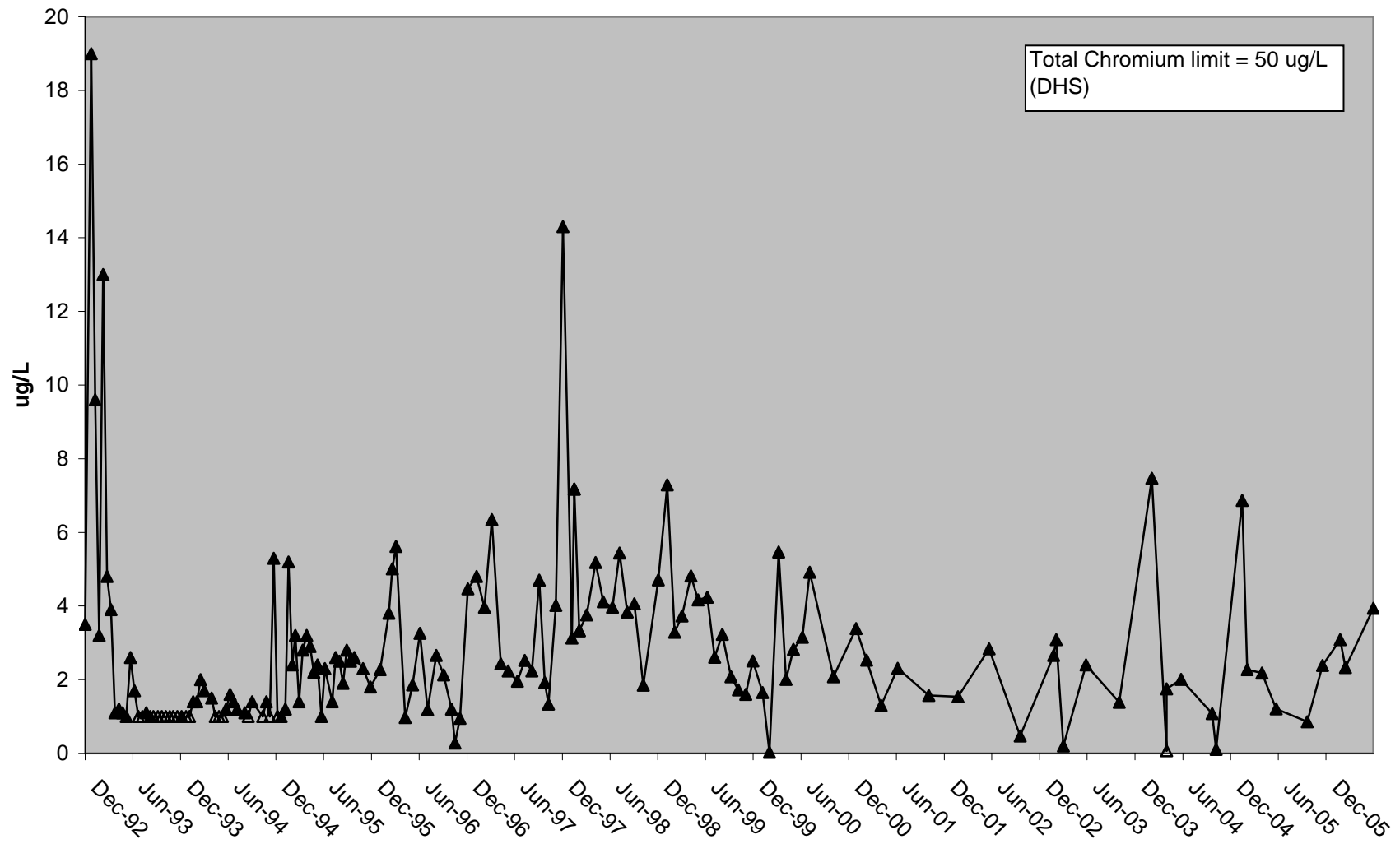
# Veterans Bridge Total Cadmium (Cd-T)



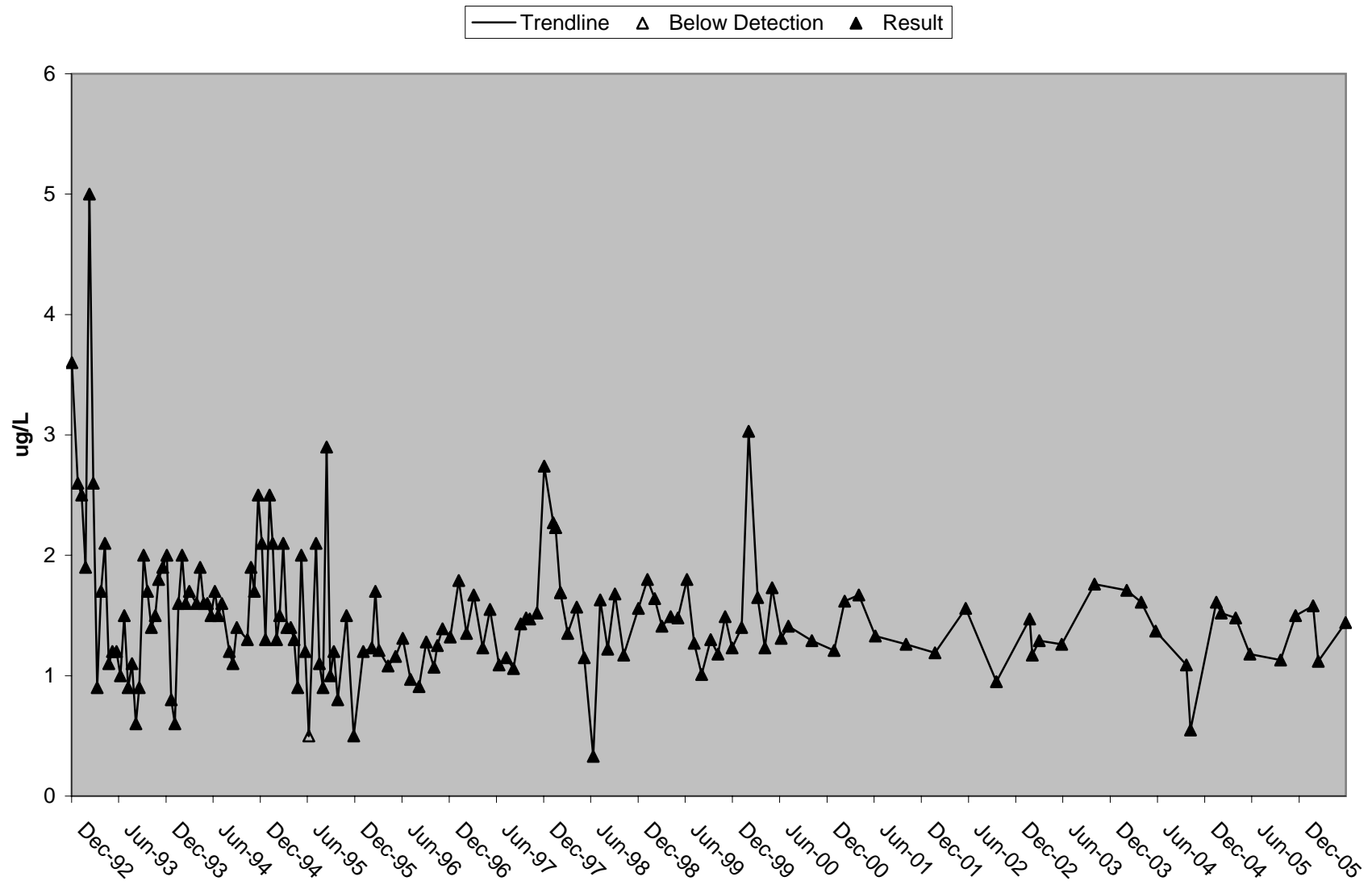
### Veterans Dissolved Chromium (Cr-d)



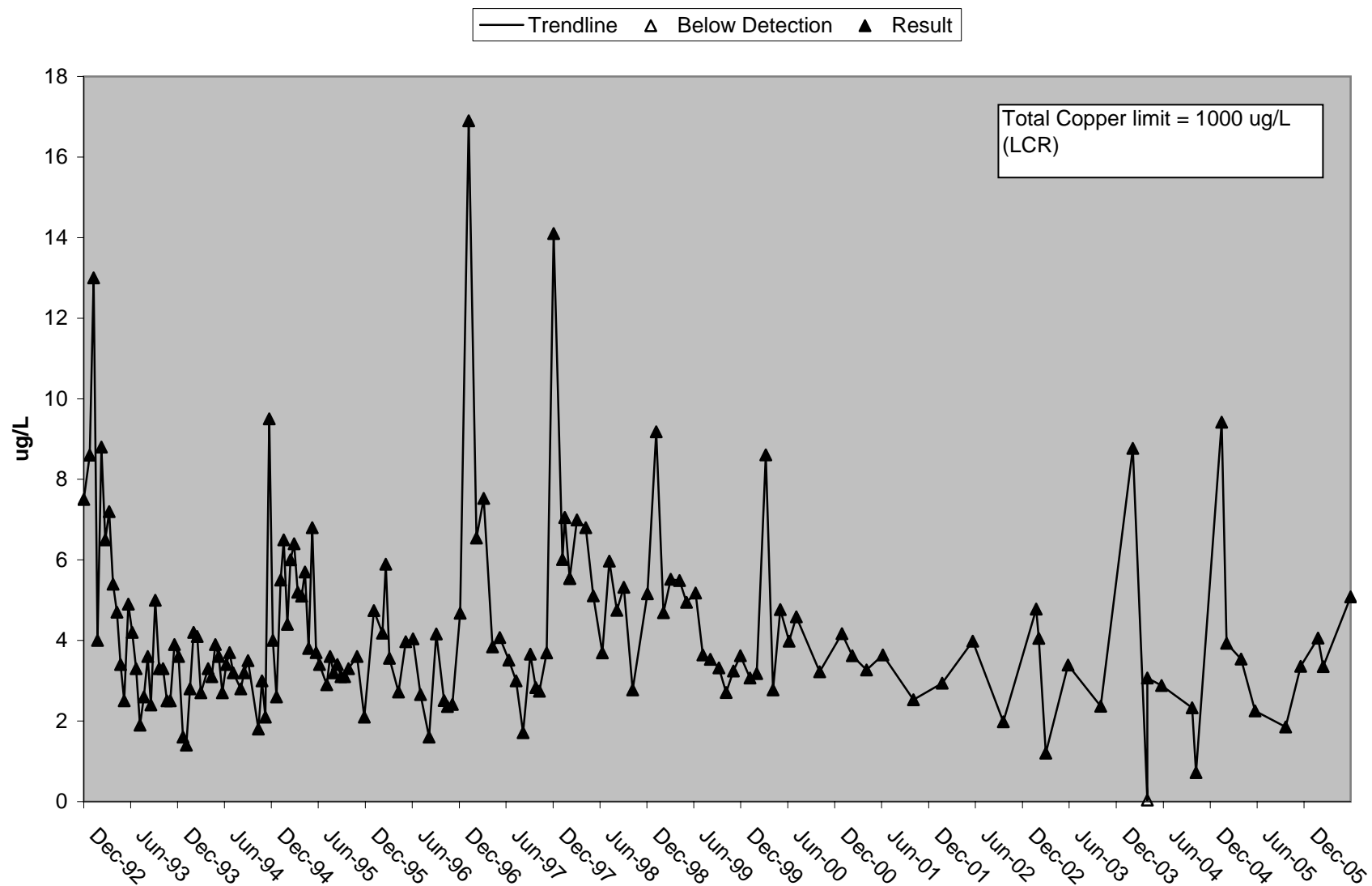
— Trendline    Δ Below Detection    ▲ Result



### Veterans Bridge Dissolved Copper (Cu-d)

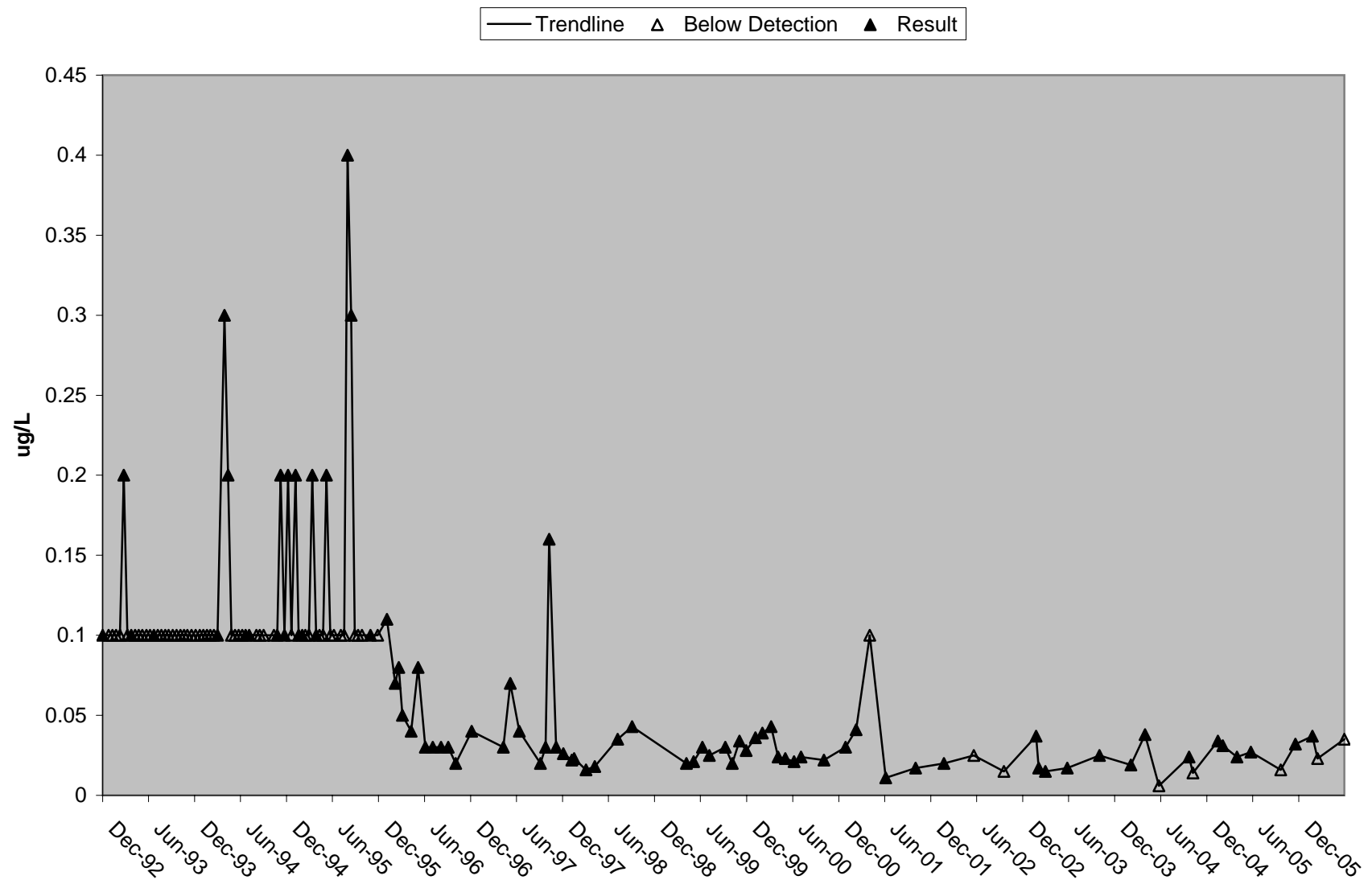


### Veterans Bridge Total Copper (Cu-T)

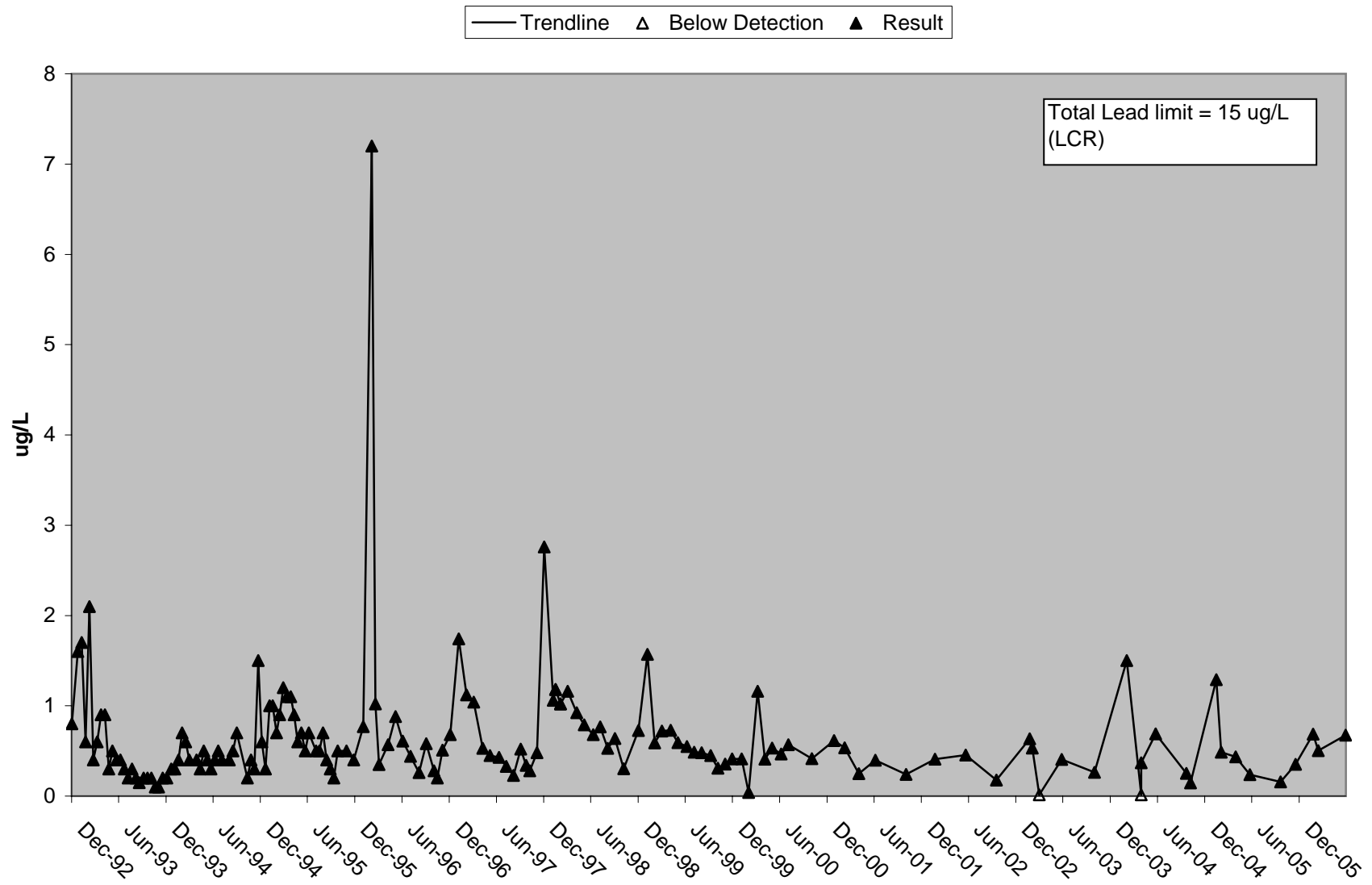




### Veterans Bridge Dissolved Lead (Pb-d)

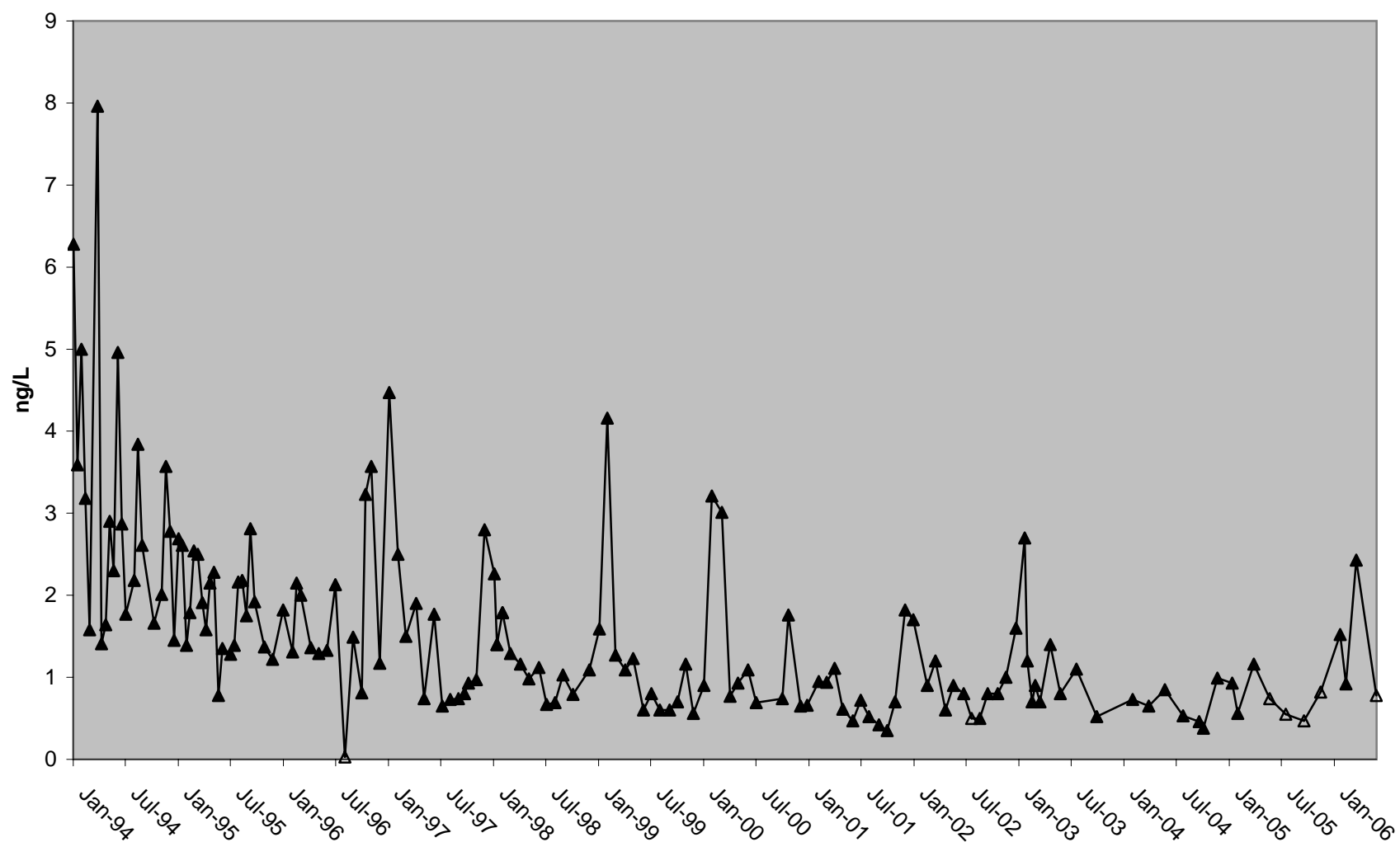


### Veterans Bridge Total Lead (Pb-T)

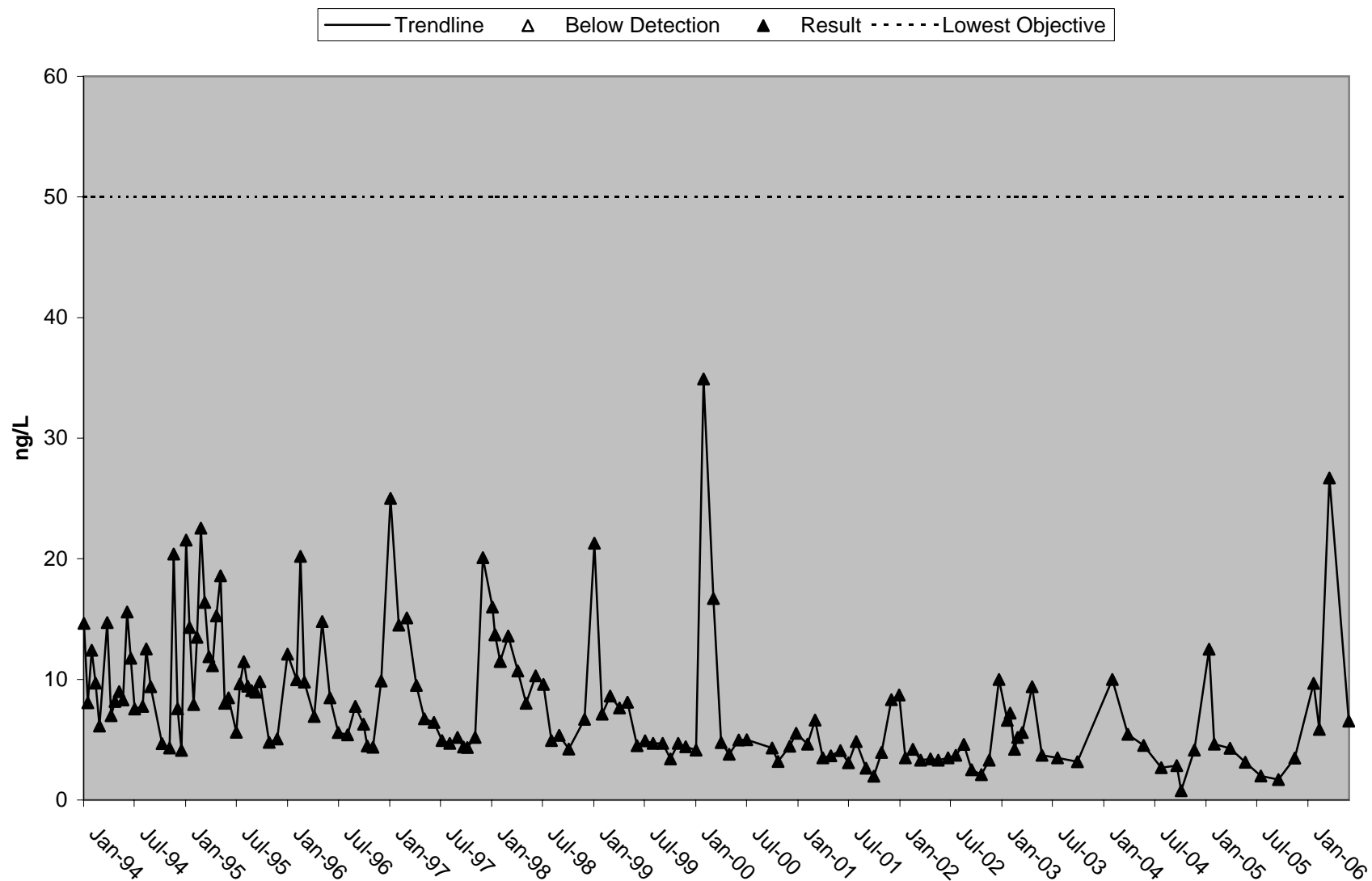


# Veterans Bridge Filtered Mercury

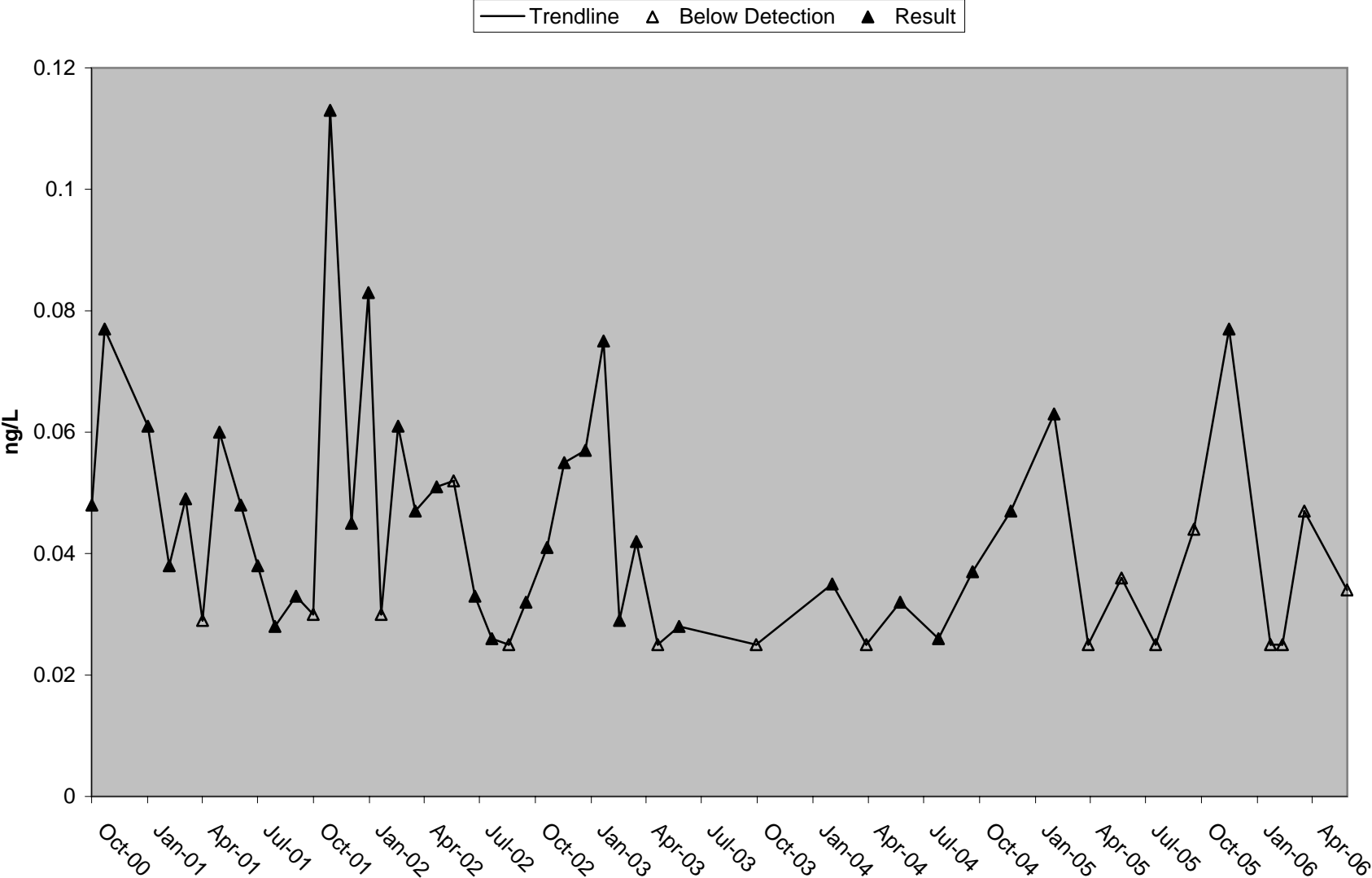
— Trendline    △ Below Detection    ▲ Result



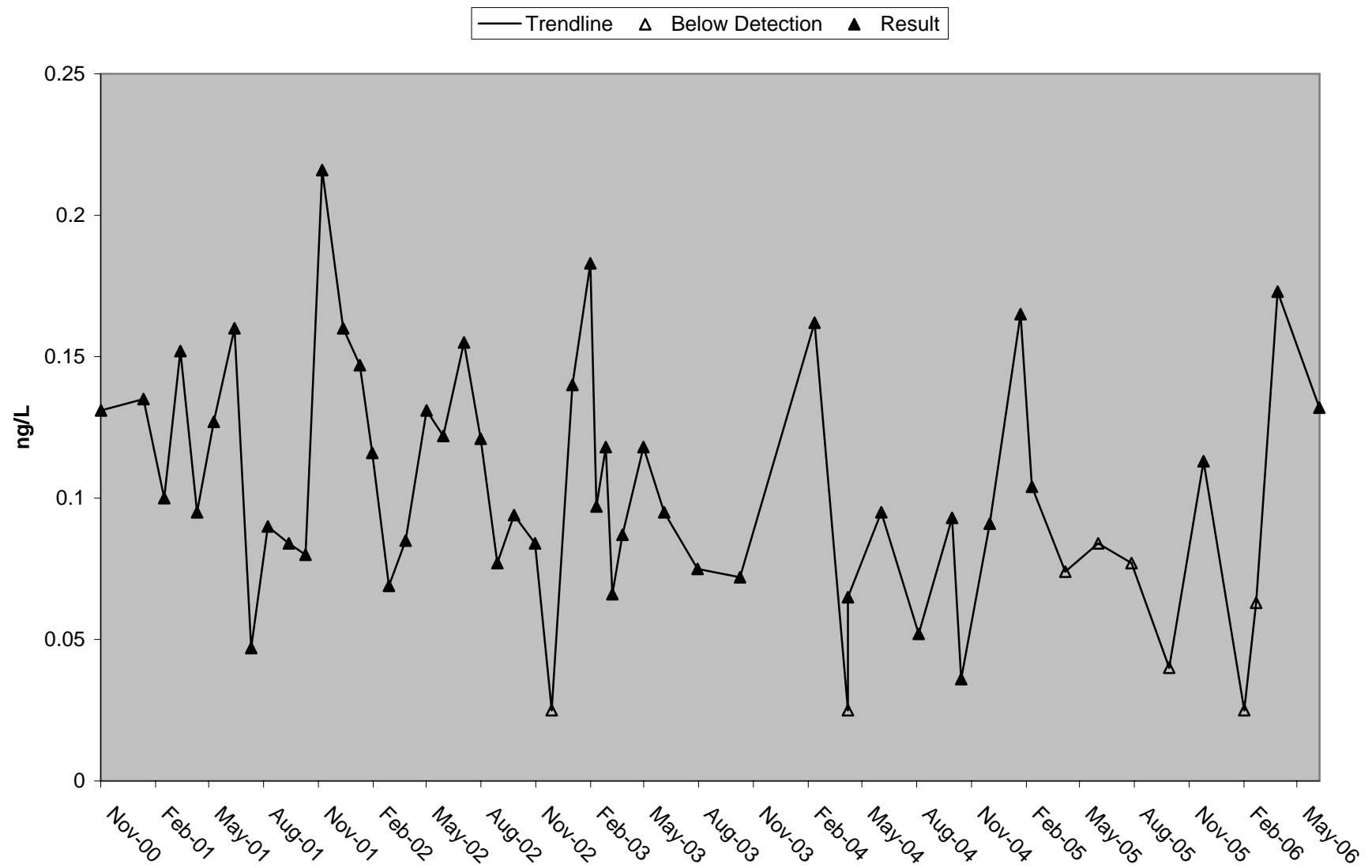
## Veterans Bridge Unfiltered Mercury



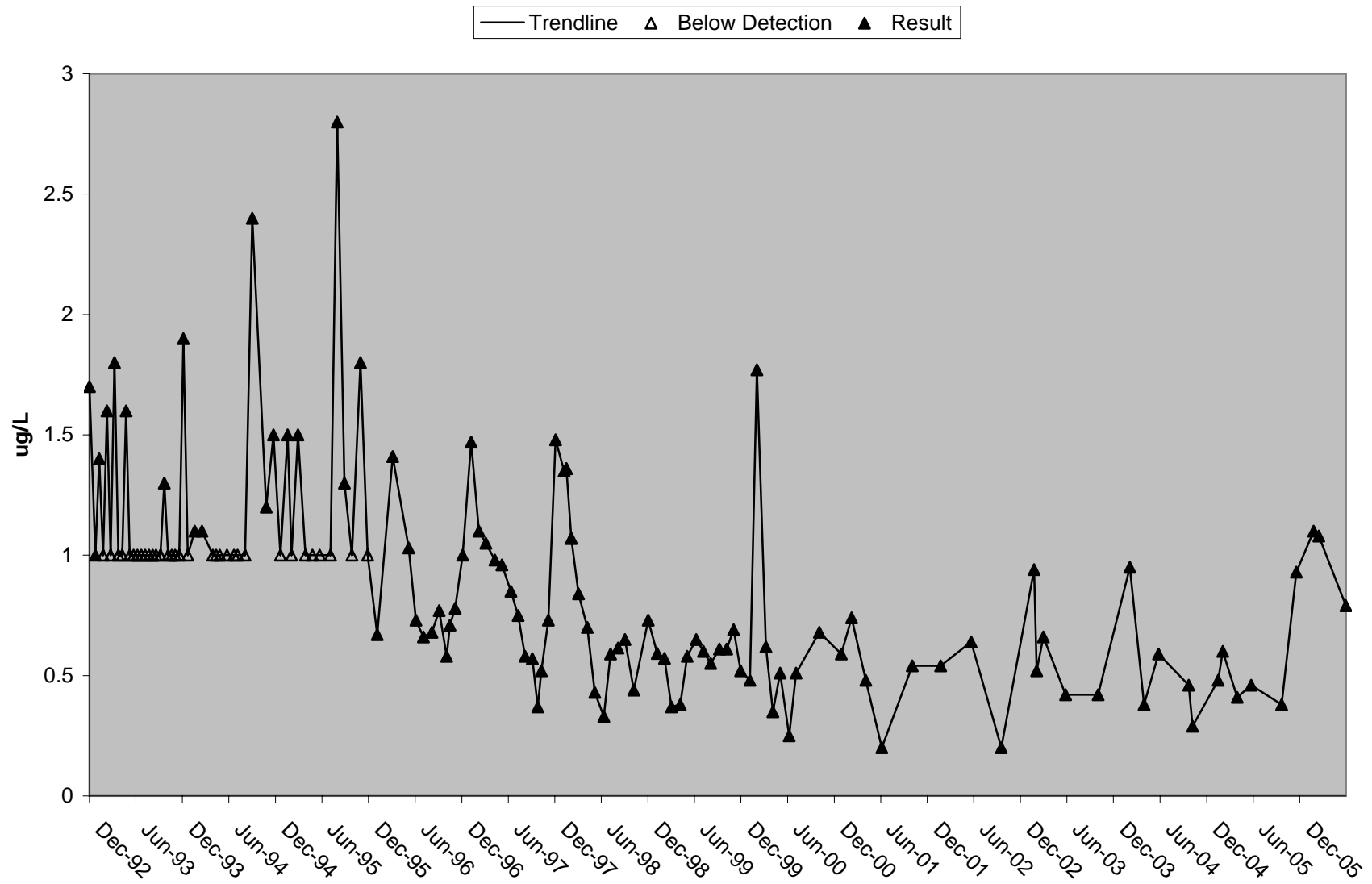
Veterans Bridge Methyl Mercury Filtered



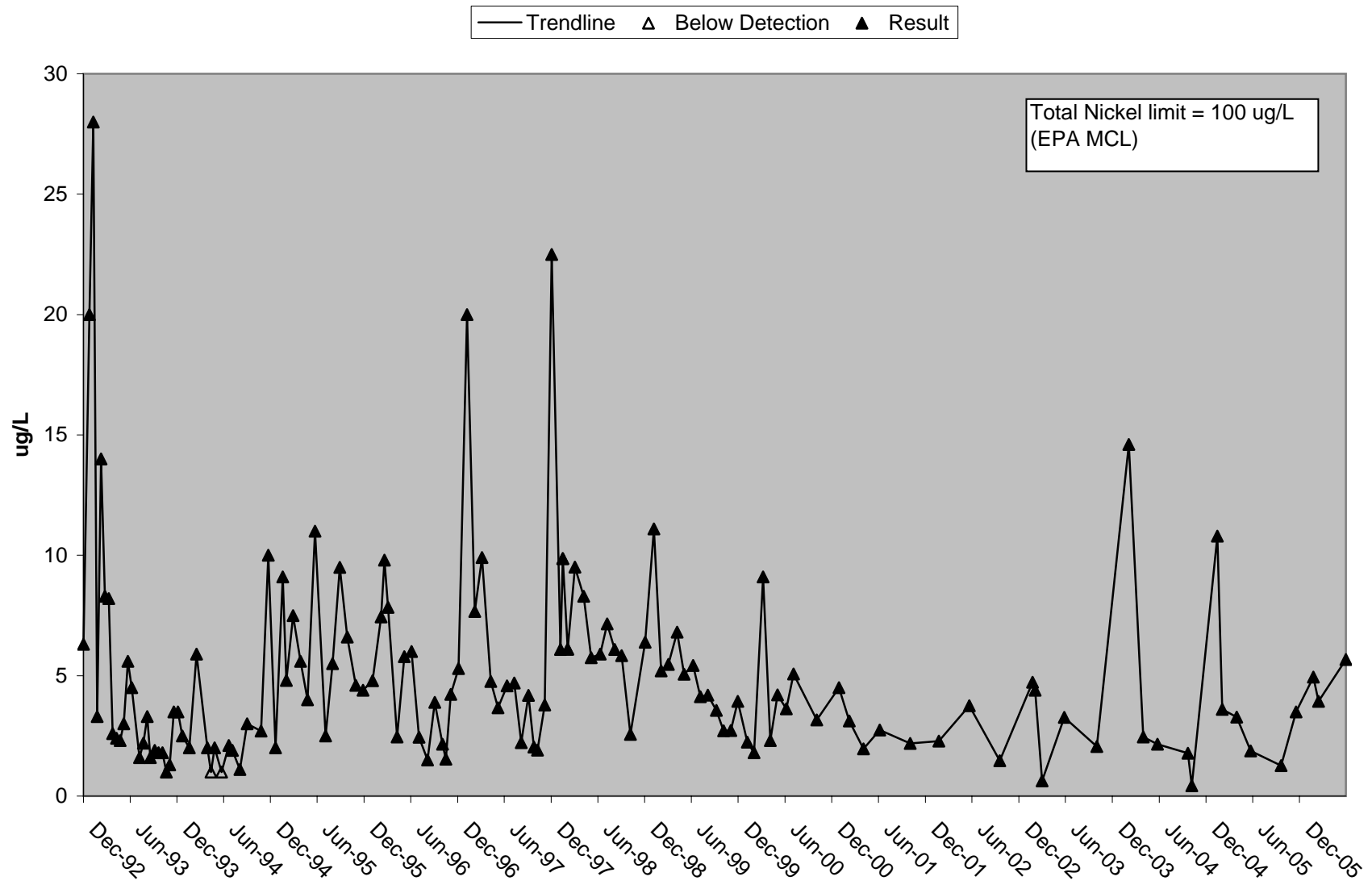
# Veterans Bridge Unfiltered Methyl Mercury



### Veterans Bridge Dissolved Nickel (Ni-d)

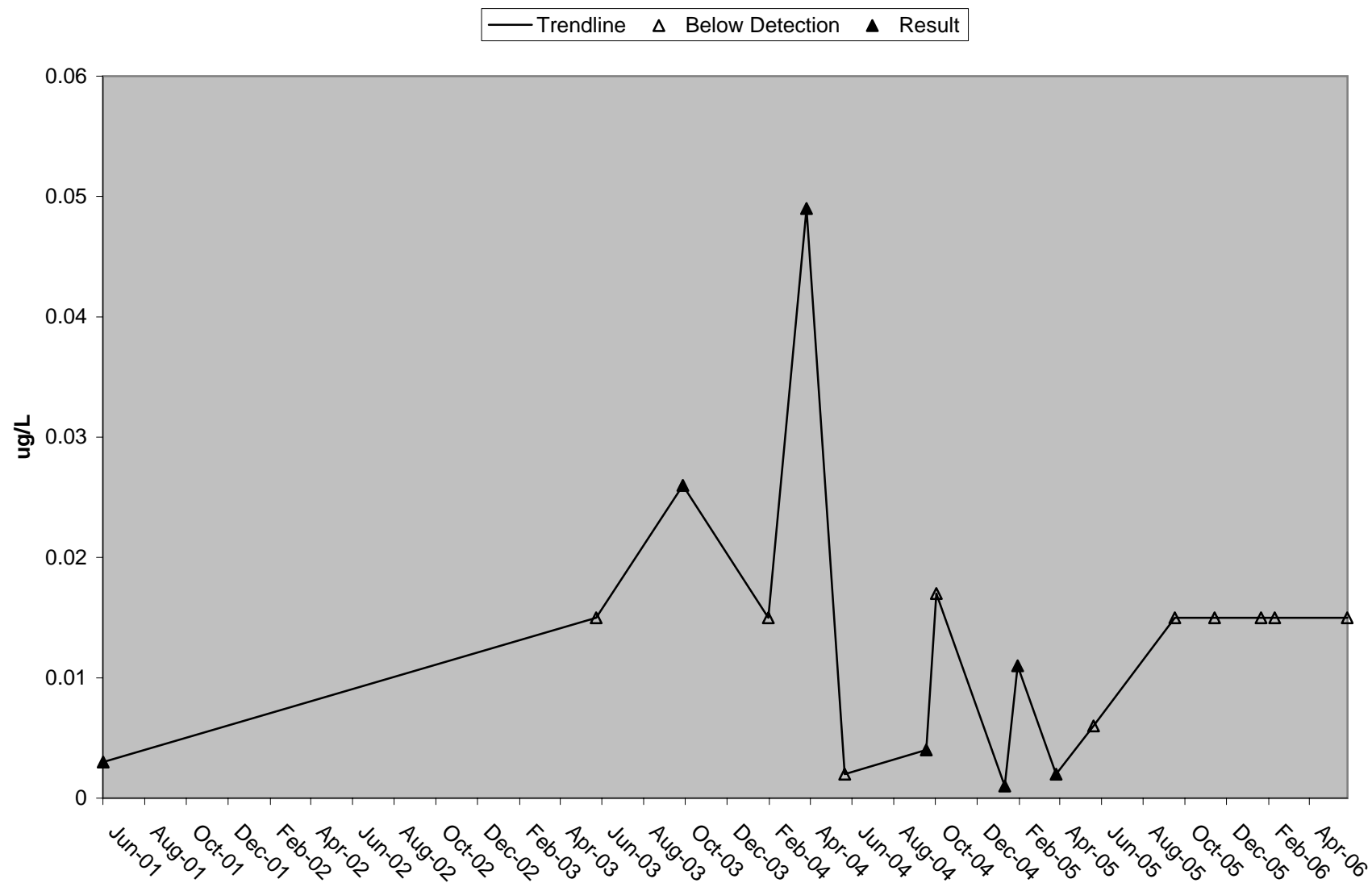


### Veterans Bridge Total Nickel (Ni-T)

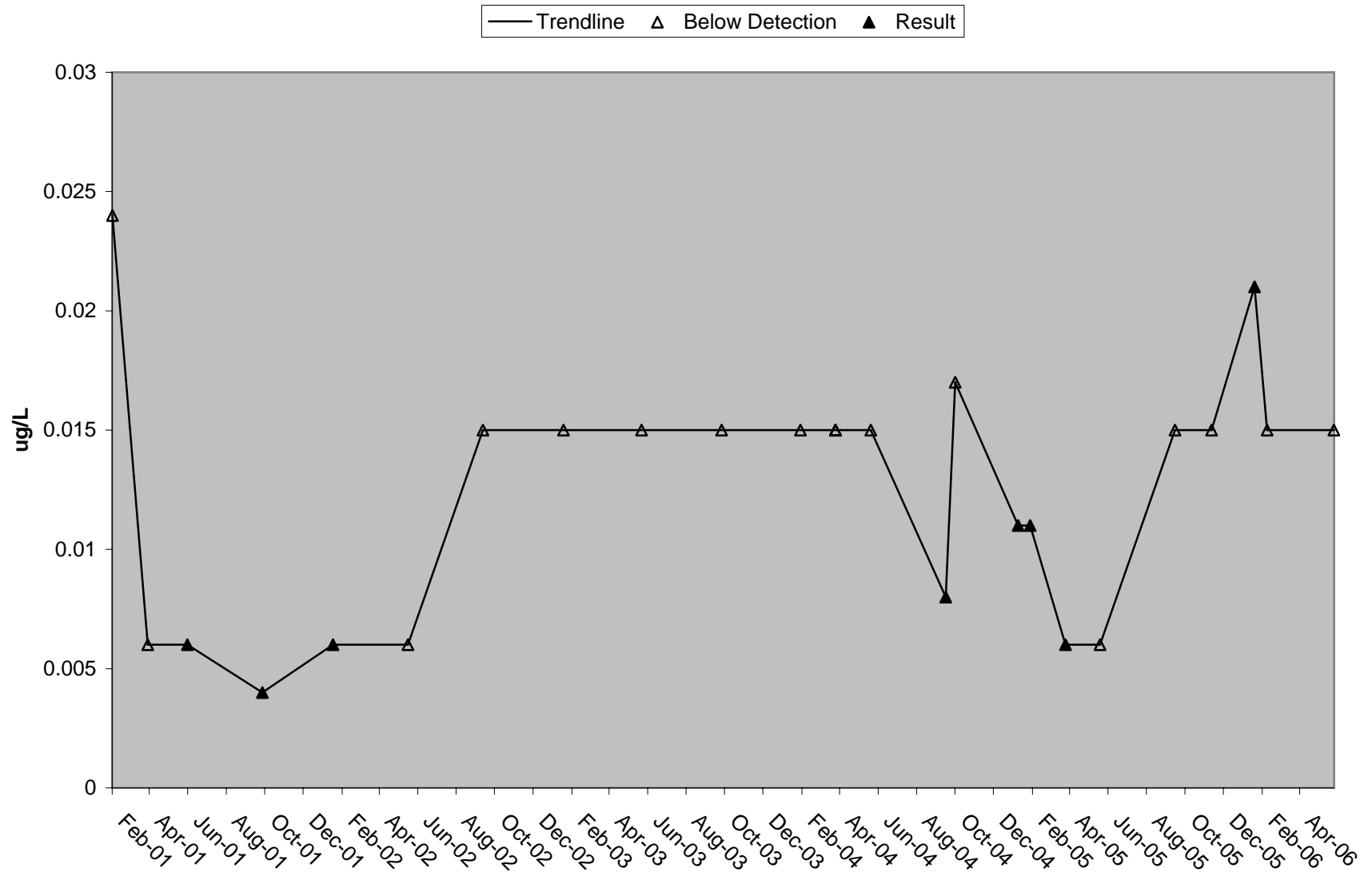




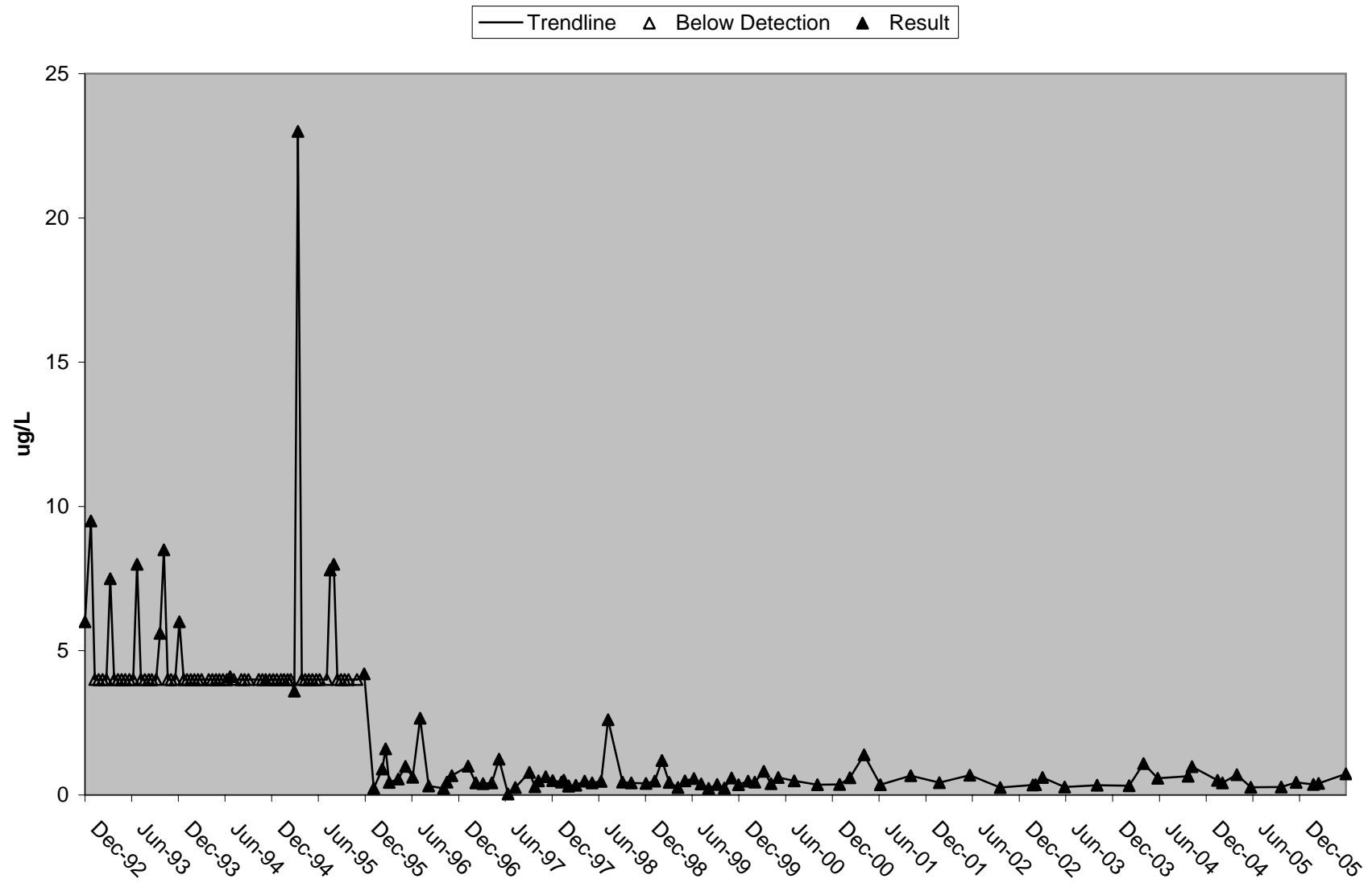
### Veterans Silver (Dissolved)



### Veterans Bridge Total Silver (Ag-T)

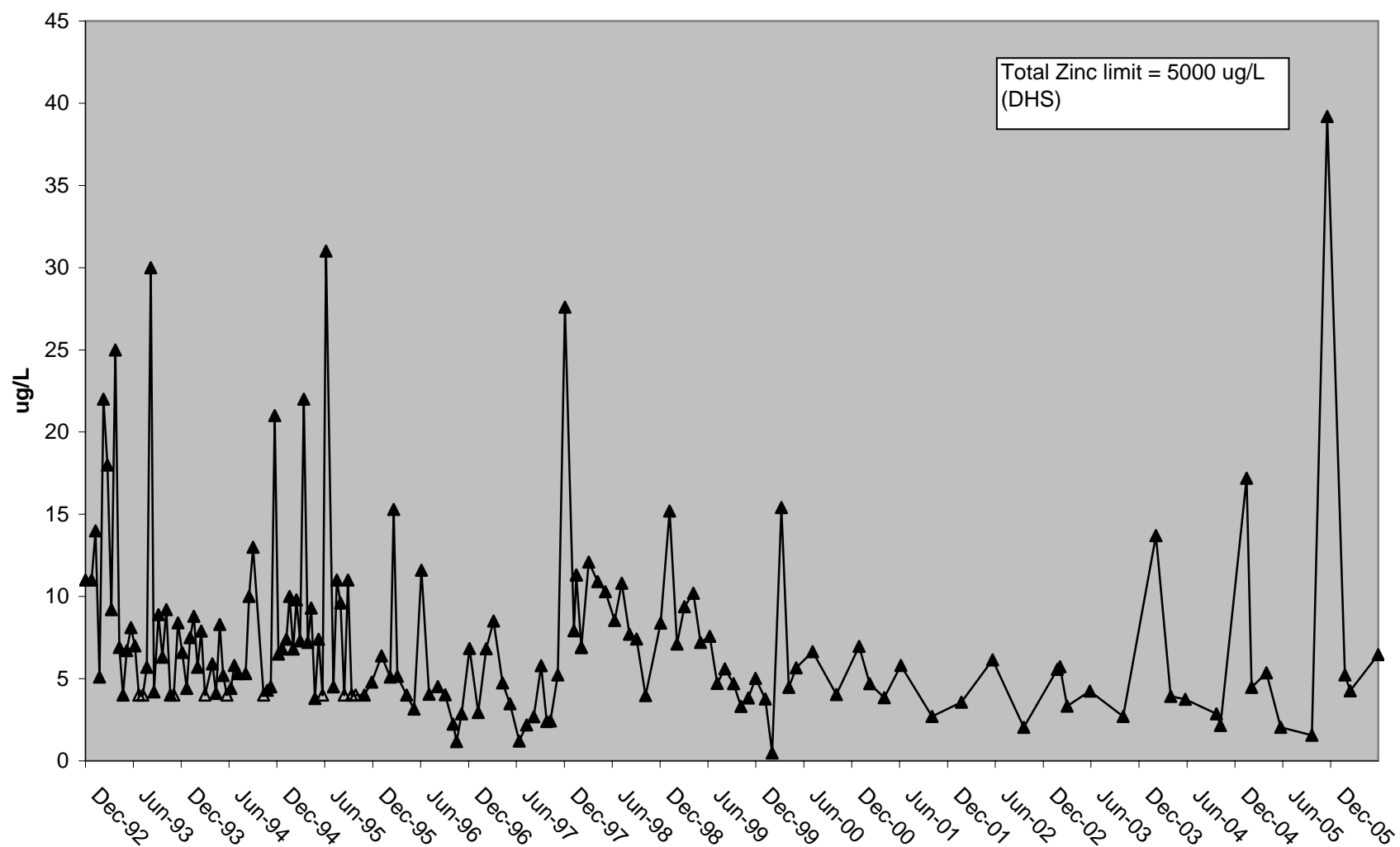


# Veterans Bridge Dissolved Zinc (Zn-d)

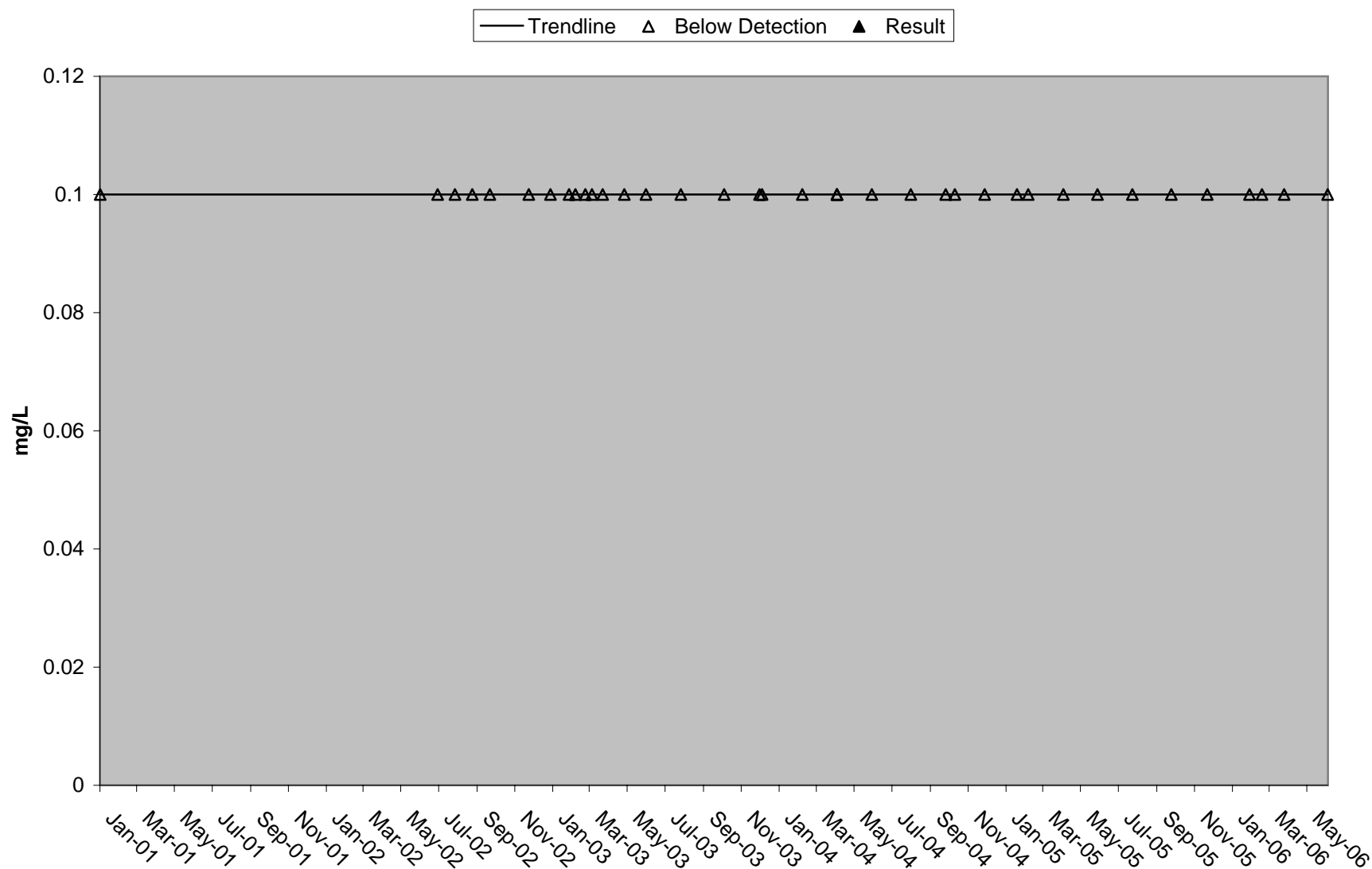


# Veterans Bridge Total Zinc (Zn-T)

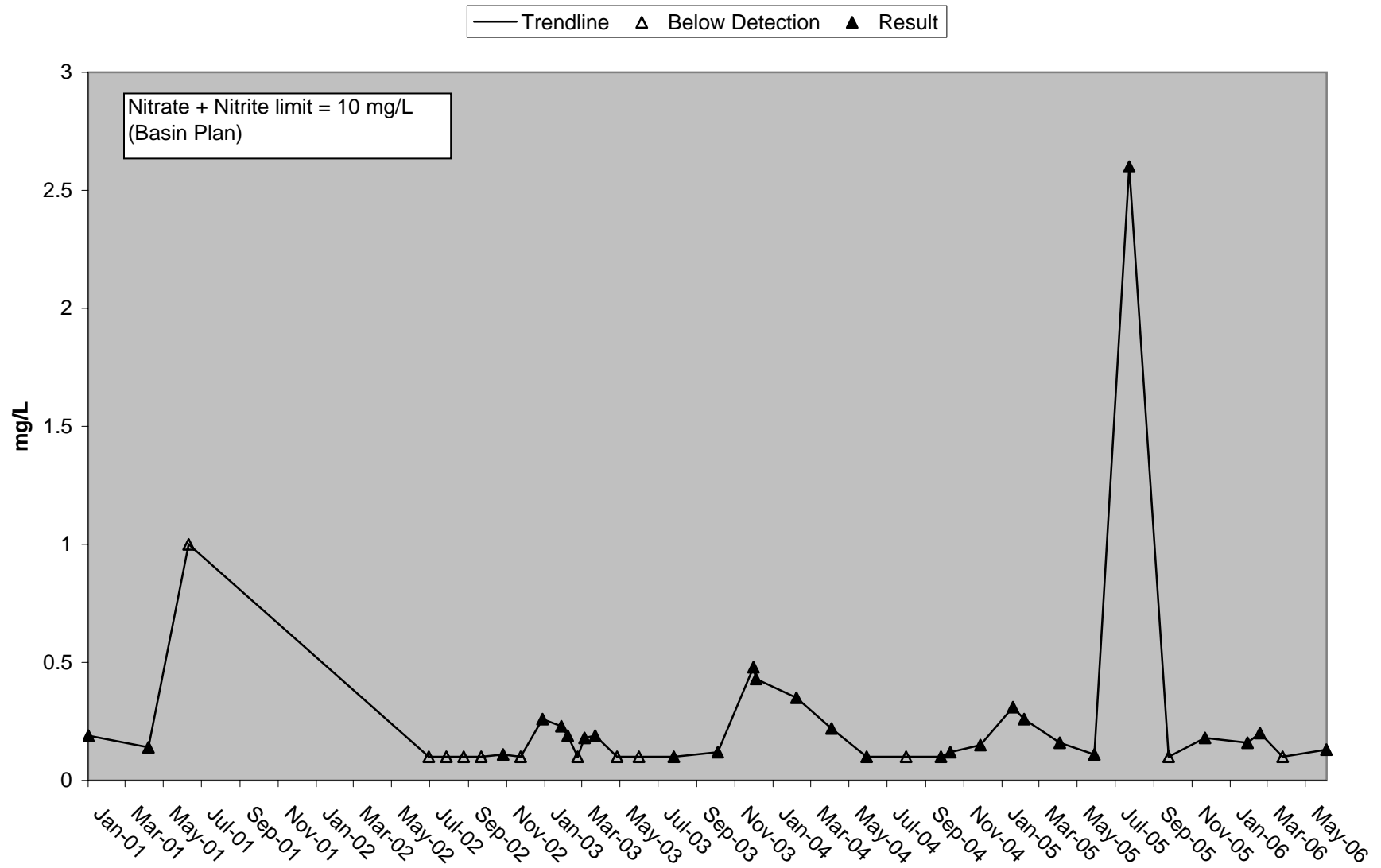
— Trendline    △ Below Detection    ▲ Result



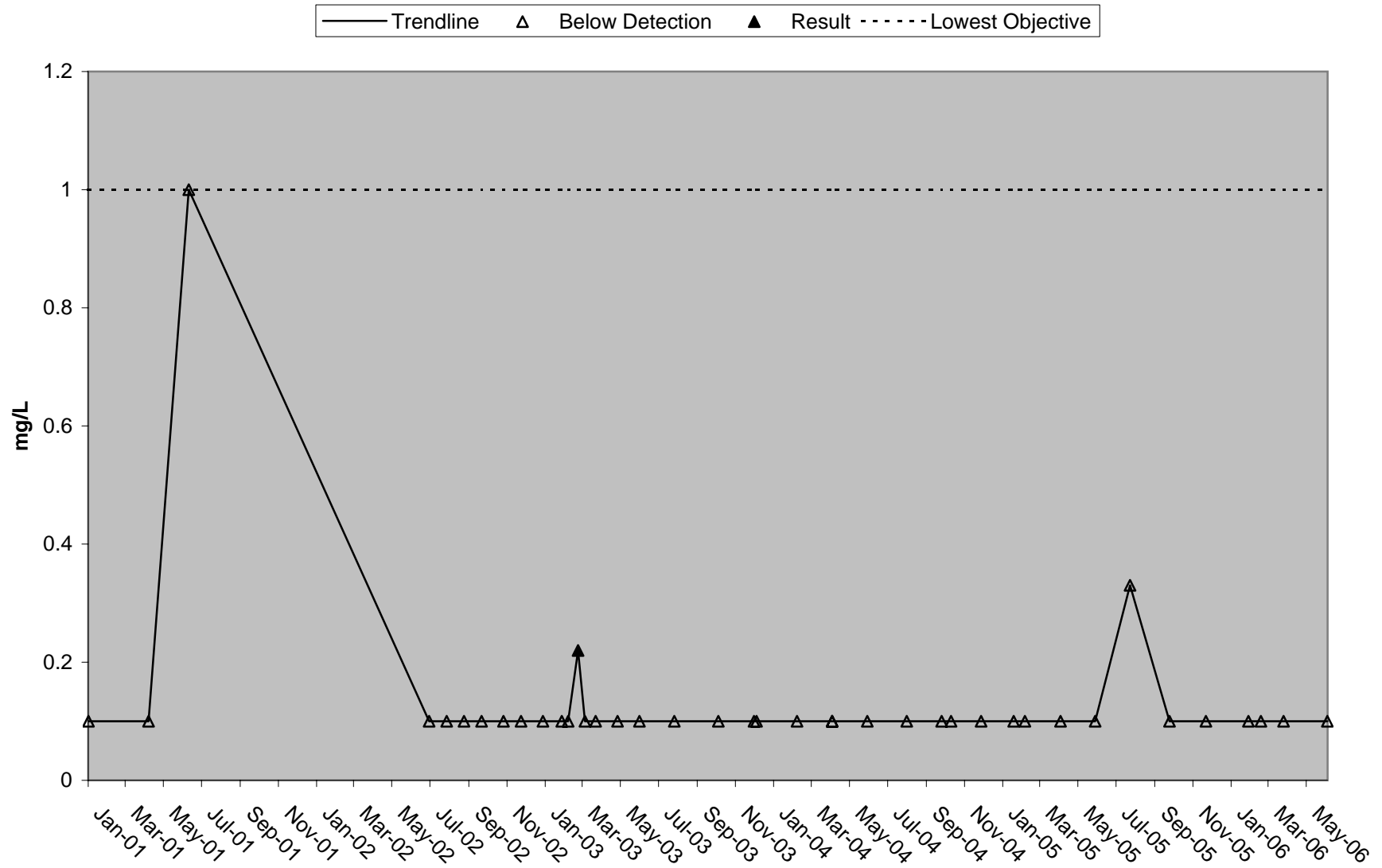
# Veterans Bridge Ammonia (NH<sub>3</sub>-N)



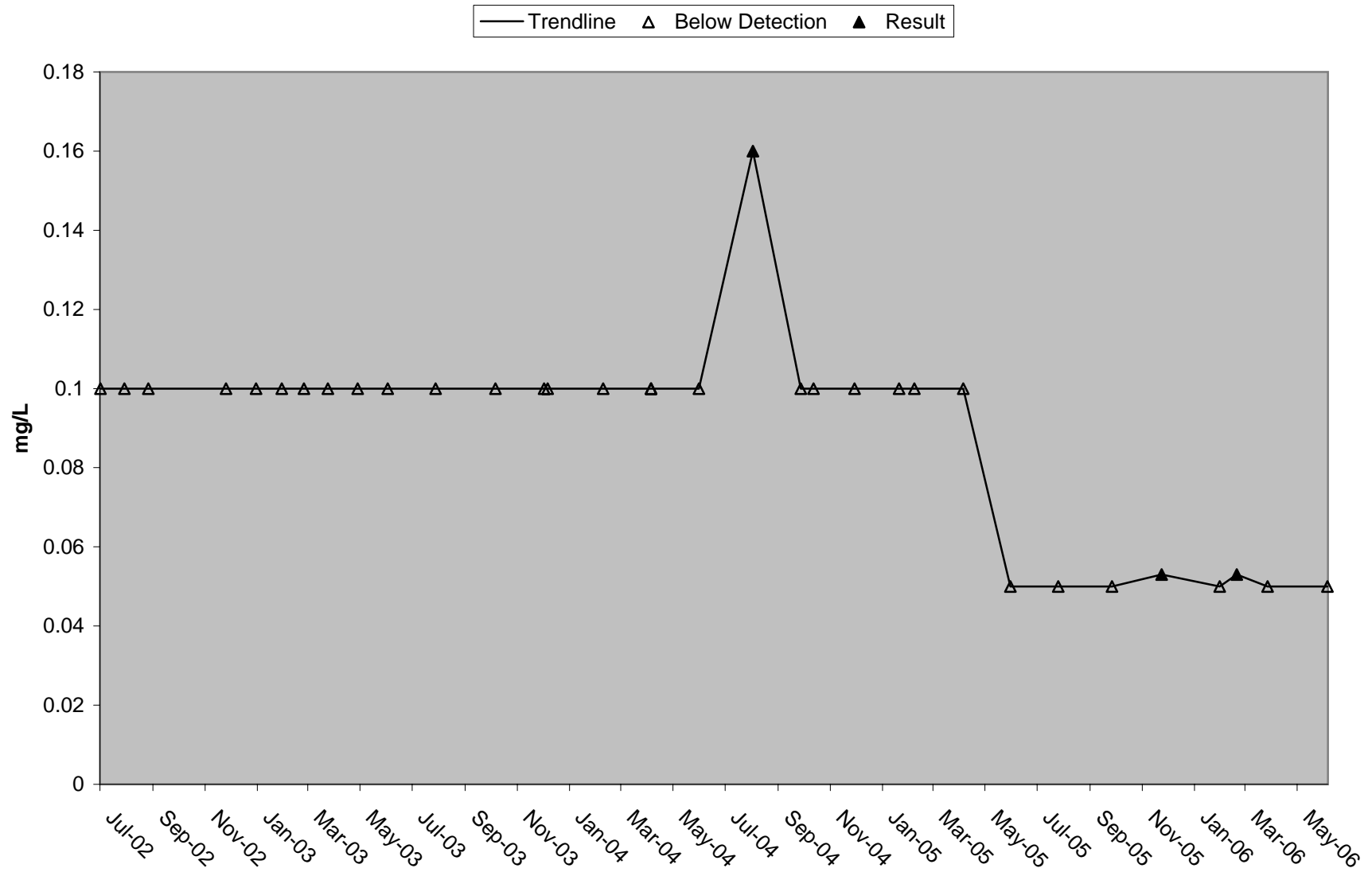
### Veterans Bridge Nitrate (NO<sub>3</sub>-N)



# Veterans Bridge Nitrite (NO<sub>2</sub>-N)

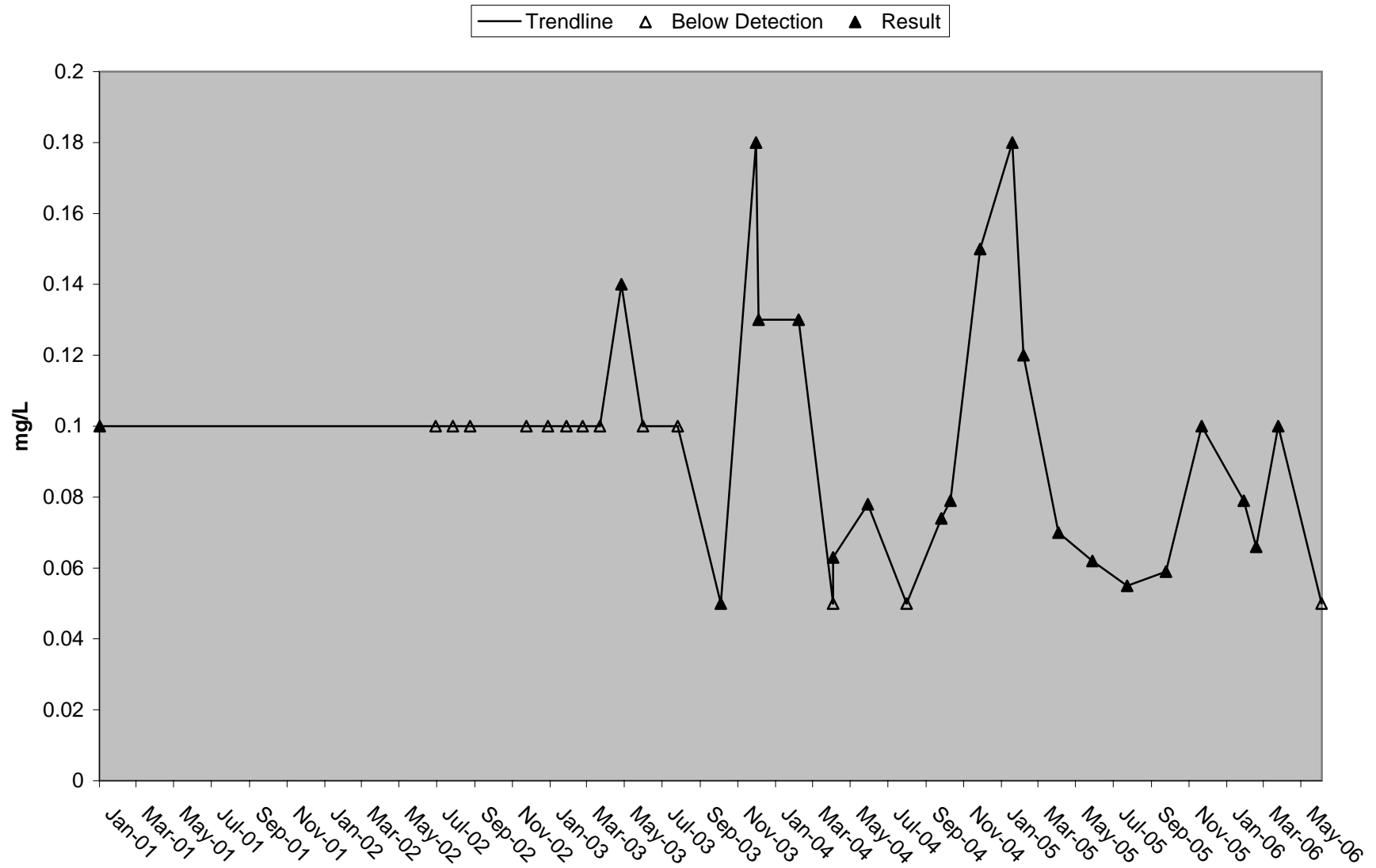


# Veterans Bridge Dissolved Ortho-phosphate

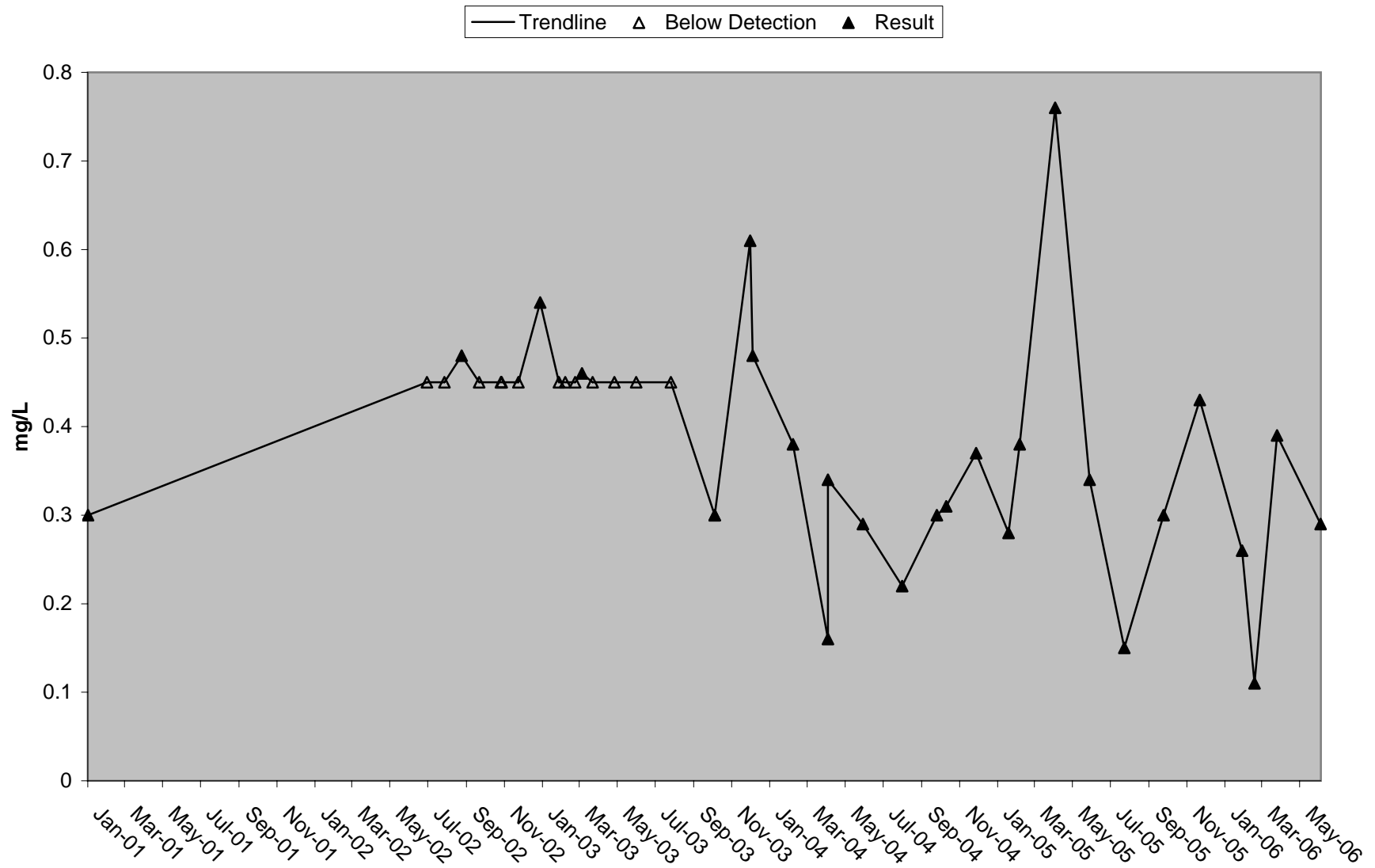




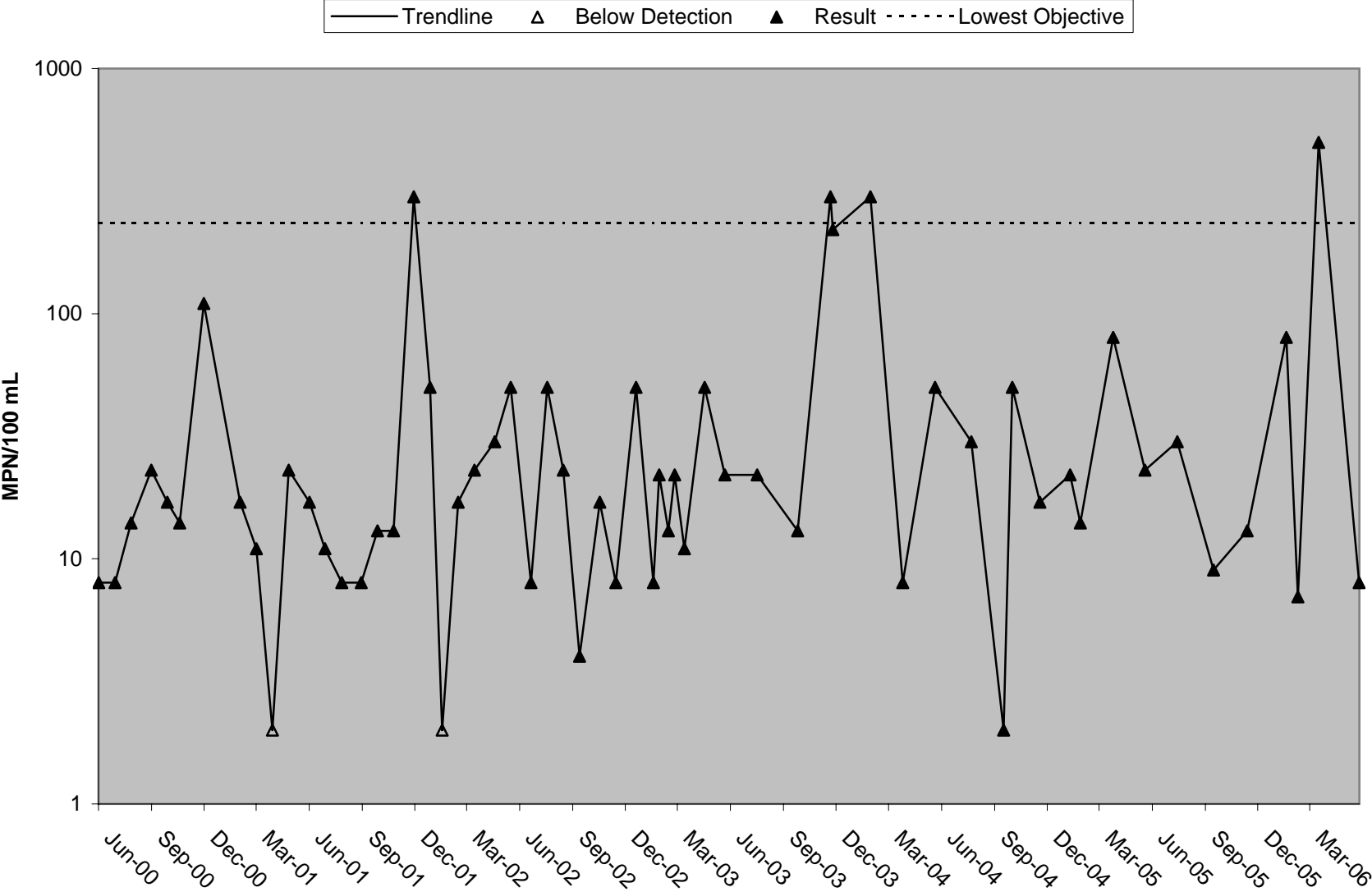
# Veterans Bridge Total Phosphorus (TP)



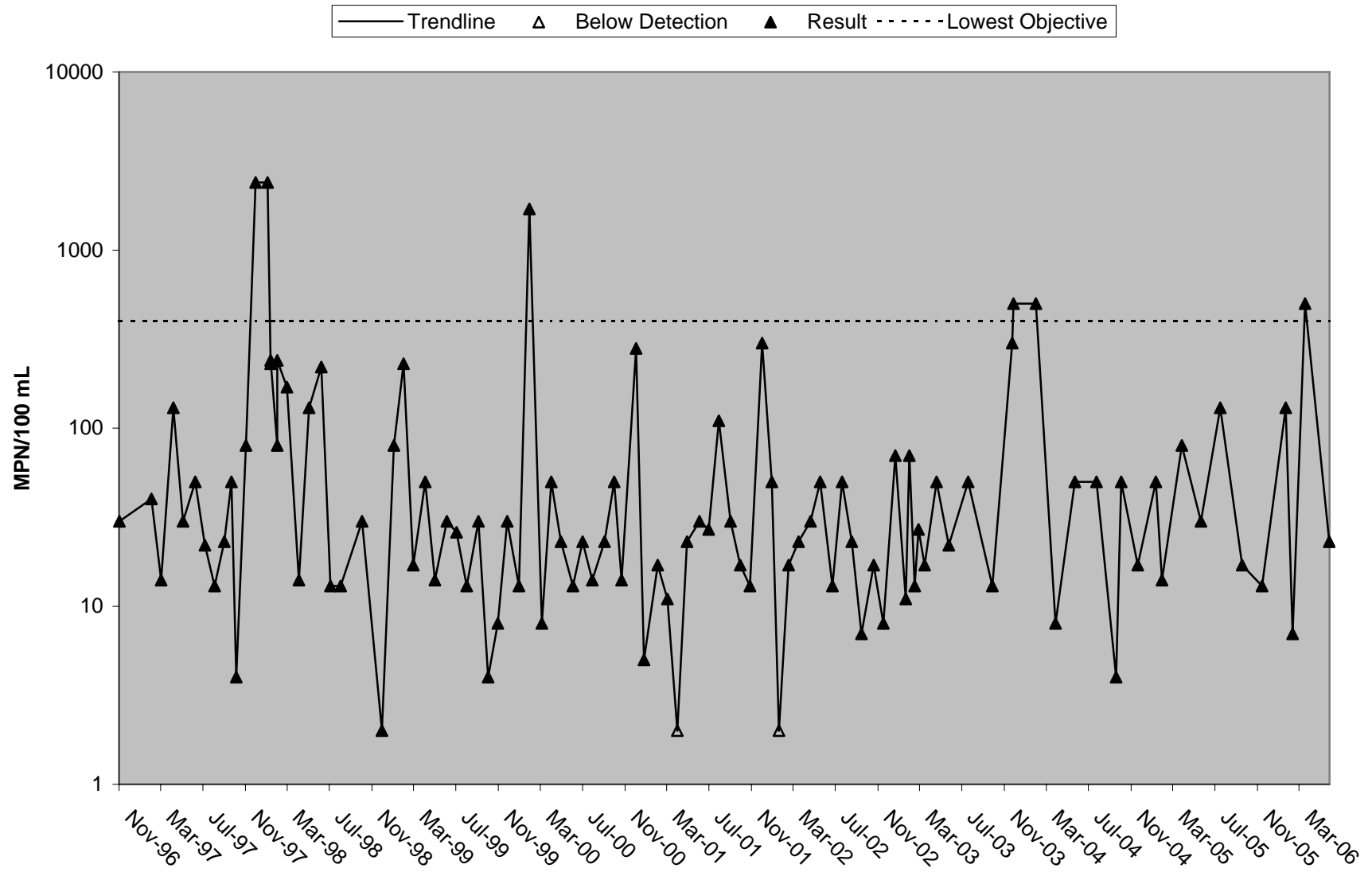
### Veterans Bridge Total Kjeldahl Nitrogen (TKN)



Veterans Bridge *E. coli*

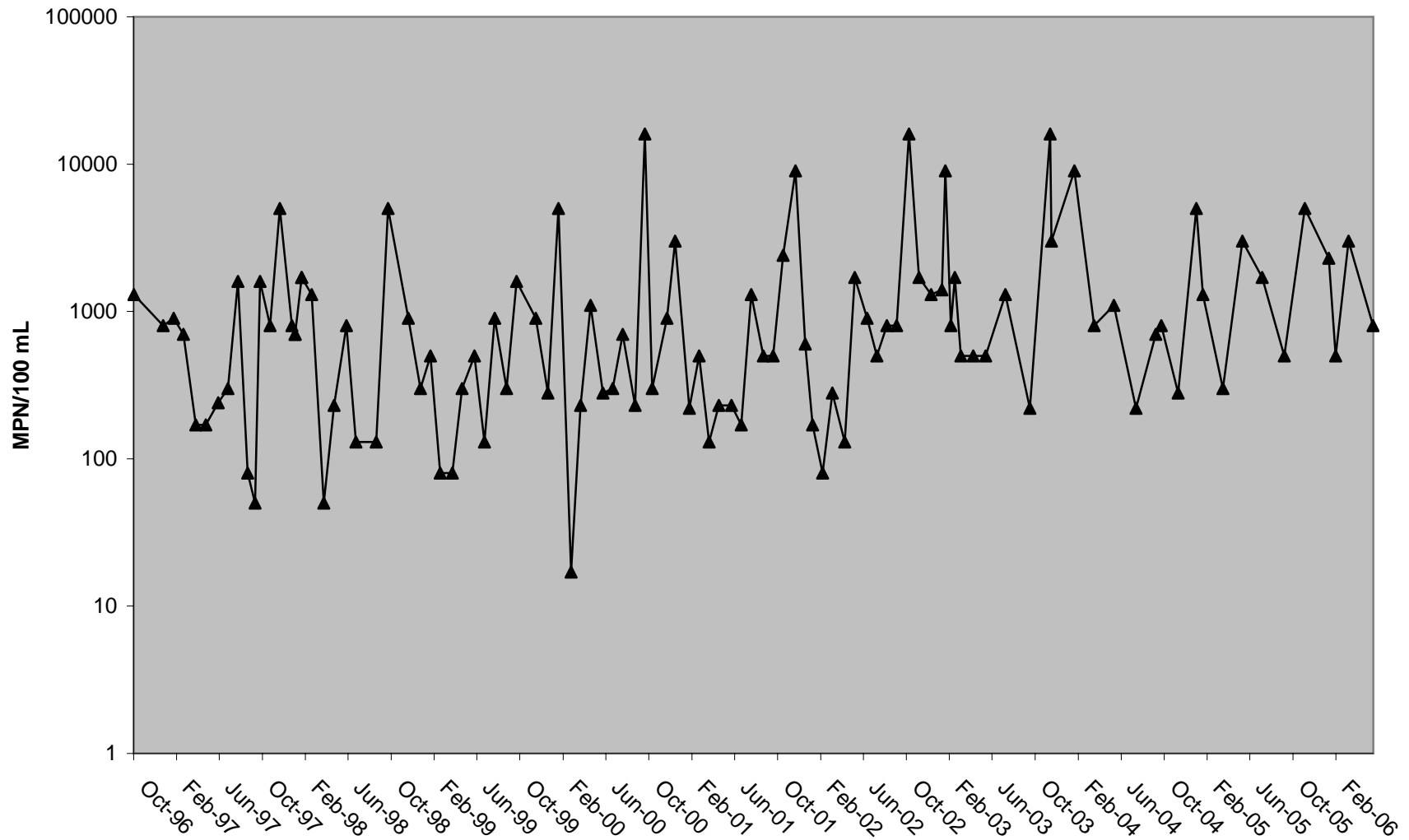


# Veterans Bridge Fecal Coliform



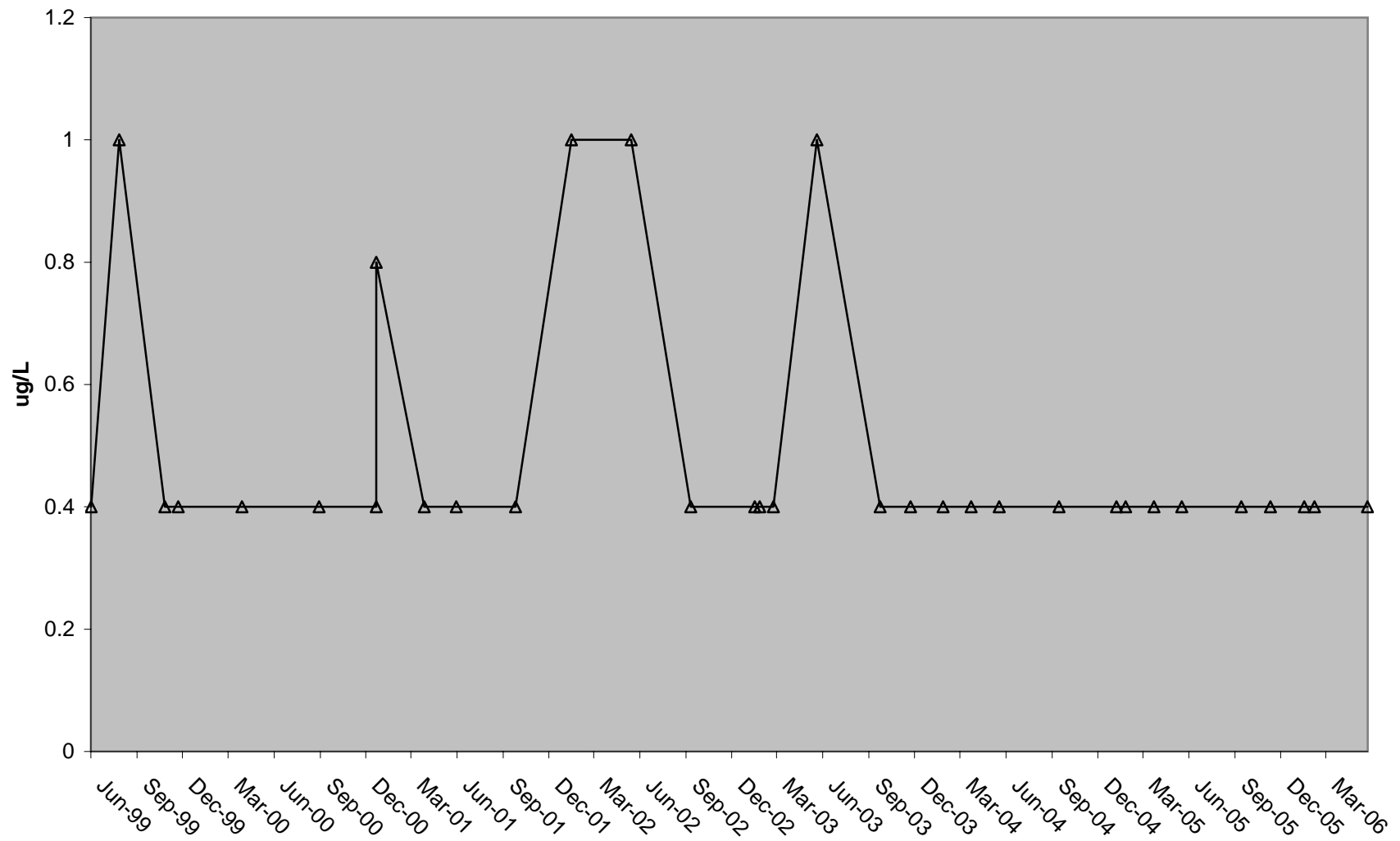
# Veterans Bridge Total Coliform

— Trendline    △ Below Detection    ▲ Result

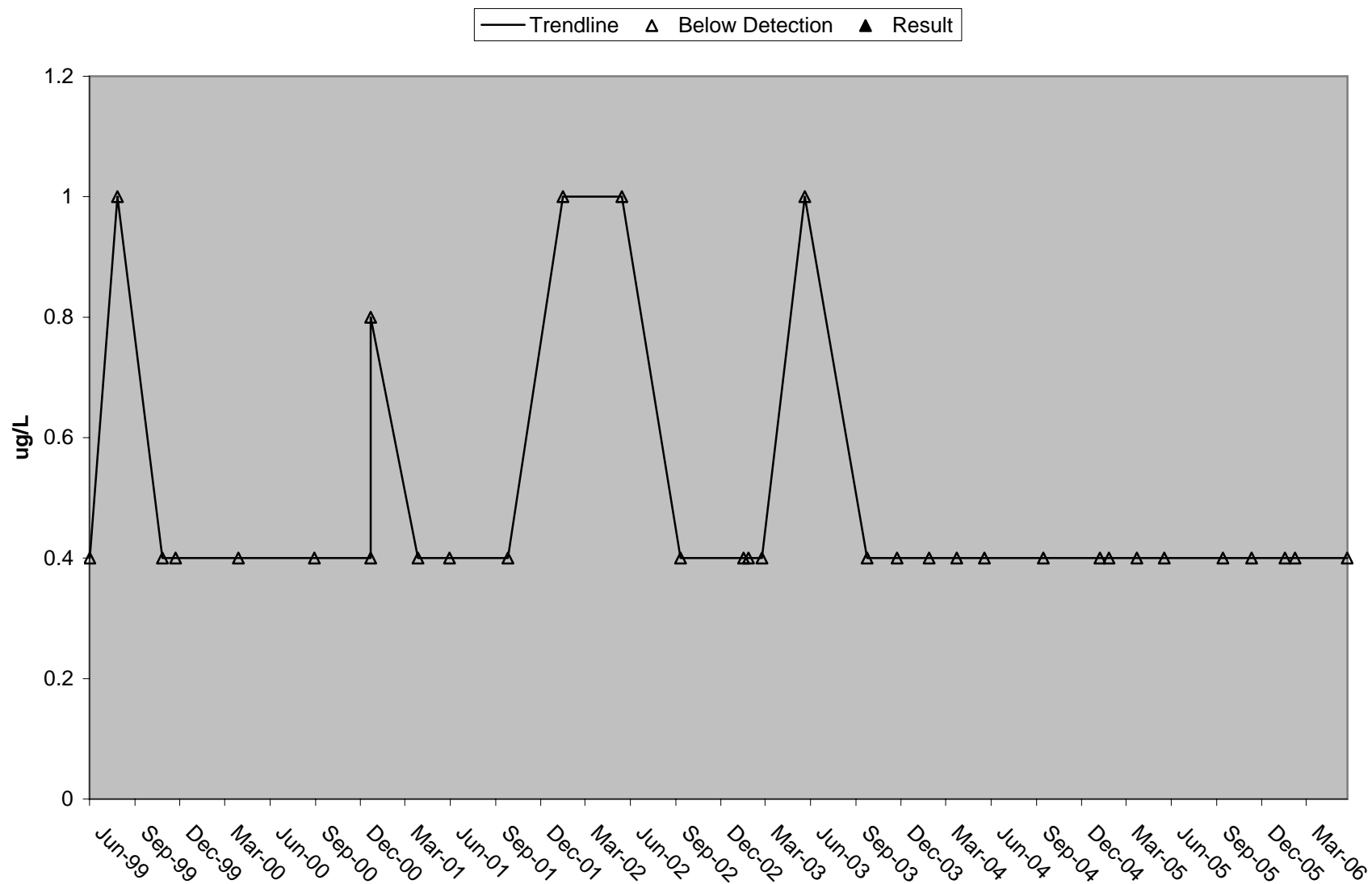


# Veterans Bridge Aldicarb

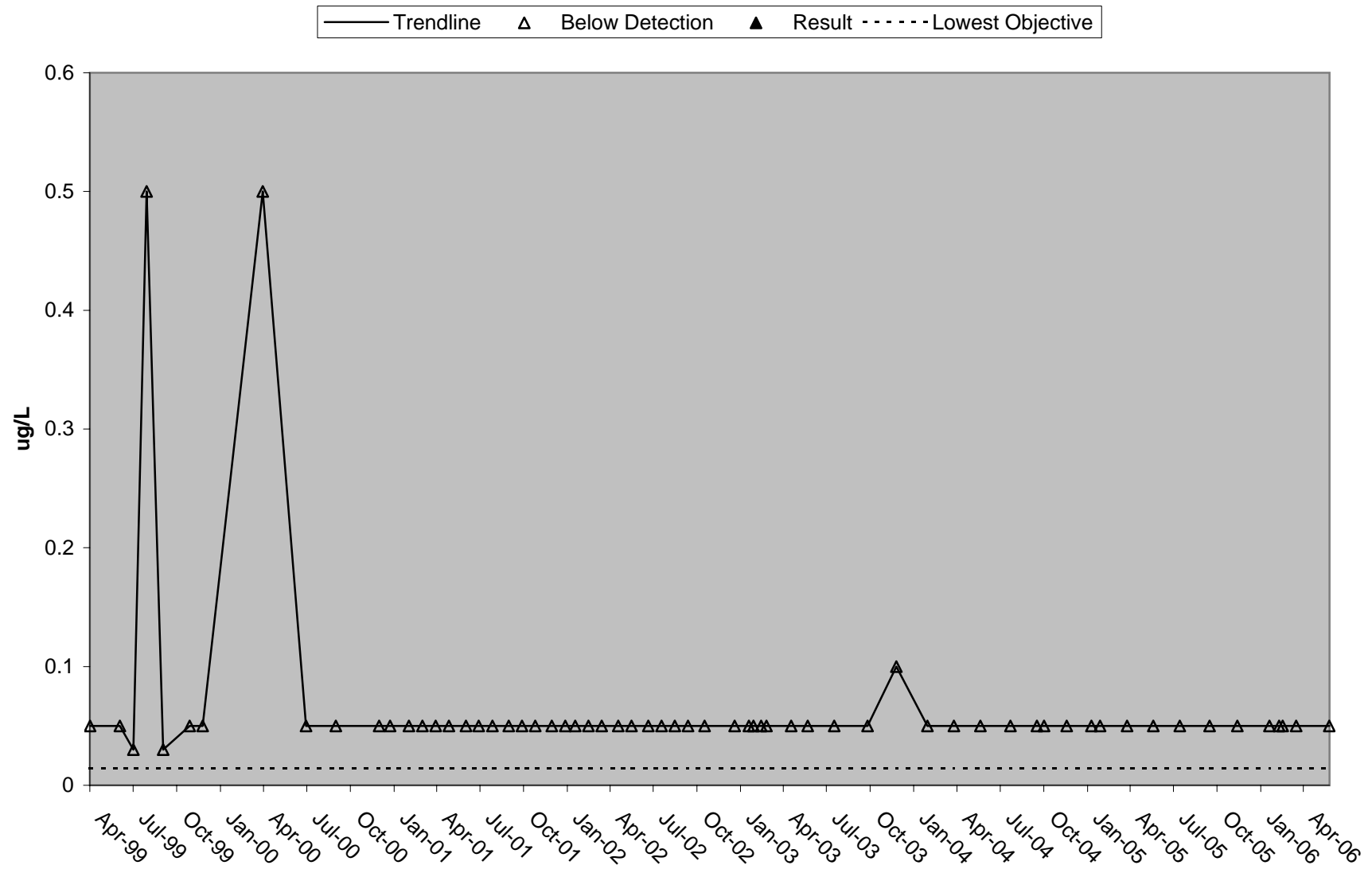
— Trendline    △ Below Detection    ▲ Result



## Veterans Bridge Propoxur

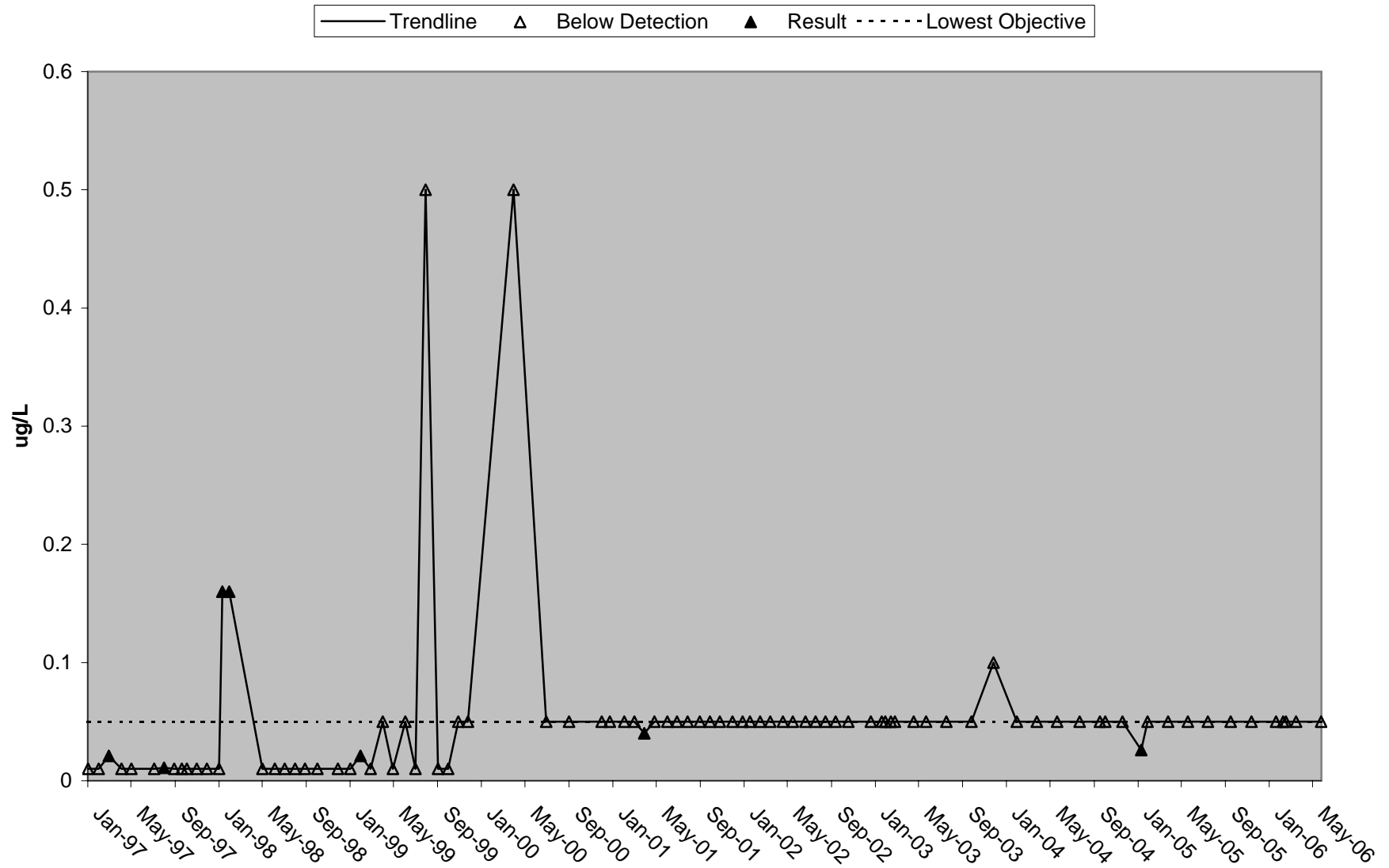


## Veterans Bridge Chlorpyrifos

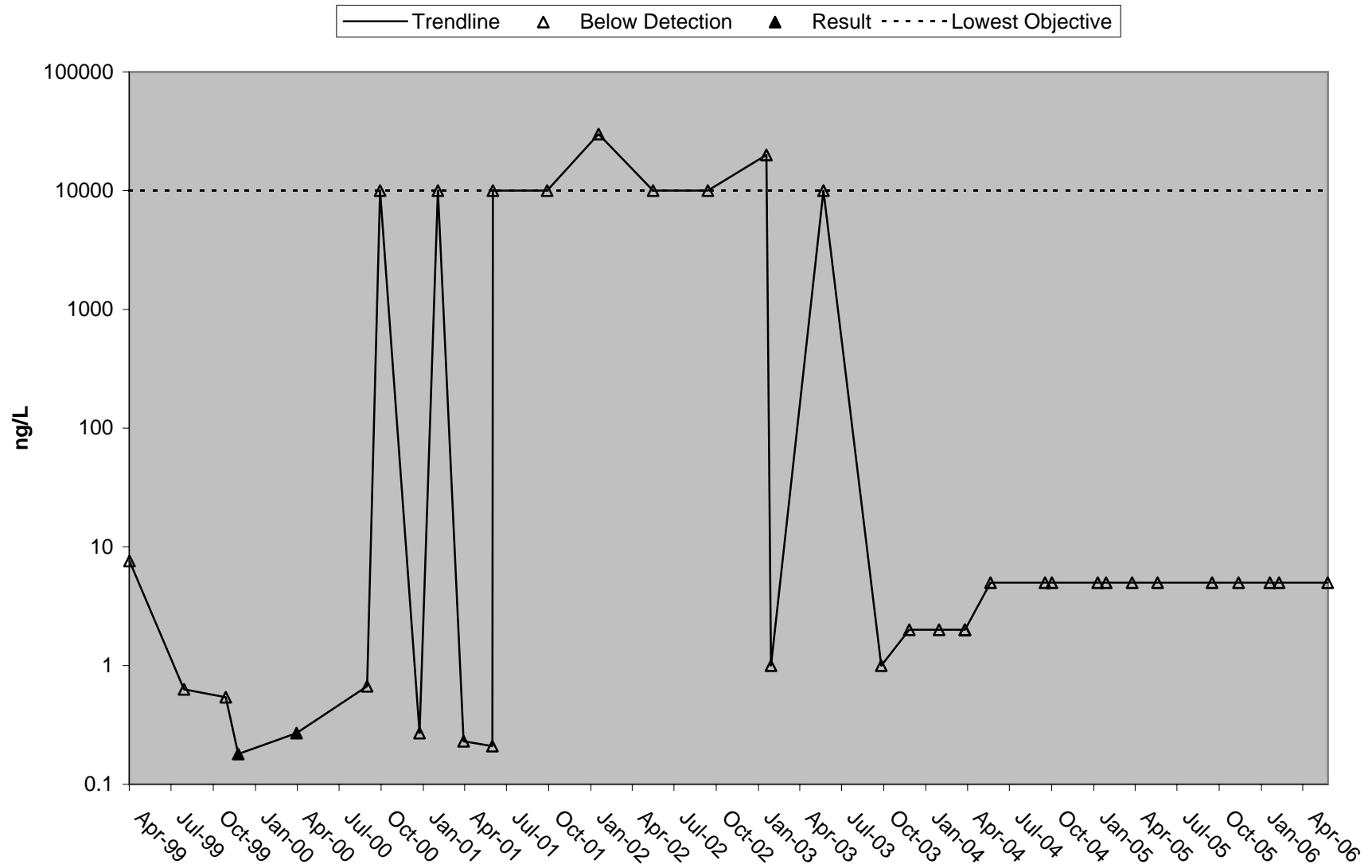




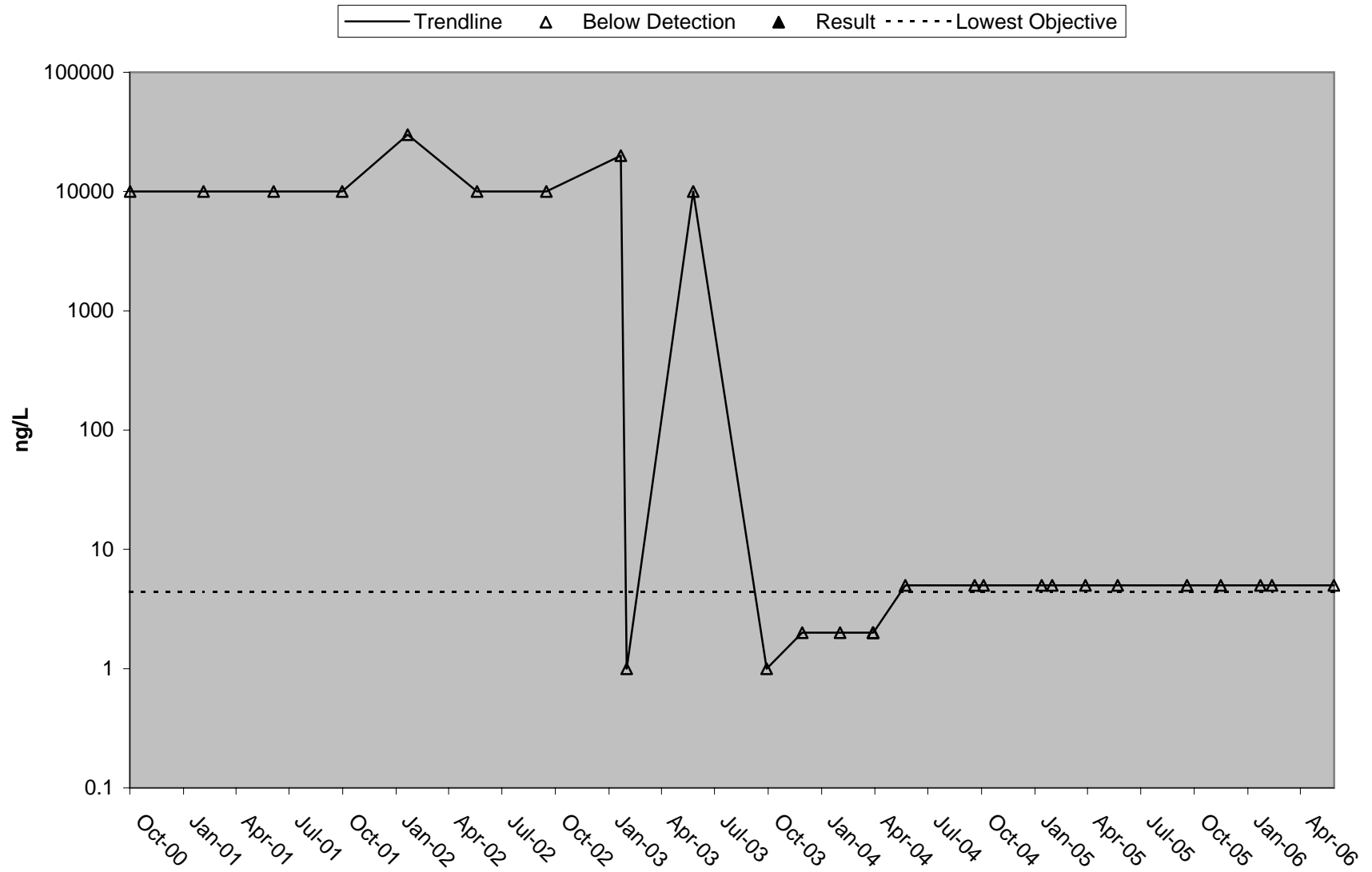
## Veterans Bridge Diazinon



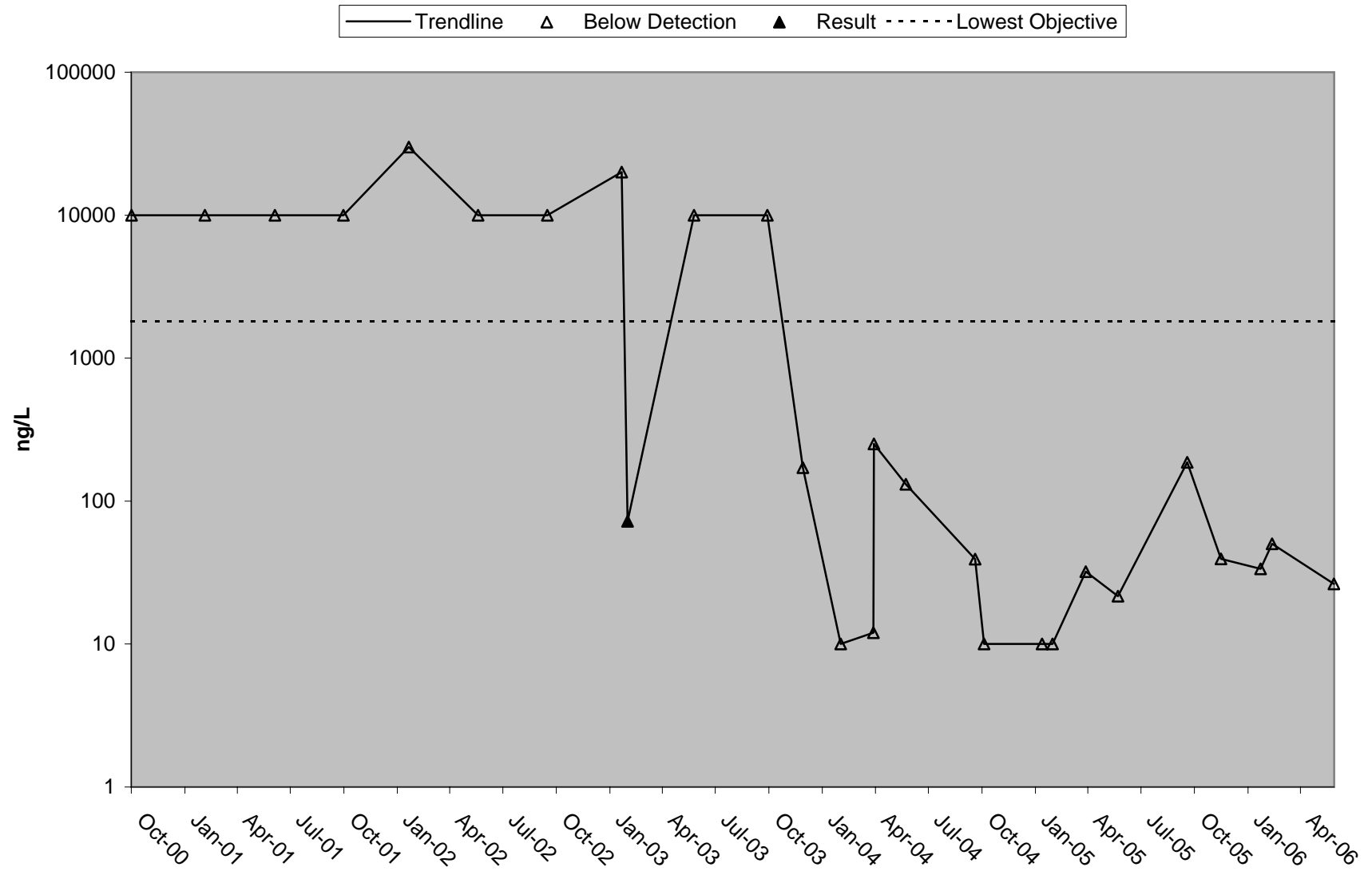
# Veterans Bridge Anthracene



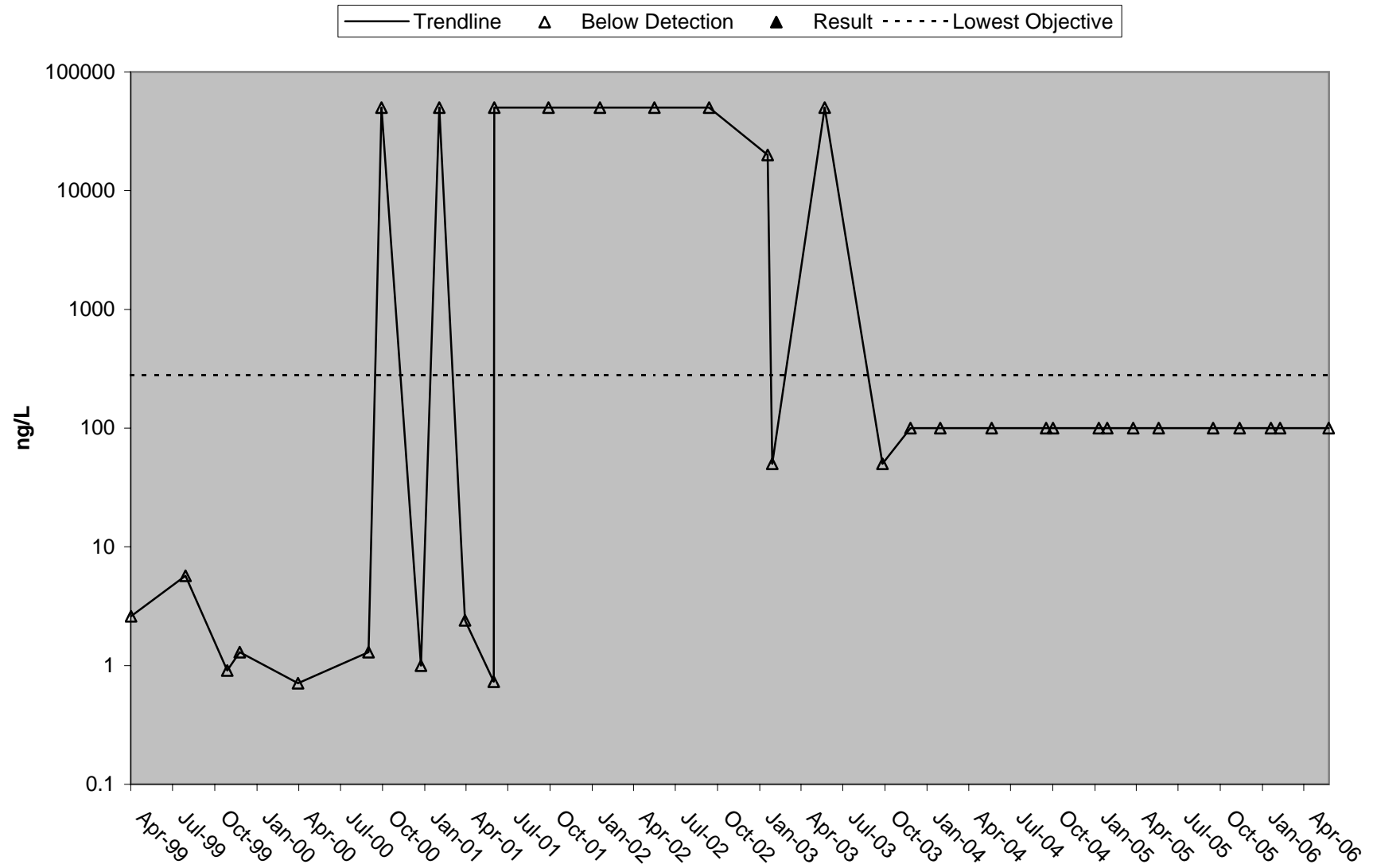
# Veterans Bridge Benzo(k)fluoranthene



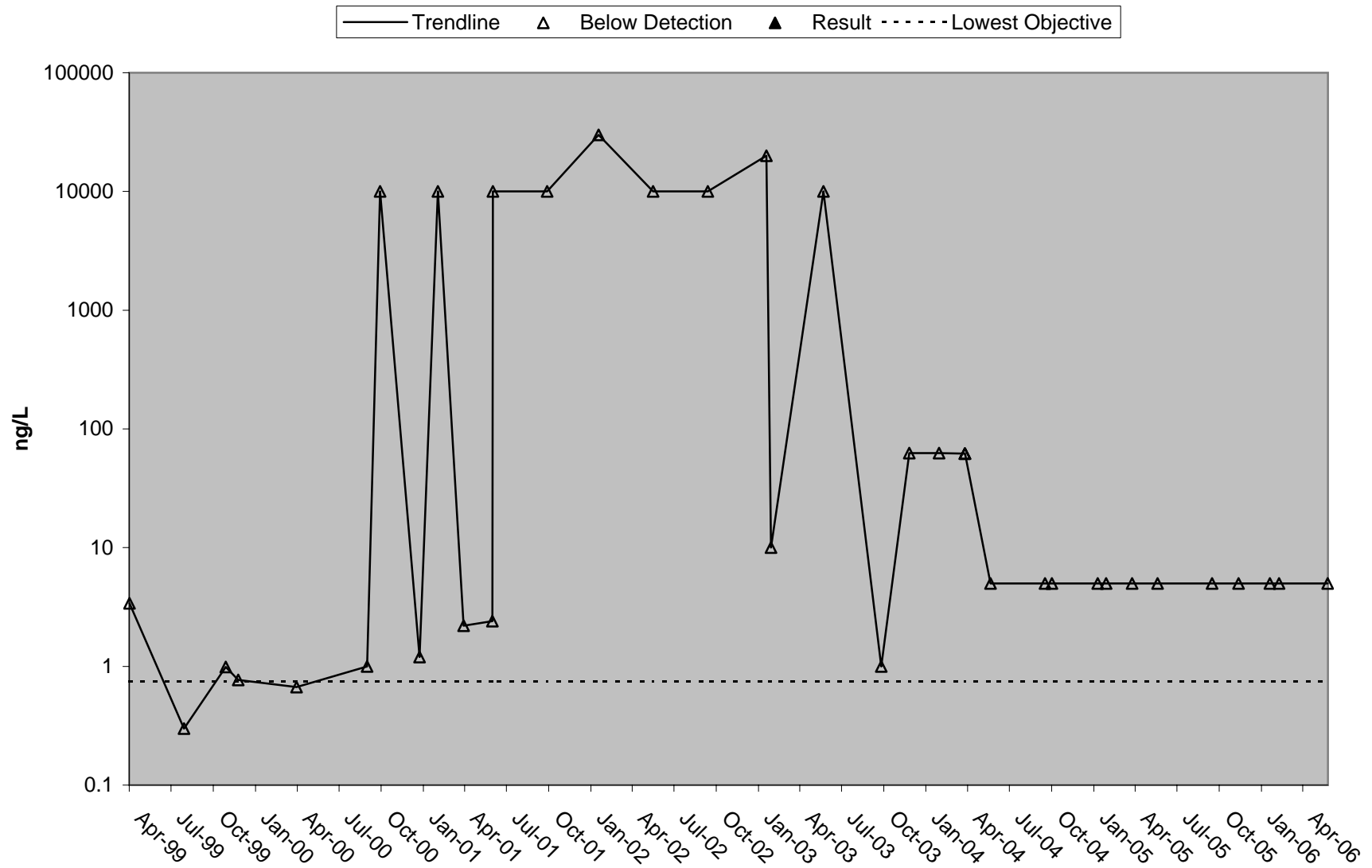
# Veterans Bridge Bis(2-ethylhexyl)phthalate



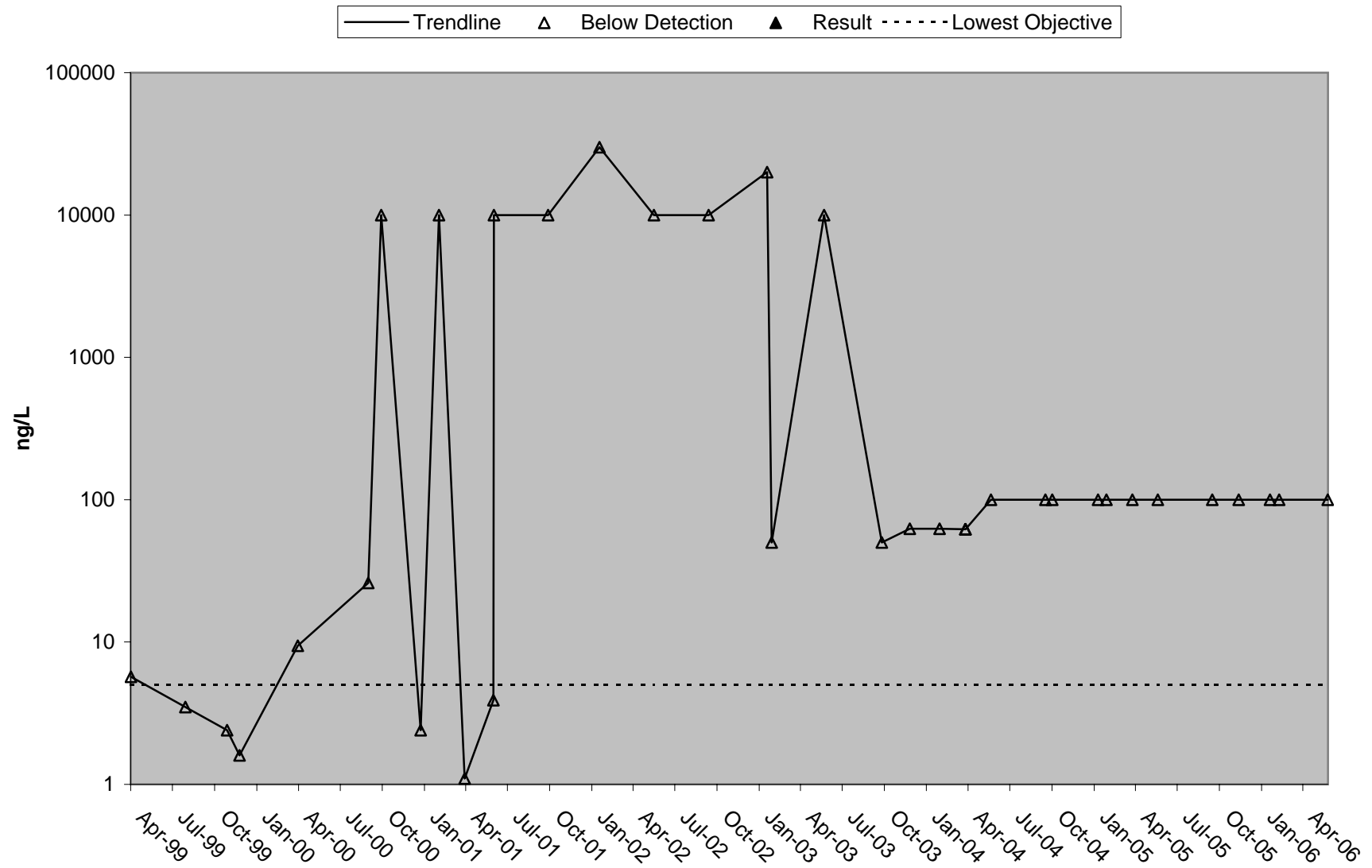
# Veterans Bridge Pentachlorophenol



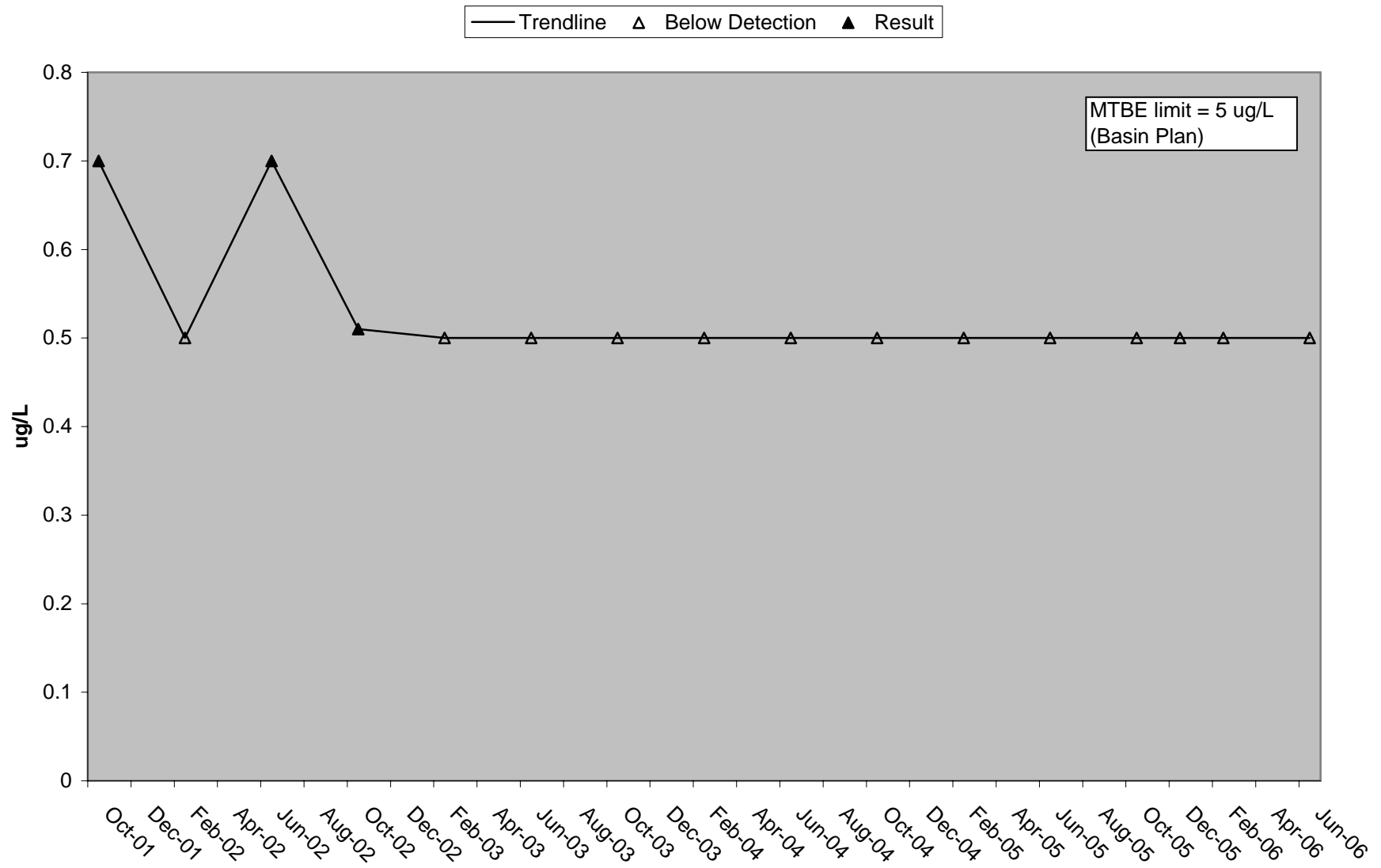
# Veterans Bridge Hexachlorobenzene



# Veterans Bridge N-Nitrosodi-N-Propylamine



# Veterans Bridge MTBE

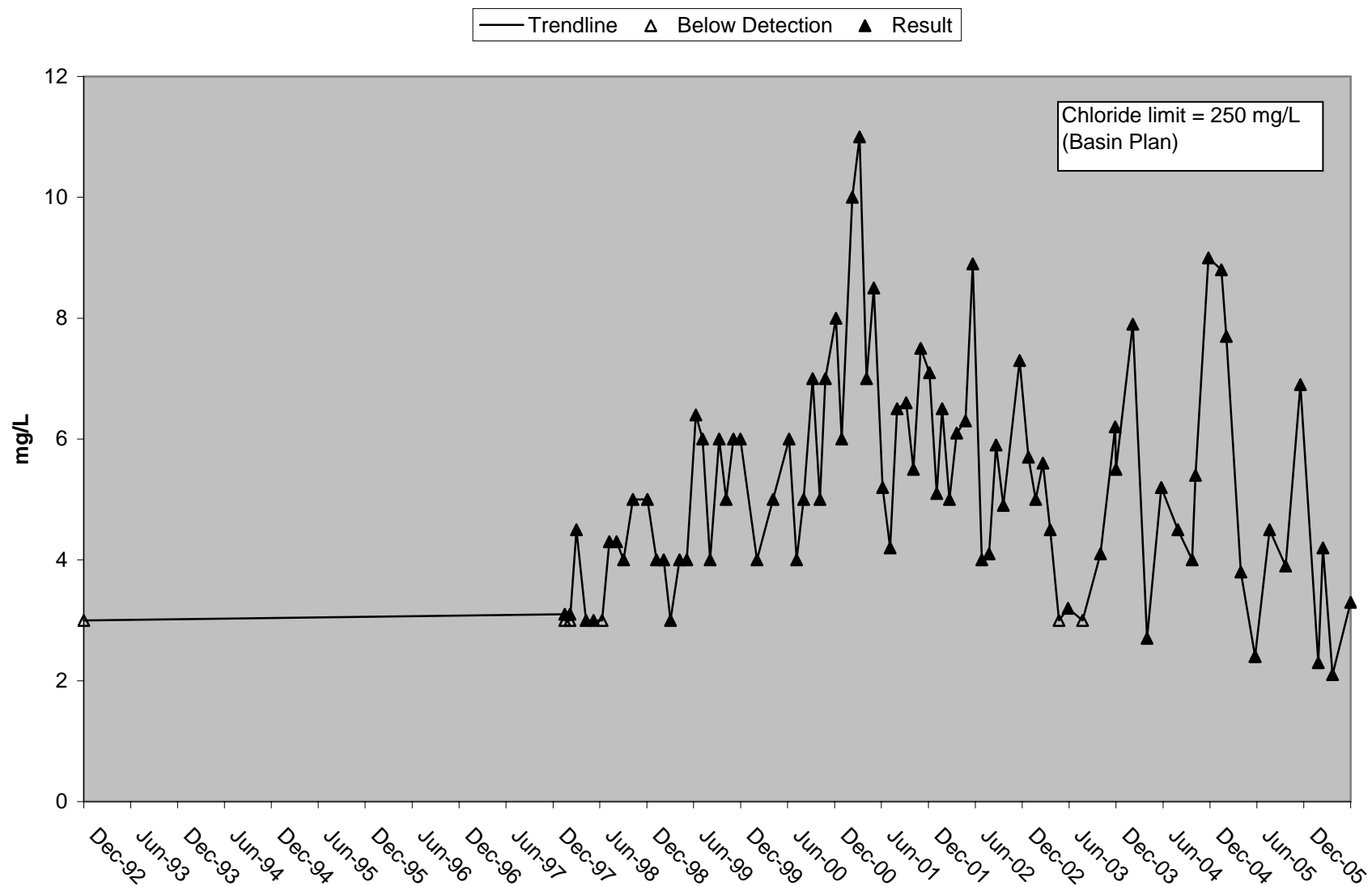




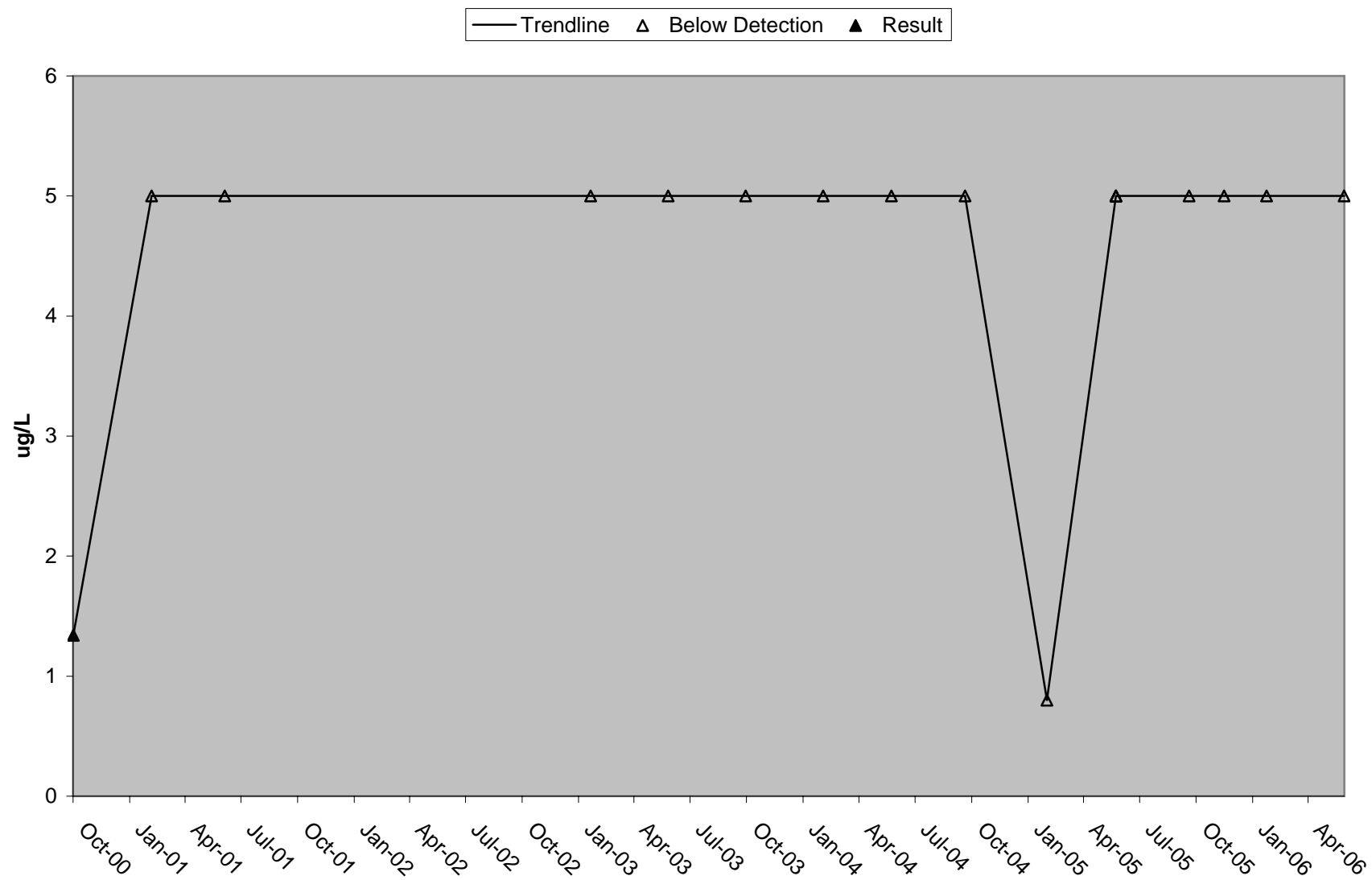
## *APPENDIX C-2*

### *Sacramento River at Freeport*

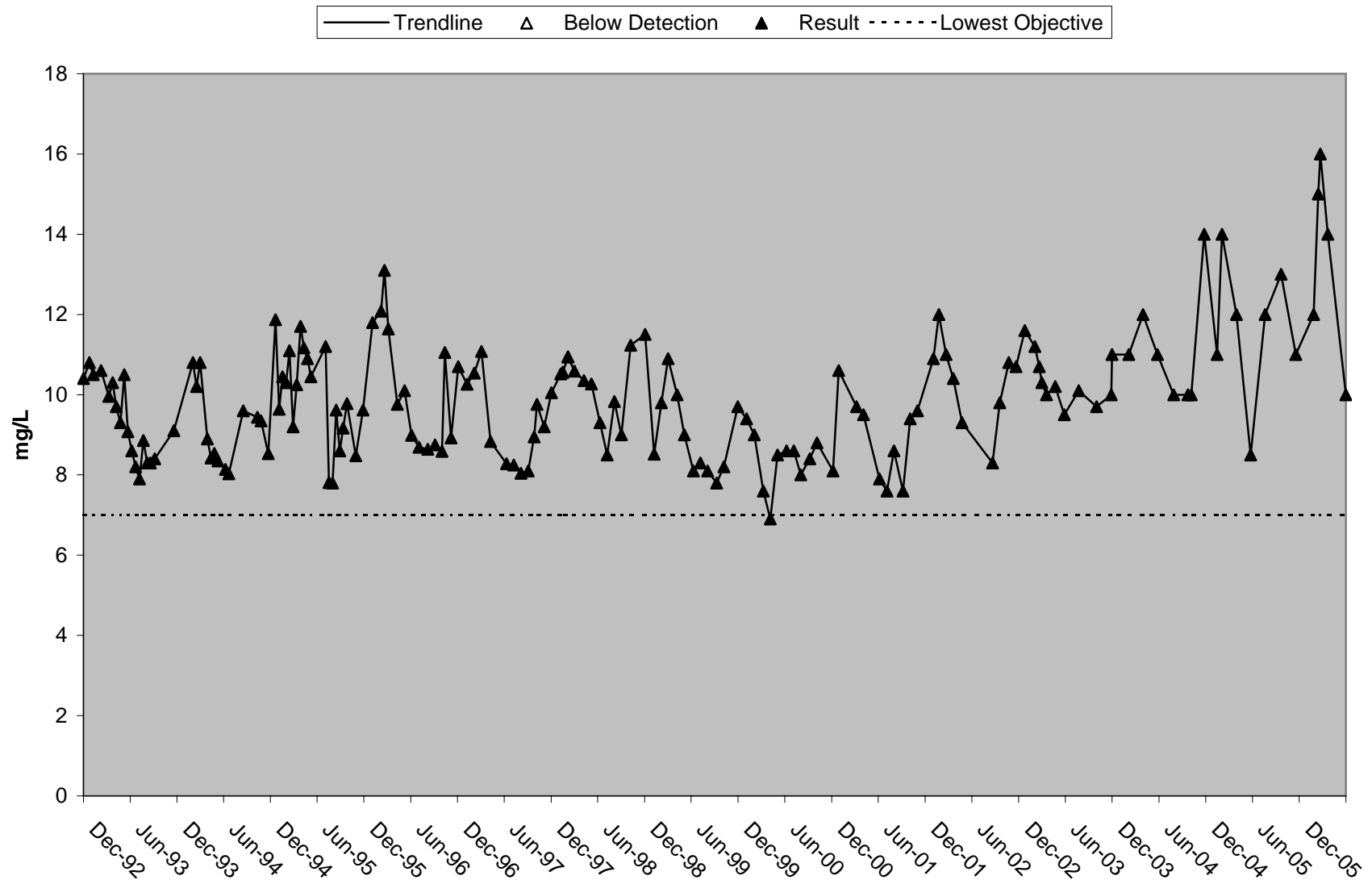
## Freeport Chloride



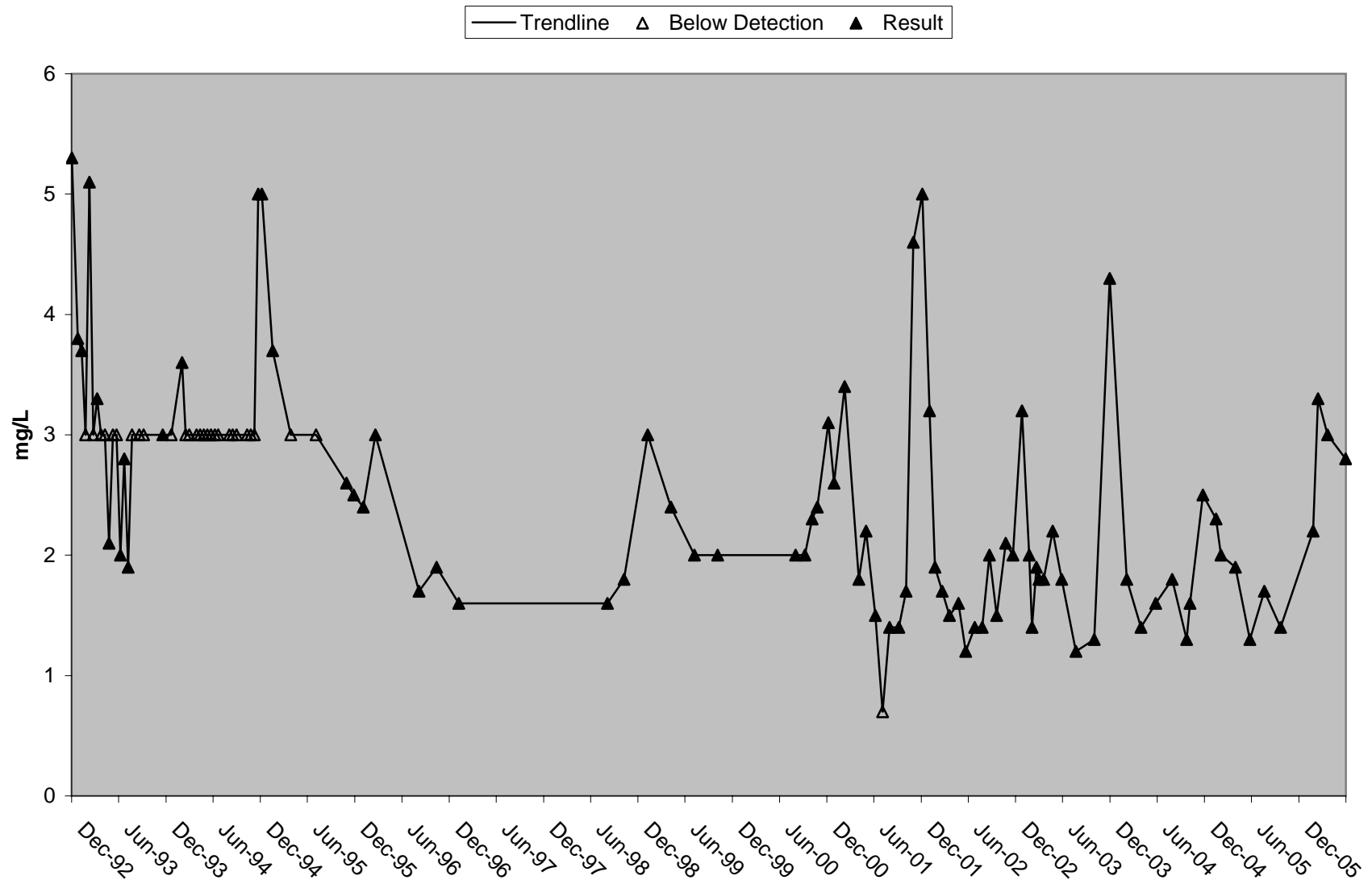
## Freeport Cyanide



## Freeport Dissolved Oxygen (DO)

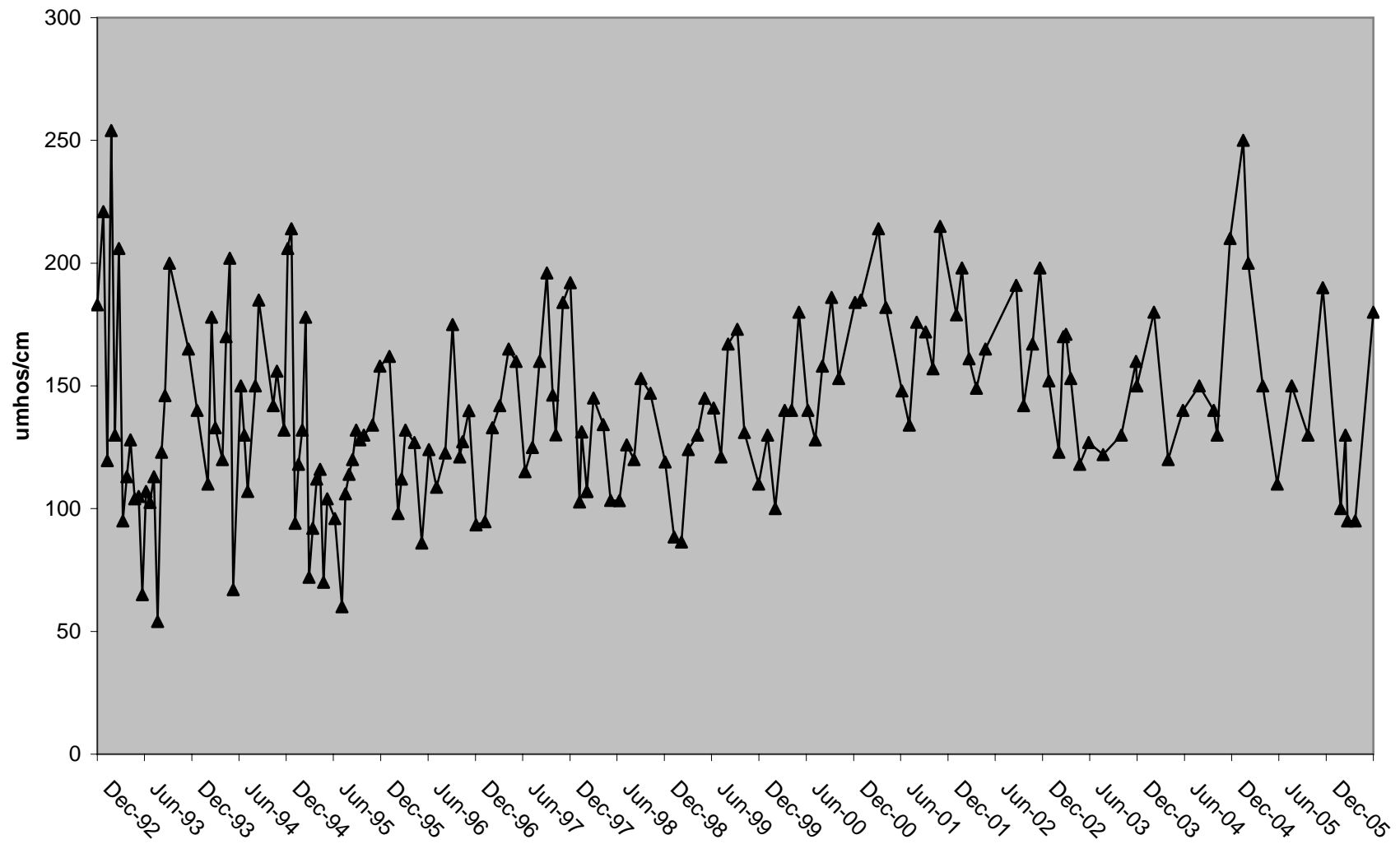


# Freeport Dissolved Organic Carbon (DOC)

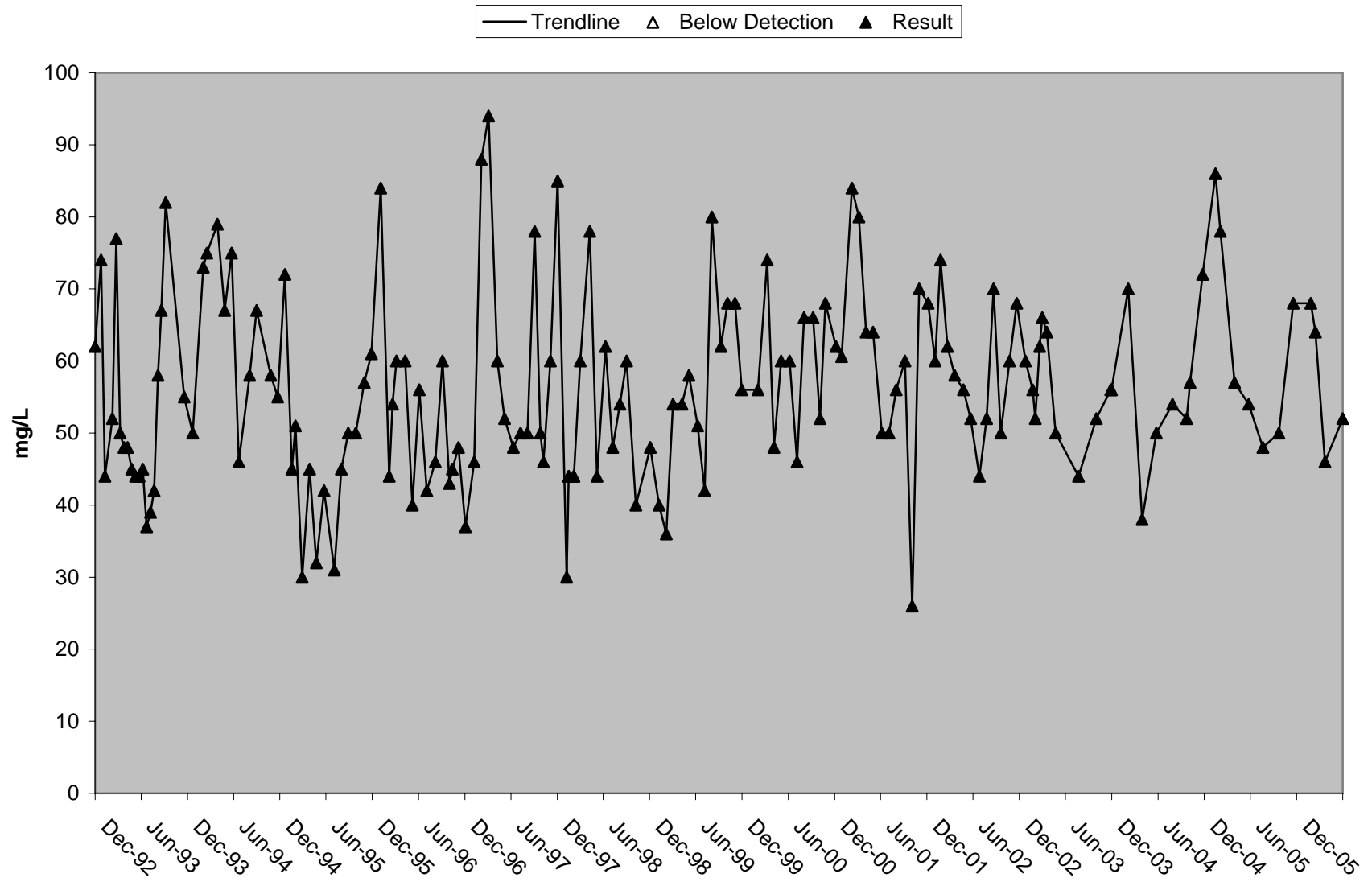


# Freeport Electrical Conductivity (EC)

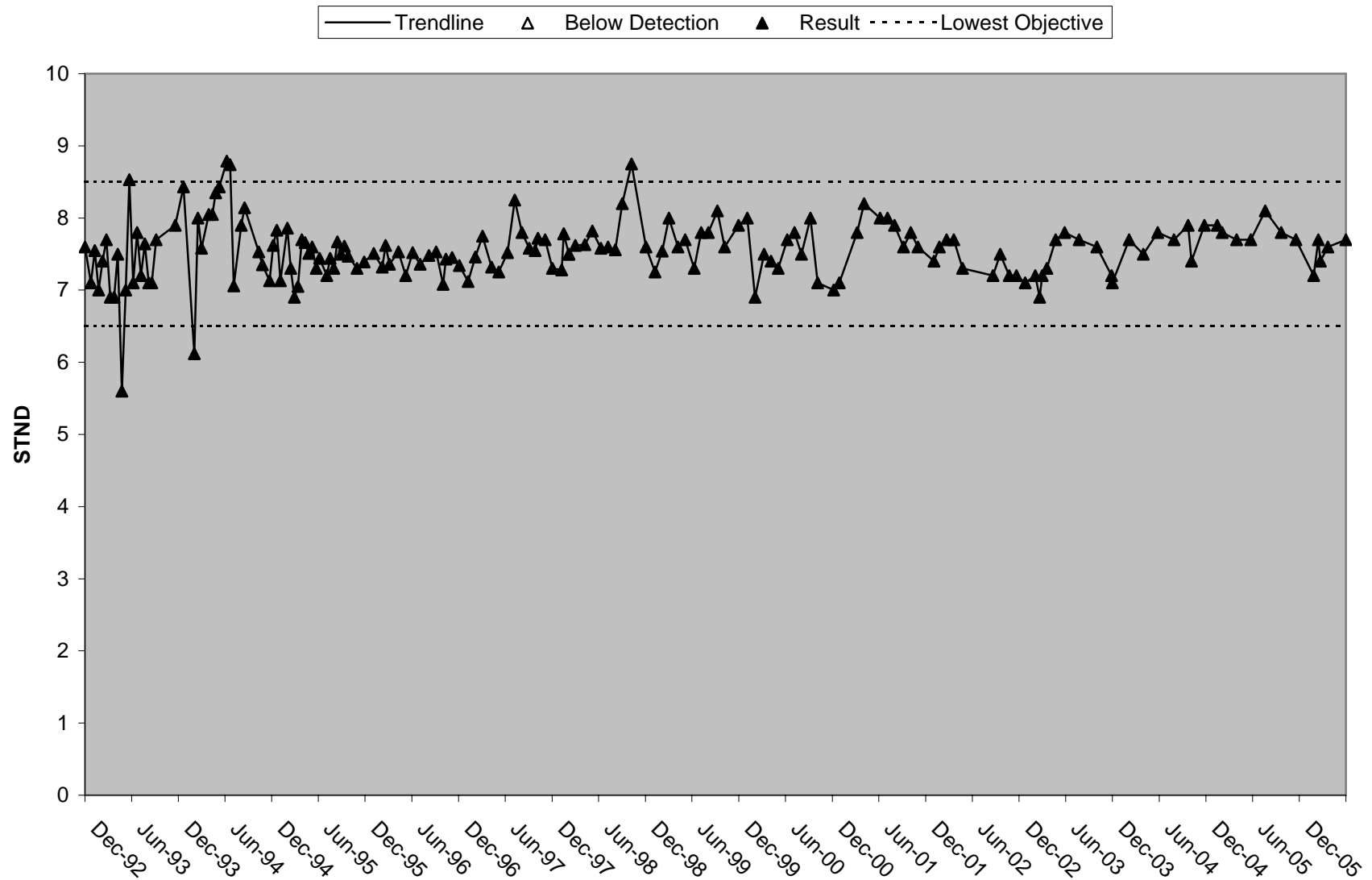
— Trendline    △ Below Detection    ▲ Result



# Freeport Hardness

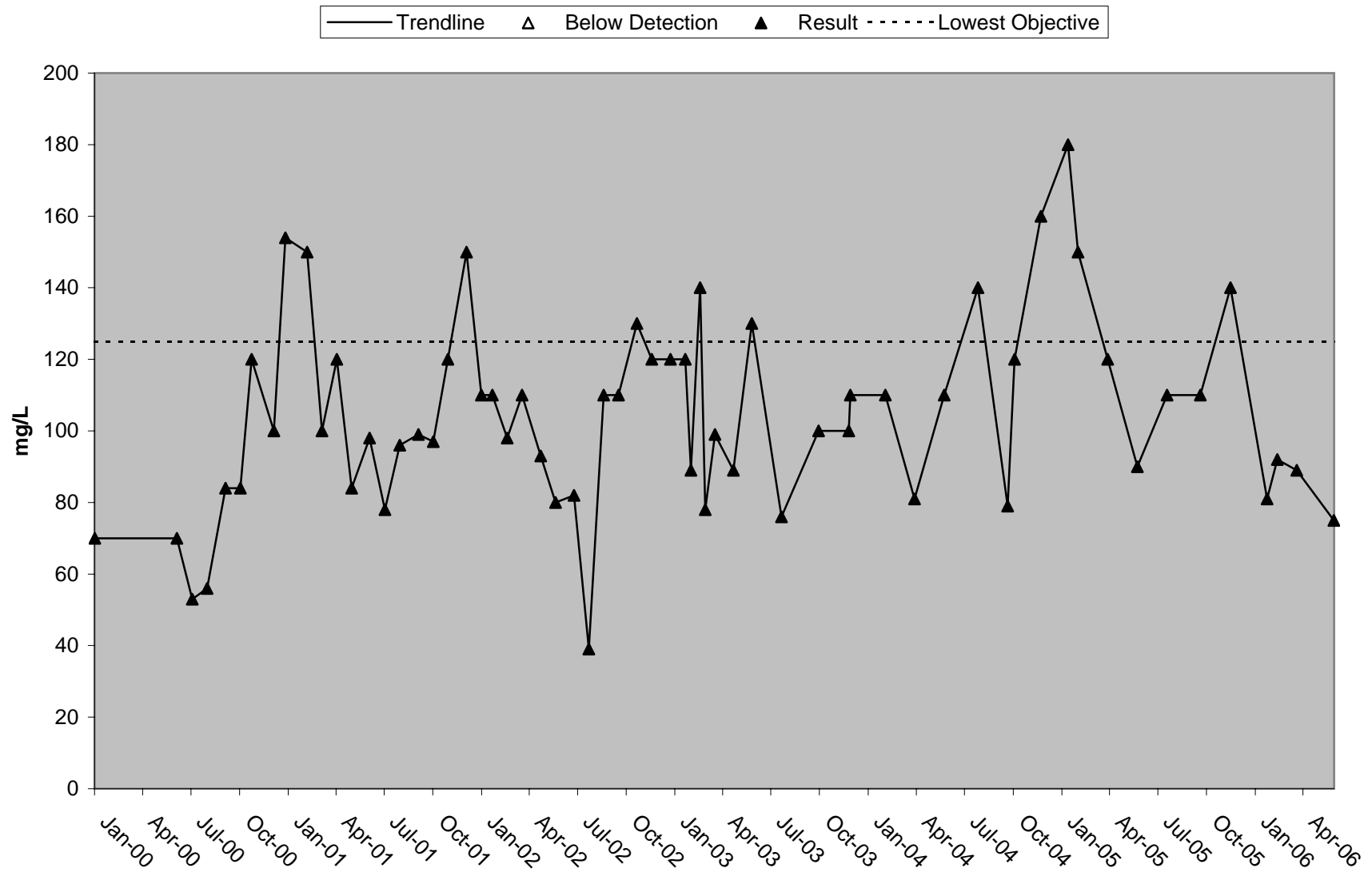


# Freeport pH

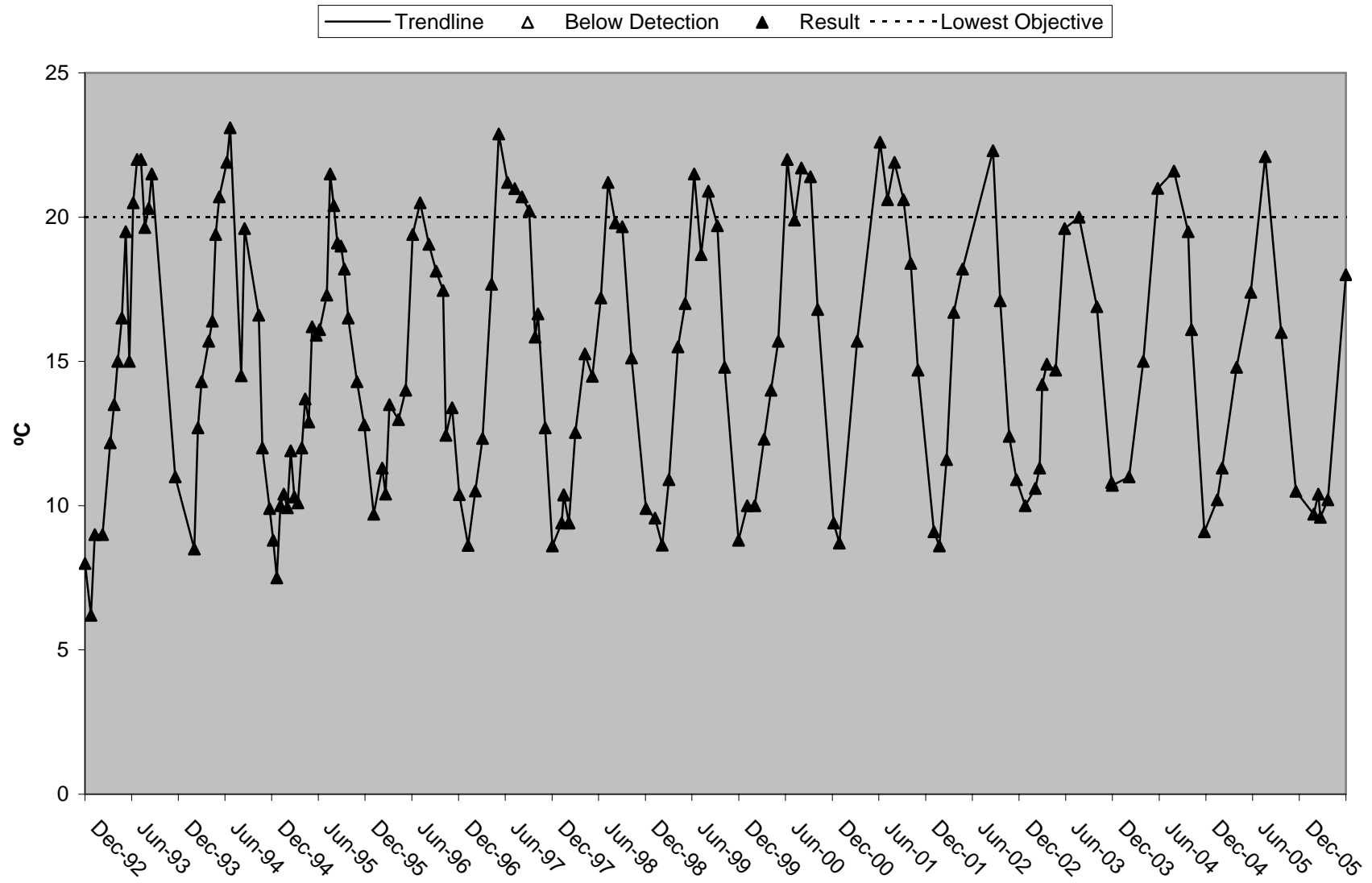




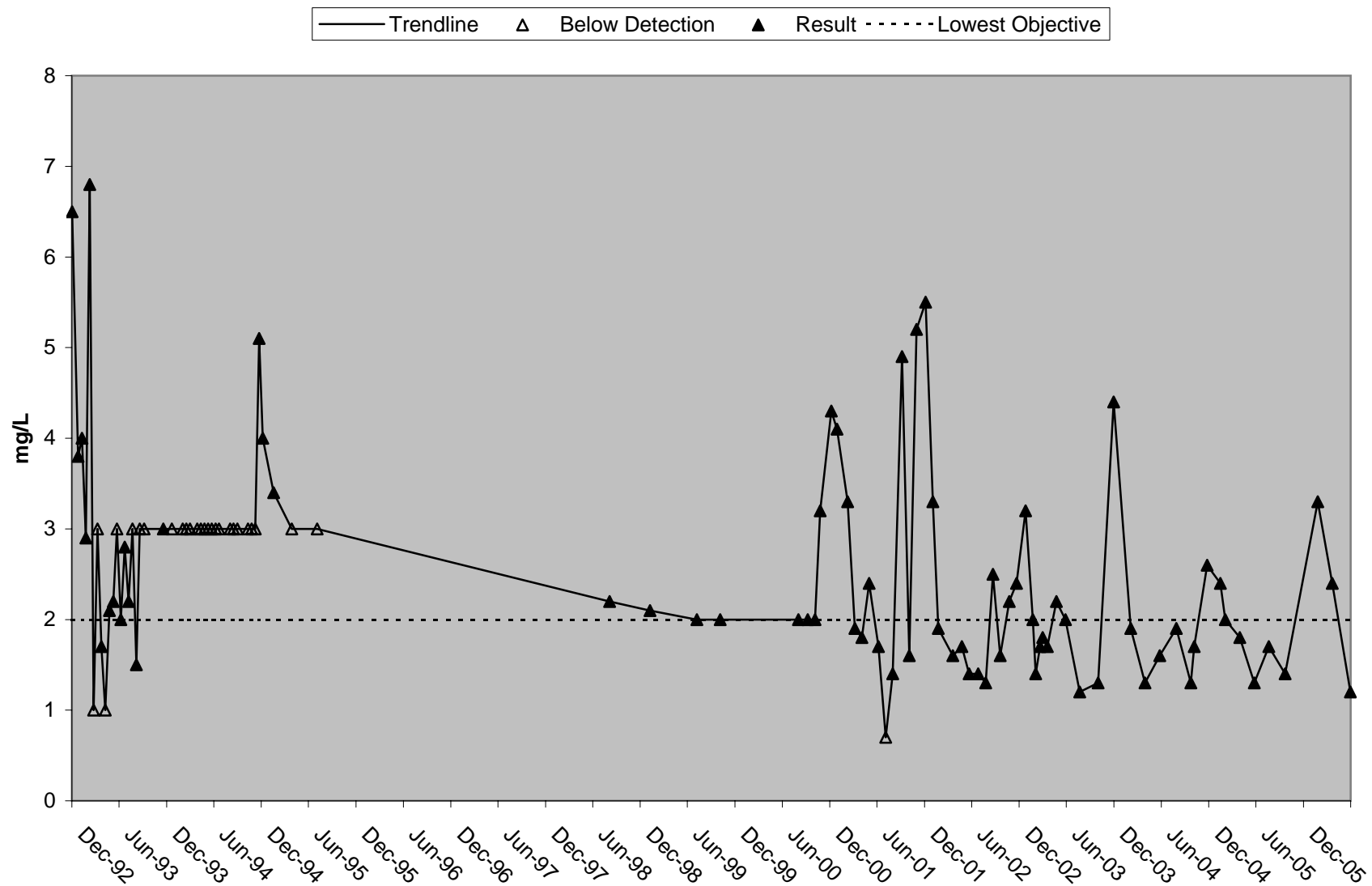
# Freeport Total Dissolved Solids (TDS)



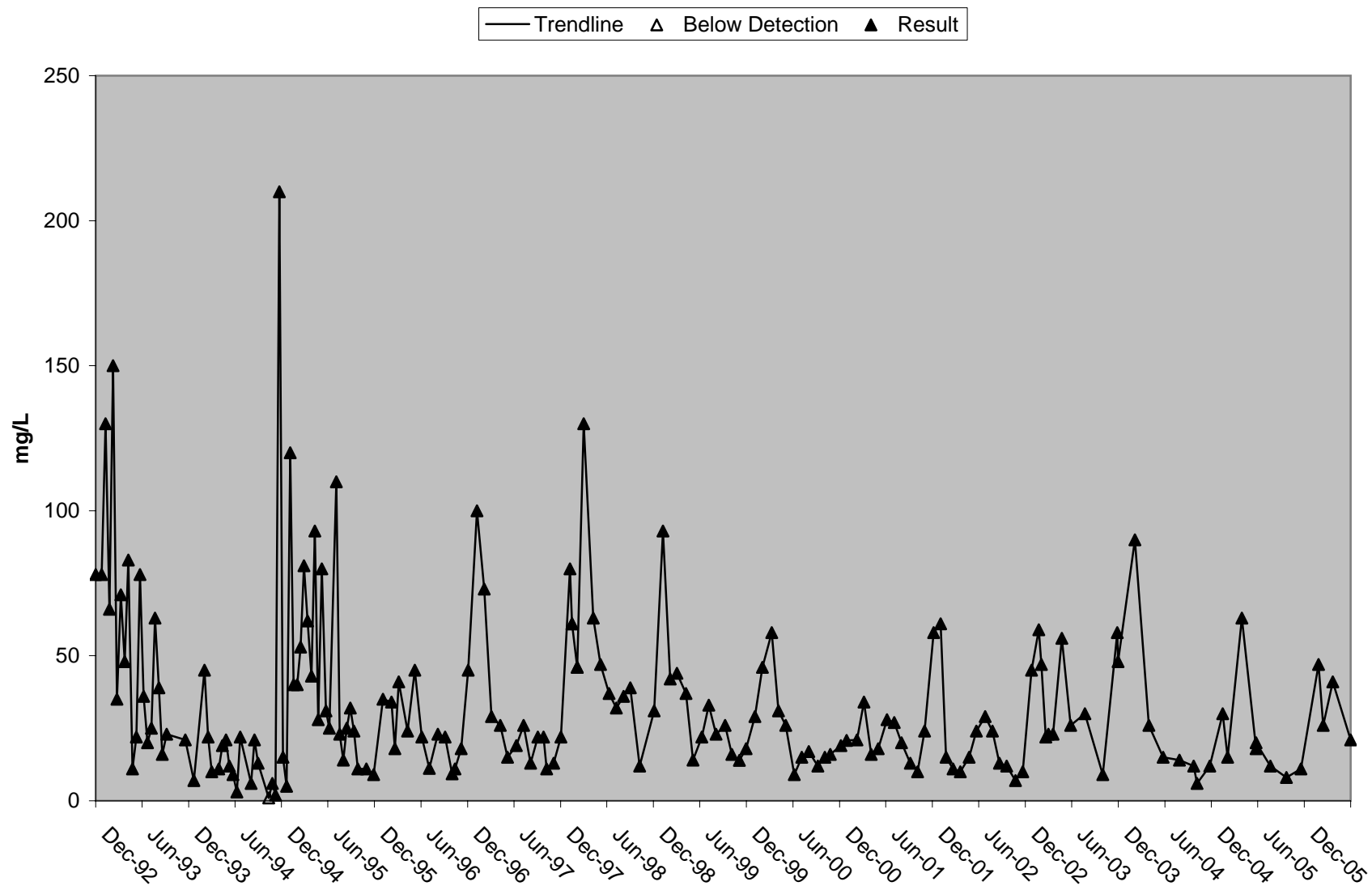
# Freeport Water Temperature



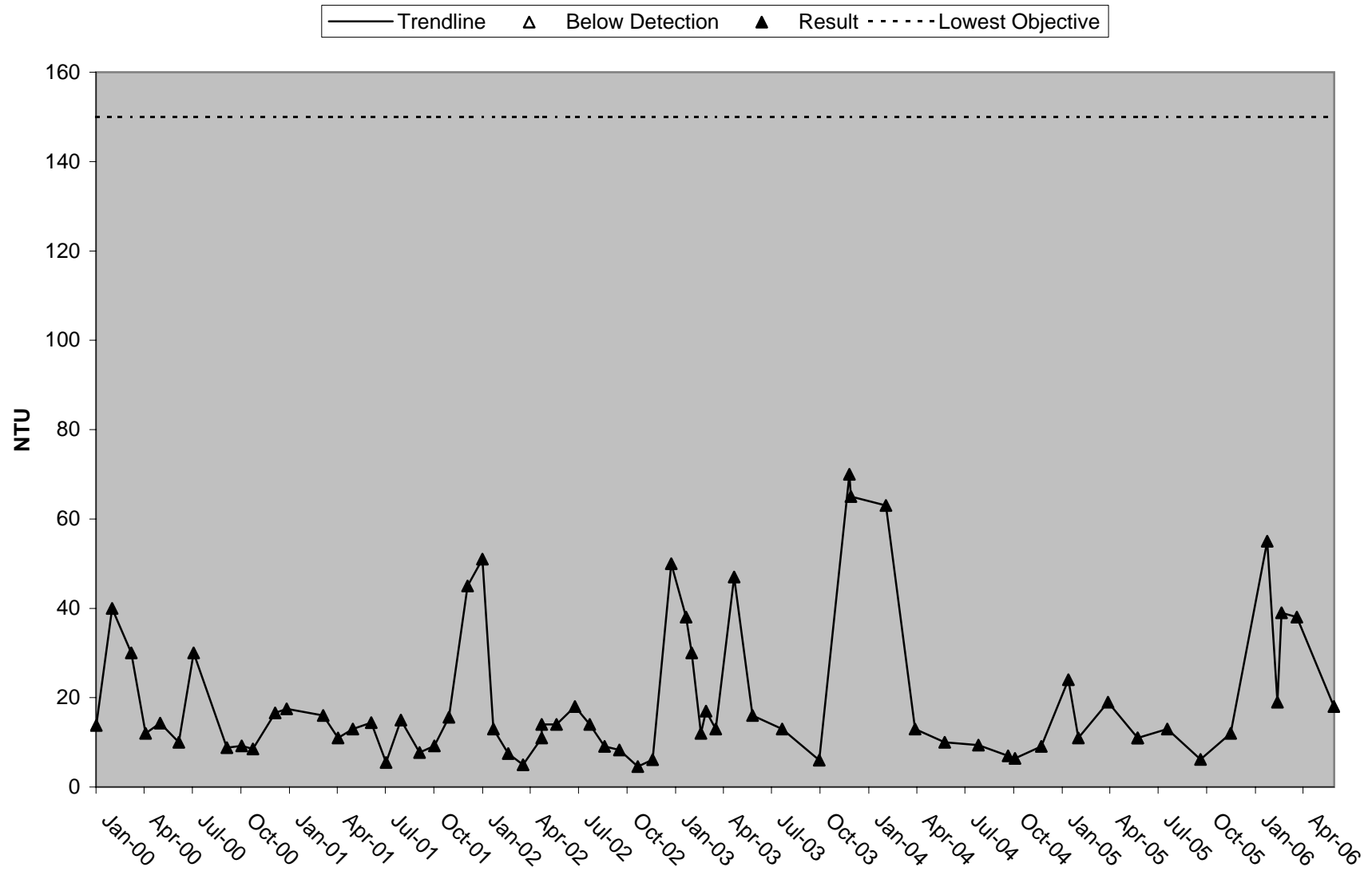
# Freeport Total Organic Carbon (TOC)



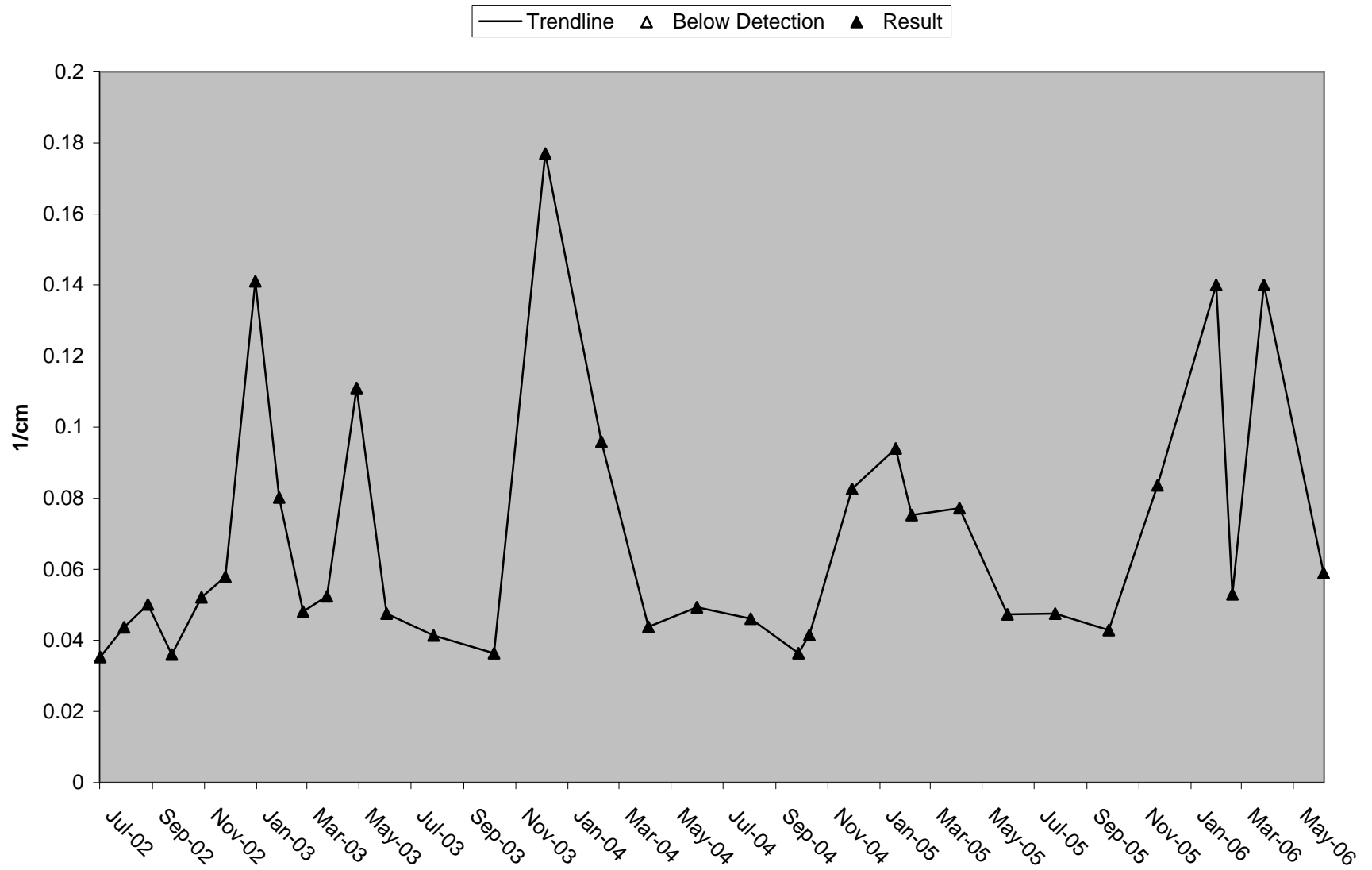
# Freeport Total Suspended Solids (TSS)



## Freeport Turbidity



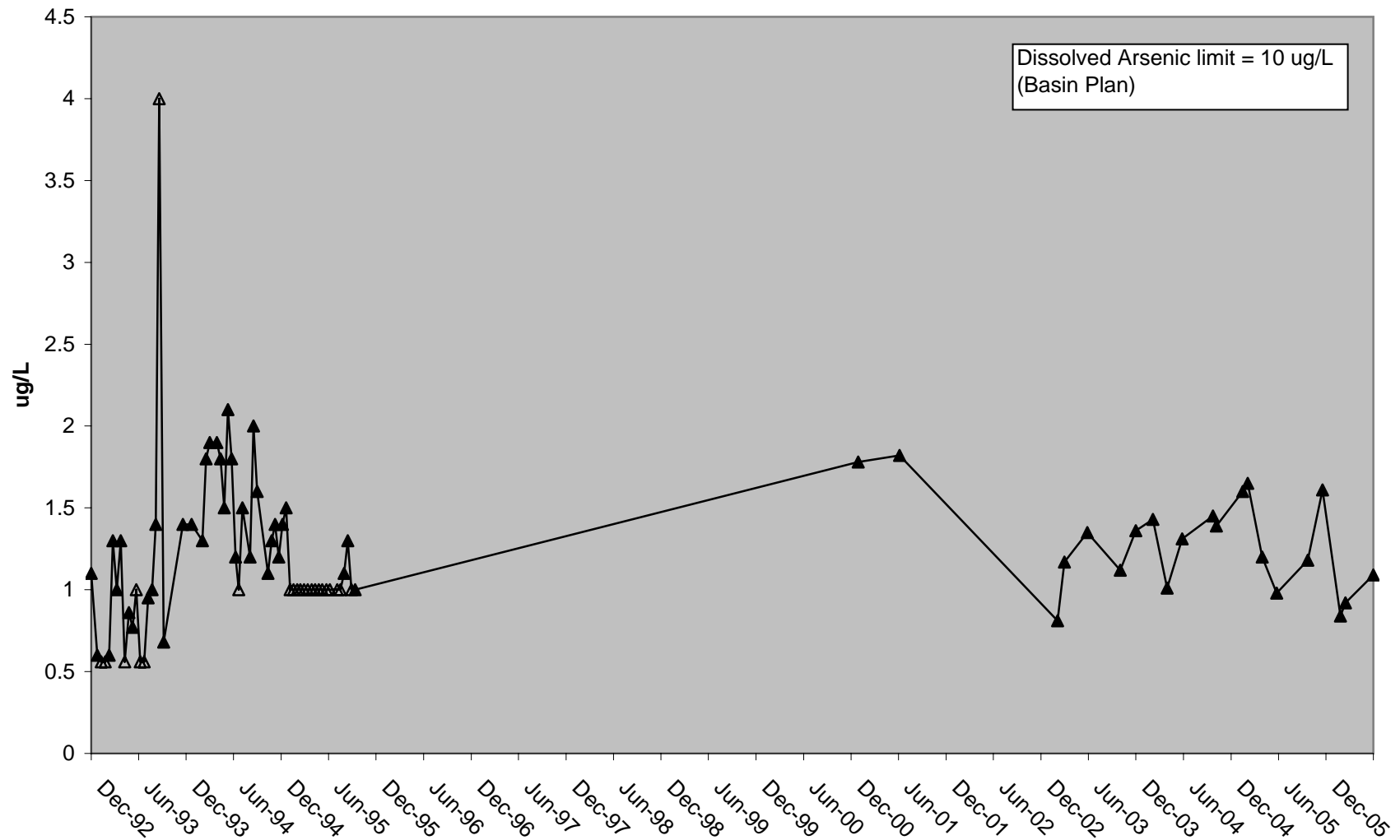
# Freeport UVA 254



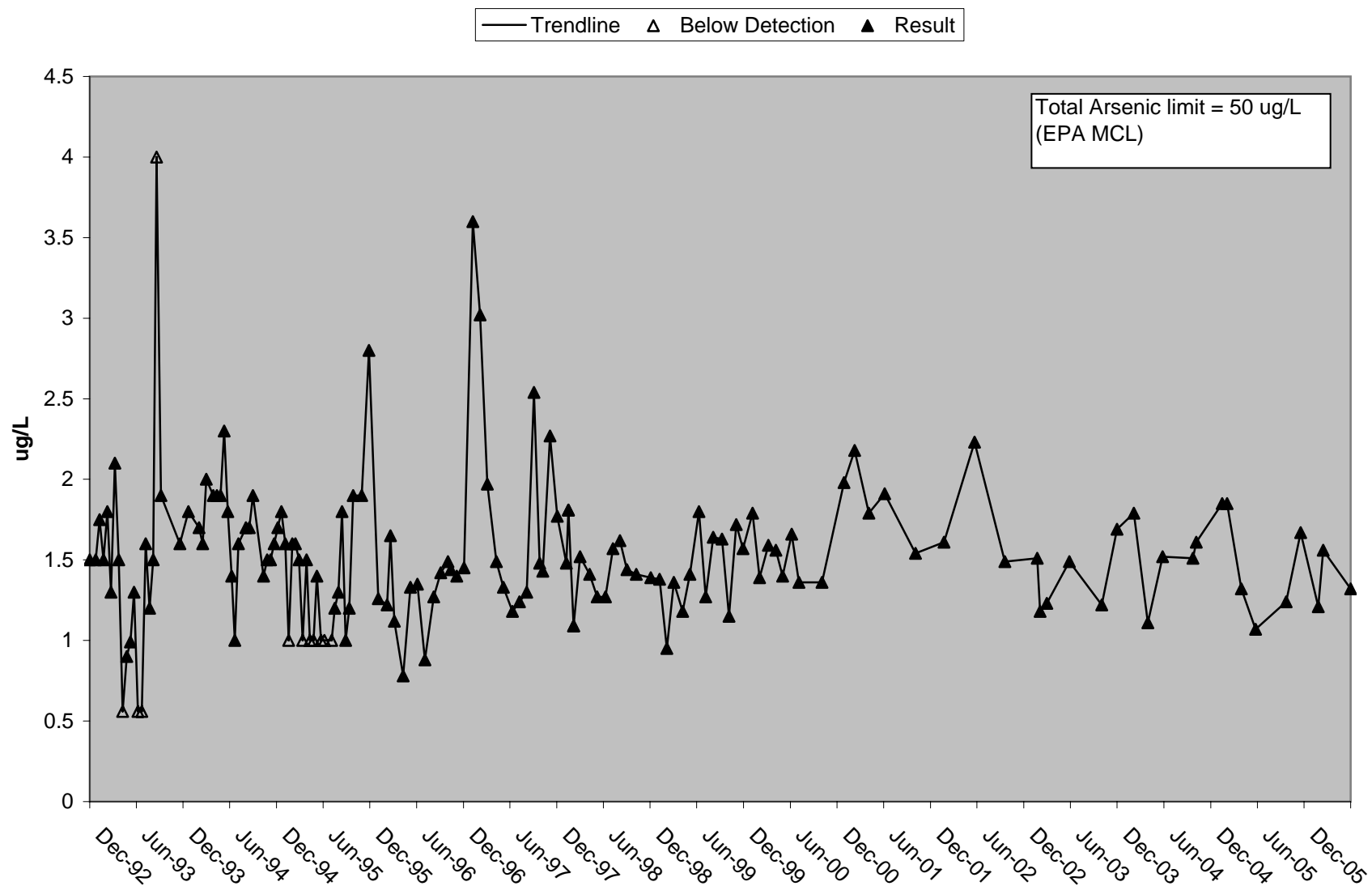
# Freeport Dissolved Arsenic (As-d)

— Trendline    △ Below Detection    ▲ Result

Dissolved Arsenic limit = 10 ug/L  
(Basin Plan)



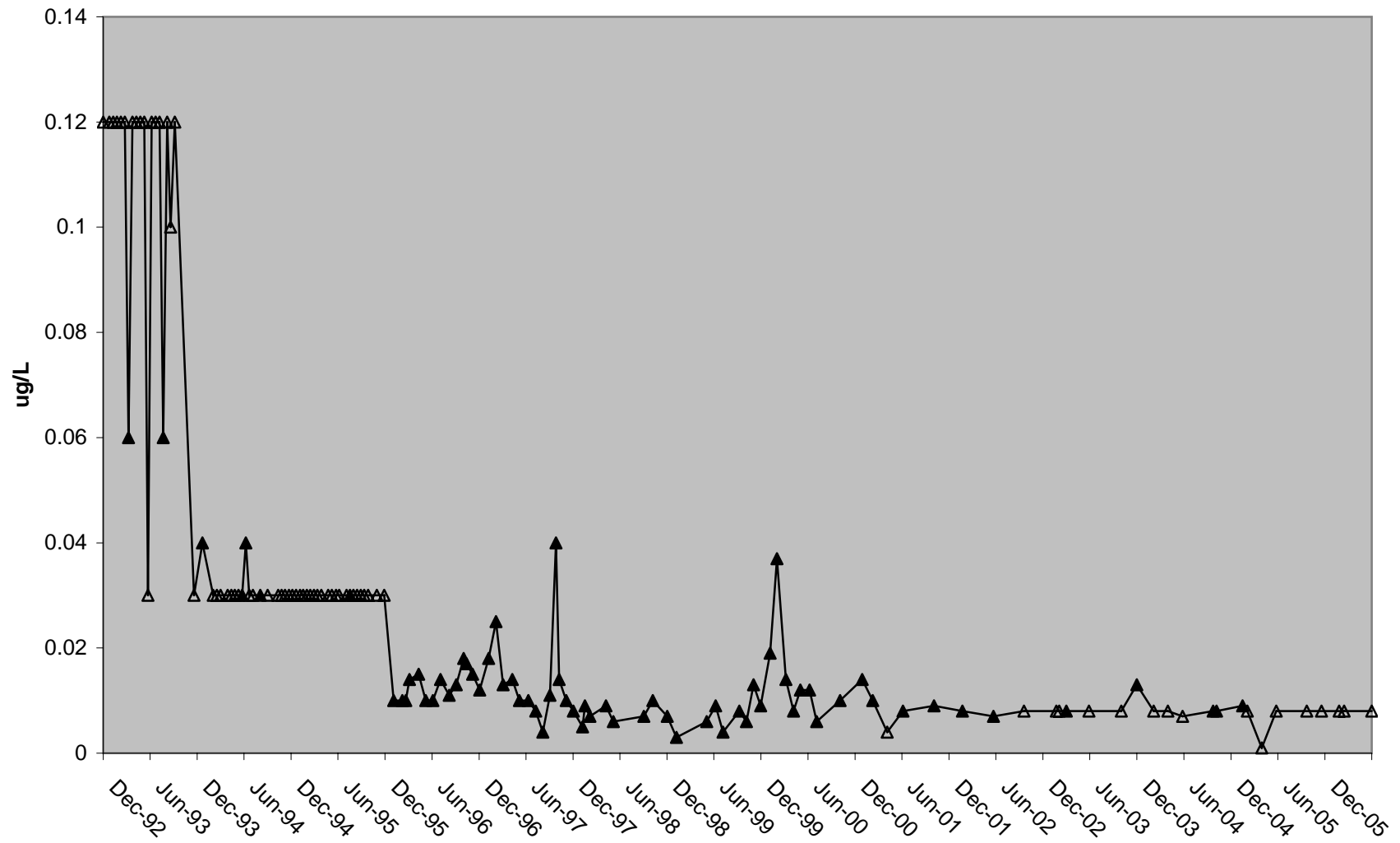
# Freeport Total Arsenic (As-T)



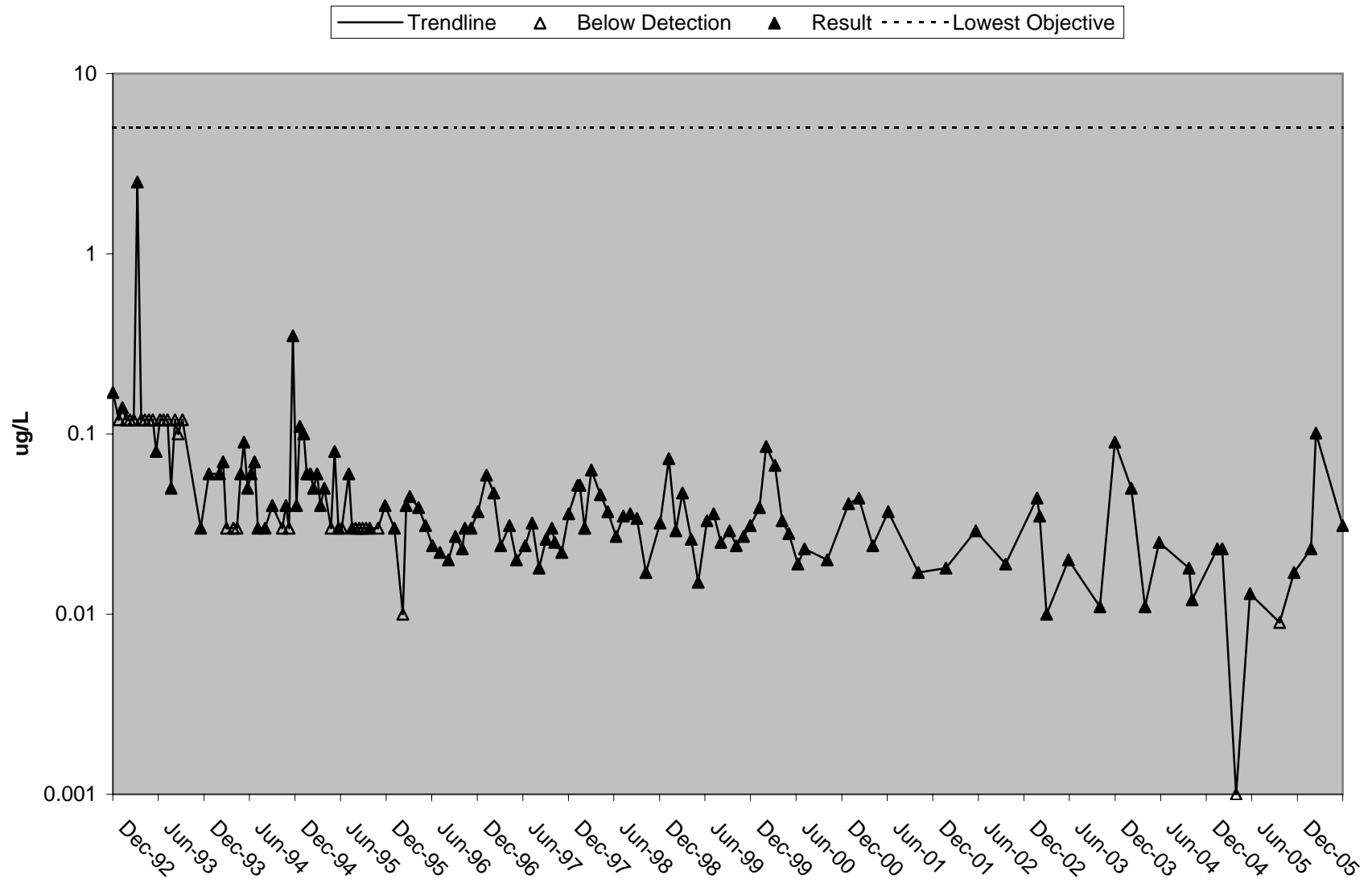


# Freeport Dissolved Cadmium (Cd-d)

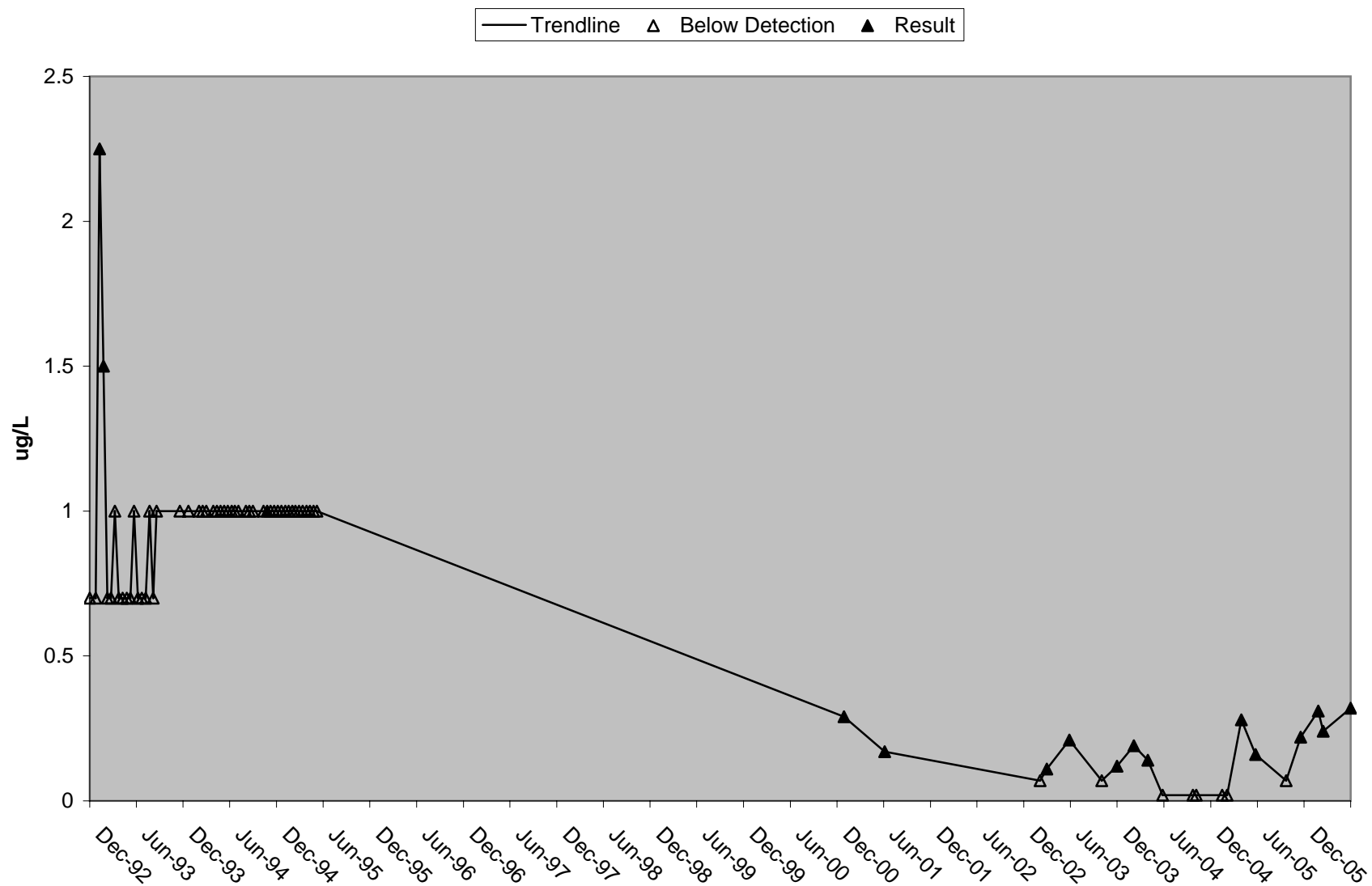
— Trendline    △ Below Detection    ▲ Result



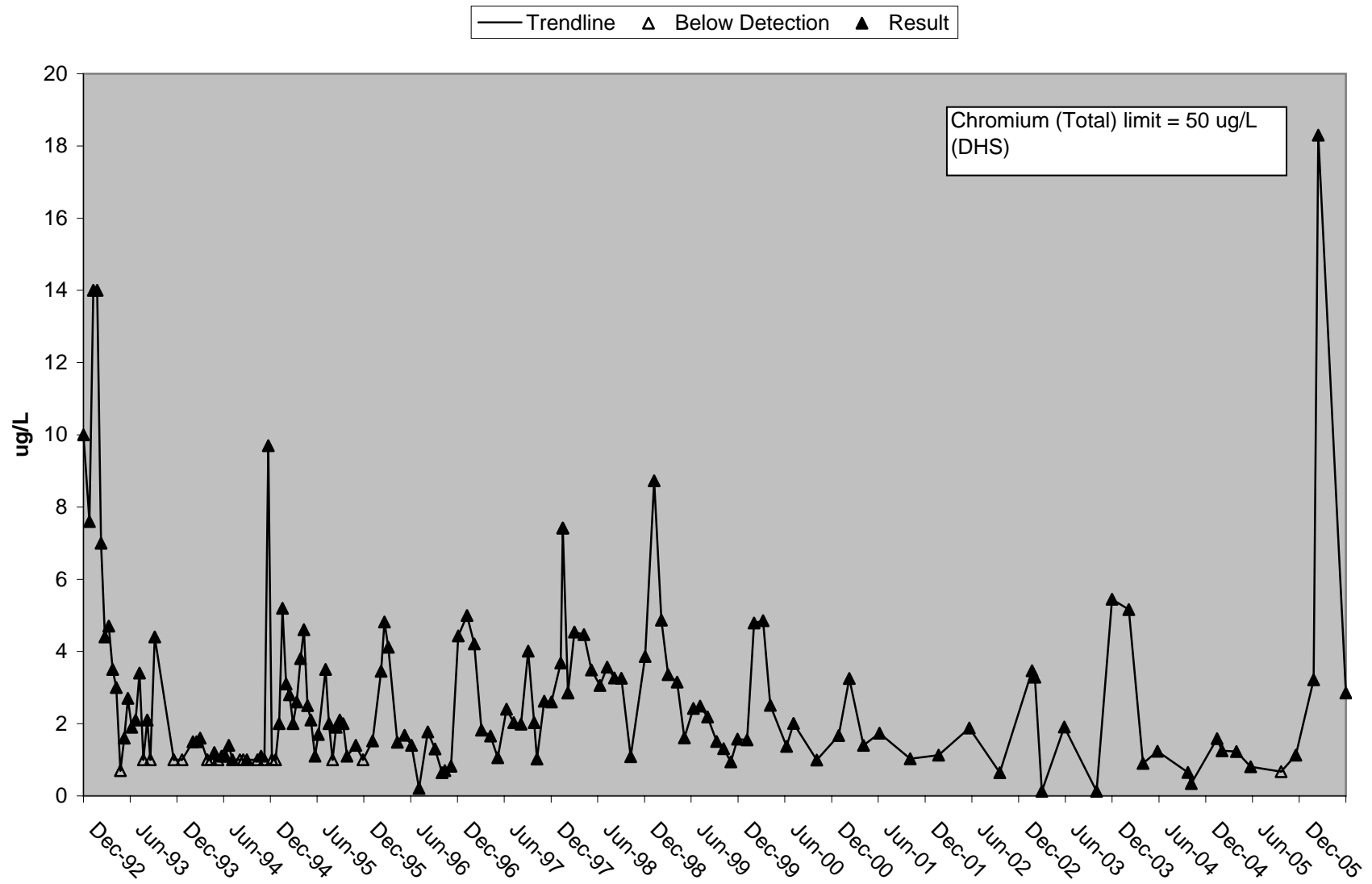
# Freeport Total Cadmium (Cd-T)



### Freeport Dissolved Chromium (Cr-d)

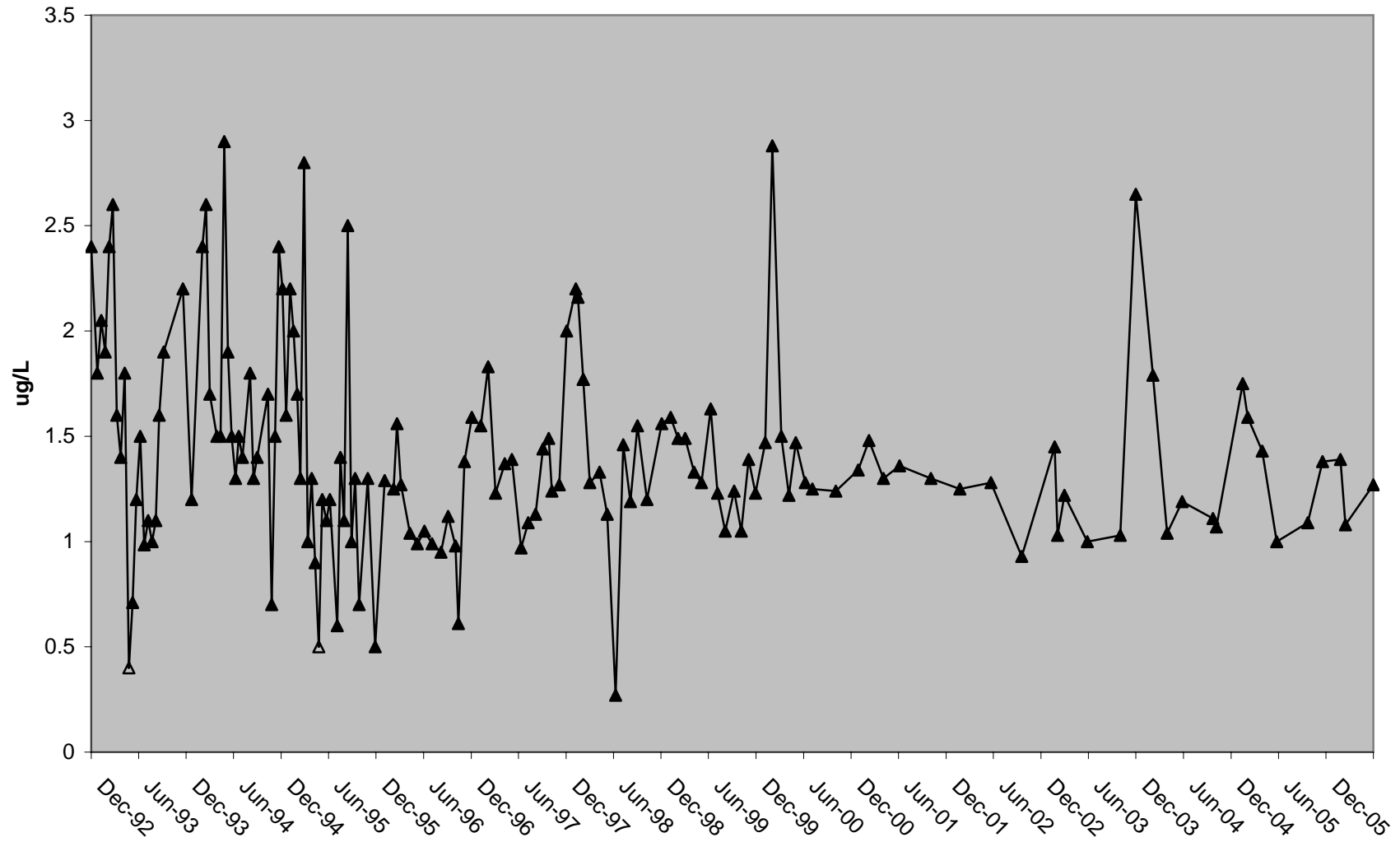


# Freeport Total Chromium (Cr-T)



# Freeport Dissolved Copper (Cu-d)

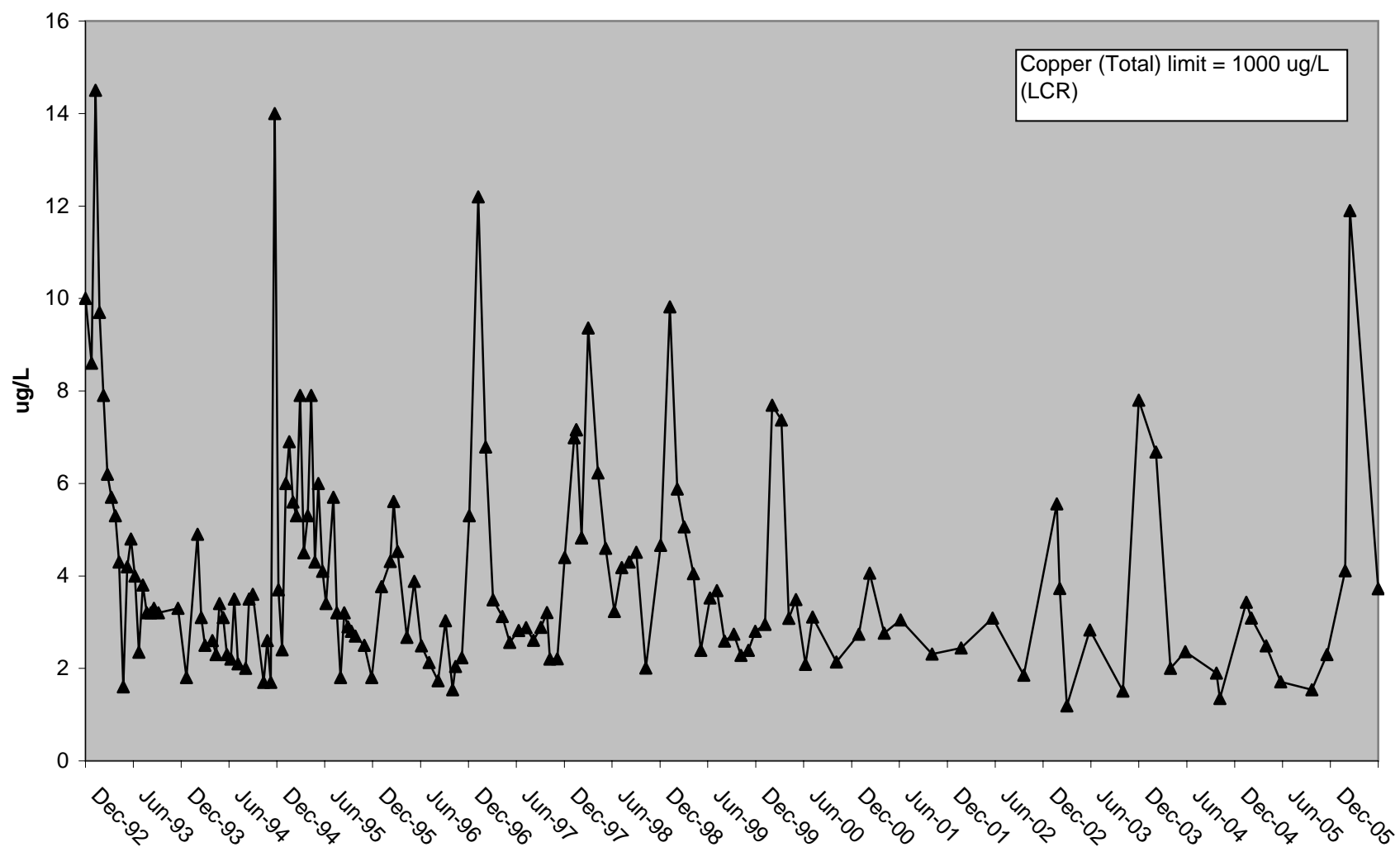
— Trendline    △ Below Detection    ▲ Result



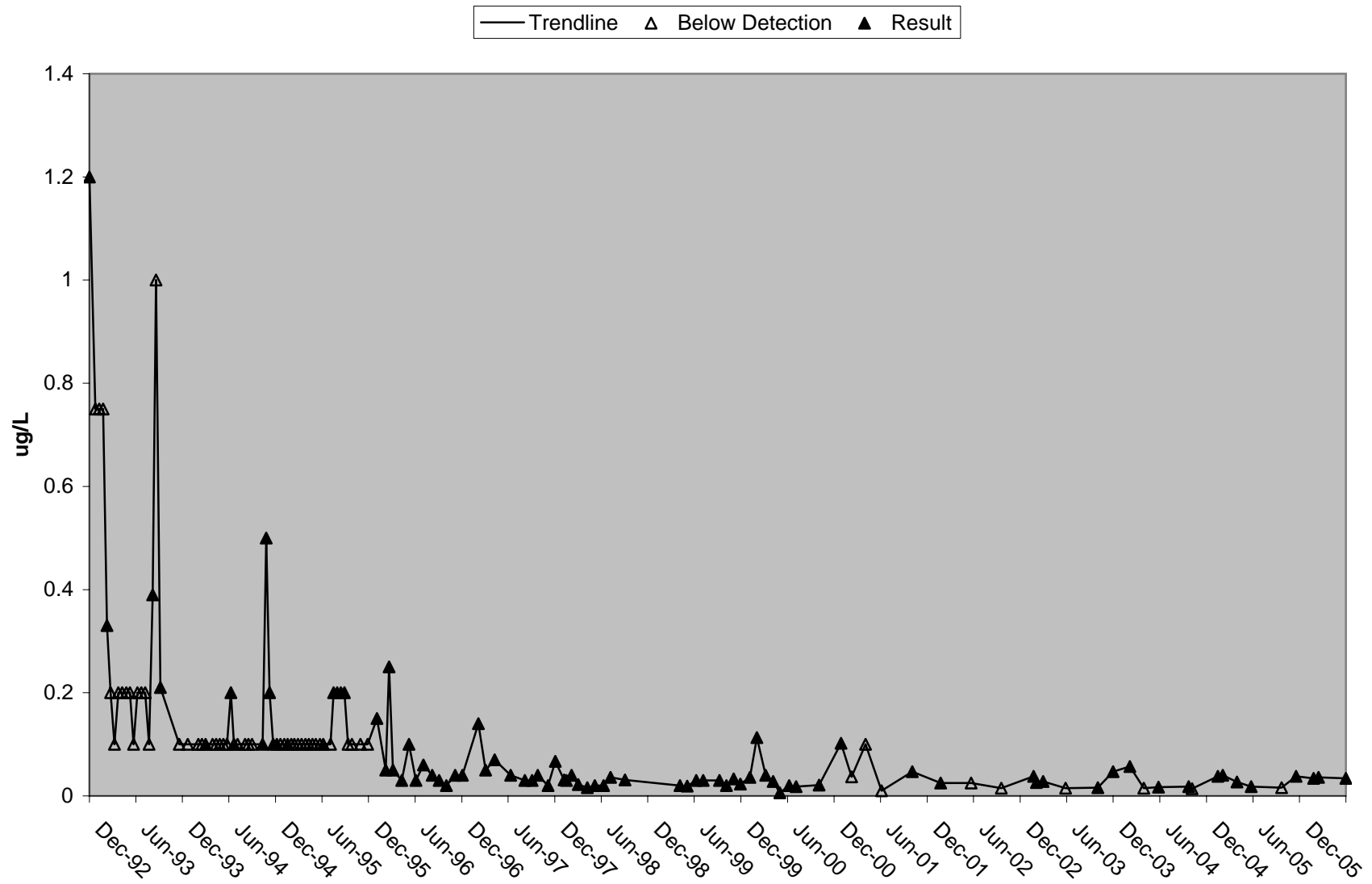
# Freeport Total Copper (Cu-T)

— Trendline    △ Below Detection    ▲ Result

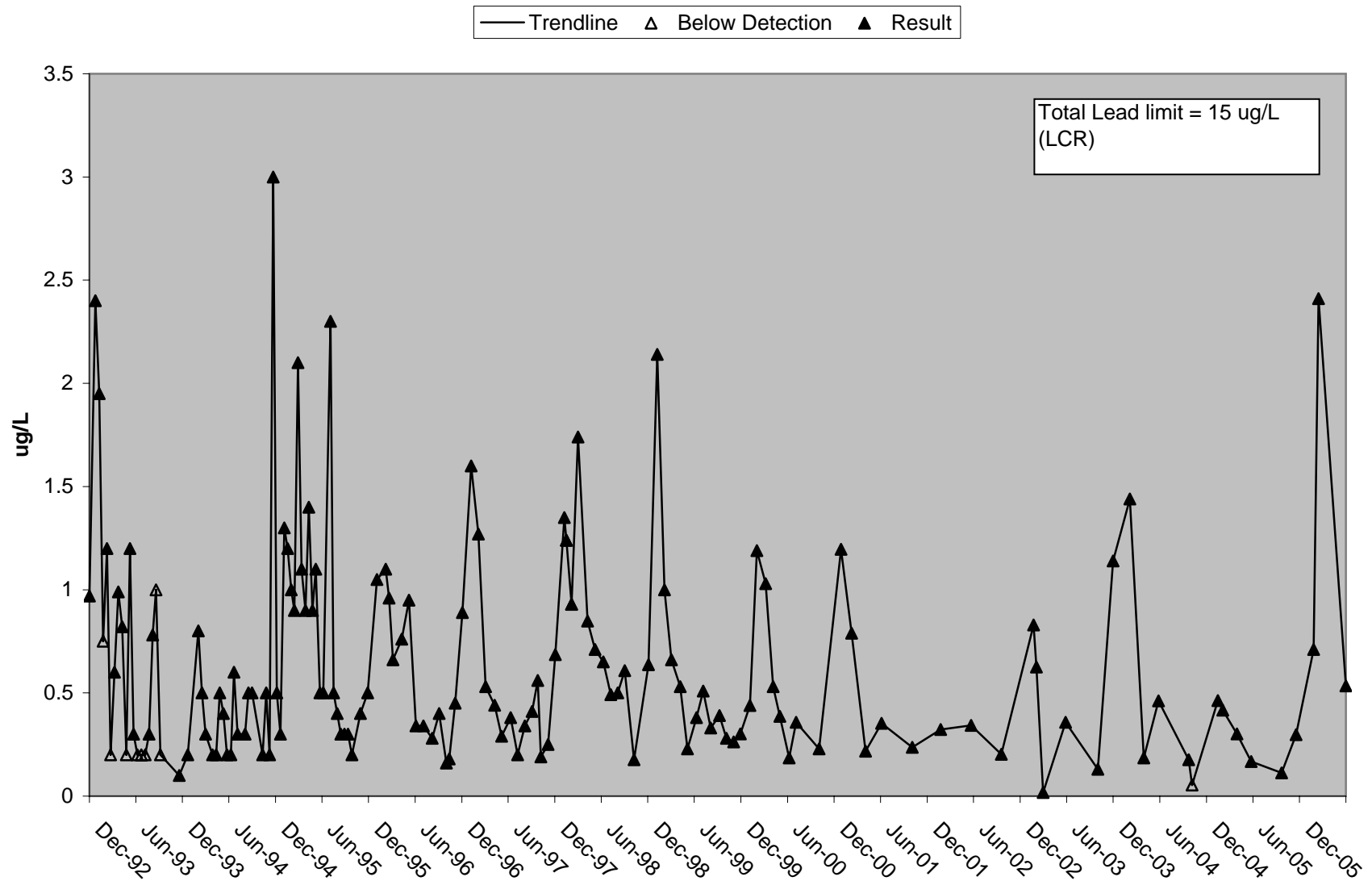
Copper (Total) limit = 1000 ug/L (LCR)



### Freeport Dissolved Lead (Pb-d)



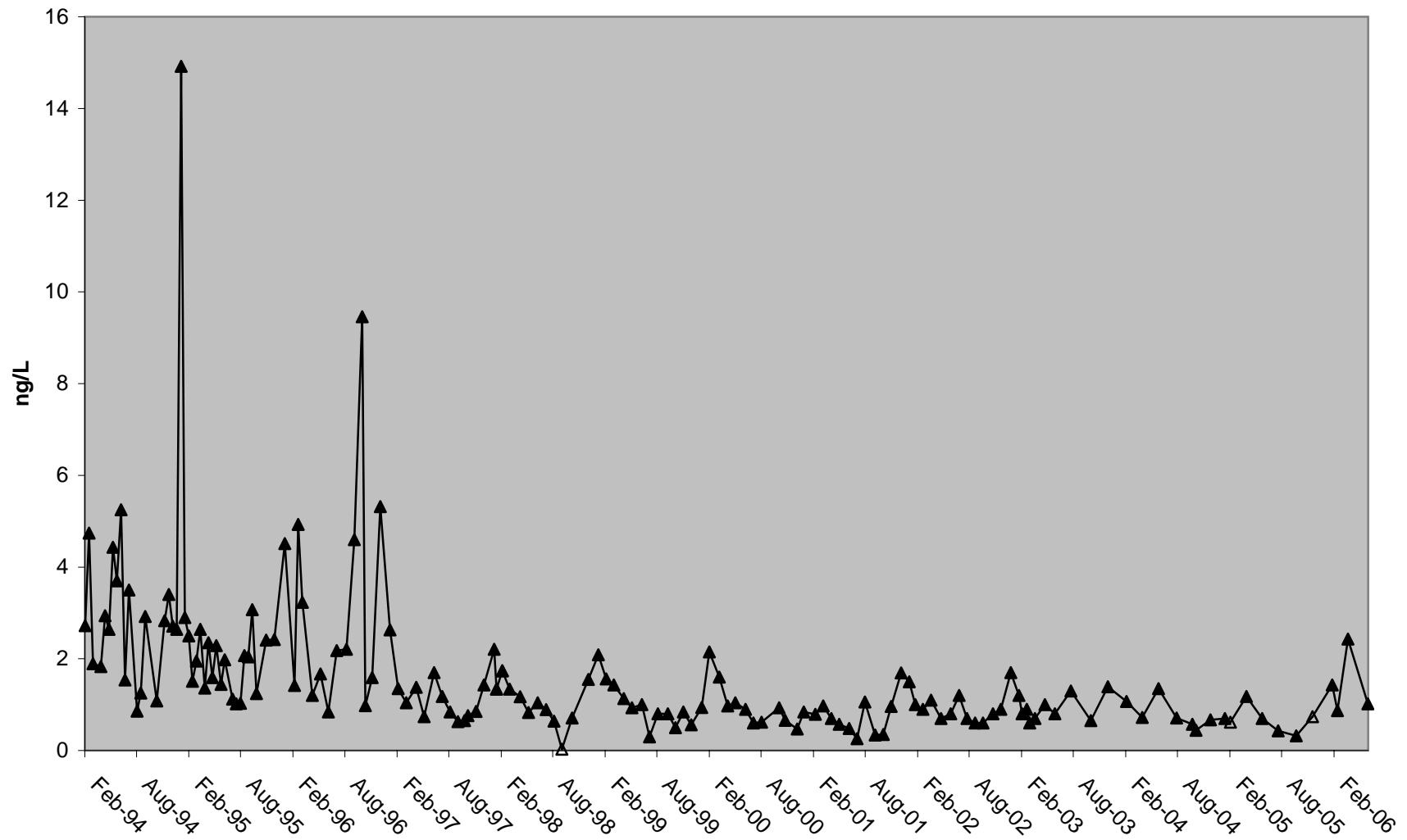
# Freeport Total Lead (Pb-T)



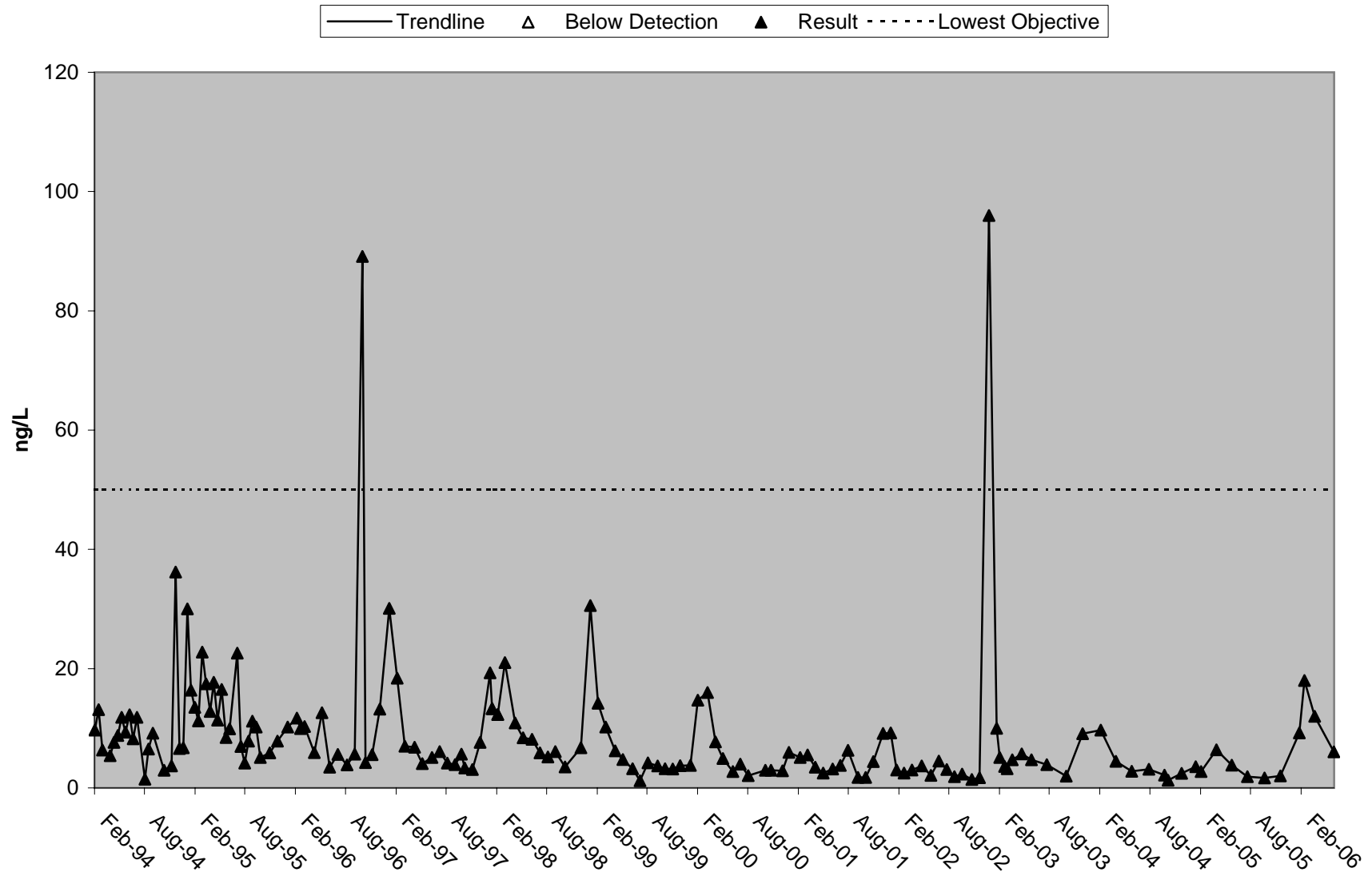


# Freeport Filtered Mercury

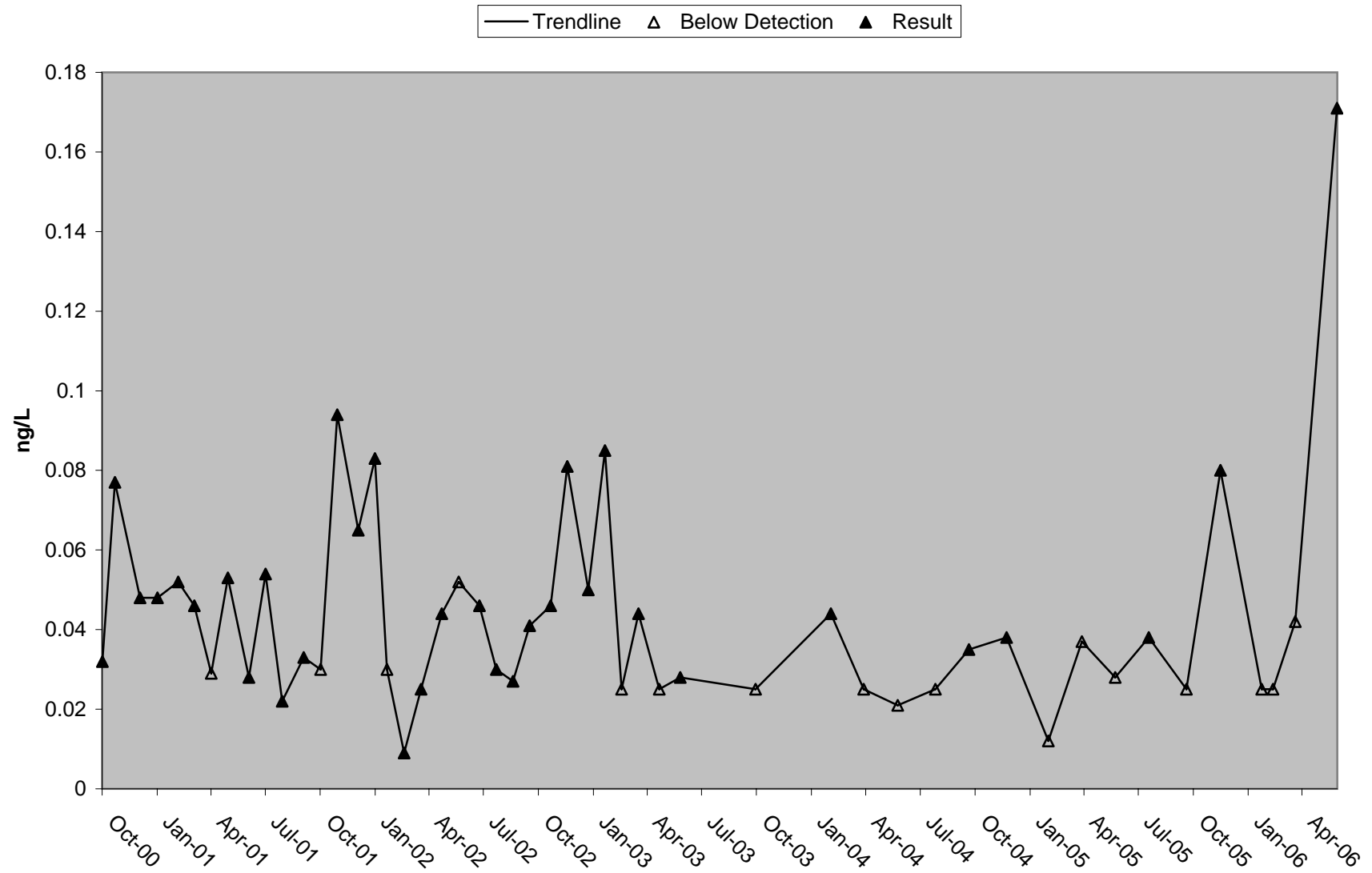
— Trendline    △ Below Detection    ▲ Result



# Freeport Unfiltered Mercury

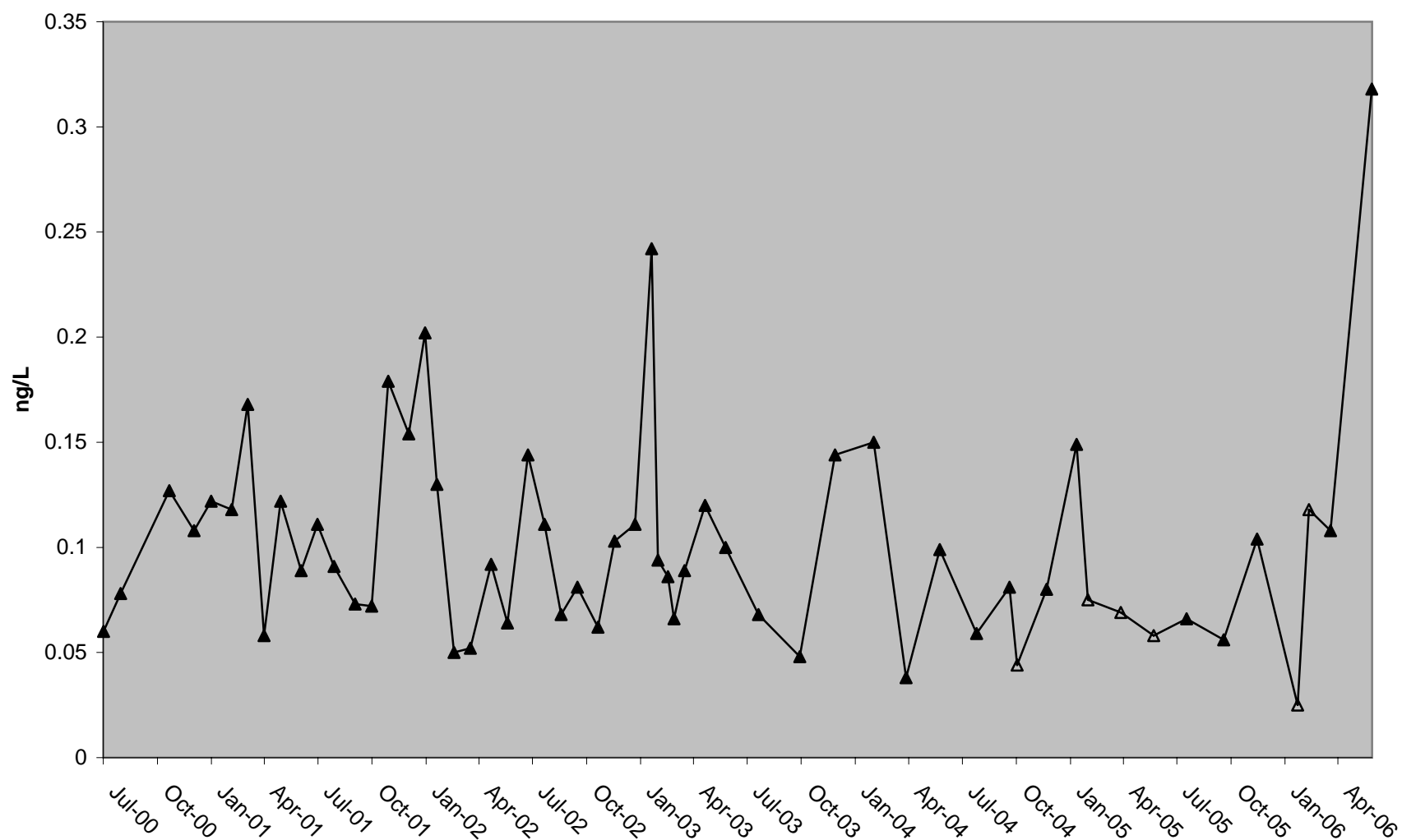


### Freeport Filtered Methyl Mercury

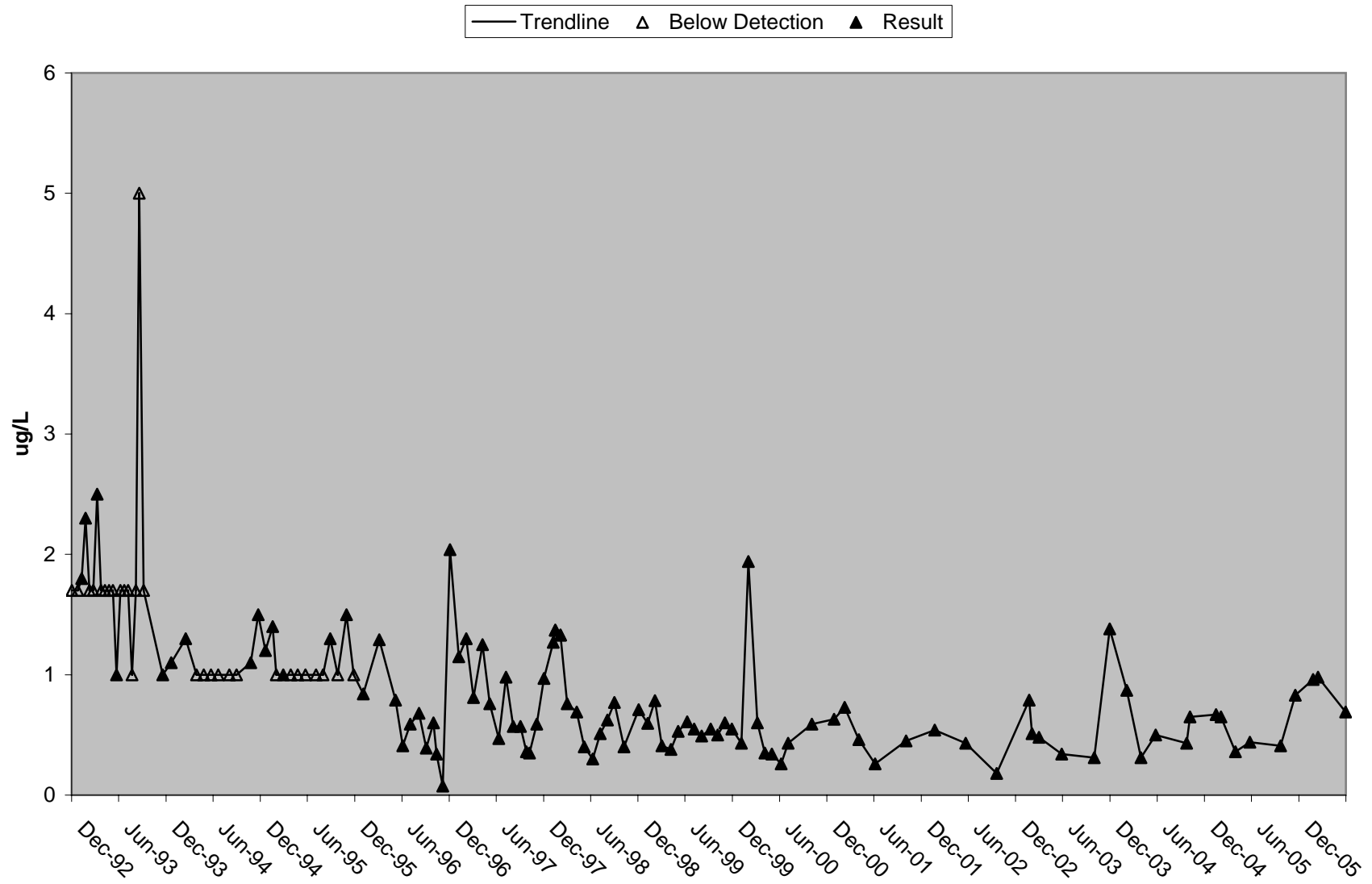


# Freeport Unfiltered Methyl Mercury

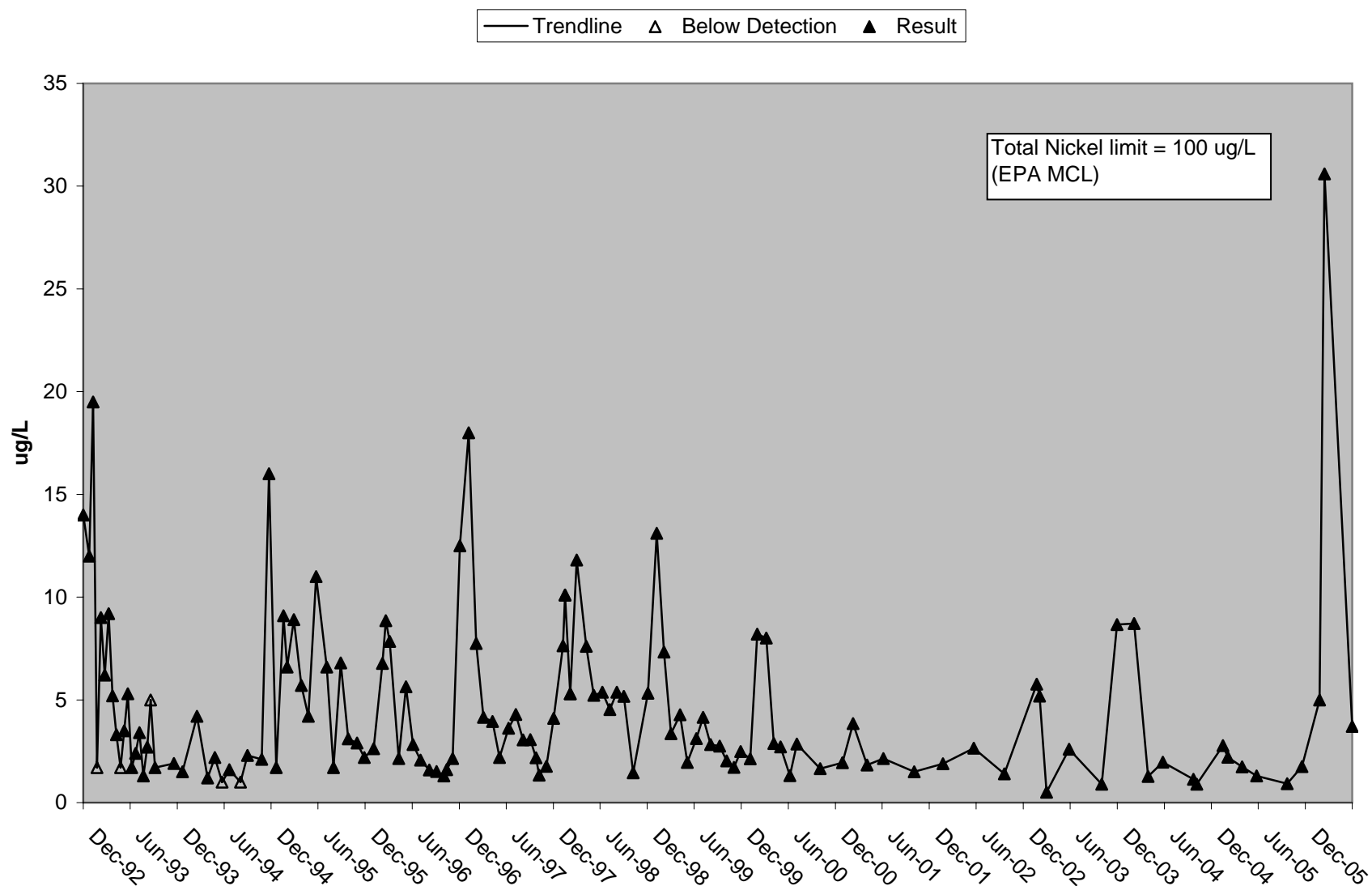
— Trendline    △ Below Detection    ▲ Result



### Freeport Dissolved Nickel (Ni-d)

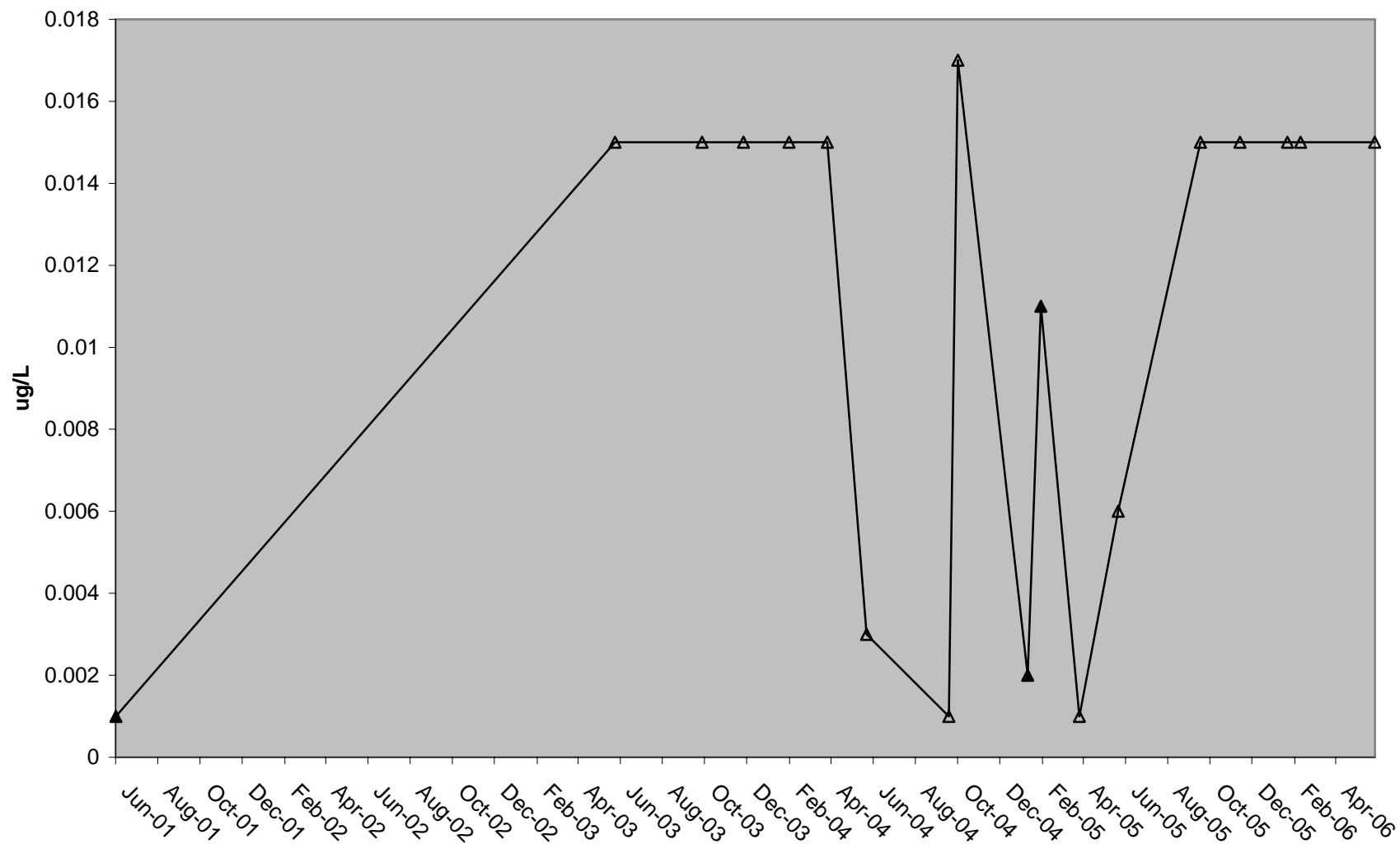


# Freeport Total Nickel (Ni-T)



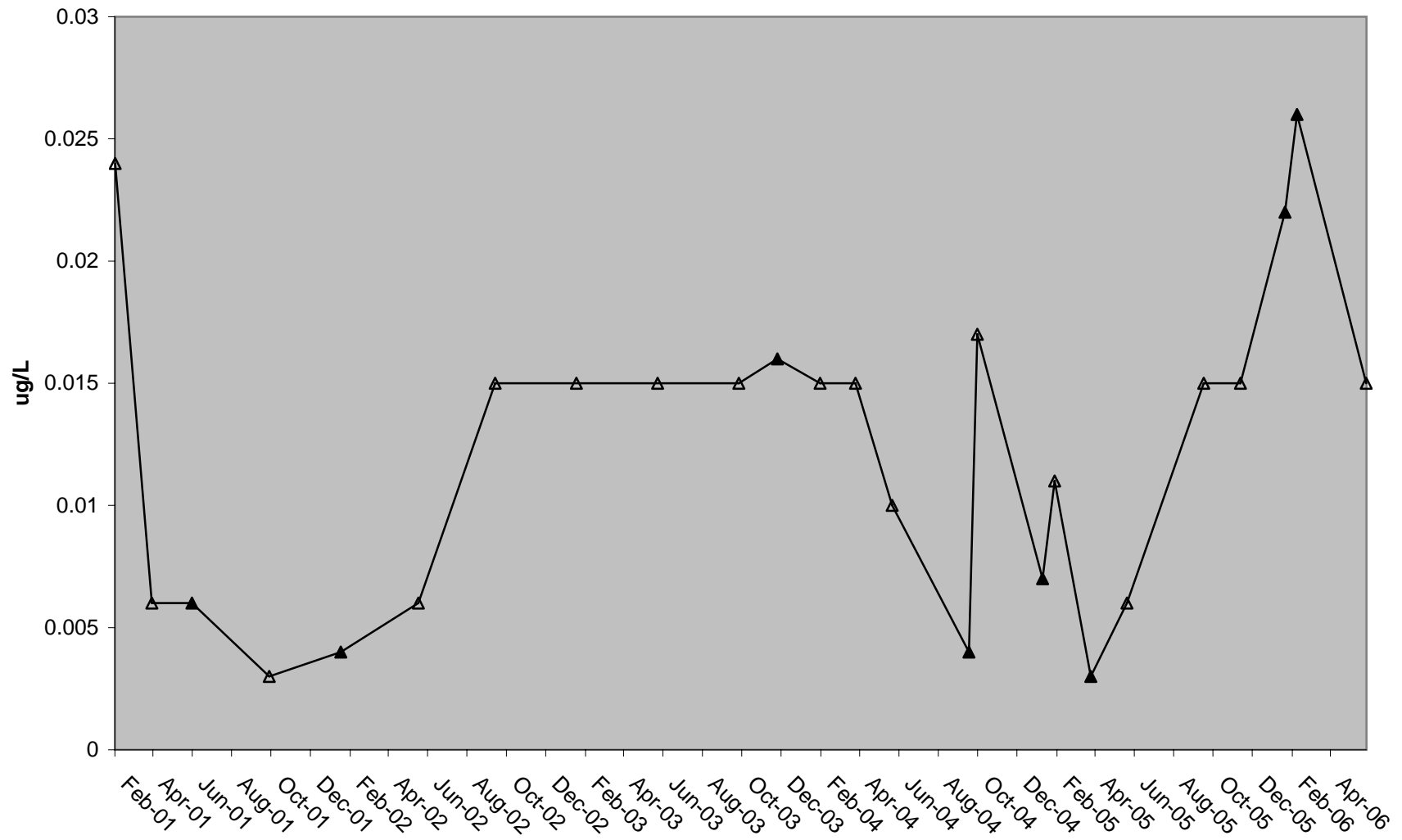
# Freeport Silver (Dissolved)

— Trendline    △ Below Detection    ▲ Result



# Freeport Total Silver (Ag-T)

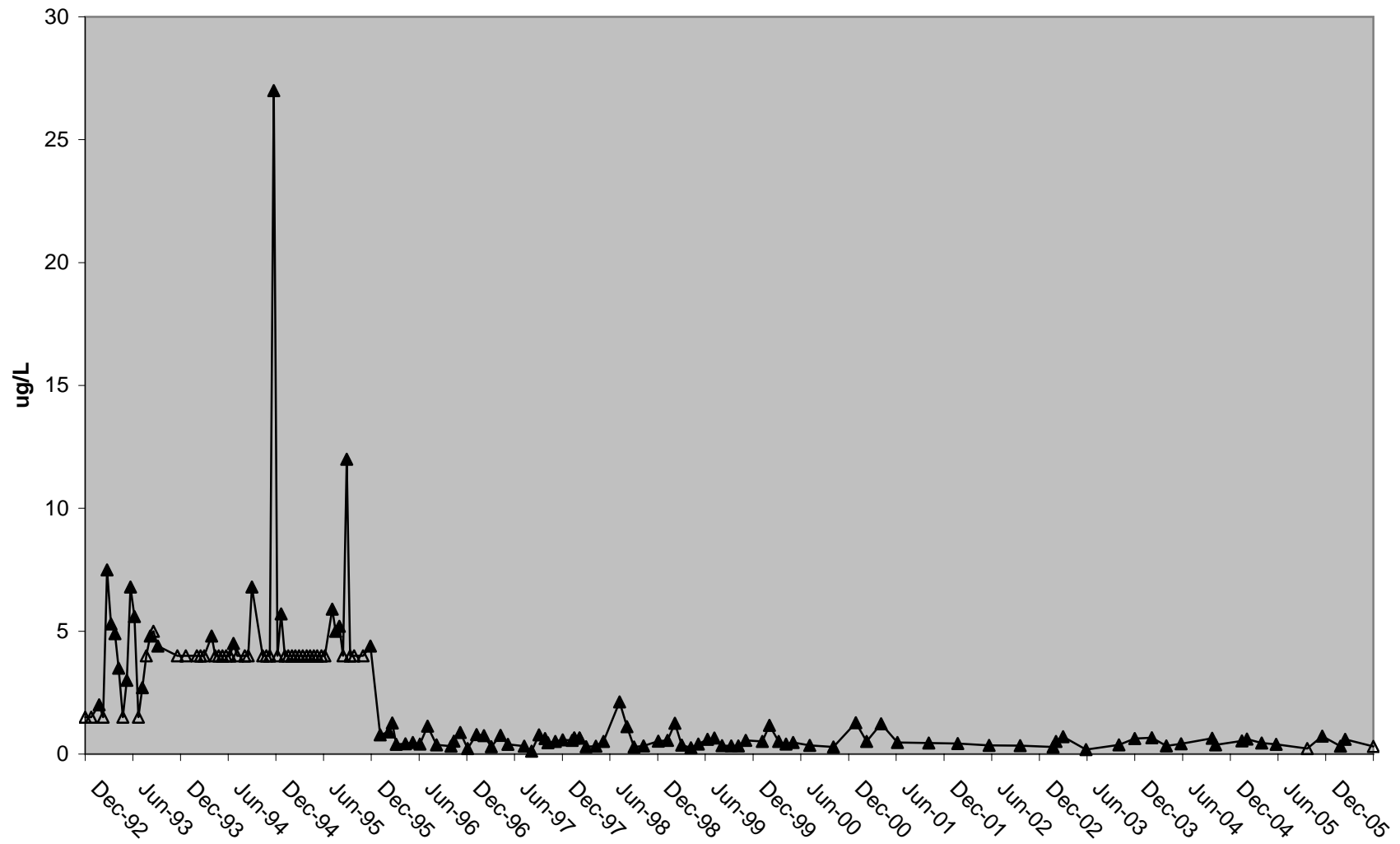
— Trendline    △ Below Detection    ▲ Result



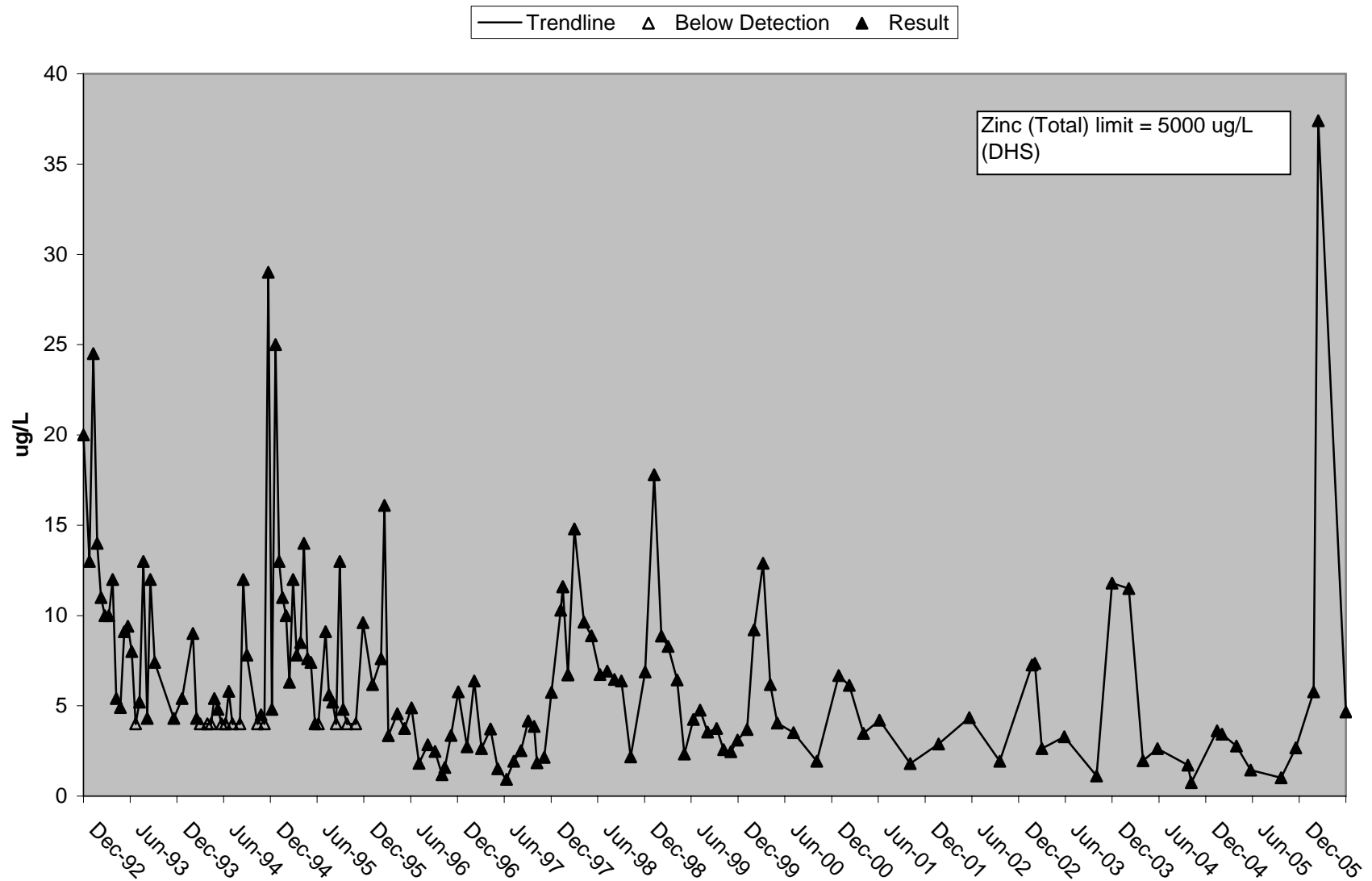


# Freeport Dissolved Zinc (Zn-d)

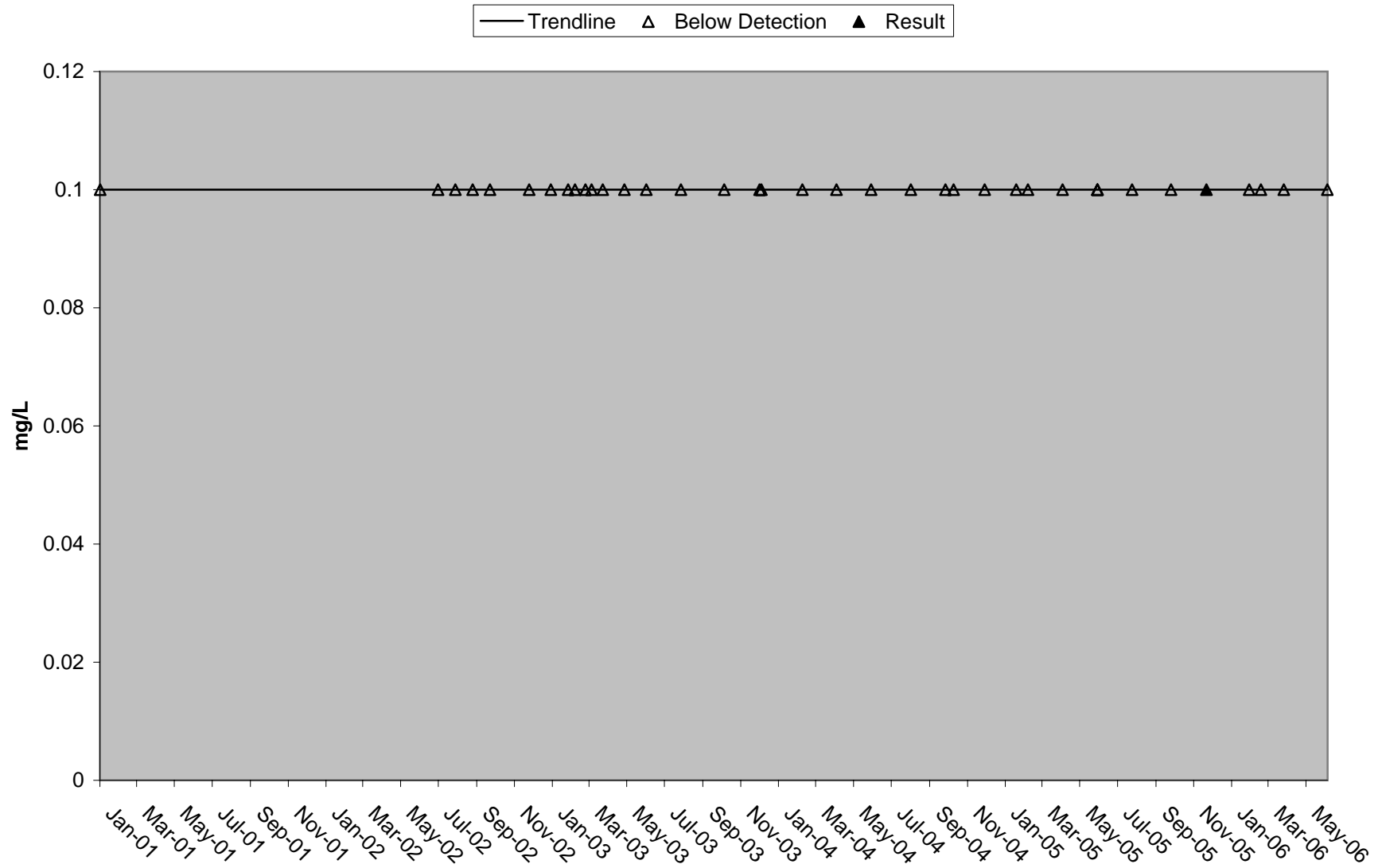
— Trendline    △ Below Detection    ▲ Result



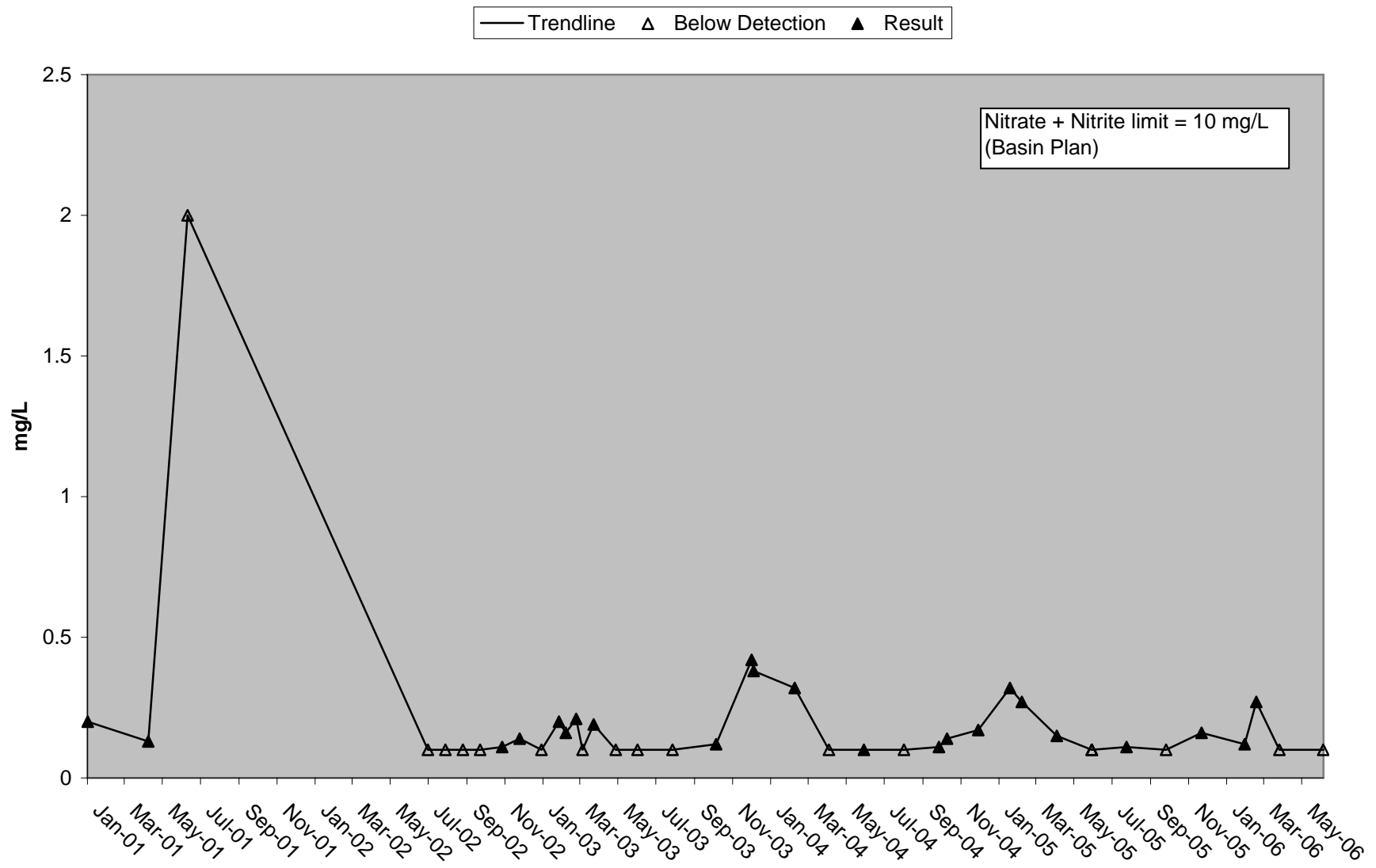
# Freeport Total Zinc (Zn-T)



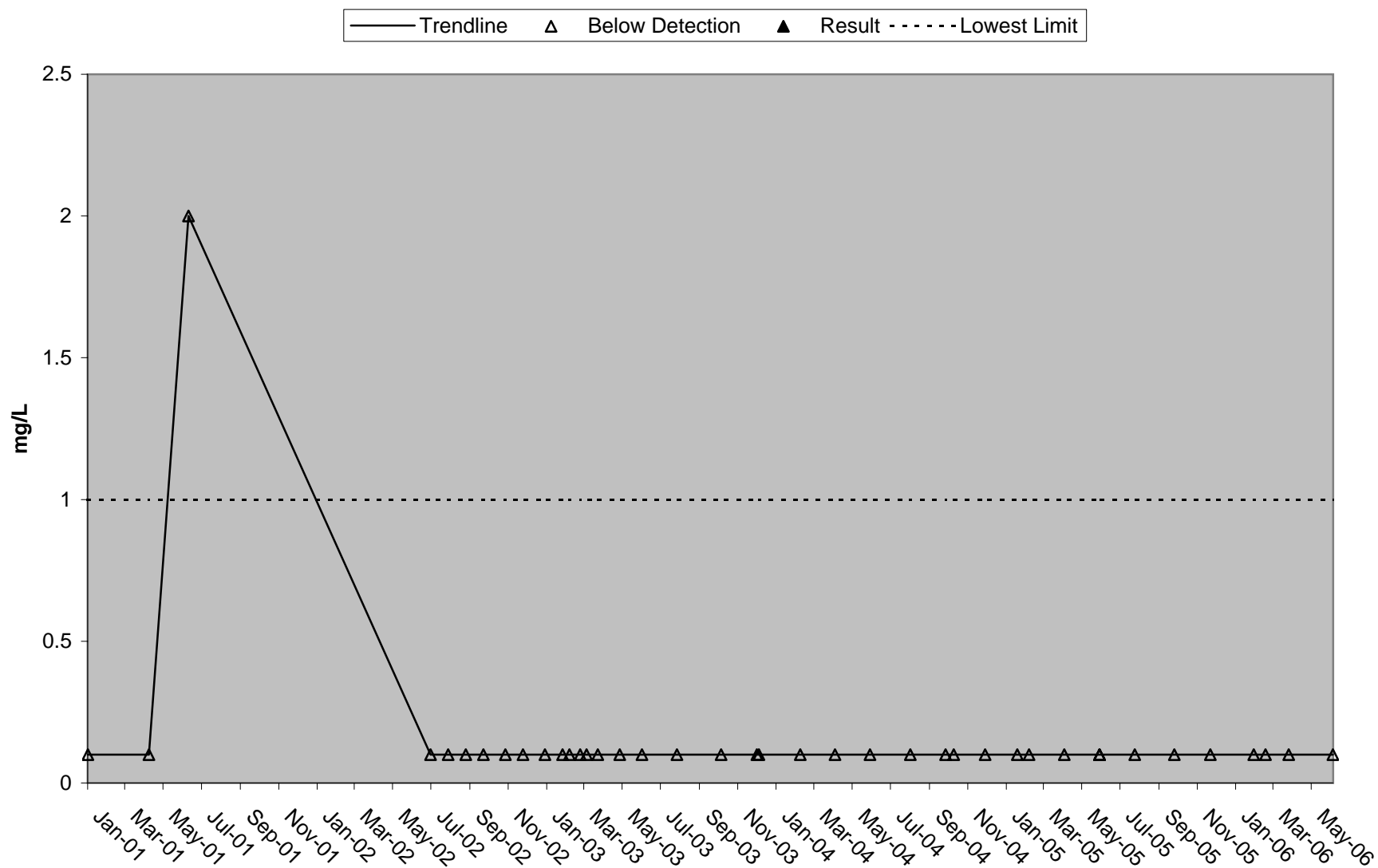
# Freeport Ammonia (NH<sub>3</sub>-N)



## Freeport Nitrate (NO<sub>3</sub>-N)

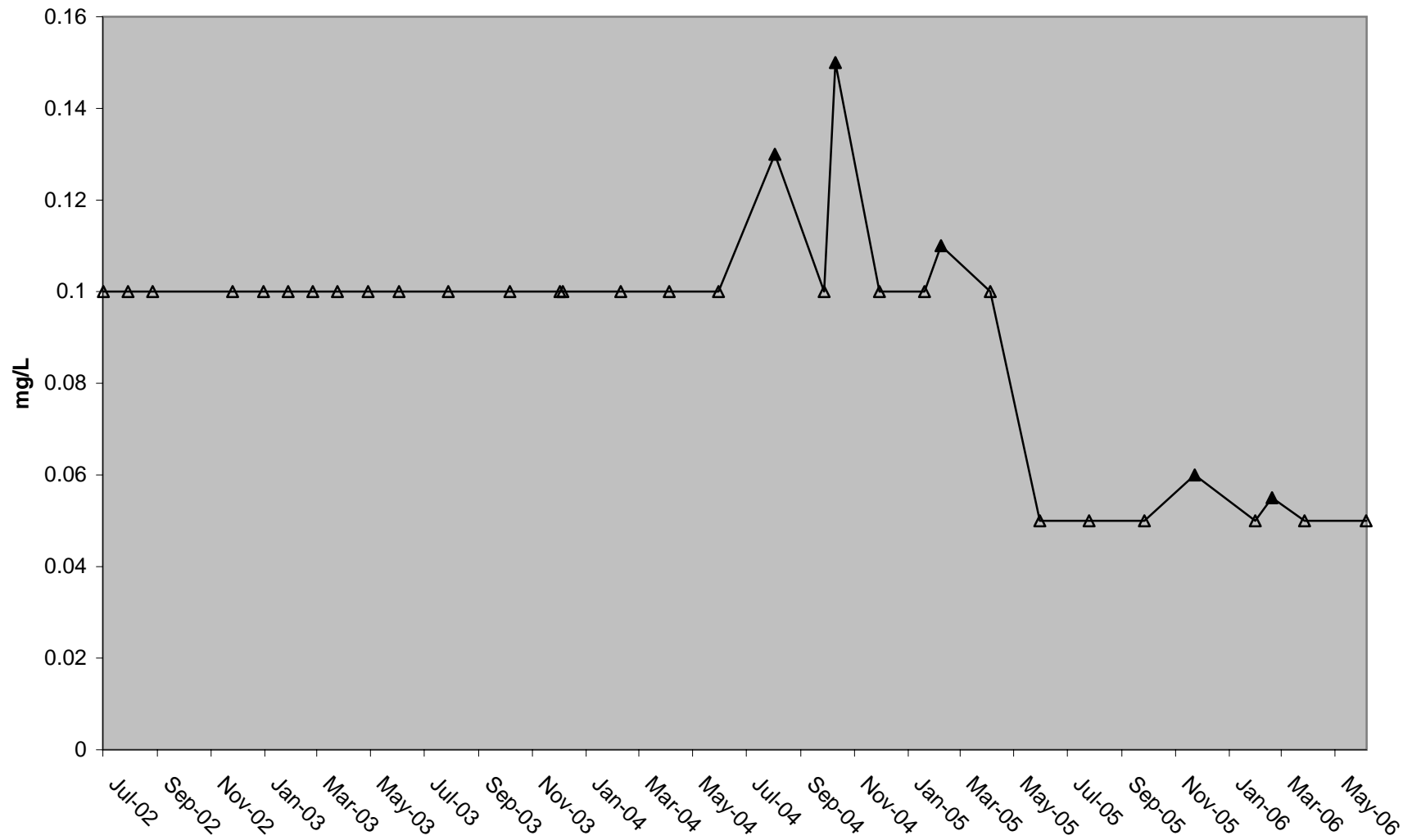


# Freeport Nitrite (NO<sub>2</sub>-N)

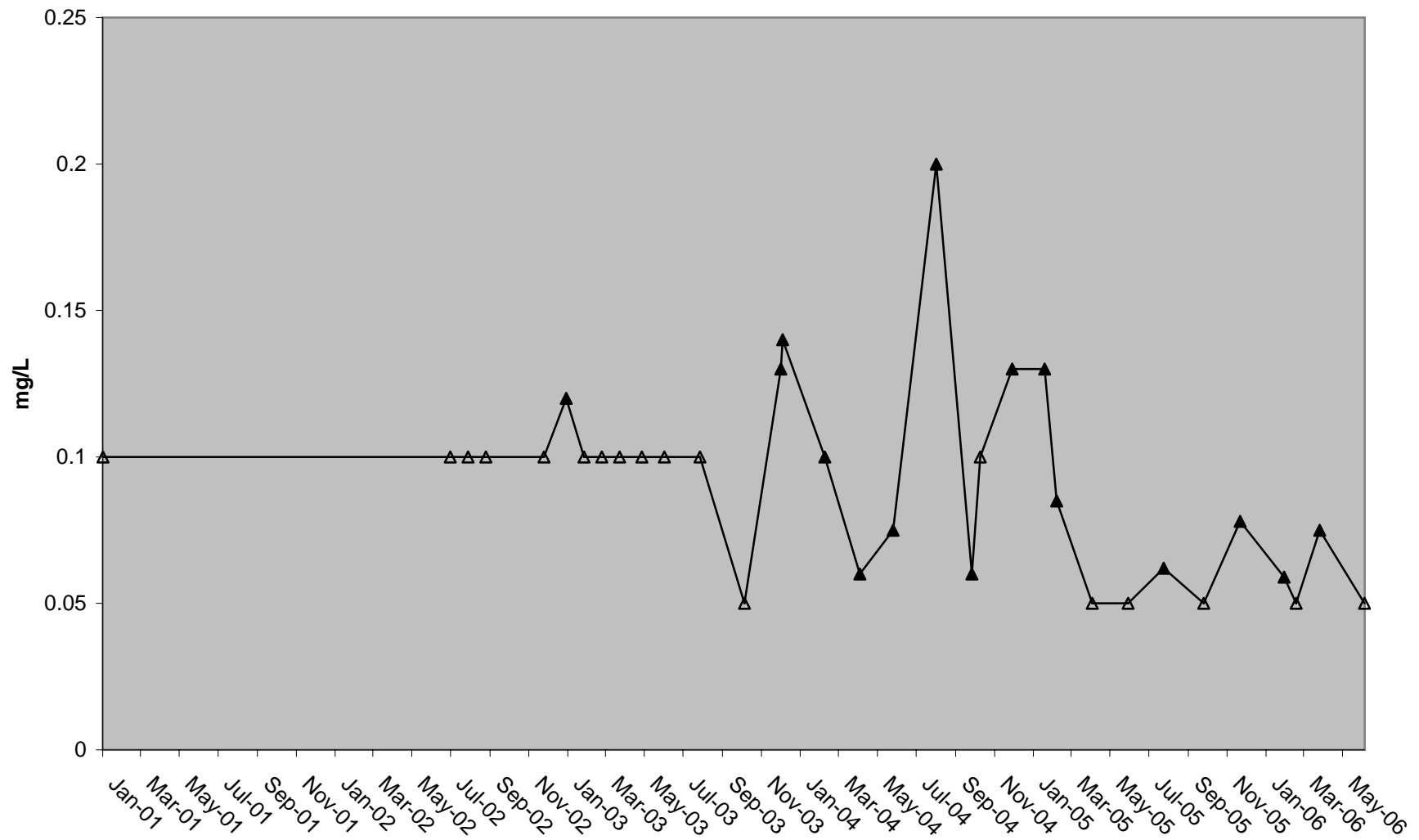


# Freeport Dissolved Ortho-Phosphate

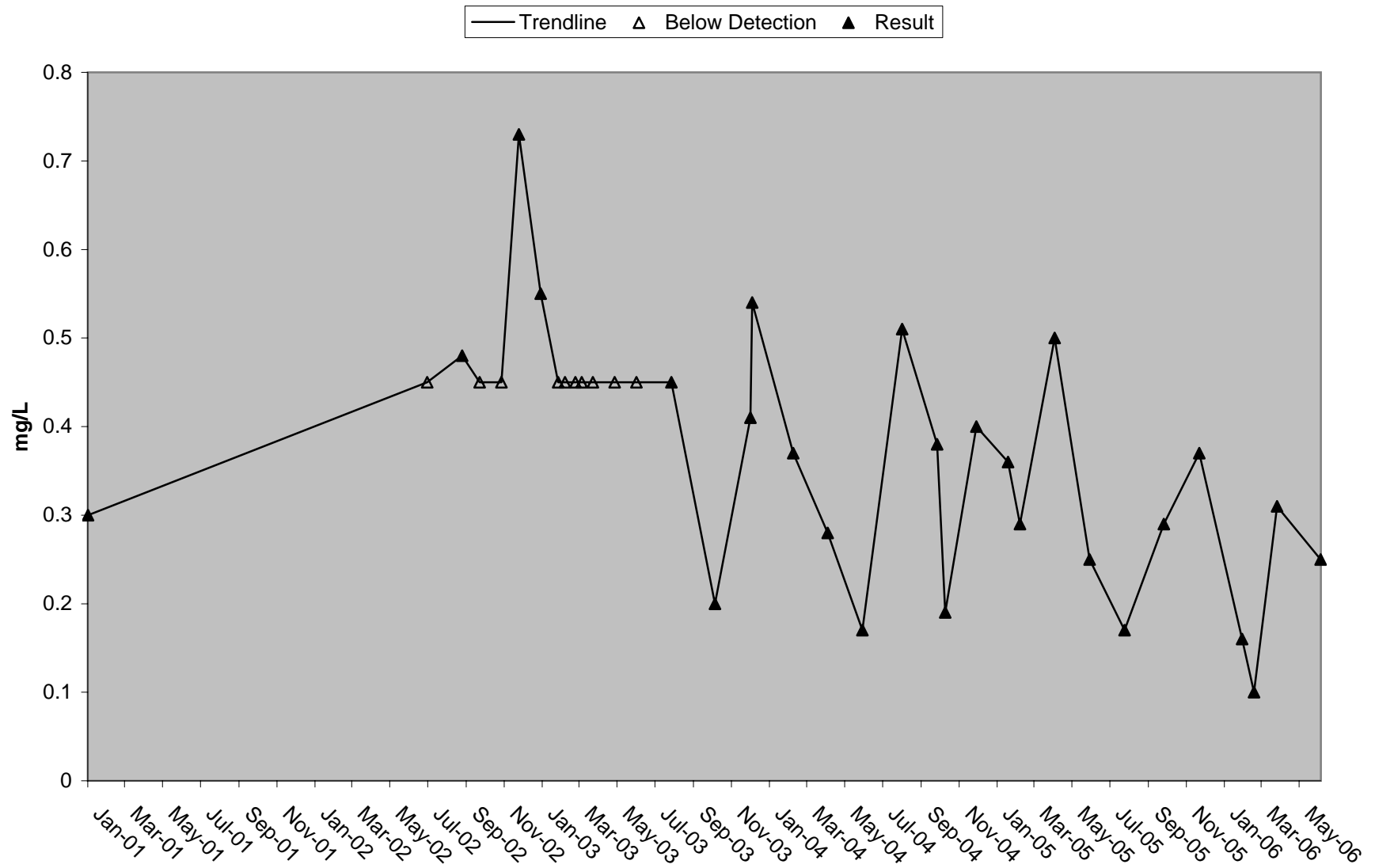
— Trendline    △ Below Detection    ▲ Result



— Trendline    Δ Below Detection    ▲ Result

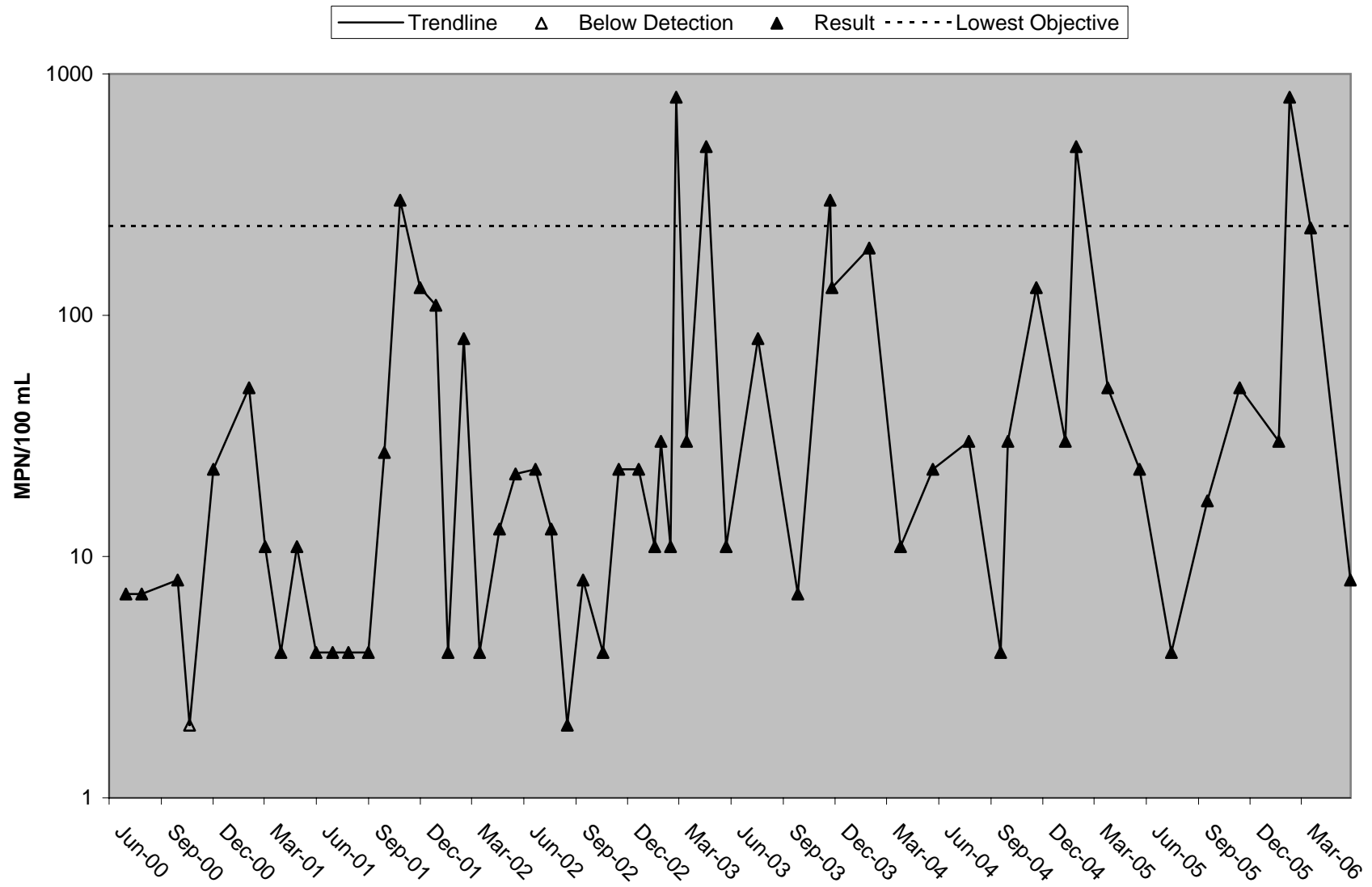


# Freeport Total Kjeldahl Nitrogen (TKN)

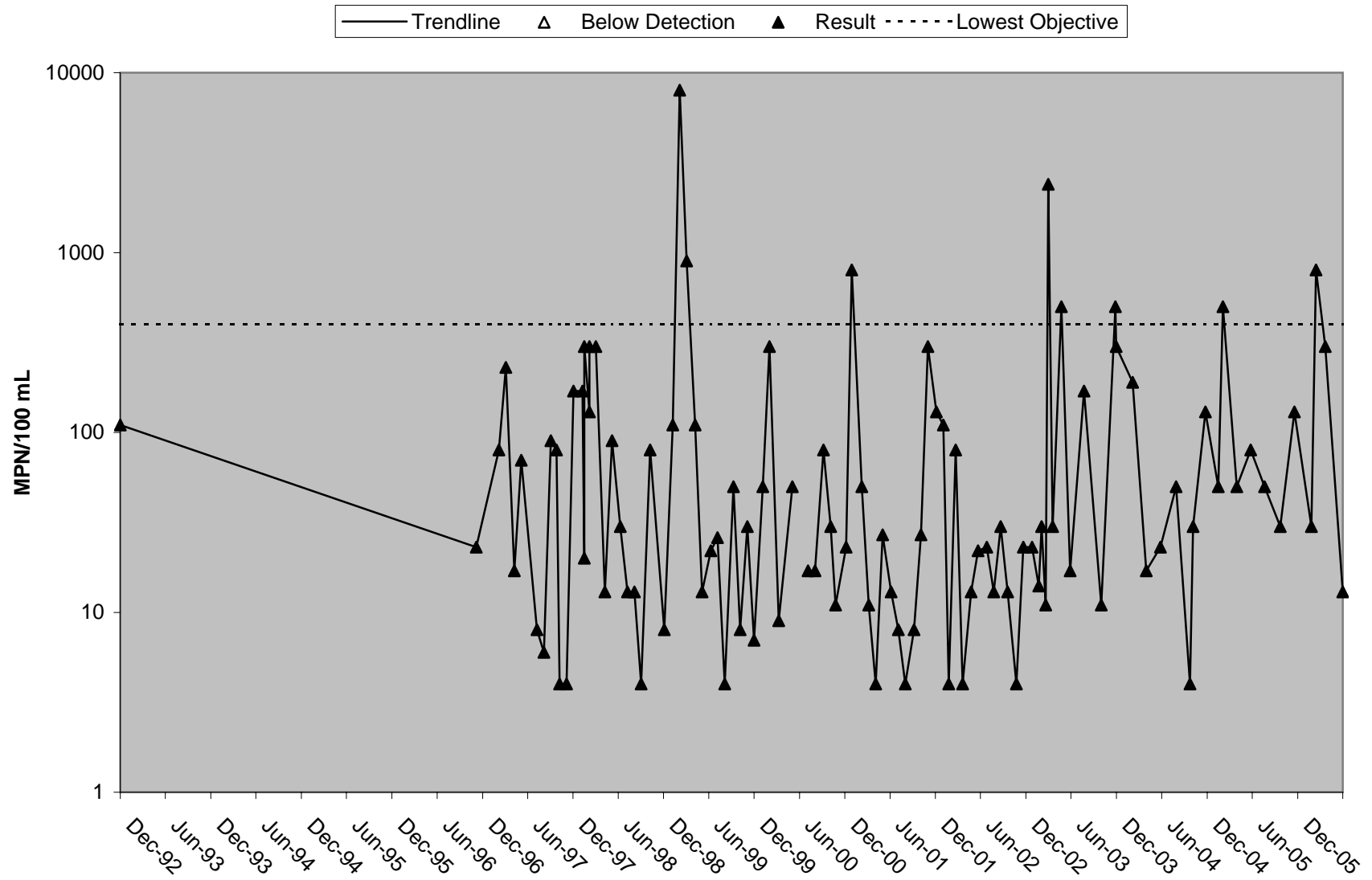




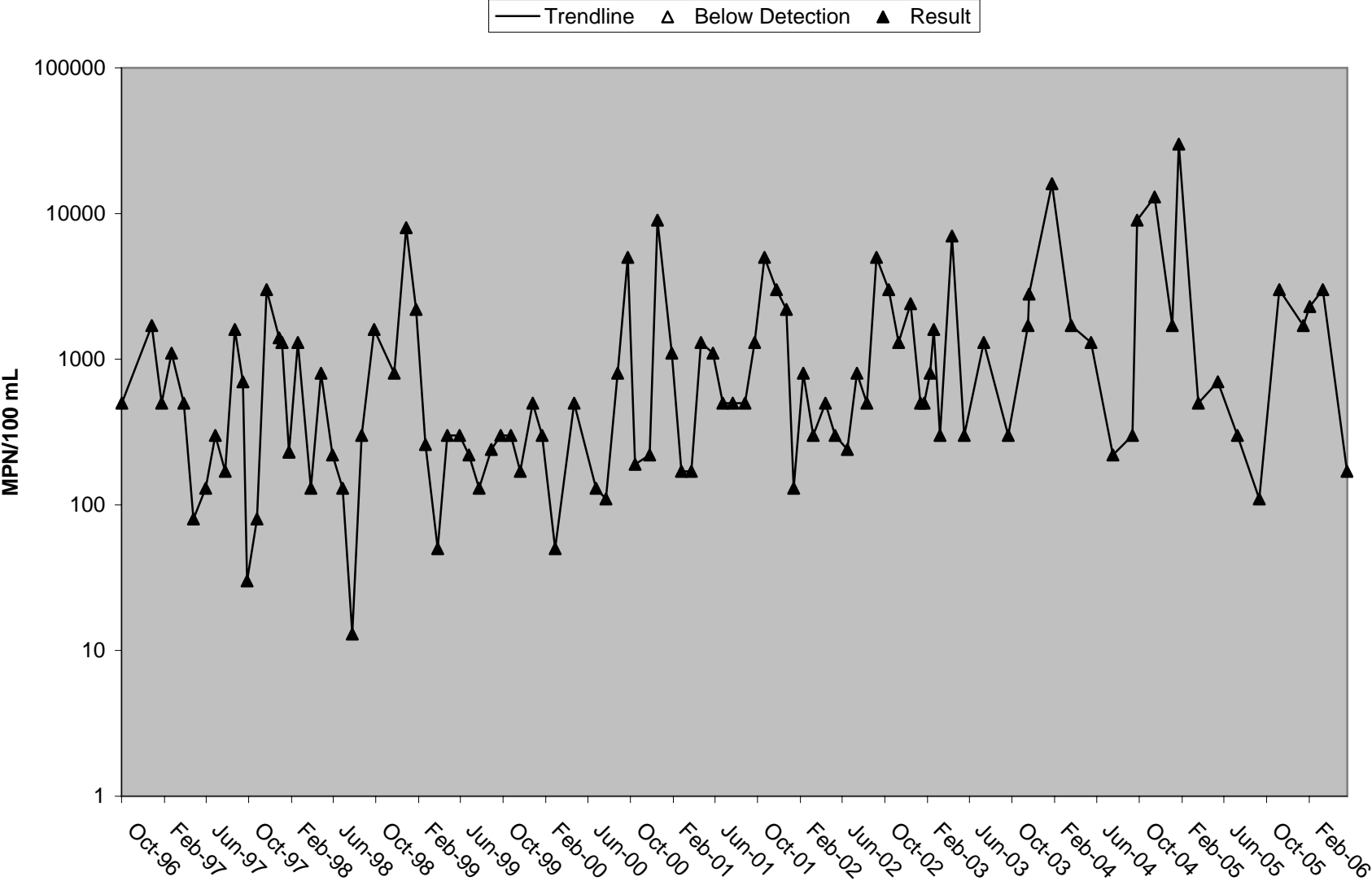
# Freeport *E. coli*



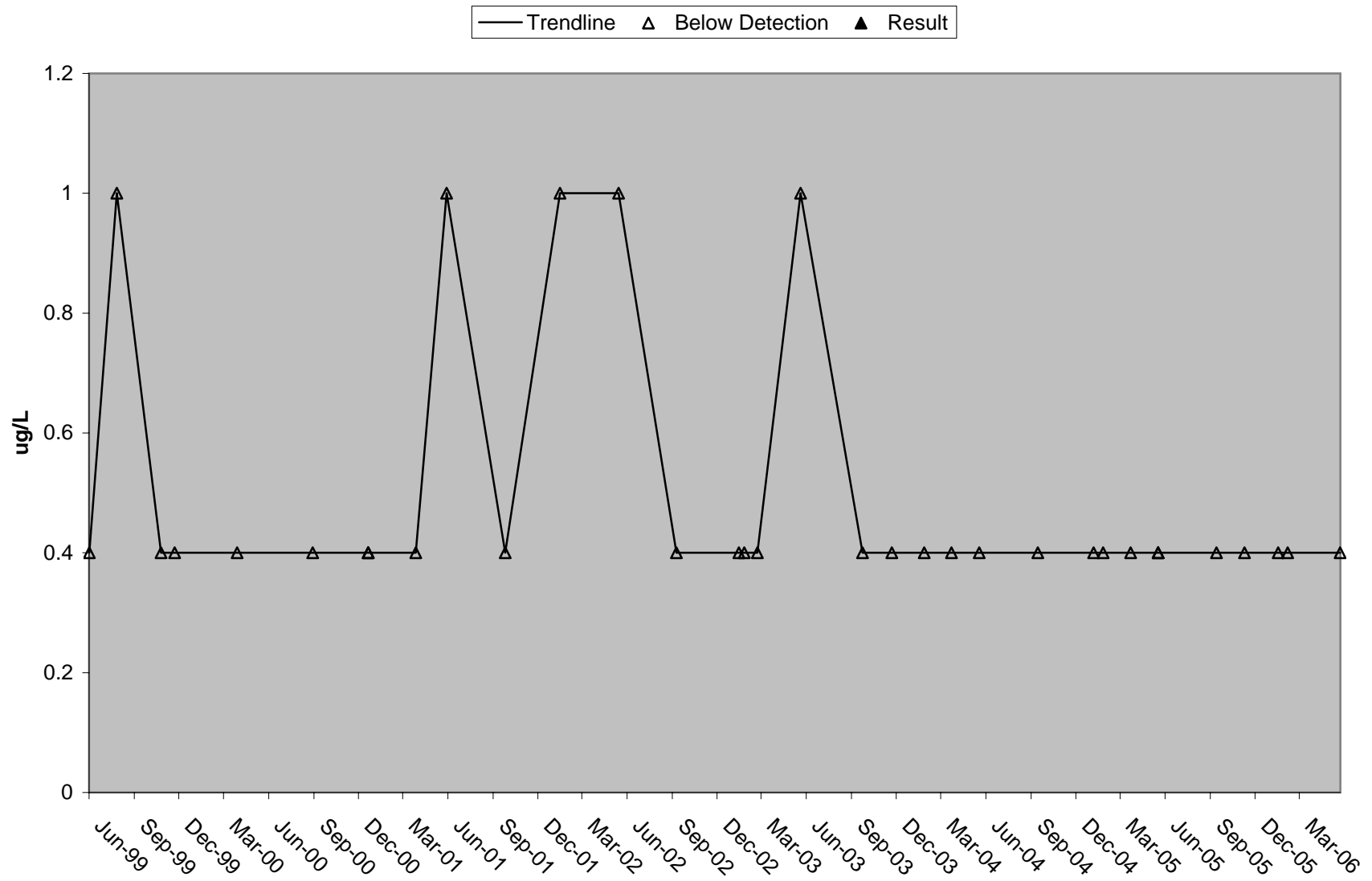
# Freeport Fecal Coliform



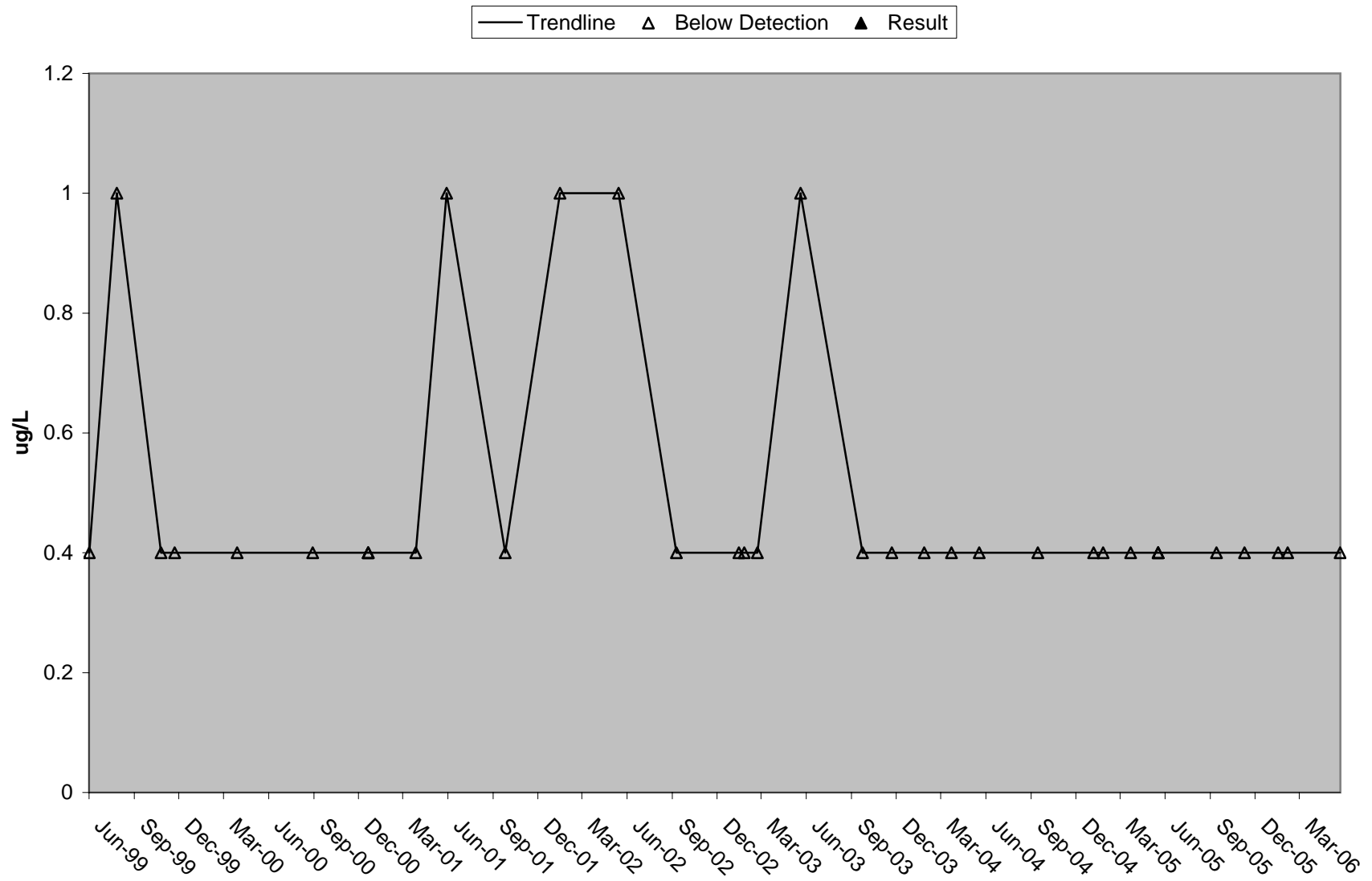
Freeport Total Coliform



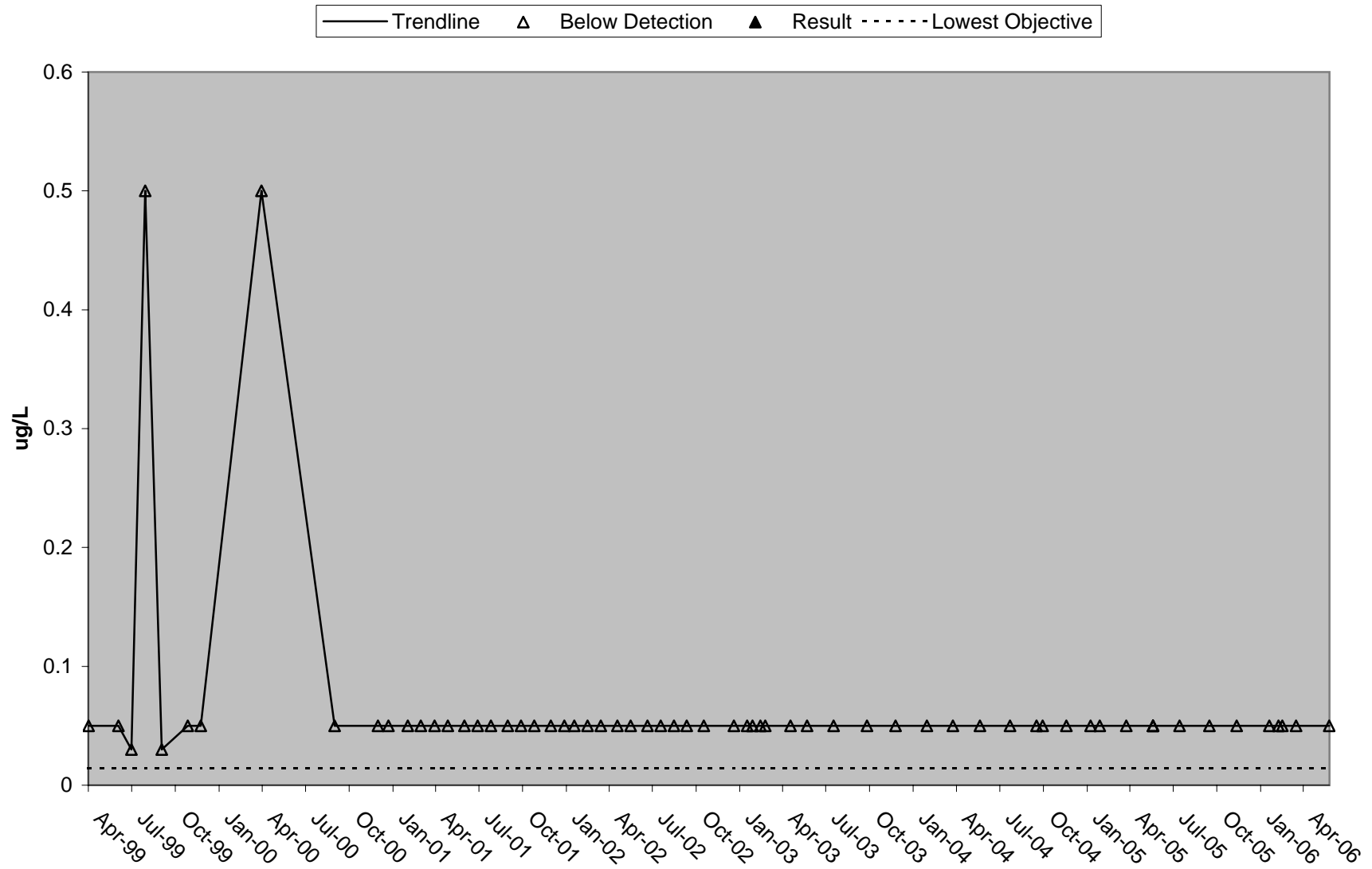
## Freeport Aldicarb



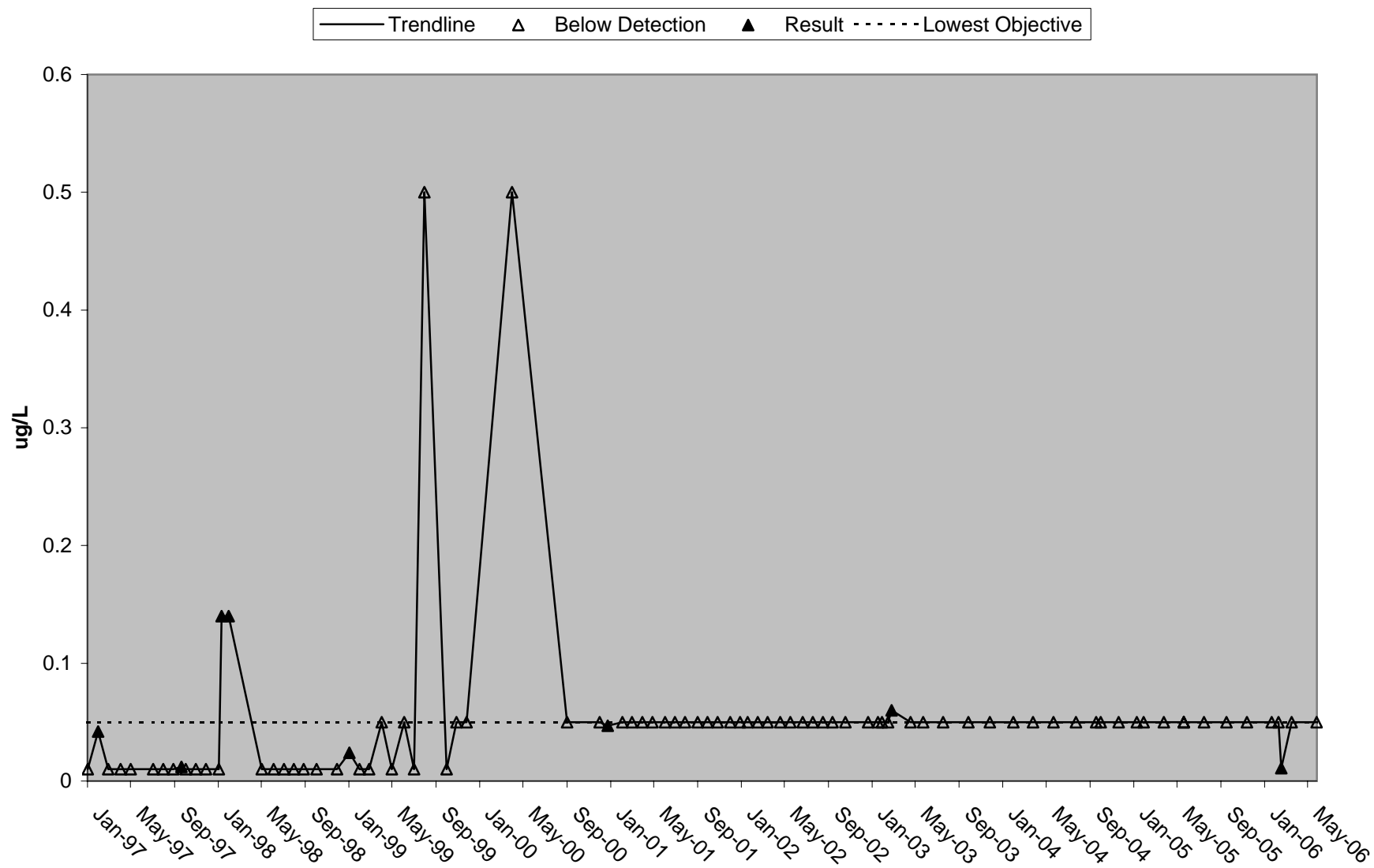
## Freeport Propoxur



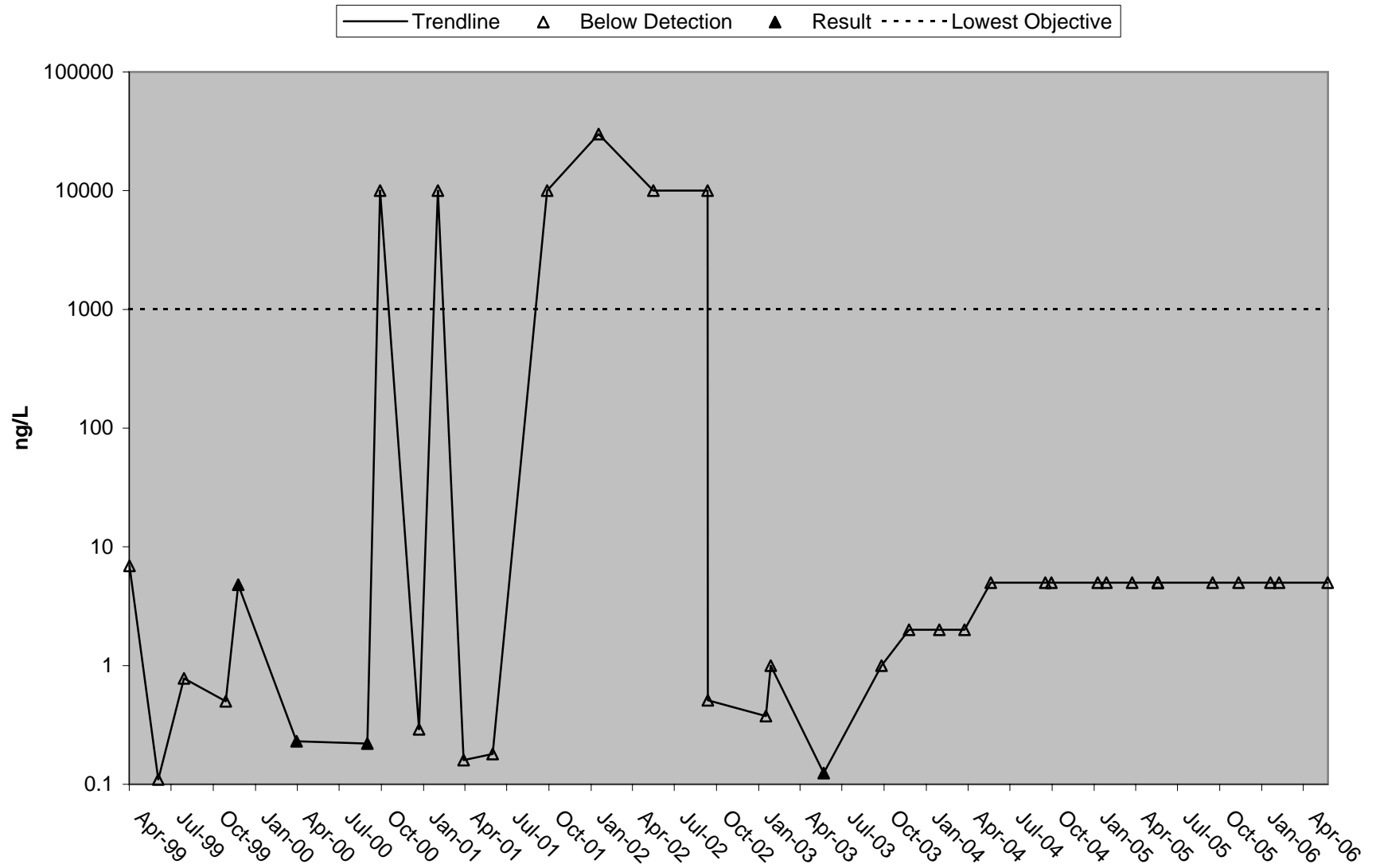
## Freeport Chlorpyrifos



## Freeport Diazinon

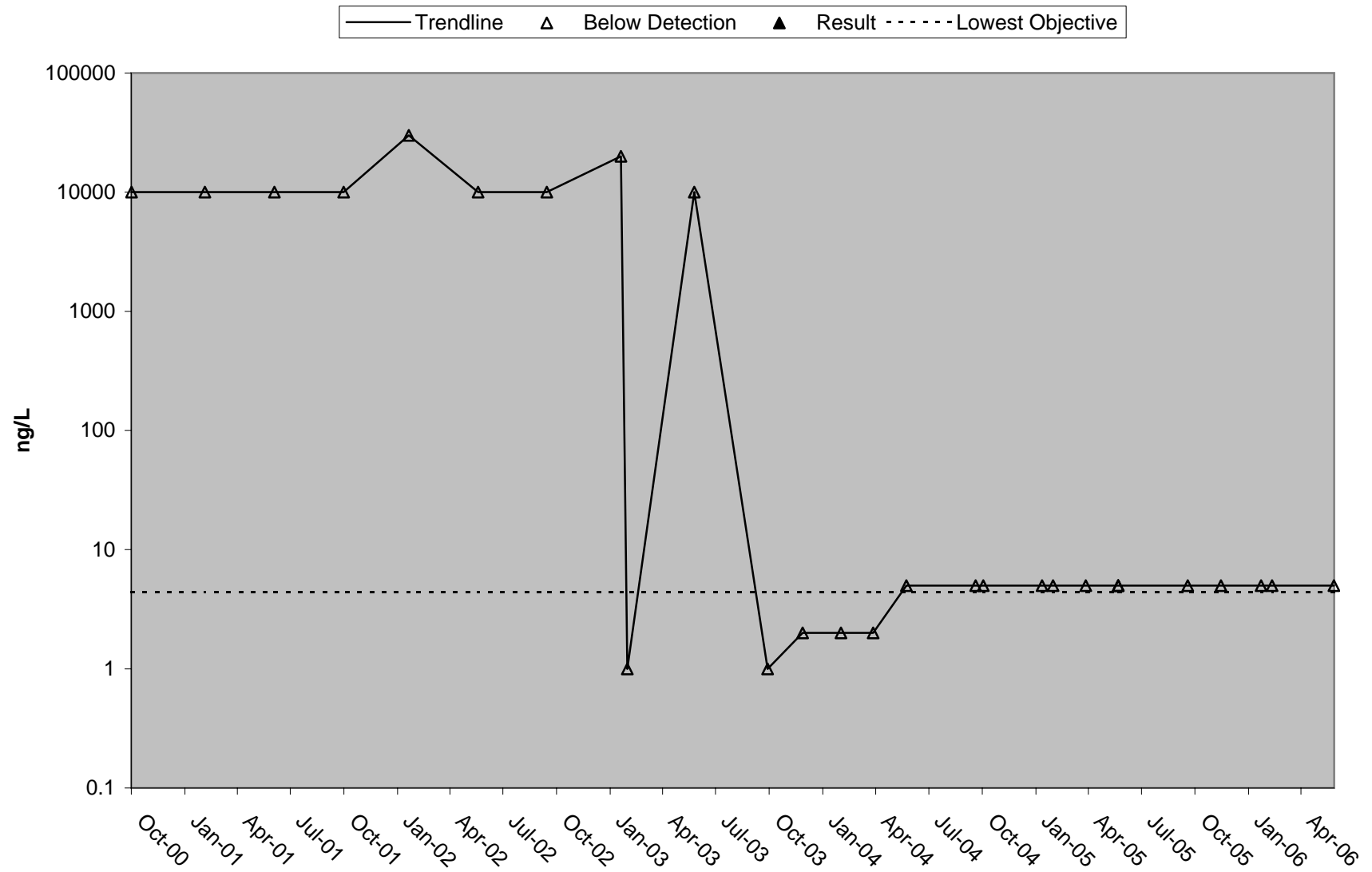


# Freeport Anthracene

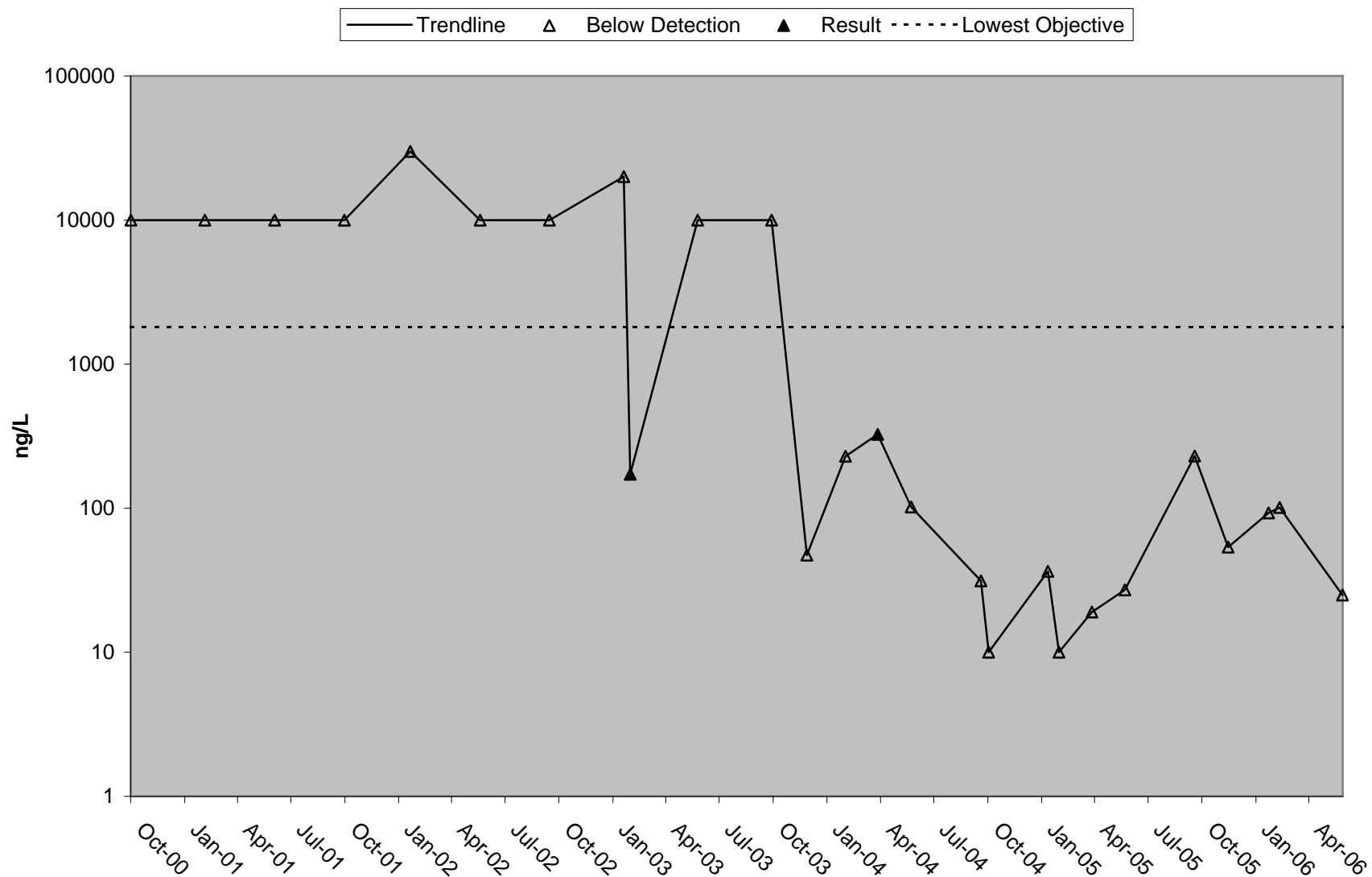




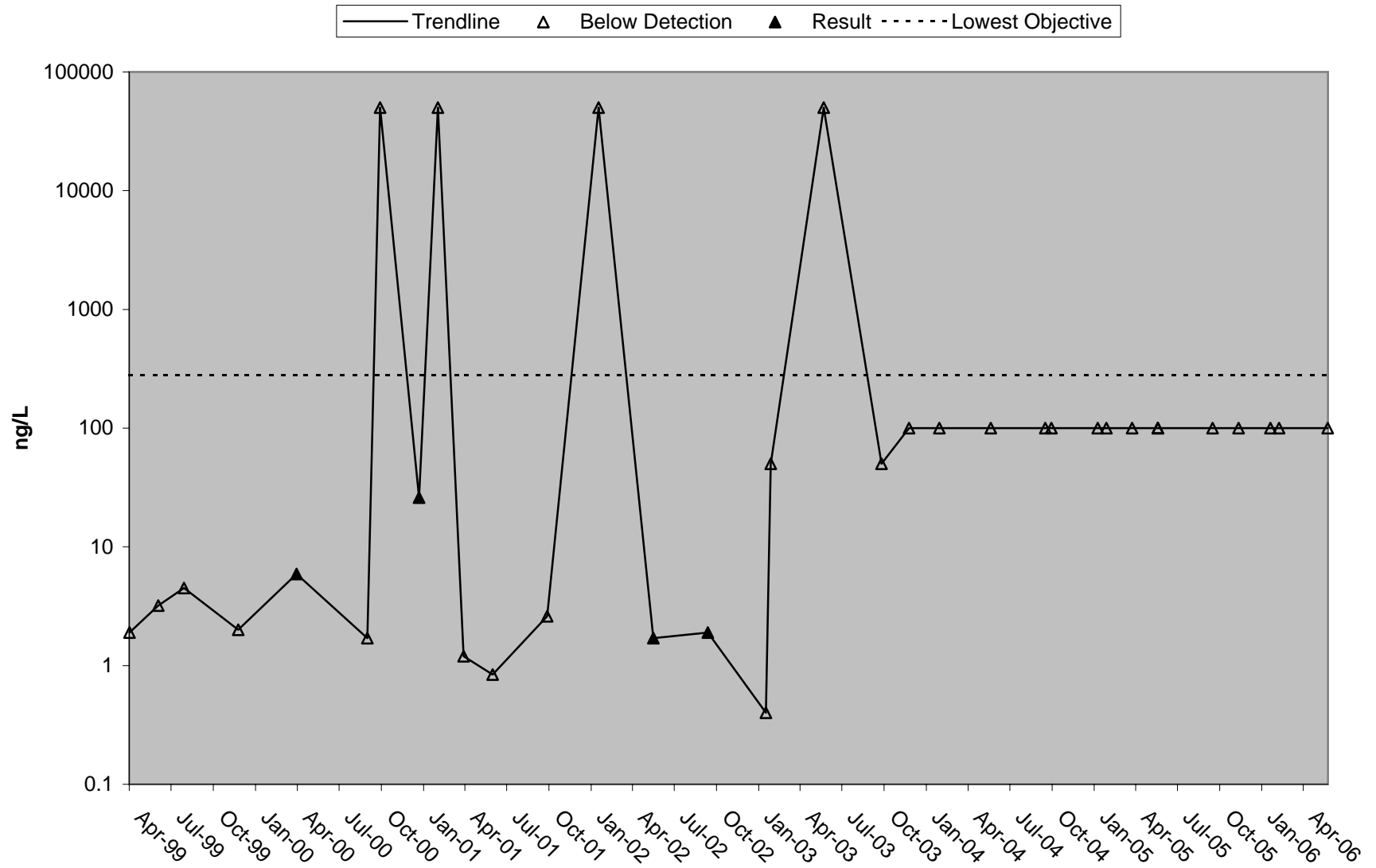
# Freeport Benzo(k)fluoranthene



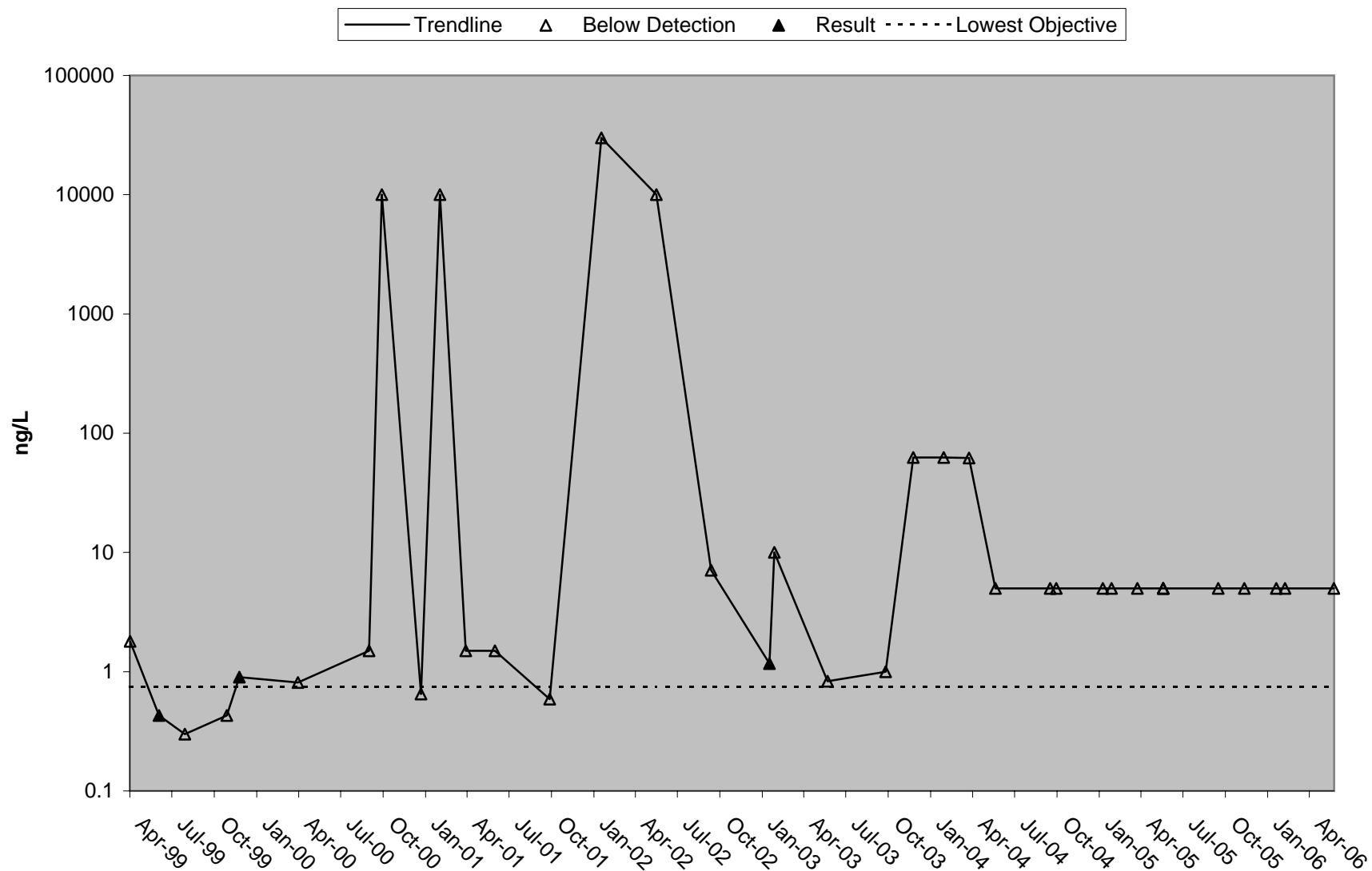
# Freeport Bis(2-ethylhexyl)phthalate



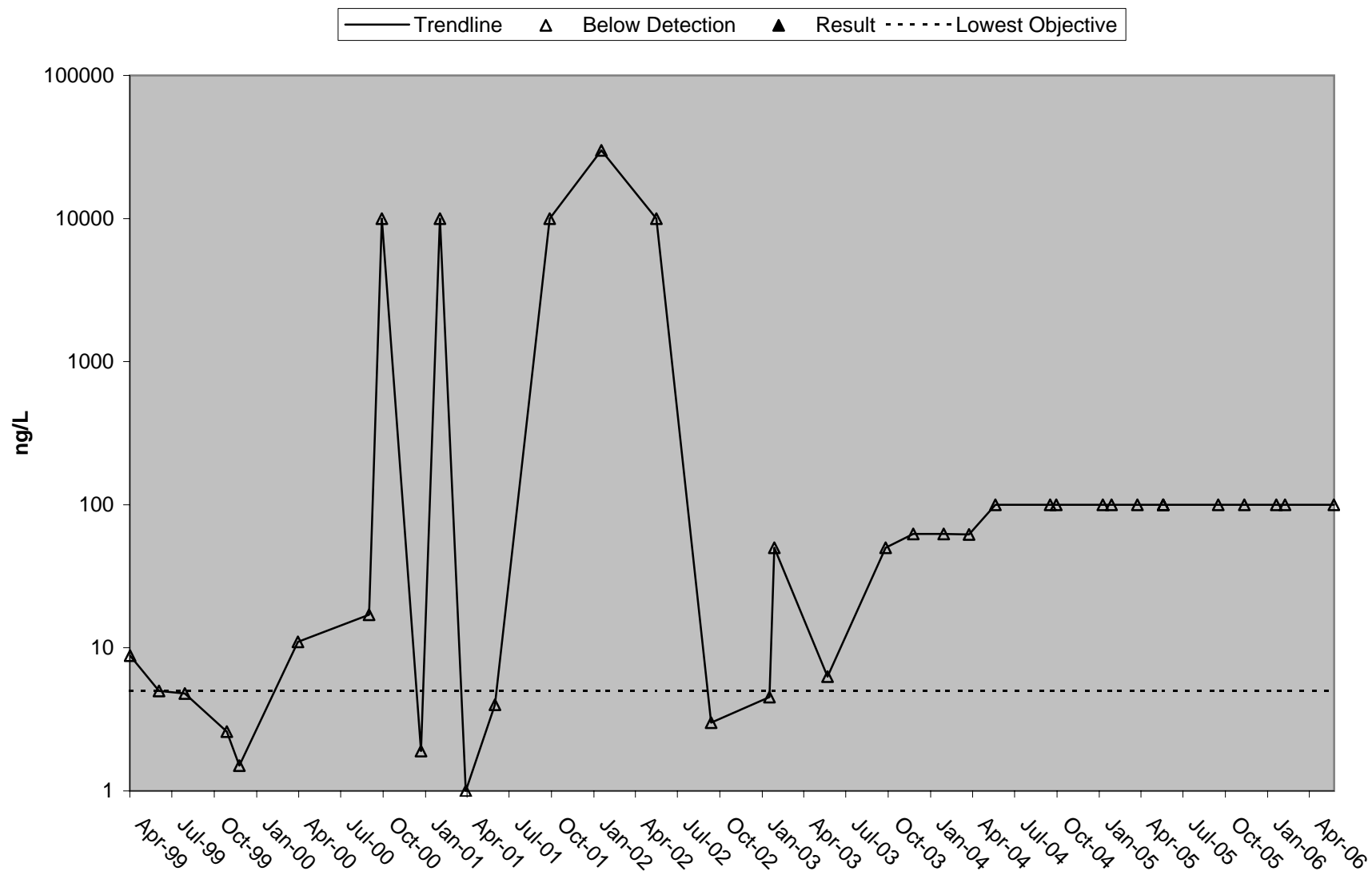
# Freeport Pentachlorophenol



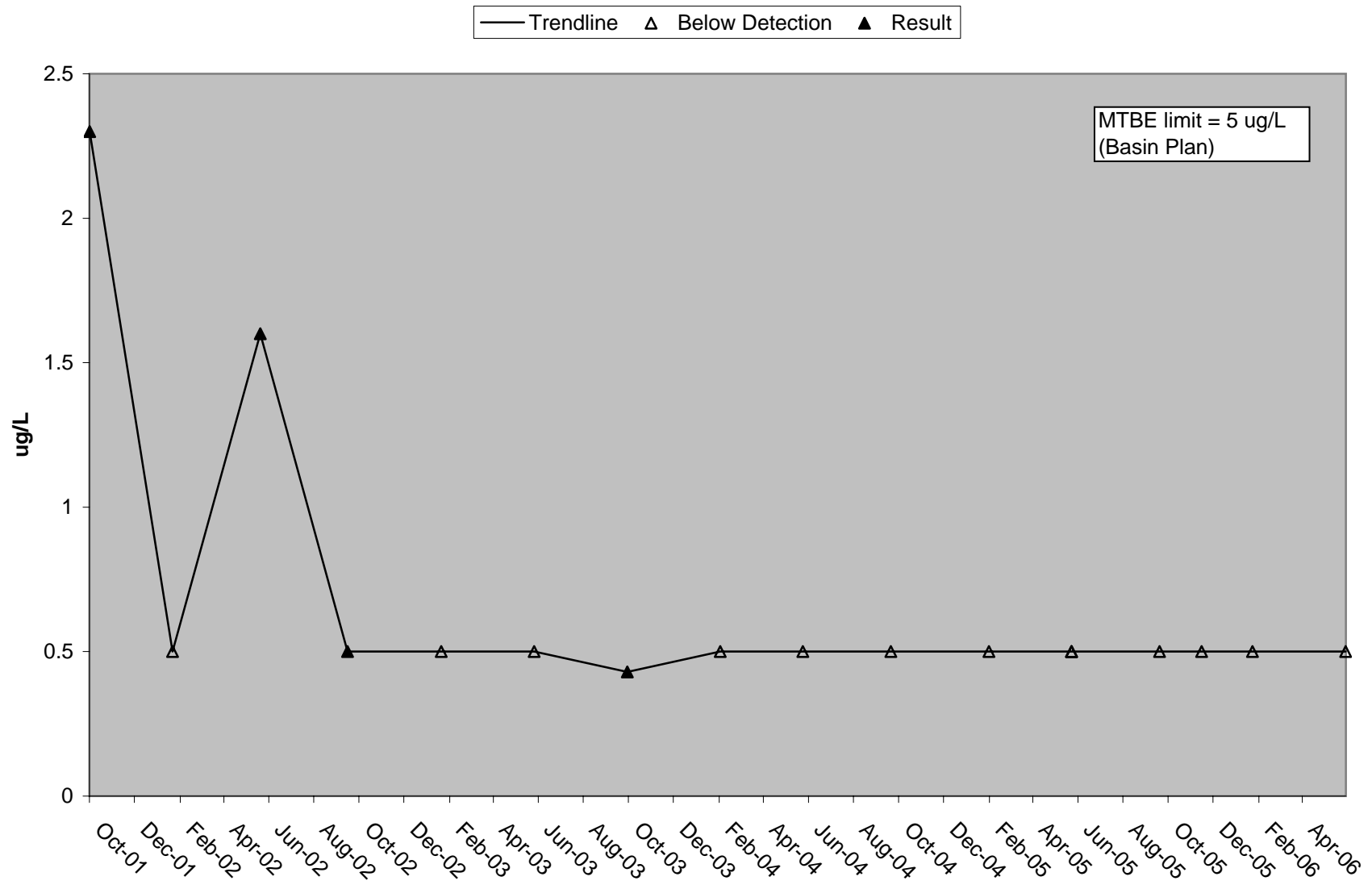
# Freeport Hexachlorobenzene



# Freeport N-Nitrosodi-N-Propylamine



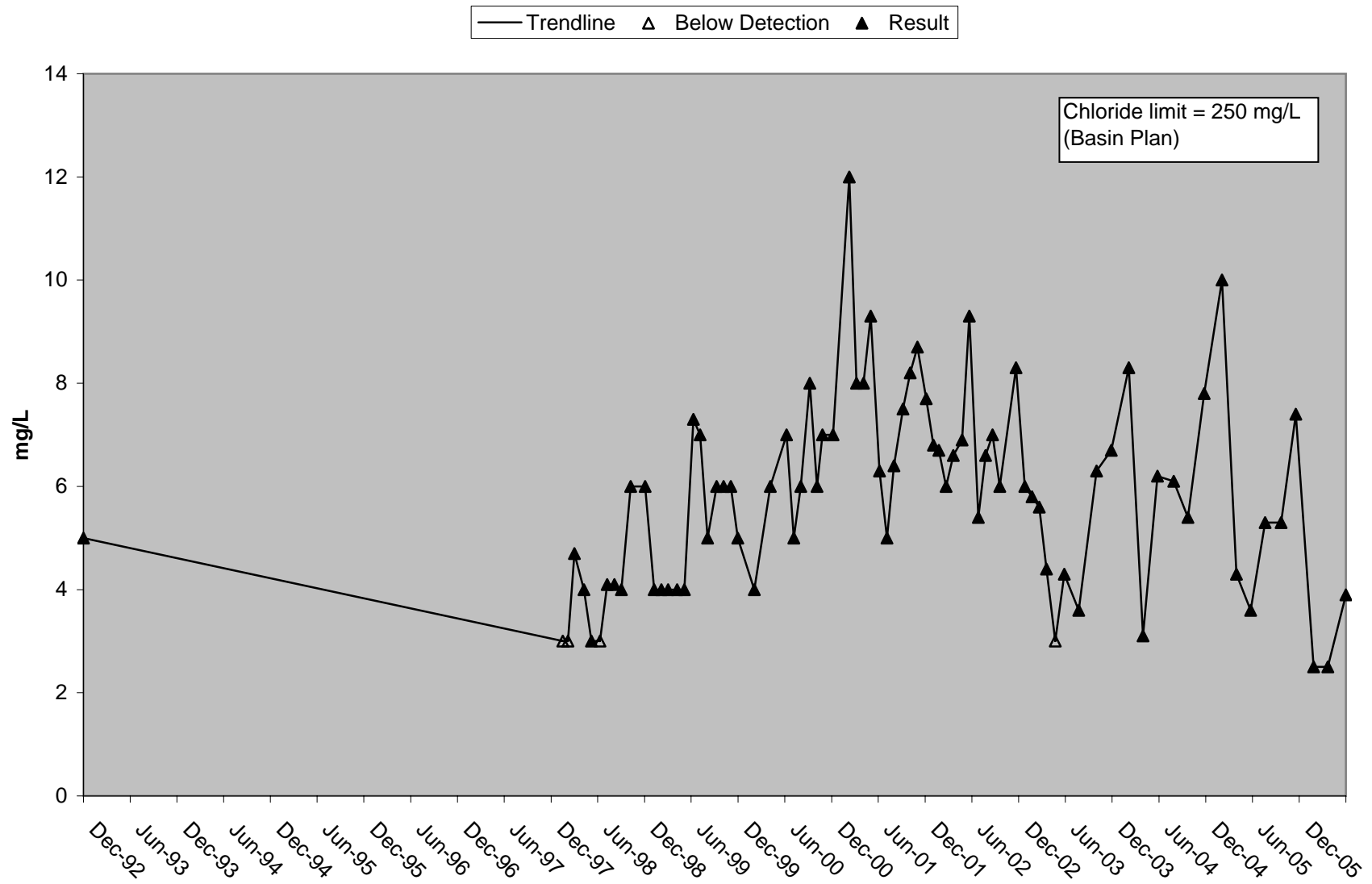
## Freeport MTBE



*APPENDIX C-3*

*Sacramento River at RM 44*

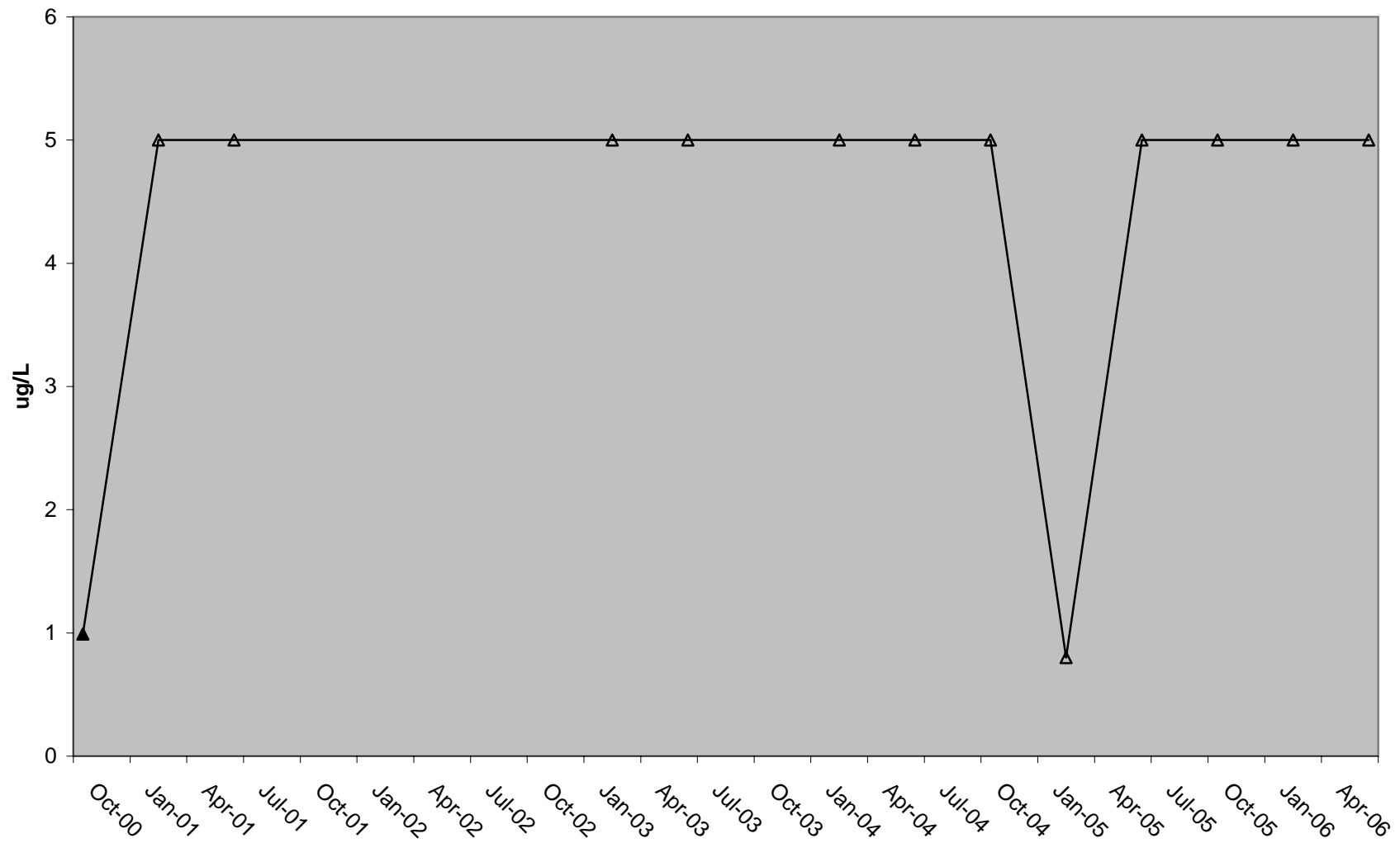
# River Mile 44 Chloride



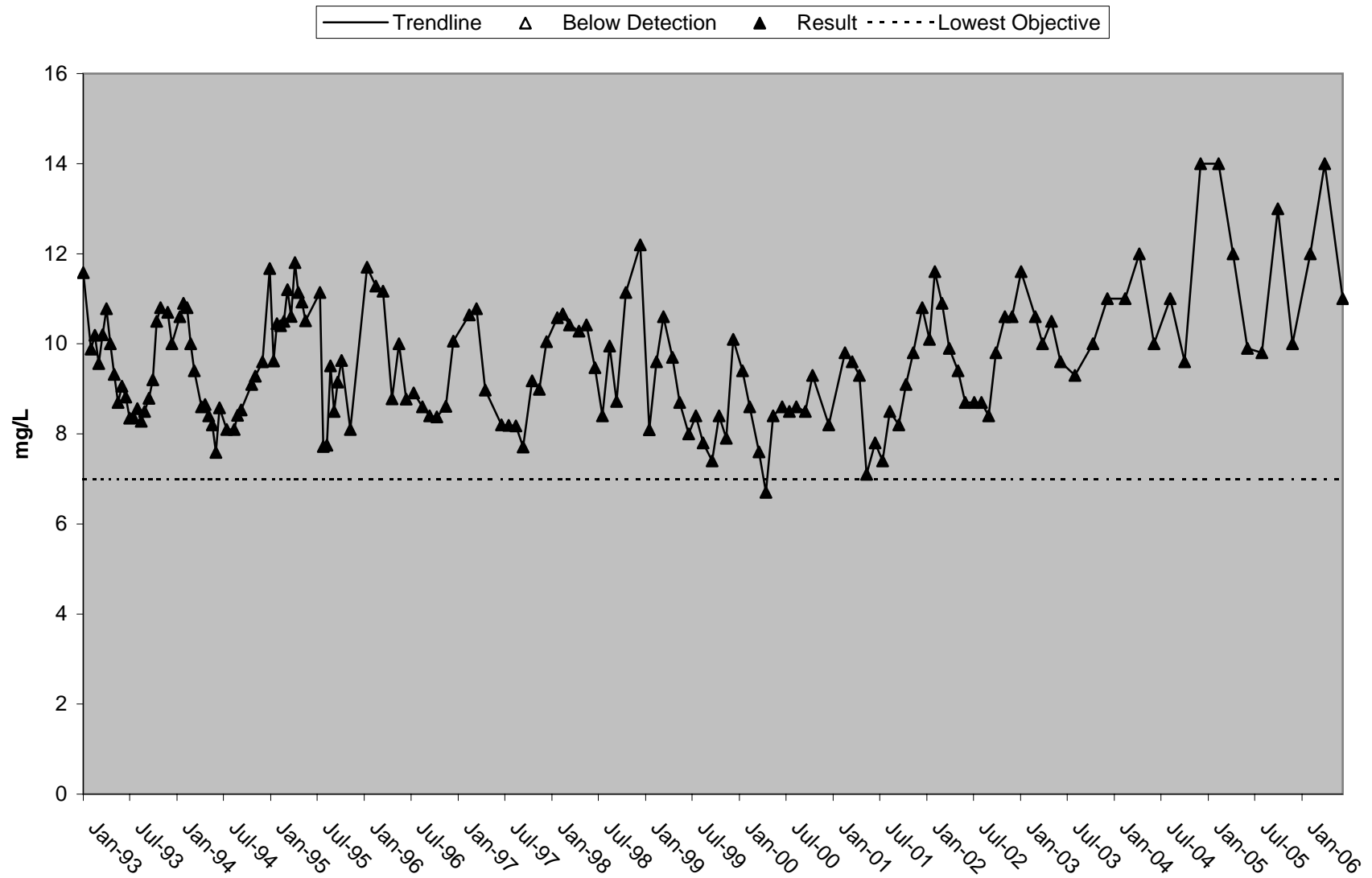


# River Mile 44 Cyanide

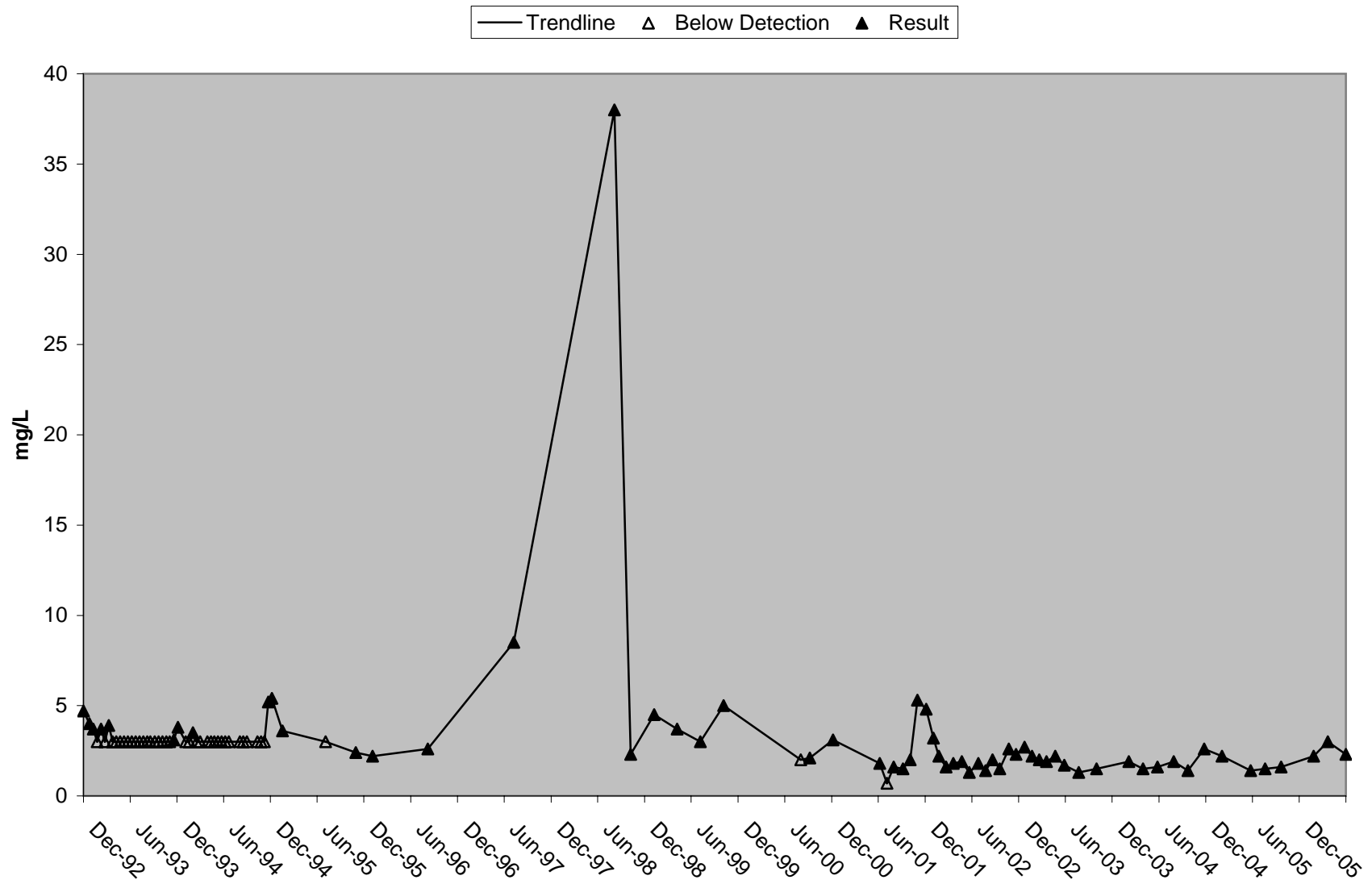
— Trendline    △ Below Detection    ▲ Result



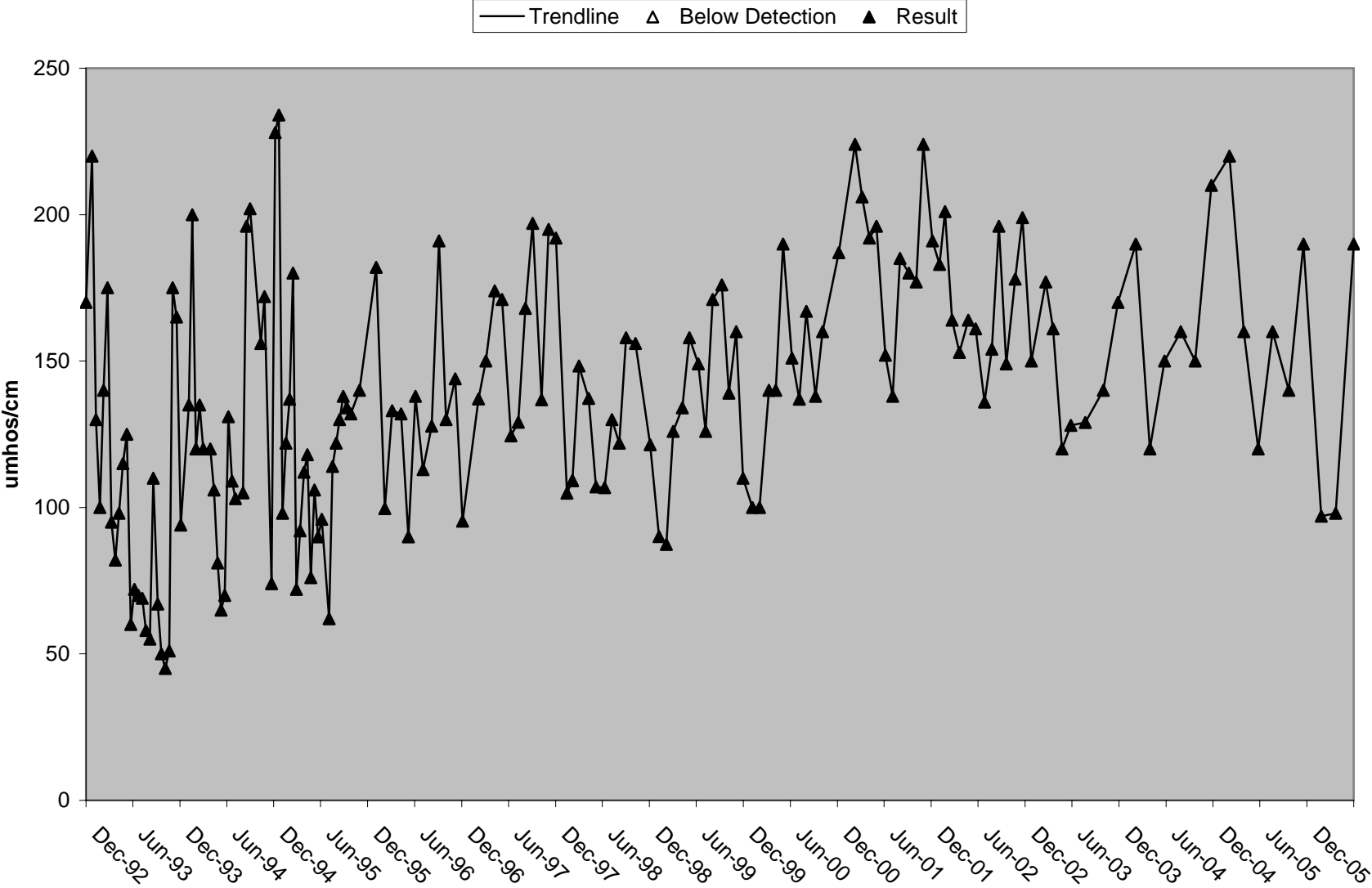
# River Mile 44 Dissolved Oxygen (DO)



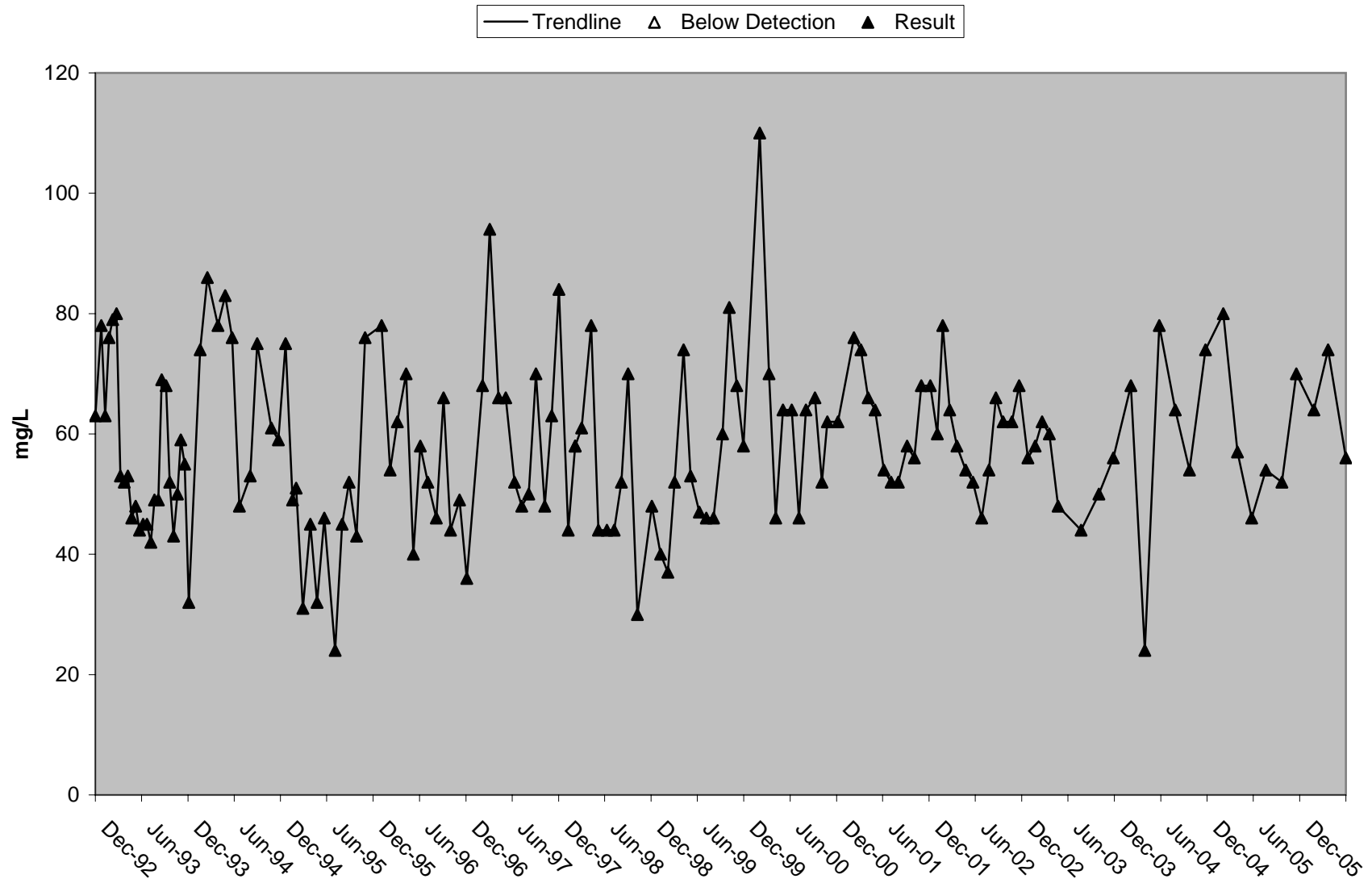
# River Mile 44 Dissolved Organic Carbon (DOC)



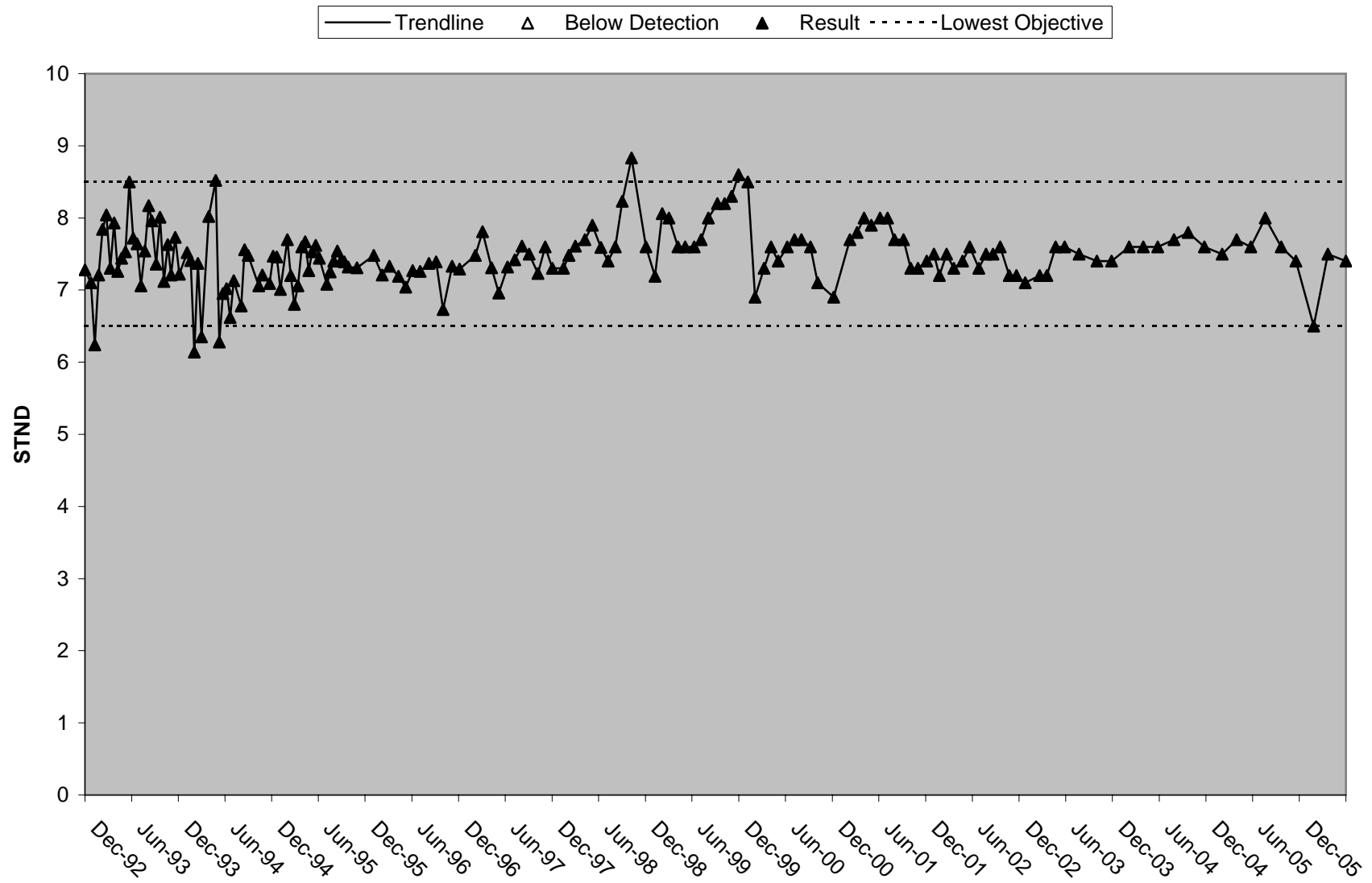
River Mile 44 Electrical Conductivity (EC)



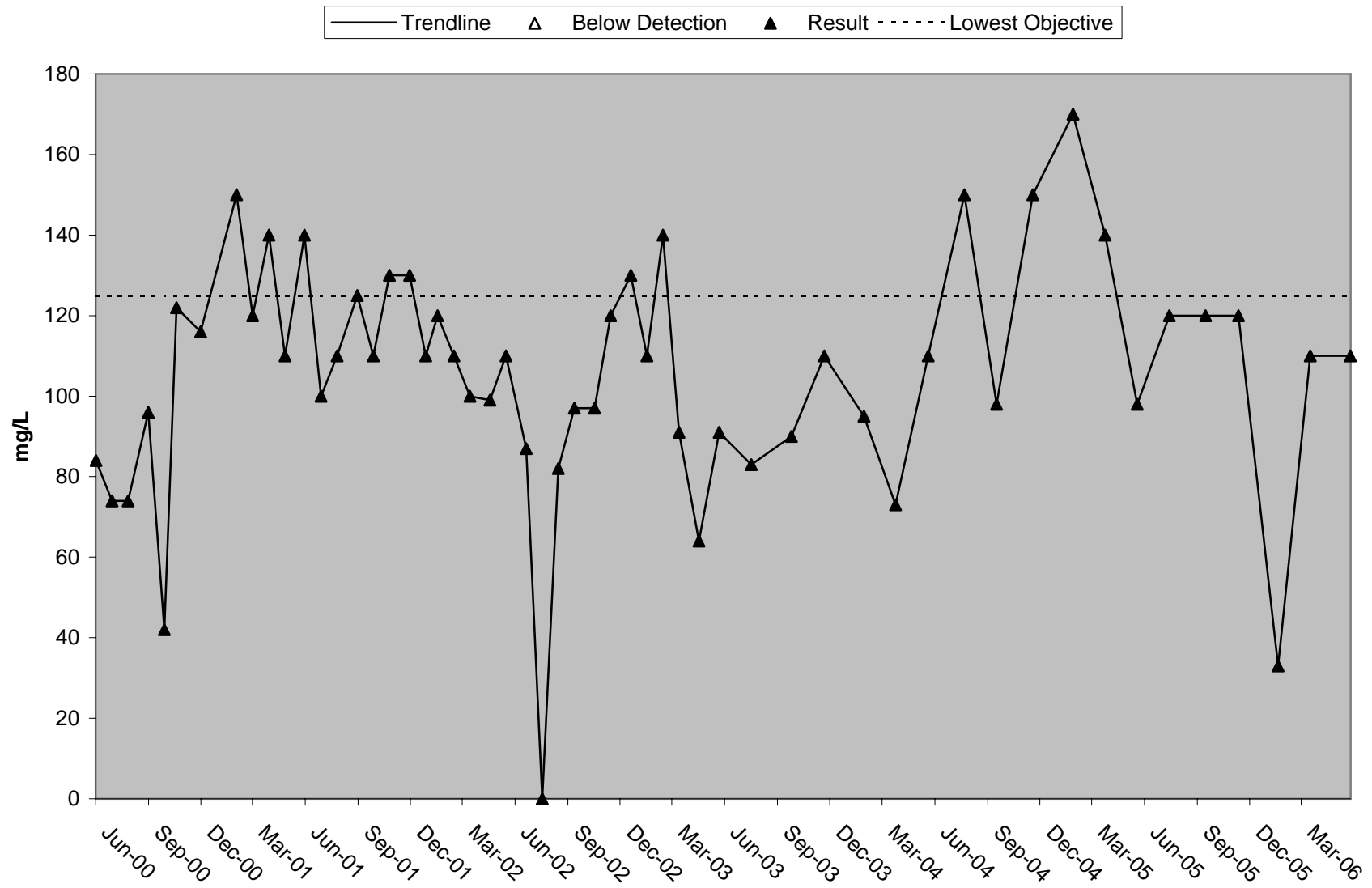
# River Mile 44 Hardness



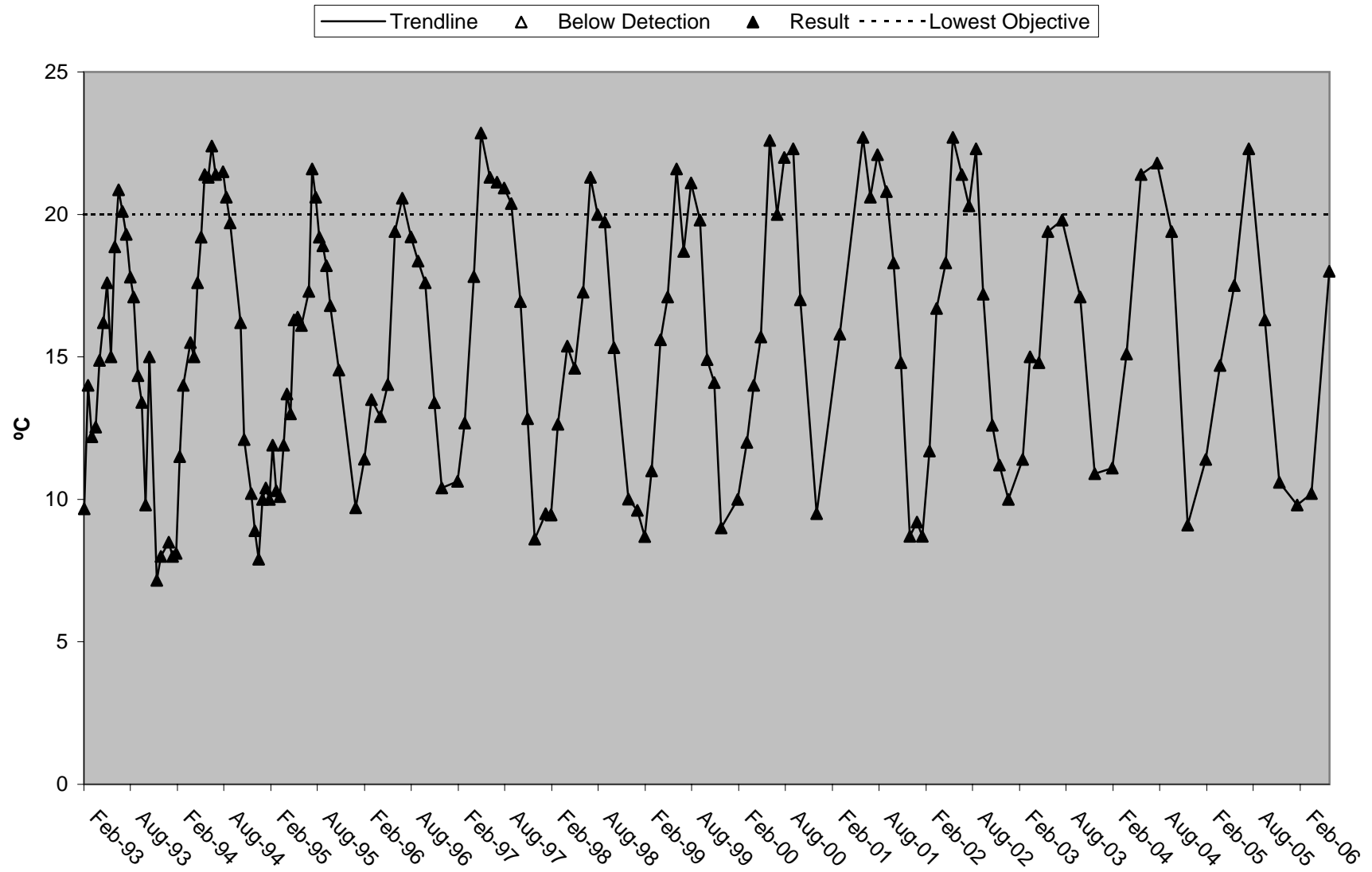
# River Mile 44 pH



# River Mile 44 Total Dissolved Solids (TDS)

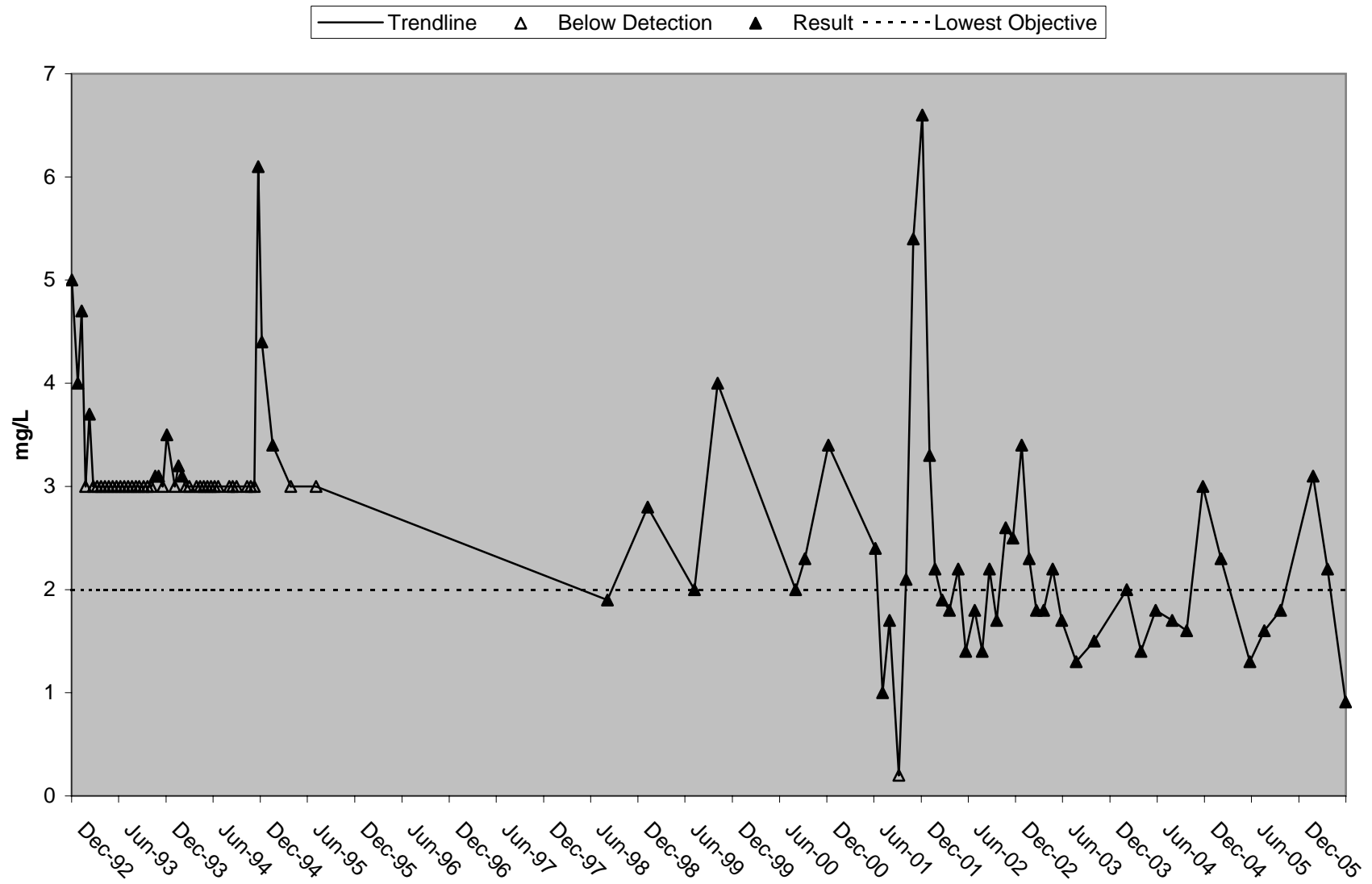


# River Mile 44 Water Temperature

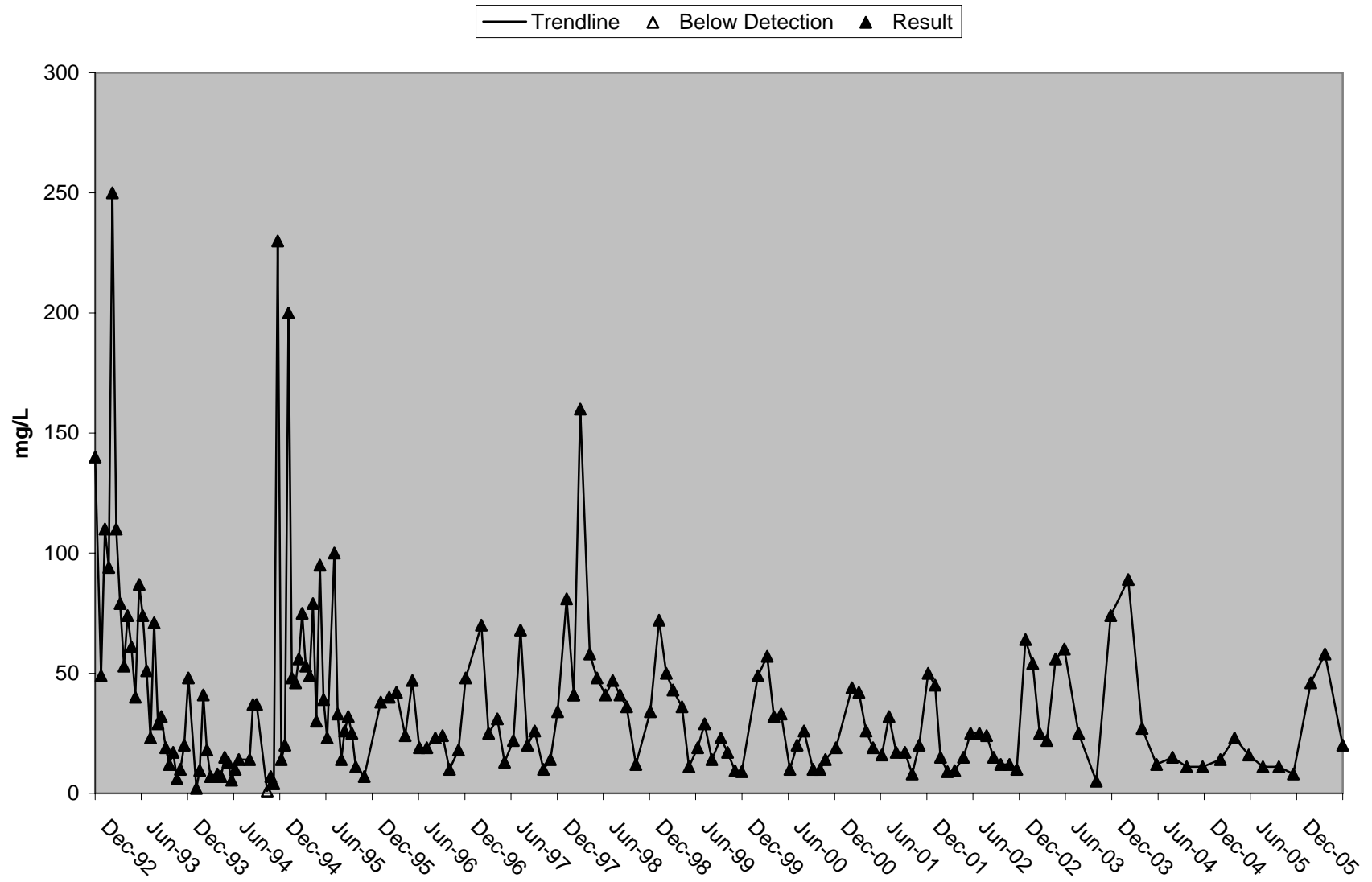




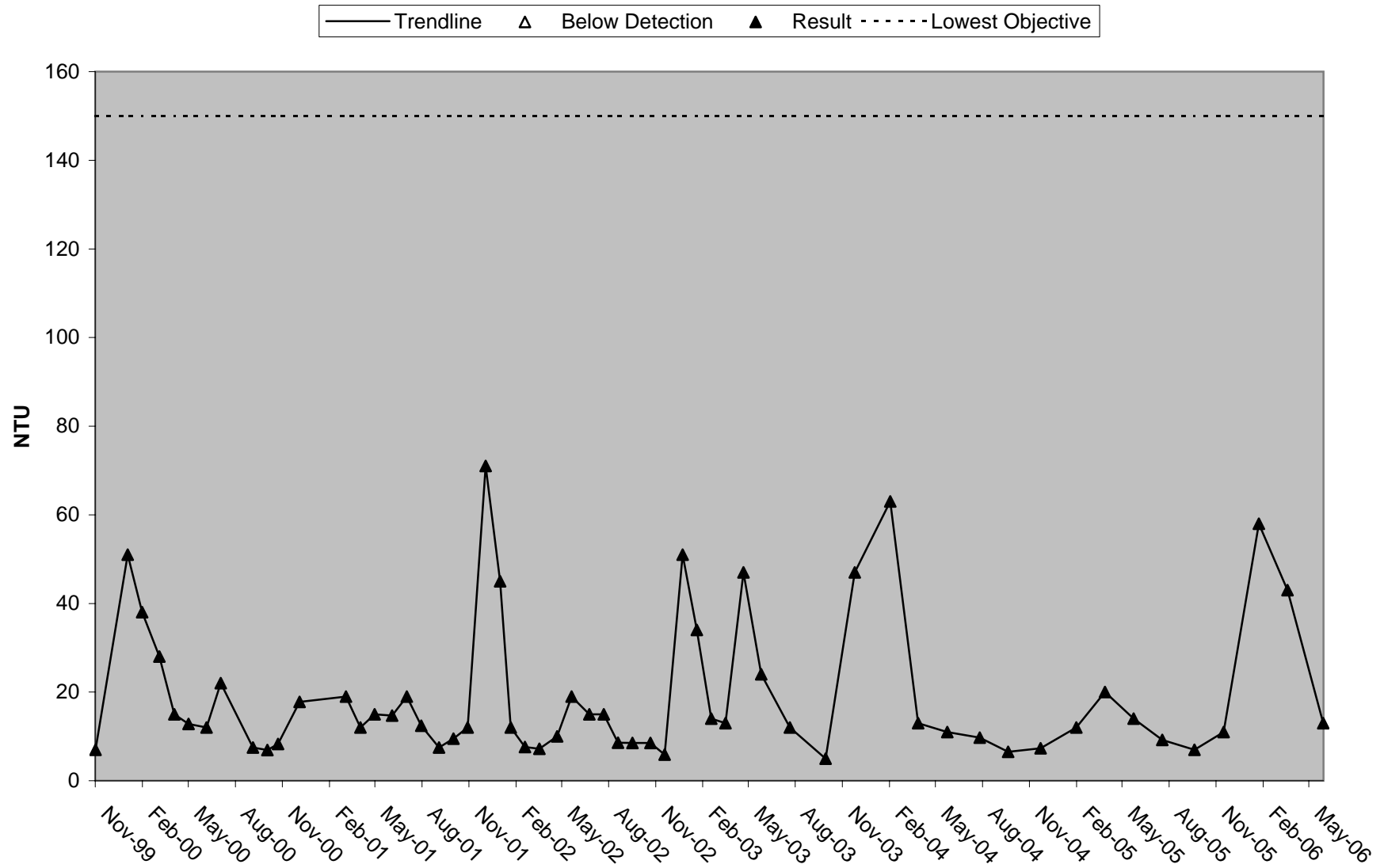
# River Mile 44 Total Organic Carbon (TOC)



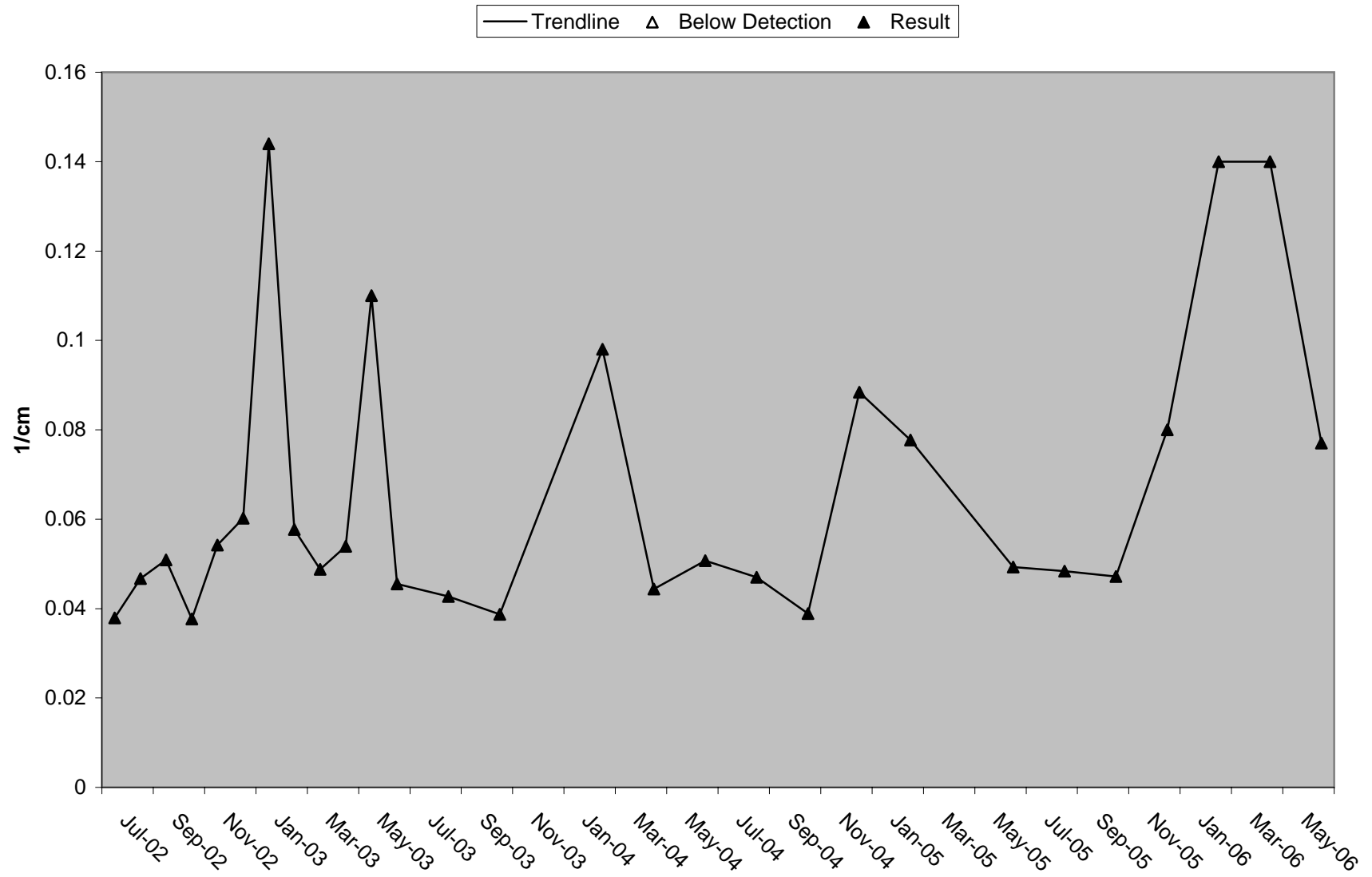
# River Mile 44 Total Suspended Solids (TSS)



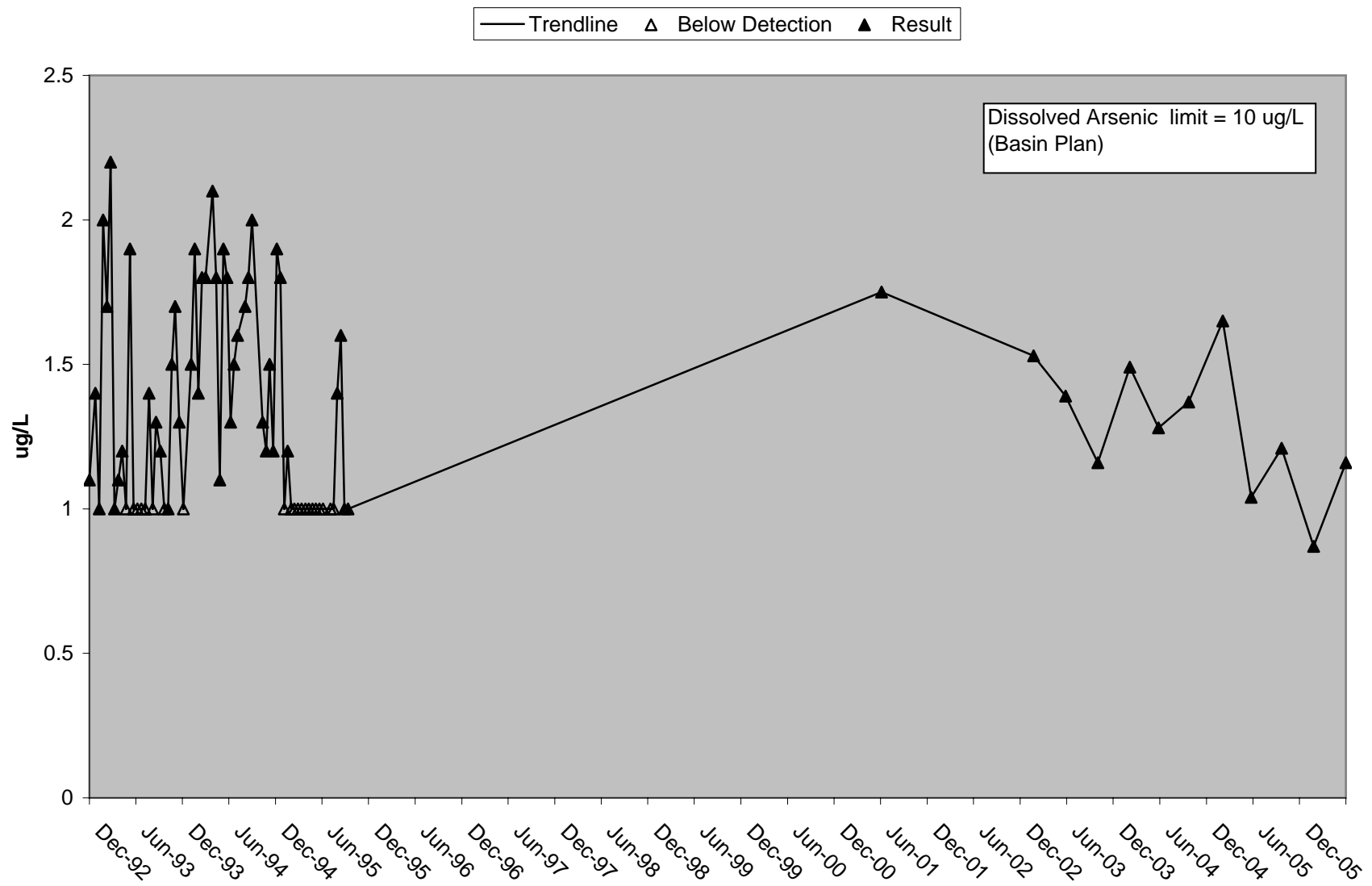
# River Mile 44 Turbidity



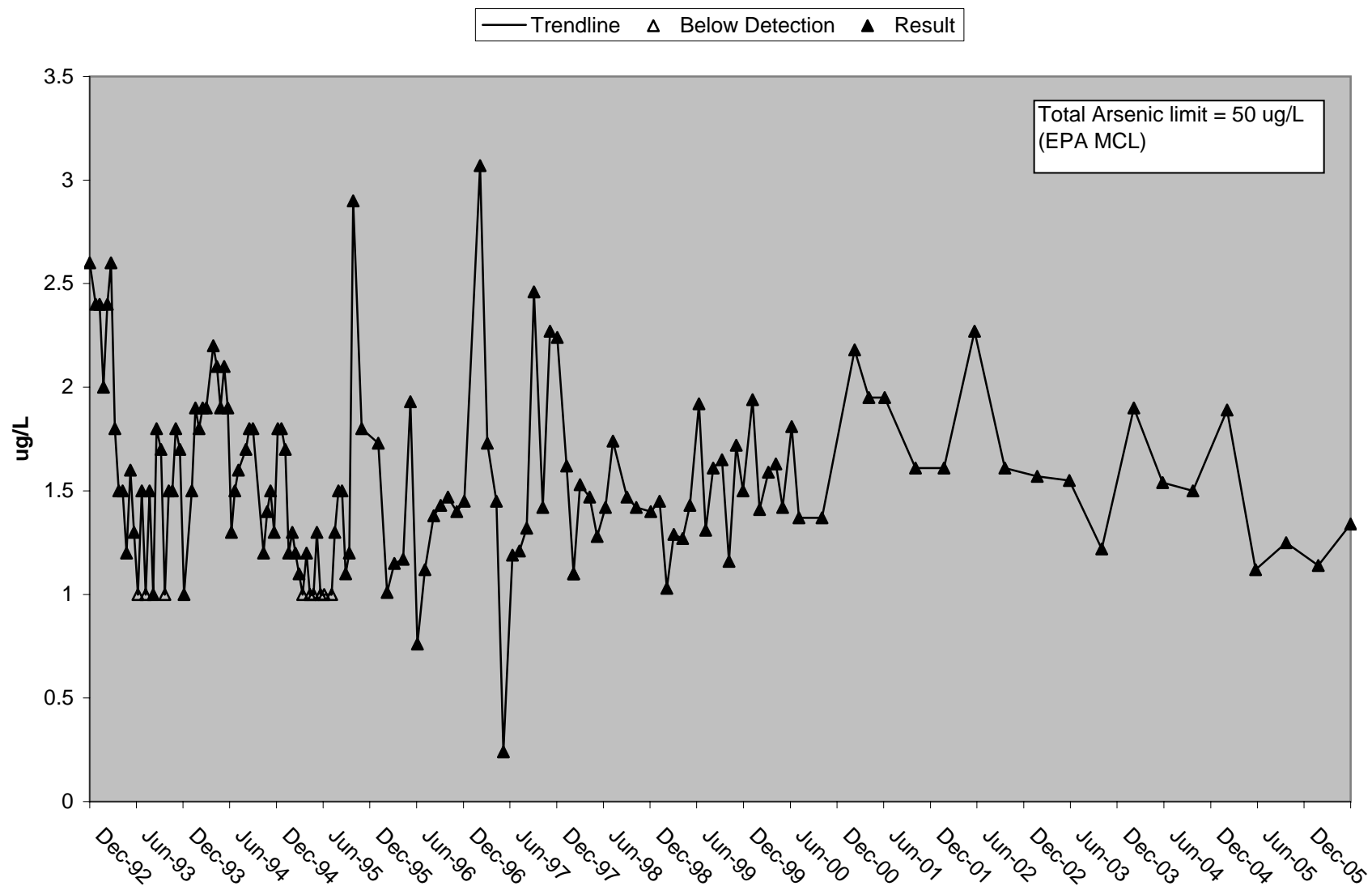
# River Mile 44 UVA 254



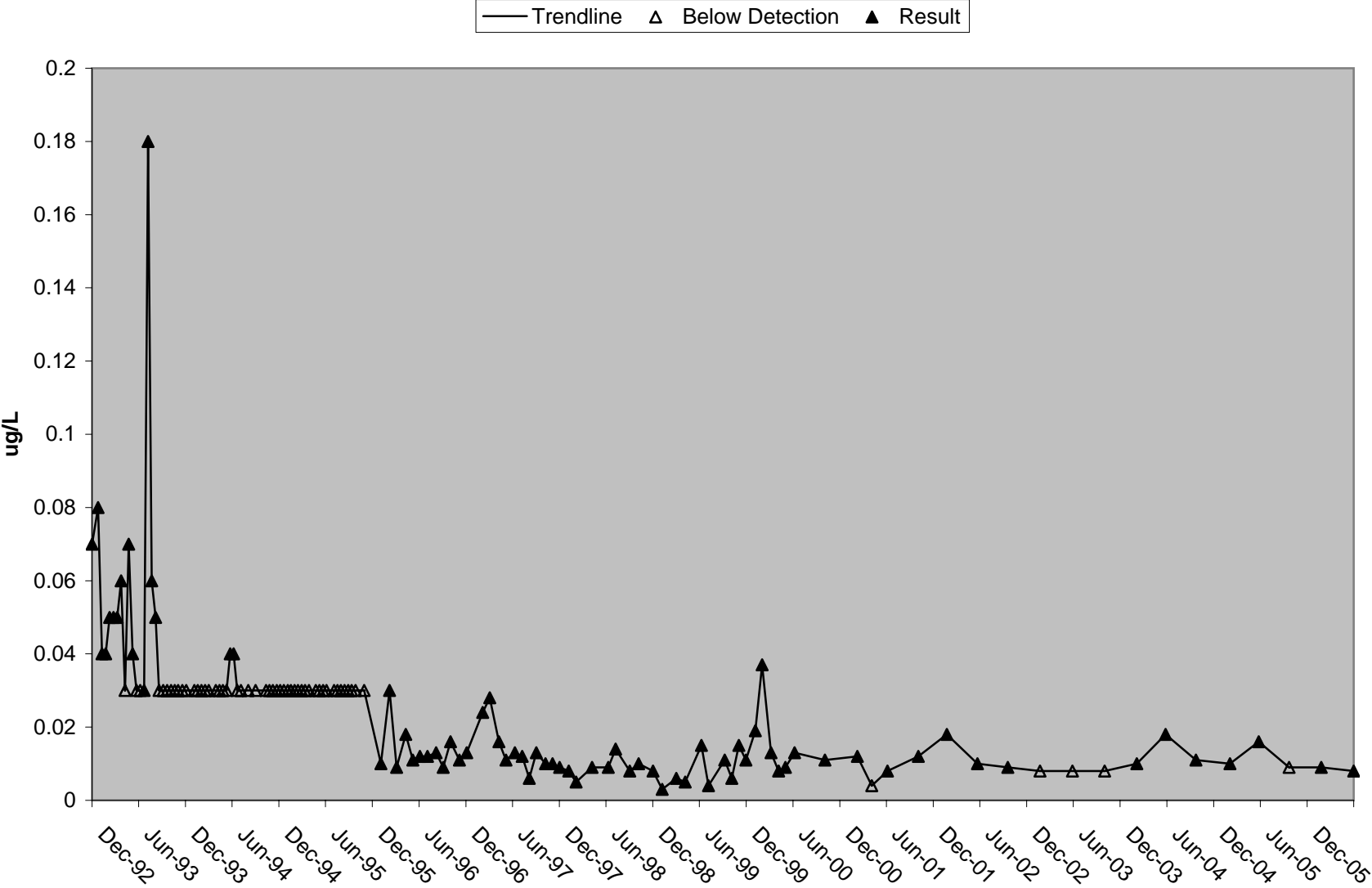
### River Mile 44 Dissolved Arsenic (As-d)



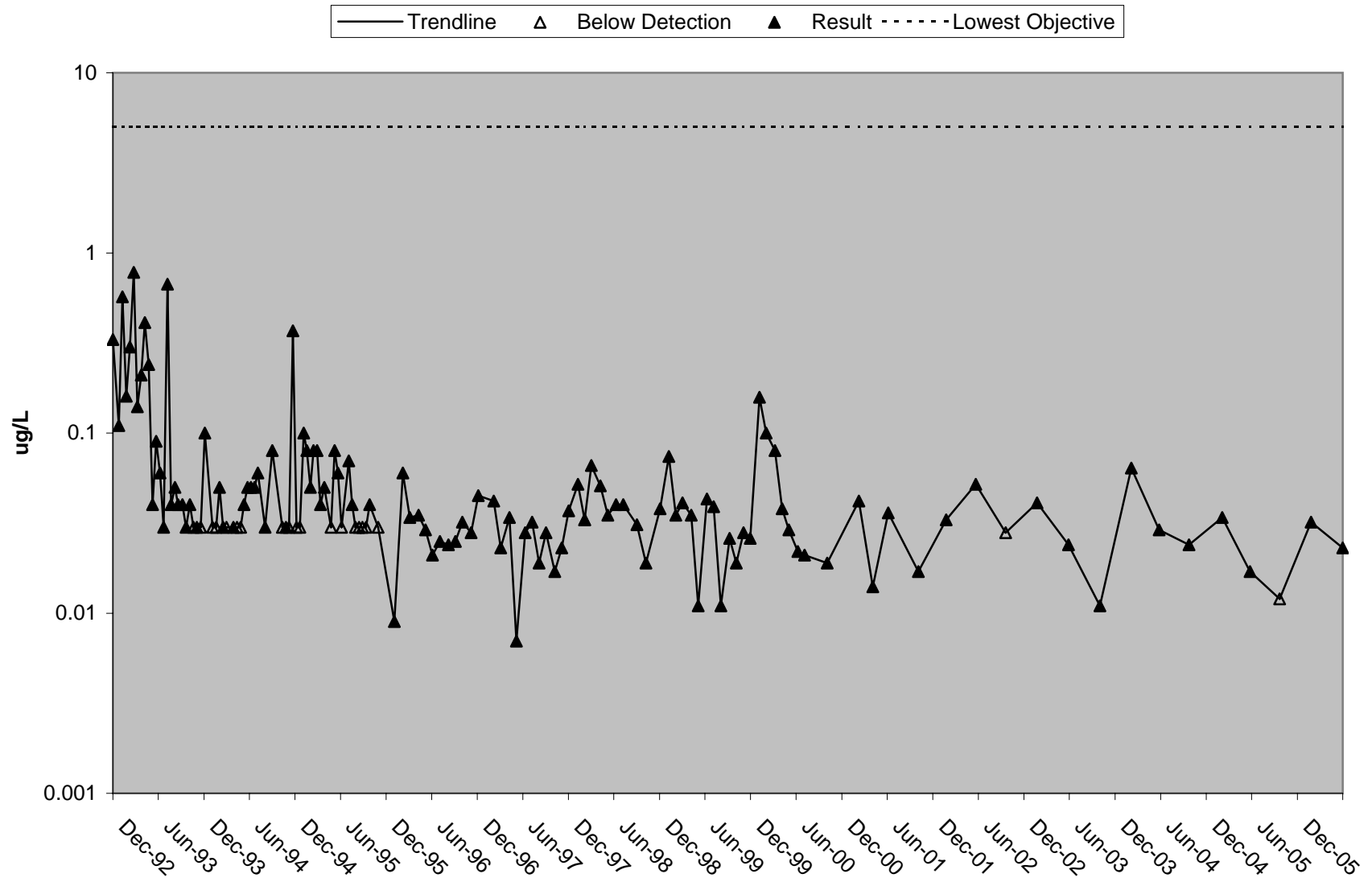
### River Mile 44 Total Arsenic (As-T)



River Mile 44 Dissolved Cadmium (Cd-d)

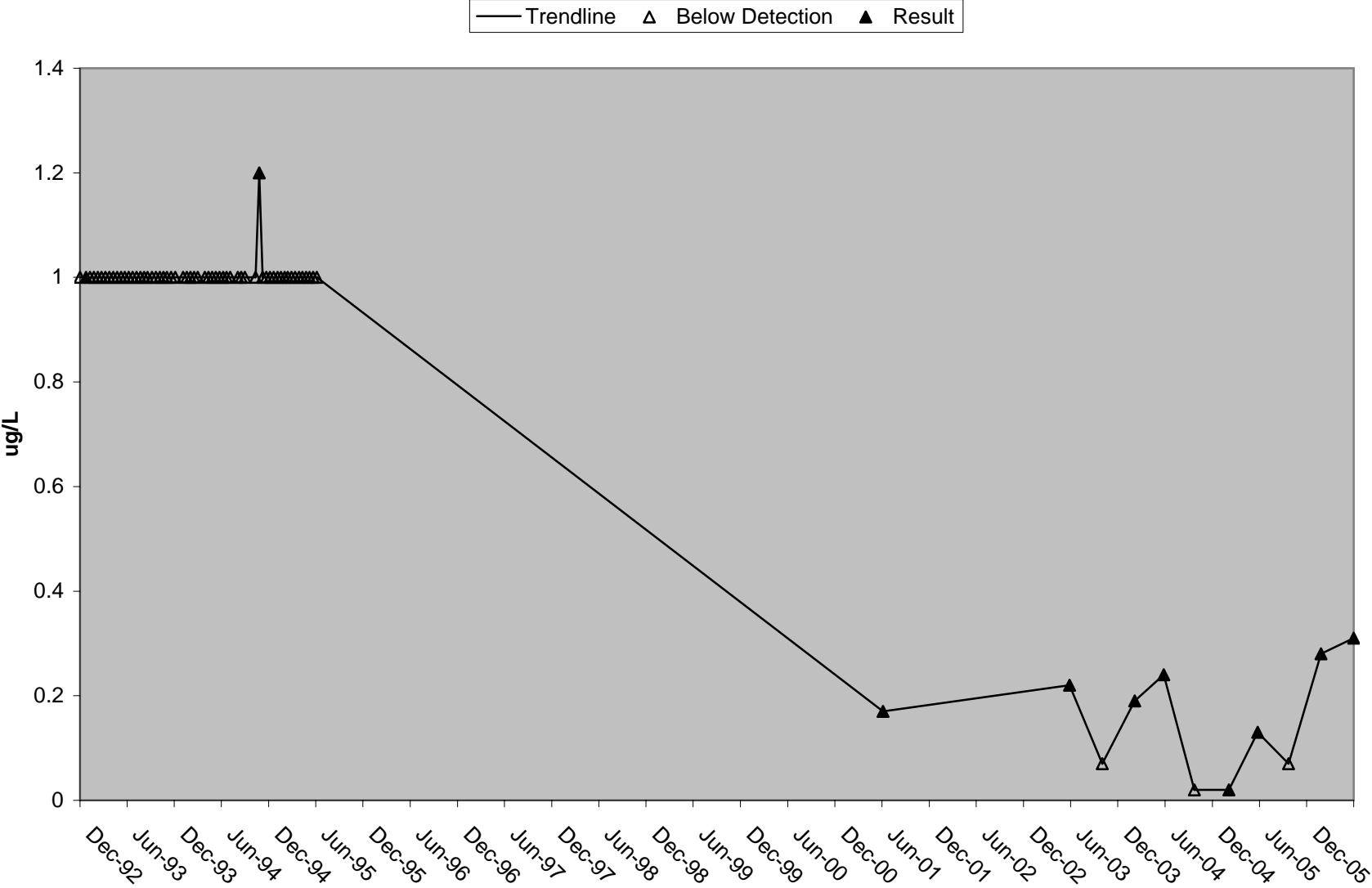


# River Mile 44 Total Cadmium (Cd-T)

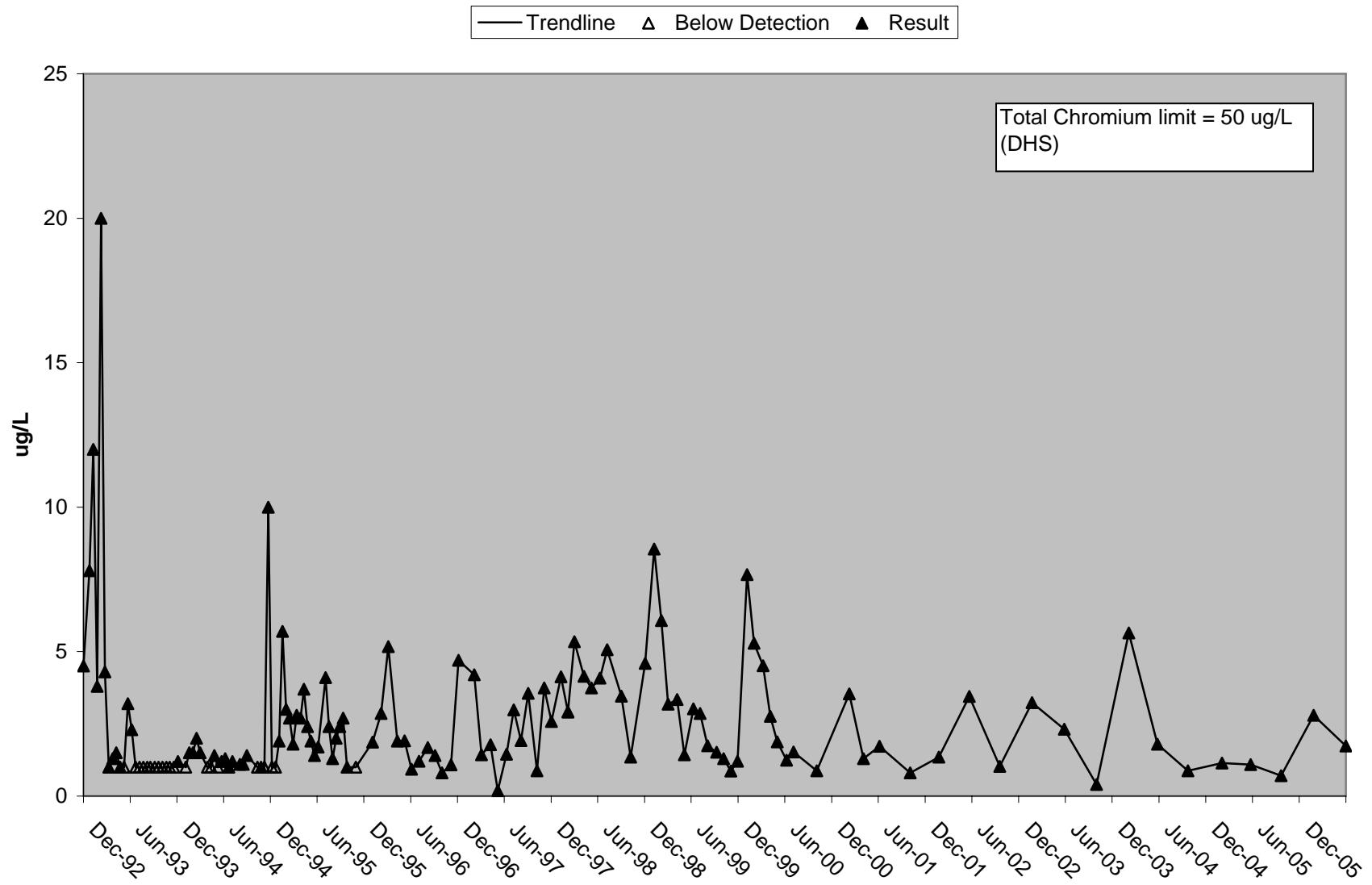




River Mile 44 Dissolved Chromium (Cr-d)

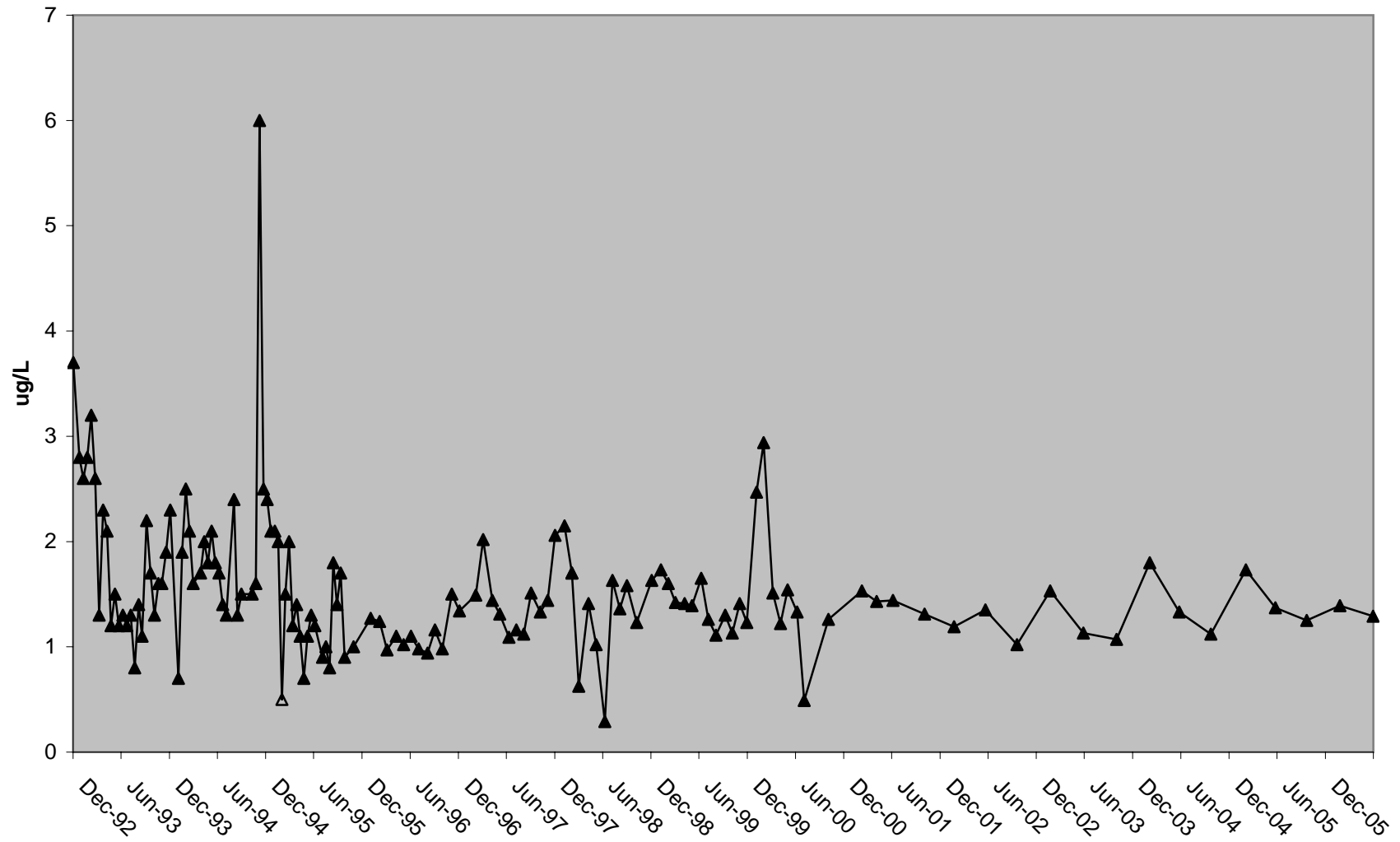


### River Mile 44 Total Chromium (Cr-T)

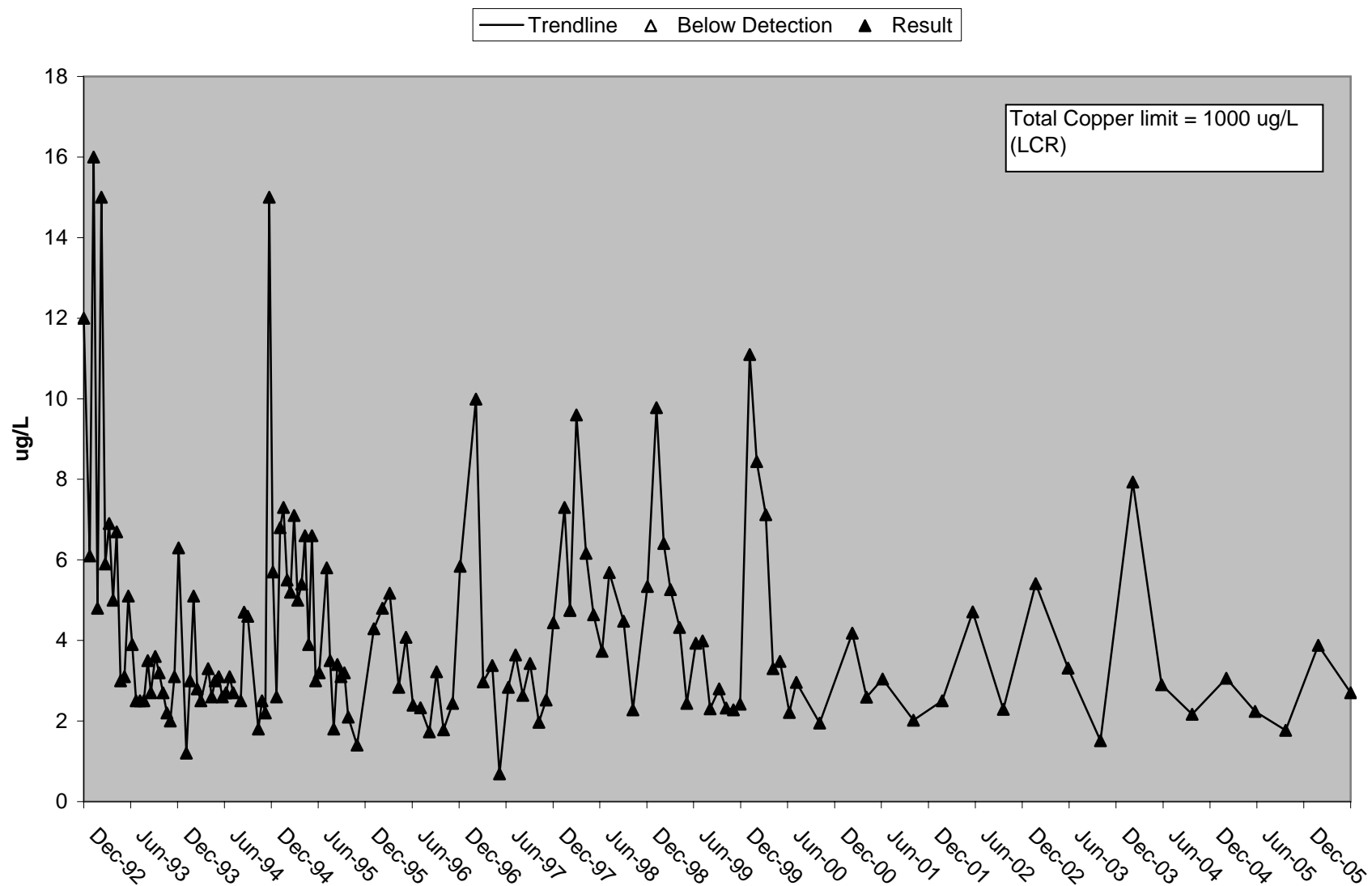


# River Mile 44 Dissolved Copper (Cu-d)

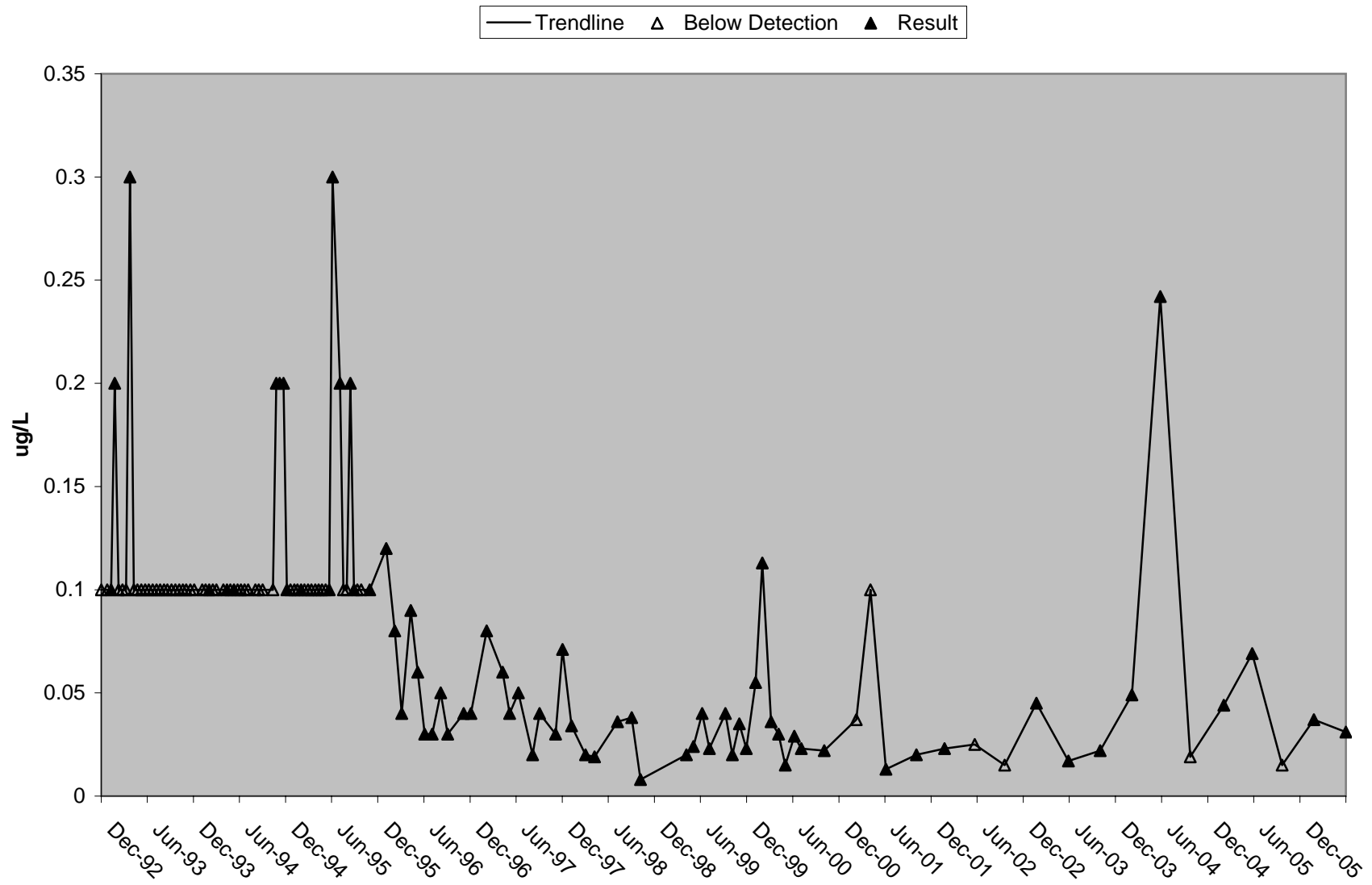
— Trendline    △ Below Detection    ▲ Result



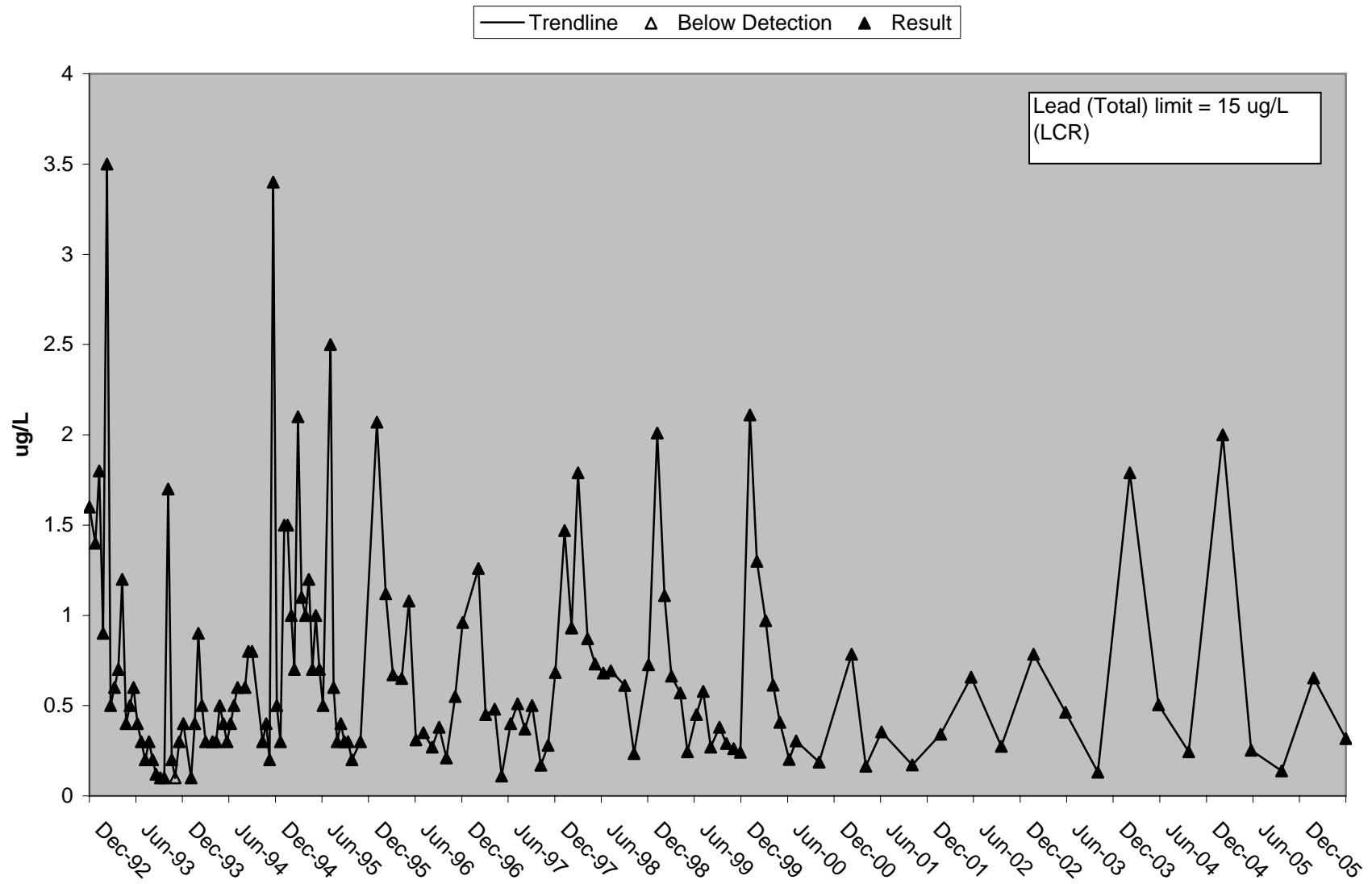
### River Mile 44 Total Copper (Cu-T)



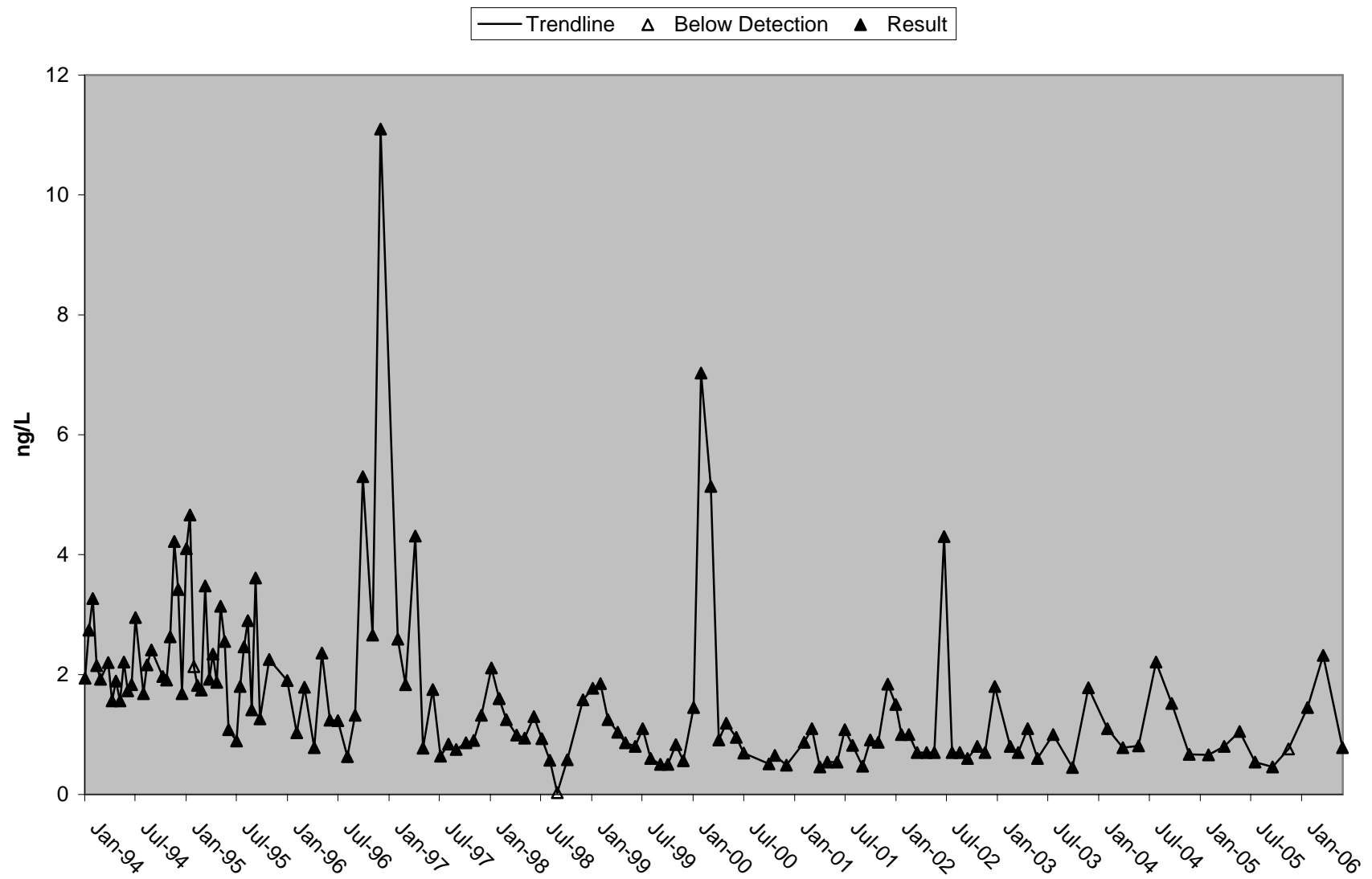
### River Mile 44 Dissolved Lead (Pb-d)



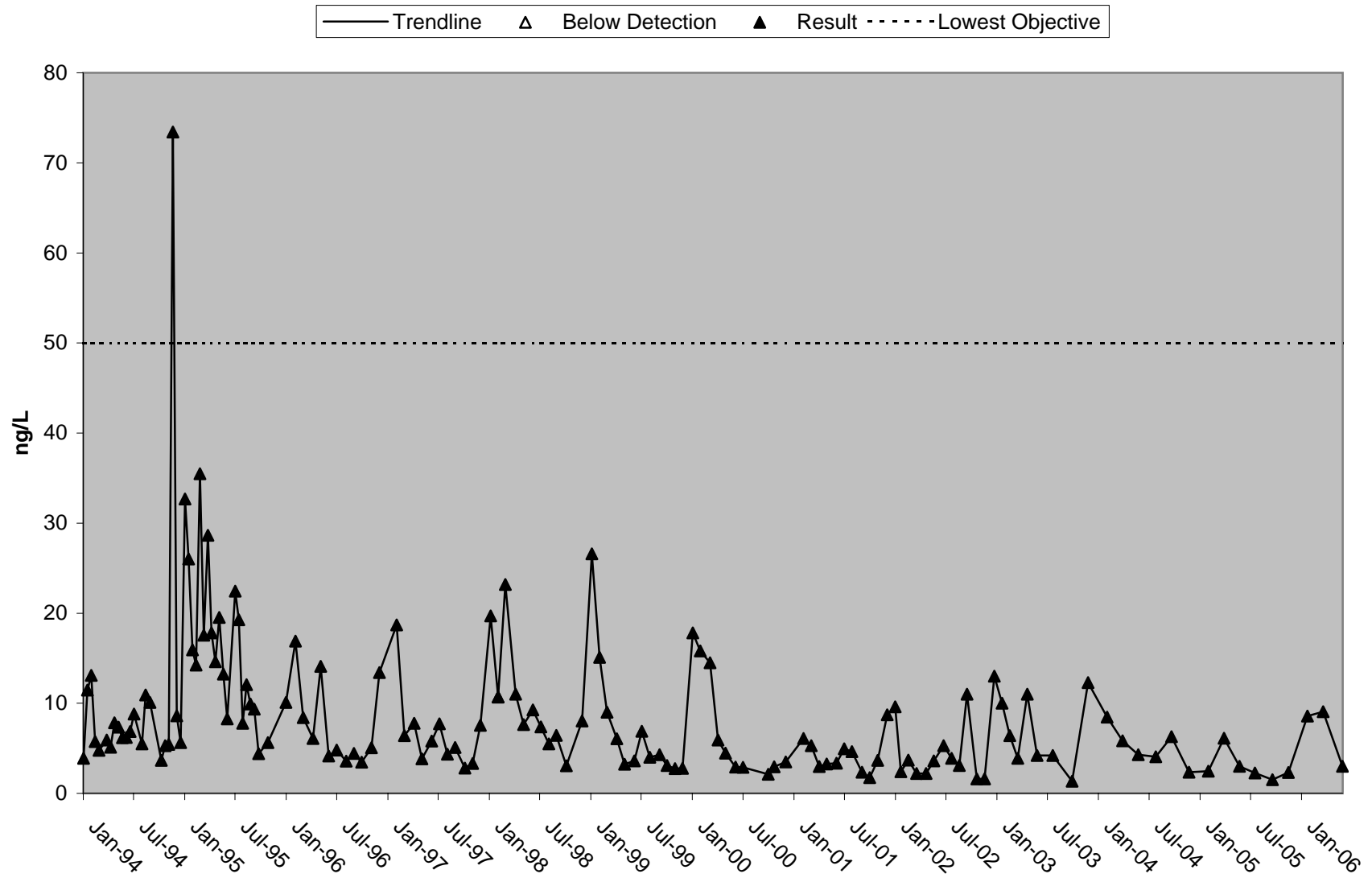
# River Mile 44 Total Lead (Pb-T)



### River Mile 44 Filtered Mercury

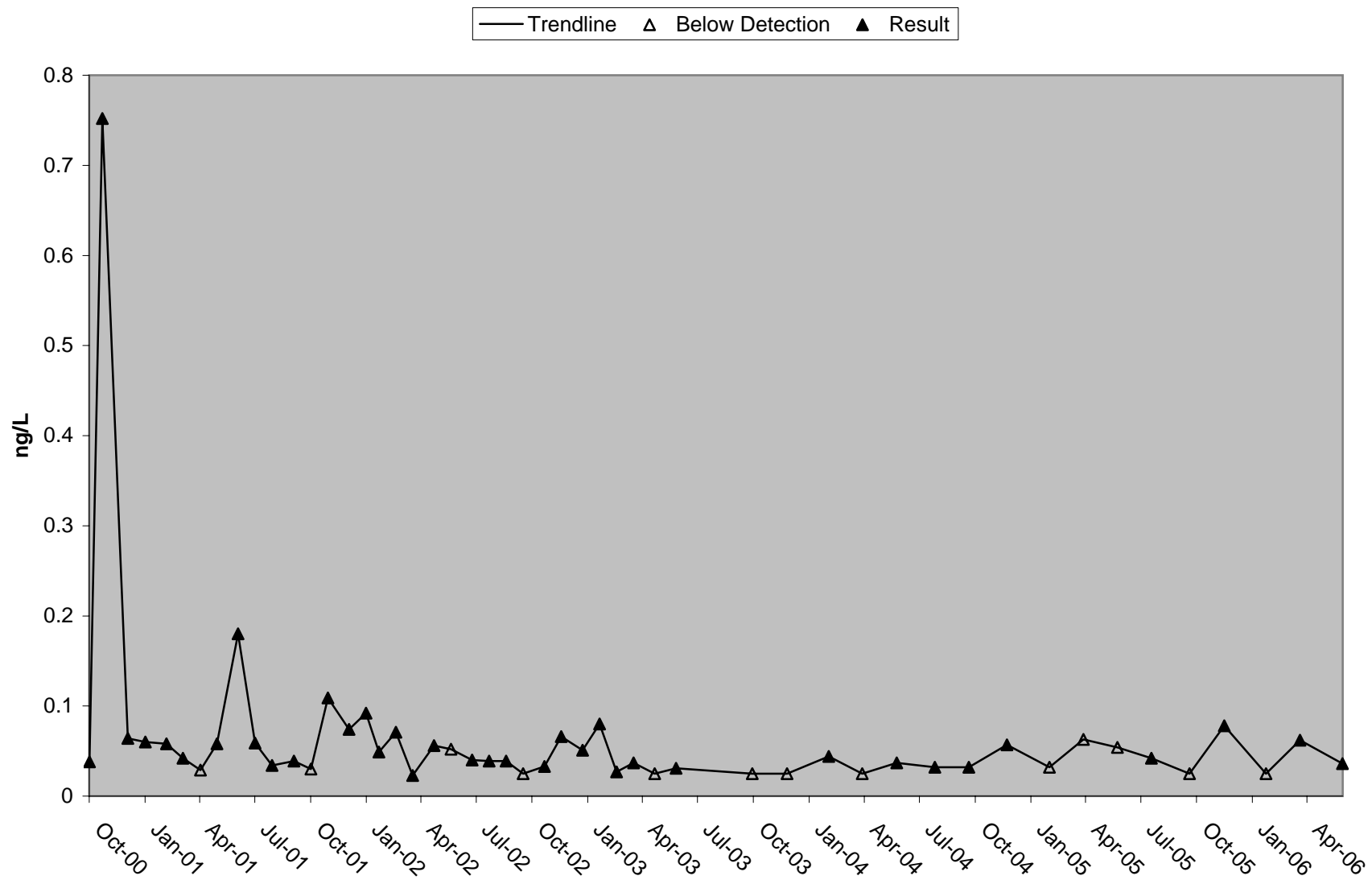


# River Mile 44 Unfiltered Mercury

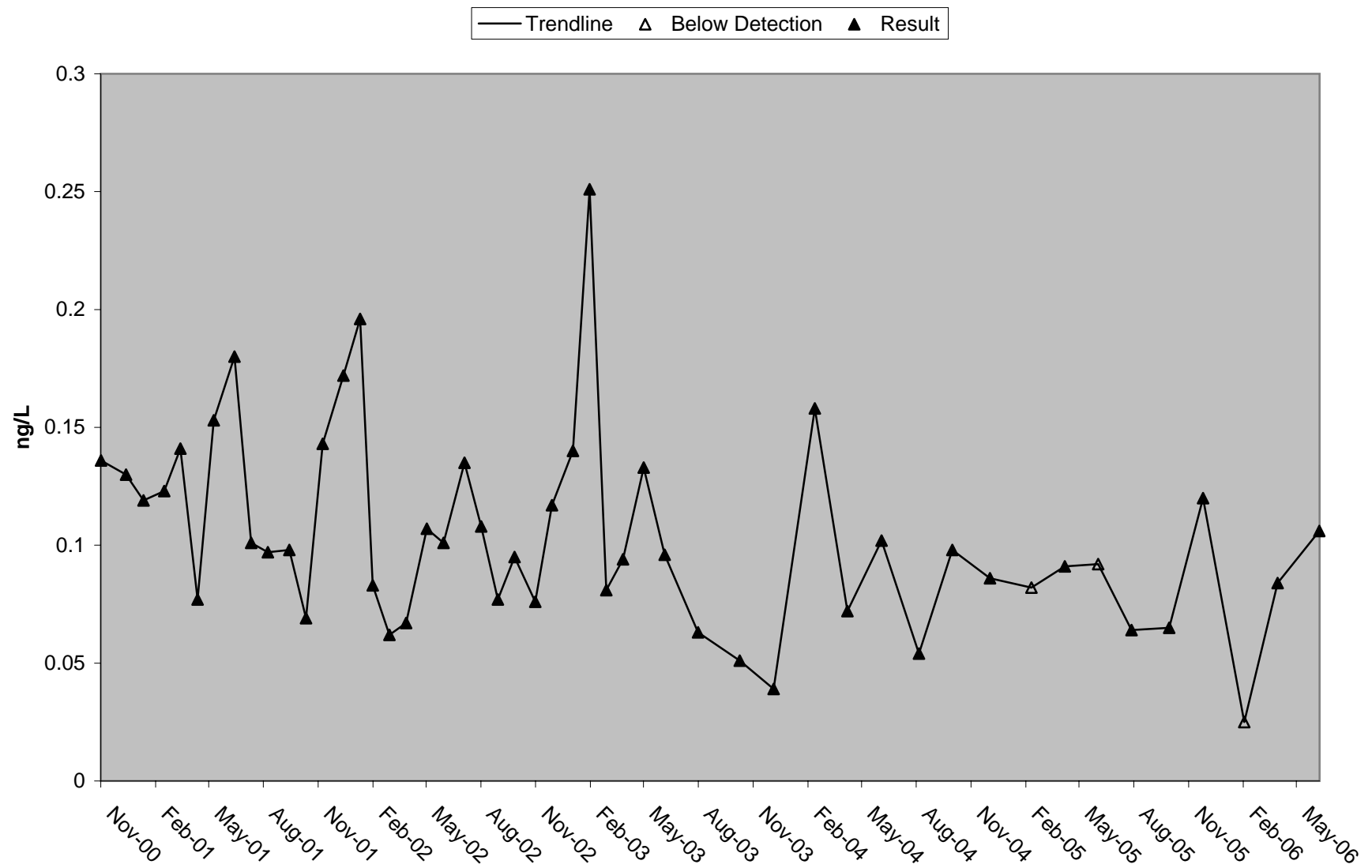




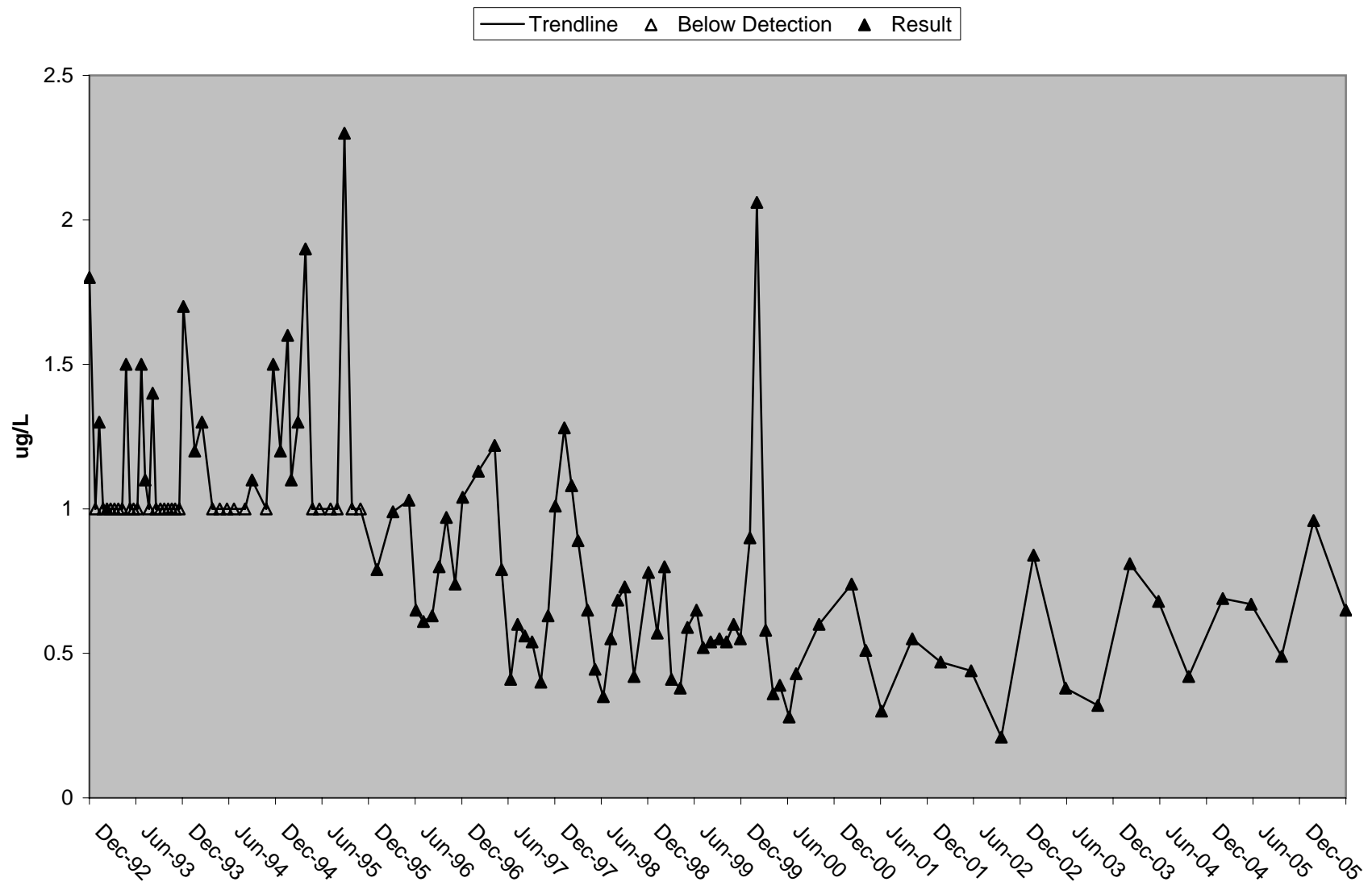
### River Mile 44 Filtered Methyl Mercury



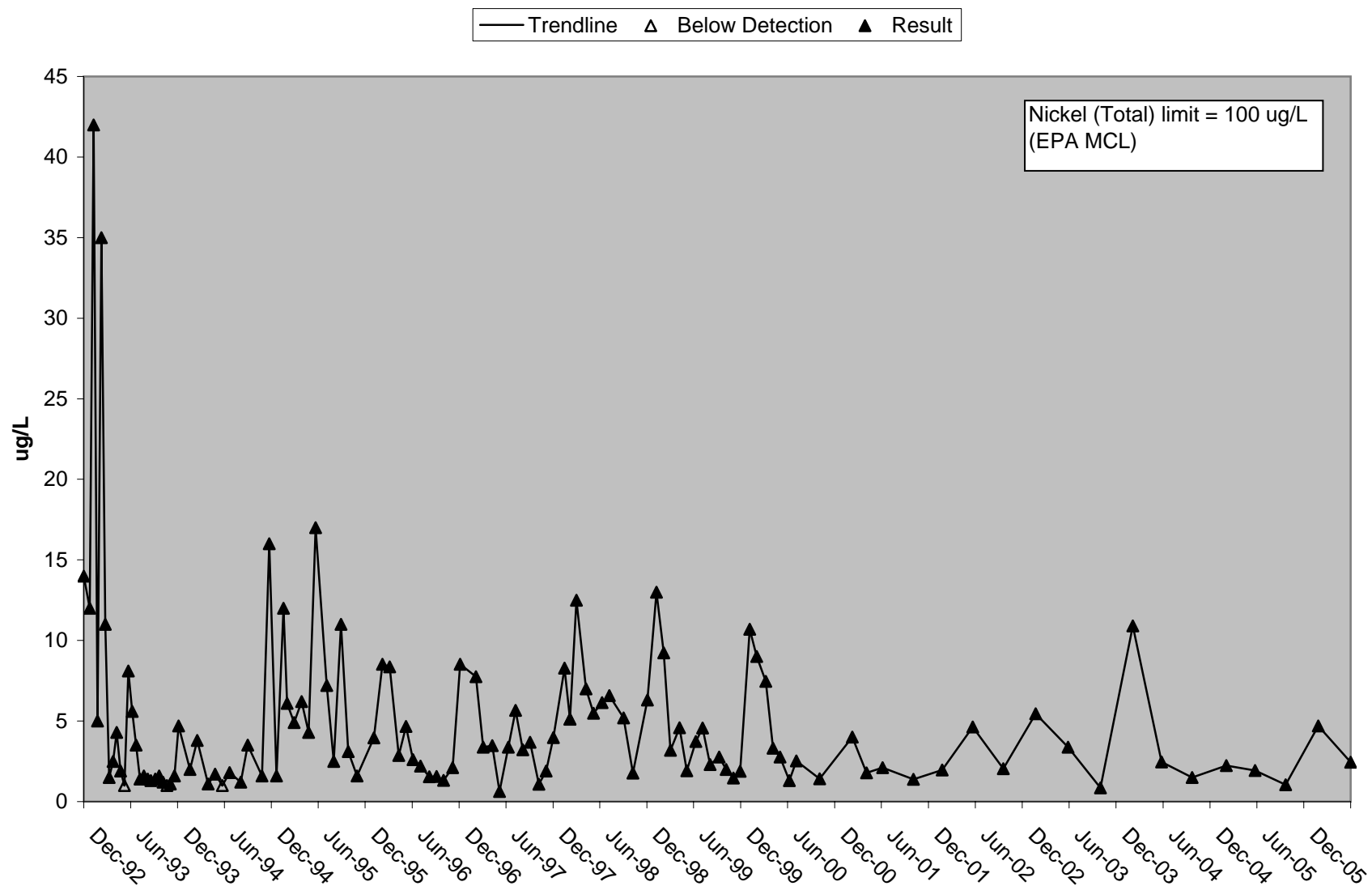
### River Mile 44 Unfiltered Methyl Mercury



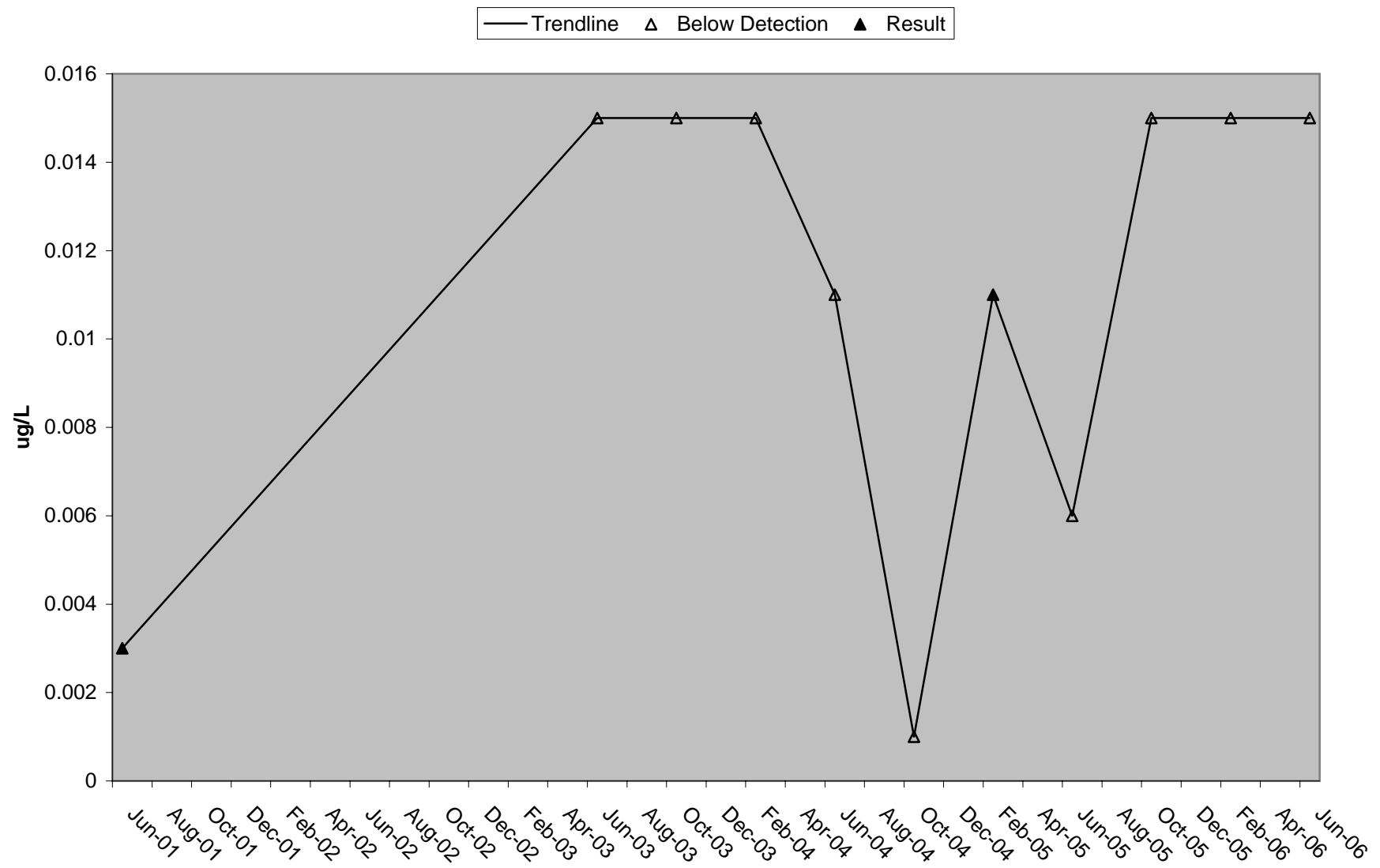
### River Mile 44 Dissolved Nickel (Ni-d)



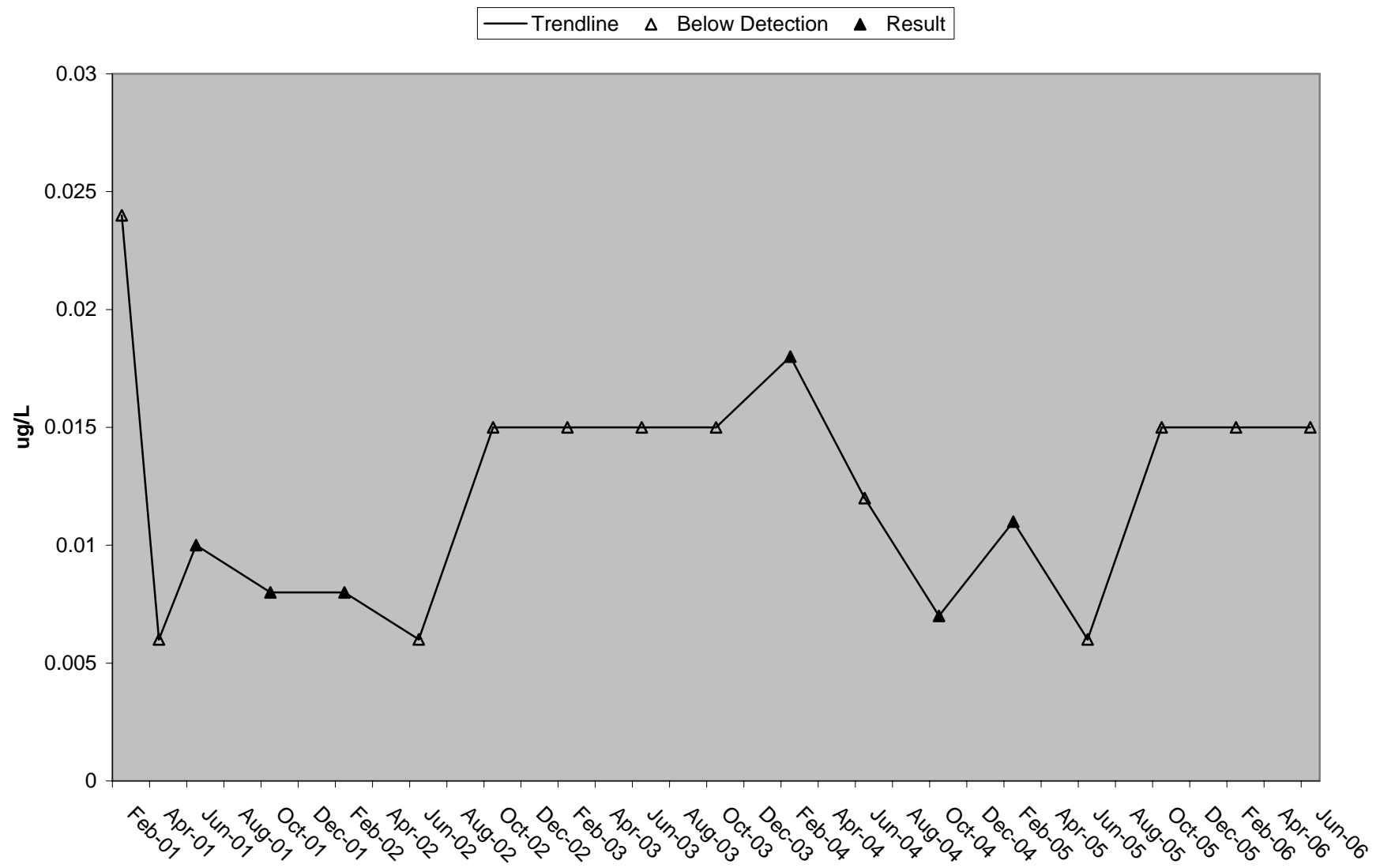
### River Mile 44 Total Nickel (Ni-T)



### River Mile 44 Silver (Dissolved)

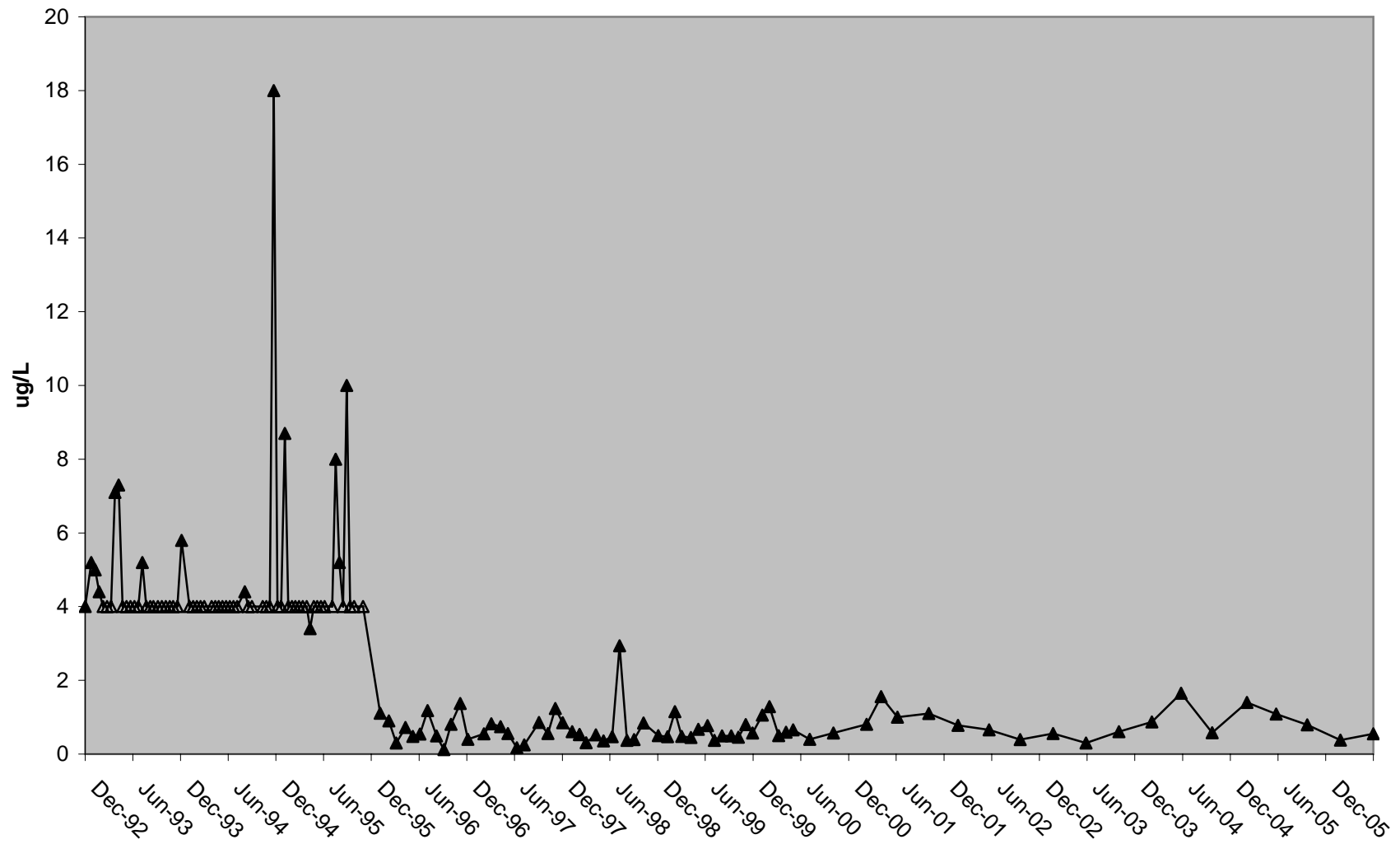


### River Mile 44 Total Silver (Ag-T)



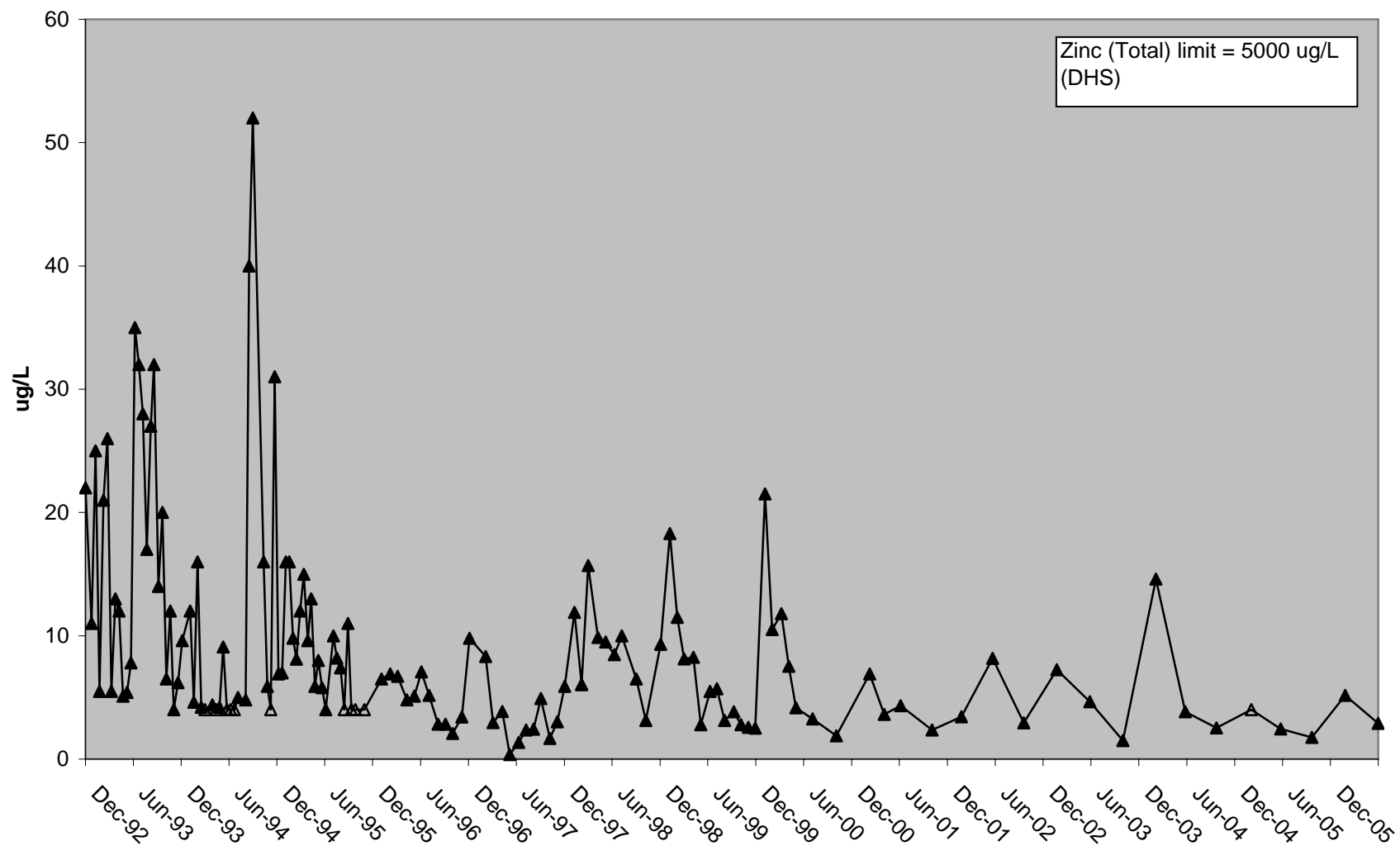
# River Mile 44 Dissolved Zinc (Zn-d)

— Trendline    △ Below Detection    ▲ Result



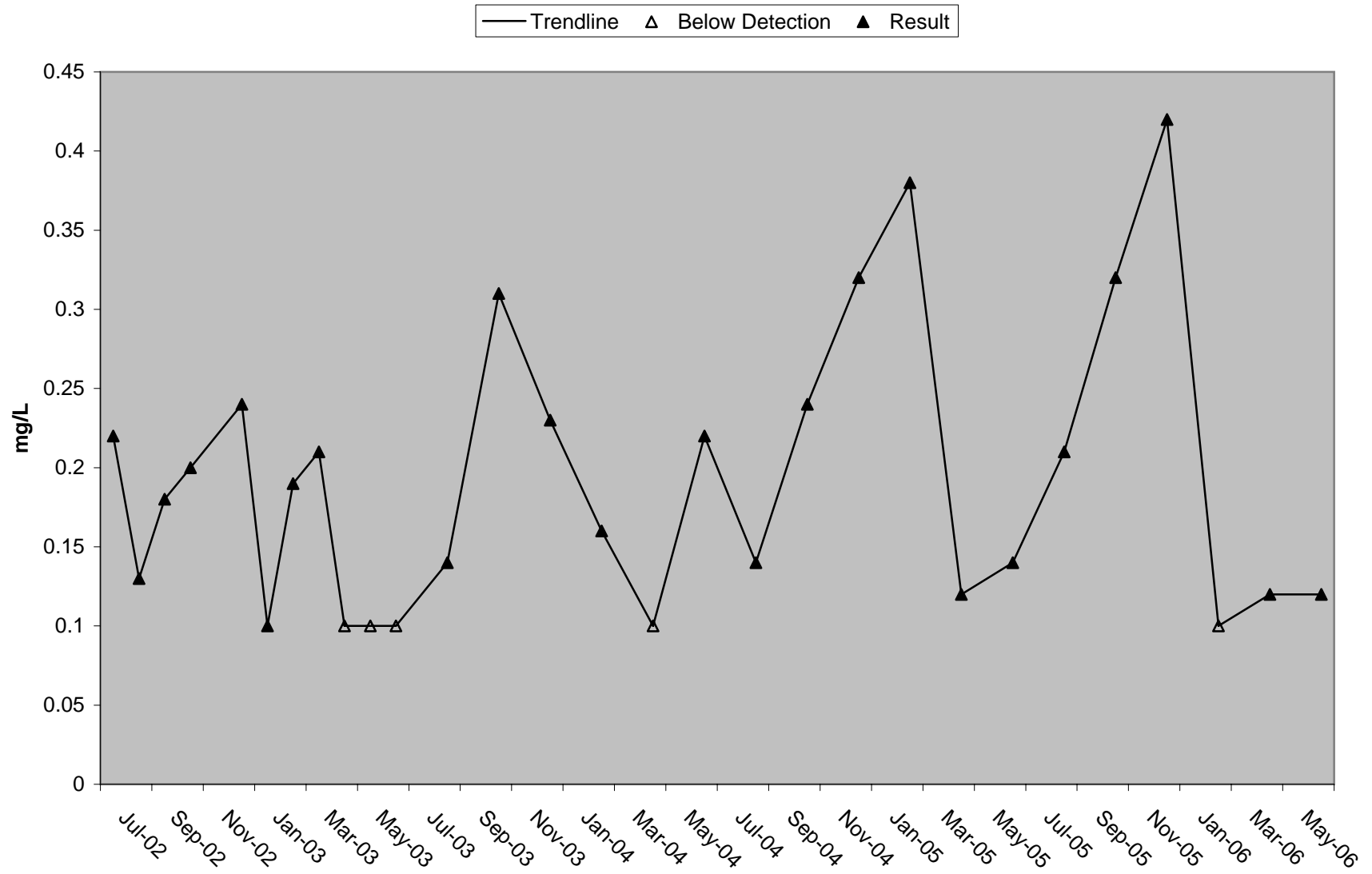
# River Mile 44 Total Zinc (Zn-T)

— Trendline    △ Below Detection    ▲ Result

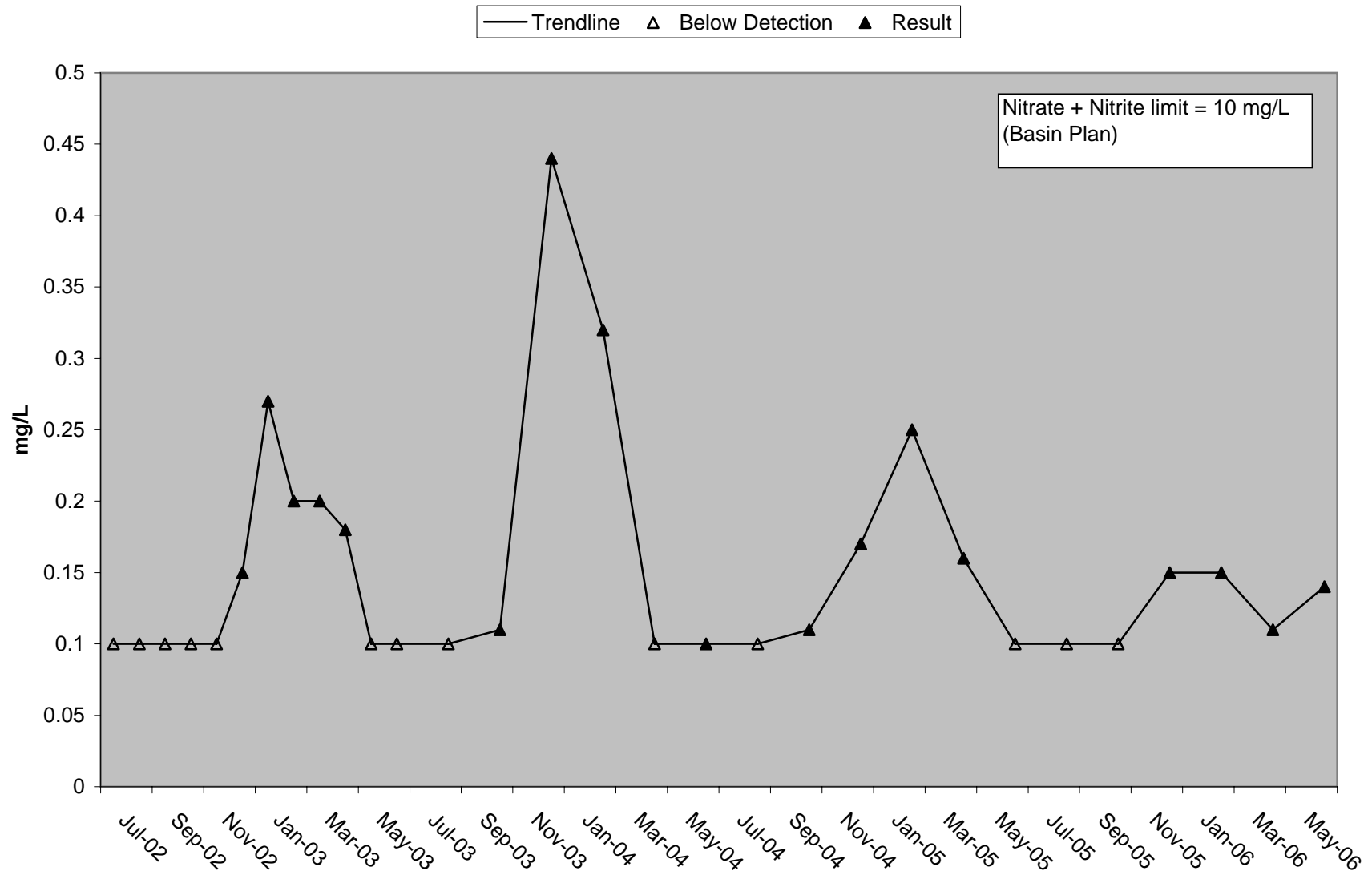




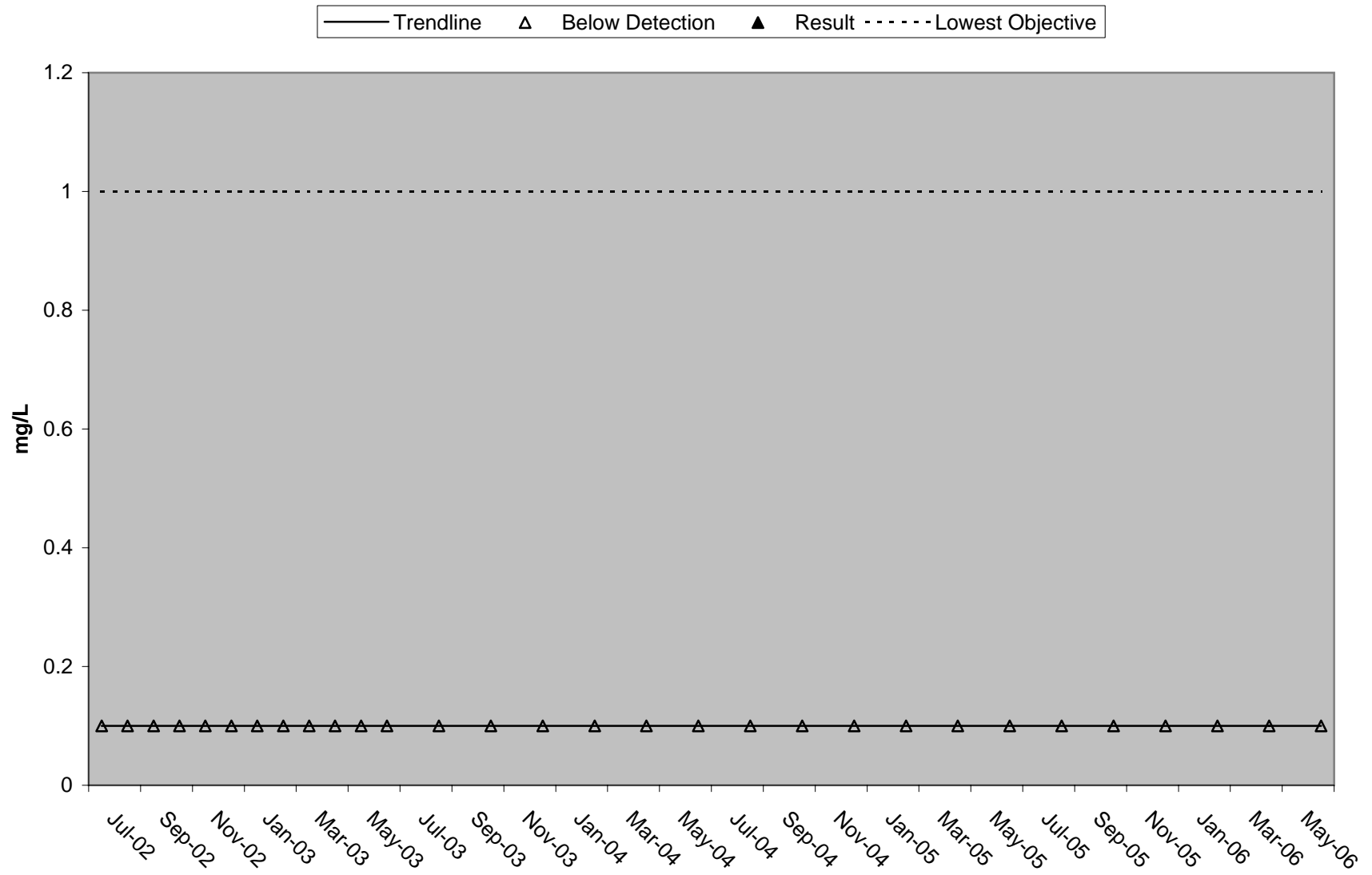
### River Mile 44 Ammonia (NH<sub>3</sub>-N)



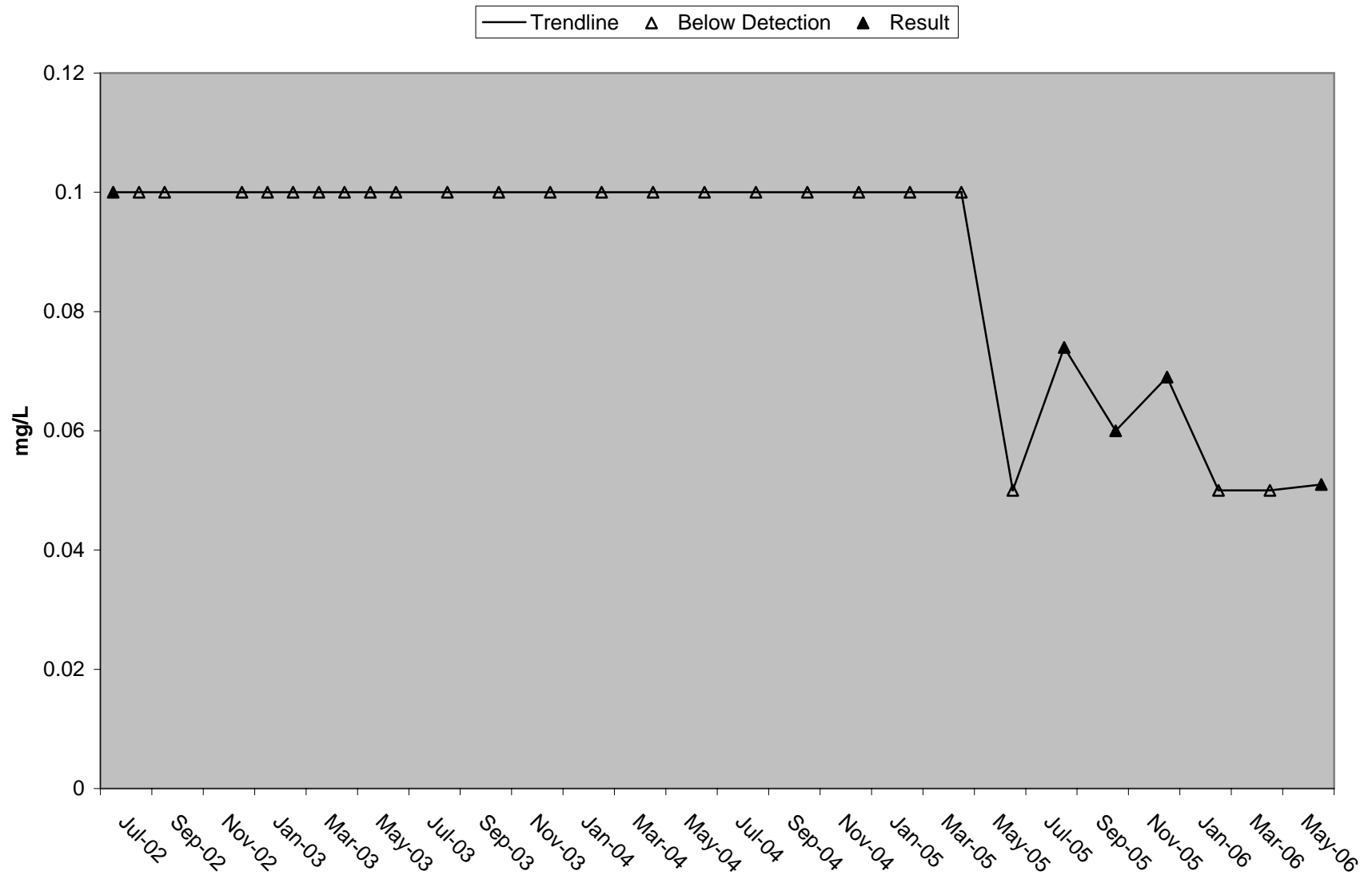
### River Mile 44 Nitrate (NO<sub>3</sub>-N)



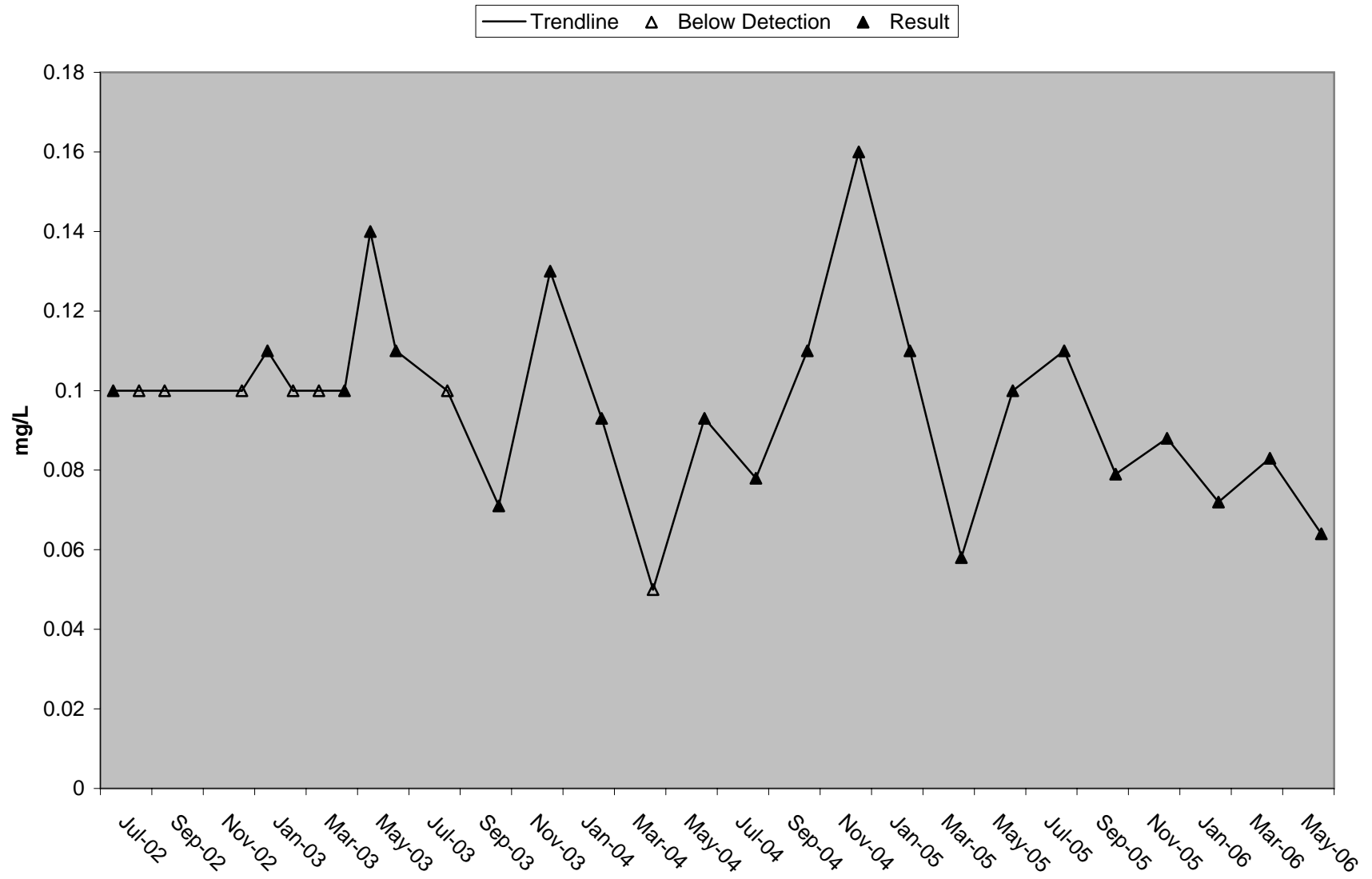
### River Mile 44 Nitrite (NO<sub>2</sub>-N)



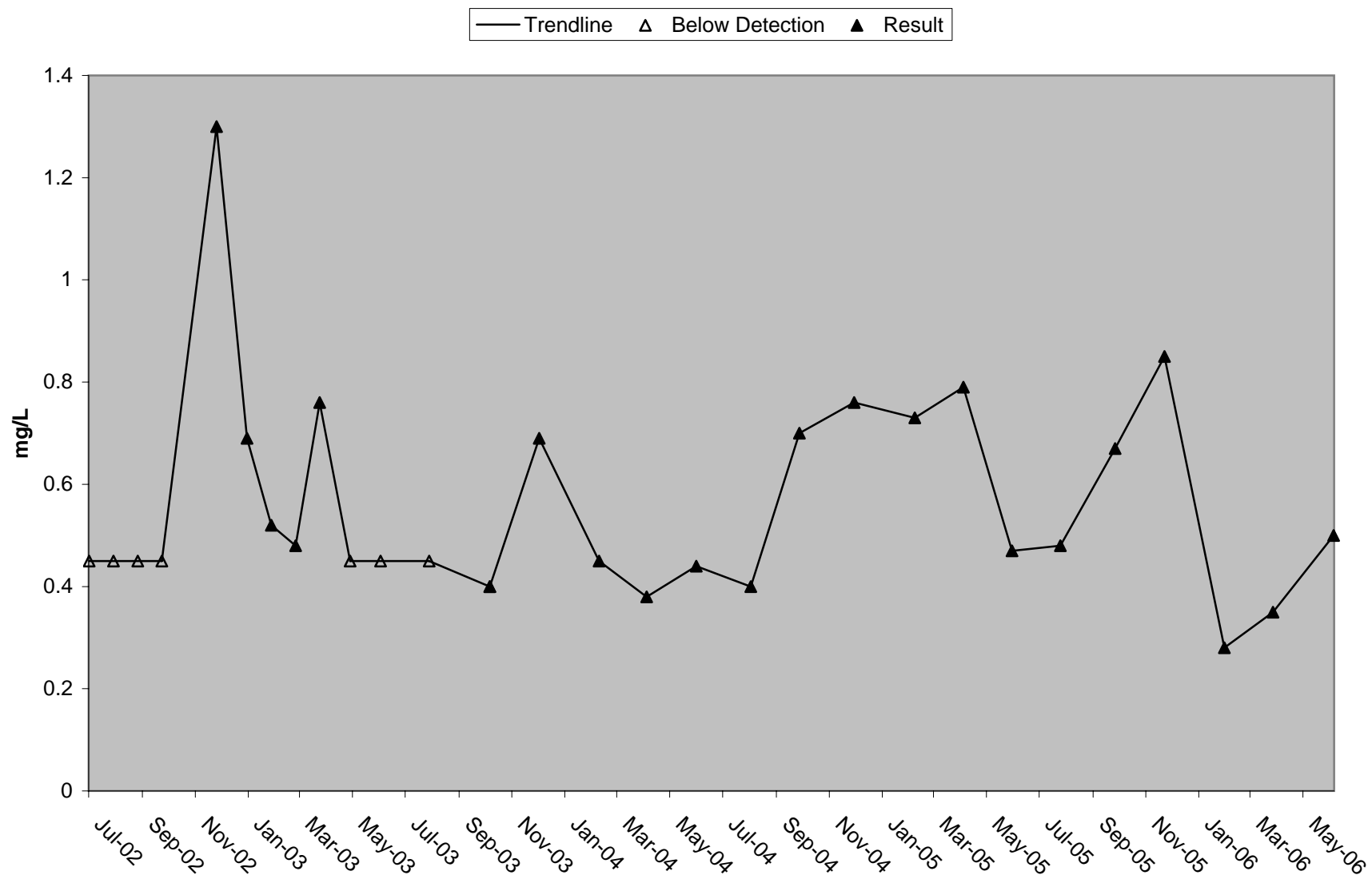
### River Mile 44 Dissolved Ortho-Phosphate



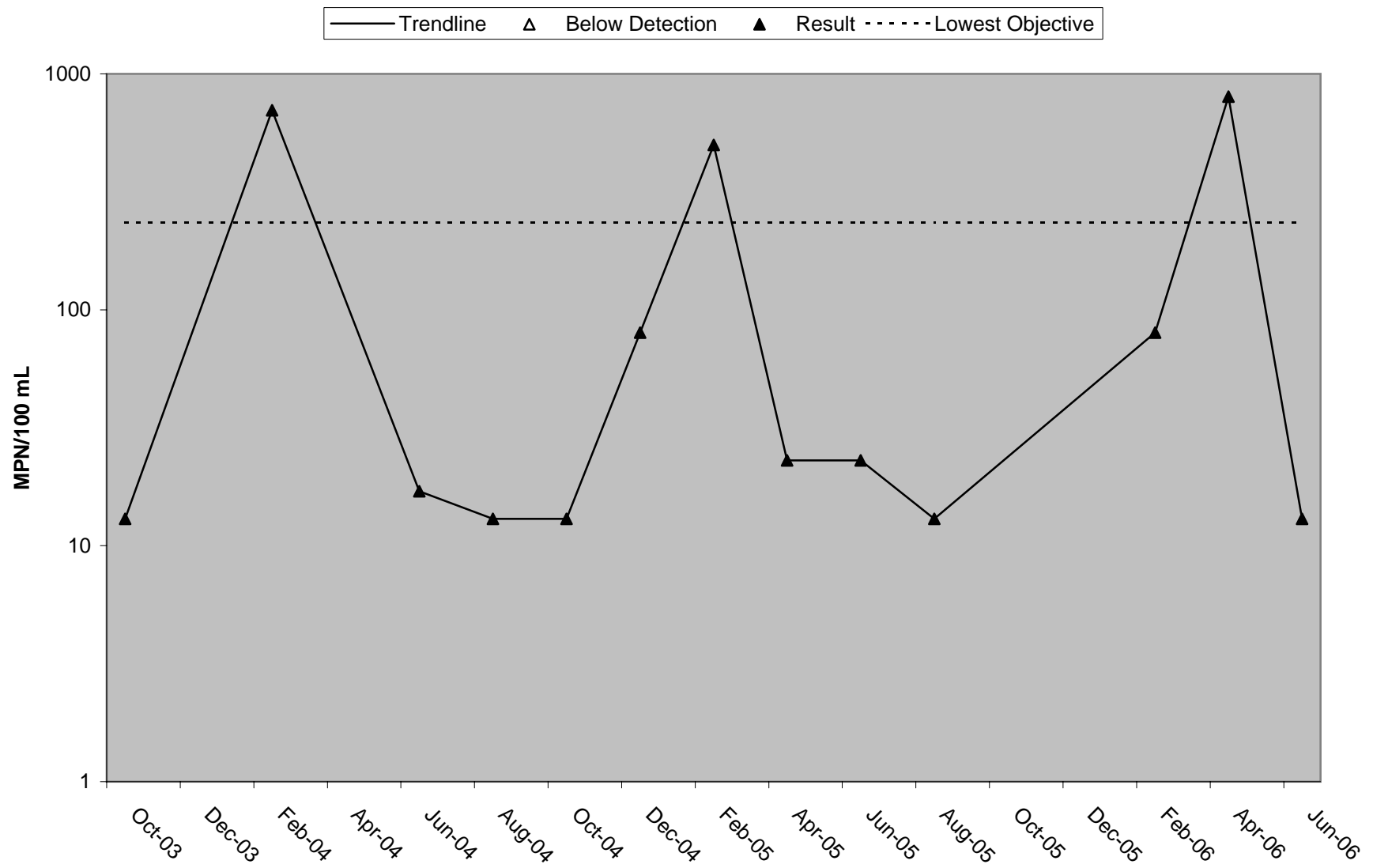
### River Mile 44 Total Phosphorus (TP)



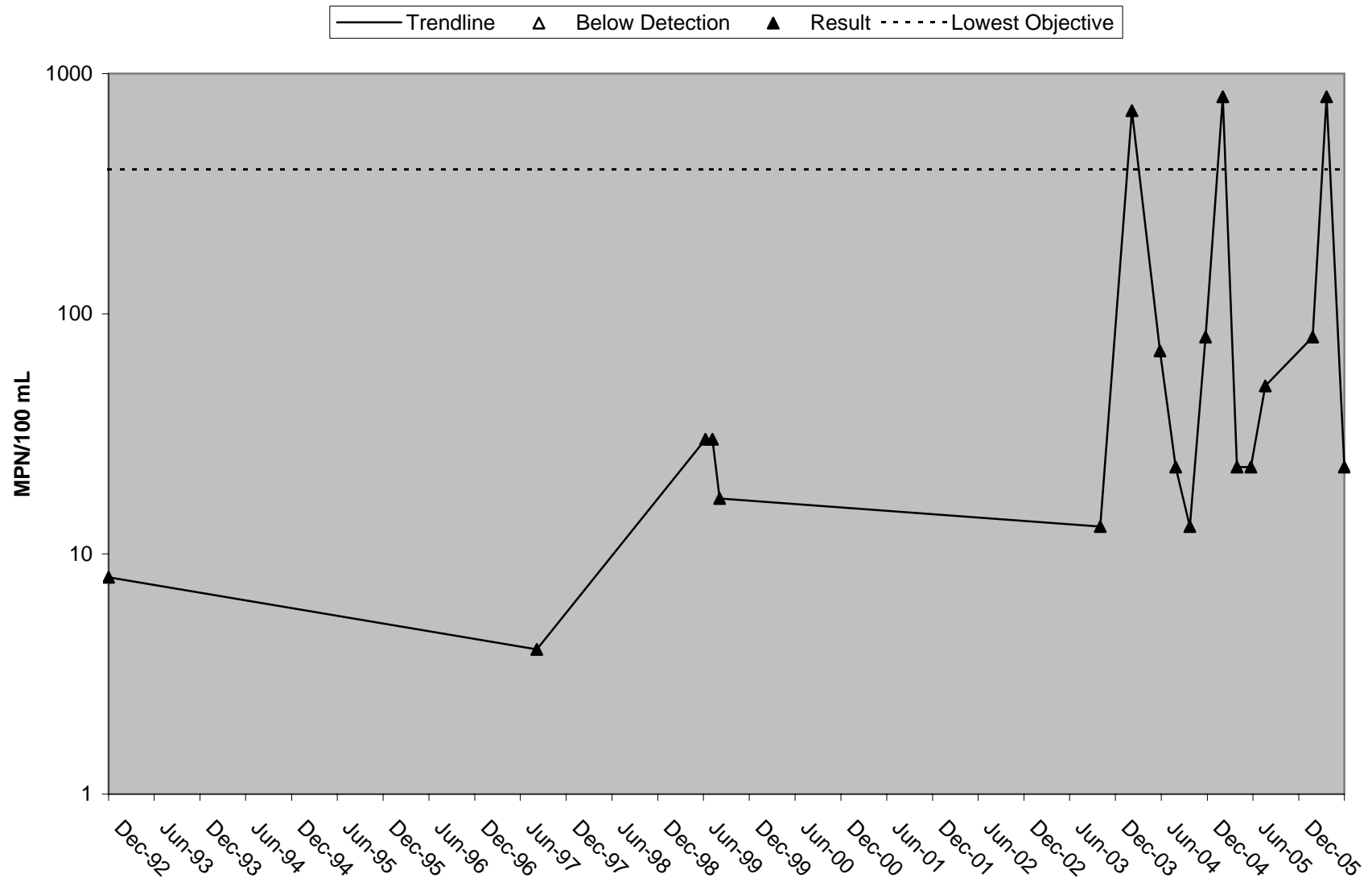
### River Mile 44 Total Kjeldahl Nitrogen (TKN)



### River Mile 44 *E. Coli*

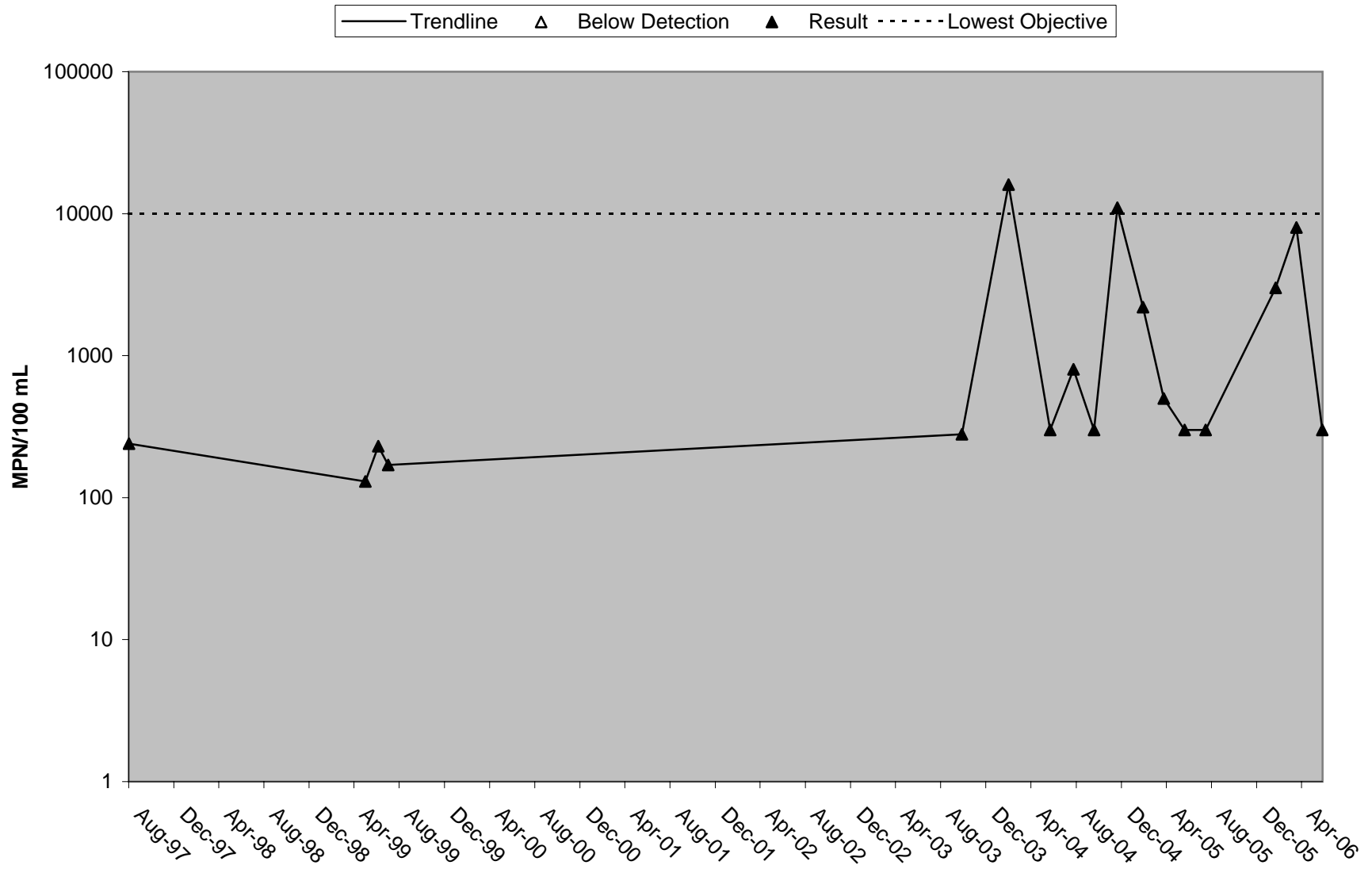


# River Mile 44 Fecal Coliform

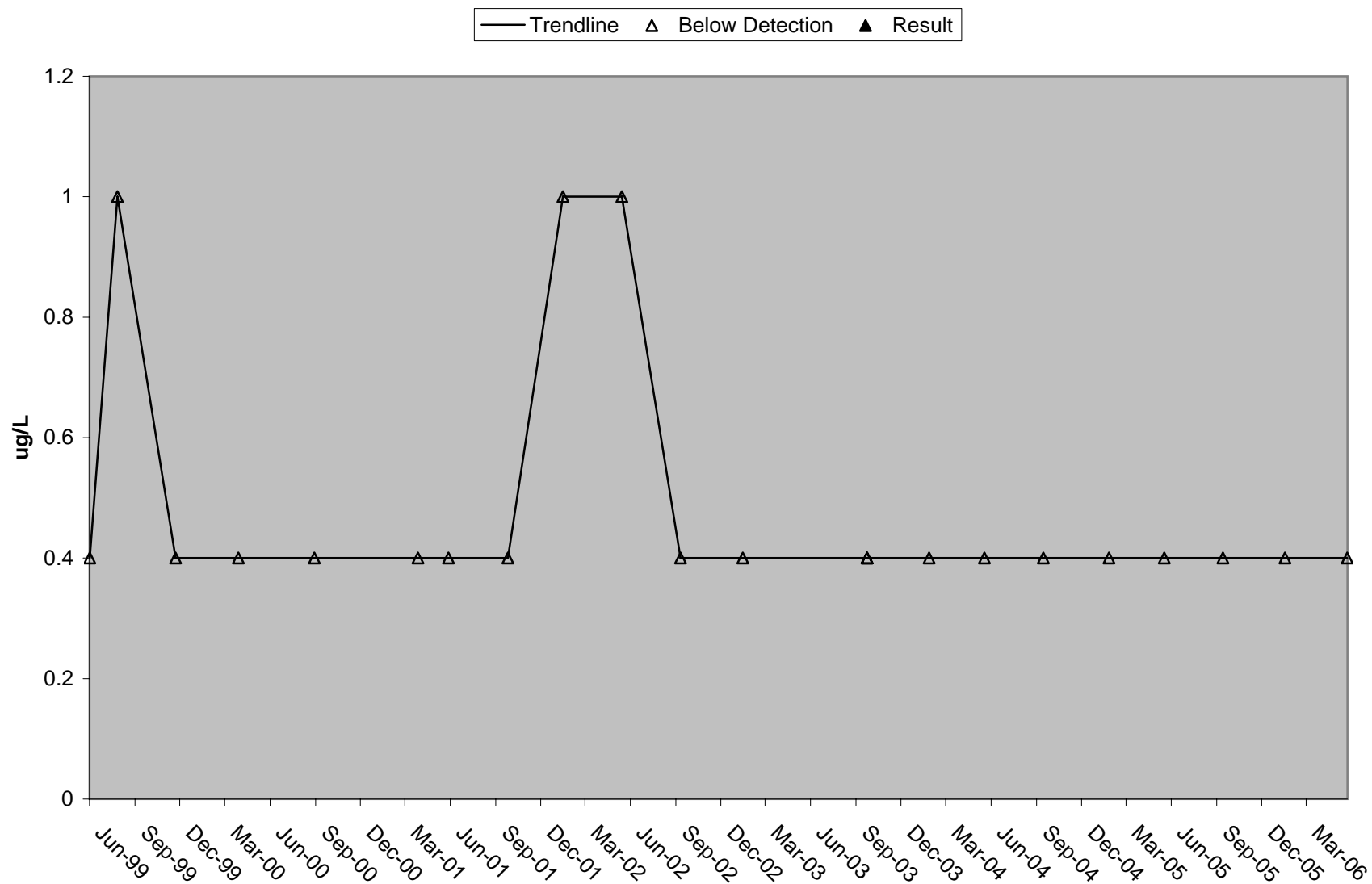




# River Mile 44 Total Coliform

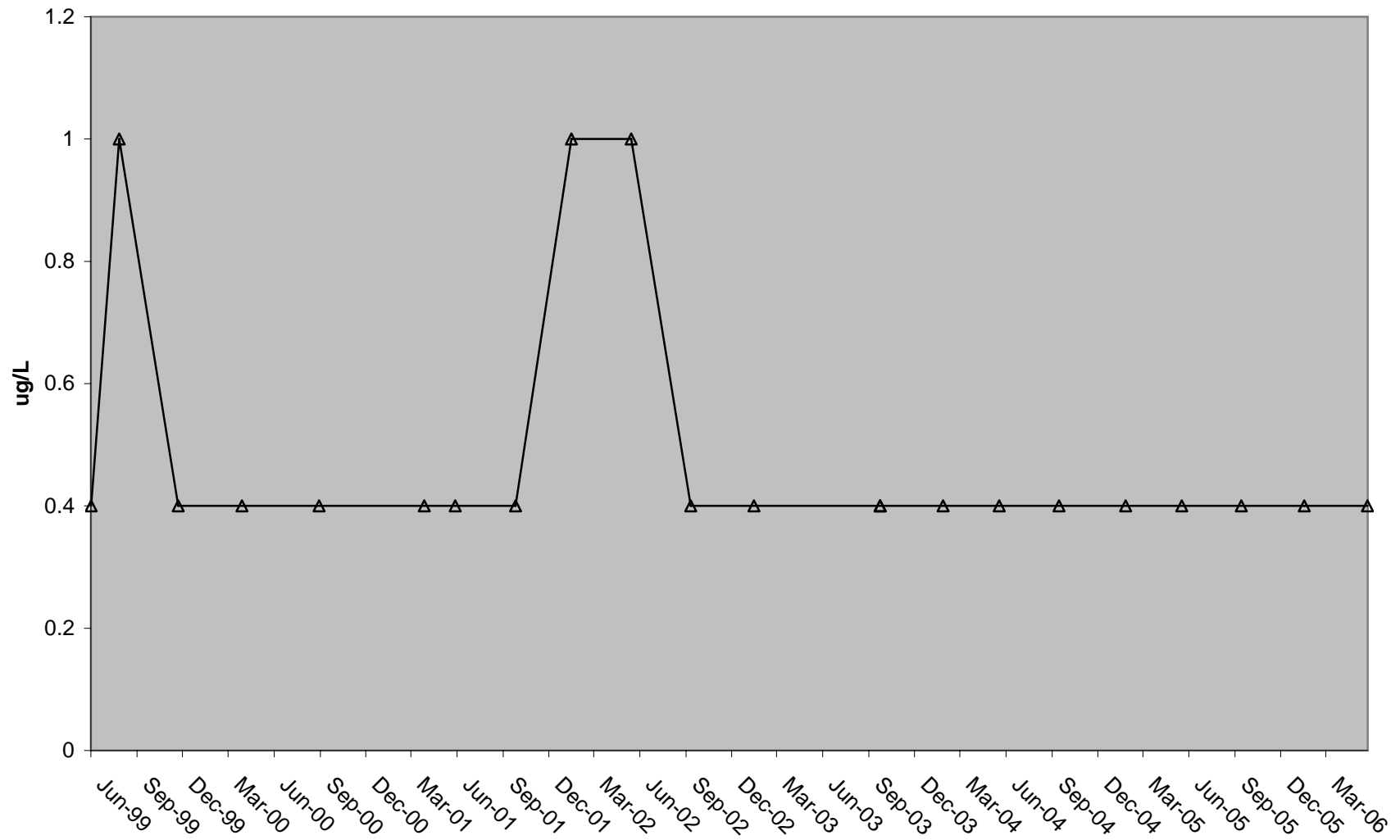


### River Mile 44 Bridge Aldicarb

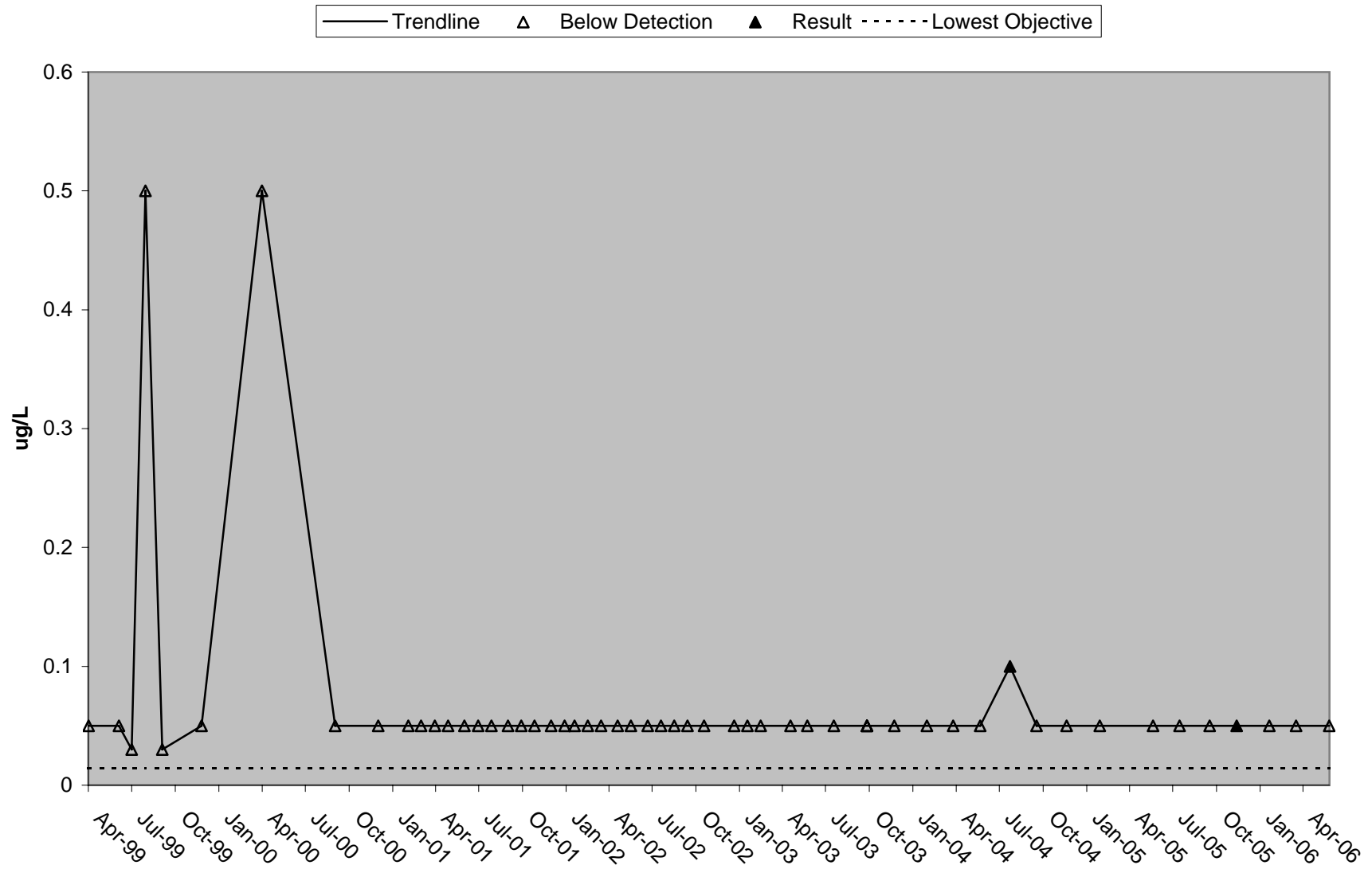


# River Mile 44 Bridge Propoxur

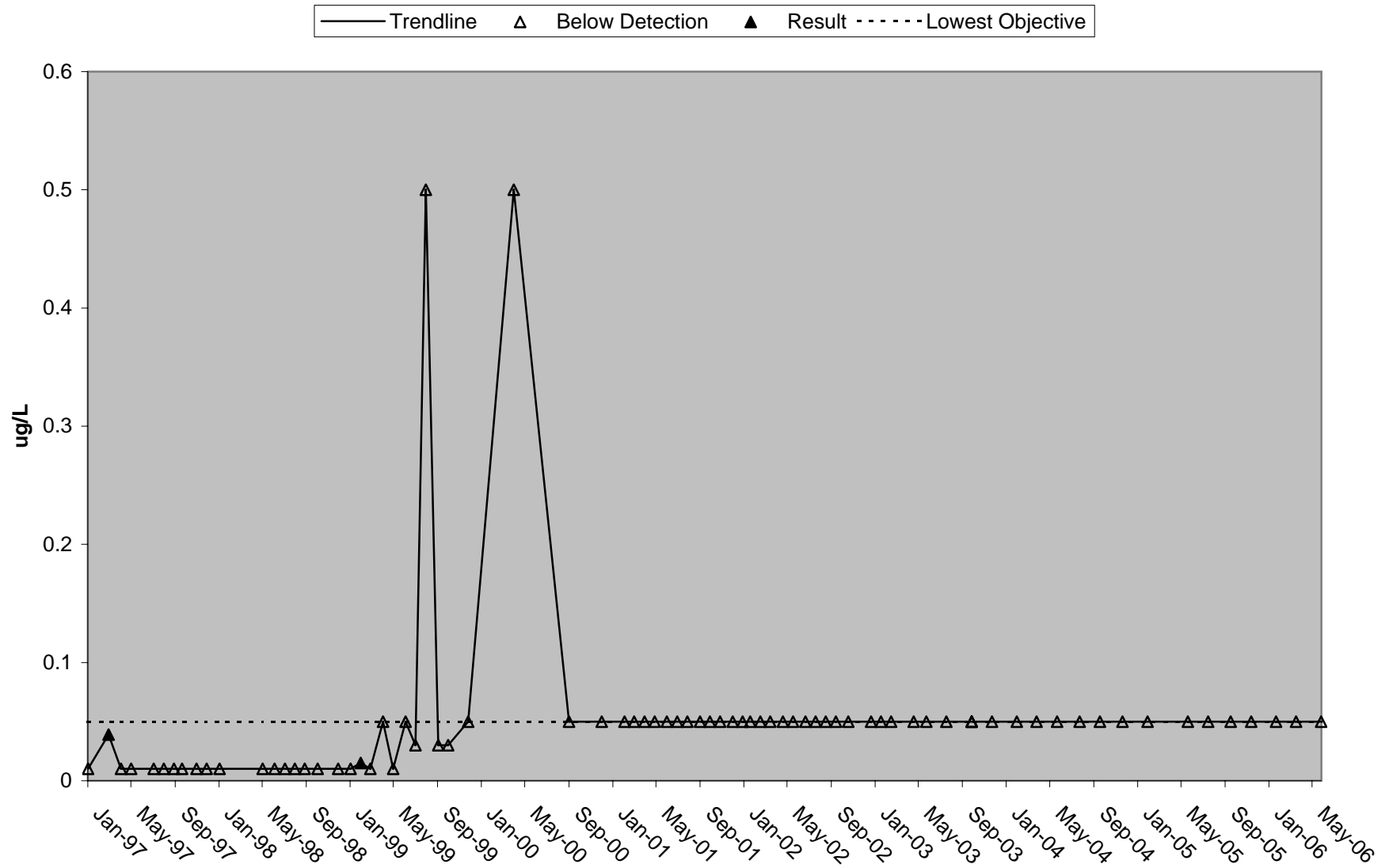
— Trendline    △ Below Detection    ▲ Result



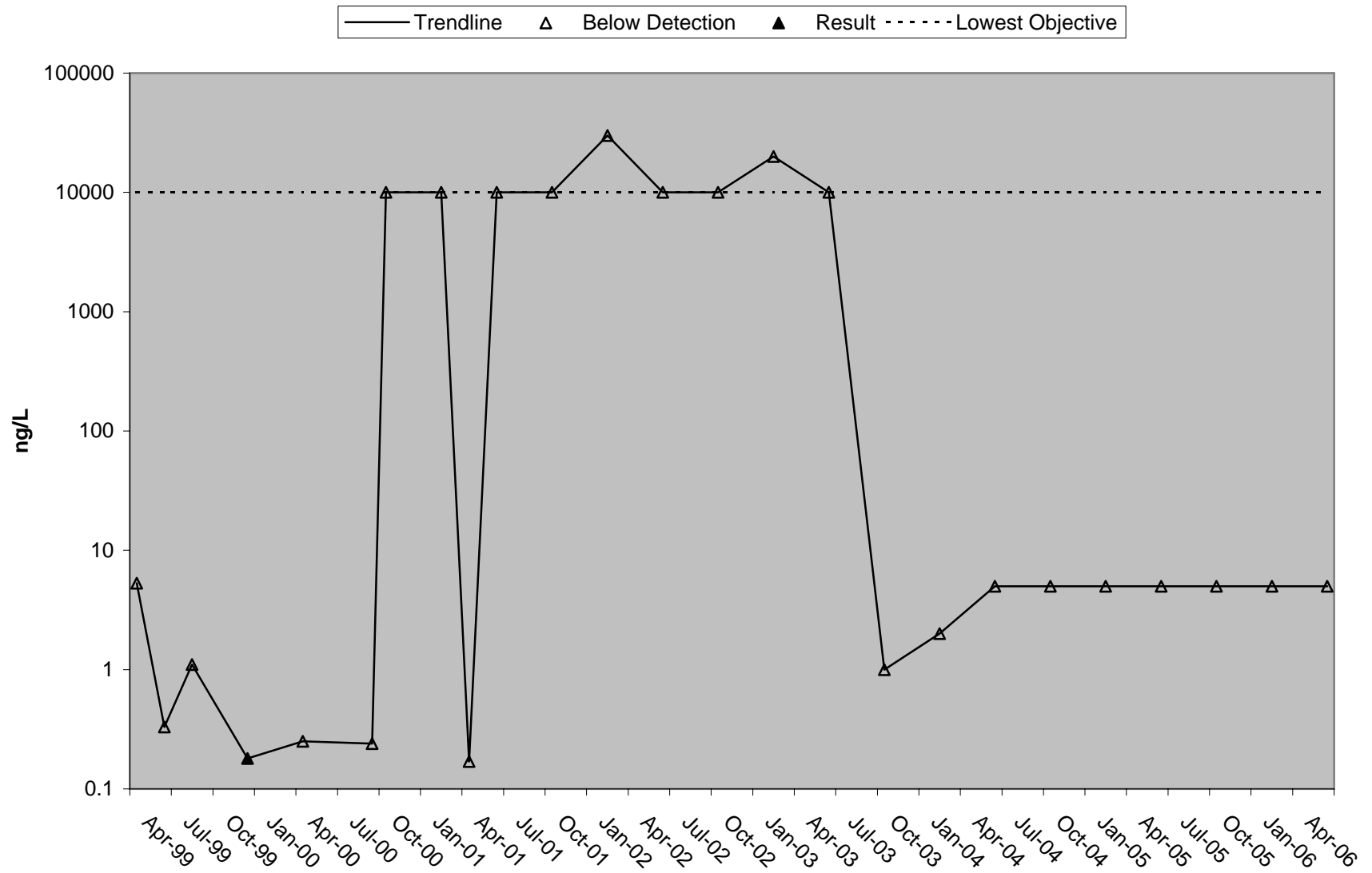
# River Mile 44 Bridge Chlorpyrifos



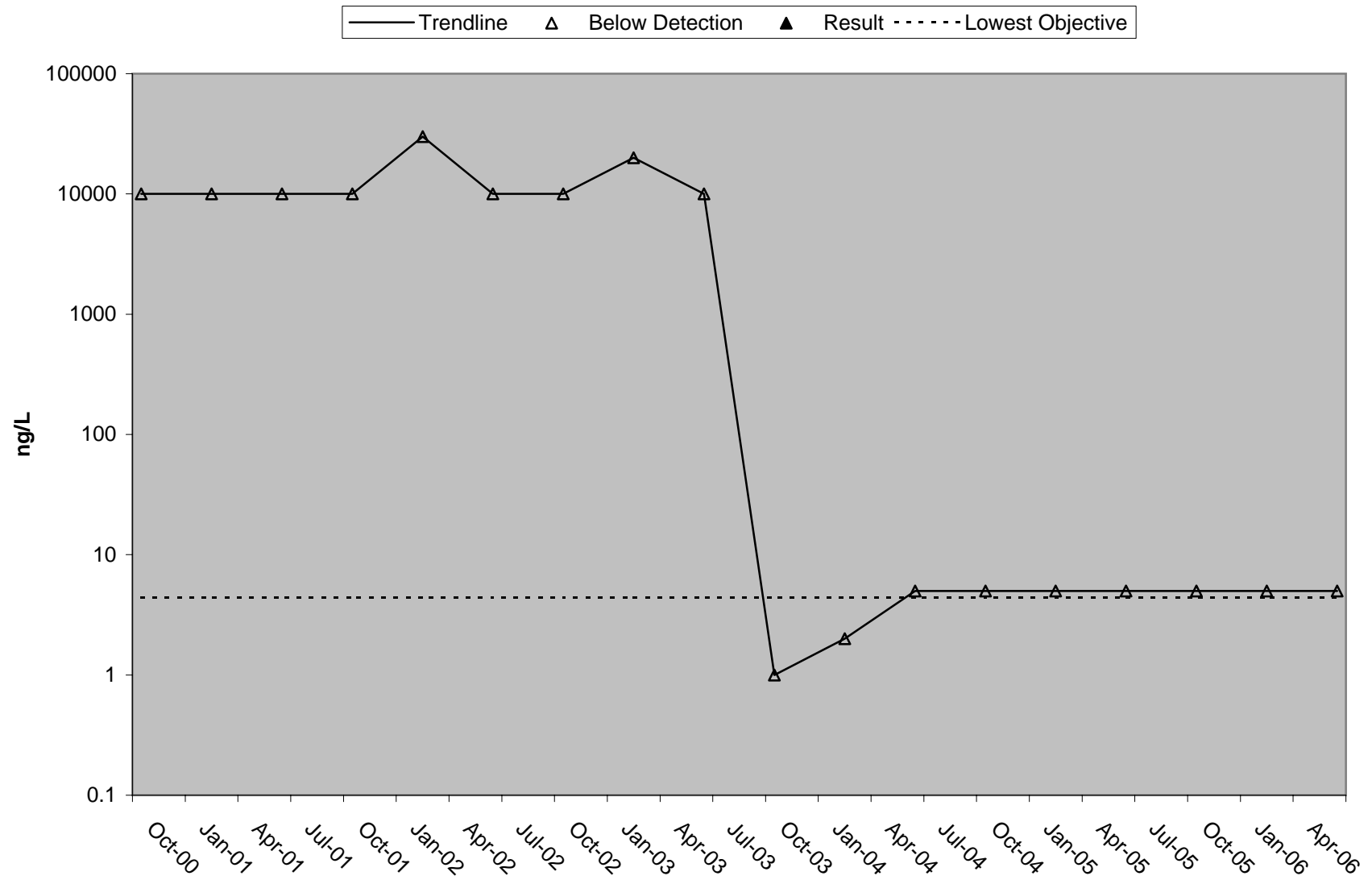
# River Mile 44 Bridge Diazinon



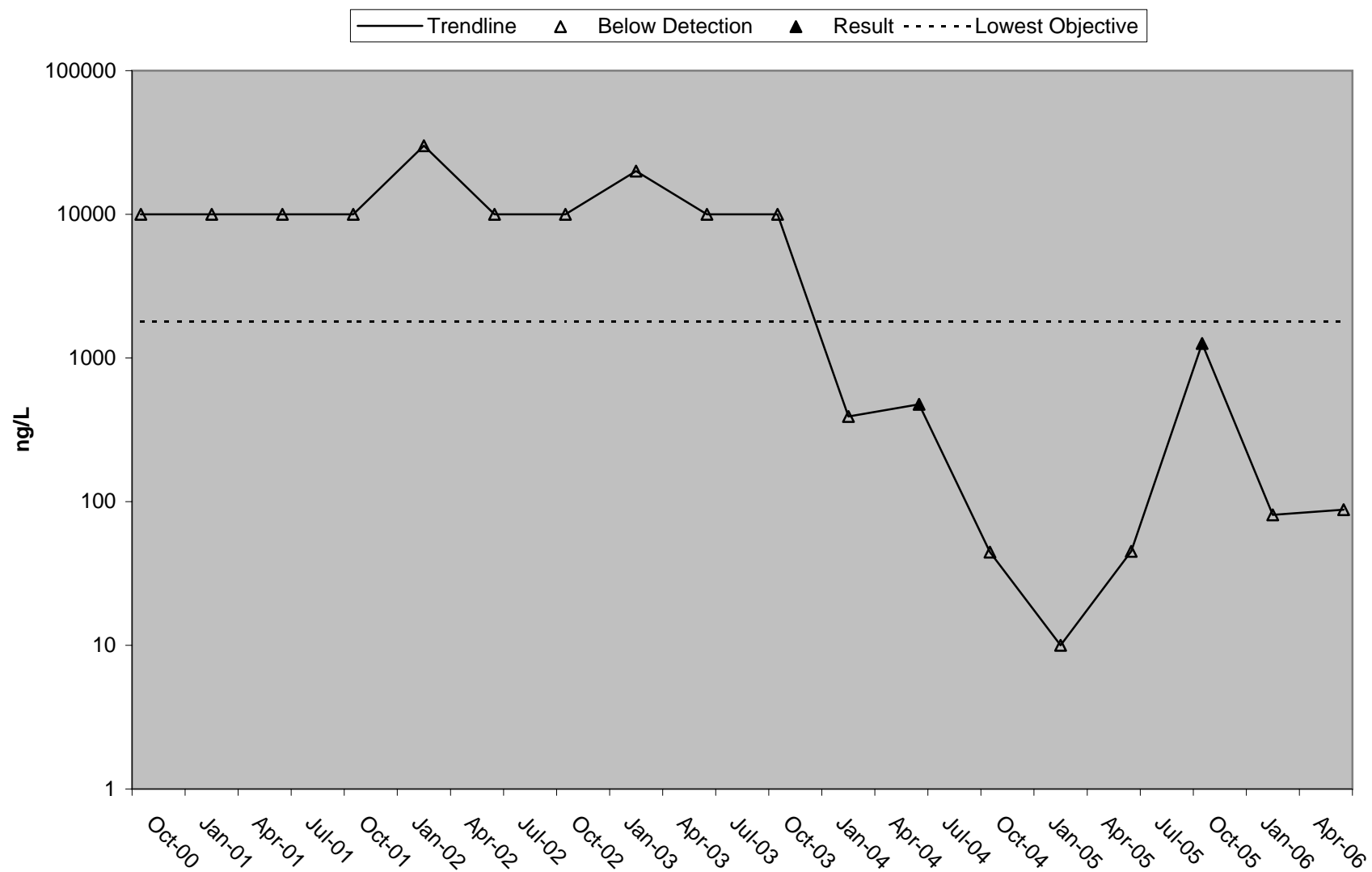
# River Mile 44 Anthracene



# River Mile 44 Benzo(k)fluoranthene

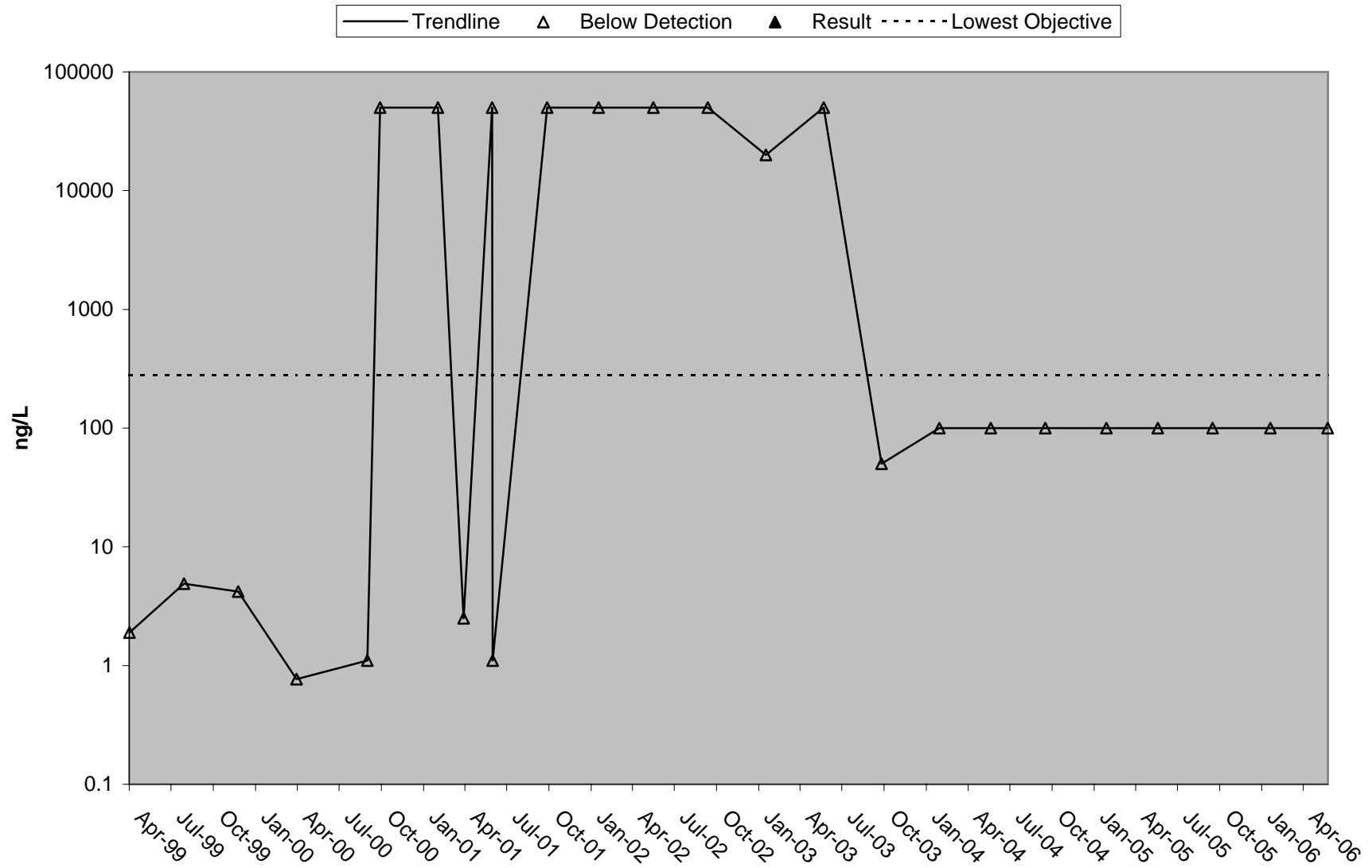


# River Mile 44 Bis(2-ethylhexyl)phthalate

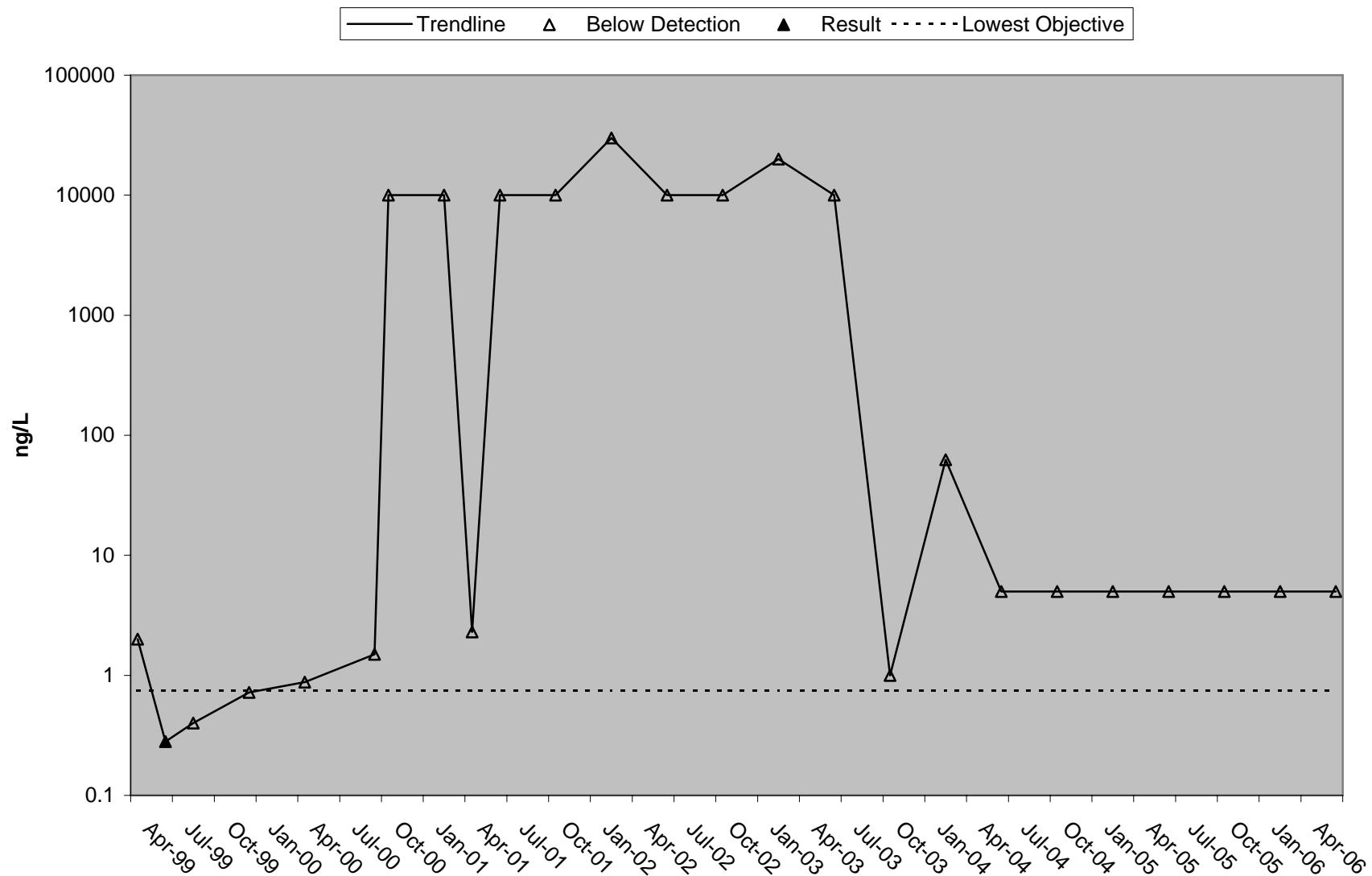




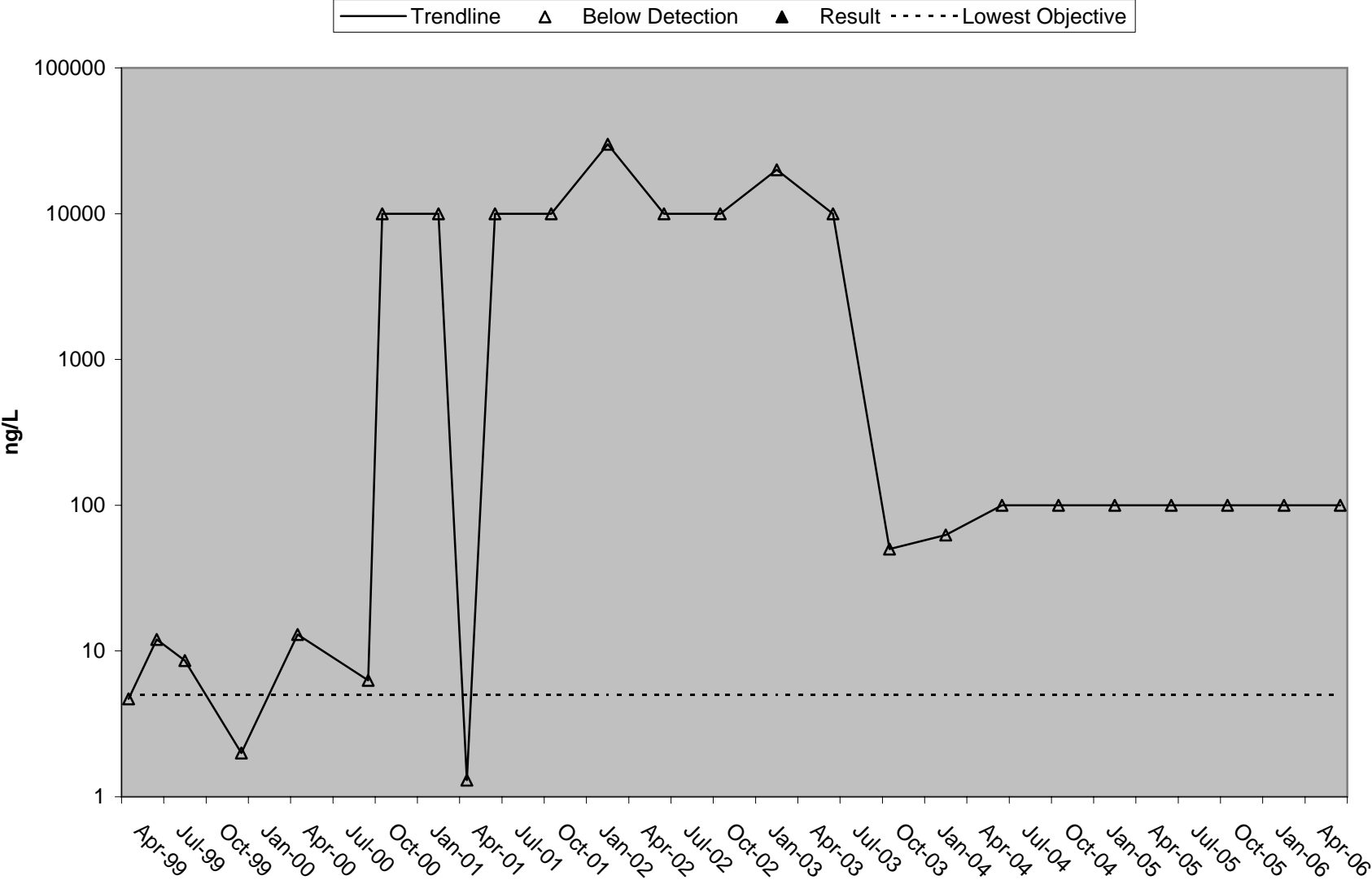
# River Mile 44 Pentachlorophenol



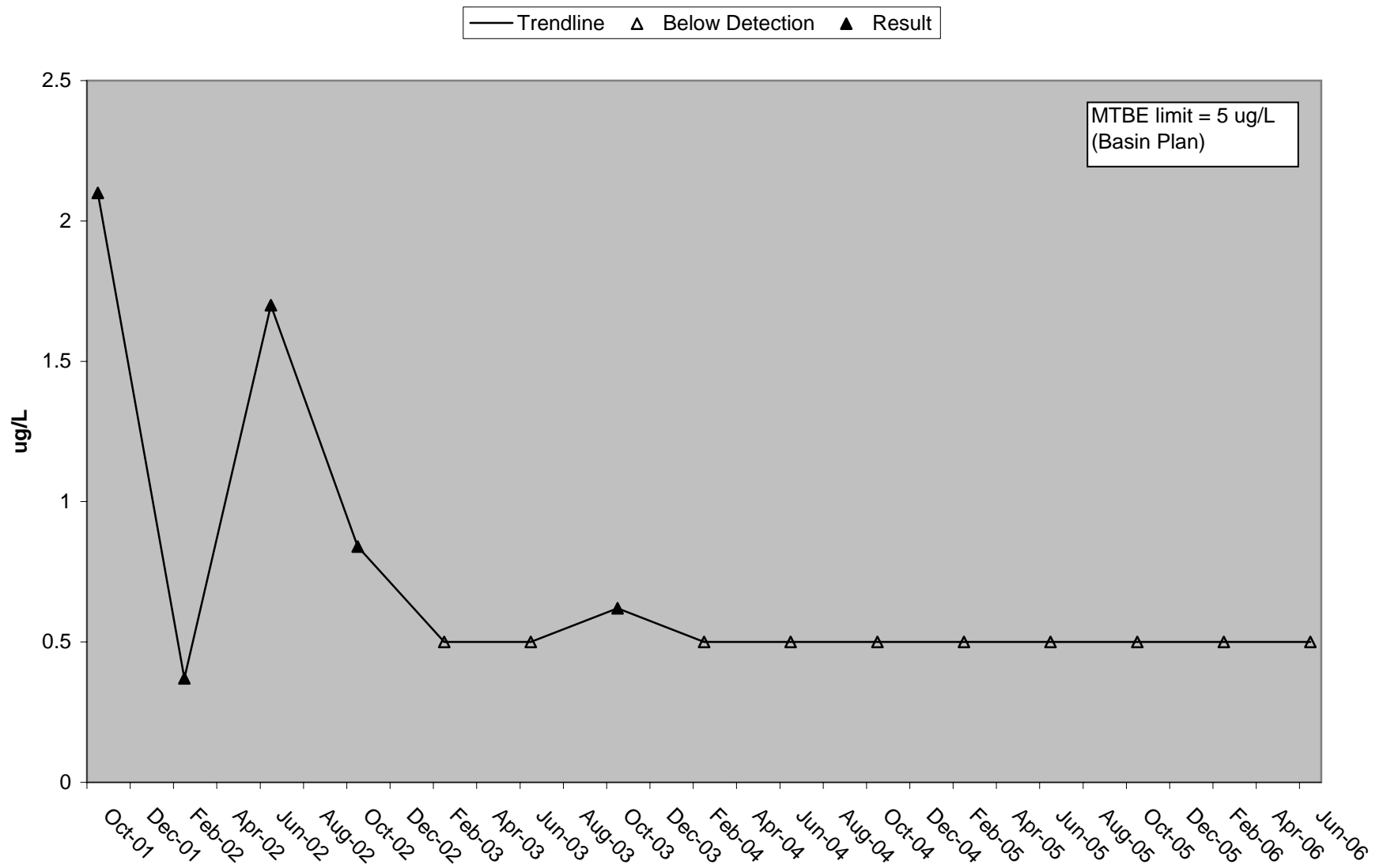
# River Mile 44 Hexachlorobenzene



River Mile 44 N-Nitrosodi-N-Propylamine



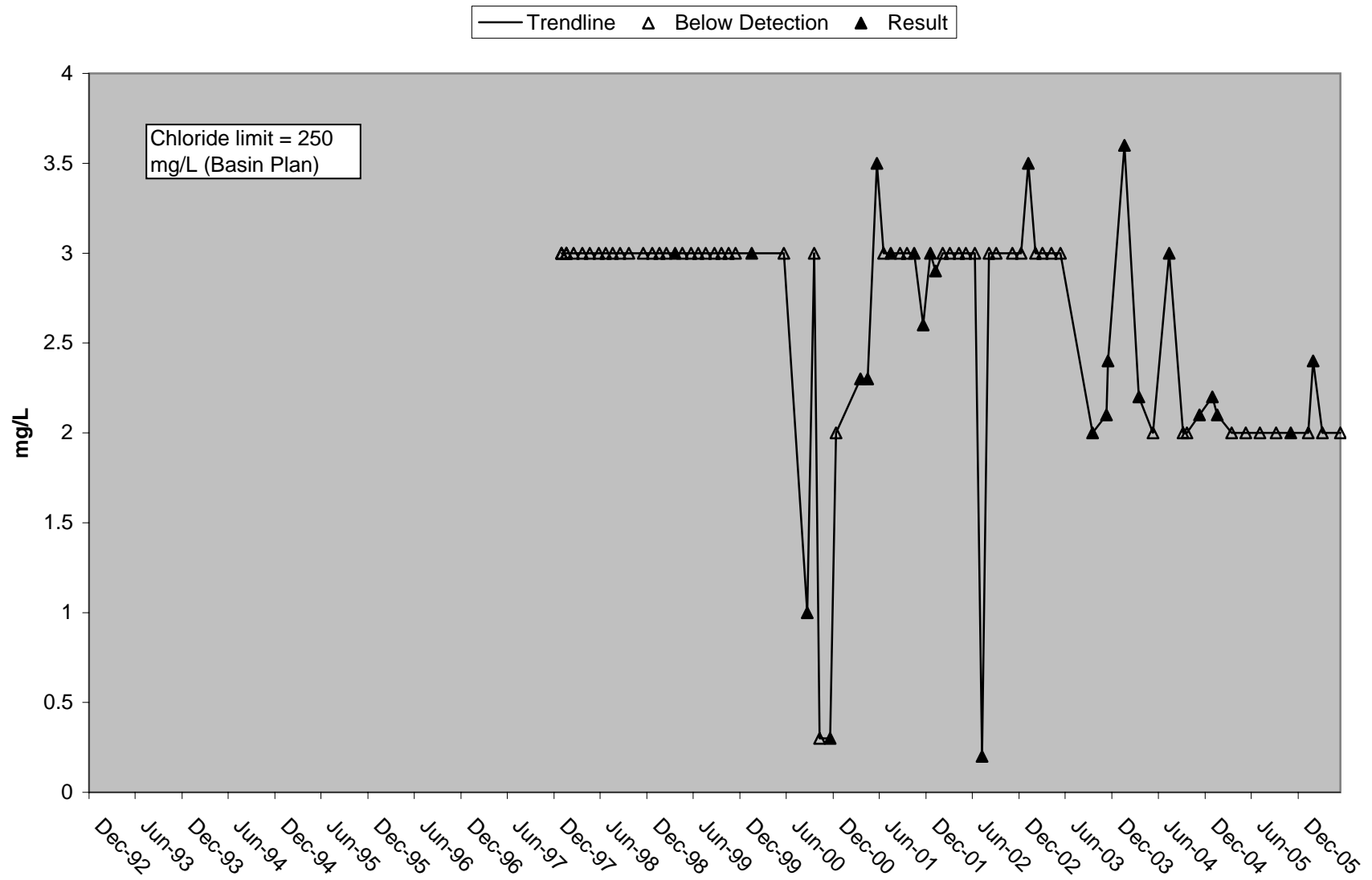
# River Mile 44 MTBE



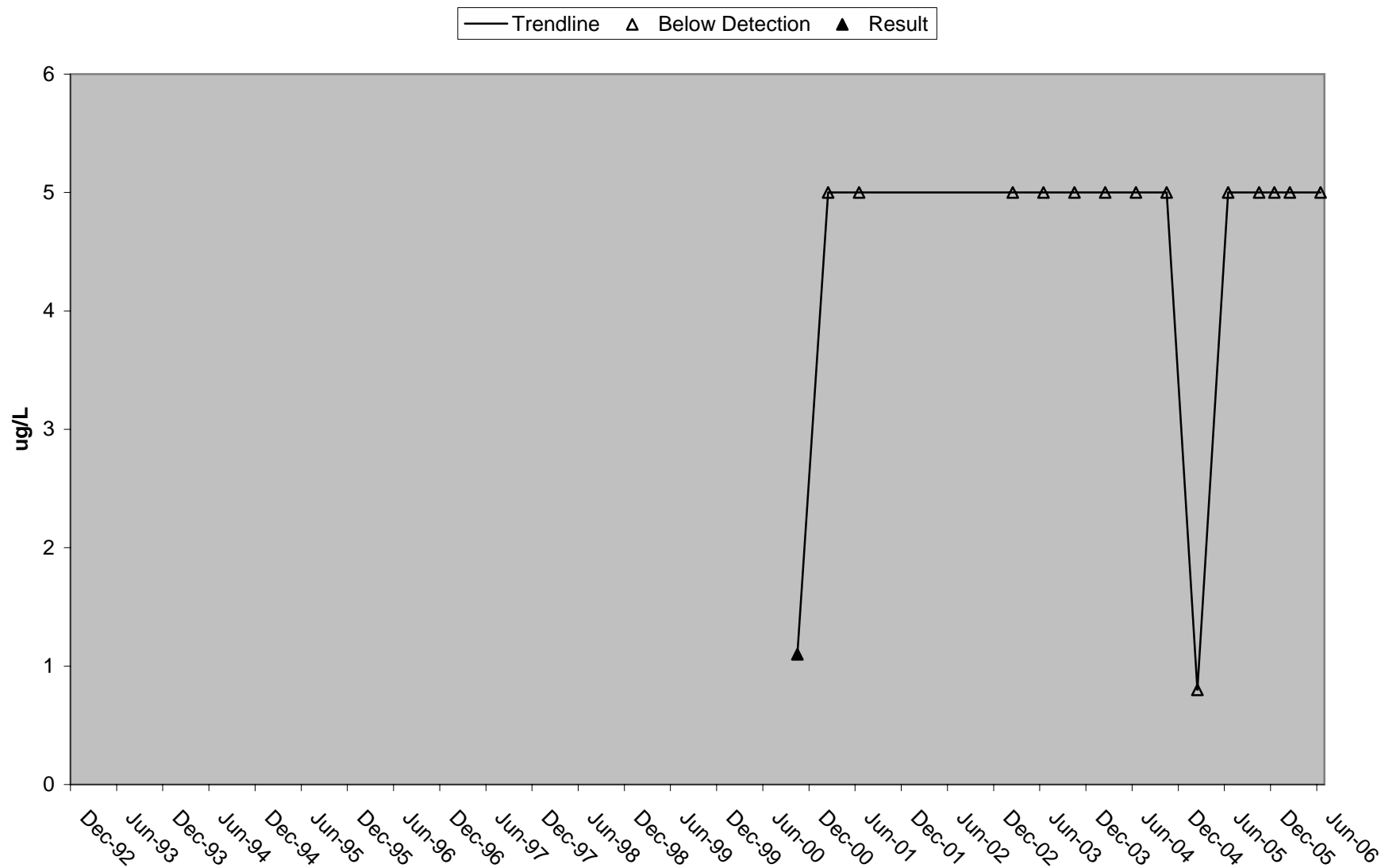
## *APPENDIX C-4*

### *American River at Nimbus*

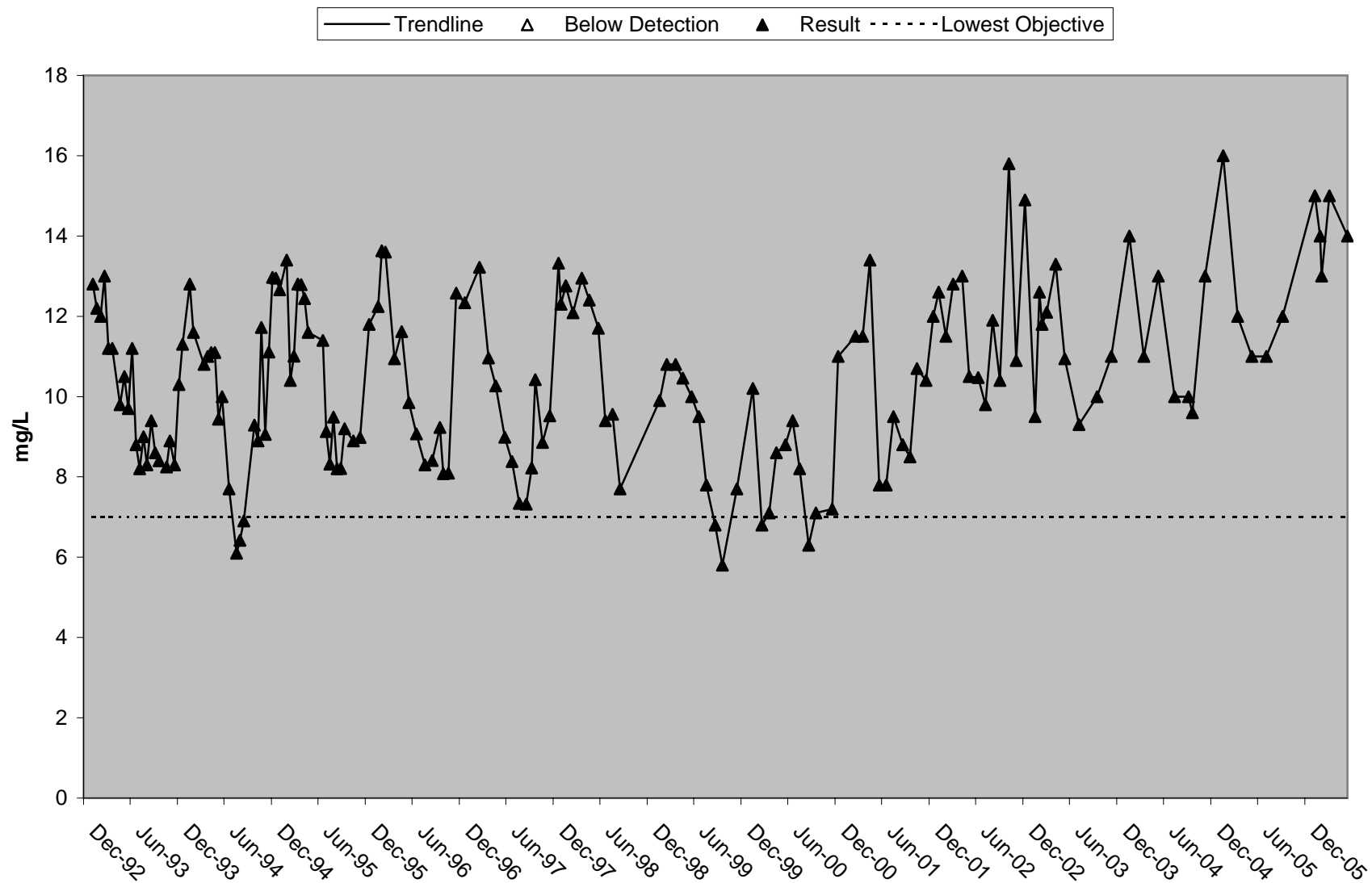
# Nimbus Chloride



# Nimbus Cyanide

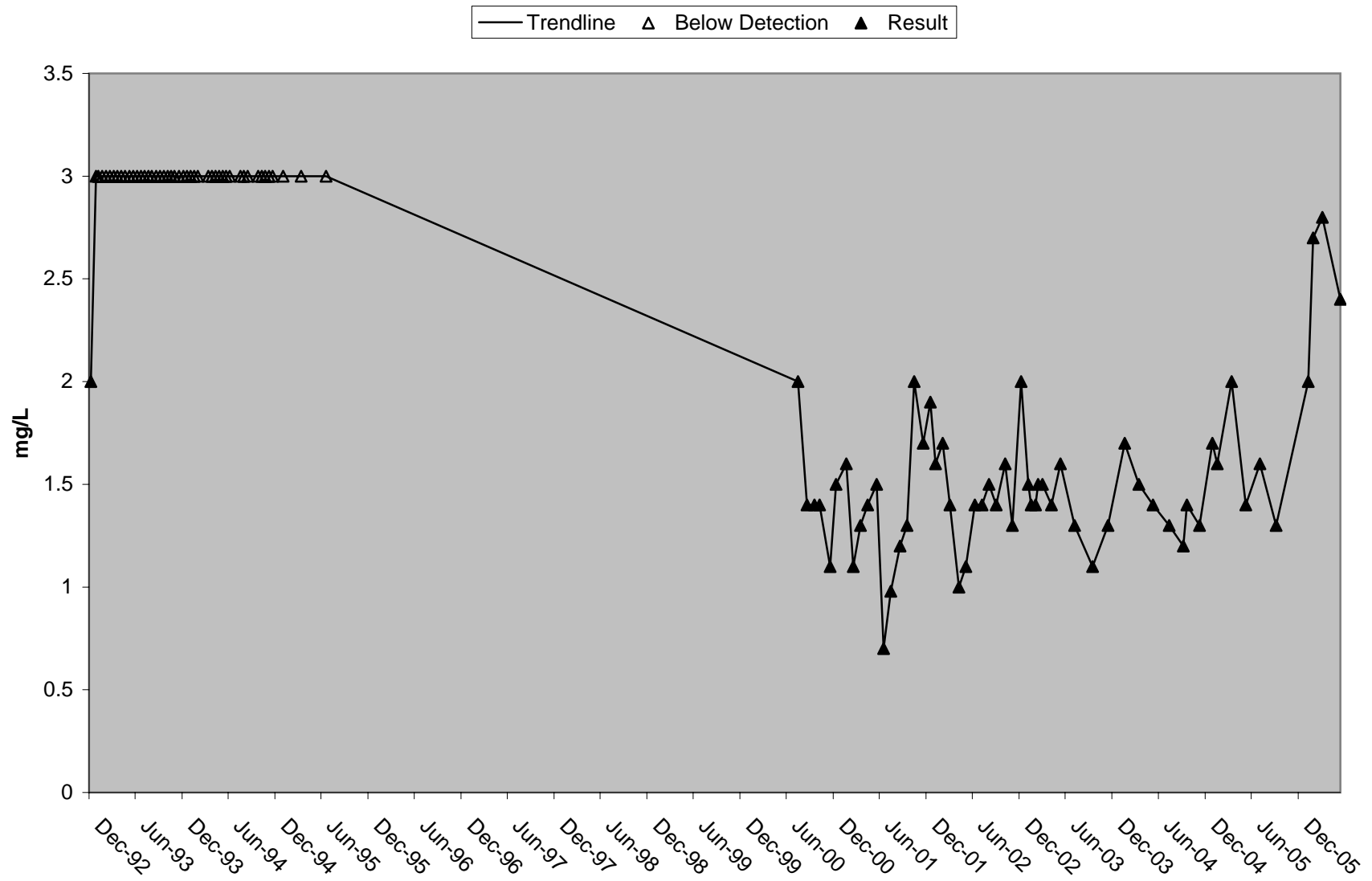


## Nimbus Dissolved Oxygen (DO)

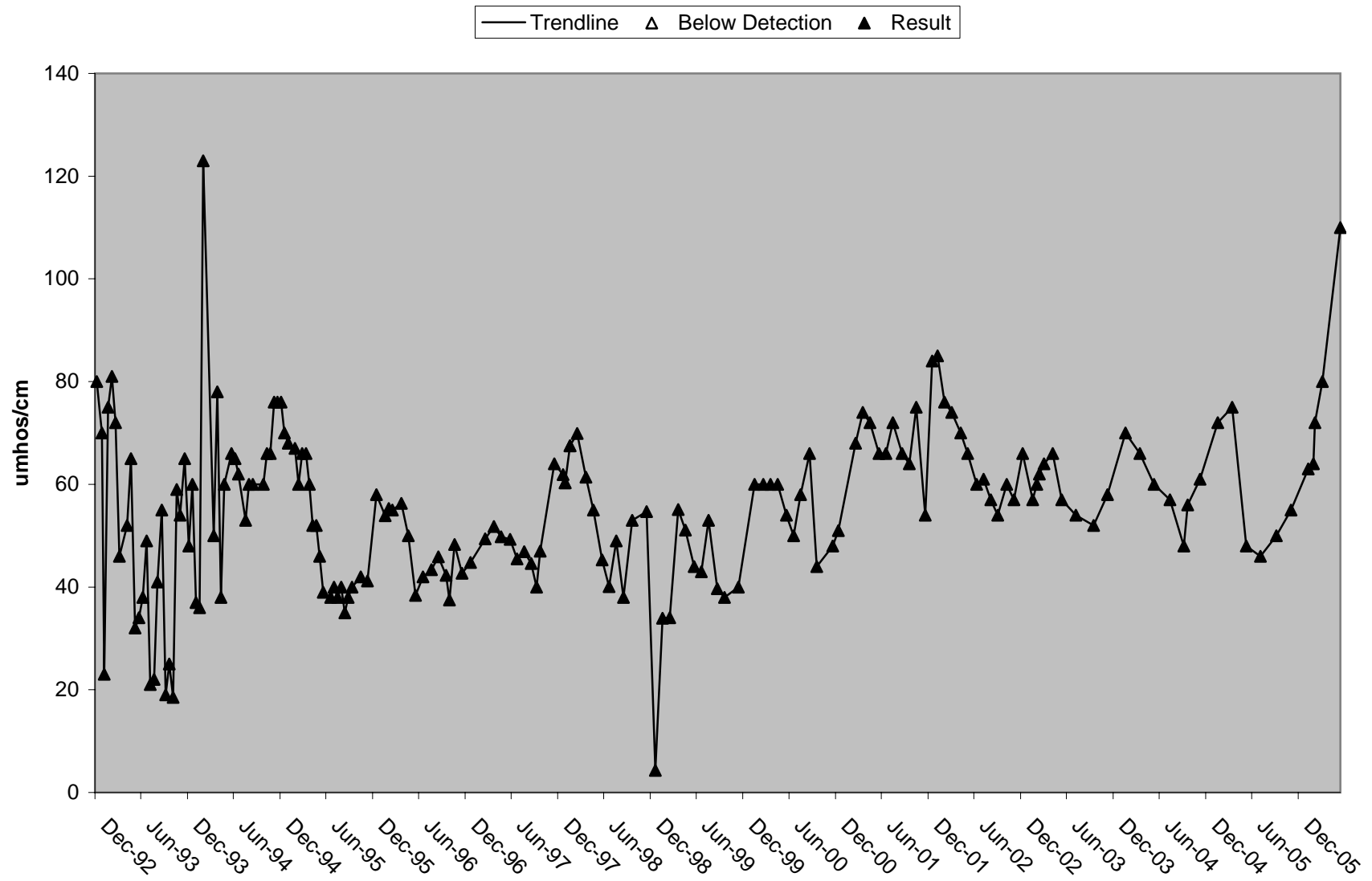




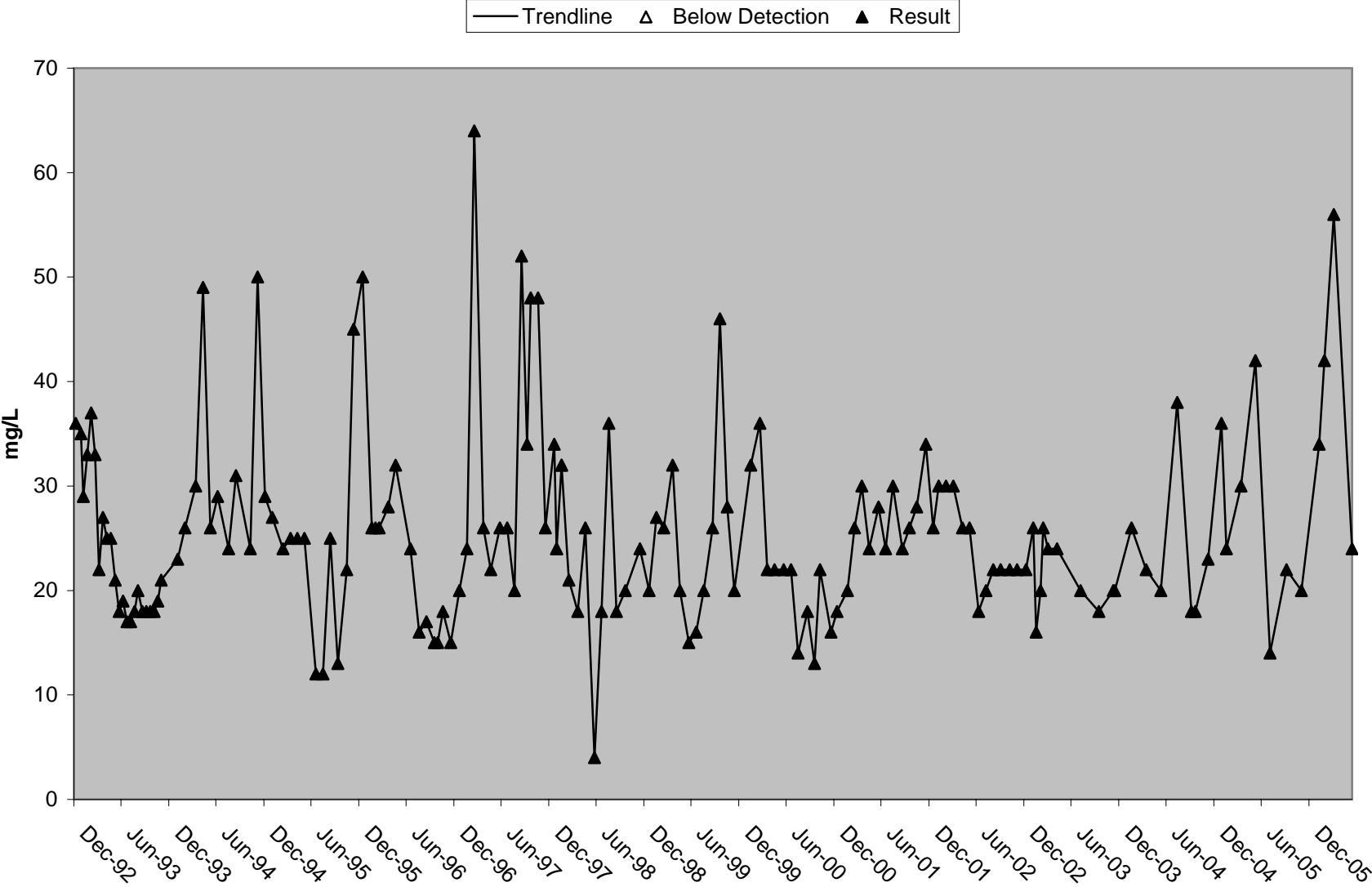
# Nimbus Dissolved Organic Carbon (DOC)



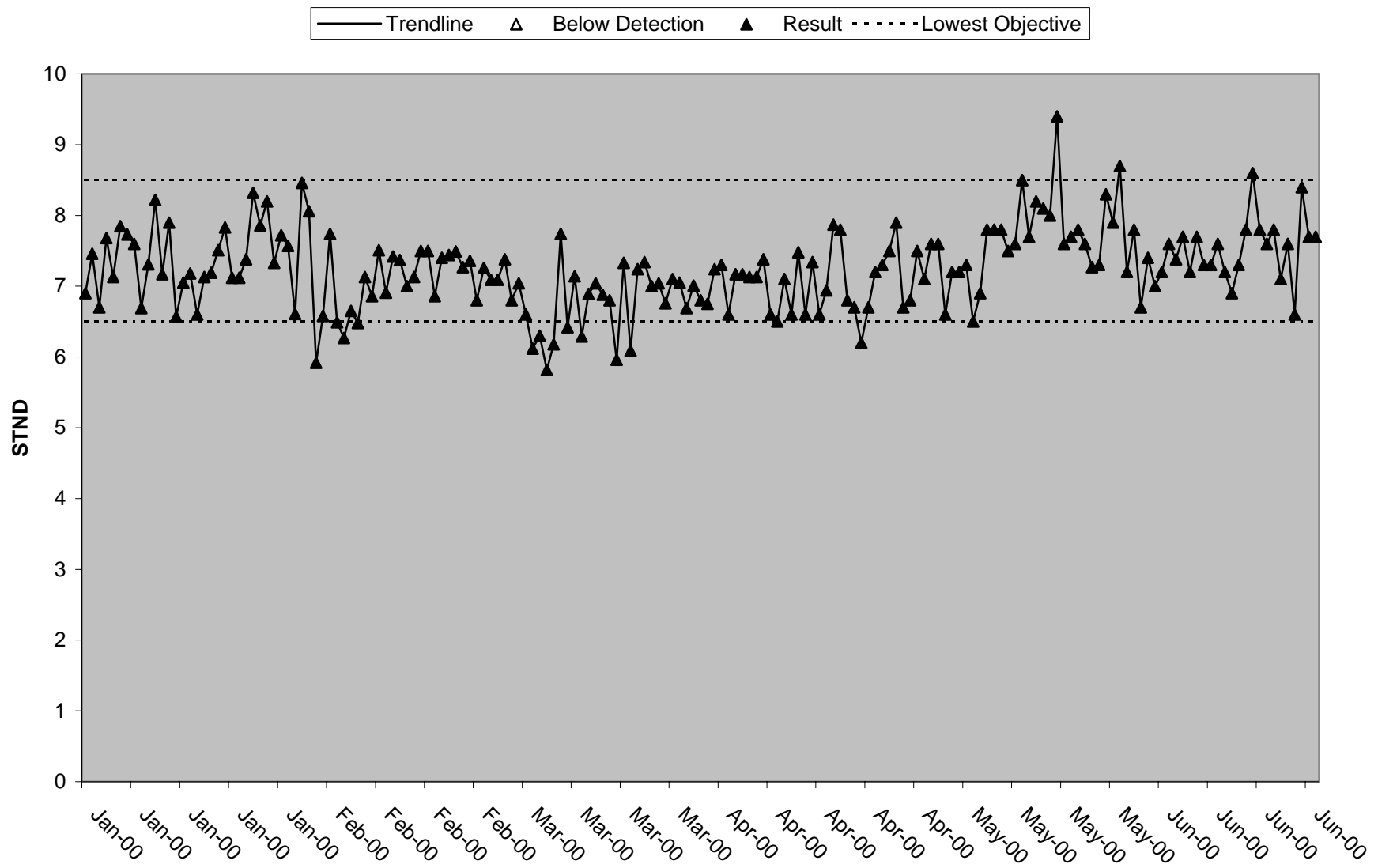
# Nimbus Electrical Conductivity (EC)



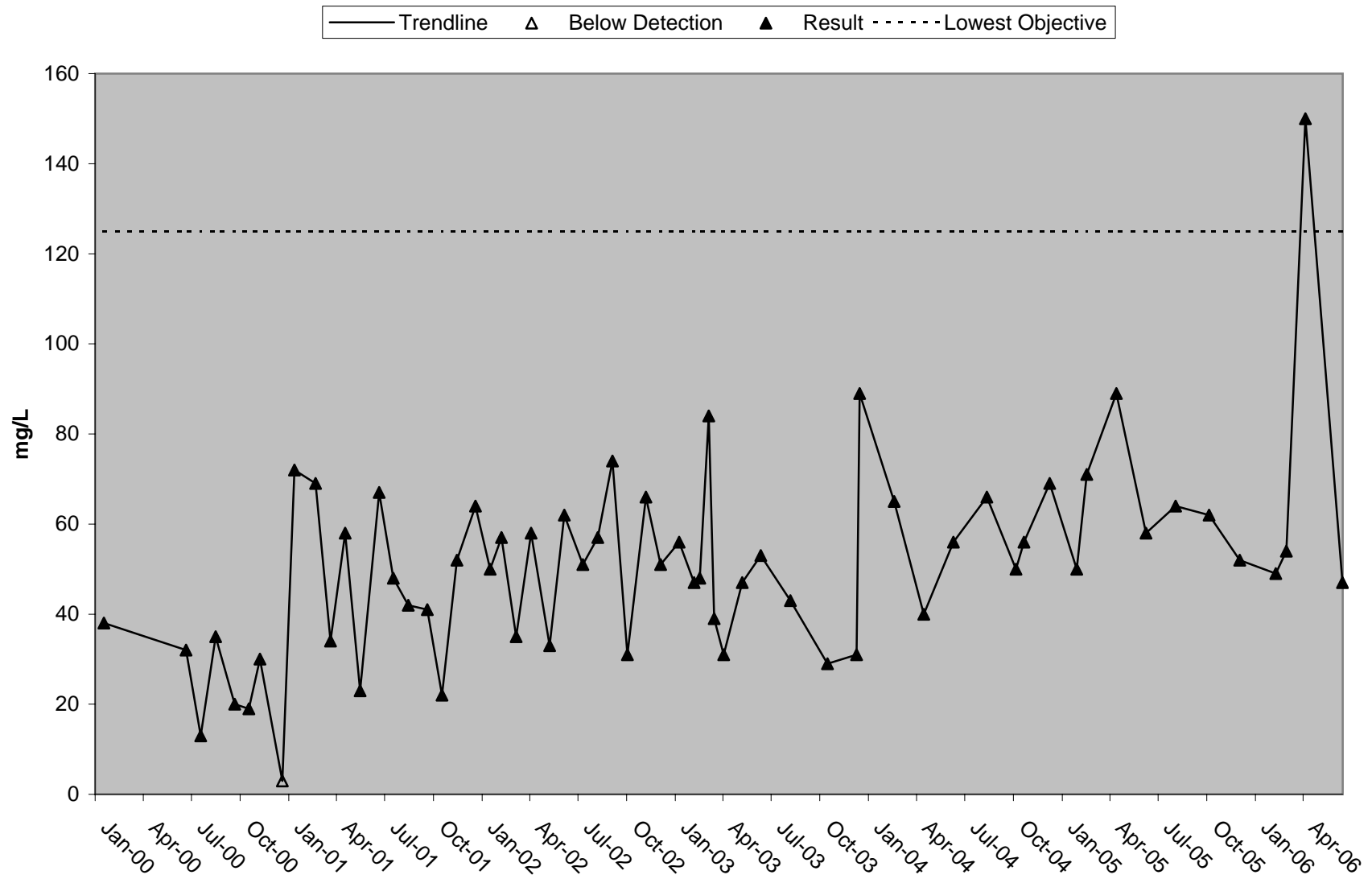
Nimbus Hardness



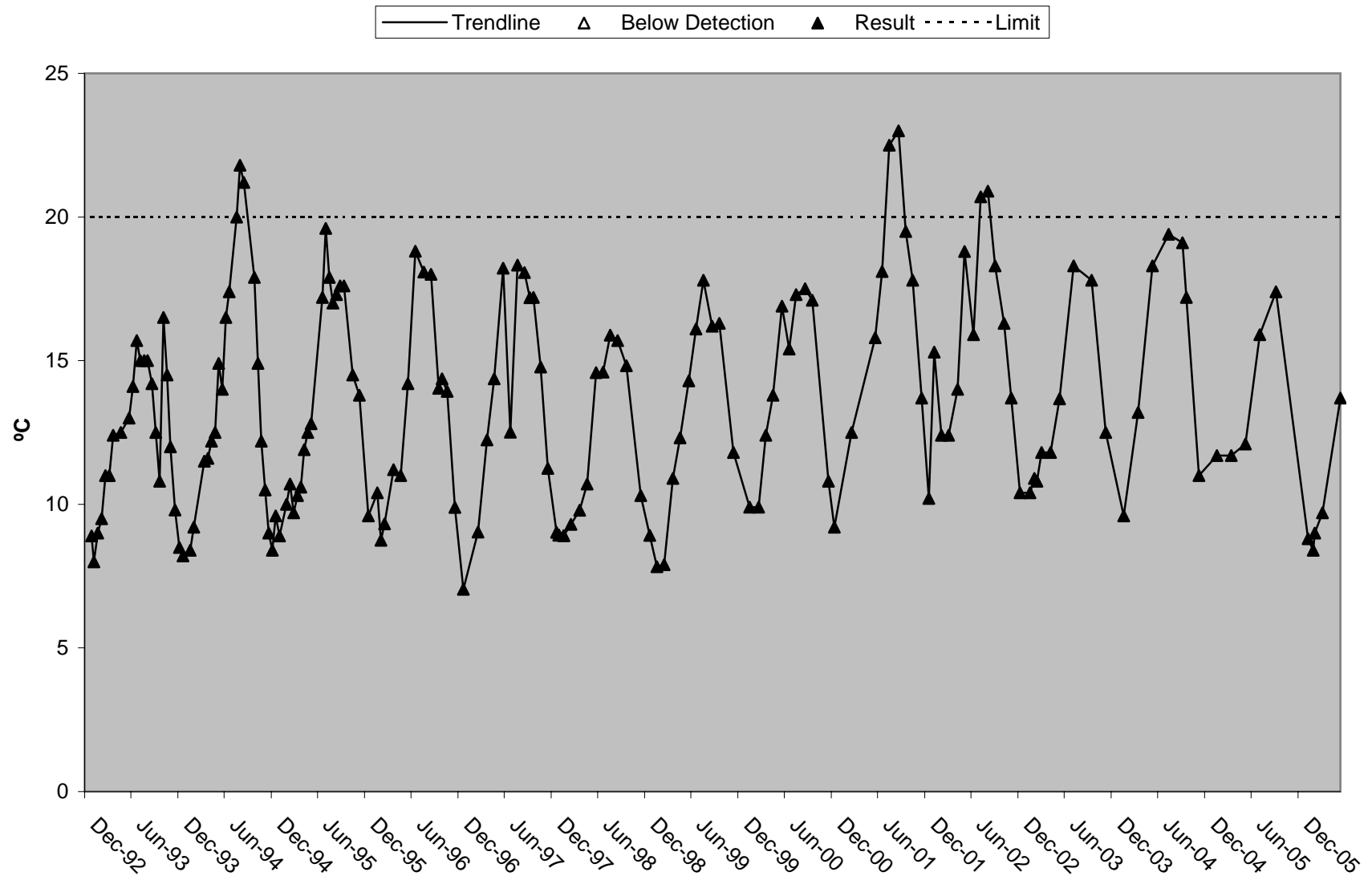
# Nimbus pH



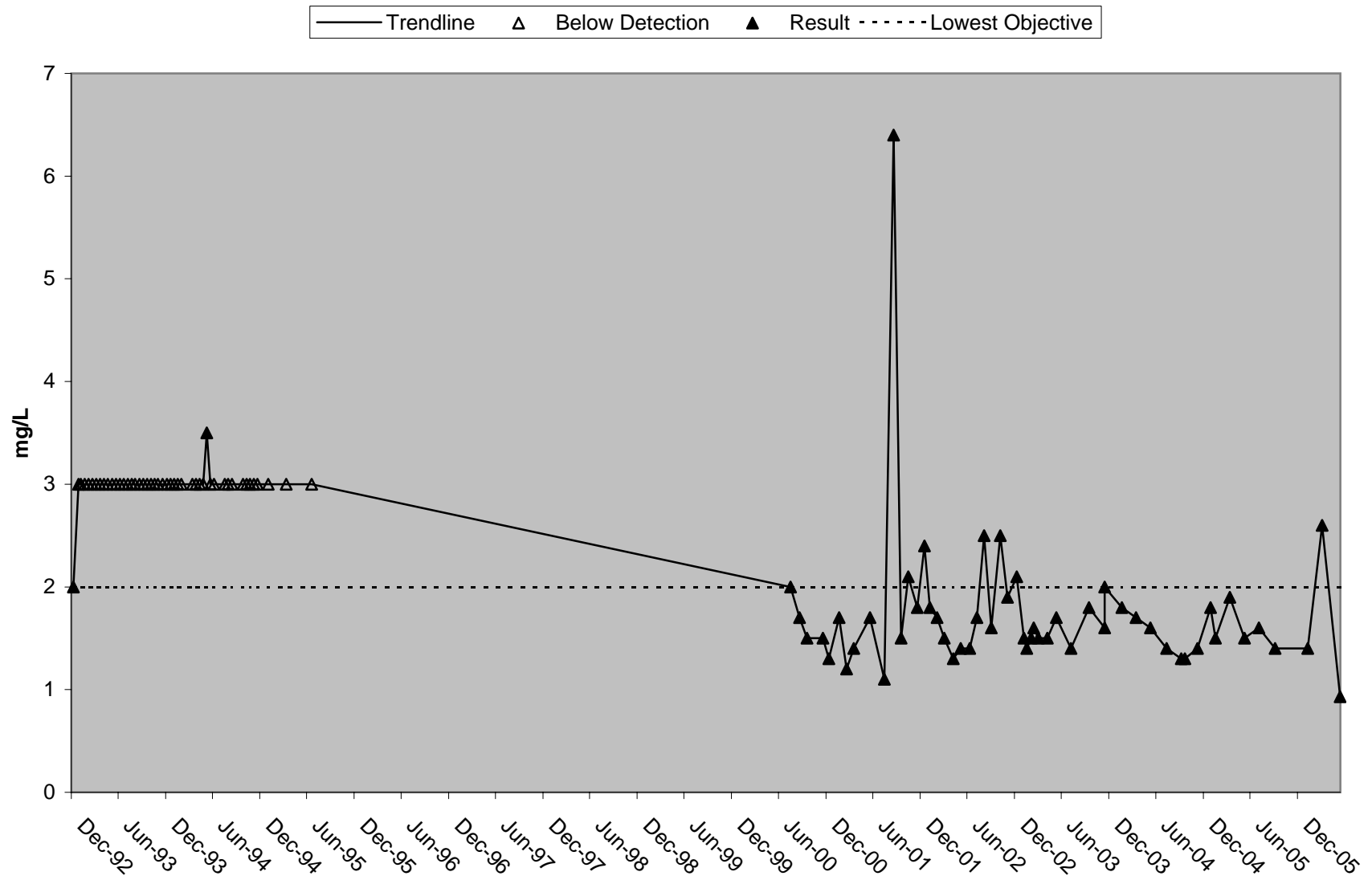
# Nimbus Total Dissolved Solids (TDS)



# Nimbus Water Temperature

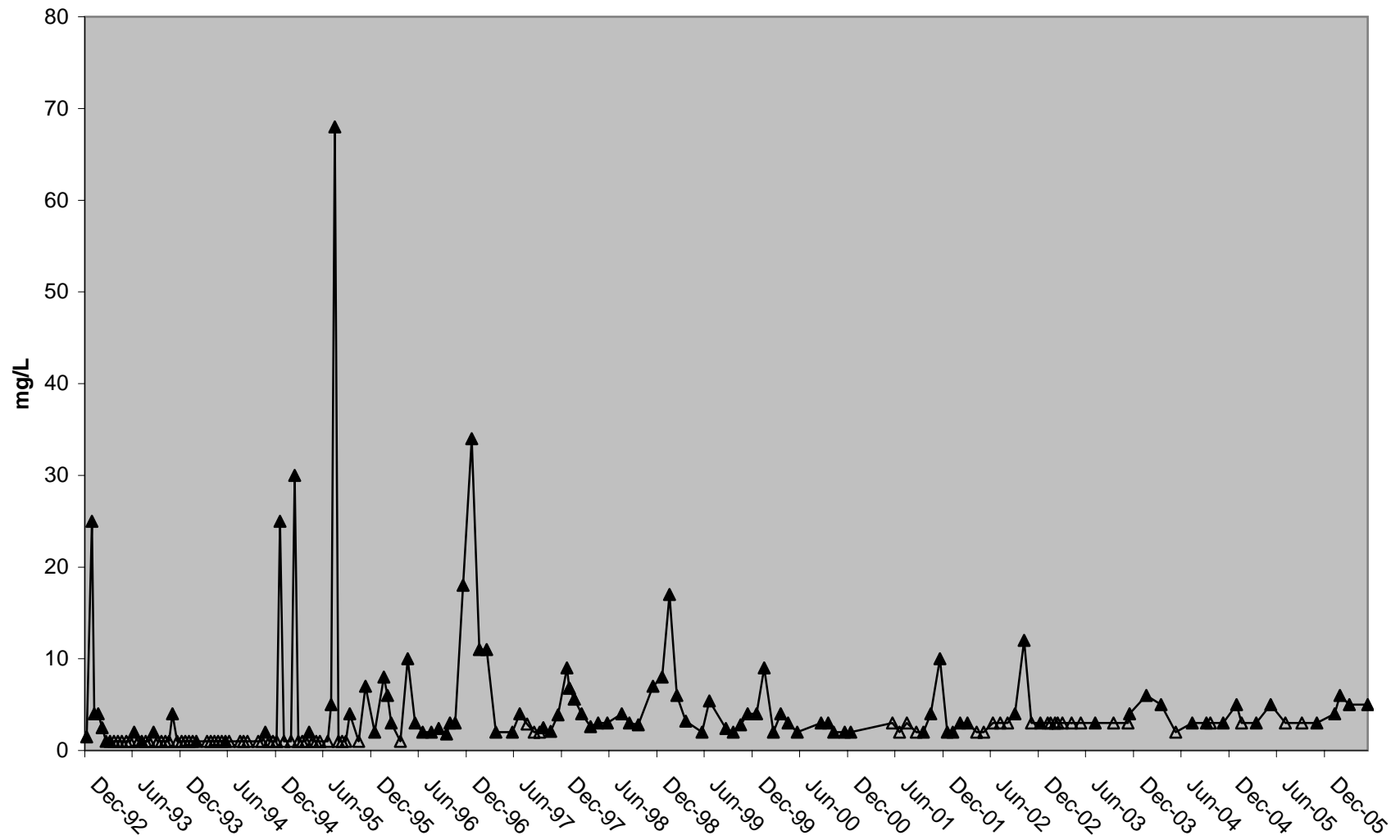


# Nimbus Total Organic Carbon (TOC)



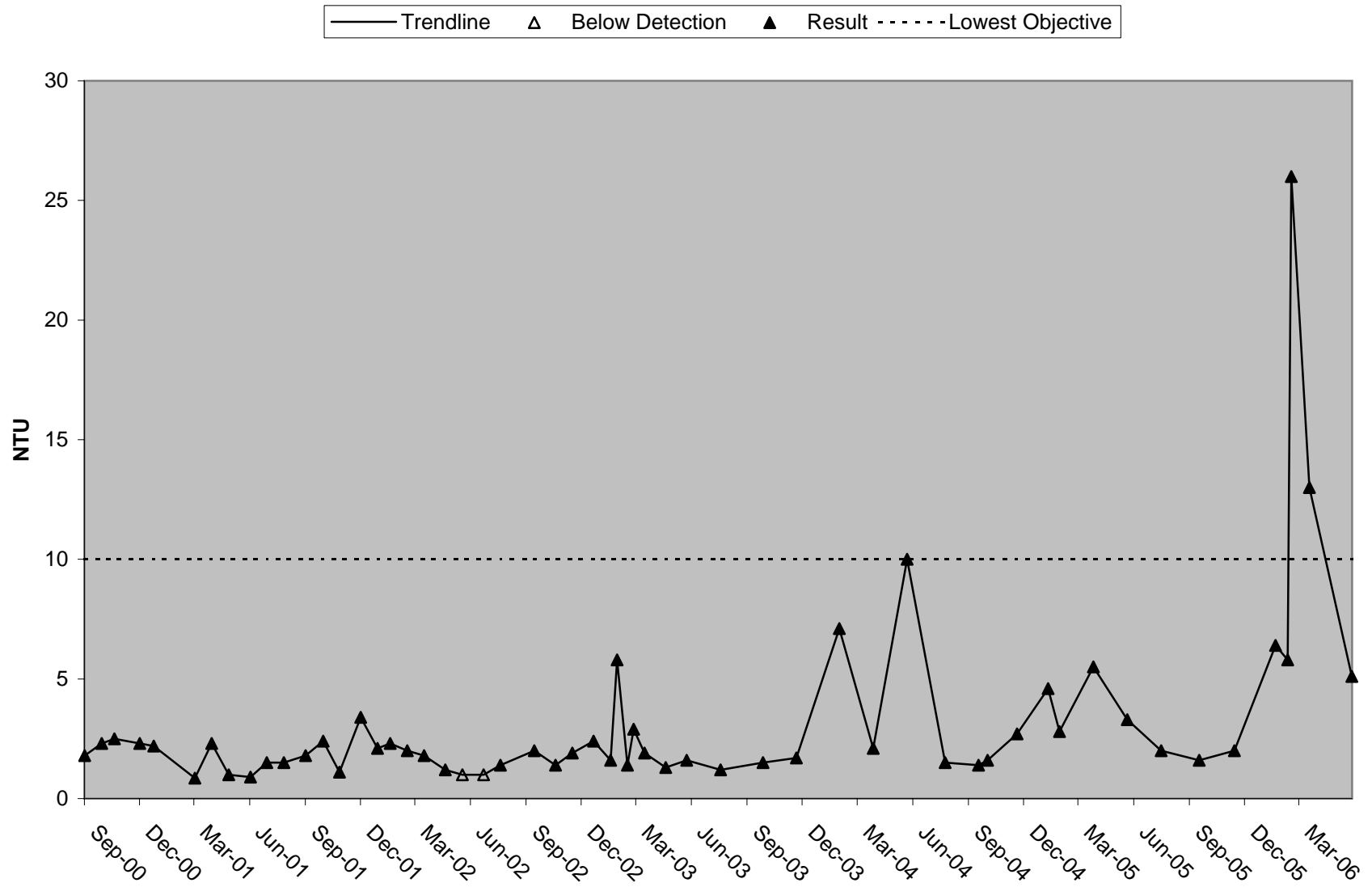
# Nimbus Total Suspended Solids (TSS)

— Trendline    △ Below Detection    ▲ Result

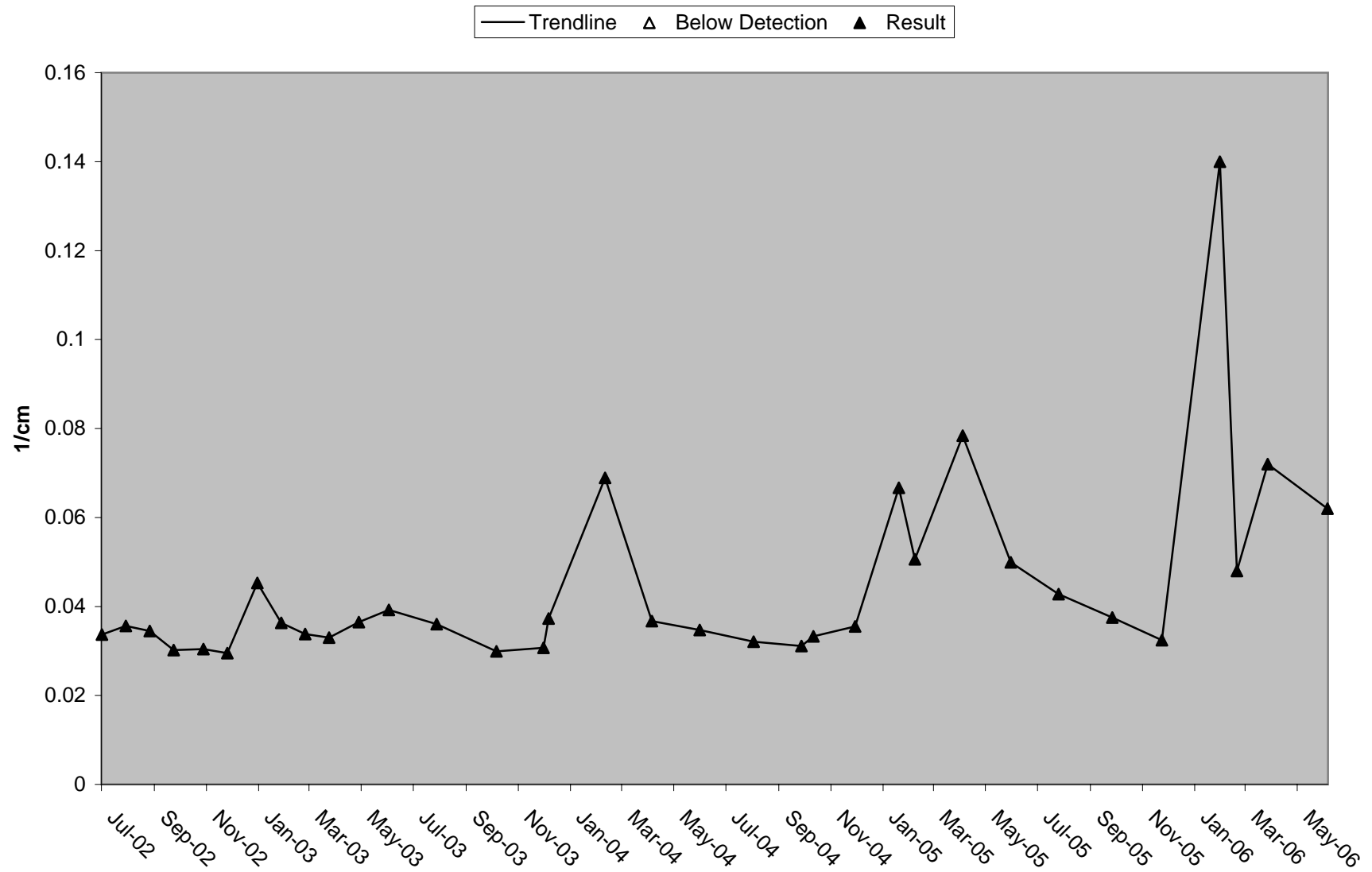




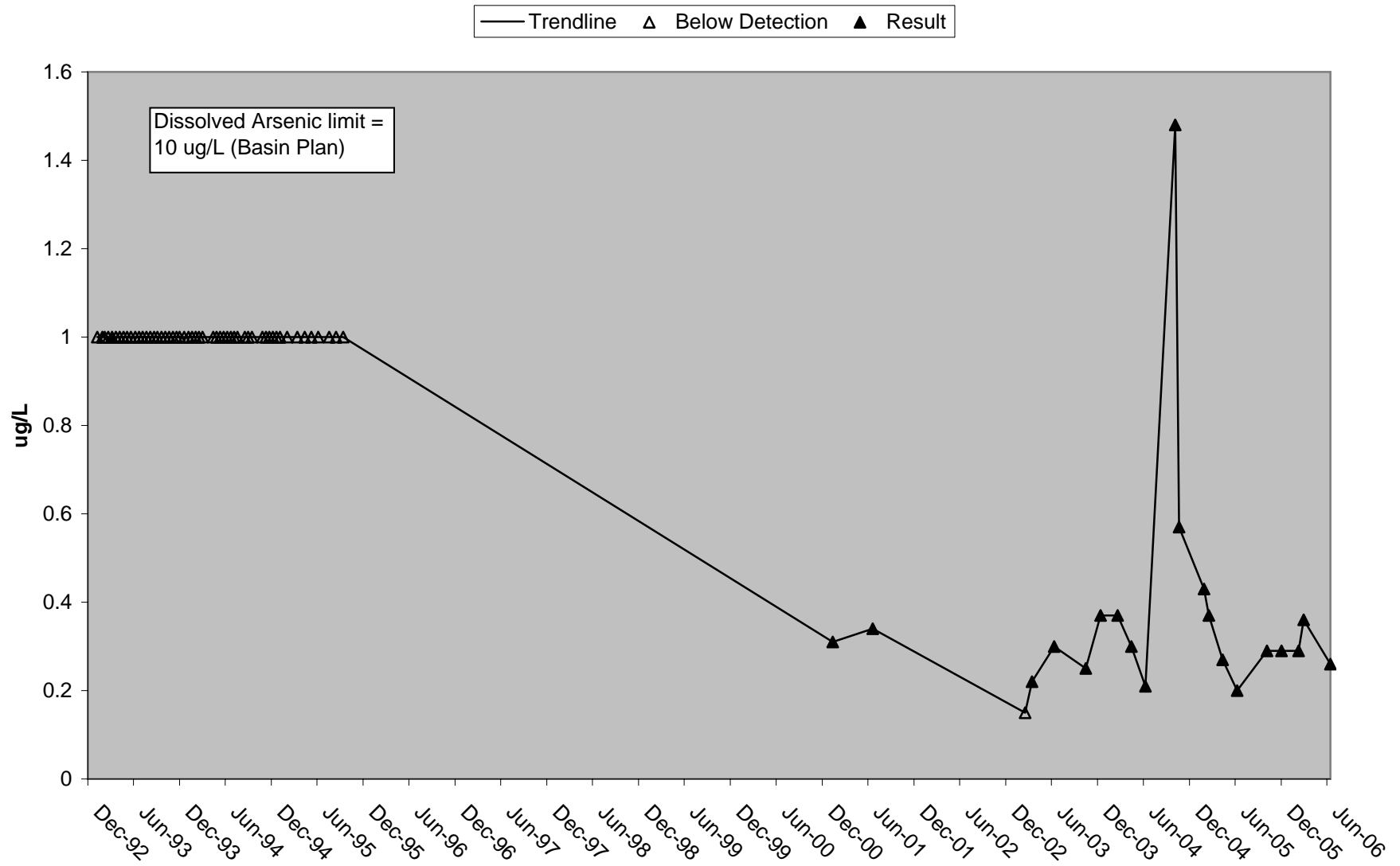
## Nimbus Turbidity



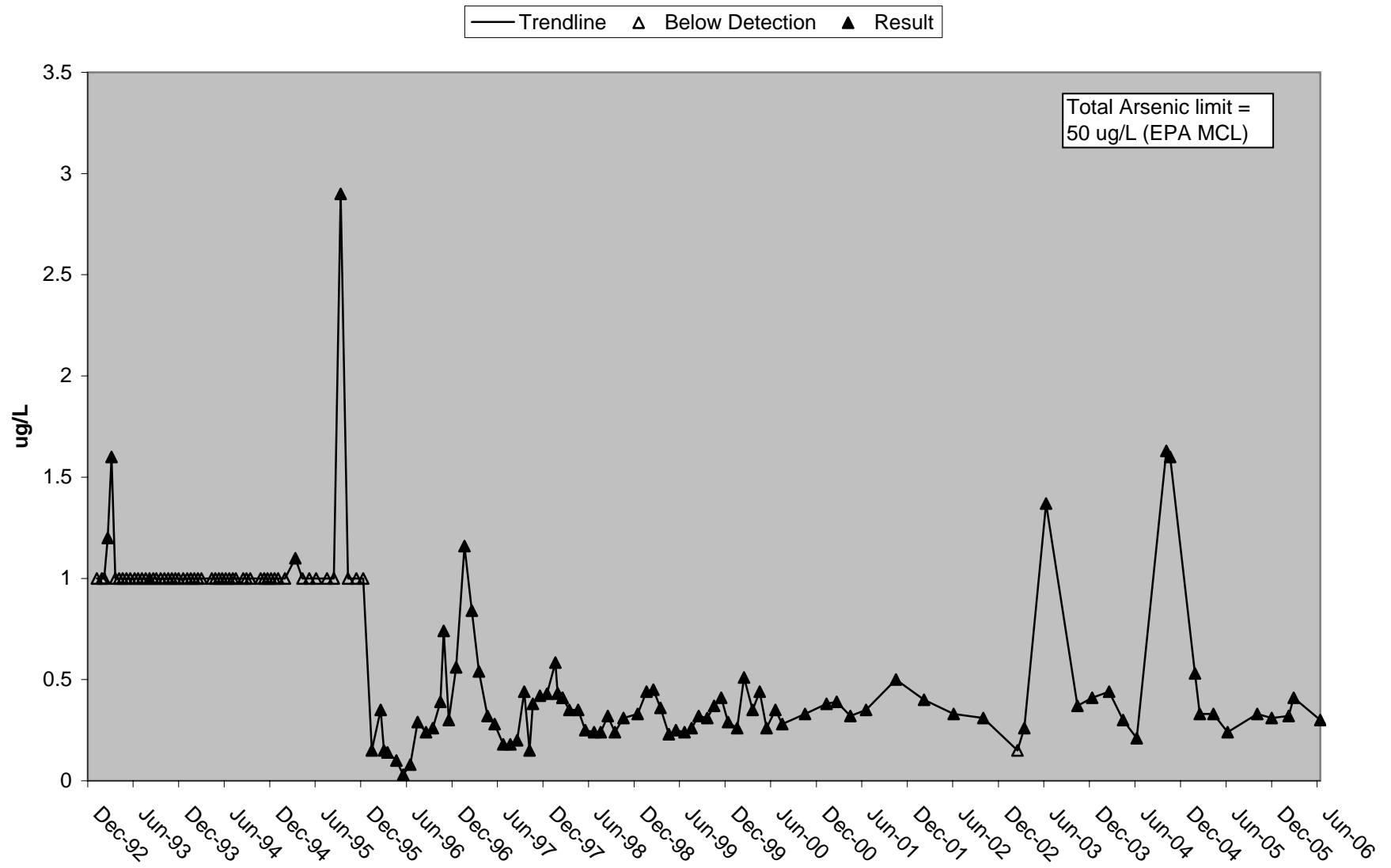
# Nimbus UVA 254



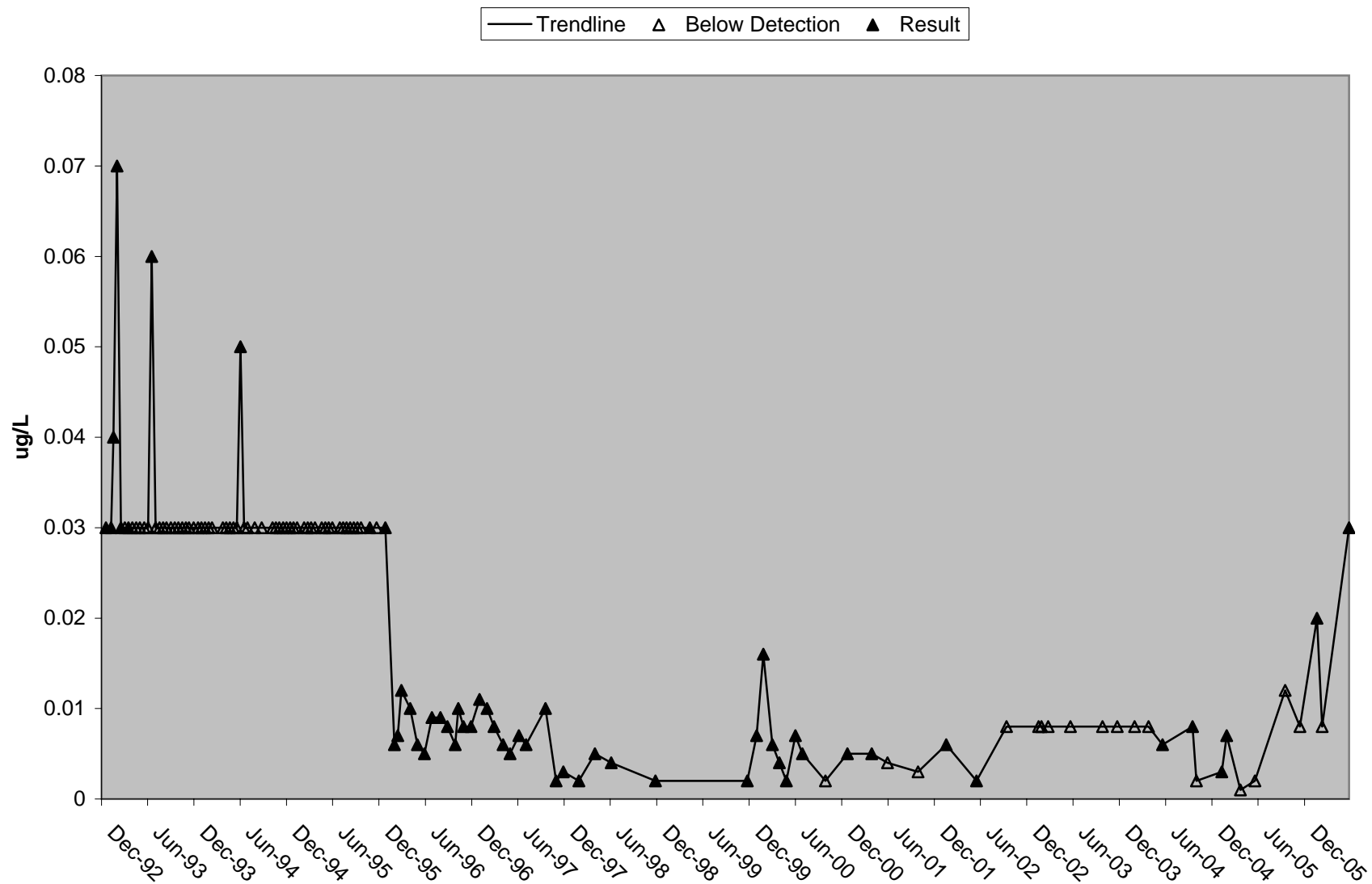
### Nimbus Dissolved Arsenic (As-d)



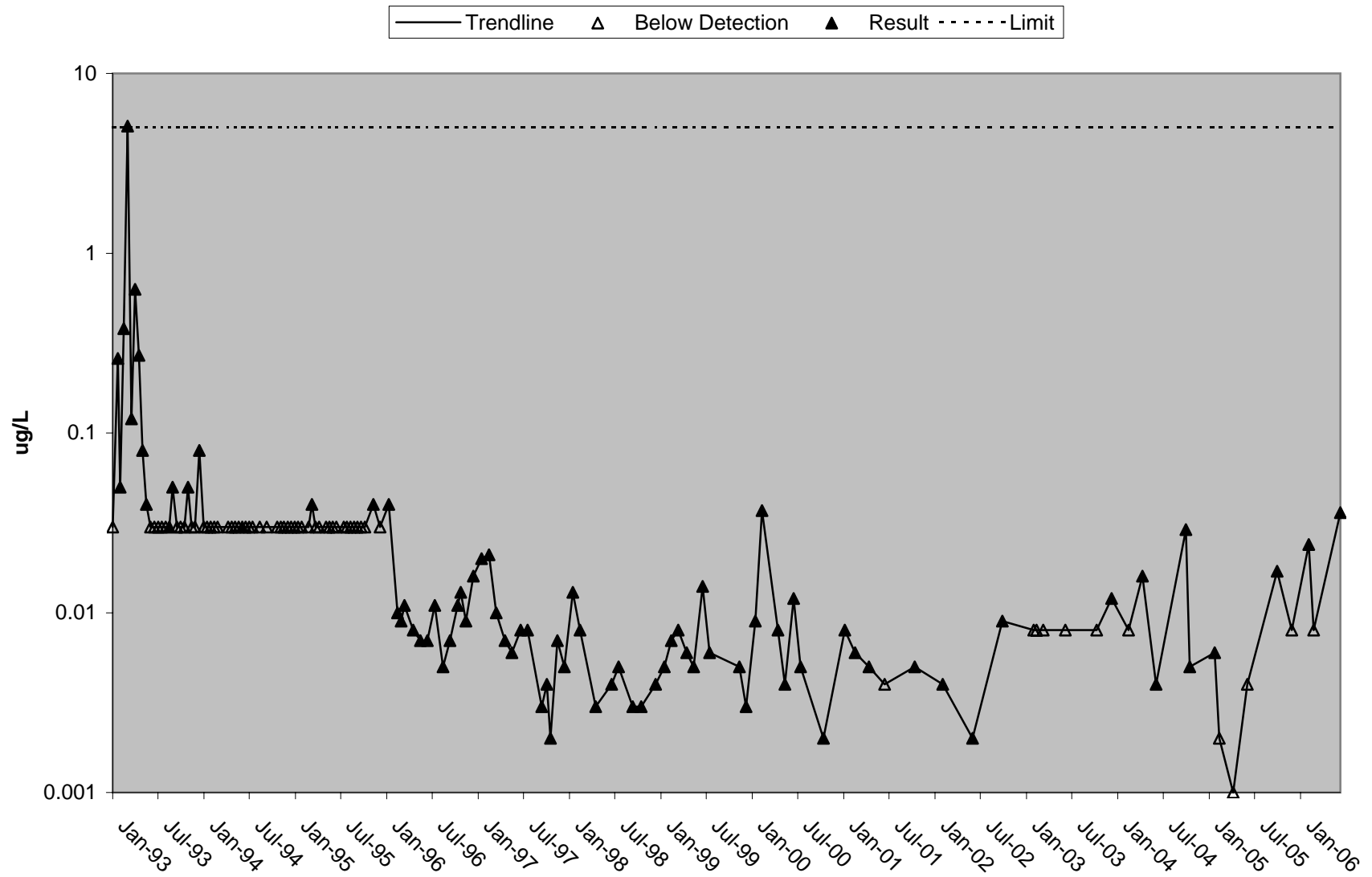
# Nimbus Total Arsenic (As-T)



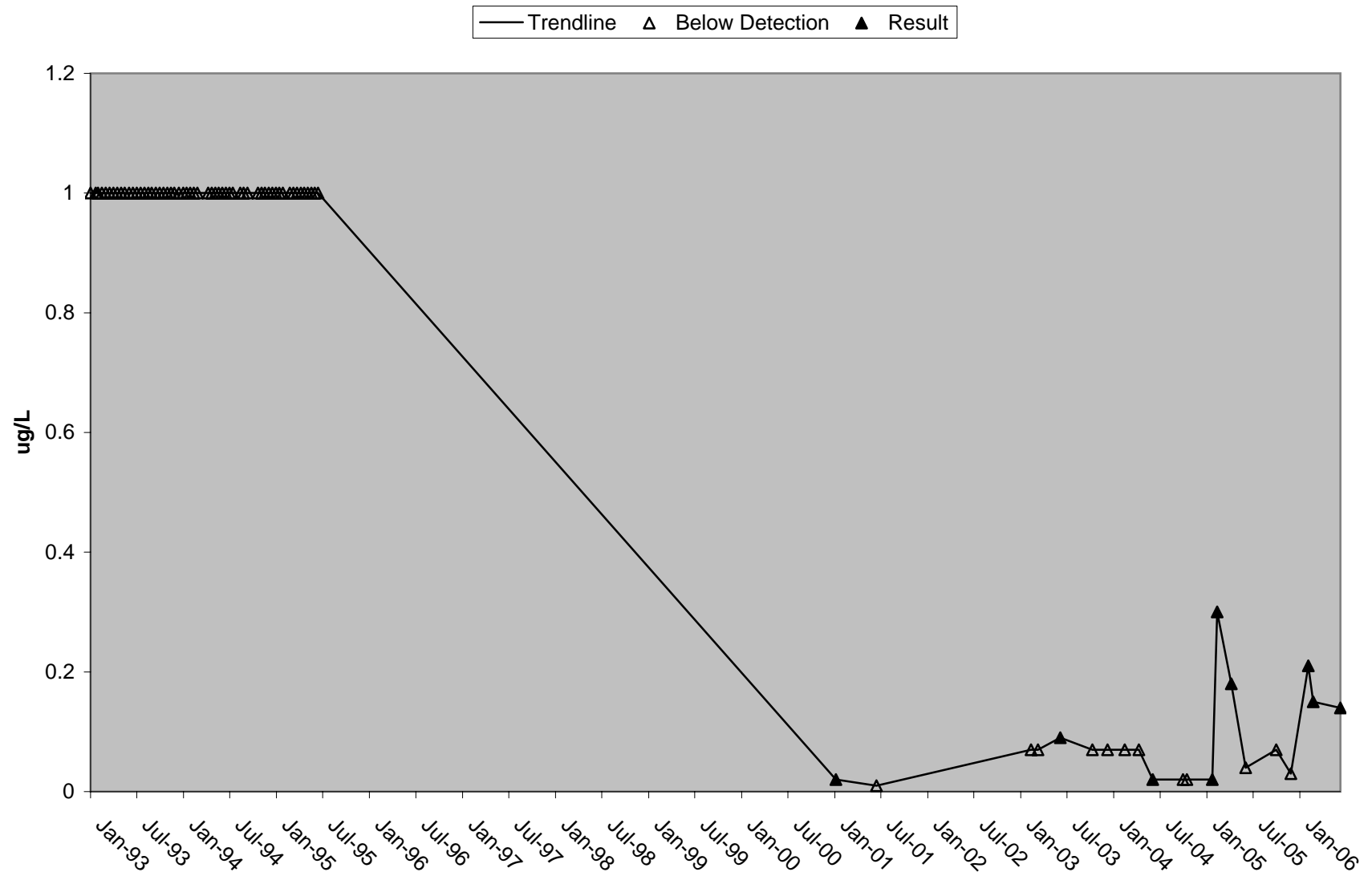
# Nimbus Dissolved Cadmium (Cd-d)



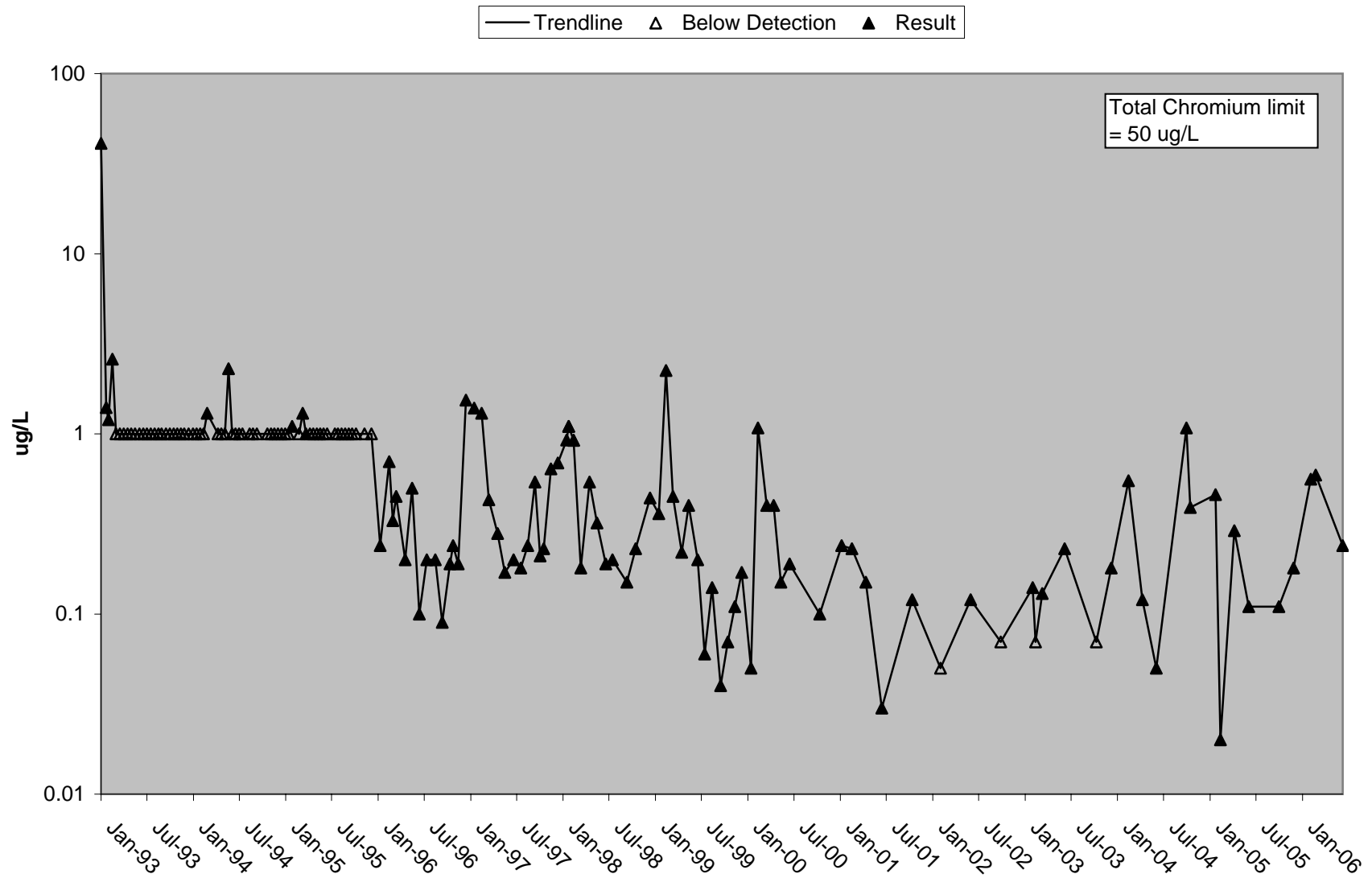
# Nimbus Total Cadmium (Cd-T)



### Nimbus Dissolved Chromium (Cr-d)



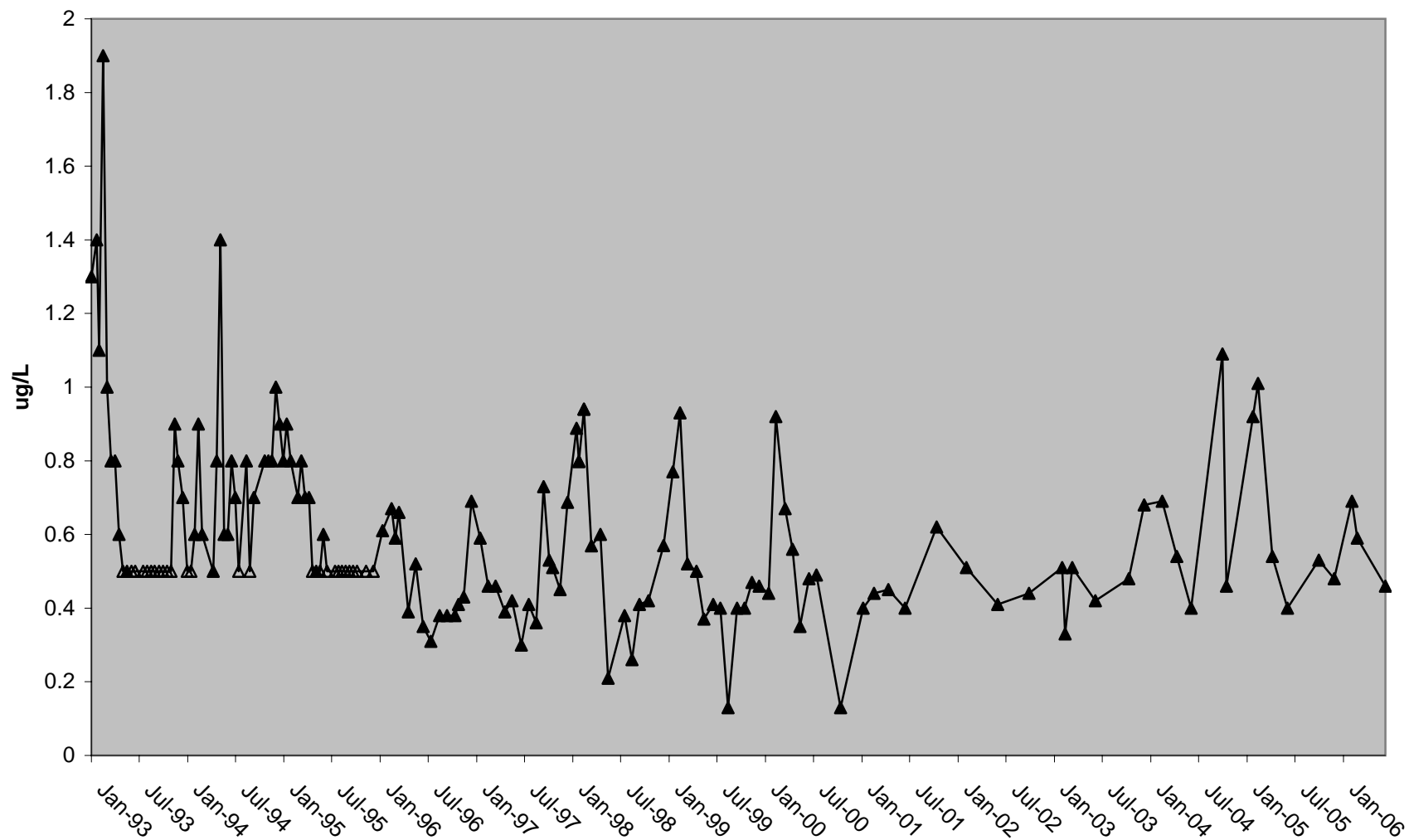
## Nimbus Total Chromium (Cr-T)



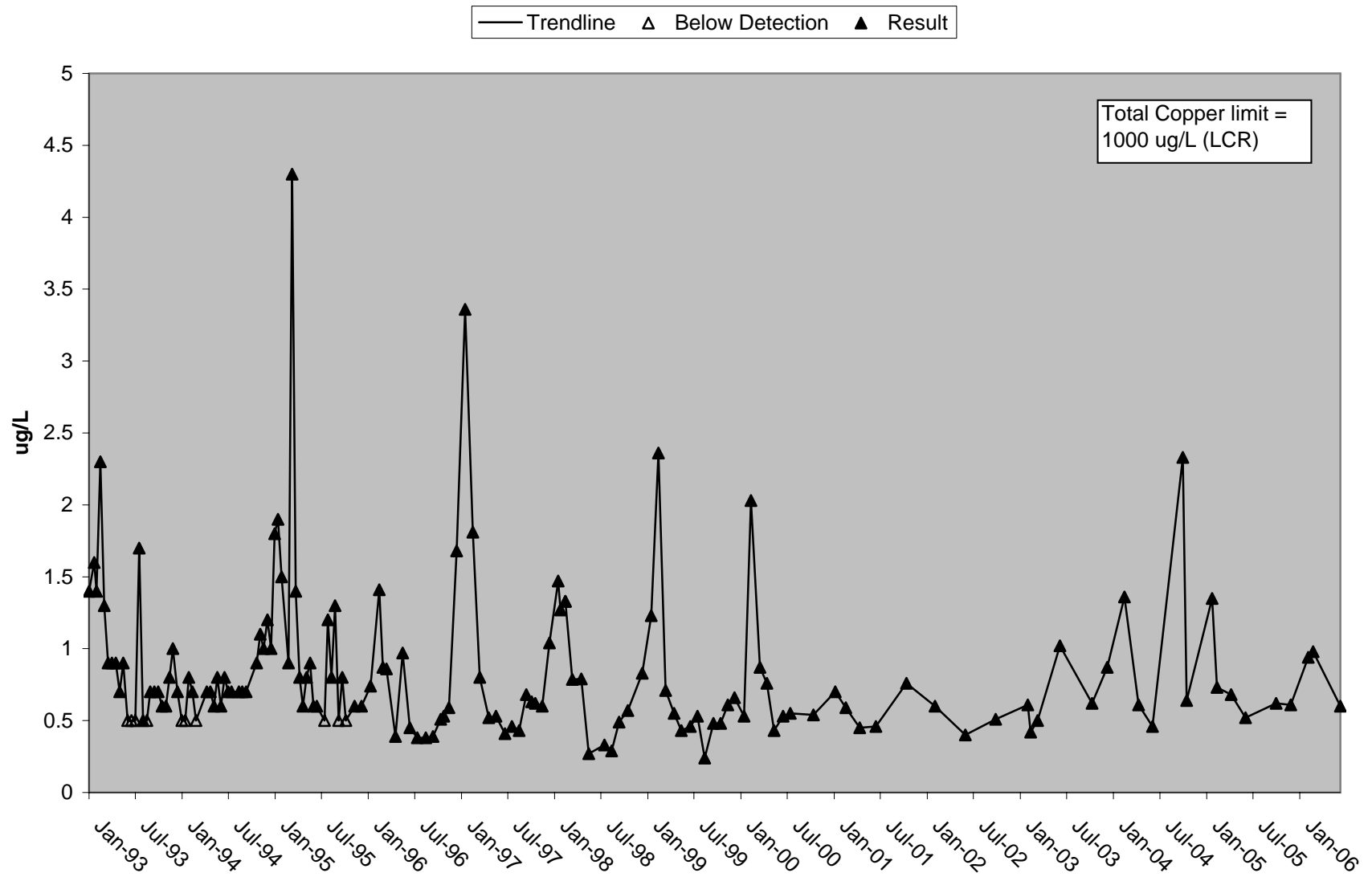


# Nimbus Dissolved Copper (Cu-d)

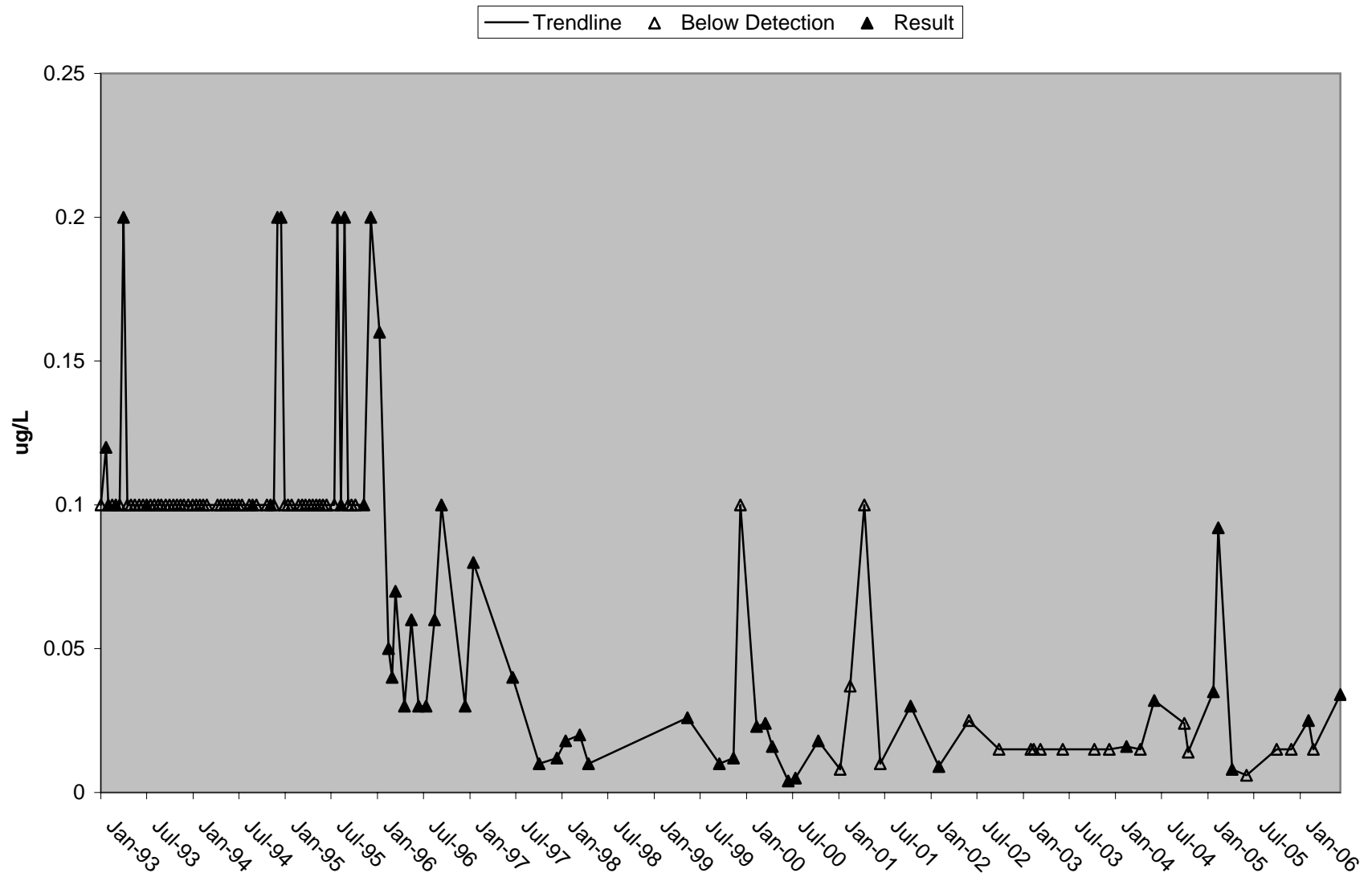
— Trendline    △ Below Detection    ▲ Result



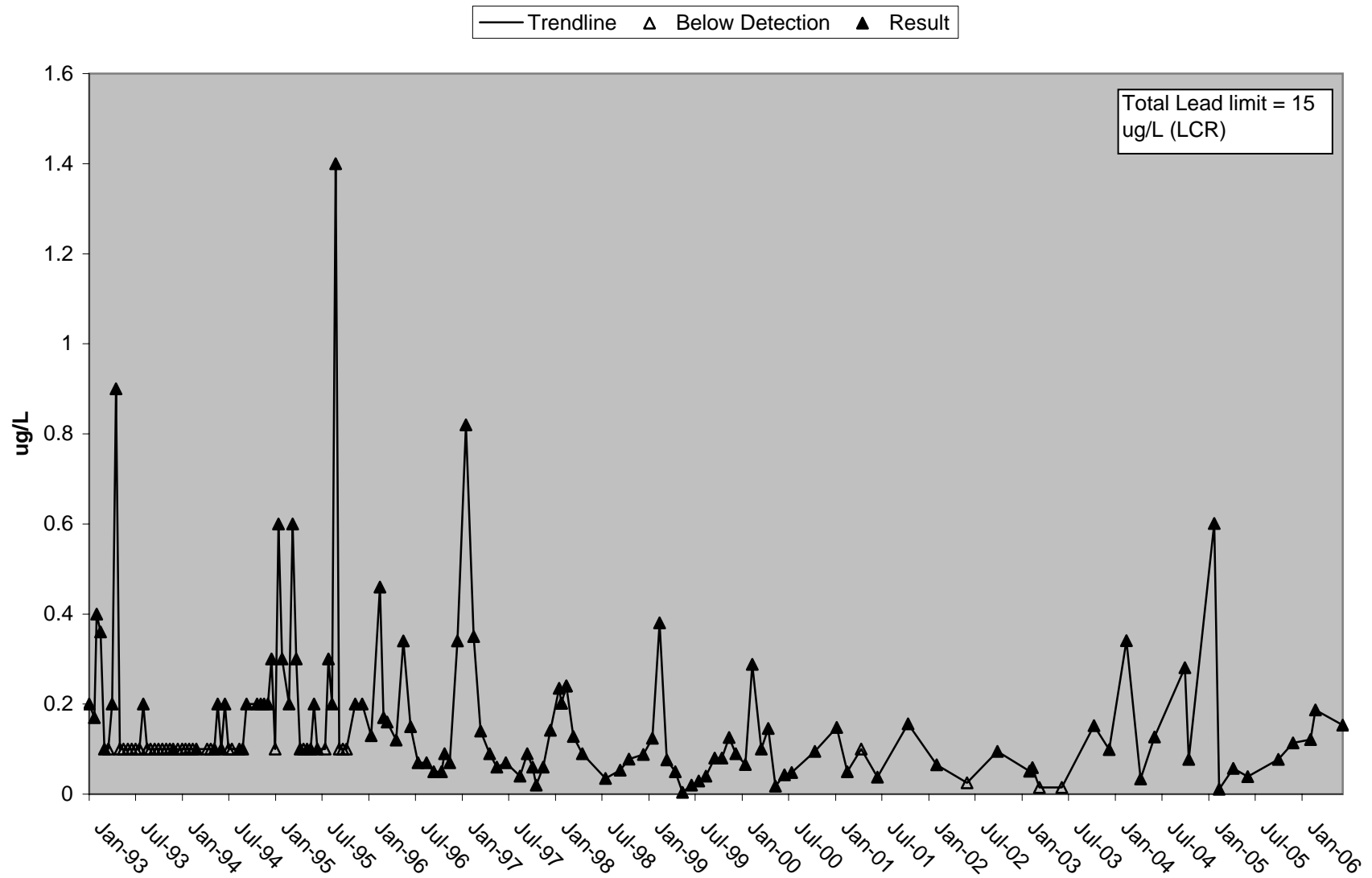
# Nimbus Total Copper (Cu-T)



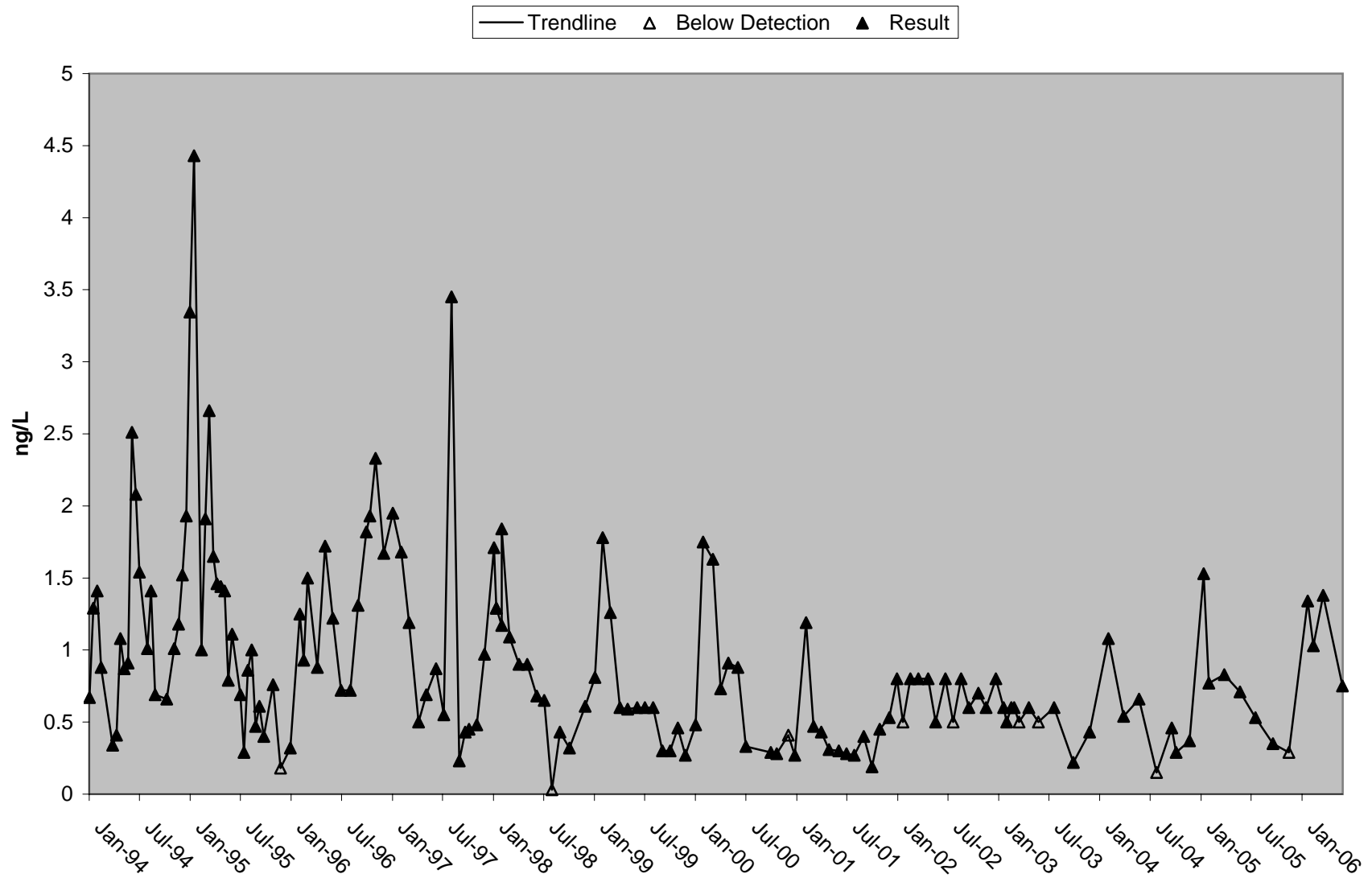
# Nimbus Dissolved Lead (Pb-d)



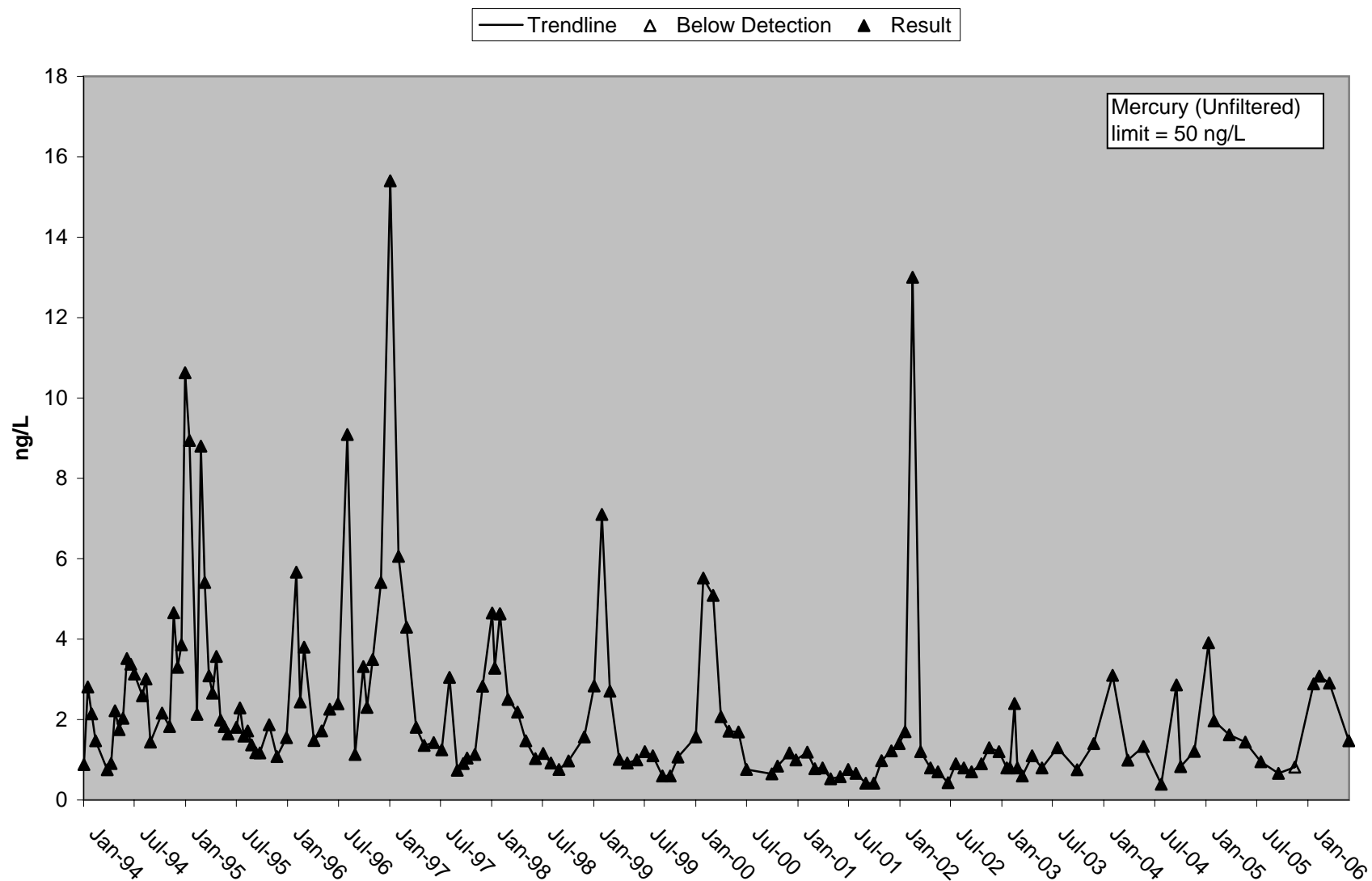
# Nimbus Total Lead (Pb-T)



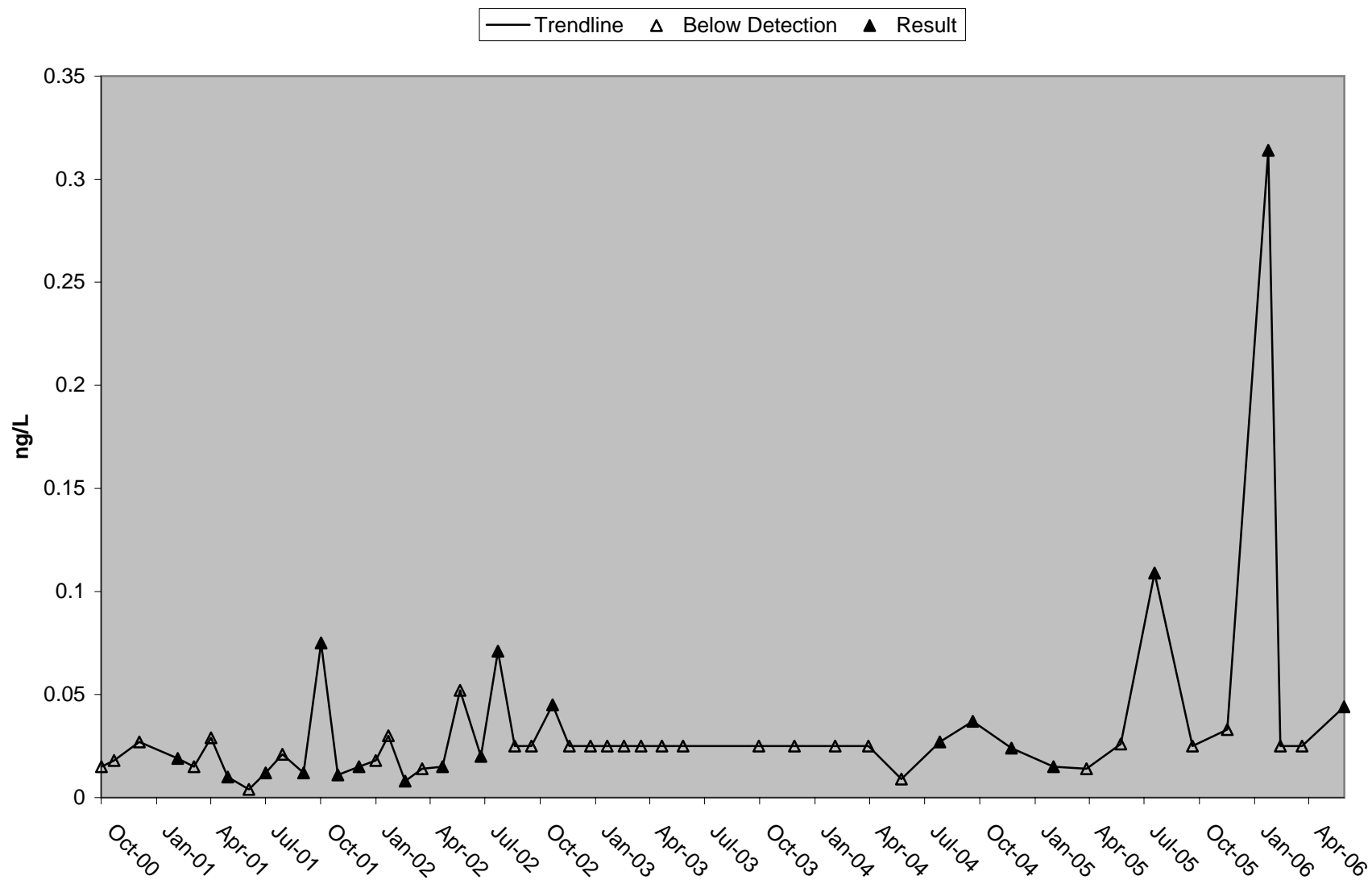
# Nimbus Filtered Mercury (Hg-f)



## Nimbus Unfiltered Mercury

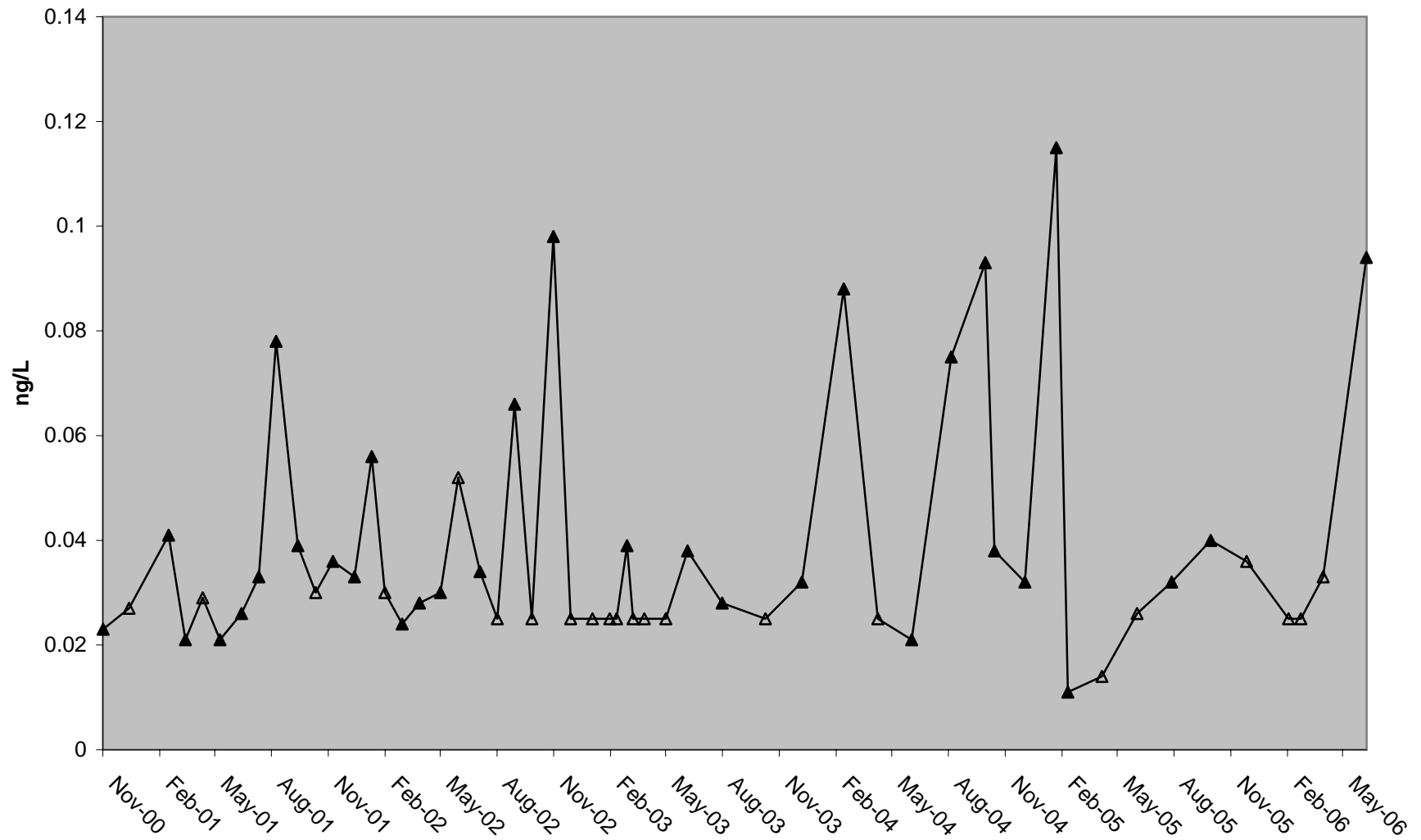


# Nimbus Filtered Methyl Mercury



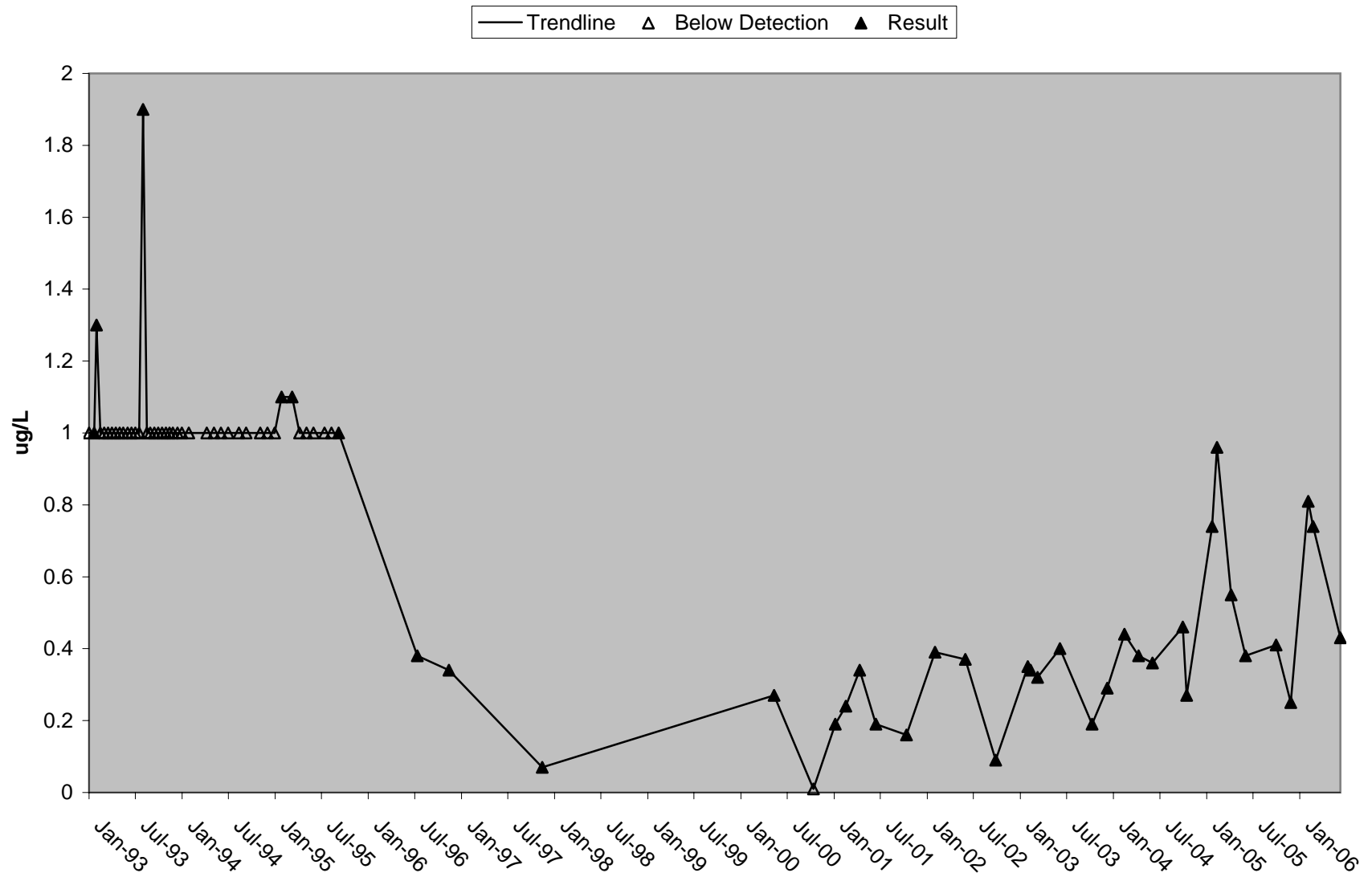
# Nimbus Unfiltered Methyl Mercury

— Trendline    △ Below Detection    ▲ Result





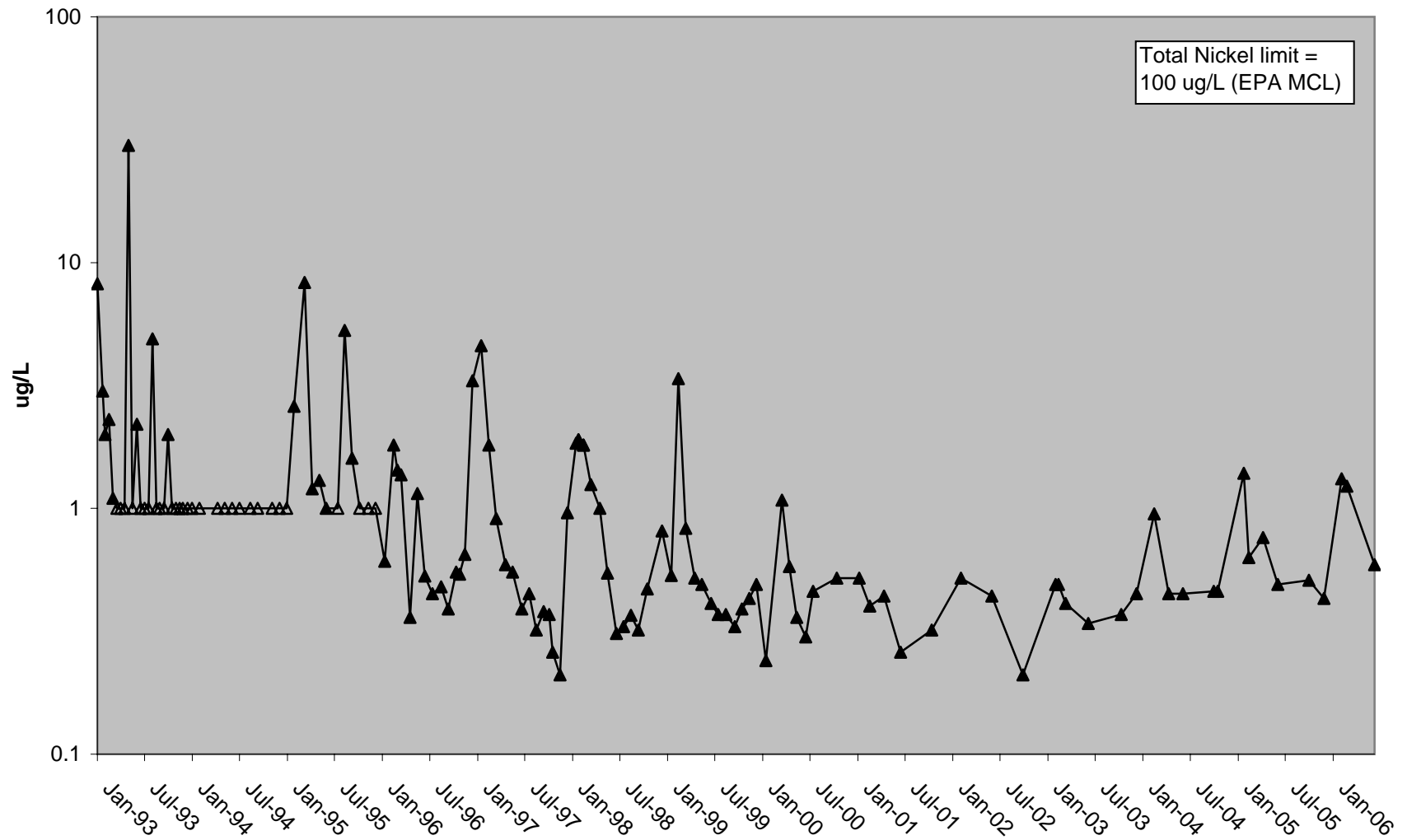
### Nimbus Dissolved Nickel (Ni-d)



# Nimbus Total Nickel (Ni-t)

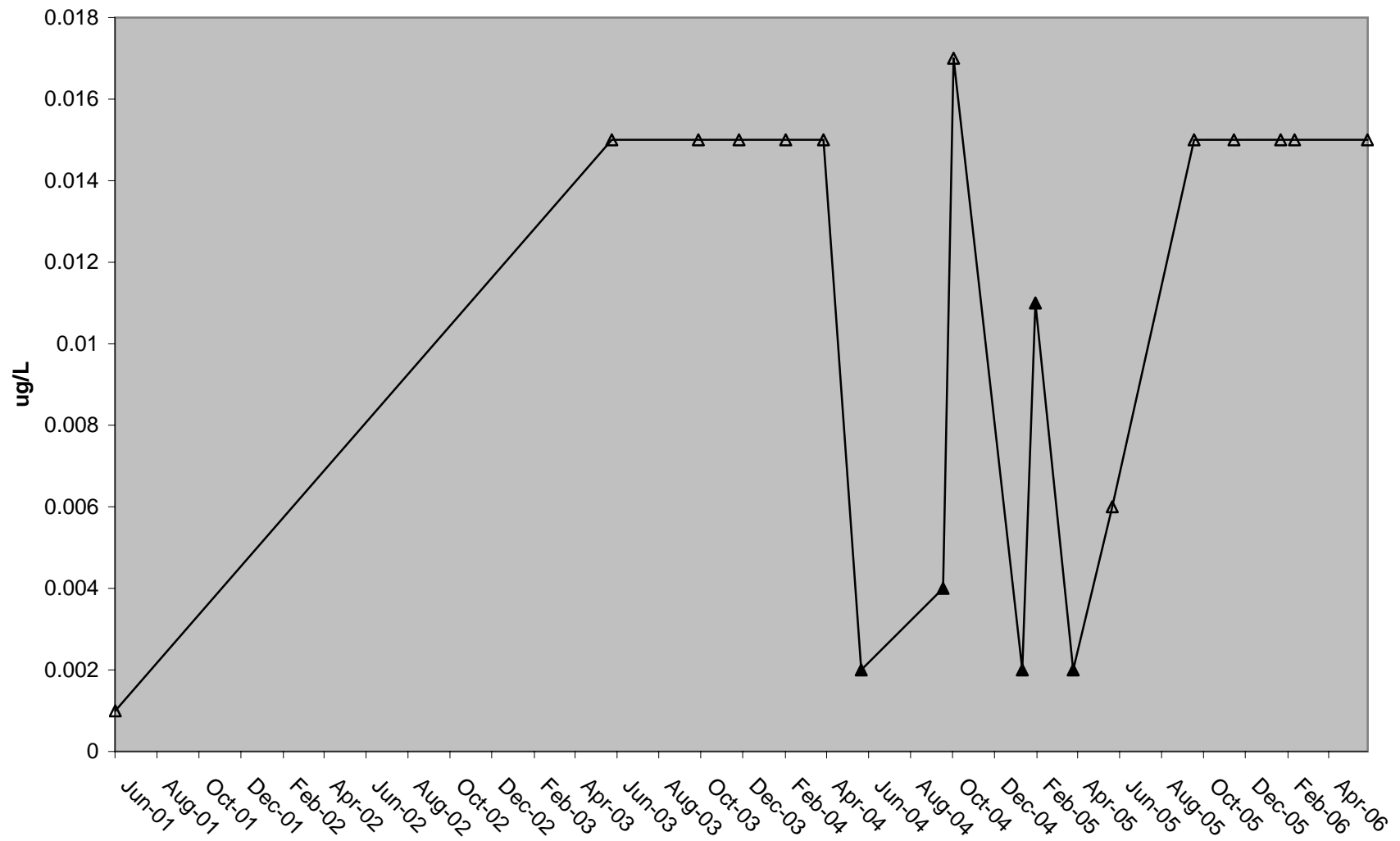
— Trendline    △ Below Detection    ▲ Result

Total Nickel limit =  
100 ug/L (EPA MCL)



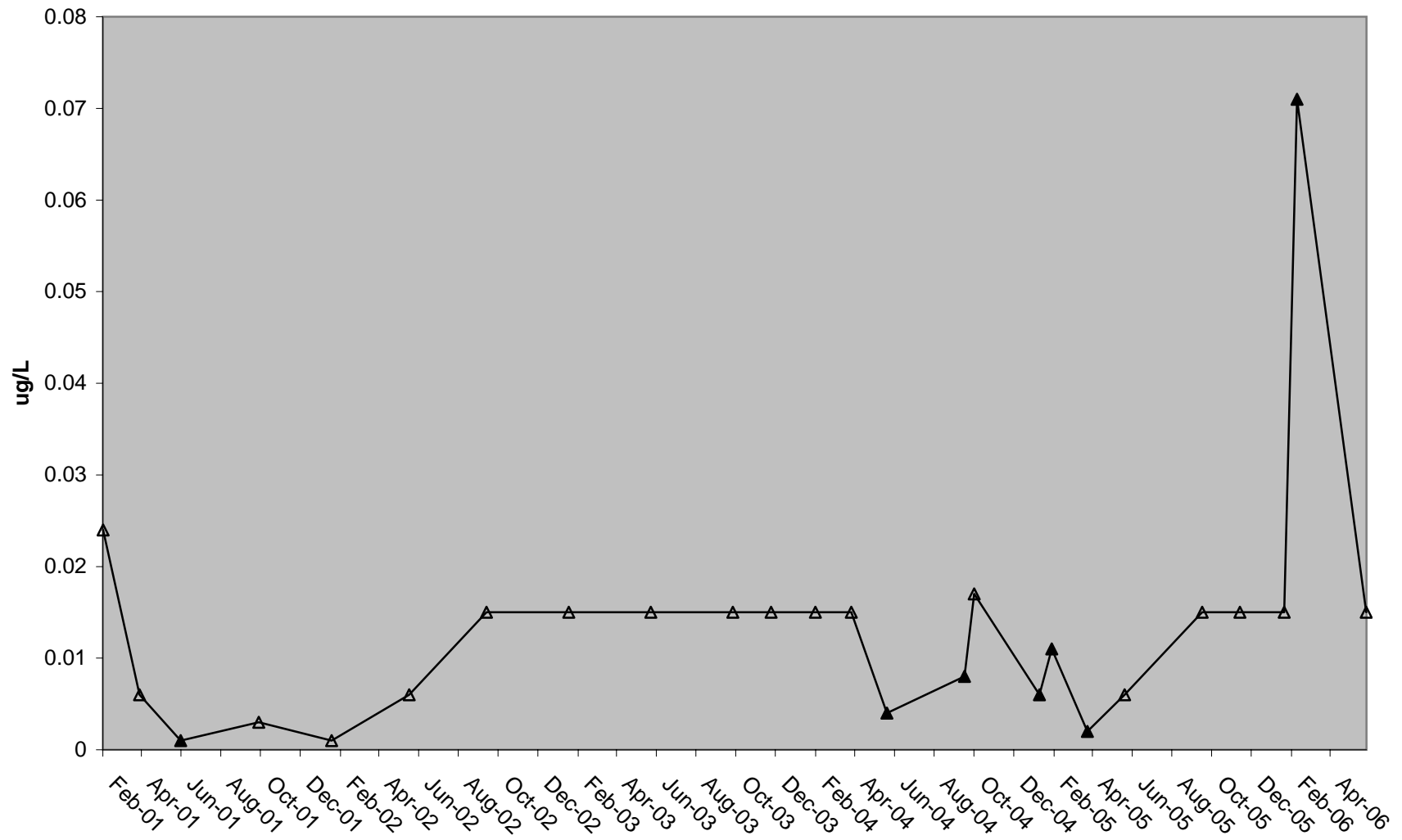
# Nimbus Silver (Dissolved)

— Trendline    Δ Below Detection    ▲ Result

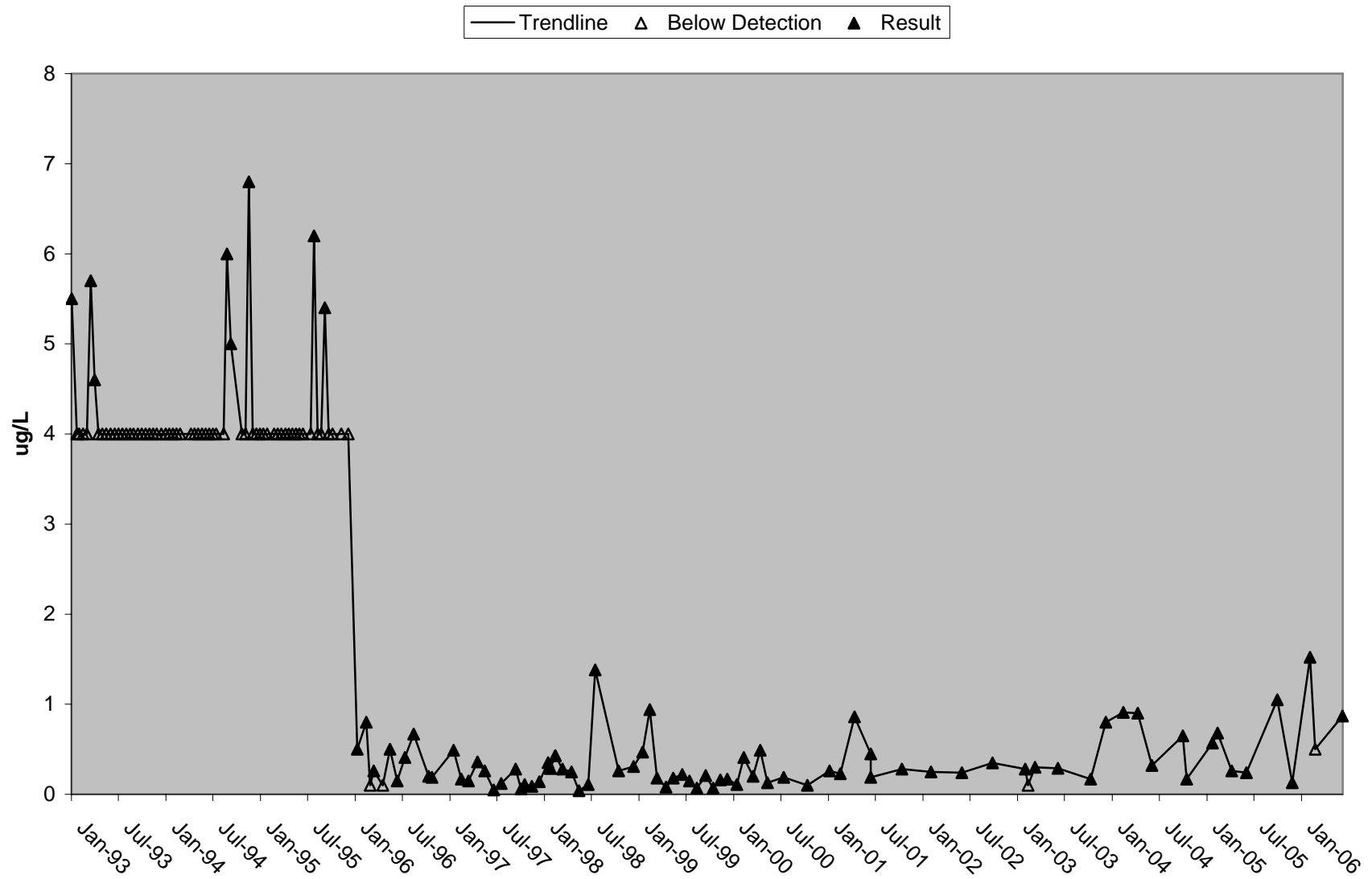


# Nimbus Total Silver (Ag-T)

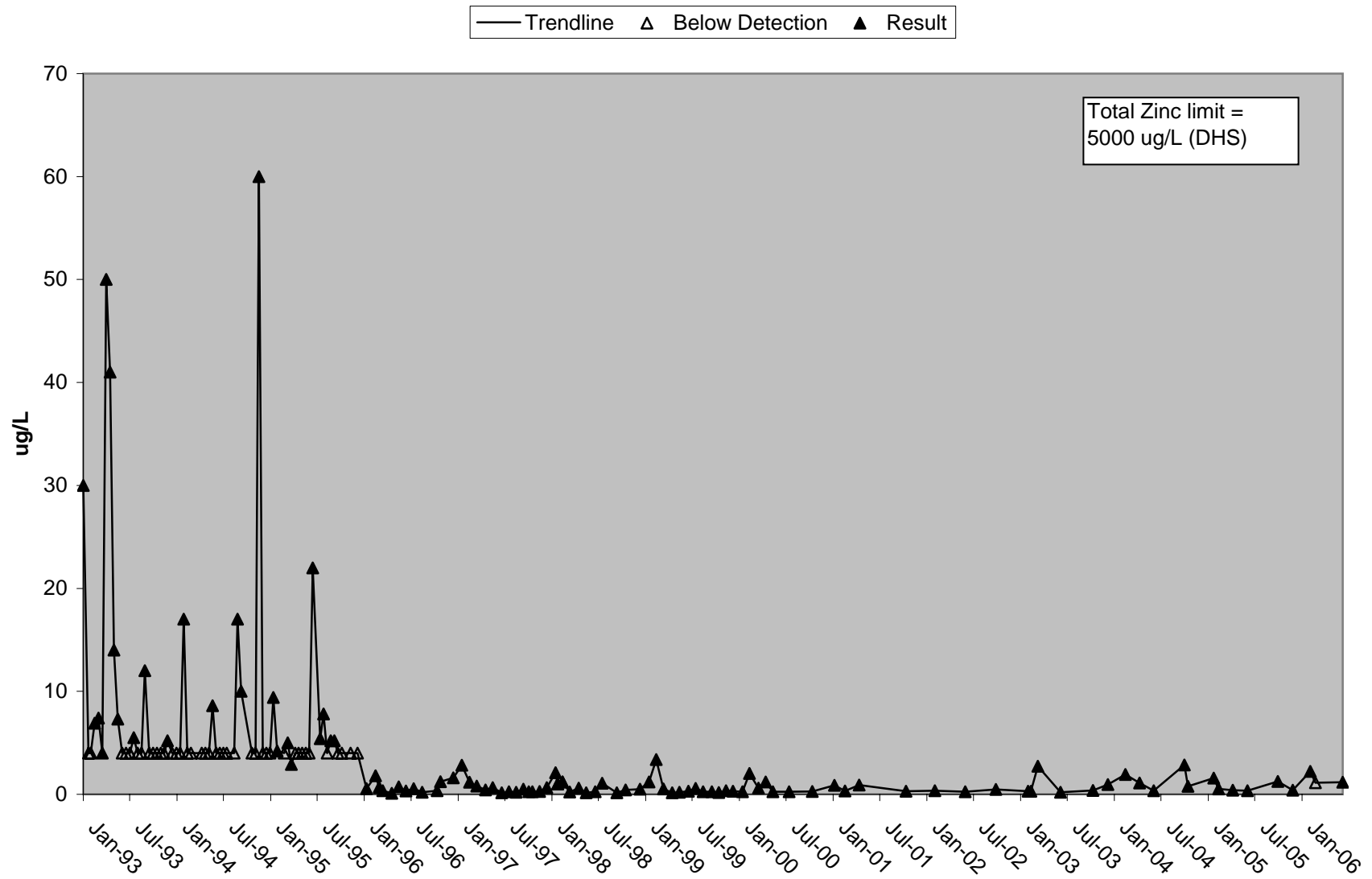
— Trendline    △ Below Detection    ▲ Result



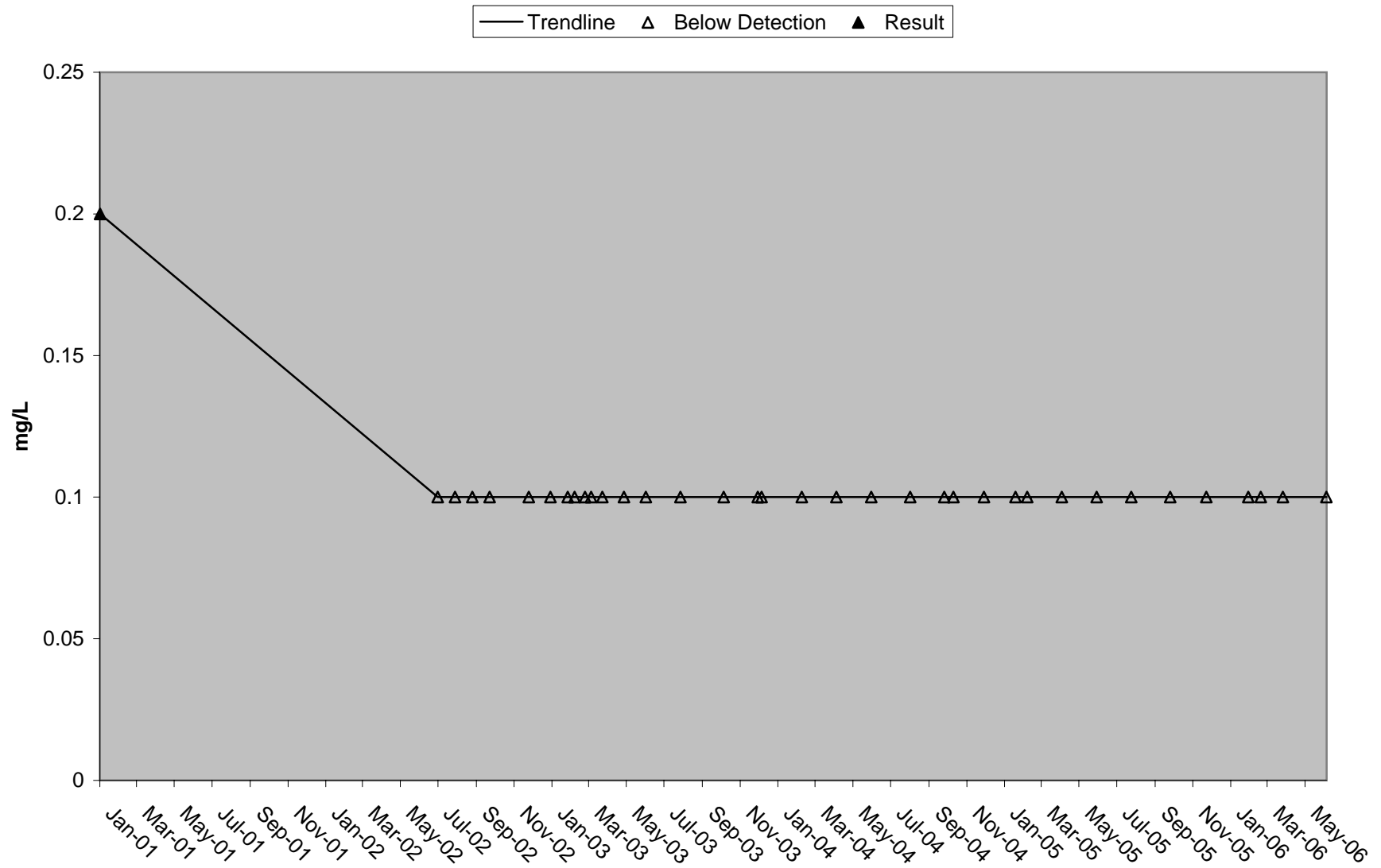
# Nimbus Dissolved Zinc (Zn-d)



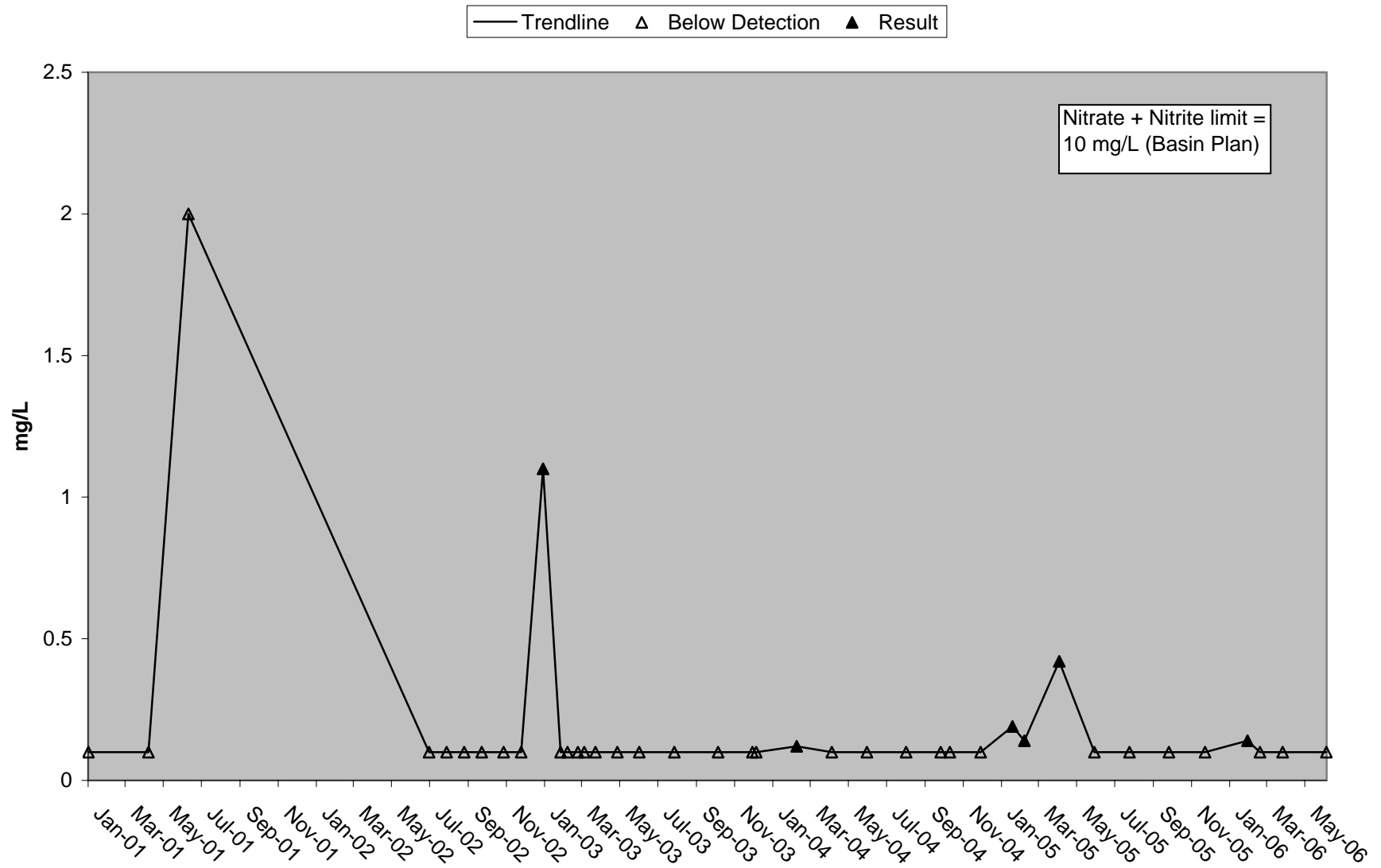
# Nimbus Total Zinc (Zn-t)



# Nimbus Ammonia (NH<sub>3</sub>-N)

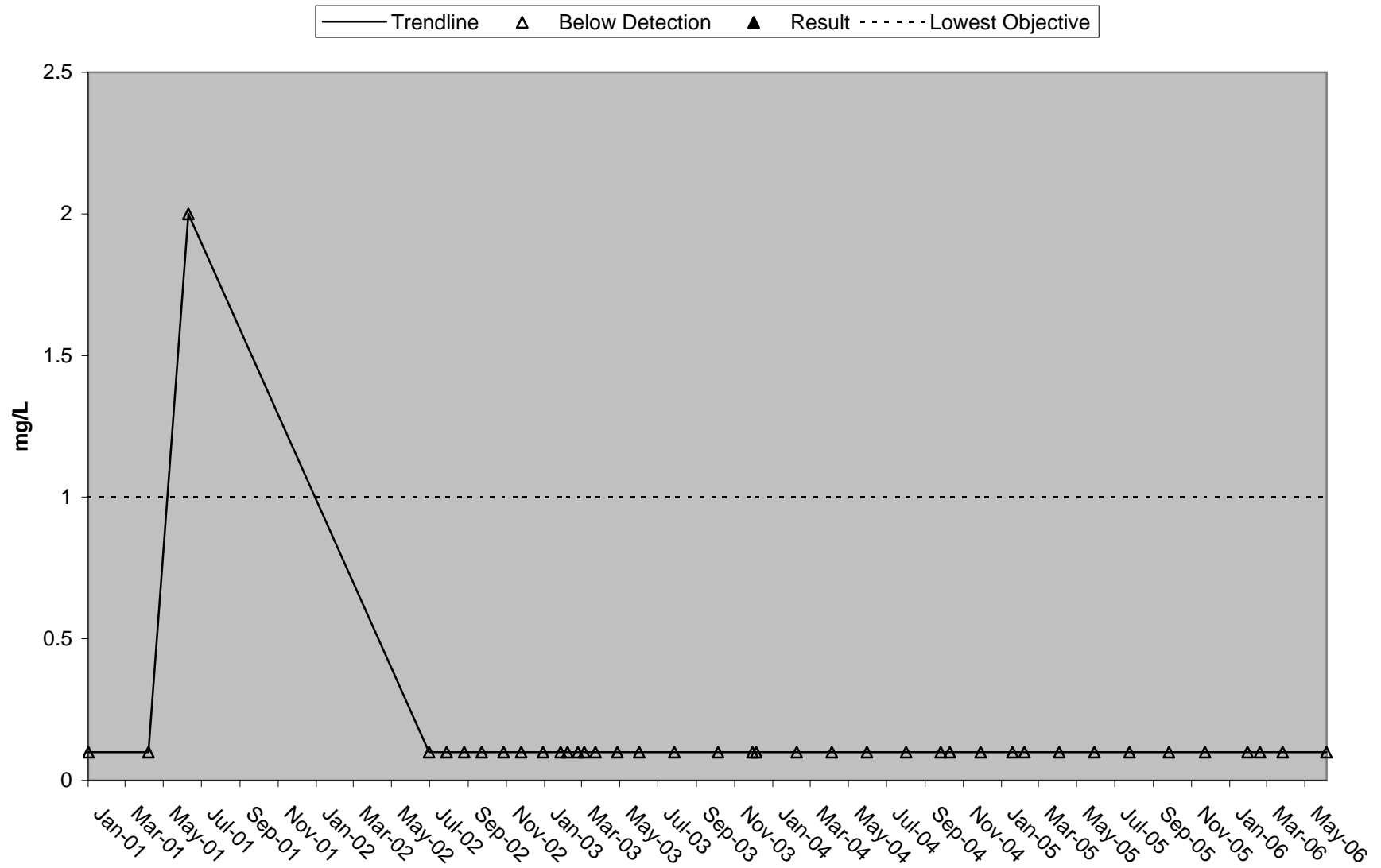


# Nimbus Nitrate (NO<sub>3</sub>-N)

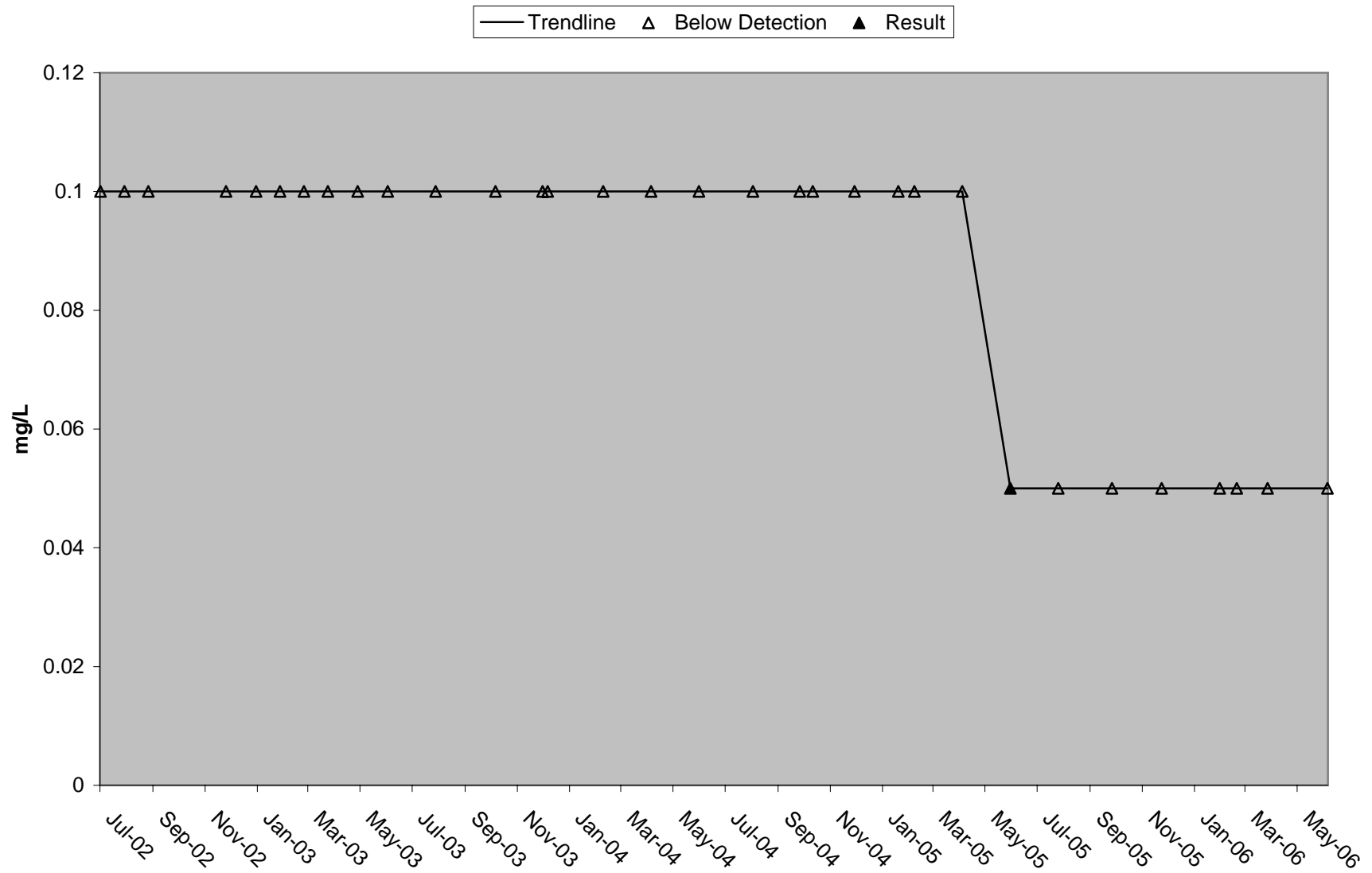




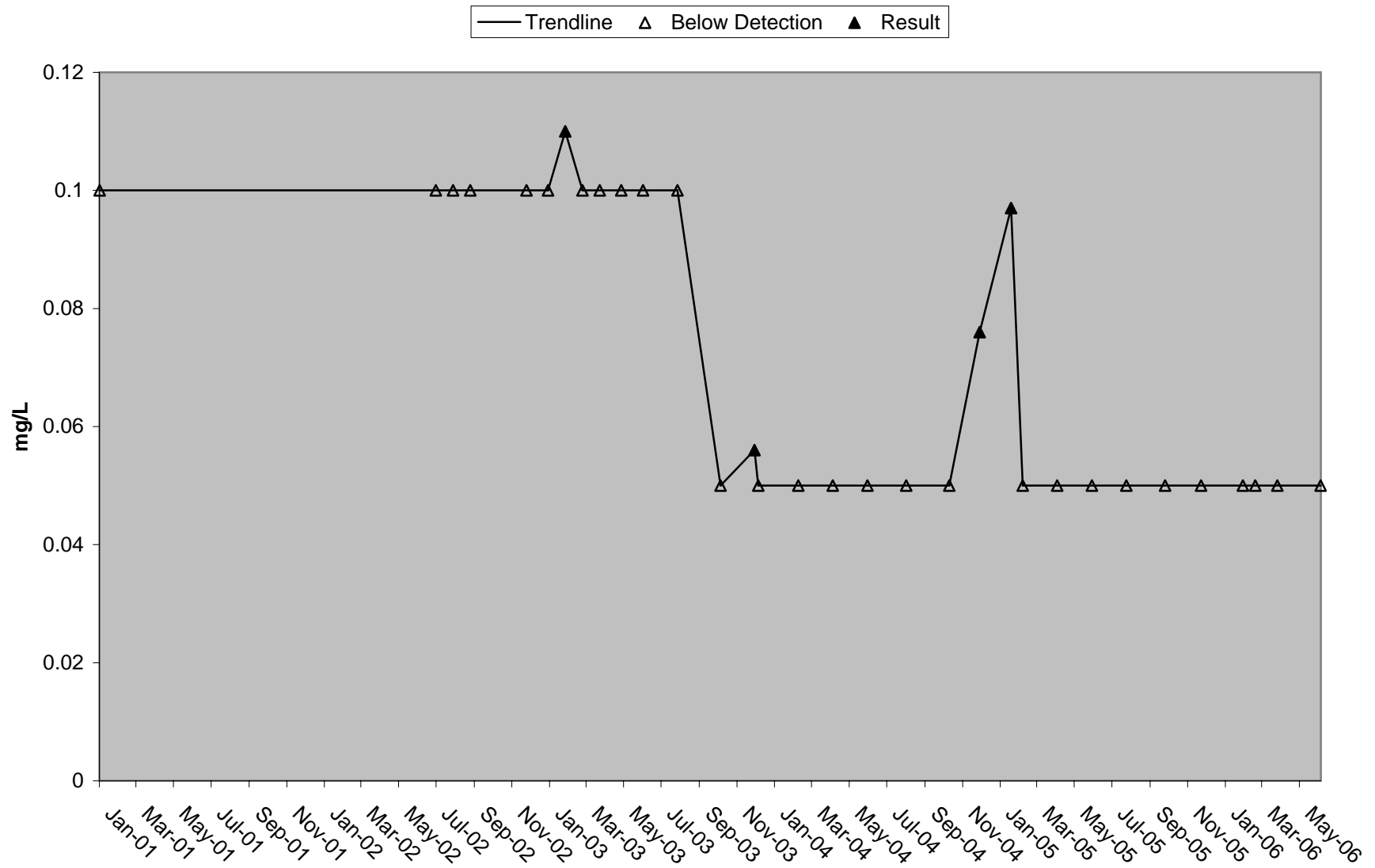
# Nimbus Nitrite (NO<sub>2</sub>-N)



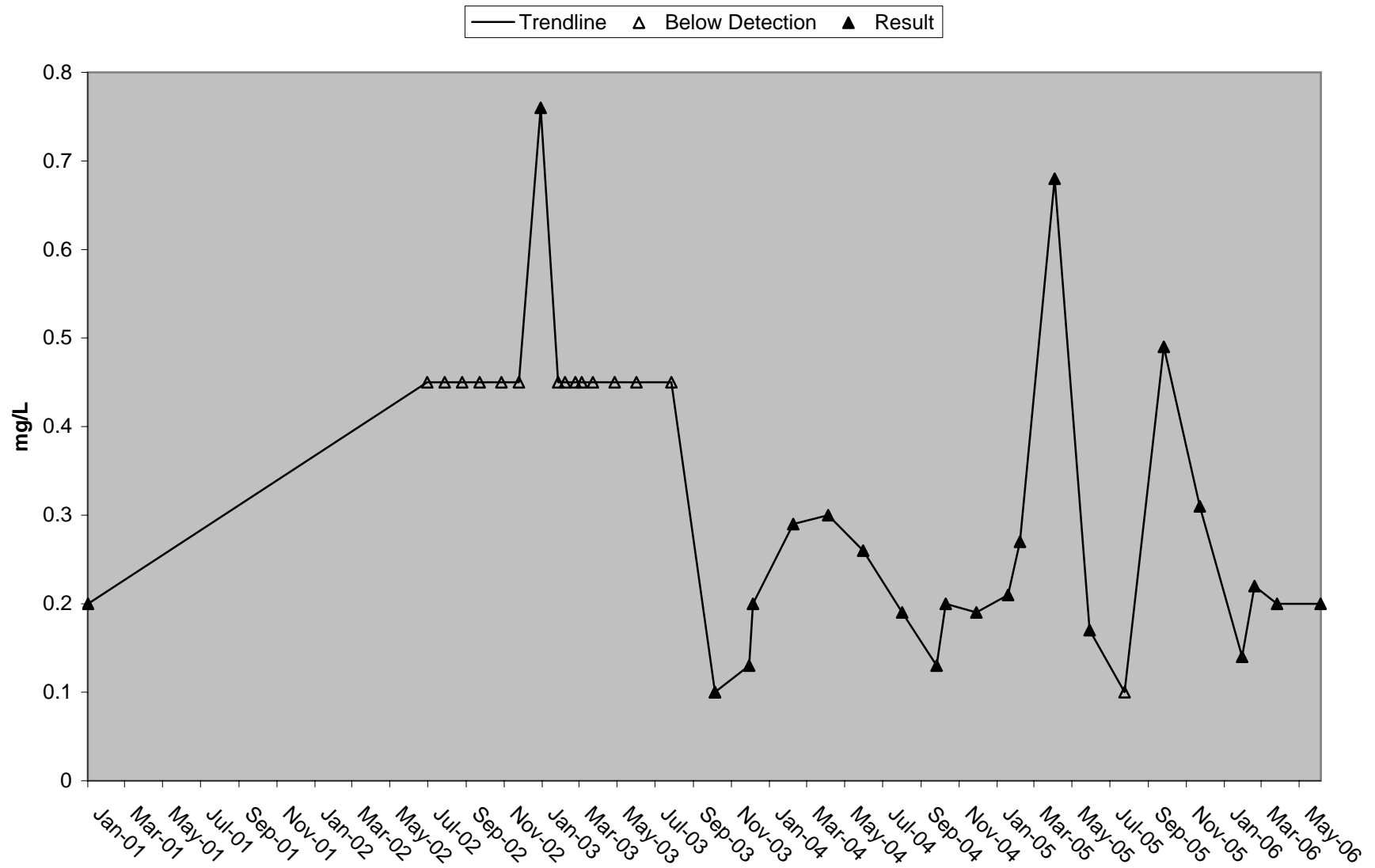
# Nimbus Dissolved Orthophosphate



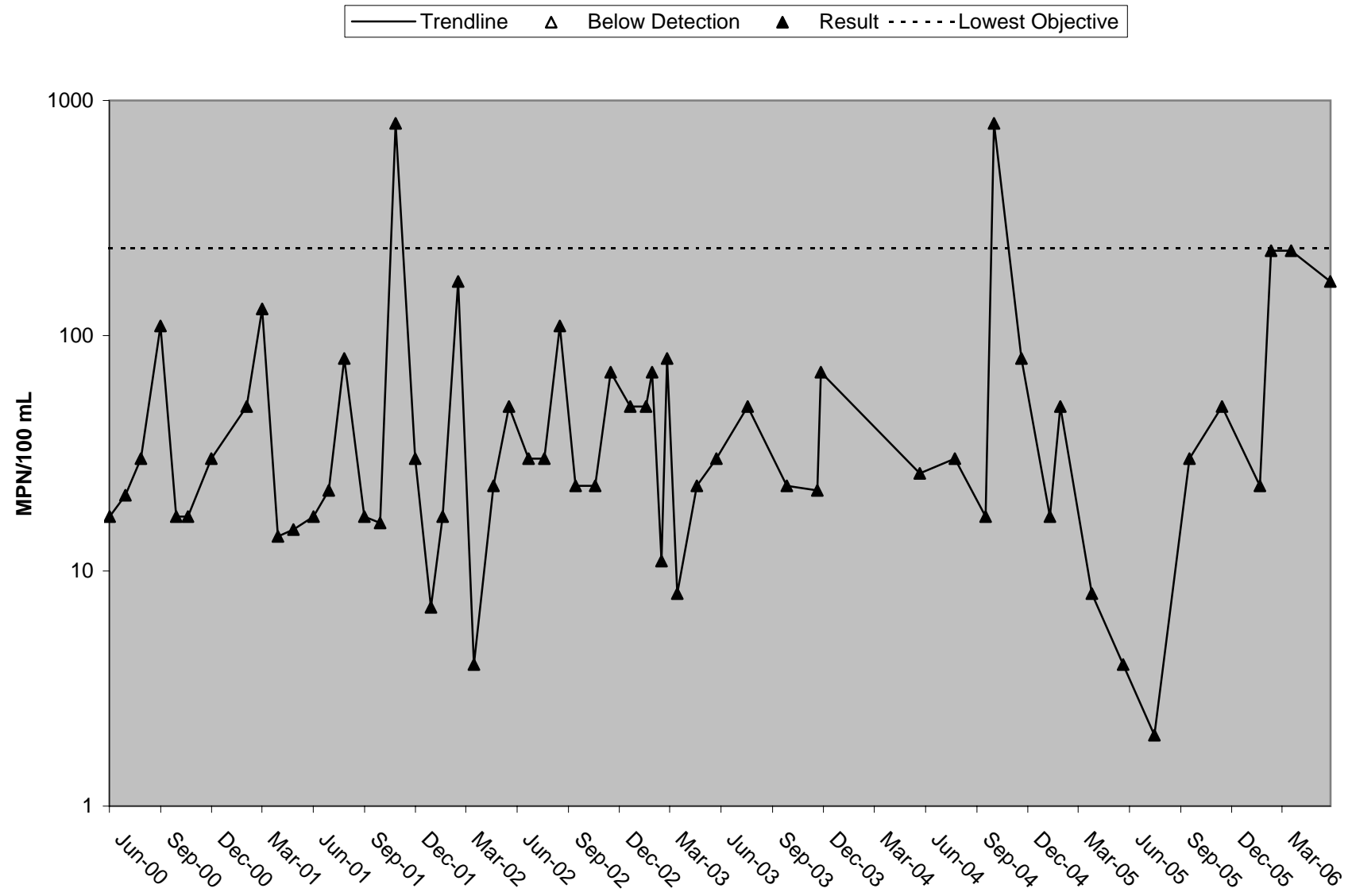
# Nimbus Total Phosphorus (TP)



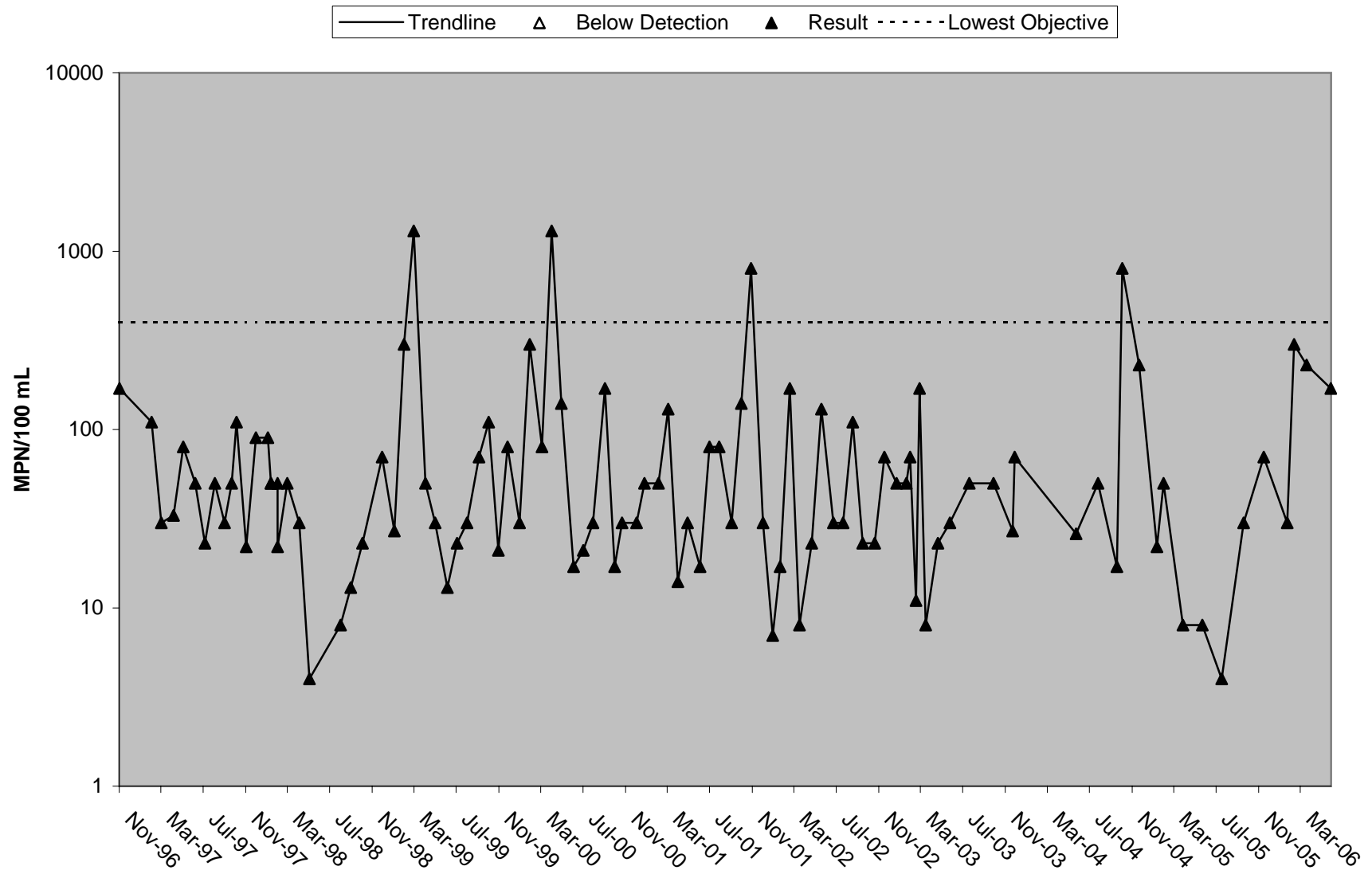
# Nimbus Total Kjeldahl Nitrogen (TKN)



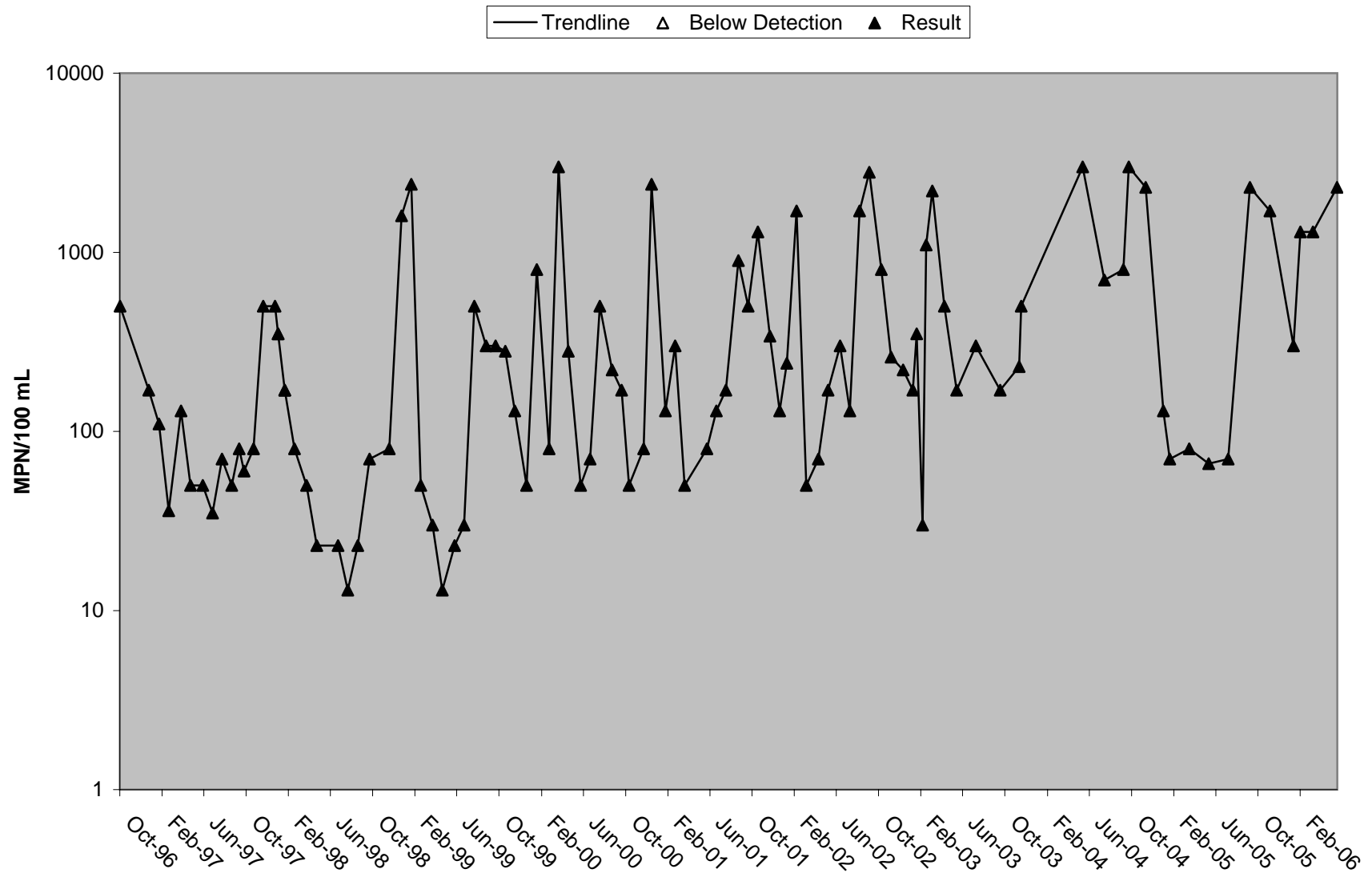
Nimbus *E. coli*



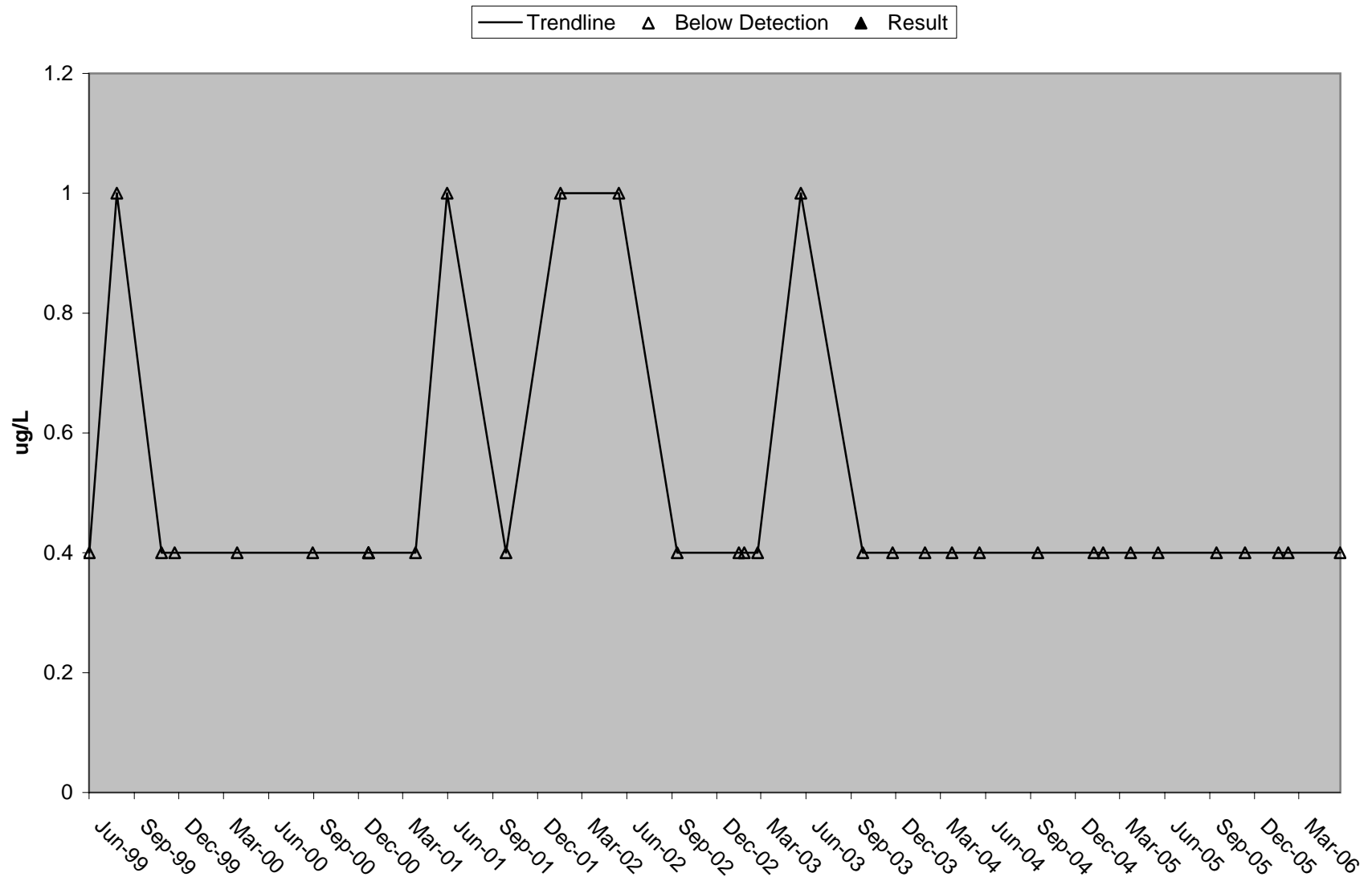
# Nimbus Fecal Coliform



# Nimbus Total Coliform

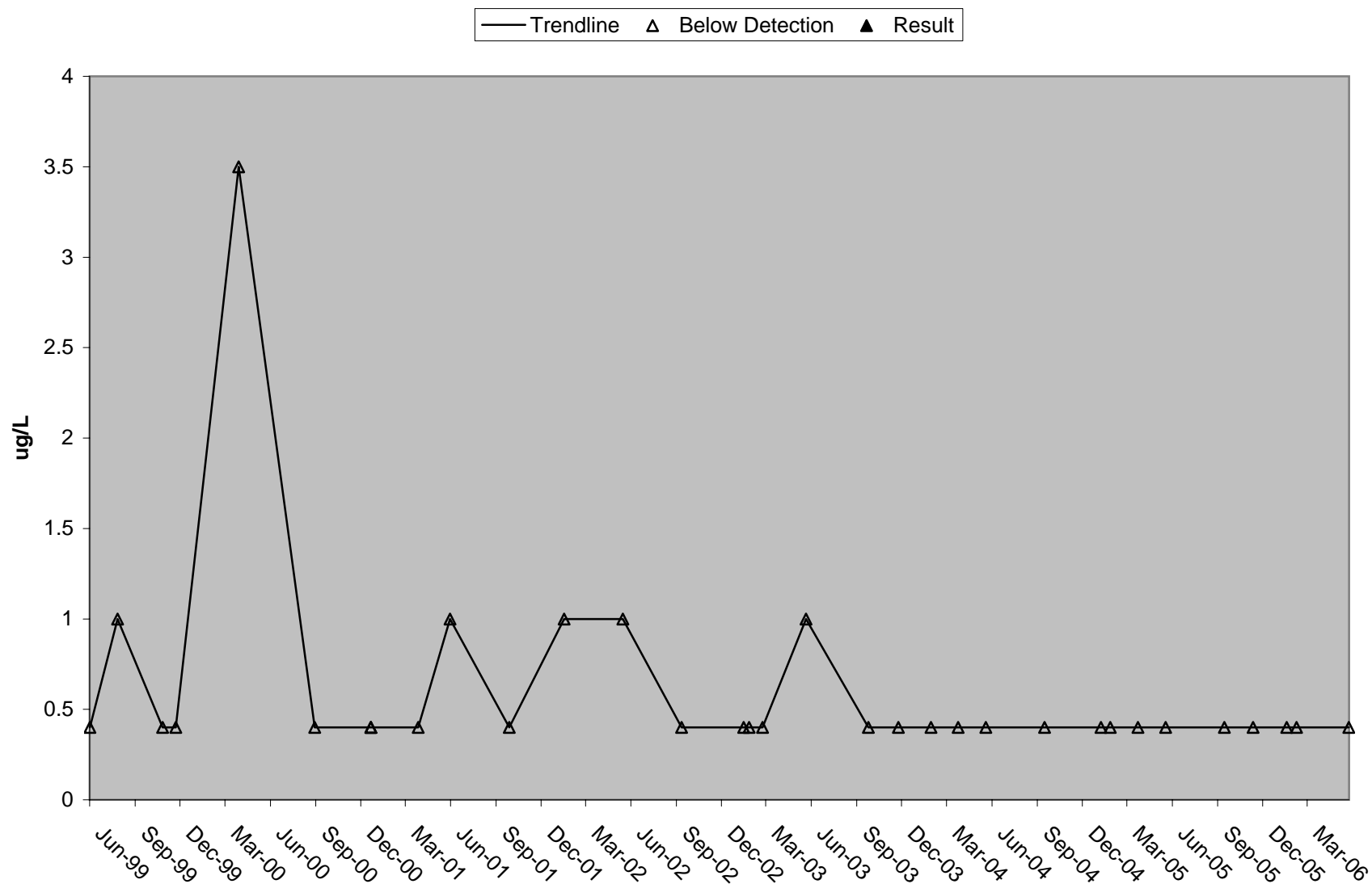


# Nimbus Aldicarb

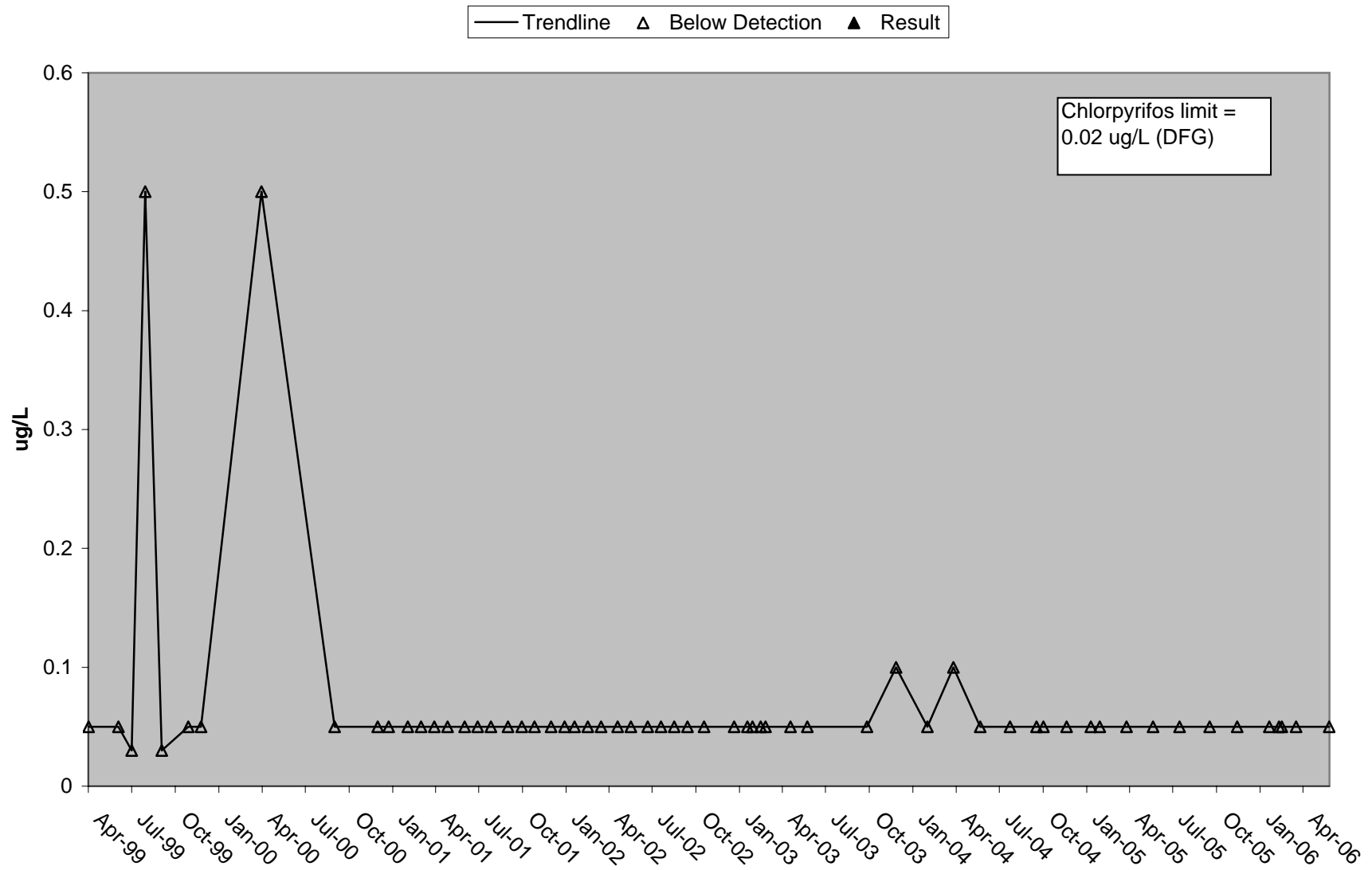




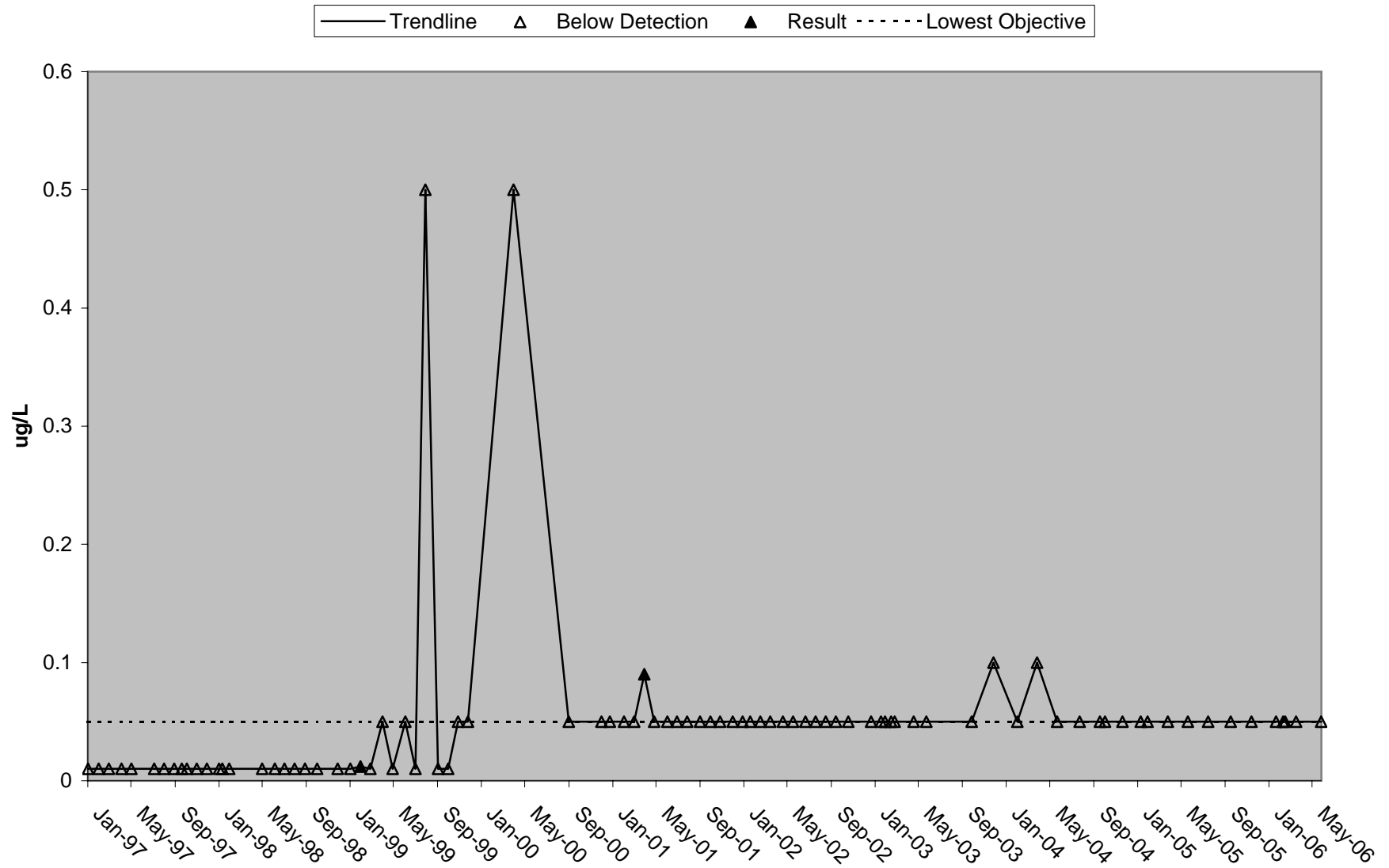
# Nimbus Propoxur



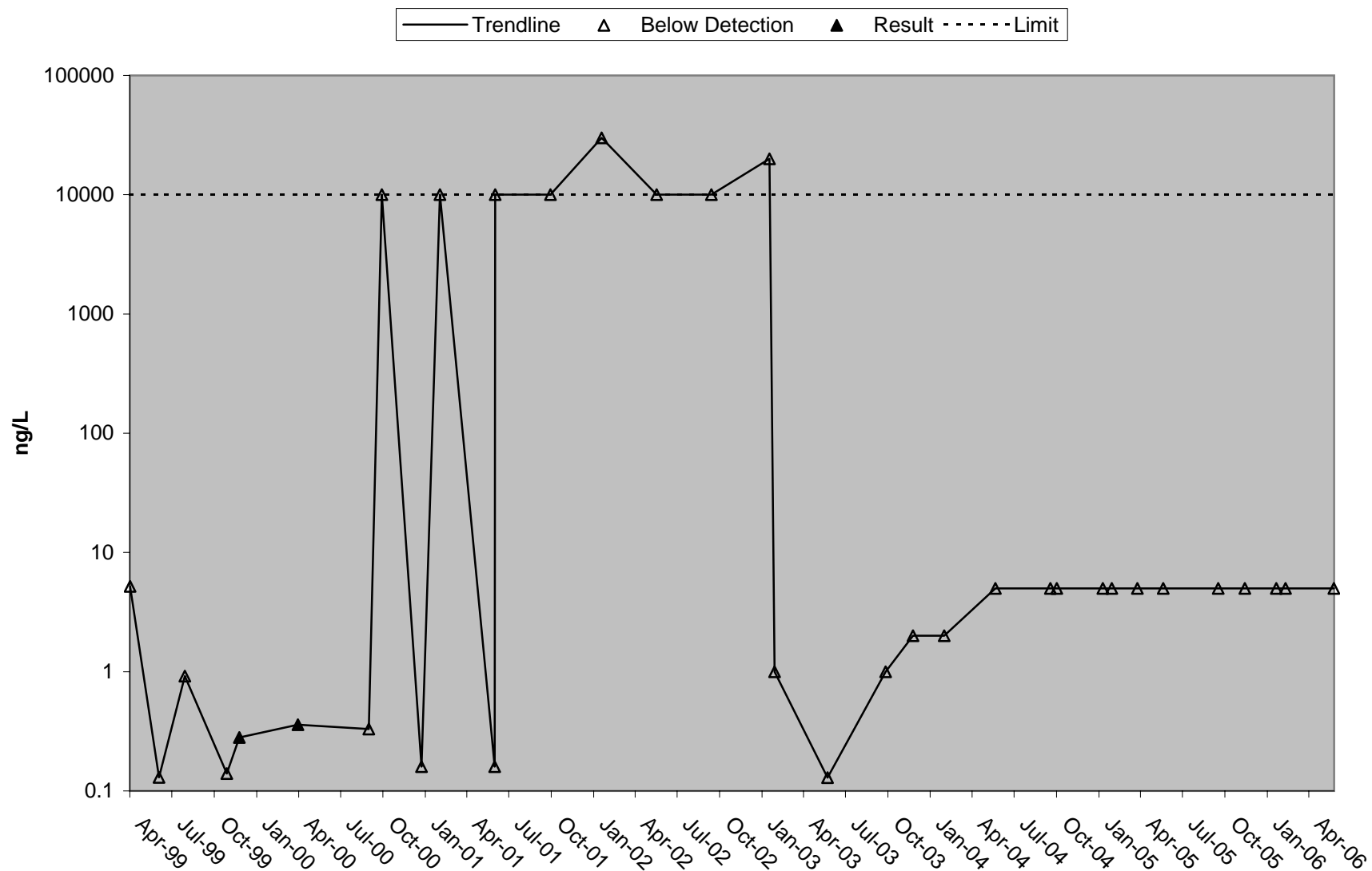
## Nimbus Chlorpyrifos



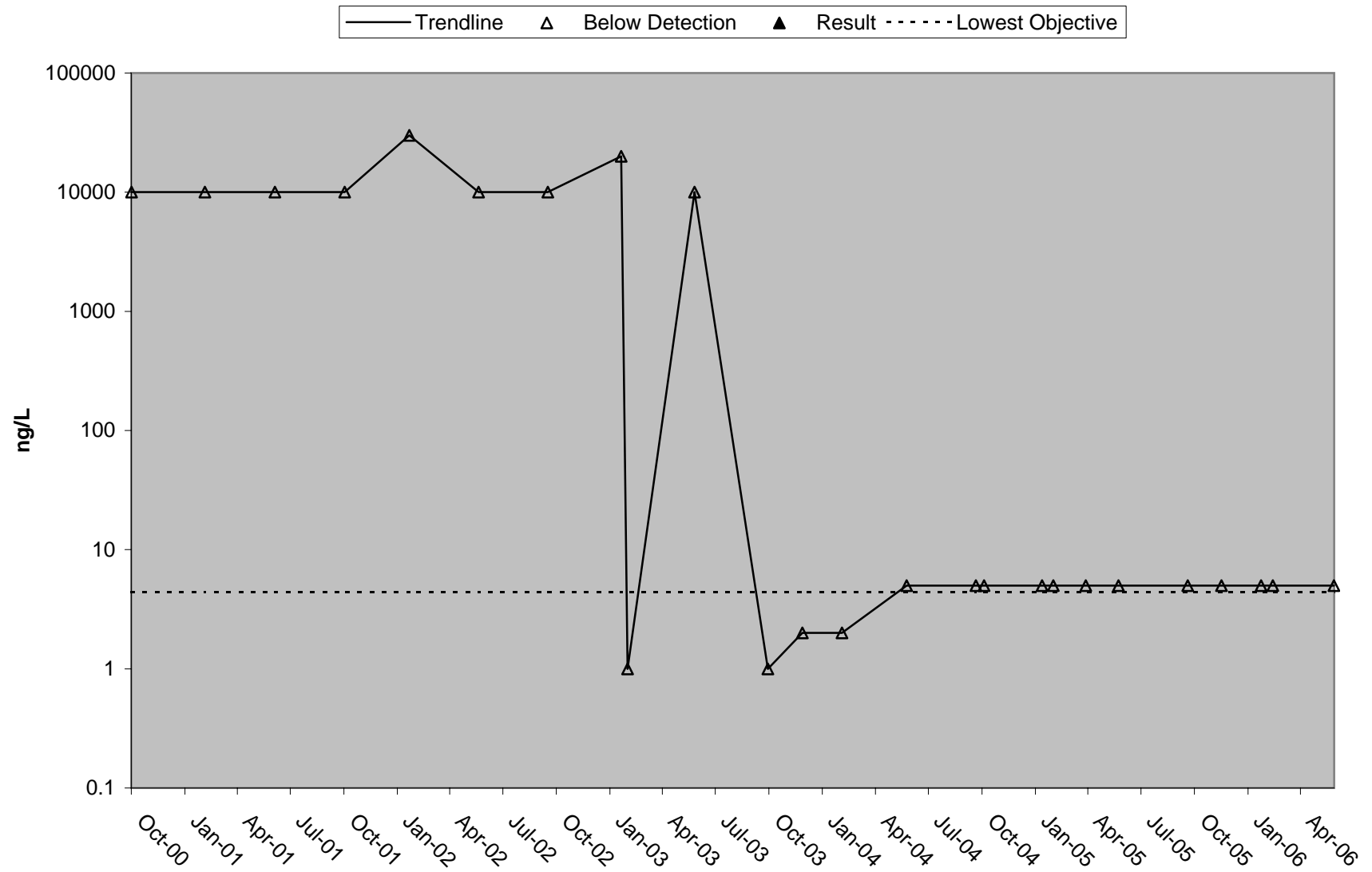
# Nimbus Diazinon



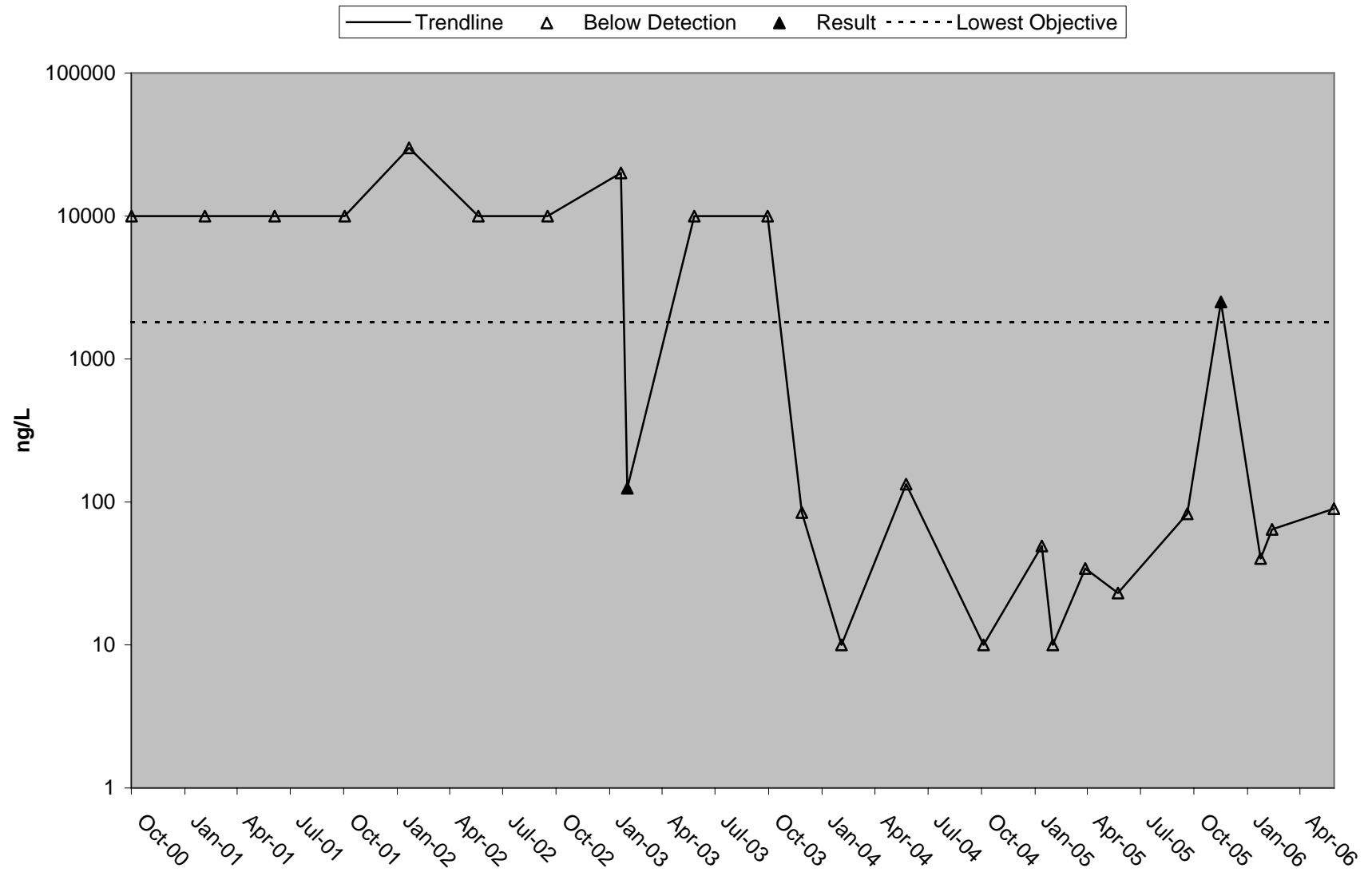
# Nimbus Anthracene



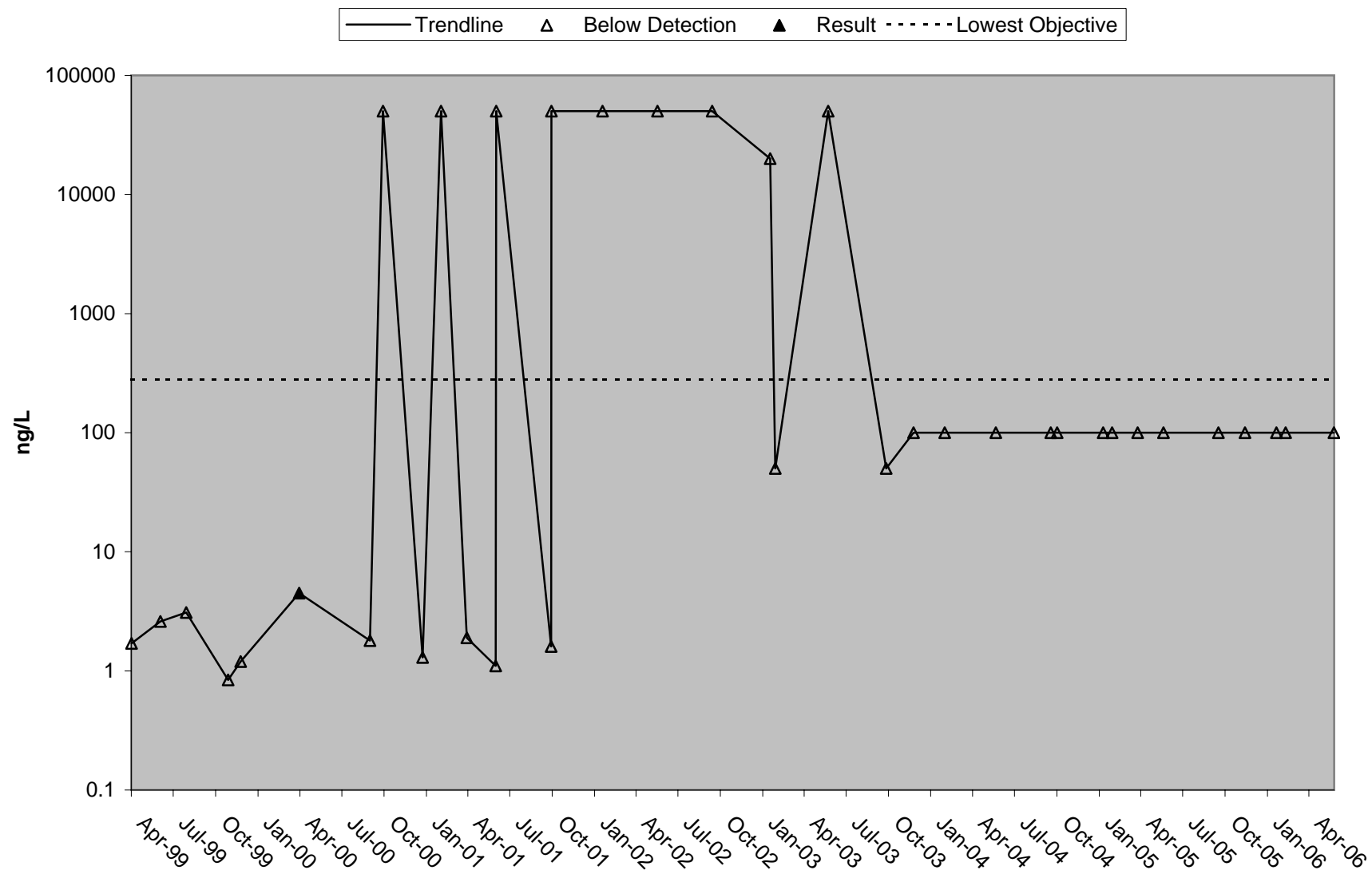
# Nimbus Benzo(k)fluoranthene



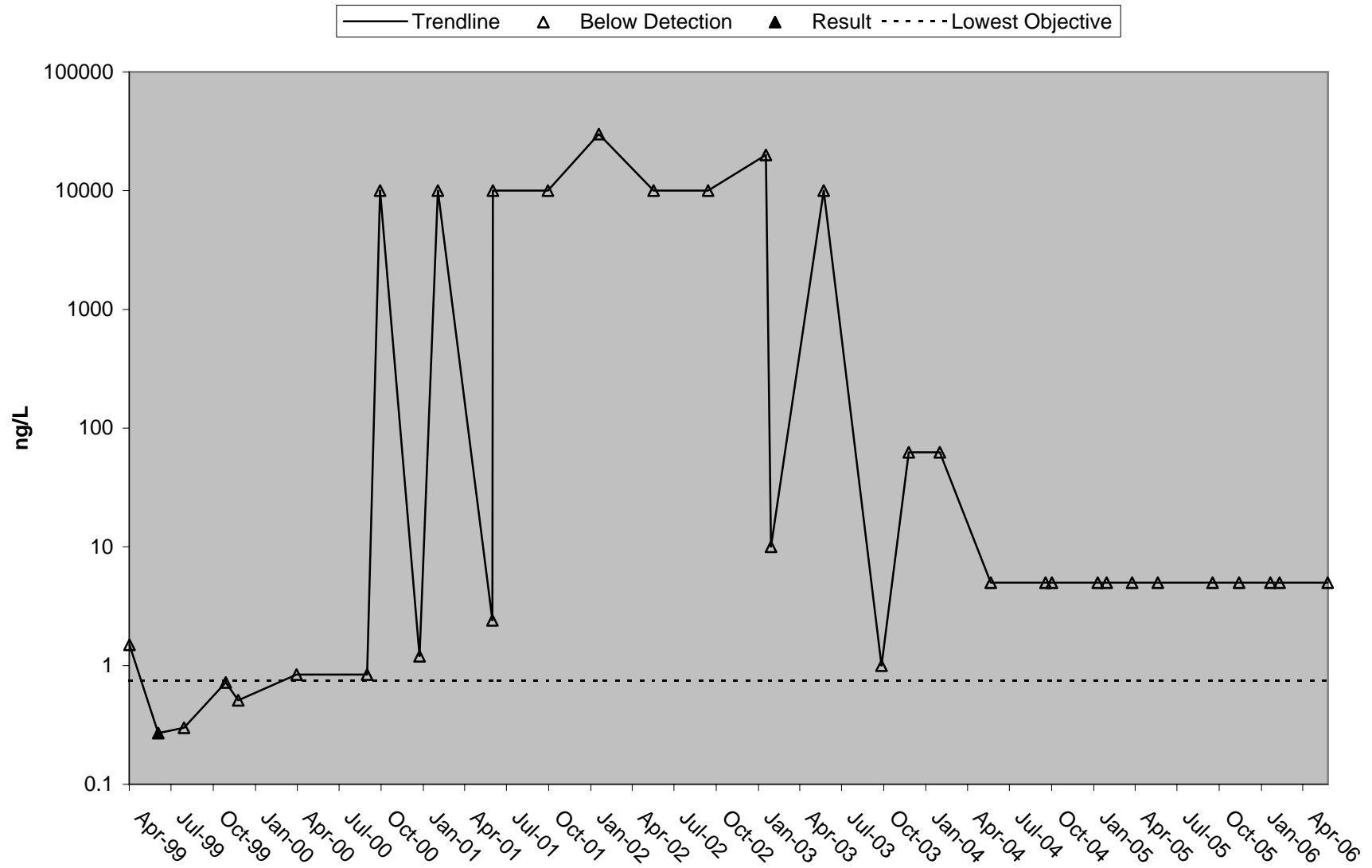
# Nimbus Bis(2-ethylhexyl) phthalate



# Nimbus Pentachlorophenol

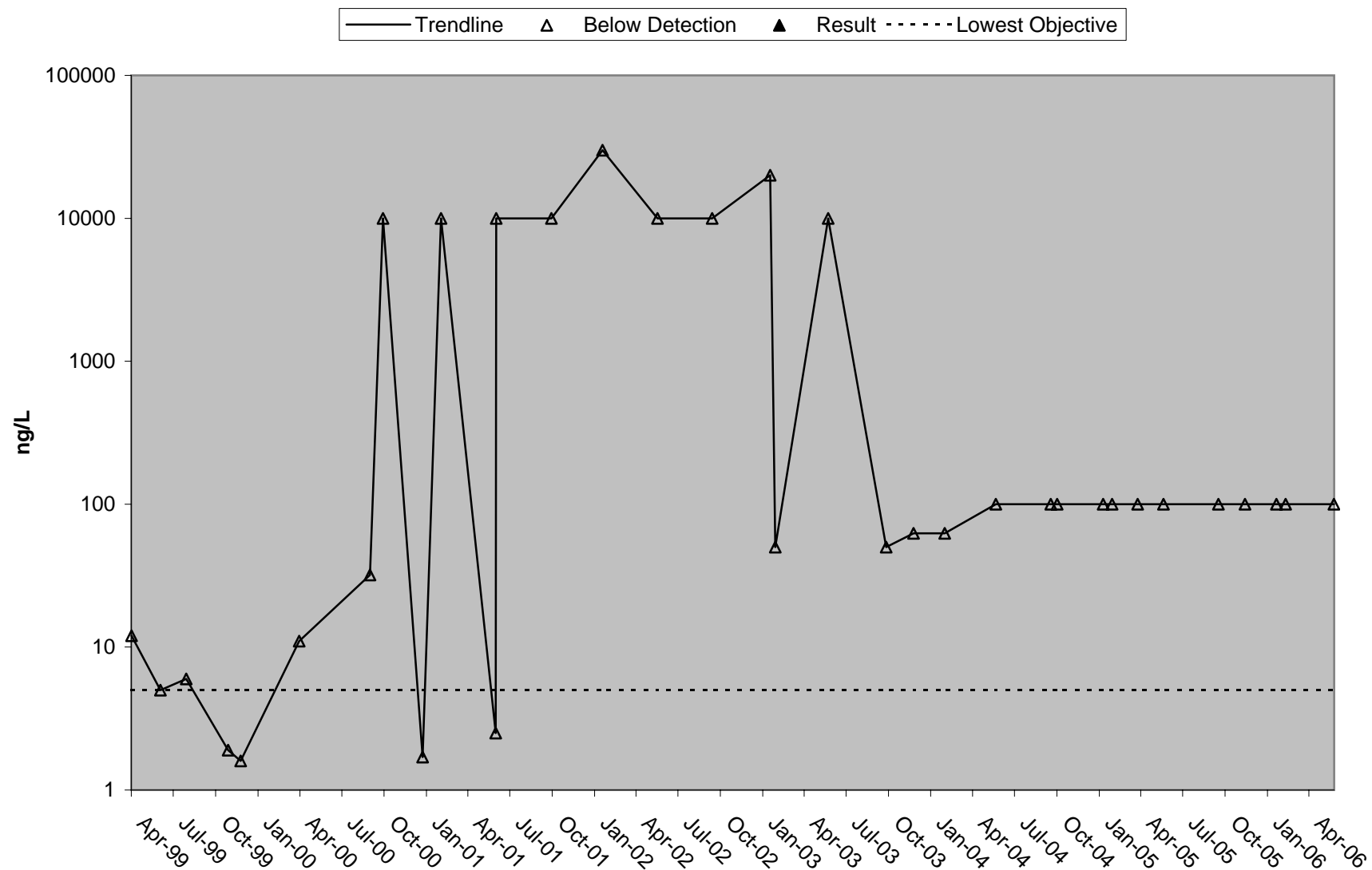


# Nimbus Hexachlorobenzene

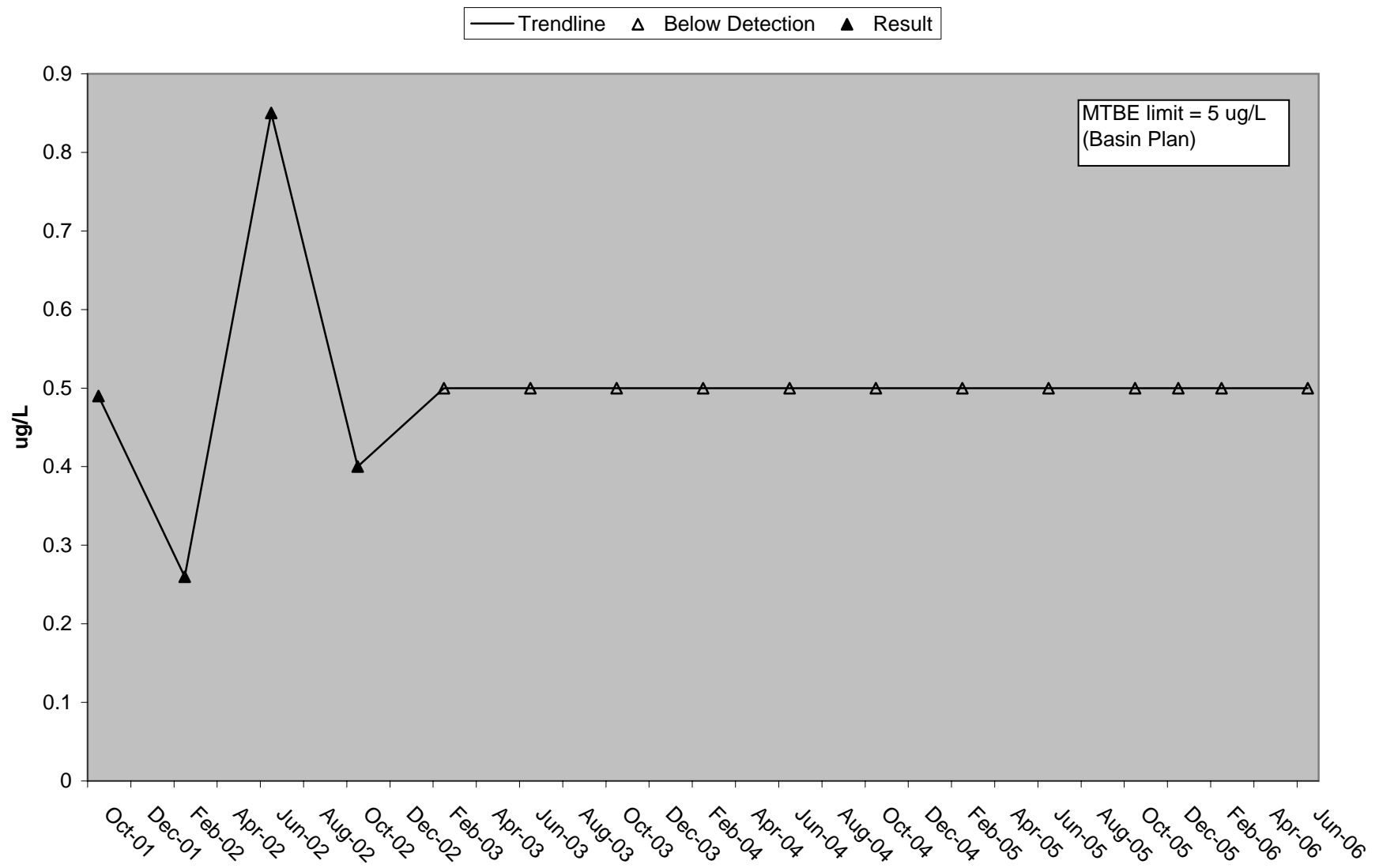




# Nimbus N-Nitrosodi-N-Propylamine



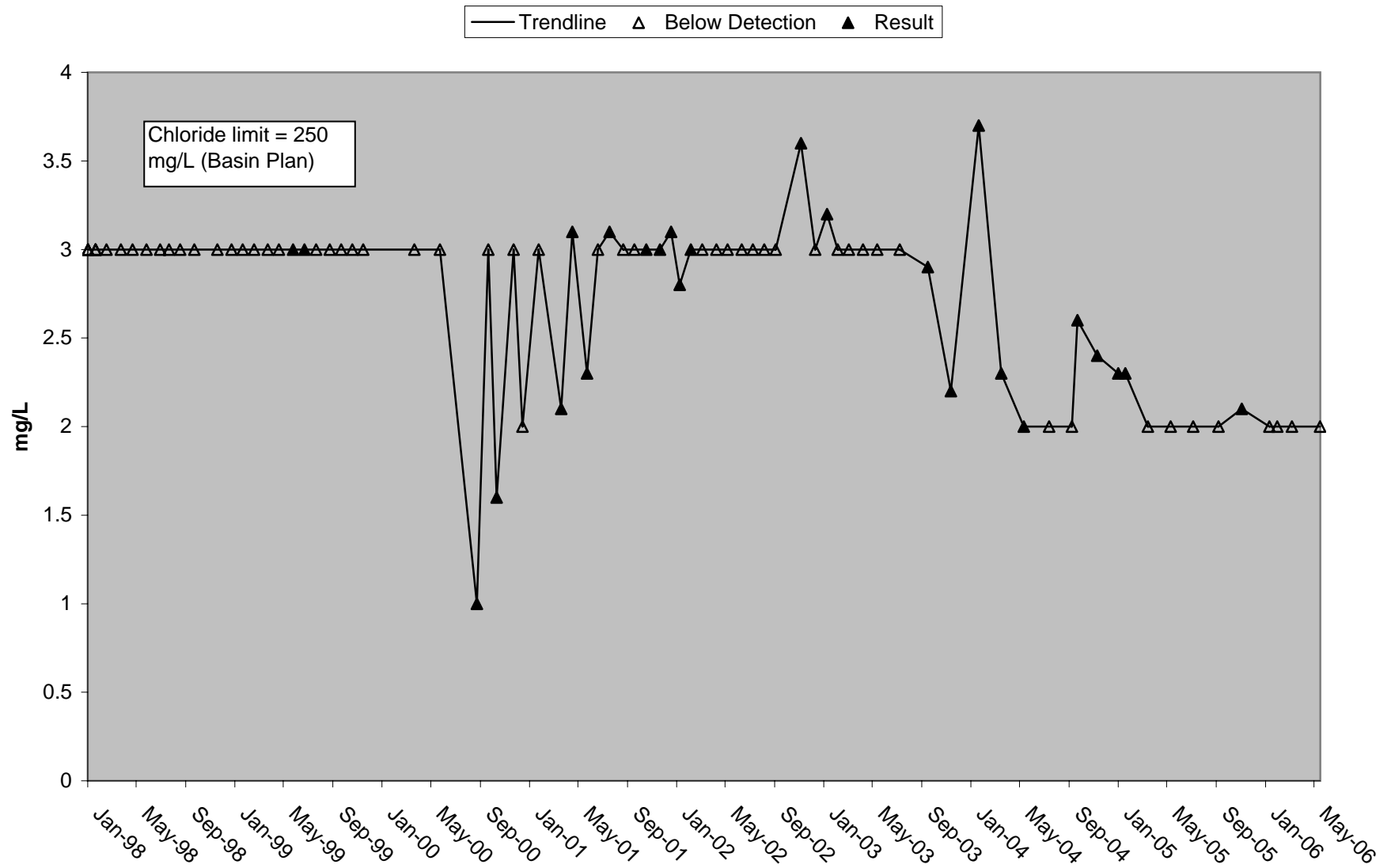
# Nimbus MTBE



## *APPENDIX C-5*

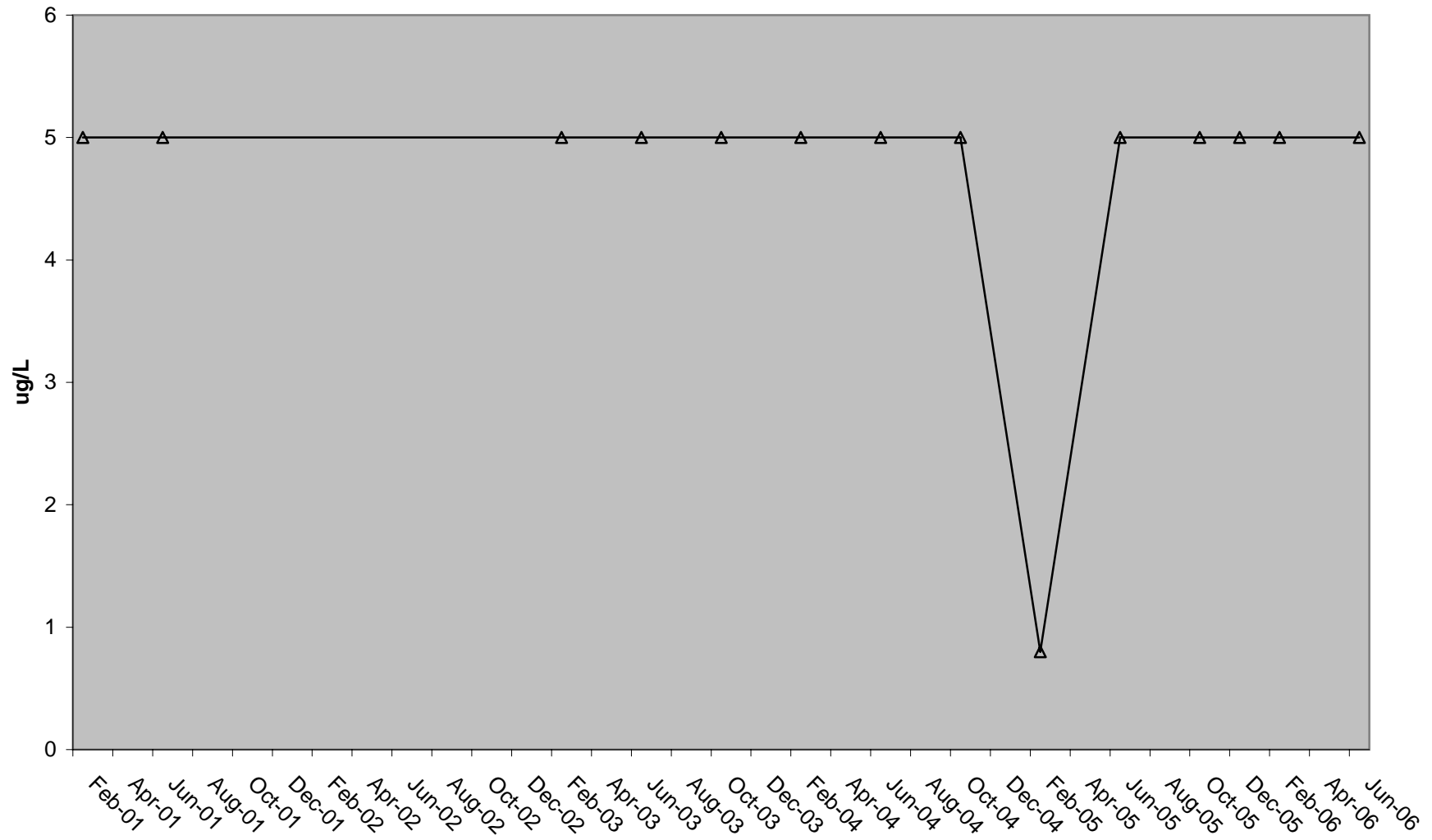
### *American River at Discovery Park*

## Discovery Park Chloride

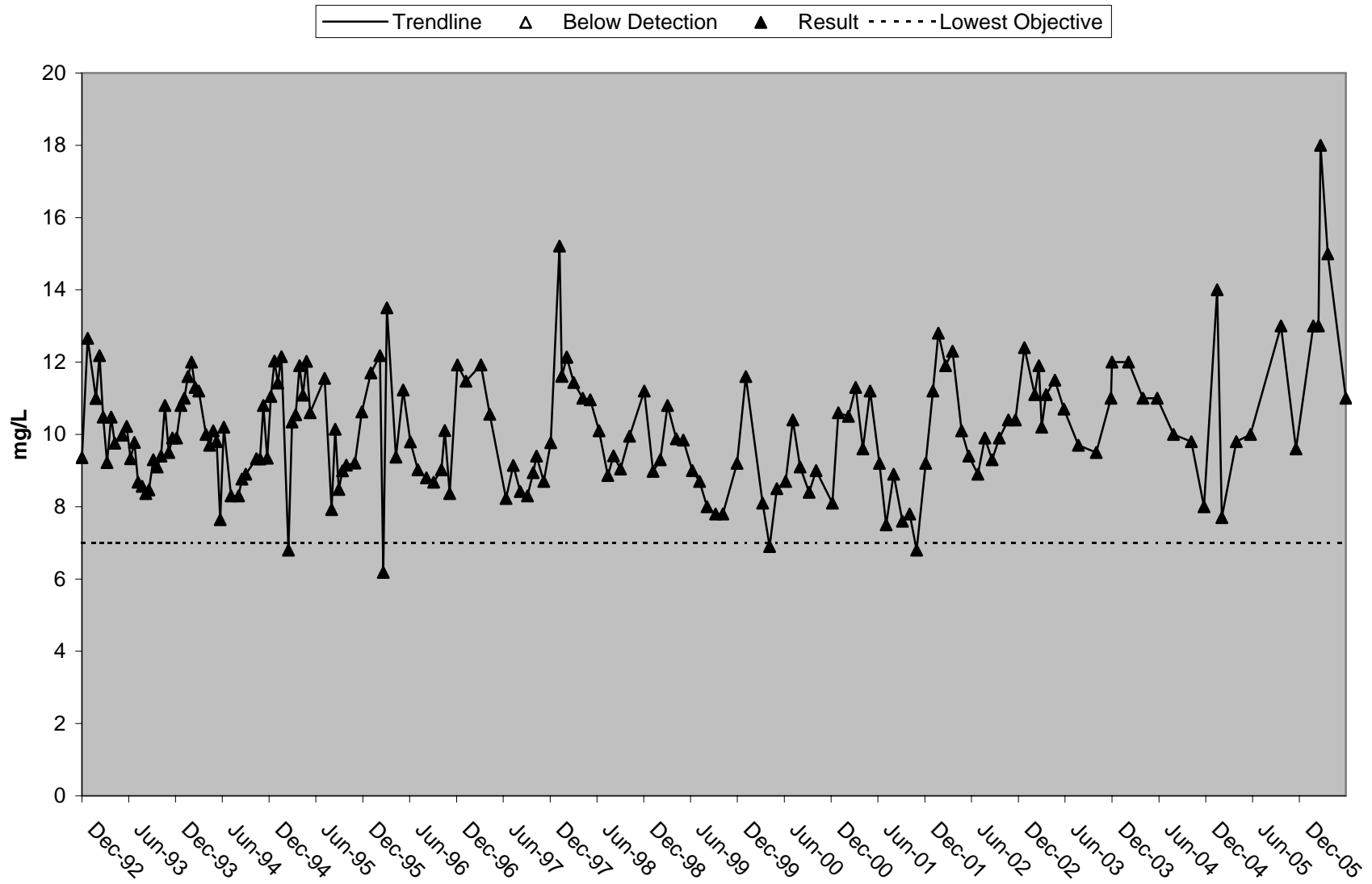


# Discovery Park Cyanide

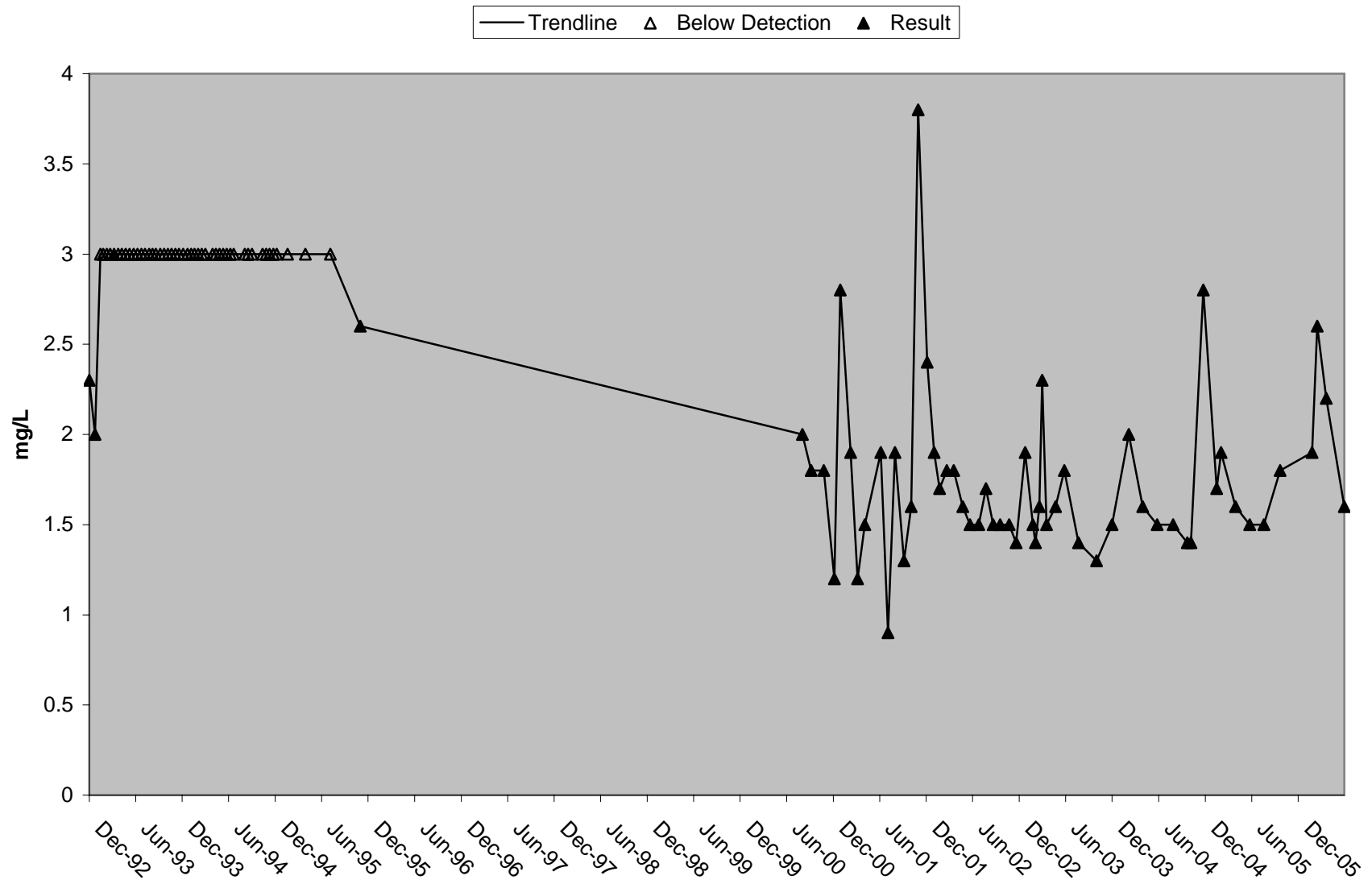
— Trendline    △ Below Detection    ▲ Result



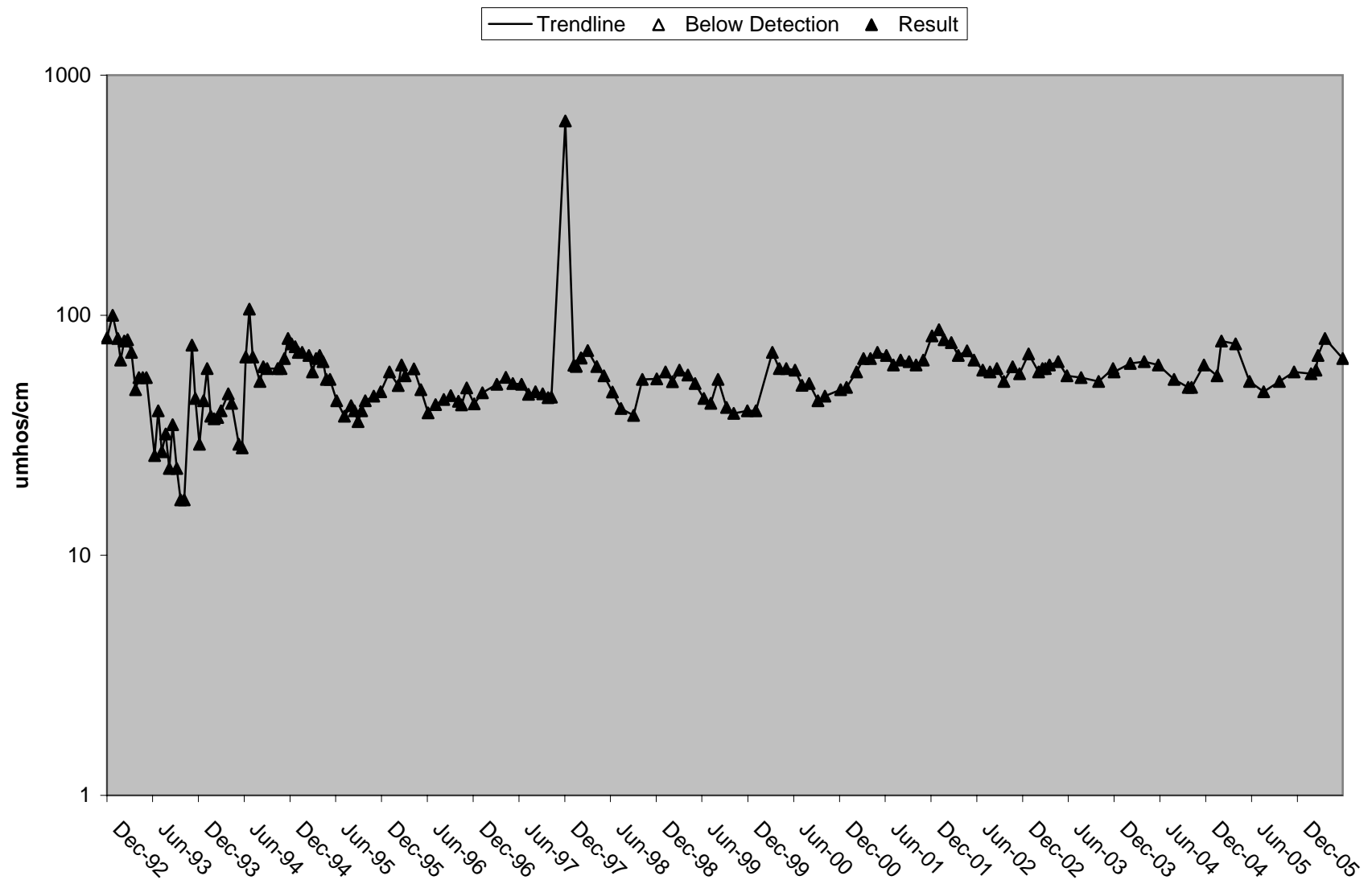
## Discovery Park Dissolved Oxygen (DO)



# Discovery Park Dissolved Organic Carbon (DOC)



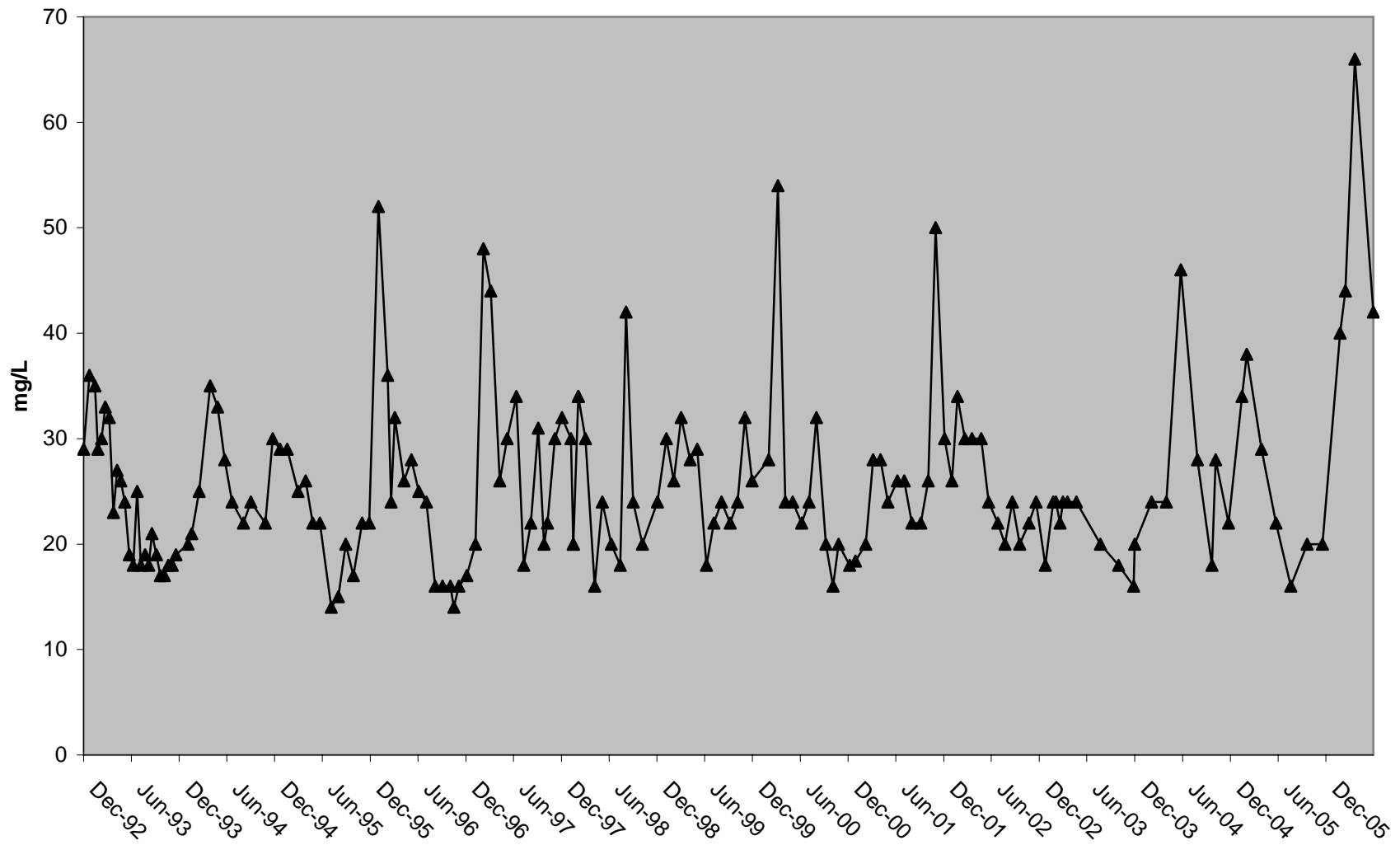
# Discovery Park Electrical Conductivity (EC)



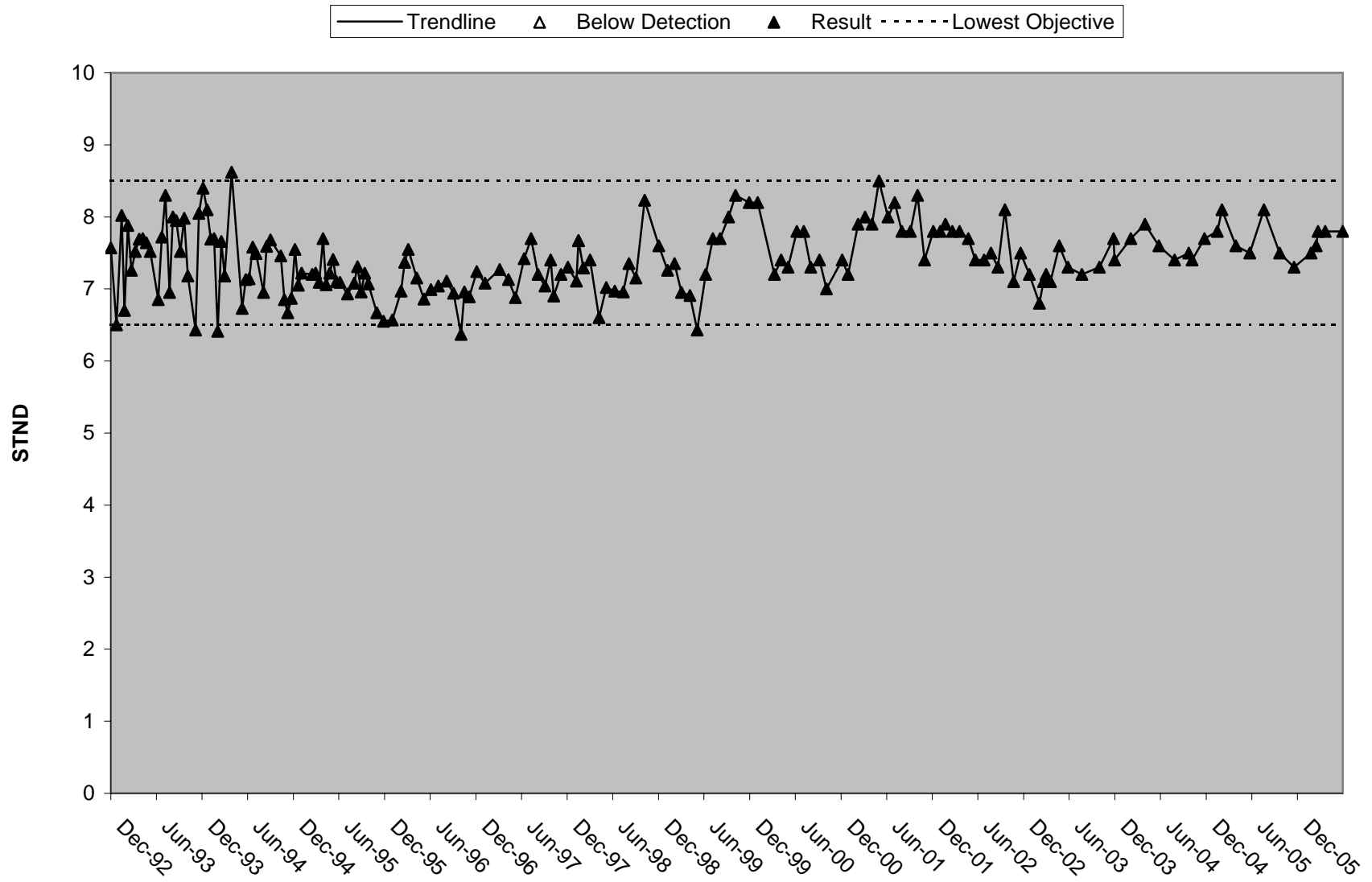


# Discovery Park Hardness

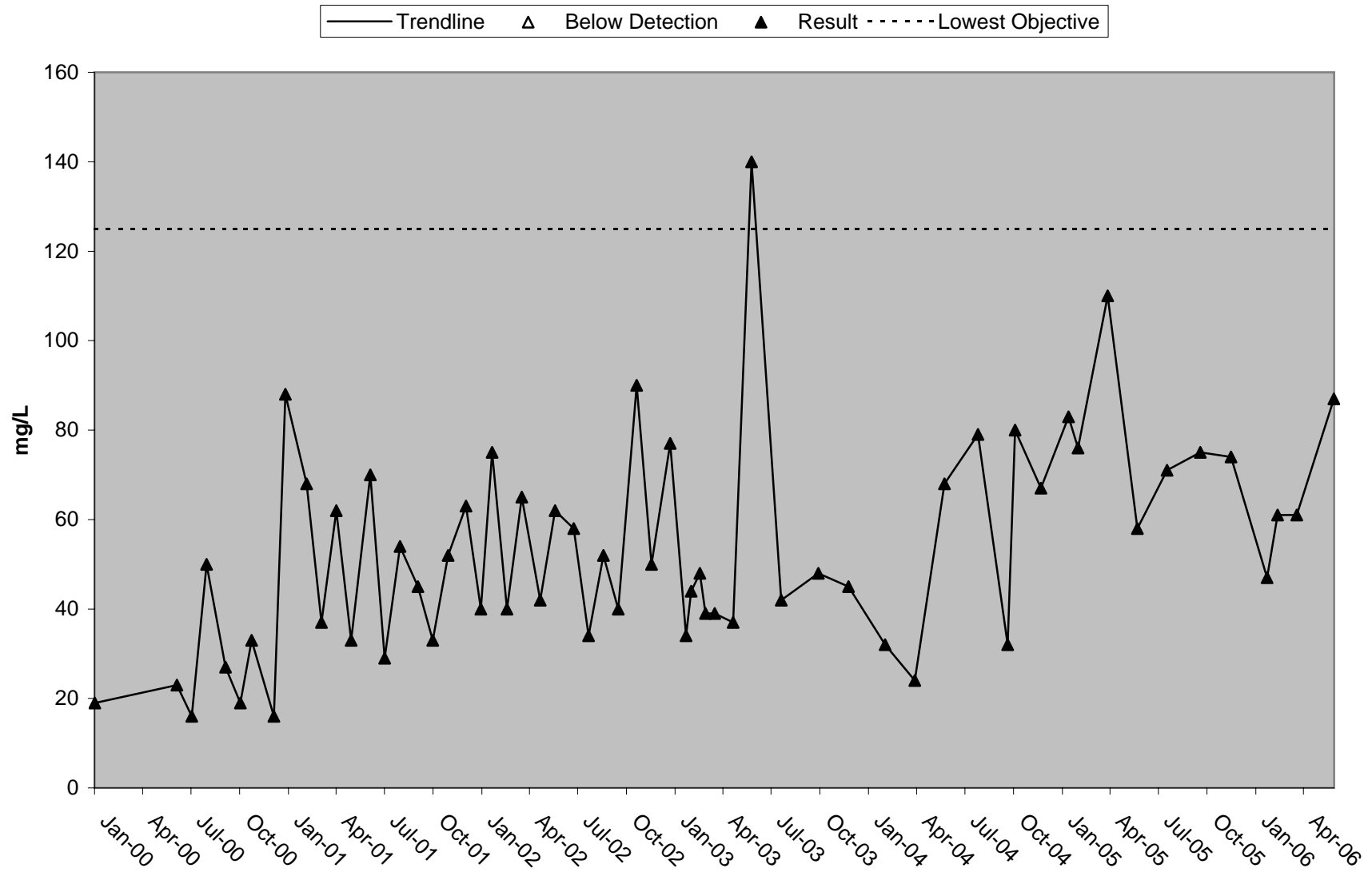
— Trendline    △ Below Detection    ▲ Result



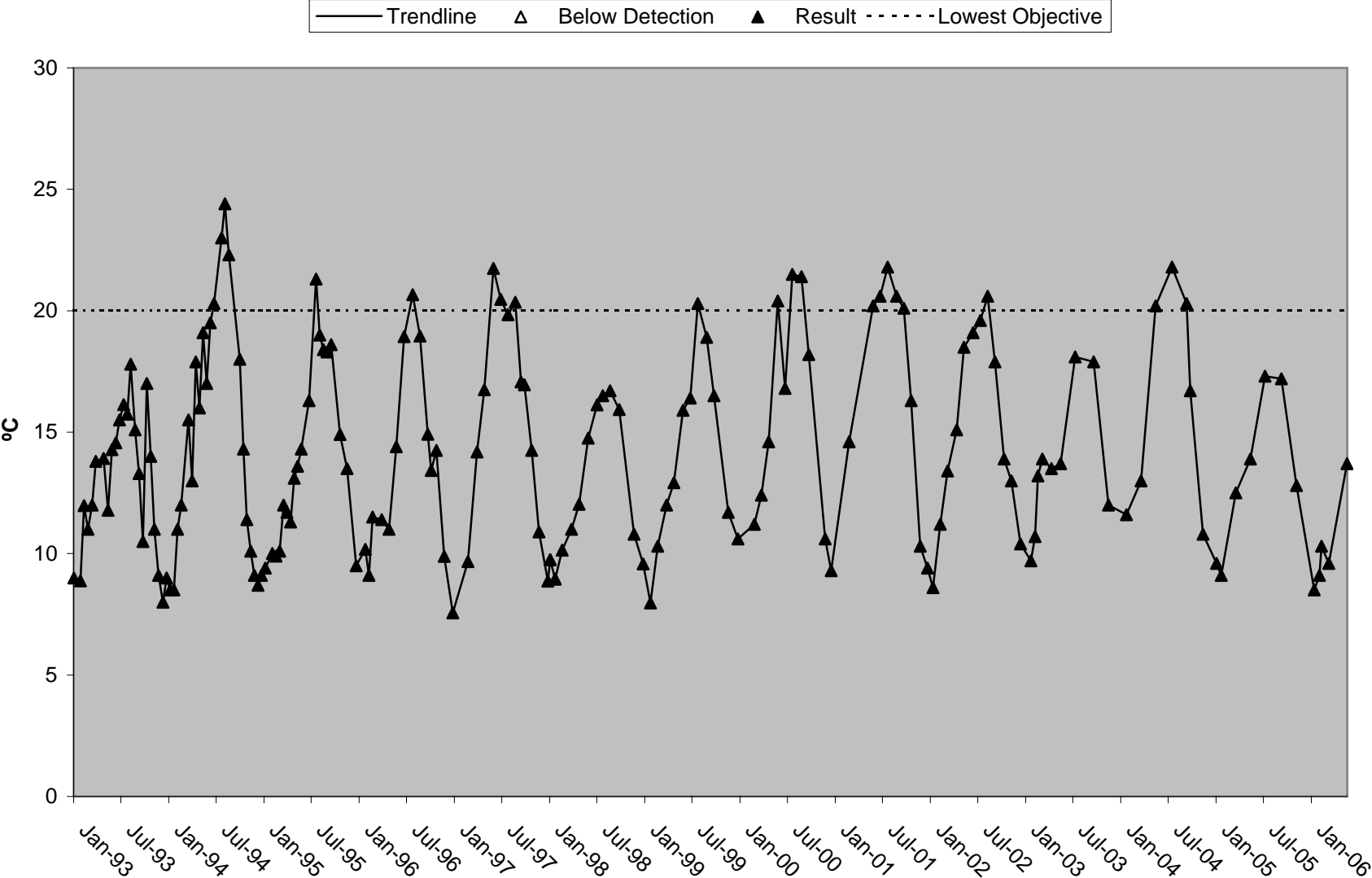
# Discovery Park pH



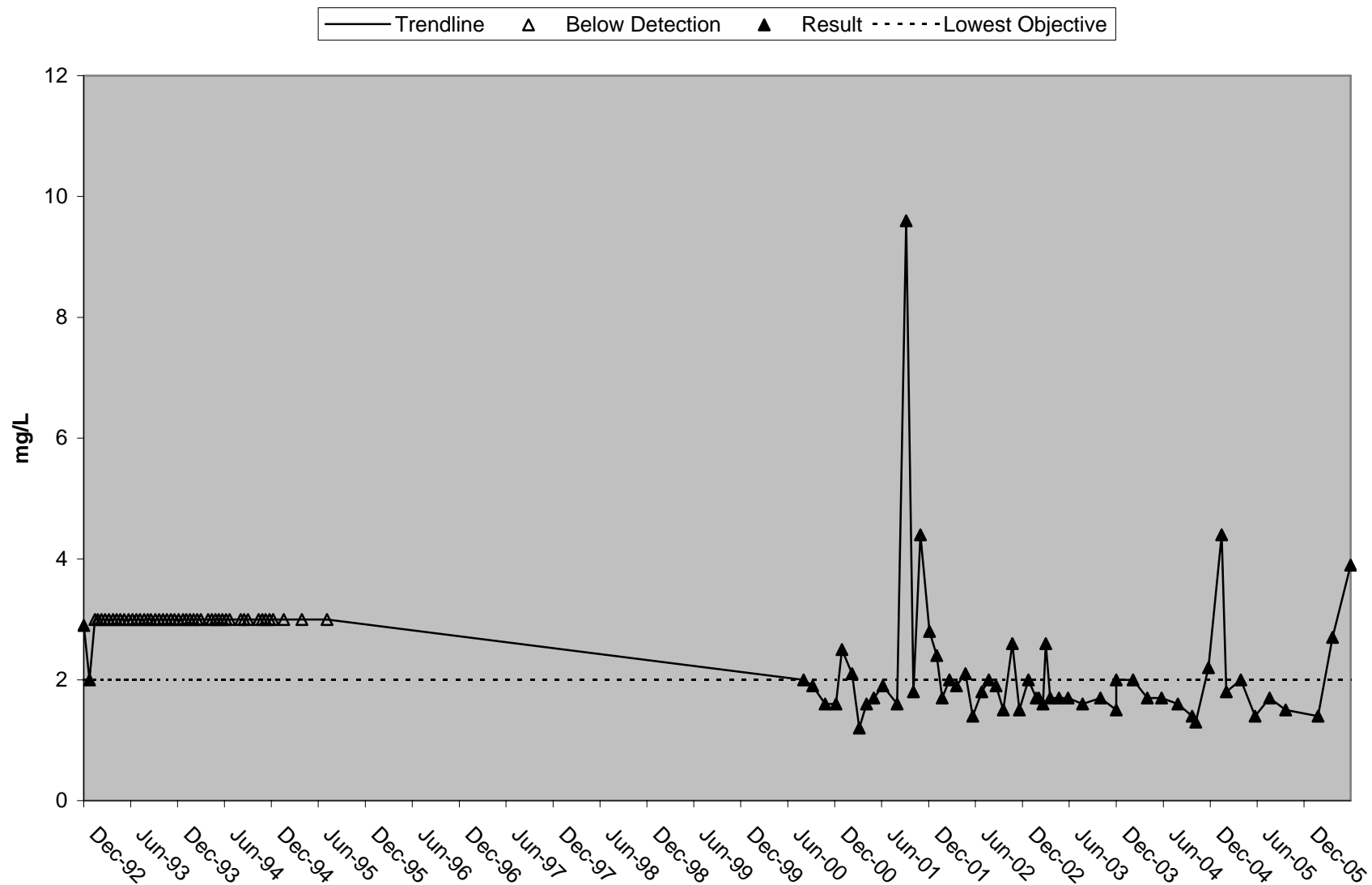
# Discovery Park Total Dissolved Solids (TDS)



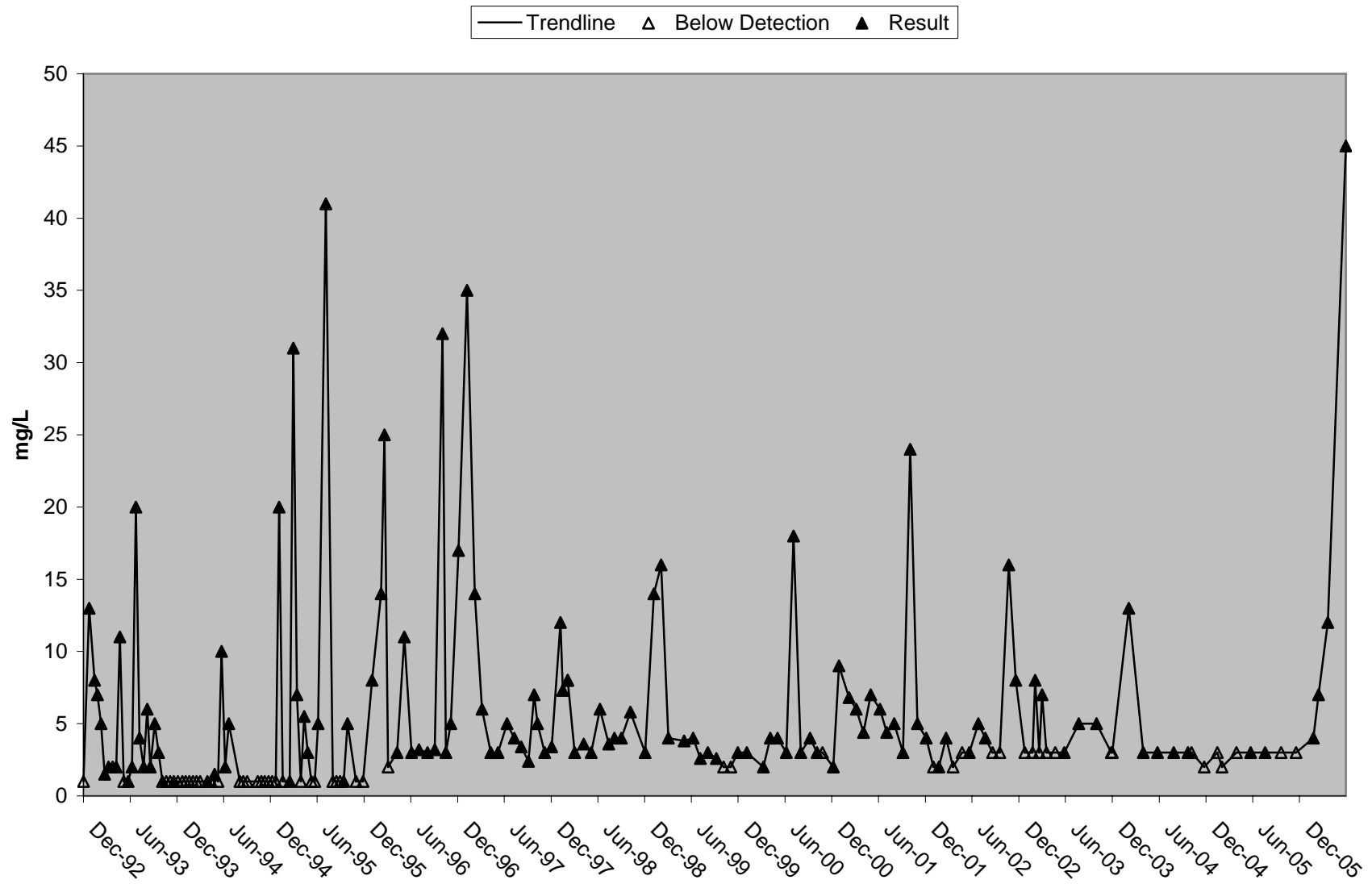
# Discovery Park Water Temperature



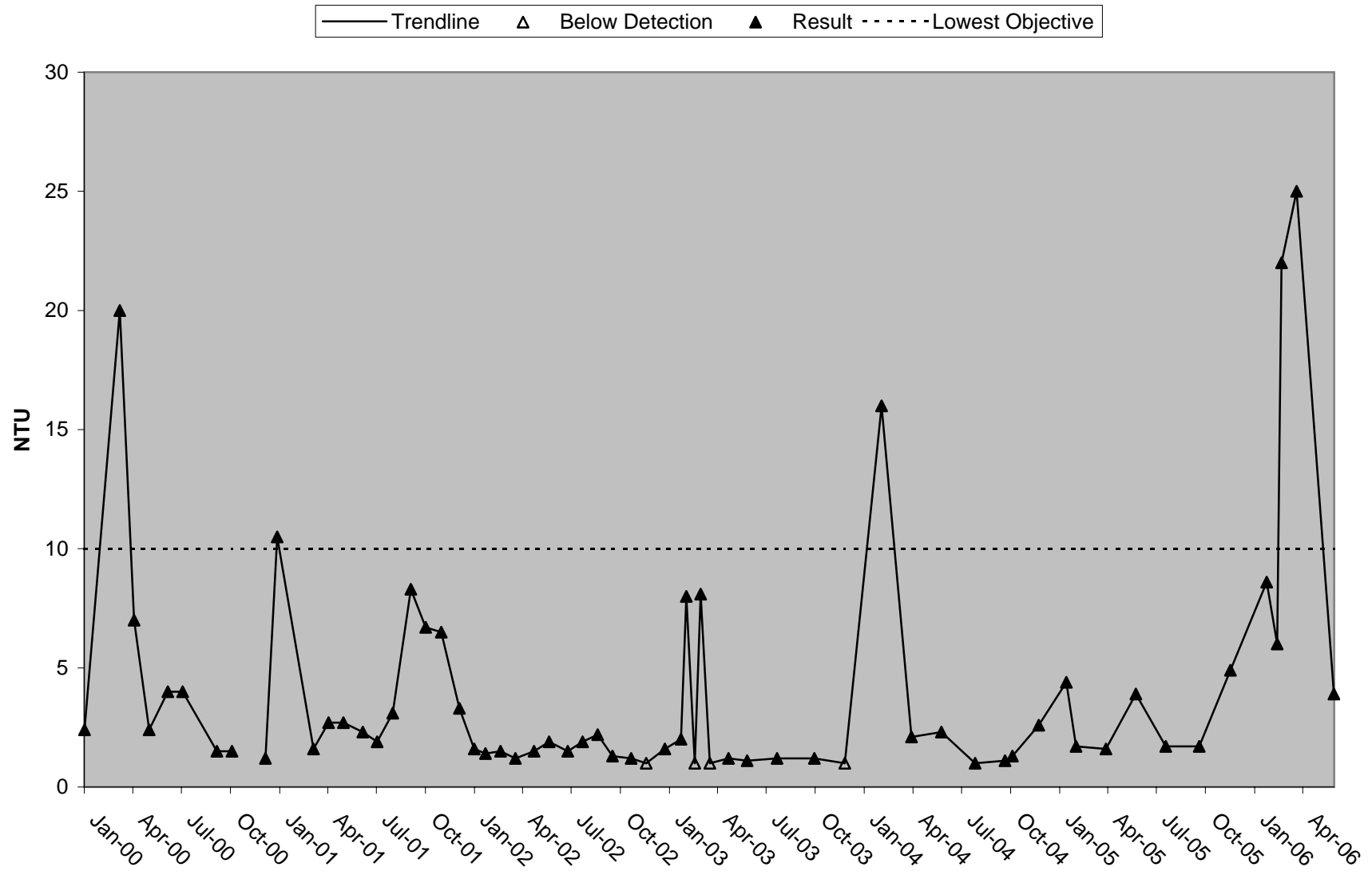
# Discovery Park Total Organic Carbon (TOC)



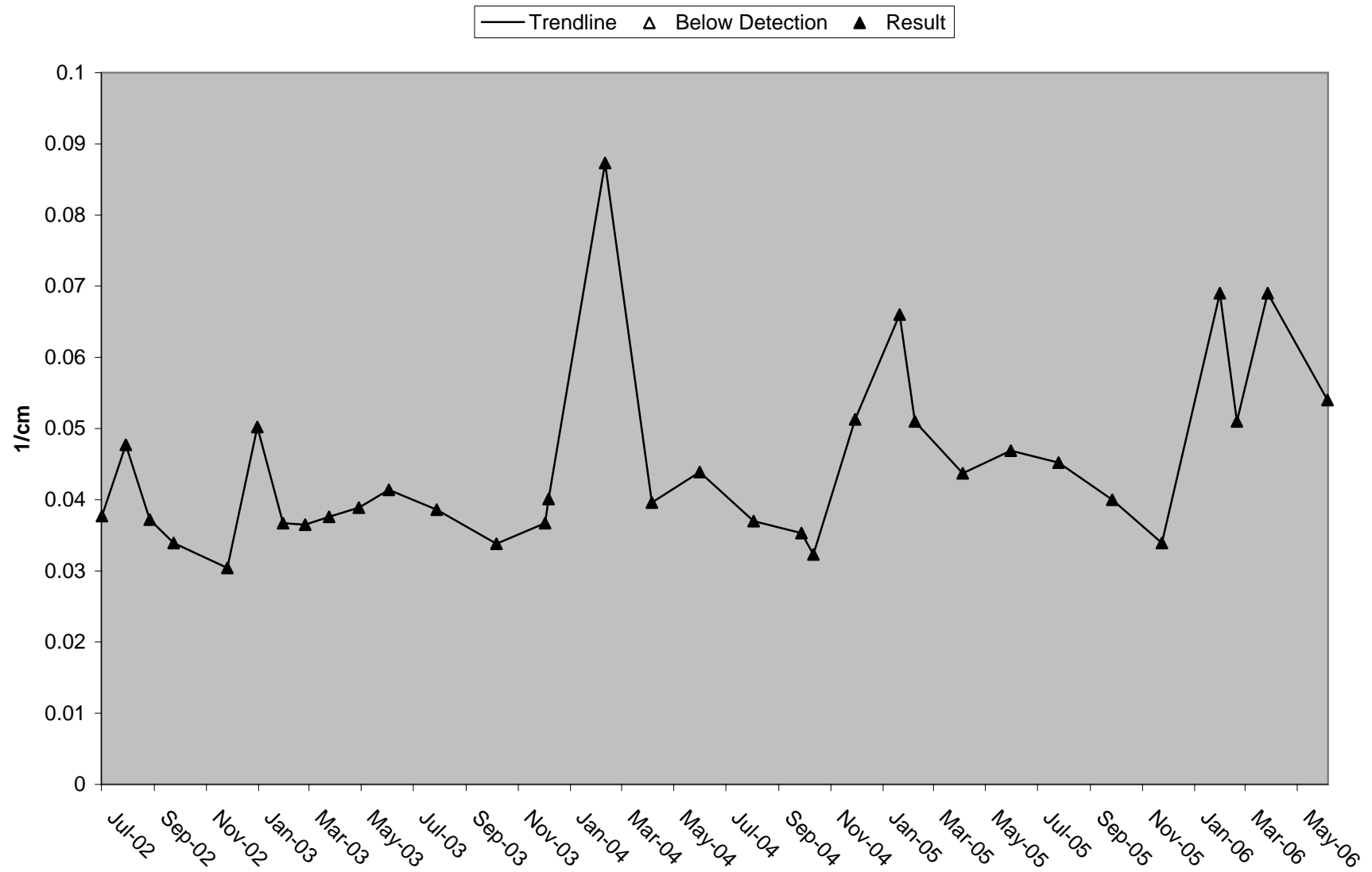
# Discovery Park Total Suspended Solids (TSS)



# Discovery Park Turbidity

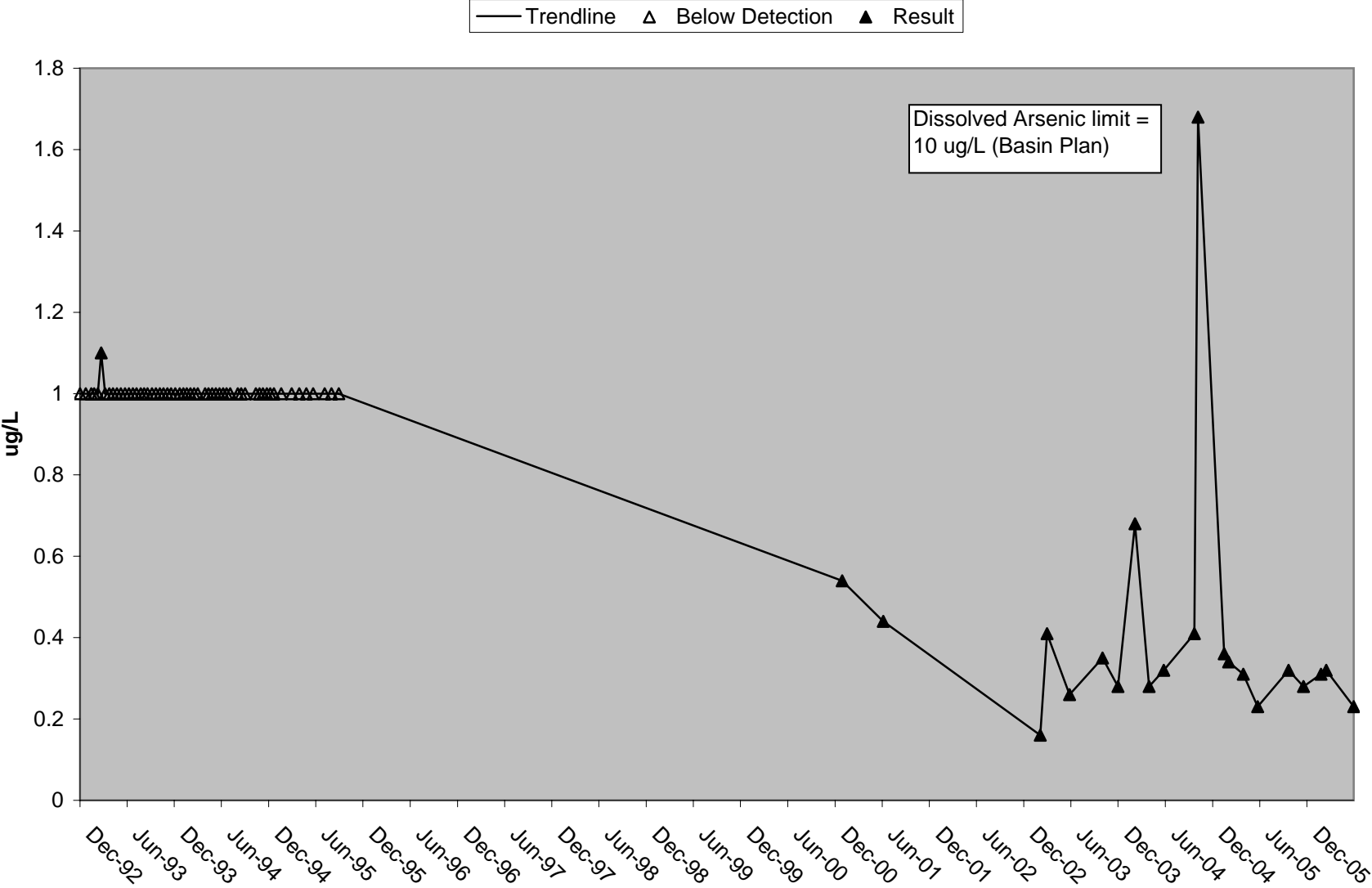


## Discovery Park UVA 254

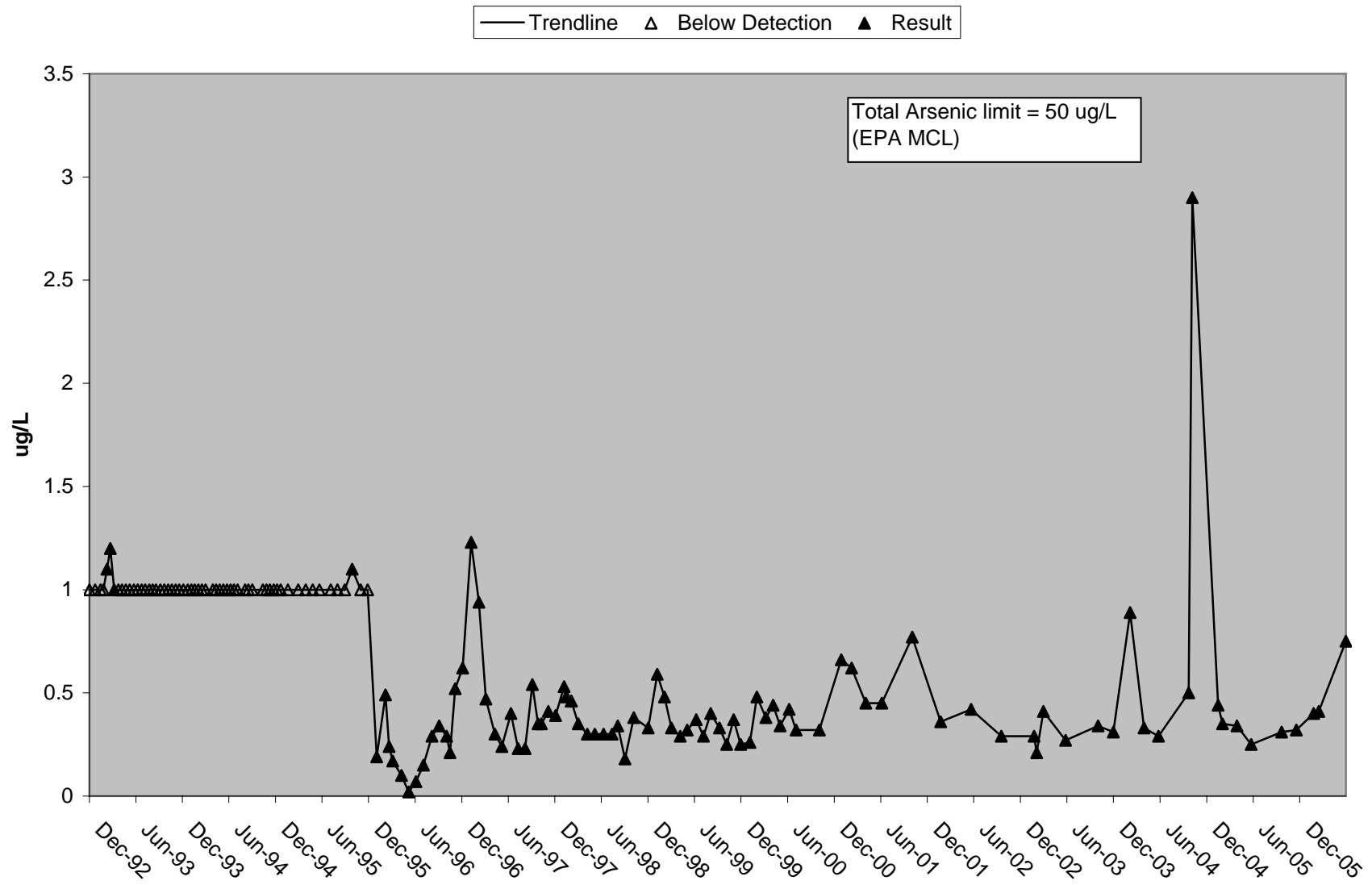




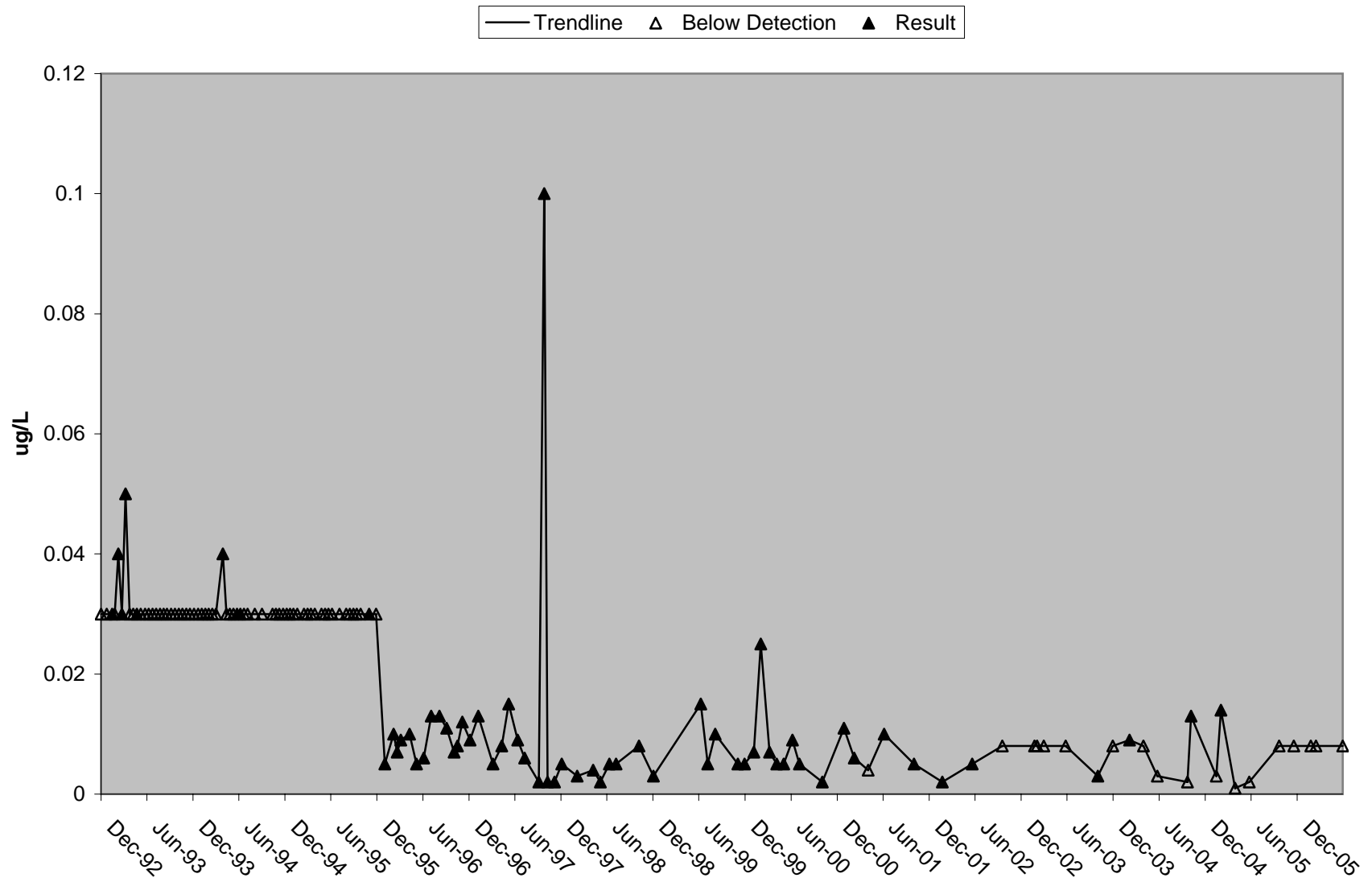
Discovery Park Dissolved Arsenic (As-d)



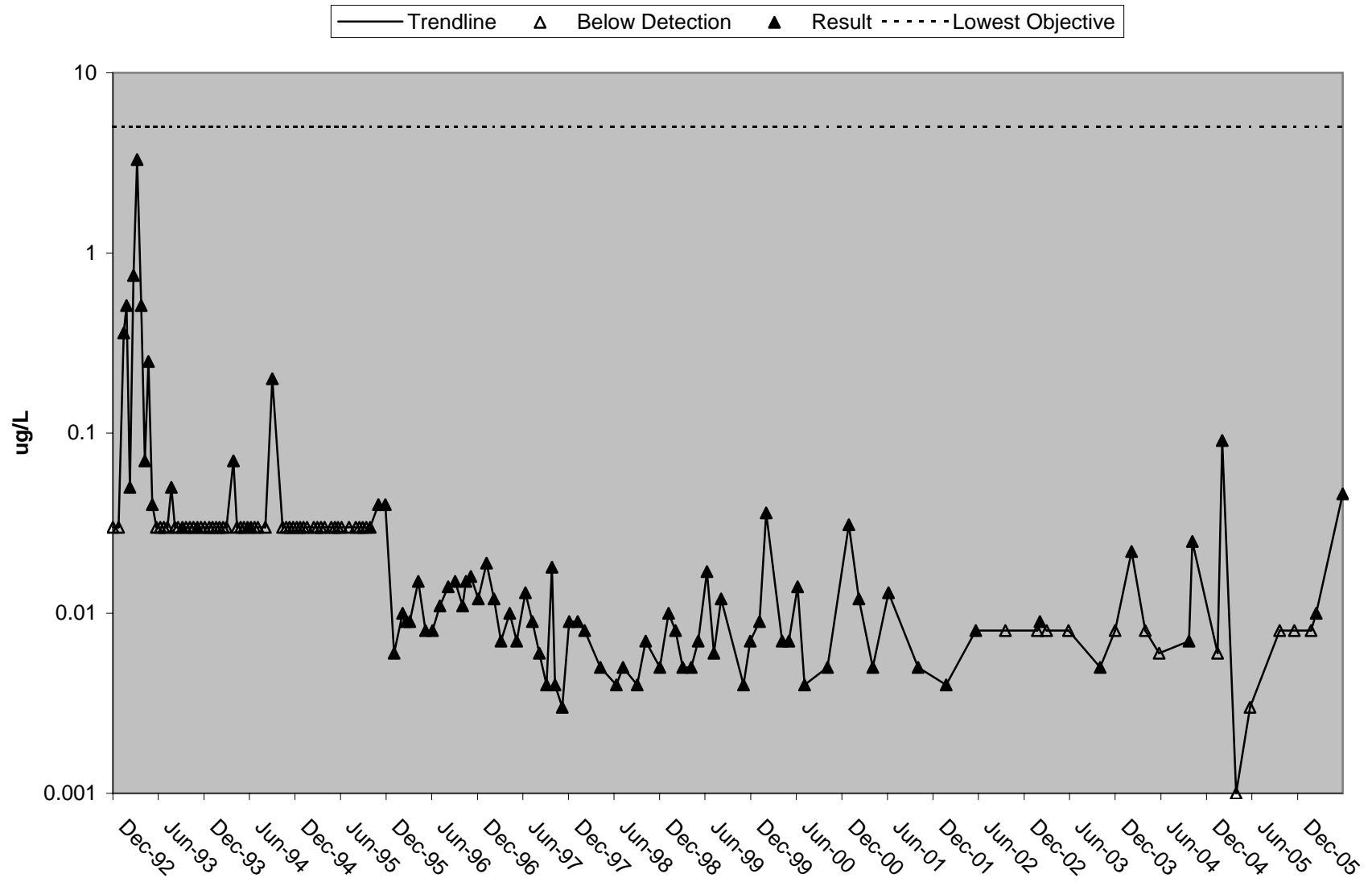
### Discovery Park Total Arsenic (As-T)



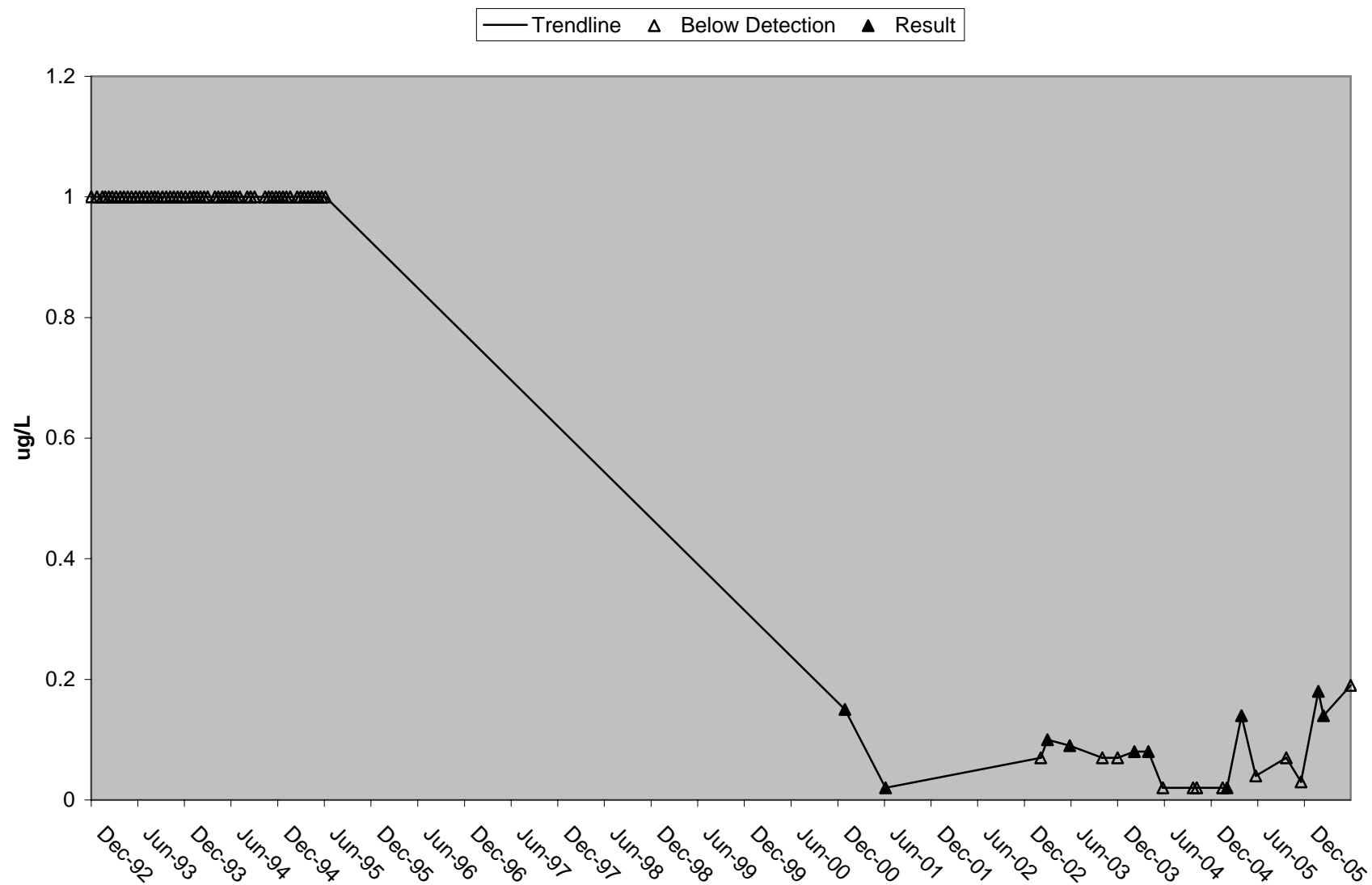
# Discovery Park Dissolved Cadmium



# Discovery Park Total Cadmium (Cd-T)

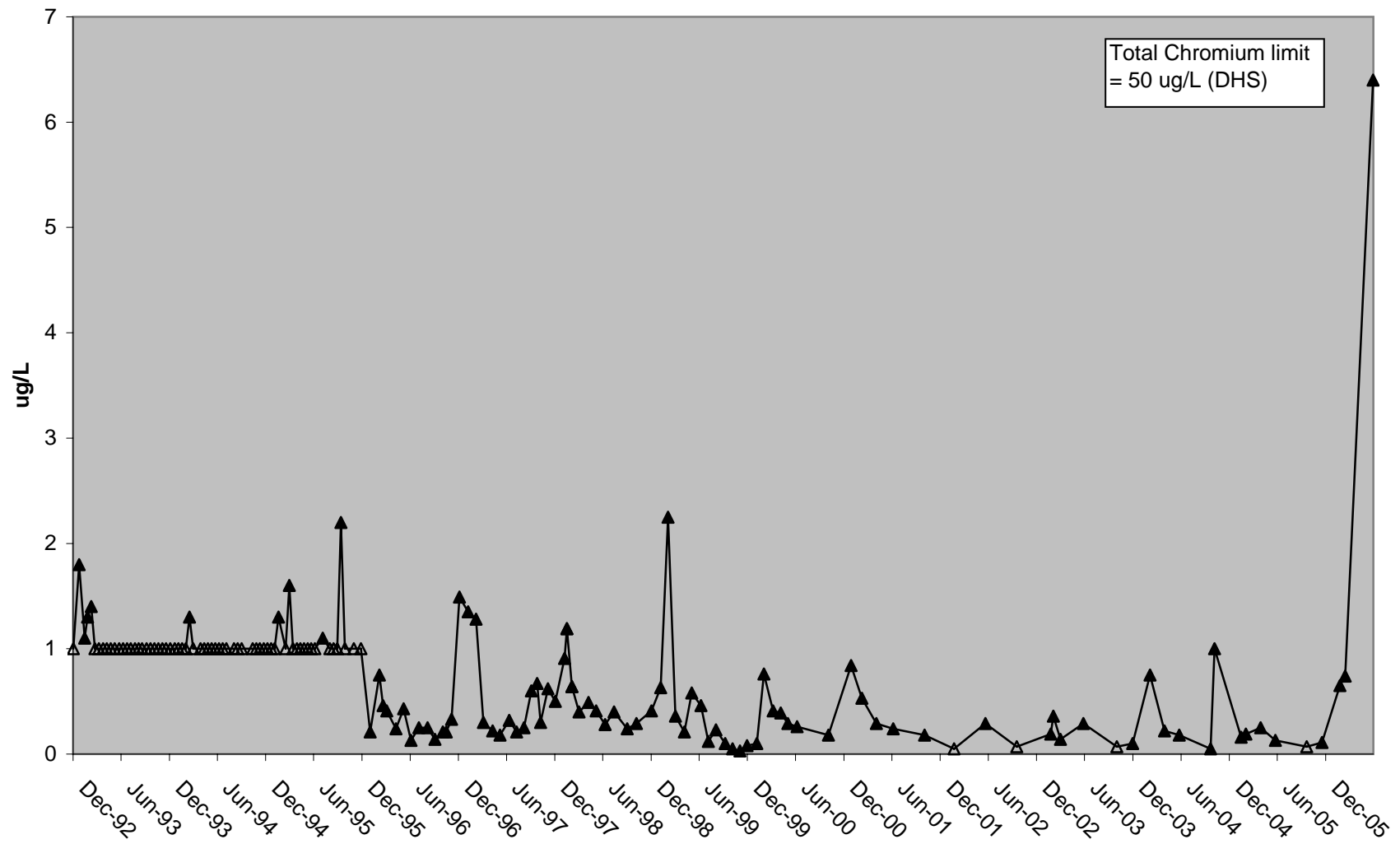


### Discovery Park Dissolved Chromium (Cr-d)

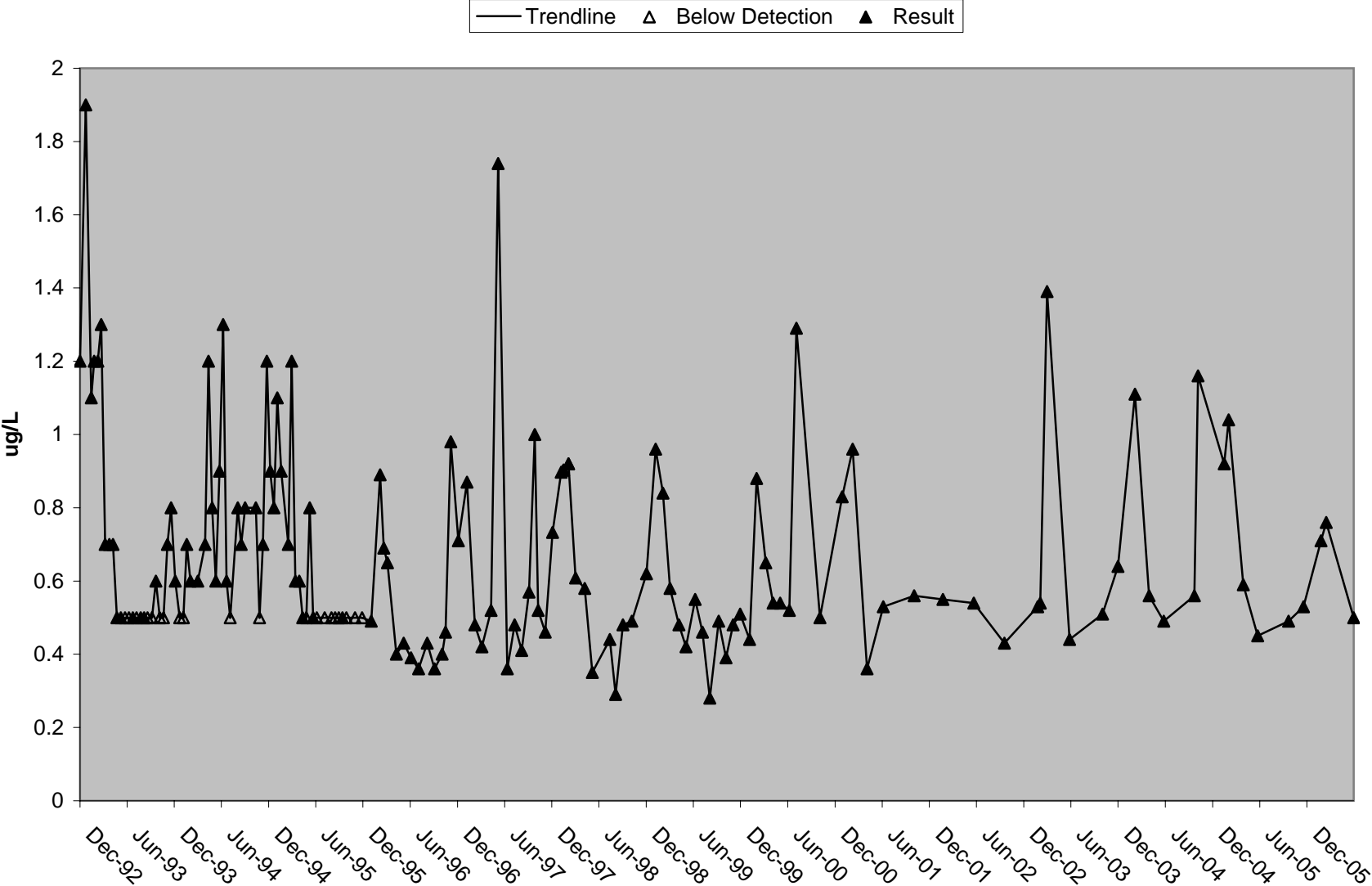


# Discovery Park Total Chromium (Cr-T)

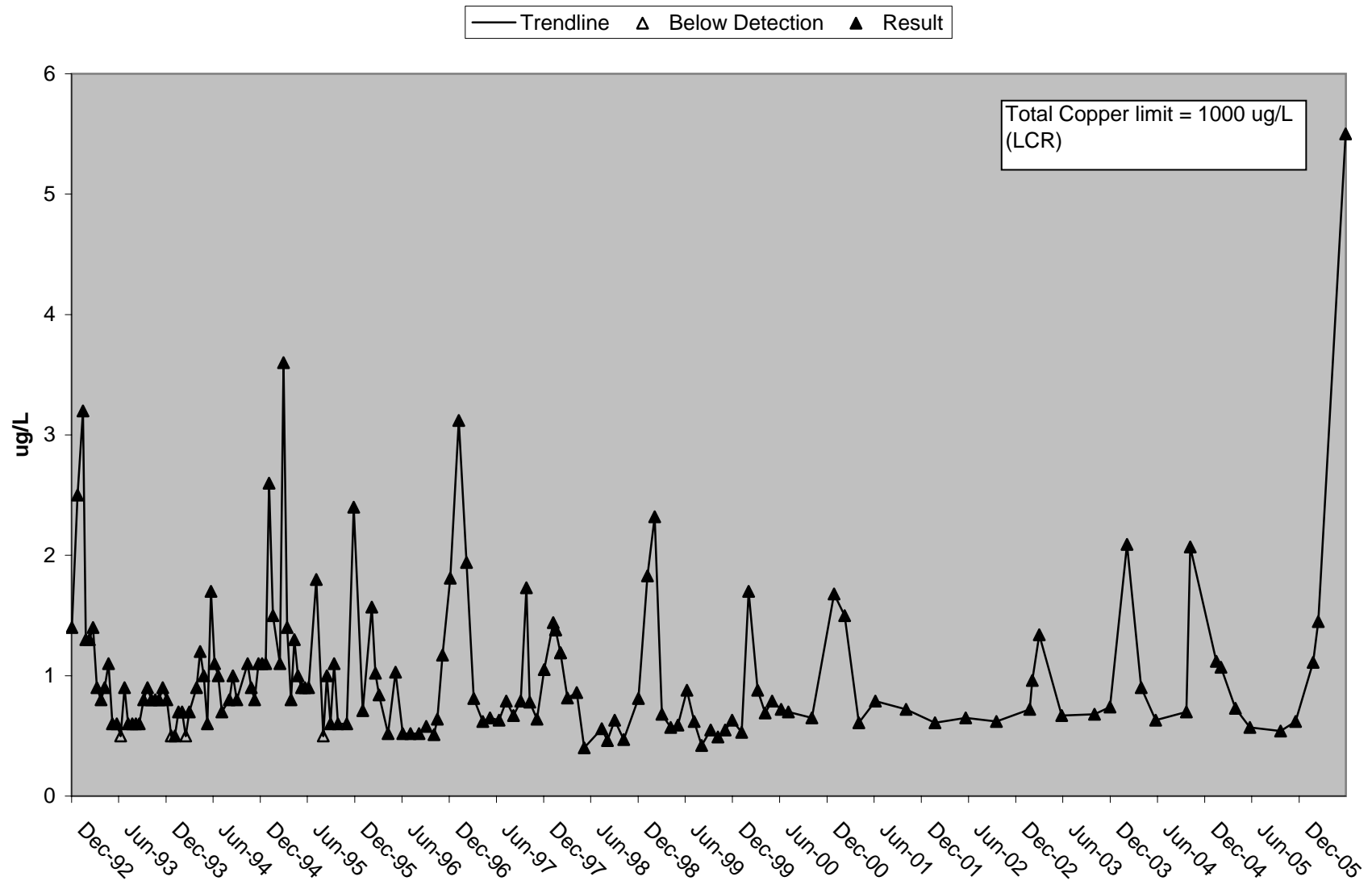
— Trendline     $\Delta$  Below Detection     $\blacktriangle$  Result



Discovery Park Dissolved Copper (Cu-d)

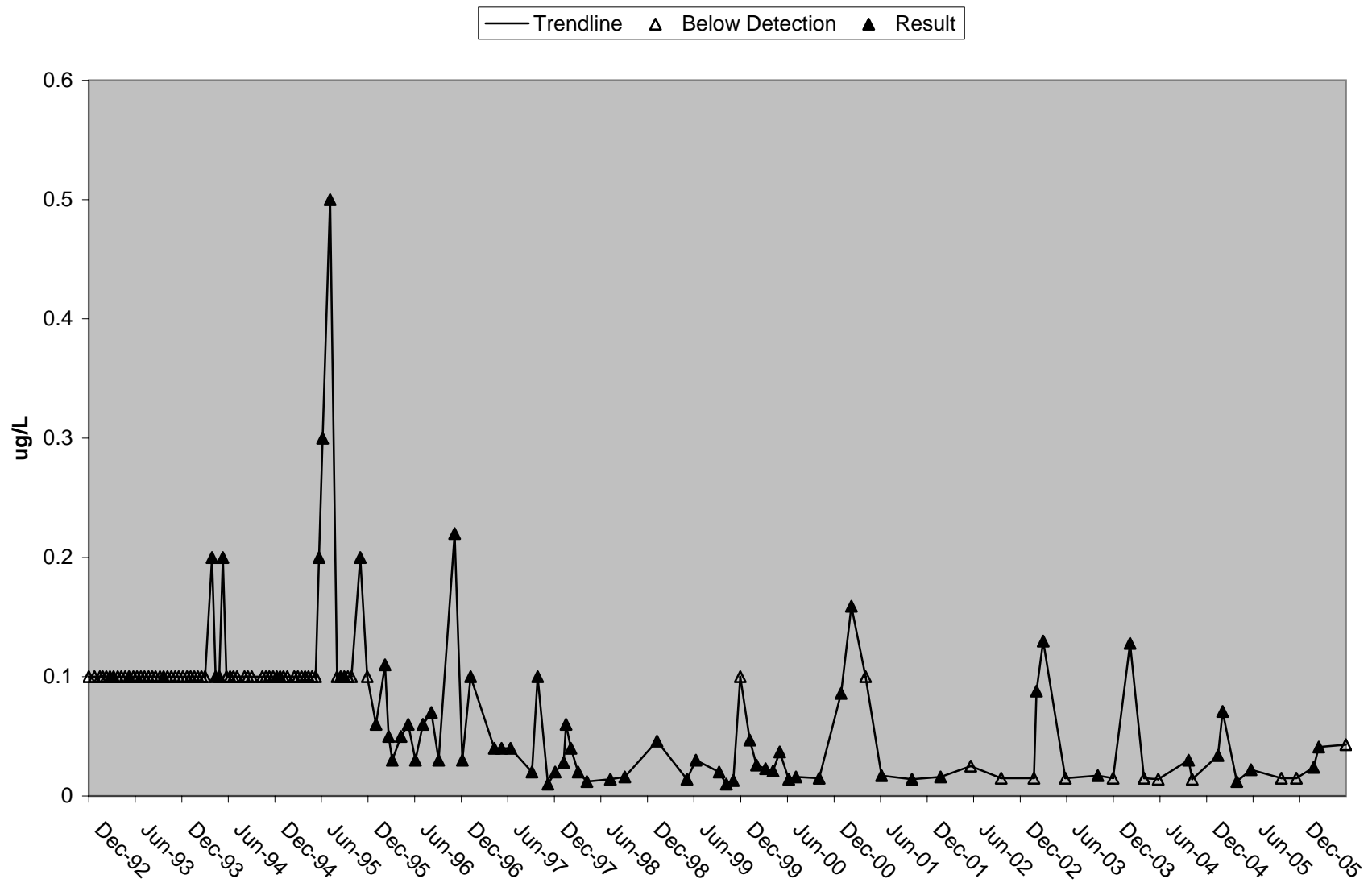


### Discovery Park Total Copper (Cu-T)

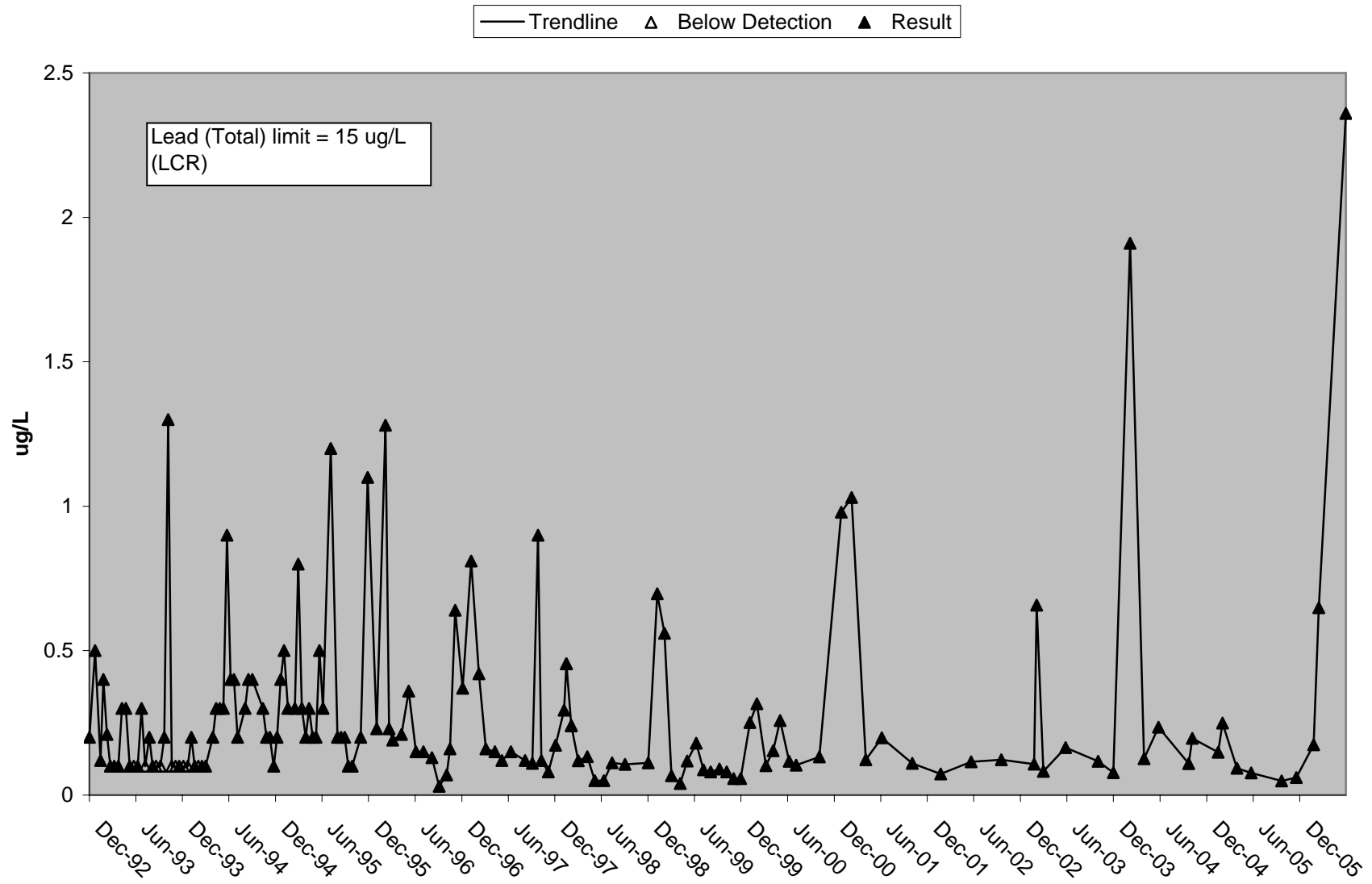




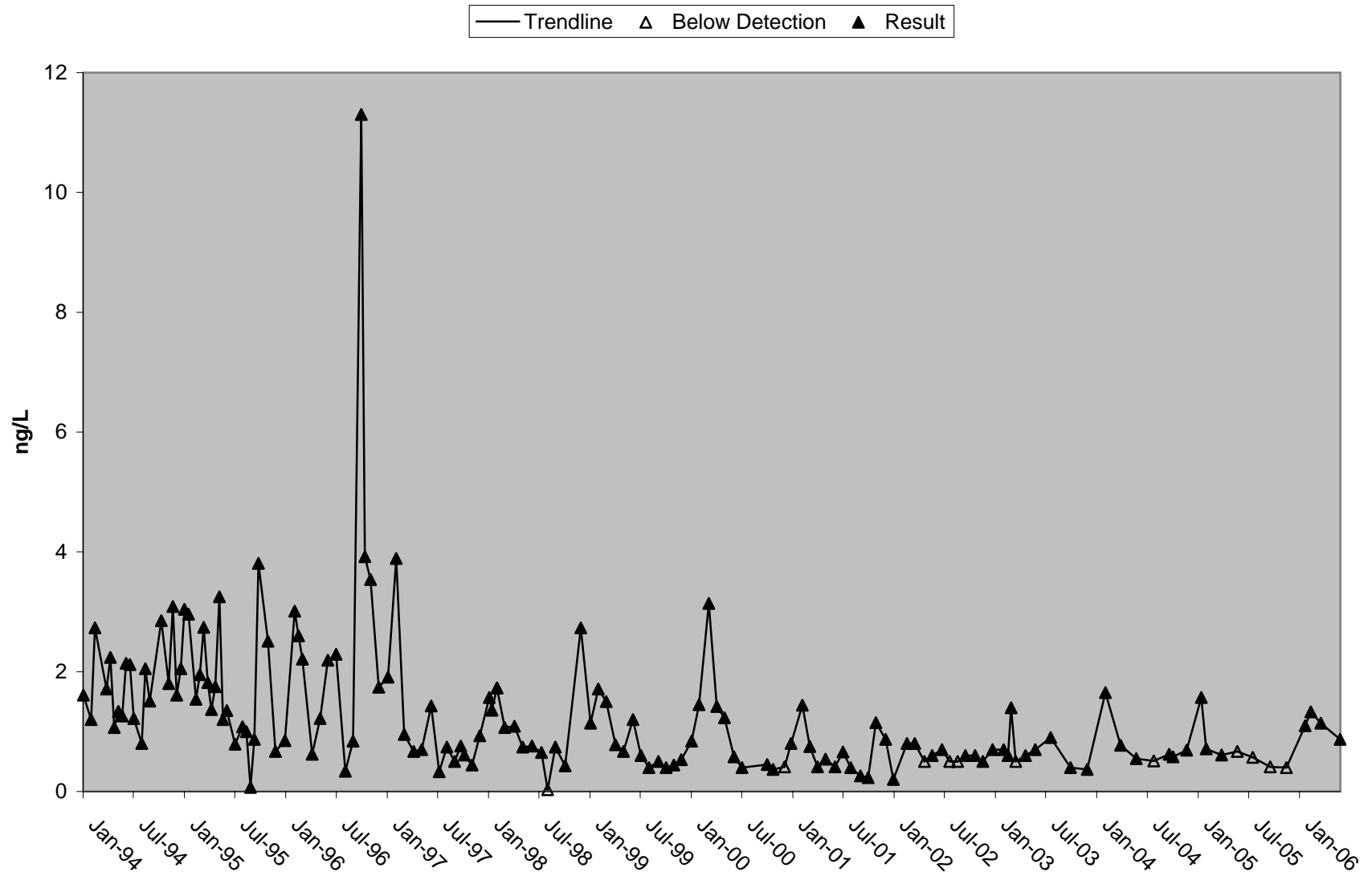
### Discovery Park Dissolved Lead (Pb-d)



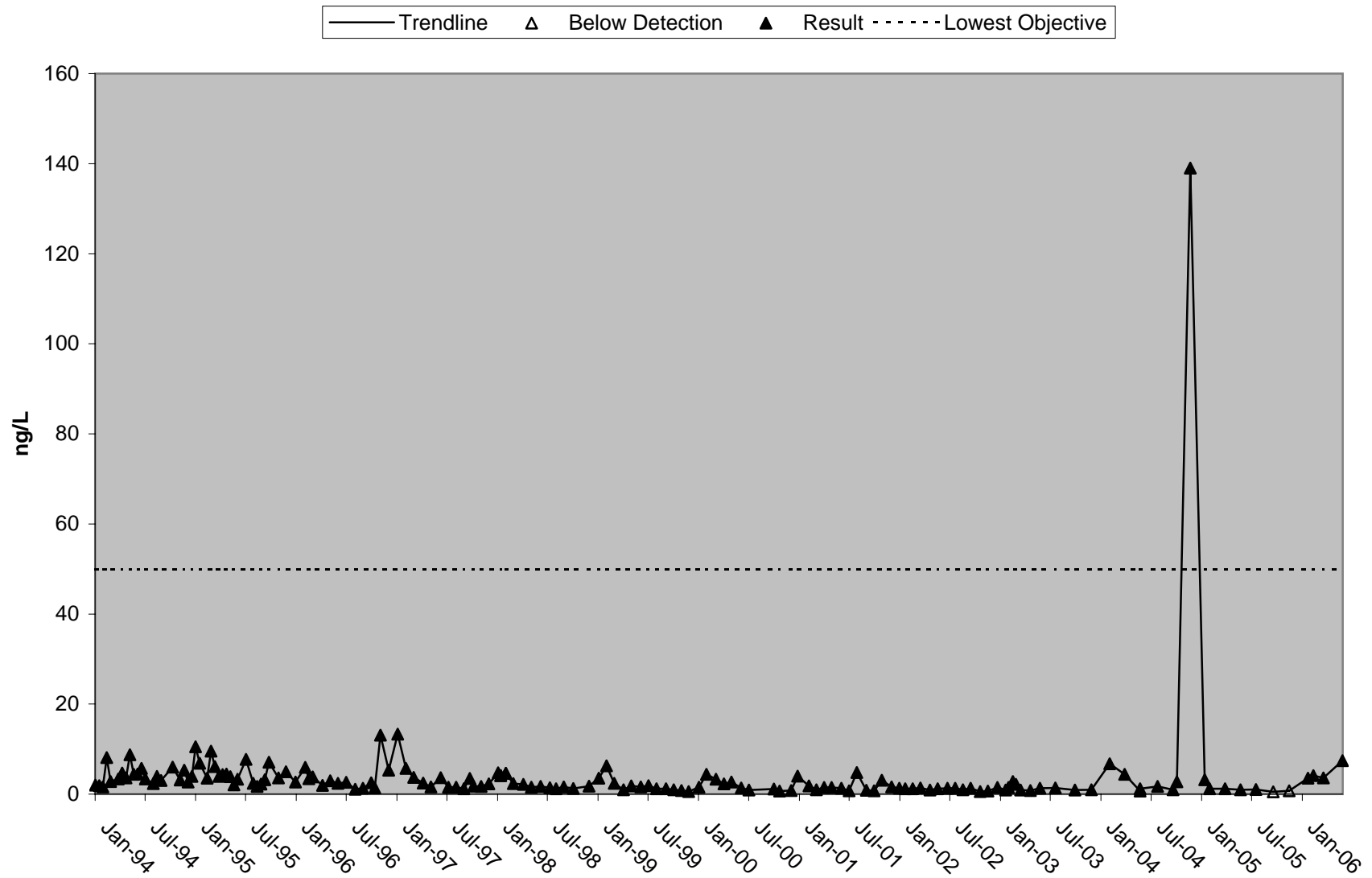
### Discovery Park Total Lead (Pb-T)



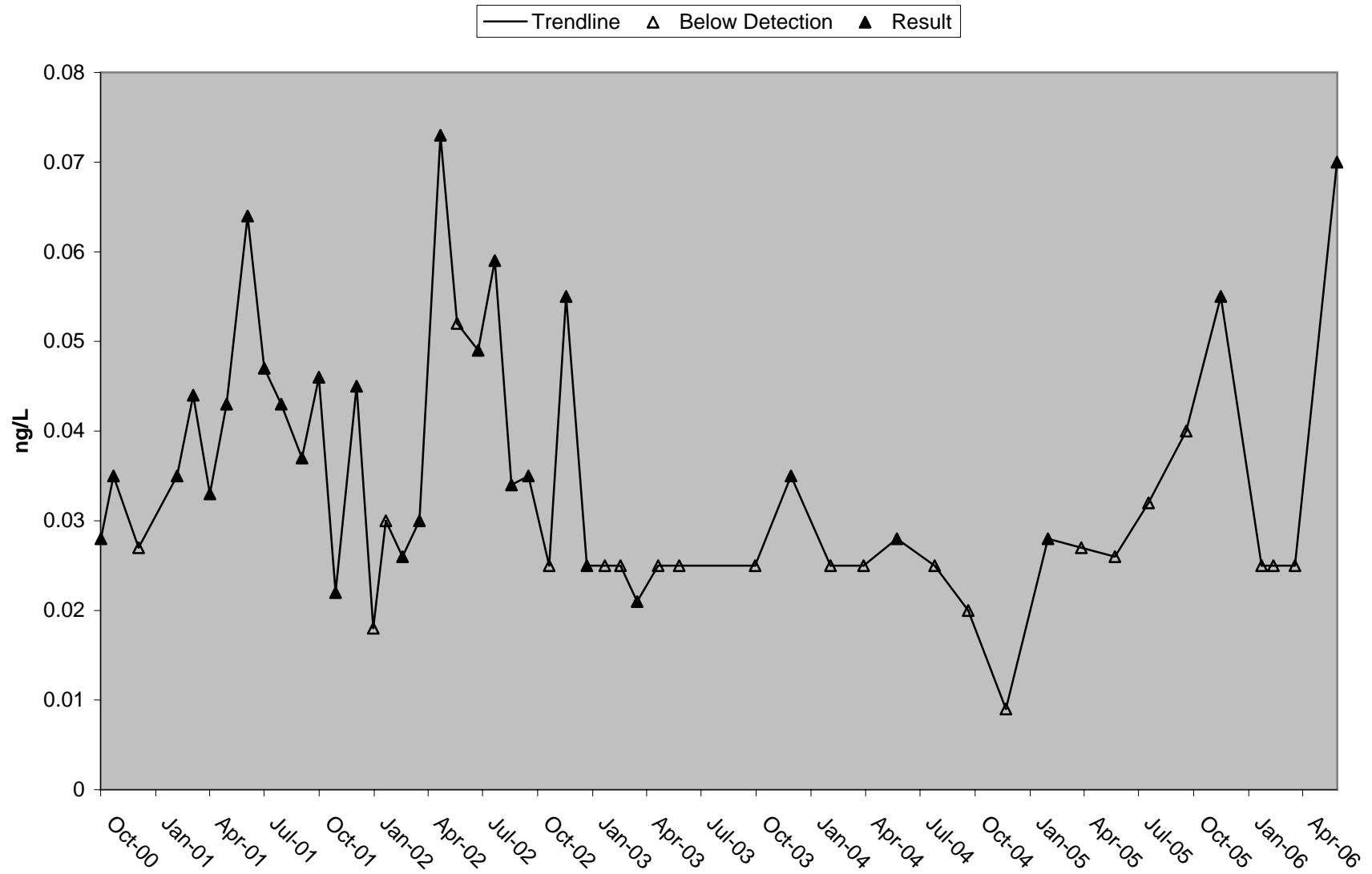
# Discovery Park Filtered Mercury



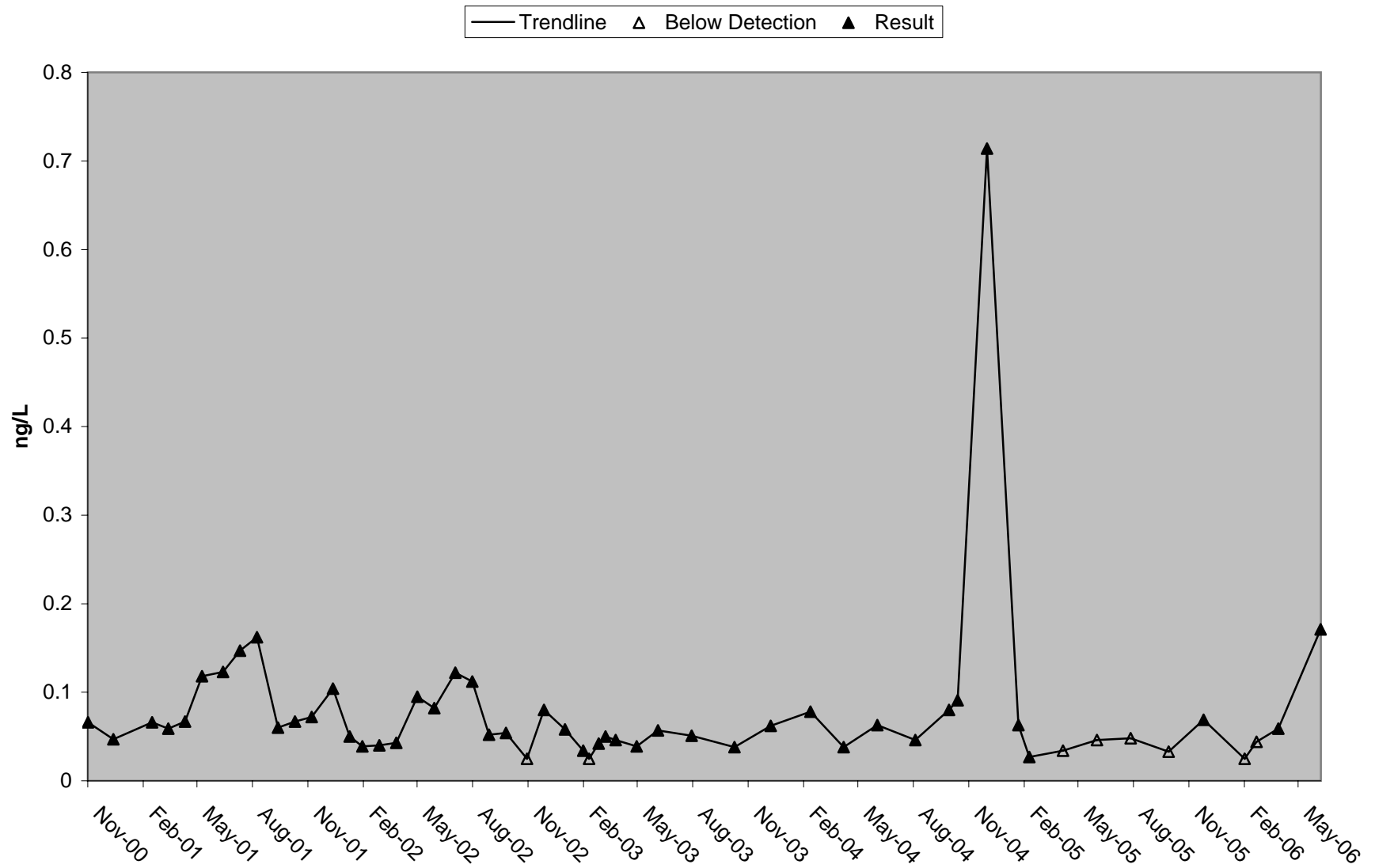
## Discovery Park Unfiltered Mercury



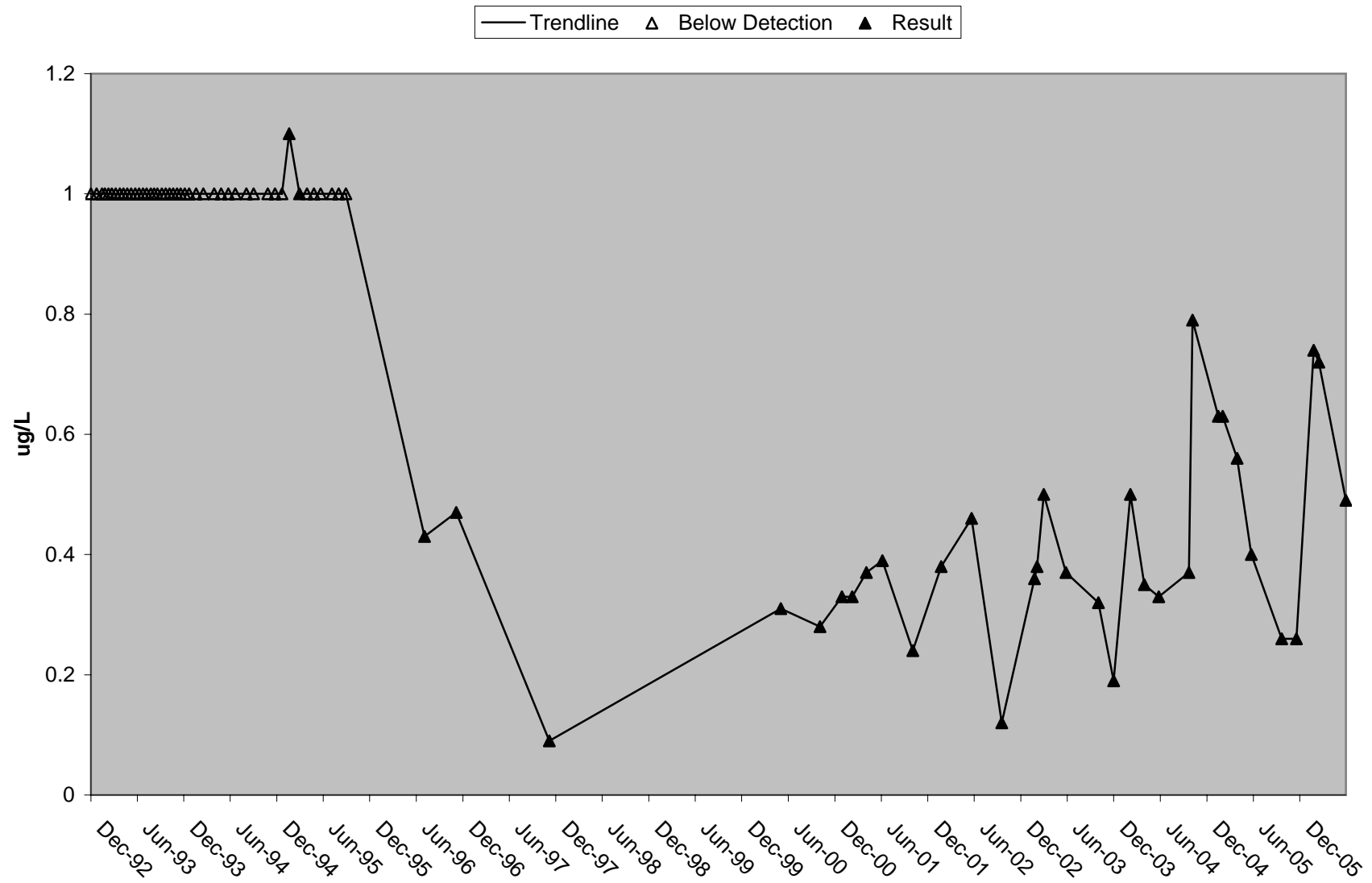
### Discovery Park Filtered Methyl Mercury



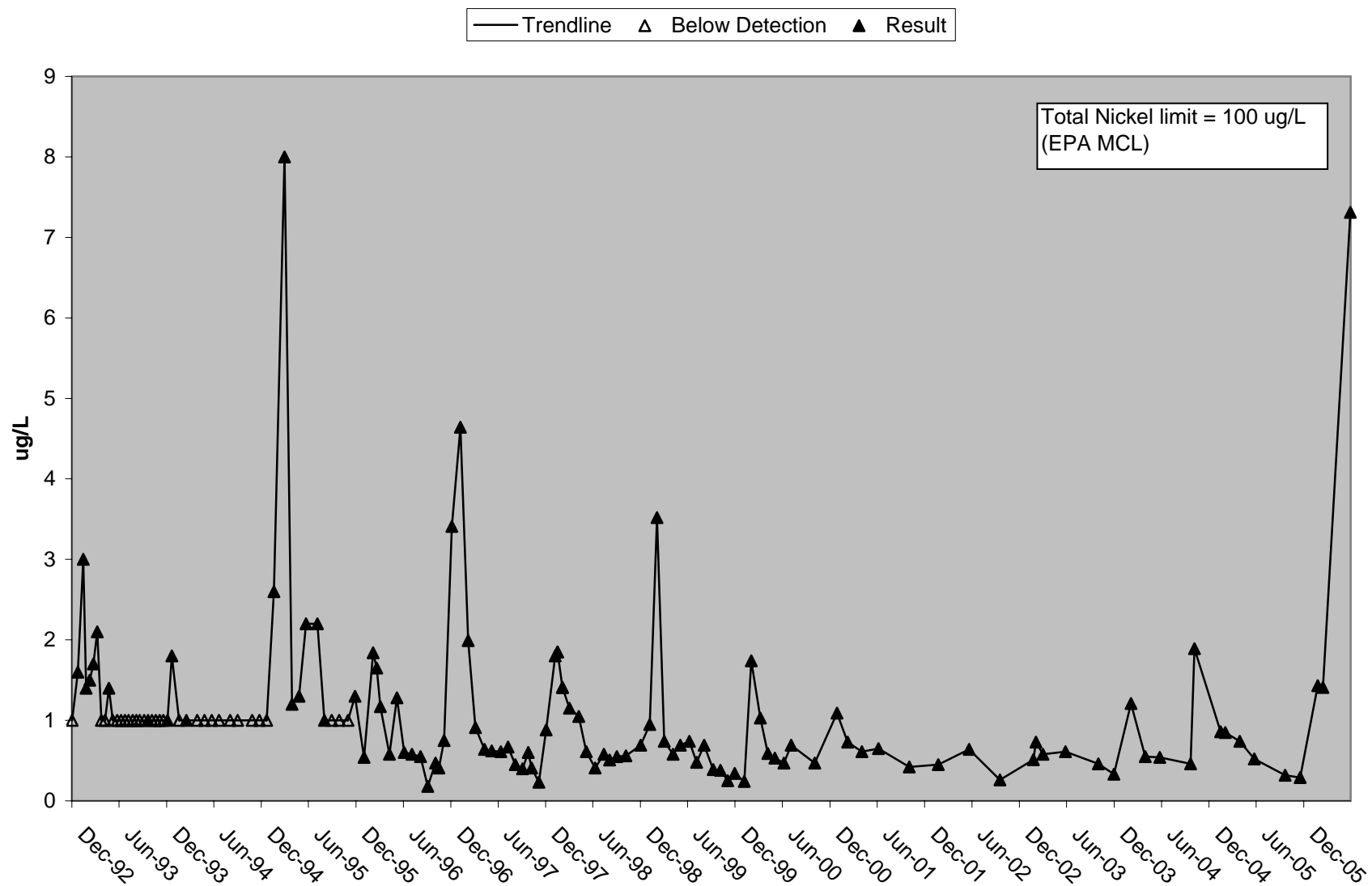
# Discovery Park Unfiltered Methyl Mercury



### Discovery Park Dissolved Nickel (Ni-d)

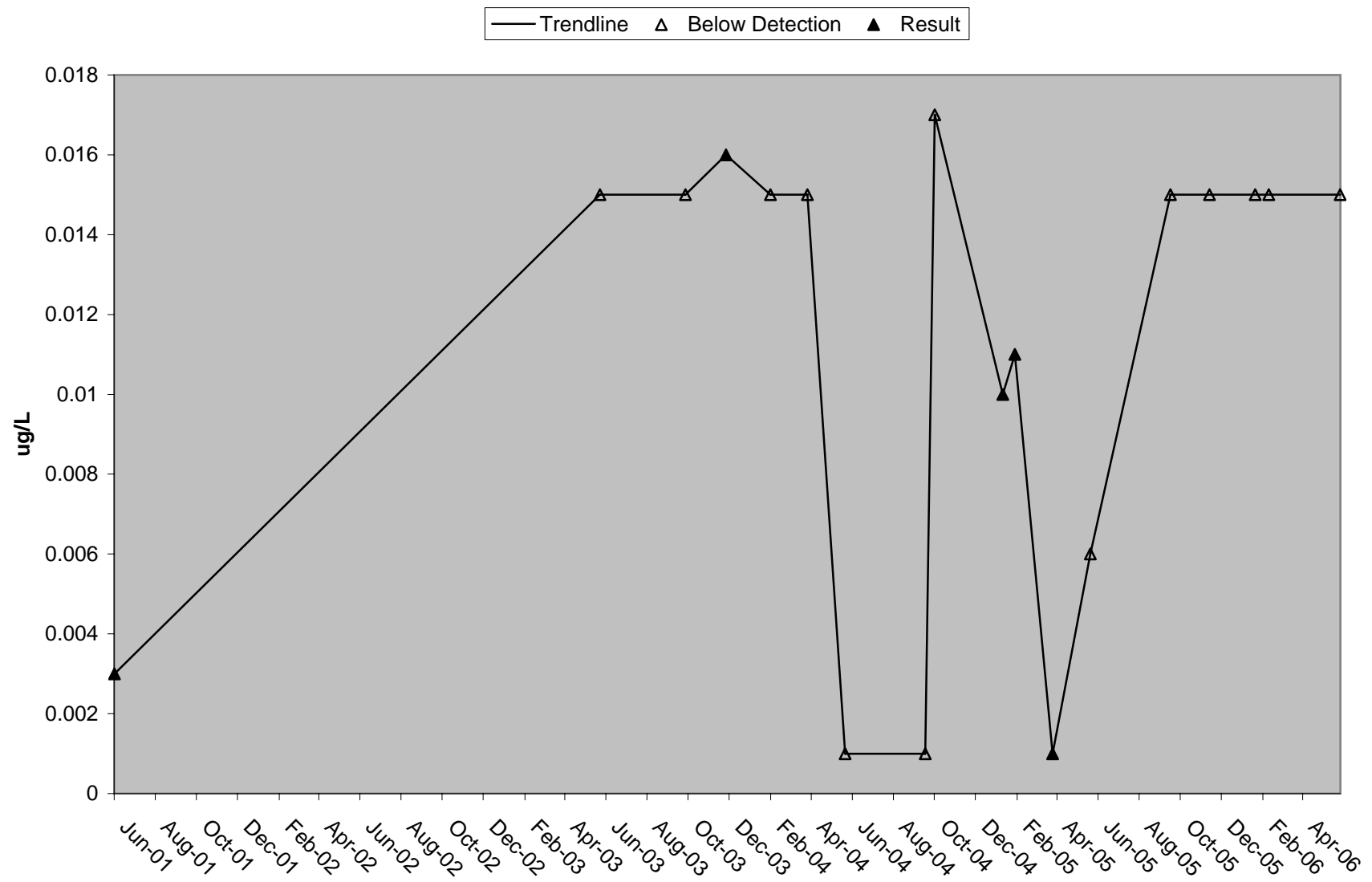


### Discovery Park Total Nickel (Ni-T)

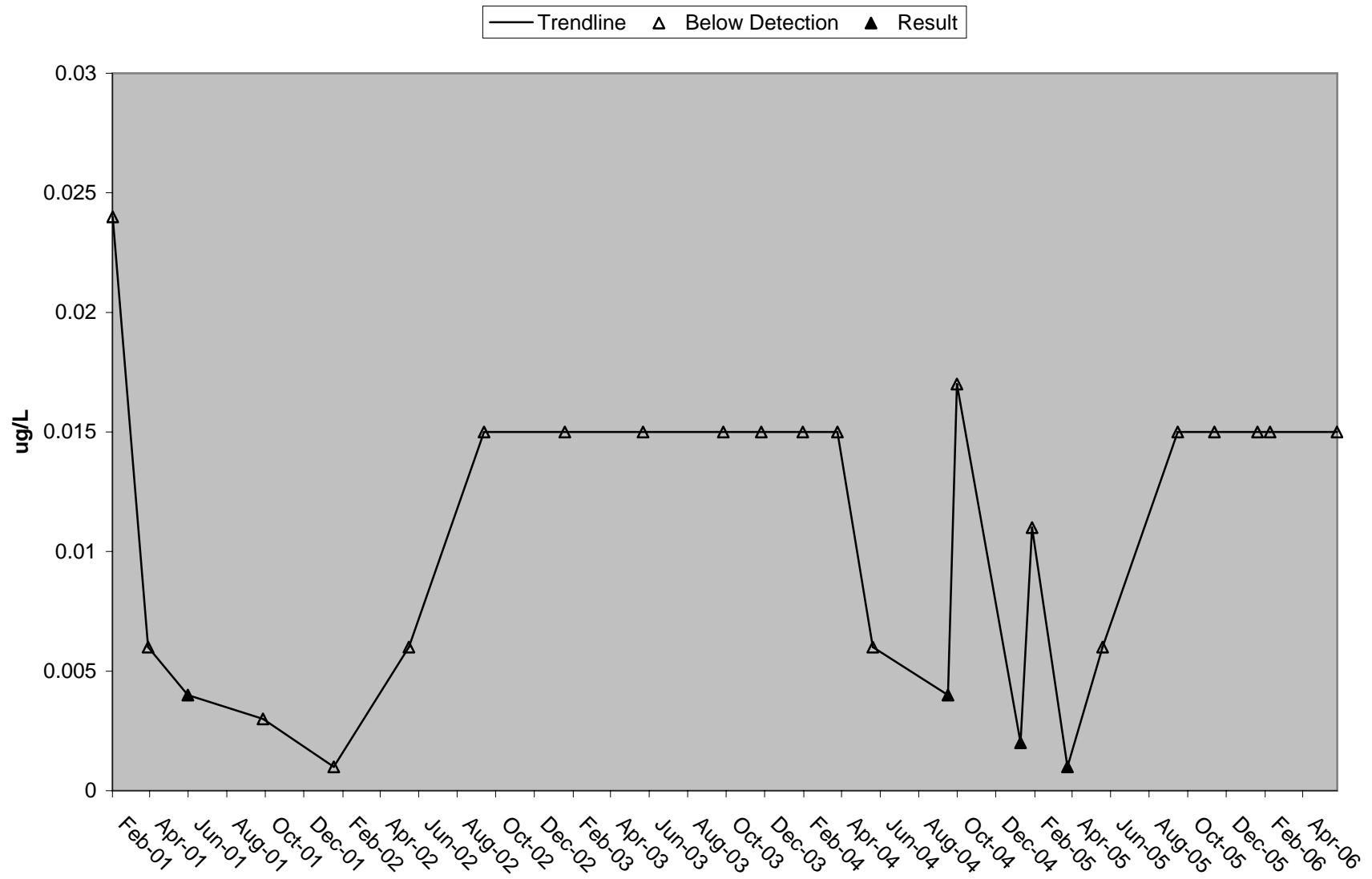




### Discovery Silver (Dissolved)

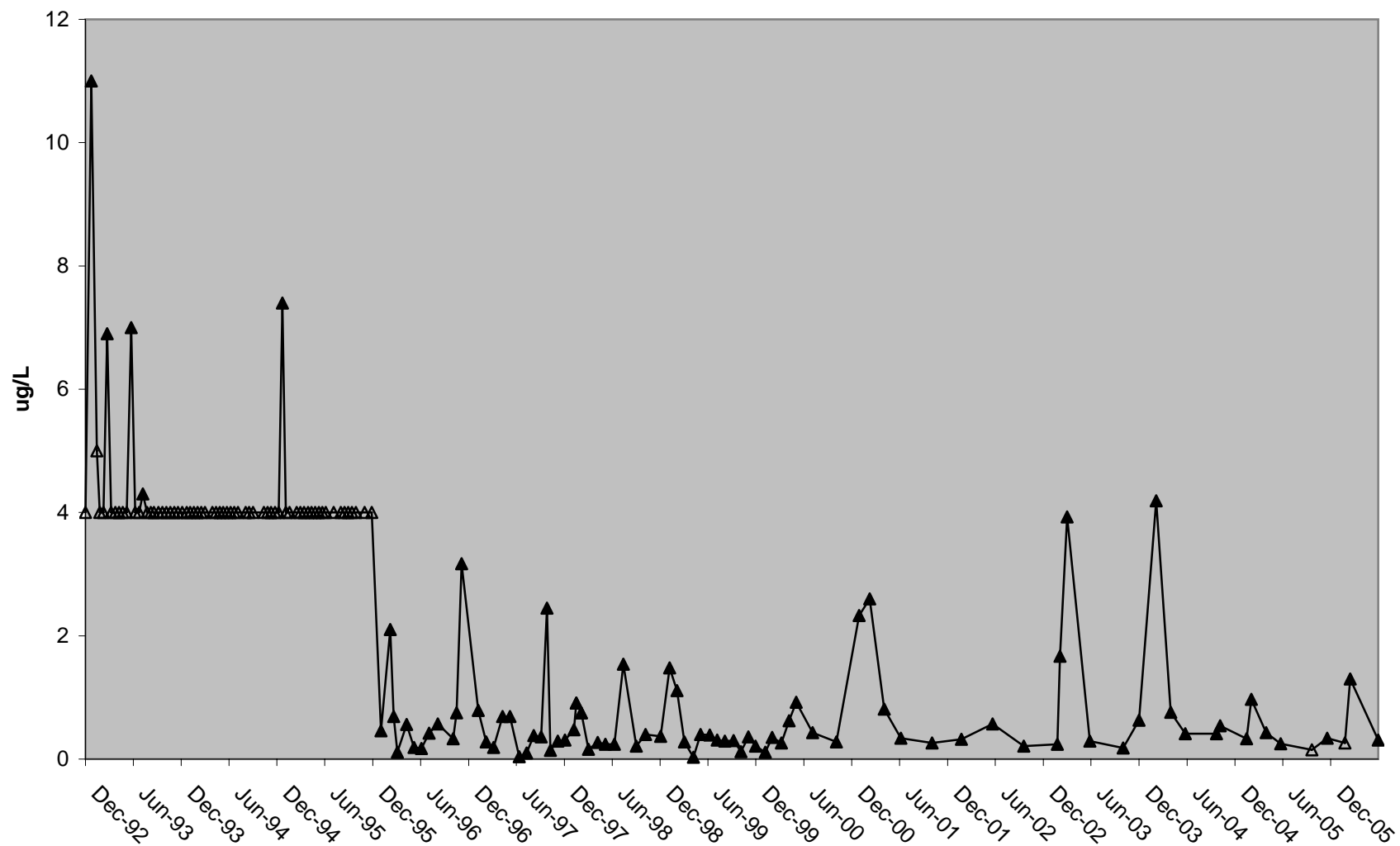


### Discovery Park Total Silver (Ag-T)



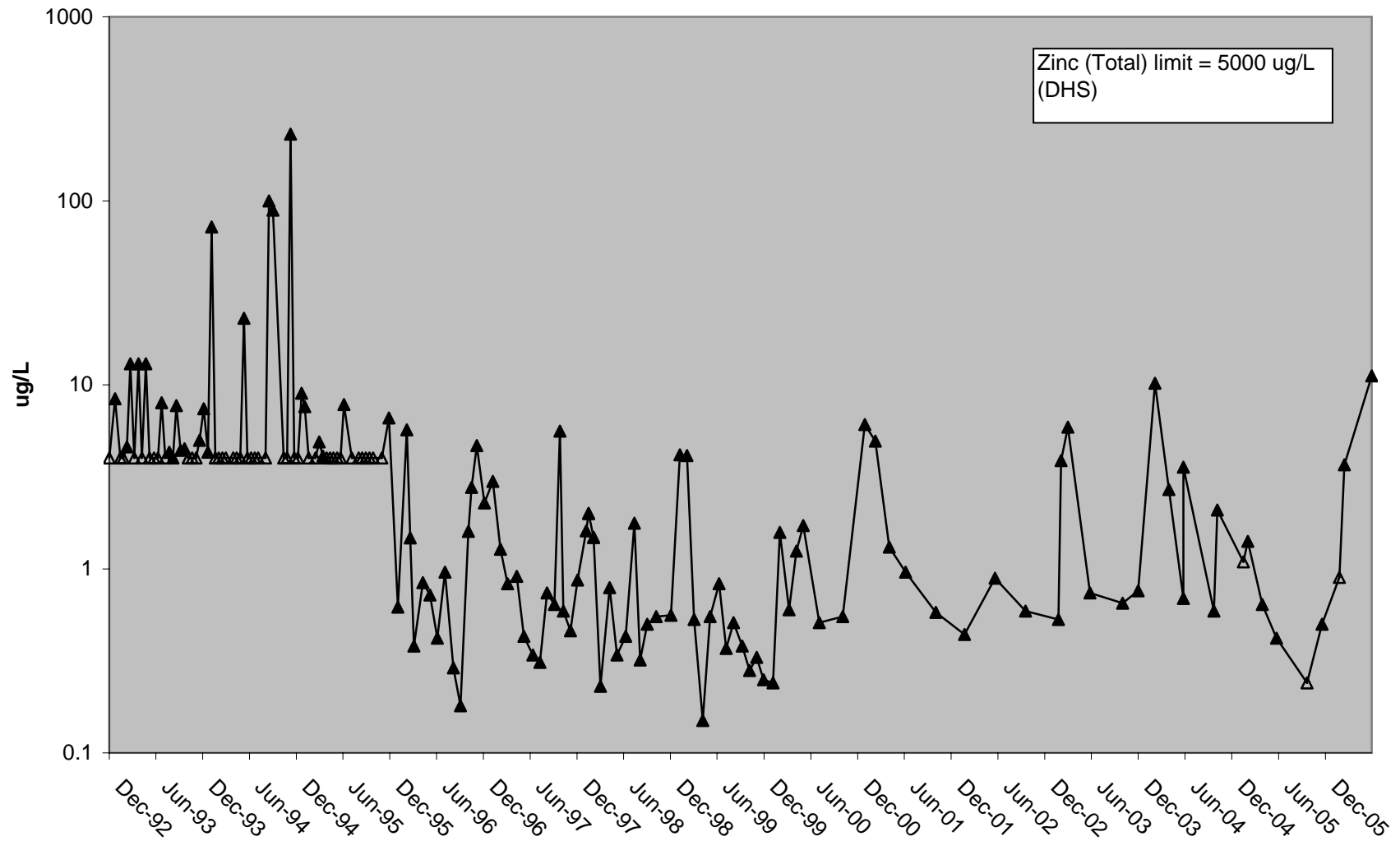
# Discovery Park Dissolved Zinc (Zn-d)

— Trendline    △ Below Detection    ▲ Result

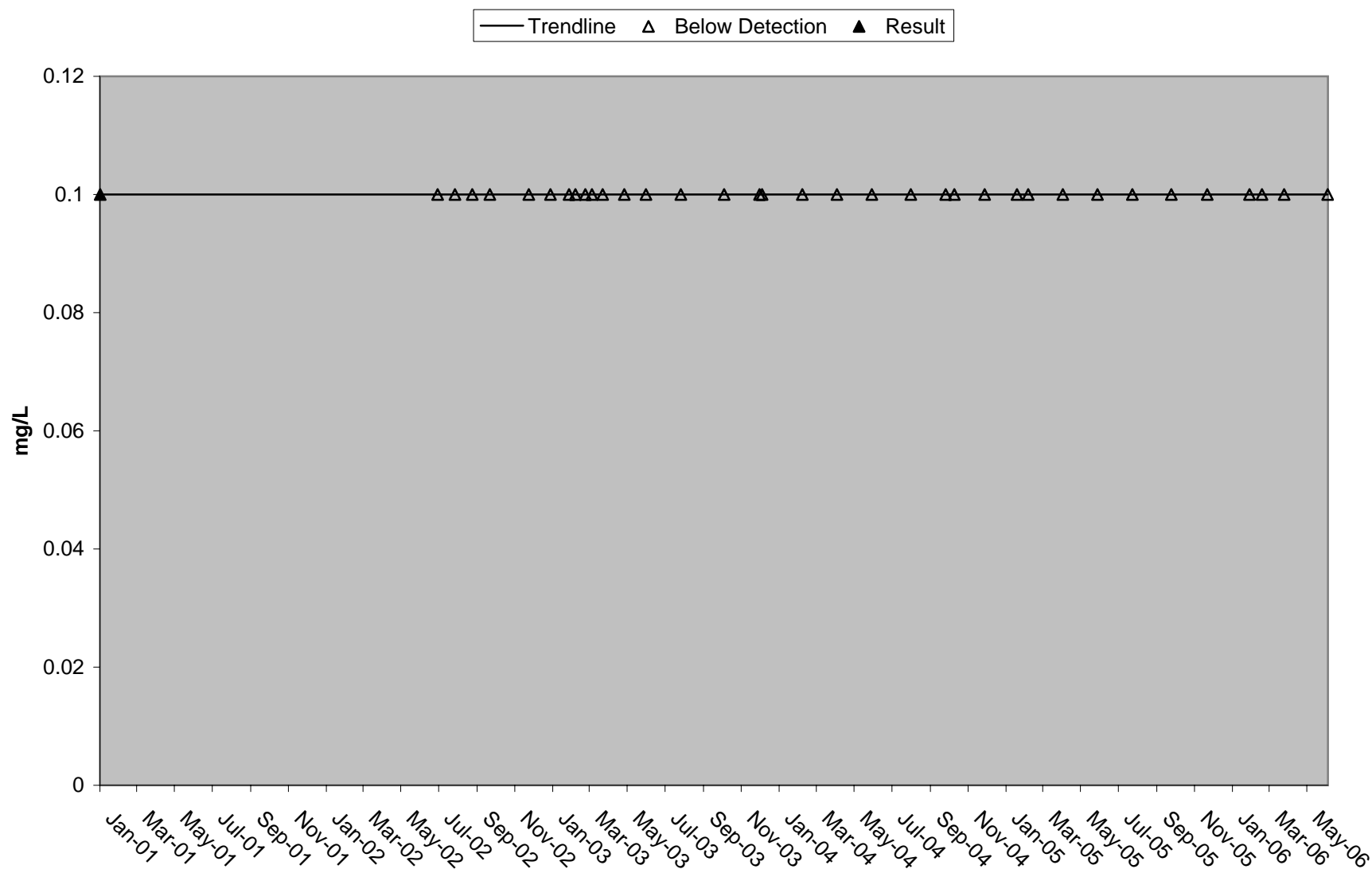


# Discovery Park Total Zinc (Zn-T)

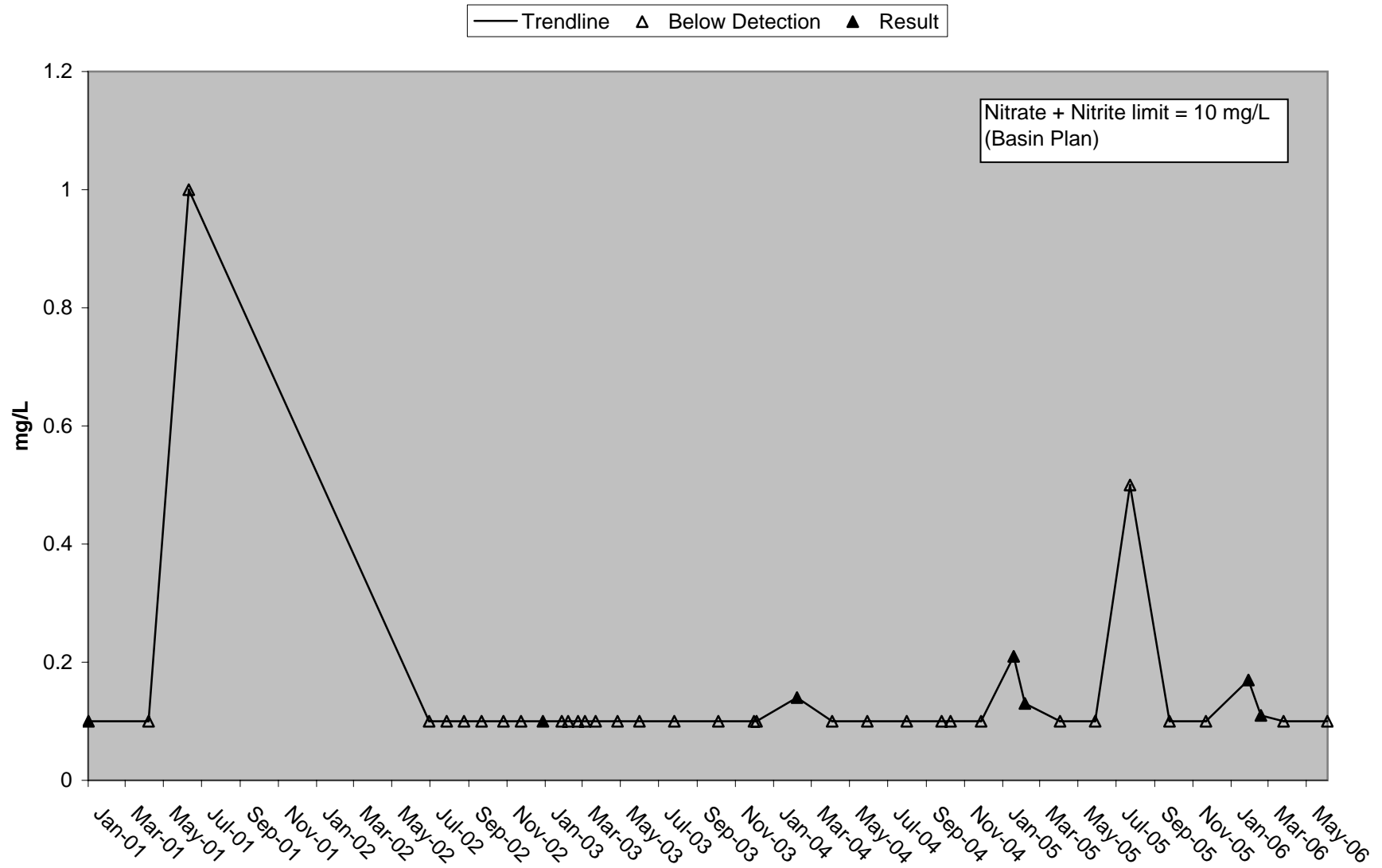
— Trendline    △ Below Detection    ▲ Result



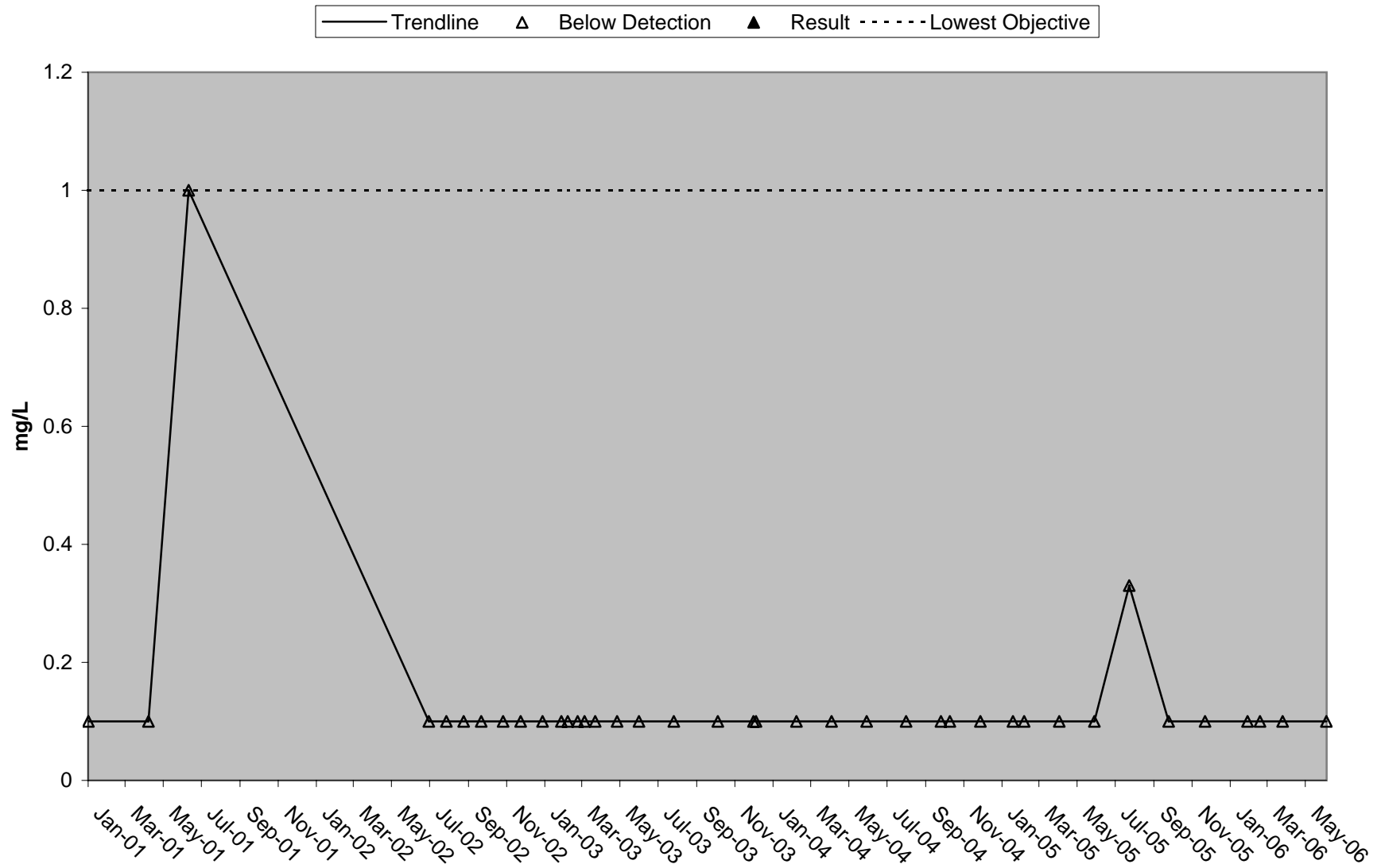
### Discovery Park Ammonia (NH<sub>3</sub>-N)



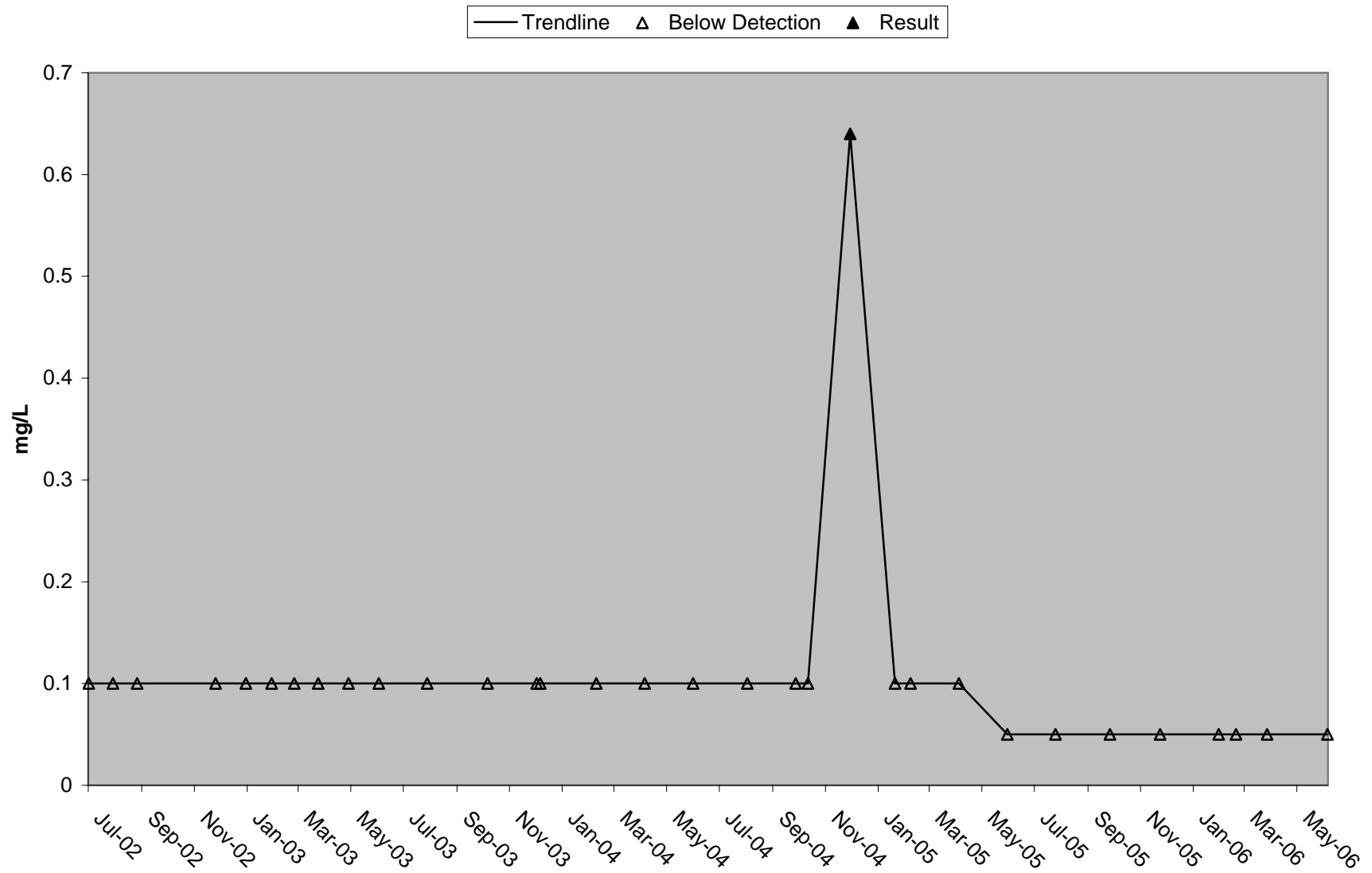
# Discovery Park Nitrate (NO<sub>3</sub>-N)



### Discovery Park Nitrite (NO<sub>2</sub>-N)

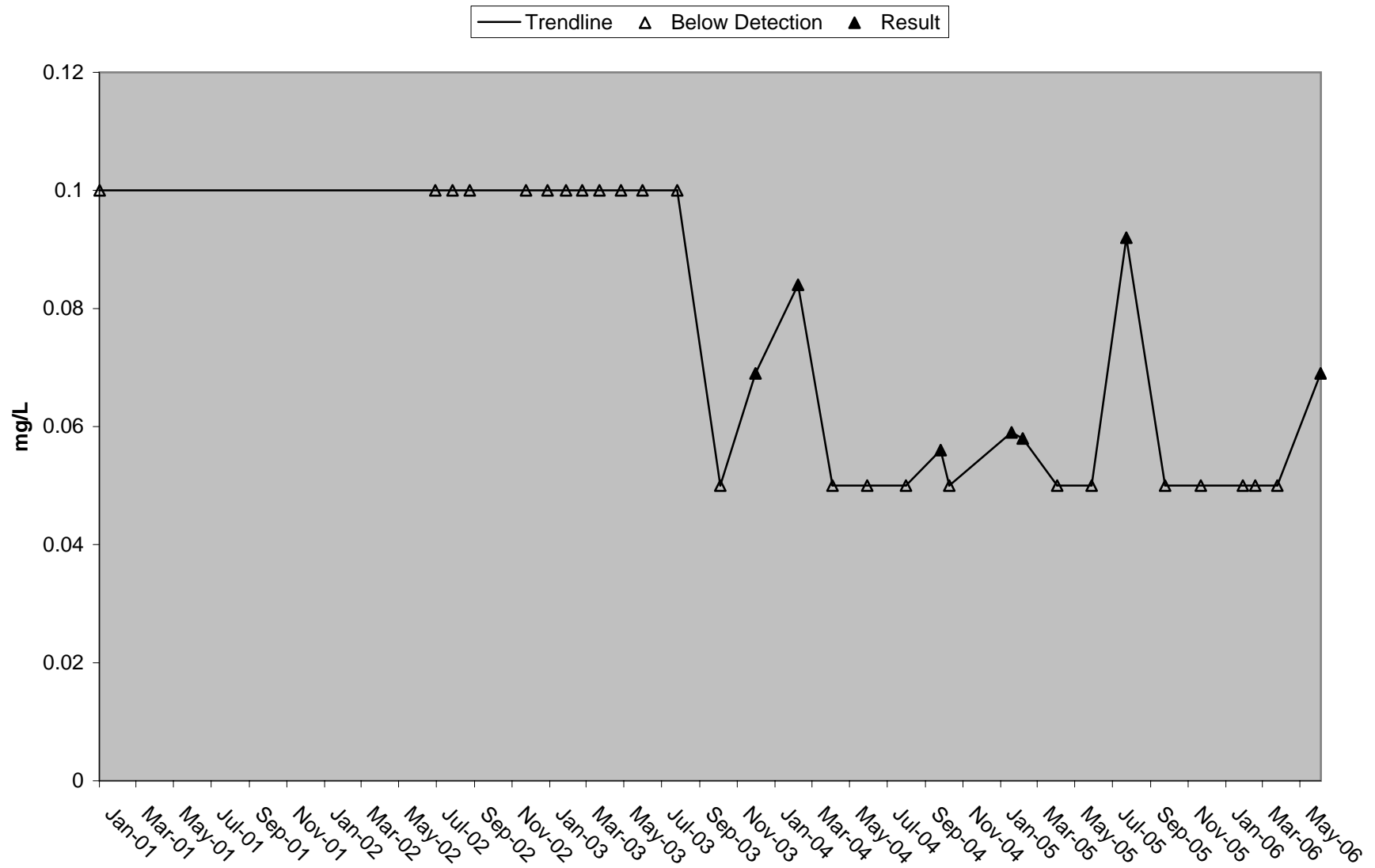


# Discovery Park Dissolved Orthophosphate

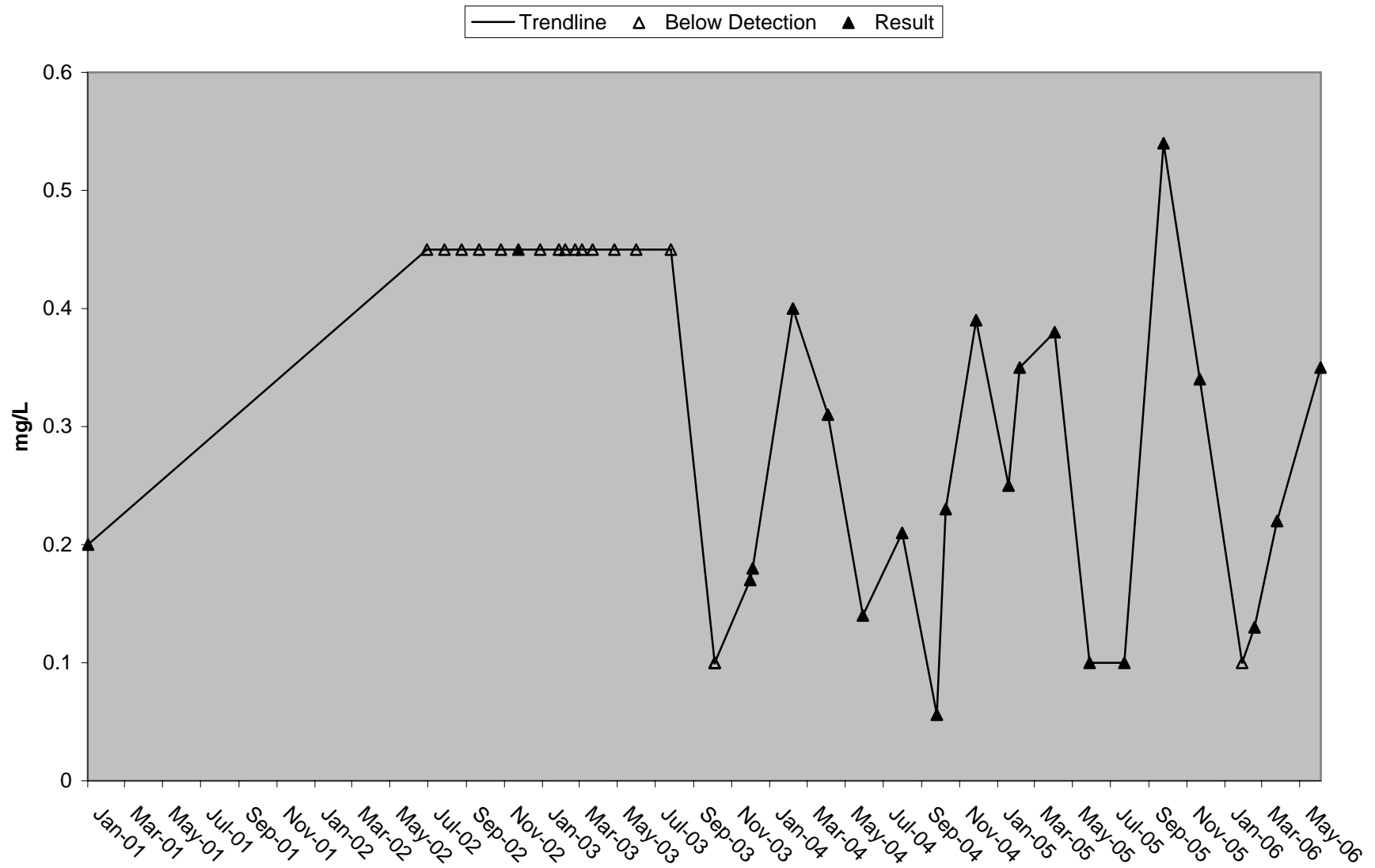




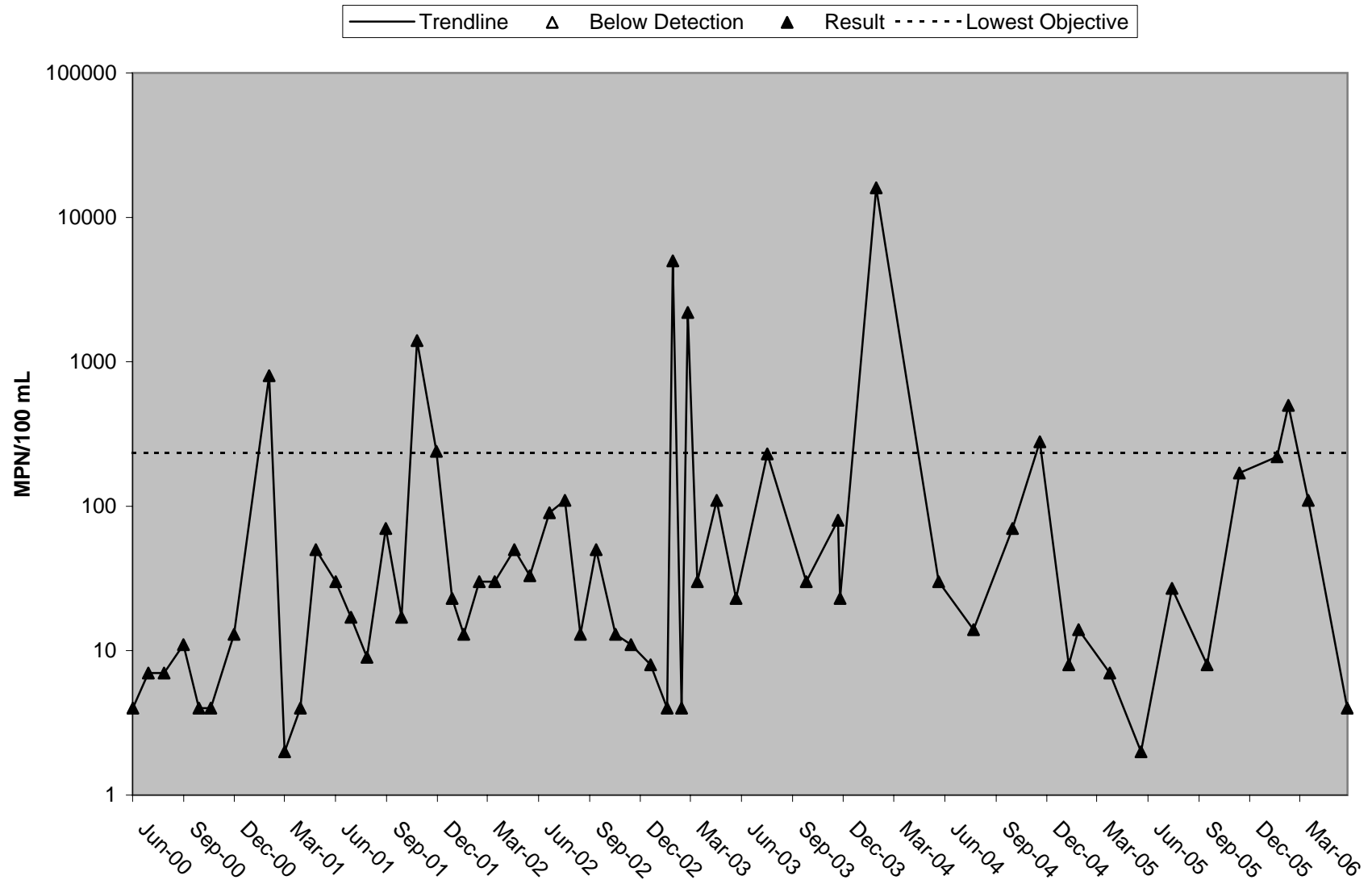
### Discovery Park Total Phosphorus (TP)



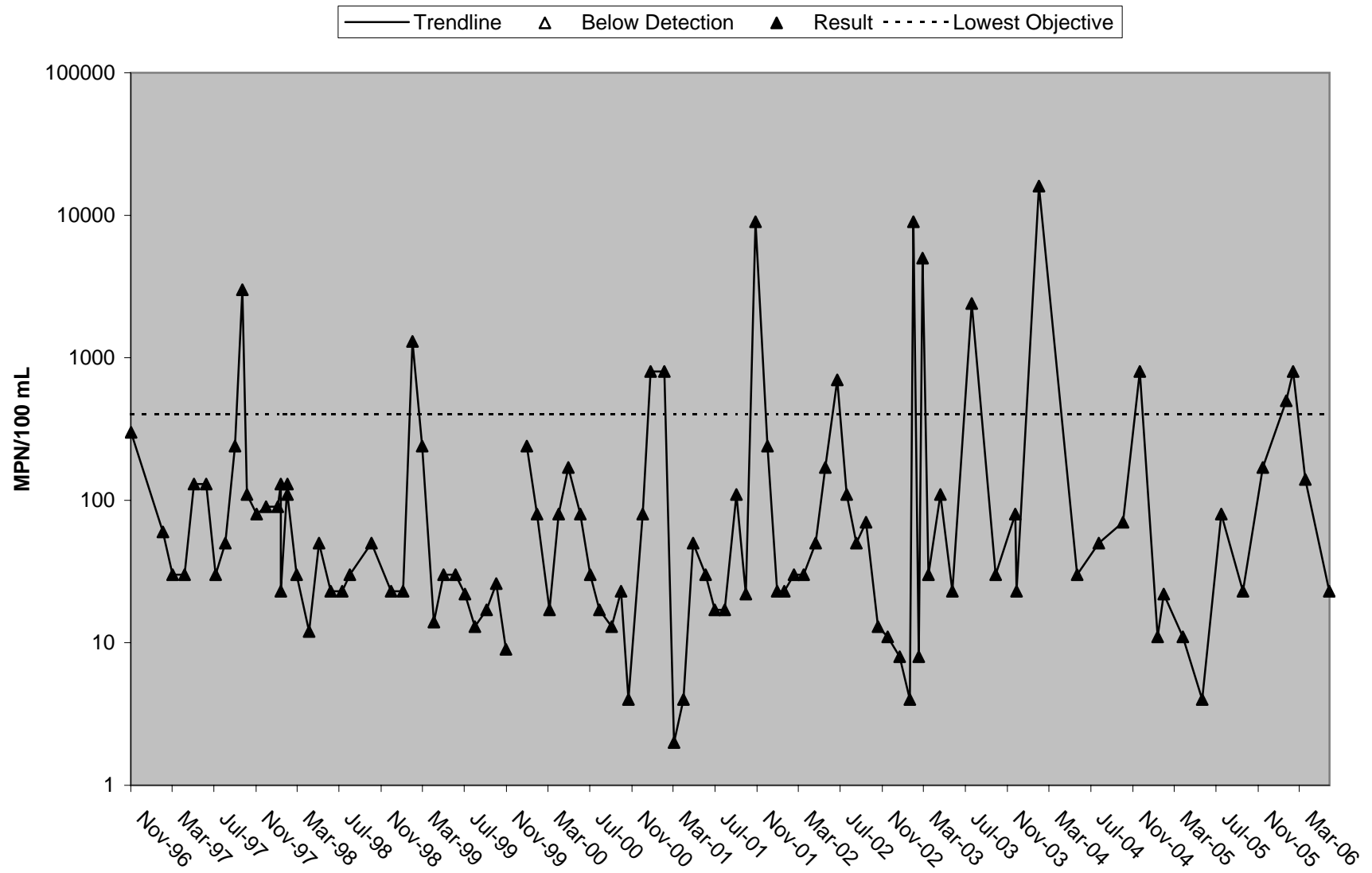
# Discovery Park Total Kjeldahl Nitrogen (TKN)



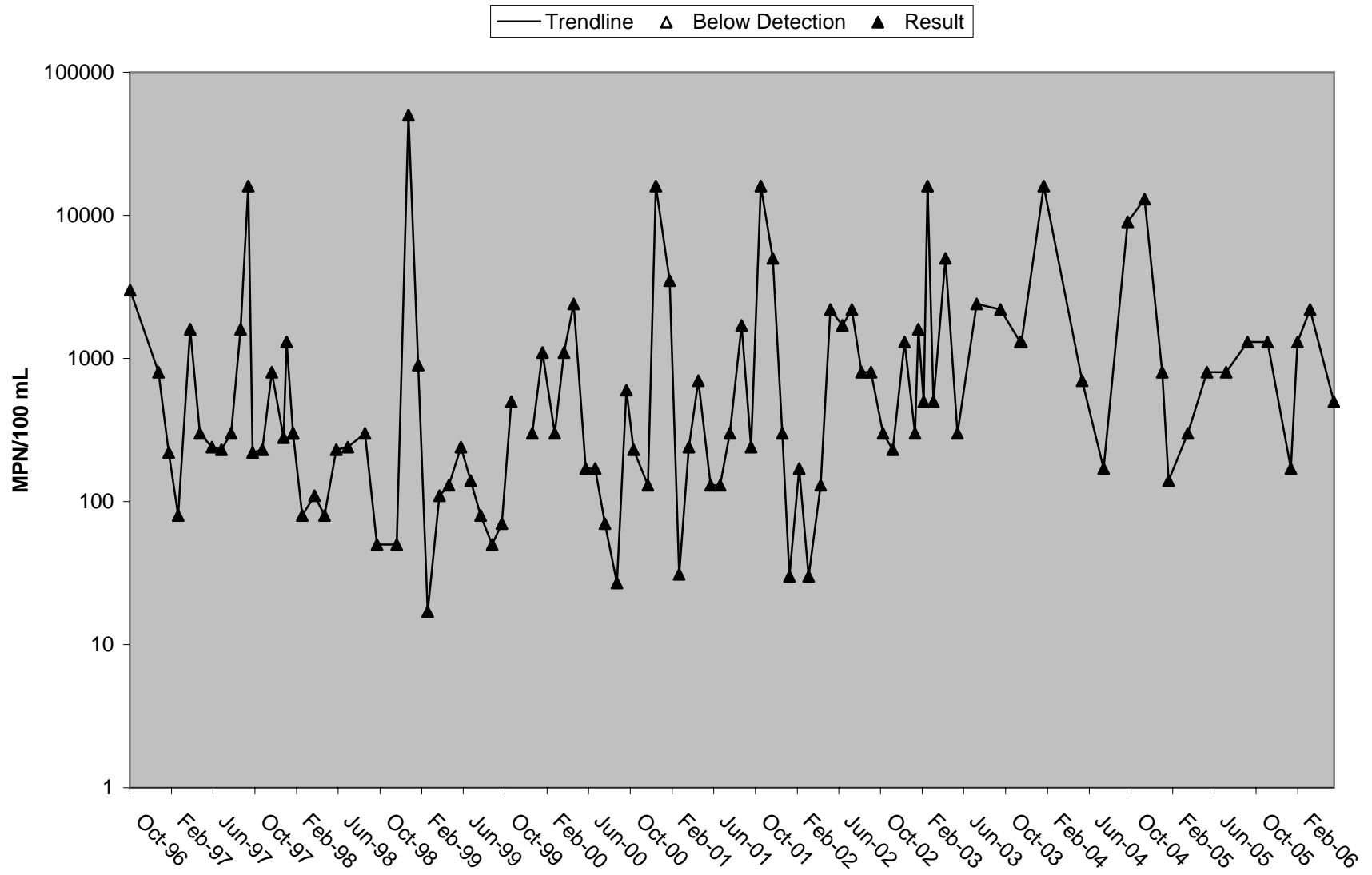
# Discovery Park *E. coli*



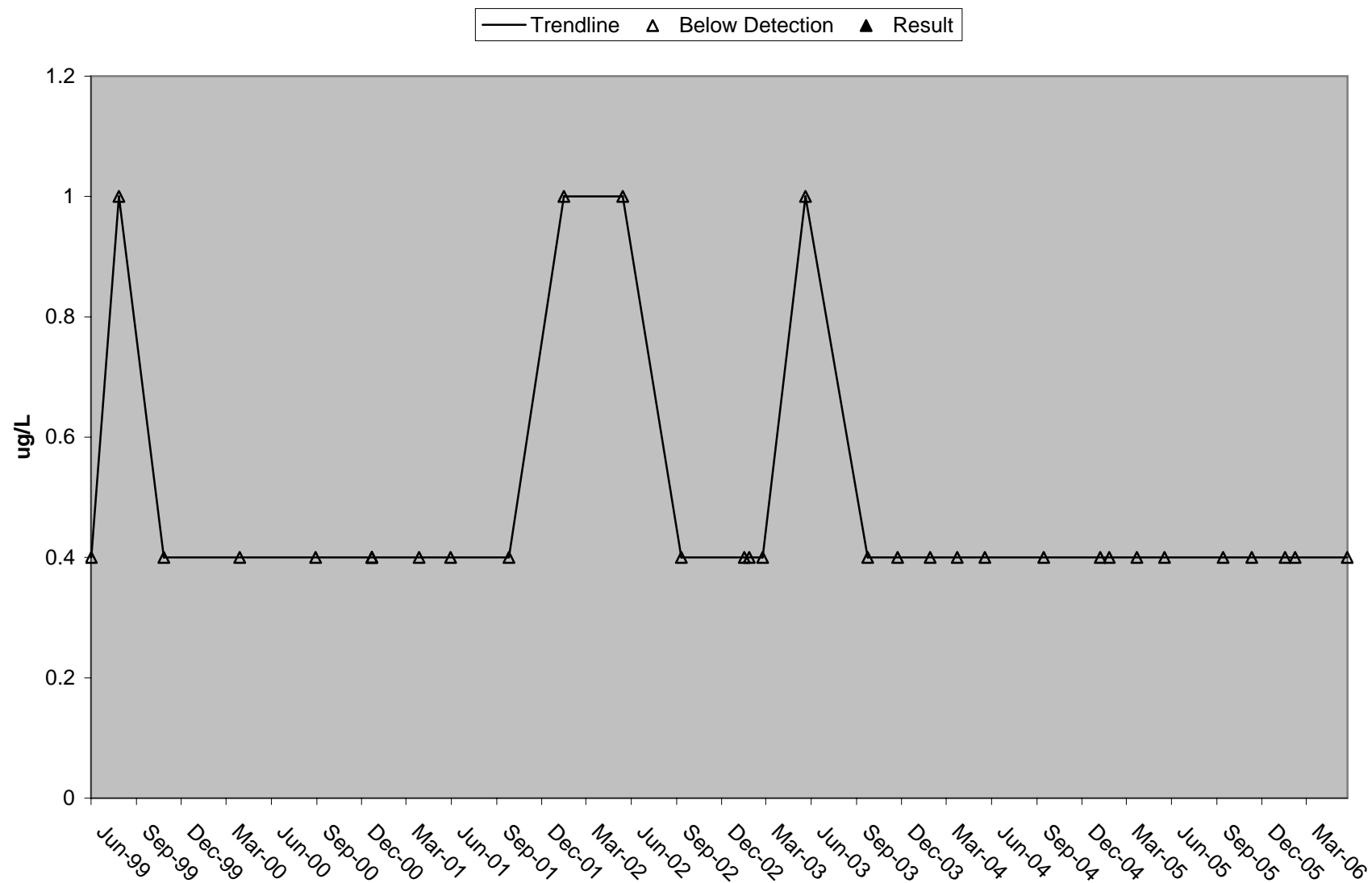
# Discovery Park Fecal Coliform



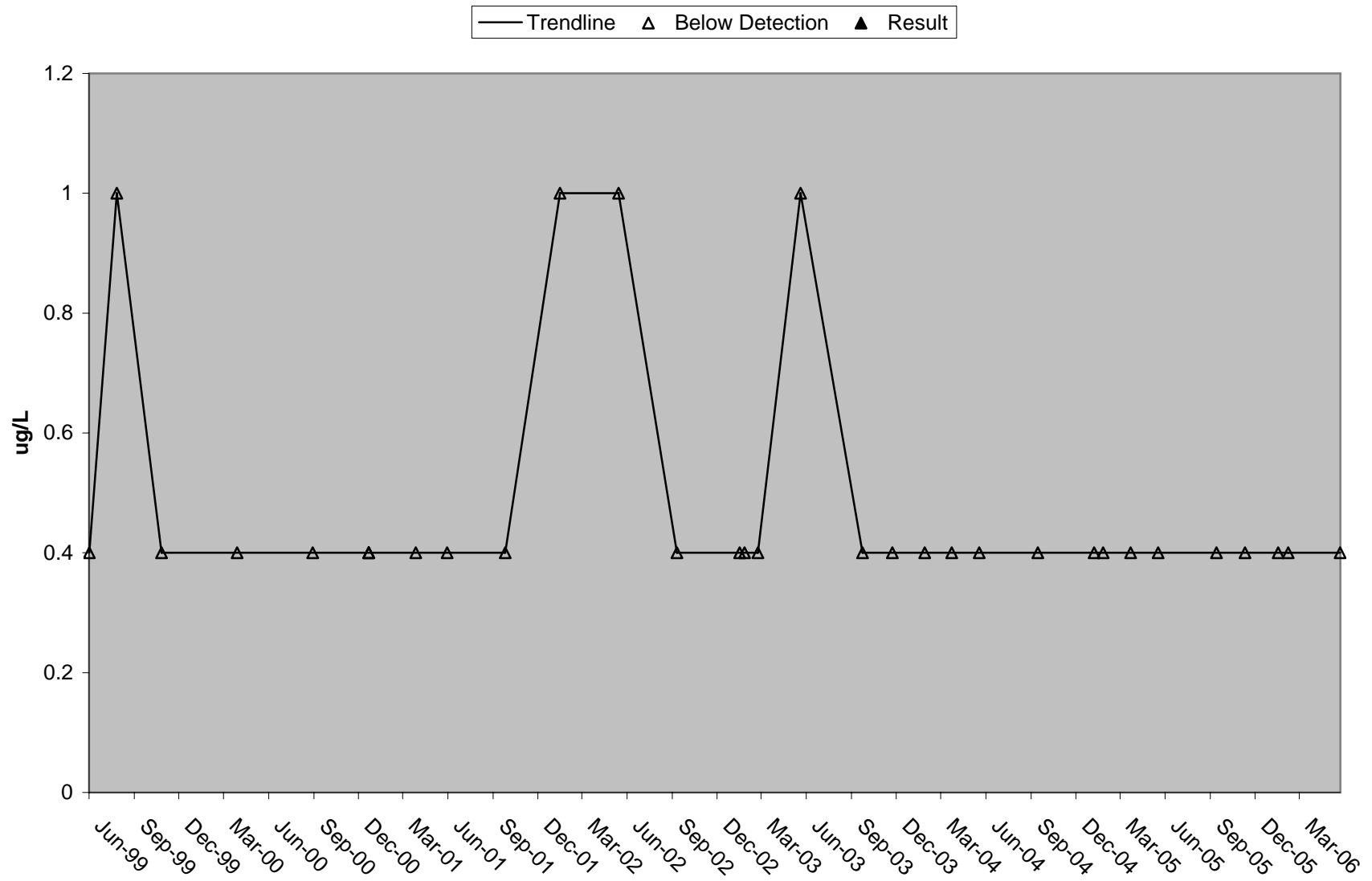
# Discovery Park Total Coliform



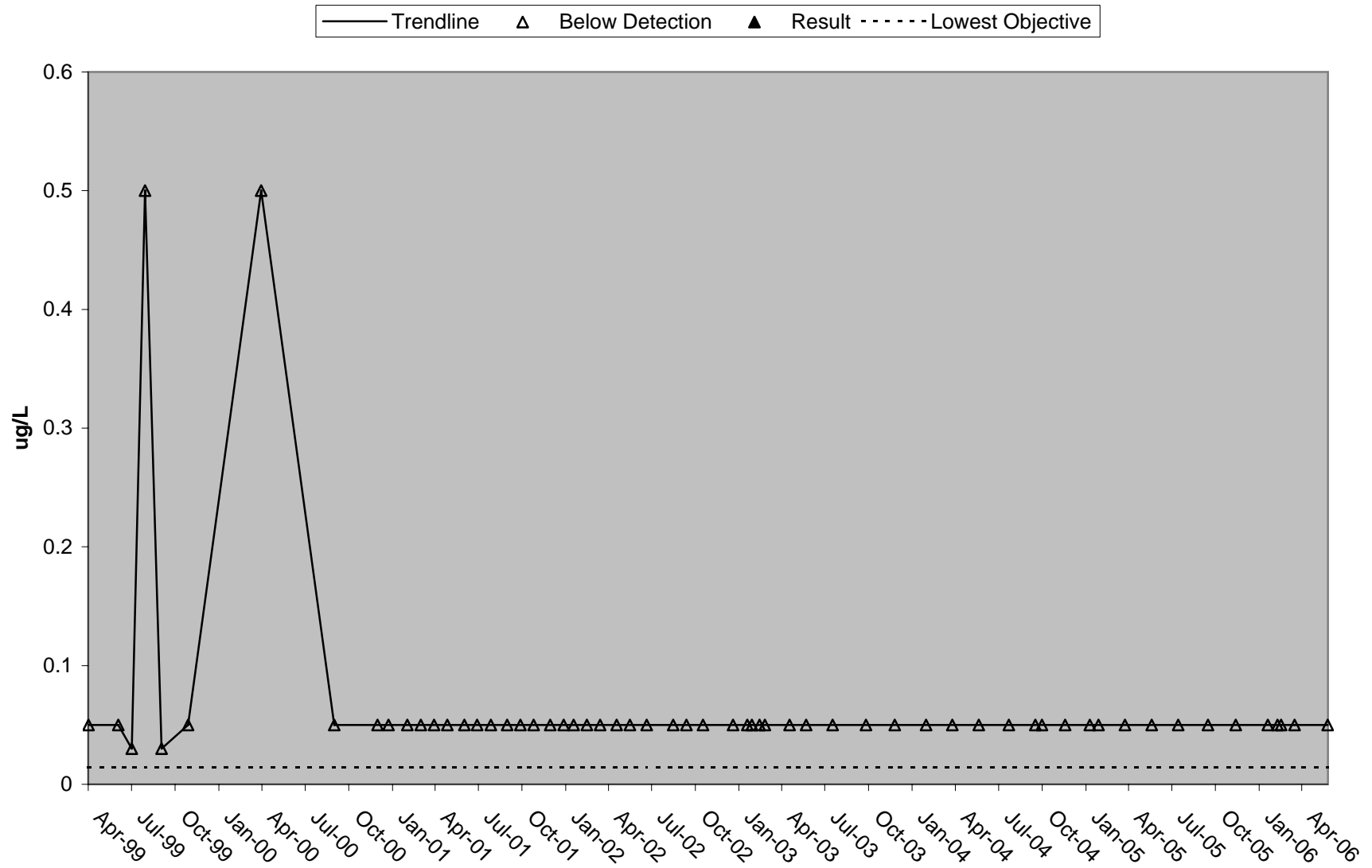
## Discovery Park Aldicarb



## Discovery Park Propoxur

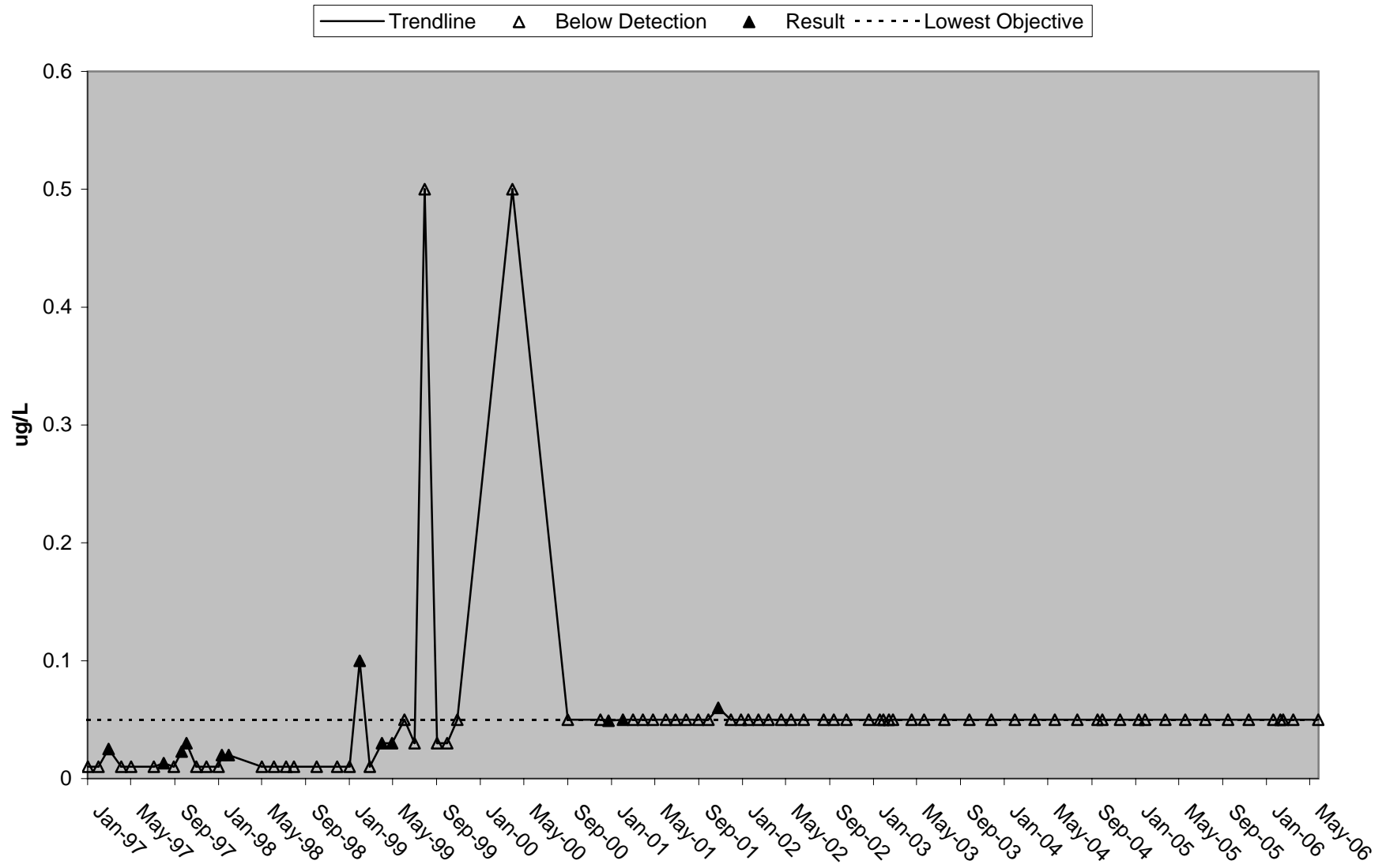


# Discovery Park Chlorpyrifos

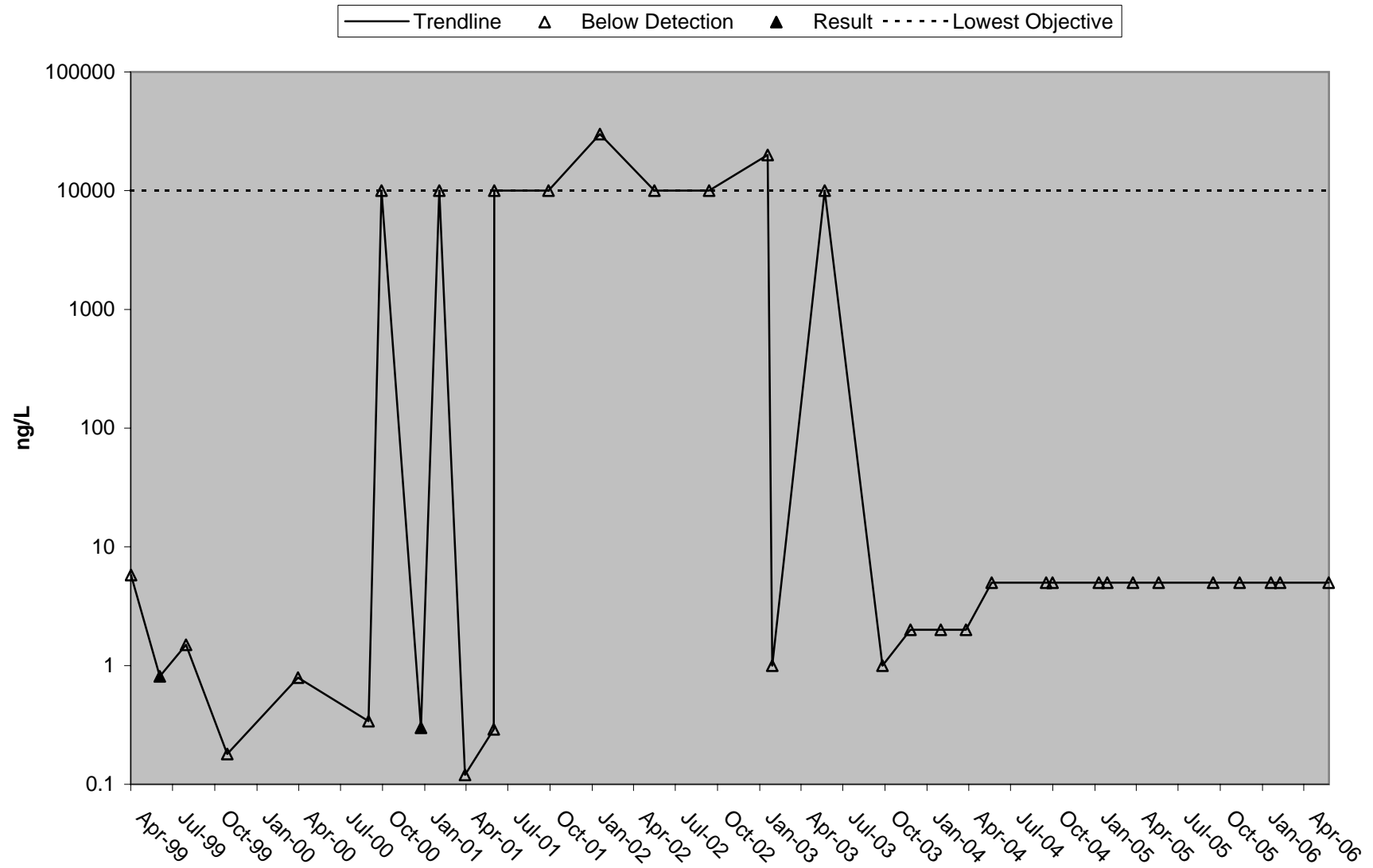




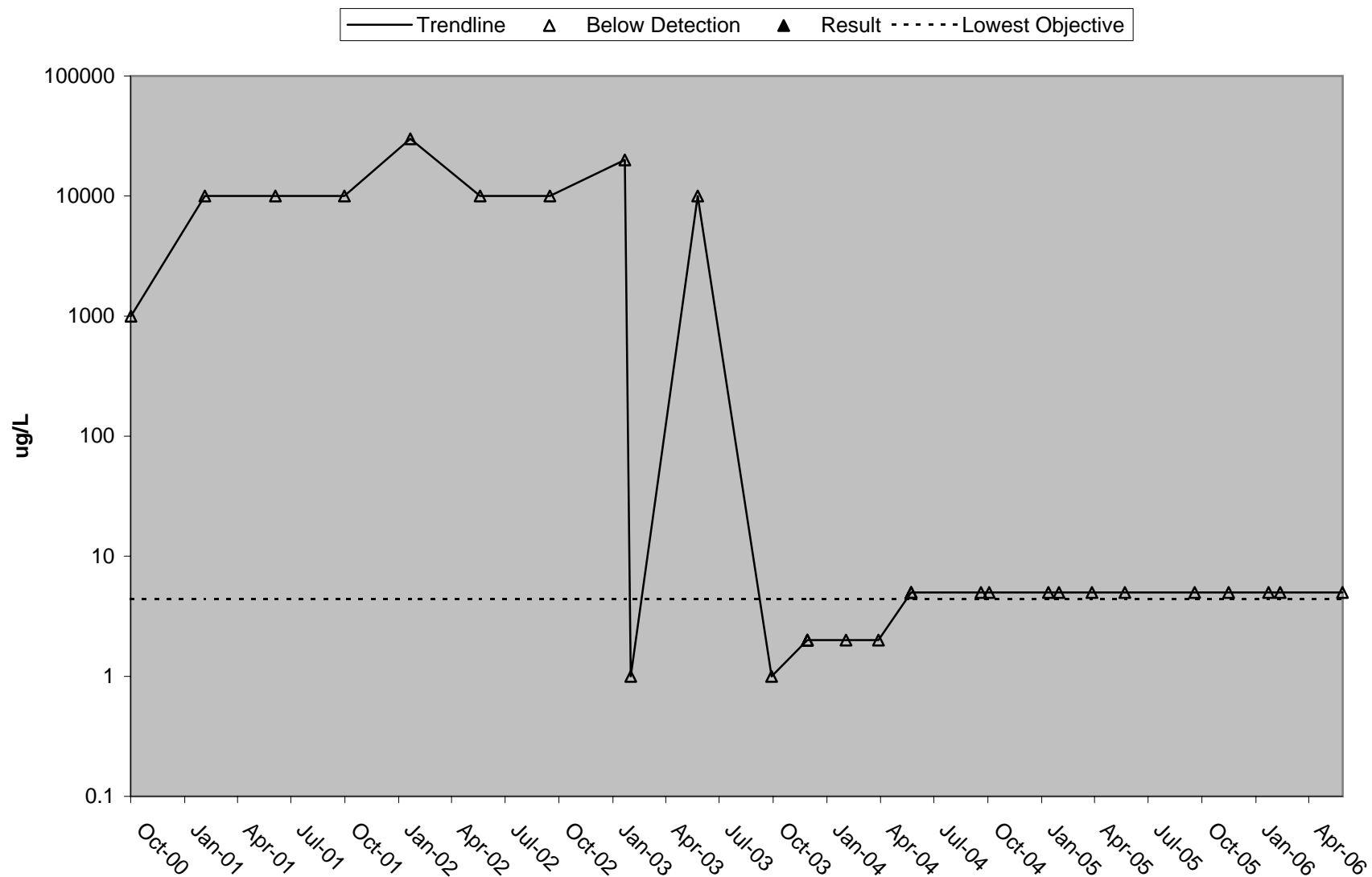
## Discovery Park Diazinon



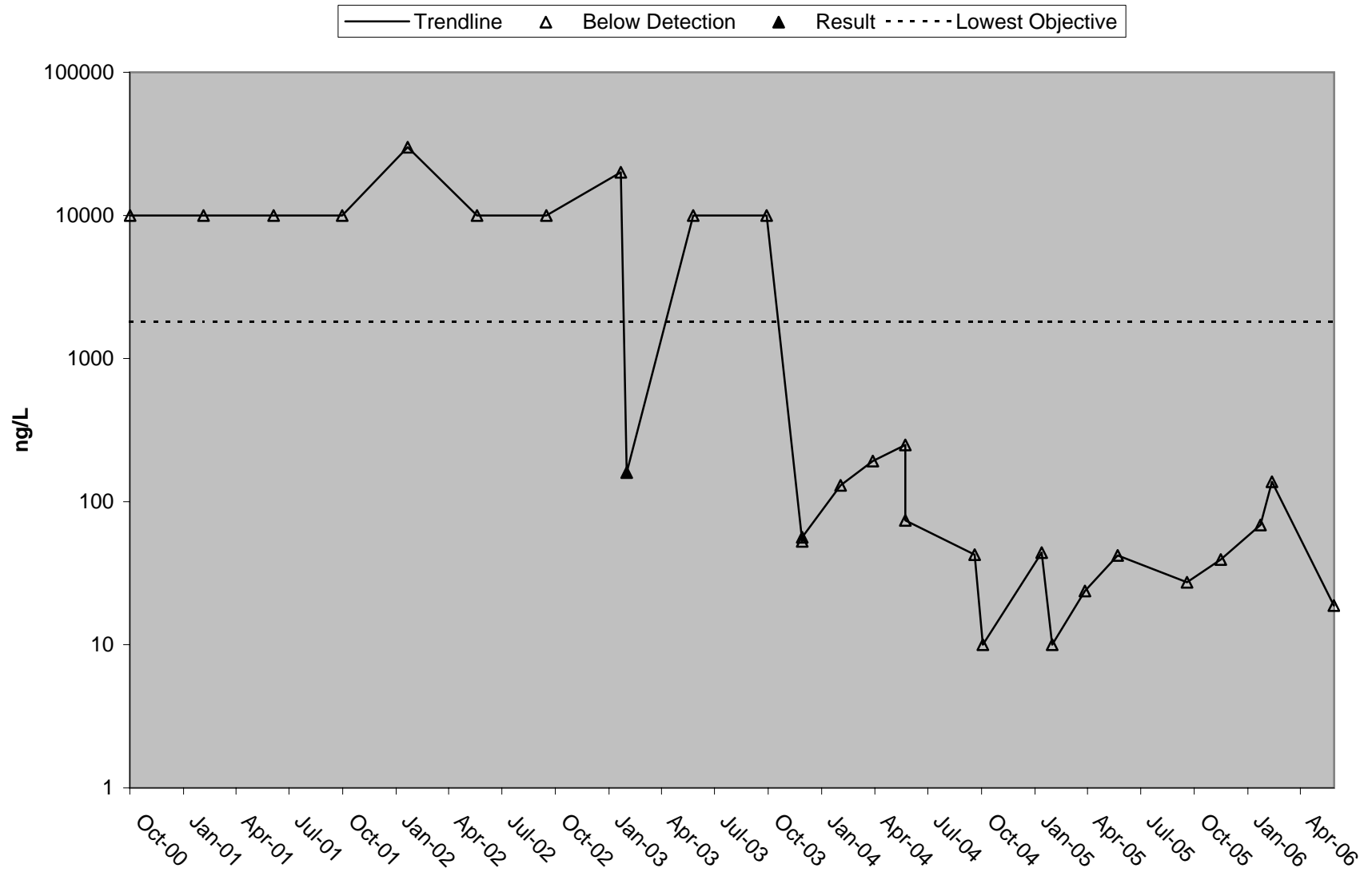
# Discovery Park Anthracene



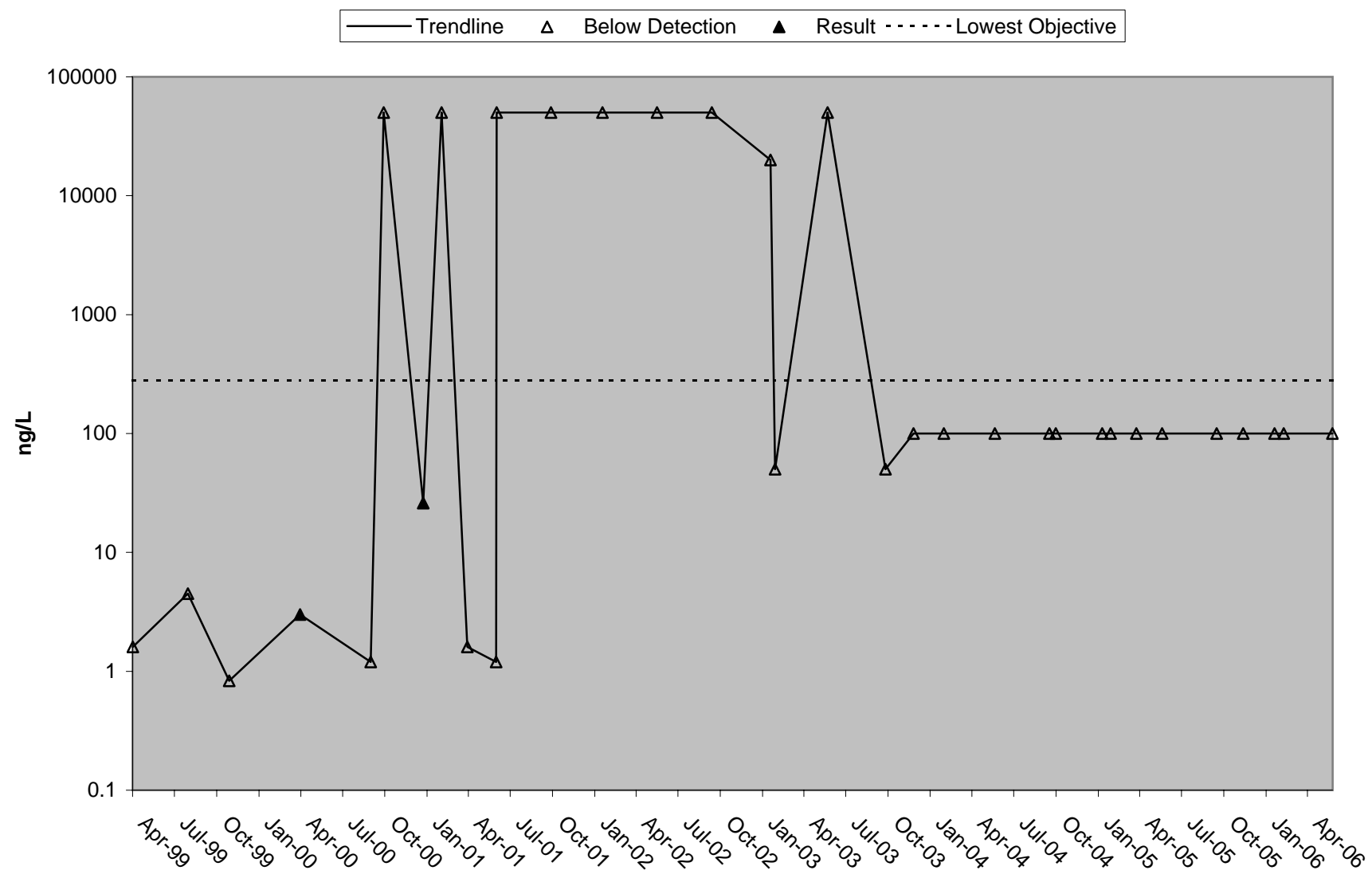
# Discovery Park Benzo(k)fluoranthene



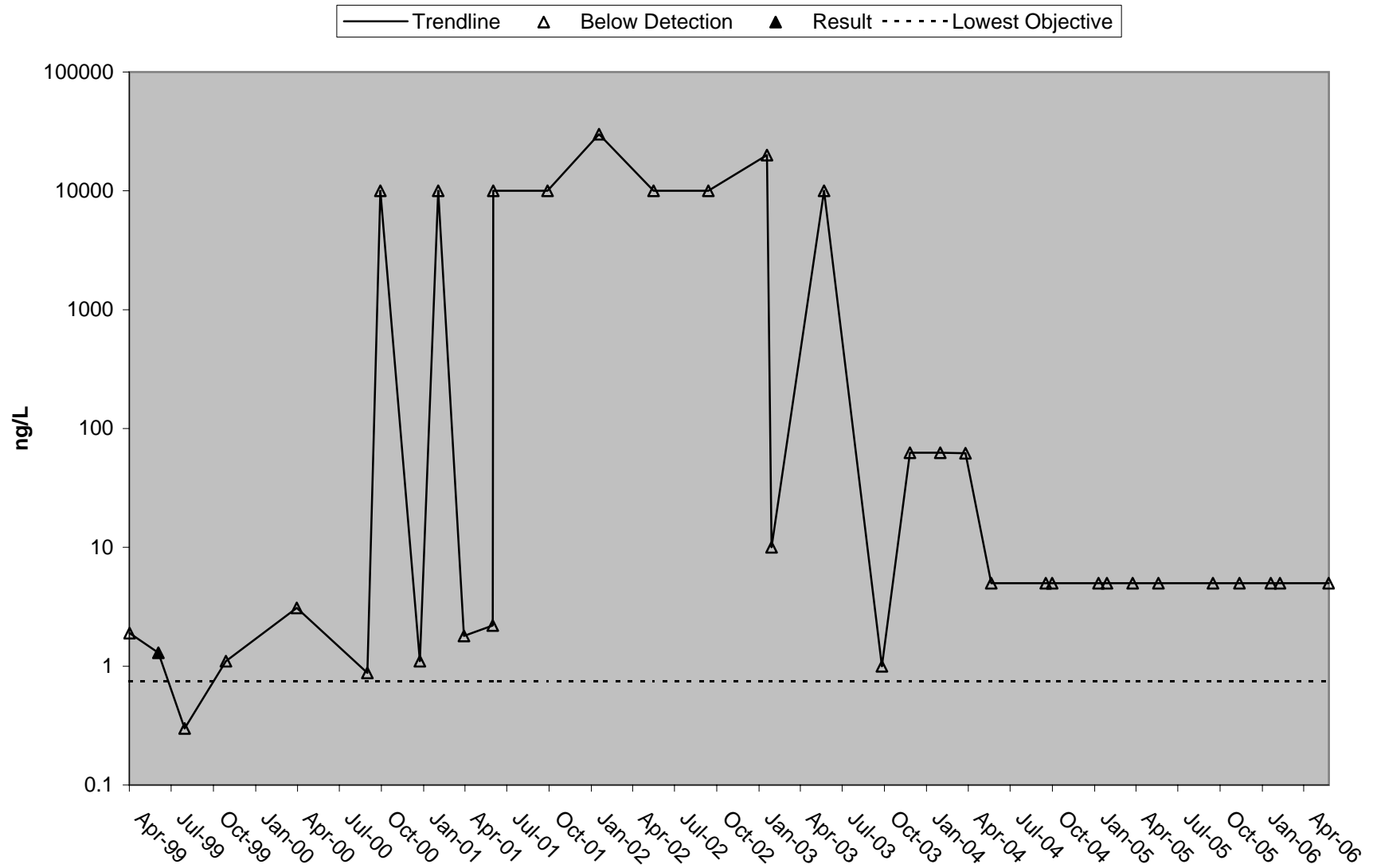
# Discovery Park Bis(2-ethylhexyl) phthalate



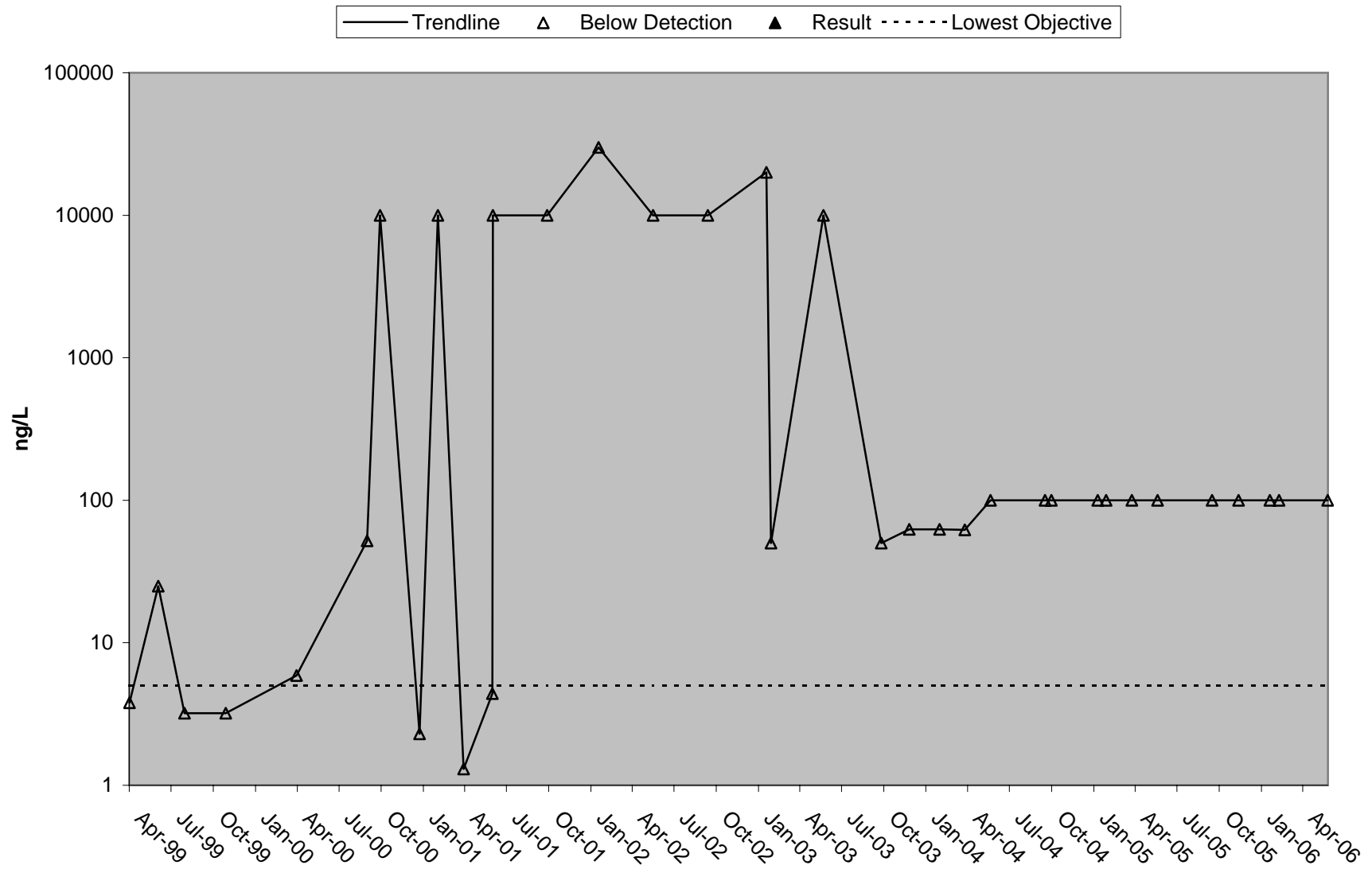
Discovery Park Pentachlorophenol



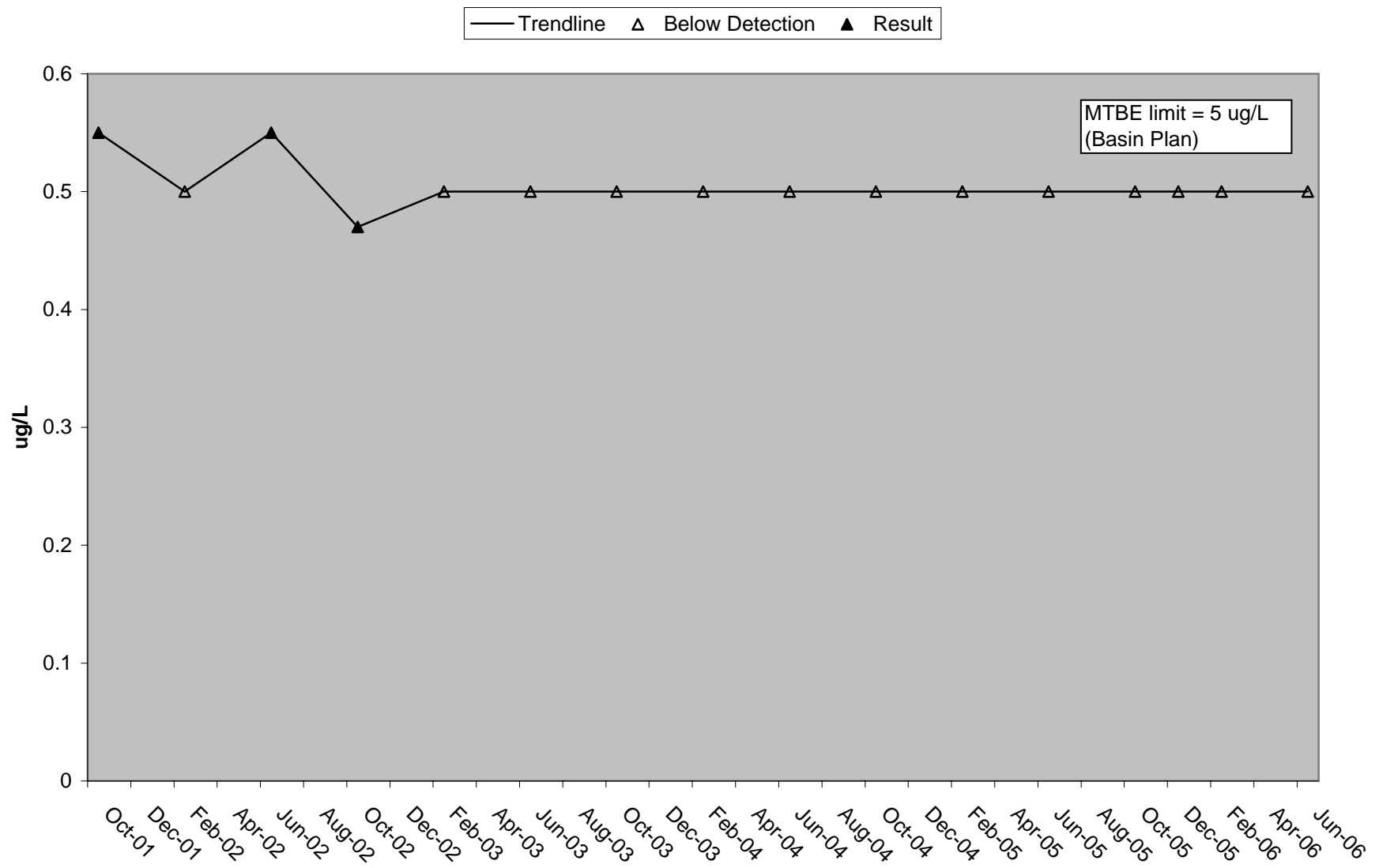
# Discovery Park Hexachlorobenzene



# Discovery Park N-Nitrosodi-N-Propylamine



# Discovery Park MTBE

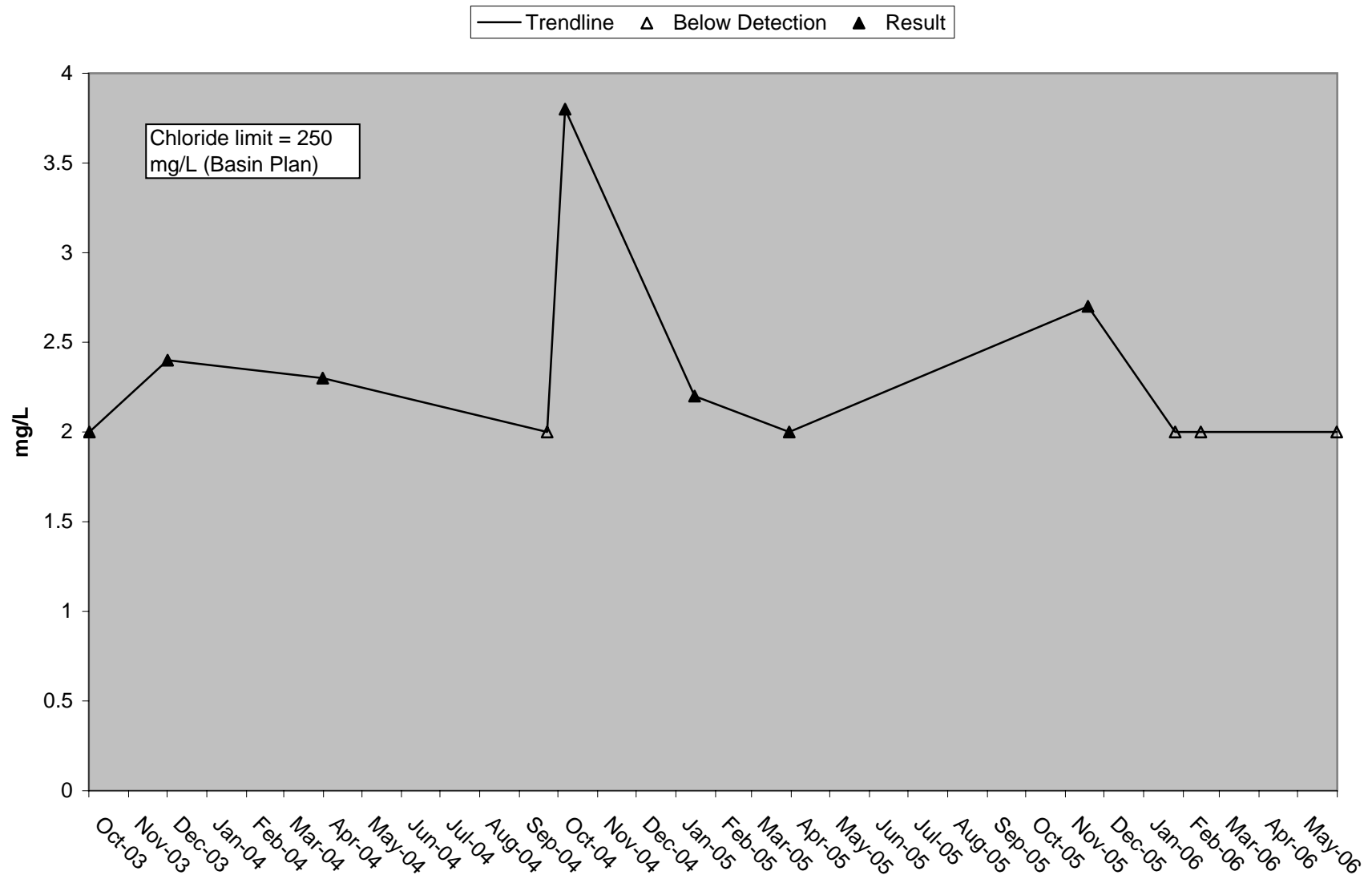




## *APPENDIX C-6*

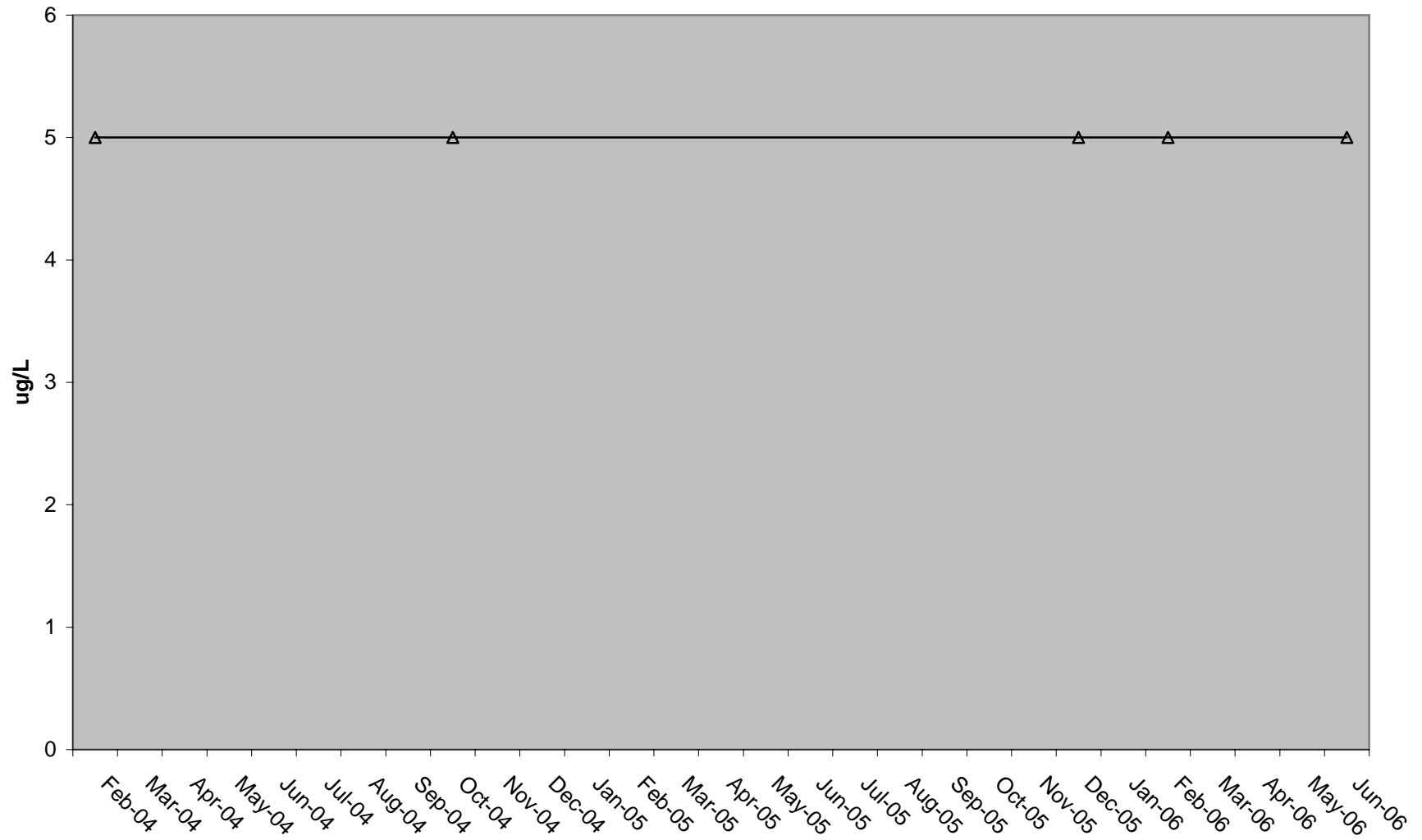
### *American River at Highway 80 Overpass*

# Am River at Hwy 80 Chloride

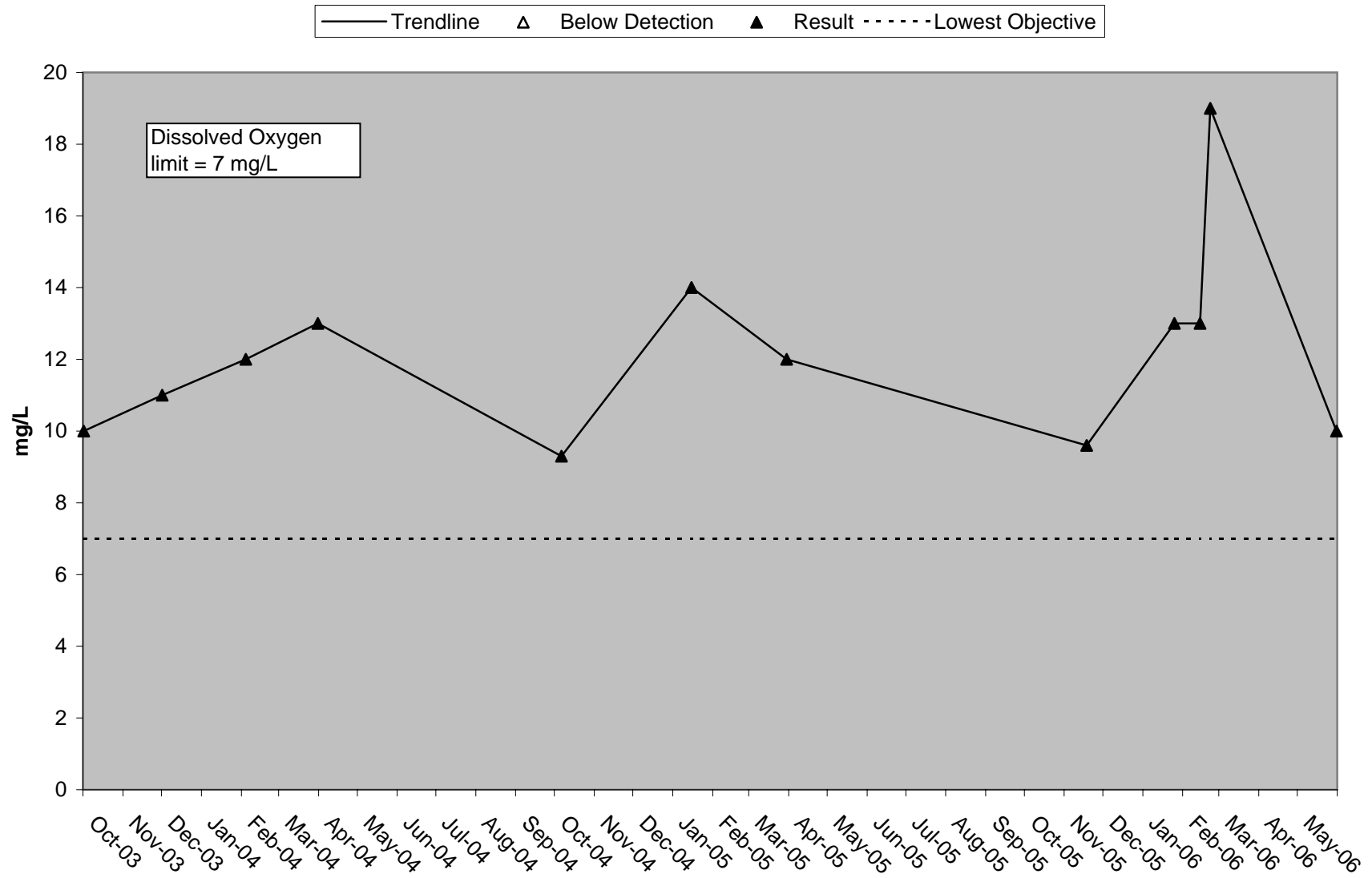


# Am River at Hwy 80 Cyanide

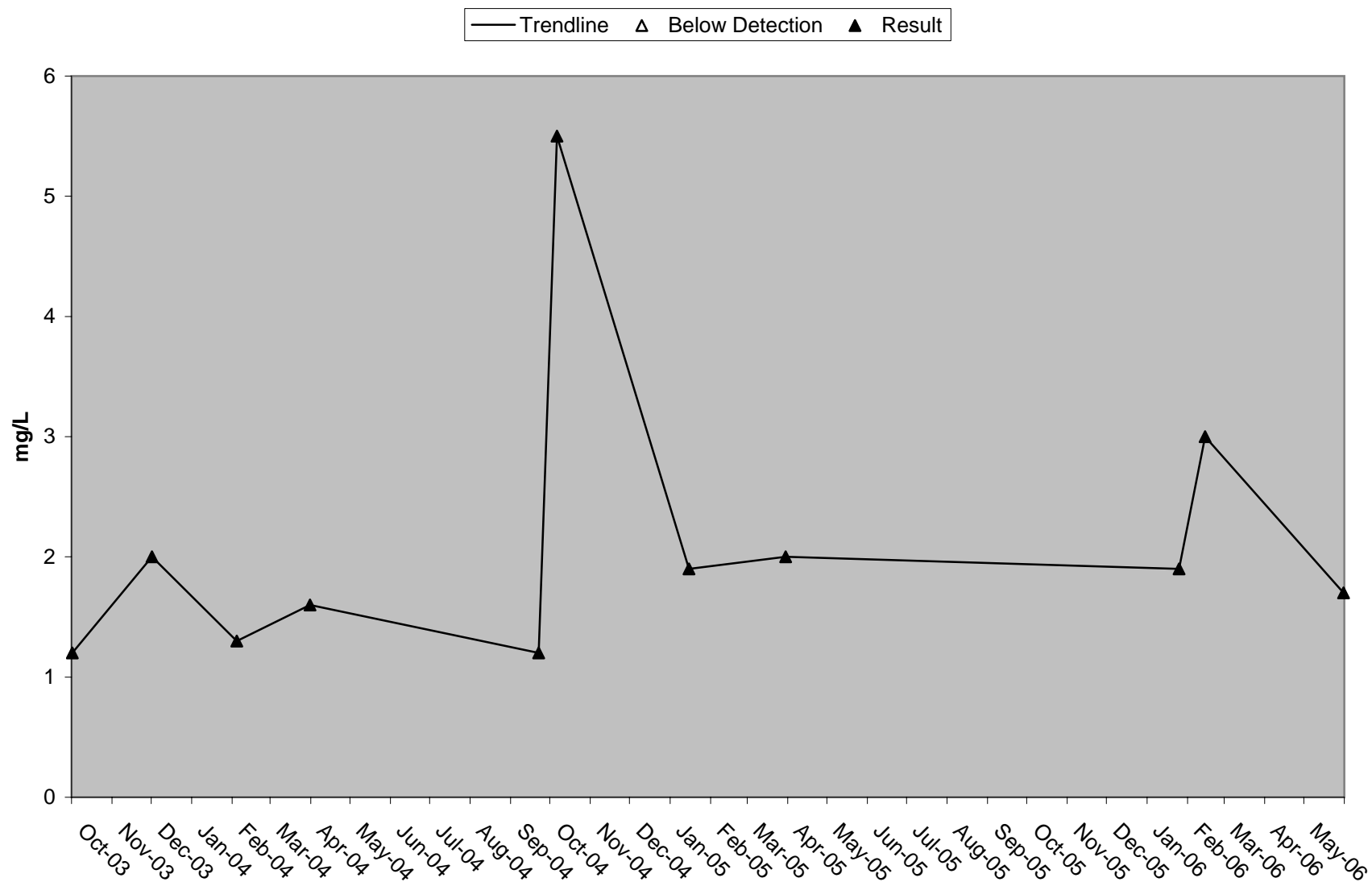
— Trendline    △ Below Detection    ▲ Result



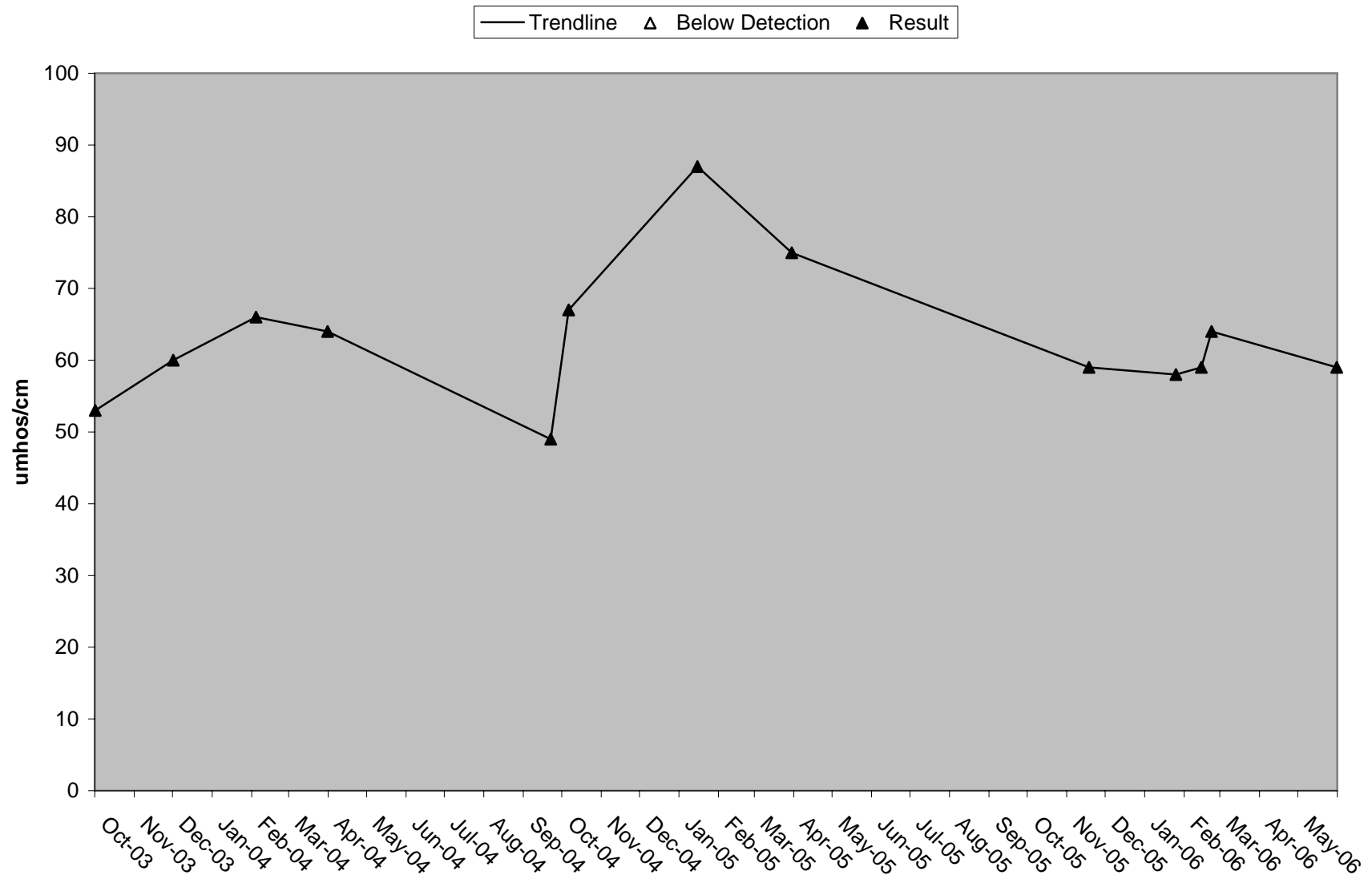
## Am River at Hwy 80 Dissolved Oxygen (DO)



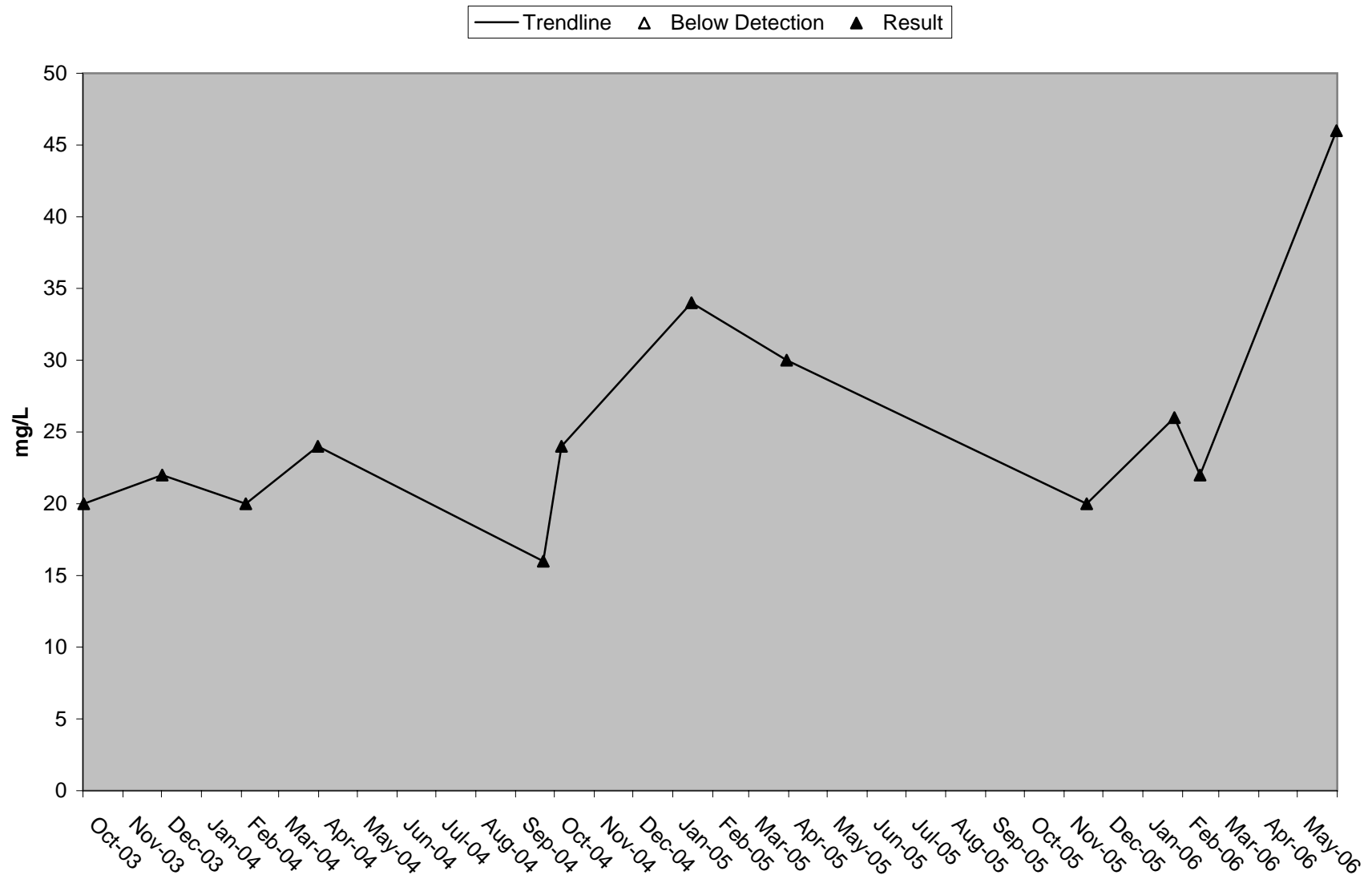
### Am River at Hwy 80 Dissolved Organic Carbon (DOC)



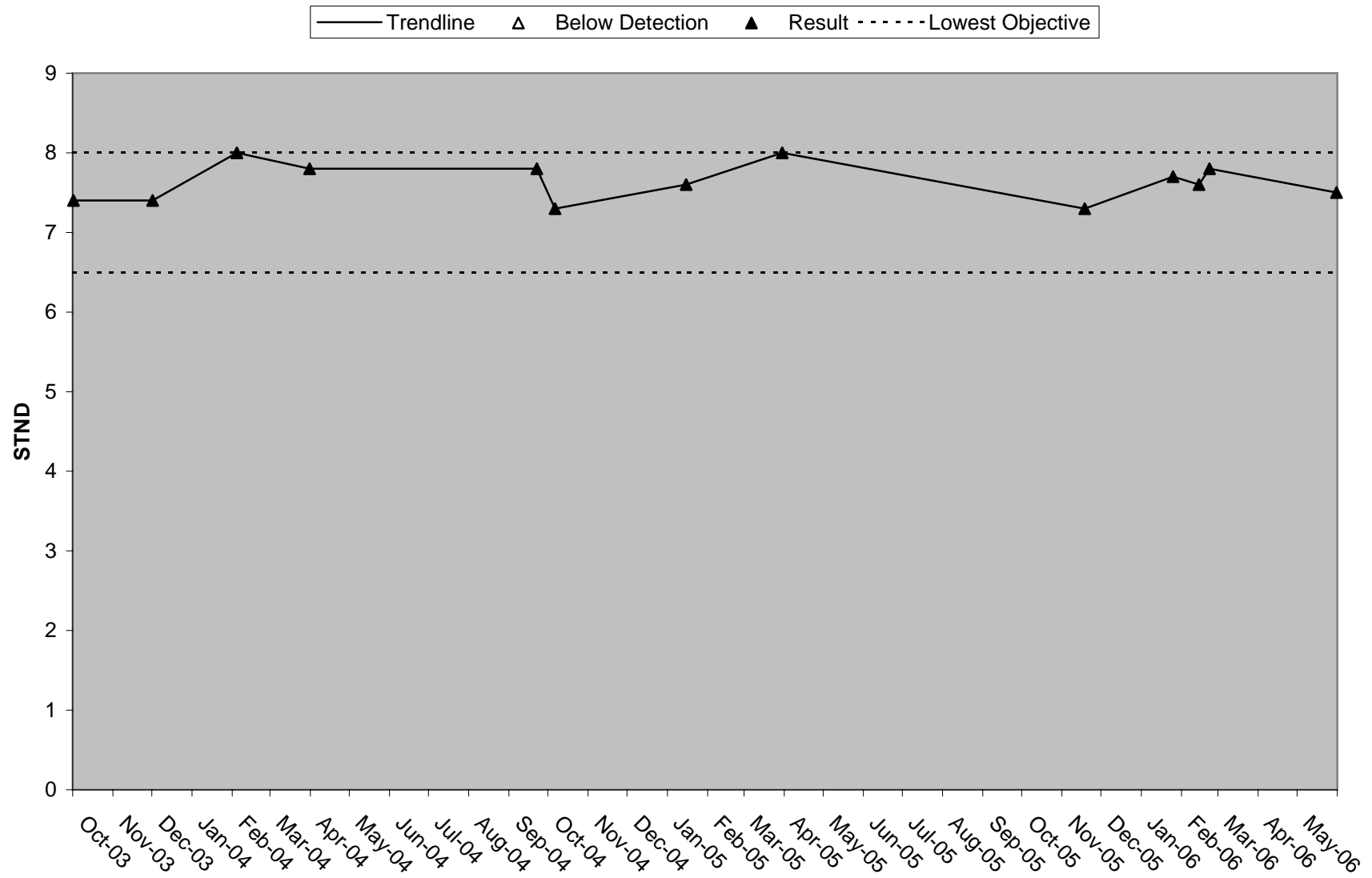
### Am River at Hwy 80 Electrical Conductivity (EC)



### Am River at Hwy 80 Hardness

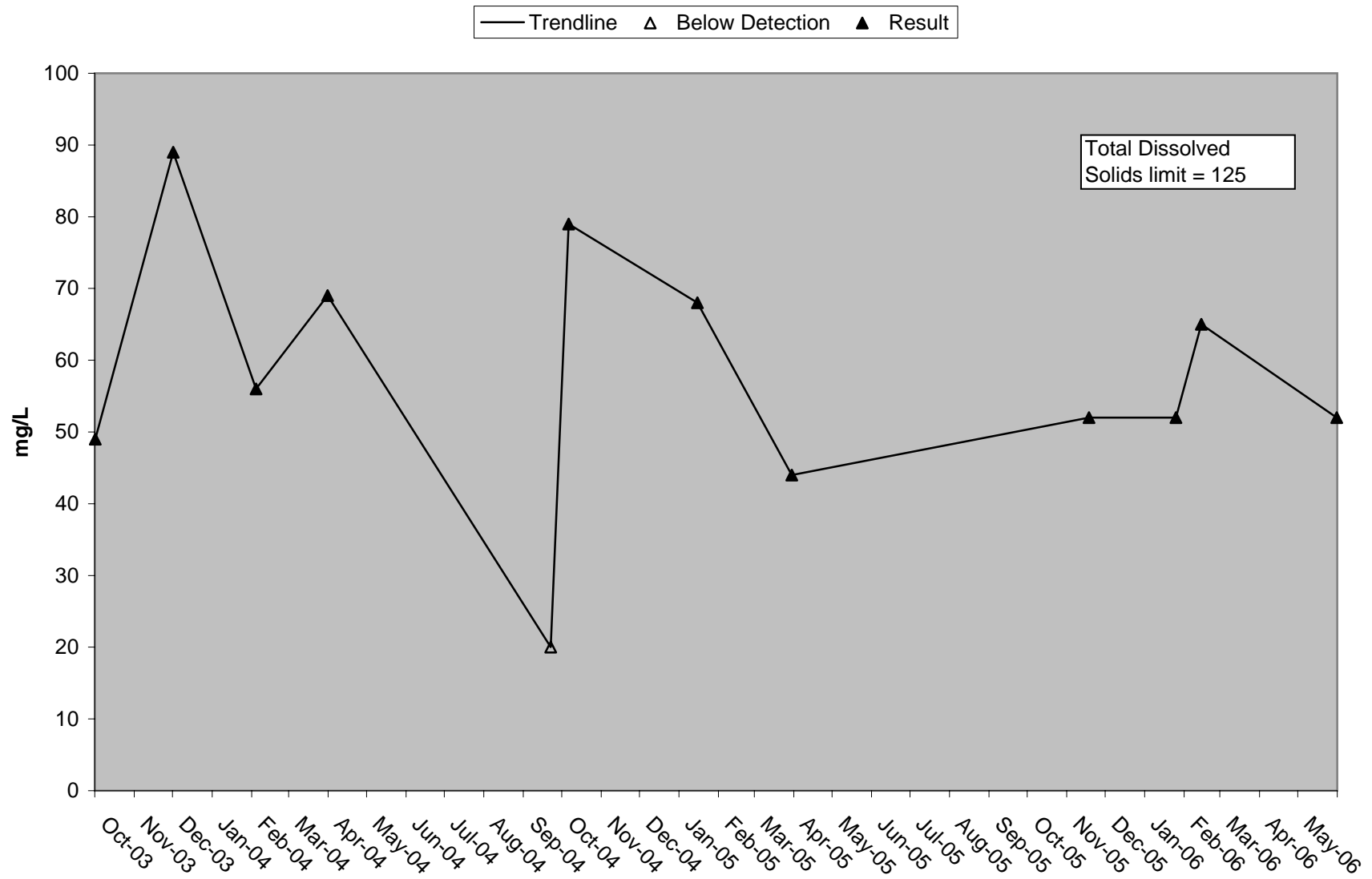


# Am River at Hwy 80 pH

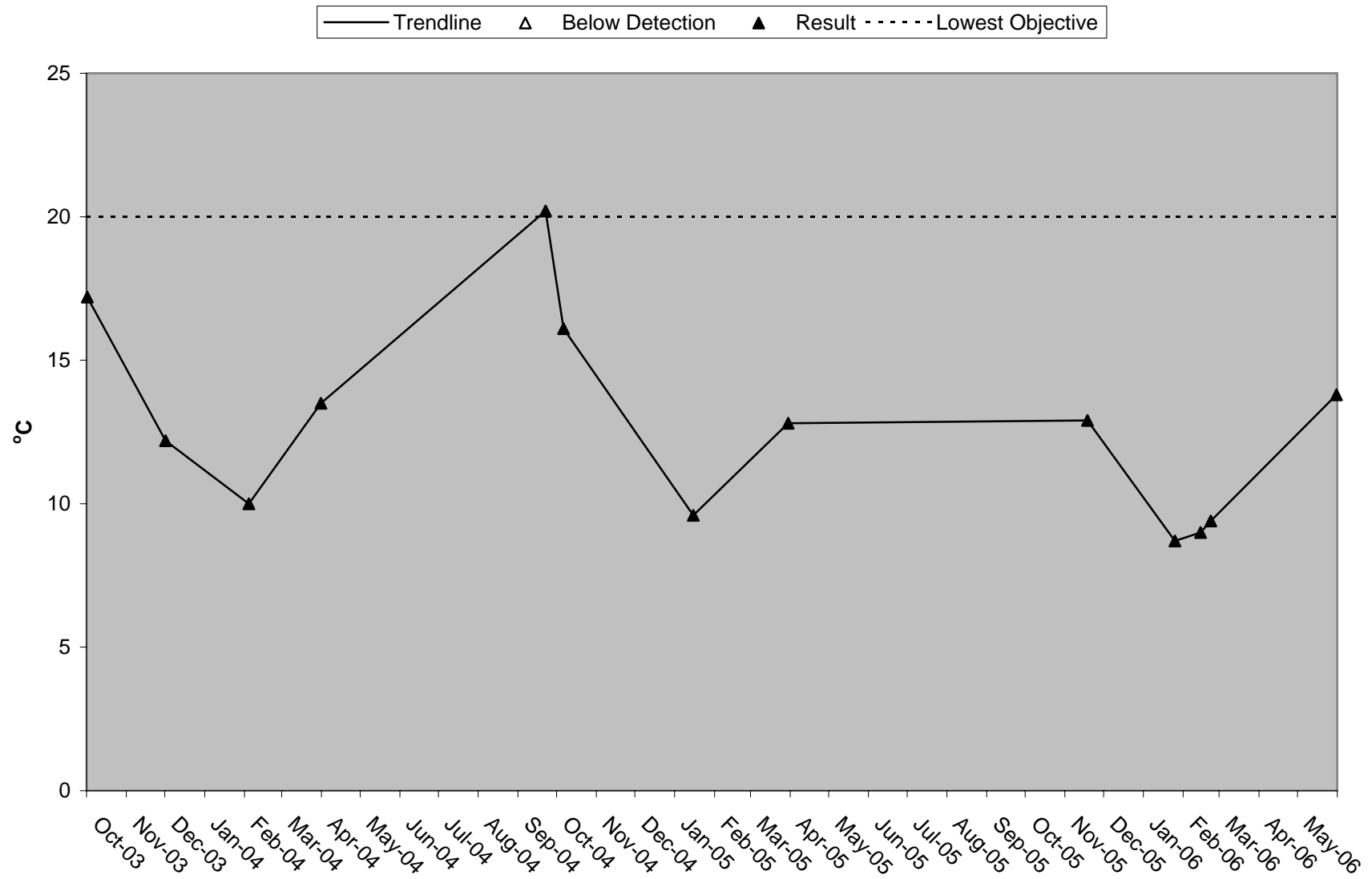




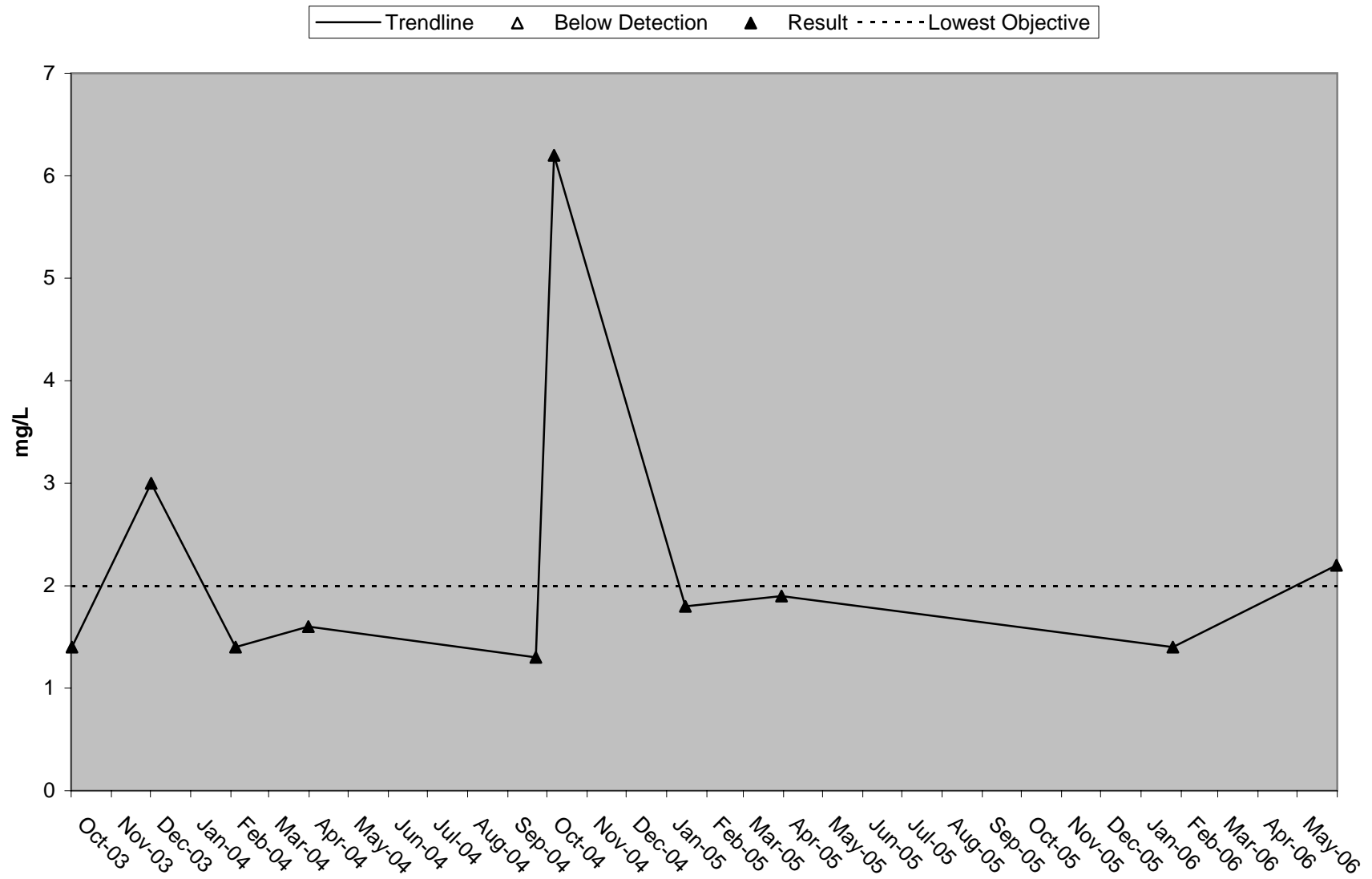
### Am River at Hwy 80 Total Dissolved Solids (TDS)



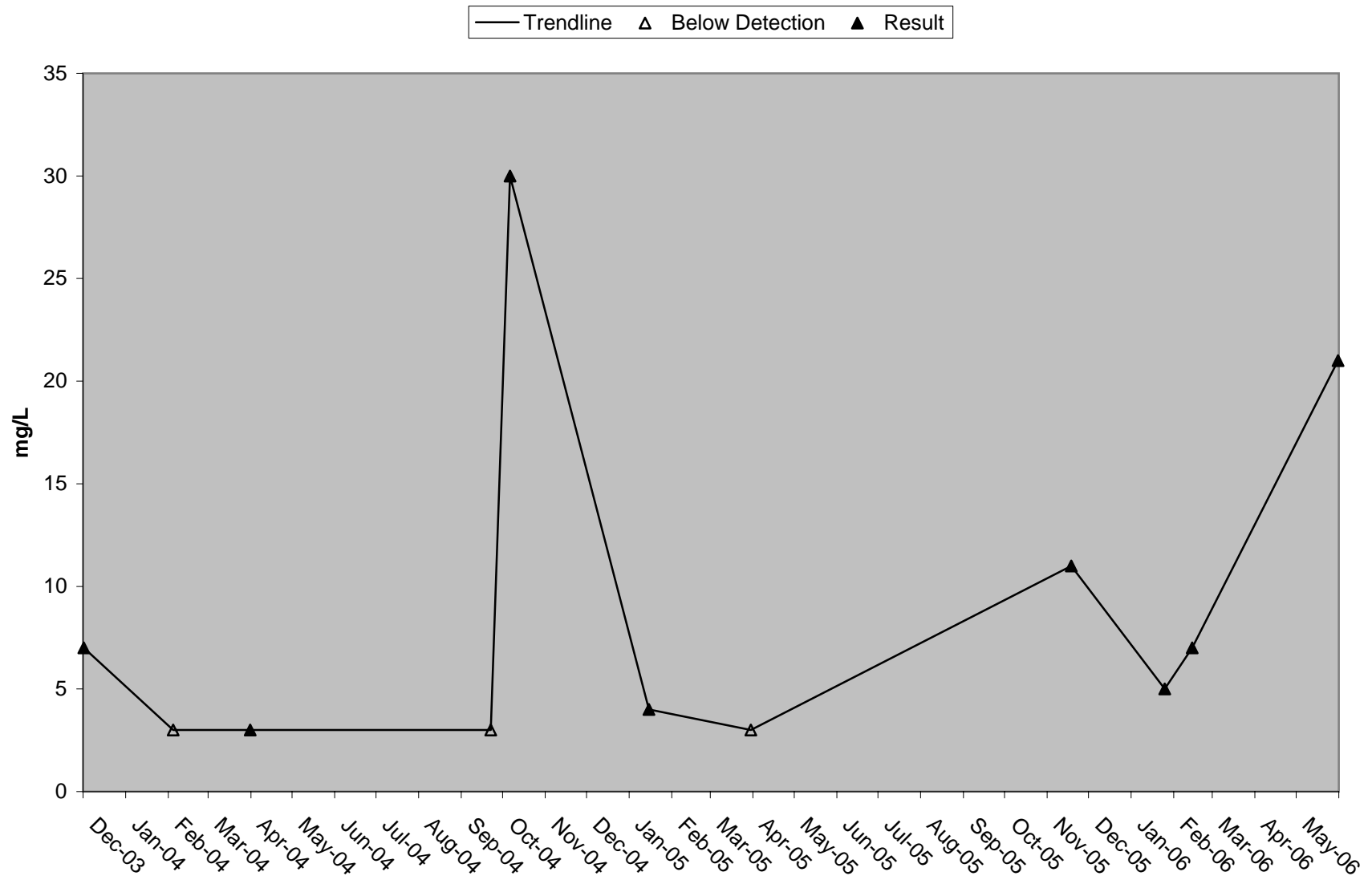
### Am River at Hwy 80 Water Temperature



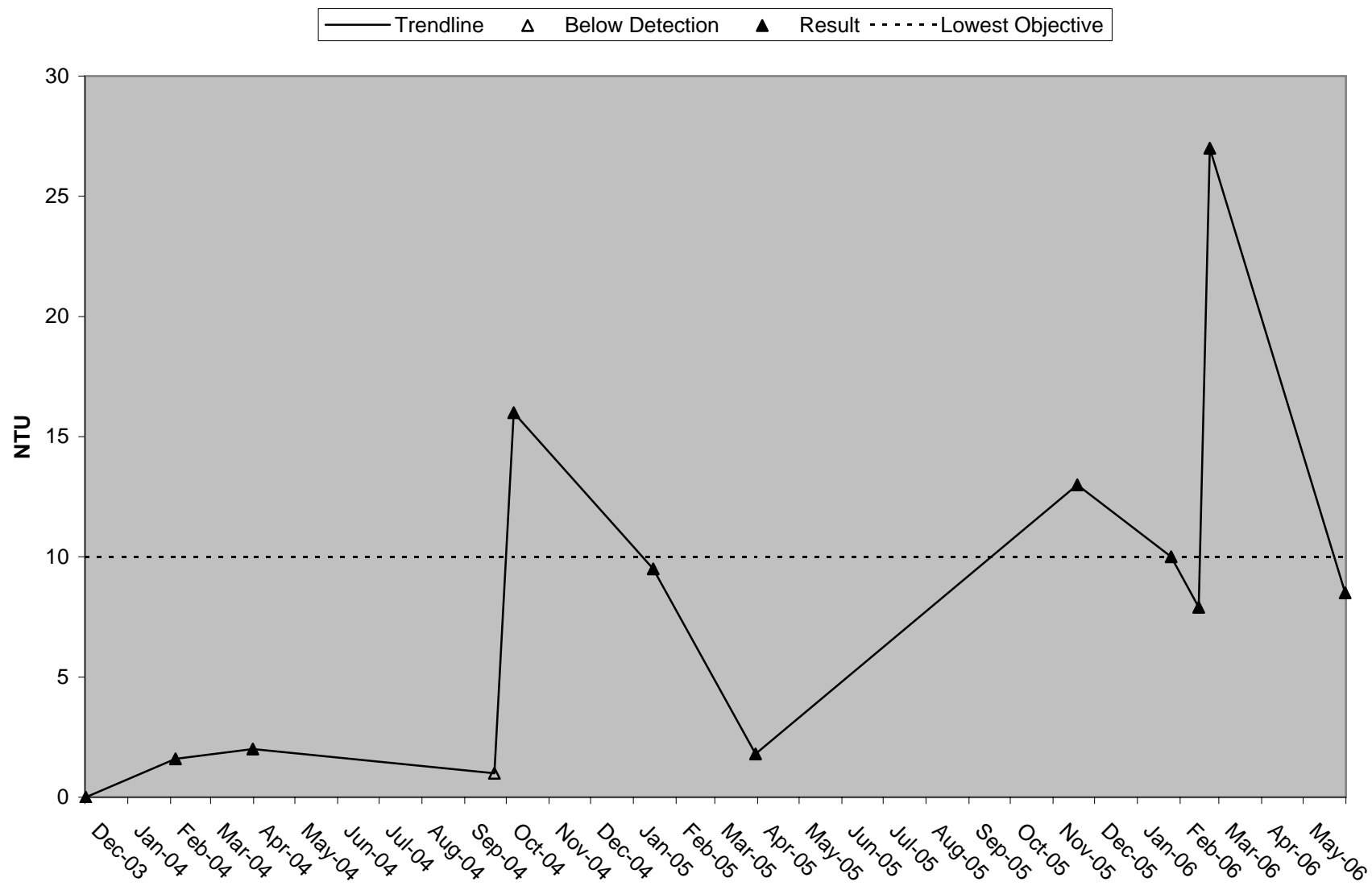
### Am River at Hwy 80 Total Organic Carbon (TOC)



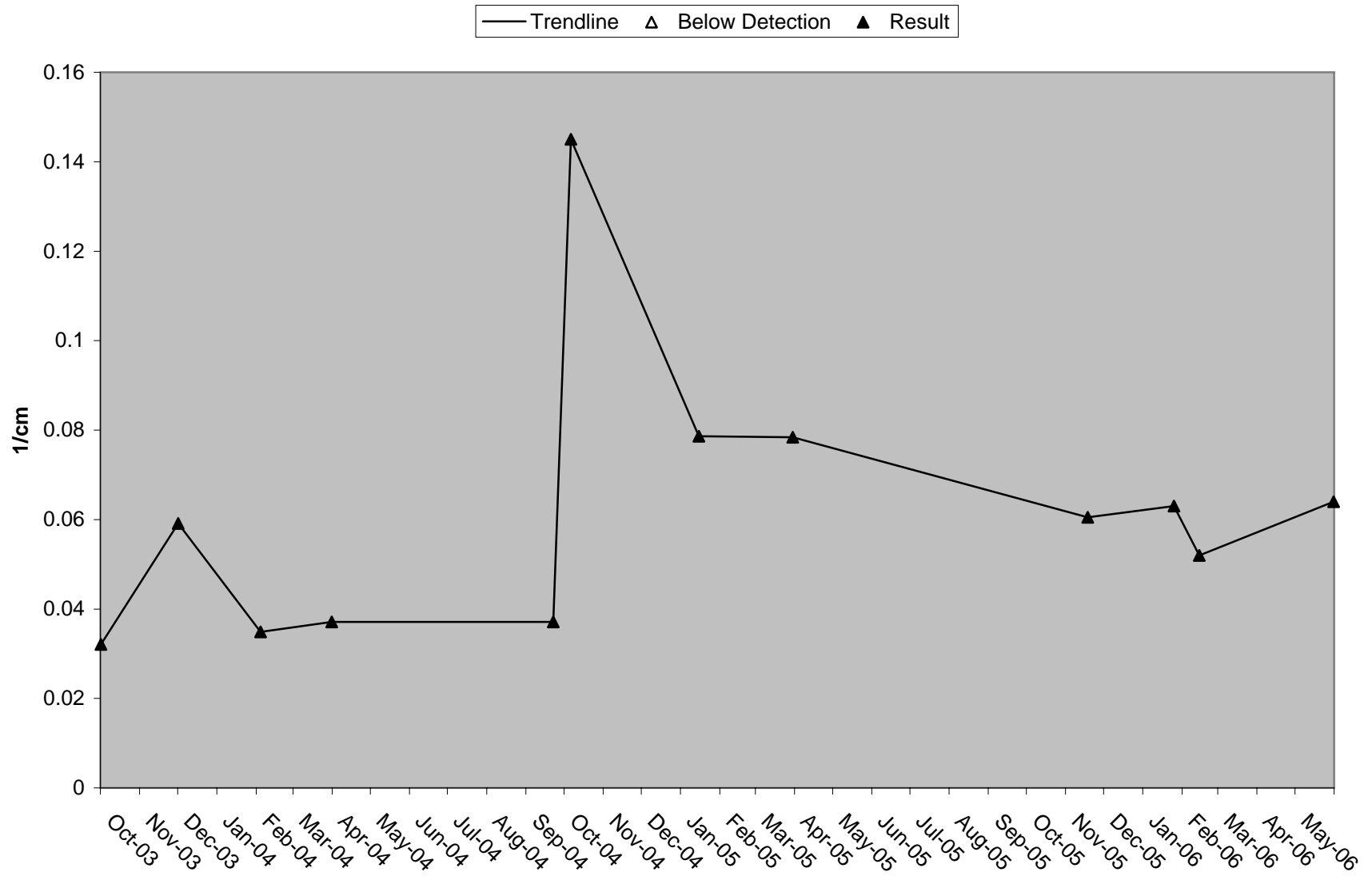
### Am River at Hwy 80 Total Suspended Solids (TSS)



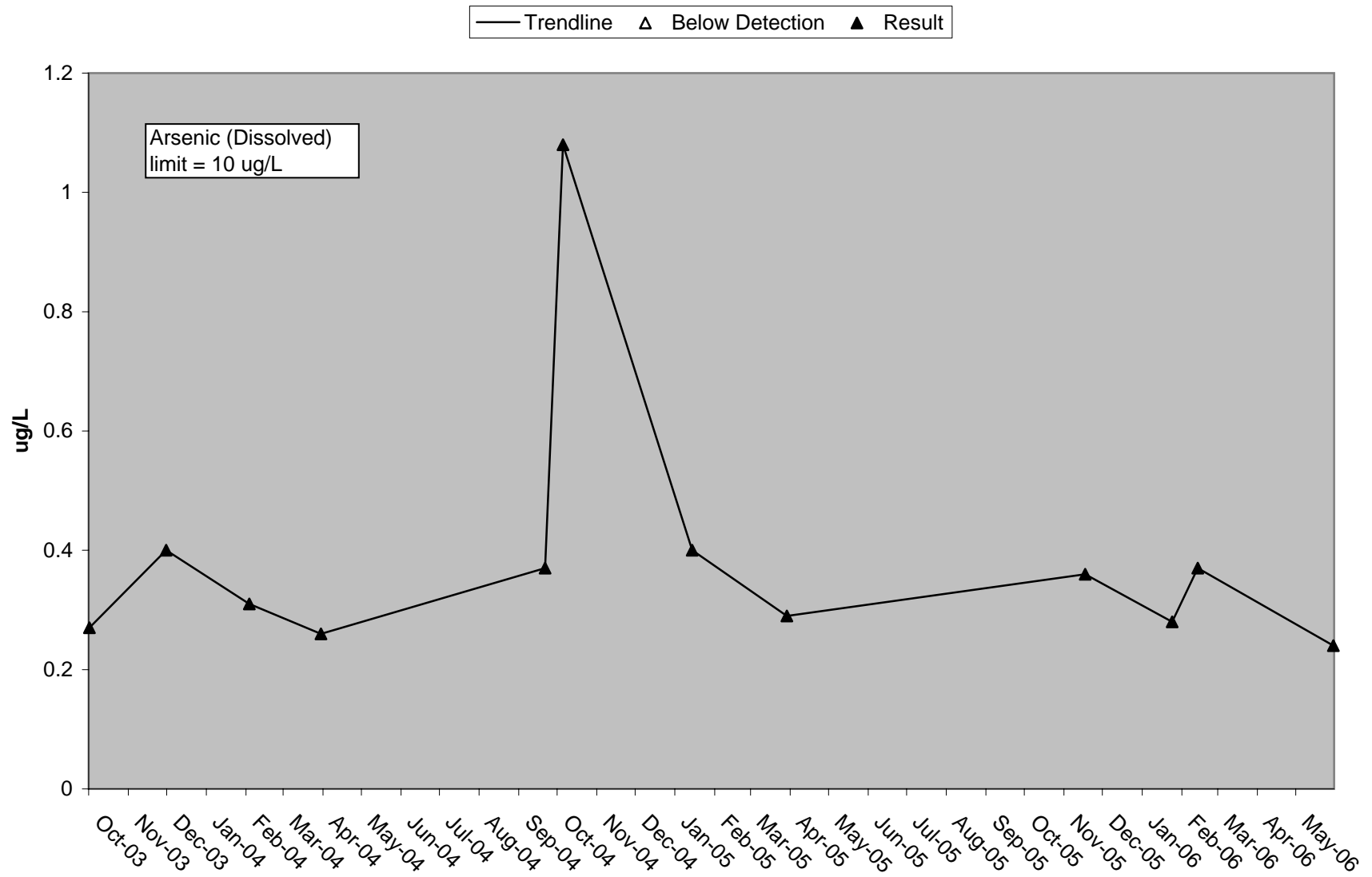
### Am River at Hwy 80 Turbidity



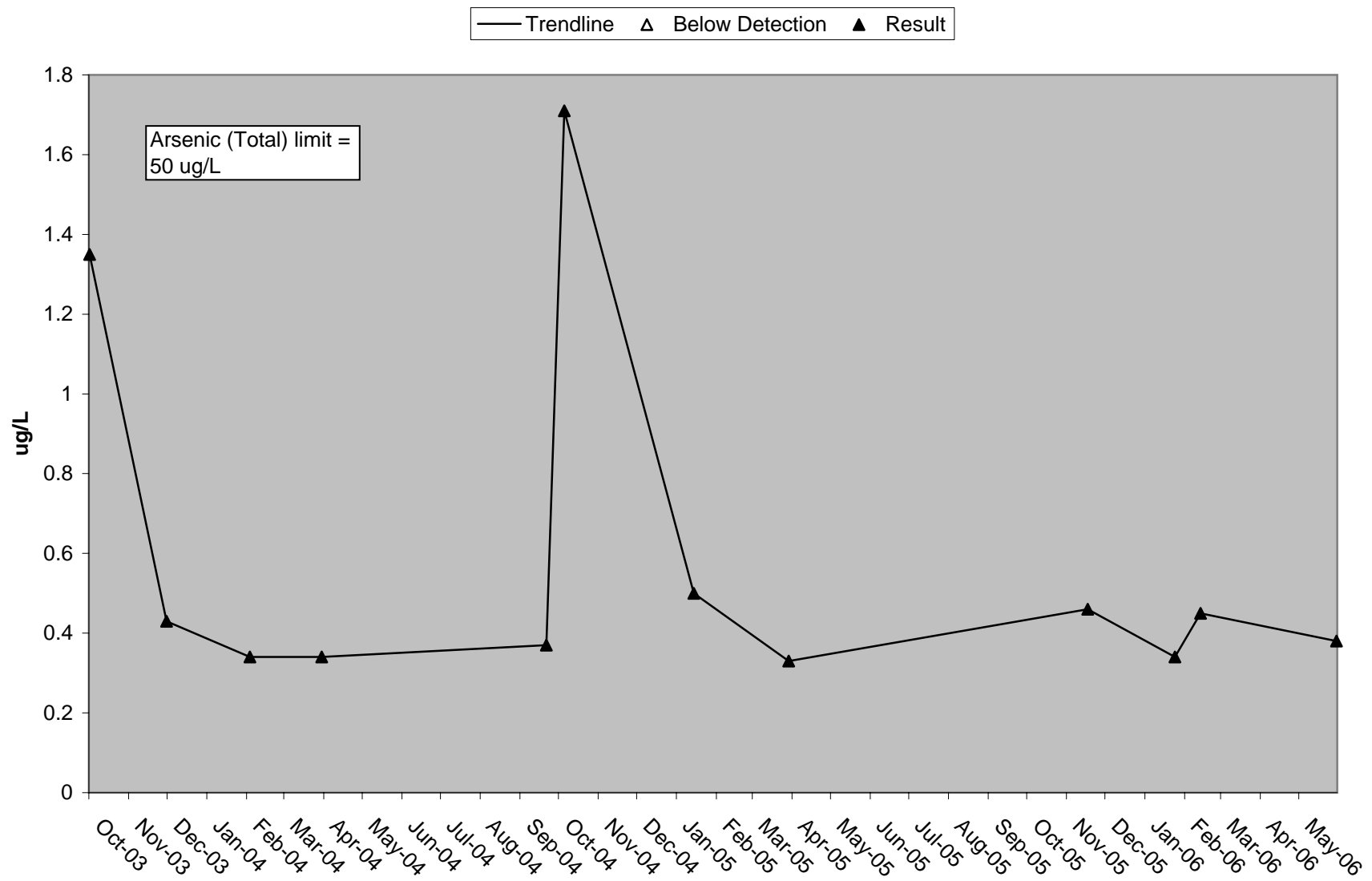
# Am River at Hwy 80 UVA 254



### Am River at Hwy 80 Dissolved Arsenic (As-d)

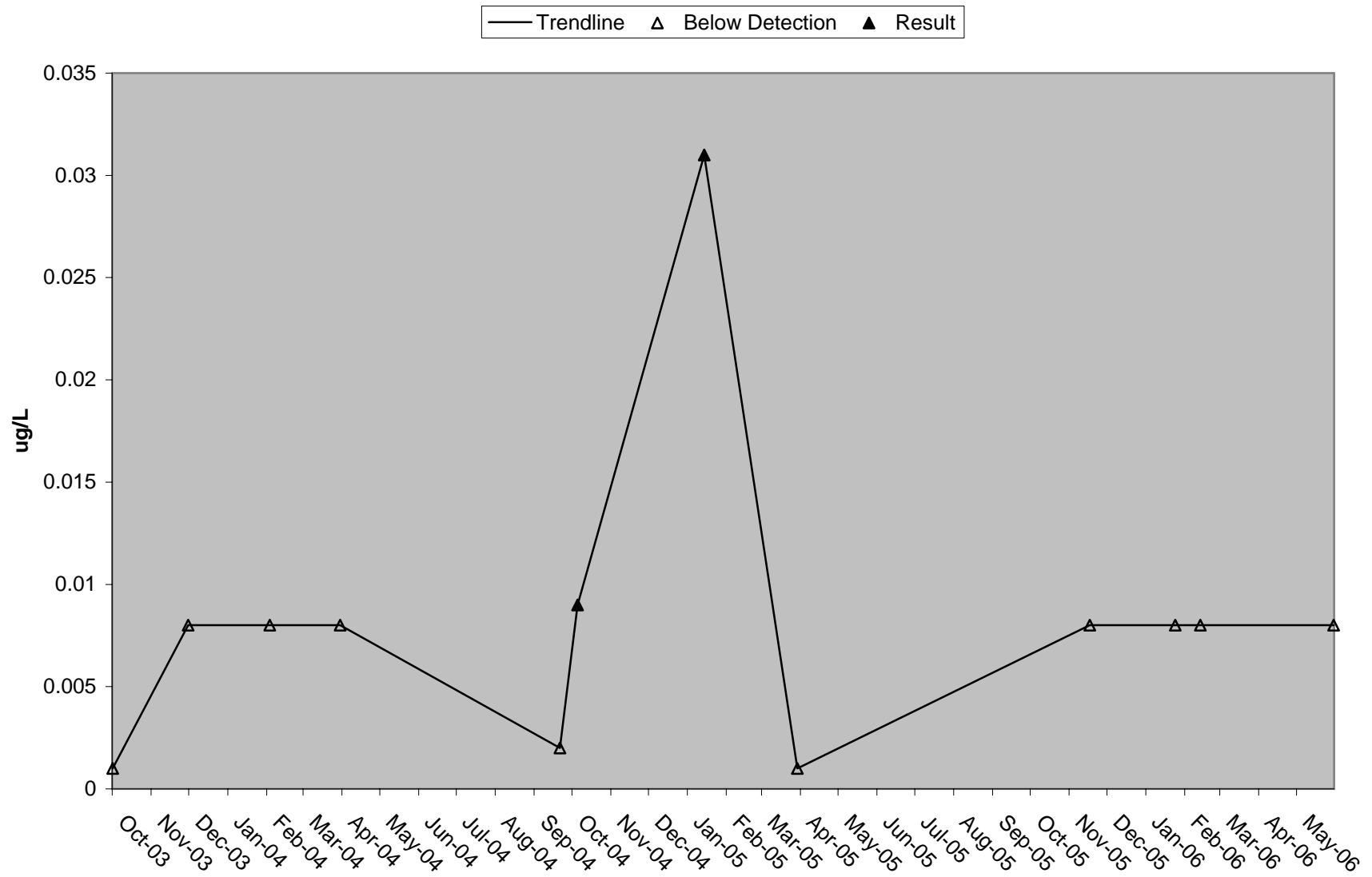


### Am River at Hwy 80 Total Arsenic (As-T)

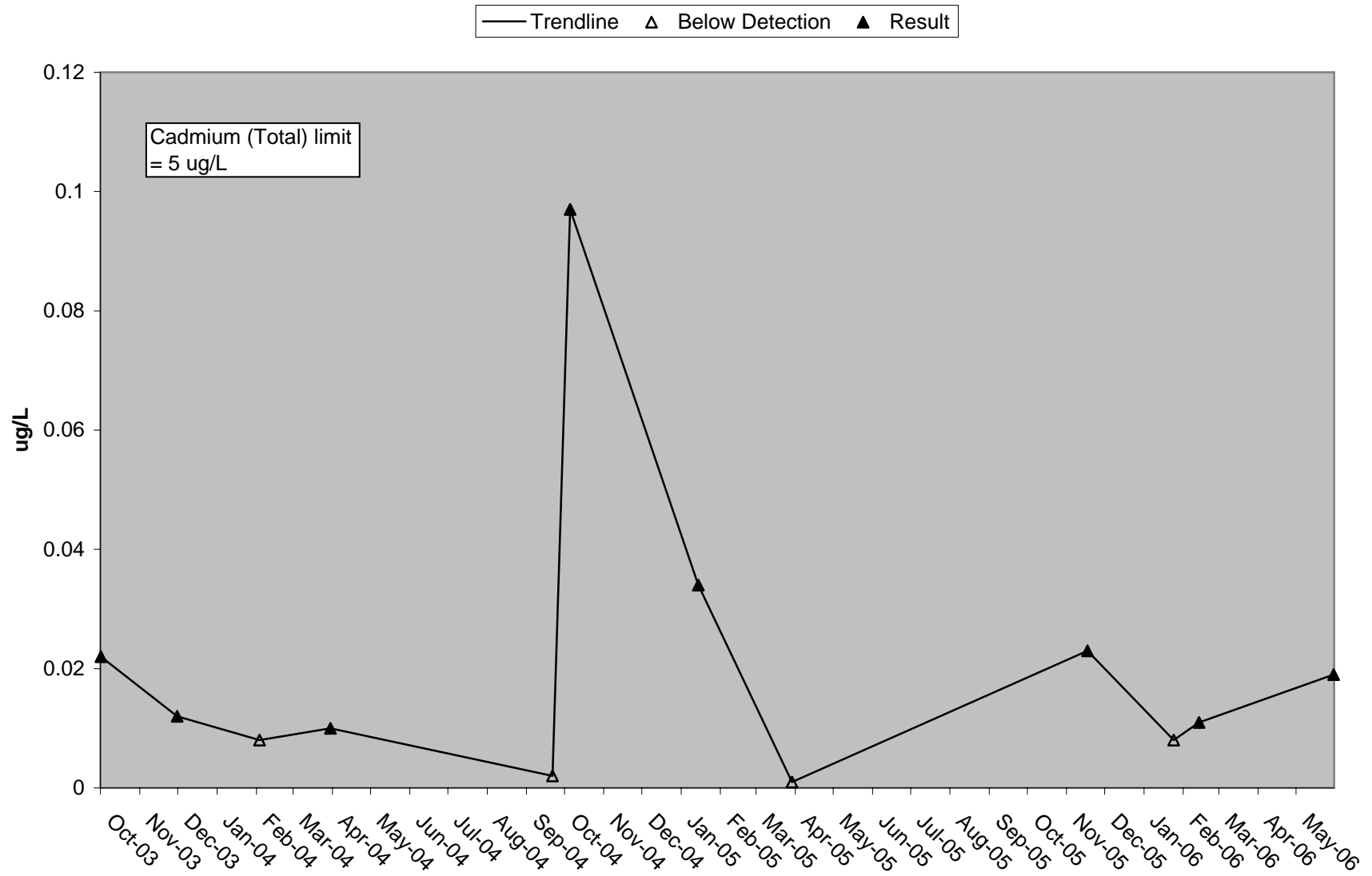




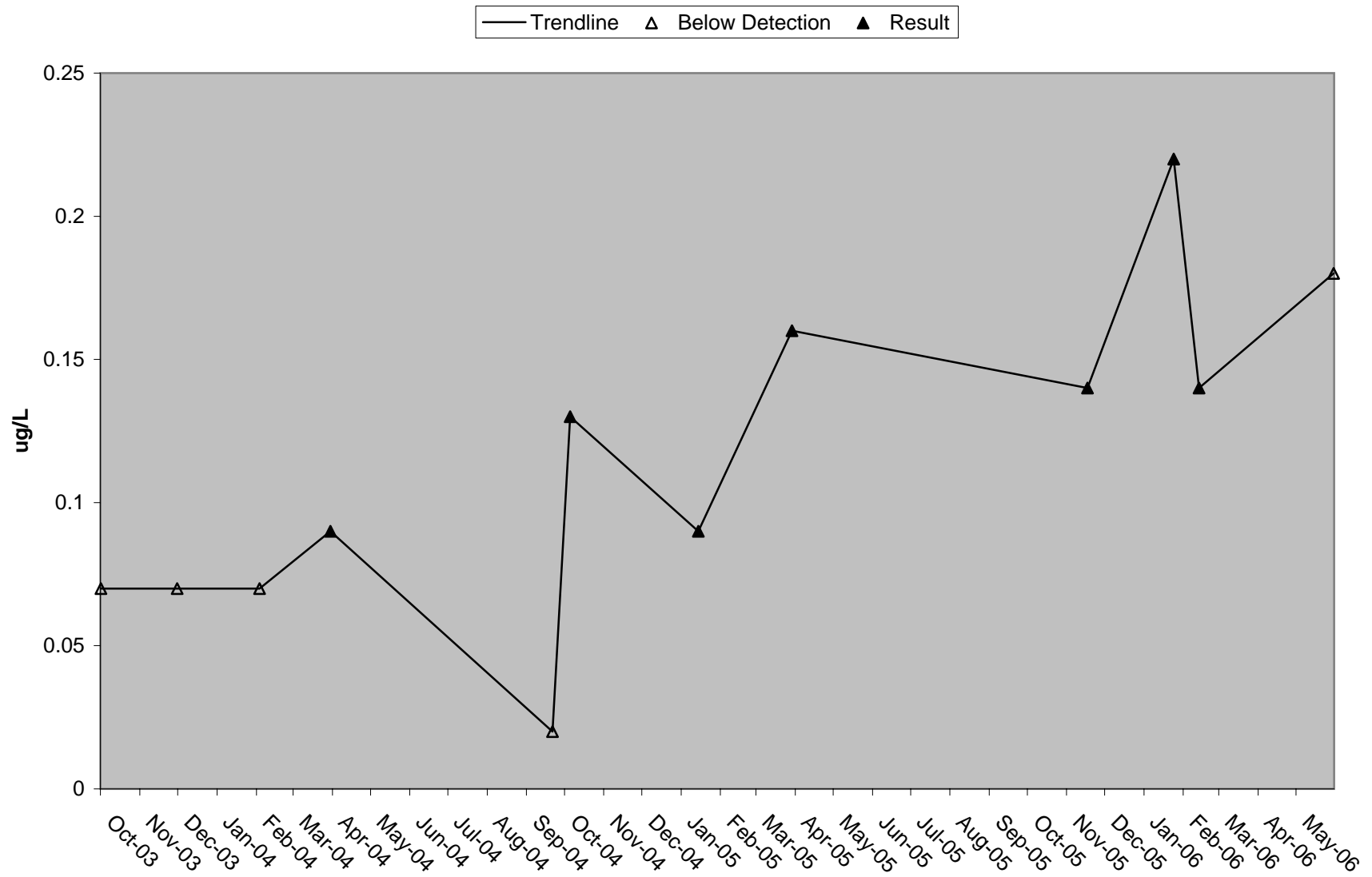
### Am River at Hwy 80 Dissolved Cadmium (Cd-d)



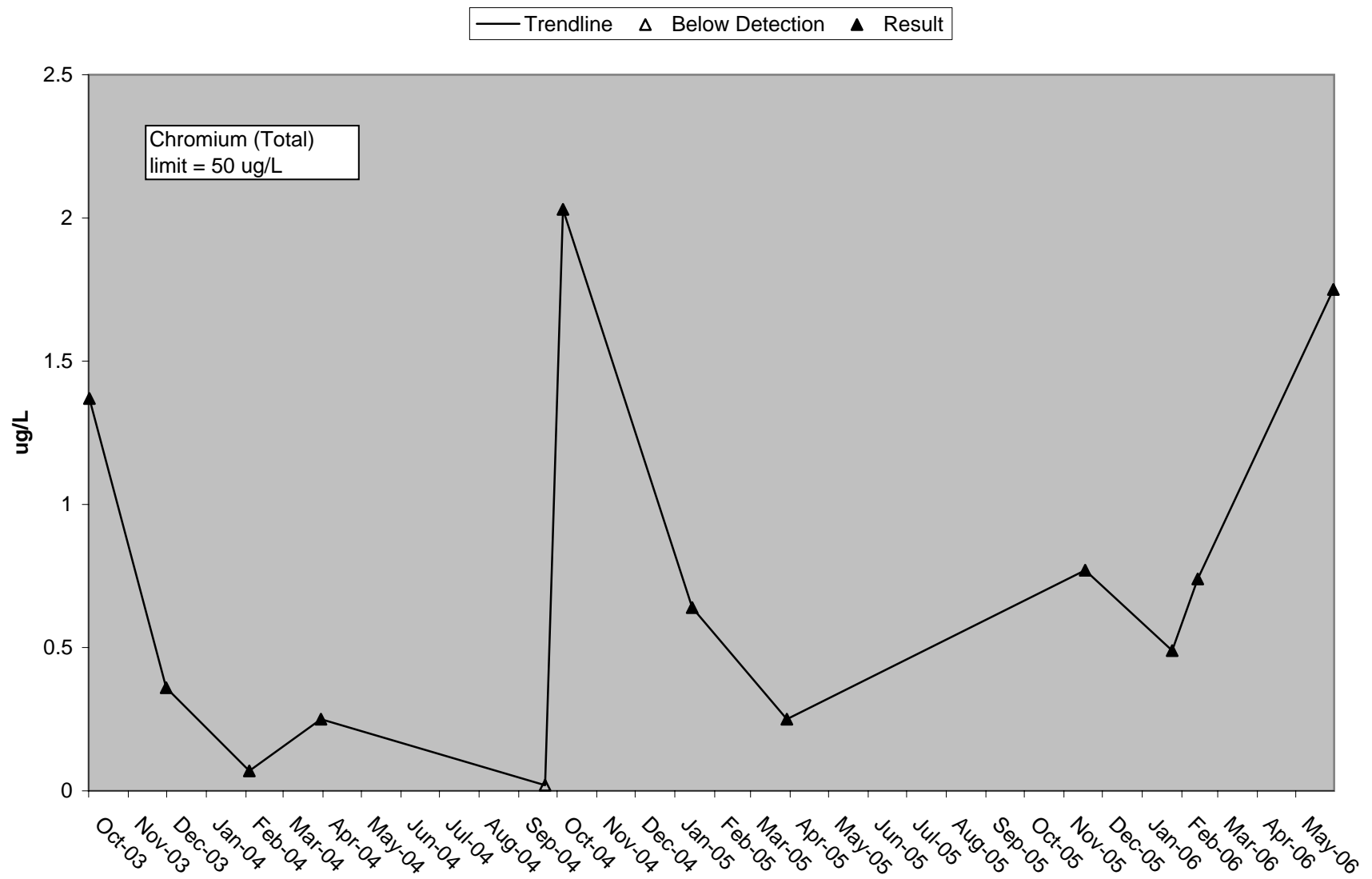
### Am River at Hwy 80 Total Cadmium (Cd-T)



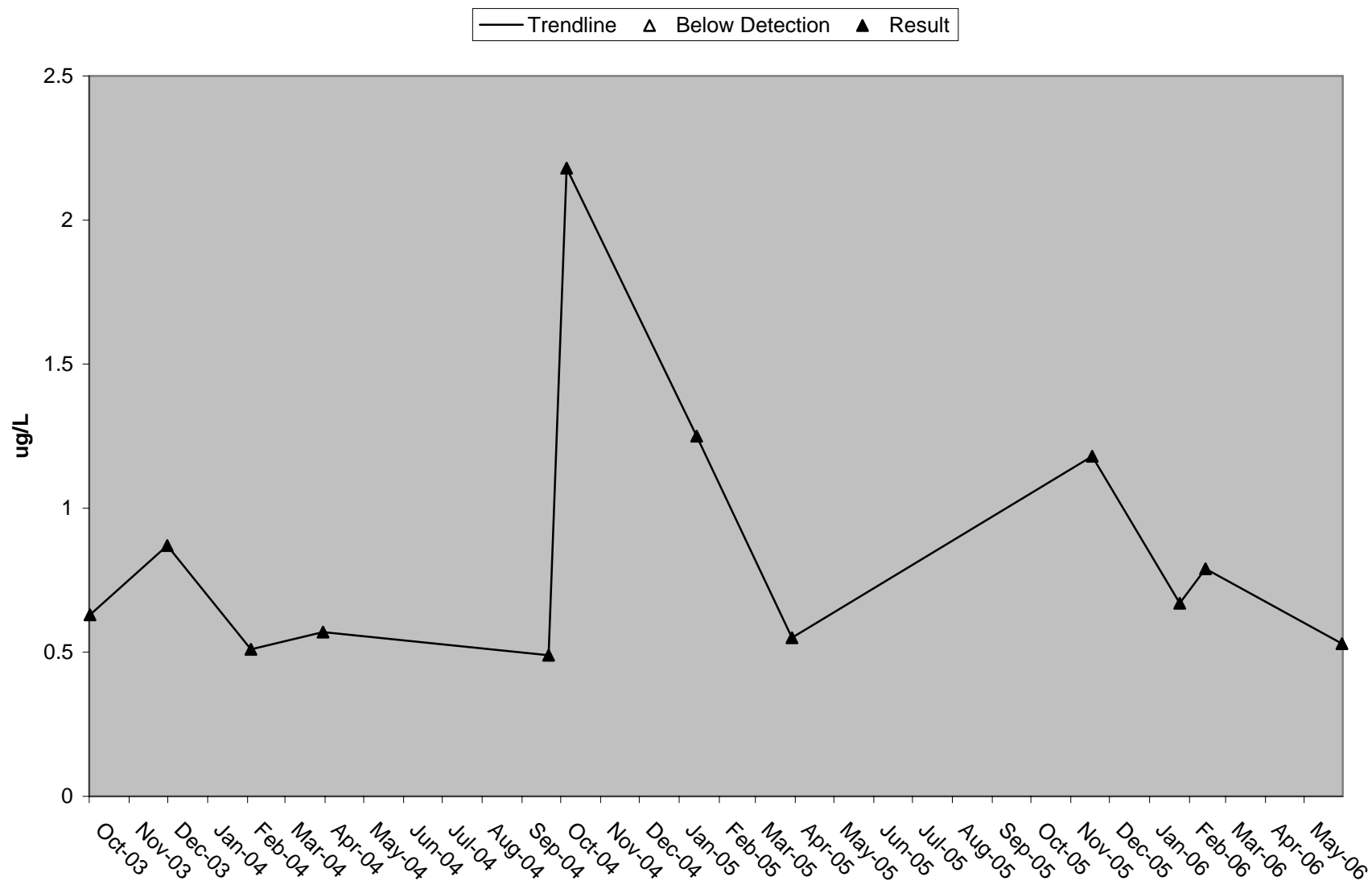
### Am River at Hwy 80 Dissolved Chromium (Cr-d)



### Am River at Hwy 80 Total Chromium (Cr-T)

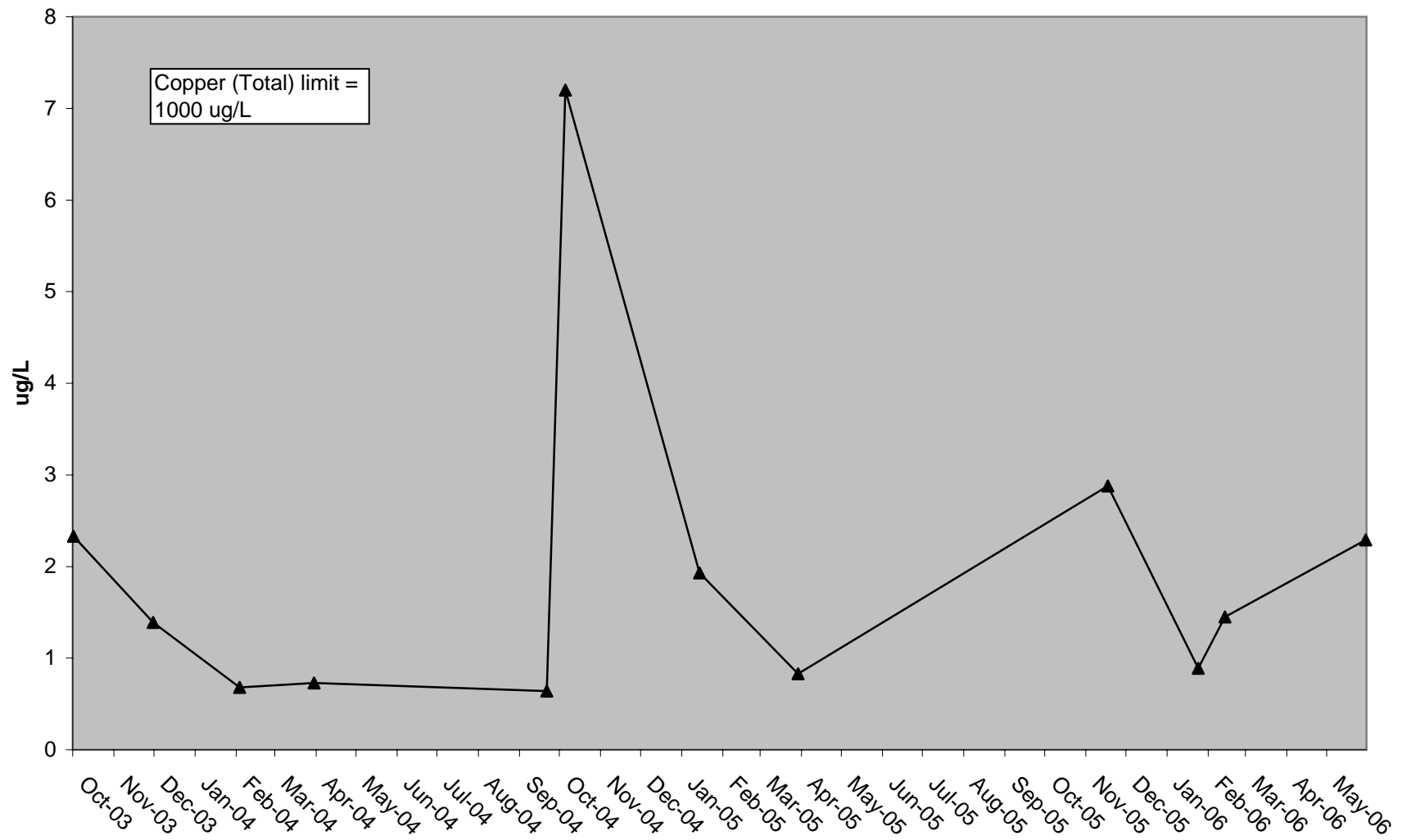


### Am River at Hwy 80 Dissolved Copper (Cu-d)

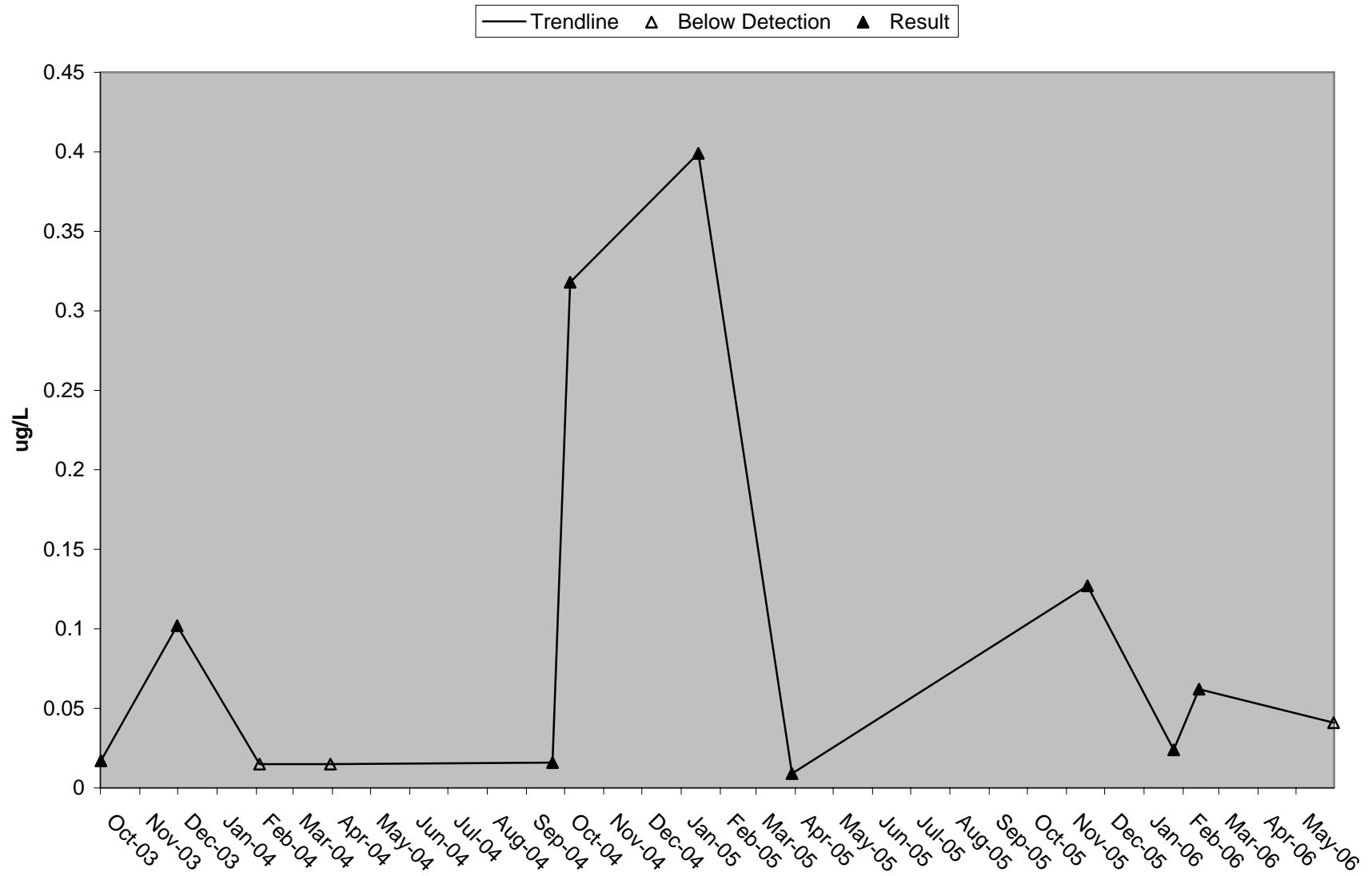


# Am River at Hwy 80 Total Copper (Cu-T)

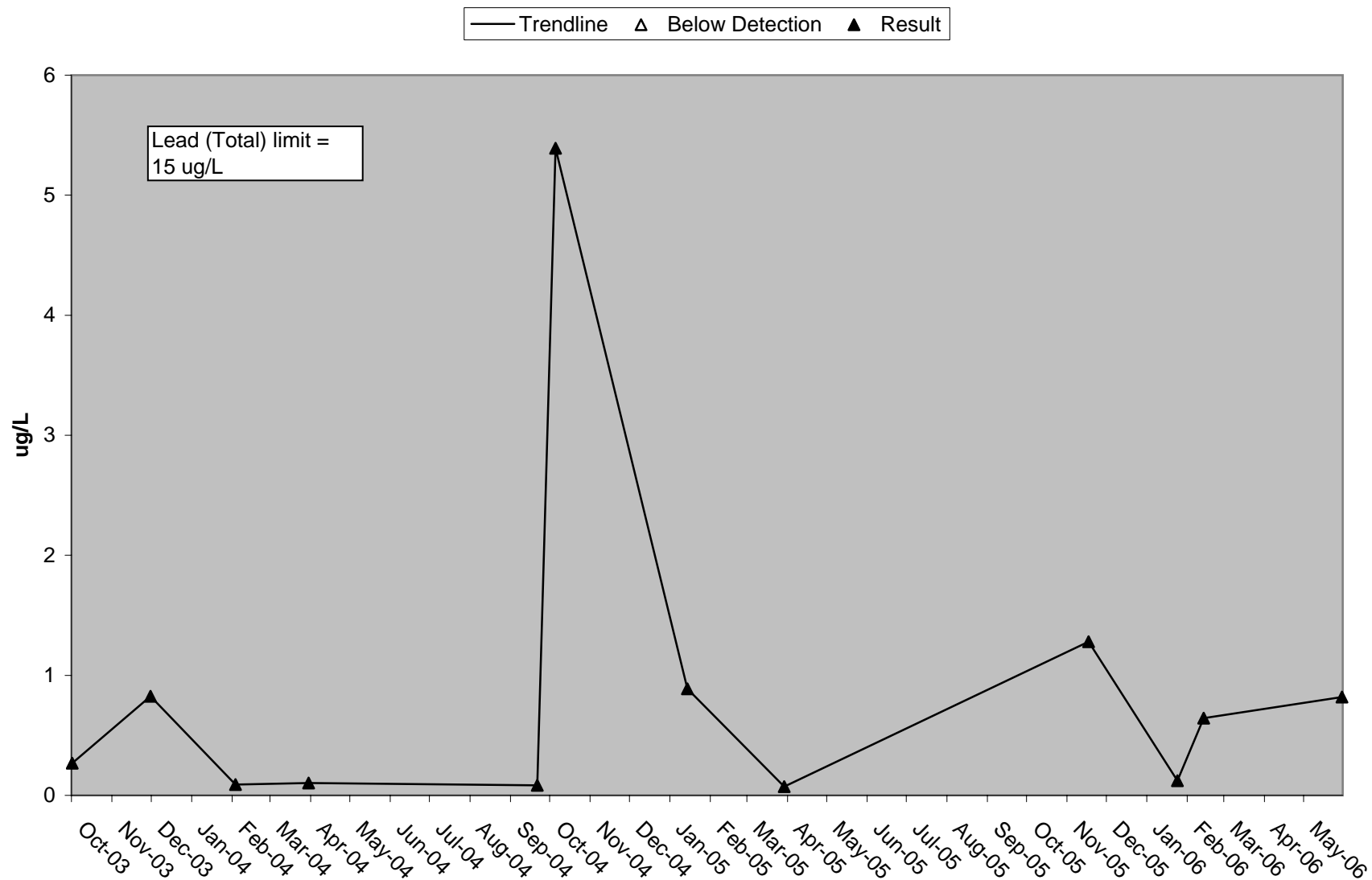
— Trendline    Δ Below Detection    ▲ Result



### Am River at Hwy 80 Dissolved Lead (Pb-d)

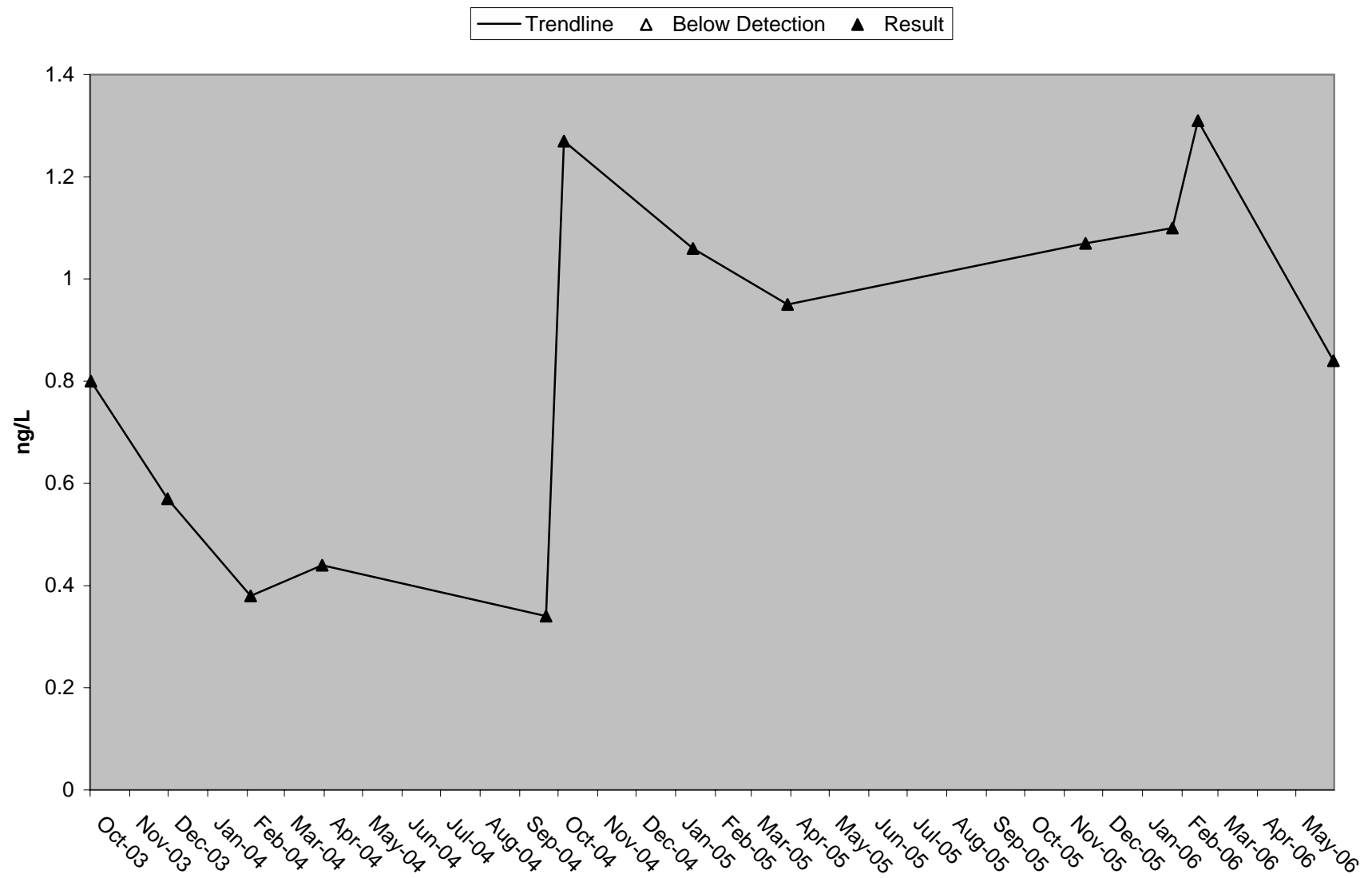


### Am River at Hwy 80 Total Lead (Pb-T)

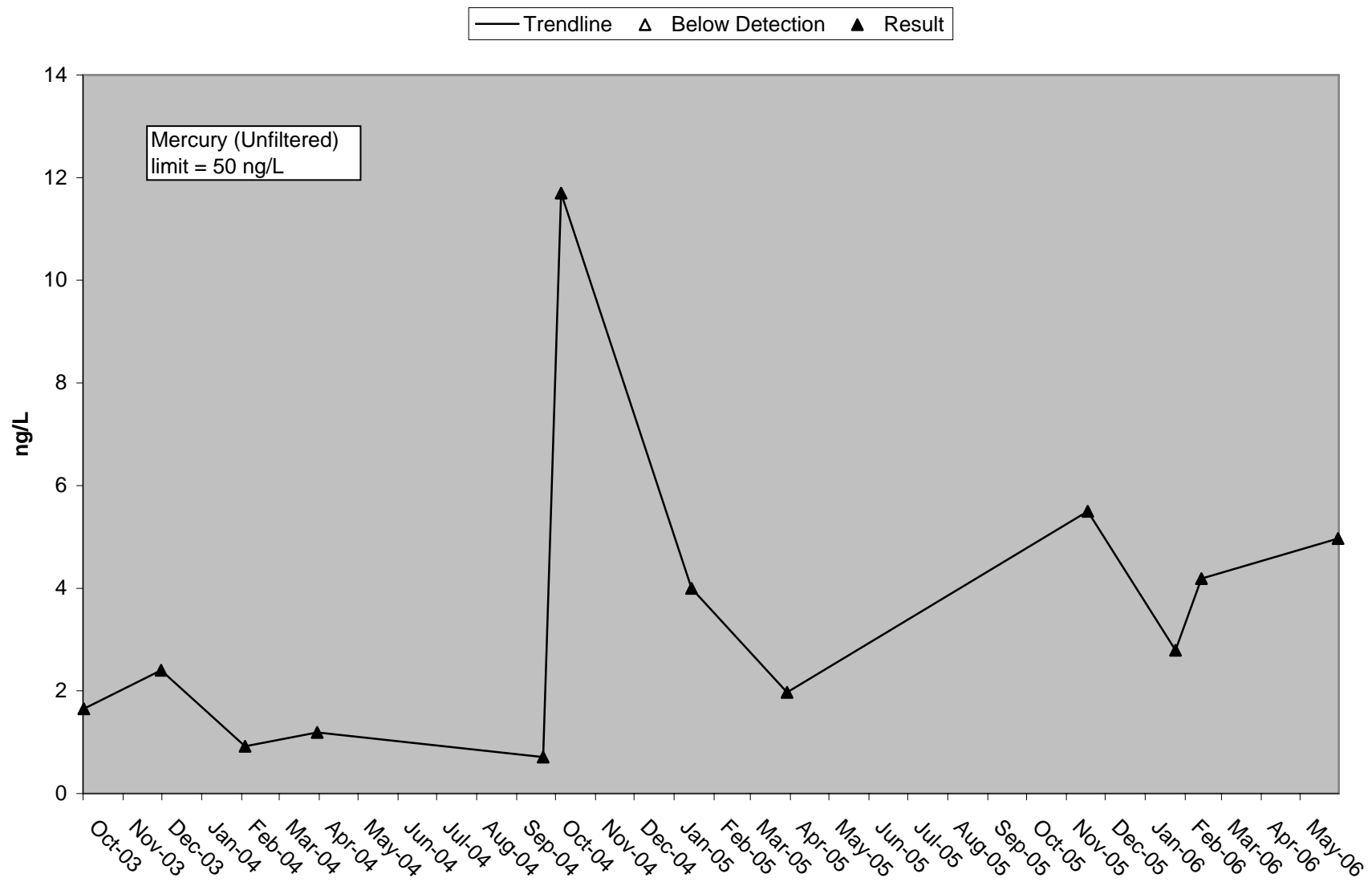




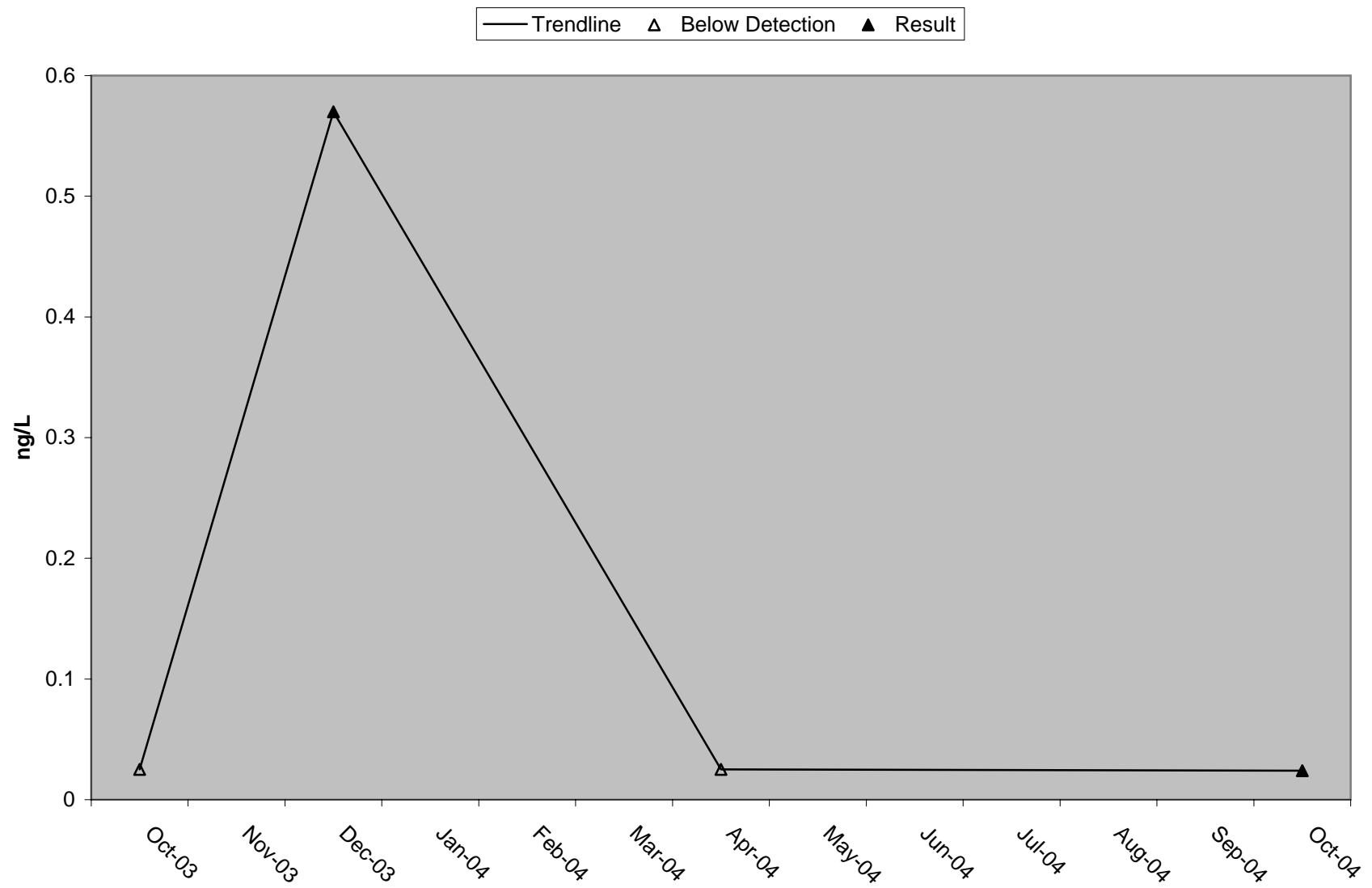
### Am River at Hwy 80 Mercury (Filtered)



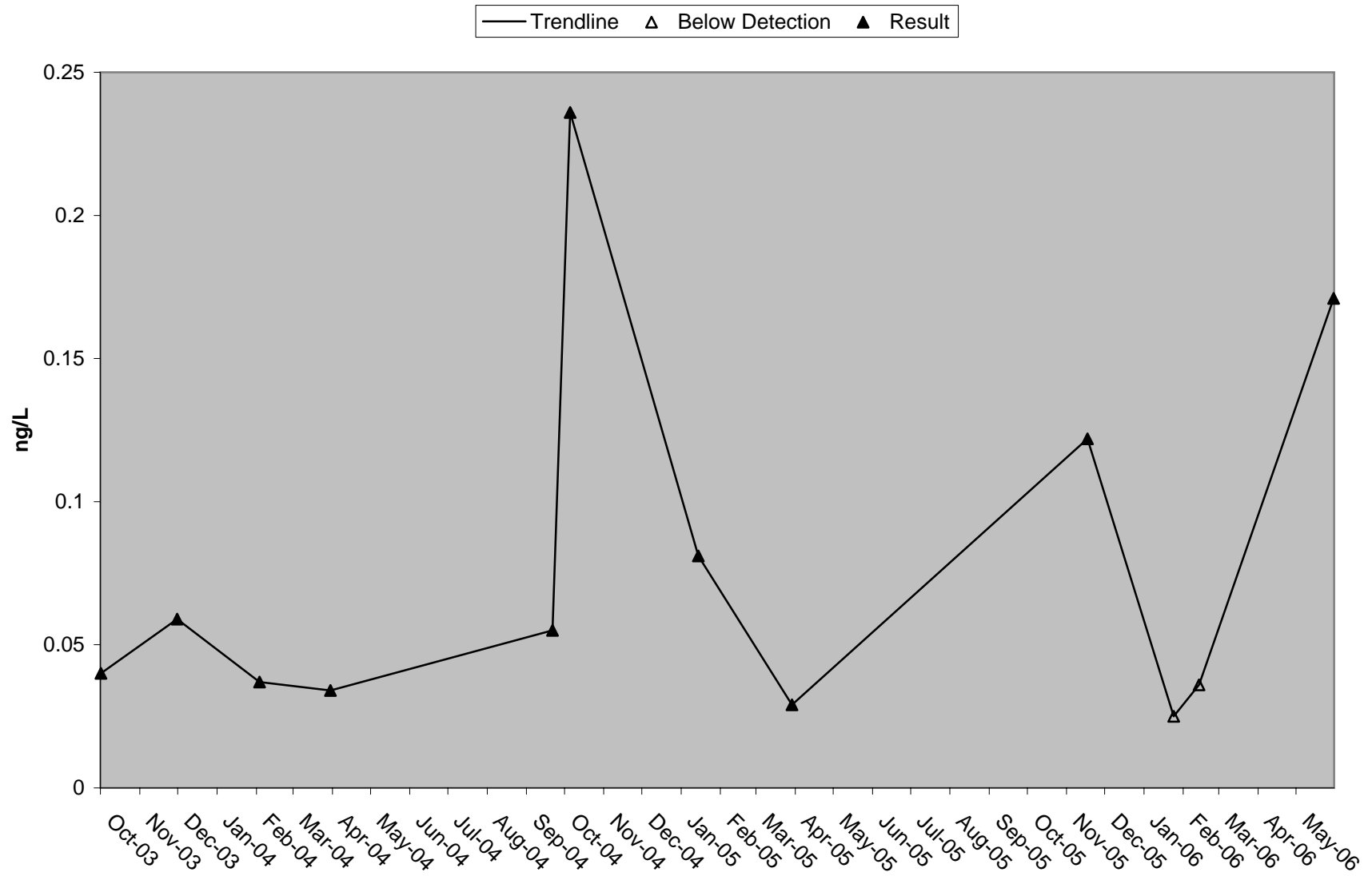
### Am River at Hwy 80 Mercury (Unfiltered)



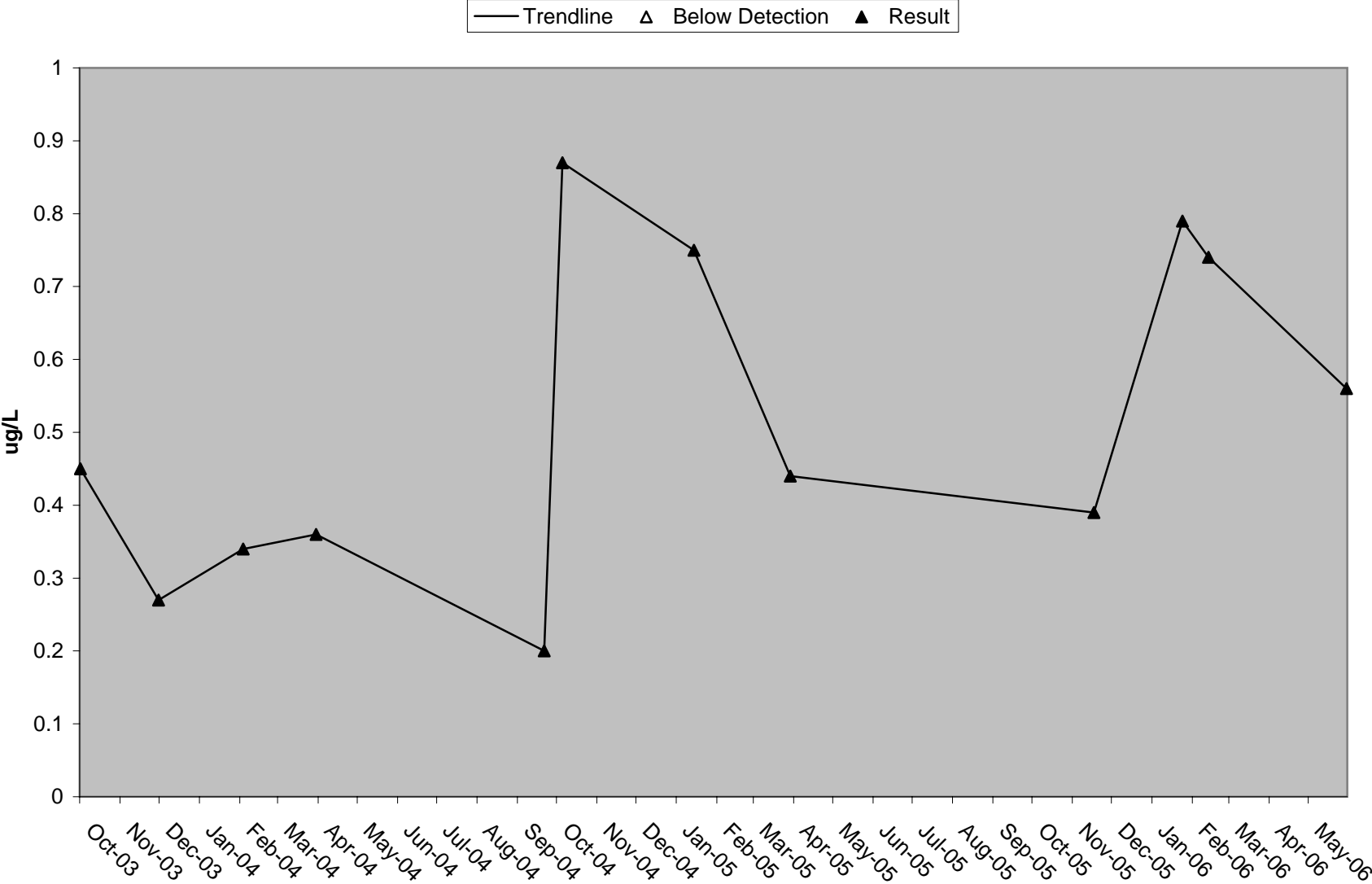
### Am River at Hwy 80 Methyl Mercury (Filtered)



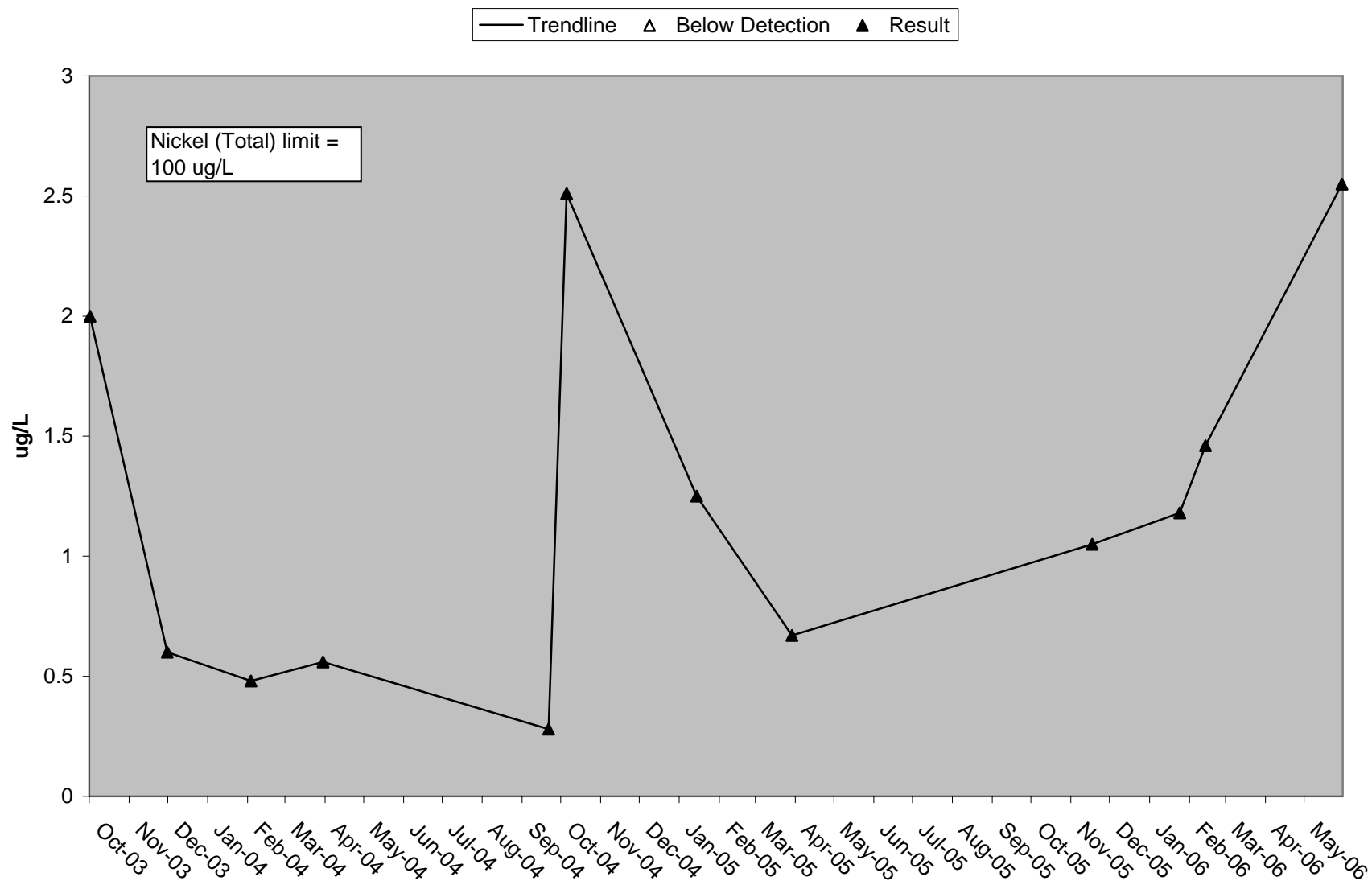
### Am River at Hwy 80 Methyl Mercury (Unfiltered)



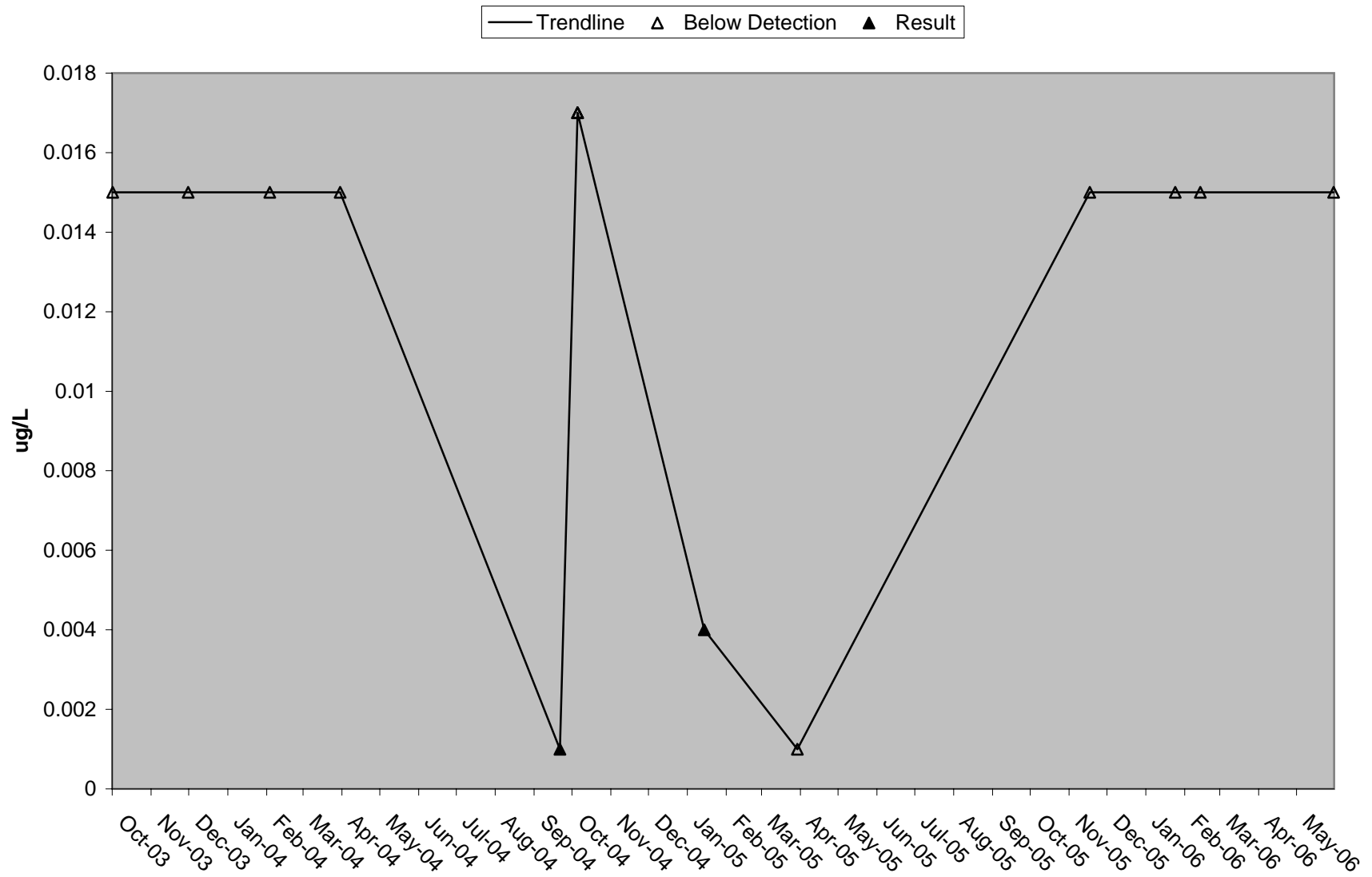
Am River at Hwy 80 Dissolved Nickel (Ni-d)



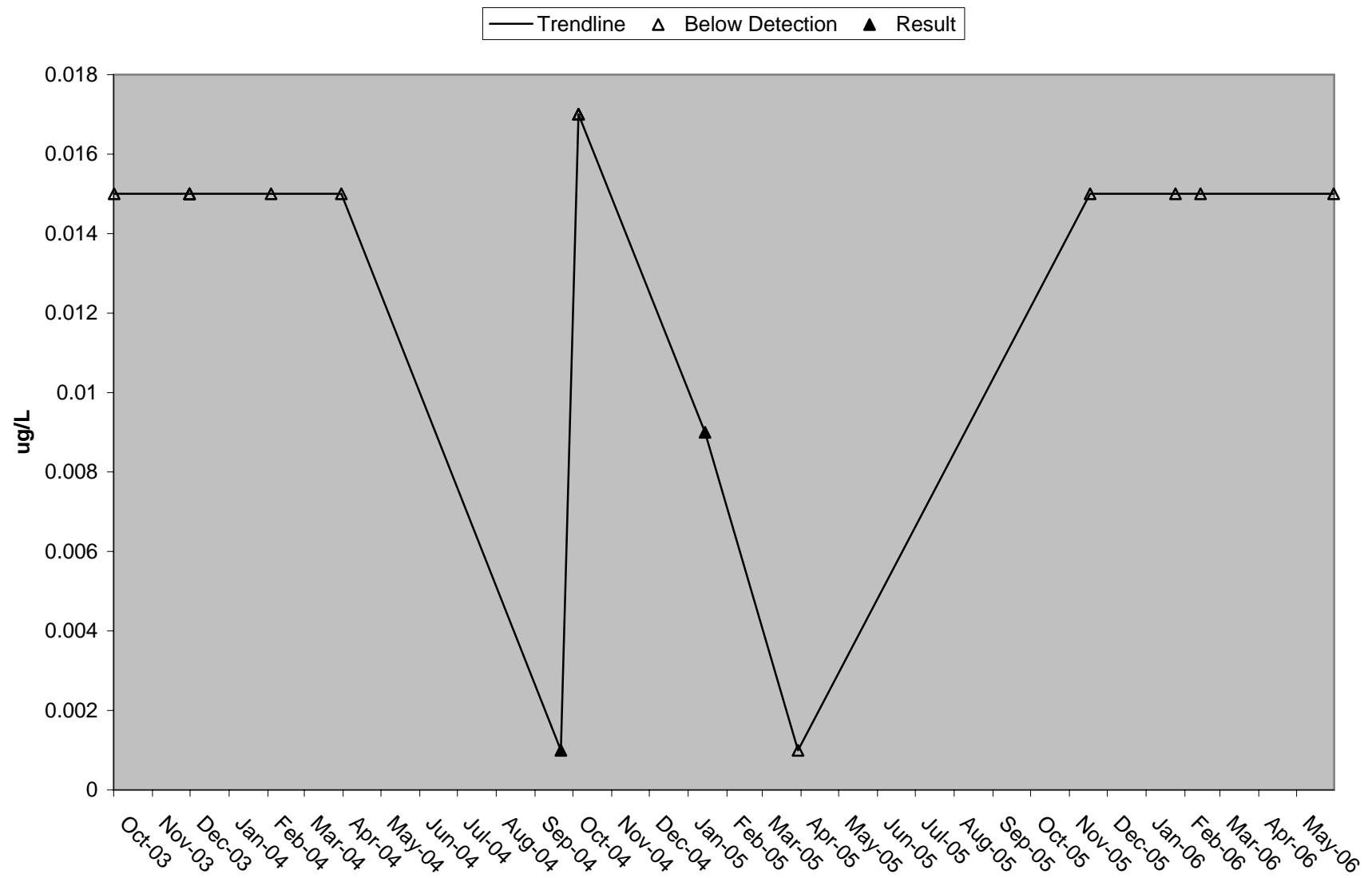
### Am River at Hwy 80 Total Nickel (Ni-T)



### Am River at Hwy 80 Dissolved Silver (Ag-d)

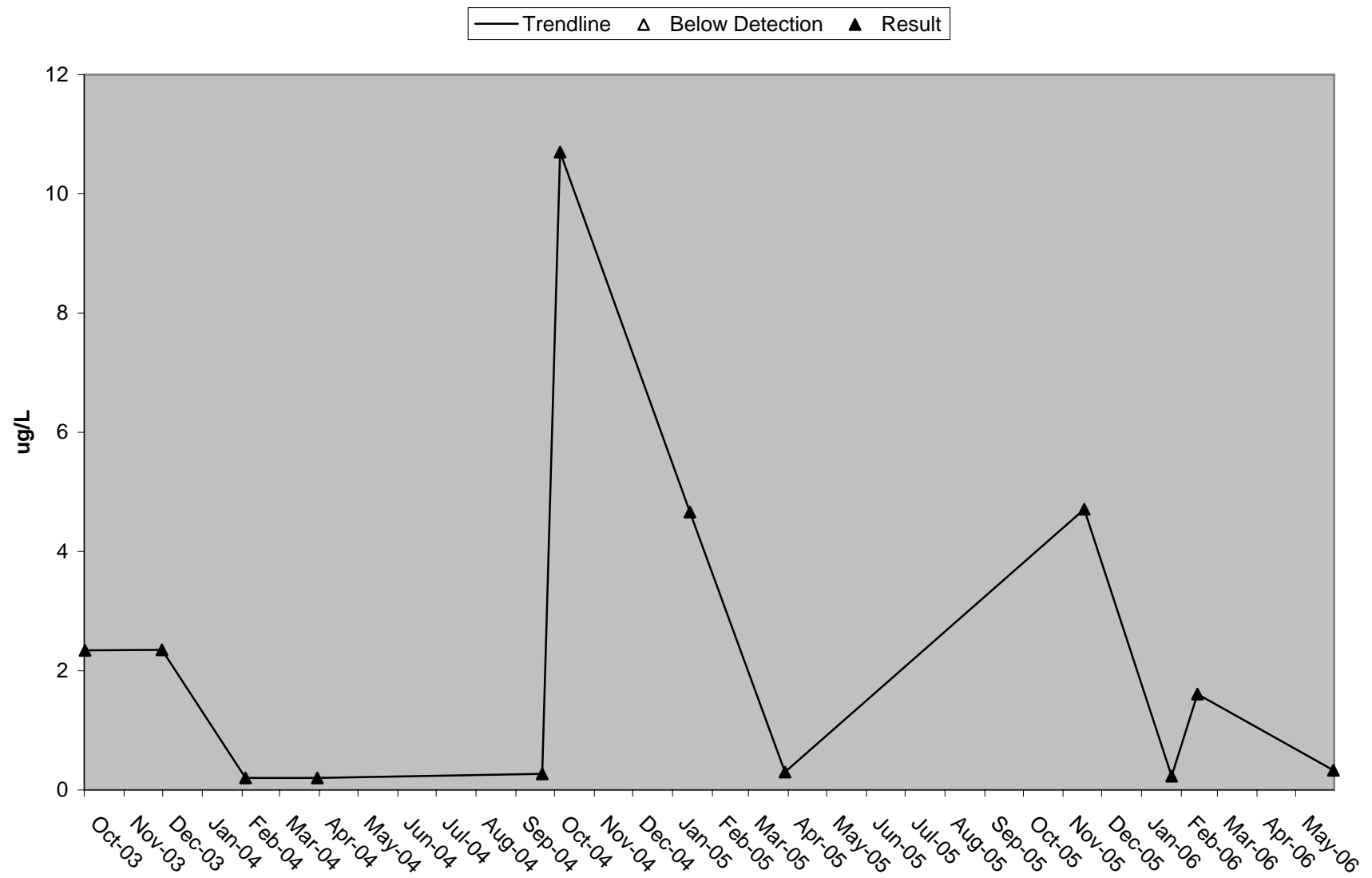


### Am River at Hwy 80 Total Silver (Ag-T)

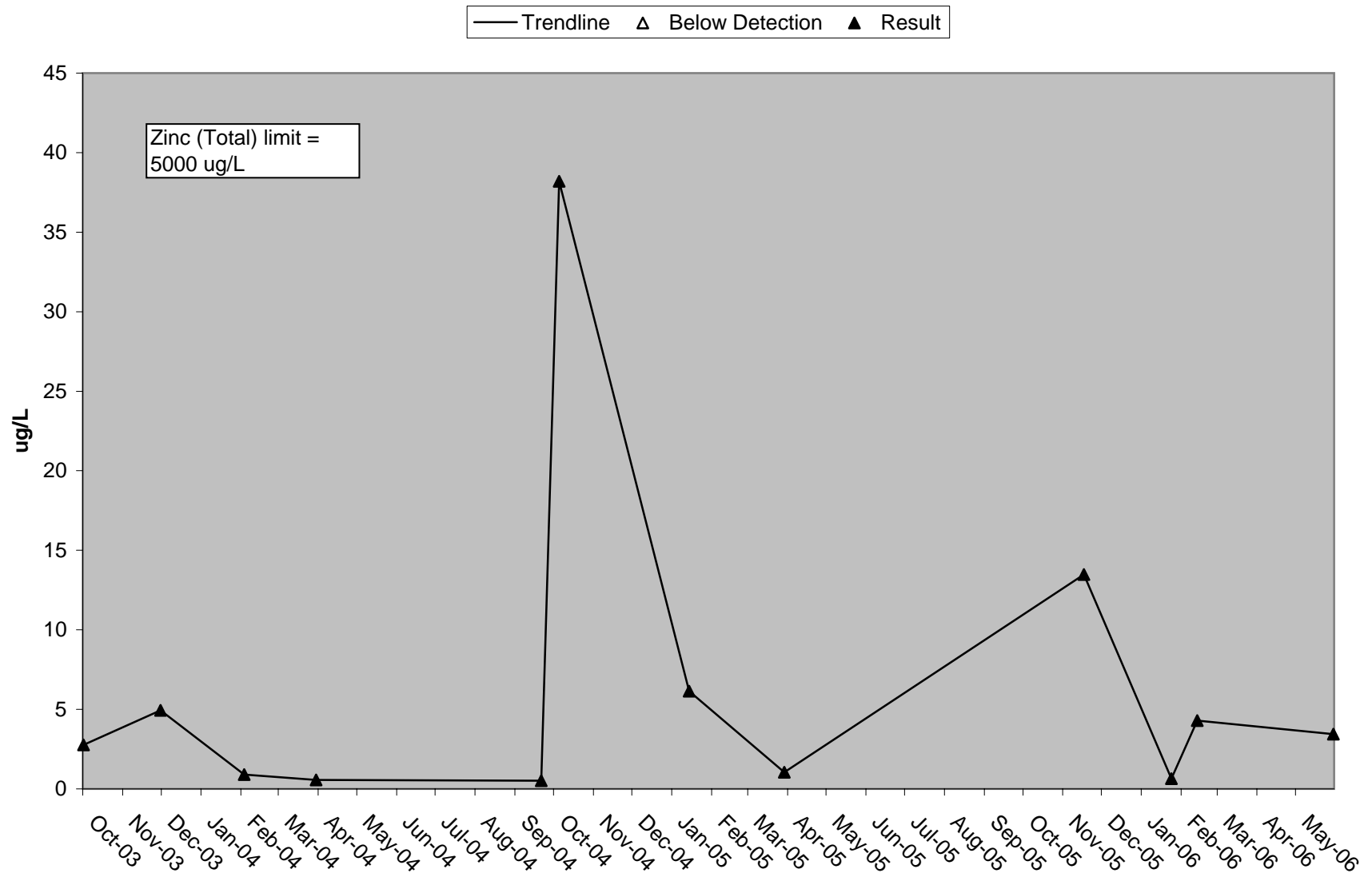




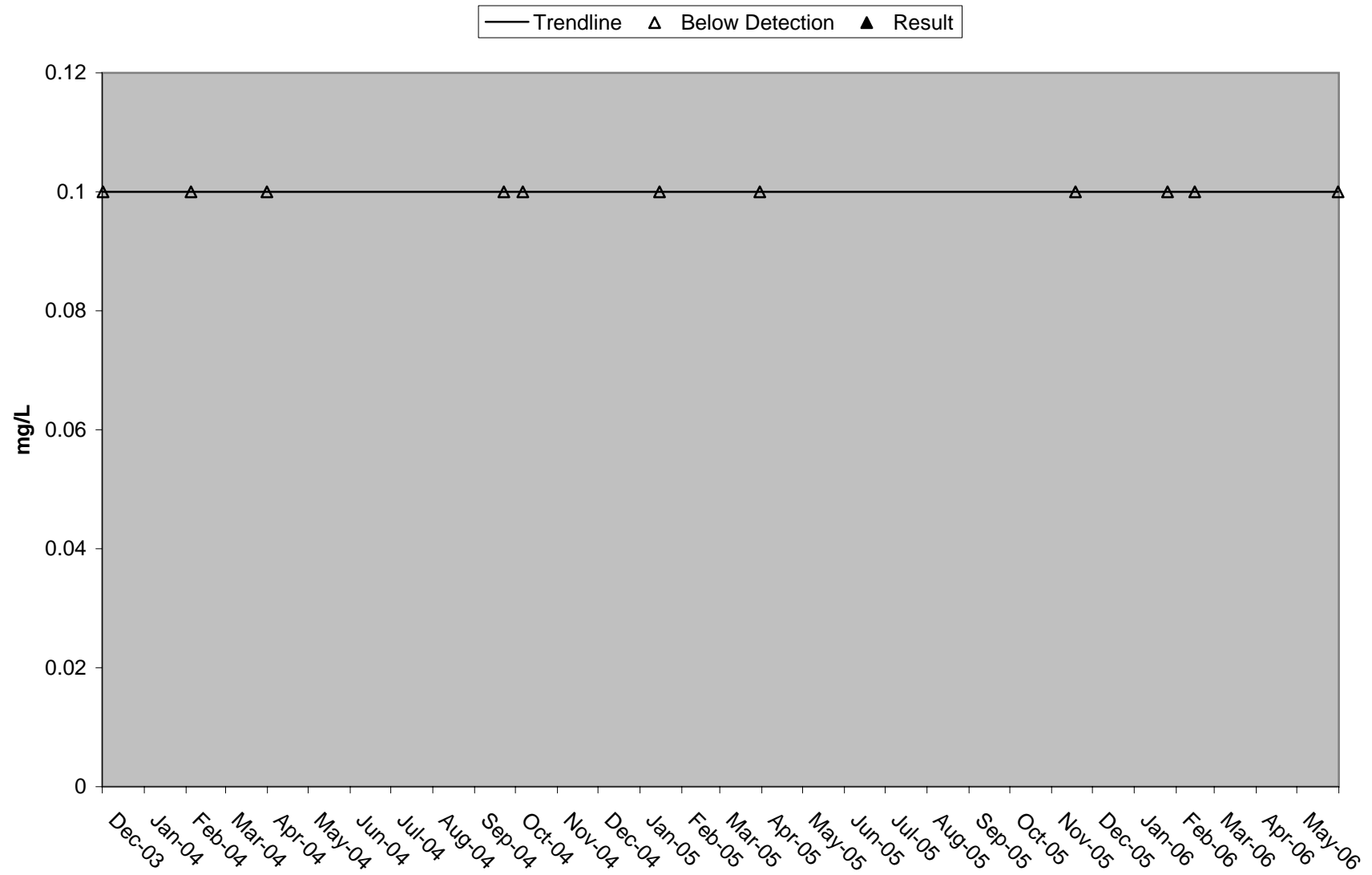
### Am River at Hwy 80 Dissolved Zinc (Zn-d)



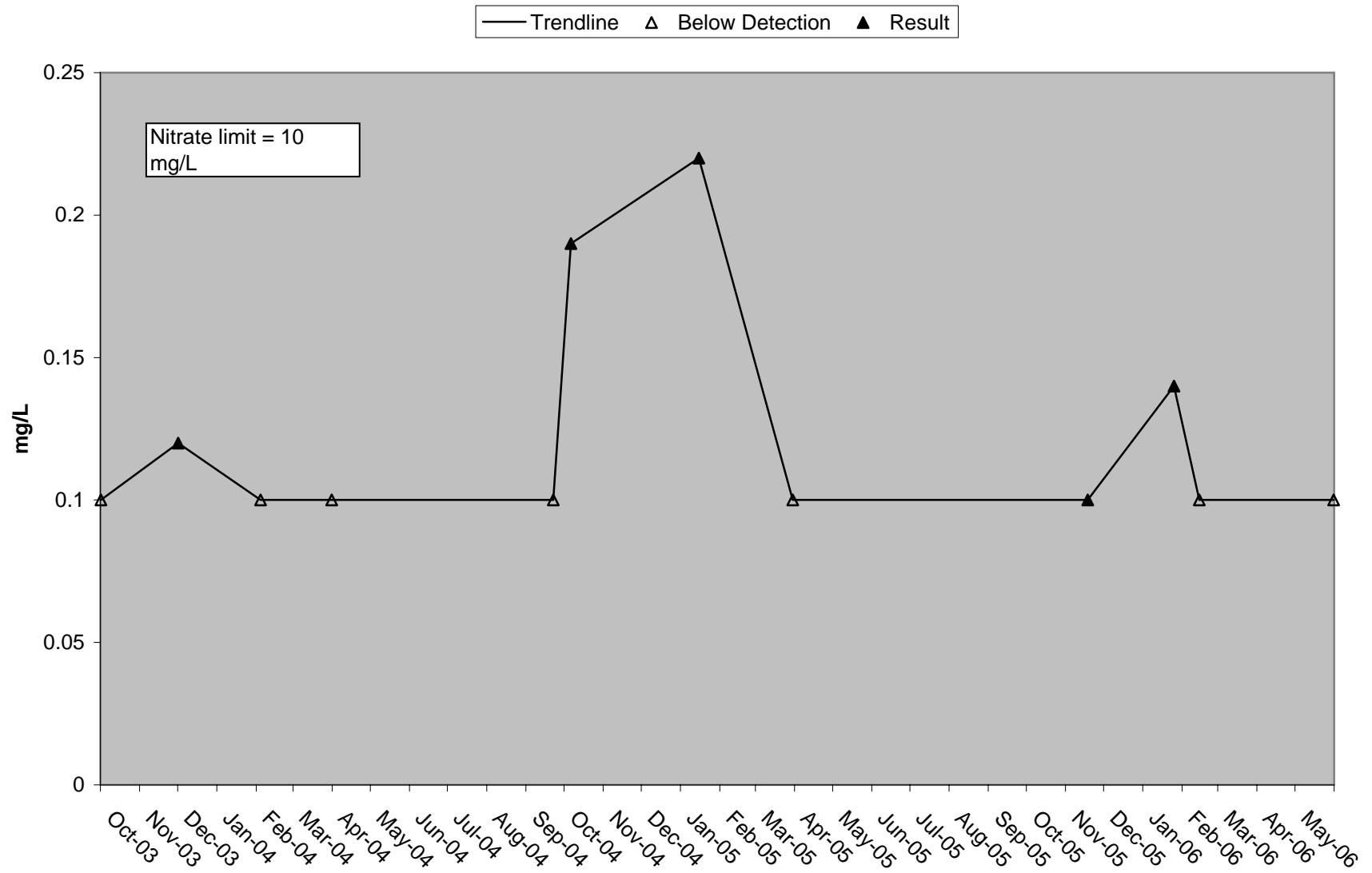
### Am River at Hwy 80 Total Zinc (Zn-T)



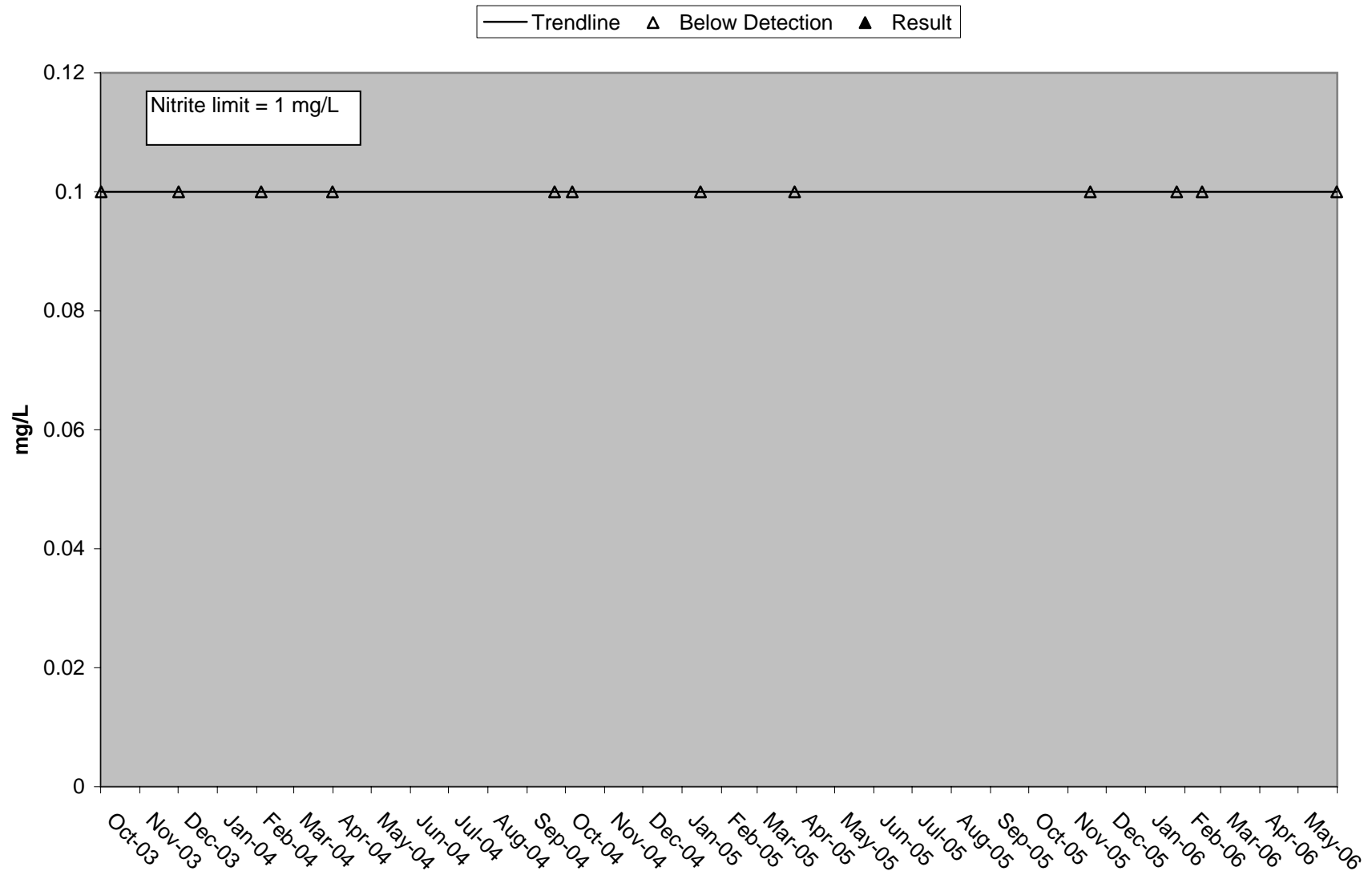
### Am River at Hwy 80 Ammonia (NH<sub>3</sub>-N)



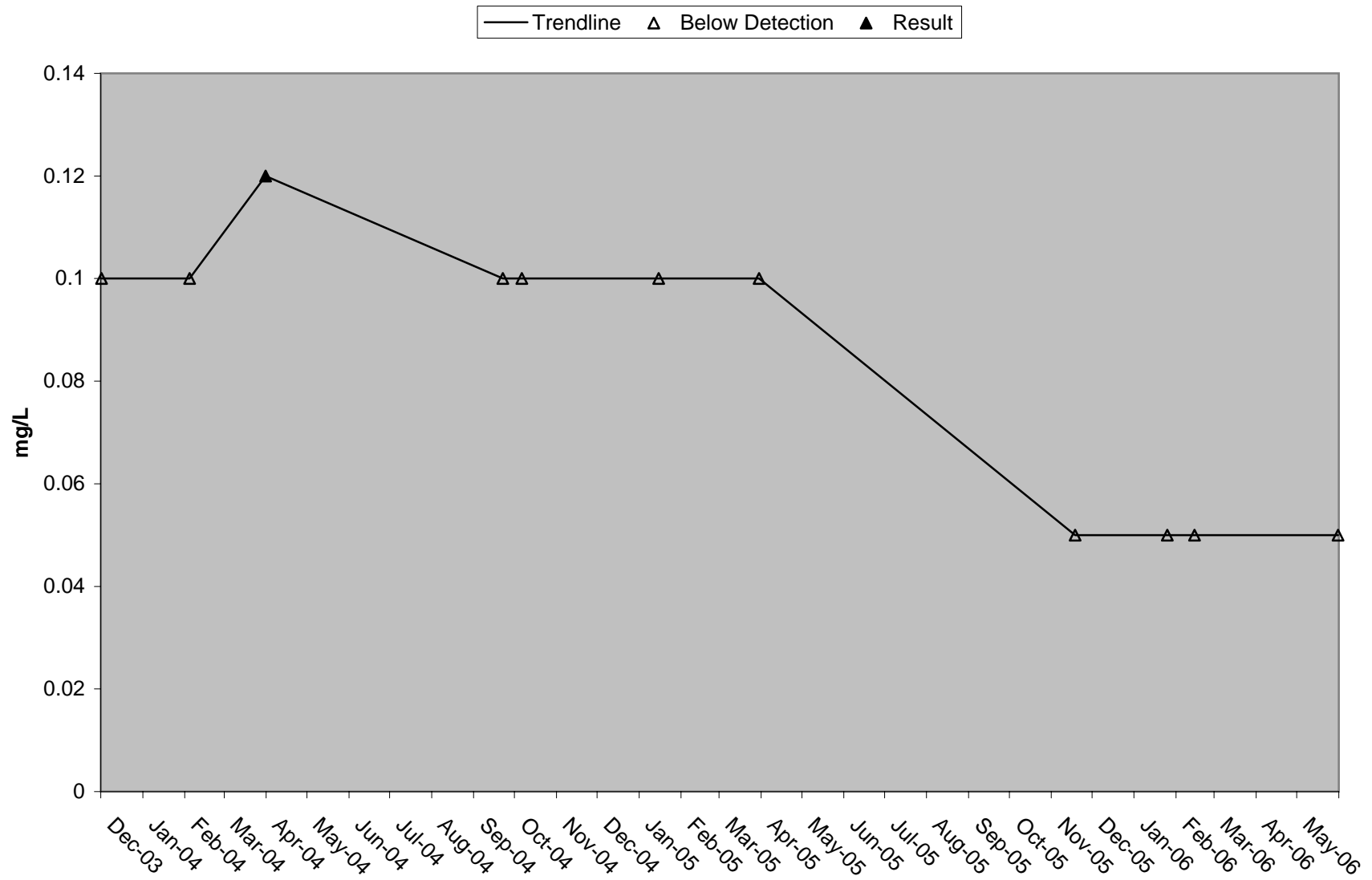
### Am River at Hwy 80 Nitrate ( $\text{NO}_3\text{-N}$ )



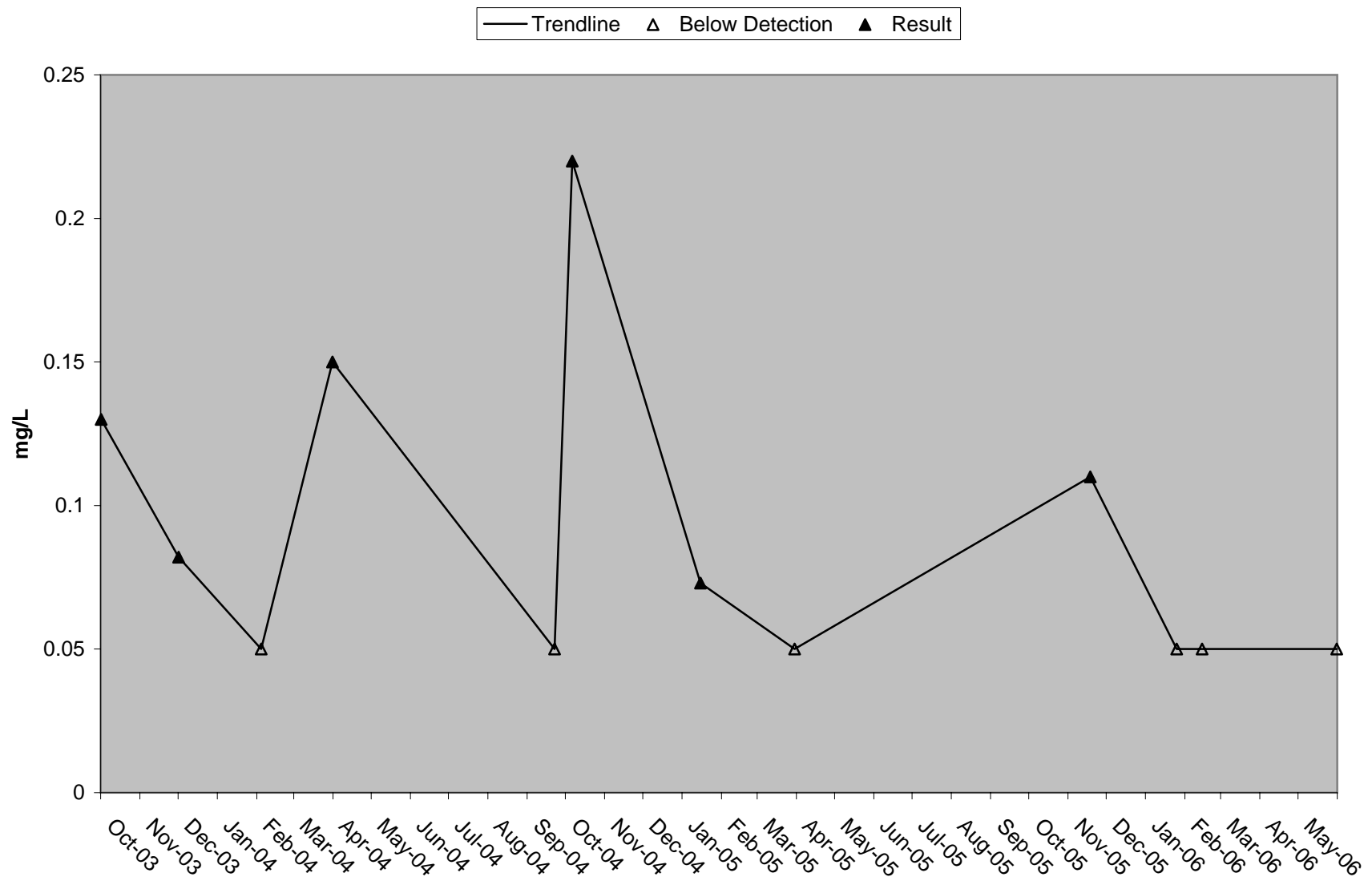
### Am River at Hwy 80 Nitrite (NO<sub>2</sub>-N)



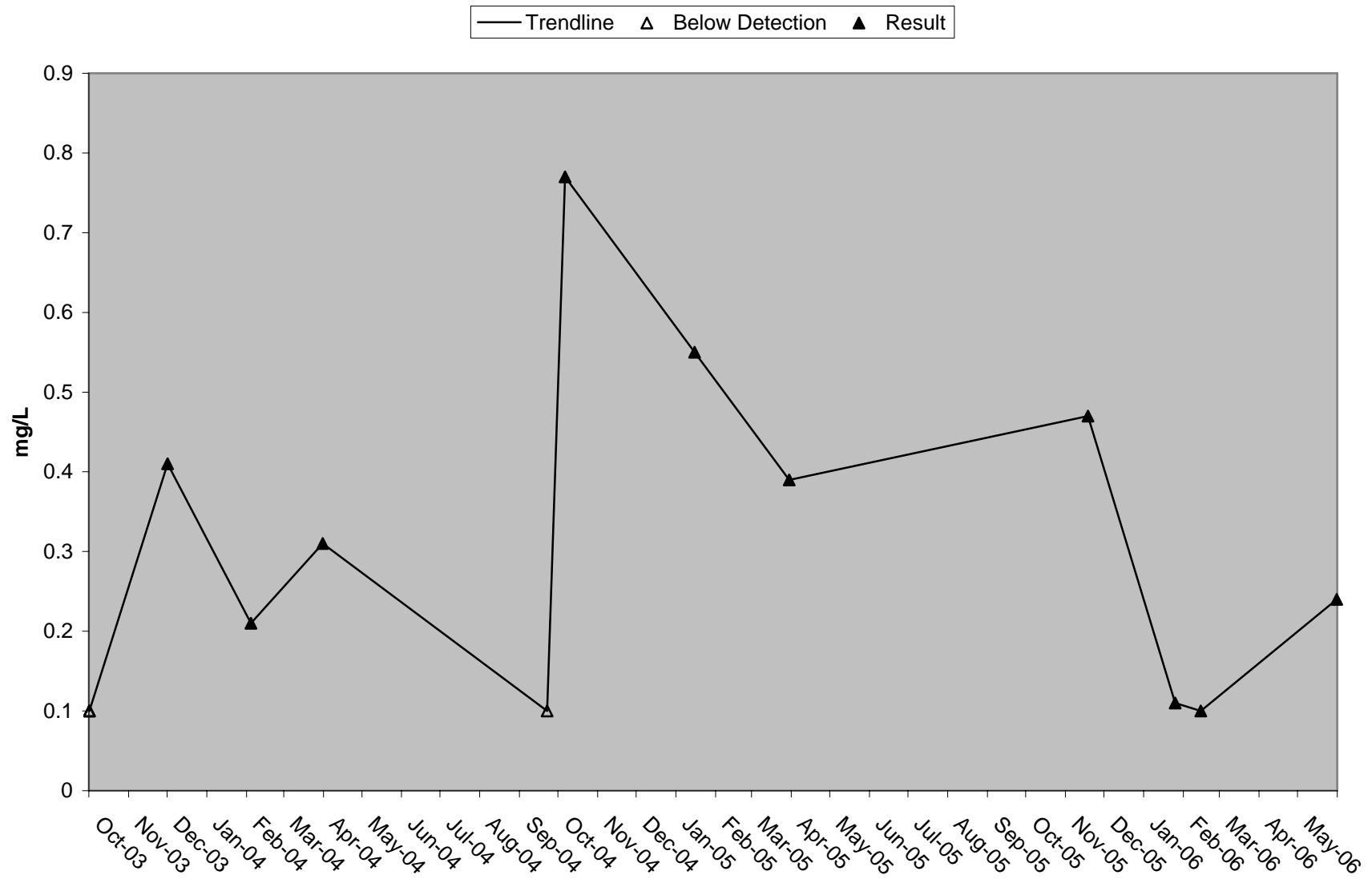
### Am River at Hwy 80 Dissolved Orthophosphate



### Am River at Hwy 80 Total Phosphorus (TP)

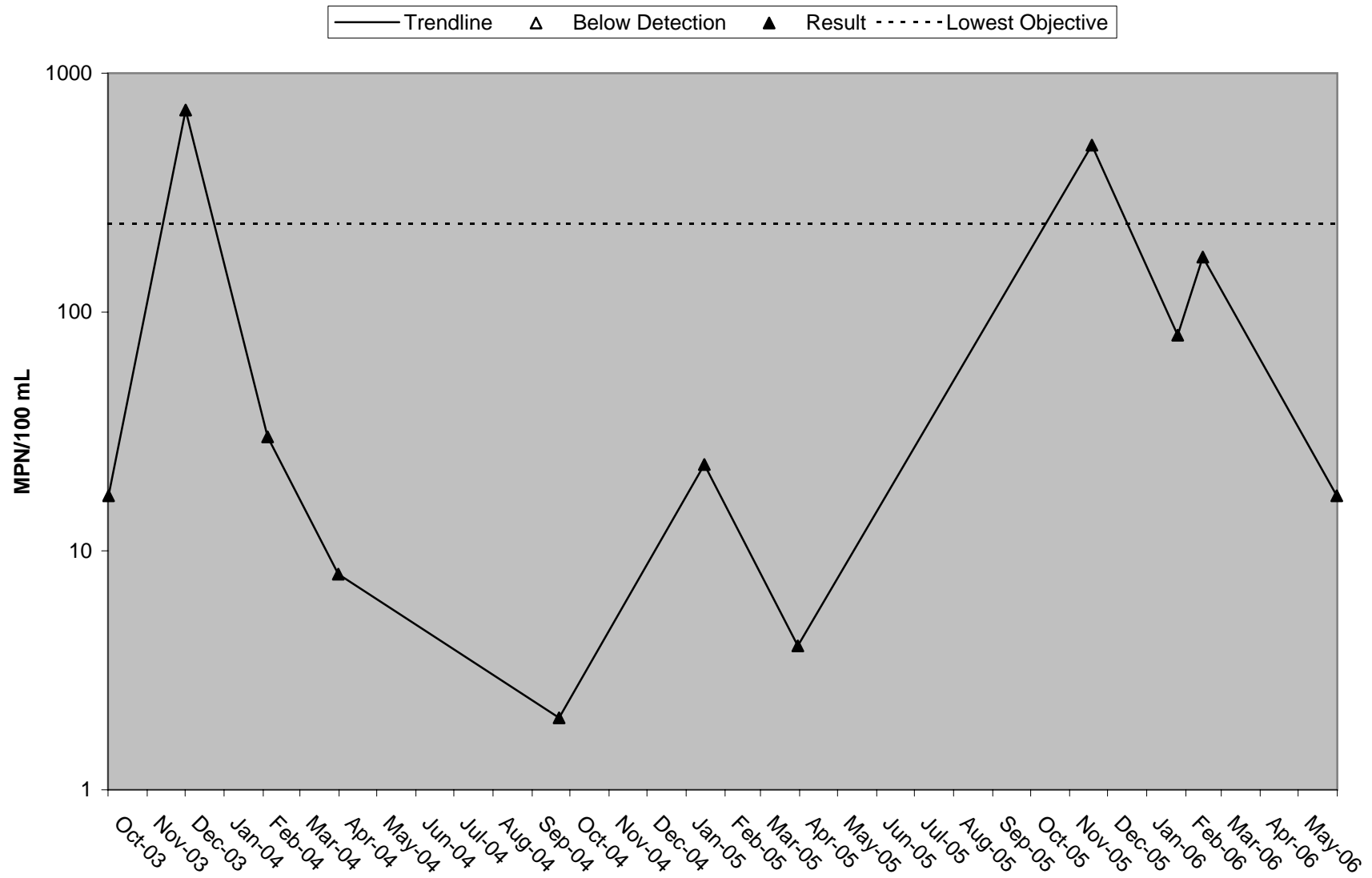


### Am River at Hwy 80 Total Kjeldahl Nitrogen (TKN)

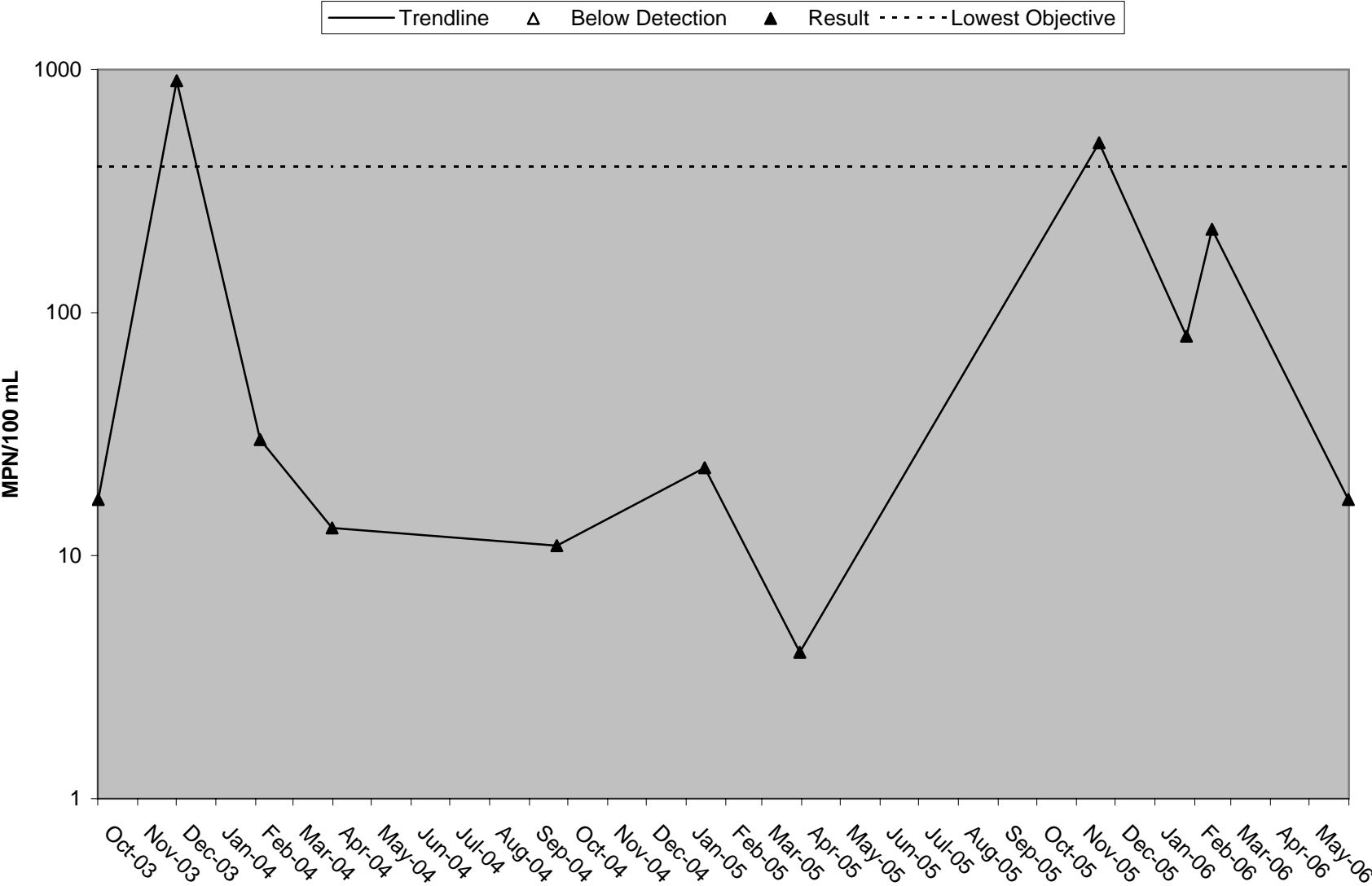




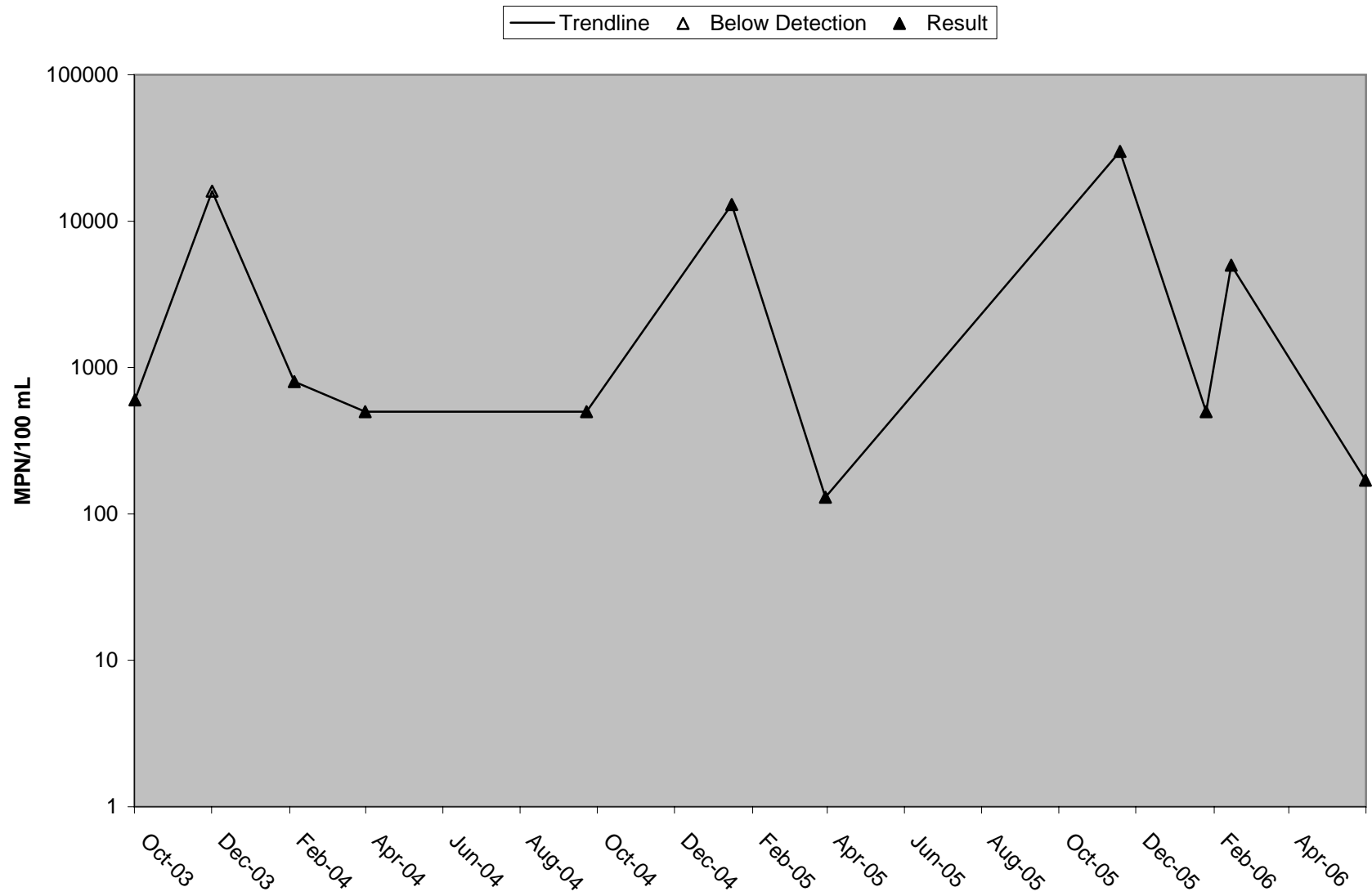
### Am River at Hwy 80 *E. Coli*



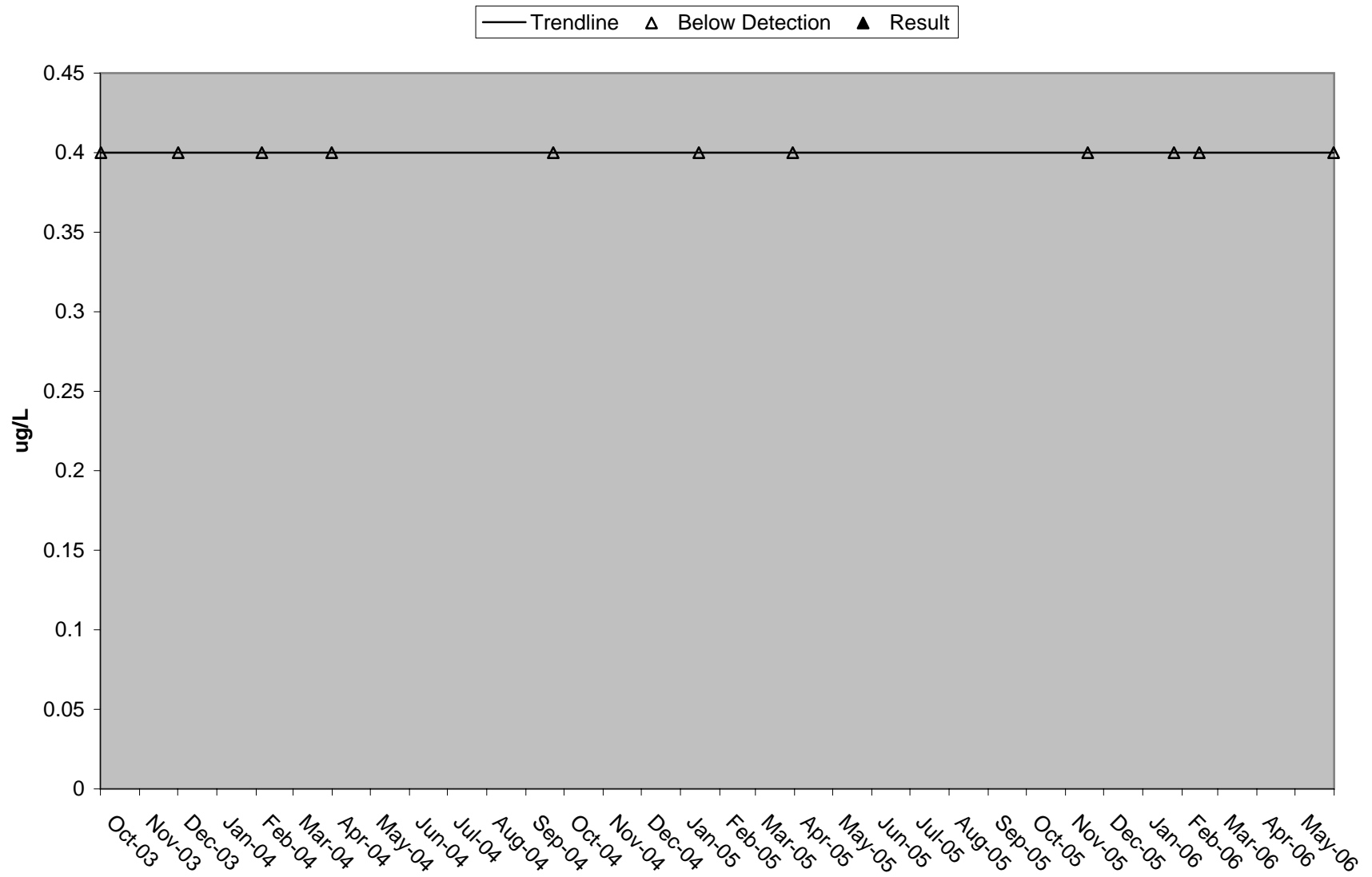
Am River at Hwy 80 Fecal Coliform



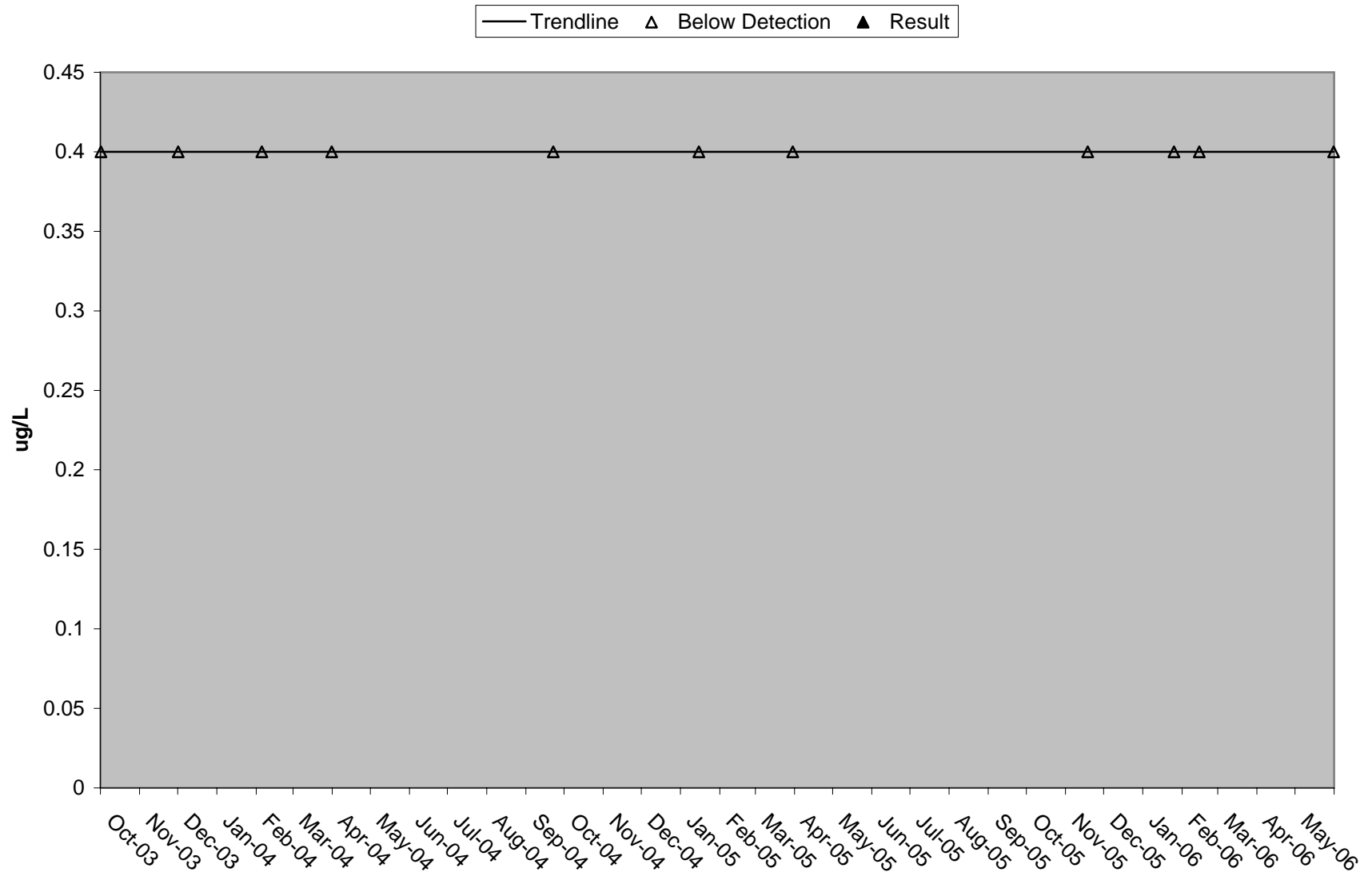
### Am River at Hwy 80 Total Coliform



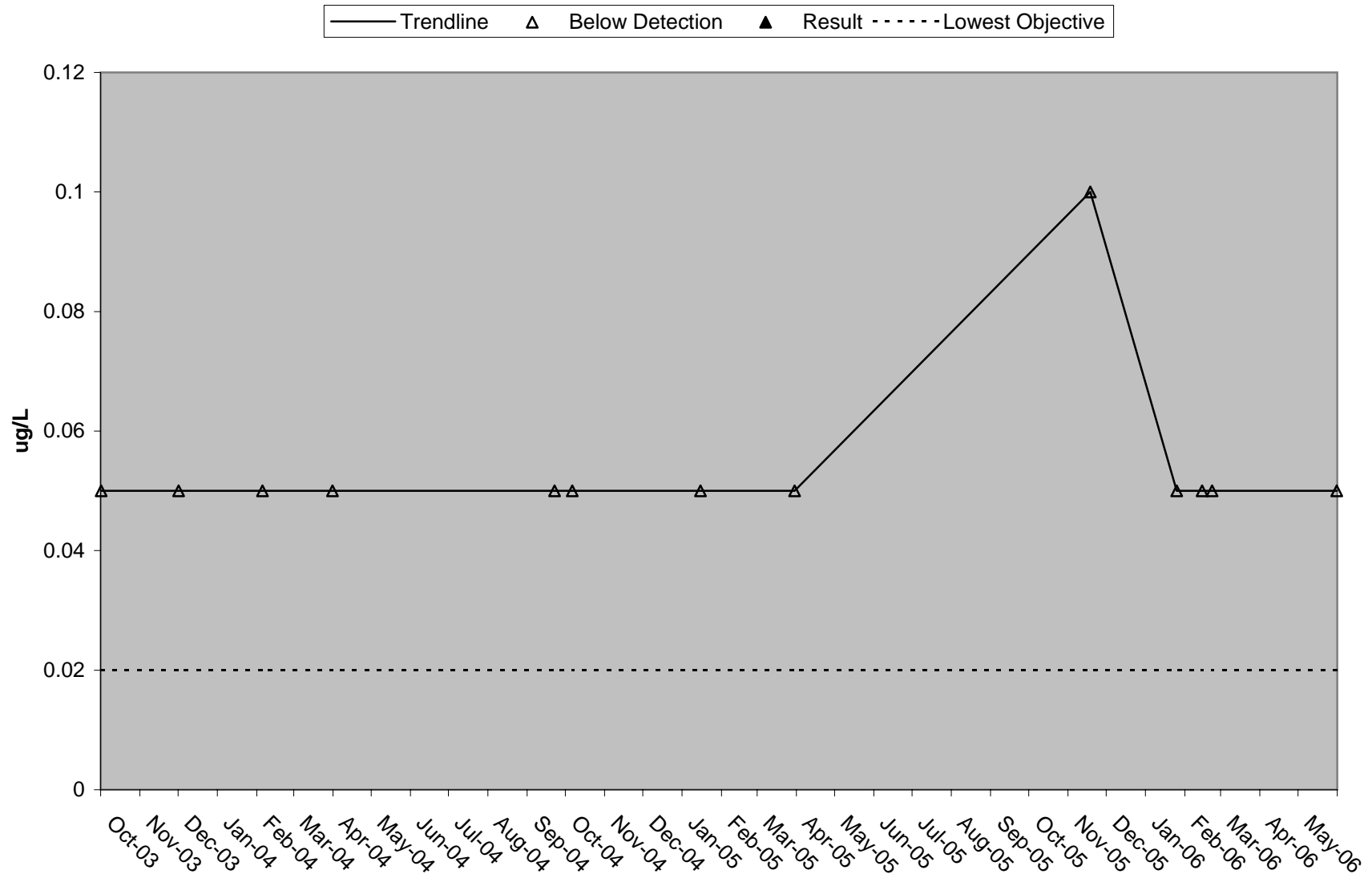
# Am River at Hwy 80 Aldicarb



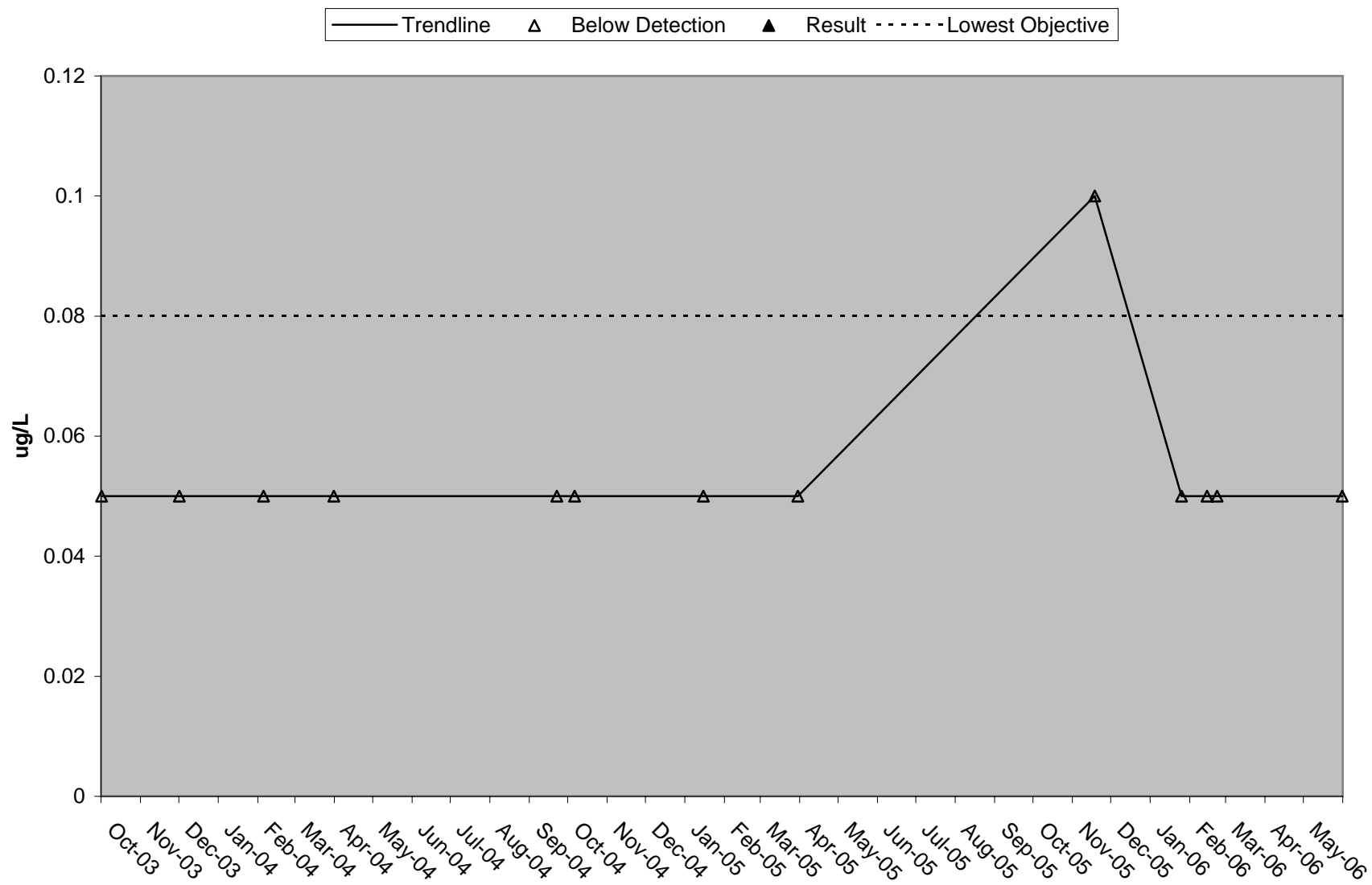
### Am River at Hwy 80 Propoxur



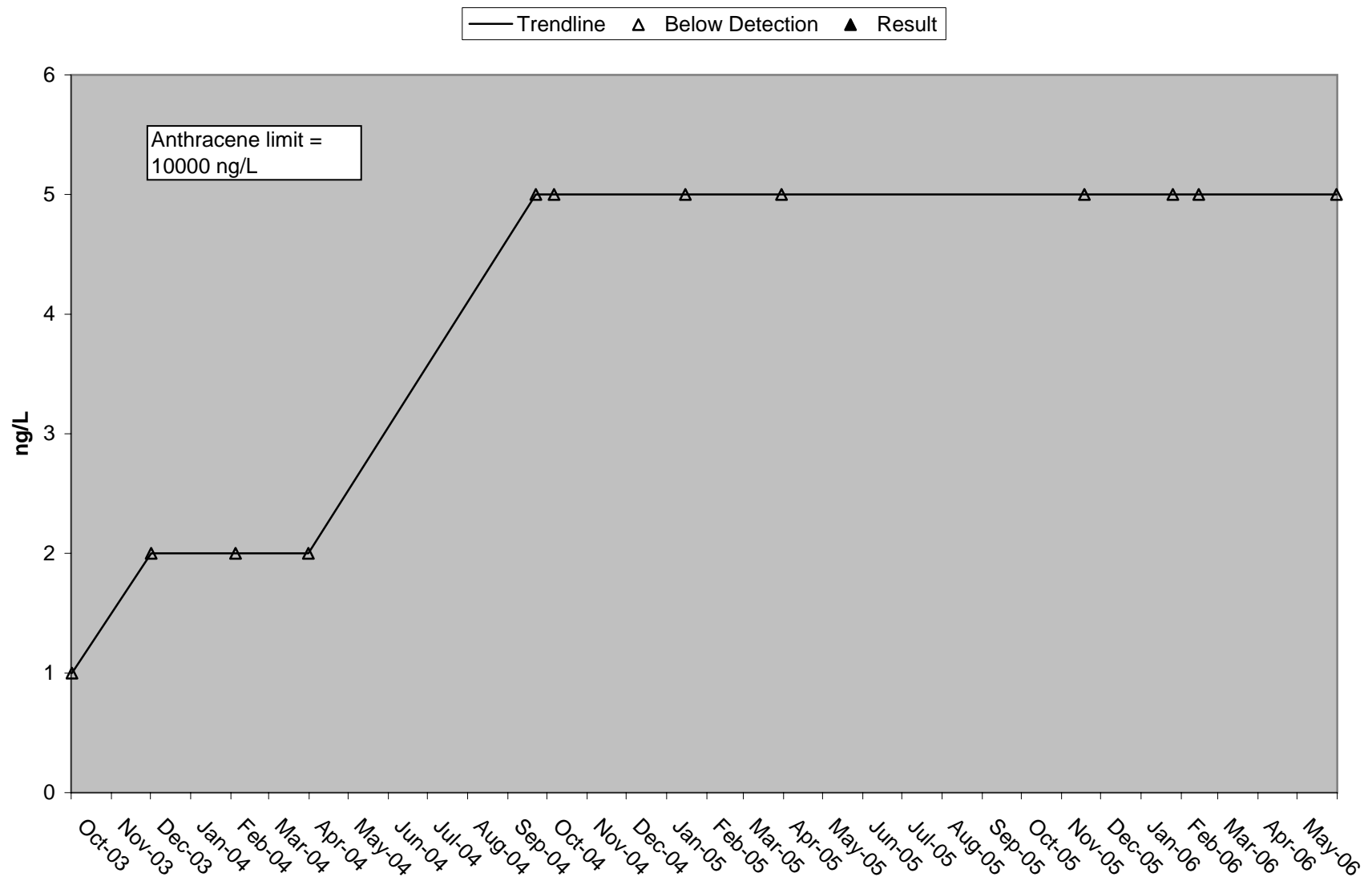
### Am River at Hwy 80 Chlorpyrifos



### Am River at Hwy 80 Diazinon

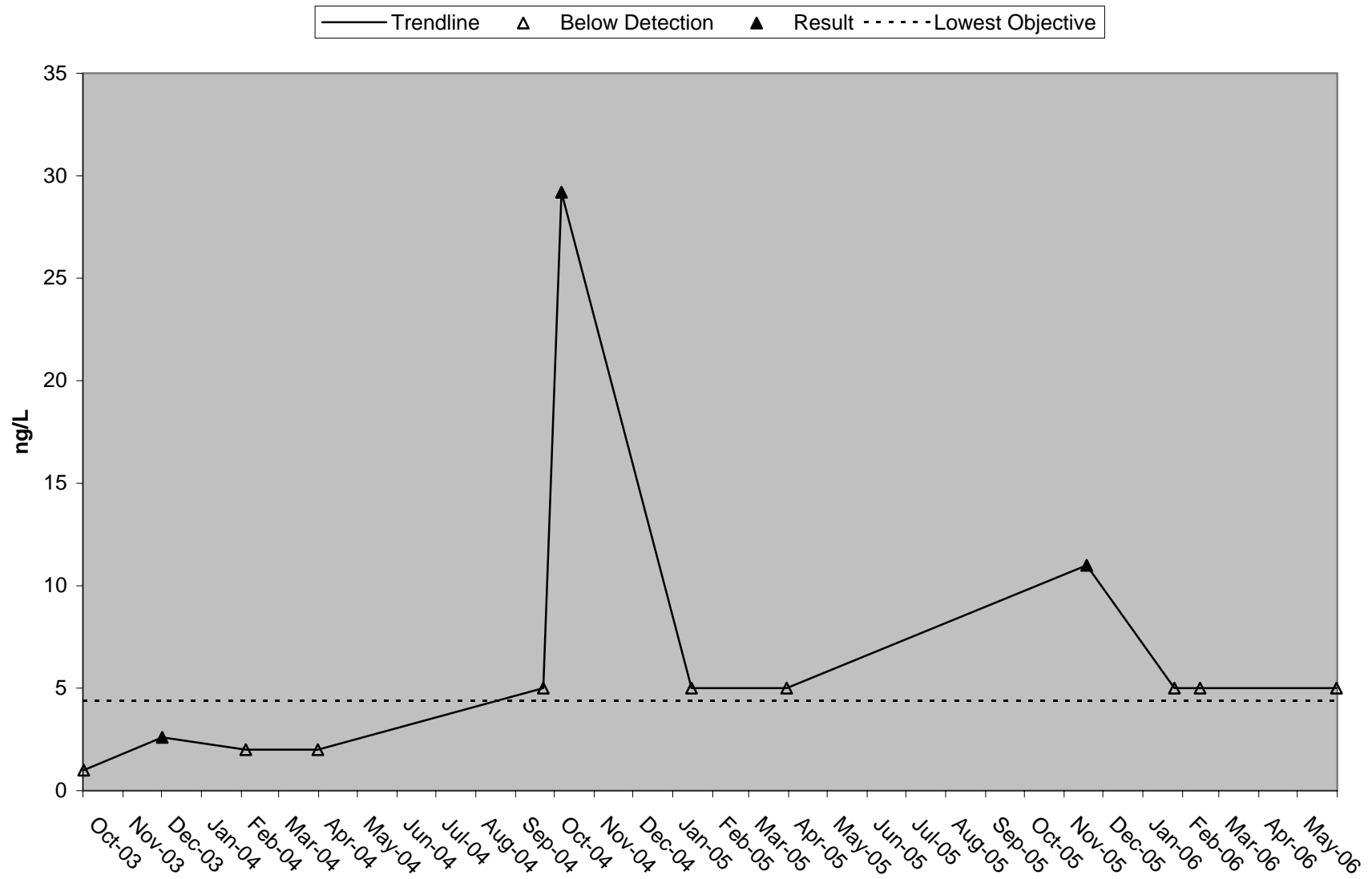


### Am River at Hwy 80 Anthracene

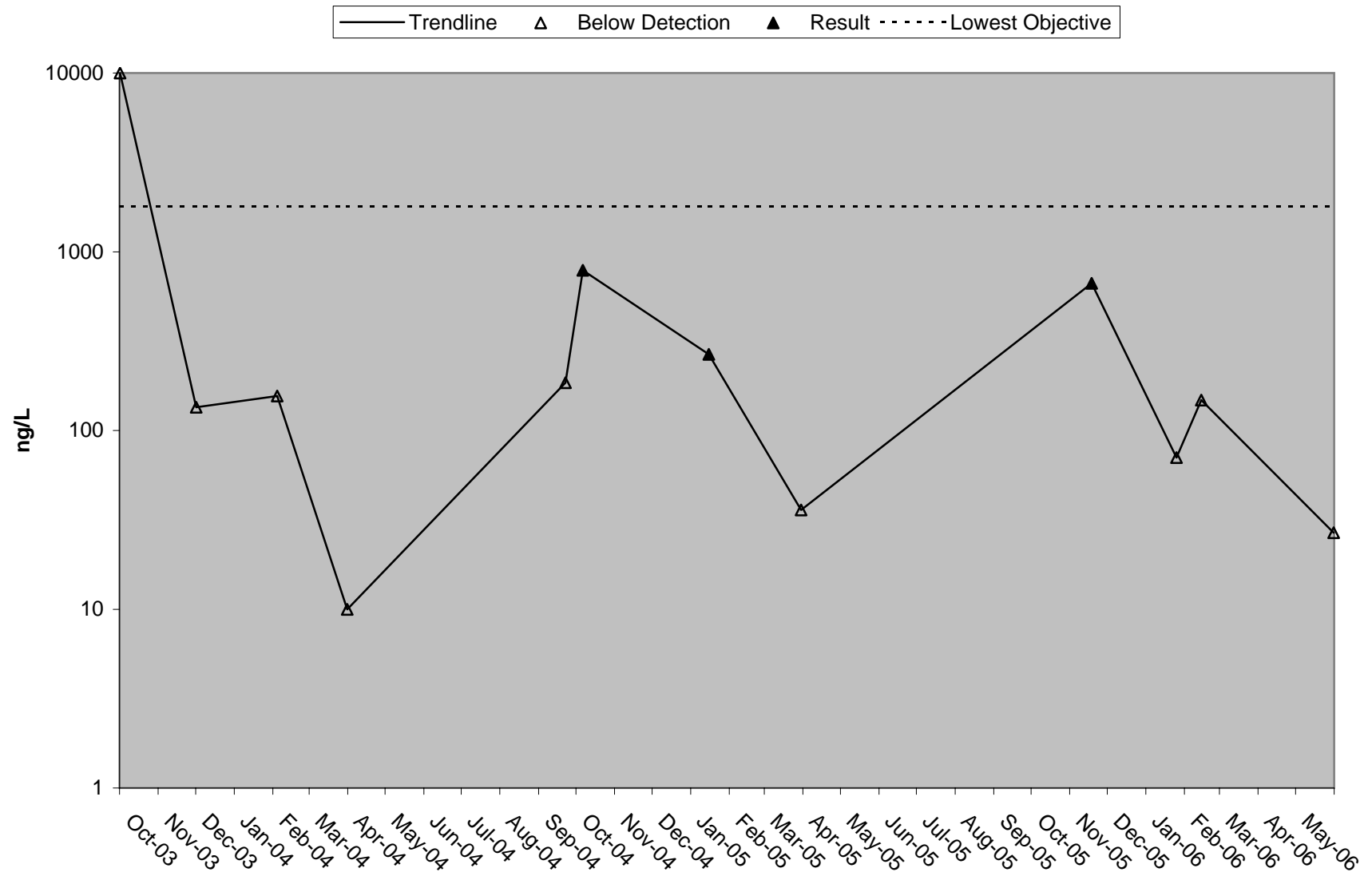




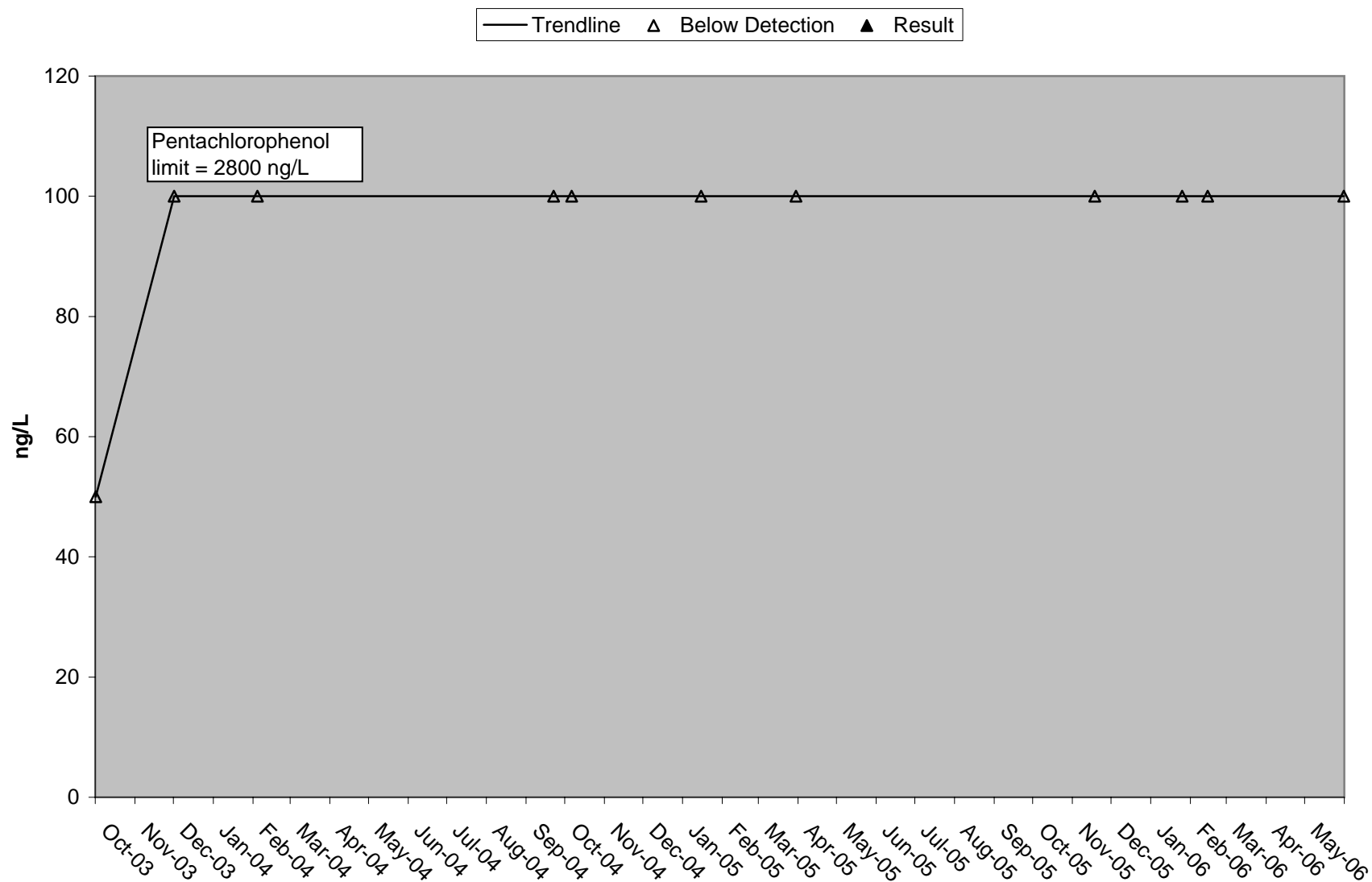
# Am River at Hwy 80 Benzo(k)fluoranthene



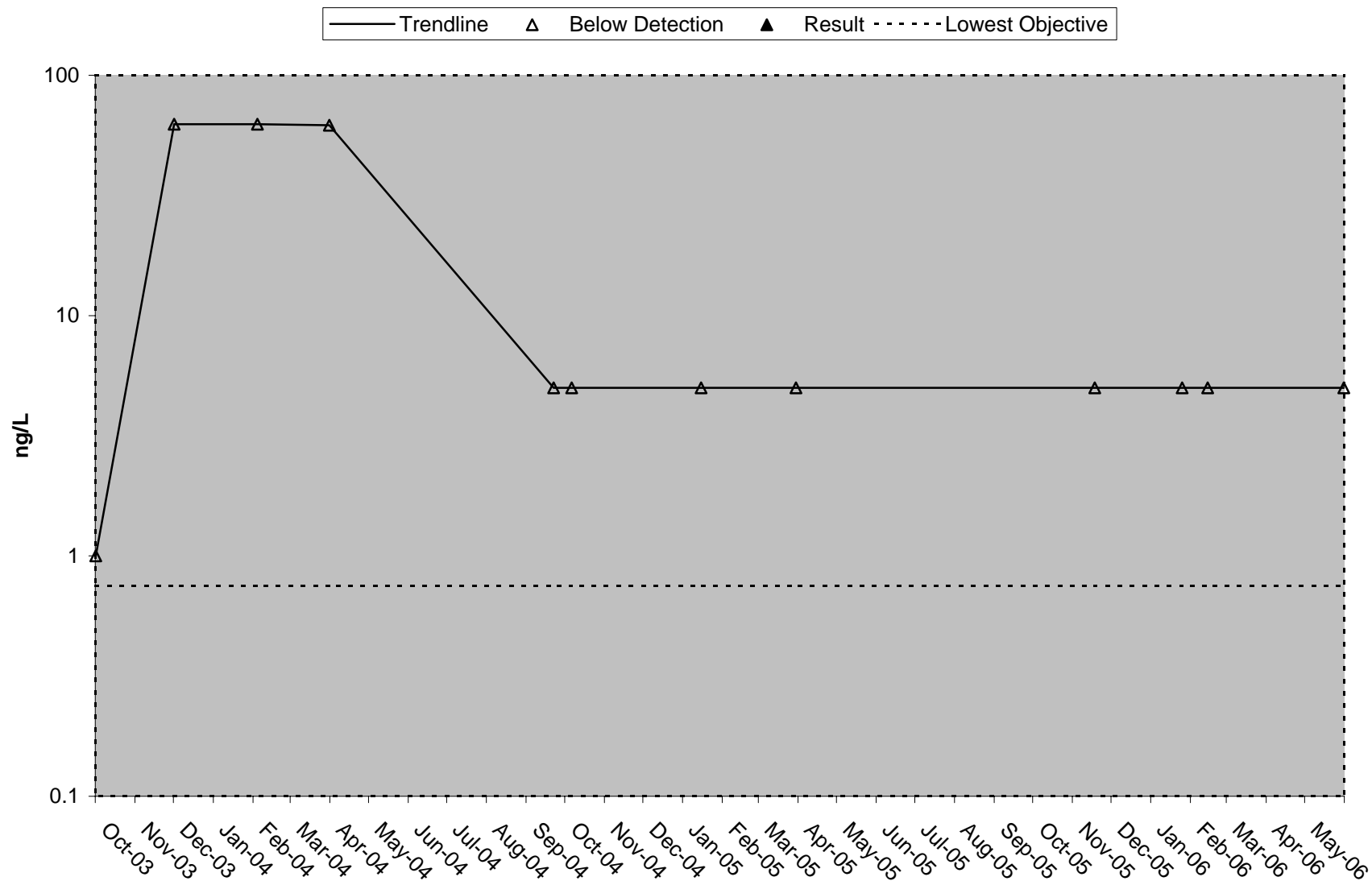
### Am River at Hwy 80 Bis(2-ethylhexyl) phthalate



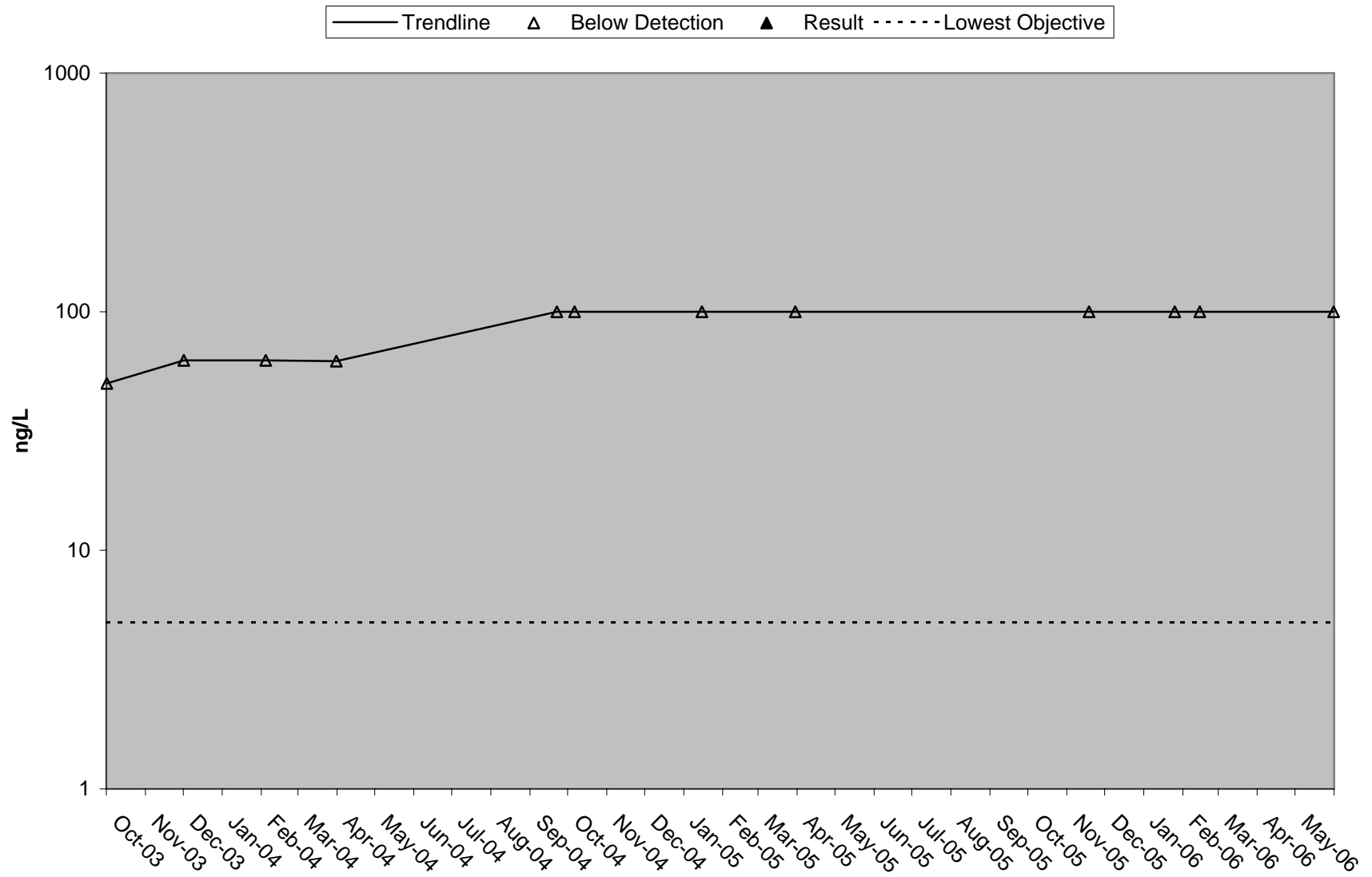
# Am River at Hwy 80 Pentachlorophenol



# Am River at Hwy 80 Hexachlorobenzene



# Am River at Hwy 80 N-Nitroso-di-n-propylamine



# Am River at Hwy 80 MTBE

