"MIAMI RIVER BASIN WATER QUALITY IMPROVEMENT REPORT"
Action Item Matrix Quarterly Progress Report

Fourth Quarterly Report, 2009
(October - December)

Action Item:

4. Monitoring and Research
   a. Continue monthly monitoring for water quality of Wagner Creek, Miami River, and adjoining Biscayne Bay

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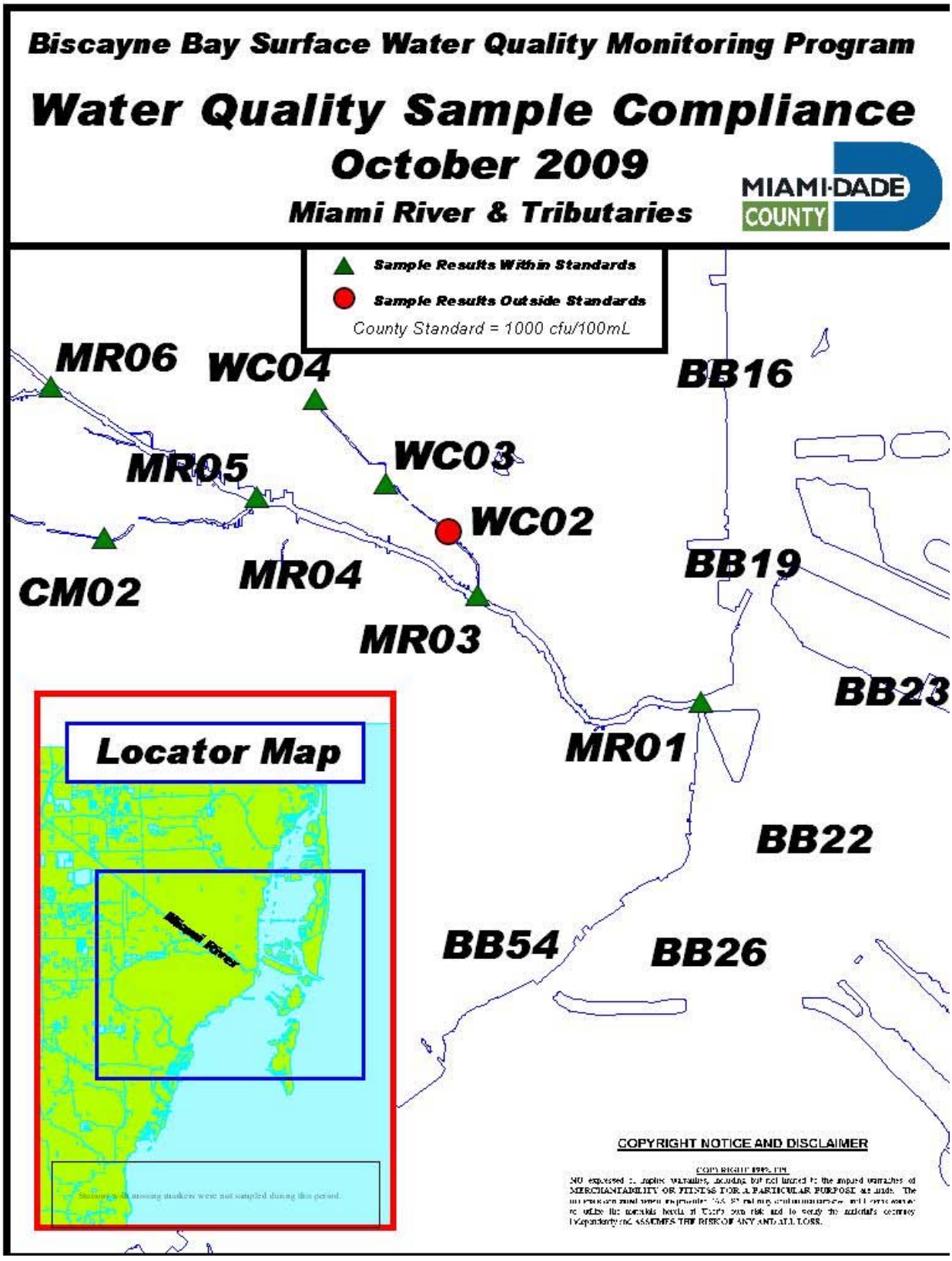
Action Item Status:

Miami-Dade DERM has continued to collect monthly water quality samples in the Miami River and its tributaries (including Tamiami Canal and Wagner Creek). During the Fourth quarter of 2009 samples were collected at each of the ten stations in the River on October 6, November 3, and December 08. Costs for sampling (including salaries and fringe and analysis) have been calculated at approximately $394 per station per month. Since the beginning of this current 2009-2010 fiscal year, the sampling regime has been modified and Total Coliform sampling has been dropped from the programme. Fecal Coliform sampling has been retained, but for some stations (i.e. BB22) the frequency has been reduced to a bimonthly cycle. A matrix table attached to this report outlines the frequency of parameters collected at each station on the Miami River during DERM's monthly "Bay Run". Two sewage spills were reported on or around the Tamiami Canal which empties into the Miami River during the quarter. Such notification typically results in additional an emergency sampling response.

See **Figures 1 - 3** below for maps showing monthly Fecal Coliform results from October – December at stations in the Miami River and vicinity. **Figure 4** is a quarterly composite of Fecal Coliform results from station locations on the Miami River and its tributaries showing how frequently the results at each station exceeded the County standard (1000 cfu/100ml) during the First quarter of the year. Table 1 lists the observed Fecal Coliform levels in Wagner Creek form October – December 2009.


Biscayne Bay Surface Water Quality Monitoring Program
Water Quality Sample Compliance
October 2009
Miami River & Tributaries
MIAMI-DADE COUNTY
Sample Results Within Standards
Sample Results Outside Standards
County Standard = 1000 cfu/100mL
MR06
WC04
BB16
WC03
MR05
WC02
CM02
MR04
BB19
MR03
BB23
MR01
Locator Map
BB22
BB54
BB26
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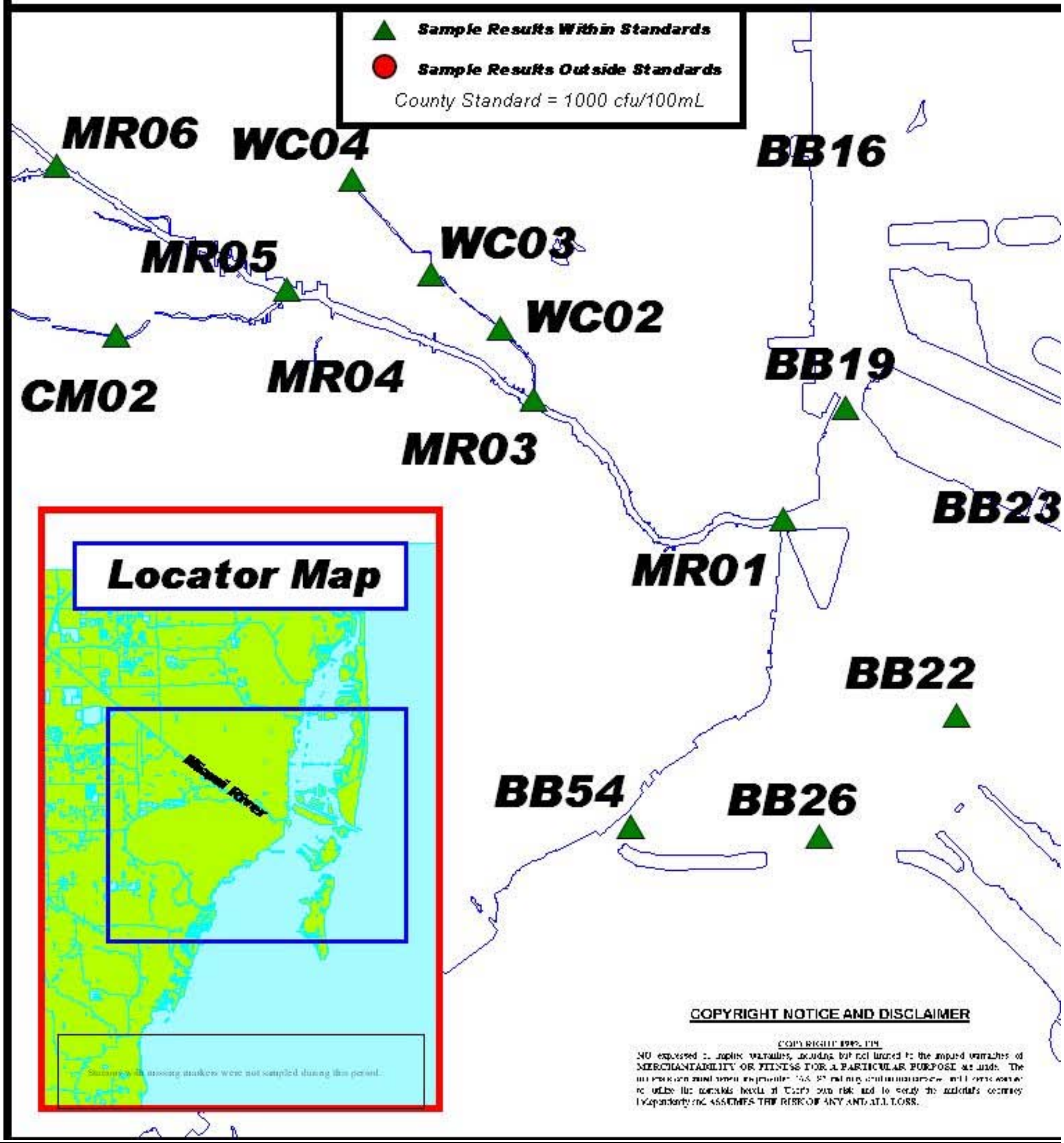
Biscayne Bay Surface Water Quality Monitoring Program

Water Quality Sample Compliance

November 2009

Miami River & Tributaries



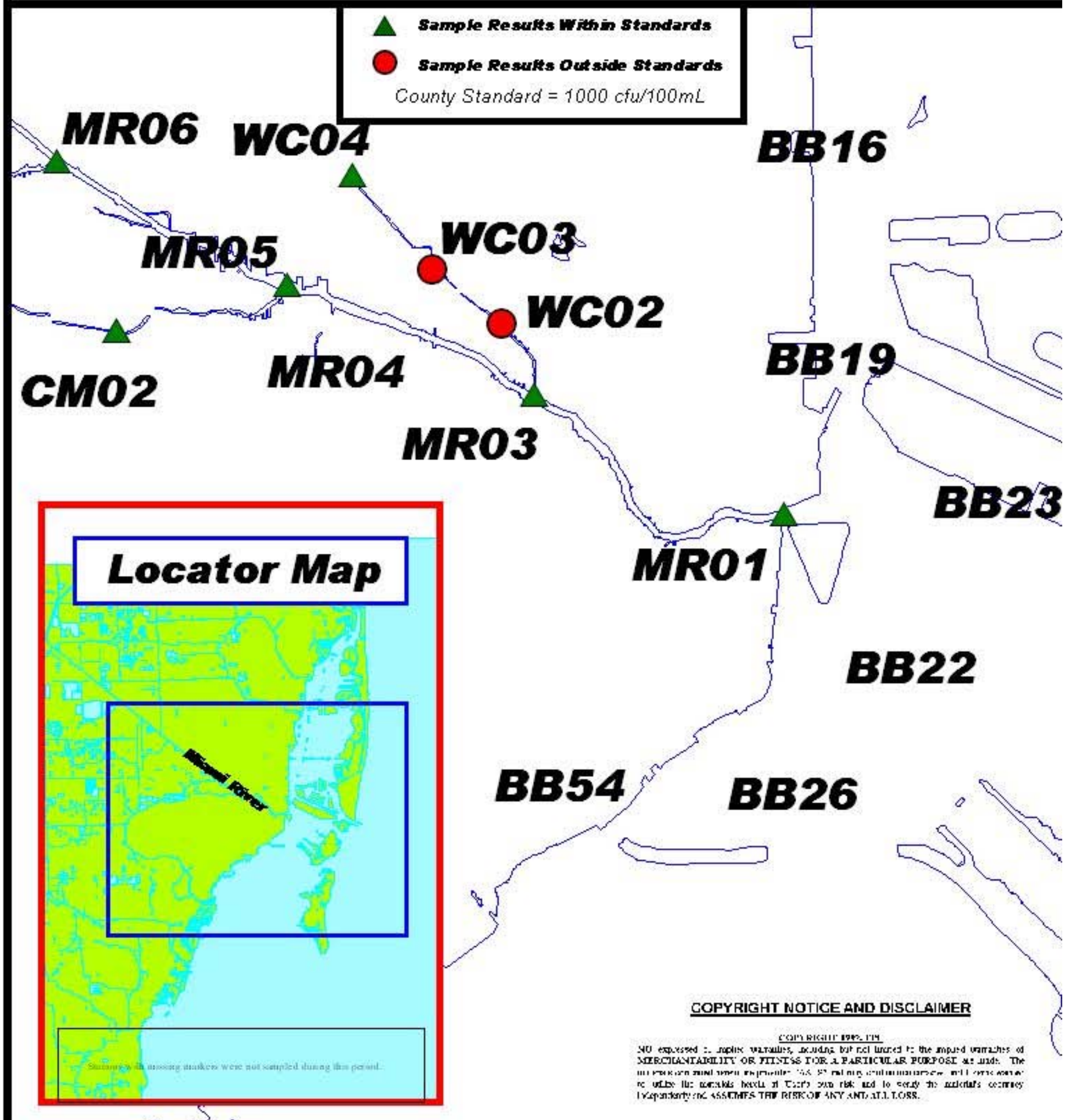
Biscayne Bay Surface Water Quality Monitoring Program

Water Quality Sample Compliance

December 2009

Miami River & Tributaries

MIAMI-DADE COUNTY



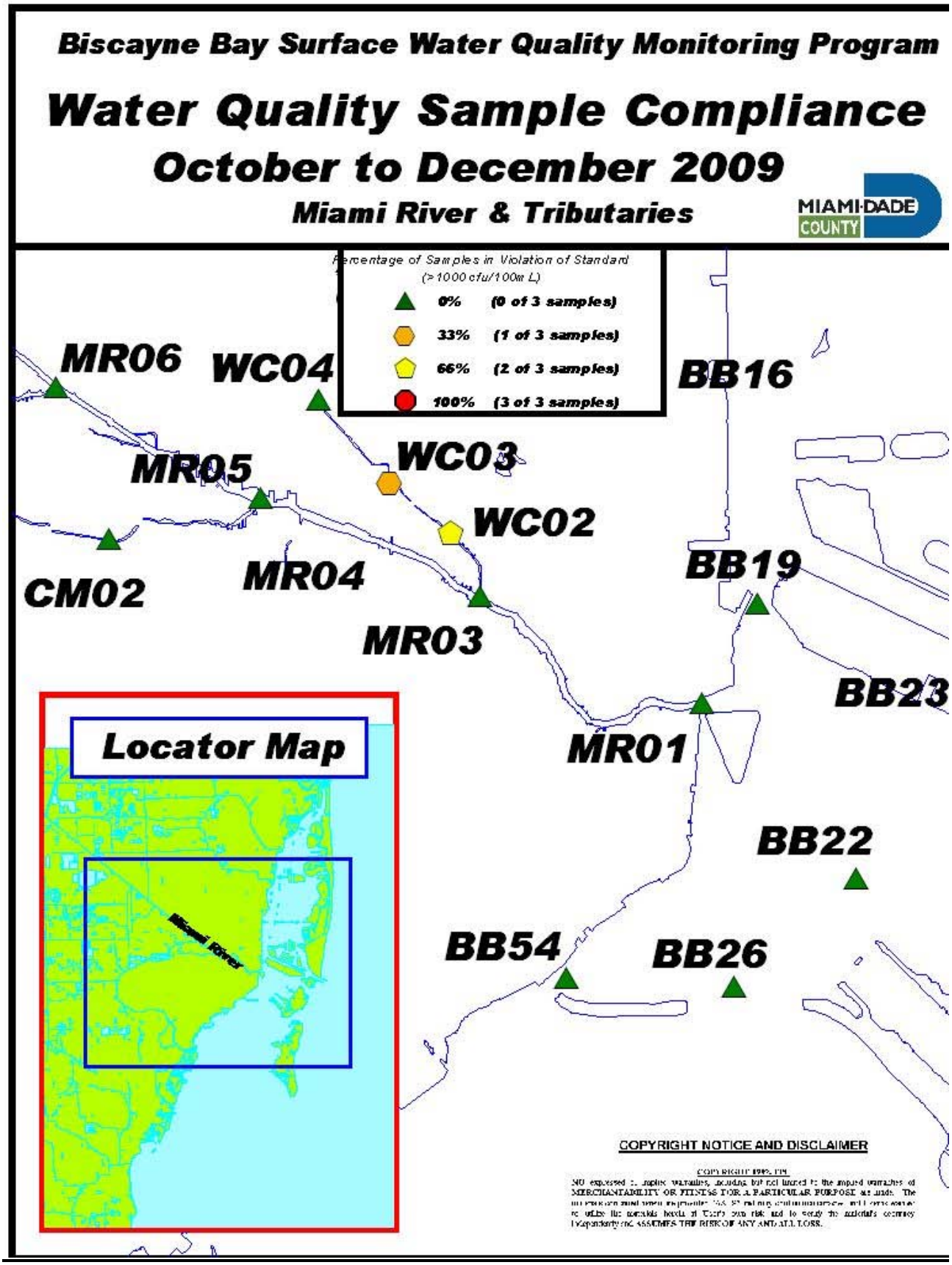

Biscayne Bay Surface Water Quality Monitoring Program
Water Quality Sample Compliance
October to December 2009
Miami River & Tributaries
MIAMI-DADE COUNTY
Percentage of Samples in Violation of Standard
(>1000 cfu/100ml L)
0% (0 of 3 samples)
33% (1 of 3 samples)
66% (2 of 3 samples)
100% (3 of 3 samples)
MR06
WC04
BB16
WC03
MR05
WC02
BB19
CM02
MR04
MR03
BB23
MR01
BB22
BB54
BB26
Locator Map
Miami River
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Table 1.

MONTHLY FECAL COLIFORM LEVELS (cfu's/100 ml) IN WAGNER CREEK				
	WC04	**WC03**	**WC02**	**MR03**
October	**200**	**300**	**900***	**390**
November	**700**	**0**	**100**	**270**
December	**0**	**7000***	**3000***	**300**

A" *" indicates results that exceed the State's Standard (800 cfu/100ml); a "0" indicates that the true value was below the method detection limit.

First Quarterly Report, 2009
(October - December)

Action Item:

5. Management
   d. Establish standardized water quality tracking for key characteristics

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Action Item Status:

This report presents selected results of the water quality monitoring that occurred in the Fourth quarter (October- December) of 2009. Due to the extensive nature of the database, it is not feasible to track each parameter collected at each station for the period of record. Therefore, representative stations and parameters have been selected to achieve the objective of this Action Item. Current water quality trends will be tracked by plotting the actual sample results of several key parameters (see **Charts 1 – 4** for graphs of ammonia nitrogen, total phosphate, fecal coliform, and turbidity data) from a station representing the Miami River (MR03) against the same parameters evaluated at another station in adjacent Biscayne Bay (BB22). See maps presented under action item 4.a for station locations. Data collected at both stations during the most recent quarter are plotted in time series along with historic data from the previous ten-year (1999 - 2009) period. For further comparison, the target values developed under Action Item 4.f are plotted, and where applicable, the existing state or county standard for each parameter is shown.

Chart 1.

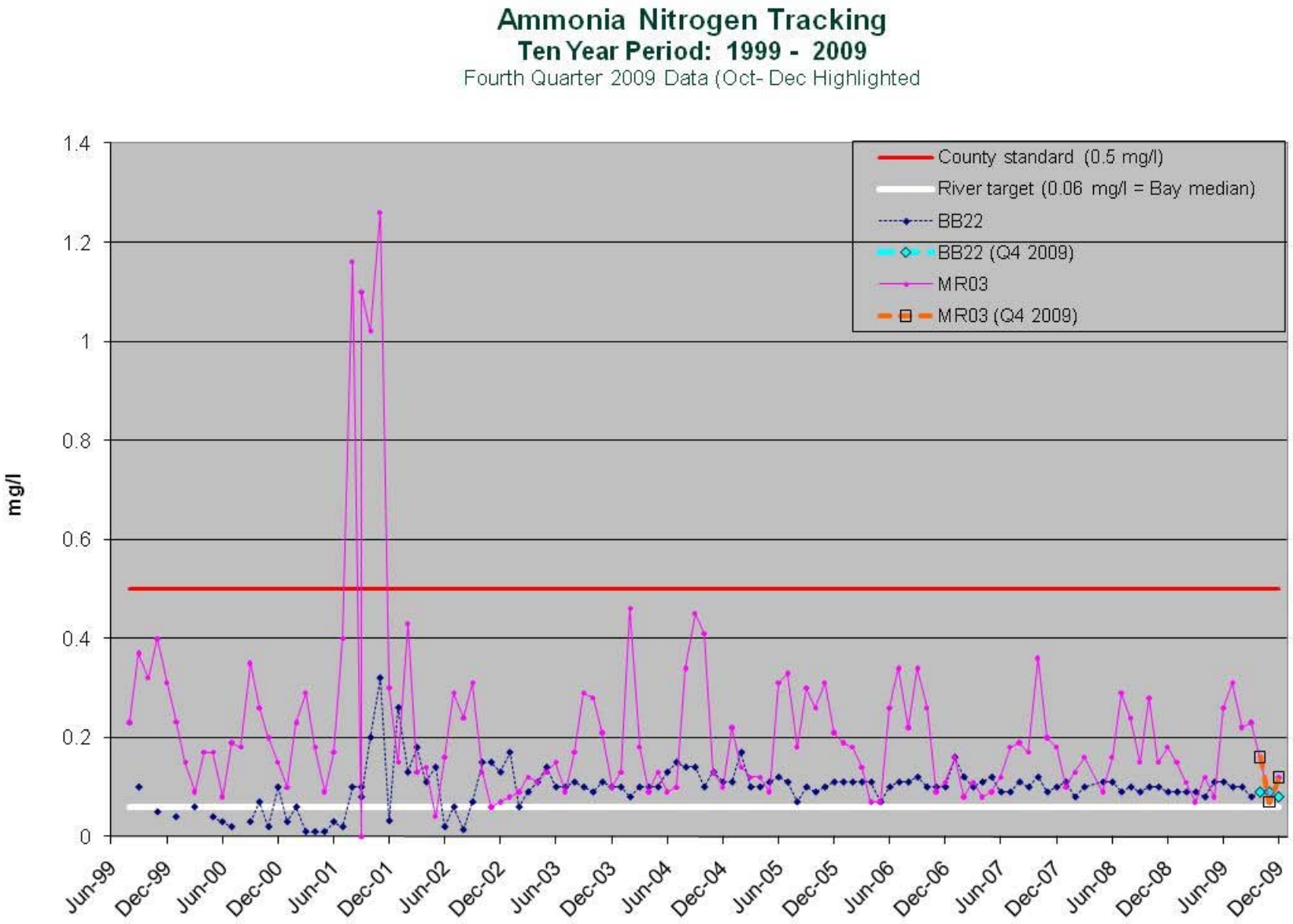

Ammonia Nitrogen Tracking
Ten Year Period: 1999 - 2009
Fourth Quarter 2009 Data (Oct- Dec Highlighted
mg/l
1.4
1.2
1
0.8
0.6
0.4
0.2
0
County standard (0.5 mg/l)
River target (0.06 mg/l = Bay median)
BB22
BB22 (Q4 2009)
MR03
MR03 (Q4 2009)
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
Dec-04
Jun-05
Dec-05
Jun-06
Dec-06
Jun-07
Dec-07
Jun-08
Dec-08
Jun-09
Dec-09

Chart 2.

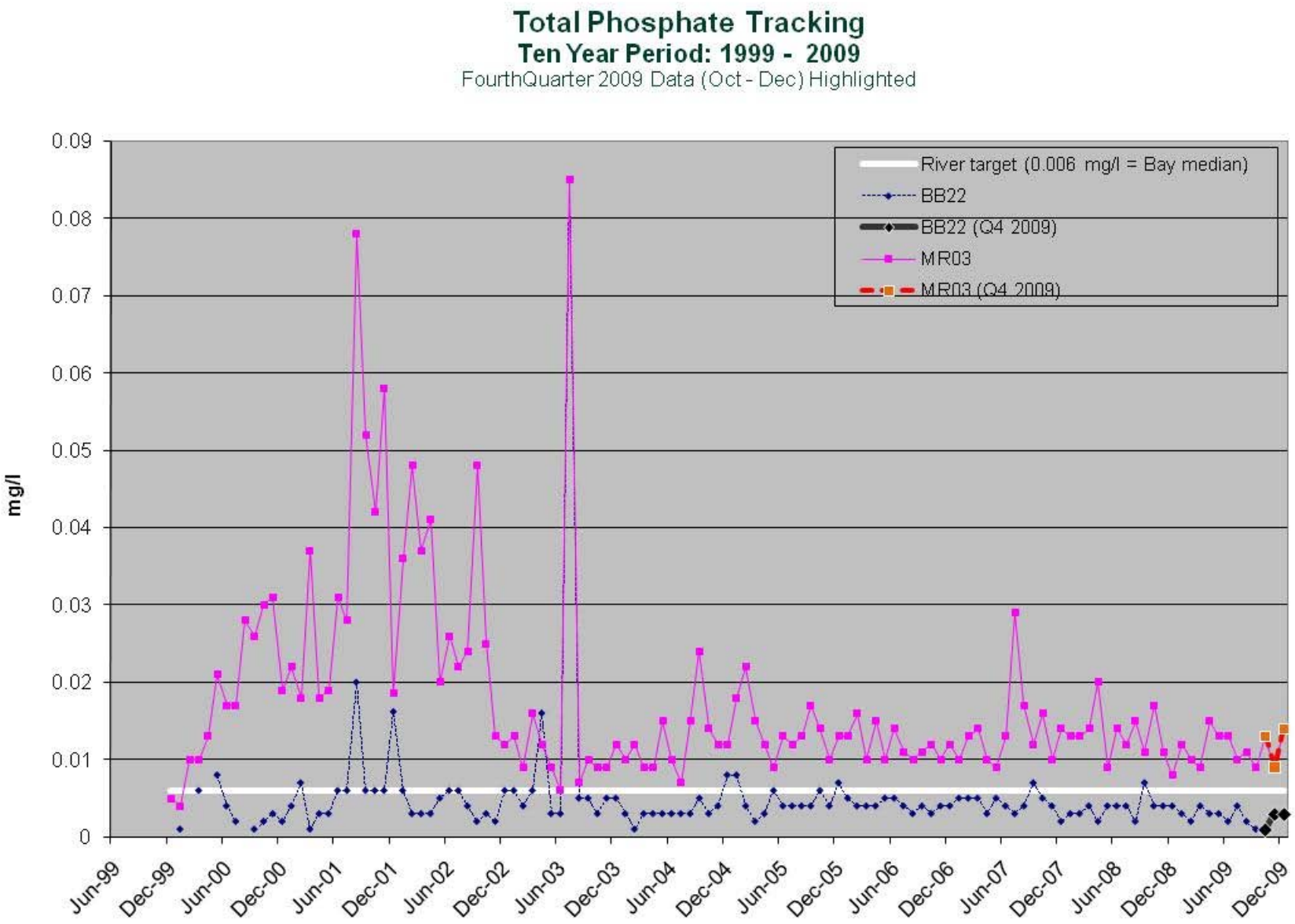

Total Phosphate Tracking
Ten Year Period: 1999 - 2009
FourthQuarter 2009 Data (Oct - Dec) Highlighted
River target (0.006 mg/l = Bay median)
BB22
BB22 (Q4 2009)
MR03
MR03 (Q4 2009)
mg/l
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
Dec-04
Jun-05
Dec-05
Jun-06
Dec-06
Jun-07
Dec-07
Jun-08
Dec-08
Jun-09
Dec-09

Chart 3.

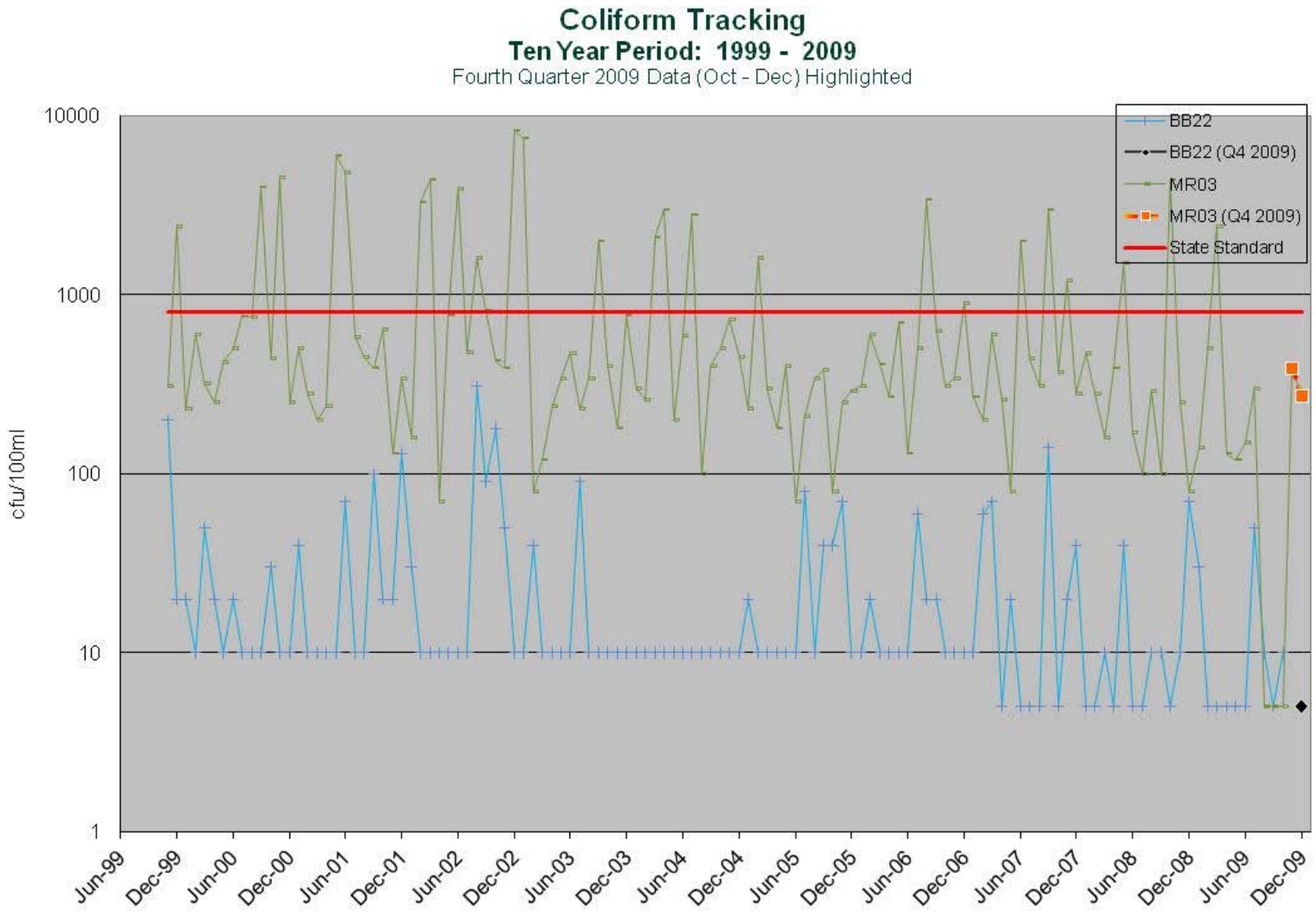
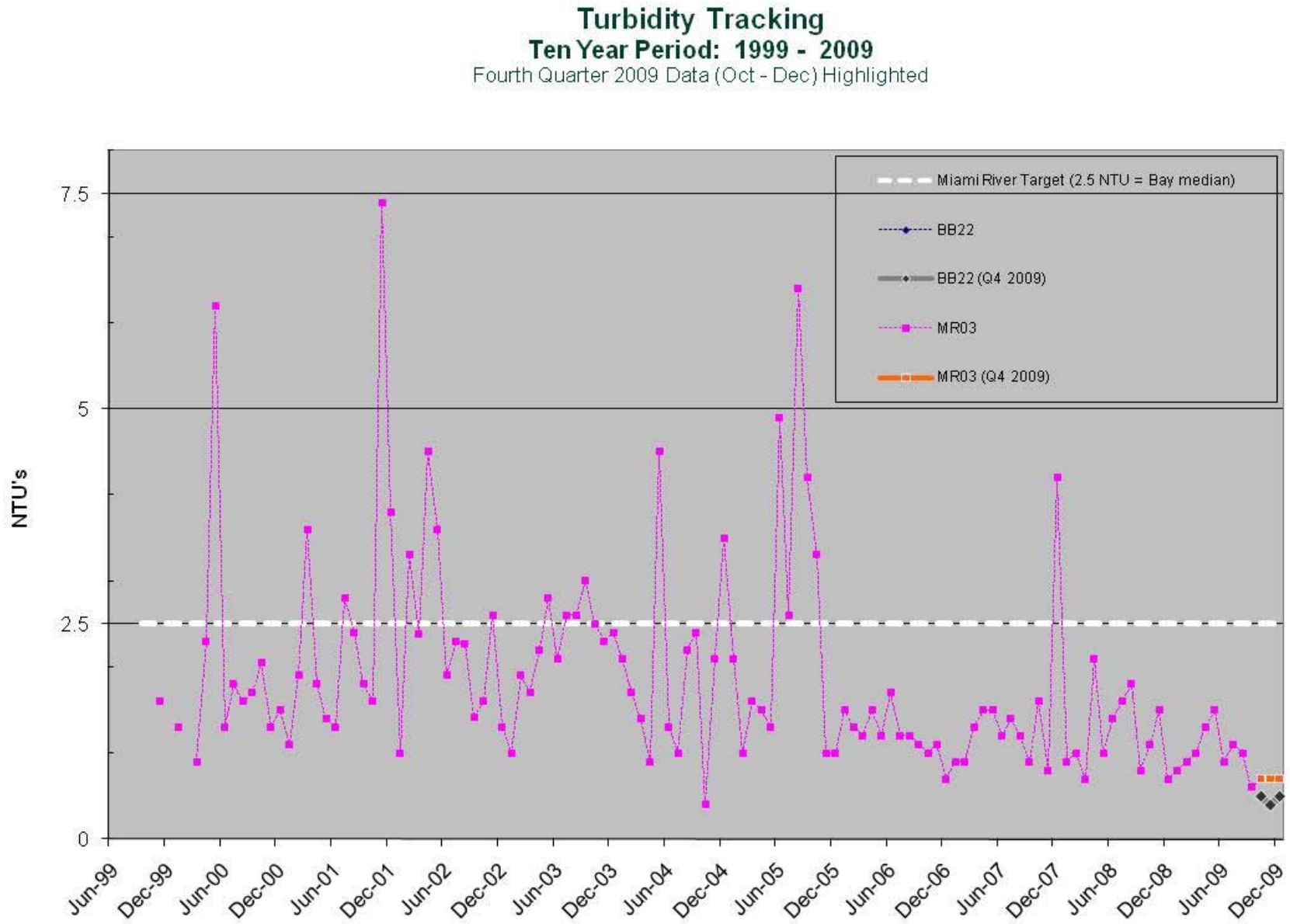

Coliform Tracking
Ten Year Period: 1999 - 2009
Fourth Quarter 2009 Data (Oct - Dec) Highlighted
cfu/100ml
10000
1000
100
10
1
BB22
BB22 (Q4 2009)
MR03
MR03 (Q4 2009)
State Standard
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
Dec-04
Jun-05
Dec-05
Jun-06
Dec-06
Jun-07
Dec-07
Jun-08
Dec-08
Jun-09
Dec-09

Chart 4.


Turbidity Tracking
Ten Year Period: 1999 - 2009
Fourth Quarter 2009 Data (Oct - Dec) Highlighted
Miami River Target (2.5 NTU = Bay median)
BB22
BB22 (Q4 2009)
MR03
MR03 (Q4 2009)
NTU's
7.5
5
2.5
0
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
Dec-04
Jun-05
Dec-05
Jun-06
Dec-06
Jun-07
Dec-07
Jun-08
Dec-08
Jun-09
Dec-09