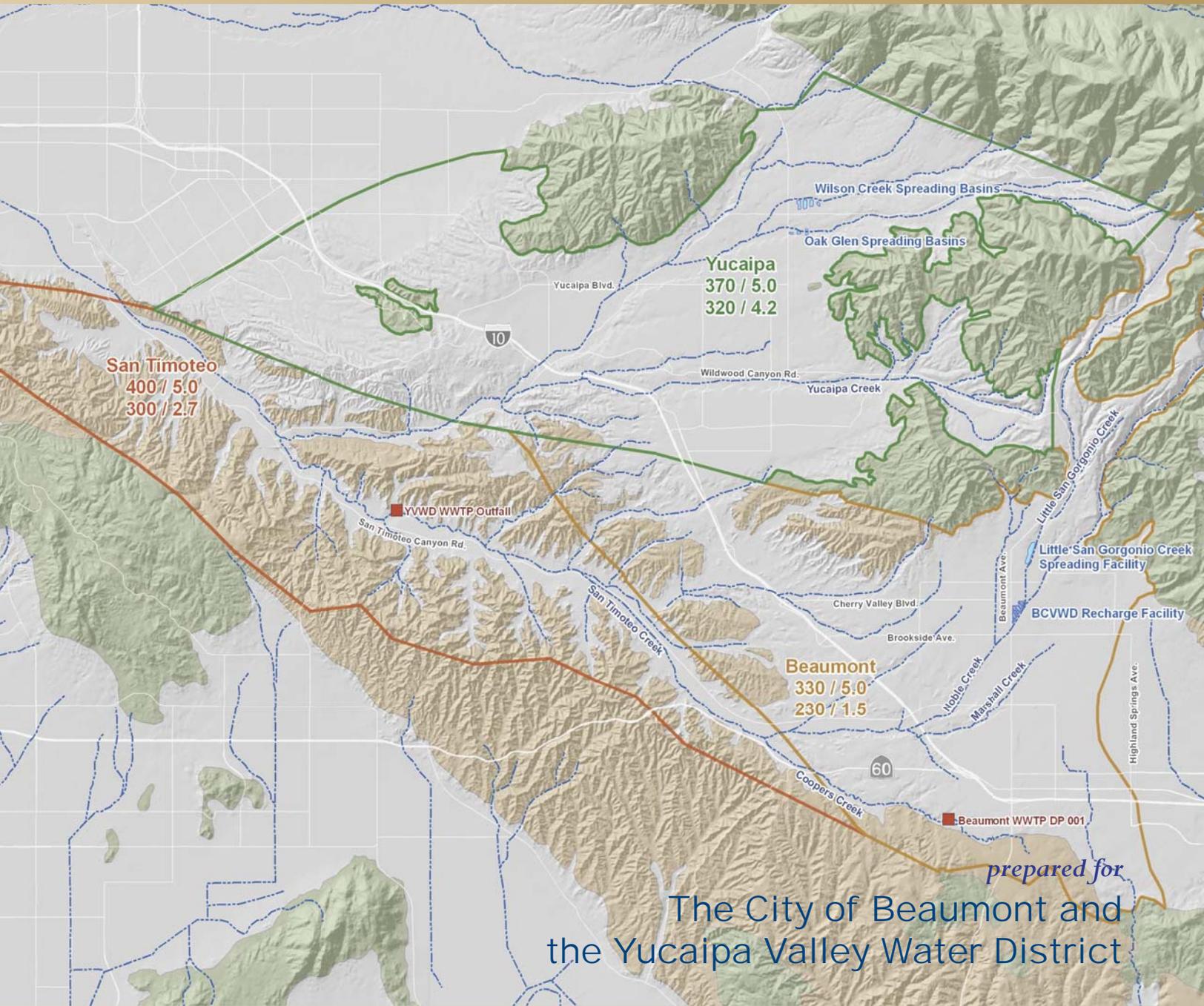


Maximum Benefit Monitoring Program 2009 Annual Report



April 2010



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Table of Contents

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Section 1 – Introduction | 1-1 |
| 1.1 Maximum Benefit Objectives..... | 1-1 |
| 1.2 Maximum Benefit Commitments..... | 1-2 |
| 1.3 Maximum Benefit Monitoring Program Objectives..... | 1-3 |
| 1.4 Report Organization | 1-3 |
| Section 2 – Surface Water Monitoring Program | 2-1 |
| 2.1 City/STWMA Surface Water Monitoring Program | 2-1 |
| 2.2 YVWD Surface Water Monitoring Program..... | 2-2 |
| 2.3 Data Collected in 2009..... | 2-3 |
| Section 3 – Groundwater Monitoring Program | 3-1 |
| 3.1 Regional Well Canvass..... | 3-1 |
| 3.2 Key Well Monitoring Programs | 3-1 |
| 3.2.1 Key Well Water Level Program | 3-2 |
| 3.2.2 Key Well Water Quality Program..... | 3-2 |
| 3.3 STMZ Groundwater Monitoring Program Expansion Status | 3-3 |
| 3.3.1 Status of the City Monitoring Wells | 3-4 |
| 3.3.2 Status of the YVWD Monitoring Wells | 3-4 |
| Section 4 – References | 4-1 |
| Appendix A – Data Collected for the Maximum Benefit Monitoring Program (Compact Disk) | |
| Appendix B – Letters to the Regional Board from the City of Beaumont Requesting Compliance Schedule Extensions for the STMZ Monitoring Wells | |



List of Tables

- 1-1 Maximum Benefit and Antidegradation Objectives for Total Dissolved Solids and Nitrate-Nitrogen
- 1-2 City of Beaumont/STWMA Maximum Benefit Commitments
- 1-3 Yucaipa Valley Water District Maximum Benefit Commitments
- 2-1 City of Beaumont/STWMA Surface Water Monitoring Sites for Discharge and Water Quality
- 2-2 Yucaipa Valley Water District Surface Water Monitoring Sites for Discharge and Water Quality
- 2-3 2009 Surface Water Monitoring Program Results – In-stream Monitoring Sites and Treatment Plant Discharges
- 2-4 2009 Surface Water Monitoring Program Results – Beaumont Management Zone Groundwater Recharge Facilities
- 2-5 2009 Surface Water Monitoring Program Results – Yucaipa Management Zone Groundwater Recharge Facilities
- 3-1 Analyte List for the Key Well Water Quality Program

List of Figures

- 1-1 Management Zone Boundaries – Maximum Benefit and Antidegradation Objectives for TDS and Nitrate-Nitrogen
- 2-1 Surface Water Monitoring Program – Monitoring Locations
- 3-1 Groundwater Monitoring Program – Status of Wells in the Beaumont, San Timoteo and Yucaipa Management Zones
- 3-2 Key Well Water Level Program – Wells with Data in 2009
- 3-3 Key Well Water Quality Program – Wells with Data in 2009
- 3-4 San Timoteo Management Zone – Expanded Groundwater Monitoring Program Wells



Acronyms, Abbreviations, and Initialisms

| | |
|----------------|----------------------------------------------------------|
| acre-ft | acre-feet |
| Banning | City of Banning |
| Basin Plan | Water Quality Control Plan for the Santa Ana River Basin |
| BCVWD | Beaumont Cherry Valley Water District |
| BMZ | Beaumont Management Zone |
| City | City of Beaumont |
| cfs | cubic feet per second |
| GWMP | Groundwater monitoring program |
| NPDES | National Pollution Discharge Elimination System |
| mg/L | milligrams per liter |
| Pass Agency | San Geronio Pass Water Agency |
| QA/QC | Quality Assurance Quality Control |
| Redlands | City of Redlands |
| Regional Board | Santa Ana Regional Water Quality Control Board |
| SMOA | Sharondale Mesa Owners Association |
| SMWC | South Mesa Water Company |
| STMZ | San Timoteo Management Zone |
| STWMA | San Timoteo Watershed Management Authority |
| SWMP | Surface Water Monitoring Program |
| SWP | State Water Project |
| TDS | total dissolved solids |
| TIN | total inorganic nitrogen |
| USGS | United States Geological Survey |
| WEI | Wildermuth Environmental, Inc. |
| WHWC | Western Heights Water Company |
| YMZ | Yucaipa Management Zone |
| YVWD | Yucaipa Valley Water District |



Section 1 – Introduction

Each year, a joint annual report of the individual Maximum Benefit Monitoring Programs of the City of Beaumont (City) and the San Timoteo Watershed Management Authority (STWMA) and the Yucaipa Valley Water District (YVWD) is submitted to the Santa Ana Regional Water Quality Control Board (Regional Board) in compliance with the Water Quality Control Plan for the Santa Ana Basin (Basin Plan), as updated in February 2008 (Regional Board, 2008). This annual report presents the work performed during the 2009 calendar year.

This section provides background information on (1) the creation of the maximum benefit objectives, (2) the commitments made by the City/STWMA and the YVWD when the Regional Board granted the new groundwater quality objectives, (3) the status of the City/STWMA's and the YVWD's compliance with these commitments, and (4) the objectives of the Maximum Benefit Monitoring Programs.

1.1 Maximum Benefit Objectives

In January 2004, the Regional Board amended the Basin Plan to incorporate an updated total dissolved solids (TDS) and nitrogen management plan (Regional Board, 2004). This amendment included revised groundwater subbasin boundaries (now called management zones), revised TDS and nitrate-nitrogen groundwater quality objectives, revised TDS and nitrogen wasteload allocations, revised reach designations, and revised TDS and nitrogen objectives and beneficial uses for specific surface waters. The technical work supporting the Basin Plan Amendment was directed by the Nitrogen/TDS Task Force and is summarized in *TIN/TDS Study (Phase 2A) of the Santa Ana Watershed, Final Technical Memorandum* (Wildermuth Environmental, Inc. [WEI], 2000).

In addition to the updated antidegradation water quality objectives set forth by the Basin Plan Amendment, alternative maximum benefit objectives were specified for certain groundwater management zones, including the Beaumont Management Zone (BMZ), the San Timoteo Management Zone (STMZ), and the Yucaipa Management Zone (YMZ). The locations of these management zones and their associated anti-degradation and maximum benefit objectives are shown in Figure 1-1. Table 1-1 shows the 2006 ambient water quality determinations for the BMZ, the STMZ, and the YMZ in comparison to the antidegradation and maximum benefit objectives. The maximum benefit objectives, which allow for the lowering of water quality, were established based on demonstrations by the City/STWMA and the YVWD that antidegradation policies were satisfied. First, they demonstrated that beneficial uses would continue to be protected. Second, they showed that water quality consistent with maximum benefit to the people of the State of California would be maintained. Other factors—such as economics, the need to use recycled water, and the need to develop housing in the area—were also taken into consideration in establishing the maximum benefit objectives.

1.2 Maximum Benefit Commitments

As stated in the Basin Plan, the maximum benefit objectives for the BMZ, STMZ, and YMZ are contingent upon commitments made by the City/STWMA and the YVWD. Specifically, these commitments relate to the implementation of programs to monitor the effects of the maximum benefit objectives on ground and surface waters and to address salt management by ensuring that plans and programs are in place to mitigate salt loads once the management zones are nearing exceedance of the maximum benefit objectives. Per the Basin Plan, the City and the STWMA are responsible for the BMZ commitments, and they share responsibility for the STMZ commitments with the YVWD. The YVWD is responsible for the YMZ commitments. Tables 1-2 (Table 5-10a in the Amendment) and 1-3 (Table 5-9a in the Amendment) identify the maximum benefit commitments made to the Regional Board by the STWMA and the City and by the YVWD, respectively. In July 2009, the City assumed full responsibility of compliance with the maximum benefit commitments listed in Table 1-2 when its original partner in the program, the Beaumont-Cherry Valley Water District (BCVWD),¹ ceased to participate in funding the maximum benefit commitments.

It is assumed that the maximum benefit is demonstrated and that the maximum benefit TDS and nitrate-nitrogen objectives apply to their respective management zones so long as the schedules presented in Tables 1-2 and 1-3 are being met by the City and the YVWD. If the Regional Board were to determine that the maximum benefit programs are not being implemented in accordance with their schedules, it could conclude that the maximum benefit is not being demonstrated and reinstate the antidegradation TDS and nitrate-nitrogen objectives (Table 1-1). Were this to occur, the Regional Board would require retroactive mitigation for TDS and nitrate-nitrogen discharges affecting these management zones in excess of the antidegradation objectives.

In 2008, the Regional Board addressed the maximum benefit commitment status of the City/STWMA and of the YVWD (Regional Board, 2008b; 2008c). In these correspondences, the Regional Board declared that the City, the STWMA, and the YVWD have not satisfactorily completed the following tasks:

- 1) Ambient groundwater quality determination for the STMZ (Commitment 6 in Tables 1-2 and 1-3)
- 2) Remove/reduce the discharge of wastewater effluent from the unlined portion of San Timoteo Creek (Commitment 9 in Tables 1-2 and 1-3)

In order to continue to operate under the maximum benefit objectives, the Regional Board set forth the following requirements (Regional Board, 2008b; 2008c):

¹ Although the Basin Plan names the STWMA as the joint responsible party with the City, it was always intended that the City and the BCVWD be responsible for the funding and implementation of the maximum benefit commitments as the intended beneficiaries of the assimilative capacity created by the maximum benefit objectives. When the Basin Plan Amendment was adopted, the STWMA formed Project Committee No. 1, comprised solely of the City and the BCVWD, to implement and fund the maximum benefit commitments. The City and the BCVWD jointly funded the maximum benefit commitments through Project Committee No. 1 until June 30, 2009. Effective July 1, 2009, Project Committee No. 1 was dissolved; at which point, the City took over the implementation and funding of the Maximum Benefit Program.

- 1) Develop a workplan and schedule for the installation of monitoring wells in the STMZ that will provide adequate data for the calculation of ambient groundwater quality.
- 2) Provide an engineering plan to reduce recycled water flows into San Timoteo Creek and an analysis and evaluation of water quality impacts related to the use of recycled water in the BMZ and the STMZ.

On October 30, 2008, the City, the STWMA, and the YVWD jointly submitted a workplan that contained a detailed plan and schedule for the installation of three new wells to augment the existing groundwater monitoring program in the STMZ (WEI, 2008). In addition, each agency submitted a letter to the Regional Board, detailing their respective plans for reducing recycled water discharges to San Timoteo Creek. The monitoring well workplan was approved by the Regional Board in April 2009 (Regional Board, 2009a; 2009b). The status of the workplan's implementation is discussed in Section 3.2.3 of this report.

1.3 Maximum Benefit Monitoring Program Objectives

In fulfillment of commitments (1) and (2) in Tables 1-2 and 1-3, the City/STWMA and the YVWD submitted proposed ground and surface water monitoring programs for their respective management zones (WEI, 2004; YVWD, 2004). On April 15, 2005, the Regional Board adopted resolutions R8-2005-0065 and R8-2005-0066, approving these monitoring programs (Regional Board, 2005a; 2005b). In 2009, The City/STWMA and the YVWD continued to execute these programs in accordance with the Basin Plan.

The objective of the Maximum Benefit Monitoring Programs is to collect surface water and groundwater as required by the Basin Plan. The Regional Board relies on these data to determine the ambient water quality and assimilative capacity of the affected management zones and to develop a wasteload allocation for San Timoteo Creek. These determinations are made periodically by the Regional Board and are not included in this report.

1.4 Report Organization

Section 1 Introduction: This section describes the background and objectives of the Maximum Benefit Monitoring Programs.

Section 2 Surface Water Monitoring Program: Section 2 describes the surface water monitoring programs of the City and of the YVWD and summarizes the data collected in 2009.

Section 3 Groundwater Monitoring Program: Section 3 describes the groundwater monitoring programs of the City and of the YVWD, summarizes the data collected in 2009, and describes the work completed to date as part of the workplan to expand the STMZ monitoring network.

Section 4 References: Section 4 provides the references consulted in the development of this report.

**Table 1-1
Maximum Benefit and Antidegradation Objectives for
Total Dissolved Solids and Nitrate-Nitrogen**

| | Beaumont Management Zone | San Timoteo Management Zone | Yucaipa Management Zone |
|-------------------------------------------|-------------------------------------|----------------------------------------|------------------------------------|
| <i>TDS Objectives (mg/L)</i> | | | |
| Max Benefit | 330 | 400 | 370 |
| Antidegradation | 230 | 300 | 320 |
| 1997 Ambient Water Quality | 290 | 300 | 330 |
| 2003 Ambient Water Quality | 260 | undetermined ¹ | 310 |
| 2006 Ambient Water Quality ² | 260 | undetermined ¹ | 310 |
| <i>Nitrate-Nitrogen Objectives (mg/L)</i> | | | |
| Max Benefit | 5.0 | 5.0 | 5.0 |
| Antidegradation | 1.5 | 2.7 | 4.2 |
| 1997 Ambient Water Quality | 2.6 | 2.9 | 5.2 |
| 2003 Ambient Water Quality | 2.0 | undetermined ¹ | 5.4 |
| 2006 Ambient Water Quality ² | 1.6 | undetermined ¹ | 5.3 |

1--Groundwater data for the San Timoteo Management Zone were insufficient to make an ambient water quality determination for the 2006 recomputation period (1987-2006).

2--The 2009 ambient water quality recomputation--for the period of 1990-2009 period--will be performed beginning in July 2010.

**Table 1-2
City of Beaumont/STWMA Maximum Benefit Commitments**

| Description of Commitment | Compliance Date (as soon as possible, but no later than) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Surface Water Monitoring Program</p> <ul style="list-style-type: none"> a. Submit Draft Monitoring Program to Regional Board b. Implement Monitoring Program c. Quarterly data report submittal d. Annual data report submittal | <ul style="list-style-type: none"> a. January 23, 2005 b. Within 30 days from date of Regional Board approval of monitoring plan c. April 15, July 15, October 15, January 15 d. April 15th |
| <p>2. Groundwater Monitoring Program</p> <ul style="list-style-type: none"> a. Submit Draft Monitoring Program to Regional Board b. Implement Monitoring Program c. Annual data report submittal | <ul style="list-style-type: none"> a. January 23, 2005 b. Within 30 days from date of Regional Board approval of monitoring plan c. April 15th |
| <p>3. Desalter(s) and Brine Disposal Facilities</p> <ul style="list-style-type: none"> a. Submit plan and schedule for construction of desalter(s) and brine disposal facilities. Facilities are to be operational as soon as possible but no later than 7 years from date of Regional Board approval of plan/schedule. b. Implement the plan and schedule | <ul style="list-style-type: none"> a. Within 6 months of either of the following: <ul style="list-style-type: none"> i. When Beaumont's effluent 5-year running average TDS exceeds 480 mg/L; and/or ii. When volume weighted average concentration in the Beaumont MZ of TDS exceeds 320 mg/L b. Within 30 days from date of Regional Board approval of monitoring plan |
| <p>4. Non-potable water supply</p> <p>Implement non-potable water supply system to serve water for irrigation purposes. The non-potable supply shall comply with a 10-year running average TDS concentration of 330 mg/L or less</p> | <p>December 23, 2014</p> |

**Table 1-2
City of Beaumont/STWMA Maximum Benefit Commitments**

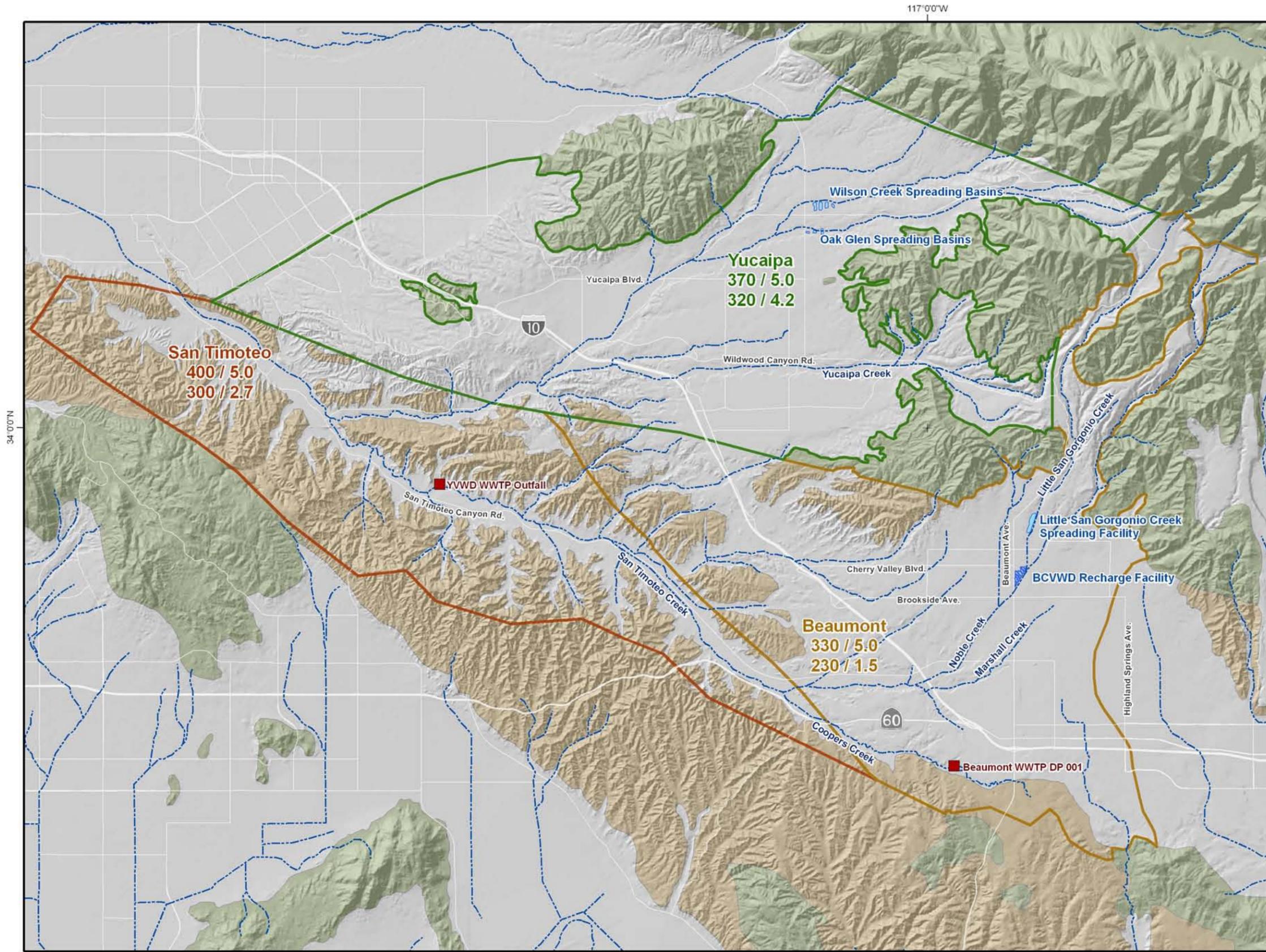
| Description of Commitment | Compliance Date (as soon as possible, but no later than) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>5. Recycled water recharge</p> <p>The recharge of recycled water in the Beaumont or San Timoteo Management Zones shall be limited to the amount that can be blended with other recharge sources to achieve a 5-year running average equal to or less than the "maximum benefit" objectives for TDS and nitrate-nitrogen for the relevant Management Zone(s).</p> <p>a. Submit baseline report of amount, locations, and TDS and nitrogen quality of stormwater/imported water recharge.</p> <p>b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of City of Beaumont/STWMA enhanced recharge facilities/programs.</p> | <p>Compliance must be achieved by end of 5th year after initiation of recycled water use/recharge operations.</p> <p>a. Prior to initiation of construction of basins/other facilities to support enhanced stormwater/imported water recharge.</p> <p>b. Annually, by January 15th, after initiation construction of facilities/implementation of programs to support enhanced recharge.</p> |
| <p>6. Ambient groundwater quality determination</p> | <p>July 1, 2005 and every 3 years thereafter</p> |
| <p>7. Replace denitrification facilities</p> <p>(necessary to comply with TIN wasteload allocation specified in Table 5-5)</p> | <p>Compliance with 6 mg/L TIN limitation to be achieved by (*3 years from effective date of this Basin Plan amendment*)</p> |
| <p>8. City of Beaumont recycled water quality improvement plan and schedule</p> <p>a. Submit plan and schedule</p> <p>b. Implement plan and schedule</p> | <p>a. 60 days after the TDS 12-month running average effluent quality equals or exceeds 490 mg/L for 3 consecutive months and/or the 12-month running average TIN concentration equals or exceeds 6 mg/L in any month (once replacement denitrification facilities are in place)</p> <p>b. Upon approval by Regional Board</p> |
| <p>9. Remove/reduce the discharge of Beaumont's effluent from the unlined portion of San Timoteo Creek</p> <p>a. Submit proposed plan/schedule</p> <p>b. Implement plan and schedule</p> | <p>a. January 23, 2005</p> <p>b. Upon Regional Board approval</p> |

**Table 1-3
Yucaipa Valley Water District Maximum Benefit Commitments**

| Description of Commitment | Compliance Date (as soon as possible, but no later than) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Surface Water Monitoring Program</p> <ul style="list-style-type: none"> a. Submit Draft Monitoring Program to Regional Board b. Implement Monitoring Program c. Quarterly data report submittal d. Annual data report submittal | <ul style="list-style-type: none"> a. January 23, 2005 b. Within 30 days from date of Regional Board approval of monitoring plan c. April 15, July 15, October 15, January 15 d. February 15th |
| <p>2. Groundwater Monitoring Program</p> <ul style="list-style-type: none"> a. Submit Draft Monitoring Program to Regional Board b. Implement Monitoring Program c. Annual data report submittal | <ul style="list-style-type: none"> a. January 23, 2005 b. Within 30 days from date of Regional Board approval of monitoring plan c. February 15th |
| <p>3. Desalter(s) and Brine Disposal Facilities</p> <ul style="list-style-type: none"> a. Submit plan and schedule for construction of desalter(s) and brine disposal facilities. Facilities are to be operational as soon as possible but no later than 7 years from date of Regional Board approval of plan/schedule. b. Implement the plan and schedule | <ul style="list-style-type: none"> a. Within 6 months of either of the following: <ul style="list-style-type: none"> i. When YVWD's effluent 5-year running average TDS exceeds 530 mg/L; and/or ii. When volume weighted average concentration in the Yucaipa MZ of TDS exceeds 360 mg/L b. Within 30 days from date of Regional Board approval of monitoring plan |
| <p>4. Non-potable water supply</p> <p>Implement non-potable water supply system to serve water for irrigation purposes. The non-potable supply shall comply with a 10-year running average TDS concentration of 370 mg/L or less</p> | <p>December 23, 2014</p> |

**Table 1-3
Yucaipa Valley Water District Maximum Benefit Commitments**

| Description of Commitment | Compliance Date (as soon as possible, but no later than) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>5. Recycled water recharge</p> <p>The recharge of recycled water in the Yucaipa or San Timoteo Management Zones shall be limited to the amount that can be blended with other recharge sources to achieve a 5-year running average equal to or less than the "maximum benefit" objectives for TDS and nitrate-nitrogen for the relevant Management Zone(s).</p> <p>a. Submit baseline report of amount, locations, and TDS and nitrogen quality of stormwater/imported water recharge.</p> <p>b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of YVWD enhanced recharge facilities/programs.</p> | <p>Compliance must be achieved by end of 5th year after initiation of recycled water use/recharge operations.</p> <p>a. Prior to initiation of construction of basins/other facilities to support enhanced stormwater/imported water recharge.</p> <p>b. Annually, by January 15th, after initiation construction of facilities/implementation of programs to support enhanced recharge.</p> |
| <p>6. Ambient groundwater quality determination</p> | <p>July 1, 2005 and every 3 years thereafter</p> |
| <p>7. Replace denitrification facilities</p> <p>(necessary to comply with TIN wasteload allocation specified in Table 5-5)</p> | <p>New facilities shall be operational no later than (<i>*3 years from effective date of this Basin Plan amendment*</i>)</p> |
| <p>8. YVWD recycled water quality improvement plan and schedule</p> <p>a. Submit plan and schedule</p> <p>b. Implement plan and schedule</p> | <p>a. 60 days after the TDS 12-month running average effluent quality equals or exceeds 530 mg/L for 3 consecutive months and/or the 12-month running average TIN concentration equals or exceeds 6 mg/L in any month (once replacement denitrification facilities are in place)</p> <p>b. Upon approval by Regional Board</p> |
| <p>9. Remove/reduce the discharge of YVWD effluent from the unlined portion of San Timoteo Creek</p> <p>a. Submit proposed plan/schedule</p> <p>b. Implement plan and schedule</p> | <p>a. January 23, 2005</p> <p>b. Upon Regional Board approval</p> |
| <p>10. Construct the Western Regional Interceptor for Dunlap Acres</p> <p>a. Submit proposed construction plan and schedule. The schedule shall assure the completion of construction as soon as possible but no later than January 1, 2010.</p> <p>b. Implement plan and schedule</p> | <p>a. January 23, 2005</p> <p>b. Upon Regional Board approval</p> |



Management Zone Labeling Key

Management Zone Name

Beaumont
 330 / 5.0 — TDS/Nitrate-N Maximum Benefit Objective (mg/L)
 200 / 1.7 — TDS/Nitrate-N Antidegradation Objective (mg/L)

Management Zone Boundary

Other Features

- Recycled Water Discharge Location
- Rivers and Streams
- Imported Water Recharge Facility

Geology

Water-Bearing Sediments

- Unconsolidated to Semi-consolidated Quaternary Alluvium
- Semi-consolidated San Timoteo Formation

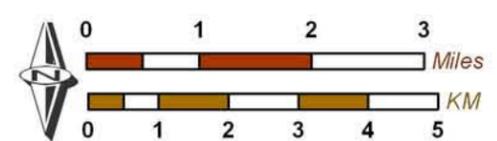
Consolidated Bedrock

- Undifferentiated Pre-Tertiary Igneous and Metamorphic Crystalline Rocks



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City of Beaumont & YVWD
 Maximum Benefit Monitoring Program
 2009 Annual Report

Management Zone Boundaries
 Maximum Benefit and Antidegradation Objectives for TDS and Nitrate-Nitrogen

Figure 1-1

Section 2 – Surface Water Monitoring Program

The objectives of the Maximum Benefit Surface Water Monitoring Programs (SWMPs) are: (i) to collect discharge and water quality data to assess compliance with surface water objectives, (ii) to assist in the development of wasteload allocations, (iii) to assess the salt balance of the underlying groundwater management zones, and (iv) to characterize the quality and magnitude of recharge waters.

2.1 City/STWMA Surface Water Monitoring Program

Table 2-1 lists the monitoring sites included in the City/STWMA's SWMP, the frequency of flow measurements and grab sample collection, and the laboratory analyses performed. Table 2-1 is based on Table 5-10b of the Basin Plan and Table 3 of the workplan for the City/STWMA's groundwater and surface water monitoring programs (WEI, 2004). The locations of the monitoring sites are shown in Figure 2-1.

Sites STWMA-4 and STWMA-5 are located in unlined sections of Little San Gorgonio Creek and Noble Creek, respectively, just before they combine as Noble Creek and flow past the BCVWD recharge facility located between Brookside Avenue and Cherry Valley Boulevard. Site STWMA-1 is located in an unlined section of San Timoteo Creek upstream of the confluence with Coopers Creek, where Noble Creek and Marshall Creek combine. Site STWMA-3 is located on Coopers Creek just downstream of the City's wastewater effluent discharge point. STWMA-2 is located on an unlined section of San Timoteo Creek approximately 6 miles downstream of STWMA-3. Per the Basin Plan, discharge measurements and water quality samples are collected at these stations once every two weeks. The samples are analyzed for TDS, total inorganic nitrogen (TIN), total organic carbon, turbidity, and general mineral parameters.

Sites STWMA-6, STWMA-7, and STWMA-8 are at active recharge facilities that overlie the BMZ: STWMA-7 is the stormwater recharge facility off Oak Glen Road in the far northeast section of the BMZ, STWMA-8 is the Little San Gorgonio Creek spreading facility located just north of the confluence of Little San Gorgonio Creek and Noble Creek, and STWMA-6 is the Noble Creek recharge facility. All three recharge facilities are owned by the BCVWD; however, the San Gorgonio Pass Water Agency (Pass Agency) currently leases and operates the Little San Gorgonio Creek facility. Per the Basin Plan, the volume of artificial recharge waters is to be measured and grab samples are to be collected and analyzed for TDS and nitrate-nitrogen. Given that the water recharged at sites STWMA-6 and STWMA-8 is from the same source—State Water Project (SWP) water imported by the Pass Agency—water quality samples are only collected at site STWMA-6. At this time, recharge volumes cannot be measured at STWMA-7 as the storm water recharge facility is not equipped for such measurements; thus, only water quality samples were collected.

The City/STWMA's SWMP also relies on discharge and water quality data collected by the City in compliance with its National Pollution Discharge Elimination System (NPDES) permit for the discharge of tertiary treated effluent from Beaumont Wastewater Treatment Plant No. 1 to Coopers Creek. Per its NPDES permit, the City monitors daily discharge volumes and collects monthly water quality samples for TDS and TIN. These data are compiled on a quarterly basis for use in the SWMP.

2.2 YVWD Surface Water Monitoring Program

Table 2-2 lists the monitoring sites included in the YVWD's SWMP, the frequency of flow measurements and grab sample collection, and the laboratory analyses performed. Table 2-2 is based on Table 5-9b of the Basin Plan and Table 3 of the workplan for the YVWD's groundwater and surface water monitoring programs (YVWD, 2004). The locations of the monitoring sites are shown in Figure 2-1.

Sites YVWD-A, YVWD-B, and YVWD-C are located in an unlined section of San Timoteo Creek that overlies the STMZ. Site YVWD-C was previously located further downstream within the San Bernardino County Flood Control District's flood control levy system. For safety reasons, the monitoring location was moved to a site just before San Timoteo Creek enters the flood control levy system. Site YVWD-D is located in a concrete-lined section of San Timoteo Creek that overlies the Bunker Hill-B Management Zone. Site YVWD-E is located just past the end of the concrete-lined section of San Timoteo Creek that overlies the Bunker Hill-B Management Zone. Site YVWD-F is located in an unlined section of the Santa Ana River upstream of the confluence with San Timoteo Creek and overlies the Bunker Hill-B Management Zone. Site YVWD-G is located in an unlined section of the Santa Ana River downstream of the confluence with San Timoteo Creek and overlies the Colton Management Zone. Per the Basin Plan, discharge measurements and water quality samples are collected at these stations once every two weeks. The water quality samples are analyzed for TDS, TIN, and turbidity.

In September 2009, the YVWD began utilizing the Wilson Creek and Oak Creek spreading basins to recharge imported SWP water purchased from the San Bernardino Valley Municipal Water District to the YMZ. The Wilson Creek spreading basins are located to the north of the YVWD's Crystal Creek water filtration facility at the northeast corner of Oak Glen Road and Bryant Street in the City of Yucaipa. The Oak Creek spreading basins are located directly to the south of the Crystal Creek facility at the southeast corner of Oak Glen Road and Bryant Street. Per the Basin Plan, the volume of artificial recharge of imported and storm waters is to be measured and grab samples are to be collected monthly and analyzed for TDS and nitrate-nitrogen. At this time, stormwater recharge at these facilities is considered negligible and is therefore not quantified or sampled for water quality.

The YVWD also relies on discharge and water quality data that it collects pursuant to its NPDES permit for discharging tertiary treated effluent from the Henry N. Wochholz Regional Water Recycling Facility to San Timoteo Creek. Per its NPDES permit, the YVWD monitors daily discharge volumes and collects monthly samples for TDS and TIN. These data are compiled on a quarterly basis for use in the SWMP.

2.3 Data Collected in 2009

Table 2-3 contains the SWMP results for discharge, TDS, and nitrate-nitrogen measured at all in-stream and treatment plant monitoring sites in 2009. Sites STWMA-4, STWMA-5, and STWMA-1 were dry during every sampling event in 2009; accordingly, data could not be collected, and these sites were excluded from Table 2-3. Periodically, direct discharge measurements could not be made and water quality samples could not be collected at sites YVWD-A, YVWD-C, YVWD-D, YVWD-F, and YVWD-G due to insufficient flow. Additionally, throughout the year, access to site YVWD-C was occasionally restricted due to construction at San Bernardino County's flood control facilities on San Timoteo Creek.

Table 2-4 contains the SWMP results for recharge, TDS, and nitrate-nitrogen measured in 2009 at all groundwater recharge facilities that overlie the BMZ. During 2009, a total of 7,154 acre-feet (acre-ft) of imported SWP water was recharged into the BMZ: 6,331 acre-ft at the BCVWD recharge facility on Noble Creek and 823 acre-ft at the Little San Geronio Creek Spreading Facility. The volume-weighted TDS and nitrate-nitrogen concentration of the recharged water was 277 mg/L and 0.43 mg/L, respectively.

Table 2-5 contains the 2009 SWMP results for recharge, TDS, and nitrate-nitrogen for all groundwater recharge facilities that overlie the YMZ. During 2009, a total of 1,770 acre-ft of imported SWP water was recharged into the YMZ: 1,740 acre-ft at the Wilson Creek Spreading Basins and 30 acre-ft at the Oak Glen Spreading Basins. The volume-weighted TDS and nitrate-nitrogen concentration of the recharged water was 236 mg/L and 0.27 mg/L, respectively.

All surface water data collected as part of the SWMP are checked for quality assurance/quality control (QA/QC) and are loaded into a relational database management system. The data collected in 2009 are contained in an Access database, which has been included with this report as Appendix A.

**Table 2-1
City of Beaumont/STWMA Surface Water Monitoring Sites for Discharge and Water Quality**

| Site ID | Site Name | Discharge | Monitoring Entity | Discharge Monitoring | | Water Quality Monitoring | | |
|----------------------|-----------------------------------------------------------------------------|---------------------------|---------------------------------|----------------------|-----------|--------------------------|-----------|------------------------------|
| | | | | Frequency | Period | Frequency | Period | Analyses |
| STWMA-1 | Above Confluence with Coopers Creek | San Timoteo Creek | City of Beaumont | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Minerals |
| STWMA-2 | Near Hinda @ T2SR2W Sec 35 | San Timoteo Creek | City of Beaumont | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Minerals |
| STWMA-3 | Above Confluence with San Timoteo Creek | Coopers Creek | City of Beaumont | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Minerals |
| STWMA-4 | Above Confluence with Noble Creek | Little San Gorgonio Creek | City of Beaumont | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Minerals |
| STWMA-5 | Above Confluence with Little San Gorgonio | Noble Creek | City of Beaumont | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Minerals |
| STWMA-6 | Noble Creek Recharge Facility -- Imported Water Recharge to BMZ | State Water Project Water | Cit of Beaumont and Pass Agency | Daily | Jan - Dec | Monthly | Jan - Dec | TDS, Nitrate-N |
| STWMA-7 | Stormwater Recharge to BMZ | Storm Water | City of Beaumont | Bi-weekly | Jan - Dec | Monthly | Jan - Dec | TDS, Nitrate-N |
| STWMA-8 ¹ | Little San Gorgonio Creek Spreading Ponds -- Imported Water Recharge to BMZ | State Water Project Water | Cit of Beaumont and Pass Agency | Daily | Jan - Dec | N/A | N/A | N/A |
| Beaumont WWTP | Beaumont Wastewater Treatment Plant No. 1 Effluent Discharge | Recycled Water | City of Beaumont | Daily | Jan - Dec | Monthly | Jan - Dec | TDS, TIN |

1 -- Water quality samples are not collected at site STWMA-8 because the recharge source water comes from the same source that is used at site STWMA-6, which is sampled monthly.

**Table 2-2
Yucaipa Valley Water District Surface Water Monitoring Sites for Discharge and Water Quality**

| Site ID | Site Name | Discharge | Monitoring Entity | Discharge Monitoring | | Water Quality Monitoring | | |
|-------------------------------|------------------------------------------------------------------------|---------------------------|-------------------|----------------------|-----------|--------------------------|-----------|------------------------------|
| | | | | Frequency | Period | Frequency | Period | Analyses |
| YVWD-A | Above YVWD Recycled Water Discharge | San Timoteo Creek | YVWD | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Physical |
| YVWD-B | Above Confluence with Yucaipa Creek | San Timoteo Creek | YVWD | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Physical |
| YVWD-C | Above San Bernardino County Flood Control Basins | San Timoteo Creek | YVWD | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Physical |
| YVWD-D | At Barton Road | San Timoteo Creek | YVWD | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Physical |
| YVWD-E | 11057500 Gage | San Timoteo Creek | USGS | Daily | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Physical |
| YVWD-F | At Waterman Avenue | Santa Ana River | YVWD | Bi-weekly | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Physical |
| YVWD-G | 11059300 Gage | Santa Ana River | USGS | Daily | Jan - Dec | Bi-weekly | Jan - Dec | TDS, TIN, & General Physical |
| YVWD WWTP | Henry N. Wochholz Regional Water Recycling Facility Effluent Discharge | Recycled Water | YVWD | Daily | Jan - Dec | Monthly | Jan - Dec | TDS and TIN |
| Wilson Creek Spreading Basins | Recharge to Yucaipa Management Zone | State Water Project Water | YVWD | Monthly | Jan - Dec | Monthly | Jan - Dec | TDS, Nitrate-N |
| Oak Glen Spreading Basins | Recharge to Yucaipa Management Zone | State Water Project Water | YVWD | Monthly | Jan - Dec | Monthly | Jan - Dec | TDS, Nitrate-N |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 1/1/2009 | 3.73 | | 2.7 | | | | | | | | | 5.52 | 440 | | | | | | | | | 8.7 | | | | | | | | | 9.3 | | |
| 1/2/2009 | 3.49 | | | | | | | | | | | 5.66 | | | | | | | | | | 7.2 | | | | | | | | | 8.9 | | |
| 1/3/2009 | 3.70 | | | | | | | | | | | 5.29 | | | | | | | | | | 6.6 | | | | | | | | | 9.9 | | |
| 1/4/2009 | 4.53 | | | | | | | | | | | 5.6 | | | | | | | | | | 8.6 | | | | | | | | | 9.4 | | |
| 1/5/2009 | 3.98 | | | | | | | | | | | 5.74 | | 4.1 | | | | | | | | 10 | | | | | | | | | 8.2 | | |
| 1/6/2009 | 3.95 | 400 | | | | | | | | | | 5.47 | | 3.8 | | | | | | | | 12 | | | | | | | | | 8 | | |
| 1/7/2009 | 3.83 | | | | | | | | | | | 5.43 | | | | | | | | | | 10 | | | | | | | | | 7 | | |
| 1/8/2009 | 4.03 | | | | | | | | 3.93 | 520 | 1.38 | 5.16 | | | 8.22 | 508 | 3.45 | 9.47 | 564 | 4.1 | na | 536 | 3.57 | 9.2 | 528 | 2.96 | 0 | -- | -- | 7.1 | 528 | 3.06 | |
| 1/9/2009 | 3.63 | | | | | | | | | | | 5.74 | | | | | | | | | | 8.2 | | | | | | | | | 6.9 | | |
| 1/10/2009 | 3.60 | | | | | | | | | | | 5.58 | | | | | | | | | | 7.7 | | | | | | | | | 6.7 | | |
| 1/11/2009 | 4.53 | | | | | | | | | | | 5.63 | | | | | | | | | | 8.1 | | | | | | | | | 6.8 | | |
| 1/12/2009 | 3.52 | | | | | | | | | | | 5.8 | | | | | | | | | | 8.5 | | | | | | | | | 7.4 | | |
| 1/13/2009 | 4.25 | | | | | | | | | | | 5.43 | | 7.1 | | | | | | | | 7 | | | | | | | | | 6.8 | | |
| 1/14/2009 | 3.94 | | | | | | | | | | | 5.25 | | | | | | | | | | 8.2 | | | | | | | | | 7 | | |
| 1/15/2009 | 3.95 | | | | | | | | 3.69 | 496 | 1.67 | 5.22 | | | 8.16 | 516 | 2.64 | 8.33 | 556 | 3.7 | na | 576 | 3.23 | 6.4 | 516 | 2.51 | 0 | -- | -- | 6.7 | 532 | 2.4 | |
| 1/16/2009 | 3.62 | | | | | | | | | | | 5.22 | | | | | | | | | | 4.1 | | | | | | | | | 6.2 | | |
| 1/17/2009 | 3.96 | | | | | | | | | | | 5.18 | | | | | | | | | | 4.4 | | | | | | | | | 5.9 | | |
| 1/18/2009 | 3.66 | | | | | | | | | | | 5.52 | | | | | | | | | | 5.7 | | | | | | | | | 6 | | |
| 1/19/2009 | 4.27 | | | 2.35 | 410 | 3 | 3.66 | 480 | 2.1 | | | 5.69 | | | | | | | | | | 5.8 | | | | | | | | | 6.2 | | |
| 1/20/2009 | 4.12 | | | | | | | | | | | 5.29 | | 1.8 | | | | | | | | 7.3 | | | | | | | | | 6.7 | | |
| 1/21/2009 | 3.90 | | | | | | | | | | | 5.94 | | | | | | | | | | 8 | | | | | | | | | 7.5 | | |
| 1/22/2009 | 3.53 | | | | | | | | | | | 4.68 | | | | | | | | | | 7.5 | | | | | | | | | 6.2 | | |
| 1/23/2009 | 3.34 | | | | | | | | | | | 5.21 | | | | | | | | | | 9.2 | | | | | | | | | 7 | | |
| 1/24/2009 | 3.57 | | | | | | | | | | | 5.58 | | | | | | | | | | 9.9 | | | | | | | | | 6.5 | | |
| 1/25/2009 | 3.64 | | | | | | | | | | | 5.64 | | | | | | | | | | 12 | | | | | | | | | 6.3 | | |
| 1/26/2009 | 5.83 | | | | | | | | | | | 5.67 | | | | | | | | | | 12 | | | | | | | | | 13 | | |
| 1/27/2009 | 4.03 | | | | | | | | | | | 5.25 | | 3.5 | | | | | | | | 9.7 | | | | | | | | | 6.9 | | |
| 1/28/2009 | 3.49 | | | | | | | | | | | 5.44 | | | | | | | | | | 7.2 | | | | | | | | | 6.3 | | |
| 1/29/2009 | 3.76 | | | 2.7 | 370 | 3.1 | 3.39 | 470 | 2.5 | 4.61 | 512 | 1.87 | 5.33 | | 6.99 | 508 | 3.89 | 8 | 560 | 4.41 | na | 592 | 4.22 | 5.1 | 552 | 3.67 | 0 | -- | -- | 5 | 584 | 3.73 | |
| 1/30/2009 | 3.66 | | | | | | | | | | | 5.32 | | | | | | | | | | 6.8 | | | | | | | | | 5.5 | | |
| 1/31/2009 | 4.19 | | | | | | | | | | | 5.33 | | | | | | | | | | 7.8 | | | | | | | | | 5.8 | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 2/1/2009 | 3.97 | | 3.22 | | | | | | | | | 5.75 | 450 | | | | | | | | | | 8.1 | | | | | | 5.8 | | | | |
| 2/2/2009 | 4.12 | | | | | | | | | | | 5.47 | | | | | | | | | | | 7.4 | | | | | | 5.8 | | | | |
| 2/3/2009 | 4.23 | 350 | | | | | | | | | | 5.39 | | 1.5 | | | | | | | | | 5.7 | | | | | | 5.4 | | | | |
| 2/4/2009 | 3.96 | | | | | | | | | | | 5.46 | | | | | | | | | | | 7.7 | | | | | | 5.6 | | | | |
| 2/5/2009 | 3.76 | | | | | | | | | | | 5.25 | | | | | | | | | | | 8.2 | | | | | | 7.8 | | | | |
| 2/6/2009 | 4.43 | | | | | | | | | | | 5.5 | | | | | | | | | | | 23 | | | | | | 180 | | | | |
| 2/7/2009 | 4.47 | | | | | | | | | | | 5.84 | | | | | | | | | | | 71 | | | | | | 471 | | | | |
| 2/8/2009 | 4.58 | | | | | | | | | | | 5.97 | | | | | | | | | | | 61 | | | | | | 209 | | | | |
| 2/9/2009 | 5.34 | | | | | | | | | | | 6.12 | | | | | | | | | | | 173 | | | | | | 950 | | | | |
| 2/10/2009 | 3.53 | | | | | | | | | | | 5.77 | | 1.4 | | | | | | | | | 105 | | | | | | 188 | | | | |
| 2/11/2009 | 3.83 | | | | | | | | | | | 5.16 | | | | | | | | | | | 34 | | | | | | 38 | | | | |
| 2/12/2009 | 4.72 | | | 4.75 | 380 | 2 | 3.87 | 450 | 2 | 3.66 | 540 | 1.76 | 5.29 | | 11.52 | 540 | 2.02 | na | 588 | 2.52 | na | 568 | 2.37 | 11 | 544 | 2.35 | 16.1 | 176 | 1.73 | 17 | 356 | 2.01 | |
| 2/13/2009 | 3.70 | | | | | | | | | | | 5.67 | | | | | | | | | | | 15 | | | | | | 93 | | | | |
| 2/14/2009 | 3.83 | | | | | | | | | | | 5.58 | | | | | | | | | | | 21 | | | | | | 24 | | | | |
| 2/15/2009 | 4.25 | | | | | | | | | | | 5.55 | | | | | | | | | | | 7.2 | | | | | | 13 | | | | |
| 2/16/2009 | 4.75 | | | | | | | | | | | 5.74 | | | | | | | | | | | 40 | | | | | | 469 | | | | |
| 2/17/2009 | 4.69 | | | | | | | | | | | 5.87 | | 1.4 | | | | | | | | | 97 | | | | | | 320 | | | | |
| 2/18/2009 | 3.16 | | | | | | | | | | | 3.05 | | | | | | | | | | | 44 | | | | | | 85 | | | | |
| 2/19/2009 | 4.31 | | | | | | | | | | | 0.64 | | | | | | | | | | | 5.5 | | | | | | 21 | | | | |
| 2/20/2009 | 4.08 | | | | | | | | | | | 5.25 | | | | | | | | | | | 3.3 | | | | | | 17 | | | | |
| 2/21/2009 | 2.85 | | | | | | | | | | | 5.47 | | | | | | | | | | | 3.5 | | | | | | 14 | | | | |
| 2/22/2009 | 4.65 | | | | | | | | | | | 5.44 | | | | | | | | | | | 2.8 | | | | | | 11 | | | | |
| 2/23/2009 | 4.36 | | | | | | | | | | | 5.41 | | | | | | | | | | | 5 | | | | | | 11 | | | | |
| 2/24/2009 | 3.73 | | | | | | | | | | | 5.36 | | 1.4 | | | | | | | | | 4.3 | | | | | | 12 | | | | |
| 2/25/2009 | 4.32 | | | | | | | | | | | 5.04 | | | | | | | | | | | 4 | | | | | | 10 | | | | |
| 2/26/2009 | 4.18 | | | 3.13 | 400 | 2.8 | 5.11 | 480 | 2.7 | 6.36 | 556 | 2.4 | 5.21 | | 11.84 | 540 | 2.8 | na | 676 | 3.4 | na | 580 | 3.5 | 5.6 | 568 | 3.5 | 11.2 | 168 | 1.5 | 9.1 | 432 | 2.5 | |
| 2/27/2009 | 3.80 | | | | | | | | | | | 5.49 | | | | | | | | | | | 4.8 | | | | | | 7.4 | | | | |
| 2/28/2009 | 3.81 | | | | | | | | | | | 5.47 | | | | | | | | | | | 5.4 | | | | | | 6.9 | | | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 3/1/2009 | 4.08 | | 1.4 | | | | | | | | | 5.61 | 530 | | | | | | | | | | 5.7 | | | | | | 6.9 | | | | |
| 3/2/2009 | 4.12 | | | | | | | | | | | 5.64 | | 1.6 | | | | | | | | | 6.4 | | | | | | 6.8 | | | | |
| 3/3/2009 | 4.26 | | | | | | | | | | | 5.66 | | | | | | | | | | | 6.9 | | | | | | 7 | | | | |
| 3/4/2009 | 3.93 | | | | | | | | | | | 5.66 | | | | | | | | | | | 8.2 | | | | | | 6.8 | | | | |
| 3/5/2009 | 3.46 | | | | | | | | | | | 5.43 | | | | | | | | | | | 9.1 | | | | | | 6.7 | | | | |
| 3/6/2009 | 4.53 | 410 | | | | | | | | | | 5.44 | | | | | | | | | | | 9.1 | | | | | | 6.6 | | | | |
| 3/7/2009 | 3.79 | | | | | | | | | | | 5.55 | | | | | | | | | | | 9.7 | | | | | | 6.8 | | | | |
| 3/8/2009 | 4.34 | | | | | | | | | | | 5.53 | | | | | | | | | | | 9.6 | | | | | | 6.7 | | | | |
| 3/9/2009 | 3.72 | | | | | | | | | | | 5.61 | | | | | | | | | | | 9.7 | | | | | | 6.5 | | | | |
| 3/10/2009 | 3.63 | | | | | | | | | | | 5.58 | | 1.6 | | | | | | | | | 9.8 | | | | | | 6.7 | | | | |
| 3/11/2009 | 3.90 | | | | | | | | | | | 5.33 | | | | | | | | | | | 9.7 | | | | | | 5.8 | | | | |
| 3/12/2009 | 3.90 | | | 1.95 | 390 | 2.7 | 3.7 | 460 | 4.1 | 5.31 | 564 | 3.7 | 5.36 | | 9.43 | 520 | 3.9 | 7.07 | 624 | 4.2 | na | 608 | 4.2 | 9.8 | 544 | 4.1 | 0 | -- | -- | 6.2 | 544 | 4 | |
| 3/13/2009 | 2.87 | | | | | | | | | | | 5.47 | | | | | | | | | | | 9.6 | | | | | | 5.1 | | | | |
| 3/14/2009 | 4.80 | | | | | | | | | | | 5.41 | | | | | | | | | | | 9.7 | | | | | | 5.2 | | | | |
| 3/15/2009 | 4.51 | | | | | | | | | | | 5.6 | | | | | | | | | | | 9.8 | | | | | | 6 | | | | |
| 3/16/2009 | 4.21 | | | | | | | | | | | 5.75 | | | | | | | | | | | 9.9 | | | | | | 6 | | | | |
| 3/17/2009 | 4.05 | | | | | | | | | | | 5.64 | | 5.4 | | | | | | | | | 9.7 | | | | | | 5.8 | | | | |
| 3/18/2009 | 3.76 | | | | | | | | | | | 5.33 | | | | | | | | | | | 9.8 | | | | | | 5.8 | | | | |
| 3/19/2009 | 3.73 | | | | | | | | | | | 5.39 | | | | | | | | | | | 9.7 | | | | | | 5.6 | | | | |
| 3/20/2009 | 4.07 | | | | | | | | | | | 5.46 | | | | | | | | | | | 9.7 | | | | | | 5.4 | | | | |
| 3/21/2009 | 4.04 | | | | | | | | | | | 5.6 | | | | | | | | | | | 9.8 | | | | | | 5.6 | | | | |
| 3/22/2009 | 3.80 | | | | | | | | | | | 5.64 | | | | | | | | | | | 11 | | | | | | 8.1 | | | | |
| 3/23/2009 | 4.28 | | | | | | | | | | | 5.61 | | | | | | | | | | | 9.7 | | | | | | 5 | | | | |
| 3/24/2009 | 4.30 | | | | | | | | | | | 5.49 | | 7.8 | | | | | | | | | 9.5 | | | | | | 4.4 | | | | |
| 3/25/2009 | 3.86 | | | | | | | | | | | 5.49 | | | | | | | | | | | 9.2 | | | | | | 5.9 | | | | |
| 3/26/2009 | 4.05 | | | 2.74 | 400 | 2.3 | 4.05 | 480 | 5 | 5.25 | 506 | 5 | 5.44 | | 9.42 | 500 | 6.5 | 8.12 | 568 | 5.9 | na | 556 | 5.3 | 9.1 | 504 | 4.8 | 0 | 208 | 2.61 | 7 | 364 | 3.1 | |
| 3/27/2009 | 4.09 | | | | | | | | | | | 5.36 | | | | | | | | | | | 8.1 | | | | | | 4.9 | | | | |
| 3/28/2009 | 4.45 | | | | | | | | | | | 5.36 | | | | | | | | | | | 7.9 | | | | | | 5.3 | | | | |
| 3/29/2009 | 3.79 | | | | | | | | | | | 5.56 | | | | | | | | | | | 7.7 | | | | | | 5.3 | | | | |
| 3/30/2009 | 3.98 | | | | | | | | | | | 5.67 | | | | | | | | | | | 7.9 | | | | | | 5.7 | | | | |
| 3/31/2009 | 4.01 | | | | | | | | | | | 5.27 | | | | | | | | | | | 8 | | | | | | 5.3 | | | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 4/1/2009 | 3.93 | | 2.2 | | | | | | | | | | 5.38 | 450 | | | | | | | | | 9.4 | | | | | | | 6.6 | | | |
| 4/2/2009 | 4.07 | | | | | | | | | | | | 5.44 | | | | | | | | | | 9.7 | | | | | | | 6.4 | | | |
| 4/3/2009 | 4.07 | | | | | | | | | | | | 5.1 | | | | | | | | | | 9.8 | | | | | | | 5.7 | | | |
| 4/4/2009 | 3.61 | | | | | | | | | | | | 5.47 | | | | | | | | | | 9.9 | | | | | | | 4.8 | | | |
| 4/5/2009 | 3.98 | | | | | | | | | | | | 5.61 | | | | | | | | | | 10 | | | | | | | 3.9 | | | |
| 4/6/2009 | 4.25 | | | | | | | | | | | | 5.33 | | | | | | | | | | 11 | | | | | | | 4.9 | | | |
| 4/7/2009 | 3.62 | | | | | | | | | | | | 5.39 | | 4.4 | | | | | | | | 11 | | | | | | | 4.2 | | | |
| 4/8/2009 | 3.89 | | | | | | | | | | | | 5.49 | | | | | | | | | | 11 | | | | | | | 4.2 | | | |
| 4/9/2009 | 3.84 | | | 2.2 | 390 | 2.1 | 3.44 | 460 | 3.6 | 3.36 | 504 | 4.18 | 5.12 | | | 7.41 | 504 | 4.94 | 7.12 | 552 | 4.78 | na | 560 | 4.45 | 11 | 540 | 3.1 | 0 | 356 | 3.05 | 4.8 | 356 | 3.28 |
| 4/10/2009 | 3.66 | | | | | | | | | | | | 5.3 | | | | | | | | | | 11 | | | | | | | 8.4 | | | |
| 4/11/2009 | 4.07 | | | | | | | | | | | | 5.64 | | | | | | | | | | 11 | | | | | | | 5.6 | | | |
| 4/12/2009 | 4.03 | | | | | | | | | | | | 5.94 | | | | | | | | | | 11 | | | | | | | 4.3 | | | |
| 4/13/2009 | 3.97 | 420 | | | | | | | | | | | 5.56 | | | | | | | | | | 11 | | | | | | | 4.3 | | | |
| 4/14/2009 | 3.93 | | | | | | | | | | | | 5.8 | | 2.5 | | | | | | | | 11 | | | | | | | 4.1 | | | |
| 4/15/2009 | 3.74 | | | | | | | | | | | | 5.38 | | | | | | | | | | 11 | | | | | | | 4.3 | | | |
| 4/16/2009 | 3.85 | | | | | | | | | | | | 5.36 | | | | | | | | | | 10 | | | | | | | 4.1 | | | |
| 4/17/2009 | 3.66 | | | | | | | | | | | | 5.24 | | | | | | | | | | 10 | | | | | | | 4 | | | |
| 4/18/2009 | 3.86 | | | | | | | | | | | | 5.49 | | | | | | | | | | 10 | | | | | | | 3.5 | | | |
| 4/19/2009 | 4.08 | | | | | | | | | | | | 5.58 | | | | | | | | | | 10 | | | | | | | 3.4 | | | |
| 4/20/2009 | 3.98 | | | | | | | | | | | | 5.47 | | | | | | | | | | 10 | | | | | | | 3.1 | | | |
| 4/21/2009 | 3.65 | | | | | | | | | | | | 5.36 | | 2.3 | | | | | | | | 9.7 | | | | | | | 2.4 | | | |
| 4/22/2009 | 3.88 | | | | | | | | | | | | 5.47 | | | | | | | | | | 8.7 | | | | | | | 1.4 | | | |
| 4/23/2009 | 3.59 | | | 3.22 | 390 | 0.74 | 2.45 | 460 | 0.7 | 2.17 | 508 | 0.99 | 5.53 | | | 6.83 | 496 | 4.3 | 5.44 | 552 | 4.75 | na | 544 | 4.59 | 8.6 | 504 | 2.77 | 0 | -- | -- | 1.5 | 516 | 2.56 |
| 4/24/2009 | 3.49 | | | | | | | | | | | | 5.39 | | | | | | | | | | 9 | | | | | | | 3 | | | |
| 4/25/2009 | 3.87 | | | | | | | | | | | | 5.44 | | | | | | | | | | 8.4 | | | | | | | 4.5 | | | |
| 4/26/2009 | 4.22 | | | | | | | | | | | | 5.58 | | | | | | | | | | 7.4 | | | | | | | 3.1 | | | |
| 4/27/2009 | 3.89 | | | | | | | | | | | | 5.77 | | | | | | | | | | 5.8 | | | | | | | 3 | | | |
| 4/28/2009 | 3.86 | | | | | | | | | | | | 5.53 | | 1.2 | | | | | | | | 2.9 | | | | | | | 2.5 | | | |
| 4/29/2009 | 3.71 | | | | | | | | | | | | 5.66 | | | | | | | | | | 3.1 | | | | | | | 3.8 | | | |
| 4/30/2009 | 3.69 | | | | | | | | | | | | 5.58 | | | | | | | | | | 3.8 | | | | | | | 3.5 | | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | | | | | | | | | | | | | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|-----|------|------|-----|------|------|------|------|------|------|-----|--|--|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | | | | | | | | | | | | | |
| 5/1/2009 | 3.39 | | 1 | | | | | | | | | | | | 5.43 | | | | | | | | | | | | | | | | | | 2.7 | | | | | | | | | | | | | |
| 5/2/2009 | 3.91 | | | | | | | | | | | | | | 5.52 | | | | | | | | | | | | | | | | | | | 1.9 | | | | | | | | | | | | |
| 5/3/2009 | 4.16 | | | | | | | | | | | | | | 5.77 | | | | | | | | | | | | | | | | | | | | 2.3 | | | | | | | | | | | |
| 5/4/2009 | 3.98 | | | | | | | | | | | | | | 5.53 | 450 | | | | | | | | | | | | | | | | | | | 1.8 | | | | | | | | | | | |
| 5/5/2009 | 3.78 | 390 | | | | | | | | | | | | | 5.5 | | 5.5 | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | |
| 5/6/2009 | 3.91 | | | | | | | | | | | 2.71 | 516 | 0.69 | 5.58 | | | 7.75 | 492 | 4.71 | 7.28 | 588 | 4.28 | 3.78 | 544 | 4.5 | 2.6 | 540 | 3.58 | 0 | -- | -- | 0.64 | 504 | 3.56 | | | | | | | | | | | |
| 5/7/2009 | 3.81 | | | 2.62 | 400 | 1.6 | 2.59 | 460 | 0.9 | | | | | | 5.77 | | | | | | | | | | | | | | | | | | | | 0.47 | | | | | | | | | | | |
| 5/8/2009 | 3.67 | | | | | | | | | | | | | | 5.53 | | | | | | | | | | | | | | | | | | | | | 0.09 | | | | | | | | | | |
| 5/9/2009 | 4.10 | | | | | | | | | | | | | | 5.56 | | | | | | | | | | | | | | | | | | | | | | 0.1 | | | | | | | | | |
| 5/10/2009 | 4.22 | | | | | | | | | | | | | | 5.83 | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | |
| 5/11/2009 | 3.76 | | | | | | | | | | | | | | 5.49 | | | | | | | | | | | | | | | | | | | | | | | 0.18 | | | | | | | | |
| 5/12/2009 | 4.02 | | | | | | | | | | | | | | 5.86 | | 0.8 | | | | | | | | | | | | | | | | | | | | | 0.86 | | | | | | | | |
| 5/13/2009 | 3.79 | | | | | | | | | | | | | | 5.97 | | | | | | | | | | | | | | | | | | | | | | | | 0.86 | | | | | | | |
| 5/14/2009 | 3.74 | | | | | | | | | | | | | | 4.76 | | | | | | | | | | | | | | | | | | | | | | | | 0.59 | | | | | | | |
| 5/15/2009 | 3.49 | | | | | | | | | | | | | | 5.72 | | | | | | | | | | | | | | | | | | | | | | | | | 0.22 | | | | | | |
| 5/16/2009 | 3.97 | | | | | | | | | | | | | | 5.77 | | | | | | | | | | | | | | | | | | | | | | | | | 0.5 | | | | | | |
| 5/17/2009 | 3.91 | | | | | | | | | | | | | | 5.69 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | |
| 5/18/2009 | 4.27 | | | | | | | | | | | | | | 5.67 | | | | | | | | | | | | | | | | | | | | | | | | | 0.09 | | | | | | |
| 5/19/2009 | 3.90 | | | | | | | | | | | | | | 5.72 | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | |
| 5/20/2009 | 3.85 | | | | | | | | | | | | | | 5.58 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | |
| 5/21/2009 | 3.76 | | | 3.04 | 400 | 2.1 | 1.85 | 440 | 1.7 | 2.31 | 484 | 1.95 | 5.58 | | | | 5.71 | 504 | 2.2 | 4.44 | 560 | 3 | 3.18 | 544 | 3.2 | 1 | 528 | 1.81 | 0 | -- | -- | 0.01 | 530 | 1.9 | | | | | | | | | | | | |
| 5/22/2009 | 3.45 | | | | | | | | | | | | | | 5.55 | | | | | | | | | | | | | | | | | | | | | | | | | | 0.23 | | | | | |
| 5/23/2009 | 3.87 | | | | | | | | | | | | | | 5.55 | | | | | | | | | | | | | | | | | | | | | | | | | | 0.34 | | | | | |
| 5/24/2009 | 3.63 | | | | | | | | | | | | | | 5.64 | | | | | | | | | | | | | | | | | | | | | | | | | | 0.44 | | | | | |
| 5/25/2009 | 4.43 | | | | | | | | | | | | | | 5.81 | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.29 | | | | |
| 5/26/2009 | 3.67 | | | | | | | | | | | | | | 5.95 | | 1.2 | | | | | | | | | | | | | | | | | | | | | | | | | 1.6 | | | | |
| 5/27/2009 | 3.70 | | | | | | | | | | | | | | 5.61 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1.3 | | | | |
| 5/28/2009 | 3.69 | | | | | | | | | | | | | | 5.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1.3 | | | | |
| 5/29/2009 | 3.42 | | | | | | | | | | | | | | 5.72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.73 | | | |
| 5/30/2009 | 3.88 | | | | | | | | | | | | | | 5.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1.5 | | | |
| 5/31/2009 | 4.16 | | | | | | | | | | | | | | 5.67 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2.1 | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 6/1/2009 | 3.63 | | 2.6 | | | | | | | | | 5.6 | | | | | | | | | | 3.5 | | | | | | 1.9 | | | | | |
| 6/2/2009 | 4.13 | | | | | | | | | | | 5.63 | | 0.8 | | | | | | | | 3.2 | | | | | | 1.5 | | | | | |
| 6/3/2009 | 3.98 | | | | | | | | | | | 5.87 | | | | | | | | | | 3.6 | | | | | | 1.8 | | | | | |
| 6/4/2009 | 3.77 | | | 1.93 | 400 | 1.4 | nm | 440 | 0.9 | 2.5 | 464 | 0.79 | 2.91 | | | 6.22 | 528 | 1.8 | 0.83 | 560 | 3.13 | na | 536 | 3.1 | 4.1 | 520 | 2.08 | 0 | -- | -- | 2.2 | 516 | 1.84 |
| 6/5/2009 | 3.56 | 380 | | | | | | | | | | | 3.33 | | | | | | | | | 5.1 | | | | | | 2.2 | | | | | |
| 6/6/2009 | 3.66 | | | | | | | | | | | | 5.32 | | | | | | | | | 5.5 | | | | | | 2.1 | | | | | |
| 6/7/2009 | 4.12 | | | | | | | | | | | | 5.7 | | | | | | | | | 5.8 | | | | | | 1.8 | | | | | |
| 6/8/2009 | 4.15 | | | | | | | | | | | | 5.75 | 450 | | | | | | | | 6.2 | | | | | | 1.8 | | | | | |
| 6/9/2009 | 3.91 | | | | | | | | | | | | 5.5 | | 1 | | | | | | | 6.2 | | | | | | 1.5 | | | | | |
| 6/10/2009 | 3.72 | | | | | | | | | | | | 4.46 | | | | | | | | | 7.1 | | | | | | 1.7 | | | | | |
| 6/11/2009 | 3.58 | | | | | | | | | | | | 5.32 | | | | | | | | | 7.6 | | | | | | 1.9 | | | | | |
| 6/12/2009 | 3.74 | | | | | | | | | | | | 5.33 | | | | | | | | | 7.9 | | | | | | 2 | | | | | |
| 6/13/2009 | 4.01 | | | | | | | | | | | | 5.49 | | | | | | | | | 8.8 | | | | | | 2.4 | | | | | |
| 6/14/2009 | 3.93 | | | | | | | | | | | | 5.43 | | | | | | | | | 8.4 | | | | | | 2.4 | | | | | |
| 6/15/2009 | 3.88 | | | | | | | | | | | | 5.47 | | | | | | | | | 8.4 | | | | | | 2.4 | | | | | |
| 6/16/2009 | 4.02 | | | | | | | | | | | | 5.35 | | 4.9 | | | | | | | 8 | | | | | | 1.3 | | | | | |
| 6/17/2009 | 4.08 | | | | | | | | | 2.7 | 442 | 0.78 | 5.35 | | | 7.15 | 516 | 3.2 | na | 588 | 3.1 | na | 512 | 3.7 | 7 | 508 | 2.4 | 0 | -- | -- | 0 | 508 | 2.3 |
| 6/18/2009 | 3.54 | | | 2.33 | 420 | 0.74 | 2.6 | 450 | 0.63 | | | | 5.3 | | | | | | | | | 4.7 | | | | | | 0 | | | | | |
| 6/19/2009 | 3.82 | | | | | | | | | | | | 5.53 | | | | | | | | | 3.2 | | | | | | 0 | | | | | |
| 6/20/2009 | 3.79 | | | | | | | | | | | | 5.61 | | | | | | | | | 2.8 | | | | | | 0 | | | | | |
| 6/21/2009 | 3.92 | | | | | | | | | | | | 5.72 | | | | | | | | | 3.5 | | | | | | 0 | | | | | |
| 6/22/2009 | 3.85 | | | | | | | | | | | | 5.5 | | | | | | | | | 2.9 | | | | | | 0 | | | | | |
| 6/23/2009 | 3.92 | | | | | | | | | | | | 5.53 | | 2.7 | | | | | | | 2.4 | | | | | | 0.04 | | | | | |
| 6/24/2009 | 3.82 | | | | | | | | | | | | 5.94 | | | | | | | | | 2 | | | | | | 0 | | | | | |
| 6/25/2009 | 3.62 | | | | | | | | | | | | 4.9 | | | | | | | | | 1.4 | | | | | | 0 | | | | | |
| 6/26/2009 | 3.59 | | | | | | | | | | | | 5.41 | | | | | | | | | 1.1 | | | | | | 0 | | | | | |
| 6/27/2009 | 3.94 | | | | | | | | | | | | 5.46 | | | | | | | | | 1.6 | | | | | | 0 | | | | | |
| 6/28/2009 | 3.81 | | | | | | | | | | | | 5.78 | | | | | | | | | 2.3 | | | | | | 0.02 | | | | | |
| 6/29/2009 | 4.08 | | | | | | | | | | | | 5.63 | | | | | | | | | 2.2 | | | | | | 0 | | | | | |
| 6/30/2009 | 3.76 | | | | | | | | | | | | 5.6 | | 2.9 | | | | | | | 2.5 | | | | | | 0 | | | | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 7/1/2009 | 3.82 | | 1 | | | | | | | | | | 5.22 | 450 | | | | | | | | | 2.4 | | | | | | | | 0 | | |
| 7/2/2009 | 3.59 | | | 2.67 | 400 | 0.54 | 1.12 | 430 | 0.47 | | | | 5.58 | | | | | | | | | | 2.8 | | | | | | | | 0.37 | | |
| 7/3/2009 | 3.88 | | | | | | | | | | | | 5.64 | | | | | | | | | | 2.4 | | | | | | | | 0 | | |
| 7/4/2009 | 3.47 | | | | | | | | | | | | 5.81 | | | | | | | | | | 2.5 | | | | | | | | 0 | | |
| 7/5/2009 | 3.87 | | | | | | | | | | | | 5.53 | | | | | | | | | | 3 | | | | | | | | 0 | | |
| 7/6/2009 | 3.81 | | | | | | | | | | | | 5.77 | | 2.9 | | | | | | | | 2.7 | | | | | | | | 0.09 | | |
| 7/7/2009 | 3.58 | | | | | | | | | | | | 5.74 | | 4.2 | | | | | | | | 3.2 | | | | | | | | 0.02 | | |
| 7/8/2009 | 3.72 | | | | | | | | | 0 | 472 | 0.25 | 5.63 | | | 5.94 | 488 | 3 | 0 | 552 | 3 | na | 42 | 2.5 | 2.5 | 524 | 2.4 | 0 | -- | -- | 0 | 508 | 2.4 |
| 7/9/2009 | 3.61 | | | | | | | | | | | | 5.67 | | | | | | | | | | 2.1 | | | | | | | | 0 | | |
| 7/10/2009 | 3.58 | 360 | | | | | | | | | | | 5.58 | | | | | | | | | | 1.7 | | | | | | | | 0 | | |
| 7/11/2009 | 3.83 | | | | | | | | | | | | 5.77 | | | | | | | | | | 1.7 | | | | | | | | 0 | | |
| 7/12/2009 | 3.63 | | | | | | | | | | | | 5.66 | | | | | | | | | | 1.3 | | | | | | | | 0 | | |
| 7/13/2009 | 4.11 | | | | | | | | | | | | 5.75 | | | | | | | | | | 1.6 | | | | | | | | 0 | | |
| 7/14/2009 | 3.68 | | | | | | | | | | | | 5.6 | | 3.4 | | | | | | | | 1.8 | | | | | | | | 0 | | |
| 7/15/2009 | 3.74 | | | | | | | | | 0 | -- | -- | 5.38 | | | 3.28 | 444 | 3 | 0 | 596 | 1.7 | na | 504 | 4.3 | 2 | 444 | 1.8 | 0 | -- | -- | 0 | 460 | 1.8 |
| 7/16/2009 | 3.63 | | | 1.93 | 390 | 0.95 | 1.42 | 450 | 0.56 | | | | 5.52 | | | | | | | | | | 1.6 | | | | | | | | 0 | | |
| 7/17/2009 | 3.78 | | | | | | | | | | | | 5.66 | | | | | | | | | | 1.5 | | | | | | | | 0 | | |
| 7/18/2009 | 3.76 | | | | | | | | | | | | 5.66 | | | | | | | | | | 1.3 | | | | | | | | 0 | | |
| 7/19/2009 | 3.86 | | | | | | | | | | | | 5.67 | | | | | | | | | | 1.5 | | | | | | | | 0 | | |
| 7/20/2009 | 4.24 | | | | | | | | | | | | 5.63 | | | | | | | | | | 2 | | | | | | | | 0 | | |
| 7/21/2009 | 3.68 | | | | | | | | | | | | 5.8 | | 2.4 | | | | | | | | 0.99 | | | | | | | | 0 | | |
| 7/22/2009 | 3.74 | | | | | | | | | | | | 5.53 | | | | | | | | | | 1.3 | | | | | | | | 0 | | |
| 7/23/2009 | 3.96 | | | | | | | | | | | | 5.5 | | | | | | | | | | 1.3 | | | | | | | | 0 | | |
| 7/24/2009 | 3.62 | | | | | | | | | | | | 5.58 | | | | | | | | | | 1.3 | | | | | | | | 0 | | |
| 7/25/2009 | 3.52 | | | | | | | | | | | | 5.61 | | | | | | | | | | 1.7 | | | | | | | | 0 | | |
| 7/26/2009 | 4.07 | | | | | | | | | | | | 5.74 | | | | | | | | | | 1.2 | | | | | | | | 0 | | |
| 7/27/2009 | 3.88 | | | | | | | | | | | | 5.78 | | | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 7/28/2009 | 3.82 | | | | | | | | | | | | 5.63 | | | | | | | | | | 0.99 | | | | | | | | 0 | | |
| 7/29/2009 | 3.87 | | | | | | | | | 0 | -- | -- | 5.91 | | | 2.86 | 512 | 13.8 | 0 | 592 | 9.14 | 0 | 580 | 8.44 | 0.97 | 452 | 2.48 | 0 | -- | -- | 0 | 472 | 2.48 |
| 7/30/2009 | 3.83 | | | 2.31 | 400 | 1 | 1.56 | 400 | 0.5 | | | | 4.32 | | | | | | | | | | 1.4 | | | | | | | | 0 | | |
| 7/31/2009 | 3.94 | | | | | | | | | | | | 6.17 | | | | | | | | | | 1.3 | | | | | | | | 0 | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 8/1/2009 | 3.76 | | 0.9 | | | | | | | | | | 5.24 | | | | | | | | | | 1.3 | | | | | | | | 0 | | |
| 8/2/2009 | 4.12 | | | | | | | | | | | | 6.05 | | | | | | | | | | 1.2 | | | | | | | | 0 | | |
| 8/3/2009 | 4.04 | | | | | | | | | | | | 5.8 | 450 | | | | | | | | | 1.3 | | | | | | | | 0 | | |
| 8/4/2009 | 3.90 | | | | | | | | | | | | 5.64 | | 2.7 | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 8/5/2009 | 3.73 | | | | | | | | | | | | 5.43 | | | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 8/6/2009 | 3.58 | | | | | | | | | | | | 5.6 | | | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 8/7/2009 | 3.71 | 440 | | | | | | | | | | | 5.55 | | | | | | | | | | 1.2 | | | | | | | | 0 | | |
| 8/8/2009 | 3.77 | | | | | | | | | | | | 5.69 | | | | | | | | | | 0.96 | | | | | | | | 0 | | |
| 8/9/2009 | 3.93 | | | | | | | | | | | | 5.83 | | | | | | | | | | 0.6 | | | | | | | | 0 | | |
| 8/10/2009 | 3.96 | | | | | | | | | | | | 6.01 | | | | | | | | | | 0.71 | | | | | | | | 0 | | |
| 8/11/2009 | 4.10 | | | | | | | | | | | | 5.32 | | 3.6 | | | | | | | | 0.91 | | | | | | | | 0 | | |
| 8/12/2009 | 3.73 | | | | | | | | | | | | 6.23 | | | | | | | | | | 0.91 | | | | | | | | 0 | | |
| 8/13/2009 | 3.75 | | | 2.99 | 420 | 0.93 | 1.16 | 400 | 0.45 | 0 | -- | -- | 4.9 | | 2.4 | 0 | 492 | 2.3 | 0 | 592 | 1.9 | 0 | 572 | 2.79 | 1.2 | 492 | 0.98 | 0 | -- | -- | 0 | 508 | 1.07 |
| 8/14/2009 | 3.50 | | | | | | | | | | | | 5.7 | | | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 8/15/2009 | 3.98 | | | | | | | | | | | | 5.35 | | | | | | | | | | 0.8 | | | | | | | | 0 | | |
| 8/16/2009 | 4.10 | | | | | | | | | | | | 5.43 | | | | | | | | | | 0.87 | | | | | | | | 0 | | |
| 8/17/2009 | 3.82 | | | | | | | | | | | | 6.28 | | | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 8/18/2009 | 3.73 | | | | | | | | | | | | 6.29 | | 3.9 | | | | | | | | 1 | | | | | | | | 0 | | |
| 8/19/2009 | 3.76 | | | | | | | | | | | | 5.38 | | | | | | | | | | 1 | | | | | | | | 0 | | |
| 8/20/2009 | 3.94 | | | | | | | | | | | | 5.64 | | | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 8/21/2009 | 3.61 | | | | | | | | | | | | 5.53 | | | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 8/22/2009 | 3.81 | | | | | | | | | | | | 5.64 | | | | | | | | | | 0.85 | | | | | | | | 0 | | |
| 8/23/2009 | 4.22 | | | | | | | | | | | | 5.64 | | | | | | | | | | 0.9 | | | | | | | | 0 | | |
| 8/24/2009 | 3.99 | | | | | | | | | | | | 5.89 | | | | | | | | | | 1.1 | | | | | | | | 0 | | |
| 8/25/2009 | 3.85 | | | | | | | | | | | | 5.64 | | 6.9 | | | | | | | | 0.93 | | | | | | | | 0 | | |
| 8/26/2009 | 3.99 | | | | | | | | | 0 | -- | -- | 5.63 | | | 5.23 | 448 | 3.4 | 0 | -- | -- | 0.76 | 500 | 3.83 | 0.89 | -- | -- | 0 | -- | -- | 0 | -- | -- |
| 8/27/2009 | 3.73 | | | 3.13 | 400 | 1 | 0.78 | 440 | 0.36 | | | | 4.6 | | | | | | | | | | 0.67 | | | | | | | | 0 | | |
| 8/28/2009 | 3.50 | | | | | | | | | | | | 6.31 | | | | | | | | | | 0.61 | | | | | | | | 0 | | |
| 8/29/2009 | 3.60 | | | | | | | | | | | | 5.35 | | | | | | | | | | 0.54 | | | | | | | | 0 | | |
| 8/30/2009 | 4.21 | | | | | | | | | | | | 5.74 | | | | | | | | | | 0.74 | | | | | | | | 0 | | |
| 8/31/2009 | 4.04 | | | | | | | | | | | | 5.92 | | | | | | | | | | 0.85 | | | | | | | | 0 | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | | |
|-----------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | |
| 9/1/2009 | 4.19 | 390 | 1.8 | | | | | | | | | 5.44 | | | | | | | | | | 0.88 | | | | | | | | | | 0 | | |
| 9/2/2009 | 5.18 | | | | | | | | | | | 5.6 | | | | | | | | | | 0.89 | | | | | | | | | | 0 | | |
| 9/3/2009 | 3.30 | | | | | | | | | | | 5.74 | | | | | | | | | | 0.81 | | | | | | | | | | 0 | | |
| 9/4/2009 | 3.98 | | | | | | | | | | | 5.74 | | | | | | | | | | 0.74 | | | | | | | | | | 0 | | |
| 9/5/2009 | 4.27 | | | | | | | | | | | 5.49 | | | | | | | | | | 0.99 | | | | | | | | | | 0 | | |
| 9/6/2009 | 3.83 | | | | | | | | | | | 5.49 | | | | | | | | | | 0.87 | | | | | | | | | | 0 | | |
| 9/7/2009 | 4.28 | | | | | | | | | | | 5.77 | 430 | | | | | | | | | 1.1 | | | | | | | | | | 0 | | |
| 9/8/2009 | 4.28 | | | | | | | | | | | 5.86 | | 3.6 | | | | | | | | 1.3 | | | | | | | | | | 0 | | |
| 9/9/2009 | 3.95 | | | | | | | | | | | 6.01 | | | | | | | | | | 0.68 | | | | | | | | | | 0 | | |
| 9/10/2009 | 4.21 | | | 3.33 | 410 | 1.1 | 0.71 | 470 | 0.32 | 0 | -- | -- | 4.9 | | | nm | 532 | 1.74 | nm | 624 | 2.11 | nm | 552 | 2.26 | 0.72 | -- | -- | 0 | -- | -- | 0 | 420 | 1.76 | |
| 9/11/2009 | 3.94 | | | | | | | | | | | 5.8 | | | | | | | | | | 0.69 | | | | | | | | | | 0 | | |
| 9/12/2009 | 4.05 | | | | | | | | | | | 5.38 | | | | | | | | | | 0.85 | | | | | | | | | | 0 | | |
| 9/13/2009 | 4.10 | | | | | | | | | | | 5.75 | | | | | | | | | | 0.86 | | | | | | | | | | 0 | | |
| 9/14/2009 | 4.12 | | | | | | | | | | | 5.94 | | | | | | | | | | 0.8 | | | | | | | | | | 0 | | |
| 9/15/2009 | 3.78 | | | | | | | | | | | 5.64 | | 4.9 | | | | | | | | 1.1 | | | | | | | | | | 0 | | |
| 9/16/2009 | 4.45 | | | | | | | | | | | 5.55 | | | | | | | | | | 0.9 | | | | | | | | | | 0 | | |
| 9/17/2009 | 3.55 | | | | | | | | | | | 5.46 | | | | | | | | | | 3.6 | | | | | | | | | | 0 | | |
| 9/18/2009 | 4.36 | | | | | | | | | | | 5.43 | | | | | | | | | | 6.2 | | | | | | | | | | 0 | | |
| 9/19/2009 | 4.20 | | | | | | | | | | | 5.58 | | | | | | | | | | 4.4 | | | | | | | | | | 0 | | |
| 9/20/2009 | 4.36 | | | | | | | | | | | 5.72 | | | | | | | | | | 1.8 | | | | | | | | | | 0 | | |
| 9/21/2009 | 4.39 | | | | | | | | | | | 5.81 | | | | | | | | | | 0.86 | | | | | | | | | | 0 | | |
| 9/22/2009 | 4.34 | | | | | | | | | | | 5.56 | | 3.1 | | | | | | | | 0.43 | | | | | | | | | | 0 | | |
| 9/23/2009 | 4.08 | | | | | | | | | 0 | -- | -- | 6.12 | | | 4.23 | 436 | 2.65 | na | na | na | 0 | 512 | 2.76 | 0.44 | 384 | 0.72 | 0 | -- | -- | 0 | -- | -- | |
| 9/24/2009 | 4.04 | | | 3.02 | 380 | 2.1 | 0.94 | 440 | 1.5 | | | 4.6 | | | | | | | | | | 0.49 | | | | | | | | | | 0 | | |
| 9/25/2009 | 3.84 | | | | | | | | | | | 5.91 | | | | | | | | | | 0.42 | | | | | | | | | | 0 | | |
| 9/26/2009 | 4.37 | | | | | | | | | | | 5.25 | | | | | | | | | | 0.58 | | | | | | | | | | 0 | | |
| 9/27/2009 | 4.26 | | | | | | | | | | | 5.69 | | | | | | | | | | 0.36 | | | | | | | | | | 0 | | |
| 9/28/2009 | 4.26 | | | | | | | | | | | 5.72 | | | | | | | | | | 0.5 | | | | | | | | | | 0 | | |
| 9/29/2009 | 4.10 | | | | | | | | | | | 5.83 | | 2.6 | | | | | | | | 0.83 | | | | | | | | | | 0 | | |
| 9/30/2009 | 4.05 | | | | | | | | | | | 5.95 | | | | | | | | | | 0.84 | | | | | | | | | | 0 | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|------------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 10/1/2009 | 3.92 | 480 | 2.1 | | | | | | | | | 4.42 | 400 | | | | | | | | | 0.87 | | | | | | | | | 0 | | |
| 10/2/2009 | 3.79 | | | | | | | | | | | 5.91 | | | | | | | | | | 0.85 | | | | | | | | | 0 | | |
| 10/3/2009 | 4.07 | | | | | | | | | | | 5.5 | | | | | | | | | | 0.87 | | | | | | | | | 0 | | |
| 10/4/2009 | 4.33 | | | | | | | | | | | 5.7 | | | | | | | | | | 1 | | | | | | | | | 0 | | |
| 10/5/2009 | 4.11 | | | | | | | | | | | 5.7 | 3 | | | | | | | | | 1.3 | | | | | | | | | 0 | | |
| 10/6/2009 | 4.11 | | | | | | | | | | | 6.14 | 3 | | | | | | | | | 1.6 | | | | | | | | | 0 | | |
| 10/7/2009 | 4.33 | | | | | | | | | | | 5.15 | | | | | | | | | | 2.5 | | | | | | | | | 0 | | |
| 10/8/2009 | 3.78 | | | 3.14 | 410 | 0.72 | 1.8 | 440 | 0.38 | 4.25 | 448 | < 0.7 | 5.56 | | | 5.88 | 468 | 3.3 | 1.58 | 504 | 2.78 | 1.71 | 508 | 4.31 | 1.8 | 472 | 2.41 | 0 | -- | -- | 0.12 | -- | -- |
| 10/9/2009 | 3.94 | | | | | | | | | | | 4.77 | | | | | | | | | | 1.2 | | | | | | | | | 0.26 | | |
| 10/10/2009 | 4.22 | | | | | | | | | | | 5.81 | | | | | | | | | | 1.6 | | | | | | | | | 0.11 | | |
| 10/11/2009 | 4.07 | | | | | | | | | | | 5.8 | | | | | | | | | | 1.8 | | | | | | | | | 0.53 | | |
| 10/12/2009 | 4.17 | | | | | | | | | | | 5.95 | | | | | | | | | | 2.5 | | | | | | | | | 1.1 | | |
| 10/13/2009 | 4.14 | | | | | | | | | | | 5.35 | 6.2 | | | | | | | | | 3.2 | | | | | | | | | 1.5 | | |
| 10/14/2009 | 4.05 | | | | | | | | | | | 5.35 | | | | | | | | | | 5.1 | | | | | | | | | 1.4 | | |
| 10/15/2009 | 3.94 | | | | | | | | | | | 5.35 | | | | | | | | | | 5 | | | | | | | | | 1.8 | | |
| 10/16/2009 | 3.86 | | | | | | | | | | | 5.35 | | | | | | | | | | 2.8 | | | | | | | | | 0.65 | | |
| 10/17/2009 | 4.25 | | | | | | | | | | | 5.7 | | | | | | | | | | 2.4 | | | | | | | | | 0.36 | | |
| 10/18/2009 | 4.19 | | | | | | | | | | | 5.72 | | | | | | | | | | 1.9 | | | | | | | | | 0.32 | | |
| 10/19/2009 | 4.19 | | | | | | | | | | | 5.83 | | | | | | | | | | 2.1 | | | | | | | | | 0.25 | | |
| 10/20/2009 | 3.76 | | | 1.81 | 420 | 7.5 | 1.77 | 480 | 3.2 | | | 5.69 | 5 | | | | | | | | | 2.4 | | | | | | | | | 0.25 | | |
| 10/21/2009 | 3.98 | | | | | | | | | | | 5.46 | | | | | | | | | | 2.5 | | | | | | | | | 0.25 | | |
| 10/22/2009 | 3.95 | | | | | | | | | | | 5.66 | | | | | | | | | | 2 | | | | | | | | | 0.27 | | |
| 10/23/2009 | 4.13 | | | | | | | | | 1.32 | 432 | 1.04 | 5.38 | | | 4.77 | 452 | 3.57 | 0 | 512 | 2.62 | 0 | 500 | 3.14 | 1.8 | 456 | 2.41 | 0 | -- | -- | 0.29 | -- | -- |
| 10/24/2009 | 4.34 | | | | | | | | | | | 5.66 | | | | | | | | | | 1.5 | | | | | | | | | 0.29 | | |
| 10/25/2009 | 4.17 | | | | | | | | | | | 5.86 | | | | | | | | | | 1.9 | | | | | | | | | 0.29 | | |
| 10/26/2009 | 4.14 | | | | | | | | | | | 6.23 | | | | | | | | | | 1.9 | | | | | | | | | 0.27 | | |
| 10/27/2009 | 3.65 | | | | | | | | | | | 5.6 | 2.7 | | | | | | | | | 2 | | | | | | | | | 0.2 | | |
| 10/28/2009 | 4.02 | | | | | | | | | | | 5.72 | | | | | | | | | | 1.9 | | | | | | | | | 0.2 | | |
| 10/29/2009 | 3.90 | | | | | | | | | | | 5.15 | | | | | | | | | | 1.9 | | | | | | | | | 0.33 | | |
| 10/30/2009 | 3.76 | | | | | | | | | | | 5.5 | | | | | | | | | | 1.8 | | | | | | | | | 0.5 | | |
| 10/31/2009 | 4.37 | | | | | | | | | | | 5.6 | | | | | | | | | | 1.9 | | | | | | | | | 0.81 | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | |
|------------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L |
| 11/1/2009 | 4.20 | -- | 5.25 | | | | | | | | | 6.17 | | | | | | | | | | 2 | | | | | | | | | 0.91 | | |
| 11/2/2009 | 4.34 | | | | | | | | | | | 5.89 | 450 | | | | | | | | | 2.4 | | | | | | | | | 1.1 | | |
| 11/3/2009 | 3.76 | | | | | | | | | | | 5.66 | | | | | | | | | | 1.9 | | | | | | | | | 1.1 | | |
| 11/4/2009 | 4.09 | | | | | | | | | | | 5.63 | | | | | | | | | | 1.7 | | | | | | | | | 1.2 | | |
| 11/5/2009 | 4.00 | | | 3.19 | 430 | 9.4 | 1.64 | 460 | 4.4 | 1.16 | 496 | 3.22 | 5.5 | | | 5.77 | 492 | 3.6 | 1.71 | 536 | 2.87 | 2.25 | 556 | 1.68 | 2.7 | 908 | 1.31 | 0 | -- | -- | 1.3 | -- | -- |
| 11/6/2009 | 3.81 | | | | | | | | | | | | 5.67 | | | | | | | | | 4.5 | | | | | | | | | 1.4 | | |
| 11/7/2009 | 4.12 | | | | | | | | | | | | 5.44 | | | | | | | | | 4.1 | | | | | | | | | 1.2 | | |
| 11/8/2009 | 4.31 | | | | | | | | | | | | 5.97 | | | | | | | | | 3.5 | | | | | | | | | 0.88 | | |
| 11/9/2009 | 4.12 | | | | | | | | | | | | 6.18 | | | | | | | | | 3.8 | | | | | | | | | 0.97 | | |
| 11/10/2009 | 3.87 | | | | | | | | | | | | 5.63 | 4.6 | | | | | | | | 3.6 | | | | | | | | | 0.78 | | |
| 11/11/2009 | 4.22 | | | | | | | | | | | | 5.49 | | | | | | | | | 3 | | | | | | | | | 0.42 | | |
| 11/12/2009 | 3.89 | | | | | | | | | | | | 5.6 | | | | | | | | | 3.8 | | | | | | | | | 0.61 | | |
| 11/13/2009 | 3.85 | | | | | | | | | | | | 5.5 | | | | | | | | | 5.8 | | | | | | | | | 4.5 | | |
| 11/14/2009 | 4.04 | | | | | | | | | | | | 5.63 | | | | | | | | | 4.5 | | | | | | | | | 0.61 | | |
| 11/15/2009 | 4.17 | | | | | | | | | | | | 5.78 | | | | | | | | | 4.9 | | | | | | | | | 0.18 | | |
| 11/16/2009 | 4.10 | | | | | | | | | | | | 5.86 | | | | | | | | | 4.6 | | | | | | | | | 0.08 | | |
| 11/17/2009 | 4.12 | | | | | | | | | | | | 5.64 | 5.1 | | | | | | | | 5.5 | | | | | | | | | 0.16 | | |
| 11/18/2009 | 3.79 | | | | | | | | | | | | 5.53 | | | | | | | | | 7 | | | | | | | | | 0.24 | | |
| 11/19/2009 | 3.89 | | | 2.12 | 390 | 3.3 | 2.87 | 430 | 1.8 | 2.19 | 472 | 1.15 | 5.55 | | | 5.8 | 472 | 4.31 | 2.4 | 504 | 3.32 | 5.67 | 480 | 4.55 | 6.7 | 464 | 4.1 | 0 | -- | -- | 0.21 | 460 | 4.01 |
| 11/20/2009 | 3.89 | | | | | | | | | | | | 5.58 | | | | | | | | | 7.2 | | | | | | | | | 0.18 | | |
| 11/21/2009 | 4.19 | | | | | | | | | | | | 5.61 | | | | | | | | | 8.8 | | | | | | | | | 0.29 | | |
| 11/22/2009 | 4.06 | | | | | | | | | | | | 5.7 | | | | | | | | | 10 | | | | | | | | | 0.33 | | |
| 11/23/2009 | 3.97 | | | | | | | | | | | | 5.39 | | | | | | | | | 10 | | | | | | | | | 0.27 | | |
| 11/24/2009 | 3.96 | | | | | | | | | | | | 5.5 | 2.2 | | | | | | | | 10 | | | | | | | | | 0.23 | | |
| 11/25/2009 | 4.04 | | | | | | | | | | | | 5.53 | | | | | | | | | 10 | | | | | | | | | 0.27 | | |
| 11/26/2009 | 4.50 | | | | | | | | | | | | 5.77 | | | | | | | | | 11 | | | | | | | | | 0.23 | | |
| 11/27/2009 | 3.99 | | | | | | | | | | | | 5.72 | | | | | | | | | 11 | | | | | | | | | 0.1 | | |
| 11/28/2009 | 4.25 | | | | | | | | | | | | 5.32 | | | | | | | | | 16 | | | | | | | | | 93 | | |
| 11/29/2009 | 4.27 | | | | | | | | | | | | 5.84 | | | | | | | | | 3.8 | | | | | | | | | 2.2 | | |
| 11/30/2009 | 4.53 | | | | | | | | | | | | 5.74 | | | | | | | | | 3.8 | | | | | | | | | 2 | | |

**Table 2-3
2009 Surface Water Monitoring Program Results
In-stream Monitoring Sites and Treatment Plant Discharges**

| Date | Beaumont WWTP ¹ | | | STWMA-3 | | | STWMA-2 | | | YVWD-A | | | YVWD WWTP ⁴ | | | YVWD-B | | | YVWD-C | | | YVWD-D | | | YVWD-E | | | YVWD-F | | | YVWD-G | | | | | |
|-----------------------------|----------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--------------------------|-------------|-----------------------------------------|--|--|--|
| | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | Flow ² cfs | TDS mg/L | NO ₃ -N ³ mg/L | | | |
| 12/1/2009 | 4.13 | 440 | 5.2 | | | | | | | | | 5.29 | | 4.0 | | | | | | | | | | | | | | | | | | | | | | |
| 12/2/2009 | 4.12 | | | | | | | | | | | 5.67 | | | | | | | | | | | | | | | | | | | | | | | | |
| 12/3/2009 | 3.83 | | | 2.45 | 410 | 2.1 | 2.32 | 440 | 0.86 | 2.34 | 462 | 0.9 | 5.6 | | | 4.64 | 456 | 4.6 | 2.87 | 508 | 3.46 | 6.02 | 488 | 4.17 | 4.1 | 472 | 3.59 | 0 | -- | -- | 5.1 | 468 | 3.39 | | | |
| 12/4/2009 | 3.91 | | | | | | | | | | | | 5.41 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/5/2009 | 4.16 | | | | | | | | | | | | 5.44 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/6/2009 | 4.53 | | | | | | | | | | | | 5.86 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/7/2009 | 4.83 | | | | | | | | | | | | 6.01 | 470 | | | | | | | | | | | | | | | | | | | | | | |
| 12/8/2009 | 4.17 | | | | | | | | | | | | 5.44 | | 2.4 | | | | | | | | | | | | | | | | | | | | | |
| 12/9/2009 | 4.29 | | | | | | | | | | | | 6 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/10/2009 | 4.35 | | | | | | | | | | | | 5.53 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/11/2009 | 4.43 | | | | | | | | | | | | 5.58 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/12/2009 | 4.50 | | | | | | | | | | | | 5.97 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/13/2009 | 4.50 | | | | | | | | | | | | 6.43 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/14/2009 | 4.33 | | | | | | | | | | | | 6.49 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/15/2009 | 3.98 | | | | | | | | | | | | 5.89 | | 1.0 | | | | | | | | | | | | | | | | | | | | | |
| 12/16/2009 | 3.98 | | | | | | | | | | | | 5.46 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/17/2009 | 3.98 | | | 2.83 | 390 | 3.9 | 2.39 | 470 | 2.3 | 0 | 512 | 2.0 | 5.44 | | | 5.56 | 500 | 2.4 | 7.29 | 556 | 2.3 | 10.09 | 504 | 1.19 | 12 | 492 | 2 | 0 | -- | -- | 4.6 | 536 | 1.09 | | | |
| 12/18/2009 | 3.76 | | | | | | | | | | | | 5.66 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/19/2009 | 3.86 | | | | | | | | | | | | 5.74 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/20/2009 | 4.40 | | | | | | | | | | | | 5.83 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/21/2009 | 4.13 | | | | | | | | | | | | 5.61 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/22/2009 | 4.06 | | | | | | | | | | | | 5.91 | | 1.2 | | | | | | | | | | | | | | | | | | | | | |
| 12/23/2009 | 4.19 | | | | | | | | | | | | 5.94 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/24/2009 | 3.94 | | | | | | | | | | | | 6.29 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/25/2009 | 3.97 | | | | | | | | | | | | 6.18 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/26/2009 | 4.58 | | | | | | | | | | | | 5.47 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/27/2009 | 4.19 | | | | | | | | | | | | 5.83 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/28/2009 | 4.05 | | | | | | | | | | | | 5.94 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/29/2009 | 4.11 | | | | | | | | | | | | 5.7 | | 0.9 | | | | | | | | | | | | | | | | | | | | | |
| 12/30/2009 | 4.13 | | | 2.39 | 340 | 7.7 | 3.62 | 410 | 5.8 | | | | 5.6 | | | | | | | | | | | | | | | | | | | | | | | |
| 12/31/2009 | 3.87 | | | | | | | | | | | | 5.77 | | | | | | | | | | | | | | | | | | | | | | | |
| 2009 Min | 2.9 | 350 | 0.9 | 1.8 | 340 | 0.5 | 0.7 | 400 | 0.3 | 0.0 | 432 | 0.3 | 0.6 | 400 | 0.8 | 0.0 | 436 | 1.7 | 0.0 | 504 | 1.7 | 0.0 | 42 | 1.2 | 0.4 | 384 | 0.7 | 0.0 | 168 | 1.5 | 0.0 | 356 | 1.1 | | | |
| 2009 Max | 5.8 | 480 | 5.3 | 4.8 | 430 | 9.4 | 5.1 | 480 | 5.8 | 6.4 | 564 | 5.0 | 6.5 | 530 | 7.8 | 11.8 | 540 | 13.8 | 9.5 | 676 | 9.1 | 10.1 | 608 | 8.4 | 173 | 908 | 4.8 | 16.1 | 356 | 3.1 | 950 | 584 | 4.0 | | | |
| 2009 Avg⁵ | 4.0 | 406 | 2.4 | 2.7 | 398 | 2.6 | 2.4 | 450 | 1.9 | 2.3 | 495 | 1.9 | 5.6 | 452 | 3.1 | 6.4 | 495 | 3.8 | 3.9 | 567 | 3.6 | 2.8 | 521 | 3.7 | 6.8 | 519 | 2.7 | 1.1 | 227 | 2.2 | 16.1 | 481 | 2.6 | | | |
| 2009 Median | 4.0 | 400 | 2.2 | 2.7 | 400 | 2.1 | 2.4 | 450 | 1.6 | 2.3 | 500 | 1.7 | 5.6 | 450 | 2.8 | 5.9 | 500 | 3.4 | 2.9 | 560 | 3.2 | 2.0 | 544 | 3.6 | 3.9 | 512 | 2.4 | 0.0 | 192 | 2.2 | 1.3 | 508 | 2.5 | | | |

Notes:
1--TDS and TIN are measured at the Beaumont WWTP once per month pursuant to the City's NPDES monitoring requirements. Because it is not measured directly, nitrate-N is calculated by subtracting measured ammonia-N concentrations from TIN. Nitrite-N is assumed to be non-detect
2--Trace flows are reported as "0." It is occasionally possible to collect a water quality sample under trace flow conditions.
3--Values of nitrate-nitrogen (NO₃-N) that are reported as non-detect are included in the annual average by setting the non-detect results as equal to the detection limit divided by √2. The detection limit is 0.2, thus a result of 0.18 is used in the average.
4--TDS at the YVWD WWTP is measured once per month pursuant to NPDES monitoring requirements. Nitrate-N is sampled multiple times per month.
5--The average value represents the arithmetic average for measurements made in 2009, not the volume-weighted concentrations of TDS and NO₃-N
"--" indicates site was dry and no water quality sample could be collected.
"nm" indicates that a flow measurement was not possible due to equipment malfunction.
"na" indicates that no measurement was obtained because access to the site was blocked.

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 1/1/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/2/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/3/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/4/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/5/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/6/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/7/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/8/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/9/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/10/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/11/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/12/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/13/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/14/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/15/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/16/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/17/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/18/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 1/19/2009 | 0 | -- | -- | n/a | 240 | 0.38 | 0 | n/a | n/a |
| 1/20/2009 | 11.9 | | | n/a | | | 0 | n/a | n/a |
| 1/21/2009 | 11.3 | | | n/a | | | 0 | n/a | n/a |
| 1/22/2009 | 11.4 | | | n/a | | | 0 | n/a | n/a |
| 1/23/2009 | 11.7 | | | n/a | | | 0 | n/a | n/a |
| 1/24/2009 | 12 | | | n/a | | | 0 | n/a | n/a |
| 1/25/2009 | 8.2 | | | n/a | | | 0 | n/a | n/a |
| 1/26/2009 | 10.2 | | | n/a | | | 0 | n/a | n/a |
| 1/27/2009 | 7.8 | | | n/a | | | 12.2 | n/a | n/a |
| 1/28/2009 | 10.1 | | | n/a | | | 4.9 | n/a | n/a |
| 1/29/2009 | 12 | 240 | 0.68 | n/a | 210 | < 0.2 | 0 | n/a | n/a |
| 1/30/2009 | 13 | | | n/a | | | 0 | n/a | n/a |
| 1/31/2009 | 13.4 | | | n/a | | | 0 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 2/1/2009 | 9.9 | | | n/a | | | 0 | n/a | n/a |
| 2/2/2009 | 8.1 | | | n/a | | | 0 | n/a | n/a |
| 2/3/2009 | 8.4 | | | n/a | | | 0 | n/a | n/a |
| 2/4/2009 | 9 | | | n/a | | | 0 | n/a | n/a |
| 2/5/2009 | 9.1 | | | n/a | | | 0 | n/a | n/a |
| 2/6/2009 | 9.9 | | | n/a | | | 0 | n/a | n/a |
| 2/7/2009 | 8.2 | | | n/a | | | 0 | n/a | n/a |
| 2/8/2009 | 7 | | | n/a | | | 0 | n/a | n/a |
| 2/9/2009 | 8.9 | | | n/a | | | 0 | n/a | n/a |
| 2/10/2009 | 6.4 | | | n/a | | | 14.2 | n/a | n/a |
| 2/11/2009 | 8.7 | | | n/a | | | 4.4 | n/a | n/a |
| 2/12/2009 | 8 | 280 | 0.7 | n/a | 260 | 1.2 | 0 | n/a | n/a |
| 2/13/2009 | 8.2 | | | n/a | | | 0 | n/a | n/a |
| 2/14/2009 | 7.6 | | | n/a | | | 0 | n/a | n/a |
| 2/15/2009 | 7.2 | | | n/a | | | 0 | n/a | n/a |
| 2/16/2009 | 7.3 | | | n/a | | | 0 | n/a | n/a |
| 2/17/2009 | 22.9 | | | n/a | | | 0 | n/a | n/a |
| 2/18/2009 | 23.1 | | | n/a | | | 0 | n/a | n/a |
| 2/19/2009 | 24.4 | | | n/a | | | 0 | n/a | n/a |
| 2/20/2009 | 13.2 | | | n/a | | | 0 | n/a | n/a |
| 2/21/2009 | 7.1 | | | n/a | | | 0 | n/a | n/a |
| 2/22/2009 | 6.2 | | | n/a | | | 0 | n/a | n/a |
| 2/23/2009 | 6.6 | | | n/a | | | 0 | n/a | n/a |
| 2/24/2009 | 7.3 | | | n/a | | | 0 | n/a | n/a |
| 2/25/2009 | 7.7 | | | n/a | | | 0 | n/a | n/a |
| 2/26/2009 | 7.9 | 260 | 0.7 | n/a | 240 | 1 | 0 | n/a | n/a |
| 2/27/2009 | 9 | | | n/a | | | 0 | n/a | n/a |
| 2/28/2009 | 8 | | | n/a | | | 0 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 3/1/2009 | 7.3 | | | n/a | | | 0 | n/a | n/a |
| 3/2/2009 | 10.5 | | | n/a | | | 0.7 | n/a | n/a |
| 3/3/2009 | 19.5 | | | n/a | | | 13.1 | n/a | n/a |
| 3/4/2009 | 13 | | | n/a | | | 4.6 | n/a | n/a |
| 3/5/2009 | 2.2 | | | n/a | | | 0 | n/a | n/a |
| 3/6/2009 | 14.3 | | | n/a | | | 0 | n/a | n/a |
| 3/7/2009 | 7.6 | | | n/a | | | 0 | n/a | n/a |
| 3/8/2009 | 6.1 | | | n/a | | | 0 | n/a | n/a |
| 3/9/2009 | 9.2 | | | n/a | | | 0 | n/a | n/a |
| 3/10/2009 | 7.7 | | | n/a | | | 0 | n/a | n/a |
| 3/11/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 3/12/2009 | 8.4 | 280 | 0.63 | n/a | 240 | 0.45 | 0 | n/a | n/a |
| 3/13/2009 | 8.5 | | | n/a | | | 0 | n/a | n/a |
| 3/14/2009 | 7.7 | | | n/a | | | 0 | n/a | n/a |
| 3/15/2009 | 6.9 | | | n/a | | | 0 | n/a | n/a |
| 3/16/2009 | 9.4 | | | n/a | | | 0 | n/a | n/a |
| 3/17/2009 | 20.4 | | | n/a | | | 14.2 | n/a | n/a |
| 3/18/2009 | 12.3 | | | n/a | | | 4.7 | n/a | n/a |
| 3/19/2009 | 9.4 | | | n/a | | | 0 | n/a | n/a |
| 3/20/2009 | 9.4 | | | n/a | | | 0 | n/a | n/a |
| 3/21/2009 | 7.5 | | | n/a | | | 0 | n/a | n/a |
| 3/22/2009 | 7.6 | | | n/a | | | 0 | n/a | n/a |
| 3/23/2009 | 7.1 | | | n/a | | | 0 | n/a | n/a |
| 3/24/2009 | 7.9 | | | n/a | | | 0 | n/a | n/a |
| 3/25/2009 | 8.4 | | | n/a | | | 0 | n/a | n/a |
| 3/26/2009 | 9.7 | 280 | 0.52 | n/a | 230 | 0.32 | 0 | n/a | n/a |
| 3/27/2009 | 13.8 | | | n/a | | | 0 | n/a | n/a |
| 3/28/2009 | 13.8 | | | n/a | | | 0 | n/a | n/a |
| 3/29/2009 | 11.6 | | | n/a | | | 0 | n/a | n/a |
| 3/30/2009 | 21.4 | | | n/a | | | 0 | n/a | n/a |
| 3/31/2009 | 22.1 | | | n/a | | | 0 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 4/1/2009 | 20.9 | | | n/a | | | 0 | n/a | n/a |
| 4/2/2009 | 21.5 | | | n/a | | | 0 | n/a | n/a |
| 4/3/2009 | 21.2 | | | n/a | | | 0 | n/a | n/a |
| 4/4/2009 | 20.5 | | | n/a | | | 0 | n/a | n/a |
| 4/5/2009 | 17.3 | | | n/a | | | 0 | n/a | n/a |
| 4/6/2009 | 21.6 | | | n/a | | | 0 | n/a | n/a |
| 4/7/2009 | 15.7 | | | n/a | | | 0 | n/a | n/a |
| 4/8/2009 | 15.5 | | | n/a | | | 0 | n/a | n/a |
| 4/9/2009 | 15.5 | 230 | 0.5 | n/a | 200 | 0.27 | 0 | n/a | n/a |
| 4/10/2009 | 15.4 | | | n/a | | | 0 | n/a | n/a |
| 4/11/2009 | 16.1 | | | n/a | | | 0 | n/a | n/a |
| 4/12/2009 | 11.2 | | | n/a | | | 0 | n/a | n/a |
| 4/13/2009 | 16.5 | | | n/a | | | 0 | n/a | n/a |
| 4/14/2009 | 0.9 | | | n/a | | | 0 | n/a | n/a |
| 4/15/2009 | 0.5 | | | n/a | | | 0 | n/a | n/a |
| 4/16/2009 | 7.7 | | | n/a | | | 0 | n/a | n/a |
| 4/17/2009 | 11.3 | | | n/a | | | 0 | n/a | n/a |
| 4/18/2009 | 9.7 | | | n/a | | | 0 | n/a | n/a |
| 4/19/2009 | 9.3 | | | n/a | | | 0 | n/a | n/a |
| 4/20/2009 | 10.2 | | | n/a | | | 0 | n/a | n/a |
| 4/21/2009 | 9.4 | | | n/a | | | 0 | n/a | n/a |
| 4/22/2009 | 9.7 | | | n/a | | | 0 | n/a | n/a |
| 4/23/2009 | 9.8 | 280 | 0.54 | n/a | 220 | 0.32 | 0 | n/a | n/a |
| 4/24/2009 | 9.8 | | | n/a | | | 0 | n/a | n/a |
| 4/25/2009 | 9.1 | | | n/a | | | 0 | n/a | n/a |
| 4/26/2009 | 7.8 | | | n/a | | | 0 | n/a | n/a |
| 4/27/2009 | 12.4 | | | n/a | | | 0 | n/a | n/a |
| 4/28/2009 | 8.8 | | | n/a | | | 0 | n/a | n/a |
| 4/29/2009 | 9.2 | | | n/a | | | 0 | n/a | n/a |
| 4/30/2009 | 9.3 | | | n/a | | | 0 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 5/1/2009 | 11.4 | | | n/a | | | 0 | n/a | n/a |
| 5/2/2009 | 9.9 | | | n/a | | | 0 | n/a | n/a |
| 5/3/2009 | 8.7 | | | n/a | | | 0 | n/a | n/a |
| 5/4/2009 | 15.5 | | | n/a | | | 0 | n/a | n/a |
| 5/5/2009 | 34.4 | | | n/a | | | 25.3 | n/a | n/a |
| 5/6/2009 | 18.7 | | | n/a | | | 7.3 | n/a | n/a |
| 5/7/2009 | 14 | 280 | 0.36 | n/a | 210 | < 0.2 | 0 | n/a | n/a |
| 5/8/2009 | 13 | | | n/a | | | 0 | n/a | n/a |
| 5/9/2009 | 11.8 | | | n/a | | | 0 | n/a | n/a |
| 5/10/2009 | 10.3 | | | n/a | | | 0 | n/a | n/a |
| 5/11/2009 | 14.1 | | | n/a | | | 0 | n/a | n/a |
| 5/12/2009 | 14.3 | | | n/a | | | 0 | n/a | n/a |
| 5/13/2009 | 13.9 | | | n/a | | | 0 | n/a | n/a |
| 5/14/2009 | 13.9 | | | n/a | | | 0 | n/a | n/a |
| 5/15/2009 | 15.7 | | | n/a | | | 0 | n/a | n/a |
| 5/16/2009 | 14.2 | | | n/a | | | 0 | n/a | n/a |
| 5/17/2009 | 9.7 | | | n/a | | | 0 | n/a | n/a |
| 5/18/2009 | 15.5 | | | n/a | | | 1 | n/a | n/a |
| 5/19/2009 | 29.3 | | | n/a | | | 25 | n/a | n/a |
| 5/20/2009 | 21.7 | | | n/a | | | 0 | n/a | n/a |
| 5/21/2009 | 15.7 | 280 | 0.36 | n/a | 210 | < 0.2 | 0 | n/a | n/a |
| 5/22/2009 | 16.1 | | | n/a | | | 0 | n/a | n/a |
| 5/23/2009 | 16.1 | | | n/a | | | 0 | n/a | n/a |
| 5/24/2009 | 14 | | | n/a | | | 0 | n/a | n/a |
| 5/25/2009 | 11.9 | | | n/a | | | 0 | n/a | n/a |
| 5/26/2009 | 14.5 | | | n/a | | | 0 | n/a | n/a |
| 5/27/2009 | 15.6 | | | n/a | | | 0 | n/a | n/a |
| 5/28/2009 | 15.4 | | | n/a | | | 0 | n/a | n/a |
| 5/29/2009 | 14.8 | | | n/a | | | 0 | n/a | n/a |
| 5/30/2009 | 16.3 | | | n/a | | | 0 | n/a | n/a |
| 5/31/2009 | 12.9 | | | n/a | | | 0 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 6/1/2009 | 10.1 | | | n/a | | | 1.4 | n/a | n/a |
| 6/2/2009 | 31.1 | | | n/a | | | 19.3 | n/a | n/a |
| 6/3/2009 | 24.9 | | | n/a | | | 6.3 | n/a | n/a |
| 6/4/2009 | 23.2 | 300 | 0.54 | n/a | 240 | < 0.2 | 0 | n/a | n/a |
| 6/5/2009 | 22.1 | | | n/a | | | 0 | n/a | n/a |
| 6/6/2009 | 22.2 | | | n/a | | | 0 | n/a | n/a |
| 6/7/2009 | 22.2 | | | n/a | | | 0 | n/a | n/a |
| 6/8/2009 | 20.8 | | | n/a | | | 0 | n/a | n/a |
| 6/9/2009 | 3.1 | | | n/a | | | 20.2 | n/a | n/a |
| 6/10/2009 | 24.3 | | | n/a | | | 6.8 | n/a | n/a |
| 6/11/2009 | 21 | | | n/a | | | 0 | n/a | n/a |
| 6/12/2009 | 21.6 | | | n/a | | | 0 | n/a | n/a |
| 6/13/2009 | 21.8 | | | n/a | | | 0 | n/a | n/a |
| 6/14/2009 | 20.9 | | | n/a | | | 0 | n/a | n/a |
| 6/15/2009 | 22.4 | | | n/a | | | 0 | n/a | n/a |
| 6/16/2009 | 34.5 | | | n/a | | | 20.7 | n/a | n/a |
| 6/17/2009 | 24.2 | | | n/a | | | 4.8 | n/a | n/a |
| 6/18/2009 | 20.4 | 300 | 0.43 | n/a | 220 | < 0.2 | 0 | n/a | n/a |
| 6/19/2009 | 22.3 | | | n/a | | | 0 | n/a | n/a |
| 6/20/2009 | 19.1 | | | n/a | | | 0 | n/a | n/a |
| 6/21/2009 | 21.8 | | | n/a | | | 0 | n/a | n/a |
| 6/22/2009 | 21.4 | | | n/a | | | 0 | n/a | n/a |
| 6/23/2009 | 31 | | | n/a | | | 15.7 | n/a | n/a |
| 6/24/2009 | 23.7 | | | n/a | | | 5.9 | n/a | n/a |
| 6/25/2009 | 20.1 | | | n/a | | | 0 | n/a | n/a |
| 6/26/2009 | 22.6 | | | n/a | | | 0 | n/a | n/a |
| 6/27/2009 | 21.7 | | | n/a | | | 0 | n/a | n/a |
| 6/28/2009 | 22.2 | | | n/a | | | 0 | n/a | n/a |
| 6/29/2009 | 23 | | | n/a | | | 0 | n/a | n/a |
| 6/30/2009 | 31.8 | | | n/a | | | 14.8 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 7/1/2009 | 25 | | | n/a | | | 4.5 | n/a | n/a |
| 7/2/2009 | 22.6 | 290 | 0.47 | n/a | 220 | < 0.2 | 0 | n/a | n/a |
| 7/3/2009 | 17.6 | | | n/a | | | 0 | n/a | n/a |
| 7/4/2009 | 25.4 | | | n/a | | | 0 | n/a | n/a |
| 7/5/2009 | 21.3 | | | n/a | | | 0 | n/a | n/a |
| 7/6/2009 | 24.7 | | | n/a | | | 0 | n/a | n/a |
| 7/7/2009 | 31.8 | | | n/a | | | 24.3 | n/a | n/a |
| 7/8/2009 | 24.6 | | | n/a | | | 0 | n/a | n/a |
| 7/9/2009 | 21.9 | | | n/a | | | 0 | n/a | n/a |
| 7/10/2009 | 21.2 | | | n/a | | | 0 | n/a | n/a |
| 7/11/2009 | 20.7 | | | n/a | | | 0 | n/a | n/a |
| 7/12/2009 | 20.2 | | | n/a | | | 0 | n/a | n/a |
| 7/13/2009 | 21.6 | | | n/a | | | 0 | n/a | n/a |
| 7/14/2009 | 33.4 | | | n/a | | | 17.2 | n/a | n/a |
| 7/15/2009 | 25.5 | | | n/a | | | 5.3 | n/a | n/a |
| 7/16/2009 | 22.2 | 310 | 0.47 | n/a | 240 | < 0.2 | 0 | n/a | n/a |
| 7/17/2009 | 21.7 | | | n/a | | | 0 | n/a | n/a |
| 7/18/2009 | 25.1 | | | n/a | | | 0 | n/a | n/a |
| 7/19/2009 | 22.9 | | | n/a | | | 0 | n/a | n/a |
| 7/20/2009 | 20.2 | | | n/a | | | 0 | n/a | n/a |
| 7/21/2009 | 32.7 | | | n/a | | | 17.8 | n/a | n/a |
| 7/22/2009 | 23.3 | | | n/a | | | 4.9 | n/a | n/a |
| 7/23/2009 | 23.5 | | | n/a | | | 0 | n/a | n/a |
| 7/24/2009 | 22.3 | | | n/a | | | 0 | n/a | n/a |
| 7/25/2009 | 23.2 | | | n/a | | | 0 | n/a | n/a |
| 7/26/2009 | 26 | | | n/a | | | 0 | n/a | n/a |
| 7/27/2009 | 19.5 | | | n/a | | | 0 | n/a | n/a |
| 7/28/2009 | 32.8 | | | n/a | | | 16.1 | n/a | n/a |
| 7/29/2009 | 24.1 | | | n/a | | | 4.8 | n/a | n/a |
| 7/30/2009 | 22.7 | 290 | 0.43 | n/a | | | 0 | n/a | n/a |
| 7/31/2009 | 25 | | | n/a | | | 0 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 8/1/2009 | 23.5 | | | n/a | | | 0 | n/a | n/a |
| 8/2/2009 | 22.7 | | | n/a | | | 0 | n/a | n/a |
| 8/3/2009 | 23.4 | | | n/a | | | 2.3 | n/a | n/a |
| 8/4/2009 | 28.7 | | | n/a | | | 21.7 | n/a | n/a |
| 8/5/2009 | 11.8 | | | n/a | | | 0 | n/a | n/a |
| 8/6/2009 | 21 | | | n/a | | | 0 | n/a | n/a |
| 8/7/2009 | 23 | | | n/a | | | 0 | n/a | n/a |
| 8/8/2009 | 23.6 | | | n/a | | | 0 | n/a | n/a |
| 8/9/2009 | 23.9 | | | n/a | | | 0 | n/a | n/a |
| 8/10/2009 | 23.8 | | | n/a | | | 2.1 | n/a | n/a |
| 8/11/2009 | 31.3 | | | n/a | | | 19.7 | n/a | n/a |
| 8/12/2009 | 24.9 | | | n/a | | | 6.3 | n/a | n/a |
| 8/13/2009 | 22.7 | 240 | 0.41 | n/a | -- | -- | 0 | n/a | n/a |
| 8/14/2009 | 22.4 | | | n/a | | | 0 | n/a | n/a |
| 8/15/2009 | 27 | | | n/a | | | 0 | n/a | n/a |
| 8/16/2009 | 18.5 | | | n/a | | | 0 | n/a | n/a |
| 8/17/2009 | 23.9 | | | n/a | | | 0 | n/a | n/a |
| 8/18/2009 | 30.8 | | | n/a | | | 18.1 | n/a | n/a |
| 8/19/2009 | 25.2 | | | n/a | | | 6.8 | n/a | n/a |
| 8/20/2009 | 21.6 | | | n/a | | | 0 | n/a | n/a |
| 8/21/2009 | 21.7 | | | n/a | | | 0 | n/a | n/a |
| 8/22/2009 | 23.3 | | | n/a | | | 0 | n/a | n/a |
| 8/23/2009 | 25.3 | | | n/a | | | 0 | n/a | n/a |
| 8/24/2009 | 24 | | | n/a | | | 2 | n/a | n/a |
| 8/25/2009 | 31.3 | | | n/a | | | 17.5 | n/a | n/a |
| 8/26/2009 | 29.2 | | | n/a | | | 5.7 | n/a | n/a |
| 8/27/2009 | 16.2 | 240 | 0.29 | n/a | -- | -- | 0 | n/a | n/a |
| 8/28/2009 | 20.4 | | | n/a | | | 0 | n/a | n/a |
| 8/29/2009 | 20.1 | | | n/a | | | 0 | n/a | n/a |
| 8/30/2009 | 19.3 | | | n/a | | | 0 | n/a | n/a |
| 8/31/2009 | 21.2 | | | n/a | | | 0.6 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 9/1/2009 | 32.2 | | | n/a | | | 19.5 | n/a | n/a |
| 9/2/2009 | 24.5 | | | n/a | | | 6.7 | n/a | n/a |
| 9/3/2009 | 20.6 | | | n/a | | | 0 | n/a | n/a |
| 9/4/2009 | 23.2 | | | n/a | | | 0 | n/a | n/a |
| 9/5/2009 | 19.4 | | | n/a | | | 0 | n/a | n/a |
| 9/6/2009 | 21.1 | | | n/a | | | 0 | n/a | n/a |
| 9/7/2009 | 21.6 | | | n/a | | | 0 | n/a | n/a |
| 9/8/2009 | 31.6 | | | n/a | | | 19.1 | n/a | n/a |
| 9/9/2009 | 22.1 | | | n/a | | | 6.4 | n/a | n/a |
| 9/10/2009 | 24.7 | 250 | < 0.2 | n/a | -- | -- | 0 | n/a | n/a |
| 9/11/2009 | 19.7 | | | n/a | | | 0 | n/a | n/a |
| 9/12/2009 | 20.5 | | | n/a | | | 0 | n/a | n/a |
| 9/13/2009 | 22.5 | | | n/a | | | 0 | n/a | n/a |
| 9/14/2009 | 22.8 | | | n/a | | | 1.9 | n/a | n/a |
| 9/15/2009 | 32.2 | | | n/a | | | 18.5 | n/a | n/a |
| 9/16/2009 | 19.8 | | | n/a | | | 5.5 | n/a | n/a |
| 9/17/2009 | 22.1 | | | n/a | | | 0 | n/a | n/a |
| 9/18/2009 | 22.7 | | | n/a | | | 0 | n/a | n/a |
| 9/19/2009 | 23.9 | | | n/a | | | 0 | n/a | n/a |
| 9/20/2009 | 23.8 | | | n/a | | | 0 | n/a | n/a |
| 9/21/2009 | 23.2 | | | n/a | | | 0 | n/a | n/a |
| 9/22/2009 | 28.7 | | | n/a | | | 15.4 | n/a | n/a |
| 9/23/2009 | 27.1 | | | n/a | | | 6.6 | n/a | n/a |
| 9/24/2009 | 22.8 | 250 | < 0.2 | n/a | -- | -- | 0 | n/a | n/a |
| 9/25/2009 | 24.4 | | | n/a | | | 0 | n/a | n/a |
| 9/26/2009 | 21.4 | | | n/a | | | 0 | n/a | n/a |
| 9/27/2009 | 21.8 | | | n/a | | | 0 | n/a | n/a |
| 9/28/2009 | 20.2 | | | n/a | | | 0 | n/a | n/a |
| 9/29/2009 | 33.4 | | | n/a | | | 15.8 | n/a | n/a |
| 9/30/2009 | 25.1 | | | n/a | | | 5.3 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|------------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 10/1/2009 | 22.8 | | | n/a | | | 0 | n/a | n/a |
| 10/2/2009 | 7.4 | | | n/a | | | 0 | n/a | n/a |
| 10/3/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 10/4/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 10/5/2009 | 3.5 | | | n/a | | | 0.4 | n/a | n/a |
| 10/6/2009 | 23.8 | | | n/a | | | 0.8 | n/a | n/a |
| 10/7/2009 | 26.5 | | | n/a | | | 0.3 | n/a | n/a |
| 10/8/2009 | 23.9 | 300 | 0.23 | n/a | -- | -- | 2.5 | n/a | n/a |
| 10/9/2009 | 22.8 | | | n/a | | | 0 | n/a | n/a |
| 10/10/2009 | 20.8 | | | n/a | | | 0 | n/a | n/a |
| 10/11/2009 | 20.5 | | | n/a | | | 0 | n/a | n/a |
| 10/12/2009 | 22.2 | | | n/a | | | 0 | n/a | n/a |
| 10/13/2009 | 31.6 | | | n/a | | | 17.8 | n/a | n/a |
| 10/14/2009 | 23.6 | | | n/a | | | 6.4 | n/a | n/a |
| 10/15/2009 | 22.7 | | | n/a | | | 0 | n/a | n/a |
| 10/16/2009 | 23.1 | | | n/a | | | 0 | n/a | n/a |
| 10/17/2009 | 22.1 | | | n/a | | | 0 | n/a | n/a |
| 10/18/2009 | 22 | | | n/a | | | 0 | n/a | n/a |
| 10/19/2009 | 22.7 | | | n/a | | | 0 | n/a | n/a |
| 10/20/2009 | 31.3 | 280 | 0.29 | n/a | -- | -- | 21 | n/a | n/a |
| 10/21/2009 | 26.4 | | | n/a | | | 6.5 | n/a | n/a |
| 10/22/2009 | 19.9 | | | n/a | | | 0 | n/a | n/a |
| 10/23/2009 | 23.2 | | | n/a | | | 0 | n/a | n/a |
| 10/24/2009 | 22.8 | | | n/a | | | 0 | n/a | n/a |
| 10/25/2009 | 22.8 | | | n/a | | | 0 | n/a | n/a |
| 10/26/2009 | 21.4 | | | n/a | | | 1.1 | n/a | n/a |
| 10/27/2009 | 31.2 | | | n/a | | | 10.5 | n/a | n/a |
| 10/28/2009 | 25.2 | | | n/a | | | 4.8 | n/a | n/a |
| 10/29/2009 | 22.3 | | | n/a | | | 0 | n/a | n/a |
| 10/30/2009 | 21.2 | | | n/a | | | 0 | n/a | n/a |
| 10/31/2009 | 28.5 | | | n/a | | | 0 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|------------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 11/1/2009 | 21.7 | | | n/a | | | 0 | n/a | n/a |
| 11/2/2009 | 22 | | | n/a | | | 1.5 | n/a | n/a |
| 11/3/2009 | 29 | | | n/a | | | 17.3 | n/a | n/a |
| 11/4/2009 | 24.2 | | | n/a | | | 6.7 | n/a | n/a |
| 11/5/2009 | 23.7 | 340 | 0.43 | n/a | -- | -- | 0 | n/a | n/a |
| 11/6/2009 | 23.1 | | | n/a | | | 0 | n/a | n/a |
| 11/7/2009 | 24.9 | | | n/a | | | 0 | n/a | n/a |
| 11/8/2009 | 25.6 | | | n/a | | | 0 | n/a | n/a |
| 11/9/2009 | 33.8 | | | n/a | | | 22.2 | n/a | n/a |
| 11/10/2009 | 24.4 | | | n/a | | | 5.7 | n/a | n/a |
| 11/11/2009 | 19.5 | | | n/a | | | 0 | n/a | n/a |
| 11/12/2009 | 22.9 | | | n/a | | | 0 | n/a | n/a |
| 11/13/2009 | 24 | | | n/a | | | 0 | n/a | n/a |
| 11/14/2009 | 24 | | | n/a | | | 0 | n/a | n/a |
| 11/15/2009 | 24.6 | | | n/a | | | 0 | n/a | n/a |
| 11/16/2009 | 25.7 | | | n/a | | | 1 | n/a | n/a |
| 11/17/2009 | 28.9 | | | n/a | | | 17.8 | n/a | n/a |
| 11/18/2009 | 26 | | | n/a | | | 7.8 | n/a | n/a |
| 11/19/2009 | 25.2 | 270 | 0.52 | n/a | -- | -- | 0 | n/a | n/a |
| 11/20/2009 | 24.3 | | | n/a | | | 0 | n/a | n/a |
| 11/21/2009 | 23.3 | | | n/a | | | 0 | n/a | n/a |
| 11/22/2009 | 23.4 | | | n/a | | | 0 | n/a | n/a |
| 11/23/2009 | 21.3 | | | n/a | | | 0 | n/a | n/a |
| 11/24/2009 | 22.1 | | | n/a | | | 0 | n/a | n/a |
| 11/25/2009 | 7.2 | | | n/a | | | 0 | n/a | n/a |
| 11/26/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 11/27/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 11/28/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 11/29/2009 | 0.8 | | | n/a | | | 0 | n/a | n/a |
| 11/30/2009 | 21.5 | | | n/a | | | 0 | n/a | n/a |

**Table 2-4
2009 Surface Water Monitoring Program Results
Beaumont Management Zone Groundwater Recharge Facilities**

| Date | STWMA-6 (Imported SWP Water) | | | STWMA-7 ¹ (Stormwater) | | | STWMA-8 ² (Imported SWP Water) | | |
|-----------------------------|---------------------------------|-------------|-----------------------------------------|--------------------------------------|-------------|-----------------------------------------|----------------------------------------------|-------------|-----------------------------------------|
| | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L | Recharge acre-ft | TDS mg/L | NO ₃ -N ³ mg/L |
| 12/1/2009 | 34.3 | | | n/a | | | 20.5 | n/a | n/a |
| 12/2/2009 | 24.1 | | | n/a | | | 6.2 | n/a | n/a |
| 12/3/2009 | 22.9 | | | n/a | | | 0 | n/a | n/a |
| 12/4/2009 | 24 | | | n/a | | | 0 | n/a | n/a |
| 12/5/2009 | 22.4 | | | n/a | | | 0 | n/a | n/a |
| 12/6/2009 | 20.4 | | | n/a | | | 0 | n/a | n/a |
| 12/7/2009 | 22.7 | | | n/a | | | 0 | n/a | n/a |
| 12/8/2009 | 32.1 | | | n/a | | | 18.4 | n/a | n/a |
| 12/9/2009 | 29.1 | | | n/a | | | 7.5 | n/a | n/a |
| 12/10/2009 | 22.4 | | | n/a | | | 0 | n/a | n/a |
| 12/11/2009 | 23.2 | | | n/a | | | 0 | n/a | n/a |
| 12/12/2009 | 23.6 | | | n/a | | | 0 | n/a | n/a |
| 12/13/2009 | 22.9 | | | n/a | | | 0 | n/a | n/a |
| 12/14/2009 | 21.7 | | | n/a | | | 0.1 | n/a | n/a |
| 12/15/2009 | 31.2 | | | n/a | | | 19.6 | n/a | n/a |
| 12/16/2009 | 24.6 | | | n/a | | | 5.8 | n/a | n/a |
| 12/17/2009 | 20.5 | 260 | 0.63 | n/a | 280 | 0.56 | 0 | n/a | n/a |
| 12/18/2009 | 23.8 | | | n/a | | | 0 | n/a | n/a |
| 12/19/2009 | 23.7 | | | n/a | | | 0 | n/a | n/a |
| 12/20/2009 | 23.6 | | | n/a | | | 0 | n/a | n/a |
| 12/21/2009 | 22.9 | | | n/a | | | 0 | n/a | n/a |
| 12/22/2009 | 34.3 | | | n/a | | | 20.8 | n/a | n/a |
| 12/23/2009 | 10.4 | | | n/a | | | 6.5 | n/a | n/a |
| 12/24/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 12/25/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 12/26/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 12/27/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| 12/28/2009 | 23.3 | | | n/a | | | 0 | n/a | n/a |
| 12/29/2009 | 24.5 | | | n/a | | | 0 | n/a | n/a |
| 12/30/2009 | 9.5 | 210 | 0.65 | n/a | 170 | 0.25 | 0 | n/a | n/a |
| 12/31/2009 | 0 | | | n/a | | | 0 | n/a | n/a |
| Totals | 6,331 | -- | -- | -- | -- | -- | 823 | -- | -- |
| 2009 Min | 0 | 210 | < 0.20 | n/a | 170 | < 0.20 | 0 | n/a | n/a |
| 2009 Max | 34.5 | 340 | 0.7 | n/a | 280 | 1.2 | 25 | n/a | n/a |
| 2009 Avg⁴ | 17.3 | 273 | 0.46 | n/a | 227 | 0.38 | 2.3 | n/a | n/a |

1--Currently, there is no method in place for measuring stormwater discharge into site STWMA-7.

2--Water quality is not measured at STWMA-8 because the source water recharged at STWMA-8 is the same as the source water at STWMA-6.

3--Values of nitrate-nitrogen that are reported as non-detect are included in the annual average by setting the non-detect results as equal to the detection limit divided by $\sqrt{2}$. The detection limit is 0.2, thus a result of 0.18 is used in the average.

4--The average value represents the arithmetic average for measurements made in 2009, not the volume-weighted concentrations of TDS and NO₃-N

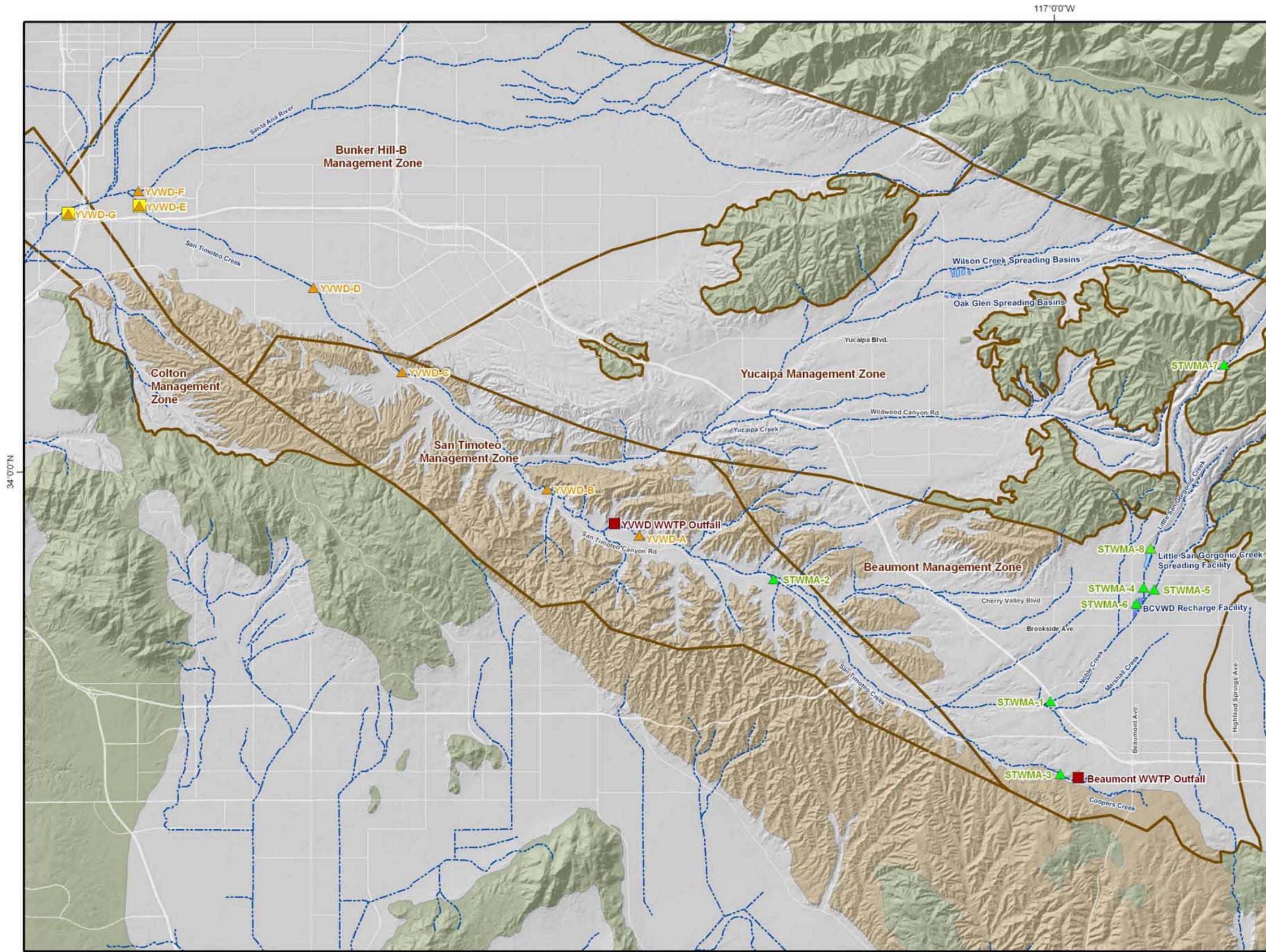
"--" indicates site was dry and no water quality sample could be collected.

Table 2-5
2009 Surface Water Monitoring Program Results
Yucaipa Management Zone Groundwater Recharge Facilities

| Quarter | Wilson Creek Spreading Basins (Imported SWP Water) | | | Oak Glen Spreading Basins (Imported SWP Water) | | |
|---------------------------------|----------------------------------------------------|--------------------|------------------------------------------------|------------------------------------------------|--------------------|------------------------------------------------|
| | Recharge <i>acre-ft</i> | TDS <i>mg/L</i> | NO ₃ -N ¹ <i>mg/L</i> | Recharge <i>acre-ft</i> | TDS <i>mg/L</i> | NO ₃ -N ¹ <i>mg/L</i> |
| January | 0 | -- | -- | 0 | -- | -- |
| February | 0 | -- | -- | 0 | -- | -- |
| March | 0 | -- | -- | 0 | -- | -- |
| April | 0 | -- | -- | 0 | -- | -- |
| May | 0 | -- | -- | 0 | -- | -- |
| June | 0 | -- | -- | 0 | -- | -- |
| July | 0 | -- | -- | 0 | -- | -- |
| August | 0 | -- | -- | 0 | -- | -- |
| September | 530 | 250 | < 0.2 | 30 | 240 | < 0.2 |
| October | 615 | 200 | < 0.2 | 0 | -- | -- |
| November | 595 | 260 | 0.45 | 0 | -- | -- |
| December | 0 | -- | -- | 0 | -- | -- |
| Totals | 1,740 | | | 30 | | |
| 2009 Min | 230 | 200 | < 0.2 | 30 | 240 | < 0.2 |
| 2009 Max | 770 | 260 | 0.45 | 30 | 240 | < 0.2 |
| 2009 Average² | 145 | 237 | 0.27 | 30 | 240 | < 0.2 |

1--Values of nitrate-nitrogen that are reported as non-detect are included in the annual average by setting the non-detect results as equal to the detection limit divided by $\sqrt{2}$. The detection limit is 0.2, thus a result of 0.18 is used in the average.

2--The average value represents the arithmetic average for measurements made in 2009, not the volume-weighted concentrations of TDS and NO₃-N

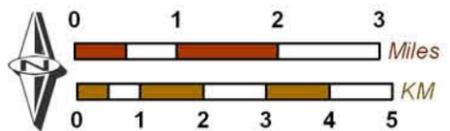


- Surface Water Monitoring Sites**
- ▲ Beaumont Sampling Site
 - ▲ YVWD Sampling Site
 - USGS Gaging Station
 - Recycled Water Discharge Location
- Other Features**
- Management Zone Boundary
 - Rivers and Streams
 - Imported Water Recharge Facility
- Geology**
- Water-Bearing Sediments**
- Unconsolidated to Semi-consolidated Quaternary Alluvium
 - Semi-consolidated San Timoteo Formation
- Consolidated Bedrock**
- Undifferentiated Pre-Tertiary Igneous and Metamorphic Crystalline Rocks



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City of Beaumont & YVWD
 Maximum Benefit Monitoring Program
 2009 Annual Report

Surface Water Monitoring Program
 Monitoring Locations

Figure 2-1

Section 3 – Groundwater Monitoring Program

The objective of the Maximum Benefit Groundwater Monitoring Programs (GWMPs) are: (i) to characterize the effects of the implementation of the maximum benefit TDS and nitrate-nitrogen water quality objectives on water levels and water quality in the BMZ, STMZ, and YMZ; (ii) to collect sufficient groundwater quality data such that the triennial recomputation of ambient water quality can be performed (see Commitment 6 in Tables 1-2 and 1-3); and (iii) to assess the salt balance in each management zone.

3.1 Regional Well Canvass

The original Maximum Benefit Monitoring Program workplans contained tables of all known wells in the BMZ, STMZ, and YMZ (WEI, 2004; YVWD, 2004). The first task of the GWMPs was to update this regional well information and to identify wells that could be used for water level and water quality monitoring through a regional well canvassing effort. During the 2004 ambient water quality recomputation (covering the 1984 through 2003 period), ambient TDS and nitrate-nitrogen concentrations could not be calculated for the STMZ due to insufficient data. Thus, a major focus of the regional well canvass was to locate existing wells in the STMZ that could be included in the monitoring program.

The information that was collected and/or updated through the well canvass effort included: well name(s), well owner, location coordinates, well status, well depth, and screened intervals. Well information was obtained from the BCVWD, the City of Banning (Banning), the City of Redlands (Redlands), the County of San Bernardino, the Sharondale Mesa Owners Association (SMOA), the South Mesa Water Company (SMWC), the Western Heights Water Company (WHWC), the United States Geological Survey (USGS), and the YVWD. Attempts were made to collect the same information from private well owners. Field work was performed to locate each well and determine whether water level measurements and water quality samples could be obtained. If a well was located on private property or in a region that was not accessible, a letter was left at the home or business. The letter requested permission to include the well in the GWMP and included contact information. In many cases, private well owners did not respond to the letter or chose not to participate in the monitoring program.

In March 2007, the two-year well canvass of the region was completed. Since then, regional well information has been continually updated as new information has become available. Figure 3-1 shows the current status of wells in the region.

3.2 Key Well Monitoring Programs

A Key Well Monitoring Program for water level and water quality data was developed based on the results of the key well canvass and submitted to the Regional Board for approval in July 2007. These programs were designed to improve the spatial distribution of groundwater data throughout the BMZ, STMZ, and YMZ, and, thereby, to support future ambient water quality assessments. Each program is made up of two components: 1) a field program wherein private wells identified during the well canvass are monitored and 2) a cooperative data collection program wherein data are obtained from various agencies in the region that actively monitor

their own wells. The City/STWMA are responsible for all data collected in the BMZ, the YVWD is responsible for all data collected in the YMZ, and both agencies are equally responsible for data collected in the STMZ.

While there are numerous wells in the STMZ, many private well owners have restricted access to their property or have chosen not to participate in the GWMPs. During the 2007 recomputation of ambient water quality (covering the 1987 through 2006 period), ambient TDS and nitrate-nitrogen concentrations could not be determined for the STMZ due to insufficient data, particularly in the western half of the management zone. In response, the Regional Board mandated that the maximum benefit parties prepare a workplan to augment the STMZ groundwater monitoring network. On October 30, 2008, the City, the STWMA, and the YVWD submitted a workplan to drill three new monitoring wells to the Regional Board (WEI, 2008). The progress of the workplan's implementation is discussed in Section 3.2.3.

3.2.1 Key Well Water Level Program

Figure 3-2 identifies the locations of the Key Well Water Level Program wells. The City/STWMA's field program element is comprised of forty-six private wells, and the YVWD's field program element is comprised of nine private wells. Water level measurements are collected from all field program wells on a monthly basis. The remaining wells in the Key Well Water Level Program are monitored by various agencies in the region; each agency monitors its wells at variable frequencies, but measurements are generally collected monthly. The City/STWMA and the YVWD collect these data from cooperating agencies periodically throughout the year. All water level data collected as part of the Key Well Water Level Program are checked for QA/QC and are loaded into a relational database management system.

During this reporting period, a total of 630 water level measurements were collected from private wells in the Key Well Water Level Program: 540 were collected by the City/STWMA, and 90 were collected by the YVWD. Water level data were also collected for all wells that are monitored by the BCVWD, Banning, Redlands, the County of San Bernardino, the SMOA, the SMWC, the WHWC, the USGS, and the YVWD. Figure 3-2 shows all wells that were monitored for groundwater levels in 2009. All water level data collected in 2009 are contained in an Access database, which has been included with this report as Appendix A.

3.2.2 Key Well Water Quality Program

Figure 3-3 identifies the locations of the Key Well Water Quality Program wells. Currently, the field program element of the program is comprised of about thirty private wells: twenty wells are located in the BMZ, eight wells are located in the STMZ, and three wells are located in the YMZ. The number wells monitored in the STMZ will increase once the new monitoring wells are completed (expected June 2010). Initially, all wells selected for the field program are to be monitored on an annual basis. After each well has been sampled for three consecutive years (the minimum requirement for inclusion in the ambient water quality analysis), wells are to be sampled triennially with approximately 10-15 wells being sampled per year. For the majority of

private wells in the Key Well Water Quality Program, sampling commenced in 2006; thus, 2009 was the first year that a smaller subset of wells was sampled. Field program wells are sampled according to the analyte list in Table 3-1. The remaining wells in the Key Well Water Quality Program are monitored by the various water supply agencies in the region. Each agency monitors its wells at variable frequencies, ranging from monthly to triennially. The City/STWMA and the YVWD collect these data from the cooperating agencies periodically throughout the year. All water quality data collected as part of the Key Well Water Level Program are checked for QA/QC and are loaded into a relational database management system.

During this reporting period, water quality samples were collected from 15 private wells in the Key Well Water Quality Program: 8 wells in the BMZ, 6 wells in the STMZ, and 1 well in the YMZ. Additionally, water quality data were collected for all wells that are monitored by the BCVWD, Banning, Redlands, the County of San Bernardino, the SMOA, the SMWC, the WHWC, the USGS, and the YVWD. Figure 3-3 shows all wells that were monitored for groundwater quality in 2009. All water quality data collected in 2009 are contained in an Access database, which has been included with this report as Appendix A.

3.3 STMZ Groundwater Monitoring Program Expansion Status

As previously mentioned, the Regional Board mandated that the maximum benefit parties prepare a workplan to augment the STMZ groundwater monitoring network due to the insufficiency of the number and distribution of wells required to perform the triennial ambient water quality computation. Also noted above, a joint workplan was submitted by the STWMA, the City, and the YVWD on October 30, 2008 (WEI, 2008), and it was accepted by the Regional Board in April 2009 with the adoption of orders R8-2009-0034 and R8-2009-0035 (Regional Board, 2009a; 2009b).

The original workplan detailed a cooperative effort between the STWMA, the City, and the YVWD to construct three monitoring wells up to 400-ft deep in the STMZ by December 2009 (WEI, 2008). In July 2009—when the City assumed full responsibility for the implementation and funding of the maximum benefit commitments in the BMZ and its portion of the STMZ—the City and the YVWD mutually agreed to split the work and construct their own monitoring wells in accordance with the specifications of the monitoring well workplan. Instead of constructing three wells, as described in the 2008 workplan, the two parties agreed to construct a total of four wells: the City agreed to construct two wells in the easternmost end of the STMZ, and the YVWD agreed to construct two wells in the westernmost end of the STMZ. In addition, the City agreed to execute the initial geologic investigation at the Fisherman’s Retreat Well #2—as described in the workplan—to further the general understanding of the STMZ’s hydrogeology.

Upon completion of the monitoring wells, the City and the YVWD will coordinate an intensive groundwater monitoring program wherein all of the key wells in the STMZ will be sampled quarterly for one year. The results of the first set of samples will be used by the Regional Board to make a preliminary estimation of ambient quality (TDS and nitrate-nitrogen) and assimilative capacity in the STMZ. The results of this preliminary estimation will be used by the Regional Board to determine if the maximum benefit parties are in violation of

wasteload allocations or groundwater quality objectives.

3.3.1 Status of the City Monitoring Wells

The proposed locations of the City's two new monitoring wells are shown in Figure 3-4. In August 2009, the City began negotiations to acquire the property needed for the wells and prepared the required CEQA documentation for the construction project. In September 2009, a Categorical Exemption was filed with the State of California. Due to initial complications in obtaining land titles, the City made a request to the Regional Board in October 2009 for an extension of the monitoring well completion schedule from December 2009 to March 2010. In December 2009, the City completed the geologic investigations at the Fisherman's Retreat well and acquired ownership of the SunCal Heartland Well, located along Cooper's Creek (see Figure 3-4). Also in December 2009, further delays in obtaining land ownership prompted the City to request a second extension of the monitoring well completion schedule from March 2010 to May 2010. The City obtained title for the well sites in early 2010 and broke ground for monitoring well construction on March 24, 2010. Both monitoring wells are expected to be complete by the end of May 2010. The City's letters requesting schedule changes have been included with this report as Appendix B.

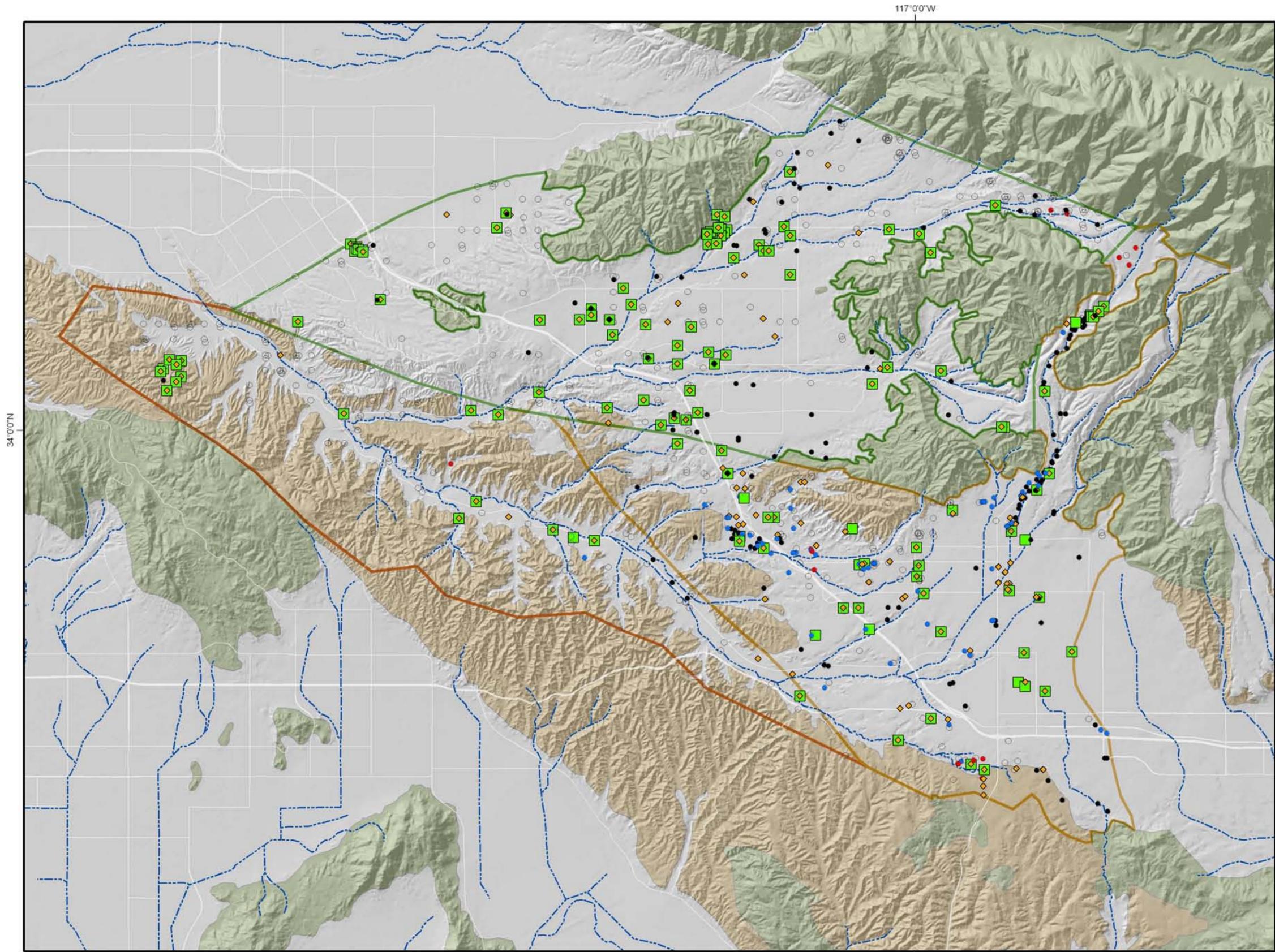
3.3.2 Status of the YVWD Monitoring Wells

In December 2009, the YVWD submitted a draft well completion report, describing four monitoring wells that were constructed in the western half of the STMZ (C.H.J. Incorporated, 2009). Each well was constructed to a depth between 70 and 85 feet below ground surface. The locations of the YVWD's four new monitoring wells are shown in Figure 3-4. Before and after construction of the four new monitoring wells, the YVWD located and sampled five privately owned residential wells within close proximity to the new monitoring wells to compare with water quality results obtained from the monitoring wells. The residential wells sampled are shown in Figure 3-4.

Upon review of the well completion report, the Regional Board determined that the four monitoring wells were not constructed in accordance with the approved monitoring well workplan, arguing that the YVWD did not drill to 400 feet nor perform the required borehole geophysical surveys. Subsequently, the Regional Board requested that the YVWD construct two more wells that comply with the specifications of the approved workplan. YVWD staff located a recently constructed, deep production well (~2005) that appears to fit the specifications of the workplan. The Regional Board has agreed to allow the YVWD to use this well as a substitute for one of the two required monitoring wells, provided that the well construction information can be obtained from the well owner. The YVWD plans to complete construction of the second required well in June 2010. The locations of the privately owned well and the proposed new monitoring well are shown in Figure 3-4. To begin to characterize the quality of the existing deep monitoring well, the YVWD is sampling the well on a monthly basis.

**Table 3-1
Analyte List for the Key Well Water Quality Program**

| Analytes |
|--------------------------------------------------------------|
| Alkalinity (Including Bicarbonate, Carbonate, and Hydroxide) |
| Ammonia-nitrogen |
| Calcium |
| Chloride |
| Fluoride |
| Magnesium |
| Nitrate-nitrogen |
| Nitrite-nitrogen |
| pH |
| Potassium |
| Silica |
| Sodium |
| Specific Conductance |
| Sulfate |
| Total Dissolved Solids |
| Total Inorganic Nitrogen |
| Total Kjeldahl Nitrogen (TKN) |
| Total Nitrogen |



- Current Well Status**
- ◻ Water Quality and Water Level Possible
 - ◻ Water Quality Possible
 - ◊ Water Level Possible
 - Well Not Suitable for Monitoring
 - Well Access Denied by Owner
 - Well Abandoned or Destroyed
 - Well and/or Owner Unable to be Located

- Other Features**
- Beaumont Management Zone
 - San Timoteo Management Zone
 - Yucaipa Management Zone
 - Rivers and Streams

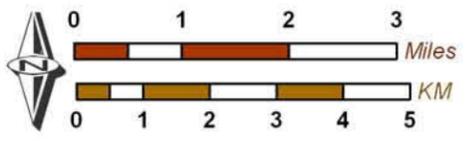
- Geology**
- Water-Bearing Sediments*
- Unconsolidated to Semi-consolidated Quaternary Alluvium
 - Semi-consolidated San Timoteo Formation
- Consolidated Bedrock*
- Undifferentiated Pre-Tertiary Igneous and Metamorphic Crystalline Rocks



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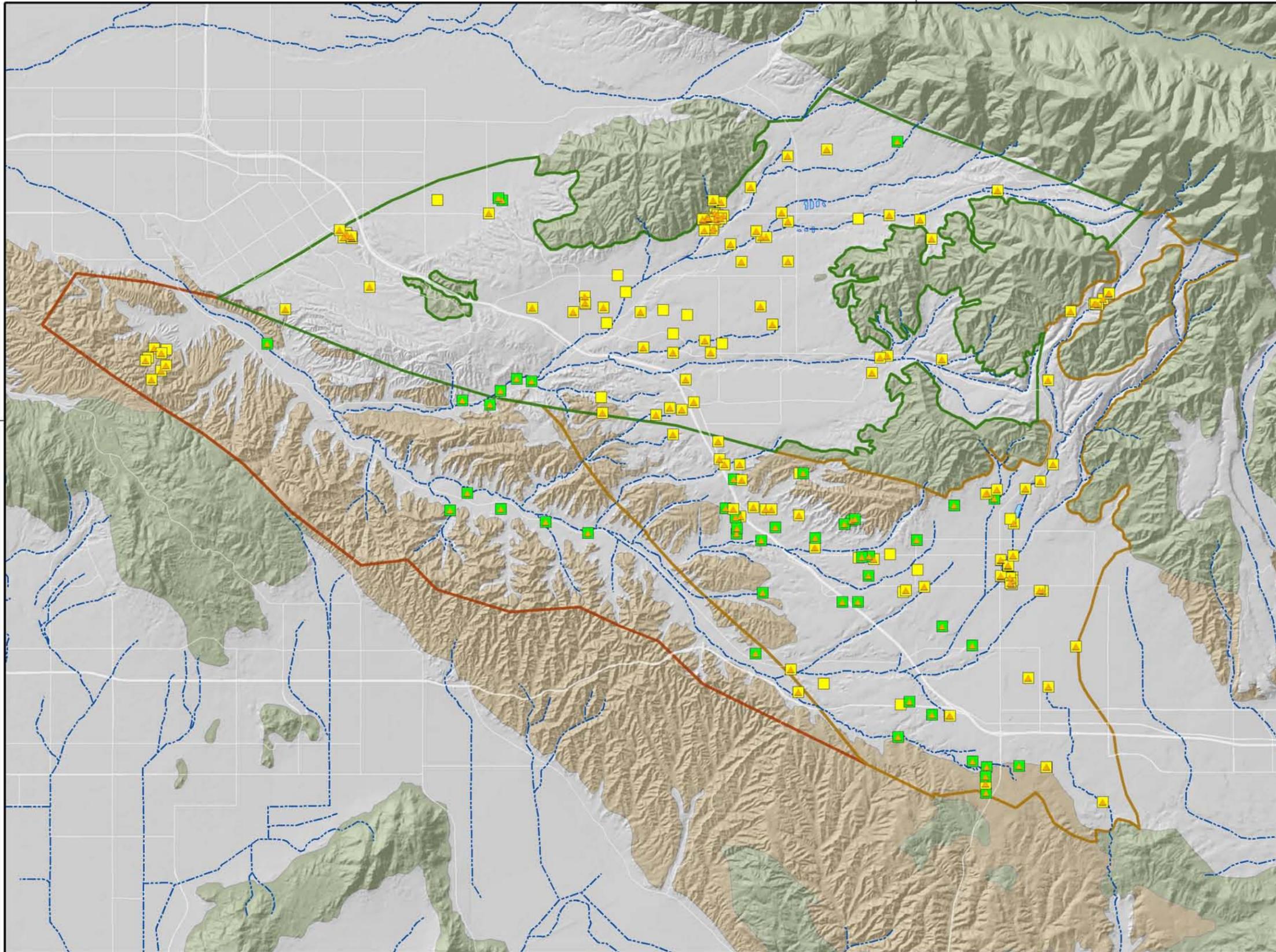
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 Maximum Benefit Monitoring Program
 2009 Annual Report

Groundwater Monitoring Program
 Status of Wells in the Beaumont, San Timoteo
 and Yucaipa Management Zones

Figure 3-1

117°00'W

34°00'N



Key Well Water Level Program

- Water Level Key Wells – Field Program
- Water Level Key Wells – Cooperative Data Collection
- ▲ Wells with Water Level Data in 2009

Other Features

- Beaumont Management Zone
- San Timoteo Management Zone
- Yucaipa Management Zone
- Rivers and Streams
- Imported Water Recharge Facility

Geology

Water-Bearing Sediments

- Unconsolidated to Semi-consolidated Quaternary Alluvium
- Semi-consolidated San Timoteo Formation

Consolidated Bedrock

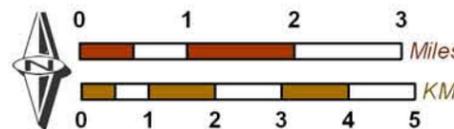
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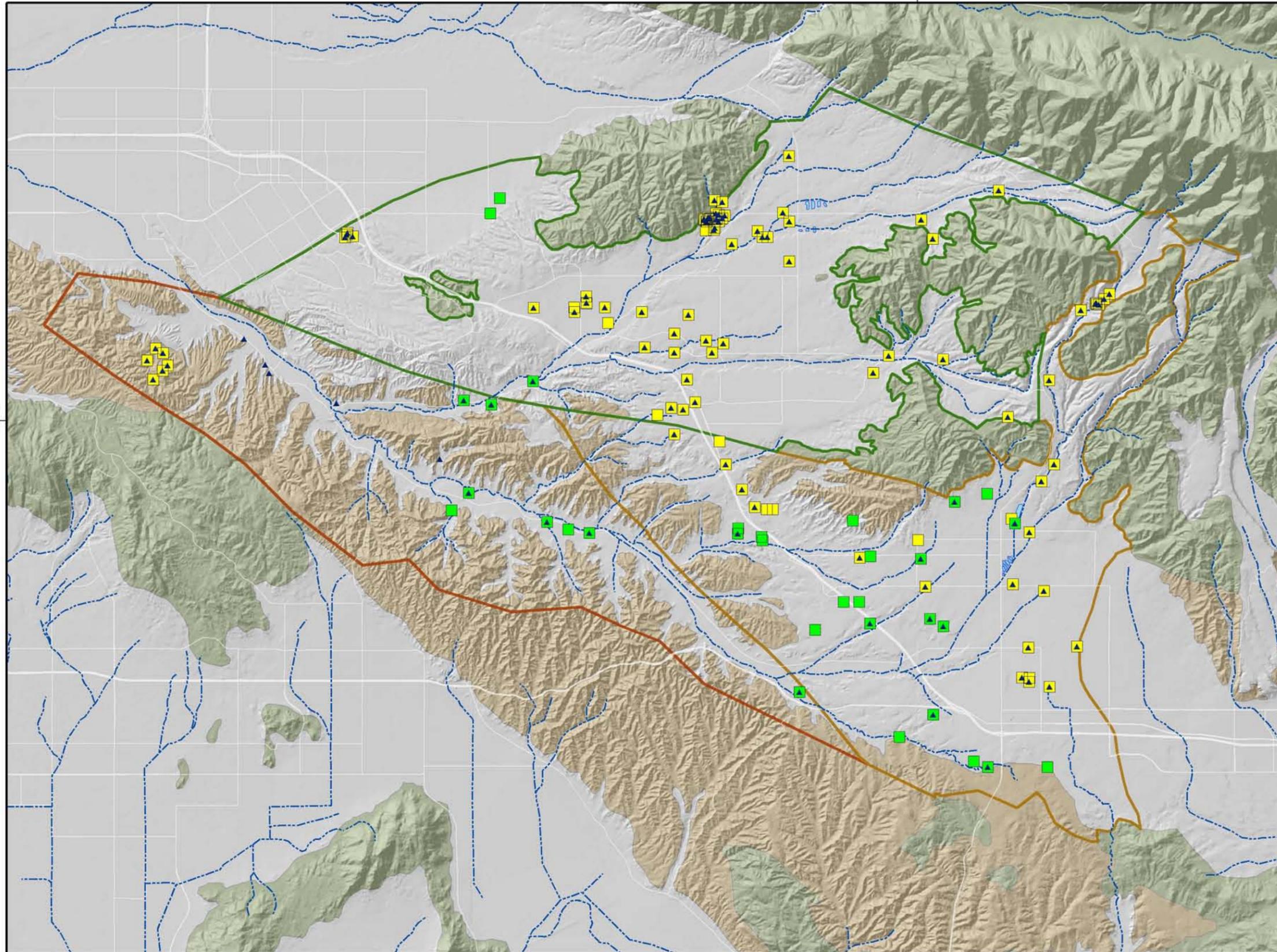
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 Maximum Benefit Monitoring Program
 2009 Annual Report

Key Well Water Level Program
 Wells with Data in 2009

Figure 3-2

117°00'W

34°00'N



Key Well Water Quality Program

- Water Quality Key Wells – Field Program
- Water Quality Key Wells – Cooperative Data Collection
- ▲ Wells with Water Quality Data in 2009

Other Features

- Beaumont Management Zone
- San Timoteo Management Zone
- Yucaipa Management Zone
- Rivers and Streams
- Imported Water Recharge Facility

Geology

Water-Bearing Sediments

- Unconsolidated to Semi-consolidated Quaternary Alluvium
- Semi-consolidated San Timoteo Formation

Consolidated Bedrock

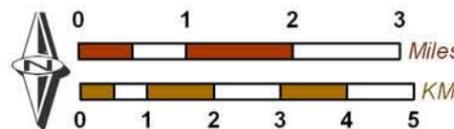
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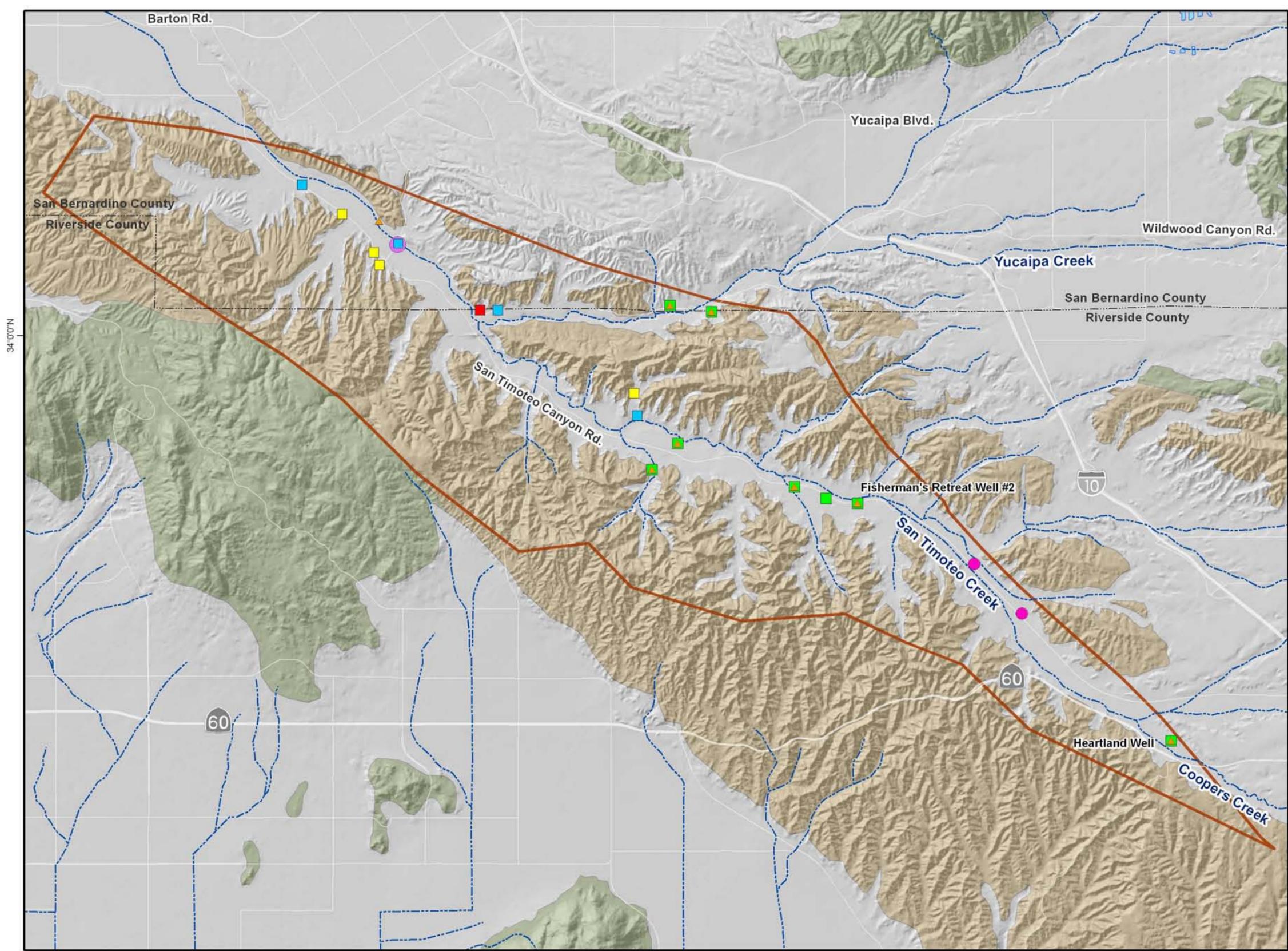
Author: SSA
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City of Beaumont & YVWD
 Maximum Benefit Monitoring Program
 2009 Annual Report

Key Well Water Quality Program
 Wells with Data in 2009

Figure 3-3



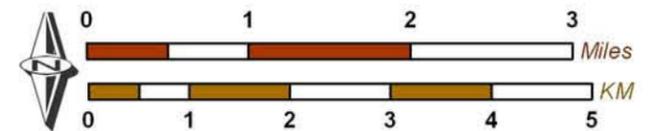
- San Timoteo Management Zone Monitoring Program**
- San Timoteo Management Zone
 - Existing Wells Monitored for Water Quality
 - Existing Wells Monitored for Water Level
 - New City of Beaumont Monitoring Wells
 - New YVWD Monitoring Wells (<85 ft. deep)
 - Proposed YVWD Monitoring Well (~400 ft. deep)
 - Proposed YVWD Deep Monitoring Well Substitute
 - Additional Private Wells Sampled by YVWD in 2009
- Other Features**
- Rivers and Streams
 - Imported Water Recharge Facility
- Geology**
- Water-Bearing Sediments**
- Unconsolidated to Semi-consolidated Quaternary Alluvium
 - Semi-consolidated San Timoteo Formation
- Consolidated Bedrock**
- Undifferentiated Pre-Tertiary Igneous and Metamorphic Crystalline Rocks



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City of Beaumont & YVWD
 Maximum Benefit Monitoring Program
 2009 Annual Report

San Timoteo Management Zone
 Expanded Groundwater Monitoring Program Wells

Figure 3-4

Section 4 – References

- California Regional Water Quality Control Board, Santa Ana Region. (2004). *Resolution No. R8-2004-0001 Resolution Amending the Water Quality Control Plan for the Santa Ana River Basin to Incorporate an Updated Total Dissolved Solids (TDS) and Nitrogen Management Plan for the Santa Ana Region.*
- California Regional Water Quality Control Board, Santa Ana Region. (2005a). *Resolution No. R8-2005-0065—Resolution Approving the San Timoteo and Yucaipa Management Zones Maximum Benefit Surface Water and Groundwater Monitoring Program Proposals as Required in the Total Dissolved Solids and Nitrogen Management Plan Specified in the Water Quality Control Plan for the Santa Ana River Basin.*
- California Regional Water Quality Control Board, Santa Ana Region. (2005b). *Resolution No. R8-2005-0066 Resolution Approving the San Timoteo and Beaumont Management Zones Maximum Benefit Surface Water and Groundwater Monitoring Program Proposals as Required in the Total Dissolved Solids and Nitrogen Management Plan Specified in the Water Quality Control Plan for the Santa Ana River Basin.*
- California Regional Water Quality Control Board, Santa Ana Region. (2008a). *Water Quality Control Plan for the Santa Ana River Basin (Region 8)* (updated February 2008).
- California Regional Water Quality Control Board, Santa Ana Region. (2008b). *Maximum Benefit Commitment Status.* Letter to the Yucaipa Valley Water District from the Regional Board, dated August 13, 2008.
- California Regional Water Quality Control Board, Santa Ana Region. (2008c). *Maximum Benefit Commitment Status.* Letter to the San Timoteo Watershed Management Authority and the City of Beaumont from the Regional Board, dated August 22, 2008.
- California Regional Water Quality Control Board, Santa Ana Region. (2009a). *Resolution No. R8-2009-0034—Resolution Approving the Workplan Submitted by the Yucaipa Valley Water District to Install Monitoring Wells in the San Timoteo Groundwater Management Zone to Collect Data Necessary to Determine the Ambient TDS and Nitrogen Quality as Required in the Total Dissolved Solids and Nitrogen Management Plan Specified in the Water Quality Control Plan for the Santa Ana River Basin.*
- California Regional Water Quality Control Board, Santa Ana Region. (2009b). *Resolution No. R8-2009-003—Resolution Approving the Workplan Submitted by the San Timoteo Watershed Management Authority and the City of Beaumont to Install Monitoring Wells in the San Timoteo Groundwater Management Zone to Collect Data Necessary to Determine the Ambient TDS and Nitrogen Quality, and Plan and Schedule to Reduce Discharges of Treated Wastewater to Unlined Portion of San Timoteo Creek, as Required in the Total Dissolved Solids and Nitrogen Management Plan Specified in the Water Quality Control Plan for the Santa Ana River Basin.5*
- C.H.J. Incorporated. (2009) *Monitoring Well Installation: San Timoteo Canyon and Live Oak Canyon Areas, Riverside and San Bernardino Counties, California.*



- Wildermuth Environmental, Inc. (2000). *TIN/TDS Phase 2A: Tasks 1 through 5, TIN/TDS Study of the Santa Ana Watershed, Technical Memorandum.*
- Wildermuth Environmental, Inc. (2004). *San Timoteo Watershed Management Program Maximum Benefit Monitoring Plan.*
- Wildermuth Environmental, Inc. (2008). *San Timoteo Management Zone Monitoring Network Development Workplan.*
- Yucaipa Valley Water District. (2004). *Monitoring Program for the Yucaipa Management Zone and San Timoteo Management Zone.*

Appendix A

Data Collected for the Maximum Benefit Program (Compact Disk)

Appendix B

**Letters to the Regional Board from the City of Beaumont Requesting Compliance Schedule
Extensions for the STMZ Monitoring Wells**



City of Beaumont

550 E. 6th Street
Beaumont, CA 92223
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October 16, 2009

Mr. Gerard J. Thibeault
Executive Officer
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501

MAXIMUM BENEFIT COMMITMENT STATUS FOR THE CITY OF BEAUMONT

Dear Mr. Thibeault:

In October 2008, the City of Beaumont (City) and others submitted the *San Timoteo Management Zone Monitoring Network Development Work Plan*. The City received your letter, dated March 19, 2009, acknowledging that the work plan was acceptable.

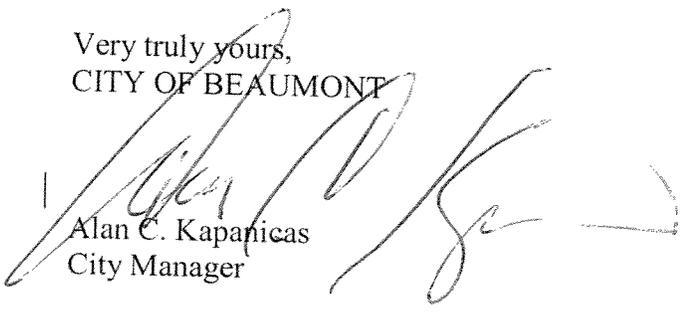
The City is responsible for developing the two easterly monitoring wells. Substantial progress has been made in this regard along with other elements of the Maximum Benefit, as set forth in the City's waste discharge permit, including: i) the construction of a new discharge pipeline within the Beaumont Management Zone, ii) the acquisition of the Heartland Well along Cooper's Creek, and iii) the retention of Wildermuth Environmental to prepare water quality monitoring reports.

In August 2009, the City prepared the CEQA documentation (Categorical Exemption) for the two monitoring wells and a bid package to solicit well contractors. In September 2009, the City filed the Categorical Exemption with the State of California (Receipt # 200900659) and began negotiations to acquire the property needed for the wells. The City has obtained title to one of the well sites and expects to receive title to the second well site in a few days. Upon obtaining title to both parcels, the City will go out to public bid for the construction of the wells, hire the selected contractor, construct the monitoring wells and begin collecting groundwater samples.

Thus, we respectfully request a three (3) month extension of time (from December 31, 2009 to March 31, 2010) to complete the groundwater quality determination report. I have included a revised schedule with this letter for your review and approval.

Thank you for your consideration in this matter.

Very truly yours,
CITY OF BEAUMONT


Alan C. Kapanicas
City Manager

Encl. The STMZ – Monitoring Network Implementation Schedule



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December 18, 2009

Gerald Thibeault, Executive Officer
Attention: Cindi Li, Engineering Geologist
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501

RE: City of Beaumont Update on San Timoteo Monitoring Wells

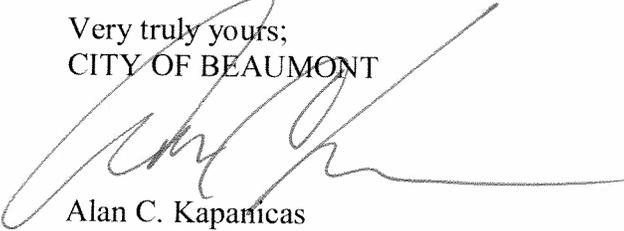
This letter provides an update on the status of the City of Beaumont's progress complying with Regional Board Order No. R8-2005-066 and requests the Regional Board's concurrence with the attached revised schedule with respect to the above referenced project.

The City has secured title to one of the two new monitoring well sites which are required. The City has also acquired title to an existing monitoring well on Cooper's Creek which overlies the South Beaumont Storage Unit. The City expects to have ownership of the second monitoring well site within a matter of a few days. A listing of the updated project milestones is provided below for your review and comment. A copy of the draft plans and specifications are enclosed, also for your review and comment.

1. January 19, 2010 – Plans and specifications to go to the City Council for approval
2. January 20 and 25, 2010 – Publication of Notice Inviting Public Bids
3. January 28, 2010 – Mandatory Pre Bidding Conference
4. February 15, 2010 – Open public bids
5. February 16, 2010 – City Council award of construction contract
6. March 8, 2010 - Contractor to complete mobilization and start construction
7. April 9, 2010 - Contractor to complete Well Site 1
8. May 14, 2010 - Contractor to complete Well Site 2
9. May 30, 2010 - Well Monitoring Report submittal to Regional Board

Thank you very much for your consideration in this matter.

Very truly yours;
CITY OF BEAUMONT



Alan C. Kapanicas
City Manager

