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Program Evaluation Report

City of Modesto Storm Water Program (NPDES Permit No. CAS083526)

Executive Summary

Tetra Tech, Inc., with assistance from the California Regional Water Quality Control Board, Central Valley Region (Regional Board), conducted a program evaluation of the City of Modesto's Storm Water Program (Program) in February 2004. The purpose of the program evaluation was to determine the permittee's compliance with the National Pollutant Discharge Elimination System (NPDES) permit (CAS083526 and Board Order No. R5-2002-0182) and to evaluate the current implementation status of the permittee's Storm Water Management Program (SWMP) with respect to EPA's storm water regulations. The program evaluation included an in-field verification of program implementation.

This program evaluation report identifies program deficiencies and positive attributes and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate overall progress in implementing the program.

The following program deficiencies are considered the most significant:

- Corporation yard lacked adequate storm water controls to prevent pollutants from entering the MS4.
- The City needs to update their guidance manual for new development.
- The City should take steps to more comprehensively evaluate program effectiveness.

Several elements of the permittees' program were particularly notable:

- The City has developed an access maintenance agreement that is required during the plan check phase.
- The City uses a standard annual reporting format and develops a work plan every year.

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1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the permittee’s compliance with the National Pollutant Discharge Elimination System (NPDES) permit (CAS083526 and Board Order No. R5-2002-0182) and to evaluate the current implementation status of the permittee’s Storm Water Management Program (SWMP) with respect to EPA’s storm water regulations. Secondary goals included the following:

- Review the overall effectiveness of the Program.
- Identify and document positive elements of the Program that could benefit other Phase I and Phase II municipalities.
- Acquire data to assist in reissuance of the permit.

40 CFR 122.41(i) provides the authority to conduct the program evaluation.

1.2 Permit History

The NPDES storm water permit was issued on October 18, 2002, and is scheduled to expire on October 1, 2007. The City of Modesto is the only permittee covered by this permit. The current permit, the second issued to the permittee, requires the City to develop and implement a SWMP.

1.3 Logistics and Program Evaluation Preparation

Before initiating the on-site program evaluation, Tetra Tech, Inc., reviewed the following Program materials:

- NPDES Permit No. CAS083526
- City of Modesto SWMP
- City of Modesto 2002/03 Annual Report
- Permittee web sites

On February 9 – 11, 2004, Tetra Tech, Inc., with assistance from the Regional Board, conducted the program evaluation. The evaluation schedule was as follows:

Monday, February 9	Tuesday, February 10	Wednesday, February 11
<ul style="list-style-type: none"> • Program evaluation kickoff meeting • Monitoring and reporting • Planning and Land Development • Industrial/commercial facilities (office) • IC/ID elimination (office) 	<ul style="list-style-type: none"> • Construction (office/field) • Industrial/commercial facilities (field) • Municipal Program and Pesticides Plan (office) 	<ul style="list-style-type: none"> • Municipal Program (field) • Program evaluation outbrief meeting: preliminary findings

Upon completion of the evaluation, an exit interview was held with the permittee to discuss the preliminary findings. During the exit interview, the attendees were informed that the findings were to be considered preliminary pending further review by EPA and the Regional Board.

1.4 Program Areas Evaluated

The following program areas were evaluated:

- Program management, including program effectiveness
- Municipal Program and Pesticides Plan
- Industrial/Commercial Facilities
- Planning and Land Development
- Construction
- Illegal Discharges/Illicit Connection (IC/ID) Elimination Program
- Monitoring and Reporting

1.5 Program Areas Not Evaluated

The following areas were not evaluated in detail as part of the program evaluation:

- Wet-weather monitoring program and monitoring program details (e.g., sample location, types, frequency, parameters).
- Other NPDES permits issued to the copermittees (e.g., industrial or construction NPDES storm water permits).
- Inspection reports, plan review reports, and other relevant files. The program evaluation team did not conduct a detailed file review to verify that all elements of the Program were being implemented as described. Instead, observations by the evaluation team and statements from the permittees' representatives were used to assess overall compliance with permit requirements. A detailed file review of specific program areas could be included in a subsequent evaluation.

1.6 Program Areas Recommended for Evaluation

The evaluation team recommends the following additional assessments:

- A review of how the City implements the Development Standards program after it has been reviewed by the Regional Board.
- An in-depth review of the City's rock well and groundwater monitoring plan to determine the effectiveness of the City's storm water program in reducing pollutants to groundwater.

2.0 Program Evaluation Results

This program evaluation report identifies program deficiencies and positive attributes and is not a formal finding of violation. Program deficiencies are areas of concern for successful program

implementation. Positive attributes indicate a copermittee's overall progress in implementing the Program. The evaluation team identified only positive attributes that were innovative (beyond minimum requirements). Some areas were found to be simply adequate; that is, not particularly deficient or innovative.

The evaluation team did not evaluate all components of each permittee's Program. Therefore, the permittee should not consider the enclosed list of program deficiencies a comprehensive evaluation of individual program elements.

The most significant program deficiencies and positive attributes identified during the evaluation are noted in the Executive Summary and are identified with

text boxes in the following subsections.

2.1 Evaluation of Program Management and Effectiveness

Deficiency Noted:

- *The City should work more closely with the County and nearby Phase II communities to increase storm water coordination.*

In-office evaluations with City staff revealed that coordination with the County and other Phase II municipalities on storm water program implementation has not yet occurred. The City is encouraged to increase coordination with the County and other Phase II communities. Coordination might include the development of a committee that discusses current storm water issues, problems, resource sharing, and information sharing. Because the City has been permitted for approximately 9 years (since June 1994), the City has the opportunity to be a leader in the region on storm water issues.

- *The City should increase interdepartmental coordination on storm water program activities.*

Section D.3 of the permit requires the City to coordinate among its internal departments and agencies and participate in intra-agency activities. During in-office evaluations, storm water staff explained that they hold weekly coordination meetings. Although these meetings are beneficial for the storm water group, other departments that implement the storm water program should be involved. For example, the Engineering and Transportation Department conducts plan check reviews and maintains standards for new development and redevelopment activities. To further solidify the City's storm water program, the Engineering and Transportation Department and other relevant City departments should be included in the coordination meetings. The City should describe in more detail how departmental coordination will occur, including specific storm water contacts within each department.

2.2 Evaluation of Construction Program

Positive Attributes:

- *The City sends out photographs of violations found at construction sites along with the citation letter to illustrate the problems described.*

When sending out a citation letter for a violation at a construction site, the City also attaches photographs of the violations found at the site. This allows the construction operator to easily see the problems identified during the City's inspection and presents visual evidence to support the citation letter.

- *The City's construction inspectors use a checklist that is specific to each construction site, including information on past violations.*

City construction inspectors print out new inspection forms for the inspections they will conduct each week. Each inspection form is customized for each site and includes a summary of the results of the last inspection at the site and any corrective actions noted so the inspector can quickly assess whether the site has implemented the corrective actions.

2.3 Evaluation of Industrial/Commercial Facilities Program

Positive Attribute:

- *The industrial/commercial inspectors were well equipped with a checklist and knowledgeable regarding industrial storm water issues.*

The City industrial/commercial inspectors were equipped with a checklist which adequately identifies outdoor activities, indoor activities, employee training, spill prevention and clean-up, SWPPP components, and monitoring program inspections. The checklist was used during the City's storm water inspection of the Amcor/Enviro Tech Chemical Services facility. The industrial inspector was very knowledgeable, thorough, and used the checklist to identify current and potential on-site storm water issues. The City's industrial inspector also educated the facility manager on storm water issues, City ordinances, as well as state permit requirements.

Deficiency Noted:

- *The City should develop standard operating procedures for conducting industrial inspections.*

Although the City had an adequate inspection checklist, the City is encouraged to develop a formalized set of procedures for conducting industrial/commercial inspections. Approximately 1 to 2 months before the MS4 evaluation, the City had appointed two new staff members to conduct the industrial/commercial inspections. At the time of the evaluation, the two new staff members had not yet been trained by the City's primary storm water inspector on how to conduct inspections. The City should develop a formal set of procedures, which includes the checklist, guidance on how to use the checklist, an enforcement protocol, and other pertinent information. The procedures should also address industrial facilities that have not submitted for coverage under the State's General Industrial Storm Water Permit (non-filers). The City should coordinate with the Regional Board on how non-filers should be reported to the Board. The standard procedures will provide a high level of consistency between inspections, and will help document the process in case staff turnover occurs.

2.4 Evaluation of Municipal Program

Deficiencies Noted:

- *The City lacked the identification of “hot spot” areas in need of increased required maintenance.*

Section D.11.b.v.(a) of the permit requires the City to prioritize and designate catch basin inlets based on the degree of required maintenance. Although the City maintains a database that contains information regarding catch basin cleaning, rock well maintenance, and other municipal maintenance activities, the City has not yet prioritized inlets based on required maintenance. Although the database logs hotline calls regarding problematic storm water facilities (i.e., catch basins, rockwells, etc.), according to storm water staff, the database has not been utilized to prioritize and identify areas in the City that are problematic (hot spots). The City is encouraged to identify these hot spot areas to focus regular maintenance and/or public education efforts.

- *The City lacked formal procedures to conduct routine municipal maintenance activities.*

Although the City municipal maintenance field crews were experienced and well trained, they did not have written standards for how routine maintenance activities should be performed to prevent water quality degradation. Such standards would be useful for new employees as well as existing staff as well as offering a high level of constancy within municipal field staff. These standards could be incorporated into a field BMP manual describing appropriate BMPs staff should use to control storm water when conducting routine maintenance activities.

- *Corporation yard lacked adequate storm water controls to prevent pollutants from entering the MS4.*

During the evaluation, the City’s corporation yard lacked adequate storm water controls for portions of the yard (the City is currently implementing design changes to address many of the issues below). The corporation yard has applied for the State Board’s NPDES General Permit for Industrial Activities and is in the process of developing an industrial SWPPP. A site evaluation of the corporation yard revealed the following storm water issues:

- The landscaping irrigation system had been overflowing into a nearby storm drain inlet. The City should fix the irrigation system to prevent overspray and discharges to the MS4.
- One of the maintenance bays has spills and leaks on the floor. Some of the spills had been covered with absorbent materials, but had not yet been cleaned-up. The corporation yard staff needs to address immediate spill and leak response and clean up.
- The corporation yard lacked visible and accessible spill kits for areas with high potential to spill (fuel area and maintenance bays). The City is encouraged to procure spill kits and place them in areas with high potential to spill.
- The bins that contained cold patch materials, waste materials, and gravel located at the back end of the facility were exposed to storm water runoff. The City is

encouraged to provide cover to these bins to avoid materials for entering adjacent storm drains.

- The stored vehicles on the south side of the maintenance bays showed signs of leaks with no drip pans or other storm water controls in place. The City should provide drip pans for the stored vehicles or otherwise control storm water pollutants from this area.
- On-site storm drains contained debris (parking signs, road cones, and miscellaneous debris). The City should routinely clean and maintain the on-site storm drains.
- Exposed paint cans were found at the paint shop along with other materials. The City should dispose of the empty paint cans or store the cans in a covered area.

Section D.11.b.iii.(a) of the permit requires the City to develop and implement a SWPPP for their corporation yard. At the time of inspection the City was in the process of developing a facility SWPPP. The SWPPP should include the aforementioned issues. The City should also designate a dedicated storm water staff member to conduct routine site inspections to ensure that BMPs are being maintained and are effective.

2.5 Evaluation of Planning and Land Development Program

Positive Attribute:

- *The City has developed an access maintenance agreement that is required during the plan check phase.*

The City has developed a “storm water treatment device access and maintenance agreement” that requires any new development project that incorporates a storm water treatment device to employ on-site control measures to minimize pollutant in urban runoff. The agreement also requires the owner to “maintain the device in a manner assuring peak performance at all times.” According to the storm water staff the access and maintenance agreement has been successful in ensuring that storm water treatment devices are working properly. The City may issue enforcement actions if the owner is non-compliant. The storm water access agreement is available on the Modesto web site at:

http://www.ci.modesto.ca.us/etd/specs/Storm_Water_Quality.htm

Deficiency Noted:

- *The City needs to update their guidance manual for new development.*

As noted in the City’s *Assessment Report on Existing Development Standards for Stormwater Quality Control Measures* (dated September 17, 2003), the City will need to make a number of changes to its *Guidance Manual for New Development and Stormwater Quality Control Measures* (dated January 2001) in order to comply with the requirements in parts 17-21 of the City’s NPDES permit. Some of these changes include modifying project categories required to have both storm water source control and treatment control measures, more specifically addressing pollutants and activities

of concern, and addressing downstream erosion. The City is currently in the process of revising this guidance manual.

During the revision of the guidance manual, the City should review the new development planning programs for suggested approaches. For example, the City of Los Angeles is implementing similar permit requirement under its Standard Urban Storm water Mitigation Plans (SUSMP) program. Los Angeles has developed a *Development BMP Handbook* (currently being revised) that includes a SUSMP review process, required source control BMPs for specific project categories, and “prescriptive” method BMPs for common project categories. A project implementing the BMPs detailed in a prescriptive method would be reviewed in less time than a project proposing a new approach. A copy of the Development BMP Handbook is available on-line at <http://www.lastormwater.org/Pages/partb.htm>.

The County of San Diego has also developed a SUSMP Manual available at http://www.sdcounty.ca.gov/dpw/watersheds/land_dev/susmp.html. This manual includes permitting procedures, project planning considerations, BMP selection guidance, and maintenance requirements. The County has also developed a flow chart of the SUSMP process.

The City should build on these and other examples to develop a guidance that addresses both short and long-term storm water quality issues from new development projects.

2.6 Evaluation of IC/ID Elimination Program

Deficiency Noted:

- *The City is not using it's IC/ID database to evaluate trends for priority areas of concern.*

Section D.12.a of the permit requires the City to “develop and maintain a listing of reported illicit connections and illegal discharges on a map.” The permit also requires the City to “use this information to start an annual evaluation of patterns and trends of illicit connections and illicit discharges, with the objective of identifying priority areas for elimination of illicit connections and illicit discharges.” The City has developed a database that tracks illicit discharges, illicit connections and responses from hotline calls. The information is logged into the database by three (3) office personnel. According to storm water staff, the database has not been used to identify problematic areas or to evaluate trends or patterns to prioritize these areas (see also the finding in section 2.4 on the identification of “hot spots”). The City should use the database as a tool to evaluate trends of illicit discharges and connections. Further assessment of the database will give the City an idea as where to focus investigations and/or educational outreach to eliminate illicit discharges and connections.

2.7 Evaluation of Reporting and Monitoring Programs

Positive Attribute:

- *The City uses a standard annual reporting format and develops a work plan every year.*

Attachment B of the City's NPDES permit includes a standard reporting format. The City used this reporting format in submitting their 2002/03 Annual Report in August 2003. The standard reporting format allows the City to report the status of its storm water program to the Regional Board in a consistent format. The standard reporting format can also save the City a significant amount of time and resources that was previously spent on reporting. The City is encouraged to work with the Regional Board in modifying the standard reporting format as necessary to accurately report activities. The City also develops a work plan that is submitted to the Regional Board every April describing activities for the coming year.

Deficiencies Noted:

- *The City faces significant challenges in addressing storm water discharges to rock wells and groundwater.*

The City has over 11,000 rock wells with a majority of the City draining to these rock wells instead of surface water. The City is developing a rock well monitoring plan to assess the overall performance and level of protection afforded by the rock wells, however determining the water quality impact and effectiveness of these rock wells will be difficult. Because of the large number of rock wells and the large percentage of the City that drains to rock wells, the City is encouraged to continue pollution prevention efforts around rock wells and to develop an effective monitoring plan to assess whether storm water management practices need to be modified to protect groundwater quality.

- *The City should take steps to more comprehensively evaluate program effectiveness.*

The City should take steps to more comprehensively evaluate program effectiveness, beyond the collection of water quality monitoring data. The current method of evaluating the Program is to account for activities such as the number of public education events, number of catch basins cleaned, number of outfalls inspected, and other basic performance measures. The City's SWMP identifies assessment tasks for most control measures which are linked to a specific performance standard (i.e. sanitary sewer overflows). To provide a mechanism to measure program effectiveness, the City should re-examine the current assessment tasks to make sure they are used as a tool for program evaluation in addition to being used for reporting. For example, section 6 of the SWMP describes assessment tasks for construction, including tasks related to enforcement. The enforcement assessment tasks relate to tracking ordinance revisions, modifications to forms, and adoption of an enforcement policy. The City should use the assessment tasks to analyze not only *what happened*, but *why* it happened and *what needs to change* in the future to improve the program.

Ultimately, this evaluation of assessment tasks will help the City evaluate water quality monitoring data to document water quality improvements.

The City is encouraged to expand upon the program evaluation section in the SWMP and future annual reports. For additional information on program evaluations, the City should review the presentations from the November 14, 2003, meeting of the California Storm Water Quality Association. This meeting focused on MS4 program effectiveness and how MS4s can document program effectiveness. The presentation materials are available at <http://www.casqa.org/swqtf/presentations.htm>. An additional resource is *A Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Management Programs* developed by the San Diego Municipal Storm Water Copermittees. A copy of this report is available at http://www.projectcleanwater.org/pdf/Copermittees/assessment_framework_final.pdf.