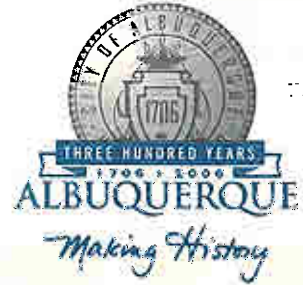


CITY OF ALBUQUERQUE



November 27, 2007

Ms. Sonia Hall
U.S. EPA, Region 6
Water Enforcement Branch (6EN-WC)
1445 Ross Avenue
Dallas, Texas 75202-2733

**RE: Albuquerque Municipal Separate Storm Sewer System Permit No. NMS000101
DRAFT Best Management Practices (BMP) Assessment**

As per Table III.B, Activity 11, of the above mentioned MS4 Permit, the following is a draft report providing an evaluation and assessment of the effectiveness of Best Management Practices (BMP) implemented by the MS4 partners to comply with fecal coliform Total Maximum Daily Loadings (TMDL). This draft report assesses the effectiveness of the BMPs as described in Table III.B, Activity 9 of the MS4 Permit.

In order to determine which BMPs would be most effective in reducing fecal coliform TMDL, the City of Albuquerque (COA) and Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) first conducted two intensive investigations to determine the source of fecal coliform in storm water from the Albuquerque Metro Area. Both the antibiotic resistance analysis method and the DNA source tracking method were used to identify the source of fecal coliform contamination by watershed. The results of both studies, the Antibiotic Resistance Analysis of Contamination in Storm Water (ARA) Study (Camp, Dresser, and McKee, 2001) and the DNA Bacteria Source Tracking (BST) Study (Parsons Water & Infrastructure, 2005), indicate the major sources of fecal coliform contamination as coming from birds (46%), dogs (24%), and human/sewage (16%).

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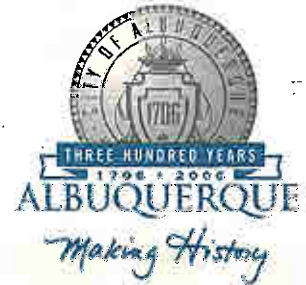
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The COA conducted a field study to further examine the source of fecal coliform contamination attributed to human/sewage in the BST. An intense dry weather screening of the storm water outfalls was performed to analyze the presence of human/sewage flows. These dry weather screenings have proven to be negative and it appears that the source of the indicated human/sewage contamination results from the contact of storm water with material in dumpsters or "dumpster juice" and not cross-connections of sanitary sewer lines. To deal with contamination due to "dumpster juice", the COA implemented a City Ordinance (Volume II, Chapter 22, Section 8, Development Process Manual) cited in the 2005 annual report. This ordinance mandates the use of structural controls for new development projects that historically have had the potential to generate the most serious post storm water pollution problems.

As described in the "Revised Procedures to Prevent Discharge of Pollutants from Sanitary Sewers in the MS4 System" submitted in the May 2005 Progress Report (Table IIIA, Activity 9), true cross connections are very infrequent. More commonly, breaks in sanitary lines that have been sleeved through larger diameter storm sewer occur. Storm Drainage Division works with Sanitary System Sewer Department to replace and reroute the sanitary sewer line as needed. In addition, engineers between the two departments coordinate the replacement of adjacent sanitary sewers during the construction of any new storm sewer installation.

The COA, AMAFCA, and the New Mexico Department of Transportation (NMDOT) have also developed and instituted innovative technologies for the improvement of storm water quality. As presented in "Criteria and Procedures to Assess the Feasibility of Adding Storm Water Quality Features to New/Existing Flood Control Facilities Controlled by COA/AMAFCA/ NMDOT" in the May 2005 Progress Report (Table IIIA, Activities 6a & 6b), these partners have worked together to install debris control facilities on principal spillways of new and existing flood control structures and retrofitted existing debris control facilities to

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remove a higher percentage of floating debris. AMAFCA and the COA also completed a study of gross pollutants in the Albuquerque Metro Area entitled "AMAFCA/Albuquerque MS4 Floatable & Gross Pollutant Study" (ASCG, Inc., 2005). Although the results of the study are inconclusive with regards to the effect of floatables/debris reduction on bacterial loading, the reduction of floatables/debris was shown to significantly improve water quality in general.

After reviewing the indicated fecal coliform sources in the ARA and BST studies, the MS4 co-permittees decided that education, enforcement of existing ordinances, and implementation of new ordinances, as needed, were the best methods to reduce fecal coliform sources and prevent future fecal discharges. As proposed in the MS4 Fecal Coliform Reduction Program submitted in May 2005, raising the public's level of knowledge about the hazards of pet waste and the enforcement of existing pet waste disposal became the cornerstone.

Specific activities taken to increase the public's awareness of the fecal coliform problem have included forming a partnership with the County of Bernalillo to implement a watershed-wide public information program targeted at the control of dog feces and other pollutant sources in the Middle Rio Grande Watershed. Since 2004, contracts ranging in value from \$47,000/year to \$50,000/year have been awarded to a local public relations firm to assist in developing a comprehensive program to reduce storm water pollution from pet waste and trash. This "Scoop the Poop" program was initiated with an advertising campaign using TV and radio spots and billboards to target dog feces and trash as unwanted storm water pollutants. Television and radio spots continue to be broadcast and a public relations firm is currently working on a short video presentation to appeal to school-age groups.

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The MS4 partners have also printed educational brochures discussing the ramifications of improper pet waste and trash disposal and emphasizing proper disposal practices. These brochures are handed out at the state fair and other community events. The COA also distributes these brochures in response to citizen complaints regarding improper disposal of pet waste or other potentially hazardous materials received via the City's "311" Hotline.

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The COA Storm Water Drainage Division and AMAFCA also work with COA Open Space Division and COA Parks & Recreation Department to install plastic bag dispensers at Open Space Trailheads and at specific park locations to encourage pet owners to properly dispose of waste. Neighborhood Associations are involved in the public outreach program since the dispensers are installed at their request.

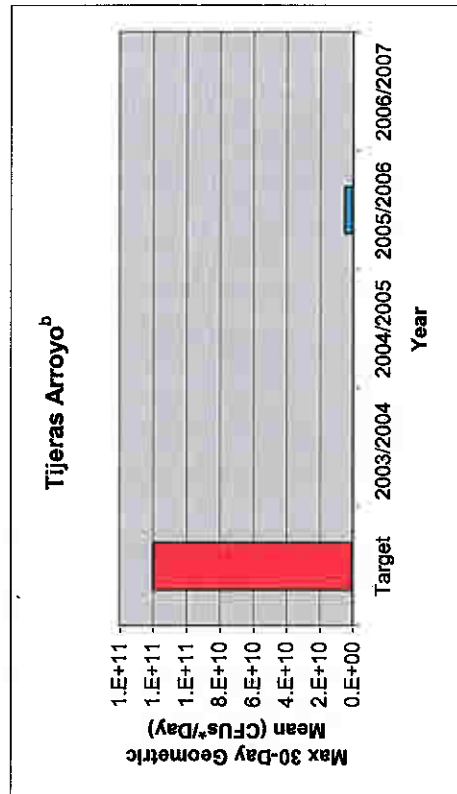
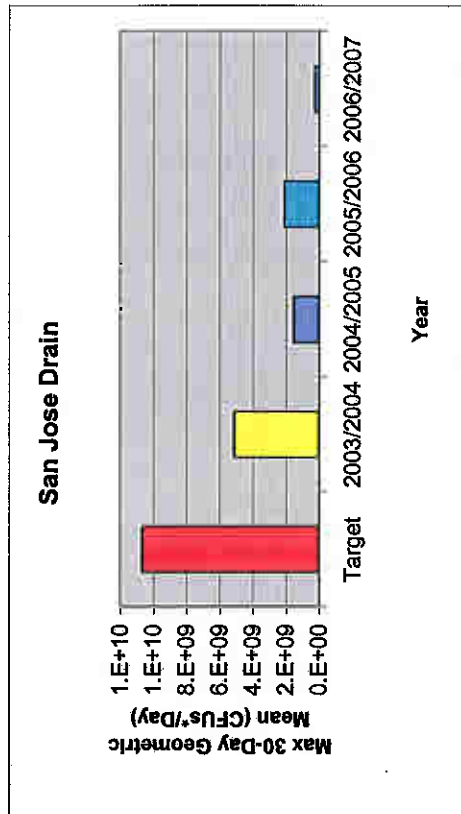
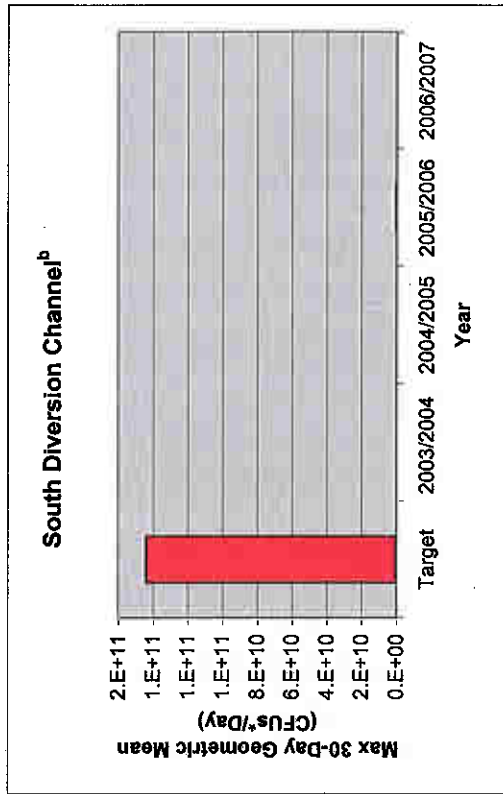
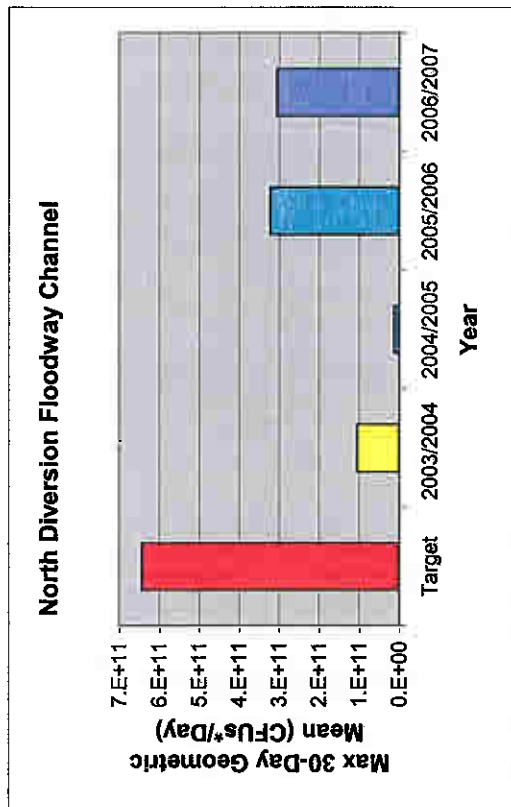
The attached TMDL loading calculations for the past four years in terms of the 30-day maximum geometric mean, provided by the USGS, are summarized in Table 1 and depicted graphically in Figures 1 through 3. Figure 1 shows the maximum 30-day geometric mean in comparison to the target value while Figure 2 presents the log of these values. Figure 3 depicts the maximum 30-day geometric mean as a percentage of the target value. These results show that the co-permittees of the Albuquerque MS4 Storm Water Permit are currently well within the target goals of the fecal coliform TMDL stated in the permit. Because these results indicate that our current BMPs are effective in reducing and/or treating fecal coliform sources and we suggest that no changes be made to our BMPs at this time.


Dan Hogan, P.E., P.S.
Manager, Storm Drainage Division
City of Albuquerque

**Table 1. Fecal Coliform Total Maximum Daily Loading (TMDL)
Results for 2003 through 2006**

Conveyance	30-day Geometric Mean, cfu/day				
	Target	2003 - 2004	2004 - 2005	2005 - 2006	2006 - 2007
North Diversion Floodway Channel	6.438×10^{11}	1.05×10^{11}	1.24×10^{10}	3.21×10^{11}	3.05×10^{11}
San Jose Drain	1.068×10^{10}	5.12×10^9	1.54×10^9	2.10×10^9	2.71×10^8
South Diversion Channel	1.444×10^{11}	3.69×10^7	3.9×10^7	4.85×10^8	1.67×10^7
Tijeras Arroyo	1.199×10^{11}	2.43×10^5	3.4×10^6	4.74×10^9	9.23×10^6

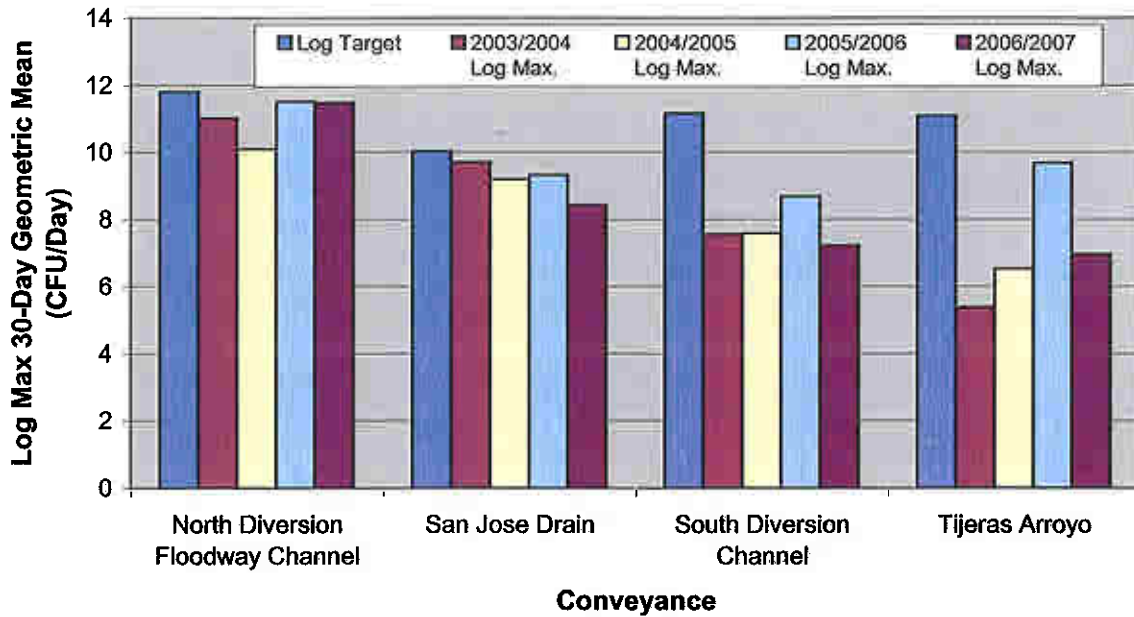
Figure 1. Fecal Coliform Total Maximum Daily Loads (TMDLs)
 Max 30-Day Geometric Mean (CFUs^a/Day)



^aCFU = Colony Forming Unit

^bYearly values compared to target values are orders of magnitude lower

**Figure 2. Fecal Coliform Total Maximum Daily Loads (TMDLs)
for Years 2003-2007
Log Max 30-Day Geometric Mean
(Colony Forming Units [CFU]/Day)**



**Figure 3. Fecal Coliform Results as Percent of Target Total
Maximum Daily Load (TMDL)**

