

SUMMARY
2004 EXEMPLARY BIOSOLIDS MANAGEMENT AWARD NOMINATION
FOR
OPERATING PROJECTS (LARGE)

METROGRO Farm
Resource Recovery & Reuse Department
Metro Wastewater Reclamation District
Denver, Colorado

Denver's Metro Wastewater Reclamation District (District) biosolids management program includes 10 years of successful METROGRO Farm ownership and management for land application of biosolids and dryland crop production. Many aspects of farm property ownership for biosolids were unanticipated or underestimated; however, through lessons learned over the past 10 years, the District has created a sustainable biosolids program, farming practices reflecting good land stewardship, and positive public relations. Proactive management of the METROGRO Farm is resulting from implementation of the Environmental Management System for Biosolids (EMS).

METROGRO Farm

After 14 years of successful land application of biosolids on privately owned farms along Colorado's northern Front Range, the Metro District was beginning to feel the pressure of urban development in the loss of close available farm property in the early 1990s. In 1993, to provide stability and security to the biosolids program, the District purchased the first of three contiguous dry-land farms for dedicated beneficial use of biosolids. The METROGRO Farm, approximately 52,000 acres on the eastern plains of Colorado, is located 65 miles east of the Metro District near the town of Deer Trail, Colorado. This purchase was not intended to replace land application on privately owned farmland; the Metro District splits land application operations about 40/60 between private farm partners and the METROGRO Farm. Between 5 and 10 percent of the District's annual biosolids production continues to be used in the production of Class A Compost.

The METROGRO Farm is typical of eastern Colorado dryland farms: semi-arid and low in organic matter, and water is more often a limiting factor than nutrients. In a proactive attempt to address issues and concerns new neighbors might have at the METROGRO Farm, the Metro District met several times with neighbors, local Soil Conservation District (SCD) members, and staff from the Natural Resource Conservation Service to assure the farm community that their concerns regarding land use changes from agriculture to treatment or production were unfounded. Biosolids operations began on the METROGRO Farm during 1994. These were the same operations — surface application followed by incorporation — the Metro District had practiced on privately owned farms during previous years. The District, based on recommendations from the Resource Recovery and Reuse (RR&R) Department, had also implemented a groundwater-monitoring program with USGS on the first-purchased parcel of the METROGRO Farm so that sampling could begin prior to beginning biosolids applications.

Concerns expressed

Based on farming concerns brought to the attention of Elbert County commissioners by a local SCD, a Cease and Desist Order was issued by the county for biosolids operations on METROGRO Farm in the summer of 1997. The return to biosolids operations was negotiated through a three-way Intergovernmental Agreement (IGA) between the District and the two counties in which the METROGRO Farm property lies: Arapahoe and Elbert. Conditions of the IGA required that a stakeholder group be formed to participate in scoping the expansion of the existing USGS monitoring program, and that the Metro District develop a Farm Management Plan to address the farming practices of concern to the SCD. The District (and the RR&R Department) recognized that the IGA criteria were only a baseline and that efforts exceeding the minimum IGA criteria, as well as regulatory requirements, were called for in order to keep the METROGRO Farm biosolids operations sustainable.

Independent monitoring program

With stakeholder participation, the initial USGS monitoring agreement on METROGRO Farm was expanded to become one of the most comprehensive independent monitoring programs in the country. The initial USGS monitoring effort was established to monitor the effects of biosolids applications on groundwater quality. The expanded monitoring program added monitoring for the effects of biosolids on surface waters and their sediments, soils, and crops. Routine USGS monitoring of Metro's biosolids in USGS laboratories was also included.

USGS reports its data in a stakeholder newsletter (initially quarterly; now twice yearly) and provides an annual presentation to summarize the data and respond to any questions stakeholders may have. To date, these data show the pollutant parameters in control and biosolids-applied areas are indistinguishable. In October 2004, USGS will present their comprehensive interpretative report for the independent METROGRO Farm monitoring program covering 1999-2003. A follow-on monitoring program is also anticipated.

Farm management

The METROGRO Farm Management Plan is a collaborative effort between the Metro District and the tenant farmer to address conservation district concerns and for implementation of best management practices (BMPs) to minimize erosion risks.

Activities for biosolids applications, planting, harvesting, grazing, chemical spraying and erosion control are identified for coordination and tracking. A significant cause of wind erosion on farmland in our area is tillage; both its impact on soil structure and the loss of crop residue. RR&R has changed biosolids applications from incorporation to surface application to eliminate tillage in most all METROGRO Farm operations. This change has also allowed the tenant farmer to replace most his tillage operations with chemical weed control.

Changing practices

Livestock grazing has also been used to control weeds. To prevent over-grazing on the Farm's rangeland, the tenant farmer divided the rangeland into smaller, more manageable units and decreased the graze duration on each unit. BMPs for field patterns have been put into place; field size reduction has been accomplished using strips in some areas and increasing crop diversity in others.

Many of the Farm management practice changes required new field equipment and more diligent management resulting in additional costs. Recognizing the original lease agreement with the tenant farmer did not adequately address the impact of these changes, RR&R and the tenant farmer made revisions for enhanced cooperation and communications. The new lease is more specific in its requirements for biosolids application, crop, grazing and weed control plans. It also provides for adjustable rent based on yield and incentives for the implementation of BMPs similar to federal farm conservation incentive programs.

The Metro District recognized that ongoing public relationships are as critical to success and sustainability as the biosolids and farming practices. Toward that effort, the Metro District meets annually with the conservation districts (CDs) and requests recommendations for conservation projects. These projects, such as terraces and diversion structures, are being identified and implemented by the CDs in cooperation with the District.

Improved listening

The Metro District is listening and responding promptly to neighbors' concerns for fence repairs and shared weed problems. When, after the fourth consecutive year of drought, some neighbors' rangeland was exhausted, the Metro District allowed emergency grazing on the METROGRO Farm so neighbors could avoid having to sell their herds.

To improve safety and eliminate dust, eight miles of an Arapahoe county road to METROGRO Farm was paved in a joint District-county effort. Internal METROGRO Farm road maintenance has also been increased for safety and dust control. Since the purchase of the METROGRO Farm, payments in lieu of property taxes have been made to the counties, and other donations are made regularly to support the communities' volunteer fire department, youth sports, and other important activities.

A bi-annual METROGRO Farm newsletter helps keep the community aware of our METROGRO Farm activities, and an annual Farm picnic provides an opportunity for neighbors and other interested parties to tour the Farm, observe biosolids being land applied, and see Metro as a little more human. The District performed a survey of the METROGRO Farm community in 2000 that showed mistrust and concerns related to both our biosolids and Farm activities. A follow-up survey in 2003 indicated attitudes have changed substantially. The EMS for biosolids is moving the District from changes driven by external necessity to changes driven by internal commitment to continual improvement.