WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION ASSISTANCE IN THE MOUNTAIN CREEK WATERSHED

Final Report Clean Water Act, Section 319(h) Non-Point Source Grant Contract # 00-6

DALWORTH SOIL & WATER CONSERVATION DISTRICT



USDA-Natural Resources Conservation Service Arlington, Texas

> TSSWCB Regional Office Dublin, Texas

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INTRODUCTION

Mountain Creek Watershed is located in Dallas, Ellis, Johnson and Tarrant counties. The drainage areas comprise of approximately 200,000 acres of land. Mountain Creek and Walnut Creek are the major drainage creeks for Joe Pool Lake. Walnut Creek begins in Northern Johnson County and flows through the City of Mansfield before draining into Joe Pool Lake.

The Mountain Creek Watershed area is an important farming area in North Texas. Major crops include, grain sorghum, corn and wheat. Pasture grasses, especially improved bermudagrass, are important agronomic crops in this area.

The Mountain Creek Watershed area is rapidly urbanizing. Midlothian and Mansfield are rapidly growing cities in the drainage area. Many farms are being subdivided into family dwellings.

Joe Pool Lake was put on the state's 303(d) list due to excessive amounts of Atrazine. Atrazine is an herbicide used in grain sorghum and corn production.

In October 2000, the Dalworth SWCD executed an agreement with the Texas State Soil and Water Conservation Board to develop and oversee conservations plans (Water Quality Management Plans – WQMP) development in the drainage area. The WQMPs utilized Best Management Practices (BMPs) to reduce Atrazine deposits in Joe Pool Lake.

In November 2000, the Dalworth SWCD employed a technician to execute all components of the program. The duties of this technician including accepting applications for WQMPs development and assist agricultural producers to install BMPs as outlined in the plans.

A goal was set to develop five WQMPs with producers in these drainage areas. Costshare funds of \$50,000 were allocated to assist the producers to install BMPs. It became clear in October 2003 that producers needed additional time to complete all practices planned. The program was extended to December 31, 2004.

The Dalworth SWCD set the following priorities to fund applications for cost share assistance:

<u>Priority One</u> - operating unit contains cropland field corn/sorghum as primary crops.

<u>Priority Two</u> - operating unit comprised of pastureland/rangeland with some cropland fields.

Priority Three - operating unit comprised of all pastureland/rangeland

BMPs designed to meet various conservation and water quality needs were made a part of the cost-share program. Such practices as waterways, terraces, grass establishment, critical area shaping, grade stabilization structures, filter strips and field borders were among those items made a part of the practice handbook. WQMPs also included nutrient and pest management, along with forage and hay land management plans. WQMPs were written to treat an entire farming unit.

PROGRAM DEVELOPMENT

In March 2000, Texas State Soil and Water Conservation Board (TSSWCB) representatives met with the local SWCD board to discuss the Mountain Creek Atrazine Remediation Program. It was determined that the program could start in the summer of 2000 and the SWCD could begin the hiring process for a planner/technician (part-time). A technician/planner was hired in November 2000.

The technician developed a list of potential applicants using Farm Service Agency (FSA) records to determine eligible producers. A total of 146 eligible farms were identified from FSA records. The local SWCD also development their list of eligible BMPs in November 2000 and sent the list to the state board for review and approval.

The first producers were contacted in January 2001.

PROJECT ACCOMPLISHMENTS

The project area for Joe Pool Lake lies on the transition zone between the Grand Prairie and Blacklands Land Resource areas. This area was once a large farming acreage in North Texas. Due to the proximity of the area to the Dallas-Fort Worth Metroplex, this watershed is becoming increasingly urbanized. There are significant acreages of cropland remaining; however, the encroachment of housing development is replacing cropland at an overwhelming rate.

The main agronomic crops grown in this area are small grain, grain sorghum, corn, and sorghum used as hay crops. A trend toward using roundup ready crops has occurred in the last several years. The use of roundup ready crops has reduced acreages treated with Atrazine.

The Dalworth SWCD and the 319 technician identified 146 potential tracts of land in the treatment area. Letters were sent to this group in January 2001. Articles were also printed in local newspapers announcing the program.

A program on the proper use of pesticides was conducted in February of 2001. This program was held in Midlothian and approximately 25 residents participated. Subjects covered included proper use of Atrazine application. The WQMP program concept was also explained.

Five potential applicants were received as a result of this effort. All five applicants were determined to be eligible and it in the high priority category as prescribed by the SWCD. All five applicants developed WQMPs for their lands and the WQMPs were approved by the State SWCDB. One of the five participants declined cost share monies to complete his WQMP.

Four WQMPs were approved by the Dalworth SWCD in 2001. All four program participants began carrying out best management practices during the first year.

Several other applicants for assistance with BMPs were received, but they were determined not to be eligible for the program.

PROJECT ACCOMPLISHMENTS BY TASK

TASK1: Program Coordination and Management.

Objective: Organize an integrated team among the multiple agencies and groups involved with the project to efficiently and effectively achieve project goals:

Subtask 1.1 Conduct semi-annual meetings with project participants to discuss technical assistance activities, project schedule, lines of responsibility, communication needs and other required tasks:

The SWCD technician regularly met with program participants. Additionally, an annual meeting was held to discuss new technology and review program progress.

Subtask 1.2 Prepare quarterly and final reports:

The SWCD technician has completed all quarterly reports. Materials were provided to committee and cooperators and participants as needed.

TASK2: Water Quality Education and Demonstration of BMPs to reduce Atrazine:

Objective: To promote the implementation of cost effective BMPs that introduce atrazine runoff by informing and educating corn and sorghum producers about appropriate BMPs. Efforts will be fully publicizes.

Subtask 2.1 Cooperate with Dalworth SWCD to provide two education/training events describing methods for reducing Atrazine runoff:

The SWCD technician arranged to conduct Pesticide Workshops for three consecutive years. The programs we conducted in cooperation with other State and Federal Agencies. Approximately 25 participants attended each program.

Subtask 2.2 Select appropriate BMPs practices for reducing Atrazine runoff, and implement at least one demonstration each year of the practice:

The SWCD technician arranged for demonstration of proper residue management and reduced tillage practices in the treatment area.

TASK 3: Development and Implementation of WQMPs

Objective: To encourage agricultural land owners to comply with State water quality laws through a traditional voluntary based incentive program and assistance the producers in developing and implementing WQMPs.

Subtask 3.1 The Dalworth SWCD will hire a technician to provide technical assistance to producers.

A technician was hired in November 2000.

Subtask 3.2 The SWCD will send out notification to land users informing them of the program.

Letters were sent to producers in January 2001.

Subtask 3.3 The SWCD technician and NRCS will provide land owners information on appropriate BMPs and will work with TSSWCB regional office in developing and implementing WQMPs:

Five WQMPs were developed. Four requested financial assistance. Producers are implementing WQMPs.

Subtask 3.4 The Dalworth technician will develop five WQMPs.

Five WQMPs were developed and approved by TSSWCB regional office in Dublin.

Subtask 3.5 TSSWCB will provide technical review and certification WQMPs:

All five WQMPs were approved and determined to meet technical standards and meet program criteria.

Subtask 3.6 Implementation schedules of WQMPs:

All WQMPs have completed one or more practices. One producer has completed all practices in his plan.

TASK4 Inventory of land use practices and BMPs implemented in Dalworth SWCD.

Objective: To compile and document information on the amount and types of BMPs implemented through WQMPs, conservation plans and other USDA cost share programs.

Subtask 4.1 The SWCD and NRCS will compile information on the location, numbers, and types of BMPs implemented within the watershed each year.

The compilations of practices are included in this report. A spreadsheet summary practice is also included.

APPENDICES

	North Central	Texas	Atrazine R	emediatio	n Project	(Mountain	Creek Wate	ershed)	
	Inve	ntory o	f Cost Shar	ed BMPs f	or Dalwor	th SWCD I	Project 319		
WQMP #	Pasture &	GSS	Grassed	Parallel	Ponds	Critical	Nutrient &	Brush	Diversion
	Hay Planting		Waterway	Terraces		Shaping	Pest Mgt.	Mgt.	Terrace
# 001	20 ac.				1 no.	4 ac.	24 ac.	40 ac.	
	05	_							
# 002	65 ac.	1 no.				4 ac.	69 ac,		
# 004	37 ac		6 0 ac	12500 L F			37 ac		
# 00+	07 d0.		0.0 40.	12000 EI			07 d0.		
# 005	13 ac.		1 ac.	12500 LF	1 no.		13 ac.	5 ac	400 cy.
Totals	135 ac.	1 no.	7.0 ac.	25000 LF	2 no.	8 ac.	143 ac.	45 ac.	400 cy.
	* # 003 - WQMP developed and approved, but landowner elected to install practices without Cost Share								

Inventory of Cost-Shared BMPs



Location of WQMP's

Pesticide Workshops (November 2000, 2002 and 2003)



The Dalworth Soil and Water Conservation District will be hosting a Pesticide Workshop on February 15, 2000, at the First Baptist Church in Midlothian, Texas. Registration starts at 8:30 AM. You will receive TDA approved CEUs to keep your Pesticide Applicators License current.

The First Baptist Church is adjacent to US 67 and just north of the US 287 and US 67 intersection in Midlothian.

There will be no workshop fee charged, but we will need to know if you plan to attend for lunch purposes. If you plan to attend, please call our office at (817) 467-3867 or fax to (817) 467-9729 or mail your response to:

Dalworth Soil and Water Conservation District 320 Westway Place, Suite 511 Arlington, TX 76018

Please feel free to call us if you need additional information.

Sincerely,

1. Crawford

John F. Crawford, Chairman Dalworth SWCD

CONSERVATION - DEVELOPMENT - SELF-GOVERNMENT



Dalworth Soil and Water Conservation District #519 320 Westway Place, Suite 511 - Arlington, TX 76018 - (817) 467-3867

PESTICIDE WORKSHOP ATRAZINE AWARENESS PROGRAM

PLACE: First Baptist Church, Midlothian, TX

DATE	· F	February	15 2000
Ditte	/. I	cordary	
8:30	to	9:00	Registration
9:00	to	9:15	Welcome Bobby Waddle, Director, Dalworth SWCD
9:15	to	10:00	Laws and Regulations, TMDLS Charlie UpchurchTX Department of Agriculture
10:00	to	10-30	Assessment of Atrazine Problem – Joe Pool Lake Lee MunzTexas State SWCD
10:30	to	10:45	Break
10:45	to	11.30	Proper Use of Atrazine and Other Chemicals to Protect Water Quality Ed BakerNovartis Corp.
11:30	to	12:30	Lunch
12:30	to	1:00	One Trip Tillage Systems Wes MorrisCase Corp.
1:00	to	1:30	Conservation Practices for Reducing Herbicide/Fertilizer Losses Glenn LubkeUSDA NRCS
1:30	to	1:45	Break
1:45	to	2:15	Agricultural/Urban Educational Efforts Fred BurrellDallas County Extension Service
2:15	to	2:45	How Do We Pay For Water Quality Practices Virgil HelmUSDA NRCS
2:45			Adjourn .

CONSERVATION - DEVELOPMENT - SELF-GOVERNMENT

PESTICIDE WORKSHOP ATRAZINE AWARENESS PROGRAM

PLACE: First Baptist Church, Midlothian, TX				
TIME: Tuesday, February 26, 2002				
8:00 - 8:30	Registration			
8:30 - 8:45	Welcome – Bobby Waddle, Director, Dalworth SWCD Lynne Narcho – 319 Project Coordinator			
8:45 - 9:45	Laws & Regulations in the Nutrient Management Industry James Poston, Eldorado Chemical			
9:45 - 10:15	Computer Technology for Planning Conservation Practices Monica Purviance, USDA NRCS, Greenville, Tx			
10:15 - 10:45	Update on Best Management Practices – Atrazine & Related Chemicals for Corn & Grain Sorghum Producers Ed Baker, Syngenta Corp.			
10:45 - 11:15	Future Land Uses – How Stable is Your Operation Location? Ginger Phillips Melms, North Central Tx. Council of Governments			
11:15 - 11:45	Balance Fertilizer Application with Expected Crop Yields Mike Wolfe, Eldorado Chemical Co., Rockwall, Tx.			
11:45 - 12:30	Lunch			
12:30 - 1:30	Farm Bill 2002, How Will Increased Emphasis on Conservation Impact your Operation? John Merrill, XXX Ranch, Crowley, Texas			
1:30 - 2:00	Nutrient and Pest Management Plans, How Much Record Keeping is Necessary Glenn Lubke, USDA NRCS			
2:00 - 2:30	BMPs as Related to Laws/Regulations Bo Spoonts, Texas Department of Agriculture			
2:30 - 3:00	Legumes & Clovers – Alternatives to Nitrogen Crop Requirements Virgil Helm, USDA NRCS, Arlington			
3:00 -	Adjourn			

۲. has completed Texas Department of Agriculture approved Pesticide Applicator Continuing Education Credits Certificate of Completion Note: Keep this certificate. In order to recertify, you will be responsible for reporting 2.0 Integrated Pest Management Drift Minimization Date 2/26/02 This is to certify that -0-5234 Course Number completed continuing education credits. Laws and Regulations 1.5 General Vingit Reland Course Representative 2.0

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Dalworth Soil and Water Conservation District #519 320 Westway Place, Suite 511 - Arlington, TX 76018 - (817) 467-3867

October 28, 2003

Dear Landuser:

The Dalworth Soil and Water Conservation District will be hosting a Pesticide/Atrazine Workshop on Thursday, November 13, 2003, at the DeSoto Civic Center,(Bluebonnet Room), DeSoto, Texas. Registration starts at 8:00 AM. You will receive five (5) TDA approved CEUs to keep your Pesticide Applicators License current.

The DeSoto Civic Center is located at 211 East Pleasant Run Road, intersection of Hampton Road. (Map attached). There will be a \$20.00 fee charged to attend the workshop that includes BBQ lunch catered by Dickey's.

We do need to know how many will attend for lunch purposes. If you plan to attend, please call our office at 817-467-3867 or fax to 817-467-9729 or mail your registration to:

Dalworth Soil and Water Conservation District 320 Westway Place Ste 511 Arlington, TX 76018

Please call us if you need additional information.

Sincerely,

John F. Crawford Chairman

CONSERVATION - DEVELOPMENT - SELF-GOVERNMENT

PESTICIDE WORKSHOP ATRAZINE AWARENESS PROGRAM

- PLACE: DeSoto Civic Center, Bluebonnet Room 211 E. Pleasant Run Rd., DeSoto, TX.
- TIME: Thursday, November 13, 2003
- 8:00 8:30 Registration
- 8:30 8:45 Welcome Bobby Waddle, Director, Dalworth SWCD
- 8:45 9:45 Laws & Regulations in the Pest Management Brad Tullis, TDA
- 9:45 10:15 Carbon Sequestration Bill Kuenstler - USDA NRCS
- 10:15 10:45 Pesticide Labels and Safety with Farm Chemicals James Poston – Eldorado Chemical Co.
- 10:45 11:15 Controllings Weeds in Pasture Michael Brooks - USDA NRCS
- 11:30 12:00 Lunch
- 12:00 1:00 Future Land Uses Nutrient Management Alternatives Ginger Melms – Private Consultant
- 1:00 2:00 Nutrient and Pest Management Plans Glenn Lubke - USDA NRCS
- 2:00 3:00 Methods of Controlling Undesirable Brush Mechnical, Biological, Herbicides Kent Ferguson - USDA NRCS
- 3:00 4:00 IPM Virgil Helm – Dalworth SWCD
- 4:00 Adjourn

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CONSERVATION PRACTICES THAT WILL REDUCE ATRAZINE LOSSES FROM AGRICULTURAL LANDS

- 1. Loss of Atrazine Atrazine that leaves agricultural land is generally attached to a soil particle. We can control losses of Atrazine by reducing soil erosion.
- Protect Soil Losses to "T" The amount of soil that can be lost, Expressed in Tons per acre, and allow the soil to maintain it's productivity indefinitely. Most Soils in our area the "T" value ranges from 1-5 tons.
- 3. Current Cropping System losses Wheat x Sorghum rotation without Terraces is probably eroding at the rate of 10-12 Tons/Ac. Drilled Haygrazer followed by Haygrazer is eroding at the 7-10 tons/Ac rate
- 4. Conservation or Best Management Practices that Reduce Erosion Rates:
 - A. Terraces and Waterway System Will generally reduce erosion losses by 3-6 Tons/Ac. Per year.
 - B. Residue Management If you increase the amounts of residue that you plant into, erosion rates will also be reduced. For example – A No-Till cropping system where you plant into 3500 –4000lbs of Residue, may protect the soil to "T"
 - C. Conservation Buffers Buffers are areas or strips of land that is maintained in permanent Vegetation to help control the loss of pollutants and manage other environmental problems
- 5. Types of Buffers that might be used in our area -
 - A. Contour Buffer Strip Strip of grass on the contour out in the field. Number of Strips would be consistent with the number of Terraces needed.
 - B. Field Border Strip of grass on the edge of the field

- C. Grassed Waterway also serve as outlet for terraces, outside water course.
- D. Filter Strip Area of Grass vegetation that water flows over, designed to filter out sediments. Many times this would be a strip of grass adjacent to a stream or water course.
- E. Riparian Forest Buffer An area of trees and shrubs located adjacent to streams, lakes, ponds.
- F. Vegetative Barriers Narrow permanent strips of Stiff Stemmed, erect, tall, dense perennial vegetation established in parallel rows and perpendicular to the dominant field slope.



WQMP # 005 – Pond Constructed to prevent erosion in cropland field



WQMP # 002 – Severely eroded cropland prior to shaping and vegetating to Coastal Bermudagrass

WQMP # 002 – Construction of Grade Stabilization Structure to slow down the flow of water to prevent gully erosion and trap sediment



WQMP # 002 – Installation of pipe in the GSS to slowly release water preventing erosion down stream





WQMP # 001 – Pond Construction

WQMP # 001 – Brush Management completed so that land can be planted to Coastal Bermudagrass to reduce soil loss



Ancillary WQMP Photos



Farmers are changing to no till and reducing tillage farming systems



Farmers are reducing Atrazine runoff by incorporating chemical in the topsoil (WQMP # 004)



A GSS was installed to heal a critically eroded area (WQMP # 002)



Critical eroding area controlled by installing GSS while shaping and planting permanent grass (WQMP # 002)



Cropland field converted to permanent grass (WQMP # 002)



Terraces and residue management are used to control erosion (WQMP # 005)



Grassed waterway constructed to serve as outlet for terrace system (WQMP # 004)



Cropland field converted to Coastal Bermudagrass (WQMP # 004)