



US Army Corps  
of Engineers  
Fort Worth District

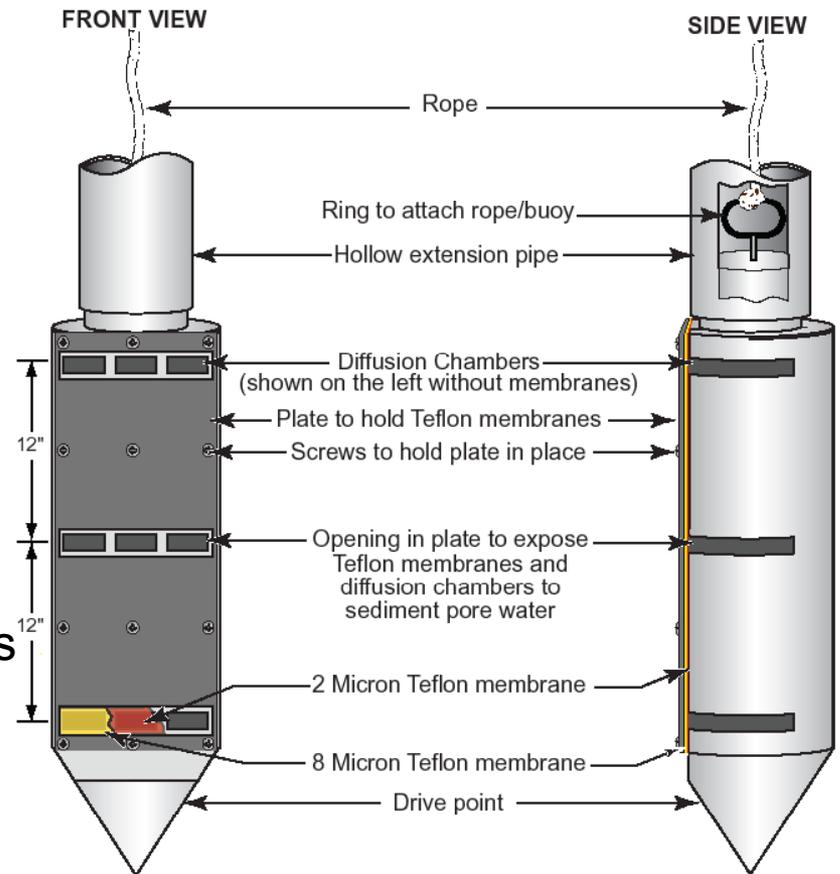
# Lake Belton and Lake Waco Delta Area Study

## Objective:

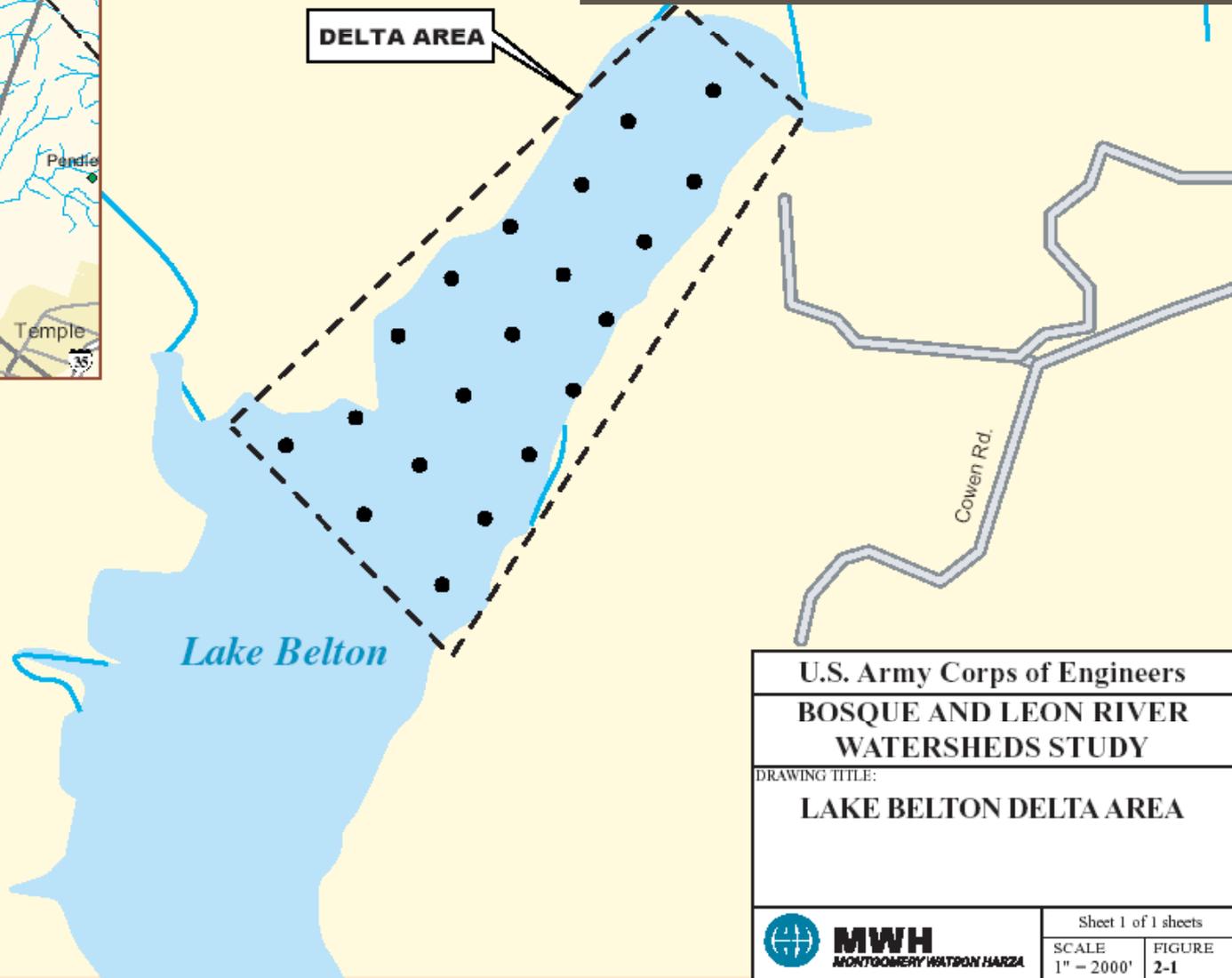
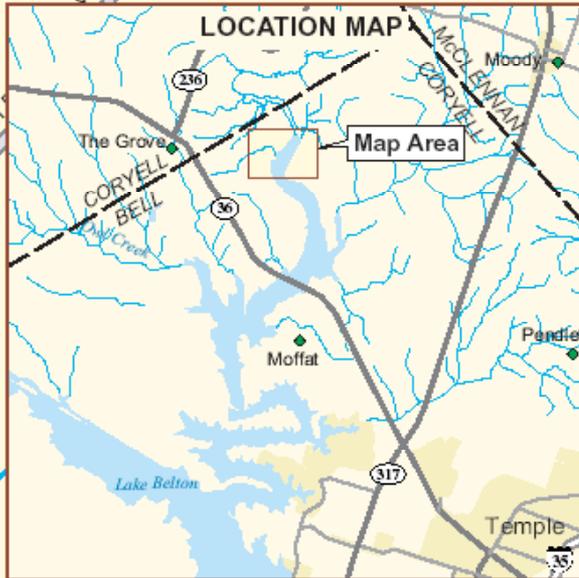
To study perchlorate concentrations in surface water and sediment pore water within the lake delta areas.

## Activities completed:

Collected and analyzed surface water and sediment water from the delta areas of Lakes Belton and Waco.



# Lake Belton Delta Areas Study Locations (from FSP)



## EXPLANATION

Sample grid point (actual grid locations will be established in the field, refer to Section 2.4.1)



U.S. Army Corps of Engineers  
 BOSQUE AND LEON RIVER  
 WATERSHEDS STUDY

DRAWING TITLE:

LAKE BELTON DELTA AREA

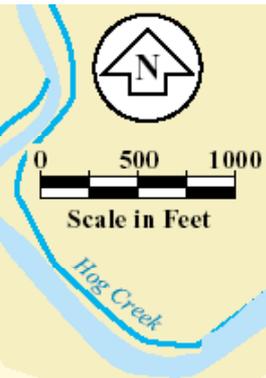


**MWH**  
 MONTGOMERY WATSON HARZA

Sheet 1 of 1 sheets

SCALE 1" = 2000'	FIGURE 2-1
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# Lake Waco Delta Areas Study Locations (from FSP)



**EXPLANATION**

● Sample grid point (actual grid locations will be established in the field, refer to Section 2.4.1)

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 WATERSHEDS STUDY

DRAWING TITLE:  
 LAKE WACO DELTA AREA

Sheet 1 of 1 sheets

SCALE 1" = 2000'

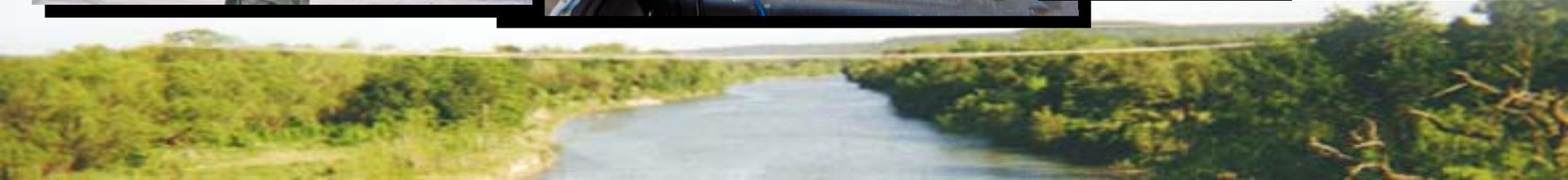
FIGURE 2-2

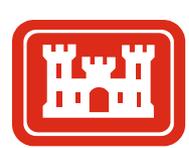


# *Lake Belton and Lake Waco Delta Area Study*

*(Installation of sediment pore water peepers, Collection of surface and sediment water peepers)*

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# Lake Belton and Lake Waco Delta Area Study Results

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## LAKE BELTON DELTA AREA

### SAMPLING RESULTS

**Surface Water (20 locations):**

**ND** (All 20 samples)

**Sediment Pore Water (3 Samples at each of 19 locations):**

**ND** (All 57 samples)

## LAKE WACO DELTA AREA

### SAMPLING RESULTS

**Surface Water (20 locations):**

**ND** (All 20 samples)

**Sediment Pore Water (3 Samples at each of 20 locations):**

**ND \*** (All 60 samples)

*\* Preliminary data based on verbal results from USACE laboratory*





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# *Intake Sampling Locations*





# *Intake Sampling Results*

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## **LAKE BELTON INTAKE SAMPLING RESULTS (Conducted by BRA)**

<b>January 2003</b>	<b>ND</b>
<b>February 2003</b>	<b>No sampling conducted</b>
<b>March 2003</b>	<b>ND</b>
<b>April 2003</b>	<b>Pending</b>
<b>May 2003</b>	<b>ND</b>
<b>June 2003</b>	<b>ND</b>

## **LAKE WACO INTAKE SAMPLING RESULTS (Conducted by City of Waco)**

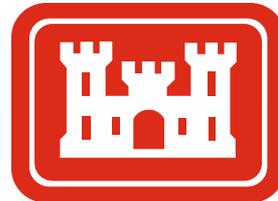
<b>January 2003</b>	<b>ND</b>
<b>February 2003</b>	<b>ND</b>
<b>March 2003</b>	<b>ND</b>





# *Conclusion*

**Brian J. Condike**  
**Project Manager**  
**US Army Corps of Engineers**  
**Fort Worth District**





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# *Remaining Work to be Accomplished*

- **Complete field investigations to gain needed information.**
- **Geographic Information System (GIS) database.**
- **Ecological and toxicological assessment of study area.**
- **Complete an evaluation of the potential threat to human and environmental health.**
- **Prepare final project report**





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# *Preliminary Results*

## **Perchlorate:**

- Varies in surface water with location, season, and rainfall
- Is persistent in sediment
- Is found in various plant species
- Is found in small mammals and birds
- Is not affecting amphibian metamorphosis
- Is affecting fish thyroid tissues
- Can affect frog reproduction (male/ female ratio)

