

1.0 INTRODUCTION

The Galveston Bay National Estuary Program goals are to protect and improve water quality and to enhance living resources within the Galveston Bay Estuary. Various characterization studies have been contracted to better substantiate problems affecting the Galveston Bay estuary system, to evaluate their causes, and to recommend possible management solutions. The Shoreline Survey for Point Source Discharges is one such study.

Several water bodies along the Texas coast have been detrimentally impacted by various amounts of undocumented pollution from unpermitted discharges. Preliminary estimates suggest that the quantities of pollutants released from these sources may exceed amounts discharged from permitted sources. The management committee felt that in order to formulate successful environmental management plans for the Galveston Bay system, it would be necessary first to obtain background information on the distribution and sources of unpermitted discharges located along the shoreline of the bay. The information could then be used for further determination of the impacts of unpermitted discharges on water and sediment quality, and aquatic organisms. With little background information on the distribution of unpermitted discharges in the Galveston Bay system, the objectives of this study are to identify and map unpermitted point source discharges within selected shoreline segments of Galveston Bay and to develop a standard methodology and framework for future comprehensive shoreline surveys of the Galveston Bay system.

This pilot study utilized low altitude aerial surveys and shallow draft small boat surveys to determine the extent of and to document locations of unpermitted discharges along 159 miles of bayou and bay shoreline. Nine different shoreline types were surveyed. Positions of discharges, both permitted and unpermitted were logged on to a personal computer data base management system, and photographic documentation of both aerial and surface observations were catalogued. A data base for each shoreline segment was prepared along with topographic map depictions of the locations of permitted and discovered unpermitted discharges to the degree that identification and correlation is possible from field and agency records data. Documentation includes narrative description, photographs and positional data (latitude and longitude from LORAN C). The information was sorted to provide regulatory agencies management and enforcement information, and can be used for further determination of the impacts of unpermitted discharges on water and sediment quality and aquatic organisms. The methodologies, procedures and estimates of level of effort required (program cost estimates) were developed here with a view toward implementation of

comprehensive surveys throughout Galveston Bay and other coastal waters as well.

2.0 STUDY OBJECTIVES

The objectives of this study are to identify and map unpermitted point source discharges within selected shoreline segments of Galveston Bay and to develop a standard methodology and framework for possible future comprehensive shoreline surveys of the Galveston Bay system.

To accomplish these goals, the following activities were defined in the project scope of work:

1. Available discharge data on permitted discharges was obtained from:
 - a. Railroad Commission (RRC) on pipeline permits and discharges of produced brines,
 - b. Texas Water Commission (TWC) on permitted discharges,
 - c. General Land Office (GLO) on pipeline permits,
 - d. local governments (cities, counties, flood control districts) on stormwater discharges.
2. A plan to determine survey variability was implemented at the conclusion of all segment surveys. At least five randomly selected 1 mile transects within three survey segments were resampled as a check on survey variability and completeness.
3. Shallow draft boat surveys were conducted in bay and bayou segments to obtain a representative cross section of the various types of shoreline in the Galveston Bay system. The representative shoreline types selected for study are listed in Section 2.1.
4. A record was made of the location of all discharges, both permitted and unpermitted.
5. Responsible agencies were notified upon discovery of an unpermitted discharge. While storm sewers presently do not require permits, their presence and locations were recorded and catalogued separately.

2.1 Shoreline Types

The Galveston Bay system encompasses many types of shorelines. These shorelines and the areas in which they drain differ with respect to the nature and density of development as well as their accessibility