



**Coastal Protection and Restoration
Authority of Louisiana**

**Office of Coastal Protection and
Restoration**

**2010/2011 Annual Inspection
Report**

For

**HUMBLE CANAL HYDROLOGIC
RESTORATION PROJECT
(ME-11)**

State Project Number ME-11
Priority Project List 8

March 24, 2011
Cameron Parish

Prepared by:

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I. Introduction

The Humble Canal Hydrologic Restoration Project (ME-11) encompasses 4,030 acres (1228.34 ha) in Cameron Parish, Louisiana. The project is bounded by the Little Chenier Ridge to the south, the Mermentau River to the east, oilfield canals on the west, and an east-west trenaise and an oilfield canal along the north. The marsh is classified as a fresh marsh with 68 percent of the project area being marsh and 32 percent open water, based on the Louisiana Department of Natural Resource's GIS data for 1988–90 (See Appendix A).

The Humble Canal Hydrologic Restoration Project was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended and approved on the eight Priority Project List. The Humble Canal Project has a twenty-year (20 year) economic life, which began in March 2003.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Humble Canal Hydrologic Restoration Project (ME-11) is to evaluate the constructed project features, identify any deficiencies and prepare a report detailing the condition of project features and recommended corrective actions needed. Should it be determined that corrective actions are needed, OCPR shall provide, in the report, a detailed cost estimate for engineering, design, supervision, inspection, and construction contingencies, and an assessment of the urgency of such repairs (O&M Plan, 2003). The annual inspection report also contains a summary of maintenance projects, if any, which were completed since completion of constructed project features and an estimated projected budget for the upcoming three (3) years for operation, maintenance and rehabilitation. The three (3) year projected operation and maintenance budget is shown in Appendix C.

An inspection of the Humble Canal Hydrologic Restoration Project (ME-11) was held on March 24, 2011 under sunny skies and mild temperatures. In attendance were Mel Guidry and Dion Broussard from OCPR, along with Dale Garber and Charles Slocum representing NRCS. All parties met at a boat launch off of Little Chenier Road, and traveled north to the Humble Canal Project Site. The annual inspection began at approximately 9:00 a.m. at the marine barrier fence on the juncture of the Humble Canal Project Outfall Channel and the Mermentau River.

The field inspection included a complete visual inspection of all project features. Staff gauge readings where available were used to determine approximate elevations of water, earthen embankments, water control structure and other project features. Photographs were taken at each project feature (see Appendix B) and Field Inspection notes were completed in the field to record measurements and any notable deficiencies (see Appendix D).

III. Project Description and History

The Humble Canal Hydrologic Restoration Project (ME-11) was completed in March 2003 and involved the installation of a water control structure consisting of 5 - 48" x 50' corrugated aluminum pipes with weir type drop inlets and flap gated outlets. Also 1 - 18" x 50' corrugated aluminum pipe with screw gate as well as all associated excavated access channels, embankments and timber bulkheads, approximately 88 linear feet of hyacinth fence, and approximately 100 linear feet of marine barrier fence. The structure is designed to improve the removal rate of excess water within the project area while preventing salt water from entering. The hyacinth fence will prevent large amounts of vegetation and debris from interfering with the operational capabilities of the structure. The marine barrier will prevent boats from getting too close to the structure. The principle project features of the Humble Canal Hydrologic Restoration Project include the following:

- A. **Water Control Structure:** One water control structure consisting of 5 - 48" x 50' corrugated aluminum pipe with weir type drop inlets and flap gated outlets. Also 1 - 18" x 50' corrugated aluminum pipe with screw gate as well as all associated excavated access channels, embankments and timber bulkheads.
- B. **Water Hyacinth Fence:** Approximately 88 linear feet of hyacinth fence.
- C. **Marine Barrier Fence:** Approximately 100 linear feet of marine vessel barrier fence.

Historically, floods occurring in spring inundated wetlands with fresh water. As water levels receded, salt water could slowly move into the basin through meandering bayous, especially during periods of low rainfall in late summer and early fall. The basin once functioned as a nursery for a variety of marine species that favor a low salinity environment. Projects initiated by various interests have disrupted the basin's natural processes. Extended periods of high water in the upper basin and saltwater intrusion in the lower basin have imposed physiological stresses on vegetated wetlands resulting in their conversion to open water (USDA/NRCS 1997). However, the vegetation in the project area was classified as freshwater marsh in 1968 (Chabreck et al. 1968), and vegetation maps produced in the last three decades still classify the project area as a freshwater marsh (Chabreck and Linscombe 1978,1988,1998,2010).

The Humble Canal and its laterals were constructed for mineral exploration during the early 1950's and increased water exchange between the Mermentau River and the eastern end of Big Burn Marsh. Dredging of the Mermentau River in 1952 and construction of the Mermentau River to the Gulf of Mexico Navigation Channel in 1978 provided greater commercial use of the Mermentau River Basin. But as with other deepwater shipping channels along Louisiana's fragile coast, one environmental consequence has been increased northward migration and intrusion of saltwater, and the deterioration of fresh water wetlands.

The specific goals of the project are:

1. Increase present (yr 2000) land to water ratio.

2. Maintain mean water levels in the project area between 6 in below and 2 in above marsh level.
3. Maintain mean monthly salinity (0–3 ppt) in the project area after construction and prevent salinities from exceeding 7 ppt.
4. Increase or maintain the occurrence and cover of fresh marsh vegetation species in the project area.
5. Increase frequency of occurrence of submerged aquatic vegetation (SAV) in the project area.

IV. Summary of Past Operation and Maintenance Projects

General Maintenance: Below is a summary of completed maintenance projects and operation tasks performed since March 2003, the construction completion date of the Humble Canal Hydrologic Restoration Project (ME-11).

2009 M & M Electric – Repairs were made to the structure to repair storm damage as well as routine maintenance repairs. Forty five (45) tons of rock rip rap were placed around the wingwalls. Sixty tons (60) tons of crushed stone aggregate were placed on top of the structure along with five-hundred (500) square yards of geotextile fabric. Repairs were made to the hyacinth guard, flap gates, locking arms and stop logs. Two warning signs were replaced at the marine vessel barrier. The costs associated with this maintenance event were as follows:

E & D, Construction Oversight, As Builts	\$15,314.00
Construction Contract (Incl. C.O. # 1)	\$59,300.00
TOTAL	\$74,614.00

Structure Operations: In accordance with the operation schedule outlined in the Operation and Maintenance Plan, the structure was operated as required, by Miami Corporation personnel at no cost to OCPR. At present, an operations contract is being developed to bid out the operations of the water control structure.

V. Inspection Results

Marine barrier fence

The structure is in excellent condition and the warning signs were recently replaced as part of a maintenance event. (Photos: Appendix B, Photo 1)

Hyacinth guard

This feature is in good condition and also was part of the recent maintenance event to replace all of the wire fence material as well as repair of the hyacinth wooden pilings and bracing. (Photos: Appendix B, Photo 2)

Water control structure

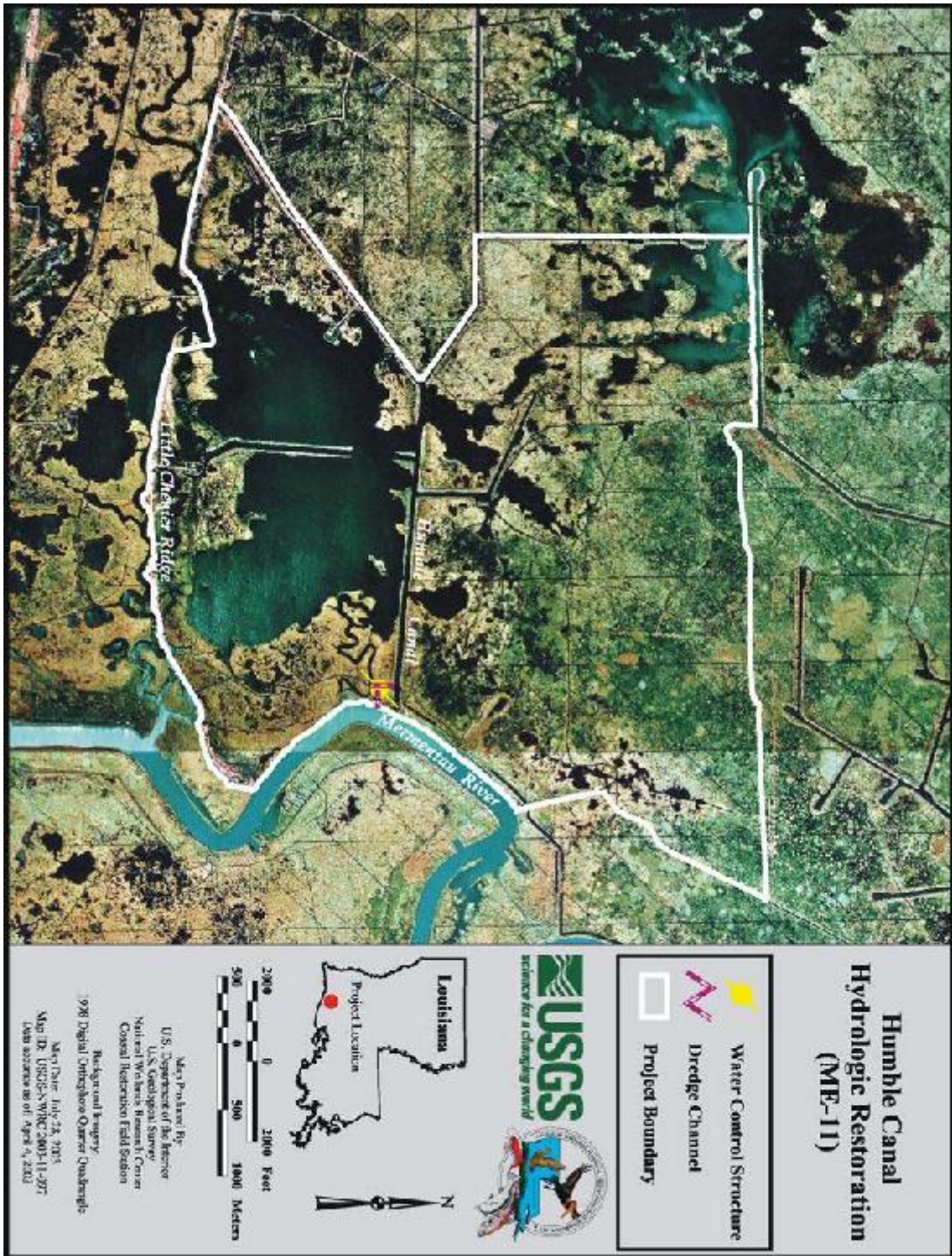
Overall, the structure is in good post construction condition. As part of the recent maintenance event rock armor was placed on the ends of the wingwalls on the inlet and outlet side of the structure. Crushed stone aggregate was also placed on the top portion of the structure. M & M Electric hired the services of a diver to check and clear out all flapgates. Several items were found wedged in the gates including a portion of an old lifting arm. Miscellaneous repairs were made to the flap gates, stoplogs and locking arms. Southside Machine fabricated an aluminum storage box for locking arms and stoplogs and was placed on Miami Corporation property off of Little Chenier Road. This storage box was added to the contract as a means to prevent vandalism. (Photos: Appendix B, Photo 3)

VI. Conclusions and Recommendations

Overall, the Humble Canal Hydrologic Restoration Project is in good condition after completion of the recent maintenance event and is functioning as designed.

Appendix A
Project Features Map

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Appendix B

Photographs



Photo No. 1, Marine barrier with signage.



Photo No. 2, Inlet side of structure



Photo No. 3, Outlet side of structure

Appendix C

Three Year Budget Projection

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HUMBLE CANAL / ME-11 / PPL8
Three-Year Operations & Maintenance Budgets 07/01/2011 - 06/30/2014

<u>Project Manager</u> Darrell Pontiff	<u>O & M Manager</u> Mel Guidry	<u>Federal Sponsor</u> NRCS	<u>Prepared By</u> Mel Guidry
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	2011/2012 (-9)	2012/2013 (-10)	2013/2014 (-11)
Maintenance Inspection	\$ 6,086.00	\$ 6,269.00	\$ 6,457.00
Structure Operation	\$ -	\$ -	\$ -
State Administration			\$ -
Federal Administration			\$ -

Maintenance/Rehabilitation

11/12 Description:

E&D	
Construction	
Construction Oversight	
Sub Total - Maint. And Rehab.	\$ -

12/13 Description:

E&D	
Construction	
Construction Oversight	
Sub Total - Maint. And Rehab.	\$ -

13/14 Description:

E&D	
Construction	\$ -
Construction Oversight	\$ -
Sub Total - Maint. And Rehab.	\$ -

	2011/2012 (-9)	2012/2013 (-10)	2013/2014 (-11)
Total O&M Budgets	\$ 6,086.00	\$ 6,269.00	\$ 6,457.00

O & M Budget (3 yr Total)	\$ 18,812.00
Unexpended O & M Budget	\$ 143,606.00
Remaining O & M Budget (Projected)	\$ 124,794.00

Appendix D

Field Inspection Form

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MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: ME-11 Humble Canal

Date of Inspection: March 24, 2011 Time: 9:00am

Structure No. N/A

Inspector(s): OCPR- Mel Guidry, Tal McCain (M&M Electric)
NRCS- Dale Garber, Charles Slocum

Structure Description: 5 - 48" x 50' corrugated aluminum pipe with weir type drop
inlets and flap gated outlets/ 1 1 - 18" x 50' corrugated alum.pip

Water Level Inside
Weather Conditions: Sunny and mild

Type of Inspection: Annual

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	good				
Steel Grating	good				
Stop Logs	good			3	
Storage Box	good				
Hardware	good			3	
Timber Piles	good				
Timber Wales	good				
Galv. Pile Caps	good				
Cables/ lifting device	good				
Signage /Supports	N/A				
Rip Rap (fill) (foreshore dike)	good				
Eathern Embankment	good			3	
Inlet Channel/Plug	good				

What are the conditions of the existing levees? Stable on both the inlet and outlet channels.
Are there any noticable breaches? No
Settlement of rock plugs and rock weirs? N/A
Position of stoplogs at the time of the inspection? Unkown
Are there any signs of vandalism? No

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MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: ME-11 Humble Canal

Date of Inspection: March 24, 2011 Time: 9:00am

Structure No. N/A

Inspector(s): OCPR- Mel Guidry, Tal McCain (M&M Electric)
NRCS- Dale Garber, Charles Slocum

Structure Description: Marine Barrier Fence

Water Level Inside
Weather Conditions: Sunny and mild

Type of Inspection: Annual

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	good				
Steel Grating					
Stop Logs	N/A				
Hardware	good				
Timber Piles	good				
Timber Wales	good				
Galv. Pile Caps	good				
Cables	N/A				
Signage / Supports	good			1	
Rip Rap (fill)	N/A				
Eathern Embankment	N/A				

What are the conditions of the existing levees?
Are there any noticable breaches?
Settlement of rock plugs and rock weirs?
Position of stoplogs at the time of the inspection?
Are there any signs of vandalism?

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MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: ME-11 Humble Canal

Date of Inspection: March 24, 2011 Time: 9:00am

Structure No. Hyacinth Fence

Inspector(s): OCPR- Mel Guidry, Dion Broussard
NRCS- Dale Garber, Charles Slocum

Structure Description:

Water Level Inside
Weather Conditions: Sunny and mild

Type of Inspection: Annual

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	good				
Steel Grating	N/A			1	
Stop Logs	N/A				
Hardware	good			1,3	
Timber Piles	good			2	
Timber Wales	fair			2	
Galv. Pile Caps	good				
Cables	N/A				
Signage / Supports	N/A			1	
Rip Rap (fill)	N/A				
Earthen Embankment	N/A				

What are the conditions of the existing levees?
Are there any noticeable breaches?
Settlement of rock plugs and rock weirs?
Position of stoplogs at the time of the inspection?
Are there any signs of vandalism?

Appendix E

Locations to be Monitored