OPERATION, MAINTENANCE, AND REHABILITATION PLAN FOR THE BRADY CANAL HYDROLOGIC RESTORATION PROJECT

TE-28

February 14, 2002
OPERATION, MAINTENANCE, AND REHABILITATION PLAN FOR
THE BRADY CANAL HYDROLOGIC RESTORATION PROJECT
TE-28

FEBRUARY 14, 2002

Prepared by:
Louisiana Department of Natural Resources
Coastal Restoration Division
Baton Rouge, Louisiana

and

Pyburn & Odom, Inc.
8178 GSRI Avenue
Baton Rouge, Louisiana 70820
Table of Contents

History of Revisions iii
Section 1. Project Description, Purpose, and Location 1
Section 2. Construction Completion 2
Section 3. Project Permits 3
Section 4. Items Requiring Operation, Maintenance, and Rehabilitation 3
Section 5. Operation and Maintenance Budget 5
Section 6. Water Management - Operation of Structures 6
Section 7. Responsibilities – Operation 6
Section 8. Responsibilities – Maintenance and Rehabilitation 7
Signature Sheet 7
Attachment I. Cost Sharing Agreement
Attachment II. Project Plan
Attachment III. Project Completion Report
Attachment IV. As-built Drawings
Attachment V. Project Permits
Attachment VI. Operation, Maintenance and Rehabilitation Budget
Attachment VII. Operation Schedule & Reports
Attachment VIII. Annual Inspections
## History of Revisions

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/12/2000</td>
<td>Pyburn &amp; Odom MCA submit draft plan to LDNR.</td>
</tr>
<tr>
<td>03/18/2001</td>
<td>NRCS comments submitted to LDNR.</td>
</tr>
<tr>
<td>07/30/2001</td>
<td>Revised draft plan submitted to landowners and NRCS for final review.</td>
</tr>
<tr>
<td>09/11/2003</td>
<td>Amended Attachment III and IV to include the Project Completion Report and As-built Drawings for the Brady Canal Breach Repair Project (2003).</td>
</tr>
<tr>
<td>1/16/2004</td>
<td>Amend Attachment III and IV to include the Project Completion Report and As-built Drawings for the Jug Lake Levee Refurbishment Project</td>
</tr>
<tr>
<td>1/28/2004</td>
<td>Issued Project Completion Report and As-built Drawings for work performed by Apache Corporation for refurbishment of levee along the west bank Jug Lake.</td>
</tr>
<tr>
<td>09/2006</td>
<td>Attachment VII - Fall 2006 Structure Operations Report</td>
</tr>
<tr>
<td>04/2011</td>
<td>Amend Attachment I to include Amendment No.1 to the original Cost Share Agreement.</td>
</tr>
<tr>
<td>09/2011</td>
<td>Attachment VI – 2009 Budget Amendment</td>
</tr>
</tbody>
</table>
OPERATION, MAINTENANCE, AND REHABILITATION PLAN

BRADY CANAL HYDROLOGIC RESTORATION

(TE-28)

The Louisiana Department of Natural Resources (LDNR) and the Natural Resources Conservation Service (NRCS) agree to carry out the terms of this Operation, Maintenance, Repair, and Rehabilitation Plan (hereinafter referred to as the “Plan”) of the accepted, completed project features in accordance with the Cost Sharing Cooperative Agreement 68-7217-7-11, DNR Agreement No. 2511-98-08 dated June 17, 1998 (Attachment I).

The project features covered by this plan are inclusive of and are identified as the Brady Canal Hydrologic Restoration Project (TE-28). The intention of the provisions of this plan is to maintain this project in a condition that will generally provide the anticipated benefits that the project was based on. There is no requirement that this project function to any standard beyond the economic life; except that it is not left as a hazard to navigation or a detriment to the environment.

Construction of the Brady Canal 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. The Brady Canal Project was approved on the third Priority Project List.

Landowner, Fina Oil and Chemical Company (FINA) purchased by LaTerre Co., Ltd. By: Castex Energy, Inc., G.P. (and managed by Castex LaTerre, Inc.) and landowner, Louisiana Land and Exploration Company (LL&E) purchased by Burlington Resources have agreed to provide LDNR support as described within the Cost Sharing Agreement, (Attachment I - Cost Share Agreement)

1. PROJECT DESCRIPTION, PURPOSE, AND LOCATION

The Brady Canal Hydrologic Restoration Project consists of 7,653 acres (3,097 ha) located in the Terrebonne basin, within the Bayou Penchant - Lake Penchant watershed in Terrebonne Parish, Louisiana. The project is bounded by Bayou Penchant, Brady Canal, and Little Carencro Bayou to the north, Bayou DeCade and Turtle Bayou to the south, Superior Canal to the east, and Little Carencro Bayou and Voss Canal to the west. (See Attachment II - Brady Canal Hydrologic Restoration Project Features).

The Brady Canal Hydrologic Restoration Project involves the installation and maintenance of fixed crested weirs with barge ways and variable crest sections, construction and maintenance of earthen, rock and rock armored earthen embankments, and the placement of rock armor to stabilize the channel cross-sections. These structures are designed to reduce the adverse tidal
effects in the project area (that have occurred through man-made channels and the enlarged natural channels) and to promote freshwater introduction to better utilize available freshwater and sediment retention. The rate of shoreline erosion will be reduced and a hydrologic regime conducive to sediment and nutrient deposition will encourage the re-establishment of emergent and submergent vegetation in eroded areas to a more historic low energy environment.

The Project has a twenty-year (20 year) economic life which began in July 2000.

The principal project features include:

- Site 6 - fixed crest weir with barge bay.
- Site 7 - rock plug.
- Site 10 - stabilization rock armored channel liner.
- Site 14 - fixed crest weir with variable crest section.
- Site 20 - stabilization rock armored channel liner.
- Site 21 - fixed crest weir with three (3) variable crest sections.
- Site 23 - fixed crest weir with two (2) variable crest sections.
- Site 24 - fixed crest weir.
- 3660 ft. - Rock dike
- 8531 ft. - Earthen embankment
- Maintenance of existing overflow bank (21,600 ft.)
- Maintenance of shore and earthen embankment.
- Maintenance of existing structures.

2. CONSTRUCTION COMPLETION

The Brady Canal Project completion report is included in Attachment III of the Plan along with the “As-Built project plans. Within this completion report is a summary of information and significant events including: project personnel; final as-built project features and benefited acres; construction cost and CWPPRA project estimates; construction oversight costs; construction activities and change orders; pipeline and utility crossing owner information; and other significant milestone dates and comments.

The project “As-built” construction drawings are updated with all field changes and modifications that occurred. (Attachment III - Project Completion Report and Attachment IV - Construction As-built Drawings)
3. PROJECT PERMITS

Project permit applications were completed and submitted to appropriate agencies and permits were received prior to construction. These permits and permit applications are included in Attachment V. Provisions for renewal of certain Federal and State Permits may be required.

4. ITEMS REQUIRING MAINTENANCE AND REHABILITATION

The following completed structural components project features jointly accepted by LDNR, and NRCS, Burlington Resources and Castex Laterre will require operation, maintenance, repair, and/or rehabilitation throughout the twenty (20) year life of the project. All elevations are referenced to the 1988 North American Vertical Datum (NAVD88).

2. Site/Structure #6 - 244 linear ft. steel pile fixed crest weir with a 70 linear ft. Barge bay across an oil field access canal on the north side of Bayou DeCadre west of Jug Lake. The structure consists of 4,752 square feet of sheet piling. The 70 linear ft. wide barge bay is set with an invert of the mudline depth of the channel or at an elevation of approximately -0.5 ft. The fixed crest is set at +0.5 ft. On each side of the canal is a 15 linear ft. wide earthen wing-wall section set at +4.0 ft. to tie into the embankment. 12" x 50 ft. timber batter piles exists at the 70 linear ft. barge bay opening. Solar powered Navigation Aid with battery backup and aluminum warning signs are set on batter piles. Sheet piling, pile caps, batter piles, railings and miscellaneous angle brackets, are galvanized and/or painted. Nuts and bolts are stainless steel or galvanized. Aluminum warning signs supported by angle brackets on 12" x 50 ft. round timber piles are set on both sides of the barge bay. **Note: The invert of the 70 ft. barge bay should be monitored for scour.**

3. Site/Structure #7 - 415 linear ft. rock riprap plug (approximately 6,000 tons of rock riprap) across an oil field access canal on the north side of Bayou DeCadre west of Site #6. The top of the rock plug is set at +4.0 ft. which corresponds to the elevation of the armored earthen embankment on either side of the canal. Aluminum warning signs supported by angle brackets on 12" x 50 ft. round timber piles with galvanized pile caps, are set on both sides of the plug. **Note: The rip rap plug should be monitored for settlement.**

4. Site/Structure #10 - 275 ft. x 48 ft. loose rock riprap channel lining (approximately 1,800 tons of rock riprap) placed three (3) feet minimum thickness, lining the opening if the channel with the outlets from the west end of Bay Long intersecting Voss Canal. Aluminum warning signs on 12" x 50 ft. round timber piles with galvanized pile caps are set on both sides of the channel lining. **Note: The channel lining should be monitored for scour.**

5. Site/Structure #14 - 82 linear ft. steel pile fixed crest weir with a six (6) ft. wide
variable crest section. This structure replaced a fixed crest weir located on the east side of Little Carencro Bayou north of Camp Better Livin. The structure consists of fixed crest weir 36 linear feet in length (18 linear feet on each side of the variable crest section) for a total of 828 square feet of sheet piling at 1.0 ft. BML (approximately 0.0 ft. NAVD88) and the 6 ft. wide variable crest section containing a stop log bay with one (1) bay of 10 each 4" x 6" stop logs mounted in a steel structured stop log guide, locking channel secured by locks, which can be adjusted from 1.0 ft. BML to 5.0 ft. BML. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels, and angle bracings, nuts and bolts which are galvanized or have painted surfaces. On each side of the fixed crest section structure is a 15 linear ft. wide earthen wing wall section set at +4.0 ft. NAVD88 to tie into the existing earthen embankment. Aluminum warning signs are attached to round timber piles with galvanized pile caps, set at the variable crest section, stop log bay.

6. Site/Structure #20 - 180 ft. x 48 ft. loose rock riprap channel lining (approximately 1,300 tons of rock rip rap) placed three (3) ft. minimum thick, lining the opening at the northwest corner of Jug Lake connection to the interior marsh. Aluminum warning signs supported by angle brackets attached to 12" x 50 ft. round timber piles with galvanized pile caps are set on both sides of the channel lining. **Note: Structure should be monitored for settlement.**

7. Site/Structure #21 - 100 linear ft. steel sheet pile fixed crest weir with three (3)- 6 ft. wide variable crest sections for a total of 2,180 square feet of sheet piling. This structure replaced a timber weir located on the north side of Jug Lake. This steel sheet pile structure consists of four (4) fixed crest weir sections set at 1.0 BML (approximately 0.0 ft.) for a total of 2,180 square feet of sheet piling and the three (3), 6 ft. wide variable crest sections containing stop log bays, with each 4" x 6" stop logs in steel structured stop log guides, including locking channels, secured by locks, which can be adjusted from 1.0 ft. BML to 5.0 ft. BML. To access, install, and remove stop logs is a 6" x 8" timber hoist support including a galvanized walkway, grating, handrails, pile caps, pull-up bars and miscellaneous channels, and angle bracing nuts and bolts which are galvanized or have painted surfaces. On either side of the fixed crest sections of the structure is a 15 linear ft. wide earthen wing wall sections set at +4.0 ft. to tie-in to the existing earthen embankments. Aluminum warning signs are attached to round timber piles with galvanized pile caps set at the variable crest sections and stop log bays.

8. Site/Structure #23 - 92 ft. steel sheet pile fixed crest weir with two, 6 ft. wide variable crest sections for a total of 2,000 square feet of sheet piling. This structure replaced a timber fixed crest weir located on the east side of Jug Lake. The fixed crest weir sections are set at 1.0 ft. BML (approximately 0.0 ft.) and two, 6 ft. wide variable crest sect tons containing stop log bays with 10 each, 4" x 6" stop log guides,
locking channels, secured by locks which can be adjusted from 1.0 ft. BML to 5.0 ft. BML. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels and angle bracing, nuts, and bolts which are galvanized or have painted surfaces. On either side of the fixed crest sections of the structure is a 15 linear ft. wide earthen wing wall section set at +4.0 ft. to tie-in to the existing embankments. Aluminum warning signs are attached to round timber piles with galvanized pile caps set at the variable crest sections and stop log bays.

9. Site/Structure #24 - 140 ft. steel pile fixed crest weir located adjacent to the southeast corner of Jug Lake replaced a timber fixed crest weir. The structure consists of a fixed crest weir with 3,320 square feet of sheet piling of which 60 linear ft. is set at 4.0 ft. elevation, 30 linear ft. is set at 1.5' elevation, and 50 linear ft. is set at -1.5' elevation. On either side of the structure is a 15 linear ft. wide earthen wing wall sections set at +4.0 ft. NAVD88 to tie-in to the existing earthen embankments. Aluminum warning signs are set at either side of the 50 linear ft. section of sheet piling, and are supported by round 12" x 50 ft. long timber piles with galvanized pile caps.

I. Rock Armored Earthen Embankment - Maintenance of approximately 4,405 linear ft. of rock armored earthen embankment canal along Bayou DeCade and Voss Canal.

J. Earthen Embankment - Maintenance of approximately 8,531 linear feet of earthen embankment along Voss Canal and along Little Carencro Bayou, and Carencro Bayou.

K. Rock Dike - Maintenance of approximately 3,660 linear feet along Bayou DeCade.

5. OPERATION AND MAINTENANCE BUDGET

The cost associated with the Operations, Maintenance, and Rehabilitation of the features outlined in Section 4 for the twenty (20) year project life is included and summarized in Attachment VI - Cost Associated with the Operation, Maintenance, and Rehabilitation.

6. WATER MANAGEMENT - OPERATION OF STRUCTURES

The schedule for operations of structures 14, 21, and 23 has been jointly determined by NRCS, LDNR, Castex LaTerre and Burlington Resources and based on analysis of monitoring data provided by LDNR. Operation schedules may require modification in the future should hydrologic conditions within the project area change. In accordance with the Cost Share Agreement, LDNR shall assume responsibility for operation of these structures.
Based on present data, the operation schedule for the project shall be as described in Attachment VII - Structure Operation Schedule.

7. **RESPONSIBILITIES – OPERATIONS**

   A. **LDNR will:**

   1. In accordance with the Cost Share Cooperative Agreement 68-7217-7-11 DNR Cooperative Agreement No.2511-98-08, assume all responsibilities for maintenance and rehabilitation of the accepted and completed project features identified in Section 4.

   2. Submit an annual report to NRCS detailing the structural operations completed for that year.

   3. Jointly approve any variations in the Structure Operation Schedule (Attachment VII) with NRCS, Castex Laterre, and Burlington Resources.

   4. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the operation cost needed for the twenty (20) year life of the project.

   B. **NRCS will:**

   1. Jointly approve any variations in the Structure Operation Schedule (Attachment VII) with LDNR, Castex Laterre, and Burlington Resources.

   2. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the operation cost needed for the twenty (20) year life of the project.

   3. Upon the request of LDNR and to the extent its resources allow, provide consultation assistance for the operation of the project.

   C. **Castex LaTerre will:**

   1. Jointly approve any variations in the Structure Operation Schedule (Attachment VII) with LDNR, NRCS, and Burlington Resources.

   2. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the operation cost needed for the twenty (20) year life of the project.

   D. **Burlington Resources (Burlington) will:**
1. Jointly approve any variations in the Structure Operation Schedule (Attachment VII) with LDNR, NRCS and Castex Laterre.

2. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the operation cost needed for the twenty (20) year life of the project.

8. RESPONSIBILITIES - MAINTENANCE AND REHABILITATION

A. LDNR will:

1. In accordance with the Cost Sharing Agreement, assume all responsibilities for maintenance and rehabilitation of the accepted completed project features identified in Part 3.

2. Conduct joint site inspections with NRCS, Castex Laterre and Burlington Resources of the project site at least annually and after major storm events if determined to be necessary by LDNR and/or NRCS. LDNR will submit to NRCS a report detailing the condition of the project features and recommendations for any corrective action. If LDNR recommends that corrective actions are needed, the report will include the entire estimated cost for engineering and design, supervision and inspection, construction, contingencies, and an assessment of the urgency of such action.

3. Perform or have performed any corrective actions needed, if such corrections have been approved by LDNR or NRCS. NRCS will participate with LDNR, or its appointed representative, in the engineering and design phases of the corrective actions for the project. Oversight of engineering and construction of the corrective actions for the project will be the responsibility of LDNR or its appointed representative. At least 30 calendar days prior to the date of formal request for construction bids, LDNR or its appointed representative shall provide NRCS with final copies of all project corrective action designs and specifications for review and concurrence by NRCS. LDNR or its appointed representative shall approve the final designs and specifications prior to proceeding with bid solicitations on all project corrective action construction contracts in coordination with NRCS. Any plan and/or specification changes both before and after award of construction contracts, shall be approved by LDNR in coordination with NRCS.

4. The representatives appointed above shall meet as necessary during the period of construction for corrective actions and shall make such recommendations as they deem necessary.

5. Provide a total contribution equal to the amount outlined in the Cost Share
Agreement for the maintenance and rehabilitation cost needed for the 20-year life of the project.

B. NRCS will:

1. Conduct joint inspections with LDNR, Castex Laterre and Burlington Resources of the project site at least annually and after major storm events if determined to be necessary by LDNR or NRCS.

2. Provide guidance for the development of plans and implementation of the project, review final copies of any maintenance and rehabilitation project designs and specifications and provide review and approval of all planning and construction details prior to formal request for construction bids or any corrective actions for the project.

3. Provide a total contribution equal to the amount outlined in the Cost Share Agreement for the maintenance and rehabilitation cost needed for the twenty (20) year life of the project.

4. Conduct quarterly reviews of the State’s progress against the goals and objectives of the Cooperative Agreement.

C. Castex Laterre will:

1. Conduct joint site inspections with LDNR, NRCS and Burlington Resources of the project site at least annually and after major storm events if determined to be necessary by LDNR.

2. Review preliminary design of any operation and maintenance project and provide concurrence prior to formal request for construction bids on any corrective actions for the project.

3. Provide a total contribution equal to the amount outlined in the Cost Share Agreement for the non-federal share of maintenance and rehabilitation cost needed for the 20-year life of the project. Contributions will include cash and/or credit for in-kind contribution at an agreed-to-value.

D. Burlington Resources will:

1. Conduct joint site inspections with LDNR, NRCS and Castex Laterre of the project site at least annually and after major storm events if determined to be necessary by LDNR.

2. Review preliminary design of any operation and maintenance project and
provide concurrence prior to formal request for construction bids on any corrective actions for the project.

3. Provide a total contribution equal to the amount outlined in the Cost Share Agreement for the non-federal share of maintenance and rehabilitation cost needed for the 20-year life of the project. Contributions will include cash and/or credit for in-kind contribution at an agreed-to-value.
The undersigned parties, acting on behalf of their respective agencies, agree to operate, maintain, and rehabilitate the Brady Canal Hydrologic Restoration Project (TE-28) according to this document, referenced Cooperative Agreement, plans, and all applicable permits and laws.

NATURAL RESOURCES CONSERVATION SERVICE
By: Donald L. Joseph
Title: State Conservationist
Date: 4/19/80

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
By: John M. McMahon
Title: Assr. Sec., DOCM, DNR
Date: 7/16/02

LATERRÉ CO., Ltd.
By: CASTEX ENERGY, Inc., G.P.
By: John W. Woodard
Title: Attorney-in-Fact
Date: April 12, 2002

BURLINGTON RESOURCES
By: J. W. L. V. Leamon, Jr.
Title: Manager
Date: 5/29/00

TE-28 Brady Canal O&M Plan -30-
ATTACHMENT I

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

COST SHARE AGREEMENT
DNR AGREEMENT NO. 5
OCR AGREEMENT NO. 435-5026
NRCS AGREEMENT NO. 68-7217-4-44

AMENDMENT NO. 1

TO

COST SHARING AGREEMENT

BETWEEN

USDA - NATURAL RESOURCES CONSERVATION SERVICE

AND

STATE OF LOUISIANA

FOR CONSTRUCTION, OPERATION, MAINTENANCE, REHABILITATION AND MONITORING OF THE

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

In accordance with ARTICLE XXI - AMENDMENTS TO BE IN WRITING, this agreement is terminated through agreement of both parties.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed on the 17th day of June, 1998, at Baton Rouge, Louisiana before the undersigned witnesses.

THE STATE OF LOUISIANA

BY:

Jack Caldwell, Secretary
Louisiana Department of Natural Resources

WITNESSES

[Signatures]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed on the 6th day of July, 1998, at Lafayette, Louisiana before the undersigned witnesses.

USDA, NATURAL RESOURCES CONSERVATION SERVICE

BY:

[Signatures]

WITNESSES

[Signatures]
COOPERATIVE AGREEMENT

BETWEEN

USDA-NATURAL RESOURCES CONSERVATION SERVICE

THE STATE OF LOUISIANA

FINA OIL AND CHEMICAL COMPANY

AND

THE LOUISIANA LAND AND EXPLORATION COMPANY

FOR CONSTRUCTION, OPERATION, MAINTENANCE, REHABILITATION

AND MONITORING OF THE

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PTE-26h/TE-28

This agreement, entered into this 15th day of May, 1996, by and between the U.S. Department of Agriculture, represented by the Natural Resources Conservation Service, (hereinafter referred to as “NRCS”), acting by and through the State Conservationist, the State of Louisiana, acting by and through the Secretary, Department of Natural Resources, (hereinafter referred to as “DNR”), Fina Oil and Chemical Company, acting by and through E. A. Hash, Vice President, (hereinafter referred to as “Fina”), and the Louisiana Land and Exploration Company, acting by and through J. N. Wood, Vice President, (hereinafter referred to as “LL&E”),

WITNESSETH, THAT:

WHEREAS, implementation of the Brady Canal Hydrologic Restoration Project (PTE-26h/TE-28) was authorized by the Coastal Wetlands Planning, Protection, and Restoration Act (hereinafter referred to as “CWPPRA”) of 1990, 16 U.S.C. Section 3961 et seq., (Public Law 101-646, Title III), and for local sponsorship by the Louisiana Coastal Wetlands Conservation and Restoration Plan, by the State of Louisiana in April 1994; and

WHEREAS, Section 303(f) of CWPPRA specifies the cost-sharing requirements applicable to the Project, and states that total project costs, including construction, operation, maintenance,
rehabilitation, and monitoring, are to be seventy-five percent (75%) federal and twenty-five (25%) non-federal, subject to modification of the cost-share formula upon approval of the State’s Coastal Wetlands Conservation Plan pursuant to Section 304 of CWPPRA; and

WHEREAS, the State’s Coastal Wetlands Conservation Plan was approved on November 30, 1997; all costs incurred prior to or on November 30, 1997, are shared at seventy-five percent (75%) federal and twenty-five (25%) non-federal, and all costs incurred on or after December 1, 1997, are shared at eighty-five percent (85%) federal and fifteen (15%) non-federal; and

WHEREAS, Section 303(c) of CWPPRA states that the Secretary of the Army shall not fund the identified project unless said project is subject to such terms and conditions necessary to ensure that wetlands restored, enhanced, or managed through the project will be administered for the long-term conservation of such lands and waters and dependent fish and wildlife populations; and

WHEREAS, NRCS is authorized by federal law to enter into a cost-sharing agreement with DNR, Fina and LL&E to provide financial cost-share assistance for the construction, operation, maintenance, rehabilitation, and monitoring of the project; and

WHEREAS, La. R.S. 49:213 and La. R.S. 49:214 state that the Secretary of DNR may enter into cost-sharing agreements with the federal government in order to conserve, restore, create, and enhance vegetated wetlands in coastal Louisiana in accordance with prescribed legislative oversight; and

WHEREAS, Fina has agreed to provide to DNR sixty percent (60%) of the non-federal share of the total Project costs, through cash or in-kind services; LL&E has agreed to provide to DNR forty percent (40%) of the non-federal share of the total Project costs, through cash or in-kind services; and

WHEREAS, Fina and LL&E have agreed to provide to DNR three percent (3%) and two percent (2%), respectively, of the total Project(s) cost in actual cash and the remaining balance of the non-federal share in the form of cash or in-kind contributions; and,

WHEREAS, DNR, Fina and LL&E are willing to participate in cost-sharing and financing in accordance with the terms of this Agreement;

NOW, THEREFORE, the parties agree as follows:
ARTICLE I - DEFINITIONS AND GENERAL PROVISIONS

For the purposes of this Agreement:

a. The term “Project” shall mean that work authorized by Congress as specified above for the construction of the PTE-26b/TE-28 Brady Canal Hydrologic Restoration Project. The PTE-26b/TE-28 Project is located in western Terrebonne Parish, about 20 miles south of the community of Gibson. The approximately 7,700 acre project area is bounded on the north by Bayou Panchant, Brady Canal, and Little Carencro Bayou; on the south by Bayou DeCade; on the east by Superior Canal; and on the west by Little Carencro Bayou and Voss Canal. The project will benefit approximately 1,100 acres of wetlands by enhancing freshwater, and sediment and nutrient delivery to the highly fragmented transitional area.

b. The term “total Project costs” shall mean all costs incurred by DNR, NRCS, Fina and LL&E directly related to implementation of the Project. Such costs shall be those costs incurred after November 1, 1993; and which shall include, but not necessarily limited to, the following: actual costs of applicable geotechnical investigations, detailed engineering and design; actual construction costs; construction management, supervision and inspection costs; operation costs; monitoring costs; the cost of land rights acquisition, easements, servitudes, rights-of-way; utility and facility alterations or relocations; maintenance; and rehabilitation for the Project.

c. The term “total first cost” shall mean all costs incurred by DNR, NRCS, Fina and LL&E directly related to completion of the construction phase of the project as identified in the official CWPPRA authorization document prepared by the CWPPRA Task Force (November 1993) and submitted to Congress.

d. The term “period of construction” shall mean the time from the advertisement of the first construction contract to the time that NRCS certifies to DNR, Fina and LL&E that construction of the entire project is complete. NRCS shall furnish to DNR, Fina and LL&E copies of the Government’s written Notice of Acceptance and Completion of Work for all contracts for the Project.

e. The term “Contracting Officer” shall mean the warranted Contracting Officer of NRCS awarding a federal contract.

f. The term “relocations” shall mean the preparation of plans and specifications for, and the accomplishment of any alteration, modification, lowering or raising in place, and/or new construction related to, but not limited to, existing: buildings, pipelines, public utilities (such as municipal water and sewer lines, telephone lines, and storm drains), aerial utilities, cemeteries, and other facilities, structures, and improvements determined by NRCS and DNR to be necessary for the construction, operation, maintenance, monitoring, and rehabilitation of the Project.

g. The term “utility” shall mean pipelines, cables, and similar facilities.
h. The term "fiscal year" shall mean one fiscal year of the United States Government, unless otherwise specifically indicated. The Government fiscal year begins on October 1 and ends on September 30.

i. The term "construction management costs" shall mean costs incurred by NRCS directly supervising and administering construction contracts, to include related overhead costs, as specified in applicable contracting regulations.

j. The term "Project Monitoring Plan" shall mean the plan dated August 13, 1996, jointly developed and approved by DNR and NRCS specifically for the Project which identifies all monitoring requirements, parameters and procedures. DNR will be responsible for collection of monitoring data and assimilation as part of the non-federal cost-share responsibilities. Monitoring will be conducted for the expected life of the Project or as agreed by NRCS, DNR, Fina and LL&E.

k. The term "maintenance" shall mean any action completed after the construction period that is required to maintain the Project at "as built" standards, and costing less than twenty percent (20%) of original construction cost.

l. The term "rehabilitation" shall mean any action completed after the construction period that is required to maintain the Project at "as built" standards, and costing twenty percent (20%) or more of the original construction cost.

m. The term "Operation, Maintenance, and Rehabilitation Plan" shall be a plan jointly developed and approved by NRCS, DNR, Fina and LL&E upon completion of the Project and prior to acceptance by NRCS, DNR, Fina and LL&E of the completed Project or functional portion of the Project. The Operation, Maintenance, and Rehabilitation Plan will address specific items, with estimated costs, to be performed throughout the expected life-span of the Project and will be revised periodically to reflect actual needs.

n. The term "operations, maintenance, and rehabilitation costs" shall mean all costs incurred by DNR, NRCS, Fina and LL&E related to operating, maintaining, and rehabilitating the final accepted Project. Specific requirements and responsibilities shall be identified and mutually accepted by all aforementioned parties in an "Operations, Maintenance, and Rehabilitation Plan".

o. The term "obligation" refers to amount of orders placed, contracts awarded, services rendered, or other commitments made during a given period which will require outlay during the same or some future period.

p. The term "engineering and design costs" shall mean all costs incurred by DNR and NRCS related to the development, approval, and acceptance of detailed engineering and design plans, specifications, and Project bid documents. This will also include all supervision and administrative costs associated with the engineering and design phase of the Project and will terminate with the award of a Project construction contract.
q. The term “monitoring costs” shall mean all costs incurred by DNR, NRCS, Fina and LL&E in developing and implementing the Project Monitoring Plan to evaluate the effectiveness of the Project in reaching Project objectives. This shall include, but not be limited to, such items as plan development and review, conducting pre- and post-construction monitoring procedures, collection and evaluation of data, and preparation of monitoring reports.

r. The term “functional portion of the Project” shall mean a completed portion of the Project as determined by NRCS, DNR, Fina and LL&E in writing to be suitable for operation, maintenance, and rehabilitation in advance of completion of the entire Project. To be suitable for operation, maintenance and rehabilitation, NRCS must determine that the completed portion of the Project can function independently and for a useful purpose, although the balance of the Project is not complete.

s. The term “life of the Project” shall mean the next twenty (20) years starting at the date of acceptance of the final Project, or functional portion of the Project, as provided in Article V.e. of this Agreement.

ARTICLE II - OBLIGATIONS OF THE PARTIES

a. No federal funds may be used to meet the non-federal share of Project costs under this agreement unless the expenditure of such funds is expressly authorized by statute as verified in writing by the granting agency.

b. DNR shall:

1. Establish and manage a separate interest-bearing account within the Treasury of the State of Louisiana. Such account shall be designated for the specific purpose of implementation of the Project. The account will be hereinafter referred to as the “Brady Canal Account”. As interest accrues, it shall remain in the Brady Canal Account.

2. Receive funds from Fina, LL&E and NRCS; deposit such funds into the Brady Canal Account; withdraw and distribute as specified in this Agreement.

3. Over the life of the Project, withdraw funds from the Brady Canal Account to compensate DNR for activities performed by DNR related to Project implementation; such activities may include, but are not limited to, acquisition of land rights, easements, servitudes and rights of way, administration and management, pre- and post-construction monitoring, permitting coordination, geological investigation, and some engineering services.

4. Over the life of the Project, withdraw from the Brady Canal Account funds provided by Fina and/or LL&E and distribute to NRCS via Escrow Account a minimum cash contribution of five percent (5%) of the total Project costs and any additional funds needed to meet the non-federal share of the total Project costs, after non-federal in-kind credits have been accounted for.
5. Over the life of the Project, withdraw from the Brady Canal Account funds provided by NRCS and distribute to Fina and/or LL&E those funds needed to meet the federal share of the total Project costs, after federal expenditures have been accounted for.

6. Prior to the advertisement of each federal construction contract, and as further specified in Article VI.b.2. hereof, DNR shall provide from the Brady Canal Account to NRCS via the "Coastal Wetlands, Planning Protection and Restoration Act Projects Construction Fund" (hereinafter referred to as the "Escrow Account") a minimum cash contribution of five percent (5%) of that portion of the total first costs incurred to date and anticipated to be expended through completion of that construction contract.

7. Prior to the advertisement of each federal construction contract, and as further specified in Article VI.b.2. hereof, DNR shall provide a contribution equal to the non-federal share of that portion of total first costs incurred to date and anticipated to be expended through completion of that construction contract. Said contribution will include cash from the Brady Canal Account and/or credit granted to DNR, Fina and LL&E for land rights, easements, servitudes, and rights-of-way acquisition, relocations, administrative and management costs, construction contributions, engineering services, etc., directly related to implementation of the Project. Each of the contributions identified must be completed, approved and accepted by NRCS before it can be considered for credit.

8. Implement the August 13, 1996 Project Monitoring Plan as further specified in Article VIII., to assure the performance of the long-term monitoring requirements.

9. Provide specific engineering services associated with the Project, subject to the cost-sharing provisions, and as mutually agreeable to both DNR and NRCS, or its engineering representative. Specific engineering services to be provided by DNR may include design surveys, plan preparation, post-construction surveys, etc. All such services will be approved by, and subject to, the supervision and guidance of NRCS engineering representatives.

10. Acquire all land rights, servitudes, rights-of-way, easements, and material borrow and disposal areas associated with the Project which are determined to be necessary, subject to cost-sharing terms previously identified.

11. Develop an "Operation, Maintenance, and Rehabilitation Plan" jointly with NRCS, Fina and LL&E which will identify specific long-term maintenance, operation, and rehabilitation requirements. Said plan will be developed upon completion of the Project features in accordance with Article I.m., and reviewed and modified as necessary after an evaluation conducted by DNR, with NRCS, Fina and LL&E participation, within twelve (12) to eighteen (18) months following completion of construction.

12. Obtain approval from the State Land Office prior to the placement of any structure(s) on state-claimed waterbottoms.
13. Assume lead responsibility for operation, maintenance, and rehabilitation of the Project upon acceptance of the completed Project, or functional portion of the Project, limited only by the provisions of Article XVII. DNR shall coordinate with Fina and LL&E to determine whether DNR, Fina, or LL&E will perform the necessary work. The non-federal share of operation, maintenance, and rehabilitation costs will be provided by Fina and LL&E pursuant to Article II.d.10, and Article II.e.10., either in cash to DNR or with in-kind services at an agreed-to value. NRCS will reimburse DNR for the federal share of such costs subject to the availability of funds.

c. NRCS shall:

1. Over the life of the Project, fund a total contribution equal to the federal share of the total Project costs, including any relocation costs associated with the Project.

2. During the design phase of the Project, provide draft plans and specifications to DNR, Fina and LL&E for review and comment. Should Fina and/or LL&E indicate, in writing to NRCS, a desire to construct a portion of the Project, NRCS shall:

   a. Coordinate with Fina and/or LL&E to confirm Fina and/or LL&E’s capabilities to perform work in accordance with the furnished plans and specifications; and

   b. Isolate the work to be performed by Fina and/or LL&E into a separate construction unit.

3. Provide to Fina and/or LL&E final plans and specifications for those construction units they have indicated a desire to construct.

4. Review written information submitted, pursuant to Articles II.d.4. and II.e.4., by Fina and/or LL&E within 30 days. Negotiate and settle upon, in writing, the value of work to be performed by Fina and/or LL&E.

5. Upon inspection and acceptance of work completed by Fina and/or LL&E, provide DNR for deposit into the Brady Canal Account the federal share of the value of in-kind work performed by Fina and/or LL&E.

6. Prior to the advertisement of each federal construction contract, NRCS shall provide a contribution equal to the federal share of that portion of total first costs incurred to date and anticipated to be expended through completion of that construction contract, including any relocation costs associated with the Project.

7. Except as limited by the provisions of Article VIII.6., and subject to the availability of appropriations, reimburse DNR for the federal share of the approved cost of pre- and post-construction monitoring of the Project upon receipt of the request for reimbursement.
8. Reimburse DNR for the federal share of the actual costs incurred by DNR for all engineering services provided for the Project, permitting coordination, and acquiring all land rights (easements, servitudes, and rights-of-way, including suitable borrow material and disposal areas) as determined by NRCS to be necessary for Project construction, operation, monitoring, maintenance, and rehabilitation.

9. Provide all engineering, design, land services, and construction services, except those mutually agreed as specified in Article II. b. 9., associated with the Project, subject to the cost-sharing provisions identified.

10. Provide to DNR the federal share of costs identified in the "Operation, Maintenance, and Rehabilitation Plan" and actually incurred by DNR, Fina and LL&E, subject to the limitations on expenditures set forth in Article XXI.

11. Comply with the Federal Acquisition Regulation (FAR), Agriculture Acquisition Regulation (AGAR), Natural Resources Conservation Service Acquisition Regulation (NRCSAR), and any permits issued for this Project for all federal contracts associated with the Project.

12. Provide authorized technical services including, but not limited to, obtaining basic information; preparation of drawings, design, and specifications; and performance of layout, inspection services, and quality assurance during construction.

13. Arrange for and conduct final inspection of the completed works of improvement with DNR, Fina and LL&E to determine whether all work has been performed in accordance with the contractual requirements for federal construction, or in accordance with plans and specifications for in-kind work. Based on this determination, accept work from the contractor, or Fina and/or LL&E in the case of in-kind work, and notify DNR, Fina and LL&E of acceptance.

14. Participate, with DNR, Fina and LL&E in an evaluation within twelve (12) to eighteen (18) months following the completion of construction to assess maintenance, operation, and rehabilitation needs. NRCS will also participate with DNR, Fina and LL&E in any subsequent evaluations as the parties deem necessary to address long-term maintenance, operation, and rehabilitation of the Project.

15. Ensure that all National Environmental Policy Act (NEPA) and regulatory requirements, including permit requirements for the Project, are met.

16. Obtain approval from the State Land Office prior to the placement by NRCS of any structure(s) on state-claimed waterbottoms.

17. Install signs, navigation aids, and/or safety lights required, through regulations or otherwise, by the U.S. Coast Guard as a result of the construction by NRCS of any barrier to navigation.
d. Fina shall:

1. Over the life of the Project, provide a minimum cash contribution of three percent (3%) of the total Project costs. The maximum amount of Fina’s minimum cash contribution is $176,922.00.

2. Over the life of the Project, fund a total contribution equal to sixty percent (60%) of the non-federal share of the total Project costs. Such total contribution will include cash and/or credit for in-kind contributions. Because a portion of the total Project costs were incurred prior to approval of the State’s Coastal Wetlands Conservation Plan, some of the costs are shared at seventy-five percent (75%) federal and twenty-five (25%) non-federal and some of the costs are shared at eighty-five percent (85%) federal and fifteen (15%) non-federal. Hence, Fina’s maximum total contribution would be greater than $530,766.00, but less than $884,610.00. It is the intent of the parties that Fina will receive its share of any monetary benefits accruing to the State of Louisiana as a result of approval of the State’s Coastal Wetlands Conservation Plan.

3. Review draft plans and specifications provided by NRCS and indicate in writing to NRCS, within thirty (30) days of receipt of the draft plans and specifications, whether Fina desires to construct a portion of the Project. **Fina will protect the confidentiality of these plans and specifications by not providing them to private contractors and/or sources outside of the Fina organization prior to either the advertisement of work for federal contracts or the performance of work by Fina for in-kind credit.**

4. Within thirty (30) days of receipt of final plans and specifications for any construction unit which Fina has indicated a desire to construct, provide a detailed cost estimate (materials, labor, equipment costs, etc.) in writing to NRCS.

5. Negotiate and settle upon with NRCS, DNR, and LL&E the value of work to be performed by Fina. The settled upon value shall be documented in a letter agreement among all parties. Any changes in work or changes in scope of work must be negotiated, settled upon, and confirmed in writing by all parties prior to its occurrence.

6. For that portion of the Project which Fina has agreed to construct, jointly develop with NRCS and DNR a construction schedule (with start date, milestones, and completion date). It is acknowledged that the construction schedule may be adjusted in accordance with those provisions customarily used by NRCS in its construction contracts.

7. For that portion of the Project which Fina has agreed to construct, perform construction in accordance with any permits issued for this Project and in accordance with final plans and specifications furnished by NRCS.

8. When requested by DNR to do so, provide Fina’s cash contribution to DNR. The cash payment will be made by certified check payable to the State of Louisiana, Department of Natural Resources. Upon receipt of the payment referenced above, DNR shall deposit the full amount into the
Treasury of the State of Louisiana. The deposit will be made into a separate, interest-bearing account that will be designated for use for the specific purpose of implementation of the Project. The account will be hereinafter referred to as the “Brady Canal Account.” As interest accrues, it will remain in the Brady Canal Account.

9. Provide prior to the advertisement of any federal construction contract or the beginning of any in-kind construction, at no cost to DNR or NRCS all lands, easements, servitudes, rights-of-way and any interest in, over, under and upon any lands, waterbodies, and/or waterbottoms owned and/or leased by Fina and determined by NRCS and DNR to be necessary for construction, inspection operation, maintenance, rehabilitation and monitoring of the Project. Supply surface use information and identify all lessors. No title to the property affected by the Project, including mineral rights therein, are transferred with any easement, servitudes, rights-of-way provided by Fina pursuant to this Agreement. No public rights of ownership will be transferred or vested in private parties as a result of the restoration activities associated with the Project.

10. Participate in the operation, maintenance, and rehabilitation of the Project upon acceptance of the completed Project, or functional portion of the Project. DNR shall coordinate with Fina and LL&E to determine whether DNR, Fina, or LL&E will perform the necessary work. Fina shall contribute sixty percent (60%) of the non-federal share of operation, maintenance, and rehabilitation costs, either in cash or DNR or with in-kind services at an agreed-to value. NRCS will contribute the federal share of operation, maintenance, and rehabilitation costs.

11. Annually reimburse DNR for sixty percent (60%) of the non-federal share of Project Monitoring costs unless covered by the agreed-to value of in-kind services.

12. Prior to the dredging of the proposed access channel, Fina will coordinate with Union Oil Company of California (UNOCAL) to determine precise locations of pipelines which would be crossed by the channel and to make arrangements necessary to ensure that these pipelines are not damaged by the dredging activity. This activity is not part of this Project. This activity shall not be financed with CWPPRA funds and no in-kind credit will be granted.

c. LL&E shall:

1. Over the life of the Project, provide a minimum cash contribution of two percent (2%) of the total Project costs. The maximum amount of LL&E’s minimum cash contribution is $117,948.00.

2. Over the life of the Project, fund a total contribution equal to forty percent (40%) of the non-federal share of the total Project costs. Such total contribution will include cash and/or credit for in-kind contributions. Because a portion of the total Project costs were incurred prior to approval of the State’s Coastal Wetlands Conservation Plan, some of the costs are shared at seventy-five percent (75%) federal and twenty-five (25%) non-federal and some of the costs are shared at eighty-five percent (85%) federal and fifteen (15%) non-federal. Hence, LL&E’s maximum total contribution would be greater than $353,844.00, but less than $589,740.00. It is the intent of the parties that LL&E will
receive its share of any monetary benefits accruing to the State of Louisiana as a result of approval of the State’s Coastal Wetlands Conservation Plan.

3. Review draft plans and specifications provided by NRCS and indicate in writing to NRCS, within thirty (30) days of receipt of the draft plans and specifications, whether LL&E desires to construct a portion of the Project. LL&E will protect the confidentiality of these plans and specifications by not providing them to private contractors and/or sources outside of the LL&E organization prior to either the advertisement of work for federal contracts or the performance of work by LL&E for in-kind credit.

4. Within thirty (30) days receipt of final plans and specifications for any construction unit which LL&E has indicated a desire to construct, provide a detailed cost estimate (materials, labor, equipment costs, etc.) in writing to NRCS.

5. Negotiate and settle upon with NRCS, DNR, and Fina the value of work to be performed by LL&E. The settled upon value shall be documented in a letter agreement among all parties. Any changes in work or changes in scope of work must be negotiated, settled upon, and confirmed in writing by all parties prior to its occurrence.

6. For that portion of the Project which LL&E has agreed to construct, jointly develop with NRCS and DNR a construction schedule (with start date, milestones, and completion date). It is acknowledged that the construction schedule may be adjusted in accordance with those provisions customarily used by NRCS in its construction contracts.

7. For that portion of the Project which LL&E has agreed to construct, perform construction in accordance any permits issued for this Project and in accordance with final plans and specifications furnished by NRCS.

8. When requested by DNR to do so, provide LL&E’s cash contribution to DNR. The cash payment will be made by certified check payable to the State of Louisiana, Department of Natural Resources. Upon receipt of the payment referenced above, DNR shall deposit the full amount into the Treasury of the State of Louisiana. The deposit will be made into a separate, interest-bearing account that will be designated for use for the specific purpose of implementation of the Project. The account will be hereinafter referred to as the “Brady Canal Account.” As interest accrues, it will remain in the Brady Canal Account.

9. Provide prior to the advertisement of any federal construction contract or the beginning of any in-kind construction, at no cost to DNR or NRCS all lands, easements, servitudes, rights-of-way and any interest in, over, under and upon any lands, waterbodies, and/or waterbottoms owned and/or leased by LL&E and determined by NRCS and DNR to be necessary for construction, inspection, operation, maintenance, rehabilitation and monitoring of the Project. Supply surface use information and identify all leases. No title to the property affected by the Project, including mineral rights therein, are transferred with any easement, servitudes, rights-of-way provided by LL&E pursuant
to this Agreement. No public rights of ownership will be transferred or vested in private parties as a result of the restoration activities associated with the project.

10. Participate in the operation, maintenance, and rehabilitation of the Project upon acceptance of the completed Project, or functional portion of the Project. DNR shall coordinate with LL&E and Fina to determine whether DNR, LL&E or Fina will perform the necessary work. LL&E shall contribute forty percent (40%) of the non-federal share of operation, maintenance, and rehabilitation costs, either in cash to DNR or with in-kind services at an agreed-to value. NRCS will contribute the federal share of operation, maintenance, and rehabilitation costs.

11. Annually reimburse DNR for forty percent (40%) of the non-federal share of Project monitoring costs unless covered by the agreed-to value of in-kind services.

12. Prior to the dredging of the proposed access channel, LL&E will coordinate with Union Oil Company of California (UNOCAL) to determine precise locations of pipelines which would be crossed by the channel and to make arrangements necessary to ensure that these pipelines are not damaged by the dredging activity. This activity is not part of this Project. This activity will not be financed by CWPPRA and no in-kind credit will be granted.

**ARTICLE III - LAND RIGHTS, FACILITIES, AND PUBLIC LAW 91-646 RELOCATION ASSISTANCE**

a. On Non-Federal lands, DNR shall acquire all land rights, easements, servitudes, rights-of-way, and material borrow and disposal areas determined to be necessary for construction of the Project and as mutually agreed-to by DNR and NRCS. Prior to the advertisement of any construction contract, DNR shall provide certification to NRCS that all land rights, easements, servitudes, rights-of-way and material borrow and disposal areas required, have been acquired as part of this Agreement and shall furnish to NRCS evidence supporting actual rights-of-way acquired by DNR for Project construction, operation, monitoring, and maintenance.

b. The State shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR part 24, in acquiring lands, easements, and rights-of-way for construction and subsequent operation, maintenance, and rehabilitation of the Project.

c. No title to the property or minerals affected herein are transferred with any easements, servitudes, rights-of-way, and material borrow and disposal areas provided by DNR pursuant to this Agreement. No public rights of ownership shall be transferred or vested in private parties as a result of the Project. Further, any easements, servitudes, rights-of-way, and material borrow and disposal areas shall provide for reasonable access for mineral exploration and development.
ARTICLE IV - VALUE OF LAND RIGHTS AND FACILITIES

a. The value of the land rights, easements, servitudes, and rights-of-way to be included in total Project costs and credited towards the non-federal share of total Project costs will be determined in accordance with the following procedures:

1. The costs associated with securing all land rights, easements, servitudes, and rights-of-way to be acquired by DNR (Article IIIA.) shall be the actual costs including, but not limited to, expenses associated with securing legal land rights instruments from all sources (legal reviews, recording fees, etc.) associated with Project activities. An estimate of such costs will be prepared by DNR and approved by NRCS for credit allowance as part of the non-federal cost-share. Credit allowance for any costs above this estimate must be approved by NRCS.

2. Any costs incurred for relocations will be included in total Project costs and will be accomplished as part of Project construction through the agreed cost-share arrangement.

ARTICLE V - CONSTRUCTION PHASING AND MANAGEMENT

a. To provide for consistent and effective communication between DNR, NRCS, Fina and LL&E during the period of construction, DNR, NRCS, Fina and LL&E shall appoint representatives to coordinate scheduling, plans, specifications, modifications, contract costs, and other matters relating to construction of the Project.

b. DNR, Fina and LL&E will participate with NRCS, or its appointed representative, in the engineering and design phases of the Project. Oversight of engineering and construction of the Project will be the responsibility of NRCS or its appointed representative. At least thirty (30) calendar days prior to the date of formal request for construction bids, NRCS, or its appointed representative, shall provide DNR, Fina and LL&E with final copies of all Project designs and specifications for review and concurrence by DNR, Fina and LL&E. NRCS, or its appointed representative, DNR, Fina and LL&E shall approve the final designs and specifications prior to proceeding with bid solicitations on all project construction contracts. Any plan and/or specification(s) changes, both before and after award of construction contracts, shall be jointly approved by NRCS, DNR, Fina and LL&E.

c. The representatives appointed above shall meet as necessary during the period of construction and shall make such recommendations as they deem warranted to the Contracting Officer for federal contracts and to the NRCS State Conservationist for in-kind construction.

d. The Contracting Officer shall consider the recommendations of the representatives in all matters relating to federal construction contracts for the Project; but the Contracting Officer, having ultimate responsibility for federal contracts of the Project, has complete discretion to accept, reject, or modify the recommendations. The State Conservationist shall consider the recommendations of the representatives in all matters relating to in-kind construction of the Project and shall make a sincere effort to accept such recommendations and to ensure that structural integrity is maintained.
e. Following completion of the Project or functional portion of the Project, final acceptance of the Project, or functional portion of the Project, will be jointly made by NRCS, DNR, Fina and LL&E. Should the Project, or functional portion of the Project, not meet plan specification objectives, then DNR, Fina and LL&E will have the option to modify the completed work, address this modification in the “Operation, Maintenance, and Rehabilitation Plan”, or to terminate this Agreement. However, DNR, NRCS, Fina and LL&E shall endeavor to modify the completed work or address these modifications in the “Operation, Maintenance, and Rehabilitation Plan” to ensure that the original plan specification objectives are achieved.

ARTICLE VI - METHOD OF PAYMENT

a. DNR shall coordinate with Fina and LL&E and provide the non-federal contributions required under Article II of this Agreement. The PL 101-646 Task Force has estimated a total Project cost of $4,717,900.00 and authorized a maximum total Project cost of $5,897,400.00 for this particular Project. DNR will coordinate the contribution of in-kind services or cash to meet the non-federal share of the total Project costs. The maximum non-federal contribution is $1,474,350.00. This figure is subject to modification as provided for in Section 303(f) of CPWPPA. Any cost in excess of the maximum total project cost of $5,897,400.00 are subject to amendment of this Agreement and Task Force approval, as provided in Article XXI. The maximum amount of the non-federal required minimum five percent (5%) cash contribution is $294,870.00.

b. DNR shall provide the required non-federal cash contribution in proportion to the rate of federal expenditures in accordance with the following provisions:

1. For purposes of budget planning, NRCS shall notify DNR, Fina and LL&E by October 1 of each year of the estimated funds that will be required to meet the non-federal share of total Project costs for the subsequent fiscal year.

2. No later than sixty (60) calendar days prior to the advertisement of each federal construction contract, NRCS shall notify DNR of the non-federal share of that portion of total first costs incurred to date and anticipated to be expended through completion of that contract. This amount will include the non-federal share of total first costs in cash and credit as described in Article II.b.7., and the minimum cash contribution of five percent (5%) of total first costs as described in Article II.b.6. No later than 30 calendar days thereafter, DNR shall verify to the satisfaction of NRCS or its representative, that it has deposited the requisite amount in the Escrow Account with interest accruing to DNR.

3. For the second and subsequent fiscal years of Project implementation, no later than sixty (60) calendar days prior to the beginning of the fiscal year, DNR shall make the necessary funds available to NRCS through the funding mechanism specified in Article VI.b.2. of this agreement. As construction of the Project proceeds, NRCS shall adjust the amounts required to be provided under this paragraph to reflect actual costs.

4. If, at any time during the period of construction NRCS determines that additional non-federal funds will be needed, NRCS shall so notify DNR, Fina and LL&E and DNR, no later than
45 calendar days from receipt of such notice, shall make the necessary funds available through the
funding mechanism specified in Article VI.b.2. of this Agreement.

c. NRCS will draw on the Escrow Account such sums as NRCS deems necessary to cover
contractual and in-house fiscal obligations attributable to the Project on an annual basis, as well as costs
incurred by NRCS prior to the initiation of construction but after November 1, 1993, according to
Article 1.b.

d. The Escrow Account will be managed for NRCS by the New Orleans District, U.S. Army
Corps of Engineers. Funds will be withdrawn from the account and disbursed to NRCS as requested.

e. Upon completion of the Project or termination of this Agreement in accordance with
Article XVII. of this Agreement, and resolution of all relevant contract claims and appeals, NRCS shall
compute the total Project costs and tender to DNR, Fina and LL&E a final accounting of the non-federal
share of Project costs. In the event that the total non-federal contribution is less than the minimum
required share of total Project costs, DNR shall, no later than ninety (90) calendar days after receipt of
written notice, make a cash payment to NRCS of whatever sum is required to meet its minimum
required share of total Project costs.

f. In the event that non-federal cash contributions are in excess of five percent (5%) of total
Project costs which result in the non-federal parties having provided more than their required share of
total Project costs, NRCS shall, no later than ninety (90) calendar days after the final accounting is
complete, subject to the availability of appropriations, return said excess to DNR. DNR will then
provide these funds in previously mentioned proportions to Fina and LL&E. The non-federal parties
shall not be entitled to any refund of the five percent (5%) cash contribution required pursuant to Article
II.b.6. of this Agreement.

g. If the non-federal total contribution under this Agreement (including land rights,
easements, rights-of-way, relocations, material borrow and disposal areas, and work-in-kind provided by
DNR, Fina and LL&E and approved by NRCS) exceeds the required non-federal share of total Project
costs, NRCS shall verify the actual exceeded costs and direct the U.S. Army Corps of Engineers, subject
to the availability of appropriations for that purpose, and the minimum five percent (5%) cash
requirement, refund the excess to DNR no later than 90 calendar days after the final accounting is
complete. DNR will then provide these funds in previously mentioned proportions to Fina and LL&E.

ARTICLE VII - DISPUTES

Before any party to this Agreement may bring suit in any court concerning an issue relating to
this Agreement, such party must first seek in good faith to resolve the issue through negotiation or other
forms of non-binding alternative dispute resolution mutually acceptable to the parties.
ARTICLE VIII - MONITORING, OPERATING, MAINTENANCE, AND REHABILITATION

a. After NRCS has accepted, with the concurrence of DNR, Fina and LL&E, the completed Project or the functional portion of the Project, DNR shall assume long-term monitoring responsibilities in accordance with the Project Monitoring Plan defined in Article I.j. and in accordance with the language of Article II.b.8 of this Agreement. At this same time, DNR will assume responsibilities for operation, maintenance and rehabilitation of the completed Project or functional portion of the Project, following the recommendations jointly developed and approved by DNR, NRCS, Fina and LL&E in the Project "Operation, Maintenance, and Rehabilitation Plan" defined in Article I.m. of this Agreement. These responsibilities will remain in effect for the expected life of the Project which is twenty (20) years from the date of acceptance of the final Project, or functional portion of the Project, unless otherwise agreed to by NRCS, DNR, Fina and LL&E.

b. DNR, Fina and LL&E grants NRCS the right to enter, at reasonable times and in a reasonable manner, upon land which it owns or maintains access easements to the Project, for the purpose of inspection related to monitoring, operating, maintaining, replacing, or rehabilitating the Project. If an inspection shows that DNR, Fina and LL&E, for any reason, are failing to fulfill their obligations under this Agreement, NRCS will send a written notice to DNR, Fina and LL&E concerning a need for compliance. If DNR, Fina or LL&E persists in such failure for thirty (30) calendar days after receipt of the notice, then NRCS shall have a right to cancel the federal assistance portion of this Agreement for any additional expenses related to monitoring, operation, maintenance, and rehabilitation costs of the Project.

ARTICLE IX - MAINTENANCE OF RECORDS

NRCS, DNR, Fina and LL&E shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total Project costs. NRCS, DNR, Fina and LL&E shall maintain such books, records, documents and other evidence for a minimum of three (3) years after completion of construction, operation, maintenance, repair, replacement, rehabilitation, and monitoring of the Project and resolution of all relevant claims arising therefrom, and shall make available at their offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

ARTICLE X - GOVERNMENT REVIEW OF RECORDS

NRCS shall conduct a review, when appropriate, of DNR, Fina and LL&E’s records for the Project to ascertain the reasonableness and allowability of their costs for inclusion as credit against the non-federal share of Project costs.
ARTICLE XI - STATE REVIEW OF RECORDS

DNR shall have the right to conduct an audit, when appropriate, of NRCS, Fina and LL&E’s records for the Project to ascertain the reasonableness and allowability of their costs for inclusion as credit against the federal and non-federal share of Project costs.

ARTICLE XII - FINA REVIEW OF RECORDS

Fina may conduct a review, when appropriate, of NRCS, DNR and LL&E’s records for the Project to ascertain the reasonableness and allowability of their costs for inclusion as credit against the federal and non-federal share of Project costs.

ARTICLE XIII - LL&E REVIEW OF RECORDS

LL&E may conduct a review, when appropriate, of NRCS, DNR and Fina’s records for the Project to ascertain the reasonableness and allowability of their costs for inclusion as credit against the federal and non-federal share of Project costs.

ARTICLE XIV - RELATIONSHIP OF PARTIES

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement, and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE XV - OFFICIALS NOT TO BENEFIT

No member of, or delegate to, the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XVI - COVENANT AGAINST CONTINGENT FEES

DNR, Fina, and LL&E warrant that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by DNR, Fina, and LL&E for the purpose of securing business. For breach or violation of this warranty, NRCS shall have the right to annul this Agreement without liability, or, in its discretion, to add to the Agreement or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE XVII - TERMINATION OR SUSPENSION

a. If NRCS or DNR fails to receive annual appropriations for the Project in amounts sufficient to meet Project expenditure for the then-current or upcoming fiscal year, NRCS or DNR shall so notify the other parties. After sixty (60) calendar days either party may elect, without penalty, to
terminate this Agreement pursuant to this Article or to defer future performance hereunder; however, deferral of future performance under this Agreement shall not affect existing obligations or relieve the parties of liability for any obligation previously incurred. In the event that either party elects to terminate this Agreement pursuant to this Article, both parties shall conclude their activities relating to the Project and proceed to a final accounting in accordance with Article VI of this Agreement. In the event that either party elects to defer future performance under this Agreement pursuant to this Article, such deferral shall remain in effect until such time as NRCS or DNR receives sufficient appropriations or until either party elects to terminate this Agreement.

b. Except as provided in paragraph (a) above, if at any time DNR fails to make the payments required under this Agreement, NRCS shall terminate or suspend work on the Project until DNR is no longer in arrears, unless NRCS determines that continuation of work on the Project is in the best interest of the United States or is necessary in order to satisfy agreements with any other non-federal interests in connection with the Project. DNR shall not be liable for any future payments should NRCS continue work on the project, but shall remain liable for obligations previously incurred.

ARTICLE XVIII - OBLIGATIONS OF FUTURE APPROPRIATIONS

Nothing herein shall constitute, or be deemed to constitute, an obligation of future appropriations by the legislature of the State of Louisiana when obligating future appropriations would be inconsistent with the State's constitutional or statutory limitations.

ARTICLE XIX - NOTICES

a. All notices, requests, demands, and other communications required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally, given by prepaid telegram, or mailed by first-class (postage pre-paid), registered, or certified mail, as follows:

If to DNR:
Secretary, Department of Natural Resources
P.O. Box 94396
Baton Rouge, LA 70804-9396

If to NRCS:
State Conservationist
USDA-Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

Page 18 of 28
If to Fina:

John Woodard
Fina Oil and Chemical Company
P.O. Box 206
Houma, LA 70361

If to LL&E:

Kermit J. Coulon
Louisiana Land and Exploration Company
P.O. Box 7097
Houma, LA 70361

b. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

c. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at such time as it is personally delivered or seven (7) calendar days after it is mailed, as the case may be.

ARTICLE XX - CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

ARTICLE XXI - PROJECT COST LIMITS

a. The PL 101-646 Task Force estimated the total Project cost for this Project to be $4,717,900.00. That estimated total Project cost includes the following Project phases and associated estimated costs.

1. Engineering and design costs (also including supervision and administration, and land) of $250,000.00
2. Total first costs (including construction and related contingency, and supervision and inspection) of $2,337,000.00
3. Operation, maintenance and rehabilitation costs of $1,287,700.00
4. Monitoring costs of $865,200.00
b. To provide flexibility in the planning and construction of coastal restoration projects, the PL 101-646 Task Force authorized a maximum total Project cost of 125% of the estimated Project cost, or $5,897,400.00, for this particular Project.

c. Based on updated cost estimates available at the time of execution of this Agreement, all parties acknowledge and concur with the following revised budget, pending any necessary approvals by the PL 101-646 Task Force:

1. Engineering and design costs (also including supervision and administration, and lands) of $250,000.00
2. Total first costs (including construction and related contingency, and supervision and inspection) of $2,337,000.00
3. Operation, maintenance and rehabilitation costs of $1,447,900.00
4. Monitoring costs of $921,500.00

d. If, at any time during the performance of a particular Project phase, the actual or anticipated cost of that phase exceeds the estimated cost of that phase as set forth in Article XXI.c. of this Agreement, all work in that particular Project phase shall cease. NRCS, DNR, Fina and LL&E may agree to increase the cost of completing that particular phase of the Project, but only if such increase would not result in the total Project costs exceeding the maximum total Project cost defined in Article XXI.b. of this Agreement. Such agreement regarding cost increases for the cost of a particular Project phase shall be made by letter agreement confirmed by the mutual written approval of both the NRCS State Conservationist, the DNR Secretary, Fina and LL&E. Work on that particular Project phase shall thereafter resume.

c. At any time during the life of this Project, any party to this Agreement may provide notification to the other parties to this Agreement, together with facts, data, and quantifiable projections, which indicates that the project cost will exceed $5,897,400.00. All parties agree to meet and determine the validity of such concern within 30 calendar days of receiving such notification. If it is determined and agreed by all parties that project costs will exceed $5,897,400.00, then all work on the Project, including the award of contracts, shall cease until the Task Force approves such cost increase and this Agreement is amended. The maximum non-federal contribution from Fina and LL&E through DNR under the terms of this Agreement would range from $884,610.00 to $1,474,350.00; any contribution in excess of that amount shall be subject to written amendment to this Agreement, including review and approval by the Division of Administration, State of Louisiana.

ARTICLE XXII - AMENDMENTS TO BE IN WRITING

This Agreement may be modified by agreement of the parties, in accordance with the provisions of CWPPRA and applicable federal and state regulations. All such amendments, modifications,
revisions, and/or changes to this Agreement must be made in writing and acknowledged by signature of the authorized parties of this agreement. All such amendments, modifications, revisions, and/or changes to this Agreement shall be subject to review and approval by the Division of Administration, State of Louisiana.

ARTICLE XXIII - EQUAL OPPORTUNITY AND CIVIL RIGHTS

a. The program or activities conducted under this Agreement will be in compliance with the nondiscrimination provision contained in the Titles VI and VII of the Civil Rights Act of 1964, as amended; the Civil Rights Restoration Act of 1987 (Public Law 100-259); and other nondiscrimination statutes: namely, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, and the Age Discrimination Act of 1975. They will also be in accordance with regulations of the Secretary of Agriculture (7 CFR-15, Subparts A & B), which provide that no person in the United States shall on the grounds of race, color, national origin, age, sex, religion, marital status, or handicap be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance from the Department of Agriculture or any agency thereof.

b. The Contracting Party shall not discriminate on the basis of sexual orientation.

ARTICLE XXIV - SURVEY

Prior to commencement of any construction activities, NRCS or the Office of Coastal Restoration and Management of DNR, or the option of DNR, shall (1) cause to be conducted, a survey to determine the highest tide during winter season or such other time which will indicate the extent of State ownership existing prior to commencement of any restoration activities, or (2) obtain aerial photographs or satellite images of the project area taken within one year prior to commencement of the restoration activity, or (3) acquire such other information as is acceptable to DNR to indicate the extent of State ownership. Any costs associated with this Article are considered a part of total Project costs and shall be cost-shared according to the terms previously identified.

ARTICLE XXV - FEDERAL AND STATE LAWS

a. In the exercise of DNR’s rights and obligations hereunder, DNR agrees to comply with all applicable federal and State laws and regulations.

b. NRCS agrees to comply with all applicable federal and State of Louisiana laws and/or regulations, unless state law and regulations are preempted by federal law.

c. In the exercise of Fina and LL&E’s rights and obligations hereunder, Fina and LL&E agree to comply with all applicable federal and State laws and regulations.
IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed on the 15th day of April 1998, before the undersigned witnesses.

USDA
NATURAL RESOURCES CONSERVATION SERVICE
BY: Donald W. Gohmert
State Conservationist

WITNESSES:

Cheryl Walter
Mary Woodman

FINA OIL AND CHEMICAL COMPANY
BY: E. A. Nash
Name: Vice President

WITNESSES:

Harry C. Fitch
Donald J. Shirley
Rick McDaniel

APPROVED
Office of the Governor
JUN 98
DIREC
CERTIFICATE OF AUTHORITY

I, [Name], do hereby certify that I am the principal legal officer of the Department of Natural Resources for the State of Louisiana, that the Department of Natural Resources for the State of Louisiana is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Natural Resources Conservation Service and the State of Louisiana in connection with the Brady Canal Hydrologic Restoration Project (PTE-26b), Terrebonne Parish, LA, and that the persons who have executed this Agreement on behalf of the State have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this [Date] day of [Month], 19__.

[Signature]

[Title]

[Signature]

[Title]
CERTIFICATE OF AUTHORITY

I, Cullen M. Godfrey, do hereby certify that I am the principal attorney of Fina Oil and Chemical Company, that Fina Oil and Chemical Company has the authority and legal capability to perform the terms of the Agreement between the Natural Resources Conservation Service, the State of Louisiana and The Louisiana Land and Exploration Company in connection with the Brady Canal Hydrologic Restoration Project (PTE-26b/TE-28), Terrebonne Parish, LA, and that the persons who have executed this Agreement on behalf of the Fina Oil and Chemical Company have acted within their authority.

IN WITNESS WHEREOF, I have made and executed this certification this __th day of 

[Signature]

Cullen M. Godfrey
General Counsel and Vice President
TITLE
CERTIFICATE OF AUTHORITY

I, Frederick J. Plaeger, do hereby certify that I am the principal attorney of The Louisiana Land and Exploration Company, that The Louisiana Land and Exploration Company has full authority and capability to perform the terms of the Agreement between the Natural Resources Conservation Service, State of Louisiana and Fina Oil and Chemical Company in connection with the Brady Canal Hydrologic Restoration Project (PTE-266/TE-28), Terrebonne Parish, LA, and that the persons who have executed this Agreement on behalf of The Louisiana Land and Exploration Company have acted within their authority.

In Witness Whereof, I have made and executed this certification this 23rd day of

[Signature]

NAME

[Title]

[Signature]

DATE
CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-115, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

DATE: 5/15/98

[Signature]

JACK CALDWELL, Secretary
Department of Natural Resources
State of Louisiana
CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence the officer or employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-7L, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S.-Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

DATE: 5/4/98

Name: E. A. Nash
Title: Vice President

Fina Oil and Chemical Company
CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-114, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

DATE: 4/23/93

[Signature]

Name: J. M. Wood
Title: Vice President

The Louisiana Land and Exploration Company
State of Louisiana

OFFICE OF COASTAL PROTECTION & RESTORATION
THROUGH THE DEPARTMENT OF NATURAL RESOURCES
OFFICE OF MANAGEMENT & FINANCE
(IN ACCORDANCE WITH R.S. 49:214.6.2C(4))

April 11, 2011

Aaron Ramsey
USDA-Natural Resources Conservation Service
3737 Government Street
Alexandria, LA  71302

RE:     DNR Cooperative Agreement No. 2511-98-08
        OCR Cooperative Agreement No. 435-800167-01
        NRCS Agreement No. 68-7217-7-11
        Amendment No. 1
        “Brady Canal Hydrologic Restoration (TE-28)”

Dear Mr. Ramsey:

Enclosed for your records please find an executed copy of the above-mentioned amendment reflecting the required approval of the Division of Administration, Office of Contractual Review.

Should you have any questions, please call Brian Babin at (985) 447-0956.

Sincerely,

Julia Raiford
Contracts and Grants Administrator

JR/amt
Enclosure

c:   Brian Babin, Project Manager
     Michelle Klecker, OCPR
     Gwen Thomas, Fiscal

RECEIVED
APR 20 2011
BY: 00
AMENDMENT NO. 1

TO

COST SHARE AGREEMENT

BETWEEN

USDA-NATURAL RESOURCES CONSERVATION SERVICE

AND

THE STATE OF LOUISIANA

FOR OPERATION, MAINTENANCE,

REHABILITATION AND MONITORING OF THE

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PTE-26b/TE-28

Reference is made to ARTICLE XXII—AMENDMENTS TO BE IN WRITING, of the Cost Sharing Agreement for the captioned Project entered into the 15th day of May, 1998, by and between The Louisiana Land and Exploration Company, Fina Oil and Chemical Company, the U.S. Department of Agriculture, represented by the Natural Resources Conservation Service (hereinafter referred to as "NRCS"), acting by and through the State Conservationist, and the State of Louisiana, through the Coastal Protection and Restoration Authority of Louisiana (hereinafter referred to as "CPRA"), acting by and through the Chairman of the CPRA, as authorized by CPRA Resolution on the 18th day of February, 2009 and the provisions of La. R.S. 49:214.1 and La. R.S. 214.5.2; which allows for the Cost Sharing Agreement to be amended in writing. Therefore,

WITNESSETH, THAT:

WHEREAS, pursuant to La. R.S. 49:214.5.2(A)(1), Coastal Protection and Restoration Authority of Louisiana (hereinafter referred to as CPRA) represents the State of Louisiana's position in policy implementation relative to the protection, conservation, enhancement and restoration of the coastal area of the state through oversight of integrate coastal projects and programs, consistent with the intent as expressed in La. R.S. 49:214.1, and has the power and authority under La. R.S. 49:214.5.2 (A)(7) to enter into any contract with the federal government or any federal agency or any political subdivision of the state or private individual for the study, planning, engineering, design, construction, operation, maintenance, repair, rehabilitation, or replacement of any integrated coastal protection project.
and to this end, may contract for the acceptance of any grant of money upon the terms and conditions, including any requirement of matching grants in whole or part, which may be necessary;

WHEREAS, first costs have been reconciled with an Engineering and Design (including lands) actual cost of $221,156.00, and a Construction actual cost of $2,630,026.00;

WHEREAS, the CWPPRA Task Force approved a Monitoring cost decrease of $129,107.00 on September 30, 1996, and a cost increase of $350,245.00 on July 23, 1998; for a total Monitoring cost of $1,084,338.00;

WHEREAS, the CWPPRA Task Force approved an Operation and Maintenance cost increase of $76,358.00 on January 20, 1999, and $1,831,346.00 on October 28, 2009, for a total Operation and Maintenance cost of $3,175,384.00;

WHEREAS, the CWPPRA Task Force approved an U.S. Army Corps of Engineers Project Management cost $14,117 on October 28, 2009;

WHEREAS, the original Cost Share Agreement dated May 15, 1998, included The Louisiana Land and Exploration Company and Fina Oil and Chemical Company as parties in this agreement;

WHEREAS, CPRA and NRCS now agree to remove The Louisiana Land and Exploration Company and Fina Oil and Chemical Company from this agreement for the remainder of project life and to revise the Project Cost Limits to account for all cost changes described above and to include the approved total project cost of $7,125,021.00 as a result of this amendment;

NOW, THEREFORE, the parties agree as follows:

Upon execution of this amendment, Fina Oil and Chemical Company and The Louisiana Land and Exploration Company will no longer be a part of this agreement for the remaining life of the Project.

ARTICLE VI – METHOD OF PAYMENT

Paragraph “a.” contained in the May 15, 1998, Cost Share Agreement is deleted in its entirety and the following is substituted therefor:

a. CPRA shall provide the non-federal share of the total project cost. The PL 101-646 Task Force originally authorized a total maximum Project cost of $4,717,920.00 for this particular Project. The approved cost changes result in a new maximum total Project cost of $7,125,021.00. To meet its share, CPRA will contribute, through in-kind services or in cash, the non-federal share of this cost. Because a portion of the total Project costs were incurred prior to approval of the State’s Coastal Wetlands Conservation Plan, some of the costs are shared at seventy-five percent (75%) Federal and twenty-five percent (25%) non-Federal and some costs are shared at eighty-five percent (85%) Federal and fifteen percent (15%) non-Federal. Hence, OCPR’s maximum total contribution will be
$1,016,630.00. This figure is subject to modification as provided for in Section 303(f) of CWPPRA. Any cost in excess of the $7,125,021.00 is subject to amendment of this Agreement and Task Force approval, as provided in Article XXII. The amount of CPRA’s required minimum five percent (5%) cash contribution is $356,251.00. Funding methods and limits of obligations are specified in Article XXI-Project Cost Limits.

ARTICLE XIX – NOTICES

Paragraph “a.” contained in the Agreement is deleted in its entirety and the following is substituted therefore:

a. All notices, requests, demands, and other communications required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally, given by prepaid telegram, or mailed by first-class (postage pre-paid), registered, or certified mail, as follows:

If to NRCS:

State Conservationist
USDA, Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

If to CPRA:

Chairman, Coastal Protection and Restoration Authority
Capitol Annex – State of Louisiana
P. O. Box 44027
Baton Rouge, LA 70804-4027
(225) 342-7669

ARTICLE XXI – PROJECT COST LIMITS

This Article as contained in the May 15, 1998, Cost Share Agreement is deleted in its entirety and the following is substituted therefore:

a. The CWPPRA Task Force approved project cost changes resulting in a new maximum total Project cost of $7,125,021.00. At the time of execution of this Amendment, all parties acknowledge and concur with the following revised budget:
1. E & D (including supervision & administration and Lands) $221,156.00 (actual)
2. Construction (including Supervision and Inspection) $2,630,026.00 (actual)
3. Monitoring $1,084,338.00
4. OMRR&R Plan $3,175,384.00
5. U.S. Army Corps of Engineers Proj. Mgmt. $14,117.00
Total $7,125,021.00

"b. If, at any time during the performance of work for a particular funding category, the actual or anticipated cost of that category exceeds the 100% cost of that particular funding category as set forth in Article XXI.a. of this Agreement, all work in that particular category shall cease. NRCS and CPRA may agree to increase the cost of completing that particular category by transferring funds from one category to the other, but only if such increase would not result in the total cost exceeding the maximum total cost defined in Article XXI.A of this Agreement. Such agreement regarding transferring funds from one category to the other shall be made by letter agreement confirmed by the mutual written approval of both the NRCS State Conservationist and the CPRA Chairman. Work on that particular funding category shall thereafter resume.

c. Any costs in excess of $7,125,021.00 shall be subject to review and approval by the CWPPRA Task Force and shall require an amendment to this Agreement approved by NRCS and the State. All work on the Project, including the award of contracts shall cease until amendment of this Agreement and, review and approval by the CWPPRA Task Force. OCPR's maximum contribution under the terms of this Agreement will be $1,016,630.00.00; any contribution in excess of that amount shall be subject to written amendment to this Agreement, including review and approval by the Division of Administration, State of Louisiana.
BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed on the 3rd day of January, 2011, before the undersigned witnesses.

USDA
NATURAL RESOURCES
CONSERVATION SERVICE

BY: [Signature]
Kevin D. Norton
State Conservationist

STATE OF LOUISIANA
Coastal Protection and Restoration
Authority of Louisiana

BY: [Signature]
Garret Graves, Chairman
Coastal Protection and Restoration
Authority of Louisiana

WITNESSES:

Cheryl Walters
[Signature]
Cheryl Walters

Jackie Gay
[Signature]
Rockwell Guilliam

Heidi Landrémanc
[Signature]

WITNESSES:

[Signature]
Jessica Orgovor

John D. Hicks

Samuel E. Priddy

APPROVED
Office of the Governor
Office of Contractual Review
MAR 28 2011

Andrea G. Gillen
DIRECTOR
CERTIFICATE OF AUTHORITY

I, Clifton O. Bingham, Jr., do hereby certify that I am the General Counsel of the Office of Coastal Protection and Restoration and that the Coastal Protection and Restoration Authority of Louisiana is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Natural Resources Conservation Service and the State of Louisiana in connection with the Brady Canal Hydrologic Restoration Project (TE-28), Terrebonne Parish, LA, and that the persons who have executed this Agreement on behalf of the State have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 12th day of October, 2010.

Clifton O. Bingham, Jr.
General Counsel
Office of Coastal Protection and Restoration
CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

DATE: 10/12/10

Garret Graves, Chairman
Coastal Protection and Restoration
Authority of Louisiana
STATE OF LOUISIANA
PARISH OF RAPIDES

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish and State aforesaid, on this 3rd day of January, 2010, personally came and appeared Kevin D. Norton, to me known, who declared that he is the State Conservationist of the USDA - Natural Resources Conservation Service, that he executed the foregoing instrument on behalf of said Federal Agency and that the instrument was signed pursuant to the authority granted to him by said Federal Agency and that he acknowledged the instrument to be the free act and deed of said Federal Agency.

[Signature]

NOTARY PUBLIC
Cheryl Turbeville
(print)

Bar or Notary No.: 066514

My commission expires: with life
(SEAL)

STATE OF LOUISIANA
PARISH OF EAST BATON ROUGE

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish and State aforesaid, on this 12th day of October, 2010, personally came and appeared Garret Graves, to me known, who declared that he is the Chairman of the Coastal Protection and Restoration Authority of Louisiana, that he executed the foregoing instrument on behalf of said State Agency and that the instrument was signed pursuant to the authority granted to him by said State Agency and that he acknowledged the instrument to be the free act and deed of said State Agency.

[Signature]

NOTARY PUBLIC
Clifton O. Bingham, Jr.
(print)

Bar or Notary No.: 03052

My commission expires: with life
(SEAL)
ATTACHMENT II
BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PROJECT FEATURES
ATTACHMENT III
BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PROJECT COMPLETION REPORT
DEPARTMENT OF NATURAL RESOURCES
January 28, 2004

Mr. Brad Sticker, P.E.
Natural Resource Conservation Service
U.S. Department of Agriculture
3737 Government Street
Alexandria, La. 71302

RE: TE-28 Brady Canal Hydrologic Restoration Project
Project Completion Report and As-Built Drawings
Maintenance Project – Levee Refurbishment along
the west bank of Jug Lake.

Dear Brad,

Please find enclosed a copy of the History of Revisions, Project Completion
Report and As-built Drawings for the above referenced maintenance project. The levee
refurbishment project along the west bank of Jug Lake was contracted through the
Apache Corporation and included the removal of an existing water control structure and
refurbishment and seeding of approximately 5,050 linear feet of existing bank.

Should you have any questions or comments concerning this project, please do
not hesitate to contact me at (985) 447-0956.

Sincerely,

Brian J. Babin, P.E.
O&M Manager

BJB:bjb
CC: TE-28 file
Garrett Broussard, LDNR
Brad Sticker, NRCS
Dale Garber, NRCS
Britt Paul, NRCS
Tim Allen, Apache Corporation
Evance Adams, Burlington Resources
TE-28 O&M Plan
PROJECT COMPLETION REPORT

Project Name: TE-28 Brady Canal Maintenance Project
Levee Refurbishment along the west bank of Jug Lake

Report Date: January 28, 2004

Report By: Louisiana Department of Natural Resources

Project Personnel:

DNR O&M Manager: Brian Babin (985) 447-0956
NRCS O&M Manager: Brad Stickler (318) 473-7791
Apache Construction Manager: Tim Allen (985) 897-3528

Project Location and Description

The maintenance project is located within the Brady Canal Hydrologic Restoration boundary along the west bank of Jug Lake from Structure No.21 south to Bayou Decade. The project consist of removing a dilapidated water control structure installed by the Fish and Wildlife Service, refurbishing approximately 5,050 linear feet of existing levee and seeding newly place dredge material obtained from Jug Lake.

Sequence of Events:

As a result of inspections of the existing levee with representatives of LDNR, NRCS and the land owners, it was determined that the existing levee should be elevated to prevent breaches from occurring along the west bank of Jug Lake due to extensive wave action. The land owner, Apache Corporation, agreed to contract the maintenance work using in-kind service credits authorized in the Brady Canal Cost Share Agreement, Cooperative Agreement No. 68-7217-7-11, DNR Agreement No. 2511-98-08 dated June 17, 1998. The contractor selected to perform the maintenance work is Berry Bros. General Contractors of Houma, La. Below is the sequence of events leading up to construction and project completion.

September 3, 2003 – Timothy Allen with Apache Corporation requested in writing there wishes to refurbish approximately 3,100 linear feet of existing levee embankment which was at risk of breaching. Apache agreed to contract the work to be charge to the project as in-kind services. Apache estimated the repairs of the levee at $35,000.

September 3, 2003 – LDNR issued a request for Coastal Zone Consistency to Greg Ducote with La. Office of Coastal Restoration and Management to remove the existing water control structure and refurbish existing levee.
September 11, 2003 – Ronald Paille with FWS confirmed through e-mail that the existing water control structure located along the west bank of Jug Lake was installed by the Fish and Wildlife Service for marsh management research was no longer needed and may be removed and disposed of.

September 12, 2003 – Brad Sticker with NRCS issued concurrence in writing to LDNR to remove flaps and gate structure and to refurbishment of existing levee.

September 15, 2003 – Coastal Zone Consistency Modification C960231 was issued to LDNR for work to be performed by the Apache Corporation.

September 15, 2003 – Apache Corporation was issued a letter from LDNR approving their request to remove the existing water control structure and refurbishment of existing levee.

September 24, 2003 – Contractor, Berry Bros. General Contractors, mobilized equipment and began construction.

September 29, 2003 – With concurrence from NRCS, an additional $1,000 was authorized to seed existing levee once levee refurbishment was completed. The total authorized amount was increased from $35,000 to $36,000.

September 29, 2003 – Berry Bros completed removal of existing water control structure and refurbishment of levee.

December 2, 2003 – Apache Corporation submitted final invoice to LDNR for in-kind service credits. The total amount for services provided by Apache is $34,284.87. This cost included construction of approximately 5,050 linear feet of levee refurbishment, structure removal and seeding.

**Maintenance Project Cost Elements:**

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berry Bros.</td>
<td>$31,323.80</td>
</tr>
<tr>
<td>Caillou Island Towing</td>
<td>$1,155.00</td>
</tr>
<tr>
<td>South La. Seed Co.</td>
<td>$469.07</td>
</tr>
<tr>
<td>Apache (const. Oversight &amp; Equipment)</td>
<td>$1,333.00</td>
</tr>
<tr>
<td></td>
<td>$34,294.87</td>
</tr>
<tr>
<td>As-built Survey (Shaw Coastal)</td>
<td>$5,103.60</td>
</tr>
<tr>
<td><strong>Total Maintenance Cost:</strong></td>
<td><strong>$39,395.47</strong></td>
</tr>
</tbody>
</table>
**Major Equipment Used:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/24/03</td>
<td>Tug “Shawnee” 900 HP</td>
</tr>
<tr>
<td>9/28/03</td>
<td>8 hrs.</td>
</tr>
<tr>
<td>9/29/03</td>
<td>16.5 hrs.</td>
</tr>
<tr>
<td>9/24/03</td>
<td>Dredge “Captain Buford” (8 cu. Yd.)</td>
</tr>
<tr>
<td>9/25/03</td>
<td>1 hr tow, 14 hrs. operating</td>
</tr>
<tr>
<td>9/26/03</td>
<td>24 hrs. operating</td>
</tr>
<tr>
<td>9/27/03</td>
<td>24 hrs. operating</td>
</tr>
<tr>
<td>9/28/03</td>
<td>23 hrs. operating, 1 hr. repair</td>
</tr>
</tbody>
</table>
TO: Brad Sticker, NRCS, O&M Manager

FROM: Brion Babin, LDNR, O&M Manager


Attached is a copy of the Project Completion Report and As-built Drawings for the above referenced project. It shall be the responsibility of the O&M Plan holder to update their copy of the O&M Plan with these documents.

Should you have any questions, please contact me at (985) 447-0956.

BJB/bjb

Attachment(s)
O&M Plan

cc: Mr. Dale Garber, NRCS, Thibodaux Watershed Office
Mr. Gene Loupe, NRCS, Thibodaux Field Office
Mr. Tim Allen, Apache Corporation
Mr. Evance Adams, Burlington Resources
Mr. Garrett Broussard, DNR, Baton Rouge
PROJECT COMPLETION REPORT


CWPPRA/STATE PROJECT NO. TE-28 – Maintenance Project

REPORT DATE: August 12, 2003

PREPARED BY: LDNR

1. Project Managers/ Contracting Parties

   DNR Project Manager: Brian Babin
   O&M/ Construction Manager: Brian Babin
   DNR Monitoring Manager: Todd Folse
   NRCS Project Manager: Brad Sticker
   Construction Administrator/ Inspection: Mike Maillet – Pyburn & Odom

2. Location and description of maintenance project.

   The Brady Canal Hydrologic Restoration Project is located in the Terrebonne Basin, within the Bayou Pecan watershed in Terrebonne Parish, Louisiana. The project area is bounded by Bayou Pecan, Brady Canal, and Little Carencro Bayou to the north, Bayou Decade and Turtle Bayou to the south, Superior Canal to the east, and Little Carencro Bayou and Voss Canal to the west. This project completion report will include project features repaired and rehabilitated under the Brady Canal Breach Repair Project (2003).

   The Brady Canal Breach Repair Project consist of repairing levee breaches at (11) eleven locations within the Brady Canal Hydrologic Restoration project and replacement of a damaged timber dolphin at Structure No.6. Plans and specifications were prepared by Pyburn and Odom MCA of Baton Rouge. The project specification and plans included a base bid and one (1) alternate. The base bid required the installation of 6,200 tons of Broken Stone Rip-Rap and repair of 2,200 linear feet of earthen embankment. The alternate bid provided for the placement of an additional 2,550 tons of Broken Stone Rip-rap along the north bank of Bayou Decade from Tutle Bayou to Jug Lake. Mansin Gulf Construction of Houma, Louisiana, submitted the lowest bid on the project and was awarded the construction contract for the base and alternate bid to complete the maintenance work.
3. Final As-built features constructed and rehabilitated.

Below are a description and location and method of repair of breaches:

<table>
<thead>
<tr>
<th>Breach</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>660 linear feet of broken stone rip-rap dike above geotextile fabric located along the northern bank of Bayou Decade near Jug Lake.</td>
</tr>
<tr>
<td>2&amp;3</td>
<td>1,130 linear feet of broken stone rip-rap dike above geotextile fabric located along the northern bank of Bayou Decade.</td>
</tr>
<tr>
<td>4</td>
<td>160 linear feet of broken stone rip-rap dike above geotextile fabric located along the northern bank of Bayou Decade.</td>
</tr>
<tr>
<td>5&amp;6</td>
<td>1,500 linear feet of earthen embankment construction located along Turtle Bayou.</td>
</tr>
<tr>
<td>7</td>
<td>261 linear feet of broken stone rip-rap dike above geotextile fabric located along an existing oil field canal off of Superior Canal.</td>
</tr>
<tr>
<td>8</td>
<td>200 linear feet of earthen embankment construction located Superior Canal.</td>
</tr>
<tr>
<td>9</td>
<td>200 linear feet of earthen embankment construction located along Superior Canal.</td>
</tr>
<tr>
<td>10</td>
<td>90 linear feet of earthen embankment construction located along the west bank of Jug Lake near an existing culver/flap gated structure.</td>
</tr>
<tr>
<td>11</td>
<td>300 linear feet of earthen embankment construction located along the west bank of Jug Lake north of Breach 10.</td>
</tr>
</tbody>
</table>
Alternate No.1: (All broken stone rip-rap sections were constructed using ASTM R-600 grade stone and designed with a crest elevation of +3.5' and 1:3 side slopes above a geotextile fabric. No earthen embankments were constructed under the alternate bid. For actual constructed elevations, see as-built drawings)

Breach repairs under alternate bid consisted of the following:
- 1,700 linear feet of rip-rap dike along Bayou Decade between breach 1 and 2.
- 400 linear feet of rip-rap dike along Bayou Decade beginning at the end of breach 3 and the beginning of breach 4.

4. Project Cost Estimates

<table>
<thead>
<tr>
<th></th>
<th>Work Order Estimate</th>
<th>Actual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>$538,000</td>
<td>$471,329.65</td>
</tr>
<tr>
<td>Engineering and Design</td>
<td>$44,134</td>
<td>$54,743</td>
</tr>
<tr>
<td>Bidding</td>
<td>$4,100</td>
<td>$4,472</td>
</tr>
<tr>
<td>Construction Administration</td>
<td>$7,096</td>
<td>$8,020</td>
</tr>
<tr>
<td>Construction Oversight</td>
<td>$24,540</td>
<td>$49,635</td>
</tr>
<tr>
<td>As-built Survey and Drawings</td>
<td>$13,130</td>
<td>$12,873</td>
</tr>
<tr>
<td><strong>Project Totals:</strong></td>
<td><strong>$631,000</strong></td>
<td><strong>$604,289</strong></td>
</tr>
</tbody>
</table>

Note: Engineering, Design, Construction Administration, Construction Oversight and As-built survey and drawings services were provided by Pyburn & Odom MCA of Baton Rouge.
5. Final Contract Quantities

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Units</th>
<th>Unit Rate</th>
<th>Item Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization</td>
<td>Lump Sum</td>
<td>100%</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>2</td>
<td>Dolphin Repair</td>
<td>Lump Sum</td>
<td>100%</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>3</td>
<td>Broken Stone Rip Rap</td>
<td>7,114 tons</td>
<td>$39.35</td>
<td>$279,935.90</td>
</tr>
<tr>
<td>4</td>
<td>Earthen Embankment</td>
<td>2,325 L.F.</td>
<td>$13.00</td>
<td>$30,255.00</td>
</tr>
<tr>
<td>5</td>
<td>Geotextile Fabric</td>
<td>5,983 S.Y.</td>
<td>$3.00</td>
<td>$26,949.00</td>
</tr>
<tr>
<td>6</td>
<td>Seeding &amp; Fertilizing</td>
<td>2.1 acres</td>
<td>$1,000</td>
<td>$3,100.00</td>
</tr>
<tr>
<td>7</td>
<td>Broken Stone Rip Rap</td>
<td>5,550 tons</td>
<td>$39.00</td>
<td>$99,450.00</td>
</tr>
<tr>
<td>8</td>
<td>Geotextile Fabric</td>
<td>5,631 S.Y.</td>
<td>$2.25</td>
<td>$12,669.75</td>
</tr>
</tbody>
</table>

Total Project Cost: $471,329.65

6. Construction and Construction Oversight

Prime Contractor: Manson Gulf Construction Co.

- Original Construction Contract: $448,069
- Change Orders (over) Runs: $39,350
- Revised Construction Contract: $487,419
- Balancing Change order (under) run: $16,089
- Final Construction Contract: $471,329

7. Major Equipment Used:

- Rock Barge
- 18' Survey Boat
- 20' Work Boat
- 14' Work boat
- 4600 Manitowic Crane with 140' booms
- 54' x 165' Work Barge
8. Discuss construction and sequences and activities.

4/21 - placing fabric and rock at Breach 2&3 (Sta. 5+46 to Sta. 4+90)
4/23 - placing fabric and rock at Breach 2&3 (Sta. 4+90 to Sta. 1+30)
4/24 - placing fabric and rock at Breach 2&3 to Alt 1 (Sta. 0+80 to Sta. 3+20)
4/25 - placing fabric and rock at Breach Alt 1 (Sta. 14+00 to Sta. 10+50)
4/26 - Rock placement – Breach Alt 1 (Sta. 10+50 to Sta. 4+40)
4/27 - Rock placement – Breach Alt 1 (Sta. 4+20 to Sta. 0+40)
4/28 - Rock placement – Breach Alt 1 to Breach 1 (Sta. 0+40 to Sta. 5+50)
4/29 - Rock Placement – Breach 1 (Sta. 5+50 to Sta. 4+50)
4/30 - Rock Placement – Breach1 (Sta. 4+50 to Sta. 0+85), completed lift of rock at all breaches along Bayou Decade and began dressing dike and placing additional rock in low areas.

5/3 - Began rebuilding earthen sections at Breach 5, 6 & 8.
5/4 - Began rebuilding earthen section at Breach 10 & 11.
5/6 - Began rebuilding earthen section at Breach 9 and dressing Breach 5 & 6.
5/8 - completed repair of broken timber pile at site No.6.
5/31 - Began placing additional rock under change order along Breach 1 thru 4.
6/2 - Completed placement of additional rock.
6/12 - Performed Substantial Completion Inspection.
6/24 - Issued punch-list items

8/13 - Performed final inspection and accepted the project as complete.

9. Construction Change Orders and Field Changes

Change Order No.1 - (5/9/2003), increased base bid quantity of required broken stone rip-rap from 6,200 tons to 7,200 tons. Additional 1,000 tons at $39.35 increased the contract by $39,350. Change Order No.1 also increased the contract time by 39 days with the new completion of May 30, 2003.

Change Order No.2 – increased the contract time to complete the project from May 30, 2003 to August 30, 2003. Final acceptance was granted to the contractor on August 13, 2003.

10. Pipelines and other utility Crossings

No pipelines were within the construction limits of this project.
11. Safety and Accidents

On May 5, 2003, one of the contractor’s employee was working on the brake drum on the spud winch when the rope supporting the drum broke and the drum fell on his thigh and top left foot. First-aid was administered on site and the employee was transported to the hospital. Word from the hospital indicated this person has a broken foot.

In a separate incident on the weekend of July 5, 2003, an accident occurred along Bayou Decade in which a boat was traveling along the bayou and loss control, colliding with the newly placed rock dike, installed under this contract, approximately 300’ east of Jug Lake. The operation and maintenance manager contacted Wildlife and Fisheries to obtain a copy of the accident report. The O&M manager was told that the accident report could not be released because the investigation was ongoing. No further information is available at this time.

12. Additional comments pertaining to construction of the project.

A. During construction, it was discovered that the barge tables for the rock riprap delivered to the site indicated the gradation to be COE R-650 designation. The rock specified and approved for the project was a ASTM R-300 designation. Gradation test data sheets for the COE R-650 riprap was requested from the contractor. The supplier of the rock (River Mountain Quarry) was contacted for an explanation. The supplier explained that since the gradations of the ASTM R-300 and COE 650 are so close in gradation that they actually perform the same gradation test for both designations. The gradation test for the R-650 was plotted on the gradation curve for the COE R-300 rock. I was determined that the COE R-650 riprap fell within the gradation limits of the ASTM R-300. Therefore, the COE R-650 was approved through a field change as an acceptable alternate riprap for the project.

B. The construction contract required the repair of an existing breach adjacent to a culvert flap gate along the west bank of Jug Lake. This breach was repaired as required by the contract. Not long after the repairs were made, over-wash from Tropical Storm Bill re-opened the breach. Through discussions with NRCS, LDNR and the landowners, a consensus was established that this structure should be removed to prevent future deterioration of the levee bank. LDNR is pursuing the removal of this structure.

C. At the land-owners request, LDNR approached the contractor to perform additional work along the west bank of Jug Lake. The additional work included placing additional rock along the low areas of Breach 1 & 4 and to install a rock rip-rap cap along the earthen embankment at Breach 10 & 11. The contractor submitted a cost of $69,647 to complete this additional work. After discussing the cost with NRCS and the landowner, it was determined that the contractor’s cost was too high and the money remaining in the project budget was insufficient to cover the additional work.
13. **Significant Construction Dates**

<table>
<thead>
<tr>
<th>LDNR Bid Identification:</th>
<th>Date</th>
<th>Bid I.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Bid Conference</td>
<td>11/21/2002</td>
<td>PO# 3521619</td>
</tr>
<tr>
<td>Bid Opening</td>
<td>1/15/2003</td>
<td></td>
</tr>
<tr>
<td>Construction Contract Award</td>
<td>3/6/2003</td>
<td></td>
</tr>
<tr>
<td>Pre-construction Conference</td>
<td>3/6/2003</td>
<td></td>
</tr>
<tr>
<td>Notice to Proceed</td>
<td>4/11/2003</td>
<td></td>
</tr>
<tr>
<td>Mobilization</td>
<td>4/16/2003</td>
<td></td>
</tr>
<tr>
<td>Construction Start</td>
<td>8/13/2003</td>
<td></td>
</tr>
</tbody>
</table>
14. Photos of completed maintenance repairs.

Breach 5 & 6 – Photo of breach repair along Turtle Bayou looking south.

Breach 9 – Photo of breach repair along Superior Canal looking south.
Breach 8 – Photo of levee repair along Superior Canal looking south.

Breach 7 – Photo of rip-rap breach repair along oil field canal looking north.
Photo of timber pile repair at Structure No.6 along Bayou Decade.

Breach 10 – photo of breach repair along the west bank of Jug Lake.
Breach 11 – photo of breach repair along the west bank of Jug Lake.

Breach 1 thru 4 – rock dike along Bayou Decade looking north.
Breach 1 thru 4 – rock dike along Bayou Decade looking north.

Breach 1 thru 4 – rock dike along Bayou Decade looking north.
PROJECT COMPLETION REPORT

PROJECT NAME
Brady Canal

CWPPRA/STATE PROJECT NO.
TE 28 / PTE 26B

Report Date: May 16, 2001

BY:
USDA - NRCS

1. Project Managers/Contracting Officer:
   - DNR Project Manager: Clark Allen
     - Telephone: (225) 342-6738
   - DNR Construction Project Manager: Clark Allen
     - Telephone: (225) 342-6738
   - DNR Monitoring Manager: Todd Folsie
     - Telephone: (504) 447-0996
   - Federal Agency Project Manager: Faye Talbot
     - Telephone: (318) 473-7817
   - Federal Agency Contracting Officer: Charles Phillips
     - Telephone: (318) 473-7796

2. Location and description of projects as approved for construction by Task Force.

The Brady Canal hydrologic restoration project is located within the Bayou Penschant - Lake Penschant watershed. The 7,653 acre project area contains fresh, brackish and intermediate marshes and is bounded by Bayou Penschant, Brady Canal and Little Carencro Bayou to the north, Bayou de Cade and Turtle Bayou to the south, Superior Canal to the east and Little Carencro Bayou and Voss Canal to the west. The Mauvais Bois Ridge bisects the area and provides for a hydrologic differentiation between a northern and southern sections of the project area. The approximate center of the project area is Latitude 29° 52’ 30” North and Longitude 91° 29’ 30” West.

The project features consist of the replacement of four structures with steel sheet pile weirs with variable crest bays on three of the structures, the construction of one composite steel sheet pile with a rock riprap armored barge bay, one rock riprap plug and two rock riprap armored channel cross-sections. It also includes the construction of 12,130 L.F. of earthen embankment and 4670 L.F. of rock riprap embankment.

3. Final, as-built features, boundaries and resulting acreage (see attachments if necessary).

Four steel sheet pile weirs with variable crest bays, one composite steel sheet pile and rock riprap weir with a barge bay, one rock plug, two rock armored channel sections, 8,531 feet of earthen embankment, 4,405 feet of rock riprap armored earthen embankment, and 3,660 feet of rock riprap embankment were constructed in this project. These measurements are completely identified in the “As Built” plans which were previously submitted.

Actual Benefited Acres: 297

To be filled out at construction completion by either the DNR Construction Project Manager or the Federal Agency Contracting Officer depending on which organization had lead role for construction of project. (Except for some items under # 1).
### 4. K's project cost elements

<table>
<thead>
<tr>
<th>Construction (includes S&amp;I)</th>
<th>CWPPRA Project Cost Estimates**</th>
<th>Cost Incurred as of Construction Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$2,921,300</td>
<td>$2,632,525</td>
</tr>
<tr>
<td>E &amp; D</td>
<td>$272,600</td>
<td>$210,428</td>
</tr>
<tr>
<td>Landrights</td>
<td>$39,900</td>
<td>$11,400</td>
</tr>
<tr>
<td>Monitoring</td>
<td>$1,084,338</td>
<td>$198,769</td>
</tr>
<tr>
<td>O &amp; M</td>
<td>$1,344,038</td>
<td>$18</td>
</tr>
<tr>
<td>Total</td>
<td>$5,662,176.00</td>
<td>$3,053,140.00</td>
</tr>
</tbody>
</table>

**Most recent estimate from CWPPRA Project estimates Report produced by USACE.**

### 5. Items of work

<table>
<thead>
<tr>
<th>Final Qty</th>
<th>Unit Price</th>
<th>Final Amount</th>
<th>Estimate Amount</th>
<th>% Over or Under</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SEE ATTACHED SPREAD SHEET**

### 6. Construction and construction oversight

- **Prime construction contractor:** All South General Contractors
- **Subcontractor:** Dolphin Services
- **Original construction contract:** $2,318,801.00
- **Change orders:** $228,991.00
- **Over/(Under) Runs:** $ - 26,466.10
- **Final construction contract:** $2,521,325.90

<table>
<thead>
<tr>
<th>Const. oversight contractor</th>
<th>Const. amt.</th>
<th>Est. amt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cons. O.S./Admin. agency</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

### 7. Major equipment used:

1. Spud barge with American 999 crane
2. Spud barge with American 5300 crane
3. Spud barge with American 9260 crane
4. Spud barge with American 99C crane
5. Marsh buggy with Cat. 329 excavator
6. Spud barge with Cat 322 excavator
7. Spud barge with Daewoo 380 LC excavator
8. Deck barges (3)
9. Bobcat front-end loader (2)
8. Discussion of construction sequences and activities, problems encountered, solutions to problems, etc.

1. The first item the contractor began work on was the placement of the earthen embankments. This consisted of making an initial placement of earth and allowing time for consolidation. Then making a second lift and in some areas a third lift to get enough material to form the embankment. The contractor then began driving sheet pile for the weir concurrent with the earthen embankment work.
2. Concurrent with the above two items the contractor began excavation for flotation for the rock dikes.
3. After completing driving all sheet piles, contractor drove pole piles and placed cap for weirs.
4. Began placement of the rock dikes after completion of the excavation for flotation.
5. Completed final shaping of earthen embankment and seeded the embankment.
6. Completed final shaping of the rock dikes and rock plugs.
7. Completed the construction of the sheet pile weirs and installed the stoplogs.

9. Construction change orders and field changes.

1. Modification #1 changed location of warning signs and background colors; no cost or time change.
2. Modification #2 changed a short segment of earthen embankment to rock dikes from station 47+90 to 50+30. This reduced bid item #8, Embankment Construction from 14,000 L.F. to 12,940 L.F., added items 19A Geotextile Embankment Sta, 49+70 - 50+30 for 233 S.Y. @ $5.00 per S.Y. and 20A Rock Riprap, Embankment Sta, 49+70 - 50+30 for 372 tons @ $30.50 per ton. This increased the contract by $11,791.
3. Modification #3 changed specification #1 to clarify what items were to be painted; no cost or time change.
4. Modification #4 changed the requirement of cable used to wrap the pile clusters and increased to number of wraps of the cable around the cluster. This modification also increased the performance time of the contract by 7 days for Christmas and Thanksgiving holidays. No change in contract cost.
5. Modification #5 changed a large amount of earthen embankment to rock armored earthen embankment. This was due to the significant under run of rock quantities used in the construction of the rock dikes portions of the contract. It was decided to utilize the quantity of rock originally in the contract and armor as much of the earthen embankment as possible. Below are the changes to the bid items.

   - B.I. 18 Embankment Construction is reduced from 13,940 L.F. to 13,210 L.F. for 730 L.F. reduction @ $12.00 per L.F. for a net reduction of $8,760.
   - B.I. 20 Rock Riprap Embankment is reduced from 24,820 tons to 620 tons for a 24,200 ton reduction @ $30.50 per ton for a net reduction of $738,100.
   - B.I. 28 Rock Riprap, Rock Dike, Mod #5 is added for 11,400 tons @ $35.00 per ton for an increase of $399,000.
   - B.I. 29 Rock Riprap, Earth Embankment Armor, Mod #5 is added for 12,800 tons @ $37.50 for an increase of $480,000.
   - B.I. 30 Geotextile, Rock Dike, Mod #5 is added for 1,217 S.Y. @ $4.50 per S.Y. for an increase of $5,476.50.
   - B.I. 31 Geotextile, Earth Embankment Armor, Mod #5 is added for 20,363 S.Y. @ $4.50 per S.Y. for an increase of $91,633,50.

This modification also reduced the mobilization for compensation of allowing the contractor to work additional hours. Appropriate drawings and specifications were changed. The total dollar of the contract was changed from $2,330,592 to $2,547,792 for a net increase of $217,000. Also the contract performance time was increased by 30 calendar days.

6. Modification #6 included specification changes to define the placement of the rock riprap. This was a no time or cost change modification.
16. Pipeline and other utility crossings.

<table>
<thead>
<tr>
<th>Structure</th>
<th>Owner</th>
<th>Rep. To Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline</td>
<td>Union Oil Company of California</td>
<td>Mr. Andy Elliott (318) 295-6852</td>
</tr>
<tr>
<td></td>
<td>Equalon Pipeline Company</td>
<td>Mr. Kevin Ledet (504) 575-2551</td>
</tr>
<tr>
<td></td>
<td>Williams Field Services</td>
<td>(281) 447-3691</td>
</tr>
<tr>
<td></td>
<td>Castex Energy, Inc.</td>
<td>Mr. L.R. Slowick (504) 879-3516</td>
</tr>
<tr>
<td></td>
<td>Tennessee Gas Pipeline Company</td>
<td>(504) 876-6880</td>
</tr>
<tr>
<td></td>
<td>SLECA</td>
<td></td>
</tr>
</tbody>
</table>

11. Safety and Accidents.

There were no reported accidents during construction of the project. Overall the work was carried out in a safe manner, and the contractor was safety conscious.

12. Additional comments pertaining to construction, completed project, etc.

One item is the coordination with sponsors or who ever will be performing the operation of the project. Currently no one has been identified to receive the keys for the stop log locking devices, lifting hooks, chain hoists, etc. These items are currently in the possession of NRCS and need to be provided to the operator of the project in order that any permit requirements regarding operation can be met.

Other comments can be found on the Continuation sheets.

13. Significant Construction Dates: To be filled out by DNR Construction Project Manager or Contracting Officer for construction for Agency responsible for construction.

<table>
<thead>
<tr>
<th>Date</th>
<th>Bid LD.</th>
<th>Bid LD.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/15/99</td>
<td>50-7217-9-06</td>
<td></td>
</tr>
<tr>
<td>5/4/99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/24/99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/6/99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/27/99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/29/99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/10/00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/10/00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If different bids are taken, repeat this table to individually reflect each bid and attach tables.

Other significant Project Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Project Implementation closeout**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start of Preconstruction Monitoring***</td>
</tr>
<tr>
<td></td>
<td>Preconstruction Aerial Photography Acquisition***</td>
</tr>
<tr>
<td></td>
<td>Monitoring Plan Completion***</td>
</tr>
</tbody>
</table>

- Final implementation closeout is made by either the DNR Project Manager or the Federal Agency Contracting Officer depending on which organization had lead role for construction of project.

*** To be completed by DNR Project Manager.
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Est. Quantity</th>
<th>Unit</th>
<th>Est. Unit Price</th>
<th>Final Total</th>
<th>Final Amount</th>
<th>% Over or Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Miscellaneous and Demobilization</td>
<td>1 Job</td>
<td>Job</td>
<td>$100,000.00</td>
<td>$100,000.00</td>
<td>1</td>
<td>$100,000.00</td>
</tr>
<tr>
<td>2</td>
<td>Impoundment Control</td>
<td>1 Job</td>
<td>Job</td>
<td>$10,000.00</td>
<td>$10,000.00</td>
<td>1</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>3</td>
<td>Construction Surveys</td>
<td>1 Job</td>
<td>Job</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
<td>1</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>4</td>
<td>Final Vegetation Swamping</td>
<td>22 Acre</td>
<td>Acre</td>
<td>$300.00</td>
<td>$300.00</td>
<td>22</td>
<td>$300.00</td>
</tr>
<tr>
<td>5</td>
<td>Painting</td>
<td>23 Acre</td>
<td>Acre</td>
<td>$300.00</td>
<td>$300.00</td>
<td>23</td>
<td>$300.00</td>
</tr>
<tr>
<td>6</td>
<td>Overriding</td>
<td>4 Acre</td>
<td>Acre</td>
<td>$300.00</td>
<td>$300.00</td>
<td>4</td>
<td>$300.00</td>
</tr>
<tr>
<td>7</td>
<td>Structure Remediation, Site 14, 21, 23 &amp; 24</td>
<td>1 Job</td>
<td>Job</td>
<td>$42,000.00</td>
<td>$42,000.00</td>
<td>1</td>
<td>$42,000.00</td>
</tr>
<tr>
<td>8</td>
<td>Sheet Pile/Wall, Sites 14, 21, 23 &amp; 24</td>
<td>13,824 S.F.</td>
<td>S.F.</td>
<td>$22.00</td>
<td>$294,128.00</td>
<td>13,863</td>
<td>$24.00</td>
</tr>
<tr>
<td>9B</td>
<td>Round Timber Piling, Sites 9, 14, 21 &amp; 23</td>
<td>28 EA</td>
<td>EA</td>
<td>$730.00</td>
<td>$20,140.00</td>
<td>28</td>
<td>$730.00</td>
</tr>
<tr>
<td>9C</td>
<td>Round Timber Piling, Wreching Sites</td>
<td>32 EA</td>
<td>EA</td>
<td>$700.00</td>
<td>$22,400.00</td>
<td>32</td>
<td>$700.00</td>
</tr>
<tr>
<td>10</td>
<td>Rock Riprap, Sites 7, 9, 10 &amp; 20</td>
<td>9,090 Tons</td>
<td>Tons</td>
<td>$35.00</td>
<td>$318,150.00</td>
<td>9,094</td>
<td>$35.00</td>
</tr>
<tr>
<td>11</td>
<td>Gravel Fill, Sites 6, 7, 10 &amp; 20</td>
<td>5,790 Y.D.</td>
<td>Y.D.</td>
<td>$4.25</td>
<td>$25,017.50</td>
<td>5,697</td>
<td>$4.25</td>
</tr>
<tr>
<td>12</td>
<td>Metal Fabrication &amp; Installation, Variable Cross View, Site 14</td>
<td>1 Job</td>
<td>Job</td>
<td>$40,000.00</td>
<td>$40,000.00</td>
<td>1</td>
<td>$40,000.00</td>
</tr>
<tr>
<td>13</td>
<td>Metal Fabrication &amp; Installation, Variable Cross View, Site 21</td>
<td>1 Job</td>
<td>Job</td>
<td>$50,000.00</td>
<td>$50,000.00</td>
<td>1</td>
<td>$50,000.00</td>
</tr>
<tr>
<td>14</td>
<td>Metal Fabrication &amp; Installation, Variable Cross View, Site 23</td>
<td>1 Job</td>
<td>Job</td>
<td>$50,000.00</td>
<td>$50,000.00</td>
<td>1</td>
<td>$50,000.00</td>
</tr>
<tr>
<td>15</td>
<td>Timber Fabrication &amp; Installation, Cross Members &amp; Slab Loss</td>
<td>1 Job</td>
<td>Job</td>
<td>$4,000.00</td>
<td>$4,000.00</td>
<td>1</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>16</td>
<td>Timber Fabrication &amp; Installation, Staff Cage Fabric, Sites 21 &amp; 23</td>
<td>4 EA</td>
<td>EA</td>
<td>$95.00</td>
<td>$380.00</td>
<td>4</td>
<td>$250.00</td>
</tr>
<tr>
<td>17</td>
<td>Embankment Construction</td>
<td>14,000 Y.P.</td>
<td>Y.P.</td>
<td>$1.80</td>
<td>$25,200.00</td>
<td>14,000</td>
<td>$1.20</td>
</tr>
<tr>
<td>18</td>
<td>Gravel Fill, Embankment</td>
<td>36,490 Y.D.</td>
<td>Y.D.</td>
<td>$1.75</td>
<td>$65,092.50</td>
<td>36,948</td>
<td>$4.00</td>
</tr>
<tr>
<td>19</td>
<td>Rock Riprap, Embankment</td>
<td>24,652 Tons</td>
<td>Tons</td>
<td>$3.60</td>
<td>$88,352.00</td>
<td>24,652</td>
<td>$3.60</td>
</tr>
<tr>
<td>20</td>
<td>Rock Fill, Embankment</td>
<td>180 Tons</td>
<td>Tons</td>
<td>$3.60</td>
<td>$636.00</td>
<td>180</td>
<td>$3.60</td>
</tr>
<tr>
<td>21</td>
<td>Rock Riprap, Embankment</td>
<td>1,420 Tons</td>
<td>Tons</td>
<td>$3.60</td>
<td>$5,112.00</td>
<td>957</td>
<td>$3.60</td>
</tr>
<tr>
<td>22</td>
<td>Gravel Fill, Embankment</td>
<td>780 Y.D.</td>
<td>Y.D.</td>
<td>$2.75</td>
<td>$2,145.00</td>
<td>894</td>
<td>$2.50</td>
</tr>
<tr>
<td>23</td>
<td>Rock Riprap, Embankment</td>
<td>1,359 Tons</td>
<td>Tons</td>
<td>$3.60</td>
<td>$4,922.60</td>
<td>478</td>
<td>$3.50</td>
</tr>
<tr>
<td>24</td>
<td>Gravel Fill, Embankment</td>
<td>410 Y.D.</td>
<td>Y.D.</td>
<td>$2.75</td>
<td>$1,122.50</td>
<td>899</td>
<td>$2.50</td>
</tr>
<tr>
<td>25</td>
<td>Rock Riprap, Embankment</td>
<td>750 Tons</td>
<td>Tons</td>
<td>$3.60</td>
<td>$2,700.00</td>
<td>308</td>
<td>$3.50</td>
</tr>
<tr>
<td>26</td>
<td>Rock Fill, Embankment</td>
<td>430 Y.D.</td>
<td>Y.D.</td>
<td>$2.75</td>
<td>$1,187.50</td>
<td>394</td>
<td>$5.00</td>
</tr>
</tbody>
</table>

Original Estimated Amount: $2,392,083.00

**Modifications**

<table>
<thead>
<tr>
<th>Description</th>
<th>Schedules of Item No.</th>
<th>Final Total</th>
<th>Final Amount</th>
<th>% Over or Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geodetic, Embankment Site 6 &amp; 7, 10, 20</td>
<td>233 Y.D.</td>
<td>$1,050.00</td>
<td>$210</td>
<td>5.00</td>
</tr>
<tr>
<td>Rock Riprap, Embankment Site 8 &amp; 9</td>
<td>370 Tons</td>
<td>$3,233.00</td>
<td>$300</td>
<td>0.00</td>
</tr>
<tr>
<td>Rock Riprap, Rock Fill</td>
<td>11,430 Tons</td>
<td>$3,500.00</td>
<td>$5,200</td>
<td>35.00</td>
</tr>
<tr>
<td>Rock Riprap, Embankment Arroyo</td>
<td>12,800 Tons</td>
<td>$3,233.00</td>
<td>$4,476.00</td>
<td>771</td>
</tr>
<tr>
<td>Rock Fill, Embankment Arroyo</td>
<td>2,127 Y.D.</td>
<td>$4,976.00</td>
<td>$4,976.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Geodetic, Embankment Arroyo</td>
<td>20,263 Y.D.</td>
<td>$3,233.00</td>
<td>$15,951</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Final Contract Amount: $2,331,325.90
NRCS SUPPLEMENT TO COMPLETION REPORT

CONTRACT ADMINISTRATION

List any significant problems encountered in the administration of the construction contract and recommended solution for future contract of like nature.

<table>
<thead>
<tr>
<th>DESCRIPTION OF PROBLEM ENCOUNTERED</th>
<th>RECOMMENDATIONS FOR FUTURE CONTRACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Problems were encountered with de-energizing power lines within the work limits. NRCS had the responsibility of notifying the affected landowners of the times power would be off.</td>
<td>Require the contract within the specifications to be responsible for ALL notifications and coordination regarding de-energizing power lines in conjunction with his construction activities.</td>
</tr>
<tr>
<td>2. There were some problems in tracking submittals, shop drawings, and material certifications.</td>
<td>In future contracts a submittal sheet currently being developed will be utilized. The contractor will be required to submit ALL submittals (shop drawings, material certifications, etc.) with a submittal sheet as the cover.</td>
</tr>
<tr>
<td>3. There were some problems in verifying materials supplied on the job site were within compliance with the specifications. This was due partially to the variety of material certifications that were submitted by the contractor.</td>
<td>In future contracts, all material certifications will be required to be submitted to the contracting officer with a standard material certification sheet that identifies the supplier/manufacturer, project, specification requirements, and testing requirements. This sheet is currently being developed and will be submitted for review as soon as completed.</td>
</tr>
</tbody>
</table>

NRCS - 1
CONSTRUCTION PLANS

List any items pertinent to the plans that caused problems, need clarification or changes for future contracts of this nature.

<table>
<thead>
<tr>
<th>DESCRIPTION OF ITEM IN PLANS</th>
<th>RECOMMENDATIONS FOR FUTURE CONTRACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Greater detail on the warning signs, specifically the text size for the signs</td>
<td>The text height and the type and grade of the sheeting material used to make the lettering shall be shown on the drawings and in the specifications.</td>
</tr>
<tr>
<td>2. Several problems were encountered in the construction of the pile clusters. One was the use of A-882 cable, which was too stiff. Also the use of Dvidag rods presented a problem.</td>
<td>Use stainless steel cable for the wraps around the pile cluster. Use stainless steel all thread bolts on the cluster. Show the top of the batter piles with a notch to better fit against the vertical pile.</td>
</tr>
<tr>
<td>3. A concern about the visibility of the structures and piles was raised.</td>
<td>Show the placement of conspicuity tape on all structures and sign support piles, etc.</td>
</tr>
<tr>
<td>4. In attaching the warning signs to support piles, a conflict with the lag bolts was encountered.</td>
<td>Use 6” long lag bolts to attach the signs to the piles rather than 8” long bolts.</td>
</tr>
<tr>
<td>5. Using aluminum angles to attach the signs to the pole piles causes the pile to have to be notched to accept the horizontal leg of the angle, which is difficult to accomplish.</td>
<td>Consider the use of aluminum “Z” section to attach the warning sign to the piles. This would make the attachment and replacement of the signs easier.</td>
</tr>
<tr>
<td>6. No method of attaching the decking (grating) to the structures was shown.</td>
<td>Show the use of stainless saddle clips with self-tapping screws to attach grating to steel members.</td>
</tr>
<tr>
<td>7. Not enough detail on the structure to earthen embankment tie in.</td>
<td>The actual alignment on tie in for each structure needs to be shown specifically for that structure, not as a typical drawing.</td>
</tr>
<tr>
<td>8. Batter piles were shown with degrees of batter.</td>
<td>Recommend showing the batter as inches per foot.</td>
</tr>
<tr>
<td>9. The timber piles on the variable crest weirs were shown with a notch in the center of the pile to accept the cross member to lift out the stop logs.</td>
<td>Cutting the notch in the center of the pile is extremely difficult. If conditions allow recommend notching the pile to accept cross member on one side.</td>
</tr>
<tr>
<td>10. When the clip angles were placed attaching the pile cap to the sheet piles according to the drawings, it caused all of the bolts to be off center on one side of the pile cap.</td>
<td>Show the clip angles on alternating sides of the sheet piles in order to have a repeating pattern with the bolts across the centerline of the pile cap.</td>
</tr>
</tbody>
</table>
List any significant items in the construction specifications, which caused problems, need clarification or changes for future contracts of this nature.

<table>
<thead>
<tr>
<th>DESCRIPTION OF ITEM IN SPECIFICATIONS</th>
<th>RECOMMENDATIONS FOR FUTURE CONTRACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sheet piles were coated as mated pairs. The specification did not preclude this.</td>
<td>Recommend stating in the specifications that each pile is to be coated independently.</td>
</tr>
<tr>
<td>2. Some concern about the materials, which were used in the manufacture of the batter enclosure for navigation lights.</td>
<td>Recommend specifying all aluminum parts for the battery enclosure if available, with a heavy-duty clasp. Also specify that the contractor shall supply all locks for battery enclosures, access hatch to light on navigation aid, as well as stop log locking devices, etc. Also the recommendation to look into the possibility of specifying LED’s in place of bulbs for the lights should be pursued.</td>
</tr>
<tr>
<td>3. The specifications were unclear as to what paint system and or color was to be applied to certain portions of the sheet pile structures.</td>
<td>A painting schedule will be developed for future contracts, which identifies each component with the surface preparation, paint system and color to be applied.</td>
</tr>
<tr>
<td>4. A large number of birds are resting on the solar panels that charge the batteries for the navigation lights. The bird droppings are covering a large portion of the panels.</td>
<td>Specify bird exclusion devices for all of the solar panels in future contracts.</td>
</tr>
<tr>
<td>5. There were inconsistencies between the schedule of pipe and wall thickness shown on the drawings and in the specifications.</td>
<td>It is recommended that the wall thickness (schedule) and the I.D. of the pipe be specified.</td>
</tr>
</tbody>
</table>
List any significant items which worked well and should be repeated or which caused problems, need clarification or changes for future contracts of this nature.

<table>
<thead>
<tr>
<th>DESCRIPTION OF ITEM</th>
<th>RECOMMENDATIONS FOR FUTURE CONTRACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The design of the work platform on the sheet pile weirs is somewhat cumbersome.</td>
<td>The project engineer has submitted proposals for the design of the platforms, which could be easier and cheaper to construct. For the next contract that utilizes this type of structure, analysis of the proposed platform should be completed and compared to the cost of the existing design.</td>
</tr>
<tr>
<td>2. There were some problems in constructing the pipe railings for the weirs and platforms.</td>
<td>For future contracts where pipe railings are specified, the railings should be designed using AMP-521 Pipe Railing System Manual where applicable.</td>
</tr>
</tbody>
</table>

NRCS - 4
ATTACHMENT IV

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

AS-BUILT DRAWINGS
PROJECT DESCRIPTION

BASE BID:
INSTALL BROKEN STONE ROCK DIKE OR EARTH EMBANKMENT AT BREACH NO. 1 THRU 11 IN ACCORDANCE WITH CONSTRUCTION PLANS. ALSO REPLACE BROKEN TIMBER AT STRUCTURE SITE 6.

ALTERNATE BID:
INSTALL BROKEN STONE ROCK DIKE IN ACCORDANCE WITH CONSTRUCTION PLANS CONNECTING THE ROCK DIKE AT BREACH 1 WITH BREACH 2 AND BREACH 2 WITH BREACH 3.

SCALE: 1" = 4000'
ALTERNATE LOCATION
(1700 FT. TO BREACH 2)

PLAN
SCALE: 1" = 100'

STATIONING IN FEET BY HORIZONTAL MEASUREMENT

ELEVATION-FEET HA RD

DESIGN ELEV. = 3.5'
GROUND PROFILE
SURVEY OF 7-8-03

AS-BUILT
SURVEY OF 7-8-03

BREACH No. 1
STA. 7+70 = ALTERNATE STA. 0+00

PROPOSED LEVEE & PROFILE
SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL

SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

BASE BID AND ALTERNATE
TYPICAL CROSS SECTION
N.T.S.

BASE BID TYPICAL END SECTION
N.T.S.
ALTERNATE LOCATION (1700 FT. TO BREACH 1)

LIMITS OF CONSTRUCTION

PLAN
SCALE: 1" = 100'

Stationing in Feet by Horizontal Measurement

Scaling: 1" = 100' horizontal
1" = 10' vertical

Proposed Levee & Profile

See attached drawings for as-built cross sections

Base Bid and Alternate Typical Cross Section

N.T.S.
ALTERNATE LOCATION (400 FT. TO BREACH 3)

PRIVATE & ODOM MCA
Engineering & Related Services, Inc.

See attached drawings for as-built cross sections

BASE BID AND ALTERNATE TYPICAL CROSS SECTION

N.T.S.

BASE BID TYPICAL END SECTION

N.T.S.

PLAN
Scale: 1" = 100'

Stationing in feet by horizontal measurement

0+00 1+00 2+00 3+00 4+00

Elevation in feet

0 5 10

0 5 10

Proposal levee & profile
Scale: 1" = 100' horizontal
1" = 10' vertical

Contours based on survey of Jan. 2002

LaREM D. B. F. F. E. T. R. H. 4
Breach 4

BAYOU DE CADE

D E S I G N  E L V E .  3.5'

B R O K E N  S T O N E  R I P - R A P

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'

TYP

1

3'
CONTOURS BASED ON SURVEY OF JAN. 2002

SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

SECTION A-A
N.T.S.

DESIGN ELEV. 3.5'

AS-BUILT SURVEY OF 7-9-03

GROUND PROFILE SURVEY OF 1-2002

PROPOSED LEVEE & PROFILE
SCALE: 1" = 100' Horizontal
1" = 10' Vertical

STATIONING IN FEET BY HORIZONTAL MEASUREMENT
0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00

ELEVATION - FEET NGVD 89
10 5 0 -5
SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

TYPICAL CROSS SECTION
N.T.S.

CONTOURS BASED ON SURVEY OF JAN. 2002

TYPICAL END SECTION
N.T.S.

ELEV 3.0'

BROKEN STONE RIP-RAP

FILTER FABRIC

ELEV 3.0'

BROKEN STONE RIP-RAP

FILTER FABRIC

STATIONING IN FEET BY HORIZONTAL MEASUREMENT
1+00  2+00  3+00  4+00
10  5  0  -5

ELEVATION - FEET
0  5  10
-5 -10

AS - BUILT SURVEY OF 7 - 8 - 03

GROUND PROFILE SURVEY OF 1 - 2002

PROPOSED LEVEE & PROFILE
SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL
PLAN
SCALE: 1" = 100'

CROSS SECTION AT STA. 2+18
SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL

PROPOSED LEVEE & PROFILE
SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL
NOTE: NO ROCK INSTALLED EARTH EMBANKMENT USED TO REPAIR BREACH

CONTOURS BASED ON SURVEY OF JAN. 2002

BASE BID AND ALTERNATE TYPICAL CROSS SECTION
N.T.S.

BASE BID TYPICAL END SECTION
N.T.S.

ELEV 3.5'

PROPOSED LEVEE & PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 10' VERTICAL

AS-BUILT SURVEY OF 7-10-03

GROUND PROFILE SURVEY OF 4-2002
NOTES:
1. ALL 3/8" ALL-THREAD TIE RODS (ASTM A-615 GR60 CALV.) SHALL BE SECURED BY NOTCHED IN PLACE ORE WASHERS AND TACK WELDED NUTS.
2. 3 WRAPS OF 3/8" STAINLESS STEEL CABLE BETWEEN THE 3/8" ALL-THREAD TIE RODS.
3. THE 3/8" CABLE SHALL BE SECURED USING 3 STAINLESS STEEL CLAMPS.
4. THE 3/8" ALL-THREAD TIE RODS SHALL BE A MIN. OF 6" BELOW TOP OF BATTER PILES AND 3" VERTICAL CLEARANCE FROM ADJACENT TIE ROD.
5. NEW TIMBER PILE FOR FOUR PILE NAVIGATION AID DOLPHIN SHALL BE 12'x50'.
6. SIGN SHALL BE REINSTALLED ON NEW TIMBER PILE DOLPHIN WITH 3-3/8"x8" STAINLESS STEEL LAG SCREWS WITH 1/2" O.D. S.S. WASHER.
7. DOLPHIN REPAIR WORK SHOULD BE INCLUDED AS PART OF BASE BID, ITEM NO. 2, DOLPHIN REPAIR.

AS-BUILT PLANS
9/04/03

REINSTALL EXISTING BATTERY/DAYLIGHT/SOLAR PANEL ASSEMBLY

REINSTALL EXISTING LIGHT MOUNTING PLATFORM TO NEW PILE. TOP Ø +11.0 NAVD

NEW 12'x50' TIMBER PILE

3/4" ALL-THREAD (TYP.) TO BE REPLACED

1/2" CABLE (TYP.) TO BE REPLACED

NEW 12" TIMBER PILE

1/2" S.S. BOLTS

120°

120°

3 FASTENERS

1/2" = 1'-0"

1/2" = 1'-0"

ELEVATION

PLAN

MOUNTING DETAILS—DAYLIGHT ASSEMBLY

1" = 1'-0"
ALT. NO. 2

CROSS SECTION C/L STA. 1+30
CROSS SECTION C/L STA. 2+00
CROSS SECTION C/L STA. 3+00

BREACH NO. 4

CROSS SECTION C/L STA. 0+00
CROSS SECTION C/L STA. 1+00
CROSS SECTION C/L STA. 2+00

BREACH NO. 7
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

LEGEND
- JULY 6, 2003 AS-BUILT
- DESIGN GRADE SECTION
AS-BUILT
8/29/03

BREACHES NO. 2 AND NO. 3 CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

LEGEND

JULY 9, 2003 AS-BUILT
DNR - BRADY CANAL
P & O FILE NO. 10-1628
AS-BUILT
8/29/03

BREACH NO. 8
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

CROSS SECTION C/L STA. 2+00

CROSS SECTION C/L STA. 2+75

CROSS SECTION C/L STA. 1+00

CROSS SECTION C/L STA. 2+20

CROSS SECTION C/L STA. 2+90

CROSS SECTION C/L STA. 1+20

BREACH NO. 9
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

LEGEND
- JULY 9, 2003 AS-BUILT
-- DESIGN GRADE SECTION

DNR - BRADY CANAL
P & O FILE NO. 10-1628
AS–BUILT PLANS
9/04/03

BASE BID
TYPICAL EARTH FILL SECTION
WITH GEOTEXTILE
BRADY CANAL HYDROLOGIC RESTORATION
CONSTRUCTION UNIT 1 (PTE-26B)

BUILT UNDER THE
COASTAL WETLANDS
PLANNING, PROTECTION,
AND
RESTORATION ACT
PUBLIC LAW 101-646

BY THE
LOUISIANA
DEPARTMENT OF NATURAL RESOURCES

WITH THE ASSISTANCE OF THE
NATIONAL RESOURCES CONSERVATION SERVICE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE
1999

"AS-BUILT PLANS"

SUBMITTED BY:

APPROVED BY:

r

CONTRACT NO.:

DATE OF SUBMISSION:

DATE OF APPROVAL:

SCALE OF DRAWINGS:

1. COVER SHEET
2. PROJECT LOCATION MAP
3. PROPOSED ENHANCEMENT PLAN VIEW
4. ENHANCEMENT PROFILE 1-100
5. ENHANCEMENT PROFILE 2
6. ENHANCEMENT PROFILE 3
7. ENHANCEMENT PROFILE 4
8. TYPICAL SECTIONS

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

LOCATION IN LOUISIANA

NOTE: GEOTEXTILE WILL BE USED UNDERGROUND EARTHWORK AND BACKFILL EXCEPT WHERE ROCKFILL IS SPECIFIED. SEE CONSTRUCTION SPECIFICATION FOR APPROPRIATE LOCATIONS OF GEOTEXTILE.

NOTE: AS CONSTRUCTION SPECIFICATION.

NOTE: AS CONSTRUCTION SPECIFICATION.

NOTE: AS CONSTRUCTION SPECIFICATION.
BRADY CANAL HYDROLOGIC RESTORATION
CONSTRUCTION UNIT 2 (PTE-26B)

BUILT UNDER THE
COASTAL WETLANDS
PLANNING, PROTECTION,
AND
RESTORATION ACT
PUBLIC LAW 101-646

BY THE
LOUISIANA
DEPARTMENT OF NATURAL RESOURCES

WITH THE ASSISTANCE OF THE
NATIONAL RESOURCES CONSERVATION SERVICE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE
1999

VICINITY MAP

LOCATION IN LOUISIANA
NOTE:
SOIL BORINGS AND X-SECTIONS WERE TAKEN AT DIFFERENT LOCATIONS,
AS A RESULT THERE MAY BE SOME ELEVATION DISCREPANCY.

SITE NO. 6 BORING LOGS

SITE NO. 14 BORING LOGS

SITE NO. 24 BORING LOGS
SITE NO. 7 - PROFILE ON CENTERLINE

SITE NO. 7 - PLAN VIEW

SECTION "B-B/8"  (NOT TO SCALE)
SITE NO. 21 - DECKING DETAIL (PLAN VIEW)

6"x6" HOIST SUPPORT (TIMBER)

SITE NO. 21 - DECKING DETAIL (ELEVATION VIEW)

6"x8"x8.5" TIMBER SUPPORT

HOIST SUPPORT DETAILS
(SITES 14, 21, A.23)

NOTES:
1. ALL TIMER PILES FOR SITE 21 SHALL BE 10" DIA. X 28'.
2. ALL PILES FOR SITE 21 SHALL BE CAPPED AS SHOWN IN THE DETAIL ON SHEET 16.
3. GALVANIZED GRATING SHALL BE ATTACHED PER MANUFACTURER'S RECOMMENDATIONS.
4. SEE SHEET 11 FOR HANDRAIL DETAILS.

6"x8" HOIST SUPPORT (TIMBER)
SITE NO. 23 - DECKING DETAIL (PLAN VIEW)

4"x8" HOIST SUPPORT (TIMBER)  
(SEE SHEET 18 FOR DETAILS)

SITE NO. 23 - DECKING DETAIL (ELEVATION VIEW)

1.374" W x 4" GALVANIZED GRATING

NOTES:
1. ALL TIMBER PILES FOR SITE 23 SHALL BE 10" DIA. x 28'.
2. ALL PILES FOR SITE 23 SHALL BE CAPPED AS SHOWN IN THE DETAIL ON SHEET 16.
3. GALVANIZED GRATING SHALL BE ATTACHED PER MANUFACTURER'S RECOMMENDATIONS.
SITE NO. 24 - PROFILE ON CENTERLINE

SITE NO. 24 - PLAN VIEW

(PILE CAP NOT SHOWN FOR CLARITY)

SHEET PILE SCHEDULE

<table>
<thead>
<tr>
<th>SHEET PILE</th>
<th>LENGTH FEET</th>
<th>MINIMUM (IN/Ft)</th>
<th>SUBTOTALS (FT, DS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>28' 80'</td>
<td>17</td>
<td>1650</td>
</tr>
</tbody>
</table>

CONSTRUCTION LIMITS

| 25C 4' 5.9 25C 4' 5.9 |

"AS-BUILT"

(NOT TO SCALE)
NOTES:
1. The minimum web and flange thickness of sheet piles shall be 0.30".
2. The contractor shall submit a method of connecting the pile cap to the sheet pile and all drawings for approval 14 days prior to fabrication.
3. The sheet pile shall conform to ASTM A529 or ASTM A582, gr. 60. All channel angles and plates shall conform to ASTM A56. The sheet pile and pile cap shall be coated with coal tar epoxy as specified in Spec. R2.
4. All sheet pile dimensions are typical and are subject to change based on manufacturer/supplier.
5. Sheet pile will be driven in the "normal configuration" as shown.
6. The holes in the sheet pile shall be field drilled.
7. All 6 x 4 x 3/8" clips are to be placed on the middle section of each pile as shown in the drawings.
8. The pile cap shall be placed along the entire length of the sheet pile including vertical sections and the bottom of the weir bays.

Pile Cap Splice Details

"AS-BUILT"
The six (6) signs required at Site 7 will be supplied by NRCS at no cost to the contractor.

Site 6-Plan
Sign Details

Site 7-Plan
Sign Details

Site 10-Plan
Sign Details

Site 14-Plan
Sign Details

Site 20-Plan
Sign Details

Site 21-Plan
Sign Details

Site 23-Plan
Sign Details

Site 24-Plan
Sign Details

Sign Detail Legend

1. 2' x 6' timber pile with warning sign (danger obstruction proceed with caution and directional sign.)
2. 2' x 6' timber pile with warning sign (danger obstruction proceed with caution and directional sign, both faces.)
3. 2' x 6' timber pile with warning sign (danger, do not proceed)
4. 2' x 6' timber pile with warning sign (danger, do not proceed, both faces)
5. 2' x 6' x 4' - timber pile cluster with navigation aid signs and navigation obstruction light

Scale: 1" = 100'
WARNING SIGN DETAILS
(USED WITH SIGN TYPE A AND B)

NOTES:
1. SIGNS SHALL BE CONSTRUCTED USING 1/16" PLATE 5052 ALUMINUM.
2. THE 2" BORDER SHALL BE A RETRO-REFLECTIVE MATERIAL OF ORANGE COLOR.
3. THE LETTERING AND ARROW FIELD SHALL BE A RETRO-REFLECTIVE MATERIAL OF WHITE COLOR.
4. THE LETTERING AND ARROWS FOR THE SIGNS SHALL BE BLACK.

PLAN
5/32" 5/64" LAB SCREW
IS REQUIRED FOR BOTH SIGNS
AMT/1/4" D.O. S/S W/ WASHERS

ELEV. -15.5 NAVO
3/8" PLATE ALUMINUM

PLAN
5/32" 5/64" LAB SCREW
IS REQUIRED FOR ALL FOUR SIGNS
AMT/1/4" D.O. S/S W/ WASHERS

ELEV. -15.5 NAVO
3/8" PLATE ALUMINUM

PLAN
5/32" 5/64" LAB SCREW
IS REQUIRED FOR BOTH SIGNS
AMT/1/4" D.O. S/S W/ WASHERS

ELEV. -46.0 NAVO
3/8" PLATE ALUMINUM

SIGN TYPE A - DETAILS
(USED AT STRUCTURES 10 & 20)

SIGN TYPE B - DETAILS
(USED AT STRUCTURE 6)

AS-BUILT
WARNING SIGN DETAILS
(USED WITH SIGN TYPES C & D)

THE SIX (6) TYPE "C" SIGNS REQUIRED AT
SITE W. WILL BE SUPPLIED BY NRCS. AT NO
LOST TO THE CONTRACTOR.

SIGN TYPE C - DETAILS
(USED AT STRUCTURE 7 ONLY)

NOTE:
The base plate detail below will apply wherever sign
type "C" and railing are used.

SIGN TYPE D - DETAILS
(USED AT STRUCTURES 14, 21, 23 & 24)

THE RAILING SHALL BE PAINTED AS SPECIFIED
IN CONSTRUCTION SPECIFICATION E2,
CLEANING AND PAINTING METALWORK.

RAILING AND SIGN SUPPORT BASE PLATE
(NOT TO SCALE)

"AS-BUILT"

RAILING CONNECTIONS
(NOT TO SCALE)
"AS BUILT"

FINAL SECTION
CONSTRUCTION UNIT 2
BRADY CANAL HYD REST.
SITE #14 PROFILE

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SCALE: HORIZONTAL 25'-50'
VERTICAL 25'-10'

DESIGNED
M.P.O. 

CHECKED 

BCE-ENG-336A (Revised 3-76)
ATTACHMENT V
BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PROJECT PERMITS
&
PERMIT AMENDMENTS
August 5, 2002

Faye Talbot
Project Manager
USDA, Natural Resources Conservation Service
646 Cajundome Blvd., Suite 180
Lafayette, Louisiana

RE: C960231, Coastal Zone Consistency Modification
Natural Resources Conservation Service
Direct Federal Action
Brady Canal Hydrologic Restoration CWPPRA Project (TE-28), modification to use barged in rock rather than borrow material from canal bottoms at 10 breach closure sites, Terrebonne Parish, Louisiana

Dear Ms. Talbot:

The above referenced project modification has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The modification, as proposed in the application, is consistent with the LCRP. If you have any questions concerning this determination please contact Brian Marcks of the Consistency Section at (225)342-7939 or 1-800-267-4019.

Sincerely,

Terry W. Howey,
Administrator

cc: Ron Ventola, NOD-COE
Clark Allen, CRD
Fred Dunham, LDWF
Rod Pierce, CMD/FI
James Miller, Terrebonne Parish
USDA Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302  

Attention: Donald W. Gohmert, State Conservationist and Agent for LA Land & Exploration (L.L&E) and Fina Oil and Chemical Co.  

Gentlemen:  

RE: Proposal to perform dredge and fill activities, to install and maintain rip rap, and to modify/install and maintain water control structures in order to reduce erosion, encourage freshwater, sediment and nutrient influx and to stabilize water levels within a 7,653 acre area of marsh and open water, Brady Canal Hydrologic Restoration Project (PTE-26B), the Bayou Peanant-Lake Peanant watershed in Terrebonne Parish, LA.  

This is to acknowledge that you have completed the requirements for Water Quality Certification for the above referenced proposal.  

It is our opinion that your proposed project will not violate water quality standards of the State of Louisiana, therefore, we offer no objection to this project provided that the dredged material and the hauled-in fill material used are free of contaminants.  

In accordance with statutory authority contained in the Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L. 95-217), the Office of Water Resources certifies that it is reasonable to expect that water quality standards of Louisiana provided for under Section 303 of P.L. 95-217 will not be violated.  

Sincerely,  

[Signature]  
Linda Korn Levy, Assistant Secretary  
Office of Water Resources  

LKL:LG  
c: Corps of Engineers, New Orleans - SW(Terrebonne PW/L)1087 - John Reddoch  
Coastal Management Division - C960231/QWPPRA Project PTE-26B  

OFFICE OF WATER RESOURCES  P.O. BOX 92215  BATON ROUGE, LOUISIANA 70894-2215
August 6, 1998

Mr. Kermit Coulon
Land Manager
Burlington Resources
P.O. Box 7097
Houma, La. 70361

Mr. John Woodard
Land Manager
Fina Oil and Chemical Co.
P.O. Box 206
Houma, La. 70361

Subject: Brady Canal Hydrologic Restoration Project (PTE-26B) Permit Modification

Gentlemen,

As I discussed with you both on separate occasions on the telephone, NRCS's engineering cost estimate came in low and there is a possibility of constructing a rock embankment along Bayou DeCade in the critical areas. To add rock we will need to modify the permit.

Enclosed is a copy of the drawing that will be sent to DNR to initiate the modification, since they are the permit holder. We do not know the actual amount of rock that could be used, since the engineer's estimate does not always come out the same as the contractors' bids. The drawing shows the entire amount of rock that could be placed using the engineer's cost and using the entire 125% of the project cost.

Please review the drawings and let me know your opinion.

Faye A. Talbot
Staff Leader
Field Office Project
Support Staff

cc: Bruce Looho
Gary Eldridge
Cherie Letfleur
Tim Landreneau
Britt Paul
Clark Allen
Rock Riprap Embankment

Detail Section - Rock Embankment
(Not to Scale)

Location Map
(Not to Scale)

Approximately 8,545 feet of Rock Embankment will be constructed within the reach along the N side of Bayou DeCade for a maximum length of 8,645 to the west of Site 6. Section P-P is indicative of this proposed rock embankment construction.

Typical Section P - P
(Not to Scale)

Notes:
1. All Elevations Shown in N.G.V.D.
2. Maximum Length of Rock Embankment - 8,545 Feet.
4. Maximum Flotation Channel Spill Fill - 98,100 Cubic Yards.

BRADY CANAL HYDROLOGIC RESTORATION
DETAILS - Rock Riprap Embankment
Section P - P

TERREBONNE PARISH, LA
Mr. Larry Wiseapple  
Certification Coordinator  
Louisiana Department of  
Environmental Quality  
Office of Water Resources  
P. O. Box 82215  
Baton Rouge, LA 70884-2215

Mr. Terry W. Howey  
Director  
Louisiana Department of  
Natural Resources/MDM  
P. O. Box 44487  
Baton Rouge, LA 70803

Gentlemen:

Please find attached the permit modification for the Brady Canal Hydrologic Restoration project. The original COE permit number for this project is WL-970-0150. At a recent engineering design review, critical areas were designated along Bayou DeCade that will need rock protection.

For your review, I have attached the COE permit cover pages outlining the modification as well as two drawings' modification.

The original Water Quality Certification, WQC 960506-10, was issued in December, 1996 and the State Consistency with the Louisiana Coastal Resource Program, WASS C960231, was issued in July, 1996. The United States Army Corp of Engineers requested that NRCS contact your respective offices and get a recertification on this project.

This project is nearing the time for advertisement; therefore, I would appreciate your handling of this permit in the most expeditious manner possible. If you have any questions concerning this application, contact Faye Talbot, Staff Leader, Field Office Project Support Staff, Lafayette, Louisiana, at 318-496-8593.

Sincerely,

Donald W. Geshert  
State Conservationist

Attachments

c: Bruce Lehto, Assistant State Conservationist/Water Resources/Rural Development, NRCS, Alexandria, LA
Faye Talbot, Staff Leader, NRCS, POPSS, Lafayette, LA
Britt Paul, Staff Leader, NRCS, WRPS, Alexandria, LA
Tim Landreau, District Conservationist, NRCS, Thibodaux, LA
LL+E, P. O. Box 7097, Houma, LA 70361
Fina Oil & Chemical Co., P. O. Box 206, Houma, LA 70361
**PRIVATE ACT STATEMENT**

APPEND 33 USC 401, Section 10: 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for a permit. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application. An application that is not completed in full will be returned.

**ITEMS 1 THRU 4 TO BE FILLED BY THE CODE**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>APPLICATION NO.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>FIELD OFFICE CODE</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>DATE RECEIVED</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>DATE APPLICATION COMPLETE</td>
<td></td>
</tr>
</tbody>
</table>

**ITEMS BELOW TO BE FILLED BY APPLICANT**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>APPLICANT’S NAME</td>
<td>Office of Coastal Restoration</td>
</tr>
<tr>
<td>6.</td>
<td>APPLICANT’S ADDRESS</td>
<td>La. Dept. of Natural Resources/OSR</td>
</tr>
<tr>
<td>7.</td>
<td>APPLICANT’S PHONE NO.</td>
<td>70884-4487</td>
</tr>
<tr>
<td>8.</td>
<td>AUTHORIZED AGENT’S NAME AND TITLE</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>AGENT’S ADDRESS</td>
<td>P.O. Box 44487</td>
</tr>
<tr>
<td>10.</td>
<td>AGENT’S PHONE NO.</td>
<td>225-342-1373</td>
</tr>
</tbody>
</table>

**STATEMENT OF AUTHORIZATION**

I have authorized, or may authorize, to act in my behalf as my agent in the processing of this application and to obtain the necessary information to support this permit application.

**APPLICANT’S SIGNATURE**

<table>
<thead>
<tr>
<th>DATE</th>
</tr>
</thead>
</table>

**NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY**

Brady Canal Hydrologic Restoration

| PROJECT NAME OR TITLE |  |

**NAME OF WATERBODY, IF KNOWN**

Brady Canal, Rayon Mauvais Bay, Bayou DesCades

**LOCATION OF PROJECT**

<table>
<thead>
<tr>
<th>BRIDGES/ELEMENTARY LOCATION</th>
<th>COUNTY</th>
<th>STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ing Lake, Superior Canal, Carencro Bayou, Vois</td>
<td>LA</td>
<td></td>
</tr>
</tbody>
</table>

**LOCATION OF PROJECT**

<table>
<thead>
<tr>
<th>LOCATION OF PROJECT</th>
<th>COUNTY</th>
<th>STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turtle Point</td>
<td>LA</td>
<td></td>
</tr>
</tbody>
</table>

**OTHER LOCATION DESCRIPTIONS, IF KNOWN**

<table>
<thead>
<tr>
<th>PROJECT STREET ADDRESS</th>
<th>LOCATION OF PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. PROJECT STREET ADDRESS</td>
<td>Transformer Center of the project is Lat. 29°51'30&quot; North and Long. 91°59'15&quot; West.</td>
</tr>
</tbody>
</table>

**DIRECTIONS TO THE SITE**

Approximately 20 miles south of Houma, LA on LA 315 to Falgout Canal Landing. Proceed west by boat across Lake DesCades to Turtle Bayou where eastern edge of project begins. Proceed south; see Fig. A, Figure 1.
This project plan contains structural measures designed to reduce adverse tidal effects and improve hydrological conditions on approximately 7,653 acres of fresh, intermediate, and brackish marsh and shall open water bodies. These structures will meet project objectives to reduce excessive tidal exchange.

20. Reason for Discharge

Bridge and/or fill material will be used in the installation of structural measures listed above under Item 18. Any discharge into waterways will be incidental during construction. The proposed activity described in this permit application complies with and will be

21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards

See Exhibit "C".

22. Surface Area in Acres of Wetlands or Other Waters Filled

4. Address of Adjoining Property Owner, Lessee, etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

All surrounding the project area is owned by the applicants.

List of Other Certifications or Approvals/Permits Received from other Federal, State or Local Agencies for Work Described in This Application.

AGENCY

IDENTIFICATION NUMBER

DATE APPLIED

DATE APPROVED

DATE DENIED

This project was approved for funding under PL-646 by a task force composed of the following six agencies: USDA Natural Resources Conservation Service, National Marine Fisheries Service, Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and the Louisiana Department of Natural Resources.

Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

DATE

SIGNATURE OF AGENT

DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or may be signed by a duly authorized agent of the statement in case 11 has been filled out and signed.

U.S.C. Section 101 provides that: "Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statement or representation or makes or uses any false writing or document knowing such to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both."
between interior marsh and the adjacent bays and bayous. The rate of shoreline erosion will be reduced and a hydrologic regime conducive to sediment and nutrient deposition will encourage the reestablishment of emergent and submersed vegetation in eroded areas. Stabilizing water conditions will return the project area to a more historic low energy environment. (See Exhibit "B" for a detailed description of the project area and components).

20. Reason(s) for Discharge -Continued-

conducted in a manner that is consistent with the Louisiana Coastal Management Program.
Approximately 8,645 feet of Rock Embankment will be constructed within the reach along the N side of Bayou DeCade for a maximum length of 8,645 to the west of Site 8. Section P-P is indicative of this proposed rock embankment construction.

NOT TO SCALE

60'

Limits of Flotation Channel.

20' Minimum

10'

Maximum 150'

Flotation Channel Spill Disposal

Note: Flotation Channel Spill will be Displaced in Adjacent Open Water Areas to Create Marsh. Maximum Settled Elevation will be Av. Marsh Level (1.0 NVDG).

BRADY CANAL HYDROLOGIC RESTORATION

DETAILS - Rock Riprap Embankment
Section P-P

TERREBONNE PARISH, LA

Typical Section P-P

NOT TO SCALE

Notes: 1. All Elevations Shown in N.G.V.D.
5. Maximum Area Marsh Created by Flotation Spill - 36 Acres.
EARTHEN EMBANKMENT
SECTION A - A

Typical Section
(Not to Scale)

Approximately 6,355 feet of Earthen Embankment will be constructed within the reach along the N side of Bayou DeCade and NE side of Voss Canal. Section A-A is indicative of this proposed construction.

Typical Profile
(Not to Scale)

Notes:
1. All Elevations Shown in N.G.V.O.
2. Total Length of Earthen Embankment - 6,355 Feet.
3. Total Volume of Earthen Embankment Fill - 26,800 Cubic Yards.
4. Borrow Material to be Taken from Bayou DeCade and Voss Canal.

BRADY CANAL HYDROLOGIC RESTORATION
DETAILS - EARTHEN EMBANKMENT SECTION A - A
TERREBONNE PARISH, LA
Mr. Bruce Lehto  
Assistant State Conservationist  
Water Resources  
Natural Resources Conservation Service  
3737 Government Street  
Alexandria, Louisiana 71302  

Re: Brady Canal Permit  

Dear Mr. Lehto:  

I am pleased to enclose a copy of the signed Brady Canal permit.  

Very truly yours,  

Katherine G. Vaughan  
Assistant Secretary  

KGV/hs  

Enclosure: As stated  

cc: (w/enclosures)  

Mr. Don Gohmert, Natural Resources Conservation Service  
Mr. Jim Buchtel, Department of Natural Resources
Operations Division
Western Evaluation Section

SUBJECT: WD-19-970-0150 and SW (Terrebonne Parish Wetlands) 1087

Louisiana Department of Natural Resources
Post Office Box 93396
Baton Rouge, Louisiana  70804-9396

Gentlemen:

Enclosed is a permit dated this date, subject as above, authorizing work under the Department of the Army permit program.

You are again reminded that any work not in accordance with the plans is subject to removal regardless of the expense and the inconvenience that such removal may involve and regardless of the date when the discrepancy is discovered.

Your attention is directed to all the terms and conditions of the approval, especially those conditions relative to supervision and approval of work by the District Engineer. In order to have the work finally approved and declared legal, all terms and conditions of the permit and plans shown on the drawings attached thereto must be rigidly adhered to.

It is necessary that you notify the District Engineer, Attention: Surveillance and Enforcement Section, in writing, prior to commencement of work and also upon its completion. The notification must include the permittee's name, as shown on the permit, and the permit number. Please note the expiration date on the permit. Should the project not be completed by that date, you may request a permit time extension. Such requests must be received before, but no sooner than 6 months before, the permit expiration date and must show the work completed and the reason the project was not finished within the time period granted by the permit.

The enclosed Notice of Authorization, ENC Form 4336, is to be conspicuously displayed at the site of work.

Sincerely,

[Signature]
Ronald J. Ventola
Chief, Regulatory Functions Branch

Enclosure
DEPARTMENT OF THE ARMY PERMIT

Louisiana Department of
Natural Resources

Permit No. W-19-970-0150 and
SW(Terrebonne Parish Wetlands)1087

Issuing Office New Orleans District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferees. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Dredge for material to construct and maintain levees, install and maintain water control structures, modify existing structures and place rip-rap in order to implement the Brady Canal Hydrologic Restoration Project, in accordance with the drawings attached in sixteen sheets, dated December 19, 1996.

Project Location: In Terrebonne Parish, central to a point approximately 16 miles southwesterly from Houma, Louisiana.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on June 30, 2001. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

ENG FORM 1721, Nov 88 EDITION OF SEP 83 IS OBSOLETE.

(33 CFR 325 (Appendix A))
a. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant’s Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 on enforcement procedures such as those contained in 33 CFR 325.4 and 325.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 329.175) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

[Signature]
(Date)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

[Signature]
(Date)

Ronald J. Ventola, Chief, Regulatory Branch

for William L. Comer, District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

[Signature]
(Date)
7. The permittee shall ensure that the work authorized herein is performed in accordance with the attached permit drawings and special conditions.

8. Prior to dredging the proposed across channel depicted on sheet 16 of the permit drawings, the permittee shall ensure that all pipelines which would be crossed by the channel have been located and shall employ appropriate measures to prevent damage to these pipelines during the dredging operation.

9. The permittee shall monitor the project in accordance with the June 1, 1998, draft monitoring plan which is attached, in part, to this permit. Monitoring shall commence during the first year of project construction and shall continue throughout the project’s operational life. In the event that federal participation or funding for this project is discontinued, the permittee shall remain responsible for monitoring but may request modifications to the monitoring plan. The Corps of Engineers will decide which modifications will be allowed after coordinating the proposed changes with the appropriate state and federal agencies.

10. The permittee shall provide this office with a report or letter describing all work performed each year beginning with the year of permit issuance (1998) and continuing until project construction is completed. These reports, along with annual monitoring data shall be submitted to this office December 31st of each year.

11. Structures will not be placed across any state-owned water bottoms without the approval of the Louisiana Department of Natural Resources, Division of State Lands. The permittee will be responsible for contacting the Division of State Lands to ascertain which, if any, of the structures will be placed over state-owned water bottoms.

12. Barriers will be visible to the boating public both day and night so as to reduce the possibility of boat collision with the barriers.

13. The permittee is aware that under 33 CFR 330.5(a)(1), signs may be placed as aids to navigation warning boaters of upcoming barriers in the waterways provided they are approved and installed with the requirements of the US Coast Guard.

14. The permittees must install and maintain, at his expense, any safety lights and signals prescribed by the US Coast Guard, through regulations or otherwise, on his authorized facilities.

15. The time limit to perform dredging needed to maintain the navigability of the proposed channel and to obtain material needed to maintain the authorized levees expires 10 years from the effective date of this approval.
Figure 1. Location and geomorphologic features of the Penchant subbasin.
Figure 1. Location of the Brady Canal Hydrologic Restoration Project. PTE-585.
BRADY CANAL
HYDROLOGIC RESTORATION
(PIE-268)

1. Bulkhead W/Boat Bay and Flapgate Stoplog Sections
2. Fixed Crest Weir W/Variable Crest Section(s)
3. Fixed Crest Weir
4. Fixed Crest Weir W/Barge Bay
5. Rock Plug
6. Stabilized Channel Cross-Section
7. Existing Weir

--- Overflow Bank
+++ Embankment Construction
*** Shoreline Maintenance
1 Evaluation Site #
--- CTU Boundary

See Drawings for Sections A-A, B-B, and C-C.
<table>
<thead>
<tr>
<th>Evaluation Site</th>
<th>Channel Width (ft)</th>
<th>Depth (ft)</th>
<th>Existing Structure</th>
<th>Crest Elevation (ft B.M.)</th>
<th>Crest Width (ft)</th>
<th>Proposed Structure</th>
<th>Type</th>
<th>Crest Elevation (ft B.M.)</th>
<th>Crest Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>112</td>
<td>20</td>
<td>Timber Bulkhead</td>
<td>0.5</td>
<td>60</td>
<td>Bulwark</td>
<td>0.5</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Boat Bay</td>
<td>-0.5</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>285</td>
<td>6</td>
<td>Var. Crest Wall</td>
<td>from 0 to -1.4</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>315</td>
<td>4</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td>33</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>225</td>
<td>10</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td>48</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>40</td>
<td>7</td>
<td>Earthen Plug</td>
<td></td>
<td></td>
<td>Earthen Plug</td>
<td>-1.0</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>160</td>
<td>9</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td>18</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>Var. Crest Section</td>
<td></td>
<td></td>
<td>Var. Crest Section</td>
<td>-1.0</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td>20</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>Section 1</td>
<td></td>
<td>50</td>
<td>Section 1</td>
<td>-1.0</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>40&quot; Pipe</td>
<td></td>
<td></td>
<td>40&quot; Pipe</td>
<td>-2.5</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>Sluice gate</td>
<td></td>
<td></td>
<td>Sluice gate</td>
<td>0</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>Flap Gate</td>
<td></td>
<td></td>
<td>Flap Gate</td>
<td>from 0 to -3.5</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td>Fixed Crest Wall</td>
<td>-2.5</td>
<td>16</td>
<td>Fixed Crest Wall</td>
<td>-2.5</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td>V. Crest wall</td>
<td></td>
<td></td>
<td>V. Crest wall</td>
<td>from 0 to -3.5</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td>Flap Gate</td>
<td></td>
<td></td>
<td>Flap Gate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Below mean low water.
Typical Drawing

Weir w/Boat Bay & VC Sections w/Flap Gates

NOTE

Dimension shown based upon existing survey.

Brady Canal
Hydrologic Restoration
ES-1 Weir W/Boat Bay and
VC Sections w/Flap Gates
Terrebonne Parish, La.
TYPICAL DRAWING
FIXED CREST WEIR WITH BARGE BAY

Plan View

Section

Existing Channel Bottom

Barge Bay

0.8' BML

Not to Scale

Brady Canal
Hydrologic Restoration
ES-8 Fixed Crest Weir W/Barge Bay
Terrebonne Parish, La.

NOTE:
Dimensions shown based upon planning surveys.

* Below mean low water
TYPICAL DRAWING
WEIR W/VARIABLE CREST SECTION

Plan View

Marsh Level

1' BML

Variable Crest Section

Existing Channel Bottom

Note:
Dimensions shown based upon planning surveys.

Not to Scale
TYPICAL DRAWING
WEIR WITH VARIABLE CREST SECTIONS

Plan View

Normal Water Level
1' BML
Existing Channel Bottom

NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

Brady Canal
Hydrologic Restoration
ES-24 Weir w/Variable Crest Sections

Incorporative Inc.
TYPICAL DRAWING
WEIR W/VARIABLE CREST SECTIONS

NOTE:
Dimensions shown based upon planning surveys.

Brady Canal
Hydrologic Restoration
ES-23 Weir W/Variable Crest
Sections
Terrebonne Parish, La.
TYPICAL DRAWING
FIXED CREST HEIR

Plan View

Section

 existing Channel Bottom

1.5'

NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

Brady Canal
Hydrologic Restoration
ES-24 Fixed Crest Heir
Terrebonne Parish, La.
TYPICAL DRAWING
ROCK CHANNEL LINER

ELEVATION VIEW
NOT TO SCALE

PLAN VIEW
NOT TO SCALE

Estimated Volume of Rock Fill

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ES-10</td>
<td>1,440 Cubic Yards</td>
</tr>
<tr>
<td>ES-20</td>
<td>1,365 Cubic Yards</td>
</tr>
</tbody>
</table>

Brady Canal
Hydrologic Restoration
ES-10, 20 Rock Channel Liner
Terrebonne Parish, La.
TYPICAL DRAWING
ROCK PLUG

ELEVATION VIEW
NOT TO SCALE

PLAN VIEW
NOT TO SCALE

Estimated Volume of Rock Fill
ES-7 4,375 Cubic Yards

Brady Canal
Hydrologic Restoration
ES-7 Rock Riprap Plug
Terrebonne Parish, La.
EARTHEN EMBANKMENT
SECTION A - A

Typical Section

LOCATION MAP

Approximately 15,000 feet of Earthen Embankment will be constructed within the reach along the N side of Bayou DeCade and NE side of Voss Canal. Section A-A is indicative of this proposed construction.

NOT TO SCALE

Limits of Borrow Excavation

-2.5 to -5.0

Earthen Embankment

Borrow Area

Typical Profile

MLW 10.2
MLW +1.3

Notes:
1. All Elevations Shown in N.G.V.D.
2. Total Length of Earthen Embankment - 15,000 Feet
3. Total Volume of Earthen Embankment Fill - 46,300 Cubic Yards
4. Borrow Material to be Taken from Bayou DeCade and Voss Canal

BRADY CANAL HYDROLOGIC RESTORATION
DETAILS - EARTHEN EMBANKMENT SECTION A - A

TERREBONNE PARISH, LA
SPOIL BANK MAINTENANCE
SECTION B - B

Typical Section

NOT TO SCALE

120' Maximum
Limits of Borrow Excavation

40' Minimum
Maintenance Earth Fill

3.5' Av. Depth

Borrow Area

MLW +0.8
MLW +1.3

NOT TO SCALE

-25 to -6.0

10'

Av. Marsh El. 1.0'

10'

Existing

Culvert

10'

Existing

Retaining Wall

Existing

Retaining Wall

Existing

Retaining Wall

Existing

Retaining Wall

Location Map

Spill Bank Maintenance is proposed for approximately 6,000 ft.
along Spillway Canal, Tolda Bayou, Bayou Declide, and Jug Lake.
Section B - B depicts the proposed construction.

BRADY CANAL HYDROLOGIC
RESTORATION
Spoil Bank Maintenance
Section B - B
TERREBONNE PARISH, LA

Revised: 09/06/96
OVERFLOW BANK MAINTENANCE
SECTION C - C

Typical Section

NOT TO SCALE

60'

Limits of Borrow Excavation

40' Minimum

25'

Maintenance Earth Fill
EL +2.0

Av. Marsh El
+5.5

MLW +0.8
MLW +1.3

-2.4 to -4.0

2.8' Av. Depth

Borrow Area

Typical Profile

Notes: 1. All Elevations Shown in MWD
2. Total Length of Section to be Maintained: Approx. 1500 feet
3. Allowing Bryce Canal, Little Bryce Canal, Brady Canal, and Bryce Pits
4. Estimated Annual Volume of Maintenance Earth Fill: Overflow Banks:

1394 Cubic Yards Based on Retaining 30% of Bank per Year.

Borrow Material to be Taken from Adjacent Canal or Bayou.

BRADY CANAL HYDROLOGIC
RESTORATION
Overflow Bank Maintenance
Section C - C

TERREBONNE PARISH

01/01/01

1/2
PROPOSED ACCESS CANAL TO BE DREDGED IN CONJUNCTION WITH THE BRADY CANAL HYDROLOGIC RESTORATION PROJECT LOCATED IN SECTION 31, T19S - R15E AND SECTION 36, T19S - R14E, TERREBONNE PARISH, LA.
Preface

Pursuant to a CWPPRA Task Force decision on April 14, 1996, the original plan was reduced in scope due to budgetary constraints. Specifically, vegetation will be monitored in years 2, 4, and 6, then every three years thereafter. SAV will be monitored in year 12 post-construction, rather than years 13 and 17. Two sondes with marsh mat movement sensors were added to measure duration and frequency of flooding of floating marsh for years 1998-2002. Water level and salinity will be monitored continuously through 2004. Upon collection and evaluation of this data set, the Technical Advisory Group (TAG) will assist in development of a sampling plan based on an approximate 50% reduction of effort, if technically advisable.

Project Description

The Brady Canal Hydrologic Restoration Project is located at 28.669, -94.643 (3,097 ha) located in the Terrebonne Basin, within the Bayou Ranchant-Loe Penchant watershed. The project is bounded by Bayou Ranchant, Brady Canal, Little Carencro Bayou to the north, Bayou de Cade and Turtle Bayou to the south, Superior Canal to the east, and Little Carencro Bayou and Voss Canal to the west (figure 1).

Historically, the Atchafalaya Basin has influenced the establishment of freshwater marsh plant species within the Brady Canal Hydrologic Restoration project area (USDA/NRCS 1995). In 1968, the vegetation in the project area was classified as freshwater, intermediate, and brackish marsh (Chabreck et al. 1989; Wotring 2). In 1988, the area was classified as intermediate marsh with a small area of brackish marsh in the northern portion of the project along Bayou de Cade (Chabreck and Linscott 1988).

The Brady Canal Hydrologic Restoration project is bisected by the Mauvais Bois Ridge, resulting in different hydrologic regimes to the north and south of the ridge. The northern section of the project area still receives freshwater and sediments which is provided through overbank flow from Bayou Ranchant, Little Carencro Bayou, and Brady Canal (USDA/NRCS 1995). The Mauvais Bois Ridge serves to reduce the outflow of freshwater. Freshwater and sediment retention has diminished at the southern portion of the project area due to unimpeded throughflow and tidal exchange combined with a decrease in freshwater and sediment (USDA/NRCS 1995).

The project area north of the Mauvais Bois Ridge is dominated by Sagittaria lancifolia (bulltongue), Sacciolepis striata (bagescale), Ludwigia leptocarpa (false loosestrife), Hydrocotyle sp. (pennywort) Eleocharis sp. (spikerush), and Sagittaria lancifolia 'back potato'. Submerged aquatic vegetation (SAV) in shallow ponds include Nymphula odorata (white waterlily), Utricularia sp. (bladderwort),
Figure 1. Brady Canal Hydrologic Restoration (TE-28) project boundaries and features.
et al. 1992). Land loss data in the project area indicates that losses were greatest in the southwest portion of the project (USDA/NRCS 1995).

The Brady Canal Hydrologic Restoration project involves the installation and maintenance of canal plugs, the repair, construction, and maintenance of levees, and the placement of stabilized channel cross-sections. The structures are designed to reduce adverse tidal effects in the project area as well as to better utilize available freshwater and sediments.

The principle project features include (figure 1):

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bulkhead with boat bay and two flapgated variable crest weirs (1)</td>
</tr>
<tr>
<td>2</td>
<td>Fixed crest weir with barge bay (1)</td>
</tr>
<tr>
<td>3</td>
<td>Fixed crest weir with variable crest section (3)</td>
</tr>
<tr>
<td>4</td>
<td>Fixed crest weir (1)</td>
</tr>
<tr>
<td>5</td>
<td>Rock plug (1) (315 ft)</td>
</tr>
<tr>
<td>6</td>
<td>Stabilized channel cross-section (rock) (2)</td>
</tr>
<tr>
<td>7</td>
<td>Earthen embankment (15,000 ft)</td>
</tr>
<tr>
<td>8</td>
<td>Maintenance of existing overflow bank (21,600 ft)</td>
</tr>
<tr>
<td>9</td>
<td>Maintenance of shore and earthen embankment</td>
</tr>
<tr>
<td>10</td>
<td>Maintenance of existing structures</td>
</tr>
</tbody>
</table>

**Project Objectives**

1. Maintain an existing existing marshes in the project area by reducing the rate of tidal exchange.

2. Improve the retention and enhanced freshwater and sediment.

**Specific Goals**

The following goals help contribute to the evaluation of the above objectives:

1. Reduce the rate of marsh loss.
2. Maintain or increase the abundance of plant species typical of a freshwater and intermediate marsh.
3. Decrease variability in water level within the project area.
4. Decrease variability in salinities in the southern portion of the project.
5. Increase vertical accretion within the project area.
6. Increase the frequency of occurrence of SAV within the project area.
Reference Areas

The importance of using appropriate reference areas cannot be overemphasized. Monitoring on both project and reference areas provides a means to achieve statistically valid comparisons, and is therefore the most effective means of evaluating project success. The evaluation of sites was based on the criteria that both project and reference areas have a similar vegetative community, soil type, and hydrology.

In addition to the above criteria, reference areas were chosen to pair with each Conservation Treatment Units (CTU) within the project area. Three reference areas were chosen. Reference area 1 is located south of Little Carencro Bayou and west of Vose Road and is the reference area for CTU 1. The reference area for CTU 2 is located east of Superior Canal and south of Evangeline. The reference area for CTU 3 is located east of Superior Canal and north of Turtick Road (reference 1). Both the project area and the reference areas are classified as freshwater marsh or intermediate marsh (Chabreck and Lincombe 1988) and contain mainly the sediments Muck and Clovelly Muck soils (USDA/NRCS 1995). Reference areas will be used in the evaluation of all monitoring elements. Although the reference areas have many similarities to the project site, we recognize that interpretation of reference data can be limited or confounded by natural or anthropogenic processes.

Monitoring Elements

The following monitoring elements will provide the information necessary to evaluate the specific goals listed above:

1. Habitat Mapping
   - To document vegetated and non-vegetated areas, color infrared aerial photography (1:40,000 scale with ground controls) will be obtained. These photographs will be photointerpreted, scanned, mosaicked, georeferenced, and analyzed by National Wetlands Research Center (NWRC) personnel according to the standard operating procedure described by Steyer et al. (1995). The photography will be obtained in 1996 (pre-construction), and in 2002, 2008, and 2017 (post-construction).

2. Vegetation
   - Species richness and relative abundance will be evaluated in the project and reference areas using techniques described in Steyer et al. (1995). More specifically, the Braun-Blanquet method (Mueller-Dombois and Ellenberg 1974) will be utilized. Five stations were chosen within each CTU and reference area and replicate samples will be collected at each station. Relative abundance will be documented in permanent plots to allow revisiting over time. Plot size will be determined after a field investigation. Sites will be sampled once in 1996 (pre-construction) and 1999 (as-built), and in 2002, 2004, 2006, 2009, 2012, and 2015 post-construction.

3. Water Level
   - To monitor water level variability, one continuous recorder will be located within each CTU and one recorder located in each reference...
to the project area on Bayou Pouchut near the northernmost water control structure. Mean daily water level variability and duration and frequency of flooding prior to construction will be compared to mean daily water level variability and duration and frequency of flooding after construction within the project area. Mean daily water level variability and duration and frequency of flooding will also be compared between the project and reference area. Water level will be monitored in 1996-1998 (pre-construction), and in 1999-2004 (post-construction). Upon completion of the dataset, the TAG will assist the CRD Monitoring Manager with development of a sampling plan based on an approximate 50% reduction of effort, if technically advisable.

4. Salinity

To monitor salinities one continuous recorder will be located in each CTU and reference area. Discharge and summary statistics will be used to compare salinities in the project area prior to construction to salinities in the project area after construction. Also, salinities will be compared between the project and reference area. Discrete salinities will be determined at a minimum of five sites within each CTU and reference area.\textsuperscript{5} Salinity data was monitored in 1996-1998 (pre-construction) and in 1999-2004 (post-construction). Upon collection of this data set, the TAG will assist the CRD Monitoring Manager with development of a sampling plan based on an approximate 50% reduction of effort, if technically advisable.

5. Accretion

Vertical accretion rates will be determined in triplicates at each of the five representative stations within each CTU and reference area using techniques described in Steyer et al. (1995). The location of vertical accretion sites will correspond with the location of vegetation sampling sites. Sites will be sampled twice in 1996 and 1999 (pre-construction), and in 2002, 2004, 2006, 2009, 2012, and 2015 (post-construction).

6. Submersed Aquatic Vegetation

The frequency of occurrence of SAV will be compared between project and reference areas. Within the project (by CTU) and reference areas, 5 ponds will be sampled during Fall (October or November) twice in 1996 and 1999 (pre-construction) and in 2002, 2006, 2012, and 2015 (post-construction). Methods described in Nyman and Chabreck (in press) will be used to determine the frequency of occurrence of SAV. Within each pond sampled, the presence/absence of SAV will be determined at 25 random points. Frequency of occurrence will be determined for each pond from the number of points at which SAV occurred and the total number of
points sampled. When SAV occurs at a point, the species occurring will be listed.

7. Marsh Mat Movement

To monitor marsh mat movement, one continuous recorder will be located within CTU #1 and one recorder located in CTU #1 reference area. Mean daily water level variability and duration and frequency of flooding of floating marshes will be determined by comparison to mean daily water level variability and duration and frequency of flooding after construction within the project area. Mean daily water level variability and duration and frequency of flooding of floating marshes will also be compared between the control and reference areas. Marsh mat movement will be monitored in 1998 (pre-construction) and in 1999, 2000, 2001, 2002, 2003, and 2004 (post-construction).

Anticipated Statistical Tests and Hypotheses

The following hypotheses correspond with the monitoring elements that will be used to evaluate the accomplishment of the project goals.

1. Descriptive and summary statistics of historical data (1975, 1978, 1988) and data from aerial photography and GIS interpretation collected prior to project implementation will be used to evaluate marsh to open water ratios and marsh loss rates. If sufficient historical information is available, trend analysis will be done to examine changes in slope between pre- and post-constructions.

   **Goal:** Decrease marsh loss.

2. Time-series model of historical measures ANOVA will be BACI type model (Before-After-Control-Impact). This model will determine if there is a detectable impact (for example, in relative abundance of vegetation) in the project area after construction. Multiple comparisons will be used to compare individual means across different treatment levels. All original data will be checked and transformed (if necessary) to meet the assumptions of ANOVA.

   **Goal:** Increase species richness and relative abundance of plant species typical of a freshwater and intermediate marsh.

   **Hypotheses:**

   \[ H_0: \] Species richness of vegetation within CTU (a) at time \( t \) will not be significantly greater than the species richness of vegetation within reference area (a) at time \( t \).
State of Louisiana
Department of Environmental Quality

USDA Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

Attention: Donald W. Gohnert, State Conservationist and Agent for LA Land & Exploration (LL&E) and Fina Oil and Chemical Co.

Gentlemen:

RE: Proposal to perform dredge and fill activities, to install and maintain rip rap, and to modify/install and maintain water control structures in order to reduce erosion, encourage freshwater, sediment and nutrient influx and to stabilize water levels within a 7,653 acre area of marsh and open water, Brady Canal Hydrologic Restoration Project (PTE:26B), the Bayou Penchant-Lake Penchant watershed in Terrebonne Parish, LA.

This is to acknowledge that you have completed the requirements for Water Quality Certification for the above referenced proposal.

It is our opinion that your proposed project will not violate water quality standards of the State of Louisiana, therefore, we offer no objection to this project provided that the dredged material and the hauled-in fill material used are free of contaminants.

In accordance with statutory authority contained in the Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L. 95-217), the Office of Water Resources certifies that it is reasonable to expect that water quality standards of Louisiana provided for under Section 303 of P.L. 95-217 will not be violated.

Sincerely,

[Linda Korn Levy, Assistant Secretary]
Office of Water Resources

LKL:LG
cc: Corps of Engineers, New Orleans - SW(Terrebonne PW/L)1087 - John Reddoch
Coastal Management Division - C360231/QWPPRA Project PTE-26b
This notice of authorization must be conspicuously displayed at the site of work.

United States Army Corps of Engineers

August 27, 1998

A permit to dredge for material to construct & maintain levees, install & maintain water control structures, modify existing structures & place riprap in order to implement the Brady Canal Hydrologic Restoration Project in Terrebonne Parish, central to a point approximately 10 miles south-southwesterly from Houma, Louisiana, has been issued to Louisiana Department of Natural Resources on August 27, 1998.

Address of Permittee: Post Office Box 34396
Baton Rouge, Louisiana 70804-3996

Permit Number: WL-19-970-0150 and SW(Terrebonne PH ML)1087

for the District Commander

Ronald A. Ventola
Donald W. Gohmert
State Conservationist
U. S. Dept. of Agriculture
Natural Resources Conservation Service
3737 Government Street
Alexandria, Louisiana 71302

RE: C960231, Coastal Zone Consistency Modification
Natural Resources Conservation Service
Direct Federal Action
Brady Canal Hydrologic Restoration CWPPRA Project (TE-28),
revision to construct a water control structure at site one
and provide 8,645' of rock embankment and 6,355' of earthen
embankment for shoreline protection, Terrebonne Parish,
Louisiana

Dear Mr. Gohmert:

The above referenced modification has been reviewed for
consistency with the approved Louisiana Coastal Resource Program
(LCRP) as required by Section 307 of the Coastal Zone Management
Act of 1972, as amended. The project, as modified in this
application, is consistent with the LCRP. If you have any
questions please call Brian Marcks of the Consistency Section at
(225) 342-7591 or 1-800-267-4019.

Sincerely,

Terry W. Howey
Administrator

TWH/JH/bgm
CC: Ron Ventola, NCD-COE
    Clark Allen, CRD
    Charles Mestayer, CMD, FC
    Fred Dunham, LDWF
    Pay Talbot, NRC, Lafayette
    Jerome Zerigia, STMCDF

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES

November 3, 1998

JACK C. CALDWELL
SECRETARY

COASTAL MANAGEMENT DIVISION
P.O. BOX 4487
BAYOU BOOGIE, LOUISIANA 70684-4487
TELEPHONE (225) 342-7391 FAX (225) 342-9439
AN EQUAL OPPORTUNITY EMPLOYER
Carroll Clark, Federal Assistance Section, CRD

Th. Bill Good, Administrator, DNR-CRD

cc: Terry Howey, Administrator, DNR-CRD

Through: Greg DuCote, Program Manager, Interagency Affairs Branch

Through: Jeff Harris, Section Coordinator, Consistency Section

From: Brian Marcks, Consistency Analyst (ext. 7939)

Subject: C960231, Coastal Zone Consistency Proposed Brady Canal Hydrologic Restoration CWPPRA Project PTE-26b, located W of Lake DeCade in Terrebonne Parish, Louisiana

Coastal Management Division is presently reviewing the referenced project for consistency with Louisiana Coastal Resources Program. We would appreciate comments from Coastal Restoration Division as to whether this project, as proposed in the enclosed application, conforms to the CWPPRA Task Force proposal.

Please contact me at 342-7939 if there are any questions or if you require additional information.
MEMORANDUM
June 20, 1996

TO: Brian Marcks
Consistency Analyst, CMD

THRU: Jeff Harris
Consistency Section Coordinator, CMD

THRU: Greg DuCote
Program Manager
Interagency Affairs Branch, CMD

THRU: Terry Howey
Administrator, CMD

THRU: Bill Good
Administrator

THRU: Diane Smith
Assistant Administrator

FROM: James R. Buchtel, P.E.
Engineer Advanced, FAS

SUBJECT: C960231, Coastal Zone Consistency

Response to Request for Comments on Application for the Proposed Brady Canal
Hydrologic Restoration Project PTE-26b (TE-28) as to conformity to the
CWPPRA Task Force Proposal

Technical review and comparison of the referenced application, as presented, reveals that
the applicant has modified the Task Force proposal by deleting two structures and adding four
others plus providing for enhanced shoreline maintenance. These changes maintain the spirit of
the Task Force intent.
On the final page of the application, in the SPOIL BANK MAINTENANCE component, reference is made to shoreline maintenance of Jug Lake being presently permitted. The applicable permit (PI901216), previously held by FINA Oil and Chemical Company, expired on 4 June 1996. They are attempting to renew that permit and simultaneously jointly applying with Louisiana Land and Exploration for the same authority.

Under date of 6 June 1996, we were made aware of a submittal to CMD of a permit modification request to include a 2380' canal dredging feature inside the project area with an estimated excavation of 36,500 c.y., used beneficially parallel to the canal, to create islands. This feature is cited as being necessary by the landowner because of the oil and gas maintenance activity access limitations imposed by a proposed structure and perimeter levee maintenance. This canal feature was not included in the scope of the Task Force proposal and was not addressed in the February 1996 Environmental Assessment promulgated by the sponsoring Federal agency (NRCS). Table 2, and Exhibit C of the original application do not include the additional canal feature requested in the amendment.

CC: JRB

c: Project File--TE-28 (PTE-26b)
   James R. Buchtel, CRD Project Manager
   Vince Cheramie, CRD Monitoring Manager
   Helen K. Hoffpain, CRD Real Estate
   Faye Talbot, Staff Leader, NRCS
May 1, 1996

Mr. Ronald Ventola
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Mr. Larry Wisepape
Certifications Coordinator
Louisiana Department of Environmental Quality
Office of Water Resources
P.O. Box 82215
Baton Rouge, Louisiana 70884-2215

Mr. Terry W. Howey
Director
Louisiana Department of Natural Resources/CMD
P.O. Box 44487
Baton Rouge, Louisiana 70803

Gentlemen:

Please find attached the permit application for the Brady Canal Hydrologic Restoration project. This project was approved for funding under Public Law-646 Coastal Wetlands Planning, Protection, and Restoration Act (Breaux-Johnston Act) on the third year (1993) priority project list. Public Law-646 required projects to be completed in five years; therefore, I would appreciate your handling of this permit in the most expeditious manner possible. The USDA Natural Resources Conservation Service (NRCS) is the federal sponsor for this project. The Louisiana Department of Natural Resources-Coastal Restoration Division is the local sponsor. The Louisiana Land and Exploration Company and Fina Oil and Chemical Company will be the permittees. If you have any questions concerning this application, contact Faye Talbot, Staff Leader, Field Office Project Support Staff, Lafayette, Louisiana, at 318-895-8903.

Sincerely,

Donald W. Gohmert
State Conservationist

cc: Bennett C. Landreneau, Assistant State Conservationist/Water Resources, NRCS, Alexandria
Britt Paul, Water Resources Planning Staff Leader, NRCS, Alexandria
Faye Talbot, Staff Leader, NRCS, FOPSS, Lafayette
Mike Tullos, District Conservationist, NRCS, Houma
LLEP, P.O. Box 7097, Houma LA 70361
Fina Oil & Chemical Company, P.O. Box 206, Houma LA 70361

Attachment
19. Project Purpose -Continued-

The rate of shoreline erosion will be reduced and a hydrologic regime conducive to sediment and nutrient deposition will encourage the reestablishment of emergent and submergent vegetation in eroded areas. Stabilizing water conditions will return the project area to a more historic low energy environment. (See Exhibit "B" for a detailed description of the project area and components).
APPLICANT: Louisiana Land & Exploration and Fina Oil & Chemical Co.

APPLICANT'S ADDRESS: P.O. Box 7097, Houma, LA 70361

AUTHORIZED AGENT'S ADDRESS: 375 Government Street, Alexandria, LA 71302

AGENT'S ADDRESS: 375 Government Street, Alexandria, LA 71302

STATED OF AUTHORIZATION: I hereby authorize, Donald G. Gohmert, State Conservationist, USDA Natural Resources Conservation Service, to act on my behalf as my agent in the processing of this application and to furnish such request, supplementary information in support of this permit application.

APPLICANT'S SIGNATURE: [Signature]

DATE: 04/23/96

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY:

Brady Canal Hydrologic Restoration

LOCATION OF PROJECT:

T19S R14E R13S. Approximate center of project is Lat. 29°32'30" North and Long. 91°29'30" West.

DIRECTIONS TO THE SITE:

Approximately 20 miles south of Houma, LA on LA 315 to Falgout Canal Landing. Proceed west by boat across Lake DeCade to Turtle Bayou where eastern edge of project begins.

See Exhibit A, Figure 1.
EXHIBIT A

STRUCTURE LOCATIONS & DRAWINGS
Figure 1. Location of the Brady Canal Hydrologic Restoration Project (PTE-26h).
<table>
<thead>
<tr>
<th>Evaluation Site</th>
<th>Channel</th>
<th>Existing Structure</th>
<th>Type</th>
<th>Crest Elevation (ft MSL)</th>
<th>Crest Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>112</td>
<td>Timber Bankhead</td>
<td></td>
<td>0.5</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Boat Bay</td>
<td>-8.0</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Var. Crest Width</td>
<td>from 0 to -1.4</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>285</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>315</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>160</td>
<td>Earth Dam Plug</td>
<td>-1.0</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>225</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Var. Crest Section</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>40</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Section 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>60</td>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Section 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>8</td>
<td></td>
<td>-2.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Structure</th>
<th>Type</th>
<th>Crest Elevation (ft MSL)</th>
<th>Crest Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulkhead</td>
<td>0.5</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>Boat Bay</td>
<td>-8.0</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Flap Gates/Stoplog</td>
<td>from 0.5 to 5.0</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Fixed Crest Wall</td>
<td>-0.5</td>
<td></td>
<td>145</td>
</tr>
<tr>
<td>Bridge Bay</td>
<td>-8.5</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>Hook Plug</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel Armor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Var. Crest Section</td>
<td>from 1.0 to 4.0</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Channel Armor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Var. Crest Sections</td>
<td>from 1.0 to 4.0</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>46</td>
</tr>
<tr>
<td>Var. Crest Section</td>
<td>from 1.0 to 4.0</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Fixed Crest Wall</td>
<td>-1.0</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Section 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Crest Wall</td>
<td>-2.5</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Section 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60&quot; Pipe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OK gate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Crest Wall</td>
<td>-0.5</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>42&quot; Pipe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. crest wall gate</td>
<td>from 0 to -3.5</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Flapgate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42&quot; Pipe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. crest wall gate</td>
<td>from 0 to -3.5</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>
Typical Drawing

Weir w/Boat Bay & VC Sections w/Flap Gates

NOTE:
Dimension shown based upon planning survey.

Brody Canal
Hydrologic Restoration
ES-1 Weir W/Boat Bay and
VC Sections w/Flap Gates
Terrebonne Parish, La.
BRADY CANAL
HYDROLOGIC RESTORATION
(PTE-26B)

1. Bulkhead W/Boat Bay and
   Flapgate Stoplog Sections
2. Fixed Crest Weir W/Variable
   Crest Section(s)
3. Fixed Crest Weir
4. Fixed Crest Weir W/Barge
   Bay
5. Rock Plug
6. Stabilized Channel Cross-
   Section
7. Existing Weir

--- Overflow Bank
--- Embankment Construction

XXX Shoreline Maintenance
1 Evaluation Site #
— CTU Boundary

See Drawings for Sections A-A, B-B, and C-C.
TYPICAL DRAWING
FIXED CREST WEIR WITH BARGE BAY

Plan View

Section

Existing Channel Bottom

Barge Bay

0.6' BML

Marsh Level

NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

Brady Canal
Hydrologic Restoration
ES-8 Fixed Crest Weir w/Barge Bay
Terrebonne Parish, La.
TYPICAL DRAWING
WEIR W/VARIABLE CREST SECTION

Plan View

NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

Brady Canal
Hydrologic Restoration
ES-14 Weir W/Variable Crest Sections
Terrebonne Parish, La.
TYPICAL DRAWING
WEIR WITH VARIABLE CREST SECTIONS

Plan View

Normal Marsh Level

1' BML

Existing Channel Bottom

Section

NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

Brady Canal
Hydrologic Restoration
ES-21 Weir w/Variable Crest Sections
Terrebonne Parish, La.
NOTE:
Dimensions shown based upon planning surveys.

Brady Canal
Hydrologic Restoration
ES-23 Weir W/Variable Crest Sections
Terrebonne Parish, La.
NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

Brady Canal
Hydrologic Restoration
ES-24 Fixed Crest Weir
Terrebonne Parish, La.
TYPICAL DRAWING
ROCK CHANNEL LINER

ELEVATION VIEW
NOT TO SCALE

PLAN VIEW
NOT TO SCALE

Brady Canal
Hydrologic Restoration
ES-10,20 Rock Channel Liner
Terrebonne Parish, La.
NOT TO SCALE

**EARTHEN EMBANKMENT
SECTION A - A**

**LOCATION MAP**

Approximately 15,000 feet of Earthen Embankment will be constructed within the reach along the N side of Bayou DeCade and NE side of Voss Canal. Section A-A is indicative of this proposed construction.

NOT TO SCALE

**BRADY CANAL HYDROLOGIC RESTORATION
DETAILS - EARTHEN EMBANKMENT
SECTION A - A**

**TERREBONNE PARISH, LA**

**Typical Section**

**Typical Profile**

Notes: 1. All Elevations Shown in N.G.V.D.
2. Total Length of Earthen Embankment - 15,000 Feet.
3. Total Volume of Earthen Embankment Fill - 60,300 Cubic Yards.
4. Borrow Material To be Taken from Bayou DeCade and Voss Canal.
SPOIL BANK MAINTENANCE
SECTION B - B

Typical Section

120' Maximum
Limits of Borrow Excavation

42' Minimum
Maintenance Earth Fill

-2.5 to -4.0
Borrow Area

1.5' Av. Depth

Notes:
1. MLW = Mean Lower Water Level
2. 120' Maximum, 42' Minimum
3. MLW = Mean Lower Water Level

Typical Profile

Not to Scale

MLW = MLW -1.3

Av. Marsh EL 1.0'

Existing Embankment

BRADY CANAL HYDROLOGIC
RESTORATION

Spoil Bank Maintenance
Section B - B

TERREBONNE PARISH, LA

Revised: 09/06/96

Spoil Bank Maintenance is proposed for approximately 43,000 LF
along Superior Canal, Judge Brey, BoysDeWalt, and Jog Lake.
Sections B-B depict the proposed construction.
SPOIL BANK MAINTENANCE
SECTION B - B

NOT TO SCALE

Typical Section

NOT TO SCALE

120' Maximum
Limits of Borrow Excavation

40' Minimum
Maintenance Earth Fill

Av. Marsh EL.

+2.0'

-2.0 to -4.0

2.6' Av. Depth

Borrow Area

Typical Profile

Notes:
1. All Elevations Shown in M.O.D.
2. Total Length of Earth Embankment to be Maintained: 44,000 Feet.
   This Length Does Not Include Lake Shore of Jug Lake, With Jug Lake Shoreline - Total Length Approximately 89,000 Feet.
4. Borrow Material to be Taken from Superior Canal, Bayou DeClaire, Turtle Bayou, Jug Lake, and Moss Canal.

BRADY CANAL HYDROLOGIC RESTORATION
Spoil Bank Maintenance
Section B - B
TERREBONNE PARISH, LA
OVERFLOW BANK MAINTENANCE
SECTION C - C

NOT TO SCALE

Limits of Borrow Excavation
MLW +0.8 MLW +1.3

Maintenance Earth Fill
EL +2.0

Av. Marsh EL +0.0

Borrow Area

2.6 to -4.0

3.6' Av. Depth

60°

40° Minimum

20°

BRADY CANAL HYDROLOGIC RESTORATION
Overflow Bank Maintenance
Section C - C
TERREBONNE PARISH, LA

Notes:
1. All Elevations Shown in NAVD
2. Total Length of Eroded Embankment to be Maintained: Approx. 23,500 Feet.
   Along Bayou Canopes, Little Bayou Canopes, Brady Canal, and Bayou Pescel.
3. Estimated Amount Volume of Maintenance Earth Fill for Overflow Banks:
   1780 Cubic Yards Based on a Recharge of 200’ of Sticks per Year
4. Borrow Material to be Taken from Adjacent Canal or Bayou.
EXHIBIT B

PROJECT DESCRIPTION
PTE-26B BRADY CANAL HYDROLOGIC RESTORATION

OVERVIEW

The Brady Canal Hydrologic Restoration Project (PTE-26B) has been approved for funding and is included on the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) Third Priority List which was transmitted to Congress in November 1993. The United States Department of Agriculture through the Natural Resources Conservation Service (NRCS) acts as the sponsoring agency for this project. Construction is authorized to begin as soon as compliance with appropriate environmental laws and regulations are achieved and the project plans and specifications are completed.

The Brady Canal project area is located within the Bayou Panchant - Lake Panchant watershed in Terrebonne Parish. The 7,653 acre project area contains fresh and intermediate marshes and is bounded by Bayou Panchant, Brady Canal, and Little Caneiro Bayou to the north, Bayou DeCade and Turtle Bayou to the south, Superior Canal to the east, and Little Caneiro Bayou and Voss Canal to the west.

The project area consists of approximately 4,613 acres of marsh, and 2,660 acres of open water, with the remaining areas classified as "other" habitats (LA Department of Natural Resources, Coastal Restoration Division, unpublished GIS data). The fresh and intermediate marshes of the project area are typically adapted to an average salinity of 0 to 3 ppt.

The area is subject to an average 31 acres per year rate of wetland loss (Dunbar et al. 1992). The conversion of emergent vegetation to open water is largely attributable to human-induced hydrologic changes, as well as subsidence. Hydrologic changes include increased water levels as a result of relative subsidence; increased inundation related to the prograding delta system to the west; and increased rates of tidal water exchange associated with oil and gas canals. In addition, this area was severely damaged by Hurricane Andrew (1992) which caused land loss and severe damage to the banks of Bayou DeCade, which buffers this area from saltwater. Within the present setting, all of these factors have an adverse effect on the highly organic soils and fresh to intermediate vegetative communities.

A seasonal supply of sediment-laden, fresh water from the Atchafalaya River allows enhancement of freshwater and sediment introduction into the project area. Natural and human-made landforms within the project area allow for management of water introduction and tidal water exchange. In combination, such management can provide for the amelioration of subsidence, erosion by tidal currents, and large, rapid fluctuations of salinity, all of which contribute to marsh loss in the present setting.

The proposed project will improve hydrologic conditions in order to maintain existing marshes in the project area. The project objectives are:

1) Enhance and promote freshwater introduction and sediment retention.
2) Reduce abnormal tidal flux through human-made channels and enlarged natural channels.
Structural components of the project are as follows (see attached map):

1) Fixed crest weir with barge bay
2) Fixed crest weirs with and without boat bays
3) Variable crested weirs
4) Rock plug
5) Stabilized channel cross sections
6) Earthen shoreline embankment.

Benefits from the implementation of this project are as follows:

**Primary**
- Protect 188 acres of emergent marsh
- Enhance the 7,653-acre project area through increased productivity of emergent and submerged aquatic vegetation
- Stabilize salinity levels within the project area
- Shoreline protection will prevent progressive linkage of existing ponds within the project area with encroaching tidal channels and open water outside of the project area

**Secondary**
- Improve fish and wildlife habitats
- Increase recreational opportunities for fish and wildlife-related sports

The data clearly shows that marsh deterioration is affecting the overall physical integrity of the Brady Canal Project area. Although no direct land losses due to human activities are now occurring, indirect losses attributable to past activities conducted locally as well as regionally are still occurring in conjunction with losses due to natural processes. The overall marsh deterioration apparent in the project area indicates a need for management practices that control and reduce the losses.
EXHIBIT C

STRUCTURAL COMPONENTS & DIMENSIONS
## Proposed Structural Components

<table>
<thead>
<tr>
<th>Structure or Site</th>
<th>Structure Type</th>
<th>Sheet Piling</th>
<th>Earth/Rock Fill</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES 1 - Brady Canal</td>
<td>Bulkhead with Weir</td>
<td>8520 Square Feet</td>
<td>100 Cubic Yards</td>
</tr>
<tr>
<td>ES 6</td>
<td>Weir With Barge Bay</td>
<td>14,175 Square Feet</td>
<td>***</td>
</tr>
<tr>
<td>ES 7</td>
<td>Rock Plug</td>
<td>NA</td>
<td>4375 Cubic Yards</td>
</tr>
<tr>
<td>ES 10</td>
<td>Rock Liner</td>
<td>NA</td>
<td>1440 Cubic Yards</td>
</tr>
<tr>
<td>ES 14</td>
<td>Weir With V/C Sect.</td>
<td>3500 Square Feet</td>
<td>240 Cubic Yards</td>
</tr>
<tr>
<td>ES 20</td>
<td>Rock Liner</td>
<td>NA</td>
<td>1365 Cubic Yards</td>
</tr>
<tr>
<td>ES 21</td>
<td>Weir With V/C Sect.</td>
<td>3900 Square Feet</td>
<td>240 Cubic Yards</td>
</tr>
<tr>
<td>ES 23</td>
<td>Weir With V/C Sect.</td>
<td>4400 Square Feet</td>
<td>230 Cubic Yards</td>
</tr>
<tr>
<td>ES 24</td>
<td>Fixed Crest Weir</td>
<td>7000 Square Feet</td>
<td>240 Cubic Yards</td>
</tr>
<tr>
<td>Earthen Embankment</td>
<td>NA</td>
<td>NA</td>
<td>60,300 Cubic Yards</td>
</tr>
</tbody>
</table>

*** Earth Fill For this Structure included in the Earthen Embankment Volume.
STRUCTURAL COMPONENTS

This project will consist of the installation of weirs with boat and barge bays with fixed and variable crest sections, channel section stabilization, a rock plug, bank and shoreline rehabilitation and/or maintenance, and overflow bank maintenance. The installation of these structural components will reduce adverse tidal fluctuations within the project area and manage the available freshwater and nutrients that are presently flushing through the area. The following list of structural components will be installed or maintained within the project area:

**ES-1** - This structure will replace an existing timber bulkhead with a boat bay at the head of Brady Canal. This structure will consist of the installation of 8520 square feet of sheet piling (Estimated quantity may vary after geotechnical investigation). Within the center section of the structure will be a 10' wide boat bay with the invert elevation set at -5.0 NGVD. On either side of the boat bay will be a 6' wide variable crest weir section with flap gates on the interior side. These stop logs can be adjusted from -5.0 NGVD to +1.5 NGVD. The flap gates will be constructed such that the gates can be locked in the open position should conditions warrant. Approximately 100 cubic yards of earth fill material will be required around the ends of the bulkhead.

**ES-6** - This fixed crest weir with a barge bay will be placed across a oil field access canal on the north side of Bayou DeCade just west of Jug Lake. This structure will consist of the installation of 14,175 square feet of sheet piling (Estimated quantity may vary after geotechnical investigation). The barge bay will be 70' wide with the invert 8.5' below marsh level (BML) or at an elevation of about -7.5 NGVD. A fixed crest with a 145' will be set at 0.5 BML. On each side of the canal will be a 50' wide section set at +4.0 NGVD to tie into the embankment. Associated earth fill quantity around the wing walls is included in the Earthen Embankment volume.

**ES-7** - This approximately 7,000 tons of loose rock rip rap in the oil field access canal on the north side of Bayou DeCade and west of site 6. This rock will serve as a plug to negate water exchange at this location. The top of the rock will be set at +4.0 NGVD to correspond to the elevation of the earthen embankment on either side of the canal. The volume of earth fill material required is included in the earthen embankment quantity.
ES-10 - This proposed work at this location consists of lining the channel that outlets from the west end of Bay Long into Voss Canal with 2,300 tons of loose rock rip rap. Armor plating will prevent further erosion of the channel section. The rock liner will be about 3’ thick with a 30’ top width perpendicular to the direction of flow. The volume of earth work at this site is included within the quantity defined by earthen embankment.

ES-14 - The proposed structural measures at this location will consist of replacing an existing fixed crest weir with a fixed crest weir with a variable crest section. This site is located on the east side of Little Carencro Bayou immediately north of Camp Better Livin. This installation will require 3500 square feet of sheet piling (Estimated quantity may vary after geotechnical investigation). The 35’ section of fixed crest weir will be placed at 1’ BML (approximately 0.0 NGVD) and the 6’ wide variable crest section will allow stop logs to be placed from 1’ BML to 6’ BML. Approximately 240 cubic yards of earth fill material will be required to tie the wing walls into the existing bank.

ES-28 - Proposed construction at this site consists of lining the opening at the northwest corner of Jug Lake that connects to the interior marsh with approximately 2,000 tons of loose rock rip rap. Armor plating will prevent further erosion of the channel section. The rock liner will be about 3’ thick with a 30’ top width perpendicular to the direction of flow. Approximately 115 cubic yards of earth fill will be required to tie the armored section into surrounding normal ground and embankment on Jug Lake.

ES-21 - Proposed measures for this site will include the installation of 3900 square feet of sheet pile (Estimated quantity may vary after geotechnical investigation) to replace an existing timber weir. This site is located on the north side of Jug Lake. The weir will have 30’ of fixed crest weir set at 1.0’ BML (approximately 0.0 NGVD) and three 6’ wide variable crest sections where the stop logs can be adjusted from 1.0’ BML to 6.0’ BML. Approximately 240 cubic yards of earth fill material will be required around the wing walls of the weir.

ES-23 - This proposed work includes the installation of 4,400 square feet of sheet pile (estimated quantity may vary after geotechnical investigation) to replace an existing fixed crest weir. This site is located on the east end of Jug Lake. The 46’ length of fixed crest the weir will be placed at 1.0’ BML (approximately 0.0 NGVD) and the two 6’ wide variable sections will allow the stop logs to be adjusted between 1.0’ and 6.0’ BML. Approximately 230 cubic yards of earth fill material will be required to around the wing walls.
ER-24 - Proposed improvements at this location include the installation of 7,000 square feet of sheet pile (estimated quantity may vary after geotechnical investigation) to replace an existing fixed crest weir. This site is located adjacent to the southeast corner of Jug Lake. The weir to be placed will have 30’ of weir crest set at 1.0’ BML and a 50’ length set at 2.5’ BML. Approximately 240 cubic yards of earth fill material will be required around the wing walls.

EARTH EMBANKMENT - Proposed improvements associated with this item include the placement of approximately 60,300 cubic yards of earth fill material to rehabilitate and reconstruct approximately 15,000 of channel bank along Bayou DeCade and Voss Canal. Earth fill material will be borrowed from the adjacent canal area. Where necessary a geotextile cloth will be placed under the embankment.

MAINTENANCE COMPONENTS

SPOIL BANK MAINTENANCE - Proposed work included within this measure will be maintaining approximately 63,000 feet of spoil bank along Superior Canal, Turtle Bayou, Bayou DeCade, Voss Canal, and Jug Lake. Maintenance of the shoreline of Jug Lake is presently permitted. However, it will also be include within the scope of this permit request. This work will involve placing approximately 15,300 cubic yards of earth fill material on a yearly basis in order to maintain the integrity of the spoil banks. Borrow material will be taken from the adjacent water body.

OVERFLOW BANK MAINTENANCE - This proposed work is targeted at maintaining the overflow banks along Bayou Carencro, Little Bayou Carencro, Brady Canal, and Bayou Penchant. It is estimated that 1590 cubic yards of earth fill per year will be required to maintain weak reaches within the overflow bank areas.

MAUVAINS BOIS RIDGE - It is anticipated that there will be areas within the existing ridge that will require maintenance throughout the 20 year life of the project. The proposed work will require the placement of earth fill material and/or loose rock rip rap. In addition, there is an area where the ridge is breached between CTU 1 and CTU 3 that will be monitored and may require armor plating in the future. Maintenance quantities are estimated at 1200 cubic yards of earth fill material on an annual cycle and approximately 1000 tons of loose rock rip rap on a five year cycle.
May 20, 1996

Marilyn Forbs
Department of Natural Resources
P. O. Box 44487
Baton Rouge, Louisiana 70804-4487

RE: Brady Canal Area

Dear Ms. Forbs:

Enclosed you will find an executed Affidavit of Notification to Owner of Property dated May 20, 1996. Should you need anything further, please do not hesitate to contact me.

Sincerely,

[Signature]

W. L. Berry

WLB/jmc

Enclosure

cc: Faye Talbot-NRCS
    Kermit Coulon-LL&E, Houma, LA
STATE OF LOUISIANA
PARISH OF ORLEANS

The Louisiana Land and Exploration Company, by W. L. Berry, is applying to the Coastal Management Division of the Louisiana Department of Natural Resources for a Coastal Use Permit for the purpose of:

Hydrologic Restoration

This activity is to occur on the following described property:
Brady Canal area, T19S-R14E-R15E: Approximate center of project is Latitude 29° 32' 30" North and Longitude 91° 29' 30" West. (See permit application filed by letter dated May 1, 1996 to Mr. Terry W. Howey-LDNR.)

Further, with regard to ownership of the above described property (check appropriate block):

[ ] I am the owner of the property on which the above described activity is to occur.

[ ] I have made every reasonable effort to determine the identity and current address of the owner(s) of the land on which the above described use is to occur, which included, if necessary, a search of the public records of the parish. The owner(s) and their address(es) are as follows (use additional sheets of paper as required):

A copy of the application has been distributed to the above listed owner(s).

Signed this 20th day of May, 1996

BY: ________________________________

APPLICANT

W. L. BERRY
August 21, 1998

Mr. John Reddock
CEMV/N-OD-SW
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Re: Brady Canal Permit

Dear John:

Per our conversation this date, enclosed is the original signed version of the Brady Canal permit.

Very truly yours,

Rachel W. Sweeney
Special Projects Coordinator

RWS/lb

Enclosure

cc:(w/enclosures)

Ms. Faye Talbot, Natural Resources Conservation Service
Mr. Clark Allen, Department of Natural Resources
Mr. Donald W. Gohmert, State Conservationist  
United States Dept. Of Agriculture  
Natural Resources Conservation Service  
3737 Government Street  
Alexandria, Louisiana 71302  

RE: C960231, Coastal Zone Consistency  
Natural Resources Conservation Service  
Direct Federal Action  
Brady Canal Hydrologic Restoration Project and proposed access canal, CWPPRA Project PTE-26b, W of Lake DeCade, Terrebonne Parish, Louisiana  

Dear Mr. Gohmert:  

The above referenced project has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in the application, is consistent with the LCRP. If you have any questions concerning this determination please contact Brian Marcks of the Consistency Section at (504)342-7591.  

Sincerely,  

Terry W. Howey  
Administrator  

cc: Fred Dunham, LDWF  
    James Buchtel, CRD  
    Frank Cole, CMD/FC  
    Ron Ventola, COE-NOD  
    Robert Jones, Terrebonne Parish
June 6, 1996

Brian Marks  
Coastal Resource Management Specialist III  
Louisiana Department of Natural Resources  
Coastal Management Division  
P.O. Box 44487  
Baton Rouge, Louisiana 70804-4487

Dear Mr. Marks:

Enclosed please find the additional drawing we spoke about for the Brady Canal Hydrologic Restoration Plan. This drawing was omitted in the original permit application. The drawing shows the location, typical section, and cubic yards of the access canal.

The access canal is needed as a result of plugging the location canal at evaluation site 7 for hydrologic restoration.

Sincerely,

Faye Talbot  
Staff Leader  
NRCS

Enclosure

cc: Gary Eldridge, Civil Engineer, NRCS, Alexandria, LA

The Natural Resources Conservation Service  
is an agency of the  
United States Department of Agriculture  
AN EQUAL OPPORTUNITY EMPLOYER
PROPOSED ACCESS CANAL TO BE DREDGED IN CONJUNCTION WITH THE BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LOCATED IN SECTION 31, T19S - R15E AND SECTION 36, T19S - R14E, TERREBONNE PARISH, LA.
MEMORANDUM

June 21, 1996

To: Carroll Clark,
   Federal Assistance Section, CRD

Through: Bill Good,
         Administrator, DNR-CRD

Through: Terry Howey,
         Administrator, DNR-CRD

Through: Greg DuCote,
         Program Manager, Interagency Affairs Branch

Through: Jeff Harris,
         Section Coordinator, Consistency Section

From: Brian Marcks,
      Consistency Analyst (ext. 7939)

Subject: C960231, Coastal Zone Consistency Revision

Proposed revision to Brady Canal Hydrologic Restoration
CWPPRA Project PTK-26b, located W of Lake DeCade in
Terrebonne Parish, Louisiana

Coastal Management Division is presently reviewing the above
referenced revision for consistency with Louisiana Coastal
Resources Program. We would appreciate comments from Coastal
Consistency Division as to whether this revision conforms to the
CWPPRA Task Force proposal.

Please contact me at 342-7591 if there are any questions or if
you require additional information.

 Attachments
MONITORING PLAN

PROJECT NO. TE-28 BRADY CANAL HYDROLOGIC RESTORATION

ORIGINAL DATE: May 29, 1996
REVISED DATE: July 23, 1998

Preface

Pursuant to a CWPPRA Task Force decision on April 14, 1998, the original plan was reduced in scope due to budgetary constraints. Specifically, vegetation will be monitored in years 2, 4, and 6, then every three years thereafter. SAV will be monitored at year 15 post-construction, rather than years 13 and 17. Two sondes with marsh mat movement recorders were added to monitor duration and frequency of flooding of floating marsh for years 1998-2004. Water level and salinity will be monitored continuously through 2004. Upon completion and evaluation of this data set, the Technical Advisory Group (TAG) will assist in development of a sampling plan based on an approximate 30% reduction of effort, if technically advisable.

Project Description

The Brady Canal Hydrologic Restoration Project consists of 7,653 ac (3,097 ha) located in the Terrebonne Basin, within the Bayou Penance-Lac Penchant watershed. The project is bounded by Bayou Penchant, Brady Canal, and Little Carenro Bayou to the north, Bayou de Cade and Turtle Bayou to the south, Superior Canal to the east, and Little Carenro Bayou and Voss Canal to the west (figure 1).

Historically, the Atchafalaya River has influenced the establishment of freshwater marsh plant species within the Brady Canal Hydrologic Restoration project area (USDA/NRCS 1995). In 1968 the vegetation in the project area was classified as freshwater, intermediate and brackish marsh (Chabreck et al. 1968) (figure 2). In 1978 the area was classified as intermediate marsh with a small area of brackish marsh in the southern portion of the project along Bayou de Cade (Chabreck and Linscombe 1988).

The Brady Canal Hydrologic Restoration project is bisected by the Mauvais Bois Ridge, resulting in different hydrologic regimes to the north and south of the ridge. The northern section of the project area still receives freshwater and sediments which is provided through overbank flow from Bayou Penchant, Little Carenro Bayou, and Brady Canal (USDA/NRCS 1995). The Mauvais Bois Ridge forms a barrier to reduce the outflow of freshwater. Freshwater and sediment retention has diminished in the southern portion of the project area due to unimpeded throughflow and tidal exchange combined with a decrease in freshwater and sediment (USDA/NRCS 1995).

The project area north of the Mauvais Bois Ridge is dominated by Sagittaria latifolia (bulltongue), Suaeda striata (bogscale), Ludwigia leptocarpa (false loosestrife), Hydrocotyle sp. (pennywort) Eleocharis sp. (pickerush), and Sagittaria latifolia (duck potato). Submerged aquatic vegetation (SAV) in shallow ponds include Nymphaea odorata (white waterlily), Utricularia sp. (bladderwort),
Brady Canal Hydrologic Restoration (TE-28) project boundaries and features.
Figure 2. Typical vegetation communities within the project area in A) 1949, B) 1968, C) 1978, and D) 1988 (O’Neill 1949, Chabreck and Linscombe 1978, and Chabrack and Linscombe 1988.)
Ceratophyllum demersum (coontail), Lemma spp. (duckweed) and Myriophyllum heterophyllum (Eurasian watermilfoil). Flotant marsh formation is evident in some interior ponds and the abundance of Elodea canadensis (water hyacinth) is providing a substrate for other species to colonize. The southern portion of the project below the Maunais Bollis Ridge is dominated by Spartina patens (marsh hay cordgrass), L. leptocarpa, S. lanceolata, and Scirpus americanus (obey bulrush). The common SAV species are C. demersum, M. heterophyllum, and Heteranthera dubia (water stargrass) (USDA/NRCS 1995).

Major changes to the hydrology of the Pecanot Basin, both natural and human induced, have resulted in a complex hydrologic setting (USDA/NRCS 1995). Under natural hydrologic conditions, the Pecanot Basin is confined by natural levee ridges and is open to the west and southwest where it connects with the lower Atchafalaya River, Atchafalaya Bay, and Fourleague Bay. Historically, this hydrologic setting produced an estuarine system created by freshwater introduction in the upper basin and tidal exchange with the bays. Over time hydrologic conditions in the Pecanot Basin were altered by the construction of numerous canals, levees, local water management structures, and major public works projects. Some of the major projects that have helped to alter the hydrology in the basin are the Atchafalaya Basin Floodway, the Avoca Island levee along the lower Atchafalaya River, the Gulf Intracoastal Waterway (GIWW), the Bayou Chene, Boeuf, and Black Projects, the rock weir at Wax Lake, and the Houma Navigation Canal (USDA/NRCS 1995).

Historically, the Atchafalaya River provided freshwater and sediments to the Pecanot Basin through the diversion of flood waters into Bayou Cocodrie via Bayou Boeuf at Morgan City, and into Bayou Pecanot via Bayou Shafer and Bayou Chene (USDA/NRCS 1995). Freshwater input and sediment retention from the Atchafalaya River diminished after the construction of the Atchafalaya Basin Floodway, the Bayou Boeuf Lock on the GIWW, and the construction of the Avoca Island Levee. Additionally, the dredging of numerous canals in the basin has resulted in the breaching of natural hydrologic barriers allowing for a strong tidal influence. These anthropogenic changes have resulted in an acceleration of tidal exchange between freshwater distribution channels and tidal channels thus reducing freshwater retention, accelerating erosion, and facilitating saltwater intrusion (USDA/NRCS 1995).

The natural levee ridge of Bayou DeCade has eroded to below marsh elevation over several thousand feet along the southern project boundary. This has created a direct hydrological connection between the higher salinity waters from the south and the project area as well as decreasing protection from storm surges and tidal scouring. In addition, off grid access canals extending from within the project area to the Bayou DeCade levee ridge have also increased tidal exchange and provided direct routes for saltwater intrusion and reduced freshwater and sediment retention (USDA/NRCS 1995).

Land loss data shows that during the period from 1932 to 1990, about 1,818 ac (736 ha) of land were converted to open water in the Brady Canal Hydrologic Restoration project area. Approximately 52% of the loss occurred over a 16 year period between 1958 and 1974. The average loss per year between 1932 and 1958 was approximately 18 ac (7.3 ha) per year. The average loss of 31 ac (12.5 ha) per year from 1983 to 1990 illustrates an increase in land loss rates for the project area (Danbar
et al., 1992). Land loss data in the project area indicates that losses were greatest in the southwest portion of the project (USDA/NRCS, 1995).

The Brady Canal Hydrologic Restoration project involves the installation and maintenance of canal plugs, the repair, construction, and maintenance of levees, and the placement of stabilized channel cross-sections. The structures are designed to reduce adverse tidal effects in the project area as well as to better utilize available freshwater and sediments.

The principle project features include (figure 1):

1. Bulkhead with boat bay and two faggoted variable crest sections (1)
2. Fixed crest weir with barge bay (1)
3. Fixed crest weir with variable crest section(s) (3)
4. Fixed crest weir (1)
5. Rock plug (1) (315 ft)
6. Stabilized channel cross-section (rock) (2)
7. Earthen embankment (15,000 ft)
8. Maintenance of existing overflow bank (21,600 ft)
9. Maintenance of shore and earthen embankment
10. Maintenance of existing structures

**Project Objectives**

1. Maintain and enhance existing marshes in the project area by reducing the rate of tidal exchange.
2. Improve the retention of introduced freshwater and sediment.

**Specific Goals**

The following goals will contribute to the evaluation of the above objectives:

1. Decrease the rate of marsh loss.
2. Maintain or increase the abundance of plant species typical of a freshwater and intermediate marsh.
3. Decrease variability in water level within the project area.
4. Decrease variability in salinities in the southern portion of the project.
5. Increase vertical accretion within the project area.
6. Increase the frequency of occurrence of SAV within the project area.
Reference Areas

The importance of using appropriate reference areas cannot be overemphasized. Monitoring on both project and reference areas provides a means to achieve statistically valid comparisons, and is therefore the most effective means of evaluating project success. The evaluation of sites was based on the criteria that both project and reference areas have a similar vegetative community, soil type, and hydrology.

In addition to the above criteria, reference areas were chosen to pair with the three Conservation Treatment Units (CTU) within the project area. Three reference areas were chosen. Reference area 1 is located south of Little Carencro Bayou and west of Voss Canal and is the reference area for CTU 1. The reference area for CTU 2 is located east of Superior Canal and south of Bayou Penchant. The reference area for CTU 3 is located east of Superior Canal and north of Turtle Bayou (figure 1). Both the project area and the reference areas are classified as freshwater marsh to intermediate marsh (Chabreck and Linscombe 1988) and contain mainly the Allemand Muck and Clovelly Muck soils (USDA/NRCS 1995). Reference areas will be used in the evaluation of all monitoring elements. Although the reference areas have many similarities to the project site, we recognize that interpretation of reference data can be limited or confounded by natural or anthropogenic processes.

Monitoring Elements

The following monitoring elements will provide the information necessary to evaluate the specific goals listed above:

1. Habitat Mapping
   - To document vegetated and non-vegetated areas, color infrared aerial photography (1:12,000 scale with ground control) will be obtained. The photography will be photointerpreted, scanned, mosaicked, georectified, and analyzed by National Wetlands Research Center (NWRC) personnel according to the standard operating procedure described in Steyer et al. (1995). The photography will be obtained in 1998 (pre-construction), and in 2002, 2008, and 2017 (post-construction).

2. Vegetation
   - Species richness and relative abundance will be evaluated in the project and reference areas using techniques described in Steyer et al. (1995). More specifically, the Braun-Blanquet method (Mueller-Dombois and Ellenberg 1974) will be utilized. Five stations were chosen within each CTU and reference area and replicate samples will be collected at each station. Relative abundance will be documented in permanent plots to allow revisiting over time. Plot size will be determined after a field investigation. Sites will be sampled once in 1996 (pre-construction) and 1999 (as-built), and in 2002, 2004, 2006, 2009, 2012, and 2015 post-construction.
3. Water Level
To monitor water level variability, one continuous recorder will be located within each CTU and one recorder located in each reference area. One additional recorder will be located outside the project area on Bayou Pechnaut near the northernmost water control structure. Mean daily water level variability and duration and frequency of flooding prior to construction will be compared to mean daily water level variability and duration and frequency of flooding after construction within the project area. Mean daily water level variability and duration and frequency of flooding will also be compared between the project and reference areas. Water level will be monitored in 1996-1998 (pre-construction) and in 1999-2004 (post-construction). Upon collection of this data set, the TAG will assist the CRD Monitoring Manager with evaluation of the data and development of a sampling plan based on an approximate 30% reduction of effort, if technically advisable.

4. Salinity
To monitor salinities one continuous recorder will be located in each CTU and reference area. Descriptive and summary statistics will be used to compare salinities in the project area prior to construction to salinities in the project area after construction. Also, salinities will be compared between the project and reference area. Discrete salinities will be determined monthly at five sites within each CTU and reference area. Salinity will be monitored in 1996-1998 (pre-construction) and in 1999-2004 (post-construction). Upon collection of this data set, the TAG will assist the CRD Monitoring Manager with evaluation of the data and development of a sampling plan based on an approximate 30% reduction of effort, if technically advisable.

5. Accretion
Vertical Accretion will be determined in triplicate at each of the five representative stations within each CTU and reference area using techniques described in Steyer et al. (1995). The location of vertical accretion sites will correspond with the location of vegetation sampling sites. Sites will be sampled twice in 1996 and 1999 (pre-construction), and in 2002, 2004, 2006, 2009, 2012, and 2015 (post-construction).

6. Submersed Aquatic Vegetation
The frequency of occurrence of SAV will be compared between project and reference areas. Within the project (by CTU) and reference areas, 5 ponds will be sampled during Fall (October or November) twice in 1996 and 1999 (pre-construction) and in 2002, 2006, 2012, and 2015 (post-construction). Methods described in Nyman and Chabreck (in press) will be used to determine the
frequency of occurrence of SAV. Within each pond sampled, the presence/absence of SAV will be determined at 25 random points. Frequency of occurrence will be determined for each pond from the number of points at which SAV occurred and the total number of points sampled. When SAV occurs at a point, the species occurring will be listed.

7. Marsh Mat Movement

To monitor marsh mat movement, one continuous recorder will be located within CTU #1 and one recorder located in CTU #1 reference area. Mean daily water level variability and duration and frequency of flooding of floating marshes will be determined by comparison to mean daily water level variability and duration and frequency of flooding after construction within the project area. Mean daily water level variability and duration and frequency of flooding of floating marshes will also be compared between the project and reference areas. Marsh mat movement will be monitored in 1998 (pre-construction) and in 1999, 2000, 2001, 2002, 2003, and 2004 (post-construction).

Anticipated Statistical Tests and Hypotheses

The following hypotheses correspond with the monitoring elements and will be used to evaluate the accomplishment of the project goals.

1. Descriptive and summary statistics on historical data (NBS 1956, 1978, 1988) and data from aerial photography and GIS interpretation collected during post-project implementation will be used to evaluate marsh to open water ratios and marsh loss rates. If sufficient historical information is available, regression analyses will be done to examine changes in slope between pre- and post conditions.

   Goal: Decrease rate of marsh loss.

2. The basic model of a repeated measures ANOVA will be BACI type model (Before-After-Control-Impact). This model will determine if there is a detectable impact (for example, in relative abundance of vegetation) in the project area after construction. Multiple comparisons will be used to compare individual means across different treatment levels. All original data will be analyzed and transformed (if necessary) to meet the assumptions of ANOVA.

   Goal: Increase species richness and relative abundance of plant species typical of a freshwater and intermediate marsh.
Hypothesis A:

$H_0$: Species richness of vegetation within CTU (a) at time $i$ will not be significantly greater than the species richness of vegetation within reference area (a) at time $i$.

$H_1$: Species richness of vegetation within the CTU (a) at time $i$ will be significantly greater than the species richness of vegetation within reference area (a) at time $i$.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B:

$H_0$: After project implementation at time $i$, species richness of vegetation will not be significantly greater than before project implementation.

$H_1$: After project implementation at time $i$, species richness of vegetation will be significantly greater than before project implementation.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis A$_1$:

$H_0$: Relative abundance of vegetation within CTU (a) at time $i$ will not be significantly greater than the relative abundance of vegetation within reference area (a) at time $i$.

$H_1$: Relative abundance of vegetation within CTU (a) at time $i$ will be significantly greater than the relative abundance of vegetation within the reference area (a) at time $i$.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B$_1$:

$H_0$: After project implementation at time $i$, relative abundance of vegetation will not be significantly greater than before project implementation.
H₀: After project implementation at time t, relative abundance of vegetation will be significantly greater than before project implementation.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

3. The primary method of analysis will be to determine differences in daily mean water level variability by descriptive and summary statistics between the project and reference area. Ancillary data (i.e., precipitation, historical) will be included as covariables when available. This additional information may be evaluated through analysis such as correlation, trend, multiple comparisons, and interval estimation. In addition, duration and frequency of flooding in relation to marsh elevation will be determined within the project and reference areas. These analyses will allow for the evaluation of goal 2.

Goal: Decrease mean daily water level variability within the project area.

Hypothesis A:

H₀: Mean daily water level variability within CTU (a) will not be significantly less than the mean daily water level variability within reference area (a) at time t.

H₁: Mean daily water level variability within CTU (a) will be significantly less than the mean daily water level variability within reference area (a) at time t.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B:

H₀: After project implementation at time t, mean daily water level variability will not be significantly less than before project implementation.

H₁: After project implementation at time t, mean daily water level variability will be significantly less than before project implementation.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

4. The primary method of analysis will be to determine differences in salinity levels using descriptive and summary statistics between the project and reference area. Ancillary data (i.e., precipitation, historical) will be included as covariables when available. This additional
information may be evaluated through analysis such as correlation, trend, multiple comparisons, and interval estimation.

**Goal:** Decrease mean variability of salinities in the southern portion of the project area.

**Hypothesis A:**

\[ H_0: \text{Mean variability of salinity within CTU 3 at time } i \text{ will not be significantly less than the mean variability of salinity within reference area 3 at time } i. \]

\[ H_A: \text{Mean variability of salinity within CTU 3 at time } i \text{ will be significantly less than the mean variability of salinity within reference area 3 at time } i. \]

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

**Hypothesis B:**

\[ H_0: \text{After project implementation at time } i, \text{ mean variability of salinity within CTU 3 will not be significantly less than before project implementation.} \]

\[ H_A: \text{After project implementation at time } i, \text{ mean variability of salinity within CTU 3 will be significantly less than before project implementation.} \]

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

5. The primary method of analysis for vertical accretion will be to determine differences in mean vertical accretion rate as evaluated by a repeated measures ANOVA that will consider both spatial and temporal variation and interaction. The basic model of ANOVA will be BACI type model (Before-After-Control-Impact). This model will determine if there is a detectable impact (for example, increase in vertical accretion rate) in the project area after construction. All original data will be analyzed and transformed (if necessary) to meet the assumptions of ANOVA (e.g. normality). This analysis will allow for the evaluation of goal 5.

**Goal:** Increase vertical accretion rate.
Hypothesis A:

\[ H_0: \text{The mean vertical accretion rate within CTU (a) at time i will not be} \]
\[ \text{significantly greater than the mean vertical accretion rate within reference} \]
\[ \text{area (a) at time i.} \]

\[ H_1: \text{The mean vertical accretion rate within CTU (a) at time i will be} \]
\[ \text{significantly greater than the mean vertical accretion rate within reference} \]
\[ \text{area (a) at time i.} \]

If we fail to reject the null hypothesis, any possible negative effects will be
investigated.

Hypothesis B:

\[ H_0: \text{After project implementation at time i, mean vertical accretion within each} \]
\[ \text{CTU will not be significantly greater than before project implementation.} \]

\[ H_1: \text{After project implementation at time i, mean vertical accretion within each} \]
\[ \text{CTU will be significantly greater than before project implementation.} \]

If we fail to reject the null hypothesis, any possible negative effects will be
investigated.

6. The primary method of analysis for SAV occurrence will be to determine the mean frequency
of SAV in the project and reference areas is evaluated by a repeated measures ANOVA that
will consider both spatial and temporal variation and interaction. The basic model of
ANOVA will be the BACI type model (Before-After-Control-Impact). This model will
determine if there is a detectable impact (for example, decrease in SAV occurrence) in the
project area after construction. Multiple comparisons will be used to compare individual
means across different treatment levels. All original data will be analyzed and transformed
(if necessary) to meet the assumption of ANOVA (e.g. normality). These analyses will
allow for the evaluation of goal 6.

Goal: Increase frequency of occurrence of SAV.

Hypothesis A:

\[ H_0: \text{Mean SAV occurrence in CTU (a) at time i will not be significantly higher} \]
\[ \text{than the mean SAV occurrence in reference area (a) at time i.} \]

\[ H_1: \text{Mean SAV occurrence in CTU (a) at time i will be significantly higher than} \]
\[ \text{the mean SAV occurrence in reference area (a) at time i.} \]
If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B:

\( H_0 \): Mean SAV occurrence in each CTU at time i will not be higher than the mean SAV occurrence in each CTU area at preconstruction.

\( H_1 \): Mean SAV occurrence in each CTU at time i will be significantly higher than the mean SAV occurrence in each CTU at preconstruction.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

NOTE: Available ecological data, including both descriptive and quantitative data, will be evaluated in concert with the statistical analysis to aid in determination of overall project success. This includes ancillary data collected in the monitoring project but not used directly in statistical analysis, as well as data available from other sources (USACE, NWRC, DNR, LSU, etc.).

Notes

1. Implementation: Start Construction: February 27, 1998  
   End Construction: June 27, 1999

2. NRCS Point of Contact: Faye Talbot  
   (318) 896-8503

3. DNR Project Manager: Jim Buchtel  
   DNR Monitoring Manager: Jennifer Young  
   DNR DAS Assistant: Chris Cretini  
   (504) 342-6738  
   (504) 447-0991  
   (504) 342-0277


5. DNR staff conducted a field investigation of the project area and reference area on December 17, 1995.
6. DNR/CRD staff conducted a field trip in March, 1996 with NBS and NRCS personnel to determine location of sampling stations.

7. Specific goals will be analyzed by project area and CTU units.

8. References:


ATTACHMENT VI

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

OPERATION, MAINTENANCE AND REHABILITATION BUDGET
2009 Budget Adjustment
### Brady Canal/ TE-28 / PPL 3

#### Three-Year Operations & Maintenance Budgets  07/01/2009 - 06/30/12

<table>
<thead>
<tr>
<th>Project Manager</th>
<th>O &amp; M Manager</th>
<th>Federal Sponsor</th>
<th>Prepared By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian Babin</td>
<td>NRCS</td>
<td>Brian Babin</td>
<td></td>
</tr>
</tbody>
</table>


**Maintenance Inspection**
- 2009/2010: $5,736.00
- 2010/2011: $5,908.00
- 2011/2012: $6,085.00

**Structure Ops/ Nav Aid**
- 2009/2010: $17,000.00
- 2010/2011: $17,000.00
- 2011/2012: $17,000.00

**OCPR Administration**
- 2009/2010: $23,000.00
- 2010/2011: $5,500.00
- 2011/2012: $5,500.00

**NRCS Administration**
- 2009/2010: $-
- 2010/2011: $-
- 2011/2012: $-

#### Maintenance/Rehabilitation

**2009/2010**
- E&D: $85,669.00
- Construction: $1,136,160.00
- Construction Oversight: $64,750.00
- Sub Total - Maint. And Rehab.: $1,286,579.00

**2010/2011**
- E&D: $-
- Construction: $55,125.00
- Construction Oversight: $3,000.00
- Sub Total - Maint. And Rehab.: $58,125.00

**2011/2012**
- E&D: $-
- Construction: $57,881.00
- Construction Oversight: $3,000.00
- Sub Total - Maint. And Rehab.: $60,881.00

#### Annual O&M Budgets

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual O&amp;M Budgets</strong></td>
<td>$1,332,315.00</td>
<td>$86,533.00</td>
<td>$89,466.00</td>
</tr>
</tbody>
</table>

**O & M Budget (3 yr Total)**: $1,508,314.00

**Unexpended O & M Funds**: $299,464.33

**Remaining O & M Budget (Projected)**: $1,208,849.67

Note: 2009-2012 Unexpended O&M budget includes a deduction of $94,083 for MIPR O&M funds allocated for NRCS (see attached worksheet for 09-12 accounting)
OPERATIONS & MAINTENANCE BUDGET WORKSHEET

**Project: TE-28 Brady Canal Hydrologic Restoration**

**FY 09/10 –**

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCPR Administration</td>
<td>$23,000*</td>
</tr>
<tr>
<td>NRCS Administration</td>
<td>$0</td>
</tr>
<tr>
<td>O&amp;M Inspection &amp; Report</td>
<td>$5,736</td>
</tr>
<tr>
<td>Operation:</td>
<td>$12,000**</td>
</tr>
<tr>
<td>Maintenance:</td>
<td>$1,291,579</td>
</tr>
<tr>
<td>E&amp;D:</td>
<td>$85,669</td>
</tr>
<tr>
<td>Construction:</td>
<td>$1,136,160***</td>
</tr>
<tr>
<td>Construction Oversight:</td>
<td>$64,750****</td>
</tr>
<tr>
<td>Navigational Aid Maintenance</td>
<td>$5,000</td>
</tr>
</tbody>
</table>

**Operation and Maintenance Assumptions:**

Refurbishment of the earthen embankments along the perimeter Jug Lake estimated to be approximately 20,000 linear feet in length. The proposed embankment sections shall be constructed to an elevation of +4.0’ NAVD with a 10’ wide top width and 6:1 side slopes. It is assumed that the existing embankment will make up 40% of the proposed section. Therefore, we are reducing the cross sectional area of the proposed section by 40%.

Area: 276 sf. x 20,000/27 = 204,444 cy – 81,777 = 122,666 cy. Use: 123,000 c.y.

Cap approximately 100 linear feet of the earthen embankment on both ends of Structures 21, 23, & 24. The rock blanket shall be approximately 2’ thick and extend the lake floor.

Area: 166 sf. x 200’/27 = 1,230 cy. x 1.5 = 1,845 tons x 3 (structures) = 5,535 tons

Breach closures at eight (8) locations along Carencro Bayou, Little Carencro Bayou and Brady Canal.

Replacement of timber piling and warning signs at Structure No.10.

**2009/2010 Maintenance Project - Construction Cost:**

- Mobilization and Demobilization: $75,000
- Clearing and Grubbing: $25,000
- Earthen Embankments: $369,000
  (123,000 cy. @ $3.00/cy.)
Armored embankment: $442,800  
(5,535 tons @ $80/ton)

Breach Repairs (Carencro Bayou): $ 25,000

Replacement of signs (Structure 10): $ 10,000  
$946,800

Contingency: (20%) $189,360

Total Construction Costs: $1,136,160

**Engineering and Design Cost:**

Design, Plans and Specifications: $68,169  
(6% of construction)

Surveying: $15,000  
(5 days @ $3,000/day)

Permits: $ 2,500

Construction Inspection: $52,000  
(800 hrs @ $65/hr)

Construction Administration: $12,750  
(150 hrs @ $85/hr)

OCPR Administration: $20,000

Total E&D and Construction Oversight: $170,419

Total Overall Estimated Project Costs: $1,306,579

**Structure Operations/ Navigational Aid Maintenance**

Structure Operations: 3 – structures are operated twice annually by Apache Minerals for a total of $12,000**. OCPR Administration: $3,000*

Navigational Aid inspection, maintenance and repairs: $5,000***
FY 10/11 –

OCPR Administration $ 5,500*  
NRCS Administration $ 0  
O&M Inspection & Report $ 5,908  
Operation: $ 12,000**  
Maintenance: $ 63,125  
  E&D: $ 0  
  Construction: $ 55,125***  
  Construction Oversight: $ 3,000****  
  Navigation Aid Maintenance $ 5,000

Operation and Maintenance Assumptions:

Structure Operations: 3 – structures are operated twice annually by landowner for a total $12,000**, OCPR Administration: $3,000*  
Routine Breach Repairs and Levee Refurbishment: 52,500*** x 5% inflation = $55,125, Construction Oversight: $3,000****  
OCPR Admin: $2,500*,  
Navigational Aid inspection, maintenance and repairs: $5,000***

It is anticipated that routine earthen breach repairs and navigation lights maintenance will be required during the fiscal year. The cost for breach repairs and levee refurbishment is based on in-kind service credits to the landowner.

FY 11/12 –

OCPR Administration $ 5,500*  
NRCS Administration $ 0  
O&M Inspection & Report $ 6,085  
Operation: $ 12,000**  
Maintenance: $ 65,881  
  E&D: $ 0  
  Construction: $ 57,881***  
  Construction Oversight: $ 3,000****  
  Navigational Aid Maintenance $ 5,000

Operation and Maintenance Assumptions:

Structure Operations: 3 – structures are operated twice annually by landowner for a total $12,000**, OCPR administration: $3,000*  
Routine Breach Repairs and Levee Refurbishment: 55,125*** x 5% inflation = $57,881, Construction Oversight: $3,000****  
OCPR Admin: $2,500*,
Navigational Aid inspection, maintenance and repairs: $5,000***

It is anticipated that miscellaneous earthen breaches and navigation lights will have to be repaired during the fiscal year. The cost above is based on in-kind service credits to the landowner for repair of breaches.

2009-2012 Accounting

Total Expenditures (Lana Report through April 09): $960,376.38
NRCS Expenditures $-14,627.00
State Expenditures $945,749.38

OCPR Expenditures (April 09 through June 09) $4,741.29

Total State Expenditures: $950,490.67

Total Federal Expenditures: $94,083.00
Total O&M Expenditures: $1,044,573.67

Unexpended O&M Funds: $299,464.33
Request for CWPPRA Project O&M Funding Increase
Project Costs and Benefits Reevaluation
Fact Sheet
September 29, 2009

Project Name: Brady Canal Hydrologic Restoration (TE-28)
PPL: 3
Federal Sponsor: NRCS
Construction Completion Date: July 2000
Projected Project Close-out Date: July 2020

Project Description: The Brady Canal project is a hydrologic restoration project consisting of the installation and maintenance of a fixed crest weir with barge bay, a rock plug, three (3) variable crested weir structures, two (2) rock lined channels, rock armored earthen embankments, overflow banks and rock dikes. These structures were designed to reduce the adverse tidal affects and saltwater intrusion in the project area and to promote freshwater introduction to better utilize available freshwater and sediment retention as well as encourage re-establishment of emergent and sub-aquatic vegetation in eroded areas.

Construction changes from the approved project: N/A

Explain why O&M funding increase is needed: O&M funding is needed in year 2010 to refurbish the rim of Jug Lake, close eight (8) breaches on the northwestern boundary of the project, armor of the earthen tie-ins to the water control structures in Jug Lake and replacement of two (2) timber cluster piles. The majority of the maintenance work recommended for year 2010 is concentrated along the rim of Jug Lake. Over the past several years, since Hurricanes Katrina and Rita, the earthen embankment surrounding Jug Lake has become very thin and narrow, particularly on the southeast side of the lake. The Jug Lake boundary is approximately 20,000 feet in length and is oriented in a northeast to southwest direction with very little marsh remaining on either side of the embankment. For this reason, both sides of the embankment are exposed to high wave energies throughout the year. The negative impacts of the failure of this embankment would render the water control structure in the lake inoperable and allow large volumes of high saline waters into the northern portion of the project area which is primarily fresh, causing the potential for additional marsh loss inside the project area. Another reoccurring maintenance issue is the erosion of the earthen embankment adjacent to the water control structures located along Jug Lake which has required maintenance repairs several times since completion of the project in 2000. The O&M funding increase excludes the repairs of storm related damage (breach on north side of Structure No. 23 in Jug Lake) which is estimated to cost $83,600.

Detail O&M work conducted to date: Below is a summary of all maintenance projects completed to date:

7/30/2007 – Apache Corporation received in-kind service credits for the repair of several breaches along the east bank of Jug Lake and reinforcement of the embankment tie-ins to the water control structures #21, #23 and #24. The repairs were completed on 7/30/2008 at a total cost of $9,103.12.

9/20/2006 – Apache Corporation received in-kind service credits for repairing breaches and refurbishment of low areas along the rim of Jug Lake and embankment tie-ins adjacent to Structures #21, 23 and 24. Repairs were completed on 9/20/2006 at a total cost of $9,265.

10/31/2003 – Apache Corporation received in-kind service credits for refurbishing approximately 5,050 linear feet of earthen embankment along the west bank of Jug Lake. These cost for these repairs were $34,284.87.
5/15/2003 – ConocoPhillips, formerly Burlington Resources, received in-kind service credits for breach repairs along Little Carencro Bayou following Hurricane Lili. This maintenance was completed on 8/15/2003 and cost $31,642.57.

10/21/2002 - Apache Corporation received in-kind service credits for repairing and restoring the existing levee embankment along Turtle Bayou, Superior Canal and Jug Lake. This work was completed at a total cost of $5,310.

2003 Brady Canal Breach Repair Project – This maintenance project was completed on August 13, 2003 and included the installation of approximately 9,667 tons of riprap along the north bank of Bayou Decade, 2,325 linear feet of levee refurbishment and earthen breach repairs along Turtle Bayou and Superior Canal, and replacement of a timber pile on the navigation aid structure at site #6. The total cost, including construction, E&D, Bidding, Construction oversight and as-built surveys, was $600,430.65

**Detail and date of next O&M work to be completed:** It is anticipated that the 2010 maintenance event will begin in the spring of 2010 and shall include the following:

Closure of eight (8) breaches ranging in width of 10’ to 40’ wide along the north and northeastern boundary of the project (Carencro Bayou, Little Carencro Bayou and Brady Canal). In situ material from the adjacent canals shall be used to close the existing breaches.

Refurbishment of approximately 20,000 linear feet of earthen embankment along the perimeter of Jug Lake. These repairs shall include clearing and grubbing the embankment, excavation of material along the lake bottom to restore the embankment and seeding the graded embankment section. This phase of work will also include armoring approximately 100 feet of the embankment on each side of the three (3) water control structures.

Removal and replacement two (2) timber cluster piles on the south side of Structure #6 and reinstalltion of navigational aid equipment.

**Detail of future O&M work to be completed:**


2014 – Navigation Aid Inspections & Maintenance, refurbishment of rock armored earthen embankments and Structure Operations

2015 through 2019 – Routine breach repairs, Navigational Aid Maintenance and Structure Operations

**Originally approved fully funded project cost estimate:** $4,717,920

**Originally approved O&M budget:** $1,344,038

**Approved O&M Budget Increases (1999):** $76,358

**Total O&M obligations to date:** $1,044,574

**Remaining available O&M budget funds:** $299,464
Current Incremental Funding Request: $1,128,972 (excludes $83,600 in storm damage repairs)

Revised fully funded cost estimate $7,125,021

Total Project Life Budget Increase: $1,845,463 (excludes $83,600 in storm damage repairs)

Requested Revised fully funded O&M estimate $3,189,501

Percent total project cost increase of proposed revised budget over original budget: 51.0%

Percent total project cost increase of proposed revised budget over original budget plus net budget changes: 35.0%

Original net benefits based on WVA prepared when project was approved: 337 acres

Estimate of cumulative project wetland acres to date (from quantitative and/or qualitative analysis): 337 acres

Revised estimate of project benefits in net acres through 20 year project life based on the project with and without continued O&M (include description of method used to determine estimate): No anticipated change in estimated net benefits, project is performing as expected.

Original and revised cost effectiveness (cost/net acre) and percent change:
  Original CE = $ 14,000/acre  51.0%
  Revised CE = $ 21,142/acre

Original plus net budget changes and revised cost effectiveness (cost/acre) and percent change:
  Original CE = $ 15,666/acre  35.0%
  Revised CE = $ 21,142/acre
### CWPPRA Project O&M Budget Adjustment Template

**Project Name:** Brady Canal Hydrologic Restoration TE-28  
**Prepared By:** OCPR  
**PPL:** 3  
**Project Sponsor:** NRCS  
**Date Prepared:** 6/24/2009  
**Date Revised:** 10/27/2009

#### SUMMAR Y:

**Benefits:**

<table>
<thead>
<tr>
<th>Year</th>
<th>FY</th>
<th>Original Net Acres</th>
<th>Revised Net Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>337</td>
<td>337</td>
<td></td>
</tr>
</tbody>
</table>

#### Approved O&M Budget vs Obligations to Date:

<table>
<thead>
<tr>
<th>Year</th>
<th>FY</th>
<th>Funding Category</th>
<th>Approved Original O&amp;M Baseline</th>
<th>O&amp;M Obligations to Date</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2000</td>
<td>State O&amp;M &amp; Insp</td>
<td>$1,344,038</td>
<td>$950,491</td>
<td>$950,491</td>
</tr>
<tr>
<td>-1</td>
<td>2001</td>
<td>Corps Admin</td>
<td>$0</td>
<td>$393,547</td>
<td>$393,547</td>
</tr>
<tr>
<td>-2</td>
<td>2002</td>
<td>Fed S&amp;A &amp; Insp</td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-3</td>
<td>2003</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-4</td>
<td>2004</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-5</td>
<td>2005</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-6</td>
<td>2006</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-7</td>
<td>2007</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-8</td>
<td>2008</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-9</td>
<td>2009</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-10</td>
<td>2010</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-11</td>
<td>2011</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-12</td>
<td>2012</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-13</td>
<td>2013</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-14</td>
<td>2014</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-15</td>
<td>2015</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-16</td>
<td>2016</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-17</td>
<td>2017</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-18</td>
<td>2018</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>-19</td>
<td>2019</td>
<td></td>
<td>$0</td>
<td>$94,083</td>
<td>$94,083</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$1,344,038</td>
<td>$1,044,574</td>
<td>$299,464</td>
</tr>
</tbody>
</table>

#### Approved Budgeted O&M Funds less O&M Obligations to Date:

<table>
<thead>
<tr>
<th>Year</th>
<th>FY</th>
<th>Total Approved O&amp;M</th>
<th>O&amp;M Obligations to Date</th>
<th>Remaining Available O&amp;M Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>App.</td>
<td>$1,344,038</td>
<td>$0</td>
<td>$1,344,038</td>
</tr>
</tbody>
</table>

#### Total Approved Budget less Proposed Revised Budget

<table>
<thead>
<tr>
<th>Year</th>
<th>FY</th>
<th>Funding Category</th>
<th>Current Total</th>
<th>Proposed Revised Total</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2000</td>
<td>State O&amp;M &amp; Insp</td>
<td>$1,344,038</td>
<td>$3,081,301</td>
<td>($1,737,263)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corps Admin</td>
<td>$0</td>
<td>$14,117</td>
<td>($14,117)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fed S&amp;A &amp; Insp</td>
<td>$0</td>
<td>$94,083</td>
<td>($94,083)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$1,344,038</td>
<td>$3,189,501</td>
<td>($1,245,463)</td>
</tr>
</tbody>
</table>

#### Change in Total Cost and Cost Effectiveness:

<table>
<thead>
<tr>
<th>Year</th>
<th>FY</th>
<th>Funding Category</th>
<th>Current Total</th>
<th>Proposed Revised Total</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2000</td>
<td>State O&amp;M &amp; Insp</td>
<td>$1,344,038</td>
<td>$3,081,301</td>
<td>($1,737,263)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corps Admin</td>
<td>$0</td>
<td>$14,117</td>
<td>($14,117)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fed S&amp;A &amp; Insp</td>
<td>$0</td>
<td>$94,083</td>
<td>($94,083)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$1,344,038</td>
<td>$3,189,501</td>
<td>($1,245,463)</td>
</tr>
</tbody>
</table>

#### Original Approved vs Proposed Revised Fully Funded Estimates:

<table>
<thead>
<tr>
<th>Year</th>
<th>FY</th>
<th>Original Fully Funded Baseline Est.</th>
<th>Approved Net Budget Change to E&amp;D, Constr., O&amp;M and Monitoring</th>
<th>Additional O&amp;M funding required for remaining project life</th>
<th>Requested Revised Fully Funded Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2000</td>
<td>$4,717,920</td>
<td>$561,638</td>
<td>$1,845,463</td>
<td>$7,125,021</td>
</tr>
</tbody>
</table>

#### As Compared To

<table>
<thead>
<tr>
<th>Year</th>
<th>FY</th>
<th>Original Fully Funded Baseline Est.</th>
<th>Cost Estimate % Change</th>
<th>Cost Effectiveness</th>
<th>Revised Cost Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2000</td>
<td>$4,717,920</td>
<td>51.02%</td>
<td>$14,000</td>
<td>$21,142</td>
</tr>
</tbody>
</table>
TE-28 BRADY CANAL

LEAD AGENCY: Natural Resources Conservation Service

PROJECT FEATURES:
- Site 6 - fixed crest weir with barge bay.
- Site 7 - rock plug.
- Site 10 - stabilization rock armored channel liner.
- Site 14 - fixed crest weir with variable crest section.
- Site 20 - stabilization rock armored channel liner.
- Site 21 - fixed crest weir with three (3) variable crest sections.
- Site 23 - fixed crest weir with two (2) variable crest sections.
- Site 24 - fixed crest weir.
- 4405 ft. - Rock armored earthen embankment.
- 3660 ft. - Rock dike
- 8531 ft. - Earthen embankment
- Maintenance of existing overflow bank (21,600 ft.)
- Maintenance of shore and earthen embankment.
- Maintenance of existing structures.

OPERATION AND MAINTENANCE / REHABILITATION ASSUMPTIONS

1. Water control structures will be maintained and operated through LDNR by third party contractor.

2. The plugs/weirs are functional with settlements up to one foot; if greater than one foot settlement occurs, these plugs will require additional capping with 250 lb. Stone.

   Year 5       Cap Replacement (18" 250 lb. Stone cap total 2,000 tons of rock),
                cap replacement of (24" 600 lb. stone at 5,100 tons of rock), and
                Structure #6 sill maintenance.

   Year 10      Cap Replacement (18" 250 lb. stone cap total 2,000 tons of rock)
                and cap replacement of (24" 600 lb. stone at 3,400 tons of rock).

   Year 15      Cap Replacement (18" 250 lb. stone cap total 1,000 tons of rock)

3. Replace Signage at Year 5, 10, and 15: 100% Replacement
OPERATION AND MAINTENANCE COST CONSIDERATIONS:
(Based on a 20 year project life; cost include inflation)

A. ANNUAL INSPECTIONS: $72,035
   (1 Field day with 3 team members including federal participant, boat and report
   form Schedule A-1)

B. ANNUAL COST OF OPERATIONS: $180,382
   ($6,500/yr. adjusted for inflation for the life of the project)

C. PREVENTATIVE MAINTENANCE $423,736
   ($15,600/yr. adjusted for inflation for the life of the project)

D. COST FOR MAINTENANCE PROJECT AT YEAR 5 (2004)
   (Includes a ten percent construction contingency (cc) and inflation factor of 1.1665.)

1. Contractor Mobilization/Demobilization $27,500
   ($25,000 x 1.1 cc)

2. Cap 18" 250 lb. stone on 6 plugs: $66,000
   (2,000 tons x $30/ton x 1.1 cc)

3. Site 6 Rock SII Installation $6,600
   (200 tons x $30/ton x 1.1 cc)

4. Cap 24" 600 lb. stone on 9,000 linear ft. $134,640
   of embankment (34,000 tons x 15% x
   $24/ton x 1.1 cc)

5. Replace warning signs, two at each plug $6,600
   ($500/sign x 2 each x 6 plugs x 1.1 cc)

Contractor Subtotal $241,340

Contractor Cost with Inflation ($241,340 x 1.1665) $281,523

6. Design Cost/ Administration $10,568
   (2 week project $9,060 x 1 1665 from Schedule D-1)

7. Engineering Consultant Design, Survey and Inspection $29,251
   Basic Services:
   $21,873
   (9% x 243,028 Contractor Cost)

Survey Supplemental Services: $2,916
   (2 days at $1,250/day x 1.1665 from Schedule E-2)

Resident Inspection: $4,462
   (5 workday x $765/day x 1.1665 from Schedule E-3)

TOTAL FOR MAINTENANCE YEAR 5: $321,342

E. COST FOR MAINTENANCE PROJECT AT YEAR 10 (2009)
   (Includes a ten percent construction contingency (cc) and inflation factor of 1.3262.)

1. Contractor Mobilization/Demobilization $27,500
   ($25,000 x 1.1 cc)

2. Cap 18"250 lb. stone on 6 plugs: $66,000
   (2,000 tons x $30/ton x 1.1 cc)

3. Cap 24"600 lb. stone on 9,000 linear ft. $90,209
   of embankment (34,000 tons x 10% x
   $24/ton x 1.1 cc)

4. Replace warning signs, two at each plug $6,600
   ($500/sign x 2 each x 6 plugs x 1.1 cc)

Contractor Subtotal $190,309

Contractor Cost with Inflation ($190,309 x 1.3262) $252,389

6. Design Cost/ Administration $12,016
   (2 week project $9,060 x 1.3262 from Schedule D-1)


   Basic Services: $21,873
      (10.5% x 208,034 Contractor Cost)

   Survey Supplemental Services: $3316
      (2 days at $1,250/day x 1.3262 from
      Schedule E-2)

   Resident Inspection: $4,058
      (5 workday x $765/day x 1.3262 from
TOTAL FOR MAINTENANCE YEAR 10: $293,685

1. Contractor Mobilization/Demobilization ($25,000 x 1.1 cc) $27,500
2. Cap 18" 250 lb. stone on 6 plugs: (1,000 tons x $30/ton x 1.1 cc) $30,000
4. Replace warning signs, two at each plug ($500/sign x 2 each x 6 plugs x 1.1 cc) $6,600

Contractor Subtotal $67,100

Contractor Cost with Inflation ($157,309 x 1.5078) $101,077

6. Design Cost/ Administration (2 week project $9,060 x 1.5078 from Schedule D-1) $13,661

7. Engineering Consultant Design, Survey and Inspection $18,360
   
   Basic Services: $11,129
   (11.0% x 101077 Contractor Cost)
   Survey Supplemental Services: $3770
   (2 days at $1,250/day x 1.5378 from Schedule E-2)
   Resident Inspection: $3,461
   (3 workday x $765/day x 1.5078 from Schedule E-3)

TOTAL FOR MAINTENANCE YEAR 15: $156,720

Previously Expended Funds (through June 10, 1998) $ 0

TOTAL ESTIMATED OPERATION AND MAINTENANCE COST $1,447,900
**OPERATION AND MAINTENANCE (O&M) BUDGET SUMMARY**

**TE-28 BRADY CANAL**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original O&amp;M Budget</td>
<td>$1,267,703</td>
</tr>
<tr>
<td>Revised O&amp;M Budget</td>
<td>$1,447,900</td>
</tr>
<tr>
<td>Budget (Increase) Decrease</td>
<td>$ 180,197</td>
</tr>
</tbody>
</table>
Tim Allen

From: Brian Babin [BrianB@dnr.state.la.us]
Sent: Thursday, April 11, 2002 11:32 AM
To: Tallen@castlexnergy.com
Subject: TE-28 Brady Canal Maintenance Project

Attached is the revised cost estimate that you have requested for year 1 of operation and maintenance for the Brady Canal Project. In our recent meeting held at your office with yourself and Mr. Woodard, we discussed a construction cost of approximately $537,000 to complete the project. However, I failed to go over other cost associated with the project such as engineering fees, surveying and construction administration and inspection. The attached file includes the estimated construction cost and other cost associated with the project.

The actual total project budget is approximately $631,000. Therefore, the cost breakdown between all parties would be as follows:

NRCS (85% total project budget)
(0.85 x $631,000) $536,350

Castex ($631,000 x .15 x .60) $56,790

Burlington ($631,000 x .15 x .40) $37,860

I apologize for overlooking these additional cost associated with the project during our meeting. Should you have any questions or need additional information, please do not hesitate to contact me at (985) 447-0956.

Thanks,
Brian
**COST FOR ADDITIONAL REPAIRS TO PROJECT AT YEAR 1 (2002)**

(Cost has been revised based upon September 2001 annual inspection with NRCS, LDNR and Landowners - Burlington Resources and Caixex-Laterre representatives)

Includes a ten percent construction contingency (cc) and inflation factor 1.1.

1. Contractor Mobilization/Demobilization $50,000
2. Pile Replacement $5,000
3. Broken Stone (Rip-Rap) $184,525
   (6050 tons @ $30.50/ton)
4. Earthen Embankment Construction $40,800
   (8,160 cu. yds. @ $5.0/cu. yd)
5. Geotextile Fabric (23,282 s.y. @ $5.0/s.y.) $116,415
6. Seeding & Fertilizing $3,410
   (3.1 acres @ $1,100/acre)
7. Broken Stone (Rip-Rap) $77,775
   Along Bayou Decade (2,550 tons @ $30.50/ton)
8. Geotextile Fabric - Bayou Decade $60,000
   (12,000 s.y. @ $5.0/s.y.)

**TOTAL ESTIMATED CONSTRUCTION COST:** $537,925

9. Engineering Consultant Design, Surveying and Inspection: $ 93,343

   Basic Services: $44,825
   Survey Supplemental Services: $19,346
   Resident Inspection: $29,172
TOTAL COST FOR REPAIR AT YEAR 1: $631,268
<table>
<thead>
<tr>
<th>Point No.</th>
<th>Point Type</th>
<th>X</th>
<th>Y</th>
<th>Ground Elevation</th>
<th>Condition</th>
<th>Notes</th>
<th>Water Surface Elevation</th>
<th>- Depth</th>
<th>Z</th>
<th>Notes</th>
<th>Datum/Datum</th>
<th>$0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Point geocell</td>
<td>222734</td>
<td>3058544</td>
<td></td>
<td>BREAK A</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Point geocell</td>
<td>222064</td>
<td>3057750</td>
<td></td>
<td>BREAK B</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Point geocell</td>
<td>222224</td>
<td>3058904</td>
<td></td>
<td>BREAK C</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Point geocell</td>
<td>318119</td>
<td>3199871</td>
<td></td>
<td>STRUCTURE 14</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Point geocell</td>
<td>518230</td>
<td>3399996</td>
<td></td>
<td>PILING PLUS</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Point geocell</td>
<td>318394</td>
<td>3394770</td>
<td></td>
<td>STRUCTURE 5</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Point geocell</td>
<td>318498</td>
<td>3387062</td>
<td></td>
<td>ROCK SETTLEMENT AREA</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Point geocell</td>
<td>319448</td>
<td>3394676</td>
<td></td>
<td>STRUCTURE 6</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Point geocell</td>
<td>318121</td>
<td>3402285</td>
<td></td>
<td>STRUCTURE 20</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Point geocell</td>
<td>322855</td>
<td>3403293</td>
<td></td>
<td>STRUCTURE 21</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Point geocell</td>
<td>318938</td>
<td>3407710</td>
<td></td>
<td>STRUCTURE 23</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Point geocell</td>
<td>316647</td>
<td>3424742</td>
<td></td>
<td>STRUCTURE 24</td>
<td></td>
<td></td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Pole Bounding</td>
<td>316593</td>
<td>3402285</td>
<td>-8.3</td>
<td>WESTERLY END OF SITE 1</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Pole Bounding</td>
<td>318639</td>
<td>3403047</td>
<td>-8.3</td>
<td>EASTERN END OF SITE 1</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Pole Bounding</td>
<td>316663</td>
<td>3405772</td>
<td>-8.3</td>
<td>WESTERLY END OF SITE 2 APPROX 1/4 WEST OF POINT</td>
<td>1.7</td>
<td>5</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Pole Bounding</td>
<td>315429</td>
<td>3406067</td>
<td>-8.3</td>
<td>EASTERN END OF SITE 2</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Pole Bounding</td>
<td>315398</td>
<td>3406940</td>
<td>-8.3</td>
<td>CENTER OF SITE 1 (X/Y/Z)</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Pole Bounding</td>
<td>315219</td>
<td>3407222</td>
<td>-8.3</td>
<td>CENTER OF SITE 2 (X/Y/Z)</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Pole Bounding</td>
<td>319508</td>
<td>3411929</td>
<td>-8.3</td>
<td>WESTERLY END OF SITE 3</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Pole Bounding</td>
<td>320177</td>
<td>3413208</td>
<td>-8.3</td>
<td>EASTERN END OF SITE 3</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Pole Bounding</td>
<td>316485</td>
<td>3413275</td>
<td>-8.3</td>
<td>WESTERLY END OF SITE 4</td>
<td>1.7</td>
<td>3</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Pole Bounding</td>
<td>320770</td>
<td>3414301</td>
<td>-8.3</td>
<td>EASTERN END OF SITE 4</td>
<td>1.7</td>
<td>3</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Pole Bounding</td>
<td>324040</td>
<td>3417823</td>
<td>-8.3</td>
<td>CENTER OF SITE 7 (X/Y/Z)</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Pole Bounding</td>
<td>322895</td>
<td>3436548</td>
<td>-8.3</td>
<td>CENTER OF SITE 8 (X/Y/Z)</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Pole Bounding</td>
<td>322841</td>
<td>3431640</td>
<td>-8.3</td>
<td>CENTER OF SITE 9 (X/Y/Z)</td>
<td>1.7</td>
<td>2</td>
<td></td>
<td>$0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Block</th>
<th>Accumulated Length of Line Based on 2021 Specifications in $0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>651 feet</td>
</tr>
<tr>
<td>2</td>
<td>489 feet</td>
</tr>
<tr>
<td>3</td>
<td>100 feet</td>
</tr>
<tr>
<td>4</td>
<td>100 feet</td>
</tr>
<tr>
<td>5</td>
<td>100 feet</td>
</tr>
<tr>
<td>6</td>
<td>155 feet</td>
</tr>
<tr>
<td>7</td>
<td>100 feet</td>
</tr>
<tr>
<td>8</td>
<td>100 feet</td>
</tr>
<tr>
<td>9</td>
<td>100 feet</td>
</tr>
<tr>
<td>Total</td>
<td>2705 feet</td>
</tr>
</tbody>
</table>
ATTACHMENT VII

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

OPERATIONS SCHEDULE & REPORTS

The purpose of this attachment is to define the operation schedule and compile structure operation reports for operable structures throughout the project life. Upon completion of structure adjustments, the contracting party tasked to perform the operations will be required to provide LDNR with a detailed report containing the following information.

- Condition of water control structures and stop logs with photos.
- Description of structures in need of maintenance.
- Dates and time of structure adjustments and weather conditions.
- Number of stop logs removed or replaced.
- Personnel and equipment used to perform the work.
- Elevations of stop logs before and after adjustments.
- Water levels on either side of structure.
- Person contacted for access to property and copy of access agreement should one be required.
BRADY CANAL HYDROLOGIC RESTORATION PROJECT

STRUCTURE OPERATION SCHEDULE

The basic philosophy for operation of the project structures is to allow fresh water from the north to move into the project area and block southerly water fluctuations by keeping these structures as high as possible. During emergency and storm events the stop logs in the variable weir structures should be removed to allow water out of the project area. Generally, during the fall (September 1) of each year, set all structures to maximum elevations, during the Spring (March 15) of each year, lower/remove stop logs to natural channel elevation. This operation may change once the Pochant Project comes on line, and cuts in the southern portion of the project area are repaired. Therefore, operation of the project should be observed and revised as needed.

The Brady Canal Project area is divided into Conservation Treatment Unit (CTU#1), CTU#2 and CTU#3. Operational plans and procedures for CTU#1 are designed to stabilize water level fluctuations. Operational plans and procedures for CTU#2 and CTU#3 are designed to expose mud flats for seed germination and planting. Once vegetative planting is established, operations and procedures for CTU#3 are designed to gradually increase water levels to maintain and enhance vegetative growth.

I. Operation and Water Management Schedule

A. CTU#1 - Water Management Scheme

1. Structure #14: Fall (September 1) of each year, set structures to maximum elevation. Spring (March 15) of each year, lower/remove stop logs to natural channel.

B. CTU#2 - Water Management Scheme

1. No structures to operate in CTU#2

C. CTU#3 - Water Management Scheme

1. Structures #21 and #23: Fall (September 1) of each year, set structure to maximum elevation. Spring (March 15) of each year, lower/remove stop logs to natural channel elevation.

II. Safety Provisions

A. CTU#1 - Special Safety Provisions

1. Storms: Immediately following heavy rain storms or storm tidal surges, all weirs shall be opened, to provide normal gravity
drainage for the area as well as to protect the integrity of the levee system.

B. CTU#2 - Special Safety Provisions
   1. No provisions.

C. CTU#3 - Special Safety Provisions
   1. Storms: Immediately following heavy rainstorms or tidal surges, all weirs shall be opened, to provide normal gravity drainage for the area as well as to protect the integrity of the levee system.
April 25, 2002

Mr. Clark Allen  
Coastal Restoration Division  
Louisiana Department of Natural Resources  
P.O. Box 44027, Capital Station  
Baton Rouge, LA 70804-4027  

SUBJECT: DNR Contract No. 2503-30-39 – Surveying & Engineering Services  
Structure Operation and Inspection  
P&O Project Nos. 10-1630, 10-1631, & 10-1632

Dear Mr. Allen:

In accordance with your letter and scope of work dated March 1, 2002 and subsequent verbal instructions, our field party inspected and operated the following listed navigation lights, flap gates and weirs:

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>ITEM OF WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA-23 Barataria Waterway</td>
<td>Inspected the condition of the crest weir and removed the stoplogs at Site 1.</td>
</tr>
<tr>
<td>Ba-02 GFWW / Clovelly Farms</td>
<td>Inspected &amp; cleaned flap gate at Site 91. Inspected The variable crest weir and installed stoplogs at Site 33. Inspected navigation lights at Site 14A.</td>
</tr>
</tbody>
</table>

Enclosed please find three (3) bound reports showing the results and photographs of our inspection and operation of the above listed structures.
We appreciate having the opportunity of providing these services to DNR. Please contact us if you have any questions or require additional information.

Very truly yours,

Michael P. Maillet, P.L.S.
Chief Surveyor

cc. w/encl.  Mr. Brian Babia
DNR/CRD
Nicholls State University
P.O. Box 2079
Thibodaux, LA 70310
FIELD TRIP REPORT

PROJECT: TE-28 Brady Canal Hydrologic Restoration Project
LOCATION: Terrebonne Basin, Terrebonne Parish
PURPOSE: Inspect the four (4) navigation lights at Site 6, and operate and adjust the variable crest weir structure at Site 14.
PARTICIPANTS: Mike Maillet, Brian Miller and Joey Laville
DATES: April 11, 2002
CONDITIONS: Cloudy / Mild / Breezy

Mike Maillet, Brian Miller, and Joey Laville arrived at the Falgoust Canal Landing at approximately 11:00 a.m. Permission to gain access to the property was obtained from Mr. Timothy J. Allen, PLS of Castex Leterre on April 1, 2002. The Field Data Report and field notes may be found in Appendix A.

NAVIGATION LIGHTS (SITE 6):

On April 1, 2002, 12:30 p.m., we inspected the four (4) navigation lights at Site 6, located on Bayou de Cade at a north-south running canal near the southwestern end of Jug Lake. All four navigation lights were dirty, with dirt dauber nests between the clear and colored glass light covers. The solar panels had bird droppings on them. We suggest that this is due to a flaw in the design of the navigation lights. At this Site, the solar panels are set on top of the lights and offer a flat surface for birds to perch on. The lights at Site 14a at the GIWW/Clovelly project, on the contrary, have sharp spines on top, and solar panels mounted on the side with four prongs sticking up, making it difficult for birds to perch.

The center pile of the southwest blue light is broken. The solar panel of the northwest blue light has been knocked over. The southeast red light is blinking on every two seconds. The northeast red light appeared to be in good condition. Photos of the navigation lights are shown in Appendix B.
VARIABLE CREST WEIR (SITE 14):

We arrived at the Site 14 variable crest weir structure located on the east side of Little Carencro Bayou north of camp 'Better Livin' at 1:30 p.m. The weir structure appeared to be in fairly good condition, but covered with bird droppings. Using a top of sheet pile elevation of 4 feet, we determined the water surface elevation at the Site to be 1.55 feet. The sounding on the marsh side of the weir stoplogs was 5.0 feet for a ground elevation of -3.4 feet, and the sounding on the canal side was 6.3 feet for a ground elevation of -4.7 feet.

It was determined that in order to lower the sill elevation of the structure to the level of the natural channel bottom that eight (8) stoplogs would have to be removed. Eight stoplogs accounts for approximately 4 feet. The sounding on top of the stoplogs prior to our adjustment was 1.6 feet, for an elevation of 0 feet, and after 5.7 feet, for an elevation of -4.1 feet. The stoplogs removed from this structure were marked with yellow flagging. The Field Equipment Checklist and Operation Procedure can be found in Appendix C. Photos of the variable crest weir structure are shown in Appendix D.

PREPARED BY: Joey Laville, Pyburn & Odom MCA
EDITED BY: Harry Rayner, Pyburn & Odom MCA
Mike Mallet, Pyburn & Odom MCA
Brian Miller, Pyburn & Odom MCA

DISTRIBUTION: Clark Allen, DNR, CRD (3 Copies)
Brian Babin, DNR, CRD (1 Copy)
APPENDIX A
FIELD DATA REPORT

Project (No. & Name)  TE-28 Brady Canal Hydrologic Restoration Project
Loc  Terrebonne Basin, Terrebonne Parish
Purpose of Site Visit  Inspect the four (4) navigation lights at Site 6, and operate and adjust the variable crest weir structure at Site 14.

Date:  1-Apr-02
Participants:  Mike Maillet, Joey Lavill, and Brian Miller
Weather Conditions:  Cloudy / Mild / Broody
Persons Contacted for Access:  Mr. Timothy J. Allen, PLS of Castex Latense
Site No.:  14 & 0

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Yes</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good @ Site 14</td>
<td>Damaged @ Site 6</td>
<td>X</td>
</tr>
<tr>
<td>Timber Heist/Lag Eyes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tie Caps</td>
<td>Good</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Framing/Metal Components</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Roof Access Ramp</td>
<td>N/A</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Weathered, but in good condition</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required:

Site 6 - Damaged center pile on Southwest Dolphin
Structure is covered with bird droppings.

Top Log Adjustment

Date/Time:  April 1, 2002  1:30 p.m.
- Number of Logs Removed/Replaced:  8 (Eight) removed
- Elevation:  Elevation based on top of sheet pile @ 4.0, See Field Notes
- Mudline Levels:  See Field Notes
- Water Levels:  See Field Notes
- Flag Description:  Yellow flagging
<table>
<thead>
<tr>
<th>Location</th>
<th>Date</th>
<th>Weather</th>
<th>Station</th>
<th>Angle</th>
<th>GC</th>
<th>MC</th>
<th>Angle</th>
<th>GC</th>
<th>MC</th>
<th>Deviation</th>
</tr>
</thead>
</table>

**BRADY CANAL**

**Hydrologic Restudy Project (TE: 28)**

**Structures 14**
Photo 1 – Southwest Navigation Light (Site 6), center pile is broken.

Photo 2 – Southeast Navigation Light (Site 6), light blinks on every 2 seconds.
Photo 3 – Northeast Navigation Light (Site 6).

Photo 4 – Northwest Navigation Light (Site 6), solar panel top has been knocked over.
APPENDIX C
FIELD EQUIPMENT CHECKLIST AND OPERATION PROCEDURE

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

VARIABLE CREST WEIR

_____ 1. 1-TON CHAIN HOIST
_____ 2. STAINLESS STEEL LIFTING RODS
_____ 3. KEYS FOR STOPLOG MECHANISM
_____ 4. GLOVES
_____ 5. HARD HATS

GENERAL NOTES:

Structures #14, #21, #23 – During the fall (September 1) of each year, all stoplogs in each bay shall be installed to their maximum elevations to impede high water level from the south. During the spring (March 15) of each year, stoplogs in each bay shall be removed to elevation of the natural channel bottom.

OPERATION PROCEDURE:

1. Install chain hoist on elevated lag eyes above the structure.
2. Unlock and remove locking mechanism and channel guides from structure.
3. Hook stainless steel lifting rods to ring on chain hoist.
4. Hook other end of stainless steel lifting rods to lag eyes on the stoplogs.
5. Lift stoplogs vertically using chain hoist.
Photo 5 – Variable Crest Weir (Site 14), view of stoplogs being removed.

Photo 6 – Variable Crest Weir (Site 14), weir has been adjusted.
Photo 7 – Variable Crest Weir (Site 14).

Photo 8 – Variable Crest Weir (Site 14).
FIELD TRIP REPORT

PROJECT:  TE-28 Brady Canal Hydrologic Restoration Project
LOCATION: Terrebonne Basin, Terrebonne Parish
PURPOSE:  Operate and adjust the variable crest weir structure at Site 21; inspect the breach in the levee southwest of Site 21 on Jug Lake.
PARTICIPANTS:  Mike Maillet, Brian Miller and Joey Laville
DATES:  April 2, 2002
CONDITIONS:  Cloudy / Warm

Mike Maillet, Brian Miller, and Joey Laville arrived at the Falgoust Canal Landing at approximately 10:30 a.m. Permission to gain access to the property was obtained from Mr. Jeff W. Debilieux, PLS of Burlington Resources on April 2, 2002. The Field Data Report and field notes may be found in Appendix A.

VARIABLE CREST WEIR (SITE 21):

We arrived at the Site 21 variable crest weir structure at 11:00 a.m. The weir structure appeared to be in good condition. There are three (3) stoplog bays at the Site, which we shall refer to as bays 1, 2, and 3, in order from east to west. Using a tape of rail and sheet pile elevation of 4.0 feet, we determined the water surface elevation at the site to be 1.6 feet.

It was determined that in order to lower the sill elevation of bay 1 to the level of the natural channel bottom that seven (7) stoplogs would have to be removed. The elevation to the top of logs before removal was +0.3 feet, and ~3.4 feet after. Bay 2 would require that ten (10) stoplogs be removed to alter the sill elevation from +0.25 feet to ~5.0 feet. Bay 3 would require that five (5) logs be removed to alter the sill elevation from +0.2 feet to ~2.5 feet. A total of 22 logs were removed from the structure during this adjustment. For mudline levels and other data, please refer to the field notes in Appendix A. The stoplogs removed from this structure were marked with blue flagging. The Field Equipment Checklist and Operation Procedure can be found in Appendix B. Photos of the variable crest weir structure are shown in Appendix C.
In addition to the subject work, we were requested to investigate a breach in the levee around Jug Lake, approximately 2000 feet southwest of Site 21. The breach was approximately 10 to 15 feet wide and approximately 3 feet deep (See Appendix D for photos).

PREPARED BY: Joey Laville, Pyburn & Odor MCA

EDITED BY: Harry Rayner, Pyburn & Odor MCA
            Mike Maillet, Pyburn & Odor MCA
            Brian Miller, Pyburn & Odor MCA

DISTRIBUTION: Clark Allen, DNR, CRD (3 Copies)
               Brian Babin, DNR, CRD (1 Copy)
APPENDIX A
FIELD DATA REPORT

**Project No. & Name**: TE-23 Brady Canal Hydrologic Restoration Project

**Location**: Jug Lake, Terrebonne Basin, Terrebonne Parish

**Purpose of Site Visit**: Operate and adjust the variable crest weir structure at Site 21, inspect the breach in the levee southwest of Site 21 on Jug Lake.

**Date**: April 2, 2002

**Participants**: Mike Maillet, Joey Laville, and Brian Miller

**Weather Conditions**: Cloudy / Warm

**Persons Contacted for Access**: Mr. Jeff W. Debleux, PLS, of Burlington Resources

**Site No.**: 21

### Structure Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Tie Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Rating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Foot Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Top _...gs</td>
<td>Good, coated with barnacles</td>
<td>X</td>
</tr>
</tbody>
</table>

### Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosson</td>
<td>None apparent</td>
</tr>
<tr>
<td>Elevation</td>
<td>Good</td>
</tr>
</tbody>
</table>

**Description of Maintenance/Repair Required**: *Breach in top levee approximately 2000 feet west of Site 21. Breach is approximately 10 to 15 feet wide.*

**NOTE**: Elevations given below are based on top of nailsheet pile @ EL. +4'

**Log Description**: Blue flagging

**Top Log Adjustment Date/Time**: April 2, 2002 - 11:00 am - 1:00 pm

**Number of Logs Removed/Replaced**: 22 removed

**Elevation**: Bay 1 - 3.4', Bay 2 - 2.6', Bay 3 - 2.0'

**Midline Levels**: See Field Notes

**Water Levels**: EL. 1.6'

**Top Log Description**: Blue flagging
FIELD EQUIPMENT CHECKLIST AND OPERATION PROCEDURE
TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
VARIABLE CREST WEIR

_____ 1. 1-TON CHAIN HOIST
_____ 2. STAINLESS STEEL LIFTING RODS
_____ 3. KEYS FOR STOPLOG MECHANISM
_____ 4. GLOVES
_____ 5. HARD HATS

GENERAL NOTES:
Structures #14, #21, #23 – During the fall (September 1) of each year, all stoplogs in each bay shall be installed to their maximum elevations to impede high water levels from the south. During the spring (March 15) of each year, stoplogs in each bay shall be removed to elevation of the natural channel bottom.

OPERATION PROCEDURE:
1. Install chain hoist on elevated lag eyes above the structure.
2. Unlock and remove locking mechanism and channel guides from structure.
3. Hook stainless steel lifting rods to ring on chain hoist.
4. Hook other end of stainless steel lifting rods to lag eyes on the stoplogs.
5. Lift stoplogs vertically using chain hoist.
Photo 1 – Variable Crest Weir (Site 21), view of the western side of the structure after stoplogs have been removed.

Photo 2 – Variable Crest Weir (Site 21), looking north at the structure.
APPENDIX D
Photo 3 – Breach in the levee southwest of Site 21, on Jug Lake looking north.

Photo 4 – Breach in the levee southwest of Site 21, on Jug Lake looking north.
FIELD TRIP REPORT

PROJECT: TE-28 Brady Canal Hydrologic Restoration Project
LOCATION: Jug Lake, Terrebonne Basin, Terrebonne Parish
PURPOSE: Operate and adjust the variable crest weir structure at Site 23.
PARTICIPANTS: Mike Maillet, Brian Miller and Joey Laville
DATES: April 16 and 17, 2002
CONDITIONS: Partly Cloudy / Warm

Mike Maillet, Brian Miller, and Joey Laville arrived at the Falgoust Canal Landing at approximately 10:30 a.m. on April 16 and 9:20 a.m. on April 17. Permission to gain access to the property was obtained from Mr. Jeff W. DeBlieux, PLS of Burlington Resources on April 2, 2002. The Field Data Report and field notes may be found in Appendix A.

VARIABLE CREST WEIR (SITE 23):

We arrived at the Site 23 variable crest weir structure at 11:15 a.m. on April 16th. The weir structure appeared to be in good condition. There are two (2) stoplog bays at the Site, which we shall refer to as the north and south bays. Using a top of rail and sheet pile elevation of 4.0 feet, we determined the water surface elevation at the Site to be 1.7 feet.

It was determined that in order to lower the sill elevation of the north bay to the level of the natural channel bottom, all ten (10) stoplogs would have to be removed. The elevation to the top of logs before removal was +0.1 feet, and −4.9 feet after. The north bay channels were put back into place and locked in position. At the time of our departure, water was flowing eastward, or from Jug Lake into the marsh. For waterline levels and other data, please refer to the field notes in Appendix A. The stoplogs removed from the structure were marked with white flagging and transported to the DNR storage facility in Thibodaux.

On April 17, we returned to the Site 23 variable crest weir structure to complete our work. In order to lower the sill elevation of the south bay to the level of the natural channel bottom, all ten (10) stoplogs would have to be removed. The elevation to the top of the logs before removal was +0.1 feet, and −5.0 feet after. The south bay channels were put back into place and locked in position. The stoplogs from the south bay were also marked with white flagging. The Field
Equipment Checklist and Operation Procedure can be found in Appendix B. Photos of our adjustment of the variable crest weir structure are shown in Appendix C.

PREPARED BY: Joey Laville, Pyburn & Odom MCA

EDITED BY: Harry Rayner, Pyburn & Odom MCA
           Mike Maillet, Pyburn & Odom MCA
           Brian Miller, Pyburn & Odom MCA

DISTRIBUTION: Clark Allen, DNR, CRD (3 Copies)
              Brian Babin, DNR, CRD (1 Copy)
FIELD DATA REPORT

Project (No. & Name)  TE-28 Brady Canal Hydrologic Restoration Project
Location:  Jug Lake, Terrebonne Basin, Terrebonne Parish
Purpose of Site Visit  Operate and adjust the variable crest weir structure at Site 23.

Date:  April 16, 2002 and April 17, 2002
Participants:  Mike Maillet, Joey Laville, and Brian Miller
Weather Conditions:  Partly cloudy / Warm
Persons Contacted for Access  Mr. Jeff W. Debilieux, PLS of Burlington Resources
Site No.:  23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>1 Log</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
<td>X</td>
</tr>
</tbody>
</table>

Structure Condition

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>None apparent</td>
</tr>
<tr>
<td>Vegetation</td>
<td>Good</td>
</tr>
</tbody>
</table>

*Removed 10 logs from the north bay on April 16, 2002. Removed 10 logs from the south bay on April 17, 2002

*Description of Maintenance/Repair Required:

Stop Log Adjustment

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Number of Logs Removed/Replaced</th>
<th>Mudline Levels</th>
<th>Water Levels</th>
<th>Tag Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 16, 2002</td>
<td>10 logs removed from north bay, 10 logs from south bay</td>
<td>See Field Notes</td>
<td>See Field Notes</td>
<td>White flagging</td>
</tr>
<tr>
<td>April 17, 2002</td>
<td>1:00 p.m.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

T:\Projects\10-1632\Field Trip Report
APPENDIX B
FIELD EQUIPMENT CHECKLIST AND OPERATION PROCEDURE

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

VARIABLE CREST WEIR

_____ 1. 1-TON CHAIN HOIST
_____ 2. STAINLESS STEEL LIFTING RODS
_____ 3. KEYS FOR STOPLOG MECHANISM
_____ 4. GLOVES
_____ 5. HARD HATS

GENERAL NOTES:

Structures #14, #21, #23 – During the fall (September 1) of each year, all stoplogs in each bay shall be installed to their maximum elevations to impede high water levels from the south. During the spring (March 15) of each year, stoplogs in each bay shall be removed to elevation of the natural channel bottom.

OPERATION PROCEDURE:

1. Install chain hoist on elevated lag eyes above the structure.
2. Unlock and remove locking mechanism and channel guides from structure.
3. Hook stainless steel lifting rods to ring on chain hoist.
4. Hook other end of stainless steel lifting rods to lag eyes on the stoplogs.
5. Lift stoplogs vertically using chain hoist.
APPENDIX C
Photo 1 – Variable Crest Weir (Site 23), removing stoplogs from the north stoplog bay.

Photo 2 – Variable Crest Weir (Site 23), ten stoplogs loaded into the boat for transport.
Photo 3 – Variable Crest Weir (Site 23), determining elevations at the south stoplog bay.

Photo 4 – Variable Crest Weir (Site 23), looking east at the adjusted weir structure.
TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

DNR CONTRACT NO. 2503-01-30
CEEC PROJECT NO. 2033

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21 and 23

AUGUST 2002

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Coastal Engineering and Environmental Consultants, Inc.
197 Elysian Drive
Houma, Louisiana 70363
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir at Site No. 14

PARTICIPANTS: Brian Brunet and Kevin Giles

DATES: August 28, 2002

CONDITIONS: Partly cloudy and Hot (92°)

Permission to gain access to Site No. 14 was obtained from Mr. John Woodard of Castex Laterre on August 26, 2002.

The weir structure is located on the east side of Little Carencro Bayou, North of camp “Better Livin”. The weir structure appeared to be in good condition. The TBM used for this site in the determination of elevation was the tope of a hex head bolt (elevation 3.51 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.05 feet. The ground elevation on the marsh side of the weir was -5.50 feet and the ground elevation on the canal side was -5.75 feet.

It was determined through coordination with Louisiana Department of Natural Resources personnel and research of the previous report that the required elevation of the stop logs would be approximately 0 feet. This would require the placement of eight (8) stop logs. The elevation of the stop logs prior to placement was -5.56 feet and elevation -0.57 after placement. The field data report, photographs and field notes are attached.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: August 27, 2002

Participants: Brian A. Brunet and Kevin Giles

Weather Conditions: Partly cloudy and Hot (92°F)

Persons Contacted for Access: Mr. John Woodard, at Castex Laterre

Site No.: 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>Yes X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>No X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>No X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>Yes X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>No X</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>One Damaged</td>
<td>Yes 1</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
<td>No X</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Top stop log damaged while trying to install in Bay. Still very usable except for small chip on one side.

Stop Log Adjustment

Date/Time: August 27, 2002 (3:30 p.m.)

- Number of Logs Removed/Replaced: 8 replaced
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th></th>
<th>Site 14</th>
<th></th>
<th></th>
<th>W.L</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H-1.</td>
<td>5.05</td>
<td>8.62</td>
<td>7.58</td>
<td>1.04</td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marsh</td>
<td></td>
<td>14.12</td>
<td>-5.90</td>
<td>14.18</td>
<td>-5.56</td>
<td></td>
</tr>
<tr>
<td>Spill Log</td>
<td></td>
<td>14.09</td>
<td>-5.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top Spill</td>
<td></td>
<td>9.19</td>
<td>-0.57</td>
<td>5.05</td>
<td>3.57</td>
<td></td>
</tr>
<tr>
<td>INSTALLATION</td>
<td></td>
<td></td>
<td></td>
<td>7.57</td>
<td>1.05</td>
<td></td>
</tr>
</tbody>
</table>

Diagram showing water control structures.
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Brian Brunet and Kevin Giles

DATES: August 27, 2002 and August 28, 2002

CONDITIONS: Partly cloudy to clear and Hot (90°)

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on August 26, 2002.

The weir structure appeared to be in good condition. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.2 feet. It was determined that in order to raise the sill elevation of Bay 1 to the proper elevation, seven (7) stop logs would be required. The elevation before stop log placement was -3.72 feet and -0.23 feet after stop log placement. Bay 2 would require that ten (10) stop logs be placed to acquire the proper elevation. The elevation before stop log placement was -5.30 feet and -0.26 feet after stop log placement. Bay 3 would require that five (5) stop logs be placed to acquire the proper elevation. The elevation before stop log placement was -2.75 and -0.24 feet after stop log placement. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 21.

Date: August 27, 2002 and August 28, 2002

Participants: Brian A. Brunet and Kevin Giles

Weather Conditions: Partly cloudy to clear and Hot (90°F)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S., at Burlington Resources

Site No.: 21

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good but Tight Fit on East Bay</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td></td>
</tr>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Slight silt buildup on East Bay. Was able to remove by use of aluminum hooks provided by D.N.R. easterly channel on East Bay bent - difficult to get latch in.

Stop Log Adjustment Date/Time: Aug. 28, 2002 (11:00 a.m.)

- Number of Logs Removed/Replaced: 22 total replaced, East Bay 1=7, Center Bay 2=10, West Bay 3=5
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th>Date</th>
<th>Water Level</th>
<th>Elevation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/21/02</td>
<td>5.00</td>
<td>8.72</td>
<td></td>
</tr>
<tr>
<td>08/27/02</td>
<td>7.74</td>
<td>8.72</td>
<td></td>
</tr>
<tr>
<td>08/28/02</td>
<td>11.97</td>
<td>8.72</td>
<td></td>
</tr>
<tr>
<td>08/31/02</td>
<td>11.47</td>
<td>8.72</td>
<td></td>
</tr>
<tr>
<td>09/01/02</td>
<td>11.95</td>
<td>8.72</td>
<td></td>
</tr>
<tr>
<td>10/02/02</td>
<td>14.32</td>
<td>-5.60</td>
<td>Top hex bolt</td>
</tr>
<tr>
<td>10/03/02</td>
<td>14.02</td>
<td>-5.30</td>
<td>Top hex bolt</td>
</tr>
<tr>
<td>10/04/02</td>
<td>14.25</td>
<td>-5.53</td>
<td>Top hex bolt</td>
</tr>
<tr>
<td>10/05/02</td>
<td>13.05</td>
<td>-4.33</td>
<td>Top hex bolt</td>
</tr>
<tr>
<td>10/06/02</td>
<td>12.65</td>
<td>-3.93</td>
<td>Top hex bolt</td>
</tr>
<tr>
<td>10/07/02</td>
<td>8.96</td>
<td>-0.24</td>
<td>Top hex bolt</td>
</tr>
<tr>
<td>10/08/02</td>
<td>8.98</td>
<td>-0.26</td>
<td>Top hex bolt</td>
</tr>
<tr>
<td>10/09/02</td>
<td>8.95</td>
<td>-0.28</td>
<td>Top hex bolt</td>
</tr>
<tr>
<td>10/10/02</td>
<td>7.52</td>
<td>1.20</td>
<td>Top hex bolt</td>
</tr>
</tbody>
</table>

**Remarks:**
- Top hex bolt
- West side
- Top water
- 8/12 P.M.
- Near shore
- West side
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Near shore
- Top water
- Nea...
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Brian Brunet and Kevin Giles

DATES: August 27, 2002

CONDITIONS: Partly cloudy to clear and Hot (89°)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on August 26, 2002.

The weir structure appeared to be in good condition. There are two stop log bays at the site, which we shall refer to as the North Bay and south Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.85 feet. It was determined that in order to raise the sill elevation of the North Bay to the proper elevation, ten (10) stop logs would be required. The elevation before stop log placement was -5.50 feet and -0.42 feet after stop log placement. The south Bay would require that ten (10) stop logs be placed to acquire the proper elevation. The elevation before stop log placement was -5.51 feet and -0.58 feet after stop log placement. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir at Site 23.

Date: August 27, 2002

Participants: Brian A. Brunet and Kevin Giles

Weather Conditions: Partly cloudy to clear and Hot (89°F)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S., at Burlington Resources

Site No.: 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good but Tight Fit on South Bay</td>
<td>Yes</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Grass build-up around structure, especially at South Bay. Removed grass lying over Bay with hooks provided by D.N.R.

Stop Log Adjustment Date/Time: August 27, 2002 (3:30 p.m.)

- Number of Logs Removed/Replaced: 10 logs replaced on North Bay, 10 logs replaced on South Bay
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,886,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)
"TBM STRUCTURE #21"

VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615"N
Long. 90°56'05.89376"W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)
TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

DNR CONTRACT NO. 2503-03-21
CEECE PROJECT NO. 2144

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21 and 23

APRIL 2003

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Coastal Engineering and Environmental Consultants, Inc.
197 Elysian Drive
Houma, Louisiana 70363
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir at Site No. 14

PARTICIPANTS: Brian Brunet, Kevin Giles, Willie Radau IV, and Jesse Bonvillain

DATES: March 18, 2003

CONDITIONS: Cloudy and Mild (75°)

Permission to gain access to Site No. 14 was obtained from Mr. Jeff Deblieux of Burlington Resources on March 13, 2003 and Mr. Timothy J. Allen, P.L.S. of Castex Laterre on March 14, 2003.

The weir structure is located on the east side of Little Carencro Bayou, North of camp “Better Livin”. The weir structure appeared to be in good condition. The TBM used for this site in the determination of elevation was the top of a hex head bolt (elevation 3.57 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.60 feet. The ground elevation on the marsh side of the weir was -5.40 feet and the ground elevation on the canal side was -6.38 feet.

It was determined through coordination with Louisiana Department of Natural Resources personnel and research of the previous report that the required elevation of the stop logs would be approximately -5.89 feet. This would need removal of nine (9) stop logs. The elevation of the stop logs prior to removal was -0.63 and after removal is -5.55. The field data report, photographs and field notes are attached.
Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: March 18, 2003

Participants: Brian A. Brunet, Kevin Giles, Willie Radau IV, Jesse Bonvillain

Weather Conditions: Cloudy and Mile (75° F)

Persons Contacted for Access: Mr. Jeff Deblieux, Burlington Resources and Mr. Timothy J. Allen, P.L.S. at Castex Laterre

Site No.: 14

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>One chipped on one side</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required:

Stop Log Adjustment Date/Time: March 18, 2003 (11:30 A.M.)

- Number of Logs Removed/Replaced: 9 Removed
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: Orange
# Removal of Stop Logs - Site No. 14

<table>
<thead>
<tr>
<th>Elevation (Elev)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.52</td>
<td>Top Hex. Rest Left Side</td>
</tr>
<tr>
<td>4.95</td>
<td>Top Hex. Rest Right Side</td>
</tr>
<tr>
<td>6.92</td>
<td>East Side Top Water</td>
</tr>
<tr>
<td>13.92</td>
<td>Nat. Bottom Marsh Side</td>
</tr>
<tr>
<td>14.90</td>
<td>Nat. Bottom Canal Side</td>
</tr>
<tr>
<td>9.15</td>
<td>Pre-Stop Log Removal Elev.</td>
</tr>
<tr>
<td>14.07</td>
<td>Stop Log Elev. After Removal</td>
</tr>
<tr>
<td>6.91</td>
<td>1.61 Ch. Top Water</td>
</tr>
<tr>
<td>4.95</td>
<td>3.57 Ch. Top Marsh</td>
</tr>
<tr>
<td>4.95</td>
<td>3.57 Ch. Top Marsh</td>
</tr>
</tbody>
</table>

![Diagram](image_url)
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section
Site No. 21
Eastern Most Pin Slot Bent at Lock Connection
FIELD TRIP REPORT

SUBJECT:  TE-28 Brady Canal Hydrologic Restoration Project

LOCATION:  Terrebonne Basin, Terrebonne Parish

PURPOSE:  Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS:  Brian Brunet, Kevin Giles, Willie Radau IV, and Jesse Bonvillain

DATES:  March 18, 2003

CONDITIONS:  Cloudy and Mild (75°)

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 13, 2003 and Mr. Timothy Allen, P.L.S. of Castex Latterre on March 14, 2003.

The weir structure appeared to be in good condition. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.39 feet on the north side and 1.35 feet on the south side.

East Bay (Bay 1)

Desired elevation at Bay 1 would be approximately -3.56. In order to achieve this elevation, seven (7) stop logs were removed. Elevation of stop logs before removal -0.21 and after removal -3.68.

Center Bay (Bay 2)

Desired elevation at Bay 2 would be approximately -4.65. Ten (10) stop logs were removed to achieve this elevation. Elevation of stop log before removal was -0.21 and after removal is -5.31.

West Bay (Bay 3)

Desired elevation at Bay 3 would be approximately -1.69. Five (5) stop logs were removed to achieve elevation. Elevation of stop log before removal -0.22 and after removal -2.78.

For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.
Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 21.

Date: March 17, 2003 and March 18, 2003

Participants: Brian A. Brunet, Kevin Giles, Willie Radau IV, and Jesse Bonvillain

Weather Conditions: Partly Cloudy and Mild (72°F)

Persons Contacted for Access: Mr. Jeff Deblieux, Burlington Resources and Mr. Timothy J. Allen, P.L.S. at Castex Laterre

Site No.: 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Eastern most pin slot bent at lock connection</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
<td>X</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Debris on structure needs to be removed.

Stop Log Adjustment

Date/Time: March 17, 2003 (4:00 P.M.) and March 18, 2003 (9:00 A.M.)

- Number of Logs Removed/Replaced: 22 stop logs removed - 7 on bay 1 (east), 10 on bay 2 (center), 5 on bay 3 (west)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: Blue
# LOUISIANA DEPARTMENT OF NATURAL RESOURCES

## TE-28 BRADY CANAL RESTORATION PROJECT

### REMOVAL OF STOP LOGS - SITE NO. 21

<table>
<thead>
<tr>
<th>Location</th>
<th>H. I.</th>
<th>ELEV.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH SIDE</td>
<td>4.82</td>
<td>8.54</td>
<td>3.72</td>
</tr>
<tr>
<td>SOUTH SIDE</td>
<td>7.15</td>
<td>1.39</td>
<td></td>
</tr>
<tr>
<td>WEST BAY</td>
<td>7.19</td>
<td>1.35</td>
<td></td>
</tr>
<tr>
<td>WEST BAY</td>
<td>8.54</td>
<td>10.04</td>
<td>-1.50</td>
</tr>
<tr>
<td>WEST BAY</td>
<td>8.76</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>WEST BAY</td>
<td>8.75</td>
<td>11.48</td>
<td>-2.73</td>
</tr>
<tr>
<td>CENTER BAY</td>
<td>13.83</td>
<td>4.79</td>
<td></td>
</tr>
<tr>
<td>CENTER BAY</td>
<td>13.04</td>
<td>4.52</td>
<td></td>
</tr>
<tr>
<td>CENTER BAY</td>
<td>8.54</td>
<td>8.75</td>
<td>-0.21</td>
</tr>
<tr>
<td>CENTER BAY</td>
<td>13.85</td>
<td>-5.31</td>
<td></td>
</tr>
<tr>
<td>EAST BAY</td>
<td>12.18</td>
<td>-3.64</td>
<td></td>
</tr>
<tr>
<td>EAST BAY</td>
<td>12.07</td>
<td>-3.48</td>
<td></td>
</tr>
<tr>
<td>EAST BAY</td>
<td>8.54</td>
<td>8.75</td>
<td>-0.21</td>
</tr>
<tr>
<td>EAST BAY</td>
<td>12.22</td>
<td>-3.68</td>
<td></td>
</tr>
</tbody>
</table>

**EAST AND CENTER STOP LOGS WERE REMOVED ON 03/17/03**

**WEST STOP LOGS WERE REMOVED ON 03/18/03**

1. STOP LOGS REMOVED FROM WEST BAY
2. STOP LOGS REMOVED FROM CENTER BAY
3. STOP LOGS REMOVED FROM EAST BAY

**03/18/03**

- 5.03
- 8.75
- 3.72
- 7.02
- 1.73

**NOTE**: SOUTH STOP BOLT
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section
Site No. 23
Chipped Stop Log on End by Padeye
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Brian Brunet, Kevin Giles, Willie Radau, IV, and Jesse Bonvillain

DATES: March 17, 2003

CONDITIONS: Partly cloudy and Mild (72° F)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources and Mr. Timothy J. Allen, P.L.S. of Castex Laterre on March 13, 2003.

The weir structure appeared to be in good condition. There are two stop log bays at the site, which we shall refer to as the North Bay and South Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.31 feet. Desired elevation at both bays would be approximately -5.78. Ten (10) stop logs were removed from each bay to achieve the desired elevation. The stop log elevation at the North Bay before stop log removal was -0.49 and after removal is -5.50. The stop log elevation at the North Bay before stop log removal was -0.47 and after removal is -5.53. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir at Site 23.

Date: March 17, 2003

Participants: Brian A. Brunet, Kevin Giles, Willie Radau IV, and Jesse Bonvillain

Weather Conditions: Partly cloudy and Mild (72° F)

Persons Contacted for Access: Mr. Jeff Deblieux, Burlington Resources and Mr. Timothy J. Allen, P.L.S. at Castex Laterre

Site No.: 23

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Two stop logs have a large split and one chipped on end by padeye</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: One stop log needs to be replaced and all have heavy baracole buildup.

Stop Log Adjustment Date/Time: March 17, 2003 (11:30 A.M.)

- Number of Logs Removed/Replaced: 10 stop logs removed from north bay and 10 removed from south bay.
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: Pink
<table>
<thead>
<tr>
<th>Location</th>
<th>H.I.</th>
<th>Elevation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>North end</td>
<td>0.00</td>
<td>7.75</td>
<td>Near original shoreline</td>
</tr>
<tr>
<td>North B1</td>
<td>1.31</td>
<td>7.05</td>
<td>Near pile of brush</td>
</tr>
<tr>
<td>North B2</td>
<td>-5.72</td>
<td>4.35</td>
<td>Near line</td>
</tr>
<tr>
<td>North B3</td>
<td>-5.79</td>
<td>0.55</td>
<td>Near top layer of old stumps</td>
</tr>
<tr>
<td>North B4</td>
<td>-0.47</td>
<td>3.93</td>
<td>Near top layer of old stumps</td>
</tr>
<tr>
<td>South B1</td>
<td>-5.82</td>
<td>14.59</td>
<td>Near line</td>
</tr>
<tr>
<td>South B2</td>
<td>-5.59</td>
<td>15.19</td>
<td>Near line</td>
</tr>
<tr>
<td>South B3</td>
<td>-6.63</td>
<td>9.53</td>
<td>Near top layer of old stumps</td>
</tr>
<tr>
<td>South B4</td>
<td>-6.36</td>
<td>14.59</td>
<td>Near top layer of old stumps</td>
</tr>
</tbody>
</table>

Removal of 300 logs (2") removed from this tract.
Benchmarks - Data Sheets
Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat: 29°23'03.4374" N
Long: 91°00'4.87931" W

NAD 83 Datum LSZ (1702) Feet:
N: 322,246.13
E: 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)
"TBM STRUCTURE #21"

VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat.  29°22'47.25280" N
Long.  90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

**Name:** "TBM Structure #23"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 23**

**NAD 83 (1993) Geodetic Position:**
Lat.  29°22'39.70615" N  
Long.  90°56'05.89376" W

**NAD 83 Datum LSZ (1702) Feet:**
N = 319,411.28  
E = 3,407,714.35

**Elevation at Top of Hex Bolt**
3.51 feet (NAVD 88)
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

Prepared By

T. BAKER SMITH
PROFESSIONAL CONSULTANTS SINCE 1913

—March 2005
TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

DNR CONTRACT NO. 2503-03-21
CEEC PROJECT NO. 2221

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21 and 23

SEPTEMBER 2003

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Coastal Engineering and Environmental Consultants, Inc.
197 Elysian Drive
Houma, Louisiana 70363
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Adjust the variable crest weir at Site No. 14

PARTICIPANTS: Brian Brunet, Matt Sevier, Willie Radau

DATES: September 10, 2003

CONDITIONS: Partly Cloudy and Hot (90°)

Permission to gain access to Site No. 14 was obtained from Mr. Vance Adams of Burlington Resources on September 9, 2003 and Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 9, 2003.

The weir structure is located on the east side of Little Carencro Bayou, North of camp “Better Livin”. The weir structure appeared to be in good condition. The TBM used for this site in the determination of elevation was the top of a hex head bolt (elevation 3.57 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.70 feet. The channel bottom elevation on the marsh side of the weir was -6.74 feet and the channel bottom elevation on the canal side was -6.79 feet.

During the Fall (September 1) of each year, all stop logs in each bay shall be installed to its maximum elevation to prevent southerly water fluctuations. The installation of nine (9) stop logs was required. The elevation of the stop logs prior to installation was -5.57 and after installation is -1.01. The field data report, photographs and field notes are attached.
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

09 10 2003
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: September 10, 2003

Participants: Brian A. Brunet, Matt Sevier, Willie Radau

Weather Conditions: Partly Cloudy and Hot (90°F)

Persons Contacted for Access: Mr. Vance Adams, Burlington Resources & Mr. Timothy J. Allen, P.L.S. of Apache Corp.

Site No.: 14

Structure Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>2 Stop Logs Had Surface Cracks/Chips</td>
<td>Yes</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Fair</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Two stop logs had surface cracks/chips, but are still usable.

Stop Log Adjustment Date/Time: September 10, 2003 (3:00 p.m.)

- Number of Logs Removed/Replaced: 9 Replaced
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description:
<table>
<thead>
<tr>
<th>JOB #2221</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA DEPARTMENT OF NATURAL RESOURCES</td>
</tr>
<tr>
<td>TE-23 BRADY CANAL RESTORATION PROJECT</td>
</tr>
</tbody>
</table>

**REPLACEMENT OF STOP LOGS**

**SITE NO. 14**

<table>
<thead>
<tr>
<th>+ H.I.</th>
<th>ELEV</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.50</td>
<td>3.57</td>
<td><strong>R.W.</strong></td>
</tr>
</tbody>
</table>

4.93

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.80</td>
<td>1.90</td>
<td></td>
</tr>
<tr>
<td>15.24</td>
<td>6.74</td>
<td></td>
</tr>
<tr>
<td>15.29</td>
<td>6.79</td>
<td></td>
</tr>
</tbody>
</table>

**ELEVATIONS INDICATE AN ADDITIONAL STOP LOG IS REQUIRED TO POSITION STOP LOGS 1' BELOW MARSH LEVEL.**

**NOTE:** A LARGE TREE WAS REMOVED FROM THE STRUCTURE STILL ON THIS DATE. THE TREE WAS APPROX. 4" TO 6" IN DIA. AND IS 15' LONG RESTING ON APPROX. 50% OF BAY OPENING.
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Brian Brunet, Matt Sevier, John Helm

DATES: September 11, 2003

CONDITIONS: Partly Cloudy with Rain and Hot (90°)

Permission to gain access to Site No. 21 was obtained from Mr. Vance Adams of Burlington Resources on September 9, 2003 and Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 9, 2003.

The weir structure is located on the North side of Jug Lake. The weir structure appeared to be in good condition. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.68 feet.

During the Fall (September 1) of each year, all stop logs in each bay shall be installed to its maximum elevation to prevent southerly water fluctuations.

East Bay (Bay 1)

Bay 1 required the installation of seven (7) stop logs. The elevation of the stop logs prior to installation was -3.73 and after installation is -0.21.

Center Bay (Bay 2)

Bay 2 required the installation of ten (10) stop logs. The elevation of the stop logs prior to installation was -5.29 and after installation is -0.25.

West Bay (Bay 3)

Bay 3 required the installation of five (5) stop logs. The elevation of the stop logs prior to installation was -2.73 and after installation is -0.2.

The field data report, photographs, and field notes are attached.
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

09 11 2003
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 21.

Date: September 11, 2003

Participants: Brian A. Brunet, Matt Sevier, John Helm

Weather Conditions: Partly Cloudy with Rain and Hot (90° F)

Persons Contacted for Access: Mr. Vance Adams, Burlington Resources & Mr. Timothy J. Allen, P.L.S. of Apache Corp.

Site No.: 21

### Structure Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Eastern most pin slot bent at lock connection</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
<td>X</td>
</tr>
</tbody>
</table>

### Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Eastern most channel iron needs to be repaired or bigger slot hole cut in lock side.

Stop Log Adjustment Date/Time: September 11, 2003 (2:30 p.m.)

- Number of Logs Removed/Replaced: 22 Total Replaced (7 on East Bay) (10 on Center Bay) (5 on West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: 
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Brian Brunet, Matt Sevier, Willie Radau

DATES: September 10, 2003

CONDITIONS: Partly cloudy and Hot (90°F)

Permission to gain access to Site No. 23 was obtained from Mr. Vance Adams of Burlington Resources on September 9, 2003 and Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 9, 2003.

The structure is located on the East side of Jug Lake. The weir structure appeared to be in good condition. There are two stop log bays at the site, which we shall refer to as the North Bay and South Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.51 feet.

During the Fall (September 1) of each year, all stop logs in each bay shall be installed to its maximum elevation to prevent southerly water fluctuations.

North Bay

North bay required the installation of ten (10) stop logs, the elevation of the stop logs prior to installation was -5.46 and after installation is -0.46.

South Bay

South bay required the installation of ten (10) stop logs, the elevation of the stop logs prior to installation was -5.47 and after installation is -0.46.

The field data, photographs, and field notes are attached.
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

09 10 2003
Site No. 23
Stop Log With Splits and Chips
Site No. 23
Stop Log With Splits

09 10 2003
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir at Site 23.

Date: September 10, 2003

Participants: Brian A. Brunet, Matt Sevier, Willie Radau

Weather Conditions: Partly Cloudy and Hot (90° F)

Persons Contacted for Access: Mr. Vance Adams, Burlington Resources and Mr. Timothy J. Allen, P.L.S., of Apache Corp.

Site No.: 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>3 Stop Logs Had Surface Cracks/Chips</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Fair</td>
<td>X</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Three stop logs had surface cracks/chips, but are still usable.

Stop Log Adjustment

- Date/Time: September 10, 2003 (1:00 p.m.)
- Number of Logs Removed/Replaced: 10 Stop Logs Replaced in North Bay and 10 Replaced in South Bay
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description:
Structure No. 06
Condition of Four (4) Navigational Aids
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Condition of four (4) navigational aids for Structure No. 6

PARTICIPANTS: Brian Brunet, Matt Sevier, Willie Radau

DATES: September 11, 2003

CONDITIONS: Partly cloudy with Rain and Hot (90° F)

The structure is located along Bayou Decade West of Jug Lake. The navigational lights appear to be in fair condition. The use of black electrical tape to cover the photocell of the navigation lights identified that the two (2) red navigation lights and the green navigation light opposite Bayou Decade are not in working condition. The Bayou Decade red navigation light's outer lens cover (clear) is in need of replacement. The photocell on the Bayou Decade side green navigation light's casing is broken and in need of replacement.

The field data, photographs, and field notes are attached.
Structure No. 6
Red Light With Broken Lens
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: September 11, 2003

Participants: Brian A. Brunet, Matt Sevier, Willie Radau

Weather Conditions: Partly Cloudy with Rain and Hot (90° F)

Persons Contacted for Access:

Site No.: Structure No. 6

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Navigation Lights</td>
<td>Poor</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: The two (2) red lights and one (1) green light not working, one (1) red light needs outer clear lens replacement. The sensor switch on the green light on Bayou Decade is broken off and needs to be replaced.

Stop Log Adjustment Date/Time: 

- Number of Logs Removed/Replaced: 
- Elevation: 
- Mudline Levels: 
- Water Levels: 

Flag Description: 

K:\2221\Reports\Field Inspection\Field Data\Field Data Site No. 6.xls 031903
NOTE: THE TWO (2) RED LIGHTS DID NOT OPERATE AND ONE (1) GREEN LIGHT DID NOT OPERATE ALSO.

THE OUTER (CLEAR) SHIELD ON THE RED LIGHT LOCATED ON BAYOU DECADE WAS COMPLETELY SHATTERED AND NEEDS REPLACEMENT.

THE SENSOR SWITCH ON THE GREEN LIGHT LOCATED ON BAYOU DECADE WAS BROKEN OFF AND IS BEING HELD ON BY THE LIGHT SWITCH WIRES.
Benchmarks - Data Sheets
Name: "TBM Structure #14"

Location: From the boat launch on Fallgout Canal in Thibodaux, Louisiana, by boat, proceed westerly and west-southwesterly in Fallgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at night.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 33 Datum LSZ (1702) Feet:
N = 322,246.13
E = 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
"TBM STRUCTURE #21"

Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

**Name:** "TBM Structure #21"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 21**

**NAD 83 (1993) Geodetic Position:**

Lat. 29°22'47.25280"N
Long. 90°56'36.35631"W

**NAD 83 Datum LSZ (1702) Feet:**

N = 320,164.32
E = 3,405,016.63

**Elevation at Top of Hex Bolt**

3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat: 29°22'39" 70615"N
Long: 90°56'05.89376"W

NAD 83 Datum LSZ (1702) Feet:
N = 319,411.28
E = 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)
TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LDNR CONTRACT NO. 2503-03-21
SCI PROJECT NO. 2273

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21 and 23

MARCH 2004

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Shaw Coastal, Inc.
197 Elysian Drive
Houma, Louisiana 70363
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Pre-Log Removal

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Post-Log Removal with Lock Replaced

Post-Log Removal

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Chipped Log

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir at Site No. 14

PARTICIPANTS: Brian Brunet, Peter Williams

DATES: March 9, 2004

CONDITIONS: Clear and Mild (68°)

Permission to gain access to Site No. 14 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 9, 2004.

The weir structure is located on the east side of Little Carencro Bayou, North of camp “Better Livin”. The weir structure appeared to be in good condition. The stop logs have chips/splits or cracks; but are still usable. The TBM used for this site in the determination of elevation was the top of a hex head bolt (elevation 3.57 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.60 feet on both sides of the structure.

It was determined through coordination with Louisiana Department of Natural Resources personnel and research of the previous report that the required elevation of the stop logs would be approximately -5.89 feet. This would need removal of nine (9) stop logs. The elevation of the stop logs prior to removal was -1.0 and after removal is -5.60. There are no navigation lights installed at this site. The field data report, photographs and field notes are attached.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: March 9, 2004

Participants: Brian Brunet, Peter Williams

Weather Conditions: Clear and Mild (68° F)


Site No.: 14

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>2 Have splits/chipped out/cracked</td>
<td>No</td>
</tr>
<tr>
<td>Master Locks</td>
<td>New</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Two of the stop logs have chips/splits or cracks, but are still usable. The locks were replaced on this date (as requested by LDNR).

Stop Log Adjustment Date/Time: March 9, 2004 (11:00 A.M.)

- Number of Logs Removed/Replaced: 9 Logs were removed
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
LA DEPARTMENT OF NATURAL RESOURCES
TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS
SITE NO. 14

LOCATION + H.I. - ELEV. REMARKS
4.50 8.07 3.57 NEW HOLE

T.WATER
7.57 0.60

BOTTOM
15.89 -7.82 BOTTOM AND CANAL
13.45 -5.38 BOTTOM ON MARSH
9.07 -1.00 PRE-LOG REMOVAL

SIDE OF STRUCTURE
SIDE OF STRUCTURE
SIDE
SIDE

9 STOP LOGS WERE REMOVED ON THIS DATE.
START ELEV. = -1.00
END ELEV. = -5.40

NOTE: SILT BEGINNING TO BUILD UP ON MARSH SIDE OF STRUCTURE
ALSO, AT THE REQUEST OF MR. BRIAN ABBIN
W/D.N.R. THE OLD LOCKS (S401) WERE
REMOVED & REPLACED WITH NEW LOCKS (S404)
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

01/01/2002
Pre-Log Removal

01/01/2002
East Bay - Post-Log Removal with New Lock

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

East Bay - Post-Log Removal

Pre-Log Removal Center and West Bays

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

01/02/2002

Post-Log Removal Center and West Bays

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Brian Brunet, Peter Williams, John Helm

DATES: March 10, 2004

CONDITIONS: Clear and Mild (70°) - March 9, 2004; Clear and Cool (60°) - March 10, 2004

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 9, 2004.

The weir structure appeared to be in good condition. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.68 feet on the north side and 0.68 feet on the south side.

East Bay (Bay 1)

Desired elevation at Bay 1 would be approximately -3.56. In order to achieve this elevation, seven (7) stop logs were removed. Elevation of stop logs before removal -0.21 and after removal -3.73.

Center Bay (Bay 2)

Desired elevation at Bay 2 would be approximately -4.65. Ten (10) stop logs were removed to achieve this elevation. Elevation of stop log before removal was -0.24 and after removal is -5.31.

West Bay (Bay 3)

Desired elevation at Bay 3 would be approximately -1.69. Five (5) stop logs were removed to achieve elevation. Elevation of stop log before removal -0.23 and after removal -2.75.

There are no navigation lights installed at this site.

For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 21.

Date: March 9, 2004 (East Bay) March 10, 2004 (Center and West Bays)

Participants: Brian Brunet, Peter Williams, John Helm

Weather Conditions: Clear and Mild (70° F) - March 9, 2004, Clear and Cool (60° F) - March 10, 2004

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: 21

Structure Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>New</td>
<td>X</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Locks were replaced on this date (as requested by LDNR).

Stop Log Adjustment

Date/Time: March 9, 2004 (2:30 p.m. on East Bay), March 10, 2004 (11:00 a.m. on Center Bay and 2:00 p.m. on West Bay)

- Number of Logs Removed/Replaced: 7 from East Bay, 10 from Center Bay, and 5 from East Bay (22 total)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: East Bay (Blue), Center Bay (Yellow), West Bay (Pink)
REMOVAL OF STOP LOGS

SITE NO. 21

LOCATION + H.I. - ELEV

4.77 849 9.72

OBTAINED FROM TOWER

EAST BAY

7.81 0.48
12.55 -4.06
11.74 -3.27
8.70 -0.21
12.22 -3.73

CENTRAL BAY

14.68 -6.19
13.94 -5.45
9.73 -0.24

WEST BAY

10.79 -2.30
9.56 -1.07
8.72 -0.23

WEST BAY

5.03 8.75

OBTAINED FROM TOWER

CENTRAL BAY

8.50 0.25
14.06 -5.31
11.50 -2.15
5.03 3.72

CENTRAL BAY

NOTE: Silt building up @ EAST AND WEST BAYS AS SHOWN BY THE ELEVATIONS AND AS INSTRUCTED BY THE R.N. PERSONNEL (MR. BAKER) OF THE ELEVATIONS.

INSTRUCTED TO REMOVE ALL LOGS PREVIOUSLY INSTALLED, IF POSSIBLE, BECAUSE OF PERMIT REQUIREMENTS. IT WAS DIFFICULT TO REMOVE ALL BOARDS PREVIOUSLY INSTALLED.

FINE DATA AS SUPPLIED BY LA D.N.R.

CHICAGO H. D. H.

05/29/04
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Pre-Log Removal

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Split Log

New Lock Installed

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

New Lock Installed

Post-Log Removal

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Chipped Log

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crestweirs at Site No. 23

PARTICIPANTS: Brian Brunet, John Helm, Peter Williams

DATES: March 11, 2004

CONDITIONS: Clear and Mild (62° F)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 9, 2004.

The weir structure appeared to be in good condition. There are two stop log bays at the site, which we shall refer to as the North Bay and South Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.17 feet. Desired elevation at both bays would be approximately -5.78. Ten (10) stop logs were removed from each bay to achieve the desired elevation. The stop log elevation at the North Bay before stop log removal was -0.51 and after removal is -5.47. The stop log elevation at the North Bay before stop log removal was -0.45 and after removal is -5.44. There are no navigation lights installed at this site. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 23.

Date: March 11, 2004

Participants: Brian Brunet, John Helm, Peter Williams

Weather Conditions: Clear and Mild (62°F)

Persons Contacted for Access: Mr. Jeff Deblieux, P.L.S. of Burlington Resources

Site No.: 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>One stop log was split on top and two cracked on sides</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>New</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Locks were replaced on this date (as requested by LDNR).

Stop Log Adjustment Date/Time: March 11, 2004 (10:00 a.m.)

- Number of Logs Removed/Replaced: 10 from 2 bays (20 total)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: Red on North Bay and White on South Bay.
<table>
<thead>
<tr>
<th>Location</th>
<th>H.I.</th>
<th>ELEV.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Water</td>
<td>1.33</td>
<td>4.67</td>
<td>0.17</td>
</tr>
<tr>
<td>North Bay</td>
<td>11.38</td>
<td>-6.34</td>
<td></td>
</tr>
<tr>
<td>North Bay</td>
<td>10.82</td>
<td>-5.98</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.35</td>
<td>-0.51</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.31</td>
<td>-5.47</td>
<td></td>
</tr>
<tr>
<td>South Bay</td>
<td>11.08</td>
<td>-6.24</td>
<td></td>
</tr>
<tr>
<td>South Bay</td>
<td>11.09</td>
<td>-6.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.29</td>
<td>-0.45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.28</td>
<td>-5.44</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
1. One of the stop logs was split on one side but still usable as were 2 other stop logs at the ends as requested by the Bryan cabin w/dnr.
2. The old locks (544) were replaced with new locks (545) on both bays.
Benchmarks - Data Sheets
**VICINITY MAP** Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

**Name:** "TBM Structure #14"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

**Date of Survey:** June 4, 2002

**TBM Structure 14**

**NAD 83 (1993) Geodetic Position:**
- Lat. 29°23'08.43740" N
- Long. 91°00'04.87931" W

**NAD 83 Datum LSZ (1702) Feet:**
- $N= 322,246.13$
- $E= 3,386,562.02$

**Elevation at Top of Hex Bolt**
- 3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
**VICINITY MAP**  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

**Name:** "TBM Structure #21"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 21**

**NAD 83 (1983) Geodetic Position:**
- Lat. 29°22'47.25280" N
- Long. 90°56'36.35631" W

**NAD 83 Datum LSZ (1702) Feet:**
- N = 320,164.32
- E = 3,405,016.63

**Elevation at Top of Hex Bolt**
- 3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
**Vicinity Map**

**Scale:** 1" = 2000'

**Reproduced from USC&GS “Lake Penchant” Quadrangle**

**Name:** "TBM Structure #23"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 23**

**NAD 83 (1993) Geodetic Position:**

Lat. 29°22'39.70615" N  
Long. 90°56'05.89376" W

**NAD 83 Datum LSZ (1702) Feet:**

N = 319,411.28  
E = 3,407,714.35

**Elevation at Top of Hex Bolt**

3.51 feet (NAVD 88)
TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LDNR CONTRACT NO. 2503-03-21
SCI PROJECT NO. 2319

OPERATION AND INSPECTION REPORT
Site Nos. 14, 21, 23 and 06 (Navigational Aid)

OCTOBER 2004

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Shaw Coastal, Inc.
197 Elysian Drive
Houma, Louisiana 70363
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Pre Log Installation

Post Log Installation
Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

TBM EL. 3.57 NAVD 88
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir at Site No. 14

PARTICIPANTS: Roy Samperi, Patrick Flanagan, Shane Parfait

DATES: September 7, 2004

CONDITIONS: Breezy (85°)

Permission to gain access to Site No. 14 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 3, 2004.

The weir structure is located on the east side of Little Carencro Bayou, North of camp “Better Livin”. The weir structure appeared to be in good condition. The stop logs have chips/splits or cracks; but are still usable. One stop log was lost during installation and was replaced. The TBM used for this site in the determination of elevation was the top of a hex head bolt (elevation 3.57 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.90 feet on both sides of the structure.

It was determined through coordination with Louisiana Department of Natural Resources personnel and research of the previous report that the required elevation of the stop logs would be approximately -1.00 feet. This would need installation of nine (9) stop logs. The elevation of the stop logs prior to installation was -5.56 and after installation is -1.05. There are no navigation lights installed at this site. The field data report, photographs and field notes are attached.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: September 7, 2004

Participants: Roy Samperi, Pat Flanagan, and Shane Parfait

Weather Conditions: Clear, Breezy (85° F)


Site No.: 14

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th></th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>1 Has a Split</td>
<td></td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: One stop log has a split. It will be replaced next time as per Brian Babin. Oiled pad locks.

Stop Log Adjustment Date/Time: September 7, 2004:

- Number of Logs Removed/Replaced: 9 logs installed
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th>Remarks</th>
<th>BS</th>
<th>H1</th>
<th>FS</th>
<th>EL</th>
<th>Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBM</td>
<td></td>
<td></td>
<td>3.87</td>
<td>7.44</td>
<td>Top of Bolt</td>
</tr>
<tr>
<td>Both Sides Are Same</td>
<td></td>
<td></td>
<td>6.54</td>
<td>0.90</td>
<td>Top of Water</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15.23</td>
<td>-7.19</td>
<td>Bottom Canal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14.36</td>
<td>-6.92</td>
<td>Bottom Marsh</td>
</tr>
<tr>
<td>Before Log Installation</td>
<td></td>
<td></td>
<td>13.00</td>
<td>-5.56</td>
<td>Top of Log Dam</td>
</tr>
<tr>
<td>Post Log Installation</td>
<td></td>
<td></td>
<td>8.49</td>
<td>-1.05</td>
<td>Top of Log Dam</td>
</tr>
</tbody>
</table>

**Note:** Installed 9 stop logs.
Lost 1 stop log in the water; Locks were in good condition, sprayed with WD-40 as preventive measure.

**Diagram:**
- TBM (3.87)
- Top of Water (0.90)
- Bottom of Canal (-7.79)

**Elev. Before Installation:** -5.56
**Elev. After Installation:** -1.05
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

Pre Log Installation

Post Log Installation
Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

Chipped Log

TBM EL. 3.72 NAVD 88
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Roy Samperi, Pat Flanagan, and Shane Parfait

DATES: September 8, 2004

CONDITIONS: Clear (84°)

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on September 3, 2004.

The weir structure appeared to be in good condition. Two of the stop logs have splits in them. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.80 feet on the north side and 0.80 feet on the south side.

East Bay (Bay 1)

Desired elevation at Bay 1 would be approximately -0.21. In order to achieve this elevation, seven (7) stop logs were installed. Elevation of stop logs before installation was -3.73 and after installation was -0.22.

Center Bay (Bay 2)

Desired elevation at Bay 2 would be approximately -0.24. Ten (10) stop logs were installed to achieve this elevation. Elevation of stop log before installation was -5.29 and after installation is -0.23.

West Bay (Bay 3)

Desired elevation at Bay 3 would be approximately -0.23. Five (5) stop logs were installed to achieve this elevation. Elevation of stop log before installation was -2.74 and after installation was -0.21.

There are no navigation lights installed at this site.

For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 21.

Date: September 8, 2004

Participants: Roy Samperi, Pat Flanagan, and Shane Parfait

Weather Conditions: Clear, Light Wind (84° F)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Two with Splits (will be replaced next time)</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (oiled and cleaned)</td>
<td></td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned lock cylinder and sprayed with WD-40.

Stop Log Adjustment

Date/Time: September 8, 2004; 11:00 a.m. West, 12:00 p.m. Center, 1:30 p.m. East

- Number of Logs Removed/Replaced: 7 East, 10 Center, 5 West (22 total)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Post Installation

Pre Installation
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Post Installation

TBM EL. 3.51 NAVD 88
FIELD TRIP REPORT

SUBJECT:              TE-28 Brady Canal Hydrologic Restoration Project

LOCATION:            Terrebonne Basin, Terrebonne Parish

PURPOSE:             Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS:        Roy Samperi, Pat Flanagan, and Shane Parfait

DATES:               September 9, 2004

CONDITIONS:          Clear (80° F)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on September 3, 2004.

The weir structure appeared to be in good condition. Two of the stop logs have splits in them. There are two stop log bays at the site, which we shall refer to as the North Bay and South Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.75 feet. Desired elevation at both bays would be approximately -0.50. Ten (10) stop logs were installed in each bay to achieve the desired elevation. The stop log elevation at the North Bay before stop log installation was -5.46 and after installation is -0.43. The stop log elevation at the South Bay before stop log installation was -5.47 and after installation is -0.36. There are no navigation lights installed at this site. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 23.

Date: September 9, 2004

Participants: Roy Samperi, Pat Flanagan, and Shane Parfait

Weather Conditions: Clear (84° F)

Persons Contacted for Access: Mr. Jeff Deblieux, P.L.S. of Burlington Resources

Site No.: 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Two split logs (will be replaced next time)</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (oiled)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned and sprayed with WD-40.

Stop Log Adjustment Date/Time: September 9, 2004:

- Number of Logs Removed/Replaced: 10 from 2 bays (20 total)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th>Remarks</th>
<th>BS</th>
<th>HI</th>
<th>FS</th>
<th>EL</th>
<th>Desc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBM</td>
<td></td>
<td></td>
<td></td>
<td>3.51</td>
<td>Top of Boat</td>
</tr>
<tr>
<td>Both Sides Same</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td></td>
<td></td>
<td></td>
<td>8.13</td>
<td>0.75</td>
</tr>
<tr>
<td>North</td>
<td></td>
<td></td>
<td></td>
<td>14.92</td>
<td>-6.04</td>
</tr>
<tr>
<td>North</td>
<td></td>
<td></td>
<td></td>
<td>15.41</td>
<td>-6.53</td>
</tr>
<tr>
<td>North</td>
<td></td>
<td></td>
<td></td>
<td>14.34</td>
<td>-5.46</td>
</tr>
<tr>
<td>South</td>
<td></td>
<td></td>
<td></td>
<td>15.27</td>
<td>-6.39</td>
</tr>
<tr>
<td>South</td>
<td></td>
<td></td>
<td></td>
<td>14.70</td>
<td>-5.82</td>
</tr>
<tr>
<td>South</td>
<td></td>
<td></td>
<td></td>
<td>14.35</td>
<td>-5.47</td>
</tr>
<tr>
<td>North</td>
<td></td>
<td></td>
<td></td>
<td>9.31</td>
<td>0.43</td>
</tr>
<tr>
<td>South</td>
<td></td>
<td></td>
<td></td>
<td>9.24</td>
<td>0.36</td>
</tr>
</tbody>
</table>

![Diagram of Structure #23](image_url)
Structure No. 06
Inspection of Navigational Aids
Site No. 06
Inspection of Navigation Aids

Structure No. 06

Northwest Green Beacon
Site No. 06
Inspection of Navigation Aids

Northeast Red Beacon

Southwest Green Beacon
Site No. 06
Inspection of Navigation Aids

09/08/2004

Southeast Red Beacon
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids

PARTICIPANTS: Roy Samperi, Patrick Flanagan, Shane Parfait

DATES: September 8, 2004

CONDITIONS: Clear (84° F)

The structure is located along Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown in the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon functioned adequately, but was in need of cleaning.
- The southeast red beacon failed to function. The clear protective shield is broken and the solar panel for charging the battery is broken and hanging in an inverted position.
- The northeast red beacon functioned adequately, but was in need of cleaning.
- The northwest green beacon failed to function and is missing the clear protective shield.

The field data, photographs, and field notes are attached.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: September 8, 2004

Participants: Roy Samperi, Patrick Flanagan, Shane Parfait

Weather Conditions: Clear (84° F)

Persons Contacted for Access: N/A

Site No.: Structure No. 6

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Navigation Lights</td>
<td>SW Grean Beacon - Functioned Fine, Needs Cleaning</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>SE Red Beacon - Clear Protective Shield is Broken, Solar Panel is Broken, Beacon Failed to Function</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>NE Red Beacon - Looks Good, Functions Fine, Needs Cleaning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NW Grean Beacon - Failed to Function, Missing Clear Protective Shield</td>
<td></td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: SW Grean Beacon and NE Grean Beacon need cleaning. The SE Red Beacon is not working and needs replacement of protective shield and solar panel. The NW Green Beacon is not working and needs replacement of protective shield.

Stop Log Adjustment

Date/Time:

- Number of Logs Removed/Replaced:
- Elevation:
- Mudline Levels:
- Water Levels:

Flag Description:
NAVIGATIONAL AIDS INSPECTION

STRUCTURE #6

SW GREEN BEACON - FUNCTIONED FINE, HOWEVER NEEDS CLEANING.

SE RED BEACON - CLEAR PROTECTIVE SHIELD IS BLEMISHED, SOLAR PANEL FOR CHARGING BATTERY IS BROKEN AND HANGING UPSIDE DOWN, BEACON FAILED TO FUNCTION.

NE RED BEACON - LOOKS GOOD. FUNCTIONED FINE, HOWEVER NEEDS CLEANING.

NW GREEN BEACON - FAILED TO FUNCTION AND IS ALSO MISSING CLEAR PROTECTIVE SHIELD.

BAYOU DE CADE
Benchmarks - Data Sheets
Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carenasco Bayou. Turn right in Carenasco Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,366,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Vicinity Map

Scale: 1" = 2000'  Reproduced from USC&GS "Lake Penchant" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat.  29°22'47.25280" N
Long.  90°56'36.35531" W

NAD 83 Datum LSZ (1702) Feet:
N=  320,164.32
E=  3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29° 22' 39.70615" N
Long. 90° 56' 05.59376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

Prepared By

TBS
T. BAKER SMITH
PROFESSIONAL CONSULTANTS SINCE 1913

March 2005
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site No. 06</td>
<td>A-1</td>
</tr>
<tr>
<td>2</td>
<td>Site No. 14</td>
<td>A-2</td>
</tr>
<tr>
<td>3</td>
<td>Site No. 21</td>
<td>A-3</td>
</tr>
<tr>
<td>4</td>
<td>Site No. 23</td>
<td>A-4</td>
</tr>
<tr>
<td>5</td>
<td>Benchmarks – Data Sheets</td>
<td>A-5</td>
</tr>
</tbody>
</table>
ATTACHMENT NO. 1

Site No. 06
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids at Site No. 06

PARTICIPANTS: Jody Ledet, Quentin Hebert, Joe Boquet

DATES: March 22, 2005

CONDITIONS: Cloudy (77°)

The structure is located along north bank of Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown with the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon failed to function. Photo cell was damaged.

- The southeast red beacon functioned but light failed. The clear protective shield was missing.

- The northeast red beacon failed to function.

- The northwest green beacon failed to function. The clear protective shield was missing.

The field data, photographs, and field notes are attached.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project
Location: Terrebonne Basin, Terrebonne Parish
Purpose of Site Visit: Inspection of Navigational Aids

Date: Tuesday, March 22, 2005
Participants: Jody Ledet, Quentin Hebert, Joe Boquet
Weather Conditions: Cloudy (77°)
Persons Contacted for Access: N/A
Site No.: Structure No. 6

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
</tr>
<tr>
<td>Navigation Lights</td>
<td>SW Green Beacon - Failed to Function, Photo Cell was Damaged</td>
</tr>
<tr>
<td></td>
<td>SE Red Beacon - Beacon Functions, Light Failed to Function, Clear Protective Shield was Missing.</td>
</tr>
<tr>
<td></td>
<td>NE Red Beacon - Beacon Failed to Function.</td>
</tr>
<tr>
<td></td>
<td>NW Green Beacon - Beacon Failed to Function, Clear Protective Shield was Missing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: SW Green Beacon, NE Red Beacon & NW Green Beacon are not working. SE Red Beacon & NW Green Beacon need clear protective shields. SW Red Beacon Photo Cell Plastic Connection is Broken and Needs Repair. SE Red Beacon Functions but Light is Out needs Replacement.

Stop Log Adjustment Date/Time: N/A
- Number of Logs Removed/Replaced: N/A
- Elevation: N/A
- Mudline Levels: N/A
- Water Levels: N/A
Flag Description: N/A
STRUCTURE NO. 06

General overview of Structure #6 – looking north (3/22/05)

General navigational light structure – southwest green beacon (3/22/05)
General over view of structure #6, looking south—southwest & northwest green beacons (3/22/05)

General over view of structure #6, looking north—northeast & southeast green beacons (3/22/05)
ATTACHMENT NO. 2

Site No. 14
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Jody Ledet, Quentin Hebert, Joe Boquet

DATES: March 21, 2005

CONDITIONS: Clear (78°)

Permission to gain access to Site No. 14 was obtained verbally from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 17, 2005.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stop log bays at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.83 feet on both sides of the weir. The stop logs have splits, cracks & barnacles but are still in good condition. Stop logs were marked with orange flags.

We removed the planned 9 stop logs that were installed on September 7, 2004. Pre stop log removal elevation was -1.07 feet and Post stop log removal was -5.59 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site14.

Date: Monday, March 21, 2005

Participants: Jody Ledet, Quentin Hebert, Joe Boquet

Weather Conditions: Clear (78°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment Date/Time: March 21, 2005; 1:00 p.m.

- Number of Logs Removed/Replaced: Removed 9 Logs
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: Flagged removed stop logs with orange flags.
STRUCTURE NO. 14

General structure condition (3/21/05)

General locking mechanism (3/21/05)
ATTACHMENT NO. 3

Site No. 21
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project
LOCATION: Terrebonne Basin, Terrebonne Parish
PURPOSE: Operate and adjust the variable crest weirs at Site No. 21
PARTICIPANTS: Jody Ledet, Quentin Hebert, Joe Boquet
DATES: March 22, 2005
CONDITIONS: Cloudy (76°)

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 18, 2005.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72” (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.38 feet on both sides of the weir. Stop logs were marked with green flags.

East Bay
We removed the planned 7 stop logs that were installed on September 8, 2004. Pre stop log removal elevation was -0.20 feet and Post stop log removal was -3.73 feet.

Center Bay
We removed the planned 10 stop logs that were installed on September 8, 2004. Pre stop log removal elevation was -0.22 feet and Post stop log removal was -5.29 feet.

West Bay
We removed 2 of the planned 5 stop logs that were installed on September 8, 2004. Pre stop log removal elevation was -0.19 feet and Post stop log removal was -1.25 feet. Due to silt building, only 2 stop logs were removed as per LADNR request.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

P:\Env\2005.1134\Doc\051134 21FTR.doc
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 21.

Date: Tuesday, March 22, 2005

Participants: Jody Ledet, Quentin Hebert, Joe Boquet

Weather Conditions: Cloudy (76°)

Persons Contacted for Access: Mr. Jeff W. Debieux, P.L.S. of Burlington Resources

Site No.: Structure No. 21

Structure Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Eye lost on one log (logs in good condition)</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40. Dropped pin for master lock on east bay and was unable to recover. Used rope to tie channel beam and contacted LADNR.

Stop Log Adjustment  Date/Time: March 22, 2005; East 9:00 a.m., Center 9:45 a.m., West 11:15 a.m.

- Number of Logs Removed/Replaced: Removed 19 Logs (7 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: Flagged removed stop logs with green flags.
Damaged stop log – eye bolt pulled out during removal (3/22/05)

Pin lost during removal (3/22/05)
ATTACHMENT NO. 4

Site No. 23
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Jody Ledet, Quentin Hebert, Joe Boquet

DATES: March 21, 2005

CONDITIONS: Clear (77°)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 18, 2005.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.79 feet on both sides of the weir. Stop logs were marked with pink flags on North Bay and pink & yellow flags on South Bay.

North Bay
We removed the planned 10 stop logs that were installed on September 9, 2004. Pre stop log removal elevation was -0.41 feet and Post stop log removal was -5.46 feet.

South Bay
We removed 10 (2 logs were lost during removal) of the planned 10 stop logs that were installed on September 8, 2004. Used chain hoist to remove first two stop logs, damaged first stop log in process and will be replaced. Pre stop log removal elevation was -0.43 feet and Post stop log removal was -5.46 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Monday, March 21, 2005

Participants: Jody Ledet, Quentin Hebert, Joe Boquet

Weather Conditions: Cloudy (77°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Damaged one log with chain hoist &amp; lost two logs during removal</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment Date/Time: March 21, 2005; North 9:00 a.m. & South 10:30 a.m.

- Number of Logs Removed/Replaced: Removed 20 Logs (10 Logs North Bay, 10 Logs Center Bay (lost 2 logs))
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: Flagged North Bay logs with Pink Flags and South Bay logs with Pink & Yellow flags.
GENERAL STRUCTURE CONDITION (3/21/05)

GENERAL STRUCTURE CONDITION (3/21/05)
STRUCTURE NO. 23

Damaged stop log – eye bolt pulled out during removal (3/21/05)

General view of locking mechanism (3/21/05)
ATTACHMENT NO. 5

Benchmarks – Data Sheets
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1983) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,366,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument “TE28-SM-C”
"TBM STRUCTURE #21"

VICTINY MAP  Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.2528" N
Long. 90°56'36.35831" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
**VICINITY MAP** Scale: 1" = 2000'  
Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name:  "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

**TBM Structure 23**

**NAD 83 (1983) Geodetic Position:**
Lat.  29°22'39.70615" N  
Long.  90°56'05.89376" W

**NAD 83 Datum LSZ (1702) Feet:**
N= 319,411.28  
E= 3,407,714.35

**Elevation at Top of Hex Bolt**
3.51 feet (NAVD 88)
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

October 2005

Prepared By

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913
## LIST OF ATTACHMENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site No. 06</td>
<td>A-1</td>
</tr>
<tr>
<td>2</td>
<td>Site No. 14</td>
<td>A-2</td>
</tr>
<tr>
<td>3</td>
<td>Site No. 21</td>
<td>A-3</td>
</tr>
<tr>
<td>4</td>
<td>Site No. 23</td>
<td>A-4</td>
</tr>
<tr>
<td>5</td>
<td>Benchmarks – Data Sheets</td>
<td>A-5</td>
</tr>
</tbody>
</table>
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project
LOCATION: Terrebonne Basin, Terrebonne Parish
PURPOSE: Inspection of Navigational Aids at Site No. 06
PARTICIPANTS: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin
DATES: September 21, 2005
CONDITIONS: Sunny (92°)

The structure is located along north bank of Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown with the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon failed to function. The clear protective shield was dirty.
- The southeast red beacon failed to function. The clear protective shield was missing.
- The northeast red beacon failed to function. The clear protective shield was dirty.
- The northwest green beacon failed to function. The clear protective shield was missing.

The field data, photographs, and field notes are attached.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: Wednesday, September 21, 2005

Participants: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

Weather Conditions: Sunny (92°)

Persons Contacted for Access: N/A

Site No.: Structure No. 6

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Navigation Lights</td>
<td>SW Green Beacon - Failed to Function, Dirty Protective Shield</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>SE Red Beacon - Failed to Function, Clear Protective Shield was Missing.</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>NE Red Beacon - Failed to Function, Dirty Protective Shield</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>NW Green Beacon - Failed to Function, Clear Protective Shield was Missing.</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: SW Green Beacon, SE Red Beacon, NE Red Beacon & NW Green Beacon are not working. SE Red Beacon & NW Green Beacon need clear protective shields.

Stop Log Adjustment Date/Time: N/A

- Number of Logs Removed/Replaced: N/A
- Elevation: N/A
- Mudline Levels: N/A
- Water Levels: N/A

Flag Description: N/A
General over view of Structure #6 – looking north (9/21/05)

General navigational light structure, looking north – southeast & northeast red beacons (9/21/05)
General over view of structure #6, looking north – southwest & northwest green beacons (9/21/05)

General over view of structure #6, looking south – northeast red beacon (9/21/05)
ATTACHMENT NO. 2

Site No. 14
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

DATES: September 21, 2005

CONDITIONS: Sunny (92°)

Permission to gain access to Site No. 14 was obtained verbally from Mr. Jeff W Deblieux, P.L.S. of Burlington on September 20, 2005.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +1.18 (NAVD88) feet on both sides of the weir.

We installed the planned 9 stop logs that were removed on March 21, 2005. Pre stop log installation elevation was -5.57 (NAVD88) feet and Post stop log installation was -1.00 feet (NAVD88).

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 14.

Date: Wednesday, September 21, 2005

Participants: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

Weather Conditions: Sunny (92°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment Date/Time: September 21, 2005; 1:00 p.m.

- Number of Logs Removed/Replaced: Installed 9 Logs
- Elevation: See Field Notes
- Mudsline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
STRUCTURE NO. 14

General structure condition (9/21/05)

General locking mechanism (9/21/05)
ATTACHMENT NO. 3

Site No. 21
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Jody Ledet, Ronnie Duke, Jr., Joe Boquet & Anthony Naquin

DATES: September 21, 2005

CONDITIONS: Sunny (92°)

Permission to gain access to Site No. 21 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 20, 2005.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.36(NAVD88) feet on both sides of the weir.

East Bay
We installed the planned 7 stop logs that were removed on March 22, 2005. Pre stop log installation elevation was -3.73 (NAVD88) feet and Post stop log installation was -0.22 (NAVD88) feet.

Center Bay
We installed the planned 10 stop logs that were removed on March 22, 2005. Pre stop log installation elevation was -5.29 (NAVD88) feet and Post stop log installation was -0.10 (NAVD88) feet.

West Bay
We installed the planned 2 stop logs that were removed on March 22, 2005. Pre stop log installation elevation was -1.04 (NAVD88) feet and Post stop log installation was -0.25 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 21.

Date: Wednesday, September 21, 2005

Participants: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

Weather Conditions: Sunny (92°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 21

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned), Replaced lock on East Dam</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40. Replaced damaged lock on East Dam

Stop Log Adjustment

Date/Time: September 21, 2005; West 10:30 a.m., Center 11:00 a.m., East 11:30 a.m.

- Number of Logs Installed: Installed 19 Logs (7 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Jody Ledet & Ronnie Duke

DATES: October 5, 2005

CONDITIONS: Sunny (88°)

Permission to gain access to Site No. 23 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 20, 2005.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.69 (NAVD88) feet on both sides of the weir.

North Bay
We installed the planned 10 stop logs that were removed on March 21, 2005. Pre stop log installation elevation was -5.53 (NAVD88) feet and Post stop log installation was -0.43 (NAVD88) feet.

South Bay
We installed the planned 10 stop logs that were removed on March 21, 2005. Pre stop log installation elevation was -5.49 (NAVD88) feet and Post stop log installation was -0.44 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Wednesday, October 05, 2005

Participants: Jody Ledet & Ronnie Duke

Weather Conditions: Sunny (88°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 23

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>Noticed Erosion at Ends of Structure</td>
</tr>
<tr>
<td>Vegetation</td>
<td>Vegetation on Levee is Dead/Stressed Following Hurricanes Katrina and Rita</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment: Date/Time: October 5, 2005; North 11:00 a.m. & South 11:45 a.m.

- Number of Logs Removed/Replaced: Installed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description:
ATTACHMENT NO. 5

Benchmarks – Data Sheets
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name:  "TBM Structure #14"

Location:  From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou.  Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description:  The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey:  June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat.  29°23'08.43740"N
Long.  91°00'04.67931"W

NAD 83 Datum LSZ (1702) Feet:
N=  322,246.13
E=  3,386,562.02

Elevation at Top of Hex Bolt
3.57 foot (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chanco Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
"TBM STRUCTURE #21"

VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat.  29°22'47.25280" N
Long.  90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)
**VICINITY MAP** Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

**Name:** "TBM Structure #23"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 23**

**NAD 83 (1993) Geodetic Position:**
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

**NAD 83 Datum LSZ (1702) Feet:**
N = 319,411.28
E = 3,407,714.35

**Elevation at Top of Hex Bolt**
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"

Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

Prepared By

March 2006
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

Prepared By

March 2006
### LIST OF ATTACHMENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site No. 06</td>
<td>A-1</td>
</tr>
<tr>
<td>2</td>
<td>Site No. 14</td>
<td>A-2</td>
</tr>
<tr>
<td>3</td>
<td>Site No. 21</td>
<td>A-3</td>
</tr>
<tr>
<td>4</td>
<td>Site No. 23</td>
<td>A-4</td>
</tr>
<tr>
<td>5</td>
<td>Benchmarks – Data Sheets</td>
<td>A-5</td>
</tr>
</tbody>
</table>
ATTACHMENT NO. 1

Site No. 06
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids at Site No. 06

PARTICIPANTS: Kodi Babin, Jody Ledet

DATES: March 17, 2006

CONDITIONS: Cloudy (82°)

The structure is located along north bank of Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown with the attached field notes. The following are the findings at Structure No. 06:

• The southwest green beacon light sensor is damaged, but working. Beacon light is working. Clear protective shield is dirty.

• The southeast red beacon solar panel is missing. Beacon did not work. Clear protective shield is missing.

• The northeast red beacon light is working. Clear protective shield and light sensor in good condition.

• The northwest green beacon light is working. Clear protective shield is missing. Light sensor in good condition.

The field data, photographs, and field notes are attached.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: Friday, March 17, 2006

Participants: Jody Ledet, Kodi Babin

Weather Conditions: Cloudy (82°)

Persons Contacted for Access: N/A

Site No.: Structure No. 6

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>SE Red Beacon - Solar Panel missing, Beacon not working. Protective Shield was Missing.</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>NE Red Beacon - Beacon light working, Protector Shield and light sensor in good condition.</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>NW Green Beacon - Beacon is working. Protective shield was missing. Light sensor in good condition.</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>


Stop Log Adjustment | Date/Time: N/A

- Number of Logs Removed/Replaced: N/A
- Elevation: N/A
- Mudline Levels: N/A
- Water Levels: N/A

Flag Description: N/A
Navigational Aids Inspection
Site No. 10

SW Green Beacon—Light sensor is damaged but working. Beacon light is working. Clear protective shield is dirty.


NE Red Beacon—Beacon light is working. Clear protective shield & light sensor in good condition.

NW Green Beacon—Beacon light is working. Clear protective shield is missing. Light sensor in good condition.
STRUCTURE 6

General Overview of Structure (Facing North) (3/17/2006)

General Overview of Structure (Facing South) (3/17/2006)

ATTACHMENT NO. 2

Site No. 14
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Kodi Babin, Jody Ledet

DATES: March 17, 2006

CONDITIONS: Cloudy (82°)

Permission to gain access to Site No. 14 was obtained verbally from Mr. Jeff W Deblieux, P.L.S. of Burlington on March 13, 2006.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.91 feet on both sides of the weir. The stop logs are in good condition.

We removed the planned 9 stop logs that were installed on September 21, 2005. Pre stop log removal elevation was -0.95 feet and Post stop log removal was -5.56 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
# FIELD DATA REPORT

**Project (No. & Name):** TE-28 Brady Canal Hydrologic Restoration Project  
**Location:** Terrebonne Basin, Terrebonne Parish  
**Purpose of Site Visit:** Adjust (remove stop logs) the variable crest weir structure at Site14.

**Date:** Friday, March 17, 2006  
**Participants:** Jody Ledet, Kodi Babin  
**Weather Conditions:** Cloudy (82\(^\circ\))  
**Persons Contacted for Access:** Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources  
**Site No.:** Structure No. 14

## Structure Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
</tbody>
</table>

## Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

**Description of Maintenance/Repair Required:** Cleaned master locks with WD-40.

## Stop Log Adjustment

**Date/Time:** March 17, 2006; 8:30 a.m.

- **Number of Logs Removed/Replaced:** Removed 9 Logs  
- **Elevation:** See Field Notes  
- **Mudline Levels:** See Field Notes  
- **Water Levels:** See Field Notes  
- **Flag Description:** N/A
<table>
<thead>
<tr>
<th>Location</th>
<th>H1</th>
<th>ELEV</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM 14</td>
<td>2.29</td>
<td>5.86</td>
<td>3.59</td>
</tr>
<tr>
<td>WATER</td>
<td>4.95</td>
<td>0.91</td>
<td>OP @ 8:30 A.M.</td>
</tr>
</tbody>
</table>

| Bottom | 13.73 | -7.87 | CANAL |
| Bottom | 11.46 | -5.60 | LAKE |
| Pre-Log | 10.81 | -0.95 | Removal |
| Post-Log | 11.42 | -5.56 | Post-Log |
| Check | 2.29 | 3.59 | BM Check |

**Notes:** Pad locks in good condition with all pad locks.

**Structure #4**
TBM #4 supplied by LADNR.
General Structure Condition (3/17/2006)

General Locking Mechanism (3/17/2006)
ATTACHMENT NO. 3

Site No. 21
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Jody Ledet, Kenny King, Jude LeDoux

DATES: March 14, 2006

CONDITIONS: Sunny (80°)

Permission to gain access to Site No. 21 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 13, 2006.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.03 feet on both sides of the weir.

East Bay
We removed 5 of the planned 7 stop logs that were installed on September 21, 2005. Pre stop log removal elevation was -0.17 feet and Post stop log removal was -2.71 feet. Replaced 1 padlock.

Center Bay
We removed the planned 10 stop logs that were installed on September 21, 2005. Pre stop log removal elevation was 0.06 feet and Post stop log removal was -4.97 feet. Replaced 1 padlock.

West Bay
We removed the planned 2 stop logs that were installed on September 21, 2005. Pre stop log removal elevation was -0.18 feet and Post stop log removal was -1.24 feet. Due to silt building, only 2 stop logs were removed as per LADNR request. Replaced 2 padlocks.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 21.

Date: Tuesday, March 14, 2006

Participants: Jody Ledet, Kenny King, Jude LeDoux

Weather Conditions: Sunny (80°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>2 pile caps are damaged</td>
<td>Yes</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>No</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40. Replaced a total of 4 padlocks.

Stop Log Adjustment

Date/Time: March 14, 2006; East 11:00 a.m., Center 9:50 a.m., West 9:30 a.m.

- Number of Logs Removed/Replaced: Removed 17 Logs (5 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
TBS Job # 2006-1225
LADNR
TE-28 Brady Canal Restoration Project

Removal of Stop Logs
Site No. Z1

<table>
<thead>
<tr>
<th>Location</th>
<th>HI</th>
<th>Elev</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bm 21</td>
<td>3.29</td>
<td>7.49</td>
<td>3.02</td>
</tr>
<tr>
<td>WATER</td>
<td>1.44</td>
<td>1.03</td>
<td>M.O @</td>
</tr>
</tbody>
</table>

| West Bottom | 8.53 | -1.04 | CANAL |
| Pre-log     | 8.16  | -1.16 | LAKE |
| Post-log    | 7.67  | -0.18 | Pre-log Removal |
| Post-log    | 8.73  | -1.24 | Post-log Removal |

| Center Bottom | 13.56 | -1.07 | CANAL |
| Pre-log       | 13.20 | -5.71 | LAKE |
| Post-log      | 7.43  | 0.00  | Pre-log Removal |
| Post-log      | 12.46 | -4.99 | Post-log Removal |

| East Bottom  | 10.18 | -2.69 | CANAL |
| Pre-log      | 10.25 | -2.76 | LAKE |
| Post-log     | 7.60  | -0.97 | Pre-log Removal |
| Post-log     | 10.20 | -2.71 | Post-log Removal |

Check: 3.77 3.72 Bm Check

---

Structure # Z1
Bm Z1 - Supplied by LADNR
WEST BAY - Removed 2 stop logs, Replaced 2 Pad Locks
CENTER BAY - Removed 10 stop logs, Replaced 1 Pad Lock
EAST BAY - Removed 5 stop logs, Replaced 1 Pad Lock

---

Notes:
2 pipe caps are damaged
- W1140 all Pad Locks
- Replaced 4 Pad Locks
STRUCTURE 21

General Structure Condition (3/14/2006)

General Structure Condition (3/14/2006)
Damaged Pile Caps (3/14/2006)

Stop Logs in Good Condition (3/14/2006)
ATTACHMENT NO. 4

Site No. 23
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Jody Ledet, Kenny King, Jude LeDoux

DATES: March 14, 2006

CONDITIONS: Sunny (80°F)

Permission to gain access to Site No. 23 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 13, 2006.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.01 feet on both sides of the weir.

**North Bay**
We removed the planned 10 stop logs that were installed on October 5, 2005. Pre stop log removal elevation was -0.51 feet and Post stop log removal was -5.47 feet.

**South Bay**
We removed the planned 10 stop logs that were installed on October 5, 2005. Used chain hoist to remove first stop log. Pre-stop log removal elevation was -0.47 feet and Post stop log removal was -5.46 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Tuesday, March 14, 2006

Participants: Jody Ledet, Kenny King, Jude LeDoux

Weather Conditions: Sunny (80°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Timber Holst/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminium</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment Date/Time: March 14, 2006; North 1:00 p.m. & South 2:15 p.m.

- Number of Logs Removed/Replaced: Removed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th>Location</th>
<th>Hi</th>
<th>Elev</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bm 23</td>
<td>3.91</td>
<td>7.47</td>
<td>Remove stop logs</td>
</tr>
<tr>
<td>WATER</td>
<td>1.46</td>
<td>1.01</td>
<td>H2O @ 1:00pm</td>
</tr>
</tbody>
</table>

**North Bay**
- Bottom: 14.00, -1.63, marsh
- Bottom: 13.50, -1.03, lake, pre-log removal
- Pre-Log: 7.98, -0.51, post-log removal
- Post-Log: 12.94, -5.47

**South Bay**
- Bottom: 13.57, -1.10, marsh
- Bottom: 13.77, -1.30, lake, pre-log removal
- Pre-Log: 7.94, -0.47, post-log removal
- Post-Log: 12.93, -5.46

**Check**
- 3.91 | 3.51 | Bm Check

**Notes:**
- Winch all post locks
- Locks in good condition

**Structure #23**
- BM 23 supplied by LADNR
- North Bay - Removed 10 stop logs in good condition
- South Bay - Removed 10 stop logs in good condition
STRUCTURE 23

General Structure Condition (3/14/2006)

General Structure Condition (3/14/2006)
ATTACHMENT NO. 5

Benchmarks – Data Sheets
BRADY CANAL HYDROLOGIC RESTORATION

Data Source:
La. Dept. of Natural Resources
Coastal Restoration Division
Feild Engineering Section
Thibodaux Field Office

1998 DOQQ's
Date: July 22, 2002
Map ID: 2002-TFO-066

LEGEND:
- Project Boundary
- Shoreline Protection
- Weir Structure
- Plug Structure
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name:  "TBM Structure #14"

Location:  From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description:  The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey:  June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat.  29°23'08.43740" N
Long.  91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N=  322,246.13
E=  3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)
VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N = 320,164.32
E = 3,405,016.83

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SMA7"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat.  29º22'39.70615" N
Long.  90º56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument T1E28-SMA.
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
September 14, 2006

Hand Delivered

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA  70301

Re: Field Trip Report
Brady Canal Hydrologic Restoration Project (TE-28) – Fall 2006
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Dear Mr. Babin:

Enclosed are four copies of the Field Trip Report for work performed on
the above referenced project. This report includes findings, field notes, data and
photographs as required in the contract.

Thank you for the opportunity of working with you on this project. For
comments or questions, I can be reached at 985-223-9288 or email
kodib@tbsmith.com.

Sincerely,

T. BAKER SMITH, INC.

Kodib
Kodi J. Babin, Project Manager
Environmental Business Unit

KJB/esh
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

September 2006

Prepared By

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA  Lafayette, LA  Baton Rouge, LA  Thibodaux, LA  Houston, TX
1 (866) 357-1050  www.tbsmith.com
# LIST OF ATTACHMENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site No. 06</td>
<td>A-1</td>
</tr>
<tr>
<td>2</td>
<td>Site No. 14</td>
<td>A-2</td>
</tr>
<tr>
<td>3</td>
<td>Site No. 21</td>
<td>A-3</td>
</tr>
<tr>
<td>4</td>
<td>Site No. 23</td>
<td>A-4</td>
</tr>
<tr>
<td>5</td>
<td>Benchmarks – Data Sheets</td>
<td>A-5</td>
</tr>
</tbody>
</table>
ATTACHMENT NO. 1

Site No. 06
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids at Site No. 06

PARTICIPANTS: Kodi Babin, Ronnie Duke, Jr.

DATES: September 5, 2006

CONDITIONS: Sunny (90°)

The structure is located along north bank of Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown with the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon failed to function. The clear protective shield was dirty. The sensor appeared to be in good condition.

- The southeast red beacon functioned properly. The clear protective shield and sensor appeared to be in good condition.

- The northeast red beacon functioned properly. The clear protective shield was dirty. The sensor appeared to be in good condition.

- The northwest green beacon functioned properly. The clear protective shield was missing. The sensor appeared to be in good condition.

The field data, photographs, and field notes are attached.
**FIELD DATA REPORT**

**Project (No. & Name):** TE-28 Brady Canal Hydrologic Restoration Project

**Location:** Terrebonne Basin, Terrebonne Parish

**Purpose of Site Visit:** Inspection of Navigational Aids

**Date:** Tuesday, September 05, 2006

**Participants:** Kodi Babin, Ronnie Duke, Jr.

**Weather Conditions:** Sunny (90°)

**Persons Contacted for Access:** N/A

**Site No.:** Structure No. 6

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item</strong></td>
<td><strong>Condition</strong></td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
</tr>
<tr>
<td>Navigation Lights</td>
<td>SW Green Beacon - Failed to Function, Dirty Protective Shield</td>
</tr>
<tr>
<td></td>
<td>SE Red Beacon - Functioned properly</td>
</tr>
<tr>
<td></td>
<td>NE Red Beacon - Functioned properly, Dirty Protective Shield</td>
</tr>
<tr>
<td></td>
<td>NW Green Beacon - Functioned properly, Clear Protective Shield was Missing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
<th><strong>Condition</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item</strong></td>
<td></td>
</tr>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Description of Maintenance/Repair Required:** SW Green Beacon is not working. SW Green Beacon and NE Red Beacon need to be cleaned. NW Green Beacon needs clear protective shield.

**Stop Log Adjustment**

**Date/Time:** N/A

- **Number of Logs Removed/Replaced:** N/A
- **Elevation:** N/A
- **Mudline Levels:** N/A
- **Water Levels:** N/A

**Flag Description:** N/A
LADAR

TE-28 Brady Canal Restoration
Navigational Aids Inspection
Site No. 6

SW Green Beacon - Beacon failed to function. Protective shield is good but dirty. Sensor is in good condition.

SE Red Beacon - Beacon functioned properly. Sensor is in good condition.

NE Red Beacon - Beacon functioned properly. Sensor is in good condition. Clear protective shield is missing.

NW Green Beacon - Beacon functioned properly. Sensor is in good condition. Clear protective shield is missing.
STRUCTURE NO. 06

General structure conditions #6 – looking north (9/05/06)

General navigation light structure #6 – southwest green beacon (9/05/06)
General navigation light structure #6 – southeast red beacon (9/05/06)

General structure conditions #6 – looking south (9/05/06)
GENERAL NAVIGATION LIGHT STRUCTURE #6 – NORTHEAST RED BEACON (9/05/06)

GENERAL NAVIGATION LIGHT STRUCTURE #6 – NORTHWEST GREEN BEACON (9/05/06)
ATTACHMENT NO. 2

Site No. 14
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Kodi Babin, Jody Ledet, Ronnie Duke, Jr.

DATES: September 6, 2006

CONDITIONS: Cloudy (86°)

Permission to gain access to Site No. 14 was obtained via email from Mr. Jeff W Deblieux, P.L.S. of Burlington on September 5, 2006.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +0.70 (NAVD88) feet on both sides of the weir.

We installed the planned 9 stop logs that were removed on March 17, 2006. Pre stop log installation elevation was -5.80 (NAVD88) feet and Post stop log installation was -1.26 feet (NAVD88).

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 14.

Date: Wednesday, September 06, 2006

Participants: Kodi Babin, Jody Ledet, Ronnie Duke, Jr.

Weather Conditions: Cloudy (86°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

Date/Time: September 6, 2006; 1:00 p.m.

- Number of Logs Removed/Replaced: Installed 9 Logs
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
**Job # 2006.11.13**

**LADNR**

TE-28  BEAVY CANAL RESTORATION

<table>
<thead>
<tr>
<th>BS</th>
<th>Hi</th>
<th>FS</th>
<th>ELEV</th>
<th>Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.57</td>
<td>TOP OF BOLT</td>
</tr>
<tr>
<td>2.13</td>
<td>5.70</td>
<td></td>
<td>3.57</td>
<td>TOP OF BOLT</td>
</tr>
<tr>
<td>H2O</td>
<td>5.00</td>
<td>0.70</td>
<td></td>
<td>TOP OF WATER</td>
</tr>
</tbody>
</table>

**Pre - Installation**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Top of Dam</td>
<td>11.50</td>
<td>-5.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Canal</td>
<td>13.85</td>
<td>-8.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Marsh</td>
<td>12.78</td>
<td>-7.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top of Dam - Post</td>
<td>16.96</td>
<td>-1.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Check**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>8.25</td>
<td>6.99</td>
<td>-1.26</td>
<td></td>
</tr>
<tr>
<td>TBM</td>
<td>3.67</td>
<td>3.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top of Log</td>
<td>3.81</td>
<td>7.38</td>
<td>3.57</td>
<td></td>
</tr>
<tr>
<td>Bottom Canal</td>
<td>8.40</td>
<td>-1.02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Installed 9 Stor Logs. Pad was applied.

**Structure # 14**

Pre: Log - 5.80

**Water Bottom**

Marsh = -7.08

Canal = -8.15

---

**Diagram**

- Top of Dam = 3.59'
- Top of Bolt supplied by LADNR
- Pre = 11.50'
- Post = 12.60'

---

**Weather:** 9/6/06, 84°F, Cloudy, 06°
STRUCTURE NO. 14

General structure conditions #14 (9/06/06)

General structure conditions #14 (9/06/06)
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project
LOCATION: Terrebonne Basin, Terrebonne Parish
PURPOSE: Operate and adjust the variable crest weirs at Site No. 21
PARTICIPANTS: Kodi Babin, Ronnie Duke, Jr.
DATES: September 5, 2006
CONDITIONS: Sunny (90°)

Permission to gain access to Site No. 21 was obtained from Mr. Francis Fields, P.L.S. of Apache Corporation on September 4, 2006.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.22 (NAVD88) feet on both sides of the weir.

East Bay
We installed the planned 5 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was -2.68 (NAVD88) feet and Post stop log installation was -0.23 (NAVD88) feet.

Center Bay
We installed the planned 10 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was -5.26 (NAVD88) feet and Post stop log installation was +0.09 (NAVD88) feet.

West Bay
We installed the planned 2 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was -1.20 (NAVD88) feet and Post stop log installation was -0.26 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 21.

Date: Tuesday, September 05, 2006

Participants: Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (90°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment Date/Time: September 5, 2006; West 9:30 a.m., Center 11:30 a.m., East 1:30 p.m.

- Number of Logs Installed: Installed 17 Logs (5 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
## Structure 21

<table>
<thead>
<tr>
<th>TBM</th>
<th>4.22</th>
<th>7.94'</th>
<th>3.72'</th>
<th>Top of Bolt</th>
</tr>
</thead>
</table>

### Water
- 6.72' Top of Water

### West Pre-Installation
- 9.14' - 1.20' Top of Dam Pre

### Bottom-Canal
- 10.91' - 2.97' Bottom of Canal

### Bottom-Lake
- 9.51' - 1.57' Bottom of Lake

### West Post-Installation
- 8.20' - 0.26' Top of Dam Post

### Center Pre-Installation
- 13.20' - 5.26' Top of Dam Pre

### Bottom-Canal
- 14.03' - 6.08' Bottom of Canal

### Bottom-Lake
- 13.51' - 5.57' Bottom of Lake

### Center Post-Installation
- 7.85' 0.08' Top of Dam Post

### East Pre-Installation
- 10.63' - 2.68' Top of Dam Pre

### Bottom-Canal
- 12.40' - 4.46' Bottom of Canal

### Bottom-Lake
- 11.30' - 3.36' Bottom of Lake

### East Post-Installation
- 8.17' 0.23' Top of Dam Post

### Check TBM
- 4.22' TBM Check

---

**Note:** Pad Looks on West, Center, and East bays in good condition.

- **West**: Installed 2 stop logs
- **Center**: Installed 12 stop logs
- **East**: Installed 5 stop logs

---

**Diagram**

- Top of Water +1.22'
- Top of Dam Pre-Installation -1.20'
- Top of Dam Post -2.68'
- Top of Water

---

**Signatures**

- K. Babin
- R. Duke
- 9-5-06
STRUCTURE NO. 21

General overview of structure #21 (9/06/06)

General overview of structure #21 (9/06/06)
ATTACHMENT NO. 4

Site No. 23
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Kodi Babin, Jody Ledet, Ronnie Duke, Jr.

DATES: September 6, 2006

CONDITIONS: Cloudy (86°)

Permission to gain access to Site No. 23 was obtained from Mr. Francis Fields, P.L.S. of Apache Corporation on September 4, 2006.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.59 (NAVD88) feet on both sides of the weir.

North Bay
We installed the planned 10 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was -5.44 (NAVD88) feet and Post stop log installation was -0.34 (NAVD88) feet.

South Bay
We installed the planned 10 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was -5.50 (NAVD88) feet and Post stop log installation was -0.45 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Wednesday, September 06, 2006

Participants: Kodi Babin, Jody Ledet, Ronnie Duke, Jr.

Weather Conditions: Cloudy (86°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 23

### Structure Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td></td>
</tr>
</tbody>
</table>

### Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>Noticed Erosion at Ends of Structure</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

### Stop Log Adjustment

Date/Time: September 6, 2006; North 09:30 a.m. & South 11:00 a.m.

- Number of Logs Removed/Replaced: Installed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description:
LADNR

TE-28 BRADY CANAL RESTORATION
BS HI FS ELEV

TBM 5.18 8.19 3.51 TOP OF BULT

NORTH BAY
PRE-INSTALLATION 14.13 -5.44 TOP OF DAM - PRE WATER BOTTOM
LAKE 14.62 -5.93 WATER BOTTOM
MARSH 16.35 -7.66 WATER BOTTOM TOP OF DAM - POST
POST - INSTALLATION 9.03 -0.34

SOUTH BAY
PRE-INSTALLATION 14.19 -6.50 TOP OF DAM - PRE WATER BOTTOM
MARSH 15.43 -6.24 WATER BOTTOM
LAKE 14.81 -6.12 TOP OF DAM - POST
POST - INSTALLATION 9.14 -0.45

H2O 8.10 0.59 WATER

North Post 9.10 8.174 -0.34
TBM 5.22 3.54

STRUCTURE #23

TBM = 3.51" Supplier A = LADNR
NOTES: Installed 10 STOP LOGS in each bay. Pad locks in good condition. WD 40 was applied.
STRUCTURE NO. 23

General structure conditions #23 (9/06/06)

General overview of structure #23 (9/06/06)
ATTACHMENT NO. 5

Benchmarks – Data Sheets
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat.  29°23'08.43740"N  
Long.  91°00'04.87931"W

NAD 83 Datum LSZ (1702) Feet:
N=  322,246.13  
E=  3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument ?TE28-SMC?  
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
VICINITY MAP Scale: 1" = 2000'

Reproduced from USGS "LAKE PENCHANT" Quadrangle

**Name:** "TBM Structure #21"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 21**

**NAD 83 (1993) Geodetic Position:**
Lat. 29°22'47.25280" N
Long. 90°56'36.3531" W

**NAD 83 Datum LSZ (1702) Feet:**
N= 320,164.32
E= 3,405,016.63

**Elevation at Top of Hex Bolt**
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument TIE28-SMA.
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division.
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat.  29°22'39.70615"N
Long.  90°56'05.93376"W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument 7E28-SMA.
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division.
March 21, 2007

Hand Delivered

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

RE: Field Trip Report
Brady Canal Hydrologic Restoration Project (TE-28) – Fall 2006
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Dear Mr. Babin:

Enclosed are four copies of the Field Trip Report for work performed on the above referenced project. This report includes findings, field notes, data and photographs as required in the contract.

Thank you for the opportunity of working with you on this project. For comments or questions, I can be reached at 985-223-9288 or email kodib@tbsmith.com.

Sincerely,

T. BAKER SMITH, INC.

Kodi J. Babin, Project Manager
Environmental Discipline

KJB/tlp
Enclosure(s)
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

March 2007

Prepared By

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

1 (866) 357-1050  www.tbsmith.com
# LIST OF ATTACHMENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site No. 14</td>
<td>A-1</td>
</tr>
<tr>
<td>2</td>
<td>Site No. 21</td>
<td>A-2</td>
</tr>
<tr>
<td>3</td>
<td>Site No. 23</td>
<td>A-3</td>
</tr>
<tr>
<td>4</td>
<td>Benchmarks – Data Sheets</td>
<td>A-4</td>
</tr>
</tbody>
</table>
ATTACHMENT NO. 1

Site No. 14
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14


DATES: March 16, 2007

CONDITIONS: Sunny (70°)

Permission to gain access to Site No. 14 was obtained via e-mail from Mr. Jeff W Deblieux, P.L.S. of Burlington on March 13, 2007.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.66 feet on both sides of the weir. The stop logs are in good condition.

We removed the planned 9 stop logs that were installed on September 6, 2006. Pre stop log removal elevation was -1.07 feet, and Post stop log removal was -5.57 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 14.

Date: Friday, March 16, 2007

Participants: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Jeff W. Deblicux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td></td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

Date/Time: March 16, 2007; 2:30 p.m.

- Number of Logs Removed/Replaced: Removed 9 Logs
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
TBS Job # 2007.1163
LDNR
BEAUVI CANAL HYDROLOGIC RESTORATION PROJECT (16-28)

REMOVAL OF STOP LOGS (SITE NO 14)

<table>
<thead>
<tr>
<th>Location</th>
<th>H1</th>
<th>ELEV</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM14</td>
<td>3.91</td>
<td>2.48</td>
<td>3.57</td>
</tr>
<tr>
<td>WATER</td>
<td>6.82</td>
<td>0.40</td>
<td></td>
</tr>
<tr>
<td>Bottom</td>
<td>15.64</td>
<td>-8.16</td>
<td>CANAL</td>
</tr>
<tr>
<td>Bottom</td>
<td>13.90</td>
<td>-6.42</td>
<td>LAKE</td>
</tr>
<tr>
<td>Pre-Log</td>
<td>8.55</td>
<td>-1.07</td>
<td>PRE-LOG</td>
</tr>
<tr>
<td>Post-Log</td>
<td>13.05</td>
<td>-5.57</td>
<td>POST-LOG</td>
</tr>
</tbody>
</table>

CHECK 3.91 3.57 BM

BAY - REMOVED 9 STOP LOGS
NOTES: HEX AND PAD LOCKS IN GOOD CONDITION, SEATING 9 PILES IN GOOD CONDITION

STRUCTURE 14

BIO 18 Supplied by LDNR

JEBBET
R. BAIN
R. BUCK, Jr.
R. FONERAT

3/14/17 Shiny, Windy
ATTACHMENT NO. 2

Site No. 21
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21


DATES: March 16, 2007

CONDITIONS: Sunny (70°)

Permission to gain access to Site No. 21 was obtained via e-mail from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 13, 2006.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.92 feet on both sides of the weir.

East Bay
We removed the planned 5 stop logs that were installed on September 5, 2006. Pre stop log removal elevation was -0.23 feet, and Post stop log removal was -2.64 feet.

Center Bay
We removed the planned 10 stop logs that were installed on September 5, 2006. Pre stop log removal elevation was -0.21 feet, and Post stop log removal was -5.27 feet.

West Bay
We removed the planned 2 stop logs that were installed on September 5, 2006. Pre stop log removal elevation was -0.22 feet, and Post stop log removal was -1.17 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 21.

Date: Friday, March 16, 2007

Participants: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>No</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td></td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

Date/Time: March 16, 2007; 11:30 a.m.

- Number of Logs Removed/Replaced: Removed 17 Logs (5 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
**Structure 21**

BM 21: Surplied by LDNR

**West Bay** - Removed 2 Stop Logs

**Center Bay** - Removed 10 Stop Logs, Lost 1 of 10

**East Bay** - Removed 5 Stop Logs

**Notes:** ND 40 all Pad Locks
Badlocks. Un 6400 Condition
Gratine & Piles in Good Condition

---

**Removal of Stop Logs (Site No. 21):**

<table>
<thead>
<tr>
<th>Location</th>
<th>H1</th>
<th>ELEV</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM21</td>
<td>4.20</td>
<td>7.92</td>
<td>3.92</td>
</tr>
<tr>
<td>H2O</td>
<td>7.00</td>
<td>0.92</td>
<td>H2O @ Noon</td>
</tr>
</tbody>
</table>

**West Bottom**

- 10.13 - 2.21 Marsh
- 8.10 - 0.28 Lake
- Pre-Log Removal
- Post Log Removal

**Center Bottom**

- 14.60 - 4.68 Marsh
- 14.02 - 6.10 Lake
- Pre-Log Removal
- Post Log Removal

**East Bottom**

- 11.32 - 3.40 Marsh
- 11.08 - 3.16 Lake
- Pre-Log Removal
- Post Log Removal

**Check**

- 4.20 3.72 BM
STRUCTURE 21

East Bank (3/16/2007)

West Bank (3/16/2007)
ATTACHMENT NO. 3

Site No. 23
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23


DATES: March 16, 2007

CONDITIONS: Sunny (70°)

Permission to gain access to Site No. 23 was obtained via e-mail from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 13, 2007.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.86 feet on both sides of the weir.

North Bay
We removed the planned 10 stop logs that were installed on September 6, 2006. Pre stop log removal elevation was -0.21 feet, and Post stop log removal was -5.49 feet.

South Bay
We removed the planned 10 stop logs that were installed on September 6, 2006. Pre-stop log removal elevation was -0.48 feet, and Post stop log removal was -5.45 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Friday, March 16, 2007

Participants: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
</tbody>
</table>

Structure Condition

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

Date/Time: March 16, 2007; 8:30 a.m.

- Number of Logs Removed/Replaced: Removed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
**TBS Job #: 2007.1163**

**LDNR**

**BEADY CANAL HYDROLOGIC RESTORATION PROJECT**

**CTE-28**

**REMOVAL OF STOP LOGS (SITE NO. 23)**

<table>
<thead>
<tr>
<th>Location</th>
<th>H2O</th>
<th>Elev.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bm 23</td>
<td>4.32</td>
<td>7.83</td>
<td></td>
</tr>
<tr>
<td>H2O</td>
<td>6.97</td>
<td>0.86</td>
<td>Top of Hex Bolt</td>
</tr>
</tbody>
</table>

**North Bay**

- Bottom: 14.98, -7.15, March
- Bottom: 14.04, -6.21, Lake
- Pre-Log: 8.04, -0.21
- Post-Log: 13.32, -5.49

**South Bay**

- Bottom: 13.80, -5.97, March
- Bottom: 13.84, -6.01, Lake
- Pre-Log: 8.31, -0.48
- Post-Log: 13.28, -5.45

**Check**

| 4.32 | 3.51 |

**Structure 23**

**3/16/07**

**BM 23 Supplied by LDNR**

**R. Evening**

**R. Dunne**

**NOTES:**

- Water All Stoplocks
- Locks in good condition
- Erosion on North side
- Grating & Flap in good condition

**Diagram:**

- North Bay:
  - Bm 23: 11/11
  - H2O: 11/11
- South Bay:
  - Bm 23: 11/11
  - H2O: 11/11
- Check:
  - Bm Check
STRUCTURE 23

General Structure Condition (3/16/2007)

General Structure Condition (3/16/2007)
ATTACHMENT NO. 4

Benchmarks – Data Sheets
Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740"N
Long. 91°00'04.87931"W

NAD 83 Datum LSZ (1702) Feet:
N = 322,246.13
E = 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
"TBM STRUCTURE #21"

**VICINITY MAP**  Scale: 1" = 2000'  Reproduced from USC&GS 'LAKE PENCHANT' Quadrangle

**Name:** "TBM Structure #21"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 21**

**NAD 83 (1993) Geodetic Position:**
Lat. 29°22'47.25280"N  
Long. 90°56'36.35631"W

**NAD 83 Datum LSZ (1702) Feet:**
N= 320,164.32  
E= 3,405,016.63

**Elevation at Top of Hex Bolt**
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"  
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat.  29°22'39.70615" N
Long.  90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N=  319,411.28
E=  3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
October 4, 2007

Hand Delivered

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

RE: Field Trip Report
Brady Canal Hydrologic Restoration Project (TE-28) – Fall 2007
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-08-13

Dear Mr. Babin:

Enclosed are four copies of the Field Trip Report for work performed on the above referenced project. This report includes findings, field notes, data and photographs as required in the contract.

Thank you for the opportunity of working with you on this project. For comments or questions, I can be reached at 985-223-9288 or email kodib@tbsmith.com.

Sincerely,

T. BAKER SMITH, INC.

Kodi J. Babin, Project Manager
Environmental Discipline

KJB/jpc
Enclosure(s)
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-08-13

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

September 2007

Prepared By

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA Lafayette, LA Baton Rouge, LA Thibodaux, LA Houston, TX
1 (866) 357-1050 www.tbsmith.com
# LIST OF ATTACHMENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site No. 14</td>
<td>A-1</td>
</tr>
<tr>
<td>2</td>
<td>Site No. 21</td>
<td>A-2</td>
</tr>
<tr>
<td>3</td>
<td>Site No. 23</td>
<td>A-3</td>
</tr>
<tr>
<td>4</td>
<td>Benchmarks – Data Sheets</td>
<td>A-4</td>
</tr>
</tbody>
</table>
ATTACHMENT NO. 1

Site No. 14
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Richard Fontenot, Jude Chenier

DATES: September 27, 2007

CONDITIONS: Cloudy (91°)

Permission to gain access to Site No. 14 was obtained via email from Mr. Jeff W Deblieux, P.L.S. of Burlington on September 25, 2007.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +1.62 (NAVD88) feet on both sides of the weir.

We installed the planned 9 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -5.56 (NAVD88) feet and Post stop log installation was -1.09 feet (NAVD88).

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 14.

Date: Thursday, September 27, 2007

Participants: Richard Fontenot, Jude Chenier

Weather Conditions: Cloudy (91°)

Persons Contacted for Access: Mr. Jeff W. Debieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>Large amount of water hyacinth surrounding structure.</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

Date/Time: September 27, 2007, 2:30 p.m.

- Number of Logs Removed/Replaced: Installed 9 logs
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th></th>
<th>BS</th>
<th>HE</th>
<th>FS</th>
<th>Elev</th>
<th>Dec</th>
<th>TBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Inst</td>
<td>12.63</td>
<td>-5.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canal</td>
<td>14.81</td>
<td>-7.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marsh</td>
<td>13.05</td>
<td>-5.98</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Inst</td>
<td>13.16</td>
<td>-1.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2O</td>
<td>5.45</td>
<td>1.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Installed 9 Step Logs
Procedure: In Flooded Pond, Fit Trackers

TBM: 5.57
The offshore support shown
Structure 14

North Bank (9/27/07)

South Bank (9/27/07)
ATTACHMENT NO. 2

Site No. 21
FIELD TRIP REPORT

SUBJECT:        TE-28 Brady Canal Hydrologic Restoration Project

LOCATION:       Terrebonne Basin, Terrebonne Parish

PURPOSE:        Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS:   Richard Fontenot, Jude Chenier

DATES:          September 27, 2007

CONDITIONS:     Partly Cloudy (91°)

Permission to gain access to Site No. 21 was obtained from Mr. Francis Fields, P.L.S. of Apache Corporation on September 25, 2007.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +1.94 (NAVD88) feet on both sides of the weir.

East Bay
We installed the planned 5 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -2.63 (NAVD88) feet and Post stop log installation was -0.16 (NAVD88) feet.

Center Bay
We installed the planned 10 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -5.24 (NAVD88) feet and Post stop log installation was +0.60 (NAVD88) feet.

West Bay
We installed the planned 2 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -1.15 (NAVD88) feet and Post stop log installation was -0.17 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 21.

Date: Thursday, September 27, 2007

Participants: Richard Fontenot, Jude Chenier

Weather Conditions: Partly Cloudy (91°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Corrugated Aluminium</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>X</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good (cleaned)</td>
<td>X</td>
</tr>
<tr>
<td>Master Locks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

- Number of Logs Removed/Replaced: Installed 17 logs (2 logs West bay, 10 logs Center bay, 5 logs East bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th>Date</th>
<th>2007/12/03</th>
<th>LDNR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brady Canal</td>
<td>Restoration Project</td>
<td></td>
</tr>
<tr>
<td>BS</td>
<td>F1</td>
<td>FS</td>
</tr>
<tr>
<td>TBM 21</td>
<td>5.44</td>
<td>9.16</td>
</tr>
<tr>
<td>H20</td>
<td>7.22</td>
<td>1.94</td>
</tr>
<tr>
<td>West Pre. Install</td>
<td>16.31</td>
<td>-1.15</td>
</tr>
<tr>
<td>Bottom Canal</td>
<td>12.50</td>
<td>-3.34</td>
</tr>
<tr>
<td>Bottom Lake</td>
<td>11.17</td>
<td>-2.01</td>
</tr>
<tr>
<td>West Post Install</td>
<td>9.33</td>
<td>-0.17</td>
</tr>
<tr>
<td>Center Pre. Install</td>
<td>14.46</td>
<td>-5.24</td>
</tr>
<tr>
<td>Bottom Canal</td>
<td>15.46</td>
<td>-6.3</td>
</tr>
<tr>
<td>Bottom Lake</td>
<td>14.89</td>
<td>-5.73</td>
</tr>
<tr>
<td>West Post Install</td>
<td>8.56</td>
<td>0.60</td>
</tr>
<tr>
<td>East Pre. Install</td>
<td>11.79</td>
<td>-2.63</td>
</tr>
<tr>
<td>Bottom Canal</td>
<td>13.89</td>
<td>-4.13</td>
</tr>
<tr>
<td>Bottom Lake</td>
<td>12.47</td>
<td>-3.81</td>
</tr>
<tr>
<td>East Post Install</td>
<td>9.32</td>
<td>-0.16</td>
</tr>
</tbody>
</table>

9-27-07

B. Roper
L. Baker
M. Mary #31

TBM = Top Bk
West - Installed 2 stainless
East - Installed 10 Galv. Legs

Notes: Pot Locks in Good Cond. WDWA was applied
Structure 21

General Structure condition (9/27/07)

General Structure Condition (9/27/07)
Structure 21

West Bank (9/27/07)

East Bank (9/27/07)
ATTACHMENT NO. 3

Site No. 23
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Richard Fontenot, Jude Chenier

DATES: September 27, 2007

CONDITIONS: Cloudy (90°)

Permission to gain access to Site No. 23 was obtained from Mr. Francis Fields, P.L.S. of Apache Corporation on September 25, 2007.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +1.57 (NAVD88) feet on both sides of the weir.

North Bay
We installed the planned 10 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -5.44 (NAVD88) feet and Post stop log installation was -0.43 (NAVD88) feet.

South Bay
We installed the planned 10 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -5.47 (NAVD88) feet and Post stop log installation was -0.61 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 23.

Date: Thursday, September 27, 2007

Participants: Richard Fontenot, Jude Chenier

Weather Conditions: Cloudy (90°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 23

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>Good</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good (cleaned)</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Levee Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Erosion</td>
</tr>
<tr>
<td>Vegetation</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

Date/Time: 11:45 a.m., September 27, 2007

- Number of Logs Removed/Replaced: Installed 20 logs (10 logs North bay, 10 logs South bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th>Date</th>
<th>Area</th>
<th>BS</th>
<th>HI</th>
<th>FS</th>
<th>Elev</th>
<th>Doc</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007.19.08</td>
<td>Brady Canal</td>
<td>7.51</td>
<td>8.82</td>
<td>3.51</td>
<td>1.57</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Restoration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>North Bay</td>
<td>14.26</td>
<td>-5.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Re-Install</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marsh</td>
<td>16.29</td>
<td>-7.47</td>
<td></td>
<td>Water Bottom</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lake</td>
<td>14.97</td>
<td>-6.15</td>
<td></td>
<td>Water Bottom</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post Install</td>
<td>9.25</td>
<td>-0.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>South Bay</td>
<td>14.29</td>
<td>-5.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Re-Install</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marsh</td>
<td>15.68</td>
<td>-6.86</td>
<td></td>
<td>Water Bottom</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lake</td>
<td>14.91</td>
<td>-6.09</td>
<td></td>
<td>Water Bottom</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post Install</td>
<td>9.43</td>
<td>-0.61</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Installed 10 3/4 ft. kauf on each side. 210 ft. total installed.
Structure 23

General Structure Condition (9/27/07)
Structure 23

North Bank (9/27/07)

South Bank (9/27/07)
ATTACHMENT NO. 4

Benchmarks – Data Sheets
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "CARENCRIO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat.  29°23'08.43740" N
Long.  91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N = 320,164.32
E = 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A" Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N = 319,411.28
E = 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"  Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
April 8, 2008

Hand Delivered

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

RE:     Field Trip Report
        Brady Canal Hydrologic Restoration Project (TE-28) – Spring 2008
        Operation of Variable Crest Weir Structures
        DNR Contract No. 2503-08-13

Dear Mr. Babin:

Enclosed are four copies of the Field Trip Report for work performed on the above referenced project. This report includes findings, field notes, data and photographs as required in the contract.

Thank you for the opportunity of working with you on this project. For comments or questions, I can be reached at 985-223-9288 or email kodib@tbsmith.com.

Sincerely,

T. BAKER SMITH, INC.

[Signature]

Kodi J. Babin, Project Manager
Environmental Discipline

KJB/tlp
Enclosure(s)
FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-08-13

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

March 2008

Prepared By

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA    Lafayette, LA    Baton Rouge, LA    Thibodaux, LA    Houston, TX
1 (866) 357-1050     www.tbsmith.com
# LIST OF ATTACHMENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site No. 14</td>
<td>A-1</td>
</tr>
<tr>
<td>2</td>
<td>Site No. 21</td>
<td>A-2</td>
</tr>
<tr>
<td>3</td>
<td>Site No. 23</td>
<td>A-3</td>
</tr>
<tr>
<td>4</td>
<td>Benchmarks – Data Sheets</td>
<td>A-4</td>
</tr>
</tbody>
</table>
ATTACHMENT NO. 1

Site No. 14
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project
LOCATION: Terrebonne Basin, Terrebonne Parish
PURPOSE: Operate and adjust the variable crest weirs at Site No. 14
PARTICIPANTS: Kodi Babin, Ronnie Duke and Kiley Cressionie
DATES: March 28, 2008
CONDITIONS: Sunny & Clear (70°)

Permission to gain access to Site No. 14 was obtained via e-mail from Mr. Jeff W Deblieux, P.L.S. of Burlington on March 27, 2008.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57′ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.86 feet on both sides of the weir. The stop logs are in good condition.

We removed the planned 9 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -1.04 feet, and Post stop log removal was -5.58 feet.

There are no navigation lights at this site.

Pad locks are in good condition and were treated with WD40. Grating and piles are in good condition.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 14.

Date: Friday, March 28, 2008

Participants: Kodi Babin, Ronnie Duke and Kiley Cressionie

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td></td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

Date/Time: March 28, 2008; 2:00 p.m.

- Number of Logs Removed/Replaced: Removed 9 Logs
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes
- Flag Description: N/A
STRUCTURE 14

North Bank Condition (3/28/2008)

South Bank Condition (3/28/2008)
ATTACHMENT NO. 2

Site No. 21
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Kodi Babin, Ronnie Duke and Kiley Cressionie

DATES: March 28, 2008

CONDITIONS: Sunny & Clear (70°)

Permission to gain access to Site No. 21 was obtained via e-mail from Mr. Francis J. Fields, P.L.S. of Apache Corporation on March 27, 2008.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.77 feet on both sides of the weir.

East Bay
We removed the planned 5 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -0.58 feet, and Post stop log removal was -2.48 feet.

Center Bay
We removed the planned 10 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was +0.22 feet, and Post stop log removal was -5.23 feet.

West Bay
We removed the planned 2 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -0.09 feet, and Post stop log removal was -1.18 feet.

There are no navigation lights at this site.

Pad locks are in good condition and were treated with WD40. Grating and piles are in good condition.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 21.

Date: Friday, March 28, 2008

Participants: Kodi Babin, Ronnie Duke and Kiley Cressionie

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Francis Fields, P.I.S. of Apache Corporation

Site No.: Structure No. 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Levee Condition

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment

Date/Time: March 28, 2008; 8:00 a.m.

- Number of Logs Removed/Replaced: Removed 17 Logs (5 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
<table>
<thead>
<tr>
<th>Time</th>
<th>Elevation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:00</td>
<td>8.15</td>
<td></td>
</tr>
<tr>
<td>2:30</td>
<td>6.35</td>
<td>6.97</td>
</tr>
<tr>
<td>2:33</td>
<td>3.33</td>
<td>4.35</td>
</tr>
<tr>
<td>4:00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Reminders**
- Remove of Stage Loss (5.4 ft) & (11.5 ft) 
- Body Canal Hydraulic Estimation Report 
- LDR
- T & S Job 2008.12.34
- 3.8.08
STRUCTURE 21

General Structure Condition (3/28/2008)

General Structure Condition (3/28/2008)
STRUCTURE 21

East Bank (3/28/2008)

West Bank (3/28/2008)
ATTACHMENT NO. 3

Site No. 23
FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Kodi Babin, Ronnie Duke and Kiley Cressionie

DATES: March 28, 2008

CONDITIONS: Sunny & Clear (70°)

Permission to gain access to Site No. 21 was obtained via e-mail from Mr. Francis J. Fields, P.L.S. of Apache Corporation on March 27, 2008.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51’ (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.54 feet on both sides of the weir.

North Bay
We removed the planned 10 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -0.46 feet, and Post stop log removal was -5.46 feet.

South Bay
We removed the planned 10 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -0.51 feet, and Post stop log removal was -5.48 feet.

There are no navigation lights at this site.

Pad locks are in good condition and were treated with WD40. Grating and piles are in good condition.

Erosion was noted on the North side.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.
FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Friday, March 28, 2008

Participants: Kodi Babin, Ronnie Duke and Kiley Cressionie

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist/Lag Eyes</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>Good</td>
<td>Yes</td>
</tr>
<tr>
<td>Master Locks</td>
<td>Good (cleaned)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>N/A</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment Date/Time: March 28, 2008; 11:30 a.m.

- Number of Logs Removed/Replaced: Removed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A
ATTACHMENT NO. 4

Benchmarks – Data Sheets
VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87934" W

NAD 83 Datum LSZ (1702) Feet:
N = 322,246.13
E = 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
**Name:** "TBM Structure #21"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 21**

**NAD 83 (1993) Geodetic Position:**
- Lat. 29°22'47.25280" N
- Long. 90°56'36.39831" W

**NAD 83 Datum LSZ (1702) Feet:**
- $N = 320,164.32$
- $E = 3,405,016.83$

**Elevation at Top of Hex Bolt**
- 3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A" Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
VICINITY MAP Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29° 22' 39.70615" N
Long. 90° 56' 05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N = 319,411.28
E = 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

OCTOBER 2008

PREPARED FOR:

MR. BRIAN J. BABIN, P.E.
LA DEPT OF NATURAL RESOURCES
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

APACHE CORPORATION

APACHE LOUISIANA MINERALS, INC.
POST OFFICE BOX 206
HOUма, LA 70361-0206
(985) 879-3528

RECEIVED
NOV 12 2008
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA

PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR

SITE No.: 14

PARTICIPANTS: BILLY WURZLOW, DANNY LEOEUF, FRANCIS FIELDS, ARCHIE DOMANGUE, DEME NAQUIN, JEREMY BOURG

DATE: OCTOBER 28, 2008

CONDITIONS: CLEAR AND COLD

Permission to gain access to Site #14 was obtained via email from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.28' on both sides of the weir.

Crew installed ten (10) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -5.57'. Post-stoplog installation elevation was -0.51'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: THIS IS THE INITIAL VISIT BY APACHE LOUISIANA MINERALS, INC. FIELD CREW OPERATING UNDER ABOVE CONTRACT NO.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - INSTALL STOP LOGS

Date: Tuesday, October 28, 2008
Participants: WURZLOW; LEOBEUF; FIELDS; DOMANGUE; NAQUIN; BOURG
Weather Conditions: CLEAR & COLD
Persons Contacted for Access: JEFF DEBLIEUX - CONOCOPHILLIPS, VIA EMAIL
Site No.: 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☒</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☒</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☒</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT

Stop Log Adjustment Date/Time: 10/28/2008 1:00 PM
Number of Logs Removed/Replaced: 10 LOGS INSTALLED
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES
Flag Description: N/A
STRUCTURE #14

GENERAL STRUCTURE CONDITION

10/28/2008
STRUCTURE #14

SOUTH WING

NORTH WING

10/28/2008
**VICINITY MAP** Scale: 1" = 2000'  
Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

**Name:** "TBM Structure #14"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

**Date of Survey:** June 4, 2002

**TBM Structure 14**

**NAD 83 (1993) Geodetic Position:**
- Lat. 29°23'08.43740" N
- Long. 91°00'04.87931" W

**NAD 83 Datum LSZ (1702) Feet:**
- N = 322,246.13
- E = 3,386,562.02

**Elevation at Top of Hex Bolt**
- 3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"

Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
Site #14

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.42</td>
<td>8.99</td>
<td></td>
<td>3.57</td>
<td></td>
<td>TBM 14</td>
</tr>
<tr>
<td>H2O</td>
<td>8.71</td>
<td>0.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Install</td>
<td>14.56</td>
<td>-5.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom outside</td>
<td>16.47</td>
<td>-7.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot; inside</td>
<td>15.15</td>
<td>-6.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Install</td>
<td>9.50</td>
<td>-0.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Added 10 Boards
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 21
PARTICIPANTS: BILLY WURZLOW, DANNY LEBOEUF, FRANCIS FIELDS, ARCHIE DOMANGUE, DENE NAQUIN, JEREMY BOURG
DATE: OCTOBER 28, 2008
CONDITIONS: CLEAR AND COLD

Permission to gain access to Site #21 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals, Inc.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.45' marsh side and +0.42' outside of the weir.

EAST BAY
Crew installed six (6) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -3.22'. Post-stoplog installation elevation was -0.26'. NOTE: April 2008 operation report indicates that five (5) stoplogs were removed.

CENTER BAY
Crew installed ten (10) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -5.28'. Post-stoplog installation elevation was -0.23'.

WEST BAY
Crew installed two (2) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -1.21'. Post-stoplog installation elevation was -0.23'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: THIS IS THE INITIAL VISIT BY APACHE LOUISIANA MINERALS, INC. FIELD CREW OPERATING UNDER ABOVE CONTRACT NO.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - INSTALL STOP LOGS

Date: Tuesday, October 28, 2008
Participants: WURZLOW; LEOBEUF; FIELDS; DOMANGUE; NAQUIN; BOURG
Weather Conditions: CLEAR & COLD
Persons Contacted for Access: TIM ALLEN - ALMI
Site No.: 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>BENT UP ON 2 PILES</td>
<td>☒ ☐</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☒ ☐</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☒ ☐</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☒ ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>SOME EROSION ON WINGS - STILL TIED TO LEVEE</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. EDGES OF 2 PILE CAPS BENT AND NAILED INTO PLACE. GRATING UNCLIPPED IN 2 AREAS - REFASTENED TO STRUCTURE. NEED DIRT WORK ON WINGS.

Stop Log Adjustment Date/Time: 10/28/2008 10:30 AM
Number of Logs Removed/Replaced: 2 WEST, 10 MIDDLE, 6 EAST INSTALLED
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES

Flag Description: N/A
GENERAL STRUCTURE CONDITION – LOOKING NORTHWEST

10/28/2008
VICINITY MAP  Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N = 320,164.32
E = 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
<table>
<thead>
<tr>
<th>STN</th>
<th>HS</th>
<th>FE</th>
<th>Pred. Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.56</td>
<td>8.28</td>
<td>7.83</td>
<td>0.45</td>
</tr>
<tr>
<td>9.19</td>
<td>0.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date: 10/28/08

Note: Added 2 or west
11.10 in middle
6 or East
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 23
PARTICIPANTS: BILLY WURZLOW, DANNY LEBEUF, FRANCIS FIELDS, ARCHIE DOMANGUE, Deme NAQUIN, Jeremy BOURG
DATE: OCTOBER 28, 2008
CONDITIONS: CLEAR AND COLD

Permission to gain access to Site #23 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals, Inc.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.15' marsh side and +0.10' outside of the weir.

NORTH BAY
Crew installed the planned ten (10) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -5.47'. Post-stoplog installation elevation was -0.47'.

SOUTH BAY
Crew installed the planned ten (10) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -5.51'. Post-stoplog installation elevation was -0.44'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: THIS IS THE INITIAL VISIT BY APACHE LOUISIANA MINERALS, INC. FIELD CREW OPERATING UNDER ABOVE CONTRACT NO.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

S:\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\2008\10-28-08 Brady Canal Project - SUMMARY.Doc
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - INSTALL STOP LOGS

Date: Tuesday, October 28, 2008
Participants: WURZLOW; LEBOEUF; FIELDS; DOMANGUE; NAQUIN; BOURG
Weather Conditions: CLEAR & COLD
Persons Contacted for Access: TIM ALLEN - ALMI
Site No.: 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☑</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☑</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☑</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☑</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☑</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☑</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☑</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>WASHOUT AROUND NORTH WING 5' WIDE</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED AT BOTH WINGS TO TIE INTO LEVEE. WASHOUT AROUND NORTH WING 5' WIDE AND APPROX. 0.0' ELEVATION

Stop Log Adjustment

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>10/28/2008 12:00 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Logs Removed/Replaced</td>
<td>10 LOGS REPLACED IN EACH BAY</td>
</tr>
<tr>
<td>Elevation</td>
<td>SEE FIELD NOTES</td>
</tr>
<tr>
<td>Mudline Levels</td>
<td>SEE FIELD NOTES</td>
</tr>
<tr>
<td>Water Levels</td>
<td>SEE FIELD NOTES</td>
</tr>
</tbody>
</table>

Flag Description: N/A
STRUCTURE #23

GENERAL STRUCTURE CONDITION – LOOKING EAST

10/28/2008

GENERAL STRUCTURE CONDITION – LOOKING SOUTH

10/28/2008
STRUCTURE #23

WASHOUT AROUND NORTH WING

10/28/2008

WASHOUT AROUND NORTH WING

10/28/2008
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N = 319,411.28
E = 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

MARCH 2009

PREPARED FOR:

MR. BRIAN J. BABIN, P.E.
LA DEPT OF NATURAL RESOURCES
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

APACHE

CORPORATION

APACHE LOUISIANA MINERALS, INC.
POST OFFICE BOX 206
HOUMA, LA 70361-0206
(985) 879-3528

S:\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\FIELD TRIP REPORT - COVER SHEET.Doc
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 14
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: MARCH 18, 2009
CONDITIONS: CLEAR AND MILD

Permission to gain access to Site #14 was obtained verbally from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.87' on both sides of the weir.

Crew removed six (6) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.55'. Post-stoplog removal elevation was -3.59". All grating clips were removed from structure and found on bank. The crew refastened the deck grating to the structure.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - REMOVE STOP LOGS

Date: Wednesday, March 18, 2009
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & MILD
Persons Contacted for Access: JEFF DEBLIEUX - CONOCOPHILLIPS
Site No.: 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD - REPLACED GRATING CLIPS</td>
<td>☒</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☒</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>INSIDE GOOD, COULD USE SOME SPOIL OUTSIDE OF WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. NATURAL BOTTOM INSIDE OF WEIR VERY SOFT.

Stop Log Adjustment Date/Time: 3/18/2009 1:30 PM
Number of Logs Removed/Replaced: 6 LOGS REMOVED
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES
Flag Description: N/A
STRUCTURE #14

MAR 18 2009

GENERAL STRUCTURE CONDITION
<table>
<thead>
<tr>
<th>Structure #14</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA</td>
</tr>
<tr>
<td>5.01</td>
</tr>
<tr>
<td>7.71</td>
</tr>
<tr>
<td>7.71</td>
</tr>
<tr>
<td>9.13</td>
</tr>
<tr>
<td>14.32</td>
</tr>
<tr>
<td>12.25</td>
</tr>
<tr>
<td>13.17</td>
</tr>
</tbody>
</table>

- Removed 6 Boards
- Silt on inside very soft
- Will check a later date to see if it has washed out any

Same Crew 3/18/09

- Removed:
  - TBM #14
  - Top Water Bayou Corridor Crew
  - Top of Boards in Bay
  - Bottom of Corridor Crew Bay
  - Bottom on Inside very soft
  - Top of Boards left in Bay
**VICINITY MAP**  Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU"

**Name:** "TBM Structure #14"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

**Date of Survey:** June 4, 2002

**TBM Structure 14**

**NAD 83 (1993) Geodetic Position:**

Lat.  29°23'08.43740" N
Long.  91°00'04.87931" W

**NAD 83 Datum LSZ (1702) Feet:**

N= 322,246.13
E= 3,386,562.02

**Elevation at Top of Hex Bolt**

3.57 feet (NAVD 88)
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA

PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR

SITE No.: 21

PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG

DATE: MARCH 18, 2009

CONDITIONS: CLEAR AND MILD

Permission to gain access to Site #21 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals LLC.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.86' marsh side and +0.77' outside of the weir.

EAST BAY
Crew removed six (6) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.20'. Post-stoplog removal elevation was -3.24'.

CENTER BAY
Crew removed nine (9) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.22'. Post-stoplog removal elevation was -4.76'.

WEST BAY
Crew removed two (2) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.18'. Post-stoplog removal elevation was -1.27'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

S:\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\2009\03-23-09 Brady Canal Project - SUMMARY.Doc
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - REMOVE STOP LOGS

Date: Wednesday, March 18, 2009
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & MILD
Persons Contacted for Access: TIM ALLEN - ALM
Site No.: 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☒</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD - 1 GRATING CLIP MISSING</td>
<td>☒</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☒</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☒</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>NEED SPOIL ON WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED ON BOTH WINGS. NEED 1 GRADING CLIP ON DECKING.

Stop Log Adjustment

Date/Time: 3/18/2009 2:30 PM
Number of Logs Removed/Replaced: 2 WEST, 9 MIDDLE, 6 EAST REMOVED
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES
Flag Description: N/A
GENERAL STRUCTURE CONDITION – LOOKING NORTHWEST

MAR 18 2009
<table>
<thead>
<tr>
<th>STA</th>
<th>B.S. Ht</th>
<th>F.S. Elevation</th>
<th>Top of Boards West Bay</th>
<th>Bottom East Side</th>
<th>Top of Boards Middle Bay</th>
<th>Bottom East Side</th>
<th>Top of Boards East Bay</th>
<th>Bottom East Side</th>
<th>Bottom East Side</th>
<th>Renewed 2 Boards West Bay</th>
<th>East</th>
<th>2 Boards Middle</th>
<th>East</th>
<th>East</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.12</td>
<td>8.84</td>
<td>3.72</td>
<td>8.07</td>
<td>0.77</td>
<td>7.98</td>
<td>0.86</td>
<td>11.04</td>
<td>-2.2</td>
<td>9.85</td>
<td>-1.01</td>
<td>9.60</td>
<td>0.88</td>
<td>15.80</td>
<td>2.96</td>
</tr>
</tbody>
</table>
"TBM STRUCTURE #21"

VICINITY MAP  Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1792) Feet:
N = 320,164.32
E = 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA

PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR

SITE No.: 23

PARTICIPANTS: BILLY WURZLOW, DEMA NAQUIN, JEREMYBOURG

DATE: MARCH 18, 2009

CONDITIONS: CLEAR AND MILD

Permission to gain access to Site #23 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals LLC.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.54' marsh side and +0.54' outside of the weir.

NORTH BAY
Crew removed ten (10) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.58'. Post-stoplog removal elevation was -5.52'.

SOUTH BAY
Crew removed ten (10) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.53'. Post-stoplog removal elevation was -5.52'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

S:\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\2009\03-23-09 Brady Canal Project - SUMMARY.Doc
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - REMOVE STOP LOGS

Date: Wednesday, March 18, 2009
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & MILD
Persons Contacted for Access: TIM ALLEN - ALM
Site No.: 23

<table>
<thead>
<tr>
<th>STRUCTURE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Timber Pile</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
</tr>
<tr>
<td>Pile Caps</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
</tr>
<tr>
<td>Stop Logs</td>
</tr>
<tr>
<td>Master Locks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Erosion</td>
</tr>
<tr>
<td>Vegetation</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED AT BOTH WINGS TO TIE INTO LEVEE. WASHOUT AROUND NORTH WING 6' WIDE.

Stop Log Adjustment: 3/18/2009 12:30 PM
Number of Logs Removed/Replaced: 10 LOGS REMOVED FROM EACH BAY
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES
Flag Description: N/A
STRUCTURE #23

GENERAL STRUCTURE CONDITION – LOOKING EAST

MAR 18 2009
STRUCTURE #23

SOUTH WING
STRUCTURE #23

WASHOUT AROUND NORTH WING

MAR 18 2009
<table>
<thead>
<tr>
<th>Structure</th>
<th>B.S. H.T.</th>
<th>F.S.</th>
<th>B.A. 3.51</th>
<th>2.88</th>
<th>6.39</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th</td>
<td></td>
<td></td>
<td>5.85</td>
<td>5.85</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.97</td>
<td>6.97</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13.02</td>
<td>13.92</td>
<td>-1.86</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13.42</td>
<td>13.42</td>
<td>-1.78</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11.91</td>
<td>11.91</td>
<td>-5.58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>North Bay</th>
<th>South Bay</th>
<th>South Bay</th>
<th>South Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Removed 10 Boads from North & South Boys.
Vicinity Map Scale: 1" = 2000'

Reproduced from USC&GS "Lake Penschant" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N = 319,411.28
E = 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
September 15, 2009

LA Dept of Natural Resources
Coastal Restoration Division
Thibodaux Field Office
1440 Tiger Drive
Thibodaux, LA 70301
ATTN: Brian Babin

RE: Brady Canal Hydrologic Restoration Project
(TE-28) - Operation of Weir Structures
DNR Contract No.: 2511-09-01

Dear Mr. Babin:

Enclosed, please find two (2) copies of Apache Louisiana Minerals LLC weir structure operations report for the subject project and contract for September 1, 2009.

Please advise if you have any questions or need additional information.

Sincerely,

APACHE LOUISIANA MINERALS LLC

Francis J. Fields, Jr., P.L.S.

RECEIVED
SEP 1 6 2009
FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

SEPTEMBER 2009

PREPARED FOR:

MR. BRIAN J. BABIN, P.E.
LA DEPT OF NATURAL RESOURCES
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

APACHE LOUISIANA MINERALS LLC
POST OFFICE BOX 206
HOUMA, LA 70361-0206
(985) 879-3528
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 14
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: SEPTEMBER 1, 2009
CONDITIONS: CLEAR AND HOT

Permission to gain access to Site #14 was obtained via email from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.28' on both sides of the weir.

Crew installed six (6) stoplogs that were removed on last visit in March 2009. Pre-stoplog installation elevation was -3.58'. Post-stoplog installation elevation was -0.66'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - INSTALL STOP LOGS

Date: Tuesday, September 01, 2009
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & HOT
Persons Contacted for Access: JEFF DEBLIEUX - CONOCOPHILLIPS
Site No.: 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☒ ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>COULD USE ADDITIONAL SPOIL OUTSIDE OF WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>GOOD</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. ADDITIONAL SPOIL NEEDED ON WINGS OF STRUCTURE.

Stop Log Adjustment Date/Time: 9/1/2009 12:30 PM
Number of Logs Removed/Replaced: 6 LOGS INSTALLED
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES
Flag Description: N/A
STRUCTURE #14

GENERAL STRUCTURE CONDITION
Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
\[ N=322,246.13 \]
\[ E=3,386,582.02 \]

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)
<table>
<thead>
<tr>
<th>Structure #</th>
<th>BS</th>
<th>H.T.</th>
<th>F.S.</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/11/09</td>
<td>8.9</td>
<td>3.57</td>
<td>7.78</td>
<td>1.28</td>
</tr>
<tr>
<td>13.88</td>
<td>4.82</td>
<td>12.64</td>
<td>5.62</td>
<td>0.66</td>
</tr>
<tr>
<td>Installed 6 Boards</td>
<td>9.72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA

PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR

SITE No.: 21

PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG

DATE: SEPTEMBER 1, 2009

CONDITIONS: CLEAR AND HOT

Permission to gain access to Site #21 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals LLC.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72’ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.32’ marsh side and +1.39’ outside of the weir.

EAST BAY
Crew installed six (6) stoplogs that were removed on last visit March 2009. Pre-stoplog installation elevation was -3.23’. Post-stoplog installation elevation was -0.24’.

CENTER BAY
Crew installed nine (9) stoplogs that were removed on last visit March 2009. Pre-stoplog installation elevation was -4.75’. Post-stoplog installation elevation was -0.23’.

WEST BAY
Crew installed two (2) stoplogs that were removed on last visit March 2009. Pre-stoplog installation elevation was -1.24’. Post-stoplog installation elevation was -0.26’.

Attached are the corresponding field data report, crew’s field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - INSTALL STOP LOGS

Date: Tuesday, September 01, 2009
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & HOT
Persons Contacted for Access: TIM ALLEN - ALM
Site No.: 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td></td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td></td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td></td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td></td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td></td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>FAIR</td>
</tr>
<tr>
<td>Vegetation</td>
<td>GOOD</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. ADDITIONAL SPOIL NEEDED ON BOTH WINGS.

Stop Log Adjustment: Date/Time 9/1/2009 10:00 AM
Number of Logs Removed/Replaced 2 WEST, 9 MIDDLE, 6 EAST BAY INSTALLED
Elevation SEE FIELD NOTES
Mudline Levels SEE FIELD NOTES
Water Levels SEE FIELD NOTES

Flag Description: N/A
STRUCTURE #21

GENERAL STRUCTURE CONDITION – LOOKING NORTHWEST
"TBM STRUCTURE #21"

VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
<table>
<thead>
<tr>
<th>STA</th>
<th>R.S.</th>
<th>H.F</th>
<th>F.S</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.67</td>
<td>8.39</td>
<td></td>
<td></td>
<td>3.72</td>
</tr>
<tr>
<td>7.00</td>
<td>1.39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.07</td>
<td>1.32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.53</td>
<td>-3.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.63</td>
<td>-1.24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.36</td>
<td>-1.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.24</td>
<td>-6.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.14</td>
<td>-4.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.62</td>
<td>-5.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.95</td>
<td>-5.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.62</td>
<td>-3.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.09</td>
<td>-3.70</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

```
Installed 2 Boards west Bay
11 9 11 middle Bay
11 6 11 East Bay
8.63 -0.24
8.62 -0.23
8.65 -0.26
```
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA

PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR

SITE No.: 23

PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG

DATE: SEPTEMBER 1, 2009

CONDITIONS: CLEAR AND HOT

Permission to gain access to Site #23 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals LLC.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51’ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.04’ marsh side and +1.04’ outside of the weir.

NORTH BAY
Crew installed ten (10) stoplogs that were removed on last visit March 2009. Pre-stoplog installation elevation was -5.47’. Post-stoplog installation elevation was -0.46’.

SOUTH BAY
Crew installed ten (10) stoplogs that were removed on last visit March 2009. Pre-stoplog installation elevation was -5.48’. Post-stoplog installation elevation was -0.45’.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - INSTALL STOP LOGS

Date: Tuesday, September 01, 2009
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & HOT
Persons Contacted for Access: TIM ALLEN - ALM
Site No.: 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>CUT ON NORTH END OF NORTH WING</td>
</tr>
<tr>
<td>Vegetation</td>
<td>GOOD</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: SPRAYED LOCKS WITH LUBRICANT. ADDITIONAL SPOIL NEEDED ON BOTH WINGS. A CUT OR WASHOUT EXISTS AROUND THE NORTH END OF THE NORTH WING.

Stop Log Adjustment       Date/Time: 9/1/2009 11:50 AM
Number of Logs Removed/Replaced: 10 LOGS INSTALLED IN EACH BAY
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES
Flag Description: N/A
GENERAL STRUCTURE CONDITION – LOOKING EAST
STRUCTURE #23

SOUTH WING

SEP 1 2009
**VICINITY MAP**  Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

**Name:** "TBM Structure #23"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 23**

**NAD 83 (1993) Geodetic Position:**
Lat.  29°22'39.70615" N
Long.  90°56'05.89376" W

**NAD 83 Datum LSZ (1702) Feet:**
N=  319,411.28
E=  3,407,714.35

**Elevation at Top of Hex Bolt**
3.51 feet (NAVD 88)

---

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
<table>
<thead>
<tr>
<th>STA</th>
<th>B.S.</th>
<th>H.T.</th>
<th>E.S.</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.55</td>
<td>8.06</td>
<td></td>
<td></td>
<td>3.51</td>
</tr>
<tr>
<td>7.02</td>
<td>1.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.02</td>
<td>1.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.34</td>
<td>-8.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.53</td>
<td>-5.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.46</td>
<td>-6.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.95</td>
<td>-7.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.54</td>
<td>-5.48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.38</td>
<td>-6.32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Installed 10 Boards in each Bay

8.52 - 0.46
8.51 - 0.45

Remarks

TB M #23
Top of Water in Lake
Top of Water inside
Bottom inside North Bay
Bottom of North Bay
Bottom outside North Bay
Bottom inside South Bay
Bottom of South Bay
Bottom outside South Bay

Top Boards North Bay
Top Boards South Bay
FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

MARCH 2010

PREPARED FOR:

MR. BRIAN J. BABIN, P.E.
LA DEPT OF NATURAL RESOURCES
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

APACHE LOUISIANA MINERALS LLC
POST OFFICE BOX 206
HOUMA, LA 70361-0206
(985) 879-3528
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 14
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: MARCH 11, 2010
CONDITIONS: CLOUDY AND MILD

Permission to gain access to Site #14 was obtained verbally from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.38’ on both sides of the weir.

Crew removed eight (8) stoplogs. Pre-stoplog removal elevation was -0.62’. Post-stoplog removal elevation was -4.57”.

One stoplog rotten on ends and needs to be replaced. Replacement stoplogs picked up from DNR Thibodaux office on 03/22/2010.

Attached are the corresponding field data report, crew’s field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - REMOVE STOP LOGS

Date: Thursday, March 11, 2010
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLOUDY & MILD
Persons Contacted for Access: JEFF DEBLIEUX - CONOCOPHILLIPS
Site No.: 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☑</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☑</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☑</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☑</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Stop Logs</td>
<td>(1) LOG ROTTEN ON END</td>
<td>☑</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☑</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>WINGS OK, SPOIL NEEDED ON OUTSIDE OF WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. (1) STOPLOG NEEDS TO BE REPLACED

Stop Log Adjustment Date/Time: 3/11/2010 1:15 PM
Number of Logs Removed/Replaced: 8 LOGS REMOVED
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES
Flag Description: N/A

\Humfile02\Dfs\Dept\Houma\Shared_Data\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\2010\03-11-2010 #14 Brady Canal Project - Report Sheet.Doc
**Name:** "TBM Structure #14"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

**Date of Survey:** June 4, 2002

**TBM Structure 14**

**NAD 83 (1993) Geodetic Position:**
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

**NAD 83 Datum LSZ (1702) Feet:**
N = 322,246.13
E = 3,386,562.02

**Elevation at Top of Hex Bolt**
3.57 feet (NAVD 88)
<table>
<thead>
<tr>
<th>Structure #14</th>
<th>Elevation</th>
<th>BS</th>
<th>F.S.</th>
<th>Hf</th>
<th>3.57</th>
<th>9.33</th>
<th>9.14</th>
<th>9.94</th>
<th>1.14</th>
<th>0.62</th>
<th>-5.08</th>
<th>-5.78</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Removed 8 boards from bay 13.89 - 457
GENERAL STRUCTURE CONDITION
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CRESCIENT WEIR
SITE No.: 21
PARTICIPANTS: BILLY WURZLOW, DEME NACUNI, JEREMY BOURG
DATE: MARCH 11, 2010
CONDITIONS: CLOUDY AND MILD

Permission to gain access to Site #21 was obtained from Mr. Francis Fields, PLS of Apache Louisiana Minerals LLC.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.51' marsh side and +1.47' outside of the weir.

EAST BAY
Crew removed five (5) stoplogs. Pre-stoplog removal elevation was -0.24'. Post-stoplog removal elevation was -3.19'.

CENTER BAY
Crew removed nine (9) stoplogs. Pre-stoplog removal elevation was -0.03'. Post-stoplog removal elevation was -4.79'.

WEST BAY
Crew removed two (2) stoplogs. Pre-stoplog removal elevation was -0.25'. Post-stoplog removal elevation was -1.23'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - REMOVE STOP LOGS

Date: Thursday, March 11, 2010
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & MILD
Persons Contacted for Access: FRANCIS FIELDS - ALM
Site No.: 21

<table>
<thead>
<tr>
<th>STRUCTURE CONDITION</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEE CONDITION</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>NEED SPOIL ON BOTH WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED ON BOTH WINGS.

Stop Log Adjustment | Date/Time | 3/11/2009 12:00 PM
Number of Logs Removed/Replaced: 2 WEST, 9 MIDDLE, 5 EAST REMOVED
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES

Flag Description: N/A
VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N = 320,164.32
E = 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
<table>
<thead>
<tr>
<th>Structure #</th>
<th>T.S. H.T.</th>
<th>F.S. Flood Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAN 1</td>
<td>7.24</td>
<td>14.7</td>
</tr>
<tr>
<td></td>
<td>7.20</td>
<td>1.51</td>
</tr>
<tr>
<td></td>
<td>8.96</td>
<td>-0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.49</td>
<td>1.78</td>
</tr>
<tr>
<td></td>
<td>8.74</td>
<td>-2.67</td>
</tr>
<tr>
<td></td>
<td>13.59</td>
<td>-0.03</td>
</tr>
<tr>
<td></td>
<td>9.48</td>
<td>-1.88</td>
</tr>
<tr>
<td></td>
<td>14.34</td>
<td>-5.63</td>
</tr>
<tr>
<td></td>
<td>12.14</td>
<td>-3.43</td>
</tr>
<tr>
<td></td>
<td>11.90</td>
<td>-3.19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Top of Boad, West Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top water, East Side</td>
<td>Top of Boad, Middle Bay</td>
</tr>
<tr>
<td>Top of Boad, West Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Top of Boad, West Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom on Inside</td>
<td>Bottom on Inside</td>
</tr>
<tr>
<td>Top of Boad, Middle Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
<tr>
<td>Bottom on Inside</td>
<td>Bottom on Inside</td>
</tr>
<tr>
<td>Top of Boad, East Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Top of Boad, West Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom on Inside</td>
<td>Bottom on Inside</td>
</tr>
<tr>
<td>Top of Boad, Middle Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
<tr>
<td>Bottom on Inside</td>
<td>Bottom on Inside</td>
</tr>
<tr>
<td>Top of Boad, East Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Top of Boad, West Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom on Inside</td>
<td>Bottom on Inside</td>
</tr>
<tr>
<td>Top of Boad, Middle Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
<tr>
<td>Bottom on Inside</td>
<td>Bottom on Inside</td>
</tr>
<tr>
<td>Top of Boad, East Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Top of Boad, West Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom on Inside</td>
<td>Bottom on Inside</td>
</tr>
<tr>
<td>Top of Boad, Middle Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
<tr>
<td>Bottom on Inside</td>
<td>Bottom on Inside</td>
</tr>
<tr>
<td>Top of Boad, East Bay</td>
<td>Top of Boad, East Bay</td>
</tr>
</tbody>
</table>
GENERAL STRUCTURE CONDITION – LOOKING NORTHWEST
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA

PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR

SITE No.: 23

PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURE

DATE: MARCH 11, 2010

CONDITIONS: CLOUDY AND MILD

Permission to gain access to Site #23 was obtained from Mr. Francis Fields, PLS of Apache Louisiana Minerals LLC.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.23' marsh side and +1.21' outside of the weir.

NORTH BAY
Crew removed ten (10) stoplogs. Pre-stoplog removal elevation was -0.49'. Post-stoplog removal elevation was -5.49'.

SOUTH BAY
Crew removed ten (10) stoplogs. Pre-stoplog removal elevation was -0.50'. Post-stoplog removal elevation was -5.49'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - REMOVE STOP LOGS

Date: Thursday, March 11, 2010
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLOUDY & MILD
Persons Contacted for Access: FRANCIS FIELDS - ALM
Site No.: 23

<table>
<thead>
<tr>
<th>STRUCTURE CONDITION</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>GOOD</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEE CONDITION</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>NEED SPOIL ON BOTH WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED AT BOTH WINGS TO TIE INTO LEVEE. WASHED OUT ON NORTH WING OF SHEETPILE. SOUTH WING VERY THIN - ABOUT TO WASH THROUGH.

Stop Log Adjustment Date/Time          3/11/2010 11:00 AM
Number of Logs Removed/Replaced       10 LOGS REMOVED FROM EACH BAY
Elevation                             SEE FIELD NOTES
Mudline Levels                         SEE FIELD NOTES
Water Levels                           SEE FIELD NOTES

Flag Description: N/A
VICINITY MAP  Scale: 1" = 2000'  

**Name:** "TBM Structure #23"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

**Date of Survey:** June 6, 2002

**TBM Structure 23**

**NAD 83 (1993) Geodetic Position:**
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

**NAD 83 Datum LSZ (1702) Feet:**
N = 319,411.28
E = 3,407,714.35

**Elevation at Top of Hex Bolt**
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
<table>
<thead>
<tr>
<th>STA.</th>
<th>3.5</th>
<th>8, 64</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.S.</td>
<td>5.13</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top of Structure</th>
<th>#23</th>
<th>Top of Walls, North (inside)</th>
<th>Top of Walls, South (inside)</th>
<th>Bottom of Walls, North</th>
<th>Bottom of Walls, South</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Bay</td>
<td>7.43</td>
<td>1.41 - 0.99</td>
<td>14.30 - 0.32</td>
<td>14.30 - 0.99</td>
<td>14.30 - 0.99</td>
</tr>
</tbody>
</table>

- Removed 10 boards from North Bay.
STRUCTURE #23

GENERAL STRUCTURE CONDITION – LOOKING EAST

MAR 11 2010
STRUCTURE #23

SOUTH WING
STRUCTURE #23

WASHOUT AROUND NORTH WING

MARCH 2010
FIELD TRIP REPORTS

BRADY CANAL PROJECT
DNR CONTRACT No.: 2511-09-01

\H:Humfile\2\Df\s\Dept\Houma\Shared_Data\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\2010\03-11-2010 Brady Canal Project Photo Documentation.Doc
September 28, 2010

LA Dept of Natural Resources
Office of Coastal Protection and Restoration
Thibodaux Field Office
1440 Tiger Drive
Thibodaux, LA 70301
ATTN: Brian Babin

RE: Brady Canal Hydrologic Restoration Project
(TE-28) - Operation of Weir Structures
DNR Contract No.: 2511-09-01

Dear Mr. Babin:

Enclosed, please find two (2) copies of Apache Louisiana Minerals LLC weir structure operations report for the subject project and contract for September, 2010.

It has been noted the elevation of the stoplogs of Structures No. 14 and 23 are approximately 0.5’ lower than what appears to be the target elevation of 0.0’. If this is not the target elevation, please advise. Should another log be added to these structures to maintain an increased water elevation?

Please advise if you have any questions or need additional information.

Sincerely,

APACHE LOUISIANA MINERALS LLC

Francis J. Fields, Jr., P.L.S.

RECEIVED
SEP 29 2010
BY: [Signature]

S:\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\FIELD TRIP REPORT - TRANSMITTAL.Doc
FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

SEPTEMBER 2010

PREPARED FOR:

OFFICE OF
Coastal Protection and Restoration

MR. BRIAN J. BABIN, P.E.
OFFICE OF COASTAL PROTECTION AND RESTORATION
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

APACHE LOUISIANA MINERALS LLC

APACHE LOUISIANA MINERALS LLC
POST OFFICE BOX 206
HOUMA, LA 70361-0206
(985) 879-3528
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 14
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: SEPTEMBER 2, 2010
CONDITIONS: PARTLY CLOUDY AND HOT

Permission to gain access to Site #14 was obtained via email from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp “Better Livin”. The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +2.39’ on both sides of the weir.

Crew installed eight (8) stoplogs that were removed on last visit in March 2010. Pre-stoplog installation elevation was -4.68’. Post-stoplog installation elevation was -0.51’.

Attached are the corresponding field data report, crew’s field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: INSTALL STOP LOGS

Date: Thursday, September 02, 2010
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: PARTLY CLOUDY & HOT; WIND EAST 10-15 MPH
Persons Contacted for Access: JEFF DEBLIEUX - CONOCOPHILLIPS
Site No.: 14

<table>
<thead>
<tr>
<th>STRUCTURE CONDITION</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Condition</td>
</tr>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Erosion</td>
</tr>
<tr>
<td>Vegetation</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT

Stop Log Adjustment:  
Date/Time: 9/2/2010 1:00 PM
Number of Logs Removed/Replaced: INSTALLED 8 LOGS
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES

Flag Description: N/A
STRUCTURE #14

GENERAL CONDITION OF STRUCTURE

SEP 2 2010
STRUCTURE #14

NORTH WING OF STRUCTURE
STRUCTURE #14

SOUTH WING OF STRUCTURE
Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N = 322,246.13
E = 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)
Structure #14
Little Canyon Crew

STA E.S. H.T. B.S. Elevation
8.90 12.47 3.57
10.08 +2.39
10.08 +2.39
17.15 - 4.68
18.90 - 4.43
17.65 - 5.18

Added 8 Boards in Bay
12.98 - .51

Remarcts
TBM #14
Top Water in Bayou
Top Water Inside
Top of Boards in Bay
Bottom in Bayou
Bottom Inside
Top of Boards in Bay
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 21
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: SEPTEMBER 2, 2010
CONDITIONS: PARTLY CLOUDY AND HOT

Permission to gain access to Site #21 was obtained from Mr. Francis Fields with Apache Louisiana Minerals LLC.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +2.48' on both sides of the weir.

EAST BAY
Crew installed five (5) stoplogs that were removed on last visit March 2010. Pre-stoplog installation elevation was -3.35'. Post-stoplog installation elevation was -0.19'.

CENTER BAY
Crew installed nine (9) stoplogs that were removed on last visit March 2010. Pre-stoplog installation elevation was -5.06'. Post-stoplog installation elevation was -0.21'.

WEST BAY
Crew installed two (2) stoplogs that were removed on last visit March 2010. Pre-stoplog installation elevation was -1.26'. Post-stoplog installation elevation was -0.24'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: INSTALL STOP LOGS

Date: Thursday, September 02, 2010
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: PARTLY CLOUDY & HOT; WIND EAST 10-15 MPH
Persons Contacted for Access: FRANCIS FIELDS - APACHE LOUISIANA MINERALS LLC
Site No.: 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐ ☒</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☒ ☐</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD</td>
<td>☐ ☒</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>NEED DIRT ON BOTH WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: TIGHTENED GRATING CLIPS AND SPRAYED LOCKS WITH LUBRICANT

Stop Log Adjustment | Date/Time | Remarks
Number of Logs Removed/Replaced | 9/2/2010 11:30 AM | 2 WEST, 9 CENTER & 5 EAST BAY INSTALLED
Elevation | | SEE FIELD NOTES
Mudline Levels | | SEE FIELD NOTES
Water Levels | | SEE FIELD NOTES
Flag Description: | N/A |
STRUCTURE #21

GENERAL CONDITION OF STRUCTURE
STRUCTURE #21

WEST WING OF STRUCTURE
STRUCTURE #21

EAST WING OF STRUCTURE
**Name:** "TBM Structure #21"

**Location:** From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

**TBM Description:** The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

**Date of Survey:** June 6, 2002

**NAD 83 (1993) Geodetic Position:**
Lat. 29°22'47.25280"N
Long. 90°56'36.35631"W

**NAD 83 Datum LSZ (1702) Feet:**
N= 320,164.32
E= 3,405,016.63

**Elevation at Top of Hex Bolt**
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A" Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
<table>
<thead>
<tr>
<th>STA</th>
<th>B.S.</th>
<th>H.T.</th>
<th>F.S.</th>
<th>Elev.</th>
<th>4.49</th>
<th>8.21</th>
<th>3.72</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.73</td>
<td>2.48</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.47</td>
<td>-1.26</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.27</td>
<td>-5.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.56</td>
<td>-3.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12.38</td>
<td>-4.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.50</td>
<td>-5.29</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.90</td>
<td>-7.69</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.80</td>
<td>-5.59</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.45</td>
<td>-2.24</td>
<td></td>
</tr>
<tr>
<td>Added</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12.70</td>
<td>-4.49</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**

- Top of Water
- Top of Boards West Bay
- " " middle Bay
- " " East Bay
- Bottom East Bay lake side
- " " Inside
- Bottom middle Bay Inside
- " " lake side
- Bottom West Bay lake side
- " " Inside

Top of Boards East Bay
- " " middle Bay
- " " West Bay
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA

PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR

SITE No.: 23

PARTICIPANTS: BILLY WURZLOW, DÈME NAQUIN, JEREMY BOURG

DATE: SEPTEMBER 2, 2010

CONDITIONS: PARTLY CLOUDY AND HOT

Permission to gain access to Site #23 was obtained from Mr. Francis Fields with Apache Louisiana Minerals LLC.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +2.17' on both sides of the weir.

NORTH BAY
Crew installed ten (10) stoplogs that were removed on last visit March 2010. Pre-stoplog installation elevation was -5.50'. Post-stoplog installation elevation was -0.51'.

SOUTH BAY
Crew installed ten (10) stoplogs that were removed on last visit March 2010. Pre-stoplog installation elevation was -5.49'. Post-stoplog installation elevation was -0.53'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

S:\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\2010\09-02-2010 Brady Canal Project - SUMMARY.Doc
## FIELD DATA REPORT

**Project (No. & Name):** TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT  
**Location:** TERREBONNE BASIN, TERREBONNE PARISH, LA  
**Purpose of Site Visit:** INSTALL STOP LOGS

**Date:** Thursday, September 02, 2010  
**Participants:** BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG  
**Weather Conditions:** PARTLY CLOUDY & HOT; WIND EAST 10-15 MPH  
**Persons Contacted for Access:** FRANCIS FIELDS - APACHE LOUISIANA MINERALS LLC  
**Site No.:** 23

### STRUCTURE CONDITION

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☐ Yes ☒ No</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☒ No ☐ Yes</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☐ Yes ☒ No</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☐ Yes ☒ No</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☒ No ☐ Yes</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐ Yes ☒ No</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☒ No ☐ Yes</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD</td>
<td>☐ Yes ☒ No</td>
</tr>
</tbody>
</table>

### LEVEE CONDITION

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>WASHED OUT ON BOTH WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Description of Maintenance / Repair Required:** SPRAYED LOCKS WITH LUBRICANT

### Stop Log Adjustment

<table>
<thead>
<tr>
<th>Description</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop Log Adjustment</td>
<td>9/2/2010 10:30 AM</td>
</tr>
<tr>
<td>Number of Logs Removed/Replaced</td>
<td>10 LOGS INSTALLED IN EACH BAY</td>
</tr>
<tr>
<td>Elevation</td>
<td>SEE FIELD NOTES</td>
</tr>
<tr>
<td>Mudline Levels</td>
<td>SEE FIELD NOTES</td>
</tr>
<tr>
<td>Water Levels</td>
<td>SEE FIELD NOTES</td>
</tr>
</tbody>
</table>

**Flag Description:** N/A
STRUCTURE #23

GENERAL CONDITION OF STRUCTURE
STRUCTURE #23

NORTH WING OF STRUCTURE
STRUCTURE #23

SOUTH WING OF STRUCTURE

SEP 2 2010
VICINITY MAP  Scale: 1” = 2000’  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat.  29°22'39.70615" N
Long.  90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N=  319,411.28
E=  3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
### Brady Canal Hydalogic Restoration Project - Stoplog Installation

**Structure #23 Aug 4th**

<table>
<thead>
<tr>
<th>ST #4</th>
<th>B.S.</th>
<th>H.I.</th>
<th>F.S.</th>
<th>B.L.O.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.19</td>
<td>8.70</td>
<td></td>
<td></td>
<td>3.51</td>
</tr>
<tr>
<td>6.53</td>
<td>3.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.74</td>
<td>9.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.95</td>
<td>6.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.10</td>
<td>9.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.85</td>
<td>6.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.20</td>
<td>5.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.19</td>
<td>5.49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Added 10 Boards in Each Bay**

| 5.21  | 8.72 |      | 3.51 |
| 9.73  | -5.1 |      |      |
| 9.25  | -5.3 |      |      |

### Remarks

- **T.B.M. #23**
- Top of Water
- Bottom on inside North Bay
  - " inside North Bay
  - " outside North Bay
- Bottom sill North Bay
  - " inside South Bay
  - " outside South Bay
  - South

**BL. Signature**

J. Burke
D. Ferguson

**Date**

9/21/10
April 12, 2011

LA Dept of Natural Resources
Coastal Restoration Division
Thibodaux Field Office
1440 Tiger Drive
Thibodaux, LA 70301
ATTN: Brian Babin

RE: Brady Canal Hydrologic Restoration Project (TE-28) - Operation of Weir Structures
DNR Contract No.: 2511-09-01

Dear Mr. Babin:

Enclosed, please find two (2) copies of Apache Louisiana Minerals LLC weir structure operations report for the above referenced project for March 15, 2011.

Also enclosed is a copy of the monitoring report for the third fiscal year services rendered in operating the Project structures during September 2010 and March 2011, along with three (3) copies of our invoice in the amount of Twelve Thousand and No/100 dollars ($12,000.00), which is now due. Please remit payment to: Apache Louisiana Minerals LLC, Post Office Box 206, Houma, LA 70361.

Please advise if you have any questions or need additional information.

Sincerely,

APACHE LOUISIANA MINERALS LLC

Francis J. Fields, Jr., P.L.S.
FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

MARCH 2011

PREPARED FOR:

OFFICE OF Coastal Protection and Restoration

MR. BRIAN J. BABIN, P.E.
OFFICE OF COASTAL PROTECTION AND RESTORATION
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

Apache

APACHE LOUISIANA MINERALS LLC
POST OFFICE BOX 206
HOUMA, LA 70361-0206
(985) 879-3528
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 14
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: MARCH 15, 2011
CONDITIONS: CLEAR AND MILD

Permission to gain access to Site #14 was obtained verbally from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57’ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.79’ on Bayou Carencro side, 0.81’ on marsh side of the weir.

Crew removed FIVE (5) stoplogs. Pre-stoplog removal elevation was -0.56’. Post-stoplog removal elevation was -3.13’.

Attached are the corresponding field data report, crew’s field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
S:\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\2011\03-15-2011 Brady Canal Project - SUMMARY.Doc
# FIELD DATA REPORT

**Project (No. & Name):** TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

**Location:** TERREBONNE BASIN, TERREBONNE PARISH, LA

**Purpose of Site Visit:** OPERATE STRUCTURE - REMOVE STOP LOGS

**Date:** Tuesday, March 15, 2011

**Participants:** BILLY WURZLOW; DEMA NAQUIN; JEREMY BOURG

**Weather Conditions:** CLEAR & MILD

**Persons Contacted for Access:** JEFF DEBLIEUX - CONOCOPHILLIPS

**Site No.:** 14

## STRUCTURE CONDITION

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Timber Hoist/ Lag Eyes</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Grating/Metal Components</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☒</td>
</tr>
</tbody>
</table>

## LEVEE CONDITION

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>WINGS OK, SPOIL NEEDED ON OUTSIDE OF WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. NEED EARTH WORK ON BAYOU CARENCRO SIDE OF STRUCTURE.

**Stop Log Adjustment**

- **Date/Time:** 3/15/2011 1:00 PM
- **Number of Logs Removed/Replaced:** 5 LOGS REMOVED
- **Elevation:** SEE FIELD NOTES
- **Mudline Levels:** SEE FIELD NOTES
- **Water Levels:** SEE FIELD NOTES

**Flag Description:** N/A
VICINITY MAP Scale: 1" = 2000'

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)
3/15/11

Struct.: 14

Sta.: 8.61
B.S.: 5.04
F.S.: 3.57
Elev.: 7.82

Rem. 5 Boards: 11.74

Rem. 5 Boards: 5.13

7.82 - 0.79
7.80 - 0.81
9.17 - 0.56
12.00 - 3.39
13.80 - 5.19

Top of Board Inside Ray
Bottom, Board Side
GENERAL STRUCTURE CONDITION
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 21
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: MARCH 15, 2011
CONDITIONS: CLEAR AND MILD

Permission to gain access to Site #21 was obtained from Mr. Francis Fields, PLS of Apache Louisiana Minerals LLC.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are THREE (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.94' marsh side and +0.89' outside of the weir. There was ONE (1) missing stoplog which needs to be replaced.

EAST BAY
Crew removed SEVEN (7) stoplogs. Pre-stoplog removal elevation was +0.10'. Post-stoplog removal elevation was -3.71'.

CENTER BAY
Crew removed EIGHT (8) stoplogs. Pre-stoplog removal elevation was -0.18'. Post-stoplog removal elevation was -4.81'.

WEST BAY
Crew removed ONE (1) stoplogs. Pre-stoplog removal elevation was -0.25'. Post-stoplog removal elevation was -0.69'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - REMOVE STOP LOGS

Date: Tuesday, March 15, 2011
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & MILD
Persons Contacted for Access: FRANCIS FIELDS - ALM
Site No.: 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>□</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>□</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>□</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>GOOD</td>
<td>□</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>5 GRATING CLIPS MISSING</td>
<td>□</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>□</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>□</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>□</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>NEED SPOIL ON BOTH WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT, DIRT FILL NEEDED ON BOTH WINGS, NEED 5 REPLACEMENT GRATING CLIPS.

Stop Log Adjustment: 3/15/2011 11:00 AM
- Date/Time: 3/15/2011 11:00 AM
- Number of Logs Removed/Replaced: 1 WEST, 8 MIDDLE, 7 EAST REMOVED
- Elevation: SEE FIELD NOTES
- Mudline Levels: SEE FIELD NOTES
- Water Levels: SEE FIELD NOTES

Flag Description: N/A
VICINITY MAP  Scale: 1” = 2000’  Reproduced from USC&GS “LAKE PENCHANT” Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat.  29°22'47.25280" N
Long.  90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N=  320,164.32
E=  3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument *TE28-SM-A*
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
<table>
<thead>
<tr>
<th>Structure #21 Jug Lake</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA</td>
</tr>
<tr>
<td>21.68</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>West Bay</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>Middle Bay</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>Removed 1 Board West Bay</td>
</tr>
<tr>
<td>Removed 8 Boards Middle</td>
</tr>
<tr>
<td>Removed 7 Boards East Bay</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Removed West Bay</td>
</tr>
<tr>
<td>Middle Bay</td>
</tr>
<tr>
<td>East Bay</td>
</tr>
<tr>
<td>7.09</td>
</tr>
<tr>
<td>11.21</td>
</tr>
<tr>
<td>10.11</td>
</tr>
</tbody>
</table>

---

Same Crew 3/15/11

- Top of Water in Jug Lake
- Top of Water Inside
- Top of Boards West Bay
- Bottom in West Bay Inside
- Bottom in West Bay LR Side
- Top of Boards Middle Bay
- Bottom Inside Middle Bay
- Bottom LR Side Middle Bay
- Top of Boards East Bay
- Bottom Inside East Bay
- Bottom LR Side East Bay
STRUCTURE #21

GENERAL STRUCTURE CONDITION – LOOKING NORTHWEST
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 23
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: MARCH 15, 2011
CONDITIONS: CLEAR AND MILD

Permission to gain access to Site #23 was obtained from Mr. Francis Fields, PLS of Apache Louisiana Minerals LLC.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are TWO (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51’ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.74’ marsh side and +0.70’ outside of the weir. There was ONE (1) missing stoplog which needs to be replaced.

NORTH BAY
Crew removed NINE (9) stoplogs. Pre-stoplog removal elevation was -1.01’. Post-stoplog removal elevation was -5.48’.

SOUTH BAY
Crew removed TEN (10) stoplogs. Pre-stoplog removal elevation was -0.49’. Post-stoplog removal elevation was -5.48’.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: OPERATE STRUCTURE - REMOVE STOP LOGS

Date: Tuesday, March 15, 2011
Participants: BILLY WURZLOW; DUME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & MILD
Persons Contacted for Access: FRANCIS FIELDS - ALM
Site No.: 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☒</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>1 LOG MISSING</td>
<td>☒</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD - LUBED</td>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>NEED SPOIL ON BOTH WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED AT BOTH WINGS TO TIE INTO LEVEE. WASHED OUT ON NORTH WING OF SHEETPILE. SOUTH WING VERY THIN - ABOUT TO WASH THROUGH, NEED 1 REPLACEMENT STOP LOG.

Stop Log Adjustment: 3/15/2011 10:00 AM
- Number of Logs Removed/Replaced: 9 NORTH; 10 SOUTH REMOVED
- Elevation: SEE FIELD NOTES
- Mudline Levels: SEE FIELD NOTES
- Water Levels: SEE FIELD NOTES

Flag Description: N/A
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name:  "TBM Structure #23"

Location:  From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description:  The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey:  June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat.  29°22'39.70615"N
Long.  90°56'05.89376"W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)
### Brady Canal Hydrologic Restoration Project

#### Structure #23 Jug Lake

<table>
<thead>
<tr>
<th>STA</th>
<th>BS</th>
<th>HI</th>
<th>FS</th>
<th>Elev.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.30</td>
<td>5.81</td>
<td></td>
<td>3.51</td>
</tr>
<tr>
<td></td>
<td>5.11</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.07</td>
<td>0.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Bay</td>
<td>6.18</td>
<td>-1.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.20</td>
<td>-6.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Bay</td>
<td>13.87</td>
<td>-8.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.30</td>
<td>-0.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11.42</td>
<td>-5.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13.00</td>
<td>-7.19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Removed 9 boards North Bay
  - (1 Board was missing)
- Removed 10 boards South Bay

**Remainders**

- BM #23
- Top of Water in Lake
- Top of Water inside
- Top of boards North Bay
- Bottom inside North Bay
- Bottom inside North Bay
- Top of boards South Bay
- Bottom left side North Bay
- Bottom inside North Bay

- Bottom of Bay North
- Bottom of Bay South
STRUCTURE #23

MAR 15 2011

GENERAL STRUCTURE CONDITION – LOOKING EAST
STRUCTURE #23

SOUTH WING

MAR 15 2011
WASHOUT AROUND NORTH WING
FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

SEPTEMBER 2011

PREPARED FOR:

OFFICE OF
Coastal Protection and Restoration

MR. BRIAN J. BABIN, P.E.
OFFICE OF COASTAL PROTECTION AND RESTORATION
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

Apache

APACHE LOUISIANA MINERALS LLC
POST OFFICE BOX 206
HOUMA, LA 70361-0206
(985) 879-3528
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 14
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: SEPTEMBER 14, 2011
CONDITIONS: CLEAR AND HOT

Permission to gain access to Site #14 was obtained from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp "Better Livin'." The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.10' on both sides of the weir.

Crew installed five (5) stoplogs that were removed on last visit in March 2011. Pre-stoplog installation elevation was -3.16'. Post-stoplog installation elevation was -0.50'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

S:\Wetlands & CWPPRA\TE-28 Brady Canal Project\Operations Reports\2011\09-15-2011 Brady Canal Project - SUMMARY.Doc
**FIELD DATA REPORT**

**Project (No. & Name):** TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
**Location:** TERREBONNE BASIN, TERREBONNE PARISH, LA

**Purpose of Site Visit:** INSTALL STOP LOGS

**Date:** Wednesday, September 14, 2011
**Participants:** BILLY WURZLOW; DÉME NAQUIN; JEREMY BOURG
**Weather Conditions:** CLEAR & HOT; WIND WEST 5-10 MPH

**Persons Contacted for Access:** JEFF DEBLIEUX - CONOCOPHILLIPS

**Site No.:** 14

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD</td>
<td>☒</td>
</tr>
</tbody>
</table>

**STRUCTURE CONDITION**

**LEVEE CONDITION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>WINGS NEED DIRT</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Description of Maintenance / Repair Required:** LOCKS SPRAYED WITH LUBRICANT

**Stop Log Adjustment**

- **Number of Logs Removed/Replaced:** INSTALLED 5 LOGS
- **Elevation:** SEE FIELD NOTES
- **Mudline Levels:** SEE FIELD NOTES
- **Water Levels:** SEE FIELD NOTES

**Flag Description:** N/A
Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N=  322,246.13
E=  3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)
### Structure #14 Corrinia Crow

<table>
<thead>
<tr>
<th>STA</th>
<th>B.S.</th>
<th>H.T.</th>
<th>F.S.</th>
<th>E.F.U.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.98</td>
<td>8.55</td>
<td></td>
<td></td>
<td>3.57</td>
</tr>
</tbody>
</table>

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.45</td>
<td>1.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.45</td>
<td>1.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.71</td>
<td>-3.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.85</td>
<td>-5.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.65</td>
<td>-5.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.14</td>
<td>-5.59</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Added 5 Boards**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9.05</td>
<td>-0.50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Some Crow 9/14/11

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bk#14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top water in Little Corrinia Crow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top water Inside</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top of Boards in Structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom Corrinia Crow Side</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom Inside</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Top of Boards in Structure**
STRUCTURE #14

GENERAL CONDITION OF STRUCTURE
STRUCTURE #14

SOUTH WING OF STRUCTURE
STRUCTURE #14

NORTH WING OF STRUCTURE
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 21
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: SEPTEMBER 14, 2011
CONDITIONS: CLEAR AND HOT

Permission to gain access to Site #21 was obtained from Mr. Francis Fields with Apache Louisiana Minerals LLC.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.29' on both sides of the weir.

EAST BAY
Crew installed seven (7) stoplogs that were removed on last visit March 2011. Pre-stoplog installation elevation was -3.70'. Post-stoplog installation elevation was -0.25'.

CENTER BAY
Crew installed eight (8) stoplogs that were removed on last visit March 2011. Pre-stoplog installation elevation was -4.80'. Post-stoplog installation elevation was -0.21'.

WEST BAY
Crew installed one (1) stoplog that was removed on last visit March 2011. Pre-stoplog installation elevation was -0.71'. Post-stoplog installation elevation was -0.25'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: INSTALL STOP LOGS

Date: Wednesday, September 14, 2011
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & HOT; WIND WEST 5-10 MPH
Persons Contacted for Access: FRANCIS FIELDS - APACHE LOUISIANA MINERALS LLC
Site No.: 21

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>☐</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>☐</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD</td>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>NEED DIRT ON BOTH WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: REPLACED 6 GRATING CLIPS AND SPRAYED LOCKS WITH LUBRICANT

Stop Log Adjustment Date/Time: 9/14/2011 11:15 AM
Number of Logs Removed/Replaced: 1 WEST, 8 CENTER & 7 EAST BAY INSTALLED
Elevation
Mudline Levels
Water Levels

Flag Description: N/A
Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)
<table>
<thead>
<tr>
<th>Bay</th>
<th>STA, B.S.</th>
<th>M.I.</th>
<th>F.S.</th>
<th>Elev.</th>
<th>1st</th>
<th>2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Bay</td>
<td>3.00</td>
<td>6.72</td>
<td></td>
<td>3.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.43</td>
<td>1.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.43</td>
<td>1.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.13</td>
<td>-0.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.15</td>
<td>-1.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.93</td>
<td>-3.21</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Bay</td>
<td>11.52</td>
<td>-4.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11.90</td>
<td>-5.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13.75</td>
<td>-6.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.01</td>
<td>-5.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Bay</td>
<td>10.42</td>
<td>-3.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11.03</td>
<td>-4.31</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11.35</td>
<td>-4.63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Installed**
- 1 Board West Bay
- 8 Boards Middle Bay
- 7 Boards East Bay

**West Bay**
- 6.97 - 0.25
- 6.97 - 0.25

**Middle Bay**
- 6.97 - 0.25

**East Bay**
- 6.97 - 0.25

**Remarks**
- BR 21
- Top of Water LH Side
- Top of Water Inside
- Top of Boards West Bay
- Bottom LH Side
- Bottom Inside
- Top of Boards Middle Bay
- Bottom LH Side
- Bottom Inside
- Bottom of Structure Middle Bay
- Top of Boards East Bay
- Bottom LH Side
- Bottom Inside

**Some Crew** 9/14/11
STRUCTURE #21

GENERAL CONDITION OF STRUCTURE
STRUCTURE #21

WEST WING OF STRUCTURE
STRUCTURE #21

EAST WING OF STRUCTURE
FIELD TRIP REPORT

SUBJECT: TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION: TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE: OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.: 23
PARTICIPANTS: BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE: SEPTEMBER 14, 2011
CONDITIONS: CLEAR AND HOT

Permission to gain access to Site #23 was obtained from Mr. Francis Fields with Apache Louisiana Minerals LLC.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51’ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +1.04’ on both sides of the weir.

NORTH BAY
Crew installed ten (10) stoplogs that were removed on last visit March 2011. Pre-stoplog installation elevation was -5.48’. Post-stoplog installation elevation was -0.44’.

SOUTH BAY
Crew installed ten (10) stoplogs that were removed on last visit March 2011. Pre-stoplog installation elevation was -5.51’. Post-stoplog installation elevation was -0.47’.

Attached are the corresponding field data report, crew’s field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)
FIELD DATA REPORT

Project (No. & Name): TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
Location: TERREBONNE BASIN, TERREBONNE PARISH, LA
Purpose of Site Visit: INSTALL STOP LOGS

Date: Wednesday, September 14, 2011
Participants: BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG
Weather Conditions: CLEAR & HOT; WIND WEST 5-10 MPH
Persons Contacted for Access: FRANCIS FIELDS - APACHE LOUISIANA MINERALS LLC
Site No.: 23

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Maintenance/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Pile</td>
<td>GOOD</td>
<td>Yes</td>
</tr>
<tr>
<td>Timber Hoist / Lag Eyes</td>
<td>GOOD</td>
<td>Yes</td>
</tr>
<tr>
<td>Pile Caps</td>
<td>GOOD</td>
<td>Yes</td>
</tr>
<tr>
<td>Corrugated Aluminum</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Grating / Metal Components</td>
<td>GOOD</td>
<td>Yes</td>
</tr>
<tr>
<td>Wood Access Ramp</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Stop Logs</td>
<td>GOOD</td>
<td>No</td>
</tr>
<tr>
<td>Master Locks</td>
<td>GOOD</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>WASHED OUT ON BOTH WINGS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description of Maintenance / Repair Required: SPRAYED LOCKS WITH LUBRICANT

Stop Log Adjustment
Date/Time: 9/14/2011 10:30 AM
Number of Logs Removed/Replaced: 10 LOGS INSTALLED IN EACH BAY
Elevation: SEE FIELD NOTES
Mudline Levels: SEE FIELD NOTES
Water Levels: SEE FIELD NOTES

Flag Description: N/A
VICINITY MAP  Scale: 1" = 2000'  Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name:  "TBM Structure #23"

Location:  From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description:  The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey:  June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat.  29°22'39.70615"N
Long.  90°56'05.89376"W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"  
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division
<table>
<thead>
<tr>
<th>BM #8.33</th>
<th>Top of Structure</th>
<th>North Bay</th>
<th>South Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.M.</td>
<td>Bottom of Structure</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>1.04</td>
<td>Bottom of Structure</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>0.81</td>
<td>Bottom of Structure</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>7.85</td>
<td>Bottom of Structure</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>3.51</td>
<td>Bottom of Structure</td>
<td>11</td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BS</th>
<th>F.S.</th>
<th>Elev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.34</td>
<td>1.04</td>
<td></td>
</tr>
<tr>
<td>6.81</td>
<td>0.94</td>
<td></td>
</tr>
<tr>
<td>13.35</td>
<td>11.04</td>
<td></td>
</tr>
<tr>
<td>14.30</td>
<td>16.84</td>
<td></td>
</tr>
<tr>
<td>16.00</td>
<td>1.84</td>
<td></td>
</tr>
<tr>
<td>13.36</td>
<td>5.10</td>
<td></td>
</tr>
<tr>
<td>13.95</td>
<td>6.10</td>
<td></td>
</tr>
<tr>
<td>15.95</td>
<td>8.10</td>
<td></td>
</tr>
</tbody>
</table>

*Added 10 Boards to each Bay*

<table>
<thead>
<tr>
<th>Bay</th>
<th>8.39</th>
<th>0.44</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>8.39</td>
<td>0.47</td>
</tr>
</tbody>
</table>
STRUCTURE #23

GENERAL CONDITION OF STRUCTURE
STRUCTURE #23

SOUTH WING OF STRUCTURE
STRUCTURE #23

NORTH WING OF STRUCTURE
CUT IN EAST BANK OF JUG LAKE
STRUCTURE #24

GENERAL CONDITION OF STRUCTURE