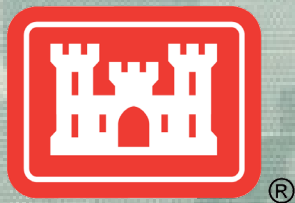


# ***DREDGING YOUR DOCKS 2012***

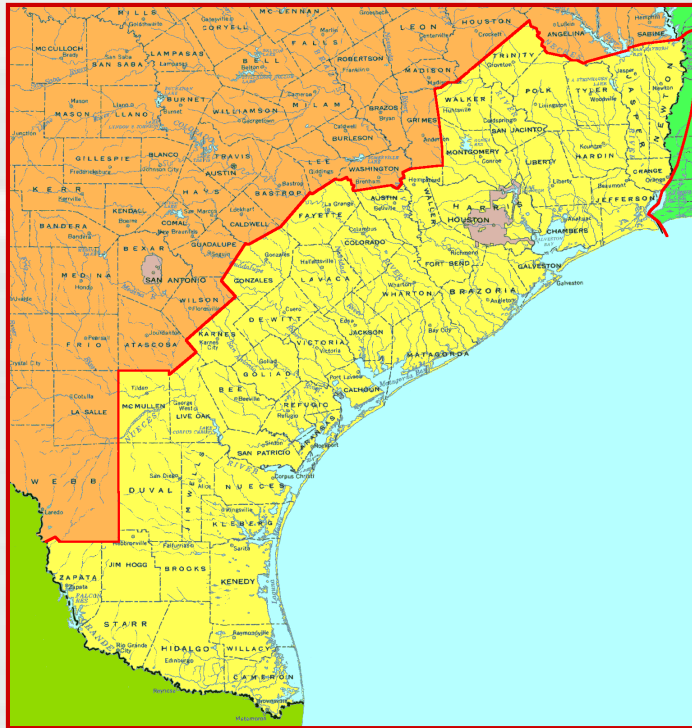
*Mr. Jayson M Hudson  
Regulatory Project Manager  
Galveston District*



®

US Army Corps of Engineers  
**BUILDING STRONG**®

# U.S. Army Corps of Engineers, Galveston District



- 50,000+ sq mi, with 700 miles coastline, 150 miles inland
- 48 counties, portions of 4 parishes with 16 congressional districts
- 340 dedicated professionals and annual budget of approximately \$150 million



Custodians of the  
Coast

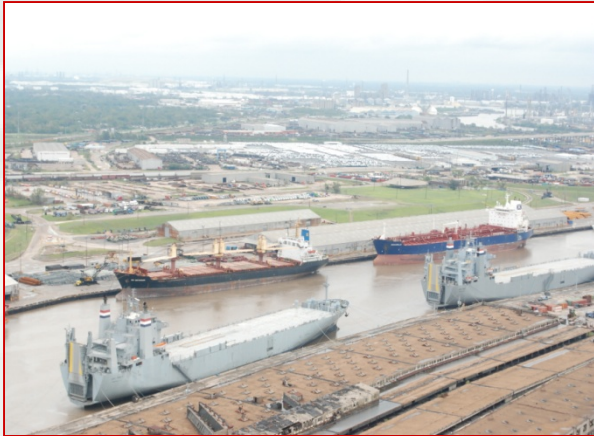


**BUILDING STRONG®**

# Section 10 Rivers and Harbors Act of 1899

(33 U.S.C. 401)

- Structures and/or work in or affecting navigable waters of the United States
- Structures and/or work outside the limits of navigable waters, IF these structures or work could affect the course, location, or condition of the waterbody so as to impact its navigable capacity
- Artificial islands, installations, or other devices on the outer continental shelf



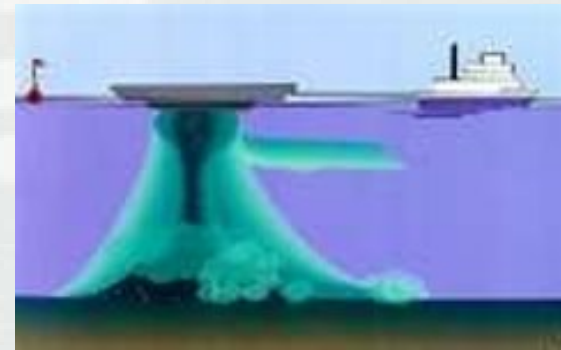
# Section 404 Clean Water Act (33 U.S.C 1344)

- Discharge of dredged or fill material
- Activities Regulated as a Discharge of Dredged Material
  - ▶ Addition of dredged material to a specified discharge site located in waters
  - ▶ Runoff or overflow from a contained land or water disposal area
  - ▶ Any addition, including more than incidental redeposit of dredged material, mechanized landclearing, ditching, channelization, or other excavation



# *Section 103 Marine Protection, Research, and Sanctuaries Act (Ocean Dumping Act - 33 U.S.C. 1413)*

- Transportation of dredged material by vessel or vehicle for purpose of dumping (disposal) in ocean waters at disposal sites designated by EPA under 40 CFR 228
- Dredged material for purposes of Section 103 means any material excavated or dredged from “navigable” waters of the United States



# Department of the Army Permits

- **Nationwide Permits**
  - ▶ Authorizes Section 10 and Section 404 actions
  - ▶ Minimal impact to aquatic environment
  - ▶ Expedite permit review process
- **Letters of Permission**
  - ▶ Authorizes Section 10 Actions ONLY
  - ▶ Non-Controversial Actions
- **Standard Permit**
  - ▶ Authorizes Section 10 and Section 404 Actions
  - ▶ Controversial Actions



DEPARTMENT OF THE ARMY  
GALVESTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1229  
GALVESTON TX 77553-1229

**PERMITTED**



# Nationwide Permits Useful for Docks

- NWP 3 – Maintenance of Structures
- NWP 13 – Bank Stabilization
- NWP 19 – Minor Dredging
- NWP 35 – Maintenance Dredging of Existing Basins
- NWP 16 – Water Quality Certification for return water from upland disposal



# Applying for a DA Permit

- Engineer Form 4345
- Complete description of the proposed activity including necessary drawings, sketches, or plans sufficient for public notice





# Public Notice Requirements

- Corps Authorities
- Location maps including dredge placement, project plans including the location and dimensions of adjacent structures
- Description, purpose and need, and scheduling of the proposed activity;
- List of authorizations required by other federal, interstate, state, or local agencies for the work, including all approvals received or denials already made
- Information on the characteristics and composition of the dredged material
- Threatened and Endangered Species, Coastal Zone Consistency, Water Quality , Historic properties, and Mitigation statements.



# *Why Did My Last Permit Take So Long*

*Primary Cause Of Delay  
For Applications Is  
Incomplete Or  
Contradictory  
Information*



# What Do We Recommend

- Review for correctness and completeness – is everything here that is required to publish a public notice
- Attach all relative information, including maps, drawings, photos, supporting documentation.
- Double check...triple check information for consistency between written information and drawings
- Remember to sign and date the Engineer From 4345
- Questions - Contact Corps.

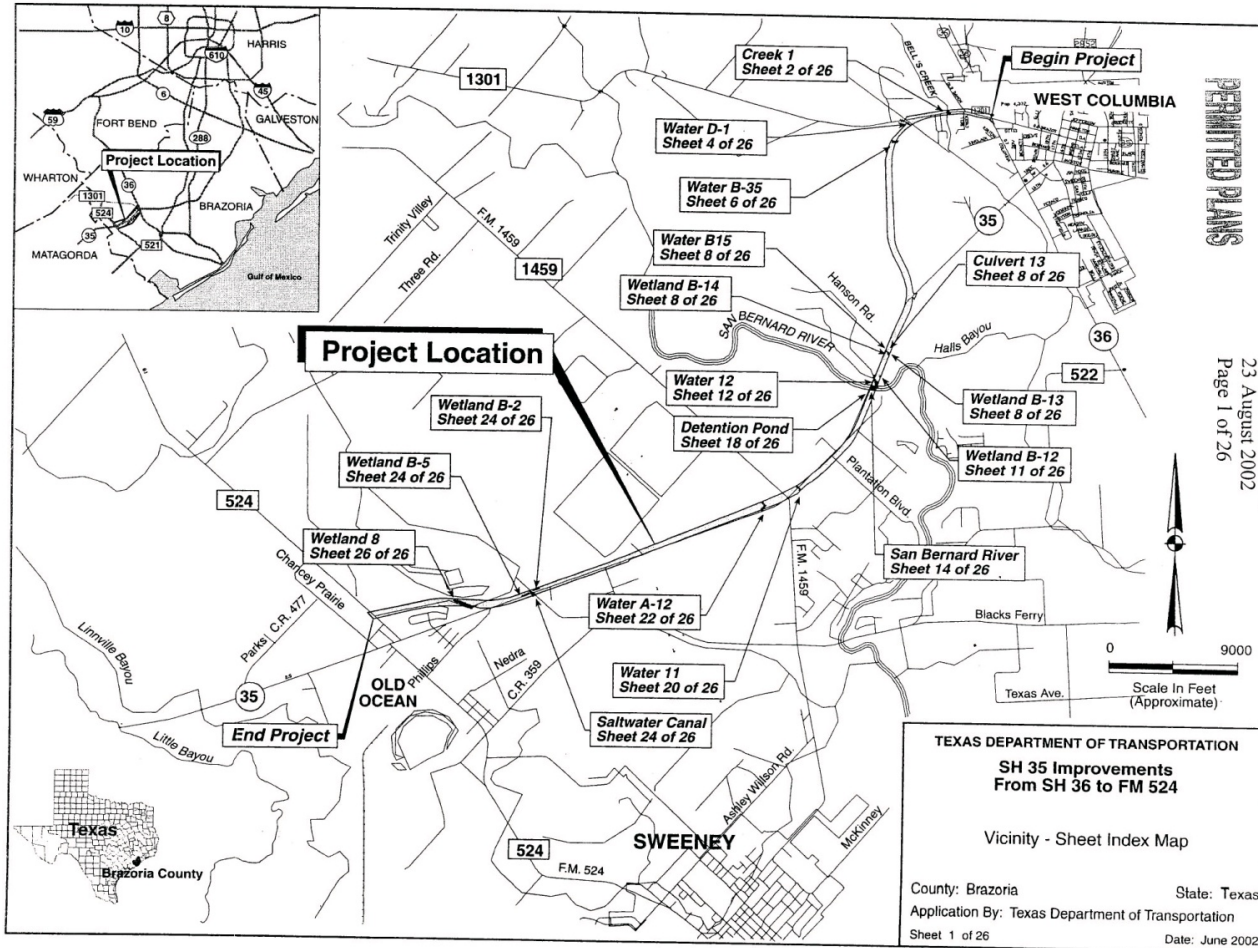


# Drawings

- Black and White - 8.5” by 11” Paper
- Scale, All dimensions standard
- Complete Legend
- All Drawings consistent - Clear Details
- Tabular info **MUST MATCH** drawing info!
- Depict all jurisdictional, construction access, staging **AND** placement areas



# Good Maps



# Limit information to that necessary for permit evaluation purposes

TABLE OF DIMENSIONS & REINFORCING STEEL (Wings for One Structure End)									
Maximum Wingwall Height (ft)	Dimensions				Variable Reinforcing		Estimated Quantities per ft of Wing Length (12-Wings)		
	W	X	Y	Z	Bars J1	Bars J2	Reinf. (Lb/ft)	Conc. (CY/ft)	
2'-6"	2'-5 1/2"	0"	9"	7"	#4	#4	44.1	0.248	
3'-0"	2'-5 1/2"	0"	9"	7"	#4	#4	44.1	0.248	
3'-6"	2'-5 1/2"	0"	9"	7"	#4	#4	44.1	0.248	
4'-0"	2'-5 1/2"	0"	9"	7"	#4	#4	44.1	0.248	
4'-6"	2'-5 1/2"	0"	9"	7"	#4	#4	44.1	0.248	
5'-0"	3'-2 1/2"	6 1/2"	0"	7"	#4	#4	44.1	0.330	
5'-6"	3'-2 1/2"	6 1/2"	0"	7"	#4	#4	44.1	0.330	
6'-0"	3'-2 1/2"	6 1/2"	0"	7"	#4	#4	44.1	0.330	
6'-6"	3'-2 1/2"	6 1/2"	0"	7"	#4	#4	44.1	0.330	
7'-0"	3'-2 1/2"	6 1/2"	0"	7"	#4	#4	44.1	0.330	
7'-6"	3'-2 1/2"	6 1/2"	0"	7"	#4	#4	44.1	0.330	
8'-0"	4'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
8'-6"	4'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
9'-0"	4'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
9'-6"	4'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
10'-0"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
10'-6"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
11'-0"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
11'-6"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
12'-0"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
12'-6"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
13'-0"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
13'-6"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
14'-0"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
14'-6"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
15'-0"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
15'-6"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	
16'-0"	5'-2 1/2"	0"	11'-6"	8"	#4	#4	61.4	0.414	

TABLE OF WINGWALL REINFORCING (12-Wings)			
Bar Size	No.	Spa	
D	#5	1'-0"	
E	#4	1'-0"	
F	#4	1'-0"	
G	#6	4'-0"	
H	#4	4'-0"	
I	#4	1'-0"	
J	#4	1'-0"	
K	#4	1'-0"	
L	#4	1'-0"	
M	#4	4'-0"	
N	#4	4'-0"	
O	#4	1'-0"	
P	#4	1'-0"	
Q	#4	1'-0"	
R	#5	6'-0"	
S	#4	1'-0"	
T	#4	1'-0"	
U	#4	1'-0"	
V	#4	1'-0"	
W	#4	1'-0"	
X	#4	1'-0"	
Y	#4	1'-0"	
Z	#4	1'-0"	

- Extend Bars P 3'-0" minimum into bottom slab of Box Culvert.
- Adjust to fit as necessary to maintain 1 1/4" clear cover and 4" minimum between bars.
- Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings multiply the tabulated values by LW.
- Recommended values of Slope are: 2:1, 3:1, 4:1, & 6:1.
- When shown elsewhere on the plans, a 5" deep concrete riprap shall be constructed. Unless otherwise shown on the plans or directed by the Engineer, the riprap shall have a 6" side by 1'-6" deep reinforced concrete toewall along all edges adjacent to natural ground. The toewall shall be reinforced by extending typical riprap reinforcing into the toewall construction joints or grooves (partial or integral) in the direction of flow. Small extends across the full distance of the riprap, at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required. Riprap for riprap shall be as required by the pertinent item.
- At Contractor's option, Culvert Toewall may be ended flush with Wingwall toewall. Adjust reinforcing from that shown as necessary.
- 7" min to 5'-0" max. For 16 or 6:1 Roll, see 16-04 standard for additional details. For curbs without roll and greater than 1'-0" high, see EC standard for additional details. Estimated curb heights are shown elsewhere in the plans.
- For vehicle safety, curb heights and wall heights shall be reduced, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.

**WING DIMENSION CALCULATIONS:**

Formulas: (All values are in Feet)

$$HW = W + T + C + 0.250$$

$$A = (W + 0.333) (SL)$$

$$B = (A) \tan(\theta) (30^\circ)$$

$$LW = (A) \cos(\theta) (30^\circ)$$

For Cast-In-place culverts:  
 $LW = (W) (SL) + (W) (1) (2)$   
 For Precast culverts:  
 $LW = (W) (2U + S) + (W) (1) (0.500) (1)$   
 Total Wingwall Area (Two Wings = S.F.) =  $(LW) \times (0.333) (LW)$

W = Height of Wingwall  
 SL = Side Slope Ratio (Horizontal: Vertical)  
 LW = Length of Wingwall  
 LW = Culvert Toewall Length  
 N = Number of Culvert Spans

See applicable box culvert standard for M, S, T, and U values.

**INSIDE ELEVATION**  
(Showing reinforcing. Culvert and Culvert Toewall reinforcing not shown for clarity.)

**PLAN**  
(Showing dimensions.)

**SECTION A-A**  
(Culvert and Culvert Toewall reinforcing not shown for clarity.)

**SECTION B-B**

**FOOTING AND TOEWALL**

**CORNER DETAILS**  
(Culvert and Culvert Toewall reinforcing not shown for clarity.)

**BARS J1, BARS V, BARS L, BARS J2, BARS D, BARS R**

**GENERAL NOTES:**

- Designed according to current AASHTO Standard and Interim Specifications.
- All reinforcing steel shall be Grade 60.
- All concrete shall be Class "C" and shall have a minimum 28 day compressive strength of 3600 psi.
- All reinforcing bars shall be adjusted to provide a minimum of 1 1/4" clear cover.
- When structure is founded on solid rock, depth of toewall for culverts and wingwall is may be reduced or eliminated as directed by the Engineer.
- See BCS sheet for additional dimensions and information.
- The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's Information only.

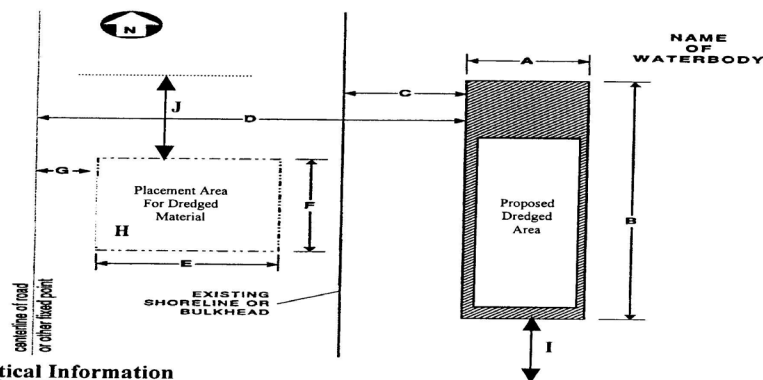
**FLARED WINGS FOR 0° SKEW BOX CULVERTS**

**FW-0**

FILE: fw-0316.dgn	REV: 04	DATE: 11/03/00	BY: JG
PROJECT: 2000	ISSUED: 11/03/00	STATE PROJECT: 01	REV: 01
NO.	NO.	COUNTY:	DATE: 11/03/00



### Typical Plan View for Mechanical/Hydraulic Dredging Area



#### Critical Information

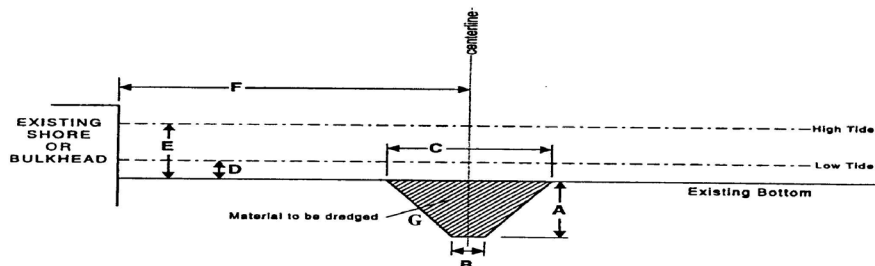
- A. & B. Dimensions of dredging area.
- C. Distance of dredging area from existing shoreline or bulkhead.
- D. & I. Distance of dredging area from fixed reference point.
- E. & F. Dimensions of dredged material placement area.
- G. Distance of dredged material placement area from the fixed reference point.
- H. Capacity (cubic yards) of dredged material placement area.
- J. Distance of placement area from fixed reference point.

Include information on the type of dredging (hydraulic or mechanical).

Please include North arrow.

Provide details on methods of moving dredged material to planned placement area.

### Typical Cross-Section View of Dredged Area or Dredged Channel



#### Critical Information

- A. Depth of proposed excavated channel or dredged area.
- B. Width of proposed channel at bottom of channel.
- C. Width of proposed channel at top of channel.
- D. Water depth (existing bottom) at mean low tide or ordinary low water.
- E. Water depth (existing bottom) at mean high tide or ordinary high water.
- F. Distance from the centerline of proposed channel or edge of proposed dredged area to existing shore or bulkhead.
- G. Amount of material to be removed (cubic yards).

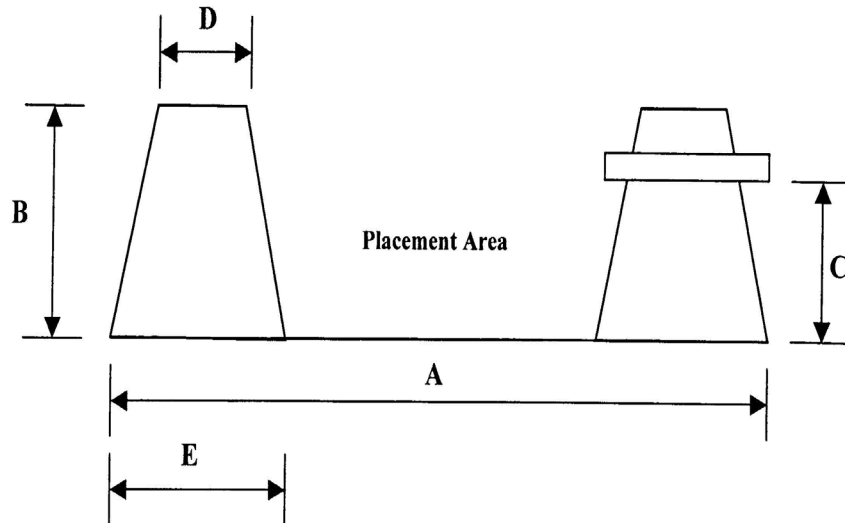
# Example Plans – Dredging



®

# Example Plans – Confined Disposal

Typical Cross-Section View of Dredged Material Placement Area for Hydraulic Dredging Projects



### Critical Information

- A. Dimension of dredged material placement area.
- B. Retaining wall height.
- C. Weir structure or outfall pipe height.
- D. Retaining wall width at the top.
- E. Retaining wall width at the base.

Please indicate how the run-off from the placement area is going to return to the main water body.





# *Specific Issues Related to Dredge Material Placement –*

- *Confined Upland Placement*
- *Beneficial Use*
- *Material testing*



# Confined Disposal Facilities (CDF)



Hart Miller Disposal Area in Baltimore



Craney Island in Virginia



Lake  
Huron



Cleveland  
(Cuyahoga River)



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# Beneficial Uses

- Wetland Habitat
- Shoreline Protection
- Beach Renourishment
- Recreation
- Agriculture
- Island Habitat
- Construction Fill
- Construction Materials
- Mine Land Restoration



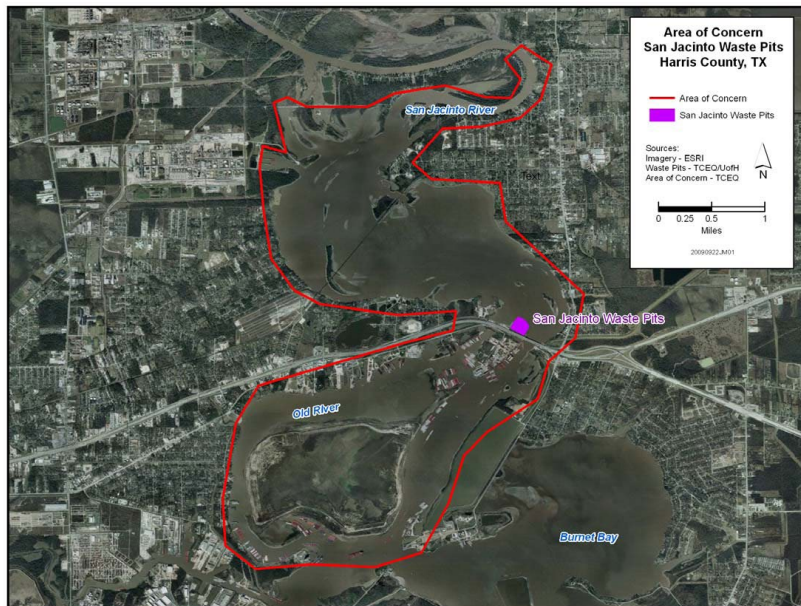
# Testing Manuals

- Tiered testing and evaluation
- Testing procedures (elutriate, benthic, and bioaccumulation)
- Computer Models for mixing
- Statistical tools, QA/QC, and data interpretation
- Case-specific evaluations



# San Jacinto River Waste Pits

## San Jacinto River Waste Pits



- On March 19, 2008, the EPA placed the San Jacinto River Waste Pits Superfund Site on the National Priorities List
- All permit applicants and existing permittees within the area of concern must conduct certain sampling events

<http://www.swg.usace.army.mil/Portals/26/docs/regulatory/SanJacinto.pdf>



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# How We Can Help

- Early consultation can save you schedule and budget headaches.
- Pre-application meetings are available for the regulated public to get feedback in your project planning stages.
- Regulatory project managers and administrative staff are there to assist you. If there's a question, ASK!



# Questions!?

**Contact us:**

**Location:** U.S. Army Corps of Engineers  
Jadwin Building  
2000 Fort Point Road  
Galveston, TX 77550

**Mailing Address:**

U. S. Army Engineer District, Galveston  
CESWG-PE-R  
P.O. Box 1229  
Galveston, TX 77553-1229

**Telephone:** 409-766-3982 or  
409-766-3891  
**Fax:** 409-766-3931

**Field Office:**

Corpus Christi Field Office  
5151 Flynn Parkway, Suite 306  
Corpus Christi, Texas 78411  
**Telephone:** 361-814-5850  
**Fax:** 361-814-5912

**On the web at:**

<http://www.swg.usace.army.mil/BusinessWithUs/RegulatoryBranch.aspx>



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