Mel Price/Wood River
Problem Seepage Area
Industry Day
December 3, 2013
Overview
- Location
- History
- Program
- Concept

Conditions

Contracting Information
DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
**Typical Sections**

**Mainline Levee Embankment**

- **Approx Crest Height:** 33 Ft
- **Crest Width:** 20 Ft
- **Foundation Geology:** Clay Blanket then Aquifer Sand
- **Levee Materials /Zoning:** Hydraulic Fill and Clay Cap
- **Riverside Erosion Protection:** Grass

**Diagram Details:**
- **Elev. 446 ft**
- **500 year flood EL 443'**
- **20 ft**
- **Clay Cap**
- **Sand Core**
- **Toe Elevation 410.0**
- **Riverside Berm**
- **Landside Berm**
- **Seepage Relief Wells**

**Disclaimer:**

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Mel Price Seepage Area

- Relocation of old Lock & Dam 26 two miles downstream to Mel Price Locks & Dam caused a permanent pool to be placed on the Upper Wood River Levee from Sta 0+00 to Sta 115+24.
Mel Price Seepage Area

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Mel Price Seepage Area

- Denotes Sand Boil or Seepage Location

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Proposed Cut-Off Wall Alignment

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Proposed Cut-Off Wall
Typical Sections

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Proposed Cut-Off Wall Location

- **Conditions**
  - Site
  - Utilities
  - Subsurface

**DISCLAIMER:** NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
High Water Event Examples

Station 95+47
2May13 3Jun13

Station 79+63
3Jun13

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Utilities

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Mel Price/Wood River Problem
Seepage Area – Typical Conditions

- **Subsurface Conditions**
  - Pumping Test
  - Exploration
  - Mel Price L&D construction

- **Subsurface Strata**
  - Levee Section
  - Alluvium
  - Groundwater
  - Glacial Deposits
  - Bedrock

**DISCLAIMER: NOT FOR CONSTRUCTION.** This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Boring Layout
(Spaced 200 ft)

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Glacial Deposits & Limits

- Glacial Deposits
  - Clay
  - Silt
  - Sand
  - Gravel
  - Cobbles
  - Boulders

Detailed Glacial Limits
Source: U.S. Geological Survey

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Rotary Drilling Circulation Losses

- Poor circulation & fluid loss
  - Typical 100s gallons
  - Alluvium & glacial deposits
  - Permeable cobbles & boulders

- Total circulation loss
  - Boring ...13-MPST-136

- Cobbles & boulder zones
  - Most permeable
  - Greatest fluid losses

Pumping Test Data

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Rough Drilling Examples

Rough Drilling Encountered During the Mel Price/Wood River Subsurface Exploration

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Glacial Till & Bedrock

- **Glacial Till Zones (typical)**
  - Typical thickness: 1 to 10 feet
  - Typical Depth: 115 to 155 feet

- **Bedrock Depths (typical)**
  - Riverside: 130 to 140 feet
  - Levee section: 150 to 160 feet

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Construction Impact Examples
Mel Price L&D – Pile Driving Test

EXTRACTED PILE B-60 #4
WITH ENTRAPPED BOULDER
Construction Impact Examples
Mel Price L&D – Pile Driving

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Construction Impact Examples
Mel Price L&D – Pile Driving
Construction Impact Examples

Mel Price L&D Pile Driving
The Government is Investigating Using these Assumptions

- Panel Construction
- Panel Width
  - 20’ to 50’
- Panel Thickness
  - 2’ Min Required
- Cut-Off Wall Material
  - Cement-Bentonite
- 40’ Wide Riverside Berm is Sufficient Working Area
- Weight of Slurry
  - 72 pcf
- Working Platform at Existing Grade
- No Guidewall
- Tying the Cut-Off Wall:
  - 5’ into Fine-Grained Glacier Till or
  - 2’ into Competent Bedrock
- 28 Day Panel Strength
  - 50 to 100 psi
- Strength of Primary Panel before an Adjacent Secondary Panel is Excavated
  - 15 psi

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.
Contracting Information

- Proposed Acquisition Strategy: Unrestricted / IDIQ
- Source Selection: Lowest Price Technically Acceptable (LPTA)
- Magnitude: > $10 Million
- Joint Venture vs. Prime/Sub Relationship
- Limitation on Subcontracting: Specialty Construction 25%
- Sub-Contracting Plan Requirements
- Bonding Requirements: Bid Bond, Payment & Performance

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.