CONVEYANCE CHANNEL STABILITY AND SETTLEMENT ANALYSES, DESIGN CROSS-SECTIONS
## Independent Technical Review

**Project Name:** Lake Maurepas Diversion  
**Client:** CPRA  
**Project Location:** St. John the Baptist, LA  
**PM:** Naveen Chilliara  
**PIC:** Mike Paterno

(This section is to be completed by the Project Manager or the PM's Designee.)

- **Assigned Reviewer:** Dwayne Smith  
- **Comments Required by:** September 18, 2013  
- **Work Product Originator:** Mahendra Shewalla and Andrew Hoppes  
- **Work Product to be Reviewed:** Slope Stability Conveyance Channel and Sedimentation Basin  
- **Review Scope:** Review for technical accuracy and applicability  
- **Specific Instructions:** Enter specific instructions for the work product.

Submitted by:  

**Project Manager Signature**  

Date: 9/30/13

(This Section is to be completed by the Reviewer.)

- **Select:**  
  - A. [ ] Reviewer has no comments.  
  - B. [ ] Comments have been provided on:  
    - [ ] Marked directly on work product  
    - [ ] Comment and Disposition Form 3-5  
    - [ ] Other; Specify: Click to enter text.  

**Reviewer Signature**  

Date: 9/18/13

(This section is to be completed by the Reviewer after verification of comment incorporation, if box B is checked off above.)

- **Select:**  
  - C. [ ] Verification of comment incorporation has been performed by Reviewer. There are no outstanding issues.  
  - D. [ ] Verification of comment incorporation has been performed by Reviewer. Unresolved issues have been submitted to the Project Manager or Designee for resolution.  
  - E. [ ] Reviewer asserts that the work product ITR is complete.

**Reviewer Signature**  

Date:

---

**APPROVAL and DISTRIBUTION**

- ITR is complete.  

**Project Manager or Designee Signature**  

Date: 9/30/13  

Click here to enter a date.

**Distribution:**  

- Project Central File – Quality File Folder  
- Other – Specify: Enter names here.
### IE QMS - Americas

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Lake Maurepas Diversion</th>
<th>Client</th>
<th>CPRA</th>
</tr>
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<td>Project Location</td>
<td>St. John the Baptist, LA</td>
<td>PM</td>
<td>Naveen Chillara</td>
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<tr>
<td>Project Number</td>
<td>10001863</td>
<td>PIC</td>
<td>Mike Paterno</td>
</tr>
</tbody>
</table>

#### Detail Check

(This section is to be completed by the Project Manager or the PM's Designee.)

Assigned Checker: Ananth Bukkapatnam  
Comments Required by: September 13, 2013

Work Product Originator: Mahendra Shewalka

Work Product to be Checked: Check for technical accuracy of Conveyance Channel Slope Stability

☑ This Detail Check is a check for correctness, completeness and technical accuracy.
☐ This Detail Check is only a technical edit for format, spelling, grammar, pagination and readability.

Specific Instructions:

Submitted by: [Signature]  
Project Manager Signature  
9/13/13

#### Comments

(This Section is to be completed by the Checker.)

Select:

A. ☑ Checker has no comments.

or

B. ☐ Comments have been provided on:
   - [ ] Marked directly on work product
   - [ ] Comment and Disposition Form 3-5
   - [ ] Other; Specify: Provided on separate list by email

[Signature]  
Checker Signature  
9-12-2013

#### Verification

(This section is to be completed by the Checker after verification of comment incorporation, if box B is checked off above.)

Select:

C. ☑ Verification of comment incorporation has been performed by Checker. There are no outstanding issues.

or

D. ☐ Verification of comment incorporation has been performed by Checker. Unresolved issues have been submitted to the Project Manager or Designee for final resolution.

and

E. ☐ Checker asserts that the work product review is complete.

[Signature]  
Checker Signature  
Date

### APPROVAL and DISTRIBUTION

☑ Detail Check is complete.

[Signature]  
Project Manager or Designee Signature  
9/13/13

Click here to enter a date.

**Distribution:**

- Project Central File – Quality File Folder
- Other – Specify: Enter names here.
Project Name: Lake Maurepas Diversion
Client: CPRA
PM: Naveen Chilliara
PIC: Mike Paterno
Project Location: St. John the Baptist, LA
Project Number: 10001863

(This section is to be completed by the Project Manager or the PM's Designee.)
Assigned Reviewer: Dwayne Smith
Comments Required by: August 23, 2013

Identifying Information

Work Product Originator: Mahendra Shewalla
Work Product to be Reviewed: Settlement Analyses
Review Scope: Review for technical accuracy and applicability
Specific Instructions: Enter specific instructions for the work product.
Submitted by: [Signature]

Project Manager Signature
Date

Comments

Select:
A. [ ] Reviewer has no comments.

or

B. [ ] Comments have been provided on:
   - [ ] Marked directly on work product
   - [ ] Comment and Disposition Form 3-5
   - [ ] Other; Specify: Click to enter text.

Reviewer Signature
Date: 8/22/13

Verification

(This section is to be completed by the Reviewer after verification of comment incorporation, if box B is checked off above.)
Select:
C. [ ] Verification of comment incorporation has been performed by Reviewer. There are no outstanding issues.

or

D. [ ] Verification of comment incorporation has been performed by Reviewer. Unresolved issues have been submitted to the Project Manager or Designee for resolution.

and

E. [ ] Reviewer asserts that the work product ITR is complete.

Reviewer Signature
Date

APPROVAL and DISTRIBUTION

[ ] ITR is complete.

Project Manager or Designee Signature
Date: 9/30/15
Click here to enter a date.

Distribution:
- Project Central File – Quality File Folder
- Other – Specify: Enter names here.
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<thead>
<tr>
<th>Project Name</th>
<th>Lake Maurepas Diversion</th>
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<tr>
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<td>St. John the Baptist, LA</td>
<td>PM</td>
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<tr>
<td>Project Number</td>
<td>10001863</td>
<td>PIC</td>
<td>Mike Patorno</td>
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(This section is to be completed by the Project Manager or the PM's Designee.)

Assigned Checker: Chris LaFoschia
Comments Required by: August 21, 2013

Work Product Originator: Mahendra Shewalla
Work Product to be Checked: Settlement Analyses
This Detail Check is a check for correctness, completeness and technical accuracy.
This Detail Check is only a technical edit for format, spelling, grammar, pagination and readability.
Specific Instructions: Enter specific instructions for the work product.

Submitted by: [Signature]
Date: 9/30/13

(project manager signature)

(This Section is to be completed by the Checker.)

Select:
A. [ ] Checker has no comments.
B. [ ] Comments have been provided on:
   - [ ] Marked directly on work product
   - [ ] Comment and Disposition Form 3-5
   - [ ] Other Specify: Click here to enter text.

[Checker's Signature]
Date: 8-30-13

(This section is to be completed by the Checker after verification of comment incorporation, if box B is checked off above.)

Select:
C. [ ] Verification of comment incorporation has been performed by Checker. There are no outstanding issues.
D. [ ] Verification of comment incorporation has been performed by Checker. Unresolved issues have been submitted to the Project Manager or Designee for final resolution.
E. [ ] Checker asserts that the work product review is complete.

[Checker's Signature]
Date

APPROVAL and DISTRIBUTION

[ ] Detail Check is complete.

[Signature]
Date: 9/30/13

Click here to enter a date.

Project Manager or Designee Signature

Distribution:
Project Central File – Quality File Folder
Other – Specify: Enter names here.
TYPICAL CONVEYANCE CHANNEL
KCS RAILROAD CROSSING
TO US HWY 61

TYPICAL CONVEYANCE CHANNEL
NORTH OF US 61
Name: LEVEE      Unit Weight: 115 pcf     Cohesion: 600 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. 3 to El. -11.5      Unit Weight: 98 pcf     Cohesion: 450 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -11.5 to El. -26.5      Unit Weight: 115 pcf     Cohesion: 325 psf     Phi: 0 °     Piezometric Line: 1
Name: CL/CH El. -26.5 to El. -39.5      Unit Weight: 117 pcf     Cohesion: 1150 psf     Phi: 0 °     Piezometric Line: 1
Name: ML El. -39.5 to El. -49.5      Unit Weight: 120 pcf     Cohesion: 0 psf     Phi: 28 °     Piezometric Line: 1
Name: CL El. -49.5 to El. -76.5      Unit Weight: 119 pcf     Cohesion: 1100 psf     Phi: 0 °     Piezometric Line: 1

LAKE MAUPREPAS DIVERSION PROJECT
CONVEYANCE CHANNEL 40 FEET
SOUTH OF US - 61
LIGHT WEIGHT PICK UP TRUCK: 5000 LBS/AXLE
GLOBAL ANALYSIS (BLOCK METHOD)
**Block - L to R**

---

**File Information**
- Created By: Bukkapatnam, Ananth
- Revision Number: 44
- Last Edited By: Shewalla, Mahendra
- Date: 7/18/2013
- Time: 5:17:35 PM
- File Name: Conveyance Channel 40 feet - South of US61.gsz

**Project Settings**
- Length(L) Units: feet
- Time(t) Units: Seconds
- Force(F) Units: lbf
- Pressure(p) Units: psf
- Strength Units: psf
- Unit Weight of Water: 62.4 pcf
- View: 2D

**Analysis Settings**
- Block - L to R
- Kind: SLOPE/W
- Method: Spencer
- Apply Phreatic Correction: Yes
- PWP Conditions Source: Piezometric Line
- Use Staged Rapid Drawdown: No
- Slip Surface Direction of movement: Left to Right
- Use Passive Mode: No
- Slip Surface Option: Block
- Critical slip surfaces saved: 1
- Optimize Critical Slip Surface Location: No
- Tension Crack Option: (none)

**FOS Distribution**
- FOS Calculation Option: Constant
- Restrict Block Crossing: Yes
- Advanced
  - Number of Slices: 30
  - Optimization Tolerance: 0.01
  - Minimum Slip Surface Depth: 0.1 ft
  - Optimization Maximum Iterations: 2000
  - Optimization Convergence Tolerance: 1e-007
  - Starting Optimization Points: 8
  - Ending Optimization Points: 16
  - Complete Passes per insertion: 3
  - Driving Side Maximum Convex Angle: 5°
  - Resisting Side Maximum Convex Angle: 1°

**Materials**

**LEVEE**
- Model: Mohr-Coulomb
- Unit Weight: 115 pcf
- Cohesion: 600 psf
- Phi: 0°
- Phi-B: 0°
- Pore Water Pressure Piezometric Line: 1

**CH El. 3 to El. -11.5**
- Model: Mohr-Coulomb
- Unit Weight: 98 pcf
- Cohesion: 450 psf
- Phi: 0°
- Phi-B: 0°
- Pore Water Pressure Piezometric Line: 1

**CH El. -11.5 to El. -26.5**
- Model: Mohr-Coulomb
- Unit Weight: 115 pcf
- Cohesion: 325 psf
- Phi: 0°
- Phi-B: 0°
- Pore Water Pressure Piezometric Line: 1

**CH El. -26.5 to El. -39.5**
- Model: Mohr-Coulomb
- Unit Weight: 117 pcf
- Cohesion: 1100 psf
- Phi: 0°
- Phi-B: 0°
- Pore Water Pressure Piezometric Line: 1

**CL/CH El. -39.5 to El. -76.5**
- Model: Mohr-Coulomb
- Unit Weight: 119 pcf
- Cohesion: 1150 psf
- Phi: 0°
- Phi-B: 0°
- Pore Water Pressure Piezometric Line: 1

**Piezometric Lines**

**Piezometric Line 1**

<table>
<thead>
<tr>
<th>Coordinates</th>
<th>X (ft)</th>
<th>Y (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>330</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Point Loads**

<table>
<thead>
<tr>
<th>Coordinate (ft)</th>
<th>Magnitude (lbs)</th>
<th>Direction (°)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point Load 1</td>
<td>(89.75, 9)</td>
<td>2500</td>
</tr>
<tr>
<td>Point Load 2</td>
<td>(98.25, 9)</td>
<td>2500</td>
</tr>
</tbody>
</table>

**Regions**

<table>
<thead>
<tr>
<th>Material</th>
<th>Points</th>
<th>Area [ft²]</th>
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</thead>
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<td>LEVEE</td>
<td>244.53868</td>
<td>256.20478</td>
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<tr>
<td></td>
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<td>8910</td>
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<tr>
<td></td>
<td></td>
<td>3300</td>
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<tr>
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<td></td>
<td>4290</td>
</tr>
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<td></td>
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<td>4950</td>
</tr>
<tr>
<td></td>
<td></td>
<td>251.20478</td>
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</tbody>
</table>

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**Slip Surface Limits**
- Left Coordinate: (-0.015, 2.81) ft
- Right Coordinate: (330, 3.695) ft

**Slip Surface Block**
- Left Grid
  - Upper Left: (65, -9) ft
  - Lower Left: (65, -59) ft
  - Lower Right: (115, -59) ft
  - X Increments: 10
  - Y Increments: 10
  - Starting Angle: 115°
  - Ending Angle: 115°
  - Angle Increments: 5

- Right Grid
  - Upper Left: (120, -9) ft
  - Lower Left: (120, -59) ft
  - Lower Right: (170, -59) ft
  - X Increments: 10
  - Y Increments: 10
  - Starting Angle: 15°
### Points

| Region | 2 | CH El. 3 to El. 11.5 | 1.40,11,12,27,13,30,31,32,33,34,35,14,15,39,16,17,18,19,20,21,22,23,24,25,26,2 | 3901.3555 |

### Critical Slip Surfaces: 21317

#### Slip Surface | FOS | Center (ft) | Radius (ft) | Entry (ft) | Exit (ft) |
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 21317</td>
<td>1.55</td>
<td>(120.984, 9.162)</td>
<td>38.171</td>
<td>(158.747, 5.93684)</td>
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</tbody>
</table>

#### Slices of Slip Surface: 21317

<table>
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<tr>
<th>Slip Surface</th>
<th>X (ft)</th>
<th>Y (ft)</th>
<th>PWP (psf)</th>
<th>Base Normal Stress (psf)</th>
<th>Frictional Strength (psf)</th>
<th>Cohesive Strength (psf)</th>
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</thead>
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<tr>
<td>1 21317</td>
<td>-24</td>
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<td>325</td>
<td>154.3692</td>
</tr>
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<td>325</td>
<td>154.3692</td>
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<td>154.3692</td>
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<td>1497.5982</td>
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<td>0</td>
<td>325</td>
<td>154.3692</td>
</tr>
</tbody>
</table>

### Notes
- **Points**: Coordinates for the points of interest are listed.
- **Critical Slip Surfaces**: Analysis of slip surfaces with FOS values and dimensions.
- **Slices of Slip Surface**: Detailed data for various slices, including X, Y, PWP, and stress values.
Name: LEVEE      Unit Weight: 115 pcf     Cohesion: 600 psf     Phi: 0 °     Piezometric Line: 1  
Name: CH El. 3 to El. -11.5      Unit Weight: 98 pcf     Cohesion: 450 psf     Phi: 0 °     Piezometric Line: 1  
Name: CH El. -11.5 to El. -26.5      Unit Weight: 115 pcf     Cohesion: 325 psf     Phi: 0 °     Piezometric Line: 1  
Name: CL/CH El. -26.5 to El. -39.5      Unit Weight: 117 pcf     Cohesion: 1150 psf     Phi: 0 °     Piezometric Line: 1  
Name: ML El. -39.5 to El. -49.5      Unit Weight: 120 pcf     Cohesion: 0 psf     Phi: 28 °     Piezometric Line: 1  
Name: CL El. -49.5 to El. -76.5      Unit Weight: 119 pcf     Cohesion: 1100 psf     Phi: 0 °     Piezometric Line: 1  

LAKE MAUPREpas DIVERSION PROJECT  
CONVEYANCE CHANNEL 40 FEET  
SOUTH OF US - 61  
LIGHT WEIGHT PICK UP TRUCK: 5000 LBS/AXLE  
GLOBAL ANALYSIS (BLOCK METHOD)
**File Information**

- Created By: Bukkapatnam, Ananth
- Revision Number: 44
- Last Edited By: Shewalla, Mahendra
- Date: 7/18/2013
- Time: 5:19:28 PM
- File Name: Conveyance Channel 40 feet - South of US61.gsz
- Directory: I:\Projects\OCPR Maurepas Geotech\10001863-Maurepas Final Design II\FINAL REPORT 7-13\FINAL Stability Analyses\Conveyance Channel to 61\South of US61 Final 2013
- Last Solved Date: 7/18/2013
- Last Solved Time: 5:19:28 PM

**Project Settings**

- Length(L) Units: feet
- Time(t) Units: Seconds
- Force(F) Units: lbf
- Pressure(p) Units: psf
- Strength Units: psf
- Unit Weight of Water: 62.4 pcf
- View: 2D

**Analysis Settings**

**Block - R to L**

- Kind: SLOPE/W
- Method: Spencer
- Settings
  - Apply Prismatic Correction: Yes
  - PWP Conditions Source: Piezometric Line
  - Use Staged Rapid Drawdown: No
  - Slip Surface
    - Direction of movement: Right to Left
    - Use Passive Mode: No
    - Slip Surface Option: Block
    - Critical slip surfaces saved: 1
    - Optimize Critical Slip Surface Location: No
    - Tension Crack
      - Tension Crack Option: (none)
- FOS Distribution
  - FOS Calculation Option: Constant
  - Restrict Block Crossing: Yes
  - Advanced
    - Number of Slices: 30
    - Optimization Tolerance: 0.01
    - Optimization Maximum Iterations: 2000
    - Optimization Convergence Tolerance: 1e-007
    - Starting Optimization Points: 8
    - Ending Optimization Points: 16
    - Complete Passes per insertion: 3
    - Driving Side Maximum Convex Angle: 5°
    - Resisting Side Maximum Convex Angle: 1°
- Materials
  - LEVEE
    - Model: Mohr-Coulomb
    - Unit Weight: 115 pcf
    - Cohesion: 600 psf
    - Phi: 0°
    - Phi-B: 0°
    - Pore Water Pressure
      - Piezometric Line: 1
  - CH El. 3 to El. -11.5
    - Model: Mohr-Coulomb
    - Unit Weight: 98 pcf
    - Cohesion: 450 psf
    - Phi: 0°
    - Phi-B: 0°
    - Pore Water Pressure
      - Piezometric Line: 1
  - CH El. -11.5 to El. -26.5
    - Model: Mohr-Coulomb
    - Unit Weight: 115 pcf
    - Cohesion: 325 psf
    - Phi: 0°
    - Phi-B: 0°
    - Pore Water Pressure
      - Piezometric Line: 1
  - CH El. -26.5 to El. -39.5
    - Model: Mohr-Coulomb
    - Unit Weight: 117 pcf
    - Cohesion: 1150 psf
    - Phi: 0°
    - Phi-B: 0°
    - Pore Water Pressure
      - Piezometric Line: 1
  - CL/CH El. -39.5 to El. -49.5
    - Model: Mohr-Coulomb
    - Unit Weight: 120 pcf
    - Cohesion: 0 psf
    - Phi: 28°
    - Phi-B: 0°
    - Pore Water Pressure
      - Piezometric Line: 1
  - CL El. -49.5 to El. -76.5
    - Model: Mohr-Coulomb
    - Unit Weight: 119 pcf
    - Cohesion: 1100 psf
    - Phi: 0°
    - Phi-B: 0°
    - Pore Water Pressure
      - Piezometric Line: 1

**Slip Surface Limits**

- Left Coordinate: (-0.015, 2.81) ft
- Right Coordinate: (330, 3.695) ft

**Slip Surface Block**

**Left Grid**

- Upper Left: (187, -9) ft
- Lower Left: (187, -59) ft
- Lower Right: (237, -59) ft
- X Increments: 10
- Y Increments: 10
- Starting Angle: 135°
- Ending Angle: 155°
- Angle Increments: 5

**Right Grid**

- Upper Left: (240, -9) ft
- Lower Left: (240, -59) ft
- Lower Right: (290, -59) ft
- X Increments: 10
- Y Increments: 10
- Starting Angle: 45°

**Piezometric Lines**

**Piezometric Line 1**

- Coordinates
  - \( X(\text{ft}) \) \( Y(\text{ft}) \)
  - 0 0
  - 330 0

**Point Loads**

<table>
<thead>
<tr>
<th>Coordinate (ft)</th>
<th>Magnitude (lbs)</th>
<th>Direction (°)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point Load 1</td>
<td>(262, 9)</td>
<td>2500</td>
</tr>
<tr>
<td>Point Load 2</td>
<td>(270, 9)</td>
<td>2500</td>
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</table>

**Regions**

<table>
<thead>
<tr>
<th>Region</th>
<th>Material Points</th>
<th>Area (ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CH El. - 11.5 to -26.5</td>
<td>4950</td>
</tr>
<tr>
<td>2</td>
<td>CH/CH El. -26.5 to -39.5</td>
<td>4290</td>
</tr>
<tr>
<td>3</td>
<td>CH El. -39.5 to -49.5</td>
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Critical Slip Surfaces:

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<th>Radius (ft)</th>
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<td>(240.737, 7.549)</td>
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Slices of Slip Surface: 16453

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<th>Frictional Strength (psf)</th>
<th>Cohesive Strength (psf)</th>
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| 16453        | 239.6 | -24    | 1497.6071 | 2979.25 | 0 | 325 |
| 16453        | 242.4 | -24    | 1497.6071 | 3057.25 | 0 | 325 |
| 16453        | 245.2 | -24    | 1497.6071 | 3135.25 | 0 | 325 |
| 16453        | 248   | -24    | 1497.6071 | 3213.257 | 0 | 325 |
| 16453        | 250.8 | -24    | 1497.6071 | 3291.257 | 0 | 325 |
| 16453        | 253.6 | -24    | 1497.6071 | 3369.3214 | 0 | 325 |
| 16453        | 256.5 | -22.5  | 1404.0076 | 2972.441 | 0 | 325 |
| 16453        | 259.5 | -19.5  | 1216.7893 | 2719.5325 | 0 | 325 |
| 16453        | 262.625 | -16.375 | 1021.8012 | 3155.0017 | 0 | 325 |
| 16453        | 265.875 | -13.125 | 819.00372 | 2046.5194 | 0 | 325 |
| 16453        | 269.25 | -9.75  | 608.39473 | 2334.2597 | 0 | 450 |
| 16453        | 272.3333 | -6.6666665 | 415.99094 | 1278.838 | 0 | 450 |
| 16453        | 275    | -4     | 249.9987 | 924.8268 | 0 | 450 |
| 16453        | 277.66665 | -1.3333335 | 83.200839 | 570.84731 | 0 | 450 |
| 16453        | 280.45615 | 1.45616 | -90.864902 | 200.75096 | 0 | 450 |
| 16453        | 283.2365 | 3.596685 | -227.11818 | -289.05042 | 0 | 450 |
| 16453        | 286.3585 | 4.55850 | -284.4529 | -325.3445 | 0 | 600 |
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Name: CH El. 3.5 to El. -11.5  Unit Weight: 98 pcf  Cohesion: 450 psf  Phi: 0 °  Piezometric Line: 1
Name: CH El. -11.5 to El. -26.5  Unit Weight: 115 pcf  Cohesion: 325 psf  Phi: 0 °  Piezometric Line: 1
Name: CL/CH El. -26.5 to El. -39.5  Unit Weight: 117 pcf  Cohesion: 1150 psf  Phi: 0 °  Piezometric Line: 1
Name: ML El. -39.5 to El. -49.5  Unit Weight: 120 pcf  Cohesion: 0 psf  Phi: 28 °  Piezometric Line: 1
Name: CL El. -49.5 to El. -76.5  Unit Weight: 119 pcf  Cohesion: 1100 psf  Phi: 0 °  Piezometric Line: 1
Block - R to L


File Information
- Created By: Bukkapatnam, Ananth
- Revision Number: 51
- Last Edited By: Harrouch, Ignacio
- Date: 8/4/2013
- Time: 2:50:51 PM
- File Name: Conveyance Channel 60 feet - South of US61.gsz
- Directory: I:\Projects\OCPR Maurepas Geotech\10001863-Maurepas Final Design II\FINAL REPORT 7-13\FINAL Stability Analyses\Conveyance Channel to 61\South of US61 Final 2013
- Last Solved Date: 8/4/2013
- Last Solved Time: 2:51:10 PM

Project Settings
- Length(L) Units: feet
- Time(t) Units: Seconds
- Force(F) Units: lbf
- Pressure(p) Units: psf
- Strength Units: psf
- Unit Weight of Water: 62.4 pcf
- View: 2D

Analysis Settings
- Block - R to L
  - Kind: SLOPE/W
  - Method: Spencer
  - Apply Prismatic Correction: Yes
  - Use Staged Rapid Drawdown: No
  - Slip Surface
    - Direction of movement: Right to Left
    - Use Passive Mode: No
    - Slip Surface Option: Block
    - Critical slip surfaces saved: 1
    - Optimize Critical Slip Surface Location: No
    - Tension Crack
      - Tension Crack Option: (none)
  - FOS Distribution
    - FOS Calculation Option: Constant
    - Restrict Block Crossing: Yes
    - Advanced
      - Number of Slices: 30
      - Optimization Tolerance: 0.01
      - Minimum Slip Surface Depth: 0.1 ft
      - Optimization Maximum Iterations: 2000
      - Optimization Convergence Tolerance: 1e-007
      - Starting Optimization Points: 8
      - Ending Optimization Points: 16
      - Complete Passes per Insertion: 1
      - Driving Side Maximum Convex Angle: 5°
      - Resisting Side Maximum Convex Angle: 1°
  - FOS Distribution

Materials
- LEVEE
  - Model: Mohr-Coulomb
  - Unit Weight: 115 pcf
  - Cohesion: 600 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
    - Piezometric Line: 1
- CH El. 3.5 to El. -11.5
  - Model: Mohr-Coulomb
  - Unit Weight: 98 pcf
  - Cohesion: 450 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
    - Piezometric Line: 1
- CH El. -11.5 to El. -26.5
  - Model: Mohr-Coulomb
  - Unit Weight: 115 pcf
  - Cohesion: 325 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
    - Piezometric Line: 1
- CL/CH El. -26.5 to El. -39.5
  - Model: Mohr-Coulomb
  - Unit Weight: 117 pcf
  - Cohesion: 1150 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
    - Piezometric Line: 1
- ML El. -39.5 to El. -49.5
  - Model: Mohr-Coulomb
  - Unit Weight: 120 pcf
  - Cohesion: 0 psf
  - Phi: 28°
  - Phi-B: 0°
  - Pore Water Pressure
    - Piezometric Line: 1
- CL El. -49.5 to El. -76.5
  - Model: Mohr-Coulomb
  - Unit Weight: 119 pcf
  - Cohesion: 1100 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
    - Piezometric Line: 1

Slip Surface Limits
- Left Coordinate: (0, 2.3208) ft
- Right Coordinate: (330, 2.2197) ft

Slip Surface Block
- Left Grid
  - Upper Left: (181, -8.492) ft
  - Lower Left: (181, -38.492) ft
  - Lower Right: (231, -38.492) ft
  - X Increments: 10
  - Y Increments: 10
  - Starting Angle: 135°
  - Angle Increments: 2
- Right Grid
  - Upper Left: (242, -8.492) ft
  - Lower Left: (242, -38.492) ft
  - Lower Right: (292, -38.492) ft
  - X Increments: 10
  - Y Increments: 10
  - Starting Angle: 25°

Piezometric Lines
- Piezometric Line 1
  - Coordinates
    - X (ft) Y (ft)
    - 0 0
    - 330 0

Point Loads
- Coordinate (ft) Magnitude (lbs) Direction (°)
- Point Load 1 (256, 8) 2500 90
- Point Load 2 (264, 8) 2500 90

Regions
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### Points

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### Critical Slip Surfaces

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Created By: Bukkapatnam, Ananth
Revision Number: 46
Last Edited By: Shewalla, Mahendra
Date: 7/18/2013
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File Name: Conveyance Channel 60 feet - South of US61.gz
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Last Solved Date: 7/18/2013
Last Solved Time: 5:24:00 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Block - L to R
Kind: SLOPE/W
Method: Spencer
Settings
Apply Phreatic Correction: Yes
PWP Conditions Source: Piezometric Line
Use Staged Rapid Drawdown: No
Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Block
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack
Tension Crack Option: (none)
FOS Distribution
FOS Calculation Option: Constant
Restrict Block Crossing: Yes
Advanced
Number of Slices: 30
Optimization Tolerance: 8.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 2000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 5 °

Materials

LEVEE
Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion: 600 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. 3.5 to El. -11.5
Model: Mohr-Coulomb
Unit Weight: 98 pcf
Cohesion: 450 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. -11.5 to El. -26.5
Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion: 115 pcf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CL/CH El. -26.5 to El. -39.5
Model: Mohr-Coulomb
Unit Weight: 117 pcf

Piezometric Lines

Piezometric Line 1

Coordinates

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<thead>
<tr>
<th>X (ft)</th>
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<tr>
<td>330</td>
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Point Loads

<table>
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<tr>
<th>Coordinate (ft)</th>
<th>Magnitude (lbs)</th>
<th>Direction (°)</th>
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<tbody>
<tr>
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<td>(95.75, 8)</td>
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Regions

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Slip Surface Limits

Left Coordinate: (0, 2.3208) ft
Right Coordinate: (330, 2.2197) ft

Slip Surface Block

Left Grid
Upper Left: (65, -9) ft
Lower Left: (65, -45) ft
Lower Right: (115, -45) ft
X Increments: 10
Y Increments: 10
Starting Angle: 115 °
Ending Angle: 115 °
Angle Increments: 5

Right Grid
Upper Left: (116, -9) ft
Lower Left: (116, -45) ft
Lower Right: (166, -45) ft
X Increments: 10
Y Increments: 10
Starting Angle: 15 °

Cohesion: 1150 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

ML El. -39.5 to El. -42.5
Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion: 325 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CL El. -49.5 to El. -76.5
Model: Mohr-Coulomb
Unit Weight: 119 pcf
Cohesion: 1150 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

Piezometric Lines

Piezometric Line 1

Coordinates

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<tr>
<th>X (ft)</th>
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Point Loads

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### Points

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### Critical Slip Surfaces

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<th>Center (ft)</th>
<th>Radius (ft)</th>
<th>Entry (ft)</th>
<th>Exit (ft)</th>
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### Slices of Slip Surface: 27742

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<th>Y (ft)</th>
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<th>Frictional Strength (psf)</th>
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LAKE MAUPREPAS DIVERSION PROJECT
CONVEYANCE CHANNEL - NORTH OF US - 61
STATION: 140+50
LIGHT WEIGHT PICK UP TRUCK: 5000 LBS/AXLE
GLOBAL ANALYSIS (BLOCK METHOD)
Block LtoR-P Load-Water -0'

Project Settings
- Length(L) Units: feet
- Time(t) Units: Seconds
- Force(F) Units: lbf
- Pressure(p) Units: psf
- Strength Units: psf
- Unit Weight of Water: 62.4 pcf
- View: 2D

Analysis Settings
- Block LtoR-P Load-Water -0'
  - Kind: SLOPE/W
  - Method: Spencer
  - Settings:
    - Apply Phreatic Correction: Yes
    - PWP Conditions Source: Piezometric Line
    - Use Staged Rapid Drawdown: No
    - Slip Surface:
      - Direction of movement: Left to Right
      - Use Passive Mode: No
      - Slip Surface Option: Block
      - Critical slip surfaces saved: 1
      - Optimize Critical Slip Surface Location: No
      - Tension Crack Option: (none)
  - FOS Distribution:
  - FOS Calculation Option: Constant
  - Restrict Block Crossing: Yes
  - Advanced:
    - Number of Slices: 30
    - Optimization Tolerance: 0.01
    - Optimization Maximum Iterations: 2000
    - Optimization Convergence Tolerance: 1e-007
    - Starting Optimization Points: 8
    - Ending Optimization Points: 16
    - Complete Passes per Insertion: 3
    - Driving Side Maximum Convex Angle: 5°
    - Resisting Side Maximum Convex Angle: 1°
  - Tension Crack:
    - Tension Crack Option: (none)
  - Slip Surface Limits:
    - Left Coordinate: (0, 1.5) ft
    - Right Coordinate: (330, 0.3) ft

Materials
- LEVEE
  - Model: Mohr-Coulomb
  - Unit Weight: 115 pcf
  - Cohesion: 600 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
  - Piezometric Line: 1

- CH El. 1.5 to EL. -5
  - Model: Mohr-Coulomb
  - Unit Weight: 88 pcf
  - Cohesion: 400 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
  - Piezometric Line: 1

- CH El. -5 to EL. -16
  - Model: Mohr-Coulomb
  - Unit Weight: 88 pcf
  - Cohesion: 200 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
  - Piezometric Line: 1

- CH El. -16 to EL. -20
  - Model: Mohr-Coulomb
  - Unit Weight: 120 pcf
  - Cohesion: 400 psf
  - Phi: 0°
  - Phi-B: 0°
  - Pore Water Pressure
  - Piezometric Line: 1

Piezometric Lines
- Piezometric Line 1
  - Coordinates:
    - X (ft) Y (ft)
    - 0 0
    - 330 0

Point Loads
- Coordinate (ft) Magnitude (lbs) Direction (°)
  - 73.5 6.4 2500 90
  - 81.5 6.4 2500 90

Regions
- Material Points Area (ft²)
  - Region 1 CH El. -5 to EL. -16 31.32 2.3.13,12,11,29,1 3482.1280
  - Region 2 CH El. -24 to EL. -30 34.6 5.33 1980
  - Region 3 CH El. -30 to EL. -40 7.6 8.8 3360
Region 4  LEVIE  9.10,17.19  137.5
Region 5  LEVIE  14.15,16.25,24,23,22,21,20  517.01
Region 6  CH El. 1.5 to El. -5  1.27,18,9.19,20  459.82
Region 7  CH El. 1.5 to El. -5  30,20,21,22,23,24,25,16,26,28,2  260.1545
Region 8  CH El. -16 to El. -20  3.3,3.4,3.4  1330
Region 9  CH El. -20 to El. -24  33,3.4,3.4  1330
Region 10  CH El. -40 to El. -50  35,7.8,36  1300

Points

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Critical Slip Surfaces

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<th>Center (ft)</th>
<th>Radius (ft)</th>
<th>Entry (ft)</th>
<th>Exit (ft)</th>
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Slices of Slip Surface: 2797

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<th>Base Normal Stress (psf)</th>
<th>Frictional Strength (psf)</th>
<th>Cohesive Strength (psf)</th>
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Block RtoL-P Load-Water -0'

File Information
Created By: Bukkapatnam, Ananth
Revision Number: 62
Last Edited By: Shewalla, Mahendra
Date: 7/18/2013
Time: 8:56:10 AM
File Name: Conveyance Channel 60 feet - North of US61-St 140+50.gsz
Directory: I:\Projects\OCPR Maurepas Geotech\10001863-Maurepas Final Design II\FINAL REPORT 7-13\FINAL Stability Analyses\Conveyance Channel to 61\North of US 61 Final 2013
Last Solved Date: 7/18/2013
Last Solved Time: 8:56:30 AM

Project Settings
Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings
Block RtoL-P Load-Water -0'
Kind: SLOPE/W
Method: Spencer
Settings
Apply Phreatic Correction: Yes
PWP Conditions Source: Piezometric Line
Use Staged Rapid Drawdown: No
Slip Surface
Direction of movement: Right to Left
Use Passive Mode: No
Slip Surface Option: Block
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack
Tension Crack Option: [none]
FOS Distribution

Materials
LEVEE
Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion: 600 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

CH EL. 1.5 to EL. -5
Model: Mohr-Coulomb
Unit Weight: 88 pcf
Cohesion: 400 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

CH EL. -5 to EL. -16
Model: Mohr-Coulomb
Unit Weight: 88 pcf
Cohesion: 200 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

CH EL. -16 to EL. -20
Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 400 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

Piezometric Lines
Piezometric Line 1
Coordinates
X (ft) Y (ft)
0 0
330 0

Point Loads
Coordinate (ft) Magnitude (lbs) Direction (°)
Point Load 1 (283.5, 7.4) 2500 90
Point Load 2 (391.5, 7.4) 2500 90

Regions
<table>
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<th>Material</th>
<th>Points</th>
<th>Area (ft²)</th>
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Slip Surface Block
Left Grid
Upper Left: (200, -4.4) ft
Lower Left: (200, -24.4) ft
Lower Right: (250, -24.4) ft
X Increments: 10
Y Increments: 10
Starting Angle: 135°
Ending Angle: 135°
Angle Increments: 1

Right Grid
Upper Left: (261, -4.4) ft
Lower Left: (261, -24.4) ft
Lower Right: (311, -24.4) ft
X Increments: 10
Y Increments: 10
Starting Angle: 45°
Ending Angle: 45°
Angle Increments: 1

Cohesion: 400 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

CH EL. -20 to EL. -24
Model: Mohr-Coulomb
Unit Weight: 110 pcf
Cohesion: 800 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

CH EL. -24 to EL. -30
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 800 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

CH EL. -30 to EL. -40
Model: Mohr-Coulomb
Unit Weight: 110 pcf
Cohesion: 800 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

CH EL. -40 to EL. -50
Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 1100 psf
Phi: 0°
Phi-B: 0°
Pore Water Pressure
Piezometric Line: 1

Slip Surface Limits
Left Coordinate: (0, 1.5) ft
Right Coordinate: (330, 0.3) ft
### Points

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### Critical Slip Surfaces

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<th>Entry (ft)</th>
<th>Exit (ft)</th>
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### Slices of Slip Surface: 2825

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Name: LEVREE  Unit Weight: 115 pcf  Cohesion: 600 psf  Phi: 0 °  Piezometric Line: 1
Name: CH El. 0 to El. -5  Unit Weight: 88 pcf  Cohesion: 400 psf  Phi: 0 °  Piezometric Line: 1
Name: CH El. -5 to El. -16  Unit Weight: 88 pcf  Cohesion: 200 psf  Phi: 0 °  Piezometric Line: 1
Name: CH El. -16 to El. -20  Unit Weight: 120 pcf  Cohesion: 400 psf  Phi: 0 °  Piezometric Line: 1
Name: CH El. -20 to El. -24  Unit Weight: 120 pcf  Cohesion: 800 psf  Phi: 0 °  Piezometric Line: 1
Name: CH El. -24 to El. -30  Unit Weight: 125 pcf  Cohesion: 800 psf  Phi: 0 °  Piezometric Line: 1
Name: CH El. -30 to EL. -40  Unit Weight: 120 pcf  Cohesion: 800 psf  Phi: 0 °  Piezometric Line: 1
Name: CH El. -40 to EL. -50  Unit Weight: 120 pcf  Cohesion: 1300 psf  Phi: 0 °  Piezometric Line: 1

LAKE MAUPREPS DIVERSION PROJECT
CONVEYANCE CHANNEL - NORTH OF US - 61
STATION: 210+00
LIGHT WEIGHT PICK UP TRUCK: 5000 LBS/AXLE
GLOBAL ANALYSIS (BLOCK METHOD)
Block LtoR-P Load-Water -0'

File Information
Created By: Bukkapatnam, Ananth
Revision Number: 62
Last Edited By: Shewalla, Mahendra
Date: 7/18/2013
Time: 9:00:15 AM
File Name: Conveyance Channel 60 feet - North of US61-St 210+00.gsz
Directory: I:\Projects\OCPR Maurepas Geotech\10001863-Maurepas Final Design II\FINAL REPORT 7-13\FINAL Stability Analyses\Conveyance Channel to 61\North of US 61 Final 2013
Last Solved Date: 7/18/2013
Last Solved Time: 9:00:26 AM

Project Settings
Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings
Block LtoR-P Load-Water -0'
Kind: SLOPE/W
Method: Spencer

Settings
Apply Phreatic Correction: Yes
PWP Conditions Source: Piezometric Line
Use Staged Rapid Drawdown: No

Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Block
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack Option: (none)

FOS Distribution Option: Constant
Restrict Block Crossing: Yes
Advanced
Number of Slices: 30
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 2000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Pauses per insertion: 3
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Number of Slices: 30
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 2000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Pauses per insertion: 3
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials
LEVEE
Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion: 600 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. 0 to El. -5
Model: Mohr-Coulomb
Unit Weight: 88 pcf
Cohesion: 400 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. -5 to El. -16
Model: Mohr-Coulomb
Unit Weight: 88 pcf
Cohesion: 200 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. -16 to El. -20
Model: Mohr-Coulomb
Unit Weight: 120 pcf

Slip Surface Block
Left Grid
Upper Left: (45, -4.5) ft
Lower Left: (45, -24.5) ft
Lower Right: (95, -24.5) ft
X Increments: 10
Y Increments: 10
Starting Angle: 135 °
Ending Angle: 135 °
Angle Increments: 1

Right Grid
Upper Left: (101, -4.5) ft
Lower Left: (101, -24.5) ft
Lower Right: (151, -24.5) ft
X Increments: 10
Y Increments: 10
Starting Angle: 45 °
Ending Angle: 45 °
Angle Increments: 1

Piezometric Lines
Piezometric Line 1

Coordinates
X (ft)  Y (ft)
0  0
330  0

Point Loads
Coordinate (ft)  Magnitude (lbs)  Direction (°)
Point load 1  (73.5, 6)  2500  90
Point load 2  (81.5, 6)  2500  90

Regions
Material  Points  Area (ft²)
Region 1  CH El. -5 to El. -16  11,12,2,10,20,19,18,9,1  3448.575
Region 2  CH El. -24 to El. -30  14,6,5,13  1980
Region 3  CH El. -30 to El. -40  3,5,6,8  3300
Region 4  CH El. -16 to El. -20  5,11,12,4  1320
Region 5  CH El. -20 to El. -24  13,3,4,14  1320
Region 6  LEVEE  15,16,17,27,26,25  190.585
Region 7  LEVEE  26,21,22,23,31,30,29  231.64
Region 8  CH El. 0 to El. -5  1,32,24,25,26,27,29,31,33,32,2  623.378
Region 9  CH El. 0 to El. -10  2,3,4,5,6,7,8,9,10,11,12,13,14,15  513.600
Region 10  CH El. -40 to El. -50  14,7,8,35  3300

Points

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Critical Slip Surfaces

<table>
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<tr>
<th>Slip Surface</th>
<th>FOS</th>
<th>Center (ft)</th>
<th>Radius (ft)</th>
<th>Entry (ft)</th>
<th>Exit (ft)</th>
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<tbody>
<tr>
<td>1 2777</td>
<td>2777</td>
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<td>(95.414, 5.538)</td>
<td>25.982</td>
<td>(123.311, 2.18881)</td>
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Slices of Slip Surface: 2777

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<th>Y (ft)</th>
<th>PWP (psf)</th>
<th>Base Normal Stress (psf)</th>
<th>Frictional Strength (psf)</th>
<th>Cohesive Strength (psf)</th>
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</table>
Name: LEVEE      Unit Weight: 115 pcf    Cohesion: 600 psf    Phi: 0 °    Piezometric Line: 1
Name: CH El. 0 to El. -5      Unit Weight: 88 pcf    Cohesion: 400 psf    Phi: 0 °    Piezometric Line: 1
Name: CH El. -5 to El. -16      Unit Weight: 88 pcf    Cohesion: 200 psf    Phi: 0 °    Piezometric Line: 1
Name: CH El. -16 to El. -20      Unit Weight: 120 pcf    Cohesion: 400 psf    Phi: 0 °    Piezometric Line: 1
Name: CH El. -20 to El. -24      Unit Weight: 120 pcf    Cohesion: 800 psf    Phi: 0 °    Piezometric Line: 1
Name: CH El. -24 to El. -30      Unit Weight: 125 pcf    Cohesion: 800 psf    Phi: 0 °    Piezometric Line: 1
Name: CH El. -30 to El. -40      Unit Weight: 120 pcf    Cohesion: 800 psf    Phi: 0 °    Piezometric Line: 1
Name: CH El. -40 to El. -50      Unit Weight: 120 pcf    Cohesion: 1300 psf    Phi: 0 °    Piezometric Line: 1
Block RtoL-P Load-Water -0'  

--- File Information ---
Created By: Bukkapatnam, Ananth  
Last Edited By: Shewalla, Mahendra  
Date: 7/18/2013  
Time: 9:00:15 AM  
File Name: Conveyance Channel 60 feet - North of US61-St 210+00.gsz  
Directory: I:\Projects\OCPR Maurepas Geotech\10001863-Maurepas Final Design II\FINAL REPORT 7-13\FINAL Stability Analyses\Conveyance Channel to 61\North of US 61 Final 2013  
Last Solved Date: 7/18/2013  
Last Solved Time: 9:00:36 AM

--- Project Settings ---
Length(L) Units: feet  
Time(t) Units: Seconds  
Force(F) Units: lbf  
Pressure(p) Units: psf  
Strength Units: psf  
Unit Weight of Water: 62.4 pcf  
View: 2D

--- Analysis Settings ---
Block RtoL-P Load-Water -0'  
Kind: SLOPE/W  
Method: Spencer  
Settings  
  Apply Phreatic Correction: Yes  
PWP Conditions Source: Piezometric Line  
Use Staged Rapid Drawdown: No  
Slip Surface  
  Direction of movement: Right to Left  
  Use Passive Mode: No  
  Slip Surface Option: Block  
Critical slip surfaces saved: 1  
  Optimize Critical Slip Surface Location: No  
  Tension Crack Option: (none)
FOS Distribution  
  FOS Calculation Option: Constant  
  Restrict Block Crossing: Yes  
Advanced  
  Number of Slices: 30  
  Optimization Tolerance: 0.01  
  Optimization Maximum Iterations: 2000  
  Optimization Convergence Tolerance: 1e-007  
  Starting Optimization Points: 8  
  Ending Optimization Points: 16  
  Complete Passes per Insertion: 3  
  Driving Side Maximum Convex Angle: 5 °  
  Resisting Side Maximum Convex Angle: 1 °  

--- Materials ---
LEVEE  
Model: Mohr-Coulomb  
Unit Weight: 115 pcf  
Cohesion: 600 psf  
Phi: 0 °  
Phi-B: 0 °  
Pore Water Pressure  
Piezometric Line: 1
CH El. 0 to El. -5  
Model: Mohr-Coulomb  
Unit Weight: 88 pcf  
Cohesion: 400 psf  
Phi: 0 °  
Phi-B: 0 °  
Pore Water Pressure  
Piezometric Line: 1
CH El. -5 to El. -16  
Model: Mohr-Coulomb  
Unit Weight: 88 pcf  
Cohesion: 200 psf  
Phi: 0 °  
Phi-B: 0 °  
Pore Water Pressure  
Piezometric Line: 1
CH El. -16 to El. -20  
Model: Mohr-Coulomb  
Unit Weight: 120 pcf  
Cohesion: 400 psf  
Phi: 0 °  
Phi-B: 0 °  
Pore Water Pressure  
Piezometric Line: 1

--- Slip Surface Block ---
Left Grid  
  Upper Left: (205, -4.5) ft  
  Lower Left: (205, -24.5) ft  
  Lower Right: (255, -24.5) ft  
  X Increments: 10  
  Y Increments: 10  
  Starting Angle: 135 °  
  Ending Angle: 135 °  
  Angle Increments: 1
Right Grid  
  Upper Left: (266, -4.5) ft  
  Lower Left: (266, -24.5) ft  
  Lower Right: (316, -24.5) ft  
  X Increments: 10  
  Y Increments: 10  
  Starting Angle: 45 °  
  Ending Angle: 45 °  
  Angle Increments: 1

--- Piezometric Lines ---
Piezometric Line 1  
Coordinates  
  X (ft)  Y (ft)  
  0  0  
  330  0

--- Point Loads ---
Point Load 1  
  Coordinate (ft)  Magnitude (lbs)  Direction(°)  
  (283.5, 7)  2500  90
Point Load 2  
  (291.5, 7)  2500  90

--- Regions ---
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<tr>
<th>Region</th>
<th>Material</th>
<th>Points</th>
<th>Area (ft²)</th>
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<td>3</td>
<td>CH El. -30 to El. -40</td>
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### Points

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<td>Point 24</td>
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<td>Point 25</td>
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### Critical Slip Surfaces

<table>
<thead>
<tr>
<th>Slip Surface</th>
<th>FOS</th>
<th>Center (ft)</th>
<th>Radius (ft)</th>
<th>Entry (ft)</th>
<th>Exit (ft)</th>
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<tbody>
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### Slices of Slip Surface: 2823

<table>
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<th>Slip Surface</th>
<th>X (ft)</th>
<th>Y (ft)</th>
<th>PDIP (psf)</th>
<th>Base Normal Stress (psf)</th>
<th>Frictional Strength (psf)</th>
<th>Cohesive Strength (psf)</th>
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<tbody>
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### Critical Point Data

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<th>PDIP (psf)</th>
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</table>
Name: LEVEE      Unit Weight: 115 pcf     Cohesion: 600 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. 0 to El. -5      Unit Weight: 88 pcf     Cohesion: 400 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -5 to El. -16      Unit Weight: 88 pcf     Cohesion: 200 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -16 to El. -20      Unit Weight: 120 pcf     Cohesion: 400 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -20 to El. -24      Unit Weight: 120 pcf     Cohesion: 800 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -24 to El. -30      Unit Weight: 125 pcf     Cohesion: 800 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -30 to El. -40      Unit Weight: 120 pcf     Cohesion: 800 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -40 to El. -50      Unit Weight: 120 pcf     Cohesion: 1300 psf     Phi: 0 °     Piezometric Line: 1

LAKE MAUPREPAS DIVERSION PROJECT
CONVEYANCE CHANNEL - NORTH OF US - 61
STATION: 211+50
LIGHT WEIGHT PICK UP TRUCK: 5000 LBS/AXLE
GLOBAL ANALYSIS (BLOCK METHOD)
Block Lto R-P Load-Water -0

File Information
Created By: Bukkapatnam, Ananth
Revision Number: 75
Last Edited By: Shewalla, Mahendra
Date: 7/18/2013
Time: 9:29:41 AM
File Name: Conveyance Channel 60 feet - North of US61-St 211+50.gsz
Directory: I:\Projects\OCPR Maurepas Geotech\10001863-Maurepas Final Design II\FINAL REPORT 7-13\FINAL Stability Analyses\Conveyance Channel to 61\North of US 61 Final 2013
Last Solved Date: 7/18/2013
Last Solved Time: 9:31:10 AM

Project Settings
Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings
Block Lto R-P Load-Water -0
Kind: SLOPE/W
Method: Spencer
Settings
Apply Phreatic Correction: Yes
PWP Conditions Source: Piezometric Line
Use Staged Rapid Drawdown: No
Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Block
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack
Tension Crack Option: (none)
FOS Distribution
FOS Calculation Option: Constant
Restrict Block Crossing: Yes
Advanced
Number of Slices: 30
Optimization Tolerance: 8.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 2000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Pauses per insertion: 3
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 5 °

Materials
LEVEE
Model: Mohr-Coulomb
Unit Weight: 115 psf
Cohesion: 600 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. 0 to El. -5
Model: Mohr-Coulomb
Unit Weight: 88 psf
Cohesion: 400 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. -5 to El. -16
Model: Mohr-Coulomb
Unit Weight: 88 psf
Cohesion: 200 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. -16 to El. -20
Model: Mohr-Coulomb
Unit Weight: 120 psf
Cohesion: 400 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

Piezometric Lines
Piezometric Line 1
Coordinates
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Point Loads
Coordinate (ft) | Magnitude (lbs) | Direction(°)
Point Load 1 (73.5, 6) | 2500 | 90
Point Load 2 (81.5, 6) | 2500 | 90

Regions
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<th>Area [ft²]</th>
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<td>CH El -24 to El -30</td>
<td>14,6,5,13</td>
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<tr>
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### Points

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<td>24</td>
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</tr>
<tr>
<td>25</td>
<td>33.4</td>
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### Critical Slip Surfaces

#### Slices of Slip Surface: 16131

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<tr>
<th>Slip Surface</th>
<th>X(ft)</th>
<th>Y(ft)</th>
<th>PWP (psf)</th>
<th>Base Normal Stress (psf)</th>
<th>Frictional Strength (psf)</th>
<th>Cohesive Strength (psf)</th>
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Name: LEVEE      Unit Weight: 115 pcf     Cohesion: 600 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. 0 to El. -5      Unit Weight: 88 pcf     Cohesion: 400 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -5 to El. -16      Unit Weight: 88 pcf     Cohesion: 200 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -16 to El. -24      Unit Weight: 120 pcf     Cohesion: 400 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -24 to El. -30      Unit Weight: 125 pcf     Cohesion: 800 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -30 to El. -40      Unit Weight: 120 pcf     Cohesion: 800 psf     Phi: 0 °     Piezometric Line: 1
Name: CH El. -40 to El. -50      Unit Weight: 120 pcf     Cohesion: 1300 psf     Phi: 0 °     Piezometric Line: 1

LAKE MAUPREPAS DIVERSION PROJECT
CONVEYANCE CHANNEL - NORTH OF US - 61
STATION: 211+50
LIGHT WEIGHT PICK UP TRUCK: 5000 LBS/AXLE
GLOBAL ANALYSIS (BLOCK METHOD)
Block Rto L-P Load-Water -0'

File Information
Created By: Bukkapatnam, Ananth
Revision Number: 76
Last Edited By: Shewalla, Mahendra
Date: 7/18/2013
Time: 9:33:02 AM
File Name: Conveyance Channel 60 feet - North of US61-St 211+50.gsz
Directory: I:\Projects\OCPR Maurepas Geotech\10001863-Maurepas Final Design II\FINAL REPORT 7-13\FINAL Stability Analyses\Conveyance Channel to 61\North of US 61 Final 2013
Last Solved Date: 7/18/2013
Last Solved Time: 9:34:00 AM

Project Settings
Length(Units): feet
Time(Units): Seconds
Force(Units): lbf
Pressure(Units): psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings
Block Rto L-P Load-Water -0'
Kind: SLOPE/W
Method: Spencer
Settings
Apply Phreatic Correction: Yes
PWP Conditions Source: Piezometric Line
Use Staged Rapid Drawdown: No
Slip Surface
Direction of movement: Right to Left
Use Passive Mode: No
Slip Surface Option: Block
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack
Tension Crack Option: (none)
FOS Distribution
FOS Calculation Option: Constant
Restrict Block Crossing: Yes
Advanced
Number of Slices: 30
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 2000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Pauses per insertion: 3
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials
LEVEE
Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion: 600 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. 0 to El. -5
Model: Mohr-Coulomb
Unit Weight: 88 pcf
Cohesion: 400 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. -5 to El. -16
Model: Mohr-Coulomb
Unit Weight: 88 pcf
Cohesion: 300 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

CH El. -16 to El. -20
Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 800 psf
Phi: 0 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

Piezometric Lines
Piezometric Line 1
Coordinates
<table>
<thead>
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<th>X (ft)</th>
<th>Y (ft)</th>
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<td>330</td>
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</table>

Point Loads
Coordinate (ft) Magnitude (lbs) Direction (°)
Point load 1 (283.5, 7) 2500 90
Point load 2 (291.5, 7) 2500 90

Regions
<table>
<thead>
<tr>
<th>Material</th>
<th>Points</th>
<th>Area [ft²]</th>
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</thead>
<tbody>
<tr>
<td>Region 1</td>
<td>CH El. -5 to El. -16</td>
<td>11,12,2,10,17,16,15,9,1</td>
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<td>Region 2</td>
<td>CH El. -24 to El. -30</td>
<td>14,6,5,13</td>
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<td>Region 3</td>
<td>CH El. -30 to El. -40</td>
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Points

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Critical Slip Surfaces: 12560

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<th>Slip Surface</th>
<th>X (ft)</th>
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<th>Cohesive Strength (psf)</th>
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5

6
### Lake Maurepas - Conveyance Channel South of US 61 - Settlements Calculations for 3 feet Fill Height

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### Lake Maurepas - Conveyance Channel North of US 61 - Settlements Calculations for Various Fill Heights

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