**Boring ID: ILBS0308**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
<th>Est. % of Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Asphalt over gravel road base</td>
<td></td>
<td>50 45 5</td>
</tr>
</tbody>
</table>

Comments: Asphalt pavement at surface, cored prior to augering

- Asphalt over gravel road base
- Poorly Graded Sand, yellowish brown (10YR 5/4), medium dense, moist, mica present, possibly weathered sandstone [Native]
- Sandstone, dark yellowish brown (10YR 4/4), weathered, moderately friable, contains quartz, feldspar, and mica, iron oxidation [Chatsworth Formation]
- Total Depth = 0.9 ft; terminated due to refusal on bedrock.
- Collected soil sample S001 at 13:05.
- Backfilled with soil cuttings and sealed with cold patch.
<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>Asphalt over 1 inch of gravel road base</td>
</tr>
<tr>
<td>0.1</td>
<td>0.1</td>
<td>SP</td>
<td>Silt/Clay</td>
<td>Poorly Graded Sand, dark greenish gray (GLEY 1 4/1), medium dense, moist, mica present, mild to moderate hydrocarbon odor (no ambient PID) [Native]</td>
</tr>
<tr>
<td>0.9</td>
<td>0.9</td>
<td></td>
<td>Coarse Sand</td>
<td>Sandstone, dark yellowish brown (10YR 4/4), weathered, moderately friable, contains quartz, felspar, and mica [Chatsworth Formation]</td>
</tr>
<tr>
<td></td>
<td>Total Depth = 0.9 ft; terminated due to refusal on bedrock.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collected soil sample S001 at 10:56.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Backfilled with soil cuttings and sealed with cold patch.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Interval (ft)</td>
<td>Sample Type</td>
<td>Recovery (%)</td>
<td>Blow Count 6&quot;</td>
<td>Water Level</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>0</td>
<td>S</td>
<td>0.7</td>
<td>SP</td>
<td></td>
</tr>
<tr>
<td>0.9</td>
<td>S</td>
<td>0.7</td>
<td>SP</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>S</td>
<td>0.7</td>
<td>SP</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 0.9 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 12:59.

Backfilled with soil cuttings and sealed with cold patch.
Boring ID: ILBS0311

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Asphalt</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gravel base, very moist to wet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, dark yellowish brown (10YR 4/4), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 0.7 ft; terminated due to refusal on bedrock.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No soil sample collected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Borehole sealed with cold patch.</td>
</tr>
</tbody>
</table>

Asphalt pavement at surface, cored prior to augering

Comments:

- Asphalt pavement at surface, cored prior to augering
- No soil sample collected
- Borehole sealed with cold patch

Total Depth (ft): 0.7

Well Comp. Date: N/A
Completion Time: N/A

Soil Backfill Date: 02-08-2010
Backfill Time: NR

Notes:

- Asphalt pavement at surface, cored prior to augering
- No soil sample collected
- Borehole sealed with cold patch
<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Retained</th>
<th>Recovery (%)</th>
<th>Blow Count/6''</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Asphalt over 1 in of gravel road base</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand, dark greenish gray (GLEY 1 4/1), medium dense, moist, mica present, mild to moderate hydrocarbon odor (no ambient PID) [Native]</td>
<td>tr 60 40</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, dark yellowish brown (10YR 4/4), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 0.9 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 13:50.

Backfilled with soil cuttings and sealed with cold patch.
Borehole Diam. (in.): 3  
Total Depth (ft): 0.8  
Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

Northing (ft): 1795933.72  
Easting (ft): 268326.05  
Job Number: 1008208  
Site: IEL (North - Grass)

Drill Start Date: 02-08-2010  
Start Time: 13:03  
Logged By: S. Aichner  
Reviewed By: B. Martasin, P.G. #8356

Drill Finish Date: 02-08-2010  
Finish Time: 13:20  
Drilling Contractor: B.L. Hall  
Field Instrumentation: PID

Depth 1st H₂O (ft): N/A  
Date / Time: N/A  
Drill Rig Type/Method: Hand Auger

Depth H₂O After Drilling (ft): N/A  
Date / Time: N/A  
Driller's Name: R. Cano

Comments: Native soil and weeds at surface

Well Comp. Date: N/A  
Completion Time: N/A

Samplers: 6-inch stainless steel sleeve  
Soil Backfill Date: 02-08-2010  
Backfill Time: 13:25

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>S</td>
<td>0.4</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SC</td>
<td>Clayey Sand, dark brown (10YR 3/3), loose, moist, micaceous [Native]</td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 0.8 ft; terminated due to refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 13:08.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
</tr>
</tbody>
</table>

Est. % of Soil

<table>
<thead>
<tr>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Boring ID: ILBS0314**

Borehole Diam. (in.): 3  
Total Depth (ft): 0.8  
Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

Northing (ft): 1795917.57  
Easting (ft): 268344.63  
Job Number: 1008208  
Site: IEL (North - Grass)

Drill Start Date: 02-08-2010  
Start Time: 13:30  
Logged By: S. Aichner  
Reviewed By: B. Martasin, P.G. #8356

Drill Finish Date: 02-08-2010  
Finish Time: 13:45  
Drilling Contractor: B.L. Hall  
Field Instrumentation: PID

Depth 1st H₂O (ft): N/A  
Date / Time: N/A  
Drill Rig Type/Method: Hand Auger

Depth H₂O After Drilling (ft): N/A  
Date / Time: N/A  
Driller’s Name: R. Cano

Comments: Asphalt at surface

- **Sample Interval Retained**
  - Sample Type
  - Recovery (%)
  - Blow Count/6”
  - PID (ppm)
  - Water Level
  - Depth (feet)

- **Graphical Log**
  - **USCS Soil Classification**
  - **Description**
  - **Est. % of Soil**

- **Sample Number**
  - **Depth**
  - **Sample Type**
  - **Recovery (%)**
  - **Blow Count/6”**
  - **PID (ppm)**
  - **Water Level**
  - **Depth (feet)**

- **Soil Type**
  - **Asphalt pavement**
  - **Silty Sand, yellowish brown (10YR 5/6), moist, trace clay, micaceous [Native]**
  - **Sandstone, weathered [Chatsworth Formation]**

- **Notes**
  - Total Depth = 0.8 ft; terminated due to refusal on bedrock.
  - Collected soil sample S001 at 13:35.
  - Backfilled with soil cuttings and sealed with cold patch.
Boring ID: ILBS0315

**Native soil and weeds at surface**

**Soil Backfill Date:** 02-08-2010

**Collected soil sample S001 at 12:50.**

**Backfilled with soil cuttings.**

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SC</td>
<td>Clayey Sand, dark yellowish brown (10YR 4/6), loose, moist, micaceous [Native]</td>
<td></td>
</tr>
</tbody>
</table>

**Sandstone, weathered [Chatsworth Formation]**

Total Depth = 0.8 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 12:50.

Backfilled with soil cuttings.
<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SC</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>Clayey Sand, brown (10YR 3/3), loose, moist, micaceous [Native]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 0.3 ft; terminated due to refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 12:35. Stepped out once to obtain sample volume.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
</tr>
</tbody>
</table>

**Comments:** Native soil and weeds at surface.

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Boring ID:** ILBS0316

**Job Number:** 1008208

**Drill Start Date:** 02-08-2010

**Drill Finish Date:** 02-08-2010

**Logged By:** S. Aichner

**Drilling Contractor:** B.L. Hall

**Drill Rig Type/Method:** Hand Auger

**Field Instrumentation:** PID

**Native soil and weeds at surface**

**Driller's Name:** R. Cano

**Soil Backfill Date:** 02-08-2010

**Backfill Time:** 12:45

**Total Depth:** 0.3 ft

**Native soil and weeds at surface**
**Boring ID: ILBS0317**

**Description:** Clayey Sand, dark brown (10YR 3/3), loose, moist, micaceous [Native]

- **Total Depth = 5.0 ft; terminated prior to refusal on bedrock.**
- **Collected soil samples S001 at 10:28 and S002 at 10:50.**
- **Backfilled with soil cuttings.**

**Comments:** Native soil and weeds at surface

**Site:** IEL (North - Grass)

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Job Number:** 1008208

**Drill Rig Type/Method:** Hand Auger

**Driller’s Name:** R. Cano

**Date / Time:** N/A

**Logged By:** S. Aichner

**Reviewed By:** B. Martasin, P.G. #8356

**Easting (ft):** 268294.98

**Start Time:** 10:10

**Finish Time:** 11:00

**Start Date:** 02-08-2010

**Finish Date:** 02-08-2010

**Sample Type:** 6-inch stainless steel sleeve

**Native soil and weeds at surface**

**Total Depth = 5.0 ft; terminated prior to refusal on bedrock.**

**Collected soil samples S001 at 10:28 and S002 at 10:50.**

**Backfilled with soil cuttings.**

**PID:** N/A

**Date / Time:** N/A

**Sample Interval Retained:**

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>0.9</td>
<td></td>
<td></td>
<td>0.0</td>
<td></td>
<td>SC</td>
<td>SC</td>
<td>Clayey Sand, dark brown (10YR 3/3), loose, moist, micaceous [Native]</td>
</tr>
<tr>
<td>S</td>
<td>0.4</td>
<td></td>
<td></td>
<td>5.0</td>
<td></td>
<td></td>
<td>Coarse Sand</td>
<td>becomes brownish yellow (10YR 6/6)</td>
</tr>
</tbody>
</table>

**Comments:** Native soil and weeds at surface

**Well Comp. Date:** N/A

**Completion Time:** N/A

**Soil Backfill Date:** 02-08-2010

**Backfill Time:** 11:05
**Boring ID: ILBS0319**

**Easting (ft):** 268295.58  
**N/A**

**Drill Rig Type/Method:** Geoprobe/Direct Push

**Comments:** Native soil and weeds at surface  
Macrocore, discrete samples retained in 6-inch stainless steel sleeves

---

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Sample Interval</th>
<th>Retained Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S/N/A</td>
<td>S</td>
<td>0.1</td>
<td>S</td>
<td></td>
<td></td>
<td>SM</td>
<td>SM</td>
<td>Dark micaceous topsoil with roots</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, yellowish brown (10YR 5/8), medium dense, moist, trace clay stringers, micaceous [Native]</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 3.0 ft; terminated due to refusal on bedrock.

Collected soil samples S001 and duplicate D001 at 10:00.

Backfilled with soil cuttings topped off with hydrated bentonite.
Silty Sand, dark brown (10YR 3/3), loose, moist, micaceous, contains roots

becomes yellowish brown (10YR 5/8), medium dense, slight increase in silt
content, no roots

Sandstone, weathered [Chatsworth Formation]

Total Depth = 2.0 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 09:30.

Backfilled with soil cuttings and topped off with hydrated bentonite.
**Boring ID: ILBS0322**

- **Borehole Diam. (in.):** 2-1/4
- **Total Depth (ft):** 2.0
- **Date / Time:** 01-28-2010
- **Start Time:** 08:40
- **PID:** N/A
- **Logged By:** S. Aichner
- **Reviewed By:** B. Martasin, P.G. #8356
- **Drill Rig Type/Method:** Geoprobe/Direct Push
- **Driller's Name:** Eric / Walter

**Comments:** Hydroseeded backfill at surface

**Sample Interval Retained**

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>Water Level</th>
<th>Graphic Log</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td></td>
<td>0.3</td>
<td></td>
<td>SM</td>
<td></td>
</tr>
</tbody>
</table>

- Silty Sand, yellowish brown (10YR 5/8), medium dense, moist, micaceous [Native]

- Sandstone, weathered [Chatsworth Formation]

Total Depth = 2.0 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 09:05.

Backfilled with soil cuttings and topped off with hydrated bentonite.
**Boring ID: ILBS0324**

**Description:**
- **Native soil and weeds at surface**
- **Native soil and weeds at surface**
- **Total Depth = 2.3 ft; terminated due to refusal on bedrock.**
- **Collected soil sample S001 at 09:45.**
- **Backfilled with soil cuttings.**

**USCS Soil Classification:**
- SC: Clayey Sand, dark brown (10YR 3/3), loose, moist, micaceous [Native]
- becomes brownish yellow (10YR 6/6)

**Sandstone, weathered [Chatsworth Formation]**

**Total Depth = 2.3 ft; terminated due to refusal on bedrock.**

**Collected soil sample S001 at 09:45.**

**Backfilled with soil cuttings.**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Retained</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Est. % of Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SC</td>
<td>70</td>
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</tr>
</tbody>
</table>

**Comments:**
- Native soil and weeds at surface
- Total Depth = 2.3 ft; terminated due to refusal on bedrock.
- Collected soil sample S001 at 09:45.
- Backfilled with soil cuttings.
<table>
<thead>
<tr>
<th>Sample Interval Retained (feet)</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SC</td>
<td>Clayey Sand, dark brown (10YR 3/3), loose, moist, micaceous [Native]</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
<td>Total Depth = 0.8 ft; terminated due to refusal on bedrock. Collected soil sample S001 at 11:20. Backfilled with soil cuttings.</td>
</tr>
<tr>
<td>2</td>
<td></td>
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<td>10</td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Est. % of Soil**

- **Gravel:** 70%
- **Coarse Sand:** 30%
- **Med. Sand:**
- **Fine Sand:**
- **Silt/Clay:**

**Comments:** Native soil and weeds at surface

**Soil Backfill Date:** 02-08-2010

**Backfill Time:** 11:40
**MWH**

**Boring ID: ILBS0341**

<table>
<thead>
<tr>
<th>Borehole Diam. (in.):</th>
<th>3</th>
<th>Total Depth (ft):</th>
<th>0.5</th>
</tr>
</thead>
</table>

**Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property**

<table>
<thead>
<tr>
<th>Northing (ft):</th>
<th>268301.66</th>
<th>Easting (ft):</th>
<th>179599.25</th>
</tr>
</thead>
</table>

**Job Number: 1008208 **

**Site: IEL-1**

<table>
<thead>
<tr>
<th>Drill Start Date:</th>
<th>07-27-2010</th>
<th>Start Time:</th>
<th>13:24</th>
</tr>
</thead>
</table>

**Logged By: V. Vathanasin**

**Reviewed By: M. Milman-Barris, P.G.**

<table>
<thead>
<tr>
<th>Drill Finish Date:</th>
<th>07-27-2010</th>
<th>Finish Time:</th>
<th>13:31</th>
</tr>
</thead>
</table>

**Drilling Contractor: B.L. Hall**

**Field Instrumentation: N/A**

<table>
<thead>
<tr>
<th>Depth 1st H₂O (ft):</th>
<th>N/A</th>
<th>Date / Time:</th>
<th>N/A</th>
</tr>
</thead>
</table>

**Drill Rig Type/Method: Hand Auger**

<table>
<thead>
<tr>
<th>Depth H₂O After Drilling (ft):</th>
<th>N/A</th>
<th>Date / Time:</th>
<th>N/A</th>
</tr>
</thead>
</table>

**Comments: Surface recently weed abated**

**Driller’s Name: M. Hoehn**

**Well Comp. Date: N/A**

**Completion Time: N/A**

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td></td>
<td>SM</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>Silty Sand, very pale brown (10YR 7/3), loose, dry, no odor or staining [Fill - Reworked Native Soil]</td>
<td>10 70 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>Sandstone [Chatsworth Formation]</td>
<td>Total Depth = 0.5 ft; refusal on bedrock.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td>2</td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 13:29.</td>
</tr>
<tr>
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<td></td>
<td>3</td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

**Soil Backfill Date: 07-27-2010**

**Backfill Time: 13:31**

**Soil Backfill Date: 07-27-2010**

**Comments:** Surface recently weed abated
**Borehole Diam. (in.):** 3
**Total Depth (ft):** 1.0

**Northing (ft):** 1794279.74
**Easting (ft):** 267893.91

**Drill Start Date:** 02-03-2010
**Start Time:** 10:13

**Drill Finish Date:** 02-03-2010
**Finish Time:** 10:30

**Logged By:** S. Aichner
**Reviewed By:** V. Vathanasin, P.G.

**Drilling Contractor:** B.L. Hall
**Drill Rig Type/Method:** Hand Auger

**Native soil at surface**

**Sample Interval (feet):** 0-1
**Sample Type:** 6-inch stainless steel sleeve

**Native soil at surface**

**Depth (feet):** 0

**USCS Soil Classification:** SM

**Description:** Silty Sand, brown (10YR 4/3), loose, moist, micaceous [Native]

**Depth (feet):** 1

**Description:** Sandstone, yellowish brown (10YR 5/4), weathered [Chatsworth Formation]

Total Depth = 1.0 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 10:20.

Backfilled with soil cuttings.
In small clearing, bare soil covered with loose rock and burnt rock debris

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
<th>Est. % of Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>SP</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Poorly Graded Sand, brown (10YR 5/3), dense, moist, abundant mica [Native]</td>
<td>5 10 40 40 5</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 0.5 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 14:04.

Backfilled with soil cuttings.
**LOG OF BORING OUTFALL 009-2009.GPJ  BOEING.GDT  5/4/10**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Water Level</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Est. % of Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>ML</td>
<td></td>
<td>Sandy Silt, light yellowish brown (10YR 6/4), stiff, dry, subangular sandstone gravel, low dry strength</td>
<td>tr tr 10 20 70</td>
</tr>
<tr>
<td>1</td>
<td></td>
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<tr>
<td>10</td>
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</tr>
</tbody>
</table>

**Boring ID: LFBS0245**

- **Easting (ft):** 1794219.74
- **Northing (ft):** 267826.02
- **Job Number:** 1891614
- **Drill Rig Type/Method:** Hand Trowel
- **Depth 1st H₂O (ft):** N/A
- **Total Depth (ft):** 0.5
- **Drill Start Date:** 07-14-2009
- **Drill Finish Date:** 07-14-2009
- **Date / Time:** N/A
- **Start Time:** 11:20
- **Finish Time:** 11:25
- **Logged By:** S. Valenzuela
- **Drilling Contractor:** B.L. Hall
- **Reviewed By:** M. Milman-Barris, P.G.
- **N/A**
- **Site:** LETF
- **Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
- **Driller's Name:** Ben Cisneros
- **Comments:** Outside (to W) of debris area, exposed soil with sparse vegetation at surface
- **Well Comp. Date:** N/A
- **Backfill Time:** 11:25
- **Backfill Date:** 07-14-2009
- **Sample Type:** Hand trowel (soil placed in stainless steel sleeve)
- **Sampler:** N/A
- **Return:** N/A
- **Blow Count/6”:** N/A
- **PID (ppm):** N/A
- **Log of Boring OUTFALL 009-2009.GPJ  BOEING.GDT  5/4/10**

**SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)**

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Site:** LETF

**Driller's Name:** Ben Cisneros

**Comments:** Outside (to W) of debris area, exposed soil with sparse vegetation at surface

**Well Comp. Date:** N/A

**Backfill Time:** 11:25

**Backfill Date:** 07-14-2009

**Sample Type:** Hand trowel (soil placed in stainless steel sleeve)

**Sampler:** N/A

**Return:** N/A

**Blow Count/6”:** N/A

**PID (ppm):** N/A

**Log of Boring OUTFALL 009-2009.GPJ  BOEING.GDT  5/4/10**
### Boring ID: LFBS0246

**Borehole Diam. (in.):** 6  
**Total Depth (ft):** 0.5  
**Northing (ft):** 267822.12  
**Easting (ft):** 1794296.38

**Drill Start Date:** 07-14-2009  
**Drill Finish Date:** 07-14-2009  
**Logged By:** S. Valenzuela  
**Drilling Contractor:** B.L. Hall

**Date / Time:** N/A  
**Finish Time:** 11:40  
**Hand Trowel:** Hand Trowel  
**Review Date:** N/A  
**Drill Rig Type/Method:** Hand Trowel

**Job Number:** 1891614  
**Site:** LETF  
**Comments:** Outside (to SE) of debris area, exposed soil with sparse vegetation at surface

**Well Comp. Date:** N/A  
**Completion Time:** N/A  
**Soil Backfill Date:** 07-14-2009  
**Backfill Time:** 11:40

**Driller's Name:** Ben Cisneros  
**Field Instrumentation:** N/A  
**Logged By:** M. Milman-Barris, P.G.

**Sample Interval Retained:** 2  
**Sample Type:** Hand trowel (soil placed in stainless steel sleeve)  
**Sample Interval:** 2  
**Sample Type:** N/A  
**Sample Interval:** N/A

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>SM</th>
<th>Silty Sand, light yellowish brown (10YR 6/4), medium dense, dry</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>Total Depth = 0.5 ft; terminated prior to refusal on bedrock.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Collected soil sample S001.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Backfilled with native soil.</td>
</tr>
</tbody>
</table>

**Sample Interval:** 2  
**Sample Type:** Hand trowel (soil placed in stainless steel sleeve)  
**Field Instrumentation:** N/A  
**Logged By:** M. Milman-Barris, P.G.

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)  
**Drill Rig Type/Method:** Hand Trowel  
**Review Date:** N/A  
**Driller's Name:** Ben Cisneros

**Borehole Diam. (in.):** 6  
**Total Depth (ft):** 0.5  
**Northing (ft):** 267822.12  
**Easting (ft):** 1794296.38

**Drill Start Date:** 07-14-2009  
**Drill Finish Date:** 07-14-2009  
**Logged By:** S. Valenzuela  
**Drilling Contractor:** B.L. Hall

**Date / Time:** N/A  
**Finish Time:** 11:40  
**Hand Trowel:** Hand Trowel  
**Review Date:** N/A  
**Drill Rig Type/Method:** Hand Trowel

**Job Number:** 1891614  
**Site:** LETF  
**Comments:** Outside (to SE) of debris area, exposed soil with sparse vegetation at surface

**Well Comp. Date:** N/A  
**Completion Time:** N/A  
**Soil Backfill Date:** 07-14-2009  
**Backfill Time:** 11:40

**Driller's Name:** Ben Cisneros  
**Field Instrumentation:** N/A  
**Logged By:** M. Milman-Barris, P.G.

**Sample Interval Retained:** 2  
**Sample Type:** Hand trowel (soil placed in stainless steel sleeve)  
**Field Instrumentation:** N/A  
**Logged By:** M. Milman-Barris, P.G.

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>SM</th>
<th>Silty Sand, light yellowish brown (10YR 6/4), medium dense, dry</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>Total Depth = 0.5 ft; terminated prior to refusal on bedrock.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Collected soil sample S001.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Backfilled with native soil.</td>
</tr>
</tbody>
</table>

**Sample Interval:** 2  
**Sample Type:** Hand trowel (soil placed in stainless steel sleeve)  
**Field Instrumentation:** N/A  
**Logged By:** M. Milman-Barris, P.G.

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)  
**Drill Rig Type/Method:** Hand Trowel  
**Review Date:** N/A  
**Driller's Name:** Ben Cisneros
Borehole Diam. (in.): 2-1/4
Total Depth (ft): 3.5

Northing (ft): 1794293.09
Easting (ft): 267823.83

Drill Start Date: 02-02-2010
Start Time: 12:18

Logged By: A. Ruotolo
Reviewed By: V. Vathanasin, P.G.

Field Instrumentation: PID

Comments: Flat area, some dried vegetation at surface

Samplers: Macrocore, discrete samples retained in 6-inch stainless steel sleeve

Total Depth = 3.5 ft; terminated due to refusal on bedrock.
Collected soil samples S001 at 12:22 and S002 at 12:24.
Backfilled with soil cuttings.

McKee, C., A. Ruotolo, V. Vathanasin

Boring ID: LFBS0246A
Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
Job Number: 1008208
Site: A1LF-2 (Southern Drainage)

Drill Rig Type/Method: Geoprobe/Direct Push

Depth 1st H2O (ft): N/A
Date / Time: N/A

Depth H2O After Drilling (ft): N/A
Date / Time: N/A

Depth 1st H2O (ft): N/A
Date / Time: N/A

Driller's Name: E. Herrera / D. Hawkins

Well Comp. Date: N/A
Completion Time: N/A

Soil Backfill Date: 02-02-2010
Backfill Time: 12:47

USCS Soil Classification

Gravel
Coarse Sand
Med. Sand
Fine Sand
Silt/Clay

Est. % of Soil

Gravel
15
40
40
5

Coarse Sand

Med. Sand

Fine Sand

Silt/Clay

Poorly Graded Sand, dark yellowish brown (10YR 4/4), medium dense, moist, contains trace gravel-size sandstone fragments, mica [Native]
becomes very dark brown (10YR 2/2)
becomes wet

Sandstone, light yellowish brown (10YR 6/4), slightly weathered, contains quartz, feldspar, and mica [Chatsworth Formation]
Total Depth = 3.5 ft; terminated due to refusal on bedrock.
Collected soil samples S001 at 12:22 and S002 at 12:24.
Backfilled with soil cuttings.

Sheet 1 of 1
**Boring ID: LFBS0263**

<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Sample Type</th>
<th>Sample Recovery (%)</th>
<th>Blow Count (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, dark brown (7.5YR 3/2), loose, moist, fine angular to rounded sandstone gravel to 1/4 inch dia., contains rootlets [Native]</td>
<td>10 10 10 30 40</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
<td>Total Depth = 0.5 ft; terminated due to refusal on bedrock.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 12:30.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
</tr>
</tbody>
</table>

**Comments:** Grassy surface in center of drainage

**Fields:**
- **Site:** A1LF-2 (Southern Drainage)
- **Logged By:** B. Martasin, P.G.
- **Reviewed By:** V. Vathanasin, P.G.
- **Date / Time:** 02-02-2010 12:32
- **Drill Rig Type/Method:** Hand Auger
- **Driller's Name:** M. Hoehn
- **Well Comp. Date:** N/A
- **Completion Time:** N/A
- **Soil Backfill Date:** 02-02-2010
- **Backfill Time:** 12:35

**Driller's Name:** M. Hoehn

**Sample Type:** 6-inch stainless steel sleeve

**Drill Rig Type/Method:** Hand Auger

**Driller's Name:** M. Hoehn

**Well Comp. Date:** N/A

**Completion Time:** N/A

**Soil Backfill Date:** 02-02-2010

**Backfill Time:** 12:35
Borehole Diam. (in.): 3  
Total Depth (ft): 2.0 
Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area) 

Northing (ft): 1794255.76  
Easting (ft): 268032.11  
Job Number: 1008208  
Site: A1LF-2 (Southern Drainage) 

Drill Start Date: 02-04-2010  
Start Time: 10:35  
Logged By: S. Aichner  
Reviewed By: V. Vathanasin, P.G. 

Drill Finish Date: 02-04-2010  
Finish Time: 10:45  
Drilling Contractor: B.L. Hall  
Field Instrumentation: PID 

Depth 1st H2O (ft): N/A  
Date / Time: N/A  
Logged By:  
Reviewed By: 

Depth H2O After Drilling (ft): N/A  
Date / Time: N/A  
Driller's Name: M. Hoehn  

Comments: Native soil and vegetation at surface  
Well Comp. Date: N/A  
Completion Time: N/A 

Samplers: 6-inch stainless steel sleeve  
Soil Backfill Date: 02-04-2010  
Backfill Time: 10:45 

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Retained Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, dark brown (10YR 3/3), loose, moist, contains trace fine gravel-size sandstone fragments, trace clay, micaceous [Native]</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gravel</td>
<td>tr</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Coarse Sand</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Med. Sand</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fine Sand</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silt/Clay</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 2.0 ft; terminated due to refusal on bedrock. 
Collected soil sample S001 at 10:37. 
Backfilled with soil cuttings.
**Boring ID:** LFBS0265

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Site:** A1LF-2 (Southern Drainage)

---

<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Sample Type Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, dark brown (10YR 3/3), loose, moist, contains trace fine gravel-size sandstone fragments, trace clay, micaceous [Native]</td>
<td>tr</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, yellowish brown (10YR 5/6), weathered, friable [Chatsworth Formation]</td>
<td>Total Depth = 1.0 ft; terminated due to refusal on bedrock. Collected soil sample S001 at 10:54. Backfilled with soil cuttings.</td>
<td>tr</td>
</tr>
</tbody>
</table>

---

**Native soil and vegetation at surface**

Native soil and vegetation at surface

**Sample Type**

- 6-inch stainless steel sleeve

**Notes**

- Backfilled with soil cuttings.
<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Retained Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
<th>Est. % of Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, dark brown (10YR 3/3), loose, moist, contains trace fine gravel-size sandstone fragments, trace clay, micaceous [Native]</td>
<td>tr 60 40</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, yellowish brown (10YR 5/6), weathered [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td>Total Depth (ft): 3.0; terminated due to refusal on bedrock.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collected soil sample S001 at 11:10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backfilled with soil cuttings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Description

- **Silty Sand, dark brown (10YR 3/3), loose, moist, contains trace fine gravel-size sandstone fragments, micaceous [Native]**
- **Sandstone, yellowish brown (10YR 5/6), weathered [Chatsworth Formation]**
- Total Depth = 0.8 ft; terminated due to refusal on bedrock.
- Collected soil sample S001 at 08:30.
- Backfilled with soil cuttings.
SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
Job Number: 1008208
Site: A1LF-2 (Southern Drainage)

Logged By: S. Aichner
Reviewed By: V. Vathanasin, P.G.

Depth 1st H₂O (ft): N/A
Date / Time: 02-04-2010
Finish Time: 09:15
Drill Rig Type/Method: Hand Auger

Drill Start Date: 02-04-2010
Start Time: 08:33
Drilling Contractor: B.L. Hall
Field Instrumentation: PID

Drill Finish Date: 02-04-2010
Finish Time: 09:15

Depth H₂O After Drilling (ft): N/A
Date / Time: N/A
Driller's Name: M. Hoehn

Comments: Native soil and vegetation at surface

Boring ID: LFBS0268

Well Comp. Date: N/A
Completion Time: N/A

Sample Interval Retained:
Sample Type:
Recovery (%): S 0.0
Blow Count/6”:
PID (ppm): 0

Easting (ft): 267954.87
Northing (ft): 1794275.33

Hand Auger

Native soil and vegetation at surface

6-inch stainless steel sleeve

Profiles:

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>USCS Soil Classifications</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>SM</td>
<td>Silty Sand, very dark grayish brown (10YR 3/2), loose, moist, contains trace gravel-size angular sandstone fragments, micaceous [Native]</td>
</tr>
<tr>
<td>4.0</td>
<td>SC</td>
<td>Clayey Sand, dark yellowish brown (10YR 4/4), wet, trace gravel-size sandstone fragments, micaceous [Native]</td>
</tr>
</tbody>
</table>

Total Depth = 4.5 ft; terminated due to water infiltration. Stepped out and augered a second boring to collect sample at 3.5-4.0 ft.

Collected soil sample S001 at 08:40. Collected soil sample S002 from 3.5-4.0 ft in step-out boring at 09:10.

Backfilled both borings with soil cuttings.

Graphic Log

Est. % of Soil

Gravel
Med. Sand
Fine Sand
Silt/Clay

40
60
70
30
**Boring ID: LFBS0269**

- **Borehole Diam. (in.):** 3
- **Total Depth (ft):** 5.3

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Northing (ft):** 1794280.38  
**Easting (ft):** 267958.32

**Job Number:** 1008208  
**Site:** A1LF-2 (Southern Drainage)

**Drill Start Date:** 02-04-2010  
**Start Time:** 09:18

**Logged By:** S. Aichner  
**Reviewed By:** V. Vathanasin, P.G.

**Drill Finish Date:** 02-04-2010  
**Finish Time:** 09:45

**Drilling Contractor:** B.L. Hall  
**Field Instrumentation:** PID

**Depth 1st H₂O (ft):** N/A  
**Date / Time:** N/A

**Depth H₂O After Drilling (ft):** N/A  
**Date / Time:** N/A

**Driller’s Name:** M. Hoehn

**Comments:** Native soil and vegetation at surface

**Samplers:** 6-inch stainless steel sleeve

**Easting (ft):** 267958.32  
**Start Time:** 09:18

**Job Number:** 1008208  
**Site:** A1LF-2 (Southern Drainage)

**Drill Rig Type/Method:** Hand Auger

**Date / Time:** N/A  
**Date / Time:** N/A

**Driller’s Name:** M. Hoehn

**Comments:** Native soil and vegetation at surface

**Samplers:** 6-inch stainless steel sleeve

**Northing (ft):** 1794280.38  
**Start Time:** 09:18

**Job Number:** 1008208  
**Site:** A1LF-2 (Southern Drainage)

**Drill Rig Type/Method:** Hand Auger

**Date / Time:** N/A  
**Date / Time:** N/A

**Driller’s Name:** M. Hoehn

**Comments:** Native soil and vegetation at surface

**Samplers:** 6-inch stainless steel sleeve

**Start Time:** 09:18  
**Finish Time:** 09:45

**Comments:** Native soil and vegetation at surface

**Samplers:** 6-inch stainless steel sleeve

**Well Comp. Date:** N/A  
**Completion Time:** N/A

**Soil Backfill Date:** 02-04-2010  
**Backfill Time:** 09:45

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0</td>
<td>Graphic Log</td>
<td>SM</td>
<td>Silty Sand, dark brown (10YR 3/3), loose, moist, contains trace fine gravel-size angular sandstone gravel, micaceous [Native]</td>
</tr>
<tr>
<td>5</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>5</td>
<td>Graphic Log</td>
<td>S</td>
<td>becomes dark yellowish brown (10YR 4/4)</td>
</tr>
</tbody>
</table>

**Native soil and vegetation at surface**

- **Water Level:** Med. Sand
- **Water Level:** Fine Sand
- **Water Level:** Silt/Clay
- **Water Level:** Coarse Sand
- **Water Level:** Gravel

- **Depth (feet):** 5.3
- **Total Depth:** 5.3 ft; terminated due to refusal on bedrock.

Collected soil samples S001 at 09:19 and S002 at 09:30.

Backfilled with soil cuttings.
<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>S</td>
<td>6-inch stainless steel sleeve</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Silty Sand, very dark grayish brown (10YR 3/2), loose, moist, trace clay, micaceous [Native]</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td></td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Sandstone, yellowish brown (10YR 5/6), weathered [Chatsworth Formation]</td>
<td>Total Depth = 1.0 ft; terminated due to refusal on bedrock. Collected soil sample S001 at 09:58. Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

**Comments:** Native soil and vegetation at surface
**LOG OF BORING OUTFALL009.GPJ  BOEING.GDT  2/25/10**

### Sample Interval Retained

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, very dark grayish brown (10YR 3/2), loose, moist, trace clay, micaceous [Native]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, yellowish brown (10YR 5/6), weathered [Chatsworth Formation]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 1.0 ft; terminated due to refusal on bedrock.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 10:20.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

### Details

- **Boring ID:** LFBS0271
- **Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
- **Job Number:** 1008208
- **Site:** A1LF-2 (Southern Drainage)
- **Logged By:** S. Aichner
- **Reviewed By:** V. Vathanasin, P.G.
- **Drilling Contractor:** B.L. Hall
- **Driller's Name:** M. Hoehn

### Comments

- **Native soil and vegetation at surface**
- **6-inch stainless steel sleeve**
- **Well Comp. Date:** N/A
- **Completion Time:** N/A

### Soil Backfill Date

- **02-04-2010**
- **Backfill Time:** 10:25

### Soil Backfill

<table>
<thead>
<tr>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Details

- **Easting (ft):** 267942.73
- **Northing (ft):** 1794258.06
- **Drill Finish Date:** 02-04-2010
- **Date / Time:** N/A
- **PID:** N/A
- **Drill Rig Type/Method:** Hand Auger
- **Date / Time:** N/A
- **PID (ppm):** N/A
- **Blow Count/6":** N/A
- **Recovery (%):** N/A
- **Field Instrumentation:** PID

---

This log provides a detailed record of the boring process, including soil samples, depths, and conditions encountered during the drilling process.
**LOG OF BORING OUTFALL009.GPJ  BOEING.GDT  2/25/10**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Retained Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>PID (ppm)</th>
<th>Water Level (feet)</th>
<th>USCS Soil Classification</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/6), loose, moist, micaceous [Native]</td>
<td>70 30</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, light yellowish brown (10YR 6/4), weathered, friable [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 0.5 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 09:40.

Backfilled with soil cuttings.

**Comments:** Native soil at surface

**Site:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Drilling Contractor:** B.L. Hall

**Driller’s Name:** M. Hoehn

**Reviewed By:** V. Vathanasin, P.G.

**Logged By:** S. Aichner

**PID (ppm): N/A**

**Date / Time:** 09:40

**Start Time:** 09:30

**Finish Time:** 09:40

**Date / Time:** 02-03-2010

**Start Date:** 02-03-2010

**Finish Date:** 02-03-2010

**Depth 1st H2O (ft): N/A**

**Depth H2O After Drilling (ft): N/A**

**Boring ID:** LFBS0272

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Job Number:** 1008208

**Site:** A1LF-2 (Southern Drainage)

**Drill Rig Type/Method:** Hand Auger

**Field Instrumentation:** PID

**Comments:** Native soil at surface
**Boring ID: LFBS0273**

- **Borehole Diam. (in.):** 3
- **Total Depth (ft):** 1.0
- **NORTHING (ft):** 1794284.48
- **EASTING (ft):** 267890.64
- **Drill Start Date:** 02-03-2010
- **Start Time:** 09:43
- **Logged By:** S. Aichner
- **Job Number:** 1008208
- **Drill Finish Date:** 02-03-2010
- **Finish Time:** 09:55
- **Logged By:** S. Aichner
- **Logged By:** V. Vathanasin, P.G.
- **Drilling Contractor:** B.L. Hall
- **Drill Rig Type/Method:** Hand Auger
- **Driller’s Name:** M. Hoehn
- **Time:** N/A
- **Date / Time:** N/A
- **Water Level:** N/A
- **Sample Interval:** N/A
- **Sample Type:** 6-inch stainless steel sleeve

### Soil Log

<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, yellowish brown (10YR 5/4), loose, moist, trace clay, micaceous [Native]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), weathered [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

- **Total Depth:** 1.0 ft; terminated due to refusal on bedrock.
- **Collected soil sample S001 at 09:50.**
- **Backfilled with soil cuttings.**

---

**Comments:** Native soil at surface

- **Well Comp. Date:** N/A
- **Completion Time:** N/A
- **Backfill Time:** 09:55
- **Soil Backfill Date:** 02-03-2010
- **Backfill Time:** 09:55
- **Comments:** Native soil at surface

---

**Sample Interval (feet):**

<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, yellowish brown (10YR 5/4), loose, moist, trace clay, micaceous [Native]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), weathered [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

- **Total Depth:** 1.0 ft; terminated due to refusal on bedrock.
- **Collected soil sample S001 at 09:50.**
- **Backfilled with soil cuttings.**

---

**Sample Interval (feet):**

<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, yellowish brown (10YR 5/4), loose, moist, trace clay, micaceous [Native]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), weathered [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

- **Total Depth:** 1.0 ft; terminated due to refusal on bedrock.
- **Collected soil sample S001 at 09:50.**
- **Backfilled with soil cuttings.**
**Boring ID: LFBS0274**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>S</td>
<td>0.0</td>
<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), loose, moist, micaceous [Native]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 1.5 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 10:05.

Backfilled with soil cuttings.
**Boring ID: LFBS0276**

**Borehole Diam. (in.):** 3  
**Total Depth (ft):** 1.5  
**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Northing (ft):** 1794256.05  
**Easting (ft):** 267864.53  
**Job Number:** 1008208  
**Site:** A1LF-2 (Southern Drainage)

**Drill Start Date:** 02-03-2010  
**Start Time:** 08:12  
**Logged By:** S. Aichner  
**Reviewed By:** V. Vathanasin, P.G.

**Drill Finish Date:** 02-03-2010  
**Finish Time:** 08:40  
**Drilling Contractor:** B.L. Hall  
**Field Instrumentation:** PID

**Depth 1st H2O (ft):** N/A  
**Date / Time:** N/A  
**Drill Rig Type/Method:** Hand Auger

**Depth H2O After Drilling (ft):** N/A  
**Date / Time:** N/A  
**Driller’s Name:** M. Hoehn

**Comments:** Native soil at surface

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Sample Recovery (%)</th>
<th>Blow Count/6”</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
<th>Est. % of Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), loose, moist, micaceous [Native]</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/8), weathered [Chatsworth Formation]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>Total Depth = 1.5 ft; terminated due to refusal on bedrock.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td>Collected soil samples S001 and S001SP at 08:30.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>6</td>
<td></td>
<td></td>
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<td>7</td>
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<td>7</td>
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</tr>
<tr>
<td>9</td>
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<td>9</td>
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</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:** Native soil at surface

**Well Comp. Date:** N/A  
**Completion Time:** N/A

**Samplers:** 6-inch stainless steel sleeve

**Soil Backfill Date:** 02-03-2010  
**Backfill Time:** 08:40
**Boring ID: LFBS0277**

**Site:** A1LF-2 (Southern Drainage)

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.1</td>
<td>N/A</td>
<td>N/A</td>
<td>0</td>
<td>1</td>
<td>Silty Sand, yellowish brown (10YR 5/6), loose, moist, micaceous [Native]</td>
<td></td>
</tr>
</tbody>
</table>

- Sandstone, brownish yellow (10YR 6/6), weathered, friable [Chatsworth Formation]
- Total Depth = 0.5 ft; terminated due to refusal on bedrock.
- Collected soil sample S001 at 09:12.

Backfilled with soil cuttings.

**Comments:** Native soil at surface
<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>SP</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0</td>
<td>SP</td>
<td>Poorly Graded Sand, dark brown (10YR 3/3), medium dense, moist, contains trace gravel-size sandstone fragments, mica [Native]</td>
</tr>
<tr>
<td>1-2</td>
<td>SC</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>SC</td>
<td>Clayey Sand, dark grayish brown (10YR 4/2), dense, moist, medium plasticity clay, mica present [Native]</td>
</tr>
<tr>
<td>2-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>significant decrease in clay content</td>
</tr>
<tr>
<td>3-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td>Sandstone, pale yellow (2.5Y 7/4), moderately weathered, slightly friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td>Total Depth = 4.0 ft; terminated due to refusal on bedrock.</td>
</tr>
</tbody>
</table>

Collected soil sample S001 at 09:09.
Backfilled with soil cuttings.
**Boring ID:** LFBS0281  
**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)  
**Site:** A1LF-2 (Southern Drainage)  
**Job Number:** 1008208  
**Logged By:** A. Ruotolo  
**Reviewed By:** V. Vathanasin, P.G.  
**Drill Rig Type/Method:** Geoprobe/Direct Push  
**Field Instrumentation:** PID  
**Drilling Contractor:** Strongarm  
**Driller’s Name:** E. Herrera / D. Hawkins  

**Comments:** Surface covered with gravel road base (1-2 in.), removed prior to drilling. Collected soil samples S001 at 13:23 and S002 at 13:24. Backfilled with soil cuttings.

**Macrocore, discrete samples retained in 6-inch stainless steel sleeve**

**Soil Backfill Date:** 02-02-2010  
**Backfill Time:** 13:31

<table>
<thead>
<tr>
<th>Sample Interval Retained (Sample Type)</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 ft</td>
<td>S</td>
<td>0.0</td>
<td>0.0</td>
<td>SW</td>
<td>Well Graded Sand, yellowish brown (10YR 5/6), medium dense, moist, mica present [Native]</td>
<td>20</td>
<td>40</td>
<td>35</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>1-2 ft</td>
<td>S</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), highly weathered, friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 3.5 ft; terminated due to refusal on bedrock.


Backfilled with soil cuttings.
### borehole Details

**Borehole Diam. (in.):** 2-1/4  
**Total Depth (ft):** 5.5  
**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Northing (ft):** 1794246.82  
**Easting (ft):** 267854.85  
**Job Number:** 1008208  
**Site:** A1LF-2 (Southern Drainage)

**Drill Start Date:** 02-03-2010  
**Start Time:** 08:06  
**Logged By:** A. Ruotolo  
**Reviewed By:** V. Vathanasin, P.G.

**Drill Finish Date:** 02-03-2010  
**Finish Time:** 08:13  
**Drilling Contractor:** Strongarm  
**Field Instrumentation:** PID

**Depth 1st H2O (ft):** N/A  
**Date / Time:** N/A  
**Drill Rig Type/Method:** Geoprobe/Direct Push

**Depth H2O After Drilling (ft):** N/A  
**Date / Time:** N/A  
**Driller’s Name:** E. Herrera / D. Hawkins

**Comments:** Targeting small metal debris pile, debris scraped away prior to drilling

**Well Comp. Date:** N/A  
**Completion Time:** N/A

**Samplers:** Macrocore, discrete samples retained in 6-inch stainless steel sleeve  
**Soil Backfill Date:** 02-03-2010  
**Backfill Time:** 08:25

### Soil Classification

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, mica present [Native]</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>SP</td>
<td>0.0</td>
<td></td>
<td></td>
<td>4</td>
<td>SP</td>
<td>Poorly Graded Sand, brownish yellow (10YR 6/6), dense, dry, mica present [Native]</td>
<td></td>
</tr>
</tbody>
</table>

**Est. % of Soil**

<table>
<thead>
<tr>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silty Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>30</td>
<td>40</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Total Depth = 5.5 ft; terminated due to refusal on bedrock.

Collected soil samples S001 at 08:07 and S002 at 08:13.

Backfilled with soil cuttings.
<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.1</td>
<td>0.1</td>
<td>SP</td>
<td>0</td>
<td>1</td>
<td>Poorly Graded Sand, light brownish gray (10YR 6/2), loose, dry, resembles &quot;beach sand&quot; (fine to medium grains), contains burnt black debris [Fill]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>S</td>
<td>0.1</td>
<td>0.1</td>
<td>SM</td>
<td>1</td>
<td>2</td>
<td>Silty Sand, yellowish brown (10YR 5/4), loose, moist, micaceous [Native]</td>
<td>60 40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), weathered [Chatsworth Formation]</td>
<td>/ Total Depth = 1.5 ft; terminated due to refusal on bedrock.</td>
</tr>
</tbody>
</table>

Collected soil samples S001 (grab sample that includes pieces of black debris) at 13:18 and S002 at 13:23.

Backfilled with soil cuttings.

Comments: Sandy fill and black debris at surface

Well Comp. Date: N/A

Completion Time: N/A

Sandy fill and black debris at surface

6-inch stainless steel sleeve

Soil Backfill Date: 02-03-2010

Backfill Time: 13:30
## Boring ID: LFBS0284

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.4</td>
<td>1</td>
<td></td>
<td></td>
<td>Silty Sand, yellowish brown (10YR 5/4), loose, moist, micaceous [Native]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), weathered [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

- Total Depth = 0.8 ft; terminated due to refusal on bedrock.
- Collected soil sample S001 at 13:43.
- Backfilled with soil cuttings.

### Comments
- Native soil and vegetation at surface
- 6-inch stainless steel sleeve
- Well Comp. Date: N/A
- Completion Time: N/A
- Soil Backfill Date: 02-03-2010
- Backfill Time: 13:51

### Project Details
- SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
- Job Number: 1008208
- Site: A1LF-2 (Southern Drainage)
- Loggers: S. Aichner, Reviewed By: V. Vathanasin, P.G.
- Driller's Name: M. Hoehn

### Soil and Vegetation Details
- Native soil and vegetation at surface
- 6-inch stainless steel sleeve
**Boring ID: LFBS0285**

- **Borehole Diam. (in.):** 3
- **Total Depth (ft):** 0.3
- **Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
- **North (ft):** 1794327.95
- **East (ft):** 267902.25
- **Job Number:** 1008208
- **Site:** A1LF-2 (Southern Drainage)
- **Drill Start Date:** 02-03-2010
- **Start Time:** 13:53
- **Logged By:** S. Aichner
- **Drill Finish Date:** 02-03-2010
- **Finish Time:** 14:10
- **Drilling Contractor:** B.L. Hall
- **Reviewed By:** V. Vathamasin, P.G.
- **Logged By:** S. Aichner
- **Reviewed By:** V. Vathamasin, P.G.

**Comments:** Native soil and vegetation at surface

**Sample Interval**: 6-inch stainless steel sleeve

<table>
<thead>
<tr>
<th>Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, dark brown (10YR 3/3), loose, moist, micaceous, roots [Native]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>/sandstone, yellowish brown (10YR 5/6), weathered [Chatsworth Formation]</td>
</tr>
</tbody>
</table>

- **PID:** N/A
- **Date / Time:** N/A
- **Depth H2O After Drilling (ft):** N/A
- **Date / Time:** N/A
- **Driller’s Name:** M. Hoehn

**Date / Time:** N/A

**Comments:** Collected soil sample S001 at 13:58; several step-outs required to obtain sample volume.

**Backfilled with soil cuttings.**

**Native soil and vegetation at surface**

**Well Comp. Date:** N/A

**Completion Time:** N/A

**Soil Backfill Date:** 02-03-2010

**Backfill Time:** 14:10

**Drill Rig Type/Method:** Hand Auger

**Field Instrumentation:** PID

**Notes:**

- **Native soil and vegetation at surface**
- **6-inch stainless steel sleeve**
- **Backfilled with soil cuttings.**
**Boring ID: LFBS0286**

**Borehole Diam. (in.):** 2-1/4  
**Total Depth (ft):** 2.5  
**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Nothing (ft):** 1794305.65  
**Easting (ft):** 267812.65  
**Job Number:** 1008208  
**Site:** A1LF-2 (Southern Drainage)

**Drill Start Date:** 02-02-2010  
**Start Time:** 10:42  
**Logged By:** A. Ruotolo  
**Reviewed By:** V. Vathanasin, P.G.

**Drill Finish Date:** 02-02-2010  
**Finish Time:** 10:49  
**Drilling Contractor:** Strongarm  
**Field Instrumentation:** PID

**Depth 1st H₂O (ft):** N/A  
**Date / Time:** N/A  
**Drill Rig Type/Method:** Geoprobe/Direct Push

**Depth H₂O After Drilling (ft):** N/A  
**Date / Time:** N/A  
**Logged By:** E. Herrera / D. Hawkins

**Comments:** Just NW of open end of old metal pipeline, surrounded by fresh grass

**Sample Interval Retained:** Macrocore, discrete sample retained in 6-inch stainless steel sleeve

**Well Comp. Date:** N/A  
**Completion Time:** N/A

**Soil Backfill Date:** 02-02-2010  
**Backfill Time:** 10:58

---

### Sample Log

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SP</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand</td>
<td>dark brown (10YR 3/3), medium dense, moist, mica present [Native]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>charred vegetation debris</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes yellowish brown (10YR 5/6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes dark yellowish brown (10YR 4/4), wet</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), highly weathered, friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 2.5 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 10:49.

Backfilled with soil cuttings.
**Boring ID: LFBS0287**

<table>
<thead>
<tr>
<th>Sample Interval Retained (ft)</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>S</td>
<td>10</td>
<td>0</td>
<td>SP</td>
<td>0</td>
<td>Poorly Graded Sand, dark brown (10YR 3/3), medium dense, moist, mica present [Native]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes wet</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes brownish yellow (10YR 6/6), iron oxidation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), highly weathered, friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 2.5 ft; terminated due to refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 12:56.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**
Approx. 2 to 3 ft from rock outcrop, fresh grass at surface

**Soil Backfill Date:** 02-02-2010
**Backfill Time:** 13:12

**Sample Date:** 02-02-2010
**Drill Start Date:** 02-02-2010
**Drill Finish Date:** 02-02-2010

**GeoProbe/Direct Push**

**Field Instrumentation:**

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Well Comp. Date:** N/A
**Completion Time:** N/A
### LOG OF BORING OUTFALL009.GPJ  BOEING.GDT  2/25/10

**LOG OF BORING OUTFALL009.GPJ  BOEING.GDT  2/25/10**

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Graphic Log</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SM</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>Silty Sand, dark brown (10YR 3/3), dense, moist, contains few rootlets, mica present [Native]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>Poorly Graded Sand, yellowish brown (10YR 5/6), medium dense, moist, abundant mica present [Native]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**
- On relatively flat surface sparsely covered with fresh grass
- Macrocore, discrete samples retained in 6-inch stainless steel sleeve

**Est. % of Soil**
- Gravel: 10
- Coarse Sand: 30
- Med. Sand: 40
- Fine Sand: 20
- Silty Clay: 10

**Soil Descriptions:**
- Poorly Graded Sand, yellowish brown (10YR 5/6), highly weathered, friable, contains quartz, feldspar, and mica, iron oxidation [Chatsworth Formation]
- Sandstone, brownish yellow (10YR 6/6), highly weathered, friable, contains quartz, feldspar, and mica, iron oxidation [Chatsworth Formation]

**Total Depth = 3.0 ft; terminated due to refusal on bedrock.**

- Collected soil samples S001 at 10:18 and S002 at 10:20.
- Backfilled with soil cuttings.
### Boring ID: LFBS0289

- **Borehole Diam. (in.):** 2-1/4
- **Total Depth (ft):** 2.0
- **Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
- **Job Number:** 1008208
- **Site:** A1LF-2 (Southern Drainage)

#### Logs

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td>Silty Sand, dark brown (10YR 3/3), medium dense, moist, contains roots and rootlets in first few inches, mica present [Native]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SW</td>
<td></td>
<td></td>
<td></td>
<td>Well Graded Sand, yellowish brown (10YR 5/6), medium dense, moist, abundant mica present [Native]</td>
<td></td>
</tr>
</tbody>
</table>

- **Sandstone, yellowish brown (10YR 5/6), highly weathered, friable, contains quartz, feldspar, and mica, iron oxidation [Chatsworth Formation]**
- **Total Depth = 2.0 ft; terminated due to refusal on bedrock.**
- **Collected soil sample S001 at 09:54.**
- **Backfilled with soil cuttings.**

#### Site Information

- **Northing (ft):** 1794333.25
- **Easting (ft):** 267840.94
- **Drill Start Date:** 02-02-2010
- **Start Time:** 09:49
- **Drill Finish Date:** 02-02-2010
- **Finish Time:** 09:57
- **Drilling Contractor:** Geoprobe/Direct Push
- **Well Comp. Date:** N/A
- **Completion Time:** N/A
- **Comments:** Dried and fresh grass at surface
- **Sample Type:** Macrocore, discrete sample retained in 6-inch stainless steel sleeve
- **Soil Backfill Date:** 02-02-2010
- **Backfill Time:** 10:10

#### QC Information

- **E. Herrera / D. Hawkins**
Boring ID: LFBS0290

Borehole Diam. (in.): 2-1/4  Total Depth (ft): 3.0  Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
Northing (ft): 1794326.82  Easting (ft): 267856.03  Job Number: 1008208  Site: A1LF-2 (Southern Drainage)
Drill Start Date: 02-02-2010  Start Time: 08:54  Logged By: A. Ruotolo  Reviewed By: V. Vathanasin, P.G.
Drill Finish Date: 02-02-2010  Finish Time: 08:59  Drilling Contractor: Strongarm  Field Instrumentation: PID

Comments: Fresh grass at surface

Depth 1st H2O (ft): N/A  Date / Time: N/A  Driller's Name: E. Herrera / D. Hawkins
Depth H2O After Drilling (ft): N/A  Date / Time: N/A

Sample Interval Retained  Sample Type  Recovery (%)  Blow Count/6"
0 0 0.0  SP-SM

Depth (feet)  Graphic Log  Water Level  USCS Soil Classification  Description
0  0  0.0  1  Poorly Graded Sand with Silt, yellowish brown (10YR 5/4), dense, moist, mica present [Native]

Very dark brown (10YR 2/2)

Sandstone [Chatsworth Formation]

Total Depth = 3.0 ft; terminated due to refusal on bedrock.
Collected soil samples S001 at 08:54 and S002 at 08:59.
Backfilled with soil cuttings.

PID (ppm)  Est. % of Soil
Gravel  5 15 40 30 10
Coarse Sand  Med. Sand  Fine Sand  Silt/Clay

Retained  Sample Type  Blow Count/6"  Recovery (%)  Graphic Log  USCS Soil Classification  Description
2-1/4 3.0 0.0  SP-SM  Poorly Graded Sand with Silt, yellowish brown (10YR 5/4), dense, moist, mica present [Native]

Very dark brown (10YR 2/2)

Sandstone [Chatsworth Formation]

Total Depth = 3.0 ft; terminated due to refusal on bedrock.
Collected soil samples S001 at 08:54 and S002 at 08:59.
Backfilled with soil cuttings.
**Boring ID: LFBS0291**

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
**Job Number:** 1008208
**Site:** A1LF-2 (Southern Drainage)

**Survey Points:**
- **Northing:** 1794344.05
- **Easting:** 267860.32

**Drill Dates:**
- **Start Date:** 02-02-2010
- **Finish Date:** 02-02-2010
- **Start Time:** 09:20
- **Finish Time:** 09:28

**Drilling Contractor:** Strongarm
**Field Instrumentation:** PID

**Drill Rig Type/Method:** Geoprobe/Direct Push

**Comments:**
- Dead and fresh grass-covered surface surrounded by rock outcrops
- Total Depth = 2.5 ft; terminated due to refusal on bedrock.
- Collected soil sample S001 at 09:24.
- Backfilled with soil cuttings.

**Sample Interval Retained**

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Soil Type</th>
<th>Recovery (%)</th>
<th>USCS Soil Classification</th>
<th>PID</th>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Clays</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>SM</td>
<td>100</td>
<td>Silty Sand, dark brown (10YR 3/3), medium dense, moist, contains wood fragments, mica present [Native]</td>
<td>tr</td>
<td>10</td>
<td>30</td>
<td>40</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>SW</td>
<td>100</td>
<td>Well Graded Sand, yellowish brown (10YR 5/6), medium dense, moist, contains rootlets and wood fragments, abundant mica present [Native]</td>
<td>tr</td>
<td>25</td>
<td>35</td>
<td>35</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td>Sandstone [Chatsworth Formation]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td>Total Depth = 2.5 ft; terminated due to refusal on bedrock.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 09:24.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
<td></td>
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</table>
## Boring ID: LFBS0292

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SP</td>
<td>SP Poorly Graded Sand, brownish yellow (10YR 6/6), medium dense, moist, mica present [Native]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>SP Sandstone, very pale brown (10YR 7/4), highly weathered, friable, fine-grained, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 1.0 ft; terminated due to refusal on bedrock.

Collected soil samples S001 at 09:36 and D001 at 09:39.

Backfilled with soil cuttings.
**Boring ID:** LFBS0293

**Easting (ft):** 267797.73  
**Depth 1st H2O (ft):** N/A  
**Drill Start Date:** 02-03-2010  
**Logged By:** A. Ruotolo  

**Northing (ft):** 1794230.63  
**Easting (ft):** 267797.73  
**Start Time:** 10:00  
**Logged By:** A. Ruotolo  

**Drill Finish Date:** 02-03-2010  
**Finish Time:** 10:05  
**Drilled By:** E. Herrera / D. Hawkins

**Job Number:** 1008208  
**Date / Time:** 02-03-2010  
**Date / Time:** 02-03-2010  
**Drill Rig Type/Method:** Geoprobe/Direct Push

**Date / Time:** 02-03-2010  
**Date / Time:** 02-03-2010  
**Drilled By:** E. Herrera / D. Hawkins

**Comments:** On grassy slope adjacent to rock outcrop  
**Comments:** On grassy slope adjacent to rock outcrop  
**Comments:** On grassy slope adjacent to rock outcrop  
**Comments:** On grassy slope adjacent to rock outcrop  
**Comments:** On grassy slope adjacent to rock outcrop  
**Comments:** On grassy slope adjacent to rock outcrop  

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>Med. Sand</td>
<td>Poorly Graded Sand, yellowish brown (10YR 5/4), medium dense, moist, mica present [Native]</td>
</tr>
<tr>
<td>1.0</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>Coarse Sand</td>
<td>Sandstone, pale yellow (2.5Y 7/4), highly weathered, friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
</tr>
</tbody>
</table>

Total Depth = 1.0 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 10:04.

Backfilled with soil cuttings.
Boring ID: LFBS0294

Borehole Diam. (in.): 2-1/4  Total Depth (ft): 4.0  Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

Northing (ft):  1794240.98  Easting (ft):  267849.96  Job Number: 1008208  Site: A1LF-2 (Southern Drainage)

Drill Start Date: 02-03-2010  Start Time: 08:39  Logged By: A. Ruotolo  Reviewed By: V. Vathanasin, P.G.

Drill Finish Date: 02-03-2010  Finish Time: 08:43  Drilling Contractor: Strongarm  Field Instrumentation: PID

Depth 1st H2O (ft): N/A  Date / Time: N/A

Depth H2O After Drilling (ft): N/A  Date / Time: N/A

Drill Rig Type/Method: Geoprobe/Direct Push

Comments: Targeting small depression west of metal debris pile  Well Comp. Date: N/A  Completion Time: N/A

Samplers: Macrocore, discrete sample retained in 6-inch stainless steel sleeve  Soil Backfill Date: 02-03-2010  Backfill Time: 09:03

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0.0</td>
<td>SP-CL</td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand with Silt, yellowish brown (10YR 5/6), medium dense, moist, sandstone gravel, mica present [Native]</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>0.0</td>
<td>CL</td>
<td></td>
<td></td>
<td></td>
<td>Lean Clay, dark grayish brown (10YR 4/2), medium stiff, moist, medium plasticity</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>0.0</td>
<td>CL</td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), highly weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>0.0</td>
<td>CL</td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 4.0 ft; terminated due to refusal on bedrock.</td>
<td></td>
</tr>
</tbody>
</table>

Collected soil sample S001 at 08:41.

Backfilled with soil cuttings.

Sheet 1 of 1
# LOG OF BORING OUTFALL009.GPJ  BOEING.GDT  2/25/10

**Boring ID:** LFBS0295  
**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)  
**Job Number:** 1008208  
**Site:** A1LF-2 (Southern Drainage)  
**Logged By:** S. Aichner  
**Reviewed By:** V. Vathanasin, P.G.  
**Drilling Contractor:** B.L. Hall  
**Driller's Name:** M. Hoehn  
**Borehole Diam. (in.):** 3  
**Easting (ft):** 267870.02  
**Northing (ft):** 1794231.87  
**Date / Time:** 02-09-2010 08:25  
**Date / Time:** 02-09-2010 08:45  
**Start Time:** 08:16  
**Finish Time:** 08:45  
**Date / Time:** 02-09-2010 08:25  
**Date / Time:** 02-09-2010 08:45  
**Date / Time:** 02-09-2010 08:45  

**Comments:** 
Native soil and vegetation at surface  
Drilled by LFBS0295  

**Sample Interval** | **Sample Type** | **Sample Retained** | **Recovery (%)** | **Blow Count/6”** | **PID (ppm)** | **Water Level** | **Depth (feet)** | **Graphic Log** | **USCS Soil Classification** | **Description** | **Est. % of Soil** | **Gravel** | **Coarse Sand** | **Med. Sand** | **Fine Sand** | **Silt/Clay** |
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
0 | S | 0.6 | | | | | | | SM | Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, micaceous [Native] | | 60 | 40 |
1 | | | | | | | | | \Sandstone, weathered [Chatsworth Formation]  
Total Depth = 1.0 ft; terminated due to refusal on bedrock.  
Collected soil sample S001 at 08:25.  
Backfilled with soil cuttings. |

**Well Comp. Date:** N/A  
**Completion Time:** N/A  
**Soil Backfill Date:** 02-09-2010  
**Backfill Time:** 08:45  
**Drill Rig Type/Method:** Hand Auger  
**Field Instrumentation:** PID  
**Native soil and vegetation at surface**  
6-inch stainless steel sleeve  

**Total Depth (ft):** 1.0  
**Terminated due to refusal on bedrock.**
**LOG OF BORING OUTFALL009-2010.GPJ  BOEING.GDT  3/28/10**

**Boring ID: LFBS0317**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Retained Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td>SM</td>
<td>Silty Sand, light yellowish brown (10YR 6/4), dense, moist, contains sandstone fragments, micaceous [Native]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>SM</td>
<td>SM</td>
<td>Sandstone, light yellowish brown (10YR 6/4), fine-grained, weathered, friable [Chatsworth Formation]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>SM</td>
<td>SM</td>
<td>Total Depth = 3.0 ft; terminated due to refusal on bedrock.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>SM</td>
<td>SM</td>
<td>Collected soil sample S001 at 08:20. Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

**Comments:** Vegetation at surface

**Loggers:**
- Logged By: B. Martasin, P.G.
- Reviewed By: C. Carter, P.G.

**Other Details:**
- **Easting (ft):** 267848.23
- **Northing (ft):** 1794225.30
- **Job Number:** 1008208
- **Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
- **Site:** A1LF-2 (Debris Drainage)
- **Date:** 03-03-2010
- **Time:** 08:18

**Samples:** 6-inch stainless steel sleeve

**Soil Backfill Date:** 03-03-2010 Backfill Time: 08:30

**Est. % of Soil:**
- **Gravel:** 70%
- **Coarse Sand:** 30%
**Boring ID: LFBS0318**

**Borehole Diam. (in.):** 3
**Total Depth (ft):** 0.6

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Northing (ft):** 1794239.59
**Easting (ft):** 267811.81

**Job Number:** 1008208
**Site:** A1LF-2 (Debris Drainage)

**Drill Start Date:** 03-03-2010
**Start Time:** 08:09

**Logged By:** B. Martasin, P.G.

**Drill Finish Date:** 03-03-2010
**Finish Time:** 08:15

**Reviewed By:** C. Carter, P.G.

**Logged By:** M. Hoehn

**Drill Rig Type/Method:** Hand Auger

**Sample Type:** 6-inch stainless steel sleeve

**Comments:**

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>USCS Soil Classification</th>
<th>Graphic Log</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td></td>
<td>Silty Sand, brown (10YR 5/3), medium dense, moist, contains weathered sandstone fragments [Native]</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>Sandstone, yellowish brown (10YR 5/4), weathered, moderately strong, friable [Chatsworth Formation]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 0.6 ft (7 in.); terminated due to refusal on bedrock.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 08:12.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

**Total Depth (ft):** 0.6

**PID:**

**Completion Time:** N/A

**Backfill Time:** 08:16

**Well Comp. Date:** 03-03-2010

**Soil Backfill Date:** 03-03-2010

**Driller's Name:** M. Hoehn

**Easting (ft):** 267811.81

**Drill Start Date:** 03-03-2010

**Drill Finish Date:** 03-03-2010

**PID:**

**Field Instrumentation:**

**Reviewers:**

**Logged By:** B. Martasin, P.G.

**Drill Rig Type/Method:** Hand Auger

**Sample Type:** 6-inch stainless steel sleeve

**Comments:**

- Silty Sand, brown (10YR 5/3), medium dense, moist, contains weathered sandstone fragments [Native]
- Sandstone, yellowish brown (10YR 5/4), weathered, moderately strong, friable [Chatsworth Formation]
- Total Depth = 0.6 ft (7 in.); terminated due to refusal on bedrock.
- Collected soil sample S001 at 08:12.
- Backfilled with soil cuttings.
Boring ID: LFBS0319

**Borehole Diam. (in.):** 3  
**Total Depth (ft):** 2.0  
**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Nothing (ft):** 1794277.52  
**Easting (ft):** 267830.68  
**Job Number:** 1008208  
**Site:** A1LF-2 (Debris Drainage)

**Drill Start Date:** 03-03-2010  
**Start Time:** 08:02  
**Logged By:** B. Martasin, P.G.  
**Reviewed By:** C. Carter, P.G.

**Drill Finish Date:** 03-03-2010  
**Finish Time:** 08:07  
**Drilling Contractor:** B.L. Hall  
**Field Instrumentation:** PID

**Depth 1st H₂O (ft):** N/A  
**Date / Time:** N/A  
**Drill Rig Type/Method:** Hand Auger

**Depth H₂O After Drilling (ft):** N/A  
**Date / Time:** N/A  
**Driller’s Name:** M. Hoehn

**Comments:** Imported gravel at surface

**Sample Interval Retained:** 0  
**Sample Type:** S  
**Recovery (%):** 0.0  
**Blow Count/6”:** 0  
**PID (ppm):** 0  
**Water Level:** 0  
**Depth (feet):** 0

**USCS Soil Classification:** SM  
**Description:** Silty Sand, dark yellowish brown (10YR 4/4), dense, moist, contains weathered sandstone fragments [Native]

<table>
<thead>
<tr>
<th>Depth H₂O After Drilling (ft):</th>
<th>2</th>
<th>2</th>
</tr>
</thead>
</table>

**Est. % of Soil**: 60% Gravel, 40% Silty Clay

**Boring ID:** LFBS0319  
**Well Comp. Date:** N/A  
**Completion Time:** N/A

**Sample Type:** 6-inch stainless steel sleeve  
**Logged By:** B. Martasin, P.G.  
**Reviewed By:** C. Carter, P.G.

**Soil Backfill Date:** 03-03-2010  
**Backfill Time:** 08:09

**Comments:** Collected soil sample S001 at 08:03. Backfilled with soil cuttings.
Silty Sand, yellowish brown (10YR 5/4), medium dense, moist, contains weathered sandstone fragments, iron oxide staining [Native]

Sandstone, weathered [Chatsworth Formation]

Total Depth = 0.8 ft (9 in.); terminated due to refusal on bedrock.

Collected soil sample S001 at 07:52.

Backfilled with soil cuttings.
**Boring ID: LFBS0321**

Borehole Diam. (in.): 3  
Total Depth (ft): 1.0  
Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

Northing (ft): 1794282.43  
Easting (ft): 267916.74  
Job Number: 1008208  
Site: A1LF-2 (Debris Drainage)

Drill Start Date: 03-03-2010  
Start Time: 08:53  
Logged By: B. Martasin, P.G.  
Reviewed By: C. Carter, P.G.

Drill Finish Date: 03-03-2010  
Finish Time: 08:57  
Drilling Contractor: B.L. Hall  
Field Instrumentation: PID

Depth 1st H₂O (ft): N/A  
Date / Time: N/A  
Drill Rig Type/Method: Hand Auger

Depth H₂O After Drilling (ft): N/A  
Date / Time: N/A  
Driller's Name: M. Hoehn

Comments: Vegetation at surface

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
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<tbody>
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<td></td>
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<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, contains weathered sandstone fragments, rootlets [Native]</td>
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<td>4</td>
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<td>Silt/Clay</td>
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</table>

Sandstone, weathered [Chatsworth Formation]  
Total Depth = 1.0 ft; terminated due to refusal on bedrock.  
Collected soil sample S001 at 08:55.  
Backfilled with soil cuttings.

Well Comp. Date: N/A  
Completion Time: N/A  
Soil Backfill Date: 03-03-2010  
Backfill Time: 08:58

Samplers: 6-inch stainless steel sleeve

**LOG OF BORING OUTFALL009-2010.GPJ  BOEING.GDT  3/28/10**
Borehole Diam. (in.): 3  Total Depth (ft): 0.5  Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
Northing (ft): 1794282.43  Easting (ft): 267916.74  Job Number: 1008208  Site: A1LF-2 (Debris Drainage)
Drill Start Date: 03-09-2010  Start Time: 08:15  Logged By: J. Wokurka  Reviewed By: C. Carter, P.G.
Drill Finish Date: 03-09-2010  Finish Time: 08:22  Drilling Contractor: B.L. Hall  Field Instrumentation: PID
Depth 1st H2O (ft): N/A  Date / Time: N/A  Drill Rig Type/Method: Hand Auger
Depth H2O After Drilling (ft): N/A  Date / Time: N/A  Driller's Name: M. Hoehn
Comments: Bare soil surface east of road, below (north of) ridgeline  Well Comp. Date: N/A  Completion Time: N/A
Samplers: 6-inch stainless steel sleeve  Soil Backfill Date: 03-09-2010  Backfill Time: 08:22

<table>
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<tr>
<th>Sample Interval</th>
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<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
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<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
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<td>SM</td>
<td>Silty Sand, light yellowish brown (10YR 6/4), loose to medium dense, moist, subrounded sandstone gravel, no staining or odor [Alluvium/Colluvium]</td>
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Total Depth = 0.5 ft; terminated due to refusal on bedrock.
Collected soil sample S001.
Backfilled with soil cuttings.
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### Description

- **Date:** 03-03-2010
- **Logged By:** B. Martasin, P.G.
- **Reviewed By:** C. Carter, P.G.
- **Driller's Name:** M. Hoehn
- **Drilling Contractor:** B.L. Hall
- **Rig Type/Method:** Hand Auger

#### Sample

- **Sample Type:** 6-inch stainless steel sleeve
- **Comments:** Vegetation at surface

#### Log

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<th>Recovery</th>
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<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
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<td></td>
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<td>Silty Sand, dark yellowish brown (10YR 4/4), dense, moist, contains weathered sandstone fragments, rootlets [Native]</td>
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<tr>
<td>1</td>
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<td></td>
<td>1</td>
<td></td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
</tr>
</tbody>
</table>

- **Total Depth:** 1.0 ft
- **Terminated due to refusal on bedrock.**
- **Collected soil sample S001 at 09:05.**
- **Backfilled with soil cuttings.**

---

**Additional Details**

- **Job Number:** 1008208
- **Easting (ft):** 267920.33
- **NORTHING (ft):** 1794291.68
- **Start Time:** 09:02
- **Finish Time:** 09:07
- **Drill Rig Type/Method:** Hand Auger
- **Drill Start Date:** 03-03-2010
- **Drill Finish Date:** 03-03-2010
- **Logged By:** B. Martasin, P.G.
- **Reviewed By:** C. Carter, P.G.
- **Backfill Time:** 09:08
**Boring ID: LFBS0322B**

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<tr>
<td>Northing (ft)</td>
<td>1794291.68</td>
</tr>
<tr>
<td>Easting (ft)</td>
<td>267920.33</td>
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<td>Date / Time</td>
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<td>Depth H2O After Drilling (ft)</td>
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</tr>
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<td>N/A</td>
</tr>
<tr>
<td>Driller's Name</td>
<td>M. Hoehn</td>
</tr>
<tr>
<td>Comments</td>
<td>Bare soil surface east of road, below (north of) ridgeline</td>
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<td>Sample Intervals</td>
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<td>Sample Type</td>
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<td>Recovery (%)</td>
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<td>Blown Count/6&quot;</td>
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<td>Depth (feet)</td>
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<td>USCS Soil Classification</td>
<td>Silty Sand, very dark gray (10YR 3/1), loose, moist, subrounded grains, no staining or odor [Alluvium/Colluvium]</td>
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<td>Description</td>
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<tr>
<td></td>
<td>Collected soil sample S001.</td>
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<td>Backfilled with soil cuttings.</td>
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<td>Est. % of Soil</td>
<td>80 20</td>
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<tr>
<td>Gravel</td>
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<td>Fine Sand</td>
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**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Job Number:** 1008208

**Site:** A1LF-2 (Debris Drainage)

**Logged By:** J. Wokurka

**Reviewed By:** C. Carter, P.G.
**Log of Boring OUTFALL 009 Area**

**Boring ID:** LFBS0323

**Borehole Diam. (in.):** 3

**Total Depth (ft):** 0.6

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Northing (ft):** 1794277.15

**Easting (ft):** 267915.99

**Job Number:** 1008208

**Site:** A1LF-2 (Debris Drainage)

**Drill Start Date:** 03-03-2010

**Start Time:** 08:46

**Logged By:** B. Martasin, P.G.

**Reviewed By:** C. Carter, P.G.

**Drill Finish Date:** 03-03-2010

**Finish Time:** 08:50

**Drilling Contractor:** B.L. Hall

**Field Instrumentation:** PID

**Depth 1st H2O (ft):** N/A

**Date / Time:** N/A

**Drill Rig Type/Method:** Hand Auger

**Depth H2O After Drilling (ft):** N/A

**Date / Time:** N/A

**Driller's Name:** M. Hoehn

**Comments:** Sparsely vegetated surface

**Sample Type:** 6-inch stainless steel sleeve

**Well Comp. Date:** N/A

**Completion Time:** N/A

**Job Number:** 0001

**Logged By:** B. Martasin, P.G.

**Reviewed By:** C. Carter, P.G.

**Drill Rig Type/Method:** Hand Auger

**Depth H2O After Drilling (ft):** N/A

**Date / Time:** N/A

**Driller's Name:** M. Hoehn

**Comments:** Sparsely vegetated surface

**Sample Type:** 6-inch stainless steel sleeve

**Well Comp. Date:** N/A

**Completion Time:** N/A

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
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<td>1</td>
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<td>Silty Sand, brown (YR 5/3), medium dense, moist, contains weathered sandstone fragments, rootlets [Native]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SM</td>
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<td></td>
<td></td>
<td></td>
<td>1</td>
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<td>Sandstone, yellowish brown (YR 5/4), fine-grained, weathered, friable [Chatsworth Formation]</td>
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<tr>
<td>3</td>
<td>SM</td>
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<td>Total Depth = 0.6 ft (7 in.); terminated due to refusal on bedrock.</td>
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<td>3</td>
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<td>Backfilled with soil cuttings.</td>
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<td></td>
<td>Est. % of Soil</td>
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</table>

**Gravel:** 10

**Coarse Sand:** 60

**Med. Sand:** 30

**Fine Sand:**

**Silt/Clay:**
### Sample Interval

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<tr>
<th>Sample</th>
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<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
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<th>Description</th>
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<tbody>
<tr>
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<td>0.1</td>
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<td></td>
<td>SM</td>
<td>Silty Sand, very dark gray (10YR 3/1), loose, moist, subrounded grains, no staining or odor [Alluvium/Colluvium]</td>
</tr>
</tbody>
</table>

- Sandstone (Chatsworth Formation)
- Total Depth = 0.5 ft; terminated due to refusal on bedrock.
- Collected soil sample S001.
- Backfilled with soil cuttings.

### Est. % of Soil

- Gravel: 80%
- Coarse Sand: 20%
- Medium Sand: 0%
- Fine Sand: 0%
- Silt/Clay: 0%

### Comments
- Bare soil surface east of road, below (north of) ridgeline
- 6-inch stainless steel sleeve
- Collected soil sample S001.
- Backfilled with soil cuttings.

<table>
<thead>
<tr>
<th>Sample Interval</th>
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<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
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<th>Depth (feet)</th>
<th>Graphic Log</th>
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<th>Description</th>
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<tbody>
<tr>
<td>S</td>
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<td>Silty Sand, very dark gray (10YR 3/1), loose, moist, subrounded grains, no staining or odor [Alluvium/Colluvium]</td>
</tr>
</tbody>
</table>

- Sandstone (Chatsworth Formation)
- Total Depth = 0.5 ft; terminated due to refusal on bedrock.
- Collected soil sample S001.
- Backfilled with soil cuttings.
**Boring ID:** LFBS0324

**Borehole Diam. (in.):** 3

**Total Depth (ft):** 0.5

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Northing (ft):** 1794296.21

**Easting (ft):** 267922.78

**Job Number:** 1008208

**Site:** A1LF-2 (Debris Drainage)

**Drill Start Date:** 03-03-2010

**Start Time:** 09:08

**Logged By:** B. Martasin, P.G.

**Reviewed By:** C. Carter, P.G.

**Drill Finish Date:** 03-03-2010

**Finish Time:** 09:15

**Drilling Contractor:** B.L. Hall

**Field Instrumentation:** PID

**Depth 1st H2O (ft):** N/A

**Date / Time:** N/A

**Drill Rig Type/Method:** Hand Auger

**Depth H2O After Drilling (ft):** N/A

**Date / Time:** N/A

**Driller’s Name:** M. Hoehn

**Comments:** Vegetation at surface

**Well Comp. Date:** N/A

**Completion Time:** N/A

**Soil Backfill Date:** 03-03-2010

**Backfill Time:** 09:16

**Sample Interval Retained**

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<td>SM</td>
<td>Silty Sand, dark brown (7.5YR 3/2), loose, moist, contains rootlets [Native]</td>
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- **Total Depth = 0.5 ft; terminated due to refusal on bedrock.**
- **Collected soil sample S001 at 09:10.**
- **Backfilled with soil cuttings.**
**LOG OF BORING OUTFALL009-2010.GPJ**

**Boring ID: LFBS0324A**

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<td>Silty Sand, very dark gray (10YR 3/1), loose to medium dense, moist, subrounded grains, contains minor organics, no staining or odor [Alluvium/Colluvium]</td>
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<td>SM</td>
<td>Total Depth = 0.5 ft; terminated due to refusal on bedrock.</td>
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**Comments:** Bare soil surface east of road, below (north of) ridgeline

**Well Comp. Date:** N/A

**Completion Time:** N/A

**Samplers:** 6-inch stainless steel sleeve

**Soil Backfill Date:** 03-09-2010

**Backfill Time:** 09:00
**Boring ID: LFBS0325**

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<td>1794233.71</td>
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<tbody>
<tr>
<td>03-17-2010</td>
<td>14:00</td>
<td>03-17-2010</td>
<td>14:20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth 1st H₂O (ft):</th>
<th>Date / Time:</th>
<th>Depth H₂O After Drilling (ft):</th>
<th>Date / Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Drill Rig Type/Method: **Hand Auger**

- **Comments:** In drainage
- **Samples:** 6-inch stainless steel sleeve

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, dark brown (10YR 3/3), loose, dry, trace fine gravel, trace clay, contains organic debris, no staining or odor [Native]</td>
</tr>
</tbody>
</table>

- **Description:** Silty Sand, dark brown (10YR 3/3), loose, dry, trace fine gravel, trace clay, contains organic debris, no staining or odor [Native]

- **Notes:** Sandstone, weathered [Chatsworth Formation]

- **Total Depth:** 3.0 ft; terminated due to refusal on bedrock. One step-out met refusal at same depth.

- **Collected:** soil sample S001 at 14:00.

- **Backfilled:** both locations with soil cuttings.

**Est. % of Soil**

<table>
<thead>
<tr>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>tr</td>
<td>15</td>
<td>60</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>
### LOG OF BORING  OUTFALL009-2010.GPJ  BOEING.GDT  3/28/10

**Boring ID:** LFBS0326

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Site:** A1LF-2 (Debris Drainage)

**Logged By:** V. Vathanasin, P.G.

**Reviewed By:** C. Carter, P.G.

**Drill Rig Type/Method:** Hand Auger

**Comments:** Steep slope west of drainage, surface covered with brush and grass

**Sample Interval**

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blown Count/6″</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S</td>
<td>0.1</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), loose, dry, trace fine gravel, no staining or odor [Native]</td>
</tr>
<tr>
<td>2</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>S</td>
<td>slight increase in sand content, grades coarser</td>
</tr>
</tbody>
</table>

**Graphic Log**

- **Depth 1st H2O:** N/A
- **Date / Time:** N/A
- **Drill Rig Type/Method:** Hand Auger
- **Field Instrumentation:** PID

**Soil Classification**

<table>
<thead>
<tr>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>tr</td>
<td>tr</td>
<td>10</td>
<td>65</td>
<td>25</td>
</tr>
</tbody>
</table>

**Est. % of Soil**

- **Sample 1:** 70%
- **Sample 2:** 60%

**Log Details**

- **Borehole Diam. (in.):** 3
- **Total Depth (ft):** 4.0
- **Easting (ft):** 267995.11
- **Northing (ft):** 1794239.48
- **Start Time:** 13:00
- **Finish Time:** 13:15
- **Depth 1st H2O:** N/A
- **Date / Time:** N/A
- **Well Comp. Date:** N/A
- **Completion Time:** N/A
- **Backfill Time:** 13:15

**Notes:**

- Sandstone [Chatsworth Formation]
  - Total Depth = 4.0 ft; terminated due to refusal on bedrock.
  - Collected soil samples S001 at 13:00 and S002 at 13:10.
  - Backfilled with soil cuttings.
**Drill Rig Type/Method:** Hand Auger

**Site:** North-facing slope covered with brush

**Boring ID:** LFBS0327

**Easting (ft):** 267995.93  
**Northing (ft):** 1794264.56

**Date / Time:** 03-17-2010  
**Start Time:** 12:35

**Logged By:** V. Vathanasin, P.G.

**Job Number:** 1008208  
**Logged By:** R. Cano

**PID (ppm):** S

**Well Comp. Date:** N/A  
**Completion Time:** N/A

**Sample Interval Retained:** S  
**Sample Type:** 6-inch stainless steel sleeve

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Water Level</th>
<th>Blow Count/&quot;</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</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>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</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>3</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>4</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>

- Silty Sand (10YR 4/3), loose, dry, contains roots, no staining or odor [Native]

- becomes pale brown (10YR 6/3)

- Sandstone [Chatsworth Formation]

Total Depth = 4.0 ft; terminated due to refusal on bedrock.

Collected soil samples S001 at 12:37 and S002 at 12:49.

Backfilled with soil cuttings.
**Boring ID: LFBS0328**

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, brown (10YR 4/3), loose, moist, trace fine gravel, no staining or odor [Native]</td>
<td>tr 15 55 30</td>
</tr>
</tbody>
</table>

**Comments:** Grassy surface

**Well Comp. Date:** N/A  
**Completion Time:** N/A

**Samplers:** 6-inch stainless steel sleeve  
**Soil Backfill Date:** 03-17-2010  
**Backfill Time:** 13:40

**Gravel**

**Coarse Sand**

**Med. Sand**

**Fine Sand**

**Silt/Clay**

**Total Depth: 1.5 ft; terminated due to refusal on bedrock.**

Collected soil sample S001 at 13:25.

Backfilled with soil cuttings.
**LOG OF BORING LFBS0329**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID ppm</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, brown (10YR 4/3), loose, dry, trace fine gravel, contains small amount of burned roots, no staining or odor [Native]</td>
<td>tr 15 65 20</td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
<td>\sandstone, weathered [Chatsworth Formation]</td>
</tr>
</tbody>
</table>

- Total Depth = 2.5 ft; terminated due to refusal on bedrock. One step-out met refusal at same depth.
- Collected soil sample S001 at 13:47.
- Backfilled both locations with soil cuttings.
**Boring ID: LFBS0330**

**Borehole Diam. (in.):** 3

**Total Depth (ft):** 5.0

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Northing (ft):** 1794237.85

**Easting (ft):** 267972.69

**Job Number:** 1008208

**Site:** A1LF-2 (Debris Drainage)

**Drill Start Date:** 03-17-2010

**Start Time:** 09:45

**Logged By:** V. Vathanasin, P.G.

**Drilling Contractor:** B.L. Hall

**Field Instrumentation:** PID

**Drill Rig Type/Method:** Hand Auger

**Depth 1st H₂O (ft):** N/A

**Date / Time:** N/A

**Driller's Name:** R. Cano

**Depth H₂O After Drilling (ft):** N/A

**Date / Time:** N/A

**Comments:** In drainage, scattered debris at surface

**Sample: 6-inch stainless steel sleeve**

**Easting (ft):**

**Start Time:**

**Finish Time:**

**Date / Time:**

**Well Comp. Date:** N/A

**Completion Time:** N/A

**Soil Backfill Date:** 03-17-2010

**Backfill Time:** 10:15

**Sample Interval**

<table>
<thead>
<tr>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Sample Type</th>
<th>Sample Retained</th>
<th>Recovery (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>Non</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Easting (ft):**

**Drill Start Date:**

**Drill Finish Date:**

**Driller's Name:**

**Comments:**

- **Total Depth = 5.0 ft (second attempt); terminated due to refusal on bedrock.**
- **Refusal at 1.3 ft in first boring.**
- **Collected soil samples S001 at 09:54 and S002 at 10:10.**
- **Backfilled both locations with soil cuttings.**

**USCS Soil Classification**

- SM Silty Sand, brown (10YR 4/3), loose, dry, fine gravel, no staining or odor [Native]
- SM became moist
- SM increase in fines content

**Soil Backfill Date:**

**Backfill Time:**

**Est. % of Soil**

<table>
<thead>
<tr>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>10</td>
<td>10</td>
<td>60</td>
<td>15</td>
</tr>
</tbody>
</table>

**Graphic Log**

- **Sandstone, weathered [Chatsworth Formation]**
- **Total Depth = 5.0 ft (second attempt); terminated due to refusal on bedrock.**
- **Refusal at 1.3 ft in first boring.**
- **Collected soil samples S001 at 09:54 and S002 at 10:10.**
- **Backfilled both locations with soil cuttings.**
**Boring ID: LFBS0331**

**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Site:** A1LF-2 (Debris Drainage)

| Northing (ft): 1794262.84 | Easting (ft): 267973.62 | Total Depth (ft): 4.0 |

**Borehole Diam. (in.):** 3

**Job Number:** 1008208

**Logged By:** V. Vathanasin, P.G.

**Reviewed By:** C. Carter, P.G.

**Drill Start Date:** 03-17-2010

**Start Time:** 10:25

**Drill Finish Date:** 03-17-2010

**Finish Time:** 10:55

**Drill Contractor:** B.L. Hall

**Drill Rig Type/Method:** Hand Auger

**Driller's Name:** R. Cano

**Comments:** Grass and organic debris at surface

**Samplers:** 6-inch stainless steel sleeve

**Well Comp. Date:** N/A

**Completion Time:** N/A

**Soil Backfill Date:** 03-17-2010

**Backfill Time:** 10:55

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td>0.0</td>
<td>SM</td>
<td>Silty Sand, brown (10YR 4/3), loose, dry, trace fine gravel, no staining or odor [Native]</td>
<td></td>
</tr>
</tbody>
</table>

**Total Depth = 4.0 ft; terminated due to refusal on bedrock.**

Collected soil samples S001 at 10:28 and S002 at 10:42.

Backfilled with soil cuttings.
**Boring ID: LFBS0332**

**Easting (ft):** 267974.63  
**Start Time:** 11:00  
**Job Number:** 1008208  
**Site:** A1LF-2 (Debris Drainage)

**Description:** Silty Sand, brown (10YR 4/3), loose, dry, trace fine gravel, dark staining, no odor [Native]

**Comments:** Grassy slope along east bank of drainage

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, brown (10YR 4/3), loose, dry, trace fine gravel, dark staining, no odor [Native]</td>
</tr>
</tbody>
</table>

**Total Depth = 2.0 ft; terminated due to refusal on bedrock. One step-out met refusal at same depth.**

**Collected soil sample S001 at 11:01.**

**Backfilled both locations with soil cuttings.**
Boring ID: LFBS0333

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, pale brown (10YR 6/3), loose, dry, no staining or odor [Native]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>becomes brown (10YR 5/3), contains roots</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
</tr>
</tbody>
</table>

Total Depth = 6.0 ft; terminated due to refusal on bedrock.

Collected soil samples S001 at 09:19 and S002 at 09:40.

Backfilled with soil cuttings.
**Boring ID: LFBS0334**

**Borehole Diam. (in.):** 3  
**Total Depth (ft):** 5.5  
**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)

**Northing (ft):** 1794247.54  
**Easting (ft):** 267969.48  
**Job Number:** 1008208  
**Site:** A1LF-2 (Debris Drainage)

**Drill Start Date:** 03-17-2010  
**Start Time:** 08:35  
**Logged By:** V. Vathanasin, P.G.  
**Reviewed By:** C. Carter, P.G.

**Drill Finish Date:** 03-17-2010  
**Finish Time:** 09:00  
**Drilling Contractor:** B.L. Hall  
**Field Instrumentation:** PID

**Depth 1st H₂O (ft):** N/A  
**Date / Time:** N/A  
**Drill Rig Type/Method:** Hand Auger

**Depth H₂O After Drilling (ft):** N/A  
**Date / Time:** N/A  
**Driller's Name:** R. Cano

**Comments:** Heavy brush at surface

**Samples:** 6-inch stainless steel sleeve

**Well Comp. Date:** N/A  
**Completion Time:** N/A  
**Soil Backfill Date:** 03-17-2010  
**Backfill Time:** 09:02

### Sample Interval and Recovery

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>Silty Sand, pale brown (10YR 6/3), loose, dry, no staining or odor [Native]</td>
</tr>
<tr>
<td>3</td>
<td>SP-SM</td>
<td>Poorly Graded Sand with Silt, brown (10YR 5/3), loose, moist, no staining or odor [Native]</td>
</tr>
</tbody>
</table>

- **Gravel:** 5%
- **Coarse Sand:** 20%
- **Med. Sand:** 55%
- **Fine Sand:** 20%
- **Silt/Clay:** 0%

**Water Level:**
- **Sample Interval:** 5.5 ft; terminated prior to refusal on bedrock.
- **Collected soil samples S001 at 08:39 and S002 at 09:00.**
- **Backfilled with soil cuttings.**
**Description**

- **Depth:** 5.1 ft
- **Witness:** N/A
- **Sample Interval:** Depth 1st H 2
- **O (ft):** 2
- **Comments:** Samples retained in 6-inch stainless steel sleeve
- **PID:** 1794261.20
- **Date / Time:** 08:22, 08:40
- **Est. % of Soil:** Gravel 5, Coarse Sand 15, Med. Sand 25, Fine Sand 35, Silt/Clay 20

**USCS Soil Classification**

- **Depth (feet):**
  - 0: SM Silty Sand, very dark grayish brown (10YR 3/2), loose, dry cementation, mica present, contains roots and twigs [Native]
  - 5: SP Poorly Graded Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, iron oxidation [Weathered Chatsworth Formation Sandstone]

**Field Instrumentation:**

- PID

**Sample Retention:**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Retained</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>SM</td>
</tr>
<tr>
<td>5.0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>SP</td>
</tr>
</tbody>
</table>

**Comments:**

- On moderate slope covered with moderate to heavy brush
- Samples retained in 6-inch stainless steel sleeve
- Total Depth = 5.1 ft; refusal on weathered bedrock.
- Collected soil samples S001 at 08:24 and S002 at 08:34.
- Backfilled with soil cuttings.
<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td></td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, very dark grayish brown (10YR 3/2), loose, dry, weak cementation, mica present, contains roots and twigs [Native]</td>
</tr>
</tbody>
</table>

Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone.

Collected soil sample S001 at 08:46.

Backfilled with soil cuttings.
**Log of Boring OUTFALL009**

**ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property**

<table>
<thead>
<tr>
<th>Borehole Diam. (in.)</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Depth (ft.)</td>
<td>2.9</td>
</tr>
<tr>
<td>Northing (ft.)</td>
<td>267973.90</td>
</tr>
<tr>
<td>Easting (ft.)</td>
<td>1794273.73</td>
</tr>
<tr>
<td>Drill Start Date</td>
<td>05-26-2010</td>
</tr>
<tr>
<td>Start Time</td>
<td>09:08</td>
</tr>
<tr>
<td>Drill Finish Date</td>
<td>05-26-2010</td>
</tr>
<tr>
<td>Finish Time</td>
<td>09:21</td>
</tr>
<tr>
<td>Depth 1st H₂O (ft.)</td>
<td>N/A</td>
</tr>
<tr>
<td>Date / Time</td>
<td>N/A</td>
</tr>
<tr>
<td>Drill Rig Type/Method</td>
<td>Hand Auger</td>
</tr>
<tr>
<td>Depth H₂O After Drilling (ft.)</td>
<td>N/A</td>
</tr>
<tr>
<td>Date / Time</td>
<td>N/A</td>
</tr>
<tr>
<td>Logged By</td>
<td>A. Ruotolo</td>
</tr>
<tr>
<td>Reviewed By</td>
<td>M. Milman-Barris, P.G.</td>
</tr>
<tr>
<td>Comments</td>
<td>On slope covered with moderate to heavy brush</td>
</tr>
<tr>
<td>Sample Interval</td>
<td>S</td>
</tr>
<tr>
<td>Retained Sample Type</td>
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<tr>
<td>Recovery (%)</td>
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<tr>
<td>Blow Count/6&quot;</td>
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<tr>
<td>PID (ppm)</td>
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<td>Water Level</td>
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<tr>
<td>Depth (feet)</td>
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<tr>
<td>Graphic Log</td>
<td>Well Graded Sand, brown (10YR 4/3), loose, dry, weak cementation, mica present, contains roots and twigs [Native]</td>
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<tr>
<td>USCS Soil Classification</td>
<td>SW</td>
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<tr>
<td>Est. % of Soil</td>
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<tr>
<td>Gravel</td>
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<tr>
<td>Coarse Sand</td>
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<td>Med. Sand</td>
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<td>Fine Sand</td>
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<tr>
<td>Silt/Clay</td>
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<tr>
<td>Description</td>
<td>Total Depth = 2.9 ft; refusal on weathered Chatsworth Formation Sandstone. Three step-out borings met similar refusal. Collected soil sample S001 at 09:10. Backfilled with soil cuttings.</td>
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<tr>
<td>Date / Time</td>
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<td>Completion Time</td>
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<td>Soil Backfill Date</td>
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<td>Backfill Time</td>
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<td>Samplers</td>
<td>Samples retained in 6-inch stainless steel sleeve</td>
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<td>Driller's Name</td>
<td>R. Cano</td>
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<td>Field Instrumentation</td>
<td>PID</td>
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<td>Drilling Contractor</td>
<td>B.L. Hall</td>
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**Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
**Job Number:** 1008208
**Site:** CTLI-1

**Notes:**
- Total Depth = 2.9 ft; refusal on weathered Chatsworth Formation Sandstone.
- Three step-out borings met similar refusal.
- Collected soil sample S001 at 09:10.
- Backfilled with soil cuttings.
Boring ID: LFBS0338

Total Depth (ft): 2.0

Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property

Logged By: A. Ruotolo

Reviewed By: M. Milman-Barris, P.G.

Field Instrumentation: PID

Description:

Poorly Graded Sand, dark grayish brown (10YR 4/2), loose, dry, fine gravel, weak cementation, mica present [Native]

Total Depth = 2.0 ft; refusal on weathered Chatsworth Formation Sandstone. Three step-out borings met similar refusal.

Collected soil sample S001 at 09:27.

Backfilled with soil cuttings.

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<th>Sample Interval Retained</th>
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<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
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Est. % of Soil

<table>
<thead>
<tr>
<th>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
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<td>10</td>
<td>15</td>
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Comments: On slope covered with moderate to heavy brush