**Boring ID: B1BS0172**

**Borehole Diam. (in.):** 3  
**Total Depth (ft):** 3.0  
**Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)  
**Job Number:** 1008208  
**Site:** B1-1 (North)  
**Drill Start Date:** 03-09-2010  
**Start Time:** 10:05  
**Logged By:** J. Wokurka  
**Reviewed By:** C. Carter, P.G.  
**Drill Finish Date:** 03-09-2010  
**Finish Time:** 10:15  
**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:** Within former building pad, bare soil surface

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

<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>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.4</td>
<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td>Silty Sand, very dark gray (10 YR 3/1), medium dense, moist, contains minor organics, no staining or odor [Fill]</td>
</tr>
<tr>
<td>3</td>
<td>S</td>
<td>0.1</td>
<td></td>
<td></td>
<td>3</td>
<td>Silty Sandstone, moist, moderately to slightly weathered, moderately hard, slightly friable [Chatsworth Formation]</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>
<tr>
<td>80</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:** Total Depth = 3.0 ft; terminated due to refusal on bedrock. Collected soil samples S001 and S002. Backfilled with soil cuttings.
Silty Sand, dark grayish brown (10YR 4/2), medium dense, moist, contains roots, mica [Native]

Sandstone, light yellowish brown (10YR 6/4), unweathered, very thin clay coating on recovered fragments [Chatsworth Formation]

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

Collected soil sample S001 at 12:40.

Backfilled with soil cuttings.
**Boring ID: B1BS0174**

<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></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SP-SM</td>
<td></td>
<td>Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, dry, gravel-size siltstone fragments, contains rootlets, mica [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, light yellowish brown (10YR 6/4), slightly weathered, iron oxidation [Chatsworth Formation]</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>Total Depth = 1.0 ft; terminated due to refusal on bedrock.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 12:58.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</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>
</tr>
</tbody>
</table>

Comments: On barren slope just southwest of drainage divide

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

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

Samplers: 6-inch stainless steel sleeve

Soil Backfill Date: 03-17-2010 Backfill Time: 13:05

**Comments:**

- On barren slope just southwest of drainage divide
- 6-inch stainless steel sleeve

**Log of Boring Outfall 009-2010.GPJ**

**Log of Boring Outfall 009-2010.GPJ**

**Log of Boring Outfall 009-2010.GPJ**

**Log of Boring Outfall 009-2010.GPJ**
<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>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, very dark brown (10YR 2/2), medium dense, moist, contains mica [Native]</td>
<td></td>
</tr>
</tbody>
</table>

- becomes yellowish brown (10YR 5/8), slightly clayey

- Sandstone, light yellowish brown (10YR 6/4), slightly weathered [Chatsworth Formation]

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

Collected soil samples S001 at 10:50 and S002 at 11:02.

Backfilled with soil cuttings.
**Boring ID: B1BS0176**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</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></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand with Gravel, dark yellowish brown (10YR 4/6), medium dense, moist, contains asphalt debris, rootlets, no odor or staining [Fill]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, hard, slightly weathered to unweathered, no odor or staining [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 1.0 ft; refusal on bedrock. One step-out boring 1 ft southeast met similar refusal.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 08:30.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
</tr>
</tbody>
</table>

**Addendum:**

- **Silt/Clay**
  - 20
- **Med. Sand**
  - 5
- **Fine Sand**
  - 20
- **Coarse Sand**
  - 35
Borehole Diam. (in.): 3
Total Depth (ft): 6.0

Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
Job Number: 1008208
Site: B1-2

Drill Start Date: 05-24-2010
Start Time: 08:37
Logged By: A. Ruotolo

Drill Finish Date: 05-24-2010
Finish Time: 09:09
Logged By: A. Ruotolo

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

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

Comments: On gentle slope covered with thick layer of leaves and vegetation

Samples: Samples retained in 6-inch stainless steel sleeve

Soil Backfill Date: 05-24-2010
Backfill Time: 09:11

Easting (ft): 1796880.25
Start Time: N/A

PID
S

SP-SM
Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, moist, weak
cementation [Native]

Depth (feet)

Sample Interval
Retained
Sample Type
Recovery (%)
Blow Count/6"
PID (ppm)
Water Level
Depth H2O After Drilling (ft)

USCS Soil Classification

Est. % of Soil

Gravel
Coarse Sand
Med. Sand
Fine Sand
Silt/Clay

Total Depth = 6.0 ft; refusal on weathered Chatsworth Formation Sandstone.
Collected soil samples S001 at 08:40 and S002 at 08:57.
Backfilled with soil cuttings.

Sample Interval
Retained
Sample Type
Recovery (%)
Blow Count/6"
PID (ppm)
Water Level
Depth H2O After Drilling (ft)

USCS Soil Classification

Est. % of Soil

Gravel
Coarse Sand
Med. Sand
Fine Sand
Silt/Clay

Total Depth = 6.0 ft; refusal on weathered Chatsworth Formation Sandstone.
Collected soil samples S001 at 08:40 and S002 at 08:57.
Backfilled with soil cuttings.
SP-SM

Poorly Graded Sand with Silt, brown (10YR 4/3), loose, dry, few fine gravel, weak cementation, mica present [Native]

Sandstone, light yellowish brown (10YR 6/4), weathered, unfractured, contains quartz, feldspar, and mica, iron oxidation [Chatsworth Formation]

Total Depth = 0.8 ft; refusal on sandstone bedrock. Two step-out borings in two directions met similar refusal.

Collected soil sample S001 at 09:33.

Backfilled with soil cuttings.
On gentle slope within small group of trees, surrounded by poison oak.

Samples retained in 6-inch stainless steel sleeve.

**Boring ID:** B1BS0179

<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>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</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, weak cementation [Native]</td>
</tr>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0</td>
<td>SP</td>
<td>Becomes dark yellowish brown (10YR 3/4)</td>
</tr>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0</td>
<td>SP</td>
<td>Total Depth = 8.5 ft; refusal on sandstone bedrock.</td>
</tr>
</tbody>
</table>

Collected soil samples S001 at 10:05, S002 at 10:17, and S003 at 11:07.

Backfilled with soil cuttings.
**Boring ID: B1BS0180**

**Borehole Diam. (in.):** 3  
**Total Depth (ft):** 1.0  
**Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property  
**Job Number:** 1008208  
**Site:** B1-2

**Notching (ft):** 269354.97  
**Easting (ft):** 1796888.32

**Drill Start Date:** 05-24-2010  
**Start Time:** 11:15  
**Logged By:** A. Goldenberg  
**Reviewed By:** M. Milman-Barris, P.G.

**Drill Finish Date:** 05-24-2010  
**Finish Time:** NR  
**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:** Under oak tree, soil and oak leaves at surface  
**Well Comp. Date:** N/A  
**Completion Time:** N/A

**Sampling:** Samples retained in 6-inch stainless steel sleeve  
**Soil Backfill Date:** 05-24-2010  
**Backfill Time:** NR

<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>0</td>
<td>S</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), loose to medium dense, moist, friable, contains roots and rootlets, no odor or staining [Native]</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 1.0 ft; refusal on roots. Two step-out borings, 2 ft to west and east, met similar refusal.

Collected soil sample S001 at 11:20.

Backfilled with soil cuttings.
**LOG OF BORING OUTFALL009 ISRA-2010.GPJ  BOEING.GDT  3/30/11**

<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>SP-SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand with Silt, yellowish brown (10YR 5/4), medium dense, moist, weak cementation [Fill (possibly native soil from another part of site)]</td>
<td></td>
</tr>
</tbody>
</table>

- **Total Depth (ft):** 5.0 ft; terminated prior to refusal on bedrock.
- Collected soil samples S001 at 14:12 and S002 at 14:22.
- Backfilled with soil cuttings.

---

**MWH**

**Boring ID: B1BS0181**

- **Borehole Diam. (in.):** 3
- **Total Depth (ft):** 5.0
- **Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property

- **Northing (ft):** 269150.48
- **Easting (ft):** 1796837.40
- **Job Number:** 1008208
- **Site:** B1-2

- **Drill Start Date:** 05-25-2010
- **Start Time:** 14:06
- **Logged By:** A. Ruotolo
- **Reviewed By:** M. Milman-Barris, P.G.

- **Drill Finish Date:** 05-25-2010
- **Finish Time:** 14:23
- **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:** On flat, sparsely vegetated surface

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

**Completion Time:** N/A

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

**Soil Backfill Date:** 05-25-2010

**Backfill Time:** 14:23

**Gravel** | **Coarse Sand** | **Med. Sand** | **Fine Sand** | **Silt/Clay**
--- | --- | --- | --- | ---
tr | 10 | 40 | 40 | 10

---

**Northing (ft):** 269150.48

**Easting (ft):** 1796837.40

**Drill Start Date:** 05-25-2010

**Drill Finish Date:** 05-25-2010

**Last Updated:** 05-25-2010

---

**Logged By:** A. Ruotolo

**Reviewed By:** M. Milman-Barris, P.G.
**Boring ID: B1BS0182**

<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>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>0.0</td>
<td>SP-SM</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, moist, weak cementation [Fill (possibly native soil from another part of site)]</td>
</tr>
</tbody>
</table>

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

Collected soil sample S001 at 13:46.

Backfilled with soil cuttings.

---

**Comments:** On flat, sparsely vegetated surface

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

**Soil Backfill Date:** 05-25-2010

**Backfill Time:** 14:04
On flat, sparsely vegetated surface within a group of tall bushes.

Sample retained in 6-inch stainless steel sleeve.

Description:

- Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, moist, weak cementation, mica present [Fill (possibly native soil from another part of site)]

- Sandstone, light yellowish brown (10YR 6/4), unweathered, unfractured, competent [Chatsworth Formation]

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

Collected soil sample S001 at 12:43.

Backfilled with soil cuttings.
Boring ID: B1BS0184

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

Date / Time: 05-25-2010
Drill Start Date: 05-25-2010
Drill Finish Date: 05-25-2010

Logged By: A. Ruotolo
Logged Time: 13:21

Drilling Contractor: B.L. Hall

Driller’s Name: R. Cano

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

Drill Rig Type/Method: Hand Auger

On edge of dirt road, surface covered with weathered hydromulch

Drill Start Date: 05-25-2010
Drill Finish Date: 05-25-2010

Results:

<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>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0.0</td>
<td>SP-SM</td>
<td>Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, moist, weak cementation [Fill (possibly native soil from another part of site)]</td>
</tr>
<tr>
<td>3</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>3.0</td>
<td>Med. Sand</td>
<td>Total Depth = 3.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil samples S001 at 13:24 and S002 at 13:34. Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

Sample Type

SP-SM: Spudhammer Sample

PID: Panic Intensity Detector

Depth (feet)

0 1 2 3 4 5 6 7 8 9 10

Water Level

0 1 2 3 4 5 6 7 8 9 10

USCS Soil Classification

SP-SM: Spudhammer Sample

Total Depth = 3.5 ft; refusal on weathered Chatsworth Formation Sandstone.

Collected soil samples S001 at 13:24 and S002 at 13:34.

Backfilled with soil cuttings.
**Boring ID: B1BS0185**

<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>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>SP-SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, dry, weak cementation [Fill (possibly native soil from another part of site)]</td>
</tr>
</tbody>
</table>

Total Depth = 2.0 ft; refusal on weathered Chatsworth Formation Sandstone.

Collected soil sample S001 at 13:09.

Backfilled with soil cuttings.
**Borehole Diam. (in.):** 3
**Total Depth (ft):** 12.5
**Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property

**Northing (ft):** 269411.08
**Easting (ft):** 1796899.96
**Job Number:** 1008208

**Drill Start Date:** 05-25-2010
**Start Time:** 08:44
**Logged By:** A. Ruotolo
**Reviewed By:** M. Milman-Barris, P.G.

**Drill Finish Date:** 05-25-2010
**Finish Time:** 10:53
**Drilling Contractor:** B.L. Hall
**Field Instrumentation:** PID

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

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

**Comments:** Within northern part of B1-2 drainage

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

**Soil Backfill Date:** 05-25-2010
**Backfill Time:** 10:53

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

**Log Type:** Boring ID: B1BS0186

---

<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>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>S</td>
<td>0.4</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SP-SM</td>
<td>Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, moist, weak cementation, mica present [Native]</td>
</tr>
<tr>
<td>S</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
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</tr>
<tr>
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<td>S</td>
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<td>4</td>
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<td>S</td>
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<td></td>
<td></td>
<td>6</td>
<td>SC-SM</td>
<td>Silty, Clayey Sand, dark greenish gray (GLEY 1 4/1), medium dense, moist, ~15% clay, ~10% silt, distinct hydrocarbon odor</td>
</tr>
</tbody>
</table>

**Gravel Coarse Sand Med. Sand Fine Sand Silt/Clay**

<table>
<thead>
<tr>
<th></th>
<th>10</th>
<th>30</th>
<th>50</th>
<th>10</th>
</tr>
</thead>
</table>

- Becomes dark yellowish brown (10YR 4/4), pervasive iron oxidation
- Becomes dark greenish gray (GLEY 1 4/1), distinct hydrocarbon odor

**Total Depth = 12.5 ft; terminated prior to refusal on bedrock.**

Collected soil samples S001 at 08:47, S002 at 09:03, S003 at 09:51, and S004 at 10:44.

Backfilled with soil cuttings.
### LOG OF BORING  OUTFALL009_ISRA-2010.GPJ  BOEING.GDT  3/30/11

**Boring ID: B1BS0187**

<table>
<thead>
<tr>
<th>Borehole Diam. (in.): 3</th>
<th>Total Depth (ft): 1.5</th>
</tr>
</thead>
</table>

**Remarks:**

- On edge of slope west of B1-2 drainage; gravel and asphalt chunks

**Sampler:**

- Sample retained in 6-inch stainless steel sleeve

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

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

**Water Level:** Retained

**PID (ppm):**

- Coarse Sand
- Med. Sand
- Fine Sand
- Clay

**Sample Interval:**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Recovery (%)</th>
<th>Blown Count/6&quot;</th>
<th>PID</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>3.4</td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>Poorly Graded Sand with Silt, dark brown (10YR 3/3), medium dense, moist, weak cementation, mica present [Fill]</td>
</tr>
</tbody>
</table>

- Total Depth = 1.5 ft; refusal on asphalt. Three step-out borings met similar refusal.
- Collected soil sample S001 at 08:16.
- Backfilled with soil cuttings.

**Depth H2O After Drilling:** N/A

**Sample Type:**

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

**Total Depth (ft):** 1.5

**Comments:**

- Three step-out borings met similar refusal.

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

**Completion Time:** N/A

**Backfill Time:** 08:38

**Backfill:**

- Soil cuttings

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

**Field Instrumentation:** PID

**PID:**

- 10
- 35
- 10
- 30
- 35
- 10

**SAMPLER**

- Samplers: Sample retained in 6-inch stainless steel sleeve

**Comments:**

- Three step-out borings met similar refusal.

**Soil Backfill Date:** 05-25-2010

**Comments:**

- Collected soil sample S001 at 08:16.
- Backfilled with soil cuttings.

**Backfill Time:** 08:38

**EASTING (ft):** 2048412.59

**NORTHING (ft):** 1796891.19

**Drill Start Date:** 05-25-2010

**Drill Finish Date:** 05-25-2010

**Finish Time:** 08:37

**Start Time:** 08:13

**Logged By:** A. Ruotolo

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

**Sample Retained in:**

- 6-inch stainless steel sleeve

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

**Sample Retained in 6-inch stainless steel sleeve**
Under oak tree, soil and oak leaves at surface
Sample retained in 6-inch stainless steel sleeve

<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></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, brown (10YR 5/3), dense, dry to moist, subangular gravel, porous, contains roots and rootlets, no odor or staining [Native]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G</td>
<td>Total Depth = 0.8 ft; refusal on Chatsworth Formation Sandstone. One step-out boring 0.5 ft to south met similar refusal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>Collected soil sample S001 at 12:40.</td>
</tr>
<tr>
<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>

Extended material:

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

**Notes:**

- Total Depth = 0.8 ft; refusal on Chatsworth Formation Sandstone. One step-out boring 0.5 ft to south met similar refusal.
- Collected soil sample S001 at 12:40.
- Backfilled with soil cuttings.
**Boring ID: B1BS0189**

- **Borehole Diam. (in.):** 3
- **Total Depth (ft):** 4.0
- **Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
- **Northing (ft):** 269192.80
- **Easting (ft):** 1796800.03
- **Job Number:** 1008208
- **Site:** B1-2
- **Drill Start Date:** 05-26-2010
- **Start Time:** 10:27
- **Logged By:** A. Ruotolo
- **Reviewed By:** M. Milman-Barris, P.G.
- **Drill Finish Date:** 05-26-2010
- **Finish Time:** 11:12
- **Drilling Contractor:** B.L. Hall
- **Field Instrumentation:** PID

**Comments:** On flat, sparsely vegetated surface

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

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

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

**Driller’s Name:** R. Cano

**Comments:******************

- **No gravel or coarse sand present**
- **Small chunks of asphalt present in auger bucket**
- **No gravel or coarse sand present**

**Total Depth = 4.0 ft; refusal on asphalt or concrete.**

Collected soil samples S001 at 10:28 and S002 at 10:47. Five step-out borings required to collect S002, which was collected from step-out 2 ft to southeast.

All borings backfilled with soil cuttings.

<table>
<thead>
<tr>
<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-SM</td>
<td>Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, dry, weak cementation (Fill)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Level</th>
<th>PID (ppm)</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td></td>
<td>S</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blown Count/6&quot;</th>
<th>Depth (feet)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, dry, weak cementation (Fill)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Water Level</th>
<th>Sample Interval</th>
<th>Recovery (%)</th>
<th>Blown Count/6&quot;</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td></td>
<td>S</td>
<td>0.0</td>
<td></td>
<td>SP-SM</td>
<td>Poorly Graded Sand with Silt, brown (10YR 4/3), medium dense, dry, weak cementation (Fill)</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>tr</td>
<td>10</td>
<td>40</td>
<td>40</td>
<td>10</td>
</tr>
</tbody>
</table>

**Notes:******************

- **Well Comp. Date:** N/A
- **Completion Time:** N/A
- **Soil Backfill Date:** 05-26-2010
- **Backfill Time:** 11:12
Silty Sand, brown (10YR 4/3), dense, dry to moist, few subangular gravel, few rootlets, no odor or staining [Fill]

Total Depth = 1.2 ft; refusal on rocks, either fill or bedrock. One step-out boring 1 ft to northwest met similar refusal.

Collected soil sample S001 at 09:18.

Backfilled with soil cuttings.
Borehole Diam. (in.): 3
Total Depth (ft): 5.0

Northing (ft): 269261.12
Easting (ft): 1796889.03

Drill Start Date: 05-25-2010
Start Time: 09:45

Drill Finish Date: 05-25-2010
Finish Time: 12:00

Depth 1st H_2O (ft): N/A
Date / Time: N/A

Depth H_2O After Drilling (ft): N/A
Date / Time: N/A

Samples: Samples retained in 6-inch stainless steel sleeve

Comments: Surface covered with gravel and hydromulch

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

Log Count/6” Recovery (ppm)

Sample Interval Retained Recovery Blowing Count/6” Water Level Depth (feet) Graphic Log
Sample Type Sample Type

SM
Silly Sand, dark yellowish brown (10YR 4/4), dense, dry to moist, slightly clayey, no odor or staining [Fill]

→ very strong odor

→ becomes very dark greenish gray (GLEY 1 3/1), moist, slightly coarser sand, very strong odor and staining

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

Collected soil samples S001 at 10:00, S002 at 10:09, and S003 at 10:30.

Backfilled with soil cuttings.
**Drill Rig Type/Method:** Hand Auger  
**Site:** B1-2  
**Reviewed By:** M. Milman-Barris, P.G.

Soil with aggregate base at surface  
Samples retained in 6-inch stainless steel sleeve

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

**Comments:** 
Soil with aggregate base at surface

**Backfill Time:** 13:10

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

---

**Sample Interval**  
**Sample Type**  
**Recovery (%)**  
**Blow Count/6”**  
**PID (ppm)**  
**Water Level**  
**Depth (feet)**  
**USCS Soil Classification**  
**Description**  
**Gravel**  
**Coarse Sand**  
**Med. Sand**  
**Fine Sand**  
**Silt/Clay**

<table>
<thead>
<tr>
<th>Sample Interval</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>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</td>
<td>SM</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>20</td>
<td>30</td>
<td>SM</td>
<td>Silty Sand, mottled yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/4), dense, dry to moist, few gravel, no odor or staining [Fill]</td>
<td>10</td>
<td>5</td>
<td>30</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>1</td>
<td>SM</td>
<td>20</td>
<td>5</td>
<td>20</td>
<td>5</td>
<td>20</td>
<td>SM</td>
<td>Silty Sand with Gravel, dark brown (10YR 3/3), dense, moist, angular to subrounded gravel [Fill]</td>
<td>20</td>
<td>5</td>
<td>20</td>
<td>25</td>
<td>30</td>
</tr>
</tbody>
</table>

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

Collected soil samples S001 at 12:40 and S002 at 13:00.

Backfilled with soil cuttings.
**Boring ID: B1BS0193**

- **Borehole Diam. (in.):** 3
- **Total Depth (ft):** 10.0
- **Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
- **Northing (ft):** 269233.17
- **Easting (ft):** 1796746.63
- **Job Number:** 1008208
- **Site:** B1-2
- **Drill Start Date:** 05-24-2010
- **Start Time:** 12:59
- **Logged By:** A. Goldenberg
- **Reviewed By:** M. Milman-Barris, P.G.
- **Drill Finish Date:** 05-24-2010
- **Finish Time:** 13:55
- **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:** Soil with vegetation at surface

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

**Soil Backfill Date:** 05-24-2010

**Backfill Time:** 14:00

**Est. % of Soil:**

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silty Sand</td>
<td>5</td>
<td>10</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>Clayey Sand</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
</tr>
</tbody>
</table>

**Graphic Log**

- **Sample Interval:**
  - Depth: 0.3
  - Description: Silty Sand, brown (10YR 4/3), medium dense, moist, porous, contains roots and rootlets, no odor or staining [Fill]

- **Sample Interval:**
  - Depth: 0.1
  - Description: Clayey Sand, dark yellowish brown (10YR 3/4), medium dense, moist, organic-rich, contains roots, no odor or staining [Alluvium]

- **Sample Interval:**
  - Depth: 0.1
  - Description: Sandstone, brownish yellow (10YR 6/6) and dark yellowish brown (10YR 4/4), moist, weathered, slightly friable, no odor or staining [Chatsworth Formation]

**Total Depth = 10.0 ft; refusal on bedrock. One step-out boring 1 ft to southwest met similar refusal.**

Collected soil samples S001 at 13:10, S002 at 13:17, and S003 at 13:47.

Backfilled with soil cuttings.
Boring ID: B1BS0194

Borehole Diam. (in.): 3
Total Depth (ft): 3.5

Northing (ft): 269239.89
Easting (ft): 1796797.35

Drill Start Date: 07-27-2010
Start Time: 10:45

Drill Finish Date: 07-27-2010
Finish Time: 11:00

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

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

Sample Interval Retained
Sample Type
Recovery (%)
Blow Count / 6"
PID (ppm)
Water Level
Depth (feet)
USCS Soil Classification

<table>
<thead>
<tr>
<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></td>
<td>Silty Sand, light yellowish brown (10YR 6/4), loose, dry, fine gravel, no odor or staining [Fill]</td>
</tr>
<tr>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>0.2</td>
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<tr>
<td>0.3</td>
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<tr>
<td>0.4</td>
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<td></td>
</tr>
<tr>
<td>3.5</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Comments: Samples retained in 6-inch stainless steel sleeve

Drill Rig Type/Method: Hand Auger

Hand Auger B1-2
Completion Time: 25
Backfill Time: 3

Silty Sand, light yellowish brown (10YR 6/4), loose, dry, fine gravel, no odor or staining [Fill]

Sandstone [Chatsworth Formation]

Total Depth = 3.5 ft; refusal on bedrock.

Collected soil samples S001 at 10:48 and S002 at 10:54.

Backfilled with soil cuttings.
Boring ID: B1BS0195

Borehole Diam. (in.): 3  Total Depth (ft): 4.5  Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
Northing (ft): 269199.50  Easting (ft): 1796781.63  Job Number: 1008208  Site: B1-2
Drill Start Date: 07-27-2010  Start Time: 11:20  Logged By: V. Vathanasin  Reviewed By: M. Milman-Barris, P.G.
Drill Finish Date: 07-27-2010  Finish Time: 11:37  Drilling Contractor: B.L. Hall  Field Instrumentation: N/A
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: Roots and oak leaves at surface  Well Comp. Date: N/A  Completion Time: N/A
Samplers: Samples retained in 6-inch stainless steel sleeve  Soil Backfill Date: 07-27-2010  Backfill Time: 11:37

Sample Interval  Depth (feet)  Graphic Log  USCS Soil Classification  Description
---  -------  --------------------  -------------------  ----------------------
0  SM  Silty Sand, yellowish brown (10YR 5/4), loose, dry, fine gravel, no odor or staining [Fill - Reworked Native Soil]
1  S  Sandstone [Chatsworth Formation]
2  S  Total Depth = 4.5 ft; refusal on bedrock.
3  S  Collected soil samples S001 and D001 at 11:28 and S002 at 11:35.
4  S  Backfilled with soil cuttings.
5  S  

Est. % of Soil
Gravel  Coarse Sand  Med. Sand  Fine Sand  Silt/Clay
5  tr  65  30  

LOG OF BORING OUTFALL009 ISRA-2010.GPJ  BOEING.GDT  3/25/11

LOG OF BORING / OUTFALL009 ISRA-2010.GPJ / BOEING.GDT  3/25/11
**Boring ID: B1BS0196**

**Borehole Diam. (in.): 3**
**Total Depth (ft): 1.5**

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

**Log No:** 1008208
**Site:** B1-2

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

**Drill Start Date:** 07-27-2010
**Drill Finish Date:** 07-27-2010
**Start Time:** 11:05
**Finish Time:** 11:18

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

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

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

**Comments:** Sample retained in 6-inch stainless steel sleeve

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

**Drill Start Date:** 07-27-2010
**Drill Finish Date:** 07-27-2010

**Backfill Time:** 11:18

**Sample Type:** Sample

**Sample Interval:**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>PIP (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></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td></td>
<td>Silty Sand, very pale brown (10YR 7/4), loose, dry, no odor or staining [Fill]</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone [Chatsworth Formation]</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 1.5 ft; refusal on bedrock.</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 11:08. Collect duplicate sample at B1BS0195 due to hard drilling at this location.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</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>5</td>
<td>10</td>
<td>55</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>
**Description**

Well Graded Sand with Silt, yellowish brown (10YR 5/4), loose, dry, fine gravel, roots, no odor or staining [Fill - Reworked Native Soil]

**Sandstone [Chatsworth Formation]**

- Total Depth = 0.5 ft; refusal on bedrock.
- Collected soil sample S001 at 13:02.
- 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>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</td>
<td>SM</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Silty Sand, pale brown (10YR 6/3), loose, dry, fine gravel, roots, no odor or staining [Fill]</td>
<td></td>
<td>5 5 60 30</td>
</tr>
</tbody>
</table>

Sandstone [Chatsworth Formation]

Total Depth = 0.5 ft; refusal on bedrock.

Collected soil sample S001 at 09:57.

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>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, pale brown (10YR 6/3), loose, dry, fine gravel, no odor or staining [Fill]</td>
<td></td>
</tr>
</tbody>
</table>

- Total Depth = 0.5 ft; refusal on bedrock.
- Collected soil sample S001 at 10:11.
- Backfilled with soil cuttings.
**Boring ID: B1BS0200**

**Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property  
**Site:** B1-2  
**Job Number:** 1008208

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

<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>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, pale brown (10YR 6/3), loose, dry, fine gravel, no odor or staining [Fill]</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone [Chatsworth Formation]</td>
</tr>
</tbody>
</table>

Total Depth = 0.5 ft; refusal on bedrock.

Collected soil sample S001 at 10:25.

Backfilled with soil cuttings.
Borehole Diam. (in.): 3
Total Depth (ft): 3.0
Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
Northing (ft): 269397.47
Easting (ft): 1796941.44
Job Number: 1008208
Site: B1-2

Drill Start Date: 07-27-2010
Start Time: NR
Logged By: V. Vathanasin

Drill Finish Date: 07-27-2010
Finish Time: 09:14
Drilling Contractor: B.L. Hall
Field Instrumentation: N/A

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

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

Comments: Surface covered with hydromulch
Sample Interval: 0.5 ft
Sample Type: SM
Sample Retained: Yes

USCS Soil Classification:
- Silty Sand, very pale brown (10YR 7/4), dense, dry, fine gravel, no odor or staining [Fill]
- becomes pale brown (10YR 6/3), decreasing gravel
- Sandstone [Chatsworth Formation]

Total Depth = 3.0 ft; refusal on bedrock. Met refusal on bedrock at similar depth at two step-out borings.

Collected soil samples S001 at 08:44 and S002 at 08:55.
Backfilled all three locations with soil cuttings.

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>Water Level (feet)</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</td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, very pale brown (10YR 7/4), dense, dry, fine gravel, no odor or staining [Fill]</td>
<td>10</td>
<td>10</td>
<td>60</td>
<td>20</td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes pale brown (10YR 6/3), decreasing gravel</td>
<td>5</td>
<td>15</td>
<td>60</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>N/A</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>3</td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td>Total Depth = 3.0 ft; refusal on bedrock. Met refusal on bedrock at similar depth at two step-out borings.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td></td>
<td>N/A</td>
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<td></td>
<td>Collected soil samples S001 at 08:44 and S002 at 08:55.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled all three locations with soil cuttings.</td>
<td></td>
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</tr>
</tbody>
</table>

Well Comp. Date: N/A
Completion Time: N/A
Samplers: Sample retained in 6-inch stainless steel sleeve
Soil Backfill Date: 07-27-2010
Backfill Time: 09:14
**Boring ID: B1BS0202**

**Borehole Diam. (in.):** 3  
**Total Depth (ft):** 0.5  
**Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property  
**Northing (ft):** 269394.77  
**Easting (ft):** 179694.66  
**Job Number:** 1008208  
**Loged By:** V. Vathanasin  
**Logged By:** M. Milman-Barris, P.G.  
**Site:** B1-2  
**Drill Start Date:** 07-27-2010  
**Start Time:** NR  
**Logged By:** V. Vathanasin  
**Reviewed By:** M. Milman-Barris, P.G.  
**Drill Finish Date:** 07-27-2010  
**Finish Time:** 09:47  
**Drilling Contractor:** B.L. Hall  
**Field Instrumentation:** N/A  
**Date:** N/A  
**Date:** N/A  
**Driller's Name:** M. Hoehn  
**Depth 1st H2O (ft):** N/A  
**Date / Time:** N/A  
**Drill Rig Type/Method:** Hand Auger  
**Date / Time:** N/A  
**Depth H2O After Drilling (ft):** N/A  
**Driller's Name:** M. Hoehn  
**Comments:** Asphalt, gravel road base, and hydromulch at surface  
**Well Comp. Date:** N/A  
**Completion Time:** N/A  
**Sample Type:** Sample retained in 6-inch stainless steel sleeve  
**Soil Backfill Date:** 07-27-2010  
**Backfill Time:** 09:47  

<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>1</td>
<td>S</td>
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<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td>Silty Sand with Gravel, light yellowish brown (10YR 6/4), loose, dry, fine gravel, no odor or staining [Fill]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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<td></td>
<td></td>
<td>1</td>
<td></td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td>3</td>
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<td></td>
<td></td>
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<td></td>
<td>2</td>
<td></td>
<td>Total Depth = 0.5 ft; refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td>Collected soil sample S001 at 09:44.</td>
<td></td>
</tr>
<tr>
<td>5</td>
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<td></td>
<td>4</td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
</tr>
<tr>
<td>6</td>
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<td></td>
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<td>10</td>
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<td></td>
<td></td>
<td>9</td>
<td></td>
<td></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>15</td>
<td>10</td>
<td>20</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td>Sample Interval (ft)</td>
<td>Sample Type</td>
<td>Recovery (%)</td>
<td>Blow Count/6&quot;</td>
<td>PID (ppm)</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>---------------</td>
<td>-----------</td>
</tr>
<tr>
<td>0</td>
<td>SP-SM</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Comments: Asphalt, gravel road base, and hydromulch at surface*

*Sample retained in 6-inch stainless steel sleeve*

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

*Samplers: M. Milman-Barris, P.G.*

*Soil Backfill Date: 07-27-2010 Backfill Time: 09:37*

*Drill Rig Type/Method: Hand Auger*

*Driller's Name: M. Hoehn*

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

*Site: B1-2*

*Drilling Contractor: B.L. Hall*

*Field Instrumentation: N/A*
**Boring ID: B1BS0204**

<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>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>[See Trench Log ISRA-B1-2 for lithology]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SM</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, yellowish brown (10YR 5/6), loose, dry, micaceous [Alluvium]</td>
<td></td>
</tr>
</tbody>
</table>

- **Total Depth:** 6.5 ft; terminated prior to refusal on bedrock.
- **Collected soil samples S001 at 08:41 and S002 at 08:52.**
- **Excavation backfilled 01-12-2011 - 01-31-2011.**

**Drill Start Date:** 10-13-2010  **Start Time:** 08:35  **Logged By:** S. Aichner  **Reviewed By:** M. Milman-Barris, P.G.

**Drill Finish Date:** 10-13-2010  **Finish Time:** 09:00  **Drilling Contractor:** MP Environmental Svcs.

**Logged By:** S. Fink  **Driller's Name:** S. Fink

**Comments:** Bottom of ISRA-B1-2 excavation, collocate with B1ET0510

**Sample Type:** Samples retained in 6-inch stainless steel sleeve

**Soil Backfill Date:** 10-13-2010  **Backfill Time:** 09:00

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

**Job Number:** 1008208  **Site:** B1-2

**Northing (ft):** 229152.52  **Easting (ft):** 1796913.52

<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>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[See Trench Log ISRA-B1-2 for lithology]</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>S</td>
<td>0.0</td>
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<td></td>
<td></td>
<td></td>
<td>Silty Sand, yellowish brown (10YR 5/6), loose, dry, micaceous [Alluvium]</td>
<td></td>
</tr>
</tbody>
</table>

**Total Depth = 6.5 ft; terminated prior to refusal on bedrock.**

**Collected soil samples S001 at 08:41 and S002 at 08:52.**

**Excavation backfilled 01-12-2011 - 01-31-2011.**
Boring ID: B1BS0206

Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
Site: B1-2

Borehole Diam. (in.): 3
Total Depth (ft): 3.0

Northing (ft): 269271.44
Easting (ft): 1796927.22

Drill Start Date: 10-13-2010
Start Time: 09:00
Logged By: S. Aichner
Reviewed By: M. Milman-Barris, P.G.

Drill Finish Date: 10-13-2010
Finish Time: 09:15
Drilling Contractor: MP Environmental Svcs.
Field Instrumentation: PID

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

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

Comments: Bottom of ISRA-B1-2 excavation, collocate with B1ET0536

Sample Interval Retained Sample Type Recovery (%) Blow Count/6” PID (ppm) Water Level Depth (feet) Graphic Log USCS Soil Classification

<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</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>SM</td>
</tr>
</tbody>
</table>

[See Trench Log ISRA-B1-2 for lithology]

Silty Sand, light yellowish brown (10YR 6/4), loose, dry, trace fine gravel, micaceous [Alluvium]

Total Depth = 3.0 ft; refusal on weathered bedrock.
Collected soil sample S001 at 09:15.
Excavation backfilled 01-12-2011 - 01-31-2011.

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

Sample Type

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM</td>
<td>Silty Sand, light yellowish brown (10YR 6/4), loose, dry, trace fine gravel, micaceous [Alluvium]</td>
</tr>
</tbody>
</table>

Gravel Coarse Sand Med. Sand Fine Sand Silt/Clay

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tbody>
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</tbody>
</table>

Est. % of Soil

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</tbody>
</table>

Soil Backfill Date: 10-13-2010
Backfill Time: 09:15

Silty Sand, light yellowish brown (10YR 6/4), loose, dry, trace fine gravel, micaceous [Alluvium]
Borehole Diam. (in.): 3
Total Depth (ft): 6.5
Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property

Northing (ft): 269204.21
Easting (ft): 1796861.55
Job Number: 1008208
Site: B1-2

Drill Start Date: 10-13-2010
Start Time: 09:25
Logged By: S. Aichner

Drill Finish Date: 10-13-2010
Finish Time: 09:40
Drilling Contractor: MP Environmental Svcs.

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. Luna

Comments: Bottom of ISRA-B1-2 excavation, collocate with B1ET0543

Sample Interval Retained
Sample Type
Recovery (%)
Blow Count/'6"
PID (ppm)
Water Level
Depth (feet)
Graphic Log
USCS Soil Classification

[See Trench Log ISRA-B1-2 for lithology]

SM
Silty Sand, dark yellowish brown (10YR 4/4), loose, dry, micaceous [Alluvium]

Total Depth = 6.5 ft; terminated prior to refusal on bedrock.
Collected soil samples S001 at 09:30 and S002 at 09:35.
Excavation backfilled 01-12-2011 - 01-31-2011.
S. Aichner

Boring ID: B1BS0208

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

Job Number: 1008208

Site: B1-2

Logged By: S. Aichner

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

Drill Rig Type/Method: Hand Auger

Drilling Contractor: MP Environmental Svcs.

Field Instrumentation: PID

Well Comp. Date: N/A

Completion Time: N/A

Bottom of ISRA-B1-2 excavation, collocate with B1ET0545

Samples retained in 6-inch stainless steel sleeve

[See Trench Log ISRA-B1-2 for lithology]

Total Depth = 6.5 ft; terminated prior to refusal on bedrock.

Collected soil samples S001 at 09:40 and S002 at 09:50.

Excavation backfilled 01-12-2011 - 01-31-2011.

Borehole Diam. (in.): 3

Total Depth (ft): 6.5

Northing (ft): 269173.26

Easting (ft): 1796842.94

Drill Start Date: 10-13-2010

Start Time: 09:38

Drill Finish Date: 10-13-2010

Finish Time: 10:00

Driller's Name: R. Luna

Inc. Water Level: N/A

Depth 

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
<th>PID (ppm)</th>
<th>Depth (feet)</th>
<th>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
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</tr>
</tbody>
</table>

Silty Sand, dark brown (10YR 3/3), loose, moist, micaceous [Alluvium]

becomes very darkish gray (GLEY 1 10Y 3/1), stained, no odor

Est. % of Soil

Gravel

Coarse Sand

Med. Sand

Fine Sand

Silt/Clay

tr 10 70 20

SM

Total Depth (ft): 6.5

Well Comp. Date: N/A

Completion Time: N/A

Bottom of ISRA-B1-2 excavation, collocate with B1ET0545

Samples retained in 6-inch stainless steel sleeve

[See Trench Log ISRA-B1-2 for lithology]

Total Depth = 6.5 ft; terminated prior to refusal on bedrock.

Collected soil samples S001 at 09:40 and S002 at 09:50.

Excavation backfilled 01-12-2011 - 01-31-2011.
Boring ID: B1BS0209

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

Job Number: 1008208
Site: B1-2

Logged By: S. Aichner
Reviewed By: M. Milman-Barris, P.G.

Drill Rig Type/Method: Hand Auger
Field Instrumentation: PID

Comments: Bottom of ISRA-B1-2 excavation, collocate with B1ET0547

Samples: Samples retained in 6-inch stainless steel sleeve

[See Trench Log ISRA-B1-2 for lithology]

Silt/Clay

Total Depth = 6.0 ft; terminated prior to refusal on bedrock.
Collected soil samples S001 at 10:20 and S002 at 10:30.
Excavation backfilled 01-12-2011 - 01-31-2011.
<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>USCSoil Classification</th>
<th>Est. % of Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>Gravel</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>[See Trench Log ISRA-B1-2 for lithology]</td>
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</tr>
<tr>
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<td></td>
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<td></td>
<td>SM Silty Sand, dark yellowish brown (10YR 4/4), loose, moist, micaceous [Alluvium]</td>
<td>10</td>
</tr>
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</tr>
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</table>

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

Collected soil samples S001 at 10:00 and S002 at 10:15.

Excavation backfilled 01-12-2011 - 01-31-2011.
[See Trench Log ISRA-B1-2 for lithology]

Silty Sand, dark yellowish brown (10YR 3/4), loose, moist, trace clay, micaceous
[Alluvium]

becomes dark yellowish brown (10YR 4/6)

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

Collected soil samples S001 at 10:35 and S002 at 10:45.

Excavation backfilled 01-12-2011 - 01-31-2011.
## LOG OF BORING OUTFALL009 ISRA-2010.GPJ  BOEING.GDT  3/30/11

### Boring ID: B1BS0212

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<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blown 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></td>
<td></td>
<td>[See Trench Log ISRA-B1-2 for lithology]</td>
</tr>
<tr>
<td>0.1</td>
<td>S</td>
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<td></td>
<td></td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), loose, moist, trace fine sandstone gravel, micaceous [Alluvium]</td>
</tr>
</tbody>
</table>

- **Total Depth**: 6.5 ft; terminated prior to refusal on bedrock.
- **Collected soil samples S001 at 09:20 and S002 at 09:25.**
- **Excavation backfilled 01-12-2011 - 01-31-2011.**
Borehole Diam. (in.): 3  Total Depth (ft): 5.5  Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
Northing (ft): 269387.10  Easting (ft): 1796841.87  Job Number: 1008208  Site: B1-2
Drill Start Date: 10-13-2010  Start Time: 13:10  Logged By: S. Aichner  Reviewed By: M. Milman-Barris, P.G.
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. Luna
Comments: Bottom of ISRA-B1-2 excavation, collocate with B1ET0573
Samplers: Samples retained in 6-inch stainless steel sleeve

[See Trench Log ISRA-B1-2 for lithology]

SM  Silty Sand, dark yellowish brown (10YR 4/6), loose, moist, micaceous [Alluvium] 10 70 20

becomes yellowish brown (10YR 5/6)

Total Depth = 5.5 ft; terminated prior to refusal on bedrock.
Collected soil samples S001 at 13:15 and S002 at 13:30.
Excavation backfilled 01-12-2011 - 01-31-2011.
### Boring ID: B1BS0214

**Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property  
**Site:** B1-2  
**Logged By:** S. Aichner  
**Reviewed By:** M. Milman-Barris, P.G.

**Drill Start Date:** 10-13-2010  
**Start Time:** 13:40  
**Drill Finish Date:** 10-13-2010  
**Finish Time:** 14:45  
**Drilling Contractor:** MP Environmental Svcs.  
**Field Instrumentation:** PID

**Borehole Diam. (in.):** 3  
**Total Depth (ft):** 5.7  
**Northing (ft):** 269326.30  
**Easting (ft):** 1796841.10  
**Job Number:** 1008208  
**Date / Time:** N/A

**Depth H₂O After Drilling (ft):** N/A  
**Date / Time:** N/A  
**Drill Rig Type/Method:** Hand Auger  
**Driller’s Name:** S. Fink

**Sample Interval Retained:**  
**Sample Type:**  
**Recovery (%):**  
**Blow Count/6” (ppm):**  
**PID:**  
**Water Level:**  
**Depth (feet):**  
**Graphic Log:**  
**USCS Soil Classification:**

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<th>Depth (feet)</th>
<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>[See Trench Log ISRA-B1-2 for lithology]</td>
</tr>
<tr>
<td>1</td>
<td>SM Silty Sand, dark yellowish brown (10YR 4/4), loose, dry, trace fine gravel, micaceous [Alluvium]</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Total Depth = 5.7 ft; refusal on weathered bedrock.</td>
</tr>
<tr>
<td>7</td>
<td>Collected soil samples S001 and duplicate D001 at 13:45 and S002 at 14:45.</td>
</tr>
<tr>
<td>8</td>
<td>Excavation backfilled 01-12-2011 - 01-31-2011.</td>
</tr>
<tr>
<td>9</td>
<td></td>
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<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**Well Comp. Date:** N/A  
**Completion Time:** N/A  
**Comments:** Bottom of ISRA-B1-2 excavation, collocate with B1ET0582

**Samples:** Samples retained in 6-inch stainless steel sleeve  
**Soil Backfill Date:** 10-13-2010  
**Backfill Time:** 14:50

<table>
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<tr>
<th>Est. % of Soil</th>
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</thead>
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<tr>
<td>Gravel</td>
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<td>tr</td>
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</table>
Borehole Diam. (in.): 3
Northing (ft): 269396.68
Easting (ft): 1796854.21
Total Depth (ft): 5.5
Job Number: 1008208
Project: ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
Site: B1-2
Logged By: S. Aichner
Reviewed By: M. Milman-Barris, P.G.
Drill Rig Type/Method: Hand Auger
Drilling Contractor: MP Environmental Svcs.
Field Instrumentation: PID
Sample Type
Depth 1st H₂O (ft): N/A
Depth H₂O After Drilling (ft): N/A
Samples Retained in 6-inch stainless steel sleeve
Comments: Bottom of ISRA-B1-2 excavation, collocate with B1ET0593
Samples collected at 14:00 and S002 at 14:20.
Excavation backfilled 01-12-2011 - 01-31-2011.
[See Trench Log ISRA-B1-2 for lithology]
Silty Sand, dark yellowish brown (10YR 4/4), loose, moist, micaceous [Alluvium]
Total Depth = 5.5 ft; terminated prior to refusal on bedrock.
Collected soil samples S001 at 14:00 and S002 at 14:20.
Excavation backfilled 01-12-2011 - 01-31-2011.
**LOG OF BORING OUTFALL009 ISRA-2010.GPJ  BOEING.GDT  3/25/11**

**MWH**

**Boring ID: B1BS0216**

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<td>2</td>
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<td>Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, trace clay, micaceous [Fill]</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td>becomes dark yellowish brown (10YR 3/4)</td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**
- Total Depth = 2.5 ft; terminated prior to refusal on bedrock.
- Collected soil samples S001 at 10:09 and S002 at 10:32.
- Backfilled with soil cuttings.

**Sample Interval Retained**

<table>
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<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>Gravel</th>
<th>Coarse Sand</th>
<th>Med. Sand</th>
<th>Fine Sand</th>
<th>Silt/Clay</th>
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<tbody>
<tr>
<td>0</td>
<td>S</td>
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<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td>20</td>
<td>60</td>
<td>20</td>
<td>20</td>
<td>20</td>
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</table>

**Other Details:**
- Silt/Clay: 20
- Coarse Sand: 60
- Med. Sand: 20

Boring ID: B1BS0217

Borehole Diam. (in.): 4
Total Depth (ft): 2.5
Northing (ft): 269105.78
Easting (ft): 1796817.04
Drill Finish Date: 10-22-2010
Finish Time: 11:45
Drill Start Date: 10-22-2010
Start Time: 11:20

Logged By: S. Aichner
Reviewed By: M. Milman-Barris, P.G.

PID
A. Vann
Hand Auger

Field Instrumentation: PID

Sample Type

Depth (feet)
Sample Interval
0
1
2
3
4
5
6
7
8
9
10

Sample Interval
0
1
2
3
4
5
6
7
8
9
10

Sample Type

Depth (feet)
Sample Interval
0
1
2
3
4
5
6
7
8
9
10

Sample Type

Depth (feet)
Sample Interval
0
1
2
3
4
5
6
7
8
9
10

Sample Interval

Description

Silty Sand, brownish yellow (10YR 6/6), medium dense, moist, micaceous [Fill]
becomes dark yellowish brown (10YR 3/4)

Total Depth = 2.5 ft; terminated prior to refusal on bedrock.
Collected soil samples S001 at 11:24 and S002 at 11:39.
Backfilled with soil cuttings.
**Boring ID: B1BS0217A**

- **Borehole Diam. (in.):** 2
- **Total Depth (ft):** 3.0
- **Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property

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

- **Northing (ft):** 269105.78  
- **Easting (ft):** 1796817.04
- **Job Number:** 1008208  
- **Site:** B1-2

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

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

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

**Drilling Contractor:** Jacob & Hefner Assoc.  
**Field Instrumentation:** PID

**Comments:** Trench ISRA-B1-2 sidewall location

<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>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>0.1</td>
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<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist</td>
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</tbody>
</table>

**Total Depth of Excavation = 3.0 ft.**

Collected soil sample S001 at 10:50 from excavation sidewall.
S. Aichner

Boring ID: 1796797.42

Date / Time: 10-22-2010

PID

Job Number: 1008208

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

Trench ISRA-B1-2 perimeter

Samples retained in 6-inch stainless steel sleeve

A. Vann

Hand Auger

B1-2

Field Instrumentation: PID

Backfill Time: 10:00

Date / Time: 10-22-2010

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

N/A

N/A

Dates / Times:

Start Time: 09:26

Finish Time: 10:00

Date / Time: 10-22-2010

Comment: Trench ISRA-B1-2 perimeter

Samples retained in 6-inch stainless steel sleeve

MP Environmental Svcs.

20

4

20

60

20

Silty Sand, dark brown (10YR 3/3), medium dense, moist, trace fine sandstone gravel, trace clay, micaceous [Fill]

becomes yellowish brown (10YR 5/6)

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

Collected soil samples S001 at 09:39 and S002 at 09:58.

Backfilled with soil cuttings.
Silty Sand, dark yellowish brown (10YR 3/4), medium dense, moist, trace clay, micaceous [Fill]

becomes dark yellowish brown (10YR 4/4), dry

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

Collected soil samples S001 at 10:49 and S002 at 11:10.

Backfilled with soil cuttings.
<table>
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<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>SM</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, trace calcium carbonate grains</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth of Excavation = 3.0 ft.

Collected soil sample S001 at 10:40 from excavation sidewall.
**Boring ID: B1BS0220**

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

**Job Number:** 1008208

**Site:** B1-2

**Logged By:** S. Aichner

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

**Drill Start Date:** 10-13-2010

**Drill Finish Date:** 10-13-2010

**Start Time:** 11:10

**Finish Time:** 11:15

**Drilling Contractor:** MP Environmental Svcs.

**Field Instrumentation:** PID

**Easting (ft):** 269153.26

**Northing (ft):** 1796803.85

**Depth 1 H₂O (ft):** N/A

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

**Sample Interval:**

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Recovery (%)</th>
<th>Blown Count/6”</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>0.1</td>
<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), loose, dry, trace fine sandstone gravel, micaceous [Fill]</td>
<td></td>
</tr>
<tr>
<td>1</td>
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<td></td>
<td>Sandstone, weathered [Chatsworth Formation]</td>
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<tr>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td>Total Depth = 0.5 ft; refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td>3</td>
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<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 11:15.</td>
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</tr>
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</table>

**Comments:** Trench ISRA-B1-2 sidewall location

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

**Completion Time:** N/A

**Driller’s Name:** S. Fine

**Job Number:** 1008208

**Logged By:** S. Aichner

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

**Drill Start Date:** 10-13-2010

**Drill Finish Date:** 10-13-2010

**Start Time:** 11:10

**Finish Time:** 11:15

**Drilling Contractor:** MP Environmental Svcs.

**Field Instrumentation:** PID

**Easting (ft):** 269153.26

**Northing (ft):** 1796803.85

**Depth 1 H₂O (ft):** N/A

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

**Sample Interval:**

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Recovery (%)</th>
<th>Blown Count/6”</th>
<th>PID (ppm)</th>
<th>Water Level</th>
<th>Graphic Log</th>
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<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>S</td>
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<td></td>
<td></td>
<td>SM</td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), loose, dry, trace fine sandstone gravel, micaceous [Fill]</td>
<td></td>
</tr>
<tr>
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<td>Sandstone, weathered [Chatsworth Formation]</td>
</tr>
<tr>
<td>2</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Total Depth = 0.5 ft; refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil sample S001 at 11:15.</td>
<td></td>
</tr>
</tbody>
</table>
**Boring ID: ENBS0045A**

<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>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>SP-SM</td>
<td>0</td>
<td>N/A</td>
<td>0</td>
<td>Fine Sand</td>
<td>Poorly Graded Sand with Silt, dark yellowish brown (10YR 4/4), dense, moist, weak cementation, mica present [Native]</td>
</tr>
<tr>
<td>5</td>
<td>S</td>
<td>0.0</td>
<td>N/A</td>
<td>5</td>
<td>N/A</td>
<td>5</td>
<td>Fine Sand</td>
<td>Total Depth = 5.0 ft; terminated prior to refusal on bedrock. Collected soil samples S001 and duplicate D001 at 12:56 and S002 at 13:21. Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

**Comments:** On edge of old road, surface covered with weathered hydromulch. Samples retained in 6-inch stainless steel sleeve.

**Sampler:** Samples retained in 6-inch stainless steel sleeve.

**Soil Backfill Date:** 05-24-2010

**Backfill Time:** 13:39

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

**Job Number:** 1008208

**Start Date:** 05-24-2010

**Finish Date:** 05-24-2010

**PID:** N/A

**Field Instrumentation:** N/A

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

**Completion Time:** N/A

**Driller’s Name:** R. Cano

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

**Drilling Contractor:** B.L. Hall
## Boring ID: ENBS0046A

### Site Information
- **Northing (ft):** 269220.20
- **Easting (ft):** 1796898.12
- **Project:** ISRA Data Gap Sampling 2010, Outfall 009, Boeing Property
- **Job Number:** 1008208
- **Site:** B1-2

### Boring Details
- **Drill Start Date:** 05-25-2010
- **Start Time:** 13:15
- **Finish Time:** 13:35
- **Drill Rig Type/Method:** Hand Auger
- **Driller's Name:** M. Hoehn
- **PID:**

### Other Information
- **Date / Time:** N/A
- **Comments:** Soil with brush at surface
- **Drilling Contractor:** B.L. Hall
- **Reviewed By:** M. Milman-Barris, P.G.
- **Logged By:** A. Goldenberg
- **Sample Type:** Samples retained in 6-inch stainless steel sleeve
- **Depth (feet):** 5.0
- **Water Level:** 0
- **Soil Backfill Date:** 05-25-2010
- **Backfill Time:** 13:38

### Sample Interval

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SM</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SM</td>
<td>1.8</td>
<td></td>
</tr>
</tbody>
</table>

### Description
- **SM:** Silty Sand with Gravel, dark brown (10YR 3/3), dense, dry to moist, angular to subrounded gravel, no odor or staining [Fill]
- **Total Depth = 5.0 ft; terminated prior to refusal on bedrock.**
- **Collected soil samples S001 at 13:27 and S002 at 13:35.**
- **Backfilled with soil cuttings.**

### USCS Soil Classification
- **Gravel**
- **Coarse Sand**
- **Med. Sand**
- **Fine Sand**
- **Silt/Clay**

### 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>20</td>
<td>5</td>
<td>25</td>
<td>15</td>
<td>35</td>
</tr>
</tbody>
</table>

**LOG OF BORING OUTFALL009 ISRA-2010.GPJ BOEING.GDT 3/30/11**
<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></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, light brown (7.5YR 6/3), loose, dry, rootlets [Alluvium]</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 0.5 ft; terminated prior to refusal.

Collected soil sample S001 at 10:17.

Backfilled with native soil.
**Log of Boring Outfall 008**

**ENBS0094**

<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>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand, dark yellowish brown (10YR 4/4), loose, dry, no cementation, few rootlets [Alluvium]</td>
<td></td>
</tr>
</tbody>
</table>

- Total Depth = 0.5 ft; terminated prior to refusal on bedrock.
- Collected soil sample S001 at 11:23.
- Backfilled with native soil.

---

**Comments:**

- Dry soil, dry grass, and fragments of charred vegetation at surface
- Water Level: Retained

---

**Est. % of Soil**

- Gravel: 5
- Coarse Sand: 5
- Med. Sand: 90
- Fine Sand: None
- Silt/Clay: None
Boring ID: ENBS0094A

Borehole Diam. (in.): 3
Total Depth (ft): 3.8

Northing (ft): 1794191.13
Easting (ft): 268010.74

Drill Start Date: 02-04-2010
Start Time: 08:25

Drill Finish Date: 02-04-2010
Finish Time: 08:35

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: Hand Auger
Field Instrumentation: PID

Comments: On flat, sparsely vegetated surface near boulder with charred surface

Collected soil sample S001 at 08:35.
Backfilled with soil cuttings.

- Poorly Graded Sand, black (10YR 2/1), medium dense, moist, contains roots and rootlets [Native]
- becomes brown (10YR 4/3)
- Sandstone, brownish yellow (10YR 6/8), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]

Total Depth = 3.8 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 08:35.
Backfilled with soil cuttings.
<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 (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>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP</td>
<td>SP</td>
<td>Poorly Graded Sand, dark yellowish brown (10YR 4/4), loose, dry, no cementation, few rootlets [Alluvium]</td>
<td>10 90</td>
</tr>
</tbody>
</table>

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

Collected soil sample S001 at 11:30.

Backfilled with native soil.
<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</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand, dark yellowish brown (10YR 4/4), loose, dry, no cementation, few rootlets [Alluvium]</td>
<td></td>
</tr>
</tbody>
</table>

Total Depth = 0.5 ft; terminated prior to refusal on bedrock.
Collected soil sample S001 at 11:38.
Backfilled with native soil.
<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>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand, very dark grayish brown (10YR 3/2), medium dense, moist, contains rootlets, mica [Native]</td>
</tr>
<tr>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes dark yellowish brown (10YR 4/4)</td>
</tr>
<tr>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/8), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 4.5 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></td>
<td>Collected soil sample S001 at 13:22.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:** On very grassy slope

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

**Notes:**
- Total Depth = 4.5 ft; terminated due to refusal on bedrock.
- Collected soil sample S001 at 13:22.
- Backfilled with soil cuttings.
<table>
<thead>
<tr>
<th>Sample Interval</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>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>SP</td>
<td>Poorly Graded Sand, dark yellowish brown (10YR 3/4), medium dense, moist, mica present [Native]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes brown (10YR 5/3)</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP</td>
<td>Sandstone, brownish yellow (10YR 6/6), moderately 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>Total Depth = 2.0 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>Collected soil sample S001 at 08:51.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

**Comments:** On flat surface sparsely covered with grass, near partially charred rock.

**Soil Backfill Date:** 02-04-2010  
**Backfill Time:** 09:05
Boring ID: ENBS0149

**MWH**

Borehole Diam. (in.): 3  Total Depth (ft): 4.5  Project: SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
Northing (ft): 1794188.64  Easting (ft): 268050.86  Job Number: 1008208
Drill Start Date: 02-04-2010  Start Time: 09:13  Site: A1LF-2 (NW of Debris Area)
Logged By: A. Ruotolo  Reviewed By: V. Vathanasin, P.G.
Drill Finish Date: 02-04-2010  Finish Time: 09:27  Drilling Contractor: B.L. Hall
Depth 1st H₂O (ft): N/A  Date / Time: N/A  Field Instrumentation: N/A
Depth H₂O After Drilling (ft): N/A  Date / Time: N/A  Drill Rig Type/Method: Hand Auger

**Comments:** In small clearing between small bushes and adjacent to large boulder

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</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>6-inch stainless steel sleeve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand, dark yellowish brown (10YR 4/4), medium dense, moist, trace gravel-size sandstone fragments, contains rootlets, mica [Native]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes yellowish brown (10YR 5/4)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/6), moderately weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 4.5 ft; terminated due to refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Collected soil samples S001 at 09:15 and S002 at 09:33.</td>
<td></td>
</tr>
<tr>
<td>6</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:**

- Total Depth = 4.5 ft; terminated due to refusal on bedrock.
- Collected soil samples S001 at 09:15 and S002 at 09:33.
- Backfilled with soil cuttings.
**Boring ID: ENBS0150**

<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>Graph 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>SP-SM</td>
<td>Poorly Graded Sand with Silt, very dark gray (10YR 3/1), medium dense, moist, contains rootlets, mica [Native]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>becomes dark yellowish brown (10YR 4/4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>Sandstone, brownish yellow (10YR 6/8), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
</tr>
</tbody>
</table>

Total Depth = 4.8 ft; terminated due to refusal on bedrock.

Collected soil samples S001 at 11:18 and S002 at 11:34.

Backfilled with soil cuttings.

On moderate slope, in small clearing surrounded by grass and shrubs

Comments:

- SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
- BJLF-2 (NW of Debris Area)
- Logged By: A. Ruotolo
- Reviewed By: V. Vathanasin, P.G.
- Driller's Name: R. Cano
- Well Comp. Date: N/A
- Completion Time: N/A
- Soil Backfill Date: 02-03-2010
- Backfill Time: 11:40
Easting (ft): 2880113.12

Drill Start Date: 02-04-2010

Logged By: A. Ruotolo

Job Number: 1008208

Reviewed By: V. Vathanasin, P.G.

Site: A1LF-2 (NW of Debris Area)

ENBS0151

Sample Interval

Retention

Sample Type

Recovery (%)

Blow Count/6”

PID (ppm)

Water Level

Depth (feet)

Graphic Log

USCS Soil Classification

Description

Est. % of Soil

<table>
<thead>
<tr>
<th></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>10</td>
<td>10</td>
<td>40</td>
<td>35</td>
<td>5</td>
</tr>
</tbody>
</table>

Poorly Graded Sand, very dark brown (10YR 2/2), medium dense, moist, fine gravel consisting of sandstone fragments, contains rootlets, mica [Native]

Sandstone, yellow (10YR 7/6), moderately weathered, slightly friable, contains quartz, feldspar, and mica [Chatsworth Formation]

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

Collected soil sample S001 at 09:48.

Backfilled with soil cuttings.
Boring ID: ENBS0152

<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>SP</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0</td>
<td>Poorly Graded Sand, very dark grayish brown (10YR 3/2), medium dense, moist, fine gravel consisting of sandstone fragments, contains rootlets [Native]</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SP</td>
<td>0.0</td>
<td></td>
<td></td>
<td>1</td>
<td>Sandstone, yellow (10YR 7/6), moderately weathered, slightly friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SP</td>
<td>0.0</td>
<td></td>
<td></td>
<td>2</td>
<td>Total Depth = 1.0 ft; terminated due to refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SP</td>
<td>0.0</td>
<td></td>
<td></td>
<td>3</td>
<td>Collected soil sample S001 at 10:17.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SP</td>
<td>0.0</td>
<td></td>
<td></td>
<td>4</td>
<td>Backfilled with soil cuttings.</td>
<td></td>
</tr>
</tbody>
</table>

Comments: Surface covered with fresh grass

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

Samplers: 6-inch stainless steel sleeve

- Soil Backfill Date: 02-04-2010
- Backfill Time: 10:20
Boring ID: ENBS0153

Borehole Diam. (in.): 3
Total Depth (ft): 3.5

Easting (ft): 267977.32
Northing (ft): 1794206.92

Drill Rig Type/Method: Hand Auger
Drill Finish Date: 02-03-2010

Date / Time: N/A
Sample Interval: 0

Easting (ft): 267977.32
Northing (ft): 1794206.92

Comments: In small clearing covered with dried vegetation and charred wood

PID
PID (ppm)

Coarse Sand
5

Med. Sand
5

Fine Sand
10

Gravel
45

Silt/Clay
40

Depth (feet)
0
1
2
3
4
5
6
7
8
9
10

Retained

Graph Log

0.1

Sample
Retained

Depth (ft)

Sample Type

Sample Recovery (%)

Blow Count/6”

Water Level

USCS Soil Classification

Description

Poorly Graded Sand, brown (10YR 4/3), medium dense, moist, contains rootlets and wood fragments, mica [Native]

becomes dark yellowish brown (10YR 4/6)

Sandstone, brownish yellow (10YR 6/8), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]

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

Collected soil samples S001 at 14:04 and S002 at 14:20.

Backfilled with soil cuttings.
**MWH**

**Boring ID: ENBS0154**

<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>SP-SM</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td>Poorly Graded Sand with Silt, very dark grayish brown (10YR 3/2), medium dense, moist, gravel consists of sandstone fragments, contains roots and rootlets [Native]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Water Level</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>Med. Sand</td>
<td>Poorly Graded Sand with Silt, very dark grayish brown (10YR 3/2), medium dense, moist, gravel consists of sandstone fragments, contains roots and rootlets [Native]</td>
</tr>
</tbody>
</table>

Sandstone, yellowish brown (10YR 5/6), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]

Total Depth = 1.6 ft; terminated due to refusal on bedrock.

Collected soil sample S001 at 10:37.

Backfilled with soil cuttings.
### Boring ID: ENBS0155

**Comments:** On slope sparsely covered with fresh grass

**Sample Interval**

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Sample Type</th>
<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>Water Level</th>
<th>PID (ppm)</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>S</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand, very dark grayish brown (10YR 3/2), medium dense, moist, contains roots and rootlets, mica [Native]</td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>S</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>becomes dark yellowish brown (10YR 4/4)</td>
<td></td>
</tr>
<tr>
<td>2-3</td>
<td>S</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>becomes yellowish brown (10YR 5/6), with few gravel</td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>S</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, brownish yellow (10YR 6/8), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
<td></td>
</tr>
<tr>
<td>4-5</td>
<td>S</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 3.5 ft; terminated due to refusal on bedrock.</td>
<td></td>
</tr>
<tr>
<td>5-6</td>
<td>S</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>Collected soil samples S001 at 13:37 and S002 at 13:49.</td>
<td></td>
</tr>
<tr>
<td>6-7</td>
<td>S</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings.</td>
<td></td>
</tr>
</tbody>
</table>

**Gravel**  
**Coarse Sand**  
**Med. Sand**  
**Fine Sand**  
**Silt/Clay**
**LOG OF BORING \ OUTFALL009.GPJ  BOEING.GDT  2/25/10**

**MWH**

<table>
<thead>
<tr>
<th>Sample Interval Retained</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>S</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0</td>
<td>SP</td>
<td>Poorly Graded Sand, very dark gray (10YR 3/1), medium dense, moist, trace gravel-size sandstone fragments, contains rootlets [Native]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>R</td>
<td>becomes yellowish brown (10YR 5/4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>S</td>
<td>Sandstone, yellowish brown (10YR 5/6), weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td>S</td>
<td>Total Depth = 4.5 ft; terminated due to refusal on bedrock.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td>S</td>
<td>Collected soil samples S001 at 11:10 and S002 at 11:24.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td>S</td>
<td>Backfilled with soil cuttings.</td>
</tr>
</tbody>
</table>

**Boring ID: ENBS0156**

- **Total Depth**: 4.5 ft
- **Sample Type**: S
- **Recovery (%)**: 0.0
- **Blow Count/6”**: 0
- **Water Level**: 0

**Comments**: In small clearing surrounded by dense brush between large boulders

**Soil Backfill Date**: 02-04-2010

**Backfill Time**: 11:24
**LOG OF BORING OUTFALL009-2010.GPJ  BOEING.GDT  2/27/10**

**Boring ID:** ILBS0118A

- **Borehole Diam. (in.):** 2-1/4
- **Total Depth (ft):** 5.5
- **Project:** SSFL - ISRA Data Gap Sampling 2010 (Outfall 009 Area)
- **Northing (ft):** 1795957.51
- **Easting (ft):** 268281.42
- **Job Number:** 1008208
- **Site:** IEL (North - Grass)
- **Drill Start Date:** 01-28-2010
- **Start Time:** 10:15
- **Logged By:** S. Aichner
- **Reviewed By:** B. Martasin, P.G. #8356
- **Drill Finish Date:** 01-28-2010
- **Finish Time:** 10:50
- **Drilling Contractor:** Strongarm
- **Field Instrumentation:** PID
- **Easting (ft):**
- **Start Time:**
- **Finish Time:**
- **Date / Time:**
- **Date / Time:**
- **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:** Eric / Walter
- **Comments:** Weeds at surface
- **Well Comp. Date:** N/A
- **Completion Time:** N/A
- **Samplers:** Macrocore, discrete sample retained in 6-inch stainless steel sleeve
- **Soil Backfill Date:** 01-28-2010
- **Backfill Time:** 11:00

<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>SM</td>
<td>0.4</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>Silty Sand, dark brown (10YR 3/3), medium dense, moist, trace clay, micaceous [Native]</td>
<td></td>
</tr>
</tbody>
</table>

- becomes yellowish brown (10YR 5/4), no clay

- **Total Depth = 5.5 ft; terminated prior to refusal on bedrock.**
- Collected soil sample S001 at 10:50.
- Backfilled with soil cuttings topped off with hydrated bentonite.
### Asphal pavement at surface, cored prior to hand augering

**Boring ID:** ILBS0139A

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

**Total Depth (ft):** 0.8

**Northing (ft):** 1795980.41

**Easting (ft):** 268404.02

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

**Start Time:** 09:56

**Logged By:** A. Ruotolo

**Reviewed By:** B. Martasin, P.G. #6356

**Job Number:** 1008208

**Site:** IEL (North - Building Corner)

**Date / Time:** N/A

**Job Number:** N/A

**Logged By:** N/A

**Reviewed By:** N/A

**Boring ID:** 4050tr

**Asphalt (cored)**

**Poorly Graded Sand with Silt, yellowish brown (10YR 5/4), medium dense, moist, mica present; possibly weathered sandstone [Native]**

**Sandstone, yellow (10YR 7/6), highly weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]**

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

**No soil sample collected.**

**Backfilled with soil cuttings and sealed with cold patch.**

---

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<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>Graphic Log</th>
<th>USCS Soil Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>Asphalt (cored)</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Poorly Graded Sand with Silt, yellowish brown (10YR 5/4), medium dense, moist, mica present; possibly weathered sandstone [Native]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, yellow (10YR 7/6), highly weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation]</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>Total Depth = 0.8 ft; terminated due to refusal on bedrock.</td>
</tr>
<tr>
<td>3</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>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Backfilled with soil cuttings and sealed with cold patch.</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>tr 50</td>
<td>40</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Boring ID: ILBS0180A**

<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>0</td>
<td>Concrete (cored)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Concrete at surface, cored prior to hand augering</td>
</tr>
<tr>
<td>0.2</td>
<td>SM</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, mica present; possibly weathered sandstone [Native]</td>
</tr>
<tr>
<td>1</td>
<td>Med. Sand</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, yellow (10YR 7/6), highly weathered, moderately friable, contains quartz, feldspar, and mica [Chatsworth Formation] Total Depth = 0.9 ft; terminated due to refusal on bedrock. No soil sample collected. Backfilled with soil cuttings and sealed with cold patch.</td>
</tr>
<tr>
<td>2</td>
<td>Coarse Sand</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gravel</td>
</tr>
<tr>
<td>3</td>
<td>Med. Sand</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Coarse Sand</td>
</tr>
<tr>
<td>4</td>
<td>Fine Sand</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fine Sand</td>
</tr>
<tr>
<td>5</td>
<td>Silt/Clay</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silt/Clay</td>
</tr>
</tbody>
</table>

**Job Number:** 1008208  
**Drill Start Date:** 02-08-2010  
**Drill Finish Date:** 02-08-2010  
**Logged By:** A. Ruotolo  
**Reviewed By:** B. Martasin, P.G. #8356  
**Date / Time:** 09:45  
**Date / Time:** 09:48  
**Boring ID:** ILBS0180A  
**Drill Rig Type/Method:** Hand Auger  
**Driller’s Name:** M. Hoehn  
**Comments:** Concrete at surface, cored prior to hand augering  
**Estimated % 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>40</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Field Instrumentation:**

- **PID:**
- **Job:**
- **Drilling Contractor:** B.L. Hall  
**Notes:**

- Concrete at surface, cored prior to hand augering
- No soil sample collected.
- Backfilled with soil cuttings and sealed with cold patch.
- **Boring ID:** ILBS0249
- **Project:** SSFL ISRA Sampling - Outfall 009 Area

**Details:**
- **Drill Rig Type/Method:** Hand Auger
- **Site:** IEL
- **Log Sheet:** 1891614
- **Reviewed By:** B. Martasin, P.G. #8356

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

**Date / Time:** 13:00

**Comments:**
- Asphalt pavement at sample location
- Slide hammer with stainless steel sleeve

**Soil Backfill Date:** 06-03-2009

**Description:**
- Asphalt 4 inches thick over 2 inches road base
- Silty Sand with Gravel, brown (10YR 4/3), medium dense, moist, angular granitic gravel up to 1/2 inch diameter [Fill]

**Graph Log:**
- **Depth (feet):** 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
- **Sample Interval:** S
- **Sample Type:** S
- **Retained:** S
- **Recovery (%):** S
- **Blow Count/6":** S
- **PID (ppm):** S
- **Water Level:** S
- **USCS Soil Classification:** SM

**Est. % of Soil:**
- **Gravel:** 15
- **Coarse Sand:** 15
- **Med. Sand:** 20
- **Fine Sand:** 20
- **Silt/Clay:** 30

**Notes:**
- Total Depth = 5.0 ft; terminated prior to refusal.
- Collected soil samples S001 at 13:00 and S002 at 13:05.
- Backfilled with auger cuttings.
Asphalt pavement at sample location

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>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>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>Fine Sand</td>
<td>Asphalt 4 inches thick over 2 inches road base</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>Med. Sand</td>
<td>Silty Sand, brownish yellow (10YR 6/8), medium dense, iron oxide staining [Alluvium]</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td>Silt/Clay</td>
<td>Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 12:45. Backfilled with auger cuttings.</td>
</tr>
</tbody>
</table>

Comments: Asphalt pavement at sample location
Well Comp. Date: N/A
Completion Time: N/A

Samples: Slide hammer with stainless steel sleeve
Soil Backfill Date: 06-03-2009
Backfill Time: 12:50
Boring ID: ILBS0251

Borehole Diam. (in.): 3  Total Depth (ft): 5.0  Project: SSFL ISRA Sampling - Outfall 009 Area
Northing (ft): 268304.70  Easting (ft): 1796019.68  Job Number: 1891614  Site: IEL
Drill Start Date: 06-03-2009  Start Time: 12:15  Logged By: B. Martasin, P.G. #8356
Drill Finish Date: 06-03-2009  Finish Time: 12:30  Reviewed By: B. Martasin, P.G. #8356
Drilling Contractor: Strongarm  Field Instrumentation: N/A
Drill Rig Type/Method: Hand Auger

<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>0</td>
<td>SM</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>SM</td>
<td>Silty Sand with Gravel, light brown (7.5YR 6/3), loose, dry, granitic gravel [Fill]</td>
<td>15 15 20 30 20</td>
</tr>
<tr>
<td>2</td>
<td>SM</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>SM</td>
<td>Silty Sand, brown (10YR 4/3), medium dense, moist [Alluvium]</td>
<td>60 40</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td>becomes brownish yellow (10YR 6/8) with iron oxide staining, micaceous, slightly coarser sand, decrease in fines, rootlets observed</td>
<td>10 70 20</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td></td>
<td>Total Depth = 5.0 ft; terminated prior to refusal. Collected soil samples S001 at 12:20 and S002 at 12:30. Backfilled with auger cuttings.</td>
<td></td>
</tr>
</tbody>
</table>

Vegetation at surface: Vegetation at surface

Comments: Vegetation at surface

Samplers: Slide hammer with stainless steel sleeve

Silty Sand, brown (10YR 4/3), medium dense, moist [Alluvium]
**Boring ID: ILBS0252**

<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>0</td>
<td>SM</td>
<td>SM</td>
<td>Silty Sand, dark brown (7.5YR 3/4), dense, moist [Fill]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>SM</td>
<td>SM</td>
<td>Silty Sand, brownish yellow (10YR 6/8), hard, moist, micaceous, iron oxide staining [Weathered Chatsworth Formation Sandstone]</td>
</tr>
</tbody>
</table>

Total Depth = 5.0 ft; terminated prior to refusal.

Collected soil samples S001 at 11:15 and S002 at 11:20.

Backfilled with geoprobe cuttings.
**LOG OF BORING OUTFALL009.GPJ  BOEING.GDT  6/16/09**

**Boring ID: ILBS0253**

<table>
<thead>
<tr>
<th>Sample Interval</th>
<th>Recovery (%)</th>
<th>Blown 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>0.0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td>0.0</td>
<td>SM</td>
<td>Silty Sand, brownish yellow (10YR 6/6), dense, moist, micaceous, iron oxide staining [Alluvium]</td>
<td></td>
</tr>
<tr>
<td>0.0</td>
<td>S</td>
<td>0.0</td>
<td></td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:** Bare soil at surface

**Soil Backfill Date:** 06-03-2009

**Total Depth (ft):** 5.0

**Comments:**
- Total Depth = 5.0 ft; terminated prior to refusal.
- Collected soil samples S001 at 10:55 and S002 at 11:00.
- Backfilled with geoprobe cuttings.
### LOG OF BORING OUTFALL009-2010.DOC

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

**Northing (ft):** 1796006.19
**Easting (ft):** 268402.95
**Job Number:** 1008208
**Site:** IEL (North - Building Corner)

**Drill Start Date:** 02-09-2010
**Start Time:** 09:10
**Logged By:** S. Aichner
**Reviewed By:** B. Martasin, P.G. #8356

**Drill Finish Date:** 02-09-2010
**Finish Time:** 09:40
**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:** Asphalt pavement at surface, cored prior to augering

**Sample Interval Retained Sample Type Recovery (%) Blow Count/6” PID (ppm) Depth (feet) Graphic Log USCS Soil Classification Description Est. % of Soil**

<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>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>S</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Asphalt over gravel road base</td>
<td></td>
</tr>
</tbody>
</table>

Asphalt over gravel road base

Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, trace gravel-size sandstone fragments, micaceous [Native]

be becomes yellowish brown (10YR 5/6)

Sandstone, yellowish brown (10YR 5/6), 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 sealed with cold patch.

**Easting (ft):**

**Start Time:**

**Finish Time:**

**Date / Time:**

**Date / Time:**

**Easting (ft):**

**Start Time:**

**Finish Time:**

**Date / Time:**

**Date / Time:**

**Job Number:** 1008208

**Site:** IEL (North - Building Corner)

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

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

**Date / Time:** N/A

**Driller’s Name:** M. Hoehn

**Comments:** Asphalt pavement at surface, cored prior to augering

**Sample Interval Retained Sample Type Recovery (%) Blow Count/6” PID (ppm) Depth (feet) Graphic Log USCS Soil Classification Description Est. % of Soil**

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</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>S</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Asphalt over gravel road base</td>
<td></td>
</tr>
</tbody>
</table>

Asphalt over gravel road base

Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, trace gravel-size sandstone fragments, micaceous [Native]

be becomes yellowish brown (10YR 5/6)

Sandstone, yellowish brown (10YR 5/6), 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 sealed with cold patch.

**Easting (ft):**

**Start Time:**

**Finish Time:**

**Date / Time:**

**Date / Time:**

**Easting (ft):**

**Start Time:**

**Finish Time:**

**Date / Time:**

**Date / Time:**

**Job Number:** 1008208

**Site:** IEL (North - Building Corner)

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

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

**Date / Time:** N/A

**Driller’s Name:** M. Hoehn

**Comments:** Asphalt pavement at surface, cored prior to augering

**Sample Interval Retained Sample Type Recovery (%) Blow Count/6” PID (ppm) Depth (feet) Graphic Log USCS Soil Classification Description Est. % of Soil**

<table>
<thead>
<tr>
<th>Sample Interval Retained</th>
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<th>Recovery (%)</th>
<th>Blow Count/6”</th>
<th>PID (ppm)</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>S</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Asphalt over gravel road base</td>
<td></td>
</tr>
</tbody>
</table>

Asphalt over gravel road base

Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, trace gravel-size sandstone fragments, micaceous [Native]

be becomes yellowish brown (10YR 5/6)

Sandstone, yellowish brown (10YR 5/6), 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 sealed with cold patch.
<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>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Asphalt over 1 inch of gravel road base</td>
</tr>
<tr>
<td>0</td>
<td>0.1</td>
<td>SP-SM</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td>Poorly Graded Sand with Silt, yellowish brown (10YR 5/4), medium dense, moist, mica present, possibly weathered sandstone [Native]</td>
</tr>
<tr>
<td>1</td>
<td>0.1</td>
<td>SP-SM</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td>Sandstone, dark yellowish brown (10YR 4/6), weathered, moderately friable, contains quartz, feldspar, and mica, iron oxidation [Chatsworth Formation]</td>
</tr>
</tbody>
</table>

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

Collected soil samples S001 and S001SP at 13:09.

Backfilled with soil cuttings and sealed with cold patch.