

## **Appendix D**

### **Boring and Trench Logs**

## **Boring Logs**

**ISRA List of Boring Logs By Object ID**

<b>Object ID</b>	<b>Outfall</b>	<b>ISRA Area</b>	<b>Type</b>	<b>Date Sample Collected or Trench Log Created</b>
A2BS1074	009	A2LF-1	Data Gap	4/2/2009
A2BS1075	009	A2LF-1	Data Gap	4/2/2009
A2BS1076	009	A2LF-1	Data Gap	4/2/2009
A2BS1077	009	A2LF-1	Data Gap	4/2/2009
A2BS1088	009	A2LF-3	Data Gap	4/3/2009
A2BS1089	009	A2LF-3	Data Gap	4/2/2009
A2BS1090	009	A2LF-3	Data Gap	4/2/2009
A2BS1091	009	A2LF-3	Data Gap	4/3/2009
A2BS1092	009	A2LF-3	Data Gap	4/2/2009
A2BS1093	009	A2LF-1	Data Gap	6/16/2009
A2BS1095	009	A2LF-3	Data Gap	6/16/2009
A2BS1096	009	A2LF-3	Data Gap	6/16/2009
A2ET0100	009	PEA-A2LF-1	Confirmation	11/10/2009
A2ET0101	009	PEA-A2LF-1	Confirmation	11/10/2009
A2ET0102	009	PEA-A2LF-1	Confirmation	11/10/2009
A2ET0200	009	PEA-A2LF-3	Confirmation	11/16/2009
A2ET0201	009	PEA-A2LF-3	Confirmation	11/16/2009
A2ET0202	009	PEA-A2LF-3	Confirmation	11/16/2009
A2ET0203	009	PEA-A2LF-3	Confirmation	11/16/2009
CNBS0128	008	CYN-1	Data Gap	2/25/2009
CNBS0129	008	CYN-1	Data Gap	2/25/2009
CNBS0130	008	unaffiliated	Data Gap	2/25/2009
CNBS0131	008	CYN-1	Data Gap	4/9/2009
CNBS0132	008	CYN-1	Data Gap	2/25/2009
CNBS0133	008	CYN-1	Data Gap	2/25/2009
CNBS0134	008	CYN-1	Data Gap	2/25/2009
CNBS0135	008	CYN-1	Data Gap	7/1/2009
CNBS0136	008	CYN-1	Data Gap	7/1/2009
CNBS0137	008	CYN-1	Data Gap	8/24/2009
CNBS0138	008	CYN-1	Data Gap	8/24/2009
CNET0100	008	CYN-1	Confirmation	9/23/2009
HVBF33	008	HVS-2A	Data Gap	10/4/2006
HVBF33A	008	HVS-2A	Data Gap	10/1/2009
HZBS0062	008	HVS-1	Data Gap	2/24/2009
HZBS0063	008	HVS-1	Data Gap	2/24/2009
HZBS0064	008	HVS-1	Data Gap	2/24/2009
HZBS0065	008	HVS-1	Data Gap	2/24/2009
HZBS0067	008	unaffiliated	Data Gap	2/24/2009
HZBS0068	008	HVS-2C	Data Gap	2/25/2009
HZBS0069	008	HVS-2C	Data Gap	2/25/2009
HZBS0070	008	HVS-2C	Data Gap	2/24/2009
HZBS0071	008	HVS-2C	Data Gap	2/25/2009
HZBS0072	008	HVS-2A	Data Gap	2/25/2009

**ISRA List of Boring Logs By Object ID**

<b>Object ID</b>	<b>Outfall</b>	<b>ISRA Area</b>	<b>Type</b>	<b>Date Sample Collected or Trench Log Created</b>
HZBS0073	008	HVS-2A	Data Gap	2/24/2009
HZBS0073A	008	HVS-2A	Data Gap	3/20/2009
HZBS0074	008	HVS-2A	Data Gap	2/25/2009
HZBS0075	008	HVS-2A	Data Gap	2/25/2009
HZBS0076	008	HVS-2A	Data Gap	2/25/2009
HZBS0077	008	HVS-2A	Data Gap	2/25/2009
HZBS0078	008	HVS-2A	Data Gap	2/25/2009
HZBS0079	008	HVS-2A	Data Gap	2/24/2009
HZBS0079A	008	HVS-2A	Data Gap	3/20/2009
HZBS0080	008	HVS-2A	Data Gap	2/25/2009
HZBS0080A	008	HVS-2A	Data Gap	10/1/2009
HZBS0081	008	HVS-2A	Data Gap	2/25/2009
HZBS0081A	008	HVS-2A	Data Gap	9/30/2009
HZBS0082	008	HVS-2A	Data Gap	2/25/2009
HZBS0082A	008	HVS-2A	Data Gap	10/1/2009
HZBS0083	008	unaffiliated	Data Gap	2/25/2009
HZBS0084	008	HVS-2A	Data Gap	2/25/2009
HZBS0084A	008	HVS-2A	Data Gap	10/1/2009
HZBS0085	008	HVS-2A	Data Gap	2/25/2009
HZBS0086	008	HVS-2B-1	Data Gap	2/24/2009
HZBS0087	008	HVS-2B-2	Data Gap	2/24/2009
HZBS0088	008	HVS-2B-1	Data Gap	2/24/2009
HZBS0089	008	HVS-1	Data Gap	2/24/2009
HZBS0090	008	unaffiliated	Data Gap	2/24/2009
HZBS0091	008	HVS-1	Data Gap	2/24/2009
HZBS0092	008	HVS-2A	Data Gap	2/25/2009
HZBS0093	008	HVS-2B-2	Data Gap	2/24/2009
HZBS0094	008	HVS-2B-2	Data Gap	2/24/2009
HZBS0095	008	HVS-2B-1	Data Gap	2/24/2009
HZBS0096	008	HVS-2A	Data Gap	2/25/2009
HZBS0097	008	HVS-2A	Data Gap	2/25/2009
HZBS0098	008	unaffiliated	Data Gap	3/20/2009
HZBS0099	008	HVS-3	Data Gap	3/20/2009
HZBS0100	008	unaffiliated	Data Gap	3/20/2009
HZBS0101	008	unaffiliated	Data Gap	3/20/2009
HZBS0102	008	unaffiliated	Data Gap	3/20/2009
HZBS0103	008	unaffiliated	Data Gap	3/20/2009
HZBS0104	008	DRG-1	Data Gap	3/20/2009
HZBS0105	008	HVS-3	Data Gap	4/9/2009
HZBS0106	008	HVS-3	Data Gap	4/9/2009
HZBS0107	008	HVS-3	Data Gap	4/9/2009
HZBS0108	008	HVS-4	Data Gap	4/9/2009
HZBS0109	008	HVS-4	Data Gap	6/1/2009

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<b>Object ID</b>	<b>Outfall</b>	<b>ISRA Area</b>	<b>Type</b>	<b>Date Sample Collected or Trench Log Created</b>
HZBS0110	008	HVS-3	Data Gap	6/1/2009
HZBS0111	008	HVS-1	Data Gap	6/1/2009
HZBS0112	008	HVS-3	Data Gap	6/1/2009
HZBS0113	008	HVS-2C	Data Gap	6/1/2009
HZBS0114	008	HVS-1	Data Gap	6/1/2009
HZBS0115	008	HVS-4	Data Gap	6/1/2009
HZBS0116	008	HVS-1	Data Gap	6/1/2009
HZBS0117	008	HVS-1	Data Gap	6/1/2009
HZBS0118	008	HVS-1	Data Gap	6/1/2009
HZBS0119	008	unaffiliated	Data Gap	6/1/2009
HZBS0120	008	unaffiliated	Data Gap	6/1/2009
HZBS0121	008	unaffiliated	Data Gap	6/1/2009
HZBS0122	008	unaffiliated	Data Gap	6/1/2009
HZBS0123	008	HVS-2A	Data Gap	6/1/2009
HZBS0123A	008	HVS-2A	Data Gap	10/1/2009
HZBS0124	008	HVS-2A	Data Gap	6/1/2009
HZBS0124A	008	HVS-2A	Data Gap	10/1/2009
HZBS0125	008	HVS-4	Data Gap	6/30/2009
HZBS0126	008	HVS-4	Data Gap	6/30/2009
HZBS0127	008	HVS-3	Data Gap	6/30/2009
HZBS0128	008	HVS-3	Data Gap	6/30/2009
HZBS0129	008	HVS-2A	Data Gap	7/14/2009
HZBS0130	008	HVS-2A	Data Gap	7/14/2009
HZBS0131	008	HVS-2A	Data Gap	7/14/2009
HZBS0132	008	HVS-2A	Data Gap	7/14/2009
HZBS0133	008	HVS-2A	Data Gap	7/14/2009
HZBS0134	008	HVS-2A	Data Gap	7/14/2009
HZBS0135	008	HVS-2A	Data Gap	7/14/2009
HZBS0136	008	HVS-2A	Data Gap	7/14/2009
HZBS0137	008	HVS-2A	Data Gap	7/14/2009
HZBS0138	008	HVS-2A	Data Gap	7/14/2009
HZBS0139	008	HVS-2A	Data Gap	7/14/2009
HZBS0140	008	HVS-2A	Data Gap	7/14/2009
HZBS0141	008	HVS-2A	Data Gap	7/14/2009
HZBS0142	008	HVS-2A	Data Gap	7/14/2009
HZBS0143	008	HVS-2A	Data Gap	7/14/2009
HZBS0144	008	HVS-2B-1	Data Gap	7/14/2009
HZBS0145	008	HVS-2C	Data Gap	7/14/2009
HZBS0146	008	HVS-2B-2	Data Gap	7/15/2009
HZBS0147	008	HVS-2B-2	Data Gap	7/15/2009
HZBS0148	008	HVS-2B-2	Data Gap	7/15/2009
HZBS0149	008	HVS-3	Data Gap	7/15/2009
HZBS0150	008	HVS-2A	Data Gap	7/15/2009

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<b>Object ID</b>	<b>Outfall</b>	<b>ISRA Area</b>	<b>Type</b>	<b>Date Sample Collected or Trench Log Created</b>
HZBS0151	008	HVS-3	Data Gap	7/21/2009
HZBS0152	008	HVS-1	Data Gap	7/1/2009
HZBS0153	008	HVS-1	Data Gap	7/1/2009
HZBS0154	008	HVS-2C	Data Gap	7/1/2009
HZBS0155	008	HVS-2C	Data Gap	7/1/2009
HZBS0156	008	HVS-2C	Data Gap	7/1/2009
HZBS0157	008	HVS-2C	Data Gap	7/1/2009
HZBS0158	008	HVS-2A	Data Gap	7/1/2009
HZBS0159	008	HVS-2A	Data Gap	7/1/2009
HZBS0160	008	HVS-2A	Data Gap	7/1/2009
HZBS0161	008	HVS-2A	Data Gap	7/1/2009
HZBS0162	008	HVS-2A	Data Gap	7/1/2009
HZBS0163	008	HVS-2A	Data Gap	7/1/2009
HZBS0164	008	HVS-2A	Data Gap	7/1/2009
HZBS0165	008	HVS-2B-2	Data Gap	7/1/2009
HZBS0166	008	HVS-2B-1	Data Gap	7/1/2009
HZBS0167	008	HVS-2B-1	Data Gap	7/1/2009
HZBS0168	008	HVS-2B-1	Data Gap	7/1/2009
HZBS0169	008	HVS-2B-1	Data Gap	7/1/2009
HZBS0170	008	HVS-2B-1	Data Gap	7/1/2009
HZBS0171	008	HVS-2B-1	Data Gap	7/1/2009
HZBS0172	008	HVS-2B-1	Data Gap	7/1/2009
HZBS0173	008	HVS-2A	Data Gap	8/20/2009
HZBS0174	008	HVS-2A	Data Gap	8/20/2009
HZBS0175	008	HVS-2A	Data Gap	10/1/2009
HZBS0177	008	HVS-2A	Data Gap	10/1/2009
HZBS0178	008	HVS-2A	Data Gap	9/30/2009
HZBS0179	008	HVS-2A	Data Gap	9/30/2009
HZBS0180	008	HVS-2A	Data Gap	10/1/2009
HZBS0181	008	Soil Borrow Area	Data Gap	10/27/2009
HZBS0182	008	Soil Borrow Area	Data Gap	10/27/2009
HZBS0183	008	Soil Borrow Area	Data Gap	10/27/2009
HZBS0184	008	Soil Borrow Area	Data Gap	10/27/2009
HZBS0185	008	Soil Borrow Area	Data Gap	10/27/2009
HZET0100	008	HVS-1	Confirmation	9/21/2009
HZET0101	008	HVS-1	Confirmation	9/21/2009
HZET0102	008	HVS-1	Confirmation	9/21/2009
HZET0103	008	HVS-1	Confirmation	9/21/2009
HZET0104	008	HVS-1	Confirmation	9/29/2009
HZET0105	008	HVS-1	Confirmation	9/29/2009
HZET0200	008	HVS-2A	Confirmation	9/10/2009
HZET0201	008	HVS-2A	Confirmation	9/10/2009
HZET0202	008	HVS-2A	Confirmation	9/10/2009

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<b>Object ID</b>	<b>Outfall</b>	<b>ISRA Area</b>	<b>Type</b>	<b>Date Sample Collected or Trench Log Created</b>
HZET0203	008	HVS-2A	Confirmation	9/10/2009
HZET0204	008	HVS-2A	Confirmation	9/10/2009
HZET0205	008	HVS-2A	Confirmation	9/10/2009
HZET0206	008	HVS-2A	Confirmation	9/10/2009
HZET0207	008	HVS-2A	Confirmation	9/10/2009
HZET0208	008	HVS-2A	Confirmation	9/10/2009
HZET0209	008	HVS-2A	Confirmation	9/10/2009
HZET0210	008	HVS-2A	Confirmation	9/10/2009
HZET0211	008	HVS-2A	Confirmation	9/10/2009
HZET0212	008	HVS-2A	Confirmation	9/10/2009
HZET0213	008	HVS-2A	Confirmation	9/14/2009
HZET0214	008	HVS-2A	Confirmation	9/14/2009
HZET0215	008	HVS-2A	Confirmation	9/14/2009
HZET0216	008	HVS-2A	Confirmation	9/14/2009
HZET0217	008	HVS-2A	Confirmation	9/14/2009
HZET0218	008	HVS-2A	Confirmation	9/14/2009
HZET0219	008	HVS-2A	Confirmation	9/14/2009
HZET0220	008	HVS-2A	Confirmation	9/14/2009
HZET0221	008	HVS-2A	Confirmation	9/15/2009
HZET0222	008	HVS-2A	Confirmation	9/15/2009
HZET0223	008	HVS-2A	Confirmation	9/15/2009
HZET0224	008	HVS-2A	Confirmation	9/15/2009
HZET0225	008	HVS-2A	Confirmation	9/15/2009
HZET0226	008	HVS-2A	Confirmation	9/15/2009
HZET0227	008	HVS-2A	Confirmation	9/15/2009
HZET0228	008	HVS-2A	Confirmation	9/15/2009
HZET0229	008	HVS-2A	Confirmation	9/15/2009
HZET0230	008	HVS-2A	Confirmation	9/29/2009
HZET0231	008	HVS-2A	Confirmation	9/29/2009
HZET0232	008	HVS-2A	Confirmation	9/29/2009
HZET0233	008	HVS-2A	Confirmation	9/29/2009
HZET0234	008	HVS-2A	Confirmation	9/29/2009
HZET0235	008	HVS-2A	Confirmation	9/29/2009
HZET0236	008	HVS-2A	Confirmation	9/29/2009
HZET0237	008	HVS-2A	Confirmation	10/5/2009
HZET0238	008	HVS-2A	Confirmation	10/5/2009
HZET0239	008	HVS-2A	Confirmation	10/5/2009
HZET0240	008	HVS-2A	Confirmation	10/5/2009
HZET0241	008	HVS-2A	Confirmation	10/5/2009
HZET0242	008	HVS-2A	Confirmation	10/6/2009
HZET0300	008	HVS-2B-1	Confirmation	9/1/2009
HZET0301	008	HVS-2B-1	Confirmation	9/1/2009
HZET0302	008	HVS-2B-1	Confirmation	9/15/2009

**ISRA List of Boring Logs By Object ID**

<b>Object ID</b>	<b>Outfall</b>	<b>ISRA Area</b>	<b>Type</b>	<b>Date Sample Collected or Trench Log Created</b>
HZET0303	008	HVS-2B-1	Confirmation	9/15/2009
HZET0304	008	HVS-2B-1	Confirmation	9/29/2009
HZET0305	008	HVS-2B-1	Confirmation	9/29/2009
HZET0500	008	HVS-2B-2	Confirmation	9/3/2009
HZET0501	008	HVS-2B-2	Confirmation	9/3/2009
HZET0502	008	HVS-2B-2	Confirmation	9/3/2009
HZET0503	008	HVS-2B-2	Confirmation	9/3/2009
HZET0504	008	HVS-2B-2	Confirmation	9/3/2009
HZET0505	008	HVS-2B-2	Confirmation	9/3/2009
HZET0506	008	HVS-2B-2	Confirmation	9/3/2009
HZET0507	008	HVS-2B-2	Confirmation	9/3/2009
HZET0508	008	HVS-2B-2	Confirmation	9/29/2009
HZET0600	008	HVS-2C	Confirmation	9/21/2009
HZET0601	008	HVS-2C	Confirmation	9/21/2009
HZET0602	008	HVS-2C	Confirmation	9/21/2009
HZET0603	008	HVS-2C	Confirmation	9/21/2009
HZET0604	008	HVS-2C	Confirmation	9/21/2009
HZET0605	008	HVS-2C	Confirmation	9/21/2009
HZET0700	008	HVS-3	Confirmation	9/24/2009
HZET0701	008	HVS-3	Confirmation	9/24/2009
HZET0702	008	HVS-3	Confirmation	9/24/2009
HZET0703	008	HVS-3	Confirmation	9/24/2009
HZET0704	008	HVS-3	Confirmation	9/24/2009
HZET0705	008	HVS-3	Confirmation	9/24/2009
HZET0706	008	HVS-3	Confirmation	9/24/2009
HZET0707	008	HVS-3	Confirmation	9/24/2009
HZET0708	008	HVS-3	Confirmation	9/24/2009
HZET0709	008	HVS-3	Confirmation	9/24/2009
HZET0710	008	HVS-3	Confirmation	9/25/2009
HZET0711	008	HVS-3	Confirmation	9/24/2009
HZET0712	008	HVS-3	Confirmation	9/24/2009
HZET0713	008	HVS-3	Confirmation	9/24/2009
HZET0714	008	HVS-3	Confirmation	9/24/2009
HZET0715	008	HVS-3	Confirmation	9/24/2009
HZET0716	008	HVS-3	Confirmation	9/24/2009
HZET0717	008	HVS-3	Confirmation	9/25/2009
HZET0718	008	HVS-3	Confirmation	9/30/2009
HZET0719	008	HVS-3	Confirmation	9/30/2009
HZET0720	008	HVS-3	Confirmation	9/30/2009
HZET0721	008	HVS-3	Confirmation	9/30/2009
HZET0722	008	HVS-3	Confirmation	9/30/2009
HZET0723	008	HVS-3	Confirmation	9/30/2009
HZET0724	008	HVS-3	Confirmation	9/30/2009



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<b>Object ID</b>	<b>Outfall</b>	<b>ISRA Area</b>	<b>Type</b>	<b>Date Sample Collected or Trench Log Created</b>
HZET0725	008	HVS-3	Confirmation	9/30/2009
HZET0726	008	HVS-3	Confirmation	10/19/2009
HZET0727	008	HVS-3	Confirmation	10/19/2009
HZET0728	008	HVS-3/Septic tank	Confirmation	10/29/2009
HZET0729	008	HVS-3/Septic tank	Confirmation	10/29/2009
HZET0730	008	HVS-3/Septic tank	Confirmation	10/29/2009
HZET0731	008	HVS-3/Septic tank	Confirmation	10/29/2009
HZET0800	008	HVS-4	Confirmation	9/23/2009
HZET0801	008	HVS-4	Confirmation	9/23/2009
HZET0802	008	HVS-4	Confirmation	9/23/2009
HZET0803	008	HVS-4	Confirmation	9/23/2009
HZET0804	008	HVS-4	Confirmation	9/23/2009
HZET0805	008	HVS-4	Confirmation	9/23/2009
HZET0806	008	HVS-4	Confirmation	9/23/2009
HZET0808	008	HVS-4	Confirmation	9/29/2009
HZET0900	008	DRG-1	Confirmation	8/26/2009
HZET0901	008	DRG-1	Confirmation	8/26/2009
HZET0902	008	DRG-1	Confirmation	8/26/2009
HZET0903	008	DRG-1	Confirmation	8/26/2009
HZET0904	008	DRG-1	Confirmation	8/26/2009
HZET1000	008	HVS-2A	Pipeline Confirmation	10/6/2009
HZET1001	008	HVS-2A	Pipeline Confirmation	10/6/2009
HZET1002	008	HVS-2A	Pipeline Confirmation	10/19/2009
HZET1100	008	HVS-2D	Pipeline Confirmation	10/19/2009





<b>PROJECT NUMBER:</b> <span style="font-size: 1.2em; font-weight: bold;">384727</span>	<b>BORING NUMBER:</b> <span style="font-size: 1.2em; font-weight: bold;">A2BS1075</span>
SHEET 1 OF 1	
<h2 style="margin: 0;">SOIL BORING LOG</h2>	

PROJECT : ISRA Soil Sampling, SSFL LOCATION :

ELEVATION : DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger ORIENTATION :

WATER LEVELS : --- START : 4/2/2009 END : 4/2/2009 LOGGER : M. Oviedo

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	0.6				<b>Silty Sand (SM)</b> 0-0.5'- dark brown, (10YR 3/3), moist, loose, 20% fines, 80% fine sand Bottom of Boring at 0.5 ft bgs on 4/2/2009	.1:1	PID = 1.1 ppm at 0.5' bgs A2BS1075S001 collected at 0.5' bgs refusal at 0.5' bgs due to tree roots twice  refusal at 0.5' bgs on roots and sandstone, no groundwater, staining or odors observed
5							
10							
15							
20							
25							



PROJECT NUMBER:  
**384727**

BORING NUMBER:  
**A2BS1076**

SHEET 1 OF 1

# SOIL BORING LOG

PROJECT : ISRA Soil Sampling, SSFL

LOCATION :

ELEVATION :

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger

ORIENTATION :

WATER LEVELS : ---

START : 4/2/2009

END : 4/2/2009

LOGGER : M. Oviedo

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	0.0				<b>Poorly Graded Sand With Silt (SP-SM)</b>		
	1.3				0-1.3'- dark brown, (10YR 3/3), moist, loose, 10% fines, 90% fine sand, rootlets present		PID = 1.1 ppm at 0.5' bgs A2BS1076S001 collected at 0.5' bgs
					Bottom of Boring at 1.3 ft bgs on 4/2/2009		refusal at 1.3' bgs, no where else to hand auger due to surrounding sandstone
5							refusal on sandstone at 1.3' bgs, no groundwater, staining or odors observed
10							
15							
20							
25							



PROJECT NUMBER:  
**384727**

BORING NUMBER:  
**A2BS1077**

SHEET 1 OF 1

## SOIL BORING LOG

PROJECT : ISRA Soil Sampling, SSFL

LOCATION :

ELEVATION :

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger

ORIENTATION :

WATER LEVELS : ---

START : 4/2/2009

END : 4/2/2009

LOGGER : M. Oviedo

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	0.0 1.0				<b>Silty Sand (SM)</b> 0-1'- dark brown, (10YR 3/3), moist, loose, 20% fines, 80% fine sand, roots and rootlets present		A2BS1077S001 collected at 2.5' bgs
	2.0 2.5				<b>Silty Sand (SM)</b> 1-2'- Same as 0-1' except dark yellowish brown, (10YR 3/6)		refusal at 1.5' bgs refusal at 2.5' bgs
					<b>Silty Sand (SM)</b> 2-2.5'- brown, (7.5YR 4/4), moist, loose, 20% fines, 50% fine sand, 30% medium sand Bottom of Boring at 2.5 ft bgs on 4/2/2009		PID = 1.2 ppm at 2.5' bgs refusal at 2.5' bgs on sandstone, no groundwater, staining or odors observed
5							
10							
15							
20							
25							



PROJECT NUMBER:  
**384727**

BORING NUMBER:  
**A2BS1088**

SHEET 1 OF 1

## SOIL BORING LOG

PROJECT : ISRA Soil Sampling, SSFL

LOCATION :

ELEVATION : N/A

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger

ORIENTATION :

WATER LEVELS : ---

START : 4/3/2009

END : 4/3/2009

LOGGER : C. Smiga

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	0.0				<b>Poorly Graded Sand (SP)</b> 0-3.5'- brown, (10YR 4/3), moist, dense, fine to medium grained, some silt, 90% sand, 10% silt, trace clay	•••••	PID = 0.4 ppm A2BS1088S001 1230 Pb 1st attempt - refusal at 2.0', step over 2.0' south 2nd attempt - refusal at 3.5' TD = 3.5' bgs
	3.5				Bottom of Boring at 3.5 ft bgs on 4/3/2009		
5							
10							
15							
20							
25							



PROJECT NUMBER:  
**384727**

BORING NUMBER:  
**A2BS1089**

SHEET 1 OF 1

## SOIL BORING LOG

PROJECT : ISRA Soil Sampling, SSFL LOCATION : Landfill

ELEVATION : N/A DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger ORIENTATION :

WATER LEVELS : --- START : 4/2/2009 END : 4/2/2009 LOGGER : C. Smiga

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	0.0 1.0				<b>Poorly Graded Gravel (GP)</b> 0-1.0'- dark olive brown, (2.5Y 3/3), moist, medium to coarse grained, fine gravel, 60% sand, 40% gravel Bottom of Boring at 1.0 ft bgs on 4/2/2009	• •	PID = 6.0 ppm A2BS1089S001 1340 Pb refusal at 1.0' bgs 1st attempt - refusal at 1.0' bgs, move over 2.0' east 2nd attempt - refusal at 1.0' bgs Target TD = 5.0'
5							
10							
15							
20							
25							



PROJECT NUMBER:  
**384727**

BORING NUMBER:  
**A2BS1090**

SHEET 1 OF 1

# SOIL BORING LOG

PROJECT : ISRA Soil Sampling, SSFL

LOCATION : Landfill

ELEVATION : N/A

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger

ORIENTATION :

WATER LEVELS : ---

START : 4/2/2009

END : 4/2/2009

LOGGER : C. Smiga

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)			
	0.0 1.0				<b>Silty Sand (SM)</b> 0-1'- dark olive brown, (2.5Y 3/3), moist, dense, fine grained, 60% sand, 60% silt, trace clay  <b>Clayey Sand (SC)</b> 1-3.8'- dark yellowish brown, (10YR 3/6), moist, dense, fine grained, 80% sand, 20% clay, trace silt		PID = 7.0 ppm A2BS1090S001 1200 Pb
	3.8				<b>Clayey Sand (SC)</b> 3.8-5'- Same as 1-3.8'		A2BS1090S002 1210 Pb
5	5.0				Bottom of Boring at 5.0 ft bgs on 4/2/2009		
10							
15							
20							
25							





PROJECT NUMBER:  
**384727**

BORING NUMBER:  
**A2BS1091**

SHEET 1 OF 1

**SOIL BORING LOG**

PROJECT : ISRA Soil Sampling, SSFL

LOCATION : Landfill

ELEVATION : N/A

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD :

ORIENTATION :

WATER LEVELS : ---

START : 4/3/2009

END : 4/3/2009

LOGGER : C. Smiga

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
0.0	0.0				<b>Silty Sand (SM)</b> 0-4.8'- brown, (10YR 4/3), moist, medium dense to dense, fine grained, some fine to coarse gravel, trace clay, 70% sand, 30% silt		PID = 4.7 ppm A2BS1091S001 1250 Pb
5	4.8 3.6				4.8-5'- olive brown, (2.5Y 4/4), dense, 60% sand, 40% silt Bottom of Boring at 5.0 ft bgs on 4/3/2009		PID = 6.0 ppm A2BS1091S002 1300 Pb
10							
15							
20							
25							



PROJECT NUMBER:  
**384727**

BORING NUMBER:  
**A2BS1092**

SHEET 1 OF 1

## SOIL BORING LOG

PROJECT : ISRA Soil Sampling, SSFL

LOCATION : Landfill

ELEVATION : N/A

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD :

ORIENTATION :

WATER LEVELS : ---

START : 4/2/2009

END : 4/2/2009

LOGGER : C. Smiga

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION  SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS  DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
				6"-6"-6" (N)			
	0.0				<b>Silty Sand (SM)</b> 0-1'- dark olive brown, (2.5Y 3/3), moist, medium to coarse grained, 80% sand, 20% silt		PID = 1.8 ppm S001 1420 Pb
	1.0				<b>Silt (ML)</b> 1-1.5'- dark olive brown, (2.5Y 3/3), moist, medium grained, 70% silt, 30% clay		
	1.5				<b>Clayey Sand (SC)</b> 1.5-3.8'- dark olive brown, (2.5Y 3/3), moist to wet, dense, fine grained, 60% sand, 40% clay, trace silt		
	3.8				<b>Poorly Graded Sand (SP)</b> 3.8-5'- brown, (10YR 4/3), wet, dense, medium grained, trace silt		PID = 5.5 ppm S002 1445 Pb TD = 5.0', no refusal
	5.0				Bottom of Boring at 5.0 ft bgs on 4/2/2009		
10							
15							
20							
25							



PROJECT NUMBER:  
**372353.RA.FS**

BORING NUMBER:  
**A2BS1093**

SHEET 1 OF 1

# SOIL BORING LOG

PROJECT : NASA SSFL ISRA

LOCATION : Landfill

ELEVATION : N/A

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger

ORIENTATION : Vertical

WATER LEVELS : ---

START : 6/16/2009

END : 6/16/2009

LOGGER : C. Smiga

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	0.0	3.6			<b>Silty Sand (SM)</b> 0-0.3'- dark olive brown, (2.5Y 3/3), dry, dense, fine to medium grained, 60% sand, 40% silt, trace clay, trace fine gravel Bottom of Boring at 0.3 ft bgs on 6/16/2009		Sample A2BS1093S001 at 15:45 - Dioxins PID = 2.5 ppm No refusal
5							
10							
15							
20							
25							



PROJECT NUMBER:  
**372353.RA.FS**

BORING NUMBER:  
**A2BS1095**

SHEET 1 OF 1

# SOIL BORING LOG

PROJECT : NASA SSFL ISRA

LOCATION : Landfill

ELEVATION : N/A

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger

ORIENTATION : Vertical

WATER LEVELS : ---

START : 6/16/2009

END : 6/16/2009

LOGGER : J. Ockerman

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
0.0	1.0	12.0			<b>Silt (ML)</b> 0-1'- brown, (10YR 4/3), dry, hard, 70% fines, 30% fine sand with occasional gravel up to 30 mm		Sample A2BS1095S001 at 15:00 - Pb PID = 0.2 ppm
	2.5	18.0			<b>Silty Sand (SM)</b> 1-2.5'- dark yellowish brown, (10YR 4/4), moist, 70% fine to medium sand, 30% fines		
	4.5	24.0			<b>Poorly Graded Sand (SP)</b> 2.5-4.5'- brown, (7.5YR 4/6), moist, medium dense, 100% medium grained sand		
5					Bottom of Boring at 4.5 ft bgs on 6/16/2009		Sample A2BS1095S002 at 15:15 - Pb PID = 0.2 ppm No refusal
10							
15							
20							
25							



PROJECT NUMBER:  
**372353.RA.FS**

BORING NUMBER:  
**A2BS1096**

SHEET 1 OF 1

## SOIL BORING LOG

PROJECT : NASA SSFL ISRA

LOCATION : Landfill

ELEVATION : N/A

DRILLING CONTRACTOR : CH2M HILL

DRILLING EQUIPMENT AND METHOD : Hand Auger

ORIENTATION : Vertical

WATER LEVELS : ---

START : 6/16/2009

END : 6/16/2009

LOGGER : C. Smiga

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	SAMPLE RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
				6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	0.0	3.6			<b>Silt (ML)</b> 0-0.3'- dark olive brown, (2.5Y 3/3), moist, soft, fine grained sand, 60% silt, 40% sand, trace clay Bottom of Boring at 0.3 ft bgs on 6/16/2009		Sample A2BS1096S001 at 15:05 - Pb PID = 0.0 ppm No refusal
5							
10							
15							
20							
25							



Boring ID: **A2ET0100**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>269482.61</b>	Easting (ft): <b>1790340.62</b>	Job Number: <b>1891614</b>	Site: <b>A2LF-1 Area</b>
Drill Start Date: <b>11-10-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>11-10-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Grab (hand sampling)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Not applicable</b>	

Comments: <b>Soil with brush at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
				0.0		0			[See Trench Log ISRA-A2LF-1 for lithology]					
	s			0.0		1		SM	Silty Sand, dark yellowish brown (10YR 4/4 to 3/6), loose to medium dense, moist, many roots and rootlets, bioturbation observed, no odor, no staining [Colluvium]	5	20	30	45	
						2			Total Depth = 1.5 ft; terminated prior to refusal on bedrock. Collected soil samples S001 and S001-RWQCB at 14:33 from excavation sidewall. Excavation not backfilled.					
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/22/09



Boring ID: **A2ET0101**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>3.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>269477.56</b>	Easting (ft): <b>1790329.69</b>	Job Number: <b>1891614</b>	Site: <b>A2LF-1 Area</b>
Drill Start Date: <b>11-10-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>11-10-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Grab (hand sampling)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Not applicable</b>	

Comments: <b>Soil with brush at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			[See Trench Log ISRA-A2LF-1 for lithology]					
				0.0		2.8		SM	Silty Sand, yellowish brown (10YR 5/6) to dark yellowish brown (10YR 4/6), medium dense with pockets of loose soil, moist, subangular gravel, subangular to subrounded grains, many roots and rootlets, no odor, no staining [Colluvium]	5	5	20	30	40
						3.0			Total Depth = 3.0 ft; terminated due to refusal, possibly on bedrock.					
						3.0			Collected soil samples S001, S001SP, and S001-RWQCB at 14:29 from excavation floor.					
						3.0			Excavation not backfilled.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008 4Q09.GPJ BOEING.GDT 12/31/09



Boring ID: **A2ET0102**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>2.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>269478.31</b>	Easting (ft): <b>1790321.56</b>	Job Number: <b>1891614</b>	Site: <b>A2LF-1 Area</b>
Drill Start Date: <b>11-10-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>11-10-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Grab (hand sampling)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Not applicable</b>	

Comments: <b>Soil with brush at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			[See Trench Log ISRA-A2LF-1 for lithology]					
	s			0.0		2		SM	Silty Sand, yellowish brown (10YR 5/6) to dark yellowish brown (10YR 4/6), medium dense, moist, subangular to subrounded grains, roots and rootlets, no odor, no staining [Colluvium]	5	20	30	45	
						3			Total Depth = 2.5 ft; terminated prior to refusal on bedrock.  Collected soil samples S001 and S001-RWQCB at 14:38 from excavation floor.  Excavation not backfilled.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008 4Q09.GPJ BOEING.GDT 12/31/09





Boring ID: **A2ET0200**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>5.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>268767.28</b>	Easting (ft): <b>1790376.47</b>	Job Number: <b>1891614</b>	Site: <b>A2LF-3 Area</b>
Drill Start Date: <b>11-16-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>11-16-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Grab (hand sampling)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Not applicable</b>	
Comments: <b>Soil with brush at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			[See Trench Log ISRA-A2LF-3 for lithology]					
						4		SM	Silty Sand, very dark grayish brown (10YR 3/2), medium dense, moist, organic-rich, no odor, no staining [Alluvium]	5	20	30	45	
						5			Total Depth = 5.0 ft; terminated prior to refusal on bedrock. Collected soil samples S001 and S001-RWQCB at 10:50 from excavation floor. Excavation not backfilled.					
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/22/09



Boring ID: **A2ET0201**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>2.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>268787.01</b>	Easting (ft): <b>1790331.79</b>	Job Number: <b>1891614</b>	Site: <b>A2LF-3 Area</b>
Drill Start Date: <b>11-16-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>11-16-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Grab (hand sampling)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Not applicable</b>	

Comments: <b>Soil with brush at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			[See Trench Log ISRA-A2LF-3 for lithology]					
	s			0.0		2		SM	Silty Sand, mottled very dark grayish brown (10YR 3/2) to dark yellowish brown (10YR 3/4), medium dense to dense, moist, subangular to subrounded gravel, organic-rich (roots and rootlets), no odor, no staining [Fill]	10	5	20	25	40
						3			Total Depth = 2.5 ft; terminated prior to refusal on bedrock. Collected soil samples S001 and S001-RWQCB at 10:44 from excavation sidewall. Excavation not backfilled.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/22/09



Boring ID: **A2ET0202**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>2.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>268799.22</b>	Easting (ft): <b>1790301.66</b>	Job Number: <b>1891614</b>	Site: <b>A2LF-3 Area</b>
Drill Start Date: <b>11-16-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>11-16-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Grab (hand sampling)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Not applicable</b>	

Comments: <b>Soil with brush at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			Fill [See Trench Log ISRA-A2LF-3 for lithology]					
						2		SM	[Fill/Alluvium Contact?] Silty Sand, brown (10YR 4/3) mottled with dark brown (10YR 3/3) organics, medium dense to dense, moist, rootlets, no odor, no staining [Alluvium]		5	20	30	45
				0.0		3			Total Depth = 2.5 ft; terminated prior to refusal on bedrock.  Collected soil samples S001 and S001-RWQCB at 10:38 from excavation floor.  Excavation not backfilled.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/22/09



Boring ID: **A2ET0203**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>4.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>268794.64</b>	Easting (ft): <b>1790274.44</b>	Job Number: <b>1891614</b>	Site: <b>A2LF-3 Area</b>
Drill Start Date: <b>11-16-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>11-16-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Grab (hand sampling)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Not applicable</b>	

Comments: <b>Soil and asphalt at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			[See Trench Log ISRA-A2LF-3 for lithology]					
				0.0		3			Sandstone, light yellowish brown (10YR 6/4), weathered, hard, poorly indurated, friable when disturbed, moist, no odor, no staining [Chatsworth Formation]					
						4			Total Depth = 4.0 ft; terminated prior to refusal on bedrock.					
						5			Collected soil samples S001 and S001-RWQCB at 10:30 from excavation sidewall.					
						6			Excavation not backfilled.					
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/22/09



Boring ID: **CNBS0128**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266319.35</b>	Easting (ft): <b>1795169.96</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>13:57</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>14:02</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>14:04</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0-0.5	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 3/4), medium dense, moist, weak cementation, plant debris [Alluvium]	5		30	35	30
						1			Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 14:00. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **CNBS0129**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.7</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266225.56</b>	Easting (ft): <b>1795009.79</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>14:06</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>14:11</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>14:12</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.7	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Alluvium]	5		30	35	30
						1			Total Depth = 0.7 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 14:10. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **CNBS0130**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266160.17</b>	Easting (ft): <b>1795033.05</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>14:15</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>14:17</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>14:19</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Alluvium]	5	5	30	30	30
Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 14:17. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **CNBS0131**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266411.02</b>	Easting (ft): <b>1794976.34</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>04-09-2009</b>	Start Time: <b>14:30</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>04-09-2009</b>	Finish Time: <b>14:35</b>	Drilling Contractor: <b>MWH</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Martasin, P.G.</b>	
Comments: <b>Soil with sparse vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>04-09-2009</b>	Backfill Time: <b>14:35</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, yellowish brown (10YR 5/6), loose, moist, rootlets [Alluvium]	10	10	15	45	20
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 14:35. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 4/30/09





Boring ID: **CNBS0132**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266417.76</b>	Easting (ft): <b>1795017.21</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>14:33</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>14:35</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Road gravel on surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>14:45</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.3	s			0.0		0		SW	Well Graded Sand with Gravel, olive gray (5Y 5/2), medium dense, moist [Road Base Fill] Total Depth = 0.3 ft (3 in.); refusal on Chatsworth Formation Sandstone.  Collected soil sample S001 (1 sleeve) at 14:35.  Backfilled with auger cuttings.	25	25	25	25		
						1									
						2									
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **CNBS0133**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266441.76</b>	Easting (ft): <b>1795049.01</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>14:36</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>14:38</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Road gravel on surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>14:46</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.3	s			0.0		0		SW	Well Graded Sand with Gravel, olive gray (5Y 5/2), medium dense, moist [Road Base Fill] Total Depth = 0.3 ft (3 in.); refusal on Chatsworth Formation Sandstone.  Collected soil sample S001 (1 sleeve) at 14:38.  Backfilled with auger cuttings.	25	25	25	25		
						1									
						2									
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **CNBS0134**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266415.38</b>	Easting (ft): <b>1795068.62</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>14:39</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>14:44</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Road gravel on surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>14:47</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.3	s			0.0		0		SW	Well Graded Sand with Gravel, olive gray (5Y 5/2), medium dense, moist [Road Base Fill] Total Depth = 0.3 ft (3 in.); refusal on Chatsworth Formation Sandstone.  Collected soil sample S001 (1 sleeve) at 14:44.  Backfilled with auger cuttings.	25	25	25	25		
						1									
						2									
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **CNBS0135**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266425.43</b>	Easting (ft): <b>1795016.13</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>11:30</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>11:35</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Paul Iler</b>	
Comments: <b>Exposed soil and 1- to 2-inch gravel at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-01-2009</b>	Backfill Time: <b>11:35</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, yellow (10YR 7/6), medium dense, dry			tr	95	5
						1			Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone (yellow, hard, moist). Collected soil sample S001 at 11:34. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **CNBS0136**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266440.98</b>	Easting (ft): <b>1795043.76</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>11:40</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>11:45</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Paul Iler</b>	
Comments: <b>Exposed soil and 1- to 2-inch gravel at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-01-2009</b>	Backfill Time: <b>11:45</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, brownish yellow (10YR 6/6), medium dense, dry			tr	95	5
						1			Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone (yellow, hard, moist). Collected soil sample S001 at 11:43. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **CNBS0137**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266437.55</b>	Easting (ft): <b>1795009.52</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>08-24-2009</b>	Start Time: <b>13:01</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>08-24-2009</b>	Finish Time: <b>13:01</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>About 2 ft up hillside, dry soil and shrubs at surface, no debris</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>08-24-2009</b>	Backfill Time: <b>13:04</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0		ML	Sandy Silt, yellowish brown (10YR 5/4), soft, dry, medium plasticity fines, moderate cementation				30	70
						1								
						2			Total Depth = 1.5 ft; refusal on Chatsworth Formation. Collected soil sample S001 (2 sleeves) at 13:01. Backfilled with auger cuttings.					
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **CNBS0138**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.8</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266405.49</b>	Easting (ft): <b>1795015.63</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>08-24-2009</b>	Start Time: <b>13:12</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>08-24-2009</b>	Finish Time: <b>13:13</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Flat area next to shrubs, bare soil with metal and asphalt debris at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>08-24-2009</b>	Backfill Time: <b>13:15</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0		ML	Sandy Silt, yellowish brown (10YR 5/4), soft, dry, medium plasticity fines, moderate cementation [Fill]				30	70
						1			Total Depth = 0.8 ft; refusal on Chatsworth Formation. Collected soil sample S001 (2 sleeves) at 13:14. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **CNET0100**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>3.2</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266428.39</b>	Easting (ft): <b>1795047.89</b>	Job Number: <b>1891614</b>	Site: <b>Canyon</b>
Drill Start Date: <b>09-23-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>V. Vathanasin, P.G.</b>
Drill Finish Date: <b>09-23-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Grab (hand sampling)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Not applicable</b>	
Comments: <b>Soil and rocks with minor brush at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0		SM	Silty Sand with Gravel, brownish yellow (10YR 6/6), dense to very dense, dry, gravel and cobbles, no odor, no staining [Fill]	25		45		30
						2			Sandstone [Chatsworth Formation]					
						4			Total Excavation Depth = 3.2 ft. Collected soil samples S001 and S001-RWQCB at 09:33 from excavation sidewall. Excavation backfilled 11-24-2009.					

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



# HVBF33

<b>MONTGOMERY WATSON</b>	Boring #: HVBF33 MW#:	Sheet	1	of	1	
	Project: SSFL GROUP 1A					
	Job #: 1881565	Site: HV				
	Logged By: J. PARKES	Reviewed By: JS				
	Drilling Contractor: JFH					
	Drill Rig Type/Method: Hand Auger					
	Drillers Name: Alex F					
	Borehole Diam./Drill Bit Type:	3.5"	Total Depth	3.5'		
			Ref. Elev.	-		
	Sampler Type: N/A					

Depth to 1st Water (∇): -	Time/Date: -	Drill Start Time/Date: 1/4/06	Drill Finish Time/Date: 10/4/06
Depth to Water After Drilling (▼): -	Time/Date: -	Well Completion Time/Date: 10/4/06	
Depth to other Water Bearing Zones: -		Soil Boring Backfill Time/Date: 10/4/06	

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of				
										Gravel	Sand			Silt/Clay
											Coarse	Medium	Fine	
				X					SURFACE VEGETATION DRY w/ ROOT MATERIAL LIGHT BROWN					
				X			1	→	SILTY SAND (SM) DARK YELLOW BROWN (10YR 4/4) DRY, V. LOOSE FINES	0	0	0	70	30
				X			2	→	SILTY SAND (SM) DARK YELLOWISH BROWN (10YR 2.4/6) MOIST, LOOSE FINES	0	0	0	80	20
							3							
							4							
							5		BEDROCK REFUSAL @ 3.5' SAMPLES 0.5' & 3.0'					
							6							
							7							
							8							
							9							
							10							
							11							
							12							

15:40

15:50



Boring ID: **HVBF33A**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>5.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267055.97</b>	Easting (ft): <b>1796341.39</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>10-01-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>V. Vathanasin, P.G.</b>
Drill Finish Date: <b>10-02-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name:	

Comments: <b>Bare soil at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>10-02-2009</b>	Backfill Time: <b>11:00</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, dry, no odor, no staining [Fill]		5	20	35	40
0.5 - 1.0	S					1		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, roots and rootlets, no odor, no staining [Colluvium]		5	25	30	40
1.0 - 3.0						2								
3.0 - 5.0	S					3			Sandstone, very pale brown (10YR 7/4), weathered, hard, moist [Chatsworth Formation]					
5.0 - 5.0						5			Total Depth = 5.0 ft; refusal on Chatsworth Formation Sandstone. Collected soil samples S001 at 10:18 (extra volume collected at 12:56 on 11-2-2009) and S002 at 10:40. Backfilled with auger cuttings.					
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ - BOEING.GDT - 12/16/09



Boring ID: **HZBS0062**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266768.67</b>	Easting (ft): <b>1795863.89</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>10:57</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>11:03</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation and road gravel at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>11:05</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand with Gravel, dark yellowish brown (10YR 4/4), medium dense, moist, subangular to rounded gravel, weak cementation, plant debris [Fill]	20	5	25	25	25
0.5 - 2.3						1		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, subangular to rounded gravel, weak cementation [Possible Alluvium]	5	5	30	30	30
Total Depth = 2.3 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 11:01. Backfilled with auger cuttings.														

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0063**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266754.34</b>	Easting (ft): <b>1795949.98</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>11:45</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>11:50</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Surface covered with heavy vegetation</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>11:52</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, abundant plant debris [Alluvium]			30	35	35
						1			Total Depth = 1.0 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 11:48. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0064**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.6</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266712.61</b>	Easting (ft): <b>1795850.90</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>10:23</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>10:31</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>10:33</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.1	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, fine subangular to subrounded gravel, weak cementation, plant debris [Fill]	5	5	30	30	30
						3			Total Depth = 2.6 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 10:28. Backfilled with auger cuttings.					

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0065**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266723.70</b>	Easting (ft): <b>1795950.30</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>11:35</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>11:41</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>11:43</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.1	s			0.1		0		SM	Silty Sand, strong brown (7.5YR 4/6), medium dense, moist, weak cementation, plant debris [Alluvium]			35	35	30	
						1									
						2			Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 11:39. Backfilled with auger cuttings.						
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0067**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267149.85</b>	Easting (ft): <b>1795853.31</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>08:20</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>08:25</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Green vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>08:30</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S			0.0		0		SM	Silty Sand, strong brown (7.5YR 4/6), medium dense, moist, weak cementation, plant debris [Alluvium]			40	30	30
	S					1								
						2			Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil samples S001 (1 sleeve) and duplicate D001 (1 sleeve) at 08:20. Backfilled with auger cuttings.					
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0068**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.8</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267040.52</b>	Easting (ft): <b>1795940.73</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>12:56</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>13:00</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>13:01</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.8	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, plant debris [Fill]	10	5	30	30	25
						1			Total Depth = 0.8 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 12:58. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09





Boring ID: **HZBS0069**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.2</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267005.59</b>	Easting (ft): <b>1796019.07</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>12:49</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>12:51</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Road gravel on surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>12:52</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0-0.2	s	0.0				0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation [Fill] Total Depth = 0.2 ft (2 in.); refusal on weathered Chatsworth Formation Sandstone.  Due to shallow bedrock, a surface sample was collected by filling a stainless steel sleeve with soil from 0-0.2 ft bgs. Collected soil sample S001 (1 sleeve) at 12:51.	10	5	30	30	25	
						1									
						2									
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0070**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.2</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266968.62</b>	Easting (ft): <b>1795943.43</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>13:15</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>13:17</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>13:18</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.0	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Alluvium]	5	5	30	30	30	
						1									
						2			Total Depth = 1.2 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) on 02-24-2009 at 14:45. Boring was advanced to total depth on 02-25-2009. Backfilled with auger cuttings.						
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0071**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.9</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266991.26</b>	Easting (ft): <b>1795894.72</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>13:04</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>13:09</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>13:11</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, plant debris [Alluvium]	5		35	35	25
						2			Total Depth = 1.9 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 13:06. Backfilled with auger cuttings.					

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0072**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267047.57</b>	Easting (ft): <b>1796082.67</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>12:40</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>12:44</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation and road gravel at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>12:46</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.1	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, plant debris [Fill]	10	5	30	30	25
Total Depth = 1.3 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 12:42. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0073**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.4</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267052.67</b>	Easting (ft): <b>1796130.97</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>08:40</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>08:58</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Road gravel on surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>09:00</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, plant debris [Fill]	10	10	20	30	30
						1			decrease in gravel, sand grades slightly finer	5	5	25	35	30
						3			Total Depth = 2.4 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 08:47. Backfilled with auger cuttings.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0073a**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.4</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267052.67</b>	Easting (ft): <b>1796130.97</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>14:20</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>14:25</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Martasin</b>	

Comments: <b>Vegetation and road gravel at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab from auger head</b>	Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>14:30</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, rootlets [Alluvium]	10	10	20	30	30
						2			▼ decrease in gravel, sand grades slightly finer	5	5	25	35	30
						3			Total Depth = 2.4 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S002 at 14:25. Backfilled with auger cuttings.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/24/09



Boring ID: **HZBS0074**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.2</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267120.30</b>	Easting (ft): <b>1796209.67</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>11:50</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>11:55</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>11:57</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.1	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, plant debris [Fill]	5		30	35	30
Total Depth = 2.2 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 11:52. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0075**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267179.46</b>	Easting (ft): <b>1796112.08</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>13:38</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>13:42</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>13:44</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.1	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Alluvium]	5	5	30	30	30	
						1									
						2			Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 13:40. Backfilled with auger cuttings.						
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09





Boring ID: **HZBS0076**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267157.78</b>	Easting (ft): <b>1796228.38</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>10:36</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>10:39</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>10:41</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.2		0		SM	Silty Sand, dark yellowish brown (10YR 3/4), medium dense, moist, weak cementation, plant debris [Alluvium]	5	5	30	35	25
Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 10:39. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0077**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267269.02</b>	Easting (ft): <b>1796287.73</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>10:14</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>10:20</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Surface covered with heavy vegetation</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>10:22</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, very dark brown (10YR 2/2), medium dense, moist, weak cementation, plant debris [Alluvium]		5	30	35	30
						1			Total Depth = 1.0 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 10:16. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0078**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.8</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267199.41</b>	Easting (ft): <b>1796292.00</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>10:25</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>10:33</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>10:35</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.1	s			0.1		0		SM	Silty Sand, dark yellowish brown (10YR 3/4), medium dense, moist, weak cementation, plant debris [Possible Fill/Alluvium]	5	5	30	30	30
						1		SM	Silty Sand, strong brown (7.5YR 4/6), medium dense, moist, weak cementation, plant debris [Alluvium]			35	35	30
						3			Total Depth = 2.8 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 10:28. Backfilled with auger cuttings.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0079**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.8</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267161.08</b>	Easting (ft): <b>1796399.08</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>09:15</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>09:24</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Green vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>09:28</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Alluvium]	5	5	30	30	30
						2			Total Depth = 1.8 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 09:21. Backfilled with auger cuttings.					
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0079a**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267161.08</b>	Easting (ft): <b>1796399.08</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>14:10</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>14:15</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Martasin</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab from auger head</b>	Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>14:20</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0		SM	Silty Sand, dark yellowish brown (10YR 4/4), loose, moist, rootlets [Alluvium]	5	5	30	30	30
						2			Total Depth = 2.0 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S002 at 14:15. Backfilled with auger cuttings.					
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/24/09



Boring ID: **HZBS0080**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.9</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267131.94</b>	Easting (ft): <b>1796333.52</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>10:00</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>10:04</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>10:06</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.9	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, weak cementation, plant debris [Alluvium]	5	5	30	30	30
						1			Total Depth = 0.9 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 10:02. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0080A**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267130.39</b>	Easting (ft): <b>1796336.47</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>10-01-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>V. Vathanasin, P.G.</b>
Drill Finish Date: <b>10-01-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>A. Goldenberg</b>	
Comments: <b>Soil with mowed brush at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>10-01-2009</b>	Backfill Time: <b>NR</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, brown (10YR 4/3) to dark yellowish brown (10YR 4/4), medium dense, dry to moist, roots and rootlets, no odor, no staining [Fill]		10	25	20	45
0.5 - 1.0	S					1		SM	Silty Sand, dark yellowish brown (10YR 4/4), dense, moist, rootlets, no odor, no staining [Colluvium]		10	30	25	35
1.0 - 2.0						2			Total Depth = 2.0 ft; refusal on Chatsworth Formation Sandstone. Collected soil samples S001 at 14:35 and S002 at 14:45. Backfilled with auger cuttings.					
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0081**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267035.97</b>	Easting (ft): <b>1796433.99</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>09:39</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>09:46</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>09:48</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, plant debris [Alluvium]  ▼ becomes strong brown (7.5YR 4/6)			30	35	35
Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 09:42. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09





Boring ID: **HZBS0081A**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>10.9</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267033.92</b>	Easting (ft): <b>1796434.25</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>09-30-2009</b>	Start Time: <b>09:28</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>V. Vathanasin, P.G.</b>
Drill Finish Date: <b>09-30-2009</b>	Finish Time: <b>10:50</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>A. Goldenberg</b>	

Comments: <b>Soil with mowed brush at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>09-30-2009</b>	Backfill Time: <b>10:50</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense to dense, dry, no odor, no staining [Fill]	5	10	25	30	30
0.5 - 3.5						2		SM	Silty Sand, strong brown (7.5YR 4/6), dense, moist, no odor, no staining [Colluvium]		10	20	35	35
3.5 - 3.8	S					4								
10.0 - 10.5						10			Sandstone, very pale brown (10YR 7/4), weathered (unweathered at total depth), hard, moist [Chatsworth Formation]					
10.5 - 10.9						12			Total Depth = 10.9 ft; refusal on competent Chatsworth Formation Sandstone. Collected soil samples S001 at 09:35 and S002 at 10:12. Backfilled with auger cuttings.					

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0082**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>3.7</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267004.69</b>	Easting (ft): <b>1796316.09</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>08:57</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>09:08</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel and grab from auger head (placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>09:10</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, weak cementation, plant debris [Possible Fill]	5	5	30	30	30
0.5 - 3.7	s			0.0		1		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, trace to no plant debris (decreases with depth) [Alluvium]			40	40	20
Total Depth = 3.7 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil samples S001 (1 sleeve taken from hand trowel) at 09:00 and S002 (1 sleeve taken from auger head) at 09:08. Backfilled with auger cuttings.														

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0082A**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>19.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267003.47</b>	Easting (ft): <b>1796317.21</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>10-01-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>V. Vathanasin, P.G.</b>
Drill Finish Date: <b>10-06-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>A. Goldenberg</b>	

Comments: <b>Bare soil at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>10-06-2009</b>	Backfill Time: <b>10:00</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, dark yellowish brown (10YR 4/4), dense, dry to moist, no odor, no staining [Fill]	5	5	25	30	35
						2			↓ becomes moist, with roots and rootlets, without gravel		10	30	25	35
3.5 - 4	S					4			↓ increasing density					
						8			↓ fewer roots and rootlets					
						9			↓ grades without roots and rootlets					
						16			Sandstone, mottled very pale brown (10YR 8/3) to brownish yellow (10YR 6/8), moderately weathered, hard, moist [Chatsworth Formation]					
						19.0			Total Depth = 19.0 ft; terminated prior to refusal per Ben Stewart. Collected soil samples S001 at 08:30 and S002 at 09:05. Backfilled with auger cuttings.					

LOG OF BORING - OUTFALL008.GPJ - BOEING.GDT 12/16/09



Boring ID: **HZBS0083**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.6</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266887.95</b>	Easting (ft): <b>1796392.72</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>08:48</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>08:53</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>08:55</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.6	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, plant debris [Alluvium]			35	35	30
Total Depth = 0.6 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 08:51. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0084**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266937.80</b>	Easting (ft): <b>1796333.70</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>08:37</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>08:42</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>08:44</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.5	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, minor plant debris [Alluvium]	5	5	30	30	30	
						1									
						2			Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 08:40. Backfilled with auger cuttings.						
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0084A**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>3.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266937.80</b>	Easting (ft): <b>1796333.70</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>10-01-2009</b>	Start Time: <b>07:40</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>V. Vathanasin, P.G.</b>
Drill Finish Date: <b>10-01-2009</b>	Finish Time: <b>08:17</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>A. Goldenberg</b>	
Comments: <b>Soil with mowed brush at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>10-01-2009</b>	Backfill Time: <b>08:17</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense to dense, dry to moist, roots and rootlets, no odor, no staining [Fill]		10	25	35	30
2.5 - 3.0	S					3			Sandstone [Chatsworth Formation]					
						3			Total Depth = 3.0 ft; refusal on Chatsworth Formation Sandstone. Collected soil samples S001 at 07:50 and S002 at 08:15. Backfilled with auger cuttings.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0085**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.1</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266992.24</b>	Easting (ft): <b>1796214.76</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>11:58</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>12:02</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation and road gravel at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>12:04</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
	S			0.3		0			Gravel road base					
	S					0 to 1.1		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Fill]	10	5	30	30	25
						1.1			Total Depth = 1.1 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil samples S001 (1 sleeve) and split S001SP (1 sleeve) at 12:00. Backfilled with auger cuttings.					

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0086**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266948.98</b>	Easting (ft): <b>1796142.58</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>13:47</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>13:51</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>13:53</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.2		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Fill]	5	5	30	30	30
Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 13:50. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09





Boring ID: **HZBS0087**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.8</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266902.81</b>	Easting (ft): <b>1796147.74</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>13:15</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>13:22</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Green vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>13:24</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.1	s			0.1		0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, weak cementation, plant debris [Fill]			30	35	35
						3			Total Depth = 2.8 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 13:18. Backfilled with auger cuttings.					

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0088**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266959.79</b>	Easting (ft): <b>1796091.43</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>13:55</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>14:02</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>14:04</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.2	S			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, weak cementation, plant debris [Fill]	5	5	30	30	30
0.2 - 2.3	S					1			Total Depth = 2.3 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil samples S001 (1 sleeve) and duplicate D001 (1 sleeve) at 13:59. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0089**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.6</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266776.20</b>	Easting (ft): <b>1795913.10</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>10:47</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>10:53</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Green vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>10:55</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.6	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, fine subangular to subrounded gravel, weak cementation, plant debris [Fill]	5	5	35	35	20
						1			Total Depth = 0.6 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 10:51. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0090**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.2</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266678.38</b>	Easting (ft): <b>1795734.08</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>10:03</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>10:13</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments:	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>10:15</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.2	S			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, fine subangular to subrounded gravel [Fill]	10	10	30	30	20
	S					1			Total Depth = 1.2 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil samples S001 and split S00SP (total 4 sleeves) at 10:09. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0091**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266728.05</b>	Easting (ft): <b>1795895.19</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>11:08</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>11:13</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Hard gravelly surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>11:15</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, fine subangular to subrounded gravel, weak cementation, plant debris [Fill]	10	5	35	35	15
Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 11:13. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0092**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.8</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266930.40</b>	Easting (ft): <b>1796246.14</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>08:08</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>08:15</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>08:17</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.8	s			0.0		0		SM	Silty Sand, yellowish brown (10YR 5/6), medium dense, moist, weak cementation, minor plant debris [Alluvium]	5	5	30	30	30
						1			Total Depth = 0.8 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 08:13. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0093**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266923.29</b>	Easting (ft): <b>1796178.86</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>13:28</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>13:35</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation and road gravel at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>13:36</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.1	s			0.1		0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, weak cementation, plant debris [Fill]	10		30	30	30
						2			Total Depth = 2.0 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 13:33. Backfilled with auger cuttings.					
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0094**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.9</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266830.73</b>	Easting (ft): <b>1796195.19</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>12:54</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>13:00</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments:	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeves)</b>	Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>13:02</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.9	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Alluvium]	5	5	30	30	30
						1			Total Depth = 0.9 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (2 sleeves) at 12:54. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09





Boring ID: **HZBS0095**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266911.24</b>	Easting (ft): <b>1796097.01</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-24-2009</b>	Start Time: <b>13:38</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-24-2009</b>	Finish Time: <b>13:42</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>02-24-2009</b>	Backfill Time: <b>13:44</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.5	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Fill]	5		30	35	30	
						1									
						2			Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 13:40. Backfilled with auger cuttings.						
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0096**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267051.39</b>	Easting (ft): <b>1796258.75</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>11:42</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>11:47</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation and brush at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>11:49</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
0 - 0.1	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, moist, weak cementation, plant debris [Fill]		5	30	35	30	
Total Depth = 1.3 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 (1 sleeve) at 11:45. Backfilled with auger cuttings.															
						1									
						2									
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0097**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.6</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267042.48</b>	Easting (ft): <b>1796205.02</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>02-25-2009</b>	Start Time: <b>12:09</b>	Logged By: <b>A. Leavitt</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>02-25-2009</b>	Finish Time: <b>12:12</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>PID</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Road gravel on surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>02-25-2009</b>	Backfill Time: <b>12:13</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.6	s			0.0		0		SM	Silty Sand, dark yellowish brown (10YR 4/4), medium dense, moist, weak cementation, plant debris [Fill]	10	5	30	30	25
Total Depth = 0.6 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 12:11. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/19/09



Boring ID: **HZBS0098**

Borehole Diam. (in.): <b>2; 3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266924.78</b>	Easting (ft): <b>1795506.95</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>08:00</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>08:10</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel (original location); Hand Auger (adjacent boring)</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Disturbed soil pile (asphalt chunks, gravel, vegetation in soil matrix)</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve); grab from auger head</b>		Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>08:20</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand with Gravel, light brown (7.5YR 6/4), loose, dry	15	15	10	40	20
0.5 - 1.0	S					1		SM	Silty Sand, brown (7.5YR 4/4), loose, moist				60	40
Total Depth = 1.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 by hand trowel at original location at 08:05 and soil sample S002 from auger head in boring 0.5 ft from original location at 14:00. Backfilled with auger cuttings.														
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/24/09



Boring ID: **HZBS0099**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.6</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266966.73</b>	Easting (ft): <b>1795711.12</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>08:25</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>08:30</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments:	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>08:35</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.6	S					0		SM	Silty Sand, light brown (7.5YR 6/4), loose, moist, rootlets [Alluvium]			10	55	35
						1			Total Depth = 0.6 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 08:30. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/24/09



Boring ID: **HZBS0100**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266524.97</b>	Easting (ft): <b>1795968.68</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>10:37</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>10:40</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Grass at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>10:45</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, brown (7.5YR 4/4), loose, moist, rootlets [Alluvium]				60	40
						1			Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 10:40. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/24/09



Boring ID: **HZBS0101**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266144.17</b>	Easting (ft): <b>1796299.42</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>09:58</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>10:00</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>In drainage, sand and vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>10:02</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SW	Well Graded Sand, light brown (7.5YR 6/4), loose, moist, rootlets [Alluvium]	10	30	30	30	
						1			Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 10:00. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/24/09



Boring ID: **HZBS0102**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>265861.24</b>	Easting (ft): <b>1796086.55</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>09:40</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>09:45</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>In drainage, sand and vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>09:50</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.3	S					0		SM	Silty Sand, light brown (7.5YR 6/4), loose, dry, rootlets [Alluvium]	10	25	20	30	15
						1			Total Depth = 0.3 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 09:45. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/24/09





Boring ID: **HZBS0103**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>265843.93</b>	Easting (ft): <b>1795905.09</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>09:15</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>09:20</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>In drainage, soil and vegetation (including poison oak) at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>09:25</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, light brown (7.5YR 6/4), loose, moist, rootlets [Alluvium]			10	50	40
						1			Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 09:20. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 3/24/09



Boring ID: **HZBS0104**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.7</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>265875.16</b>	Easting (ft): <b>1795430.24</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>03-20-2009</b>	Start Time: <b>10:58</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>03-20-2009</b>	Finish Time: <b>11:00</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Vegetation and hydroseed at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>03-20-2009</b>	Backfill Time: <b>11:05</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.7	S					0		SM	Silty Sand, light brown (7.5YR 6/4), loose, moist, rootlets [Alluvium]			10	50	40
						1			Total Depth = 0.7 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 11:00. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 4/7/09



Boring ID: **HZBS0105**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.8</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266989.21</b>	Easting (ft): <b>1795744.52</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>04-09-2009</b>	Start Time: <b>08:35</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>04-09-2009</b>	Finish Time: <b>08:40</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Disturbed soil with asphalt and concrete chunks at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>04-09-2009</b>	Backfill Time: <b>08:45</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.8	S					0		SM	Silty Sand, light yellowish brown (10YR 6/4), loose, dry, rootlets [Artificial Fill]	10	15	25	35	15
						1			Total Depth = 0.8 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 08:40. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 4/30/09



Boring ID: **HZBS0106**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>4.2</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266954.48</b>	Easting (ft): <b>1795741.76</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>04-09-2009</b>	Start Time: <b>08:15</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>04-09-2009</b>	Finish Time: <b>08:30</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Hardpacked silty sand at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve); grab from auger head</b>		Soil Backfill Date: <b>04-09-2009</b>	Backfill Time: <b>08:35</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, brownish yellow (10YR 6/6), loose, dry [Alluvium] ▼ becomes brown (10YR 5/3, medium dense, moist)				60	40
3.7 - 4.2	S					4			Total Depth = 4.2 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil samples S001 at 08:20 and S002 at 08:30. Backfilled with native soil.					

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 4/30/09



Boring ID: **HZBS0107**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266922.59</b>	Easting (ft): <b>1795701.01</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>04-09-2009</b>	Start Time: <b>08:07</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>04-09-2009</b>	Finish Time: <b>08:13</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Silty sand at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>04-09-2009</b>	Backfill Time: <b>08:15</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, light yellowish brown (10YR 6/4), loose, dry, rootlets [Alluvium]	10	15	20	30	25
	S					1			Total Depth = 1.0 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 08:10, as well as duplicate D001. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 4/30/09



Boring ID: **HZBS0108**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266895.35</b>	Easting (ft): <b>1795569.36</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>04-09-2009</b>	Start Time: <b>14:40</b>	Logged By: <b>B. Martasin, P.G.</b>	Reviewed By: <b>B. Martasin, P.G.</b>
Drill Finish Date: <b>04-09-2009</b>	Finish Time: <b>14:45</b>	Drilling Contractor: <b>MWH</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Martasin, P.G.</b>	

Comments:	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>04-09-2009</b>	Backfill Time: <b>14:45</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, light brown (7.5YR 6/3), loose, dry, rootlets [Alluvium]	5	15	20	40	20
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 14:45. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 4/30/09



Boring ID: **HZBS0109**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266890.46</b>	Easting (ft): <b>1795690.16</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>08:05</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>08:09</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>08:10</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), medium dense, dry, rootlets [Alluvium]			10	50	40
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:09. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0110**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266949.97</b>	Easting (ft): <b>1795656.95</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>08:00</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>08:02</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>08:05</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), loose, dry, rootlets [Alluvium]	5	10	15	40	30
Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:00. Backfilled with native soil.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09





Boring ID: **HZBS0111**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266791.95</b>	Easting (ft): <b>1795840.58</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>08:28</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>08:29</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>08:30</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), medium dense, dry, rootlets [Alluvium]		5	25	40	30
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:28. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0112**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>267007.97</b>	Easting (ft): <b>1795776.97</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>09:42</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>09:44</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>09:46</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), loose, dry, rootlets [Alluvium]	5	10	10	35	40
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:44. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0113**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>267065.17</b>	Easting (ft): <b>1795835.71</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>09:55</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>09:57</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>09:59</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), loose, dry, rootlets [Alluvium]	10	10	10	40	30
Total Depth = 0.5 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil sample S001 at 09:57. Backfilled with native soil.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0114**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266820.28</b>	Easting (ft): <b>1795797.28</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>08:16</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>08:18</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>08:20</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.3	S					0		SM	Silty Sand, pale brown (10YR 6/3), medium dense, dry [Alluvium]			10	50	40
						1			Total Depth = 0.3 ft (3 in.); refusal on weathered Chatsworth Formation Sandstone.  Collected soil sample S001 at 08:18.  Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0115**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266896.10</b>	Easting (ft): <b>1795619.82</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>15:12</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>15:15</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>15:17</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), medium dense, dry, rootlets [Alluvium]	10	10	20	20	40
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 15:15. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0116**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266784.93</b>	Easting (ft): <b>1795951.52</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>08:23</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>08:25</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>08:27</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), loose, dry, rootlets [Alluvium]				60	40
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:25. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0117**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266831.21</b>	Easting (ft): <b>1795980.53</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>08:39</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>08:41</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>08:43</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), loose, dry, rootlets [Alluvium]				60	40
Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:41. Backfilled with native soil.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0118**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266678.06</b>	Easting (ft): <b>1795884.64</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>09:24</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>09:26</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>09:27</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), loose, dry, rootlets [Alluvium]	10	10	25	30	25
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:26. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09





Boring ID: **HZBS0119**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266632.29</b>	Easting (ft): <b>1795802.01</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>08:53</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>08:55</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation and scattered asphalt chunks at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>08:57</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, light yellowish brown (10YR 6/4), loose, dry, rootlets [Fill]	5	15	20	25	35
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:55. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0120**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266625.49</b>	Easting (ft): <b>1795851.52</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>09:00</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>09:03</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	
Comments: <b>Vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Hand trowel (soil placed in stainless steel sleeve)</b>		Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>09:05</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), medium dense, dry, rootlets [Alluvium]		5	10	45	40
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:03. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0121**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266591.26</b>	Easting (ft): <b>1795874.46</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>09:12</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>09:15</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Slide Hammer</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>09:18</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), loose, dry, rootlets [Alluvium]	10	15	15	30	30
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:15. Backfilled with native soil.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0122**

Borehole Diam. (in.): <b>2</b>	Total Depth (ft): <b>0.1</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266983.19</b>	Easting (ft): <b>1796182.39</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>09:20</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>09:21</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Trowel</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	
Comments: <b>Bedrock within 1 inch of surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>No sample collected</b>		Soil Backfill Date: <b>N/A</b>	Backfill Time: <b>N/A</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			Total Depth = 0.1 ft; terminated on Chatsworth Formation Sandstone. Unable to collect sample due to shallow bedrock.					
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0123**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.9</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>267091.32</b>	Easting (ft): <b>1796403.65</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>11:15</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>11:20</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Slide hammer with stainless steel sleeve</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>11:25</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), dense, dry [Alluvium]				60	40
						2			becomes reddish yellow (7.5YR 6/8) [Weathered Sandstone] Total Depth = 1.9 ft; refusal on weathered Chatsworth Formation Sandstone. Collected soil samples S001 and S001SP at 11:17. Backfilled with auger cuttings.					
						4								
						6								
						8								
						10								
						12								
						14								
						16								
						18								
						20								

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0123A**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267089.20</b>	Easting (ft): <b>1796404.17</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>10-01-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>V. Vathanasin, P.G.</b>
Drill Finish Date: <b>10-06-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>A. Goldenberg</b>	

Comments: <b>Bare soil at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>10-06-2009</b>	Backfill Time: <b>09:30</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, dark yellowish brown (10YR 4/4), loose, dry, roots and rootlets, no odor, no staining [Fill]	10	5	30	25	30
0.5 - 2.0						1		SM	Silty Sand, yellowish brown (10YR 5/4), medium dense to dense, dry to moist, roots and rootlets, no odor, no staining [Colluvium]					
2.0 - 2.3	S					2			Sandstone, brownish yellow (10YR 6/6), hard [Chatsworth Formation]					
2.3 - 10						3			Total Depth = 2.3 ft; refusal on Chatsworth Formation Sandstone. Collected soil samples S001 and duplicate D001 at 13:15 and S002 at 13:20. Backfilled with auger cuttings.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ - BOEING.GDT - 12/16/09



Boring ID: **HZBS0124**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.8</b>	Project: <b>SSFL ISRA Sampling - Outfall 009 Area</b>	
Northing (ft): <b>266984.61</b>	Easting (ft): <b>1796412.23</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-01-2009</b>	Start Time: <b>10:55</b>	Logged By: <b>B. Martasin, P.G. #8356</b>	Reviewed By: <b>B. Martasin, P.G. #8356</b>
Drill Finish Date: <b>06-01-2009</b>	Finish Time: <b>11:05</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>B. Cisneros</b>	

Comments: <b>Vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab from auger head collected with hand trowel (placed in sleeve)</b>	Soil Backfill Date: <b>06-01-2009</b>	Backfill Time: <b>11:08</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, pale brown (10YR 6/3), medium dense, dry, rootlets [Alluvium]	5	10	20	30	35
0.5 - 1.8	S					1.8			becomes reddish yellow (7.5YR 6/8), grades coarser [Weathered Sandstone]	10	20	15	25	30
<p>Total Depth = 1.8 ft; refusal on weathered Chatsworth Formation Sandstone.</p> <p>Collected soil samples S001 and D001 at 10:58.</p> <p>Backfilled with auger cuttings.</p>														

LOG OF BORING - OUTFALL009.GPJ BOEING.GDT 6/16/09



Boring ID: **HZBS0124A**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>8.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266983.68</b>	Easting (ft): <b>1796410.19</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>10-01-2009</b>	Start Time: <b>NR</b>	Logged By: <b>A. Goldenberg</b>	Reviewed By: <b>V. Vathanasin, P.G.</b>
Drill Finish Date: <b>10-06-2009</b>	Finish Time: <b>NR</b>	Drilling Contractor: <b>Envirosolve</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>A. Goldenberg</b>	

Comments: <b>Soil with mowed vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>10-06-2009</b>	Backfill Time: <b>08:30</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s					0		SM	Silty Sand, dark yellowish brown (10YR 4/6), medium dense, dry to moist, roots and rootlets, no odor, no staining [Fill]	5	10	25	30	30
0.5 - 3.5	s					1		SM	Silty Sand, dark yellowish brown (10YR 4/4), dense, moist, no odor, no staining [Colluvium]		10	35	25	30
3.5 - 8.5						3								
						4								
						5								
						6								
						7								
						8								
						8.5			Sandstone, very pale brown (10YR 7/4), hard [Chatsworth Formation]					
						9			Total Depth = 8.5 ft; refusal on Chatsworth Formation Sandstone. Collected soil samples S001 and S001-SP at 11:00 and S002 at 12:30. Backfilled with auger cuttings.					
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09





Boring ID: **HZBS0125**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266858.99</b>	Easting (ft): <b>1795648.62</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-30-2009</b>	Start Time: <b>09:55</b>	Logged By: <b>S. Dawson</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>06-30-2009</b>	Finish Time: <b>10:02</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>Sample located 4 ft S of asphalt road, just S of wood retaining wall</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>06-30-2009</b>	Backfill Time: <b>10:05</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM/ML	Silty Sand / Sandy Silt, tannish brown, loose, moist, fine sandstone gravel, mica present [Alluvium]	10	5	10	25	50
						1			Total Depth = 0.5 ft; terminated prior to refusal.  Collected soil sample S001 at 10:00.  Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0126**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266857.07</b>	Easting (ft): <b>1795715.37</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South</b>
Drill Start Date: <b>06-30-2009</b>	Start Time: <b>09:47</b>	Logged By: <b>S. Dawson</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>06-30-2009</b>	Finish Time: <b>09:52</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>In vegetated gully 6 ft N of paved road, 20 ft S of gravel road</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>06-30-2009</b>	Backfill Time: <b>09:55</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, tannish brown, loose, moist, trace sandstone gravel, mica present [Alluvium]	tr	15	10	35	40
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:50. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0127**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266967.38</b>	Easting (ft): <b>1795647.20</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-3</b>
Drill Start Date: <b>06-30-2009</b>	Start Time: <b>09:15</b>	Logged By: <b>S. Dawson</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>06-30-2009</b>	Finish Time: <b>09:22</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	

Comments: <b>In thickly vegetated area 20 ft SW of former substation</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>06-30-2009</b>	Backfill Time: <b>09:25</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, loose, dry, sandstone gravel, mica present [Alluvium]	10		20	30	40
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:20. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0128**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266936.56</b>	Easting (ft): <b>1795640.04</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-3</b>
Drill Start Date: <b>06-30-2009</b>	Start Time: <b>09:35</b>	Logged By: <b>S. Dawson</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>06-30-2009</b>	Finish Time: <b>09:42</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>In vegetated gully 3 ft N of paved road, 1.5 ft N of white 6-inch water pipe</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>06-30-2009</b>	Backfill Time: <b>09:47</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, dark brown, loose, moist, mica present [Alluvium]			10	50	40
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:45. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0129**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266948.82</b>	Easting (ft): <b>1796247.52</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>08:17</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>08:17</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	

Comments: <b>Dry, loose soil with little dried vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>08:19</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, reddish brown, loose, dry, weak cementation	5	80	15		
Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:17. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0130**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266958.59</b>	Easting (ft): <b>1796272.38</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>08:20</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>08:25</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Hummocky terrain, exposed soil with sparse grass and debris at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>08:30</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	s					0		ML	Silt with Sand, yellowish brown (10YR 5/4), medium stiff, dry, low dry strength, some rootlets, concrete debris [Sifted Alluvium]			tr	25	75
						1			Total Depth = 0.5 ft; terminated prior to refusal.  Collected soil sample S001.  Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0131**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266992.08</b>	Easting (ft): <b>1796284.76</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>08:33</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>08:33</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>Dry soil covered with dried vegetation at surface, no debris</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>08:35</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, reddish brown, medium dense, dry, weak to moderate cementation			10	90	
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:35. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0132**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267039.87</b>	Easting (ft): <b>1796295.85</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>08:30</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>08:35</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Exposed soil with sparse vegetation at surface</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>08:35</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		ML	Silt with Sand, yellowish brown (10YR 5/4), medium stiff, dry, nonplastic, low dry strength [Sifted Alluvium]			tr	25	75
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09





Boring ID: **HZBS0133**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267078.02</b>	Easting (ft): <b>1796299.86</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>08:46</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>08:47</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>Dry bare soil with gravel-size asphalt pieces and concrete debris at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>08:48</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, reddish brown, medium dense, dry, moderate cementation, one coarse sand-size piece of porcelain-like debris [Fill]		10	10	80	
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 08:47. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0134**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267037.77</b>	Easting (ft): <b>1796242.19</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>08:39</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>08:45</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Near HV road, soil with sparse vegetation and trace road gravel at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>08:45</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		CL	Lean Clay with Sand, yellowish brown (10YR 5/6), medium stiff, dry, low to medium plasticity, medium dry strength, trace rootlets [Sifted Alluvium]			5	20	75
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0135**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267078.49</b>	Easting (ft): <b>1796213.00</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>08:59</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:00</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>In 3-ft-deep drainage filled with vegetation (removed), adjacent to road</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:00</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, reddish brown, medium dense, dry, weak cementation [Alluvium]		5	25	70	
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:00. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008 4Q09.GPJ BOEING.GDT 12/31/09



Boring ID: **HZBS0136**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267097.78</b>	Easting (ft): <b>1796228.23</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>08:55</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:00</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>In drainage filled with heavy brush, burnt vegetation on top (removed)</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:00</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, dark brown (10YR 3/3), medium dense, angular to subangular coarse sand derived from sandstone, trace burnt debris [Alluvium]		5	25	50	20
						1			Total Depth = 0.5 ft; terminated prior to refusal.  Collected soil sample S001.  Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008 4Q09.GPJ BOEING.GDT 12/31/09



Boring ID: **HZBS0137**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267124.01</b>	Easting (ft): <b>1796297.38</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>09:19</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:20</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>Dry soil with some dried vegetation at surface, no debris</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:20</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, reddish brown, medium dense, dry, moderate cementation, dry organics (sticks)			10	90	
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:20. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0138**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267109.79</b>	Easting (ft): <b>1796270.72</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>09:00</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:05</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Exposed soil at surface, near heavy brush</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:05</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		CL	Lean Clay with Sand, yellowish brown (10YR 5/4), medium stiff, dry, medium plasticity, medium dry strength [Sifted Alluvium]			5	15	80
						1			Total Depth = 0.5 ft; terminated prior to refusal.  Collected soil sample S001.  Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0139**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267148.87</b>	Easting (ft): <b>1796248.07</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>09:36</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:37</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>Dry soil with some dried vegetation at surface, no debris</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:37</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, reddish brown, medium dense, dry, angular gravel, coarse sand derived from sandstone, moderate cementation, dry organics (sticks)	5	5		90	
						1			Total Depth = 0.5 ft; terminated prior to refusal.  Collected soil sample S001 at 09:37.  Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0140**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267234.73</b>	Easting (ft): <b>1796296.74</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>09:15</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:20</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Exposed soil with sparse vegetation at surface, near small bush</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:20</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		ML	Silt with Sand, dark yellowish brown (10YR 4/4), soft, dry, low dry strength, some rootlets [Sifted Alluvium]		tr	10	15	75
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09





Boring ID: **HZBS0141**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267196.40</b>	Easting (ft): <b>1796270.64</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>09:49</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:50</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>In drainage, under tree, loose soil and dry vegetation at surface, no debris</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:50</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, reddish brown, loose, weak cementation, sticks and vegetation			10	90	
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 09:50. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0142**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267225.36</b>	Easting (ft): <b>1796331.44</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>09:25</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:35</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>At bottom of cliff, exposed soil at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:35</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
	s					0		CL	Sandy Lean Clay, yellowish brown (10YR 5/4), medium stiff, dry, low to medium plasticity, medium dry strength			10	20	70
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0143**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267191.22</b>	Easting (ft): <b>1796308.37</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2A</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>10:17</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>10:18</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Mike Hoehn</b>	
Comments: <b>Dry, moderately cemented soil with dry grass and tall shrubs at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>10:18</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, reddish brown, medium dense, dry, moderate cementation, dry grass				100	
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 10:18. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0144**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266942.24</b>	Easting (ft): <b>1796110.17</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2B</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>09:30</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:40</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Near bottom of hillside, medium grasses covering soil surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:40</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SC	Clayey Sand, yellowish brown (10YR 5/4), loose, moist, no cementation [Fill?]	tr	tr	20	50	30
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0145**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266986.88</b>	Easting (ft): <b>1795998.07</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2B</b>
Drill Start Date: <b>07-14-2009</b>	Start Time: <b>09:40</b>	Logged By: <b>S. Valenzuela</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-14-2009</b>	Finish Time: <b>09:50</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>On hillside, exposed soil with sparse vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-14-2009</b>	Backfill Time: <b>09:50</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SC	Clayey Sand, yellowish brown (10YR 5/4), medium dense, dry, medium to high dry strength, weak cementation [Fill?]	tr	tr	20	40	40
						1			Total Depth = 0.5 ft; terminated prior to refusal.  Collected soil sample S001.  Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0146**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.2</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266874.18</b>	Easting (ft): <b>1796153.25</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2B</b>
Drill Start Date: <b>07-15-2009</b>	Start Time: <b>12:52</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-15-2009</b>	Finish Time: <b>12:54</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Bare soil and dry vegetation at surface (vegetation cleared earlier in day)</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-15-2009</b>	Backfill Time: <b>12:54</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.15	S					0		SP	Poorly Graded Sand, light yellowish brown, medium dense, dry, moderate cementation				100	
						1			Total Depth = 1.2 ft (14 in.); refusal on Chatsworth Formation Sandstone. Collected soil sample S001 at 12:53. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0147**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>3.3</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266895.94</b>	Easting (ft): <b>1796156.98</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2B</b>
Drill Start Date: <b>07-15-2009</b>	Start Time: <b>12:41</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-15-2009</b>	Finish Time: <b>12:44</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Bare soil and dry vegetation at surface (vegetation cleared earlier)</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-15-2009</b>	Backfill Time: <b>12:46</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, yellowish brown, medium dense, dry, moderate cementation [Fill]				100	
2.8 - 3.3	S					3								
<p>Total Depth = 3.3 ft; refusal on Chatsworth Formation Sandstone.</p> <p>Collected soil samples S001 at 12:42 and S002 at 12:44.</p> <p>Backfilled with auger cuttings.</p>														

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0148**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>2.2</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266908.12</b>	Easting (ft): <b>1796181.19</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2B</b>
Drill Start Date: <b>07-15-2009</b>	Start Time: <b>12:25</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-15-2009</b>	Finish Time: <b>12:34</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>10 ft from gravel road; bare soil, dry vegetation, and scattered road gravel</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-15-2009</b>	Backfill Time: <b>NR</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, yellowish brown, medium dense, dry, moderate cementation [Fill]					100
1.5 - 2.0	S					2			becomes dark yellowish brown, loose, dry to moist, no cementation					
						3			Total Depth = 2.2 ft; refusal on Chatsworth Formation Sandstone. Collected soil samples S001 at 12:27 and S002 at 12:34. Backfilled with auger cuttings.					
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09





Boring ID: **HZBS0149**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266954.59</b>	Easting (ft): <b>1795608.73</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-3</b>
Drill Start Date: <b>07-15-2009</b>	Start Time: <b>12:07</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-15-2009</b>	Finish Time: <b>12:08</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>At side of road, in area of both green dry shrubs, no debris</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-15-2009</b>	Backfill Time: <b>12:08</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, dark yellowish brown, loose, dry, no cementation [Alluvium]				100	
Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 12:08. Backfilled with auger cuttings.														
						1								
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0150**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>267190.18</b>	Easting (ft): <b>1796332.11</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-3</b>
Drill Start Date: <b>07-15-2009</b>	Start Time: <b>13:15</b>	Logged By: <b>M. Milman-Barris</b>	Reviewed By: <b>S. Valenzuela, P.G.</b>
Drill Finish Date: <b>07-15-2009</b>	Finish Time: <b>13:16</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Dry soil with dry vegetation at surface</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-15-2009</b>	Backfill Time: <b>13:16</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SP	Poorly Graded Sand, dark yellowish brown, loose, dry, no cementation				100	
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001 at 13:16. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0151**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>0.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266968.46</b>	Easting (ft): <b>1795585.58</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-1</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>08:56</b>	Logged By: <b>A. Ruotolo</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>08:57</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>Heavy vegetation (mostly dry grass) removed prior to sampling, no debris</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-01-2009</b>	Backfill Time: <b>09:04</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
0 - 0.5	S					0		SM	Silty Sand, dark yellowish brown (10YR 4/4), very loose, dry, mica present [Native]	tr	10	20	40	30
						1			Total Depth = 0.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0152**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266787.23</b>	Easting (ft): <b>1795903.83</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-1</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>10:46</b>	Logged By: <b>A. Ruotolo</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>10:48</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>On slight slope covered with heavy vegetation (removed prior to sampling)</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-01-2009</b>	Backfill Time: <b>10:51</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0		SM	Silty Sand, yellowish brown (10YR 5/4), loose, dry, fine gravel, no cementation, mica present [Native]	tr	10	20	40	30
	S					1			Total Depth = 1.0 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

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Boring ID: **HZBS0153**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266779.42</b>	Easting (ft): <b>1795913.45</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-1</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>11:00</b>	Logged By: <b>A. Ruotolo</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>11:01</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Heavy vegetation removed prior to sampling, no debris</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>07-01-2009</b>	Backfill Time: <b>11:05</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
						0		SM	Silty Sand, yellowish brown (10YR 5/4), loose, dry, fine gravel, no cementation, mica present [Native]	tr	10	20	40	30	
						1									
						2			Total Depth = 1.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.						
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0154**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.0</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266995.49</b>	Easting (ft): <b>1795969.31</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2C</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>13:22</b>	Logged By: <b>A. Ruotolo</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>13:23</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>On slope covered with dried vegetation, no debris</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>07-01-2009</b>	Backfill Time: <b>13:25</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0		SM	Silty Sand, brown (10YR 4/3), loose, dry, fine gravel, no cementation, mica present [Native]	tr	10	20	30	40
	S					1			Total Depth = 1.0 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						2								
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0155**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266974.97</b>	Easting (ft): <b>1796005.93</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2C</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>12:47</b>	Logged By: <b>A. Ruotolo</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>12:48</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: **In small clearing surrounded by heavy vegetation, no debris** Well Comp. Date: **N/A** Completion Time: **N/A**  
 Samplers: **Grab sample collected in 6-inch stainless steel sleeve** Soil Backfill Date: **07-01-2009** Backfill Time: **12:57**

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil				
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0		SM	Silty Sand, brown (10YR 4/3), loose, dry, no cementation, mica present [Native]	tr	10	20	30	40
						1			Sandstone, weathered [Chatsworth Formation]					
						2			Total Depth = 1.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.					
						3								
						4								
						5								
						6								
						7								
						8								
						9								
						10								

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09



Boring ID: **HZBS0156**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266961.12</b>	Easting (ft): <b>1795939.68</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2C</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>13:11</b>	Logged By: <b>A. Ruotolo</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>13:12</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	

Comments: <b>Surface covered with vegetation (removed prior to sampling), no debris</b>	Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>	Soil Backfill Date: <b>07-01-2009</b>	Backfill Time: <b>13:13</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
						0		SM	Silty Sand, brown (10YR 4/3), loose, dry, no cementation, mica present [Native]	tr	10	20	30	40	
						1									
						2			Total Depth = 1.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.						
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09





Boring ID: **HZBS0157**

Borehole Diam. (in.): <b>3</b>	Total Depth (ft): <b>1.5</b>	Project: <b>SSFL ISRA Sampling - Outfall 008 Area</b>	
Northing (ft): <b>266966.15</b>	Easting (ft): <b>1795952.79</b>	Job Number: <b>1891614</b>	Site: <b>Happy Valley South - HVS-2C</b>
Drill Start Date: <b>07-01-2009</b>	Start Time: <b>13:01</b>	Logged By: <b>A. Ruotolo</b>	Reviewed By: <b>M. Milman-Barris, P.G.</b>
Drill Finish Date: <b>07-01-2009</b>	Finish Time: <b>13:02</b>	Drilling Contractor: <b>B.L. Hall</b>	Field Instrumentation: <b>N/A</b>
Depth 1st H <sub>2</sub> O (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Drill Rig Type/Method: <b>Hand Auger</b>	
Depth H <sub>2</sub> O After Drilling (ft): <b>N/A</b>	Date / Time: <b>N/A</b>	Driller's Name: <b>Ben Cisneros</b>	
Comments: <b>In small clearing between bushes, no debris</b>		Well Comp. Date: <b>N/A</b>	Completion Time: <b>N/A</b>
Samplers: <b>Grab sample collected in 6-inch stainless steel sleeve</b>		Soil Backfill Date: <b>07-01-2009</b>	Backfill Time: <b>13:02</b>

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil					
										Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay	
						0		SM	Silty Sand, brown (10YR 4/3), loose, dry, no cementation, mica present [Native]	tr	10	20	30	40	
						1									
						2			Total Depth = 1.5 ft; terminated prior to refusal. Collected soil sample S001. Backfilled with auger cuttings.						
						3									
						4									
						5									
						6									
						7									
						8									
						9									
						10									

LOG OF BORING - OUTFALL008.GPJ BOEING.GDT 12/16/09