

ATTACHMENT 38
Type, Thickness, and Range of Unconsolidated Materials
Special Waste Landfill Permit
FGD Disposal Facility
Big Sandy Plant – Ash Pond Closure
Lawrence County, Kentucky

The type, thickness, and range in thickness of unconsolidated materials were analyzed as part of the Soil Borrow studies performed in 2006 by FSM, in 2009 by AEP, and in 2012 by URS. A table summarizing the type, thickness, and range of unconsolidated materials is included with this attachment. For additional information, see Attachment 39.

Attachment 38 - Unconsolidated Soil Types and Thickness Profiles

Table 38.1: Horseford Creek Area

Designation	Location	Description	Unified Soil Classification System (USCS) Designation	Thickness Average (ft)	Thickness Range (ft)
Soil 1	Predominant soil in uppermost native soil horizon.	Clayey Sand	SC	8.1	1.5 to 29.0
Soil 4	Within uppermost portion of bedrock profile in Burke Branch, Horseford Creek, and Fullers Branch.	Clayey Sand (Shale)	SC	7.5	0.9 to 27.5
Soil 6	Found mostly within Fullers Branch and Horseford Creek and to lesser extent within Burke Branch.	Lean Clay with varying amounts of Silt/Sand	CL	4.8	2.0 to 15.0
Soil 10	Found within Horseford Creek.	Fat Clay	CH	5.1	2.0 to 12.5

Table 38.2: Burke Branch Area

Designation	Location	Description	Unified Soil Classification System (USCS) Designation	Thickness Average (ft)	Thickness Range (ft)
Soil 1	Predominant soil in uppermost native soil horizon.	Clayey Sand	SC	8.1	1.5 to 29.0
Soil 2	Found within Burke Branch.	Sandy Lean Clay (visual)	CL	7.9	4.5 to 15.0
Soil 3	Found mostly within Fullers Branch.	Silty Clayey Sand	SC-SM	7.0	2.3 to 10.0
Soil 4	Within uppermost portion of bedrock profile in Burke Branch, Horseford Creek, and Fullers Branch.	Clayey Sand (Shale)	SC	7.5	0.9 to 27.5
Soil 5	Found within highway refuse fill area within Burke Branch.	Clayey Sand with Gravel to Clayey Gravel with Sand	SC to GC	67.9	46.9 to 95.5
Soil 6	Found mostly within Fullers Branch and Horseford Creek and to lesser extent within Burke Branch.	Lean Clay with varying amounts of Silt/Sand	CL	4.8	2.0 to 15.0
Soil 7	Alluvial soil found in single boring within lower horizons of Burke Branch.	Sandy Lean Clay to Sand with Clay	CL to SC	28.5	N/A

Table 38.3: Fullers Branch Area

Designation	Location	Description	Unified Soil Classification System (USCS) Designation	Thickness Average (ft)	Thickness Range (ft)
Soil 1	Predominant soil in uppermost native soil horizon.	Clayey Sand	SC	8.1	1.5 to 29.0
Soil 3	Found mostly within Fullers Branch.	Silty Clayey Sand	SC-SM	7.0	2.3 to 10.0
Soil 4	Within uppermost portion of bedrock profile in Burke Branch, Horseford Creek, and Fullers Branch.	Clayey Sand (Shale)	SC	7.5	0.9 to 27.5
Soil 6	Found mostly within Fullers Branch and Horseford Creek and to lesser extent within Burke Branch.	Lean Clay with varying amounts of Silt/Sand	CL	4.8	2.0 to 15.0
Soil 8	Found within Fullers Branch.	Sandy Lean Clay	CL	5.3	2.3 to 9.5
Soil 9	Mine spoil found in single boring in Fullers Branch.	Lean Clay	CL	N/A	N/A