MTR
MANAGEMENT AND TECHNICAL RESOURCES, INC.

June 6, 2011

Mr. Lucas Berresford
Project Manager
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Re: Phase II Delineation – Summary
Phase III Delineation – Proposed Activities
Congaree River Sediments
Columbia, South Carolina

Dear Mr. Berresford:

This letter provides a brief summary of the recently completed Phase II delineation findings and provides recommendations for additional activities. Also included herein is a summary of the current understanding of the extent of tar-like material (TLM) in the Congaree River based on the work completed to date.

PHASE II DELINEATION Summary

Work Plan Overview

The proposed Phase II delineation activities were described in a letter that was submitted to the South Carolina Department of Health and Environmental Control (SCDHEC), dated December 29, 2010. The proposed activities were, by design, a continuation of the delineation efforts initiated by SCE&G to accurately determine the extent of TLM in the Congaree River. The proposed Phase II activities included:

- Pre-screening the area for magnetic anomalies from the "16" line to approximately 400 feet below the Blossom Street Bridge and within Unnamed Tributary #1 (UT #1);
- Evaluating the presence or absence of TLM in UT #1;
- Delineating the eastern extent of TLM by drilling landside borings along the shoreline;
- Delineating the potential extent of TLM from the "16" line to approximately 400 feet below the Blossom Street Bridge;
- Evaluating the potential occurrence of other weathered material (OWM) from the "16" line to below the Blossom Street Bridge; and
- Collecting samples for laboratory analyses at the visually un-impacted boundary locations to confirm delineation.

Phase II Activities

The magnetometer survey (a pre-screening activity to assure safe conditions for sediment sampling) was conducted on January 4, 2011 and the sediment coring activities and UT #1 investigations were performed on February 22 and 23, 2011.

The river current was relatively swift on January 4, 2011 and due to safety concerns, the magnetometer survey could not be completed as originally planned. The Congaree River conditions severely restricted the areas that could be safely accessed and therefore, the survey was only conducted between the "16" and "20" lines (upriver to downriver direction), and the "P" line to the shoreline (west to east direction) as shown on Figure 1. The Congaree River conditions were re-evaluated on January 5, 2011 and due to the fast current and cold water temperature (too cold for wading), it was decided that conditions were not safe to perform any additional magnetometer survey work.

For the February sampling event, the Congaree River current was again too swift to safely navigate the pontoon boat (equipped with personnel and the coring equipment) to the "20" line and further downriver to the Blossom Street Bridge and beyond, as planned. The 019 location situated to the west of the "island" could not be accessed (Figure 1). However, on February 22 and 23, 2011 the "17" through "19" lines were safely navigated and a total of 19 grid nodes were investigated with direct push technology (DPT) and included the following:

- "17" line: seven (7) locations I17 through O17;
- "18" line: eight (8) locations I18 through P18; and
- "19" line: four (4) locations J19 through M19.

The sediment cores were advanced until refusal was encountered and if limited sample recovery was obtained, multiple cores were advanced. Dedicated acetate liners were used at each location.

A total of five sediment samples were collected for laboratory analyses on February 22 and 23, 2011. Two sediment samples were collected along the "17" line and included western boundary grid node location O17 and near shoreline grid node I17. Three sediment samples were collected along the "19" line at grid node locations J19, K19, and L19.

The laboratory analyses included benzene, toluene, ethylbenzene, and total xylenes (BTEX) and polynuclear aromatic hydrocarbons (PAH) via EPA Methods 8260B and 8270D, respectively. The samples were transported under standard chain-of-custody procedures to Shealy Environmental Services, Inc. (Shealy) located in West Columbia, South Carolina for laboratory analyses.

On February 23, 2011, sediment was visually inspected in UT #1 to assess the presence of TLM. A total of eight locations (UT-1 through UT-8) were investigated with the furthest downstream location (UT-1) approximately 30 feet west of the walkway crossing UT #1 and proceeding upstream to just below the "pool" at the falls (UT-8). The locations were investigated by wading into the tributary and digging sediment with a sharp shooter (a long, narrow shovel), then inspecting the sediment. The approximate sampling locations are also shown on Figure 1.

The proposed landside borings could not be completed since an access agreement was not available.

PHASE II FINDINGS

Magnetometer Survey

The magnetometer survey was conducted to screen the project area for unexploded ordnances (UXO) from the Civil War. For Phase II, the frequency of the detected magnetic anomalies decreased significantly between the "16" and "20" lines, compared to the concentration of anomalies documented during the Phase I activities. Similar to previous submittals, locations of the magnetic anomalies are not provided herein, since this information is very sensitive and may be used by others for activities that are currently prohibited.

Visual Observations - Congaree River Sediment Corings

The Phase II findings were useful to further assess locations where TLM was visually present or absent. In general, visually continuous TLM was noted at some "interior" locations along the "17" and "18" lines, whereas evidence of TLM blebs was noted at some locations along the "19" line. TLM was not observed at the western boundary locations along the "17" through "19" lines as shown on Figure 1. Table 1 provides a summary of the visual observations for sediment samples collected to date. In summary for Phase II, TLM was not visually present at the western portion of the:

- "17" line (N17 and O17);
- "18" line (L18 through P18); and
- "19" line (M19).

Other visual indictors of TLM (e.g., blebs) were not noted at these locations. Based on these observations and with comparison to interior locations where visually continuous TLM was noted, the western boundary appears to be delineated. For illustration purposes, the western extent of TLM appears to narrow beginning at the "O" line "(O16), inflects towards the shoreline, and may be defined by the N17, M18, and M19 grid nodes.

At the "19" line, the most southern line investigated during Phase II, visual evidence of TLM was sporadic with two locations (K19 and M19) indicating the absence of TLM and two locations (L19 and J19) where relatively minor amounts of TLM were observed. At the L19 location, continuous TLM was not observed within the sample matrix but rather a TLM bleb was noted on a piece of gravel and potentially on a fragmented gravel or cobble. Coring location J19 contained TLM blebs, versus a continuous TLM layer. Visually continuous TLM was noted at some locations upriver from the "19" line and includes J18 and K18 and some locations along the "17" line (J17, K17, and M17). For illustration purposes, the sparsely observed TLM blebs along the "19" line is believed to be representative of a "transition zone" since other weathered material (OWM) was observed to occur sporadically downriver from this line.

Based on these visual observations, the western edge and the southern boundary have been better defined. As stated previously, investigation activities could not be completed south of the "20" grid line due to high water, fast current, and colder water temperatures.

Visual Observations - Unnamed Tributary

TLM was not visually observed at seven of the eight locations (Figure 1) evaluated along the Unnamed Tributary #1 (UT #1). At sample location UT-4, which was located approximately 24 feet upstream (east)

of the walking bridge, TLM was not observed within the sediment matrix at UT-4. Minimal blebs were observed on the water surface and occurred when the sediment was disturbed while investigating UT-4.

Phase II - Analytical Results

A summary of all available sediment analytical results is provided on Table 2 and the sample locations are shown on Figure 1. For Phase II, a total of five samples were collected for laboratory analysis. The two samples collected along the "17" line indicated the following:

- Sediment sample O17 collected at the western boundary yielded non-detect concentrations of BTEX and PAHs; and
- Sediment sample I17 collected near the shoreline yielded low total BTEX concentrations (slightly above the detection limits), and detection of the 16 PAH constituents with a total PAH concentration of 630.1 mg/Kg.

Three sediment samples were collected along the "19" line (furthest downriver location) since continuous TLM was not observed (although evidence of TLM blebs were noted at L19 and J19). Analytical results for these sediment samples indicated the following:

- Sediment samples K19 and L19 were found to have non-detect total BTEX, and low total PAH concentrations; and
- Sediment sample J19 indicated low total BTEX concentrations with moderate total PAH concentrations (647.6 mg/Kg).

CURRENT UNDERSTANDING - EXTENT OF TLM

The following items provide a summary of the current understanding of the extent of TLM in the Congaree River and are based upon the visual observations and analytical data collected to date as shown on Figure 1:

- The northern and western boundaries of TLM have been defined.
- It is assumed that the eastern shoreline of the river forms the boundary of TLM (landside borings will confirm this assumption).
- Visually continuous TLM is generally observed from the mouth of UT#1 and extends downriver to south of the "18" line (with some noted exceptions where TLM was not observed).
- There appears to be a transition zone south of the "18" line, where continuous TLM changes to sporadic blebs and some intermittent OWM.
- Areas south of the transition zone require further delineation via sampling and analysis.

PHASE III DELINEATION - PROPOSED ACTIVITIES

As currently envisioned, Phase III activities will include:

- Pre-screening the proposed sampling locations for magnetic anomalies from the "20" line to approximately 400 feet below the Blossom Street Bridge (to the extent possible);

- Confirming the eastern extent of TLM by drilling landside borings along the shoreline;
- Evaluating the potential occurrence of OWM from the "20" line to below the Blossom Street Bridge; and
- Collecting samples for laboratory analyses at the visually un-impacted boundary locations to confirm delineation.

The following sections briefly discuss the proposed Phase III delineation activities. All field activities will follow procedures described in the approved DWP.

Area Descriptions

The project area has been divided into five separate areas that have been defined by the work completed to date or proposed. The areas are shown on Figure 2 and include:

- Area A – From the Gervais Street Bridge to the northern boulder field, 1-4 lines
- Area B – Northern boulder field to the "18" line, 4-18 lines
- Area C – The transition zone, 18-20 lines
- Area D – Southern boulder field, 20-30 lines
- Area E – Blossom Street Bridge, 30-36 lines

Magnetometer Survey

As currently envisioned, a magnetometer survey will be performed to identify potential UXO prior to implementing intrusive activities in Areas D and E. The survey procedures that were used previously will not be feasible due to the river conditions that include numerous boulders, rapids and shallow water depths in Area D (Figure 2). Therefore, Area D will be surveyed by mounting the magnetometer on a small raft and guiding the raft along the survey lines via wading. In order to perform the magnetometer survey safely in Area D, lower river levels and warmer water temperatures will be necessary for wading. Survey lines will be maintained to the extent practicable.

Area E (Blossom Street Bridge) may be amenable to performing the magnetometer survey from a boat and access will be determined based on river conditions encountered. Wading may be necessary if some locations are not accessible.

Landside Borings (as Proposed in Phase I)

As currently planned, a total of 24 landside borings are proposed and the locations and rationale are listed below:

- Borings L6 and L7: Determine visual presence/absence of TLM under the boat launch apron;
- Borings K4 through K8: Determine visual presence/absence of TLM near the toe of a steep bank; and
- Borings J3 through J15 and I16 through I19: Intended to delineate the eastern extent of TLM and may be located at the top of or toe of the steep bank and will be determined based on field conditions and access agreement.

The borings will be completed using procedures presented in the approved DWP.

Phase III - Congaree River Investigation Points

As discussed above, the extent of OWM has not been delineated south of the "19" line. Therefore, additional Congaree River investigative points (i.e., sediment cores) are proposed as shown on Figure 2. As currently planned, the additional points will start at or near the "20" line and extend southward to the "36" line, which is approximately 400 feet down river from the Blossom Street Bridge. As envisioned, the investigative points will likely be bounded by the "N", "P" or "R" line and extend eastward to the shoreline. A total of 39 sediment cores are proposed within the Phase III investigation area. Also, nine "contingency" sediment cores (located on the western perimeter of the Phase III area) are shown on Figure 2 in the event interior points indicate the presence of visual TLM or OWM. It should be noted, that investigative points may be moved, added, or deleted based on observations made at the time of implementation, physical constraints, or at the request of SCDHEC.

For the area south of the "20" line, it is recommended that the sampling grid size be increased, with a spacing of 200 feet (north to south) by 100 feet (east to west). The increased spacing is proposed because of the sporadic and very limited observations of OWM in this area during previous excavations.

Area D and Area E will be investigated with methods used previously that will be dictated by the Congaree River conditions. Because of the boulders and swift current, Area D will be investigated by wading and obtaining sediment samples with a sharp shooter or other device (e.g., Whacker BH24 equipped with a macrocore barrel). It is anticipated that Area E will be investigated similar to Areas B and C by utilizing a pontoon boat equipped with a DPT (Geoprobe 420M). The sediment cores will be collected and logged using similar procedures to past sampling events. Locations in Area E that may not be accessible with the pontoon boat may be investigated via wading, if feasible.

Sample Collection and Analysis

Sediment and soil samples will be collected at select locations to provide analytical data to augment existing data. Figure 2 presents the proposed analytical sample locations and field conditions and observations will dictate the actual sample locations. Consistent with the approved DWP, sediment samples will be collected at locations where neither visual nor olfactory observations are noted. Generally, these sediment samples will be collected on a 400- to 600-foot spacing and in-line with existing samples (i.e., 20, 24, 30, and 36 lines). Area D western boundary samples will be collected on the "N" line if visual TLM or OWM is not observed. Contingency coring locations are also identified in Area D if visual TLM or OWM impacts are noted along the "N" line.

The sediment and soil samples will be collected, processed, and transported to Shealy for analysis. Soil and sediment samples will be analyzed for the same constituents as Phase I and Phase II and includes BTEX and PAHs by Method 8260B and 8270D, respectively. Decontamination of field instruments, sampling equipment and management of investigative derived waste (IDW) will follow procedures described in the approved DWP. The IDW will be containerized and staged at SCE&G's 1409 Huger Street site, pending disposal.

As before, each investigative location will also be field-screened with a metal detector to confirm the absence of any magnetic anomaly before attempting to obtain a sample. Also, a photoionization detector (PID) will be used to screen the sediment samples retrieved for laboratory analysis.

Schedule

The actual start date will be dependent upon anticipated Congaree River conditions (level, current, and temperature) and the weather forecast. It is anticipated that the work will occur in phases during the summer months. The magnetometer survey will be conducted before the intrusive activities (corings and borings). As before, the data obtained from the magnetometer survey will be superimposed onto the proposed sampling grid map so that potential obstructions can be avoided.

A preliminary "test run" for boat access around the Blossom Street Bridge is tentatively scheduled for the week of June 6, 2011. If access via boat is feasible, the magnetometer study will be completed in late June and the Phase III sediment coring and soil borings will likely commence in July 2011. Field implementation of all Phase III work (and especially the landside activities) will be contingent upon securing a new property access agreement and confirming access to the boat ramp located below the Blossom Street Bridge. A complete Delineation Report will be developed and submitted to SCDHEC for review and approval following completion of the Phase III work.

Should you have any questions, please contact Bob Apple at 919-819-2748 or me at 412-829-9650.

Sincerely,

Andrew R. Contrael
Senior Project Manger

Attachments

cc: B. Apple - SCANA
M. Ferlin - MTR

TABLE 1

SEDIMENT CORING OBSERVATIONS

Congaree River Sediments
Columbia, South Carolina

Point	Grid Node	TLM Noted	River Depth (feet)	Depth to Refusal or Approximate Sediment Thickness (feet brb)[1]	Top of Visual TLM (feet brb)	Bottom of Visual TLM (feet brb)	Approximate Visual TLM Thickness (feet)	Notes
PHASE I FINDINGS - SEPTEMBER-OCTOBER 2010								
1	G1	No	Shore	1.5	--[2]	--	--	
2	H1	No	NR[3]	1.1	--	--	--	
3	I1	No	NR	0.5	--	--	--	
4	J1	No	NR	1.25	--	--	--	
5	K1	No	NR	0.25	--	--	--	
6	L1	No	NR	0.25	--	--	--	
7	M1	No	NR	1.0	--	--	--	
8	N1	No	NR	0.5	--	--	--	
9	O1	No	NR	0.4	--	--	--	
10	I2	No	Shore	0.9	--	--	--	Located near AB4 and data from AB4 used for this grid node
11	J2	Grid point within and on top of boulders.						
12	K2	No	NR	1.0	--	--	--	
13	L2	No	NR	0.8	--	--	--	
14	M2	No	NR	0.3	--	--	--	
15	N2	No	NR	0.5	--	--	--	
16	O2	No	NR	0.5	--	--	--	
17	K3	Yes	NR	1.0	0.3	0.9	0.6	
18	L3	No	NR	0.25	--	--	--	
19	M3	No	NR	0.25	--	--	--	
20	N3	No	NR	0.20	--	--	--	
21	L4	No	NR	1.0	--	--	--	
22	M4	Yes	NR	1.5	1.3	1.7	0.4	
23	N4	Yes	NR	1.0	1.0	1.0	~0.01	TLM noted at one foot depth using sharp shooter
24	O4	No	4.5	3.5	--	--	--	
25	L5	Yes	NR	2.0	0.2	0.4	--	Slight TLM odor
26	M5	No	land	1.5	--	--	--	Located on sand bar
27	N5	Yes	1.5	4.0	0.5	4.0	3.5	Recovery about 50% so TLM thickness could be under or overstated
28	O5	Yes	6.0	1.8	0.0	1.8	1.8	Recovery about 40% so TLM thickness could be under or overstated
29	P5	No	8.2	1.1	--	--	--	
30	M6	Yes	3.65	5.1	0.5	5.0	4.8	
31	N6	Yes	7.7	1.0	0.5	1.0	0.5	
32	O6	Yes	7.9	2.25	0.4	2.25	1.85	
33	P6	No	8.8	0.5	--	--	--	
34	N7	Yes	7.0	1.1	0.0	1.1	1.1	Recovery about 64% so TLM thickness could be under or overstated
35	O7	No	7.0	0.8	--	--	--	
36	L8	Moved twice. Magnetometer indicated a number of anomalies.						
37	M8	Yes	6.8	4.0	?	3.5	3.5	Recovery about 27% in 0 to 3 foot interval and therefore top not defined and TLM thickness could be under or overstated

TABLE 1

SEDIMENT CORING OBSERVATIONS

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Columbia, South Carolina

Point	Grid Node	TLM Noted	River Depth (feet)	Depth to Refusal or Approximate Sediment Thickness (feet brb)[(1)]	Top of Visual TLM (feet brb)	Bottom of Visual TLM (feet brb)	Approximate Visual TLM Thickness (feet)	Notes
38	N8	No	7.1	0.5	--	--	--	
39	O8	No	6.25	1.1	--	--	--	
40	L9	Yes	5.2	3.0	1.25	2.0	0.75	
41	M9	No	9.0	1.6	--	--	--	
42	N9	Yes	6.3	0.75	0.4	0.55	0.15	
43	O9	No	6.6	1.1	--	--	--	
44	L10	Yes	4.3	4.5	1.5	2.8	1.3	Recovery about 50% so TLM thickness could be under or overstated
45	M10	Yes	10.2	1.25	0.5	0.6	0.1	Very slight TLM odor, potential visual TLM
46	N10	No	11.0	1.5	--	--	--	
47	O10	No	8.2	2.9	--	--	--	
48	K11	Yes	3.0	0.7	0.5	0.6	0.1	Staining to potential visual TLM
49	L11	Yes	6.4	1.0	0.05	1.0	0.95	
50	M11	No	11.4	0.9	--	--	--	
51	N11	No	10.5	0.33	--	--	--	
52	O11	No	7.9	6.0	--	--	--	
53	K12	Yes	5.5	1.0	0.3	0.5	0.2	
54	L12	No	7.0	1.0	--	--	--	
55	M12	Yes	9.75	0.5	?	0.5	0.5	Blebs on liner and granite fragment
56	N12	Yes	11.5	0.9	--	--	--	TLM noted on cutting shoe, not in sample. Sample did have a very slight odor.
57	O12	No	8.8	1.5	--	--	--	
58	K13	Water was too shallow access.						
59	L13	Yes	4.2	0.42	0.20	0.28	0.08	
60	M13	Yes	7.0	0.65	0.0	0.55	0.55	
61	N13	Yes	NR	0.5	0.2	0.4	0.2	
62	O13	No	NR	1.0	--	--	--	
63	J14	No	5.5	3.0	--	--	--	Location difficult to access, difficulty retrieving rods, no recovery, but no evidence of TLM on liner
64	K14	Rocks impeded drilling. A rock fragment recovered did not indicate TLM.						
65	L14	Yes	7.5	0.2				No recovery due to rocks, TLM on cutting shoe
66	M14	Yes	6.4	0.8	?	0.8	0.8	Recovery about 50% so TLM thickness could be under or overstated
67	N14	Yes	6.9	0.65	0.6	0.6	0.02	TLM noted after initial "sampling" and when location was "re-sampled" for laboratory analyses
68	O14	No	0.8	0.7	see note			Total of three sample runs so adequate sample volume could be collected for analyses. Two of the three runs indicated absence of TLM and the third indicated one bleb on the acetate liner
69	J15	Multiple attempts and no sample recovery						

TABLE 1

SEDIMENT CORING OBSERVATIONS

Congaree River Sediments
Columbia, South Carolina

Point	Grid Node	TLM Noted	River Depth (feet)	Depth to Refusal or Approximate Sediment Thickness (feet brb)[1]	Top of Visual TLM (feet brb)	Bottom of Visual TLM (feet brb)	Approximate Visual TLM Thickness (feet)	Notes
70	K15	Yes	6.8	0.75	0.0	0.1	0.1	
71	L15	No	6.0	0.55	--	--	--	
72	M15	No	6.5	0.75	--	--	--	
73	J16	Yes	12.7	0.25	0.0	0.25	0.25	
74	K16	Yes	9.1	1.0	0.0	1.0	1.0	Recovery about 40% so TLM thickness may be under or overstated
75	L16	Yes	7.0	1.1	0.0	0.85	0.85	
76	M16	Yes	8.2	1.0	0.0	0.5	0.5	Recovery about 50% so TLM thickness could be under or overstated
77	N16	Yes	6.0	1.2	0.35	0.8	0.45	
78	O16	No	6.5	1.0	--	--	--	
79	AB1	No	Shore	1.0	--	--	--	
80	AB2	Yes	Shore	1.0	0.45	0.8	0.35	
81	AB3	Yes	Shore	2.25	0.6	1.1	0.5	Recovery about 50% so TLM thickness may be under or overstated
82	AB4	No	Shore	0.9	--	--	--	
83	AB5	Rocks with limited sediment depostion. Could not obtain sample.						
84	AB6	Yes	Shore	1.5	0.3	0.5	0.2	Staining and sheens
PHASE II FINDINGS - FEBRUARY 2011								
85	I17	No	5.0	2.8	--	--	--	
86	J17	Yes	10.9	1.4	0.0	0.85	0.85	The top and bottom of the TLM interval is not exactly known since recovery was ~ 60% (recovered interval contained TLM evidence). Generally, a non-impacted sand layer is found above the TLM but was not observed at this location.
87	K17	Yes	10.8	1.0	0.4	0.5	0.1	Recovery was 50% and therefore TLM thickness may be greater than that observed.
88	L17	No	8.0	1.5	--	--	--	
89	M17	Yes	7.6	1.7	0.0	0.35	0.35	The top and bottom of the TLM interval is not exactly known since recovery was ~ 41% (part of recovered interval contained TLM evidence). Generally, a non-impacted sand layer is found above the TLM but was not observed at this location.
90	N17	No	5.3	2.9	--	--	--	
91	O17	No	6.5	1.4	--	--	--	
92	I18	No	5.0	2.0	--	--	--	
93	J18	Yes	9.0	2.2	0.3	0.95	0.65	Recovery was 59% and therefore TLM intervals are likely approximate
94	K18	Yes	9.0	0.25	see note			TLM did not occur in distinct layers but rather was noted as "balls" with matrix of sand and tended to be found at top part of sample.

TABLE 1

SEDIMENT CORING OBSERVATIONS

Congaree River Sediments
Columbia, South Carolina

Point	Grid Node	TLM Noted	River Depth (feet)	Depth to Refusal or Approximate Sediment Thickness (feet brb)[1]	Top of Visual TLM (feet brb)	Bottom of Visual TLM (feet brb)	Approximate Visual TLM Thickness (feet)	Notes
95	L18	No	NR	0.35	--	--	--	
96	M18	No	6.5	1.0	--	--	--	
97	N18	No	5.0	0.75	--	--	--	
98	O18	No	6.0	0.25	--	--	--	
99	P18	No	6.0	1.5	--	--	--	
100	J19	Yes	3.5	2.0	1.75	2.0	0.25	Stained black, interval contained what appeared to be TLM blebs, TLM odor
101	K19	No	6.0	0.6	--	--	--	
102	L19	Yes	5.5	0.5	see note			TLM was not observed in sample matrix (I.e. sand and gravel). A TLM bleb was observed on a piece of gravel, and potential TLM blebs on a large fragmented gravel or cobble.
103	M19	No	4.0	0.3	--	--	--	
104	UT-1[4]	No	NR	1.4	--	--	--	Located ~ 35 west downstream of western bridgepile.
105	UT-2	No	NR	1.8	--	--	--	Located ~10 feet downstream of western bridge pile and along southern bank.
106	UT-3	No	NR	1.4	--	--	--	Located mid stream under bridge.
107	UT-4	Yes	NR	0.7	see note			Located ~ 24 east upstream of eastern bridgepile. TLM was not noted in sample but a bleb or two was noted on water surface when walking in stream. Faint grey sheen was also noted around bleb.
108	UT-5	No	NR	1.9	--	--	--	Located ~37 feet upstream of UT-4.
109	UT-6	No	NR	0.7	--	--	--	Located ~29 feet upstream of UT-5.
110	UT-7	No	NR	0.25	--	--	--	Located ~43 feet upstream of UT-6.
111	UT-8	No	NR	2.0	--	--	--	Located ~38 feet upstream of UT-7. Lite grey sheen noted while digging was very minor in extent

Notes:
(1) brb - below river bed
(2) Since TLM was not noted, this information is not applicable.
(3) NR - not recorded.
(4) UT - Unnamed Tributary #1 investigation location.

TABLE 2

SUMMARY OF SEDIMENT ANALYTICAL RESULTS USED TO CONFIRM EXTENT OF TLM

Congaree River Sediments
Columbia, South Carolina

	Analytical Results														SCDHEC Analytical Results[2]		
Area	**Area A**					**Area B**						**Area C**			**Location Specific**		
Line Location of Sample	**"1" Line**			**"2" Line**	**"3" Line**	**"5" Line**	**"8" Line**	**"11" Line**	**"14" Line**	**"17" Line**		**"19" Line**			**Located between "5" and "8" Lines**		
Sample Identification	**I1**	**K1**	**M1**	**O2**	**L3**	**P5**	**O8**	**O11**	**O14**	**O17**	**I17**	**J19**	**K19**	**L19**	**SED-1**	**SED-2**	**SED-3**
Date Sampled	**10/6/2010**	**10/6/2010**	**10/6/2010**	**10/6/2010**	**10/7/2010**	**10/4/2010**	**10/04/2010**	**10/4/2010**	**10/5/2010**	**2/23/2011**	**2/23/2011**	**2/22/2011**	**2/22/2011**	**2/22/2011**	**6/28/2010**	**6/28/2010**	**6/28/2010**
Sample Interval (feet brb)[1]	**0 - 0.5**	**0 - 0.25**	**0 - 1.0**	**0 - 0.5**	**0 - 0.25**	**0 - 1.1**	**0 - 1.1**	**0 - 6**	**0 - 0.7**	**0 - 1.4**	**0 - 2.8**	**0 - 2.0**	**0 - 0.6**	**0 - 0.5**	**--[3]**	**--**	**--**
Parameters																	
Volatiles (mg/Kg)																	
Benzene	0.005 U[5]	0.005 U	0.005 U	0.0046 U	0.0048 U	0.0054 U	0.0049 U	0.0052 U	0.0048 U	0.0055 U	0.0084 U	0.037	0.0052 U	0.0051 U	16	0.97	8
Ethylbenzene	0.005 U	0.005 U	0.005 U	0.0046 U	0.0048 U	0.0054 U	0.0049 U	0.0052 U	0.0055	0.0055 U	0.0084 U	2.2	0.0052 U	0.0051 U	150	10	90
Toluene	0.005 U	0.005 U	0.005 U	0.0046 U	0.0048 U	0.0054 U	0.0049 U	0.0052 U	0.0048 U	0.0055 U	0.0084 U	0.0081	0.0052 U	0.0051 U	5.7 U	0.35 U	3.2 U
Total Xylenes	0.005 U	0.005 U	0.005 U	0.0046 U	0.0048 U	0.0054 U	0.0049 U	0.0052 U	0.0057	0.0055 U	0.058	0.19	0.0052 U	0.0051 U	79	4.1	19
Semi-Volatiles (mg/Kg)																	
Acenaphthene	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	59	58	0.89	0.37 U	730	380	740
Acenaphthylene	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	4.7	4.5	0.41	0.37 U	170	44 U	100
Anthracene	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	65	41	1.8	0.37 U	450	300	430
Benzo(a)anthracene	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	28	29	1.9	0.37 U	340	130	290
Benzo(a)pyrene	0.41 U	0.39 U	0.41 U	0.37 U	0.91	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	27	34	1.9	0.37 U	380	130	310
Benzo(b)fluoranthene	0.41 U	0.39 U	0.41 U	0.37 U	0.92	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	17	18	1.4	0.37 U	220	110	180
Benzo(g,h,i)perylene	0.41 U	0.39 U	0.41 U	0.37 U	0.60	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	7.4	9.5	0.65	0.37 U	140 U	47	110
Benzo(k)fluoranthene[4]	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	6.6	0.42 UJ	0.54	0.37 U	140 U	44 U	94
Chrysene	0.41 U	0.39 U	0.41 U	0.37 U	0.67	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	26	34	2.1	0.37 U	340	110	280
Dibenz(a,h)anthracene	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	1.8	2.4	0.42	0.37 U	140 U	44 U	82 U
Fluoranthene	0.41 U	0.39 U	0.41 U	0.37 U	0.95	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	76	51	3.6	0.45	530	320	480
Fluorene	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	37	35	0.81	0.37 U	490	220	420
Indeno(1,2,3-cd)pyrene	0.41 U	0.39 U	0.41 U	0.37 U	0.45	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	6.8	7.2	0.5	0.37 U	140 U	44 U	82 U
Naphthalene	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	0.79	82	0.34 U	0.37 U	3,100	470	2,000
Phenanthrene	0.41 U	0.39 U	0.41 U	0.37 U	0.39 U	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	170	150	4.8	0.94	1,600	710	1,400
Pyrene	0.41 U	0.39 U	0.41 U	0.37 U	1.10	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	97	92	5.8	0.75	900	380	800
Totals (mg/Kg)[6]																	
Total BTEX	0.005 U	0.005 U	0.005 U	0.0046 U	0.0048 U	0.0054 U	0.0049 U	0.0052 U	0.0112	0.0055 U	0.058	2.4	0.0052 U	0.0051 U	245	15.07	117
Total PAH	0.41 U	0.39 U	0.41 U	0.37 U	5.6	0.36 U	0.35 U	0.36 U	0.35 U	0.37 U	630.1	647.6	27.5	2.1	9,250	3,307	7,634

Notes:

1. TLM = tar like material
2. The laboratory reported some results between the method detection limit (MDL) and reporting limit (RL). For purposes of this reporting, the results are shown at the RL.
3. (1) brb = below river bed. Interval is based on depth from top of sediment to refusal.
4. (2) Analytcial results from samples collected and analyzed by the South Carolina Department of Health and Environmental Control.
5. (3) -- depth of sample is not known and assumed to be 0 to 1 feet brb.
6. (4) SCDHEC reported (j/k) fluoranthene.
7. (5) U Indicates the consitutent was not detected at the reported detection limit.
8. (6) Total BTEX and total PAH includes only detected results.

K1	
TOTAL BTEX	0.005 U
TOTAL PAH	0.39 U

I1	
TOTAL BTEX	0.005 U
TOTAL PAH	0.41 U

M1	
TOTAL BTEX	0.005 U
TOTAL PAH	0.41 U

O2	
TOTAL BTEX	0.0046 U
TOTAL PAH	0.37 U

L3	
TOTAL BTEX	0.0048 U
TOTAL PAH	5.6

P5	
TOTAL BTEX	0.0054 U
TOTAL PAH	0.36 U

SED–1	
TOTAL BTEX	245
TOTAL PAH	9,250

SED–2	
TOTAL BTEX	15.07
TOTAL PAH	3,307

SED–3	
TOTAL BTEX	117
TOTAL PAH	7,634

O8	
TOTAL BTEX	0.0049 U
TOTAL PAH	0.35 U

O11	
TOTAL BTEX	0.0052 U
TOTAL PAH	0.36 U

O14	
TOTAL BTEX	0.0112
TOTAL PAH	0.35 U

O17	
TOTAL BTEX	0.0055 U
TOTAL PAH	0.37 U

I17	
TOTAL BTEX	0.0058
TOTAL PAH	630.1

J19	
TOTAL BTEX	2.4
TOTAL PAH	647.6

K19	
TOTAL BTEX	0.0052 U
TOTAL PAH	27.5

L19	
TOTAL BTEX	0.0051 U
TOTAL PAH	2.1

GERVAIS STREET BRIDGE

UNNAMED TRIBUTARY #1

UNNAMED TRIBUTARY #2

GST STREET

SENATE STREET

CONGAREE RIVER

BOULDER FIELD

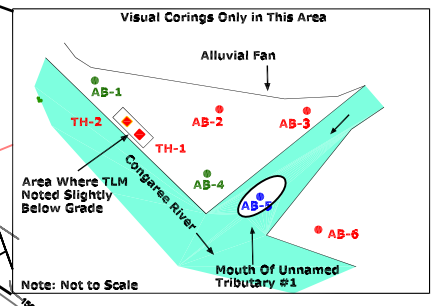
ASPHALT BOAT RAMP

APPROX EDGE OF RIVER (WATER'S EDGE)

18° DIP

N

Visual Corings Only in This Area



LEGEND

- TLM NOT OBSERVED
- TLM OBSERVED
- INACCESSIBLE OR OBSTRUCTED
- TLM ODOR AND/OR POTENTIAL VISUAL TLM
- OTHER WEATHERED MATERIAL (OWM)
- SCDHEC SEDIMENT SAMPLING LOCATION (S–1)
- SCANA RECONNAISSANCE LOCATION (TH–1)
- TRANSECT LINE (A A')
- APPROXIMATE EDGE OF RIVER
- APPROXIMATE ISLAND LOCATION
- APPROXIMATE EXTENT OF TLM
- APPROXIMATE EXTENT OF TRANSITION ZONE
- ASSUMED EASTERN TLM BOUNDARY

NOTES:

1) SAMPLE POINTS K2 AND L2 ARE APPROXIMATE.
2) TRANSECT LINES A–A' AND B–B' WERE INVESTEGATED IN OCTOBER 2010 VIA WADING AND USING A SHOVEL.
3) ALL RESULTS IN mg/Kg.
4) INVESTIGATION POINTS IN UNNAMED TRIBUTARY #1 ARE APPROXIMATE.

0 70 140 210

SCALE IN FEET

FIGURE 1
SOUTH CAROLINA ELECTRIC & GAS COMPANY

PHASE I AND PHASE II DELINEATION FINDINGS

COLUMBIA, SOUTH CAROLINA

DATE: 5–6–11 FILE NAME: PHASE I–PHASE 2 REV

MANAGEMENT AND TECHNICAL RESOURCES, INC.

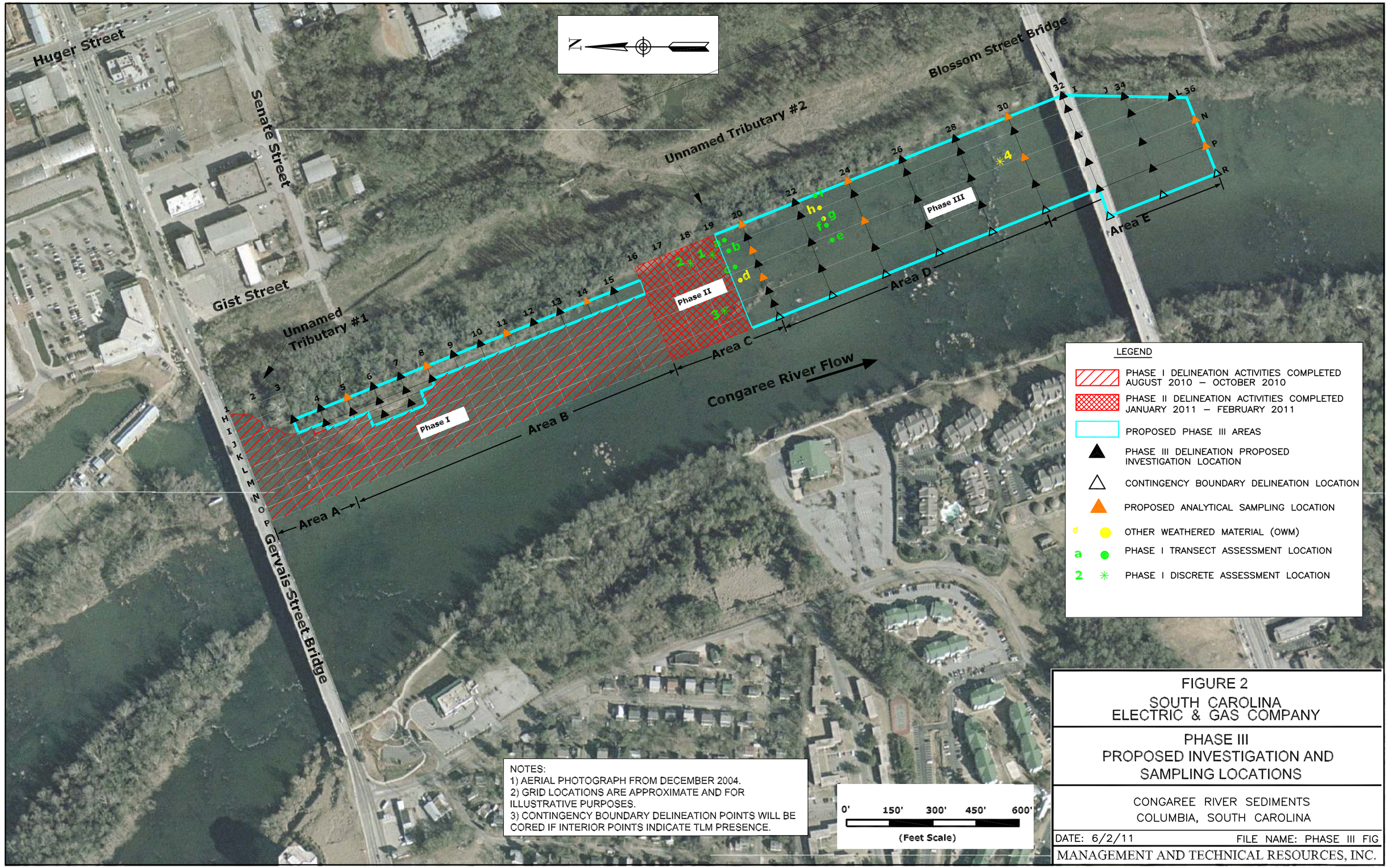


FIGURE 2
SOUTH CAROLINA
ELECTRIC & GAS COMPANY

PHASE III
PROPOSED INVESTIGATION AND
SAMPLING LOCATIONS

CONGAREE RIVER SEDIMENTS
COLUMBIA, SOUTH CAROLINA

DATE: 6/2/11 FILE NAME: PHASE III FIG

MANAGEMENT AND TECHNICAL RESOURCES, INC.