CEMVS-EC-GT (Conroy) 27 Sept, 2011

MEMO TO CEMVN-PM-OF (Wagner)

SUBJECT: Minutes of Second Meeting of the WBV14c.2 Tiger Team.

1. The subject meeting commenced at 8:00am, Monday, 26 September, 2011 in the District Office of the Corps of Engineers, New Orleans, ED Conference Room. Team members in attendance were:

CORPS OF ENGINEERS

Kevin Wagner; CEMVN-PM-OW
Richard Pinner; CEMVN-ED-F
Mark Woodward; CEMVN-ED-FD
Brad Arcement (TT); CEMVK-EC-GA
Tim Shows (TT); CEMVK-EC-C
Glenn Gremillion; CEMVN-CD-E
John Bivona; CEMVN-EC
Patrick Conroy (TT); CEMVS-EC-GT
Michael Wielputz (TT); CESAS-EN-GSE
Lanny Barfield (TT); CEMVK-EC-GA
Kim Tullier; CEMVN-ED-FD
Jeremy George; Contract Employee

SOUTHEAST LOUSIANA FLOOD PROTECTION AUTHORITY-WEST (SLFPA-W)

Michael Merritt (TT); (joined by telephone)
David Roarke (TT);

LOUSSIANA COASTAL RESTORATION AND PROTECTION (CPRA)

Rickey Brouillete; (TT)
David St. Marie; (TT):
Jas Singh; (TT)

BURNS-COOLEY-DENNIS (BCD)

Eddie Templeton; (TT)

2. The team reviewed comments to the minutes of the initial Tiger Team meeting of 12 September, 2011. Mr. Conroy will finalize those minutes based on these comments.

3. Mr. David Valintine of FUGRO Engineers reported on the progress made on the GeoPhysical scanning of the WBV14C.2 levee. Valintine reported that the Ground Penetrating Radar is not effective in the constructed levee. The moisture and density of the compacted clay levee and berms absorbs and attenuates the GPR signal limiting its penetration and reflection back to the GPR transceiver. On the other hand, the EM-38 equipment is much more effective. Based on the contract, Fugro was required to initially evaluate the effectiveness of EM-38 and Ground Penetrating Radar technologies, pick the best technology, and then complete the job with that chosen technology. Fugro has decided to proceed with the EM-38 system. FUGRO reported 12 locations where the EM-38 equipment measured a strong reflection, indicating some kind of foreign object buried in the fill. Mr. Valintine stated that Fugro was 70% complete with the work.

4. Messrs Singh, Pinner, Woodward and Tullier described how 7 ground truthing excavations (done on 16 Sept 2011) had been completed covering 9 areas identified by Fugro. Fugro identified these areas based on maximum and minimum values recorded during the geophysical scanning of the levee reach between stations 70+00 and 80+00. During the initial Tiger Team meeting, Mr. St. Marie requested that this reach be the first to be investigated. The ground-truthing effort involved excavating at the location and to the depth indicated by the EM-38 scan and carefully inspecting the cuttings to find foreign objects buried in the fill. In all cases, the excavations yielded one or more pieces of wood that were 12 to 18 inches in length. One site yielded a 2-ft by 2-ft by 1-inch piece of concrete (most likely a shard of reinforced concrete pipe). And finally, another site yielded a 16 to 18 inch long piece of 1-inch diameter steel pipe. The team instructed Mr. Valintine to located three additional sites on the levee, sites where the EM-38 equipment indicated even stronger reflections than previously measured. Mr. Valintine stated that the sites would be marked by 8:00am on Tuesday, 27 September.

5. When asked if Fugro had inquired about the capabilities of the "Ohm-Mapper" system, Mr. Valintine stated that CEMVN-EC instructed Fugro to not make that inquiry, that Fugro was to stick to the technical specifications issued to FFEB for this geophysical work. Mr. Bivona stated that based on reviews of the technical specifications by Fugro and the Corps Engineering Research and Development Center (ERDC) geophysical specialists, CEMVN-EC was satisfied that the specifications are technically adequate. Mr. Bivona further stated that any of the non-federal sponsors were free to have Fugro make the inquiry using their agency's funds.

6. The entirety of the afternoon was given over to study of the WBV14C.2 Material Source Charts provided by CEMVN-CD. These charts indicate what borrow material source was used to construct all parts of the levee and berms over the entire project. The Tiger Team annotated these charts with the proposed inspection trench locations. Then the team discussed each trench location in great detail: examining the construction documents to determine the prevailing elevations before and after construction and estimating the thickness of the River Birch, Willow Bend, or levee degrade borrow at each trench location. This discussion yielded a depth of inspection trench at each location. Table 1 shows the locations and depths of 19 inspection trenches to be excavated on the levee. All Tiger Team members in attendance agreed to this list.

7. The team then began to discuss the schedule for the following days' inspection trench excavations. During this discussion, Mr. Merrit stated that he would not attend any field activities until detailed plans and procedures were established for the trench excavation, cutting inspection, and testing. Mr. Merrit stated that until such plans and procedures were established, reviewed, and finalized that he would categorize any field activities as preliminary. The Tiger Team in attendance in the room requested Mr. Merritt to clarify his position and further requested that he reconsider and join the team in the excavation and inspection activities that were planned for the following two days (27 and 28 September, 2011). Mr. Merritt remained resolute in his position that any field activities occurring before the plans and procedures were finalized were for practice only and that he would not consider any data obtained from those activities as being valid.

8. The Tiger Team then discussed the proposed procedures for excavating, inspection of excavated cuttings, and excavated cutting testing. A draft of these procedures is attached to these minutes. All Tiger Team members in attendance agreed to the draft procedures with the understanding that they were subject to amendments and improvements.

9. The Tiger Team coordinated with Mr. Gremillion to begin inspection trench excavations on Tuesday morning, 27 September, 2011. The group agreed to meet at the WBV14C.2 construction trailers at 0800 hours. Mr. Conroy stated that all Tiger Team members were to show up on the construction site with appropriate safety equipment

Respectfully Submitted
Patrick J. Conroy, P.E.
WBV14c.2 Team Lead

Trench Number			Protected Side Berm			C/L		Flood Side Berm		
	Station		O/S	Depth		Depth		O/S	Depth	
1	10+00		90	4		-		-	-	
2	30+00		90	3		-		-	-	
3	50+00		90	3		-		-	-	
4	66+00		130	3		-		-	-	
5	90+00		90	3		-		-	-	
6	100+00		110	3		-		-		
7	110+00		120	4		-		-	-	
8	145+00		130	3		-		-	-	
9	170+00		137	3		-		-	-	
10	30+00		-	-		5		-	-	
11	50+00		-	-		5		-	-	
12	90+00		-	-		3.5		-	-	
13	150+00		-	-		6		-	-	
14	170+00		-	-		3		-	-	
15	20+00		-	-		-		Note 1	5	
16	40+00		-	-		-		“	5	
17	80+00		-	-		-		“	3	
18	140+00		-	-		-		“	3	
19	160+00		-	-		-		“	3	

Table 1 – WBV14C.2 Inspection Trench Locations and Depths
These do not include “Ground-Truth trenches” excavated at GeoPhysical sites.

Note 1: Top of cut located at least 15-feet flood-side of the flood-side levee toe.

PROCEDURES FOR INSPECTION TRENCH EXCAVATION, CUTTINGS INSPECTION AND TESTING.

EXCAVATION PROCEDURES:

1. Locate the inspection trench as per the location (floodside, centerline, or protected side), station and offset shown in Table 1.
2. All trenches shall be 10-foot by 10-foot in plan dimension at the surface. The contractor surveyor will locate the four corners of the trench and its center (on the ground surface), obtaining accurate coordinates and elevations of these five points.
3. The contractor shall cover a sufficient area of the ground surface surrounding the inspection trench with a construction fabric. A “sufficient area” is that area necessary to contain all of the materials excavated from the trench placed in no more than 6-inch thick layers.
4. The operator shall excavate the inspection trench in 6-inch layers. The operator shall carefully place these cuttings on the construction fabric. The operator shall begin placing the cuttings on the fabric on one end of the fabric and then proceed in an orderly fashion such that as the excavation depth increases, the cuttings cover more and more of the fabric surrounding the excavation. This will result in the inspection team knowing approximately what depth the observed cuttings originated from.
5. The operator will place and spread the clay cuttings on the fabric in 6-inch layers. The operator will do the necessary work to spread and break-down the cuttings to achieve the 6-inch thick layer. The operator will be careful not to significantly change the location of the cuttings from their originally placement on the fabric. The operator will do the necessary work with the excavator to attempt to break-up or cut-up the cuttings into smaller, more manageable pieces.
6. Once the excavation is complete, the contract surveyor will locate the four corners of the trench and its center (at the bottom of the excavation), obtaining accurate coordinates and elevations of these five points. For excavations deeper than 4-feet, the excavation center point will not be surveyed due to safety concerns for the surveyor. In this case all corner and midpoints of the excavated surface will be surveyed.

CUTTINGS INPSECTION PROCEDURES

1. The team shall carefully and methodically comb through the cuttings, inspecting the cuttings, breaking up the cuttings as necessary by hand or with shovels to collect wood and wood pieces of any size or shape that are visible to the naked eye.
2. If necessary, the team shall ask the contracting officer’s representative to instruct the contractor to break down the cuttings into smaller pieces to assist the inspection.
3. All wood collected from this inspection shall be stored in containers of ample volume to store the collected wood. The container shall be marked or labeled with the trench location and depth. The collected wood will be stored for later analyses.
4. The team will reach consensus that the necessary efforts have been expended to collect the wood and that all wood that can be collected has been.
5. Finally, the team will gather at the excavation and discuss if any team member observed anything about the cuttings or observed anything about the sidewalls or bottom of the excavation that would cause concern for seepage or stability of the levee or any other observation that might indicate any part of the constructed levee or berms were unsuitable for their intended purpose.

CUTTINGS TESTING PROCEDURES.

A. Wood Pieces Collected at the Excavation.

1. The wood pieces collected at the excavations shall be delivered to the testing laboratory. There any clay pieces adhering to the wood pieces that can be removed by hand without damaging the wood piece shall be removed.

2. The wood pieces shall be separated by size:
   - Up to 3” long
   - 3” to 6”
   - 6” to 12”
   - Greater than 12”

3. All wood pieces shall be photographed.

4. All wood pieces shall be weighed in their existing conditions (wet weight as excavated)

5. Sturdy containers shall be used for the density determination processes. The weight of the empty containers shall be determined. The container shall be filled with Ottawa sand and then the surface of the sand shall be loaded with a static weight and the entire container placed on the vibrating table and vibrated such that the Ottawa sand achieves its maximum density. Additional Ottawa sand shall be added during the vibrating process to “top off” the container as the sand achieves a greater density. If a vibratory table is not available, then an appropriate vibratory hammer will be used to impart the necessary densifying energy to the sample.
The weight of the container filled with densified Ottawa sand shall be determined multiple times to determine the best value of the weight. The weight of the sand shall be divided by the known volume of the container and reported as the maximum unit weight (density) of the Ottawa sand.

6. The volume of the wood shall be determined by placing and covering it in layers of standard Ottawa sand in the same container of known volume. The surface of the sand and wood shall be loaded with a static weight and the entire container placed on the vibrating table and vibrated such that the Ottawa sand achieves its maximum density. Additional Ottawa sand shall be added during the vibrating process to “top off” the container as the sand achieves a greater density. If a vibratory table is not available, then an appropriate vibratory hammer will be used to impart the necessary densifying energy to the sample.

7. When no more densification of the Ottawa sand is achieved, the weight of the densified sand and wood shall be determined. The known volume of the container shall be multiplied by the known maximum density of the Ottawa sand and the theoretical weight of the container filled with only densified Ottawa sand shall be determined. The difference between the measured weight of the sand and wood filled container and the theoretical weight of the sand filled container shall be divided by the known maximum density of the Ottawa sand to determine the volume of the wood.

8. The volume of the excavated trench shall be determined using the survey information obtained during the excavation. The volume of collected wood that is objectionable per the specifications shall be divided by the volume of the excavated trench and reported as the percentage (by volume) of objectionable wood collected from that excavation.

B. Wood Pieces Not Visible to the Naked Eye.

1. The team shall revisit each of the excavated trenches shown on Table 1. The team shall excavate a smaller hole (one or two cubic-feet) immediately next to the previous excavation. All material collected from this excavation shall be saved.

2. The hole shall be lined with a plastic trash bag and filled with water drained from a water tank of known weight. The hole shall be filled with water to the surface. After filling the hole, the tank shall be reweighed to determine the weight of the water in the hole. This weight shall be divided by the known unit weight of water to determine the exact volume of the hole. Another option for volume determination would include filling the hole with loose sand in lieu of filling it with water.

3. All cuttings excavated from this hole shall be delivered to the lab. All cuttings from the hole shall be sieved or washed through a “number four” sieve. All wood pieces retained on the sieve shall be washed. A volume of soil that passed the “number four” sieve shall be saved for a subsequent organic determination.

4. The volume of these wood pieces shall be determined using the process described above for the larger wood pieces collected from the trench.

5. The volume of wood pieces collected on the “number four” sieve shall be divided by the volume of the excavated smaller hole to determine a percentage (by volume) of wood not visible to the naked eye.

C. Determination of Organic Content.

1. The organic content of the saved soil shall be determined.