1.2 RECOMMENDATIONS

1.2.1 Recommendations Regarding the Structural Stability
The following issues need to be addressed with routine maintenance:

- ***Remediate the two minor depressions along the crest of the South Bottom Ash Pond;***

TEC Response: See Attached Photographs 1-4 for verification that the repairs of the South Bottom Ash Pond (SBAP) dike crest are complete.

- ***Repair the shear failure of the liner within the South Economizer Ash Pond.***

TEC Response: TEC's contractor is currently replacing the liner in the Long Term Fly Ash Pond (LTFAP) directly south of the South Economizer Ash Pond (SAP). Immediately upon completion of the LTFAP project, the SAP liner tear will be repaired.

1.2.2 Recommendations Regarding the Hydrologic/Hydraulic Safety
Hydrologic/Hydraulic analysis should be provided.

TEC Response: TEC has hired a geotechnical engineering firm to perform systematic soil borings of the dikes for the four impoundments in question. Figure 1 illustrates the locations at which core data will be obtained and analyzed to verify that the original design assumptions and stability analyses for the dikes remain valid and to obtain phreatic surface data sufficient to perform hydraulic analyses. This work will be initiated in March 2012.

1.2.3 Recommendations Regarding the Supporting Technical Documentation
Supporting technical documentation is insufficient and the following documents need to be provided:

- ***Hydrologic/Hydraulic analyses***

TEC Response: These analyses are dependent upon the data which will be obtained from the planned soil borings described above and will be provided upon completion.

- ***Slope stability analyses for steady state (normal) and seismic conditions for current (as-built) conditions of the embankments***

TEC Response: The original stability analyses will be confirmed, as described above, based on the data obtained from the soil borings. The analyses will be provided when complete.

- ***A documented inspection procedure and log of inspections***

TEC Response: Big Bend staff have begun quarterly inspections of the ash pond dikes following the guidelines provided by Chapter 62-672 FAC - Minimum Requirements for Earthen Dams Used in Phosphate Mining and Beneficiation Operations. Attached is the completed inspection form (Attachment 1) for the first inspection utilizing the enhanced requirements. Also please note that a formal dam safety program, including the requested inspection procedures, is being drafted at this time for approval by Big Bend management. This program is being adapted from the procedures required for TEC's Polk Power Station under the conditions of the power plant license for that facility and is being voluntarily implemented by Big Bend Station to follow the EPA's recommendation. The procedure will be submitted for EPA review by April 1, 2012.

1.2.4 Recommendations Regarding the Field Observations

The following recommendations have been made based on the field observations:

- ***Repair the shear failure in the liner of the South Economizer Ash Pond***

TEC Comment: As described above, this repair will be made immediately upon completion of the LTFAP liner project.

- ***Maintain and prevent further expansion of woody vegetation onto the downstream slope of South Bottom Ash Pond;***

TEC Response: As demonstrated by Photographs 5-7, vegetation at the bottom of the downstream slope has been cleared as requested and will be maintained in the future to allow for inspection of dike conditions in this area.

- ***Remediate two minor depressions in South Bottom Ash Pond crest.***

TEC Response: As described above, these depressions have been repaired.

1.2.6 Recommendations Regarding the Surveillance and Monitoring Program

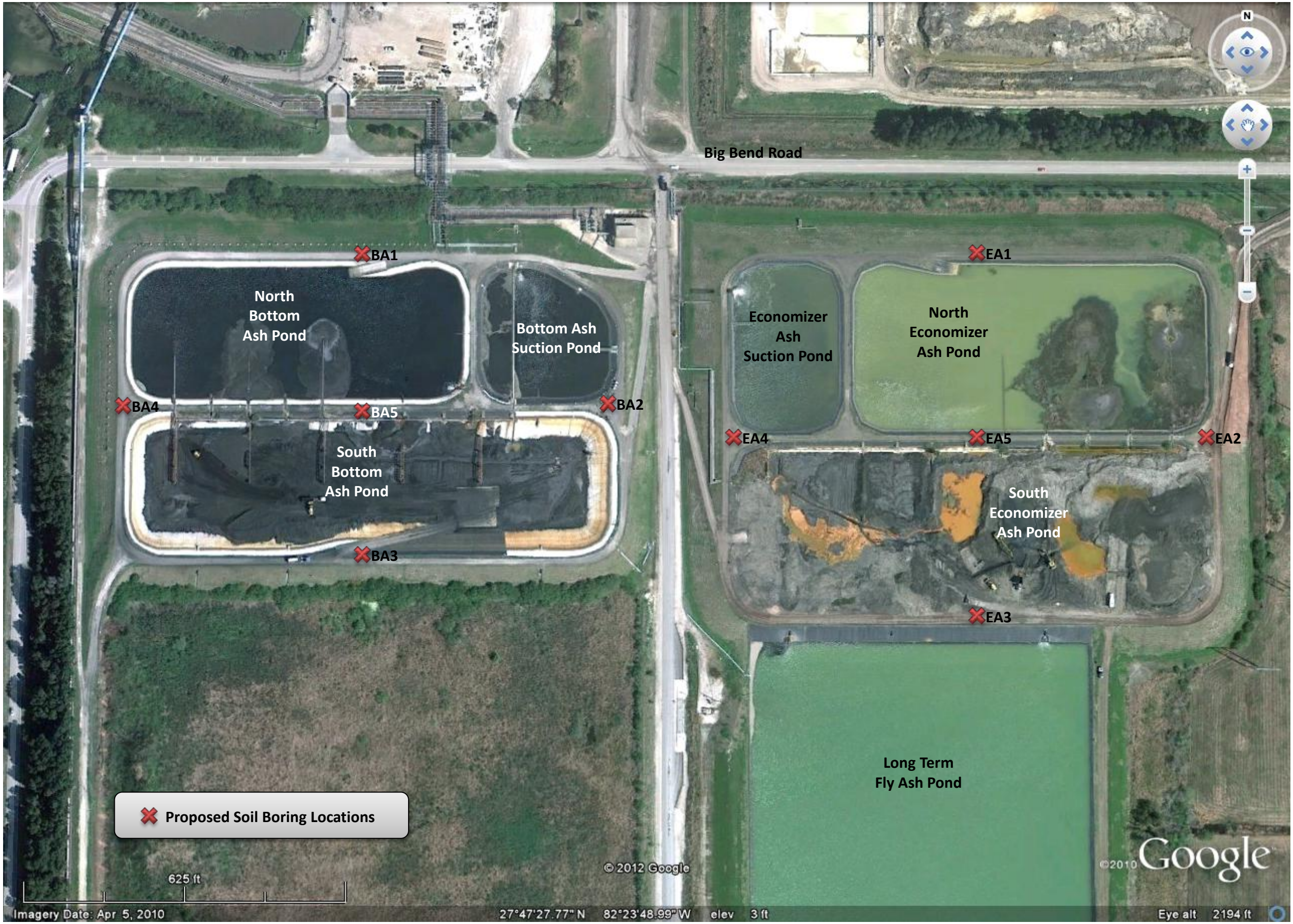
Field observations should be recorded and documented at least on a monthly to quarterly basis. An annual observation should be performed and documented by a Professional Engineer licensed in the State of Florida.

TEC Response: In addition to the informal visual observation of dike conditions to be performed during the daily routine inspections, TEC will document quarterly dam safety inspections and an annual inspection and report will be performed by a Florida PE. Any recommendations by the engineer for corrective actions will be implemented by Big Bend within a reasonable timeframe upon receipt of the annual report.

1.2.7 Recommendations Regarding Continued Safe and Reliable Operation

Repair liner on South Economizer Ash Pond.

TEC Response: As described above, the liner will be repaired in the near future upon completion of the LTFAP relining project.



Tampa Electric Big Bend Ash Pond Boring Locations

Bottom Ash Pond System / Recycle Pond System / Fly ash Pond System

IMPOUNDMENT INSPECTION FORM

N. Reach South

1 CREST

		COMMENTS	
a.	Any visual settlements/changes from last inspection	N/A	N/A
b	Misalignment/changes from last inspection	" "	N/A
c.	Cracking/changes from last inspection	" "	N/A
d	Crest drainage	" "	N/A
	(1) Pipes inlets free of vegetation	" "	N/A
	(2) Pipe outlets below ~~below~~ reservoir	" "	N/A

2 UPSTREAM SLOPE (WATER SIDE)

a.	Adequate grass cover	yes	yes
b	Any erosion? (Note locations)	No	No
c.	Are trees growing on slope?	No	No
d	Longitudinal cracks?	No	No
e.	Transverse cracks?	No	No
f	Adequate vegetative protection?	yes	yes
f	Visual depressions or bulges?	No	No
h.	Visual settlements?	No	No
i.	Debris or trash present?	No	No

3 DWNSTREAM SLOPE (LAND SIDE) 50'FROM TOE

a.	Adequate grass cover	yes	yes
b	Any erosion (Note locations)	No	No
c.	Are trees growing on slope?	No	No
d	Logitudinal cracks	No	No
e.	Transverse cracks?	No	No
f	Visual depressions or bulges?	No	No
f	Visual settlements?	No	No
h.	Is seepage present?	No	No
i.	Soft or spongy zones present	No	No

4 AREA DWNSTREAM

a.	Recent downstream development	N/A	N/A
b.	Seepage or wetness	N/A	N/A

5 OTHER COMMENTS

Karen Zwolak / Jim Rothrock / Zel Jones 2/22/2012

Name Date

Bottom Ash System

Long Term Cattail Pond Bottom Ash

1. Northwest corner pipe outlet has substantial vegetation growing on Suction Pond

2. Upstream Slope

yes
No
No
No
No
yes
No
No
No

3. Downstream slope

yes
NO; minimal (watch it) add soil, seed around stanchions
NO
NO
NO
A few ruts from mowing needs to be seeded in april 2012
No
NO
NO

North side of Downstream Slope (Trees starting to encroach slope).

4. Area Downstream

N/A

Flyash system

IMPOUNDMENT INSPECTION FORM

1 CREST

		COMMENTS North	South
a.	Any visual settlements/changes from last inspection	N/A	N/A
b	Misalignment/changes from last inspection	N/A	
c.	Cracking/changes from last inspection		
d	Crest drainage		
	(1) Pipes inlets free of vegetation		
	(2) Pipe outlets below below reservoir		

2 UPSTREAM SLOPE (WATER SIDE)

a.	Adequate grass cover	yes	No [illegible]
b	Any erosion? (Note locations)	NO	NO
c.	Are trees growing on slope?	No	NO
d	Longitudinal cracks?	No	NO
e.	Transverse cracks?	No	NO
f	Adequate vegetative protection?	yes	NO
f	Visual depressions or bulges?	NO	No
h.	Visual settlements?	NO	NO
i.	Debris or trash present? *	yes	NO

3 DWNSTREAM SLOPE (LAND SIDE) 50'FROM TOE

Suction pond + the North flyash pond — sediment + cattails on top of liner — East slope of South ECCM

a.	Adequate grass cover	yes	Needs sod
b	Any erosion (Note locations)	No	Some
c.	Are trees growing on slope?	NO	No
d	Logítudinal cracks	NO	NO
e.	Transverse cracks?	NO	No
f	Visual depressions or bulges?	NO	NO
f	Visual settlements?	NO	NO
h.	Is seepage present?	NO	NO
i.	Soft or spongy zones present	NO	NO

4 AREA DWNSTREAM

a.	Recent downstream development	N/A	N/A
b.	Seepage or wetness	N/A	N/A

5 OTHER COMMENTS

Karen Zwolak / Jim Rothrock / Zel Jones 2/23/2012

Name Date